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DUFFIN CREEK WATER POLLUTION CONTROL PLANT STAGE 3 EXPANSION PROJECT CONSULTANT FEE INCREASE PROJECT 73720

The Transportation and Works Committee recommends the adoption of the recommendations contained in the following report, April 22, 2008, from the Commissioner of Environmental Services:

1. RECOMMENDATIONS

It is recommended that:

1. Regional Council receive this report detailing the progress to date on delivery of the Duffin Creek Water Pollution Control Plant (WPCP) Stage 3 Process Expansion Project.
2. Regional Council approve an increase in consultant engineering fees related to significant scope changes, under Purchase Order P-05-29, to the Duffin Creek WPCP Stage 3 Expansion Project from \$29,897,573 to \$44,247,573 (GST excluded).

2. PURPOSE

This report will update Council on the progress of this critical York Durham Sewage System (YDSS) project. This report seeks Regional Council's authorization to increase the consultant engineering fees as a result of significant scope changes that have occurred since award of the Request for Proposal. These additional services include: additional detailed engineering and design, increased contract administration services, enhanced site inspection, environmental approvals and environmental monitoring.

The requested fee increase exceeds the authorization under the Purchasing By-law and therefore requires Council authorization.

3. BACKGROUND

Plant expansion needed to accommodate growth in York and Durham Regions

The Duffin Creek WPCP Stage 3 Expansion Project was initiated in 2005, to increase the treatment capacity to meet approved growth in York and Durham Regions, currently

estimated at a total project cost of \$501 million. York Region requires additional liquid process capacity by 2010, while Durham does not require additional liquid capacity until later. Both Regions require additional biosolids process capacity to be operating by 2010.

The present biosolids treatment facility at the plant has insufficient firm capacity to effectively and efficiently dewater and process biosolids. Any breakdown or failure in the equipment results in shipping biosolids to Sarnia, Ontario for dewatering and disposal at an annual cost of \$3 million.

Management of the Duffin Creek WPCP is governed by the Co-Owner's agreement between York and Durham, executed November 28, 1997, which continues until December 31, 2017. Regional staff are presently in negotiations to refine the terms of cost sharing for this and future projects. The agreement term that governs the cost sharing states:

"Each of the Co-Owners acknowledges and agrees that each Co-Owner will be responsible for the cost of the capital expansion to the WPCP to the extent of the percentage share which each Co-Owner is to have of the additional capacity proposed to be created through capital expansion to the WPCP".

Previous Council authorization obtained to retain Team Duffin to undertake the Stage 3 Expansion

On May 19, 2005, Report 5 Regional Council authorized award of engineering services for the pre-design, detailed design, contract administration and resident inspection services for Contract P-05-29 at total cost of \$29,897,573, excluding GST. This fee is comprised of engineering fees for the Stage 3 Liquids process at a fee of \$15,295,112 and the Stage 3 Solids process at a fee of \$14,602,462, excluding GST.

The Request for Proposal (RFP) for these services was issued early in 2005 while the Class Environmental Assessment (Class EA) phase of the project was still ongoing. At that time, the extent of the upgrades and modifications to the treatment processes had not been confirmed either through the Class EA or with the Ministry of the Environment (MOE). Consequently, the RFP outlined detailed requirements and scope of services based on both Regions' knowledge at the time and similar plants discharging effluent to Lake Ontario. A comparison of effluent limits for Duffin Creek WPCP to similar plants is attached as Attachment 1. It was imperative for both Regions to initiate the design services in 2005 to expedite completion of this project. Awarding the engineering services contract in 2005 allowed the Regions to advance the schedule for the design phase by about ten months.

As the Class EA progressed and as Team Duffin developed the basis of design and other key project details, and as the Ministry of the Environment confirmed the effluent requirements towards the end of the Class EA phase in 2007, the original conceptual

design for the Liquids process was no longer adequate. Significant changes were required to the original project scope to address these new requirements, as follows:

- Significant upgrades were required to the existing treatment facility to meet the newly confirmed requirements.
- A larger expansion of new treatment modules was now required (i.e. 310MLD vs. 210 MLD) to account for the reduced treatment capacity rating of existing treatment modules.

