

**TOWN OF AJAX  
REPORT**



**REPORT TO:** General Government Committee

**SUBMITTED BY:** Paul Allore, M.C.I.P., R.P.P.  
Director of Planning & Development Services

**PREPARED BY:** Barbara Hodgins, M.C.I.P., R.P.P.  
Senior Policy Planner

**SUBJECT:** **Duffin Creek Water Pollution Control Plant Outfall EA-Status Update**

**WARD(S):** All

**DATE OF MEETING:** June 25, 2015

**REFERENCE:** Report to General Government Committee-February 10, 2014  
Community Action Plan - Environmental Leadership

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**RECOMMENDATIONS:**

1. That the report titled "Duffin Creek Water Pollution Control Plant Outfall EA-Status Update", dated June 25, 2015, be endorsed;
2. That the Minister of the Environment and Climate Change take immediate action to protect and restore the Ajax nearshore by issuing a Part II Order under the *Environmental Assessment Act* directing the Regions of Durham and York to undertake a full Individual EA (IEA) regarding the Duffin Creek Water Pollution Control Plant outfall, subject to the following requirements:
  - a) Preparation of Terms of Reference, in consultation with the Town of Ajax, specifying that a primary objective of the IEA is to ensure that phosphorus in the Plant effluent does not reach the *Cladophora* Habitat Zone at levels that will increase algae production, and that the alternatives studied to achieve this objective must include:
    - i) Installing and using Actiflo™ tertiary treatment technology to remove phosphorus below levels known to limit the nuisance growth of *Cladophora* resulting from Plant effluent prior to discharge into Lake Ontario; or
    - ii) Extending the Plant's outfall to a length sufficient that phosphorus in discharged effluent does not reach the *Cladophora* Habitat Zone at levels that increase algae production; or

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- iii) Using a combination of effluent treatment using Actiflo™ and increased outfall length;
- b) Implementation of a solution that removes phosphorus below levels known to limit the nuisance growth of *Cladophora* resulting from Plant effluent from the *Cladophora* Habitat Zone must be commenced within three years from the date of the Town of Ajax's Part II Order Request (by February 2017);
- c) Provision of peer review funding to the Town of Ajax, to be managed by the Town, to enable the Town and its experts to participate meaningfully in the full IEA process; and,
- d) Reimbursement of the Town for the legal and consulting costs incurred by the Town of Ajax to demonstrate the fundamental deficiencies in the Regions' Class Outfall EA;
3. That the Minister ask the Director of the Environmental Approvals Branch to consider amending the Duffin Creek Plant's Environmental Compliance Approval to impose phosphorus limits following selection of a preferred alternative through the IEA, and that those limits reflect the best available treatment technology (taking into consideration Actiflo™ tertiary treatment technology in use in the Metro Syracuse Plant), including limits on Total Phosphorus and Soluble Reactive Phosphorus; and,
4. That this staff report be sent to the Minister of the Environment and Climate Change, Durham Region and York Region, the City of Pickering and other lakefront communities in Durham Region, Pickering-Ajax Citizens Together Protecting Our Water (PACT POW) and the other Part II Order Requesters, the International Joint Commission, the Great Lakes Executive Committee, the Ajax Environmental Advisory Committee, the Durham Environmental Advisory Committee, the Environment Commissioner of Ontario, the Great Lakes and St. Lawrence Cities Initiative, Conservation Ontario, Toronto and Region Conservation Authority, Central Lake Ontario Conservation Authority, the Council of Canadians, Ecojustice, Lake Ontario Waterkeeper, Environmental Defence, Sierra Club, Chris Alexander MP (Ajax-Pickering), Joe Dickson MPP (Ajax-Pickering), Tracey MacCharles MPP (Pickering-Scarborough East) and other interested parties.
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#### **BACKGROUND:**

The purpose of this report is to provide a status update on the Part II Order Request filed by the Town with the Ministry of Environment and Climate Change (MOECC) in February 2014, in relation to York and Durham Regions' Class Environmental Assessment for the Duffin Creek Water Pollution Control Plant Outfall (Outfall EA) to overcome limits imposed in 2007 by the MOECC.

#### **DISCUSSION:**

The Town's problem with explosive growth of *Cladophora* algae along the shoreline of Lake Ontario at Ajax is evident again in 2015, as shown in Figure 1: Algae Fouling Ajax Waterfront at Veterans' Point Gardens.

