



October 7, 2010

Mr. Denis Kelly,
Regional Clerk
The Regional Municipality of York
17250 Yonge Street
Newmarket, ON L3Y 6Z1

REGION OF YORK
CLERK'S OFFICE

FILE No. - 942

The Regional
Municipality
of Durham

Clerk's Department

605 ROSSLAND RD. E.
PO BOX 623
WHITBY ON L1N 6A3
CANADA
905-668-7711
1-800-372-1102
Fax: 905-668-9963
E-mail: clerks@durham.ca
www.durham.ca

Pat M. Madill, A.M.C.T., CMM III
Regional Clerk

RE: ADDITIONAL FINANCING FOR THE GEOTECHNICAL INVESTIGATION TO SUPPORT THE CLASS ENVIRONMENTAL ASSESSMENT TO ADDRESS THE CAPACITY LIMITATIONS OF THE EXISTING OUTFALL/DIFFUSER AT THE DUFFIN CREEK WATER POLLUTION CONTROL PLANT, IN THE CITY OF PICKERING (2010-W-128) (Our File: 012)

Please be advised the Works Committee of Regional Council considered the above matter and at a meeting held on October 6, 2010 Council adopted the following recommendations of the Committee:

- "a) THAT approval be granted to increase the upset limit of the existing engineering services agreement with Coffey Geotechnics Incorporated in the amount of \$680,000* for additional geotechnical investigations to support the Class Environmental Assessment to address the capacity limitations of the existing outfall/diffuser at the Duffin Creek Water Pollution Control Plant, from the previous approved upset limit of \$939,323* to a revised upset limit of \$1,619,323*:

Regional Municipality of Durham's Share (50%)	\$809,661.50
Regional Municipality of York's Share (50%)	<u>809,661.50</u>
Total	<u>\$1,619,323.00*</u>

- b) THAT the Regional Chair and Clerk be authorized to execute the amendment to the existing agreement;

- c) THAT financing of Durham's share in the amount of \$340,000* (50 per cent of the \$680,000*) for the Geotechnical Investigation to support the Class Environmental Assessment to address the capacity limitations of the existing outfall/diffuser at the Duffin Creek Water Pollution Control Plant, in the City of Pickering, be provided at the discretion of the Commissioner of Finance as follows:

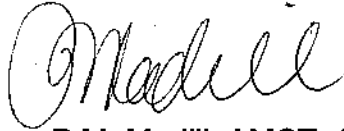
Residential Development Charges	\$70,652
Commercial Development Charges	12,172
User Revenue	175,576
Other	
(Seaton and Federal Lands Oversizing Share)	<u>81,600</u>

Total Sanitary Sewerage Financing **\$340,000;** and



- d) THAT a copy of Report No. 2010-W-128 of the Commissioner of Works be forwarded to The Regional Municipality of York."

As directed, please find enclosed a copy of Report No. 2010-W-128 of the Commissioner of Works.



P.M. Madill, AMCT, CMM III
Regional Clerk

PMM/cb

Encl.

- c: C. Curtis, Commissioner of Works, Region of Durham



The Regional Municipality of Durham
To: The Works Committee
From: Commissioner of Works
Report: 2010-W-128
Date: September 22, 2010

SUBJECT:

Additional Financing for the Geotechnical Investigation to Support the Class Environmental Assessment to Address the Capacity Limitations of the Existing Outfall/Diffuser at the Duffin Creek Water Pollution Control Plant, in the City of Pickering

RECOMMENDATIONS:

THAT subject to the approval of the Finance and Administration Committee (recommendation c), the Works Committee recommends to Regional Council that:

- a) Approval be granted to increase the upset limit of the existing engineering services agreement with Coffey Geotechnics Incorporated in the amount of \$680,000* for additional geotechnical investigations to support the Class Environmental Assessment to address the capacity limitations of the existing outfall/diffuser at the Duffin Creek Water Pollution Control Plant, from the previous approved upset limit of \$939,323* to a revised upset limit of \$1,619,323*;

Regional Municipality of Durham's Share (50%)	\$809,661.50
Regional Municipality of York's Share (50%)	809,661.50
Total	<u>\$1,619,323.00*</u>