As referenced in Attachment 1, it was reasonable for the RFP to have the design limits as listed. (A copy of pages 54 and 56 of the RFP are attached in Attachment 2). The Regions agreed to reduce proposed discharge compliance criteria and operating objectives for total phosphorous and ammonia beyond the commitments made in the ESR in a letter response to the MOE. (November 20, 2006 – Attachment 3). Although the RFP allowed for design parameters of 0.3 mg/l and 5.0 mg/l respectively, the revised limits required a design parameter of 0.1mg/l and 1 mg/l respectively. Refer to Table 1 in item 4.2. Design parameters are significantly lower than the Compliance and Objective limits to ensure compliance under all treatment conditions.

Significant changes to original scope of work are required to address MOE requirements

Currently, the WPCP capacity is 420 MLD, shared equally between Stage 1 and 2. Prior to submission of the Environmental Assessment Report, Team Duffin's design and scope of services was to accommodate the required capacity of 630 MLD by evenly dividing the three stages (210/210/210 MLD). To facilitate the approval process, the Region committed to a more stringent standard than is typically required for discharge of treated effluent to Lake Ontario. Among the commitments made were to upgrade the nitrification and phosphorous removal in the existing plant, conduct comprehensive odour studies and provide third party environmental monitoring during construction.

To meet these standards, the existing plant capacity was derated from 210 MLD to 165 MLD for Stage 1 and 2. This derating resulted in a significant increase in the Stage 3 Expansion capacity from 210 MLD to 310 MLD. This resultant 50% increase in Stage 3 capacity requires significant additional engineering and technical services during the design, construction and inspection phases.

The hourly rates for Team Duffin provided in the RFP remain the same through the scheduled completion of the construction project, December 31, 2010. The cost implications for the various components of the significant changes to the scope of work are described later in this report.

4. ANALYSIS AND OPTIONS

4.1 SCOPE OF SERVICES

In May 2005, Team Duffin was retained through a competitive process to provide pre-design, detailed design, contract administration and site inspection services at a total fee of \$29,897,573. The Regions received two proposals in response to the RFP, one each from the two teams of consultants that were pre-qualified through a vigorous evaluation screening process. The second proposal was for a total price of \$44,355,360, excluding GST (\$23,887,750 – Liquids; \$20,467,610 – Solids). Team Duffin's overall score ranked first and their total fee was 48% or over \$14 million lower than the second ranked proposal. Both cost proposals were based on the same scope of work therefore, the additional services now being requested would also have been required from the second proponent.

(Attachment 4 is a copy of Report No. 5 of the Transportation and Works Committee from May 2005).

Changes to original scope

In preparing the original scope of work, Regional staff utilized the best available information at the time. Unforeseeable technical, regulatory, logistical and time requirements, such as the de-rating of the existing facilities and the extremely stringent effluent criteria imposed by the MOE after award of the design project have forced significant changes to the required scope of the engineering services. As a result, the original basis for the upset fee has changed considerably due to a number of unforeseeable external factors. These include changes to the work scope for both the Stage 3 Liquids and Solids Process expansions. Details of each of these changes are provided in the following section.

4.2 ADDITIONAL SCOPE FOR STAGE 3 LIQUIDS PROCESS EXPANSION

Increase in Stage 3 Capacity

The RFP stipulated an expansion to the liquid treatment process of 50%. Specifically an increase of 210 MLD from 420 MLD to 630 MLD was required to accommodate approved growth for the next 25 years which is a reasonable time horizon for this type of capital program.

As a result of the new effluent limits, "nitrification/denitrification" processes were included into the process requirements. To meet the new requirements, the existing facility can only be used to treat 320 MLD instead of the 420 MLD capacity. Consequently, to provide treatment capacity for a total of 630 MLD, Stage 3 needs to treat 310 MLD as Stages 1 and 2 can now only treat 320 MLD.

To summarize, the new Stage 3 expansion design has to have a treatment capacity of 320 MLD, but the original scope of work in the RFP only allowed for a design of 210 MLD. This represents a 50% increase to the work both in design services and construction costs. The cost increase for design of this additional capacity is \$1,540,000.