This summer, Ajax residents will again be unable to enjoy the waterfront and nearby residents will be forced to stay indoors and close their windows due to the stench of rotting *Cladophora* along the shoreline. Further, the Town is hosting Pan Am events where we anticipate thousands of people visiting our waterfront.

This emphasizes the need for immediate action from the Minister for a viable solution for the Duffin Creek Water Pollution Control Plant to eliminate this unacceptable and preventable nuisance algae along the Ajax shoreline.

**Figure 1**  
**Algae Fouling Ajax Waterfront at Veterans' Point Gardens**



#### **1. Update on the Town's Part II Order Request**

In February 2014, the Town submitted a Part II Order Request<sup>1</sup> regarding York and Durham Regions' Municipal Class Environmental Assessment for the Duffin Creek Water Pollution Control Plant Outfall (Outfall EA) to the Minister of the Environment and Climate Change. The Town's Request identified the following deficiencies in the Regions' Outfall EA:

- Failure to comply with the *Environmental Assessment Act*, the Municipal Class EA, the *Environmental Bill of Rights* and the Ministry's Statement of Environmental Values;
- Fundamental deficiencies in the description of the existing environment (in the Outfall EA's Environmental Study Report or ESR);
- Failure to identify and measure significant adverse impacts caused by the Plant today; and,

<sup>1</sup> <http://www.ajax.ca/en/doingbusinessinajax/resources/PartIIOrderRequest.PDF>

- The very significant improvement that could be made to the Ajax nearshore if Soluble Reactive Phosphorus (SRP) is removed from the Plant's effluent prior to discharge.

Specifically, the Town has requested that the Minister issue a Part II Order under the *Environmental Assessment Act* directing the Regions to undertake a full Individual EA (IEA) for the Plant's Outfall, and that the IEA be subject to the following requirements:

1. Preparation of Terms of Reference, in consultation with the Town of Ajax, specifying that a primary objective of the IEA is to ensure that phosphorus in the Plant effluent does not reach the Cladophora Habitat Zone at levels that will increase algae production, and that the alternatives studied to achieve this objective must include:
  - i) Installing and using Actiflo™ tertiary treatment technology to remove phosphorus below levels known to limit the nuisance growth of Cladophora resulting from Plant effluent prior to discharge into Lake Ontario; or
  - ii) Extending the Plant's outfall to a length sufficient that phosphorus in discharged effluent does not reach the *Cladophora* Habitat Zone at levels that increase algae production; or
  - iii) Using a combination of effluent treatment using Actiflo™ and increased outfall length;
2. Implementation of a solution that removes phosphorus below levels known to limit the nuisance growth of Cladophora resulting from Plant effluent from the Cladophora Habitat Zone must be commenced within three years from the date of the Town of Ajax's Part II Order Request (by February 2017);
3. Provision of peer review funding to the Town of Ajax, to be managed by the Town, to enable the Town and its experts to participate meaningfully in the full IEA process;
4. Reimburse the Town for the legal and consulting costs incurred by the Town of Ajax to demonstrate the fundamental deficiencies in the Regions' Class Outfall EA;
5. The Plant's Environmental Compliance Approval being amended by the Director of the Environmental Approvals Branch to impose phosphorus limits following selection of a preferred alternative through the IEA, and that those limits reflect the best available treatment technology (taking into consideration Actiflo™ tertiary treatment technology in use in the Metro Syracuse Plant), including limits on Total Phosphorus and Soluble Reactive Phosphorus

The Town is seeking a full IEA in order to give the Ministry an oversight role and the Minister a decision-making role in relation to the IEA. This contrasts with the Class EA process used by the Regions, which is a self-assessment process.

As of writing this staff report, the Town's Request is still under review by Ministry staff, who will be providing recommendations to the Minister. Timing of the Minister's decision is unknown.

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To date, the Town has spent considerable funds for external legal counsel and consulting experts, in order to undertake scientific and other research, prepare and review reports, and reply to additional documentation produced by the Regions, and submitted directly to the Ministry in response to the Town's Part II Order Request.

## 2. Recent Town Actions

This section of the staff report outlines several actions taken in the first half of 2015.

### 2.1 Dr. Auer's Presentation

On January 13, 2015, the Town hosted a widely advertised, open public event called "Special Evening with Dr. Martin T. Auer<sup>2</sup>" in the Council Chamber at Town Hall, at which Dr. Auer presented<sup>3</sup> his "Phosphorus Provenance and *Cladophora* Growth in Lake Ontario Report"<sup>4</sup> refuting the Regions' position to a standing-room only audience (more than 170 people). The Report, linking the algae issue plaguing the Ajax waterfront to the Duffin Creek Plant, is a key component of the Town's Request.