- b) The Regional Chair and Clerk be authorized to amend the existing agreement;
- c) Financing of Durham's share in the amount of \$340,000* (50 per cent of the \$680,000*) for the Geotechnical Investigation to Support the Class Environmental Assessment to Address the Capacity Limitations of the Existing Outfall/Diffuser at the Duffin Creek Water Pollution Control Plant, in the City of Pickering, be provided at the discretion of the Commissioner of Finance as follows:

Residential Development Charges	\$ 70,652
Commercial Development Charges	12,172
User Revenue	175,576
Other (Seaton and Federal Lands Oversizing Share)	<u>81,600</u>

Total Sanitary Sewerage Financing **\$340,000**

d) A copy of this report be forwarded to the Regional Municipality of York.

* (including disbursement and before applicable taxes)

REPORT:

Attachment No. 1: Works Committee Report No. 2010-W-54

1. PURPOSE

The purpose of this report is to obtain approval to reallocate financing to increase the upset limit of the engineering services agreement with Coffey Geotechnics Incorporated (Coffey) in order to continue the Geotechnical Investigation currently being undertaken in Lake Ontario, which will support the Class Environmental Assessment (EA) to address the capacity limitations of the existing outfall/diffuser at the Duffin Creek Water Pollution Control Plant (WPCP).

2. BACKGROUND

The Duffin Creek WPCP is co-owned by the Regional Municipality of Durham (Durham) and the Regional Municipality of York (York), and provides sanitary sewage treatment for the urban areas of the City of Pickering (Pickering), the Town of Ajax (Ajax), and portions of York. Treated effluent from the WPCP is discharged to Lake Ontario through a one kilometre long outfall, which has a diffuser system at the end to ensure rapid assimilation of the effluent in the lake. The capacity of the existing outfall/diffuser is less than the approved process capacity of the WPCP; therefore, the York and Durham (Regions) retained the firm of CH2M Hill Canada Limited in June 2008 to provide engineering services for the initial stages of a Class EA to address the capacity limitations of the existing outfall/diffuser.

The alternative solutions to be evaluated by the Class EA include a new outfall/diffuser and/or modifications to the existing outfall/diffuser. To properly evaluate these alternatives, the geotechnical conditions in Lake Ontario must be determined in the vicinity of the Duffin Creek WPCP. Therefore, CH2M developed a Work Plan for a local investigation of the geotechnical conditions in

Lake Ontario, and in May 2010 the Regions retained the firm of Coffey to undertake the geotechnical investigation. The investigation involves the drilling of boreholes from a drill rig mounted on a barge in Lake Ontario to collect core samples for evaluation.

Prior to initiation of the drilling program, the subcontractor that was to supply the barge withdrew from the project. In addition, the MNR began to strictly enforce some unexpected regulations. Both of these events have significantly impacted the budget, and as a result additional financing will be required to complete the drilling program.

2.1 Barge Subcontractor

The original proposal received from Coffey for the geotechnical investigation named Dean Construction (Dean) as a sub-consultant responsible for supplying the spud barge on which the drill rig would be mounted. However, during the proposal phase Coffey was unable to secure a firm commitment to the project from Dean. Just prior to receiving Durham Regional Council approval to award the geotechnical investigation to Coffey (with Dean as a sub-consultant), Dean elected to withdraw in favour of another project in Halifax. There are a limited number of spud barges available for work on the Great Lakes, and as a result only one replacement barge was immediately available. The cost of this replacement barge (supplied by Canadian Soil) is approximately \$2,900 more per day than the quote provided by Dean. It is estimated that the drilling program will take 45-50 days, therefore, the estimated increase in cost associated with the replacement barge is \$130,000 to \$145,000.