Coordination of technical issues with Hydro Utility (Veridian)

To provide the WPCP with greater, more consistent and flexible electrical power supply the power supplier, Veridian, is required to install a new overhead electrical power supply line from the nearest substation, Cherrywood Substation in Pickering. Veridian has advised the Region that they will be required to share in the capital cost of the supply and installation of this new line, poles and switchgear. To date, the Region has been advised that our share is approximately 50% a value of \$2.01 million. The work associated with coordination of the new power supply, the new stand-by generator equipment and the electrical substation transformers and switchgear was not included in the original RFP. The cost increase for this item is \$50,000.

Design changes due to *Ontario Building Code (OBC)* Revisions

Since the assignment for the design services was awarded, the *Ontario Building Code* has been revised. These revisions have changed the scope of the design of some of the buildings and/or have resulted in a re-design by the consultant. For example, the OBC reduced the maximum distance for egress in a building that has a fire sprinkler system, thus requiring revised layouts to meet the shorter distance to stairwells and exit doors. The cost increase for this item is \$50,000.

Nitrogen and Phosphorous Treatment Systems

Concentrations of Nitrogen and Phosphorous are used as the measure of effluent quality, the lesser the amount, the better the water quality. Changes in effluent limits from the RFP are shown in the table below with the release dates in the month and year:

Table 1
Effluent Quality

Parameter	Existing Limit	RFP Limits May 2005	New Limits March 2007
Nitrogen (as ammonia)	none	16 mg/l	10 mg/l in winter 6 mg/l in summer
Phosphorous	1 mg/l	1 mg/l	0.8 mg/l 311 kg/day

The original engineering RFP was awarded to Team Duffin after the May 2005 Council Meeting approved the award. The EA process ran concurrently with the design. The issue of the de-rating of the existing facility was discovered later that year as the EA and the design progressed. The lower phosphorous limits were not negotiated by the MOE until after the Environmental Study Report was published for public review, in September 2006, and the Minister of the Environment issued her letter denying the Part II Order requests in March 2007.

Complex chemical and microbiological processes are required to remove these nutrients from the sewage flows entering the WPCP and produce effluent quality in accordance with these very stringent new limits

This scope change to address the overall new effluent quality limits accounts for approximately 35% of the additional fees requested which is included in item 4.2 above. The impact of the specific increase in phosphorous removal is \$1,450,000.

In addition to the changes to effluent limits imposed as described above, the MOE also imposed other conditions on the Regions (the cost impacts are addressed later in this report):

- Completion of an extensive Odour Sampling and Modeling Study.
- Commitment to initiation of the EA to assess the limitations of the existing outfall.
- Commitment to a near shore water sampling and modeling study in the vicinity of the WPCP in cooperation with OPG, TRCA and the Town of Ajax.

Value engineering recommendations requires additional services

Value engineering audits were performed involving a third-party group of engineers to facilitate cost effective solutions during the design process. Since the size and details of the deliverables from the VE team were developed after project award, the effort required to evaluate and review the possible alternatives is extra scope. The major criteria for consideration of the alternatives is overall value to the project, including this additional scope. The VE Team provided several options that resulted in an overall savings in design and construction of some \$30 million. The cost increase for this item is \$650,000.

Credits for omitted work

In preparing the original scope of the RFP, staff identified many items that were to be included in the proposal. During the progression of the project, a few of the items investigated were not required and the Region will recover a credit for work removed from the scope. One example on the liquid project is the requirement for the construction of a new influent pumping station, which was shown not to be required at this time, but may be required in the future. The credit for this work is \$695,000.

Construction review services

As advised in previous reports to Council on the project, it was anticipated that the Region would break the project down into various pre-purchase packages to expedite the engineering and supply of long delivery equipment. It was also envisaged that multiple construction contracts, would be employed not only to expedite delivery but also to allow the greatest number of contractors to bid on portions of the work.

To date, the Region has awarded four pre-purchase packages. These contracts range in value from \$2,653,350 to \$5,598,255. The Region has also awarded two construction contracts; one contract has already been completed and the other is in progress. Another four contracts will be tendered before the end of 2008.