Dr. Auer's presentation was "live streamed"<sup>5</sup> and uploaded to the Town's website and YouTube for viewing ([www.ajax.ca/wpcp](http://www.ajax.ca/wpcp)). He presented his scientific findings in layperson's terms, engaged the audience for more than two hours and responded openly to questions from attendees and the media. All members of Ajax Council, the Mayors of Oshawa and Whitby, Durham Regional Councillors (from Oshawa and Pickering) and MPP Joe Dickson attended.

This event was an unprecedented success in engaging the community and expanding their understanding that sufficient scientific information and feasible engineering solutions are available to solve the *Cladophora* problem in nearshore Lake Ontario at Ajax (and elsewhere).

### 2.2 Letter to the Premier

On February 20<sup>th</sup>, Mayor Parish sent a letter to Premier Wynne<sup>6</sup> to congratulate her on the introduction of the proposed *Great Lakes Protection Act* in the Legislature. The proposed legislation, as put forward by the Ministry of the Environment and Climate Change in February 2015, is intended to keep the Great Lakes "drinkable, fishable and swimmable" by:

- Helping reduce harmful algal blooms and protect wetlands and other coastal areas;
- Monitoring and reporting on the health of the Great Lakes;
- Encouraging local action on priority issues from "Ontario's Great Lakes Strategy"; and,

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<sup>2</sup> Link to Special Evening with Dr. Auer Event Flyer: [http://www.ajax.ca/en/livinginajax/resources/duffin-creek-wpcp/documents/Dr\\_Auer\\_Flyer\\_SaveWaterfront\\_FNL\\_2.pdf](http://www.ajax.ca/en/livinginajax/resources/duffin-creek-wpcp/documents/Dr_Auer_Flyer_SaveWaterfront_FNL_2.pdf)

<sup>3</sup> Dr. Auer's Presentation Slides: [http://www.ajax.ca/en/livinginajax/resources/duffin-creek-wpcp/documents/Nuisance\\_Growth\\_of\\_Cladophora\\_in\\_the\\_Ajax\\_Nearshore\\_Presentation\\_Jan\\_13.pdf](http://www.ajax.ca/en/livinginajax/resources/duffin-creek-wpcp/documents/Nuisance_Growth_of_Cladophora_in_the_Ajax_Nearshore_Presentation_Jan_13.pdf)

<sup>4</sup> Link to Phosphorus Provenance Report: [http://www.ajax.ca/en/livinginajax/resources/duffin-creek-wpcp/documents/Phosphorus\\_Provenance\\_Final\\_Report\\_24\\_Oct\\_2014.pdf](http://www.ajax.ca/en/livinginajax/resources/duffin-creek-wpcp/documents/Phosphorus_Provenance_Final_Report_24_Oct_2014.pdf)

<sup>5</sup> Video of Dr. Auer's Presentation: <https://www.youtube.com/watch?v=DwnJ0x3BoTY>

<sup>6</sup> Mayor's Letter to Premier Wynne: [http://www.ajax.ca/en/livinginajax/resources/duffin-creek-wpcp/documents/Congratulatory\\_Letter\\_Premier\\_Wynne\\_Great\\_Lake\\_Protection\\_Act.pdf](http://www.ajax.ca/en/livinginajax/resources/duffin-creek-wpcp/documents/Congratulatory_Letter_Premier_Wynne_Great_Lake_Protection_Act.pdf)

- Meeting commitments made in the 2014 Canada-Ontario Agreement on Great Lakes Water Quality and Ecosystem Health<sup>7</sup> (COA 2014). COA 2014 is the primary mechanism by which the Federal, State and Provincial governments are coordinating their respective work to address commitments made in the 2012 Canada-U.S. Great Lakes Water Quality Agreement<sup>8</sup> (GLWQA).

The Regions' preferred alternative could *triple* phosphorus discharge from the Plant's existing outfall into already degraded nearshore receiving waters, which is contrary to the principles contained in the proposed *Great Lakes Protection Act*.

Mayor Parish's letter reminded the Premier that the Ajax nearshore is in crisis due to *current* levels of phosphorus discharge from the Duffin Creek Plant and its outfall. He advised that, without the Premier's intervention, the crisis in Ajax's nearshore will worsen, as the Regions would be permitted to *triple* phosphorus discharge from the Plant's existing outfall into already degraded nearshore receiving waters.