2.2 Ministry of Natural Resources Regulations

As a reaction to BP oil spill in the Gulf of Mexico this year, the MNR began enforcing blow out prevention regulations under the Oil, Gas, and Salt Resources Act that had not previously been enforced on the type of drilling program proposed by Coffey. The need to comply with these regulations has had a significant impact on budget, including:

- A one-week delay in initiating the drilling program while the Drilling Licence was secured from the MNR, during which the spud barge was paid to stand by at a cost of approximately \$45,000.
- Rental of the blow out prevention equipment at a cost of approximately \$1,000 per day, resulting in a total estimated cost increase of \$45,000 to \$50,000.
- A reduction in drilling production of approximately 40 per cent, which has reduced the number of boreholes that can be completed under the available budget to six from the planned 11.

It is noted that the MNR has been inspecting the drilling, and that the Regions have been following prescriptive measures to ensure that the environment is protected and that disturbances to the lake are minimized.

2.3 Status of Drilling Program

The reduction in the number of boreholes that can be completed to six (6) compromises the Regions' ability to satisfy the requirements of the Class EA process.

3. ADDITIONAL PROJECT COSTS

The cost related to the Class EA to address the capacity limitations of the existing outfall/diffuser at the Duffin Creek WPCP are:

	Estimated Cost
Additional Consultant fees	\$ 525,000*
Contingencies	<u>155,000*</u>
Total Additional Class EA Costs	<u>\$680,000*</u>
Durham's share of 50 per cent	<u>\$340,000*</u>

4. FINANCIAL IMPLICATIONS

4.1 Budget Management Policy

The budget management policy requires the approval of the appropriate Standing Committee, the Finance and Administration Committee and Regional Council for reallocations of current budget provisions in excess of \$100,000 within the department.

4.2 Financing

Works staff recommends approval to reallocate financing to increase the upset limit of the engineering services agreement with Coffey in order to continue the Geotechnical Investigation currently being undertaken in Lake Ontario, which will support the Class EA to address the capacity limitations of the existing outfall/diffuser at the Duffin Creek WPCP.

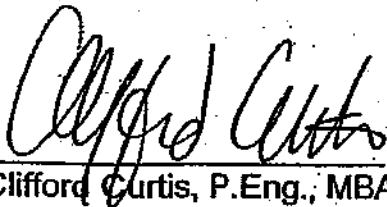
The required Class EA to address the Capacity Limitations of the Existing Outfall/Diffuser at the Duffin Creek WPCP in Pickering can be financed at the discretion of the Commissioner of Finance as follows:

Residential Development Charges	\$ 70,652*
Commercial Development Charges	12,172*
User Revenue	175,576*
Other (Seaton and Federal Lands Oversizing Share)	<u>81,600*</u>

Total Sanitary Sewerage Financing**\$340,000*****5. CONCLUSION**

It is recommended that the required sewer project noted above be approved and that financing be at the discretion of the Commissioner of Finance as noted in this report.

This report has been reviewed by the Finance Department and the Commissioner of Finance concurs with the financial recommendation.



Clifford Curtis, P.Eng., MBA
Commissioner of Works

Recommended for Presentation to Committee


G.H. Cubitt, M.S.W.
Chief Administrative Officer

EPS3/em



The Regional Municipality of Durham
To: The Works Committee
From: Commissioner of Works
Report: 2010-W-54
Date: April 28, 2010

SUBJECT:

Assignment of Engineering Services for a Geotechnical Investigation to Support the Class Environmental Assessment to Address the Capacity Limitations of the Existing Outfall/Diffuser at the Duffin Creek Water Pollution Control Plant, in the City of Pickering

RECOMMENDATIONS:

THAT the Works Committee recommends to Regional Council that:

- a) Coffey Geotechnics Incorporated be retained to provide engineering services for a geotechnical investigation to support the Class Environmental Assessment to address the capacity limitations of the existing outfall/diffuser at the Duffin Creek Water Pollution Control Plant at an upset limit of \$939,323* with the Regional Municipality of Durham's share to be funded from within the approved 2010 project budget;

Regional Municipality of Durham's Share (50%)	\$469,661.50
Regional Municipality of York's Share (50%)	<u>469,661.50</u>
Total	<u>\$939,323.00</u>

- b) The Regional Chair and Clerk be authorized to execute the agreement; and
c) A copy of this report be forwarded to the Regional Municipality of York and the Ministry of the Environment.