The original scope of the RFP for the Engineering Services for the Resident Engineering and Construction Administration allowed for one resident engineer and eight site inspectors for 150 weeks. Region staff has reviewed this requirement and concluded that additional on-site staff provided by the consultant will be required. The projects are far more complex than originally anticipated and require additional senior management and support staff. Also the construction period has increased from the originally estimated 150 weeks to 200 weeks.

(Attachment 5 includes pages 46 to 53 of the RFP which identify the level of effort requested at the time of the RFP. Since the actual construction period was unknown at that time, an estimate was provided to enable an equal evaluation of the proponents).

The team has effectively employed multiple contracts as previously described to compensate for the additional construction weeks and the project is on schedule for completion in 2010.

The cost increase for this item is \$3,050,000.

4.3 ADDITIONAL SCOPE FOR STAGE 3 SOLIDS PROCESS EXPANSION

Odour sampling and testing

The Region, at the recommendation of the MOE, has committed to perform an Odour Sampling and Impact Study. This investigation is to perform on-site odour sampling and testing, computer modelling of results to determine neighbouring impacts and off-site ambient air monitoring. The goal is to ensure that the WPCP not impact any neighbouring residents or local communities with nuisance odours. The portion included in the solids expansion project is testing, analysis and study of the results.

After the sampling is completed, the consultants are required to analyse the results using complex computer modelling, then interpret the results and prepare a study report. The cost for this item is \$400,000.

Greening/biodiversity plan helps maintain Duffins Marsh and Waterfront Trail

A portion of the site has been allocated to act as a buffer between naturally sensitive areas to the east and south of the WPCP site. They are Duffins Marsh to the east which is a natural setting owned and maintained by the Toronto and Region Conservation Authority, and a waterfront trail that runs across the south boundary of the site on the near-shore of Lake Ontario. During the site plan approval process with the TRCA, the Region has committed to maintain, and improve where possible, the natural environment of this sensitive area. The cost for this item is \$325,000.

New dewatering facility results in capital cost savings

The VE team suggested a separate, new biosolid dewatering, storage and pumping building in lieu of a retrofit of the existing south and north dewatering buildings. The existing buildings required significant modifications to accept the new dewatering centrifuge technology, involved pumping dewatered cake twice and offered very limited storage capacity. The new facility provides an easier, less complex installation of the centrifuges, fewer conveyors, 12-hour storage capacity and involves direct pumping from the storage silo to the incinerators. The overall savings associated with the new facility versus the original layout is estimated at over \$9 million. Additional engineering for the new facility is approximately \$1.6 million, plus design and provision of temporary dewatering while the new facility is constructed at \$0.6 million, for an overall savings of \$6.8 million to the project. The cost increase for this item is \$1,650,000.

Progression of project definition requires additional services

When progressing through from concept to finalizing the engineering design, many refinements and revisions are made throughout the process. On a large project such as this, there are always many alternative solutions to design concepts and challenges and each must be investigated to ensure the most cost effective design solution. Some of these requirements and revisions were changes from the original design scope. Two examples of these changes are:

The operations staff at the WPCP are experiencing a bottleneck with the biosolids dewatering. As much free water as possible needs to be removed from the biosolids prior to the incineration. The existing equipment used and a commitment to minimize the trucking of biosolids to landfill is creating an issue. To relieve the bottleneck, one of the new dewatering centrifuges is temporarily being installed in the existing building. It will be relocated into the new dewatering facility at a later date. The design and construction work was not included in the RFP.

Another example arose during the investigation into the existing digester gas trains and new, stringent code requirements. It became apparent that the existing equipment would

not be re-usable and also the existing facility would not be able to house the new equipment to boost the digester gas supply and fire new hot water boilers. A new boiler building is required which was not included in the RFP.

The cost increase for these and other similar items is \$2,200,000.

Credits for omitted work – solids upgrades

Similarly to the Liquid Project, certain aspects of the RFP originally envisioned were not required. One example is the requirement for a new incinerator stack. The credit shown is the overall value of the work reduced. The cost savings associated with this item is \$705,000.

