CITY CLERK

Consolidated Clause in Policy and Finance Committee Report 8, which was considered by City Council on October 26, 27 and 28, 2004.

15

Ashbridges Bay Treatment Plant Odour Control Facilities, Provision of Engineering Services - RFP No. 9117-04-7188 (Ward 32 - Beaches-East York)

City Council on October 26, 27 and 28, 2004, amended this Clause by adding the following:

> *"That authorization be granted for Works and Emergency Services staff for travel for technical inspection of other facilities utilizing technologies of the type being considered for implementation under the Ashbridges Bay Treatment Plant odour control facilities project, at a cost not to exceed $10,000.00."*

This Clause, as amended, was adopted by City Council.

Council also considered additional material which is noted at the end of this Clause.

The Policy and Finance Committee recommends that City Council adopt Recommendation (1) of the Works Committee in the communication (October 6, 2004) from the Committee.

> **"(1) City Council adopt the staff recommendations in the Recommendations Section of the report (September 29, 2004) from the Acting Commissioner of Works and Emergency Services and the Chief Financial Officer and Treasurer;".**

Action taken by the Committee:

The Policy and Finance Committee referred the following Recommendation (2) of the Works Committee in the communication (October 6, 2004) from the Committee to the Chief Administrative Officer, the Acting Commissioner of Works and Emergency Services and the Chief Financial Officer and Treasurer for report thereon to the Policy and Finance Committee:

"(2) the criteria and associated weighting and/or scoring system for all major Works contracts, Requests for Proposals and Environmental Assessments be provided to the Works Committee before the contracts, Requests for Proposals and Environmental Assessments are issued."

The Policy and Finance Committee submits the communication (October 6, 2004) from the City Clerk, Works Committee:

Recommendations:

The Works Committee recommends to the Policy and Finance Committee that:

(1) City Council adopt the staff recommendations in the Recommendations Section of the report (September 29, 2004) from the Acting Commissioner of Works and Emergency Services and the Chief Financial Officer and Treasurer; and

(2) the criteria and associated weighting and/or scoring system for all major Works contracts, Requests for Proposals and Environmental Assessments be provided to the Works Committee before the contracts, Requests for Proposals and Environmental Assessments are issued.

Action Taken by the Works Committee:

The Works Committee requested that staff meet with Councillor Del Grande prior to Council, and provide a supplementary report directly to Council for its meeting on October 26, 2004, providing a breakdown of how the various components of the contract and their costs address, by percentage, solution of the outstanding odour issues.

Background:

The Works Committee on October 6, 2004, considered a report (September 29, 2004) from the Acting Commissioner of Works and Emergency Services and the Chief Financial Officer and Treasurer.

Staff Recommendations:

It is recommended that:

(1) a project cost of $16,659,969 net of GST, be approved in capital account CWW019-8 Odour Control Engineering for engineering services for the pre-design, detailed design, construction contract administration, and post-construction monitoring for the ABTP Odour Control Facilities, with no cash flow requirement in 2004 and future year commitments of $1,907,000 in 2005, $4,862,000 in 2006, $4,958,969 in 2007, $3,035,000 in 2008 and $1,897,000 in 2009;

(2) subject to approval of Recommendation (1), Earth Tech Canada Inc., being the highest scoring proponent meeting the requirements, be retained to provide engineering services for the pre-design, detailed design, construction contract administration inclusive of options 1, 2, and 3 as set out in this report, and post-construction monitoring for the ABTP Odour Control Facilities, for an estimated cost not to exceed $17,826,167 including all taxes, charges, and contingencies as follows:

(a) for pre-design and detailed design, an amount not to exceed $8,811,578 including disbursements and GST, and including a contingency allowance of $500,000 including GST, for additional services, if necessary and authorized by the Acting Commissioner of Works and Emergency Services;

(b) for general administration and site engineering services for a construction period of up to six years, an amount not to exceed $8,336,488 including disbursements and GST, and including a contingency allowance of $500,000 including GST to cover services beyond a period of six years at a rate not to exceed $11,235 per week including disbursements and GST, if necessary and authorized by the Acting Commissioner of Works and Emergency Services; and

(c) for post-construction services, an amount not to exceed $678,101 including disbursements and GST to cover engineering services during the two-year warranty period of the construction contract(s), and including a contingency allowance of $50,000 including GST, for additional services, if necessary and authorized by the Acting Commissioner of Works and Emergency Services;

(3) this report be forwarded to the Policy and Finance Committee for consideration; and

(4) the appropriate officials be authorized and directed to take the necessary action to give effect thereto.