* (before applicable taxes)

REPORT:

Attachment No. 1: Works Committee Report 2008-W-85 on the Assignment of Engineering Services to Address the Capacity Limitations of the Existing Outfall/Diffuser at the Duffin Creek Water Pollution Control Plant, in the City of Pickering

1. PURPOSE

The purpose of this report is to obtain approval to retain Coffey Geotechnics Incorporated for engineering services to undertake a geotechnical investigation in Lake Ontario, which will support the Class Environmental Assessment (EA) to address the capacity limitations of the existing outfall/diffuser at the Duffin Creek Water Pollution Control Plant (WPCP), in the City of Pickering.

2. BACKGROUND

The Duffin Creek WPCP is co-owned by the Regional Municipalities of Durham (Durham) and York (York), and provides sanitary sewage treatment for the urban areas of the City of Pickering, Town of Ajax, and portions of the Region of York. Treated effluent from the WPCP is discharged into Lake Ontario through a one kilometre long outfall, which has a diffuser system at the end to ensure rapid assimilation of the effluent into the lake. The capacity of the existing outfall/diffuser is less than the approved process capacity of the WPCP; therefore, Durham and York retained the firm of CH2M Hill Canada Limited (CH2M) in June 2008 to provide engineering services for the initial stages of a Class EA to address the capacity limitations of the existing outfall/diffuser (Attachment No. 1). Only the initial stages of the Class EA could be awarded to CH2M because the scope of some tasks in the later phases of the Class EA could not be confirmed, including the scope of the geotechnical investigations in Lake Ontario, until the initial tasks had been completed.

The alternative solutions to be evaluated by the Class EA include a new outfall/diffuser and/or modifications to the existing outfall/diffuser. To properly evaluate these alternatives, the geotechnical conditions in Lake Ontario must be determined in the vicinity of the Duffin Creek WPCP. CH2M has completed a preliminary analysis of the geotechnical conditions, including a geophysical/sonar survey to determine the profile of the lake bottom, and a review of previous geotechnical investigations completed in 1974 during design of the existing outfall/diffuser. Based on the results of this preliminary analysis, CH2M has developed a work plan for a local investigation of the geotechnical conditions in Lake Ontario, which will support the Class EA to address the capacity limitations of the existing outfall/diffuser.

3. ASSIGNMENT FOR A GEOTECHNICAL INVESTIGATION

Based on the work plan developed by CH2M, the Regions invited three qualified consultants to submit a proposal to undertake a geotechnical investigation in Lake Ontario to support the Class EA to address the capacity limitations of the existing outfall/diffuser. The Regions received two proposal submissions.

The Regions' project team evaluated the proposal submissions. Based on an overall technical and financial evaluation of the proposals, it is recommended that Coffey Geotechnics Incorporated be retained to provide the engineering services for a geotechnical investigation in Lake Ontario, with an upset limit not to exceed \$939,323*. It is anticipated that the investigation will commence in May 2010, with a proposed completion date of September 2010.

4. FINANCIAL IMPLICATIONS

4.1 Purchasing By-Law 68-2000

The Region's Purchasing By-Law 68-2000, Section 9.4.1 states that a department may acquire the services of a particular consulting or professional services firm or individual with Regional Council approval when the assignment exceeds \$50,000.

4.2 Financing

The cost of engineering services for the Class EA to address the capacity limitations of the existing outfall/diffuser at the Duffin Creek WPCP is to be shared equally between Durham and York as follows:

Durham's Share (50%)	\$469,661.50
York's Share (50%)	<u>469,661.50</u>
Total	<u>\$939,323.00*</u>

Funds for Durham's share are available from the 2010 Capital Sanitary Sewerage Budget Item 54 – "Durham Region's share of Class Environmental Assessment to address the outfall limitations at Duffin Creek WPCP, Pickering": \$750,000.