Construction review services increased due to project complexity and duration of construction

To date, the Region has issued and awarded nine pre-purchase packages. There is one pre-purchase package for equipment still to be tendered and it is scheduled to be completed by May 2008. The contracts range in value from \$280,000 to \$68 million.

To date, the Region has awarded one construction contract. Another three contracts will be tendered before the end of 2008.

The original scope of the RFP for the Engineering Services for the Resident Engineering and Construction Administration allowed for 1 Resident Engineer and 8 Site Inspectors for 150 weeks. Region staff has reviewed this requirement and has concluded that additional on-site staff provided by the consultant will be required. The projects are far more complex than originally anticipated, thus requiring additional senior management and support staff. Also the construction period has increased from the estimated 150 weeks to 200 weeks.

The team has employed the multiple contract breakdown as previously described very effectively to compensate for the additional construction weeks and expect to complete the project on schedule in 2010. The cost increase for this item is \$2,500,000.

4.4 SIMILAR SERVICES REQUIRED FOR LIQUID AND SOLIDS EXPANSION PROJECTS

The following similar services were not anticipated at the time of the RFP and are a change in scope to both the Liquids and Solids Expansion projects. A brief explanation of each requirement is provided.

Health and Safety Coordination Consultants

The Region has investigated the requirements of the *Occupational Health and Safety Act* and has prepared a project specific Contractor/Constructor Health and Safety Program. Requirements to ensure compliance with the Act are numerous and extensive. Staff have secured the services of a third-party health and safety consultant for the duration of construction to assist the Region in mitigating risks associated with such large and complex construction projects. The circumstances surrounding the project and the site are unique and were unanticipated by staff during preparation of the original RFP. The cost increase for this item is \$375,000 on the Liquids Expansion Project and \$375,000 on the Solids Expansion Project.

Odour sampling and impact study

The Region, at the recommendation of the MOE, has committed to perform an Odour Sampling and Impact Study. This investigation is to perform on-site odour sampling and testing, analysis by computer modelling of the results to determine the neighbouring impacts and off-site ambient air monitoring. The goal is to ensure that the WPCP does not impact any neighbouring residents or local communities with nuisance odours. The portion included in the liquids expansion scope is the on-site testing of the liquids processes. The cost increase for this item is \$150,000 on each of the Liquids and Solids Expansion Projects.

Material (concrete), geotechnical and other testing

Since the full scope of the design was truly unknown at the time of award of the RFP, third party testing for strength of building materials, compaction of engineering backfill and sub-base materials and other material testing required to ensure the equipment or materials supplied for the project are correct and meet the specifications was not included in the original scope. The details are now known and can be identified and specified. The cost increase for this item is \$380,000 for the Liquids Expansion Project and \$360,000 for the Solids Expansion Project.

Environmental Coordinator

During construction activities, the possibility of impact to the environment is heightened, particularly with the sensitive Duffins Marsh immediately to the east of the project site. The Region committed to the TRCA and the MOE during the EA to employ a third party Environmental Monitoring Consultant to provide guidance and advice to eliminate or minimize impacts and risks. The cost increase for this item is \$100,000 for each of the Liquids and Solids Expansion Projects.

Independent review of invoicing

In addition to the Regional review of the costs, rates and progress documented in the engineering invoices, a third party, Revay and Associates (Revay) performs an independent review. Revay performs several evaluations of each invoice, in particular they provide the Regions with the Earned Value on the project. **Earned Value Management (EVM)** is a project management technique used to objectively measure project progress. EVM combines measurements of technical performance (i.e., accomplishment of planned work), schedule performance (i.e. behind/ahead of schedule), and cost performance (i.e. under/over budget) within a single integrated methodology. Actual payments made to Team Duffin are based upon this evaluation.

4.5 PROJECT SCHEDULE

Completion of Stage 3 Liquids Process Expansion remains on track for the end of 2010

The overall project schedule is aggressive due to required completion by end of 2010. While the major milestones associated with the filing and approval of the Environmental Study Report were delayed, the design phase has progressed well and we are on schedule for completion of the most critical Liquid Process Construction contract by end of 2010 (*as shown in Table 2*).