In his letter, the Mayor also noted that if the Minister rejects the Town's Part II Order Request and allows the Regions to proceed with the preferred alternative from the Outfall EA, the Province will be creating a larger issue that the Province will have to deal with, at the Province's own expense. He encouraged the Wynne government to approve the Town's Request and require that a full IEA be conducted.

On March 2<sup>nd</sup>, Premier Wynne responded in a letter to the Mayor, indicating that the Minister of the Environment and Climate Change is responsible for responding directly to the issues raised in the Town's Request and that she had asked him to do so.

## 2.2 Review of Regions' Analysis of Actiflo™

In early 2015, the Regions advised the Town that the construction of a new outfall further offshore in Lake Ontario over the next several years is not considered to be a feasible solution since it will take at least 10 years to collect sufficient funds through development charges and other sources to fund a new outfall and the remaining life of the existing outfall is 30 to 40 years. However, the Regions have indicated that they explored over the past several months whether Actiflo™ tertiary treatment technology could be installed in the Duffin Creek WPCP and operate seasonally during the algae growing season.

On March 11<sup>th</sup>, the Ministry received the Regions' submission, titled "Technical Memorandum Regarding Actiflo™ Process for Tertiary Treatment at the Duffin Creek Water Pollution Control Plant" (dated March 11, 2015), containing a letter from Regional staff<sup>9</sup> and a memorandum prepared by the Regions' consultant (CH2MHill)<sup>10</sup>. The documents indicated the use of Actiflo™ technology at the Duffin Creek WPCP is technically feasible but cited high costs as the rationale for not proceeding with Actiflo™ as a viable solution.

<sup>7</sup> Link to COA 2014: <https://www.ec.gc.ca/grandslacs-greatlakes/default.asp?lang=En&n=B903EE0D-1>

<sup>8</sup> Link to 2012 Canada-U.S. Great Lakes Water Quality Agreement: <https://www.ec.gc.ca/grandslacs-greatlakes/default.asp?lang=En&n=45B79BF9-1>

<sup>9</sup> Regions' Letter to Paul Allore: [http://www.ajax.ca/en/livinginajax/resources/duffin-creek-wpcp/documents/march-may-2015/Regions\\_Letter\\_to\\_Paul\\_Allore.pdf](http://www.ajax.ca/en/livinginajax/resources/duffin-creek-wpcp/documents/march-may-2015/Regions_Letter_to_Paul_Allore.pdf)

<sup>10</sup> CH2MHILL's Technical Memo dated March 11, 2015: [http://www.ajax.ca/en/livinginajax/resources/duffin-creek-wpcp/documents/march-may-2015/Technical-Memorandum-by-CH2M-Hill\\_memo.pdf](http://www.ajax.ca/en/livinginajax/resources/duffin-creek-wpcp/documents/march-may-2015/Technical-Memorandum-by-CH2M-Hill_memo.pdf)

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The Regions have to date refused to alter the existing preferred alternative in the Outfall EA ESR, make any changes to the ESR, or produce an Addendum to the ESR under any circumstances. Further, the Regions' Outfall EA ESR does not recognize the Plant's effluent as a contributor to the Town's algae problem along the Lake Ontario nearshore.

On April 2<sup>nd</sup>, the Town forwarded an email to Ministry staff advising that:

- Procedurally, the Regions' submission was completely inappropriate, as the information it contained was entirely outside of the Outfall EA and its ESR, did not form part of the information released for public consultation during the Outfall EA, and had not been circulated to interested parties for review and comment;
- Under these circumstances, the Ministry may not consider the Region's submission, unless the public is made aware of and given access to the material as well as an extension of time to review it and respond to it, and unless the Ministry revisits its evaluation of the Town's Part II Order Request upon receipt of a reply from the Town, other Requesters and members of the public at large; and,
- The Ministry owes a duty of procedural fairness to the Town and all other Requesters in the evaluation of the Part II Order Requests made for an IEA, and allowing the Regions to make unilateral submissions to the Ministry after the mandatory public consultation window has closed, without permitting a reply to the Ministry, would be a legally reviewable error.

On April 23<sup>rd</sup>, the Ministry replied to the Town that the March 11<sup>th</sup> submission from the Regions is in the Ministry's Outfall EA file and any questions should be directed to the Regions.