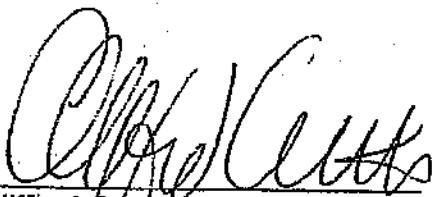
A detailed work plan and cost estimate for the later phases of the Class EA will be finalized once the initial stages of the Class EA have been completed by CH2M, and the geotechnical investigation has been completed by Coffey. Based on the information available at this time, the total estimated cost to complete the entire Class EA is approximately \$3,000,000. The cost sharing arrangement for this work between Durham and York is currently being reviewed

for the total project cost.

4. **CONCLUSION**

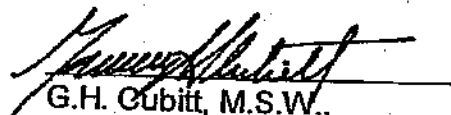
It is recommended that Coffey Geotechnics Incorporated be retained to provide engineering services for a Geotechnical Investigation to support the Class Environmental Assessment to address the Capacity Limitations of the existing outfall/diffuser at the Duffin Creek Water Pollution Control Plant at an upset limit of \$939,323*.

This report has been reviewed by the Finance Department.



Clifford Curtis, P.Eng., MBA,
Commissioner of Works

Recommended for Presentation to Committee



G.H. Cubitt, M.S.W.,
Chief Administrative Officer

EPS3/em



Regional Municipality of Durham
To: The Works Committee
From: Commissioner of Works
Report: 2008-W-85
Date: June 4, 2008

SUBJECT:

Assignment of Engineering Services for a Class Environmental Assessment to Address the Capacity Limitations of the Existing Outfall/Diffuser at the Duffin Creek Water Pollution Control Plant, in the City of Pickering

RECOMMENDATION:

THAT the Works Committee recommends to Regional Council that:

- a) CH2M Hill Canada Limited be retained to provide engineering services for the initial stages of a Class Environmental Assessment to Address the Capacity Limitations of the Existing Outfall/Diffuser at the Duffin Creek Water Pollution Control Plant at an upset limit of \$495,000 (excluding disbursements and applicable taxes);
 - b) The Regional Chair and Clerk be authorized to execute the agreement; and
 - c) A copy of this report be forwarded to the Region of York and the Ministry of the Environment.
-

REPORT:

1. BACKGROUND

The Duffin Creek Water Pollution Control Plant (WPCP) provides sanitary sewage treatment for the urban areas of the City of Pickering, Town of Ajax and portions of the Region of York. The plant is co-owned by the Regions of Durham and York, and is operated by the Region of Durham. Administration of the Duffin Creek WPCP is facilitated through the York-Durham Sewage System (YDSS) Management Committee, consisting of senior management staff from both Regions, including representatives from the Works, Finance and Legal Departments.

In 2004, the Regions of Durham and York engaged the firm of CH2M Hill Canada Limited to undertake a Class Environmental Assessment (EA), to plan for additional process capacity at the Duffin Creek WPCP. The resulting plan for expanding the Duffin Creek WPCP from its current process capacity of 420 megalitres per day (MLpd) to a capacity of 630 megalitres per day (MLpd) was approved by the Ministry of the Environment (MOE) in March 2007. The WPCP is to continue to discharge to Lake Ontario through the existing one (1) kilometre long outfall, which has a diffuser system at the end to ensure rapid assimilation of the treated effluent in the lake. A hydraulic evaluation of the existing outfall/diffuser capacity by CH2M determined that it can effectively discharge 520 megalitres per day (MLpd) of effluent to Lake Ontario. Since the capacity of the existing outfall/diffuser is less than the approved process capacity of 630 megalitres per day (MLpd), the first Certificate of Approval (No. 0823-6Z9LF7) issued by the MOE on May 8, 2007 for the process capacity expansion included the following condition:

The Owner shall initiate the environmental assessment activity required to address the limitations in the existing outfall/diffuser within six (6) weeks of receiving the Certificate of Approval (Air) for the Digestion and Boiler Buildings, the complete application for which shall be submitted to the Ministry for approval before the end of August 2007.

As required by the above condition, the Regions submitted an application for a Certificate of Approval (Air) before the end of August 2007. This application is still being processed by the MOE, and the Regions have not yet received the Certificate of Approval (Air).