Table 2
Critical Project Milestones

Milestone	2006 Schedule	Actual Completion
EA Complete/ESR Filing	May 2006	September 2006
Part II Order Response	December 2006	March 2007
Receipt of C of A Sewage	March 2007	March 2007
Commence Construction of the Site Preparation Contract	April 2007	April 2007
Completion of Bulk Excavation	August 2007	July 2007
Commence Construction of Liquid Process Contract	September 2007	September 2007
Operation of Process	December 2010	On Schedule for December 2010

Completion of Stage 3 Solids Process Expansion now scheduled for end of 2010

The Stage 3 solids process expansion is scheduled for completion by end of 2010. To ensure delivery of the overall construction, splitting of the work into discrete portions is underway. This allows construction to commence on the first portion while the design is completed on the second portion.

Additionally, to assist operations staff in maintaining control of the biosolid treatment processes, the Region has issued a contract to install one of the new biosolids dewatering machines and equipment as a temporary measure.

Almost \$250 Million in contracts awarded to date

To date, two construction contracts valued at \$149 million (excluding GST) and 12 equipment contracts valued at \$110 million (excluding GST) have been awarded.

5. FINANCIAL IMPLICATIONS

Breakdown of the \$14,350,000 fee increase

The total project cost is estimated to be \$501 million. Design of the liquid treatment facility is complete and the design for the biosolids facilities is nearing final completion. With the design services almost complete, the team does not foresee any other engineering changes of consequence in the future. The fee increase requested in this report for engineering services for the Stage 3 Expansion is \$14,350,000 (excluding GST). These additional costs are included in the 2008 Budget.

Additional fees consistent with projects of similar magnitude and complexity

The breakdown of the fees from the proposal are as follows:

Table 3
Breakdown of Fees

Project Phase	Liquids Project	Solids Project
Conceptual and Pre-Design	\$ 3,615,247	3,532,946
Detailed Design	4,580,887	4,530,382
Contract Administration and Resident Inspection	7,098,978	6,539,134
Total fees per RFP	\$ 15,295,112	\$ 14,602,462
Conceptual Capital Estimate (2005\$)	120,000,000	110,000,000
Fees as a Percentage	12.75%	13.27%
Proposed Latest Estimates	223,000,000	231,000,000
Proposed Fees	22,395,112	21,852,462
Fees as a percentage	9.12%*	8.64%*

* The total engineering fees including the additional fee increase represents approximately nine per cent of the overall project cost, which is consistent with and slightly lower than industry standards for engineering fees on plant projects of similar magnitude and complexity.

Hourly rates for Team Duffin staff used in the fee increases are the same as rates used in the original RFP and are capped and fixed through December 2010.

The following tables itemize the scope changes and corresponding additional fees for engineering services for the expansion of liquids and solids processes. The additional fees are broken down and distributed between the two projects as shown. Each invoice is tracked separately to ensure the correct cost sharing between York and Durham since the percentages of the cost sharing are different between the two projects.

Table 4
Breakdown of Additional Fees for Stage 3 Liquid Project (P-05-29)

CHANGE ITEMS	AMOUNT (\$)
1. Engineering Design fee changes:	
• Increase Stage 3 Capacity (310 vs. 210 MLD)	\$1,540,000
• Coordination of technical issues with Hydro utility	\$50,000
• Design revisions due to OBC Revisions	\$50,000
• Phosphorous Removal treatment system	1,450,000
• Design changes resulting from Value Engineering	350,000
• Miscellaneous upgrades and enhancements	300,000
2. Credits for omitted work	-\$695,000
3. Construction Administration fee changes:	
• Increased Stage 3 Capacity (310 vs. 210 MLD)	\$2,500,000
• Phosphorous Removal: new and existing plants	300,000
• Miscellaneous	250,000
4. Material Testing and Monitoring services (not included in RFP)	
• Health and Safety Coordination consultants	\$375,000
• Odour Sampling and Testing	150,000
• Material Testing-Concrete	150,000
• Geotechnical Testing (compaction, etc.)	180,000
• Specialized Testing, Miscellaneous	50,000
• Environmental Coordinator	100,000
TOTAL	\$7,100,000