On May 4<sup>th</sup>, the Ministry received a letter from the Town with Dr. Auer's technical memo (dated April 30<sup>th</sup>), providing a summary of the Town's review of the Regions' March 11<sup>th</sup> submission, as follows:

- a. The Regions acknowledged that Actiflo could be successfully implemented at the Duffin Creek Plant, in contrast to their previous position (in the Outfall EA ESR) that Actiflo was unproven, unreliable and unworthy of consideration;
- b. Despite this, the Regions continue to ignore the unparalleled opportunity this (use of Actiflo) presents to prevent nuisance algae growth in the Ajax nearshore;
- c. The cost of Actiflo was unfairly compared to the cost of other alternatives studied in the Outfall EA;
- d. The capital cost of Actiflo has been overestimated by designing to treat for 945 MLD, which is 50% more or 1.5 times greater than the Duffin Creek Plant's actual (unapproved) maximum capacity (630 MLD). By doing this, a different approach was applied to Actiflo than to the other alternatives evaluated in the Outfall EA, in effect, penalizing the Actiflo option; and,
- e. It may be possible to reduce costs significantly by designing for use of Actiflo on a seasonal basis only. If additional treatment is used 4-5 months a year (during the algae growing season), operating costs could be 33% to 42% less than the Regions' estimated costs.

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On May 26<sup>th</sup>, Town staff sent a letter to Regional staff, reiterating the Town's view that Actiflo was not properly evaluated during the Class Outfall EA, and Actiflo was not reported as a viable alternative because, from the outset, the Regions chose not to consider that nutrient loads in the Plant effluent could be driving the local nuisance algal growth problem when the Problem Statement governing the Class Outfall EA process was established. As a significant consequence, Actiflo's ability to be a viable solution was not evaluated during the Class Outfall EA.

On June 10, 2015, Town staff received a letter from Regional staff which generally stated that the Regions stand behind the work conducted as part of the Class Outfall EA process, and they do not agree with the Town's position on the Outfall EA or the use of Actiflo. The Regions also indicated they await the Minister's decision on the Outfall Class EA.

### **Next Steps**

If the Town's Part II Order Request for a full IEA is rejected by the Minister, the existing Ministerial conditions on the Duffin Creek WPCP outfall would be removed (increasing flows from 520 MLD to 630 MLD) and phosphorus loading to the already degraded receiving water along our publicly-owned waterfront could be permitted to *triple*.

Pursuant to Council's prior authorization and approved funding, Dr. Auer and his Michigan Technological University team are nearing completion of field work and modeling of nearshore conditions in Lake Ontario at Ajax that will help determine the best possible combination of outfall length and Actiflo treatment technology required to solve the Town's algae problem. To address several new issues raised by the Regions with the Ministry since the Town filed its Part II Order Request, it is necessary to enable Dr. Auer to conduct scoped supplementary field work this summer.

### **FINANCIAL IMPLICATIONS:**

To date, Council has authorized approximately \$1.7 million for outside legal counsel specializing in environmental law and a team of consulting experts in the fields of *Cladophora*, water quality, fish and fish habitat, wastewater treatment technology, air quality and odour monitoring, and lake modelling for this project.

### **COMMUNICATION ISSUES:**

Communications staff will continue to conduct an effective public awareness/media campaign to increase attention on the Town's worsening algae problem and the Town's environmental leadership and investment in finding an immediate, viable solution.

### **CONCLUSIONS:**

At this time, the Town's Part II Order Request is still being reviewed by the Ministry of the Environment and Climate Change. The Minister could issue a decision at any time.

The Town requires an immediate solution from the Ministry to the worsening, chronic problem of explosive *Cladophora* algal growth in nearshore Lake Ontario along our waterfront.

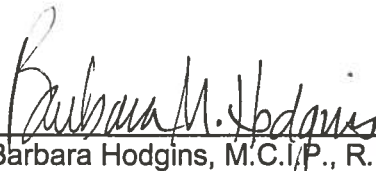
The Regions of Durham and York continue to ignore the adverse impacts on our nearshore driven by phosphorus in effluent discharged from the Duffin Creek Water Pollution Control Plant,



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although Dr. Martin Auer's local field work and analyses have confirmed the direct relationship between the Plant's phosphorus emissions and excessive algal growth.

Council will be advised immediately if the Minister's decision is released prior to the next staff report tentatively scheduled in late September/October 2015.

  
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