2. ASSIGNMENT TO PROCEED WITH A CLASS ENVIRONMENTAL ASSESSMENT (EA)

The above noted condition of approval also requires the Regions to initiate an environmental assessment to address the capacity limitations with the existing outfall/diffuser within six (6) weeks of receiving the Certificate of Approval (Air). Although the Regions have not yet received a Certificate of Approval (Air) from the MOE, the YDSS Management Committee has authorized staff of Durham and York Regions to proceed with a Schedule 'C' Class EA to address the capacity limitations of the existing outfall/diffuser at the Duffin Creek WPCP. This direction will allow enough time to plan and initiate the environmental assessment as mandated in the MOE's condition of approval.

A Schedule 'C' Class EA is a five (5) phase planning process that facilitates the sound environmental planning and design of municipal infrastructure projects. The requirements of a Schedule 'C' Class EA are based on the Municipal Engineers Association (MEA) document (issued in October 2000, as amended in 2007), and must include an effective public consultation program.

The Regions asked CH2M to prepare a work program for this Schedule 'C' Class EA since their previous evaluation of the existing outfall/diffuser allowed CH2M to become thoroughly familiar with its capacity limitations and hydraulic modelling requirements, and because CH2M demonstrated a high level of expertise on that previous assignment. CH2M subsequently advised the Regions that the scope of some tasks in the later phases of the Class EA could not be confirmed until the initial tasks had been completed, including the scope of the geotechnical investigations in Lake Ontario and the scope of any aquatic restoration/compensation plans. Consequently, CH2M submitted a detailed workplan for the initial Class EA tasks, including Phase 1 (Identify Problem or Opportunity) and the majority of Phase 2 (Identify and Evaluate Alternative Solutions), at an estimated cost of \$495,000 (excluding disbursements and applicable taxes). These initial stages of the Class EA include consultations with stakeholders, as well as the technical tasks necessary to satisfy the requirements of the Canadian Environmental Assessment Act (CEAA). A preliminary workplan to complete the later phases of the Class EA was also submitted by CH2M; however, the scope and preliminary cost estimate of \$1,700,000 for these tasks is subject to refinement. A detailed workplan and cost estimate for these later phases of the Class EA will be finalized once the initial tasks have been completed. Based on the information available at this time, the total estimated cost to complete the Class EA is approximately \$2,195,000.

3. **FINANCING**

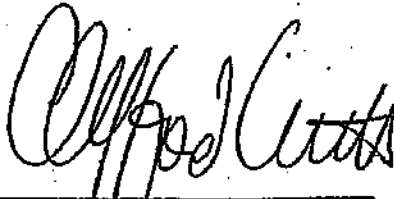
The cost of consulting services for the Class EA to address the capacity limitations of the existing outfall/diffuser at the Duffin Creek WPCP is to be shared equally between the Regions of Durham and York as follows:

Consultant: CH2M Hill (CH2M)	
Durham Region's Share (50%)	\$247,500
York Region's Share (50%)	<u>247,500</u>
Total	<u>\$495,000</u>

Funds for Durham Region's share are available from the 2008 Capital Sanitary Sewerage Budget Item 27 – "Durham Region's share of project to address the outfall limitations at the Duffin Creek WPCP, Pickering": \$250,000.

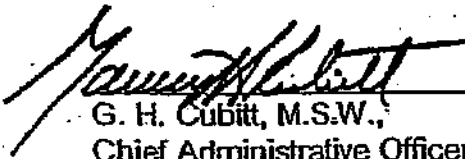
4. CONCLUSION

It is recommended that CH2M HILL Canada Limited (CH2M) be retained to provide engineering services for the initial stages of a Class Environmental Assessment (EA) to address the capacity limitations of the existing outfall/diffuser at the Duffin Creek Water Pollution Control Plant (WPCP) at an upset limit of \$495,000 (excluding disbursements and applicable taxes).



Clifford Curtis, P. Eng., MBA,
Commissioner of Works

Recommended for Presentation to Committee



G. H. Cubitt, M.S.W.,
Chief Administrative Officer

EPS3/rw