Table 5
Breakdown of Additional Fees for Stage 3 Solids Project (P-05-29)

CHANGE CATEGORY	AMOUNT (\$)
1. Engineering Design fee changes:	
• Odour Sampling and Testing	\$400,000
• Develop Greening/Biodiversity Plan	325,000
• Designated Substances Assessment	100,000
• New Dewatering Facility	1,625,000
• Temporary Dewatering Equipment	350,000
• Additional EA Studies	890,000
• OBC Revisions	130,000
• Design revisions due to New Boiler Building	300,000
• Ash Thickening facilities	250,000
• Miscellaneous upgrades and enhancements	300,000
2. Credits against original scope of work	-\$705,000

3. Construction Administration fee changes:	
• New Dewatering Facility	\$1,250,000
• Revised Incinerator Building	500,000
• New Boiler Building	250,000
• Temporary Dewatering Equipment	250,000
• Miscellaneous upgrades and enhancements	250,000
4. Testing and Monitoring services (not included in RFP)	
• Health and Safety Coordinator	\$375,000
• Odour Sampling and Testing	150,000
• Material Testing-Concrete	130,000
• Geotechnical Testing (Compaction, etc.)	180,000
• Specialized Testing, Miscellaneous	50,000
• Environmental Coordinator	100,000
TOTAL	\$7,250,000

5.1 CO-OWNERS AGREEMENT FOR COST SHARING

Staff continue to negotiate terms of cost sharing agreement

The Co-owners Agreement expires December 31, 2017 and Regional staff are presently in negotiations with Durham Region to refine the terms of cost sharing for this project. Table 6 summarizes the cost sharing agreement to date including the amendments included in this report.

Table 6
Project Summary and York Region and Durham Region Cost Split

Contract Description	Total Project Budget (\$million)	Estimated York's Share (\$million)	Estimated Durham's Share (\$million)
Liquid Project Engineering fees	22.4	19.0	3.4
Solid Project Engineering fees	21.9	13.6	8.3
Others – VE, Project Management, Health and Safety, etc.	3.7	3.0	0.7
Liquid Project Construction	199.0	169.2	29.8
Solid Project Construction	143.4	88.9	54.5
Pre-purchase Equipment	110.7	75.7	35.0
TOTAL	\$501	\$369.4	\$131.6

The funding sources for this project are 95% development charges and 5% rates. The estimated 2008 project expenditure is \$130 million.

6. LOCAL MUNICIPAL IMPACT

Stage 3 Expansion continues to improve the quality of Lake Ontario

The Duffin Creek WPCP Stage 3 Expansion will be designed and constructed to meet stringent effluent requirements and stringent air emission requirements. This project will enhance the local natural environment and set a new standard for large scale WPCP's in the Greater Toronto Area.

The plant was state-of-the-art when first conceived and constructed by the MOE. Current upgrades will result in the plant retaining its reputation as one of the best performing wastewater facilities in the Great Lakes Basin.

Enhancements to the Lake Ontario Waterfront Trail and the implementation of the Greening/Biodiversity Plan at the plant are examples of both Regions' commitment to greening and sustainability strategies.

This \$501 million project will provide significant economic and employment benefits to the local area.

7. CONCLUSION

Population and the resulting flow projections indicate that the Duffin Creek WPCP Stage 3 Expansion Projects are required to be operating by the end of 2010. To ensure that there will be no direct impact to the schedule of providing the required wastewater treatment and biosolids disposal capacity, the above described work must be completed in a timely manner. This project is considered critical to the ability to provide wastewater service to the Region until 2035.

To ensure successful on-time delivery of this critical project, staff recommend approval from Regional Council for the consultant fee increase as outlined in this report, resulting from the significant scope changes to the design and contract administration portions of the project.

For more information on this report, contact Bala Araniyasundaran, extension 5131, Director, Capital Delivery of the Water and Wastewater Branch in the Environmental Services Department.

Report No. 5 of the Transportation and Works Committee
Regional Council Meeting of May 15, 2008

The Senior Management Group has reviewed this report.

(The attachments referred to in this clause were included in the agenda for the April 30, 2008 Committee meeting.)