Michael Rosenberg appeared before the Works Committee.

(Report dated September 29, 2004, addressed to the
Works Committee from the
Acting Commissioner of Works and Emergency Services
and the Chief Financial Officer and Treasurer)

Purpose:

The purpose of this report is to advise on the results of Request for Proposal (RFP) No. 9117-04-7188 for the pre-design, detailed design, construction contract administration, and post-construction monitoring for the Ashbridges Bay Treatment Plant (ABTP) Odour Control Facilities, and to request authority to award an engineering consulting services agreement to the recommended Proponent.

Financial Implications and Impact Statement:

The total contract award for RFP No. 9117-04-7188 identified in this report is $17,826,167.00, including GST, with the cost to the City of $16,659,969.00, net of GST, requiring project cost approval in the 2004 Water and Wastewater Budget (capital account CWW019-8 Odour Control Engineering). There is no related 2004 cash flow requirement, however future year cash flow commitments total $1,907,000.00 in 2005, $4,862,000.00 in 2006, $4,958,969.00 in 2007,

$3,035,000.00 in 2008 and $1,897,000.00 in 2009, net of GST, that require Council approval and will be included in the 2005 Water Services Capital Budget Request. Project cost approval in 2004 was necessary to award the contract during the current year for cash flows in 2005-2009. The engineering estimate for this project was $19,000,000.00 including all applicable taxes.

Recommendations:

It is recommended that:

(1) a project cost of $16,659,969.00 net of GST, be approved in capital account CWW019-8 Odour Control Engineering for engineering services for the pre-design, detailed design, construction contract administration, and post-construction monitoring for the ABTP Odour Control Facilities, with no cash flow requirement in 2004 and future year commitments of $1,907,000.00 in 2005, $4,862,000.00 in 2006, $4,958,969.00 in 2007, $3,035,000.00 in 2008 and $1,897,000.00 in 2009;

(2) subject to approval of Recommendation (1), Earth Tech Canada Inc., being the highest scoring proponent meeting the requirements, be retained to provide engineering services for the pre-design, detailed design, construction contract administration inclusive of options 1, 2, and 3 as set out in this report, and post-construction monitoring for the ABTP Odour Control Facilities, for an estimated cost not to exceed $17,826,167.00 including all taxes, charges, and contingencies as follows:

   (a) for pre-design and detailed design, an amount not to exceed $8,811,578.00 including disbursements and GST, and including a contingency allowance of $500,000.00 including GST, for additional services, if necessary and authorized by the Acting Commissioner of Works and Emergency Services;

   (b) for general administration and site engineering services for a construction period of up to six years, an amount not to exceed $8,336,488.00 including disbursements and GST, and including a contingency allowance of $500,000.00 including GST to cover services beyond a period of six years at a rate not to exceed $11,235.00 per week including disbursements and GST, if necessary and authorized by the Acting Commissioner of Works and Emergency Services; and

   (c) for post-construction services, an amount not to exceed $678,101.00 including disbursements and GST to cover engineering services during the two-year warranty period of the construction contract(s), and including a contingency allowance of $50,000 including GST, for additional services, if necessary and authorized by the Acting Commissioner of Works and Emergency Services.

(3) this report be forwarded to the Policy and Finance Committee for consideration, and;

(4) the appropriate officials be authorized and directed to take the necessary action to give effect thereto.

Background:

As part of the Environmental Assessment approval process for the Ashbridges Bay Treatment Plant (ABTP), the City and concerned residents entered, in 1999, into a Mediation Agreement (Agreement). Resolution No. 9 of the Agreement, Good Neighbour Issues, stipulated the City's commitment to address issues having a direct impact on the neighbours of ABTP. These issues included: noise, odour, air emissions, truck traffic, visual impacts, and the storage of chemicals on site.

In compliance with Resolution No. 9, Clause No. 3, Odour and Air Emissions, the City retained a specialized consultant, Zorix Consultants Inc., who conducted a comprehensive odour assessment of the entire ABTP site. In the final report Comprehensive Odour Assessment of Ashbridges Bay Treatment Plant: Final Report, completed in December 2002, the consultant identified the main sources of odour from the plant and recommended an odour treatment strategy that would meet the objective of odour concentration of no more than 1 odour unit at the plant boundary, as well as at the pumping stations located on the north side of Lakeshore Boulevard. The consultant confirmed, through preliminary discussions with the Ministry of the Environment, that adopting a standard of 1 odour unit would comply with the MOE objective of applying more stringent odour concentration standards.

The report identified multiple sources of odour: aeration tanks, exhaust air from D Building (housing primary tanks 10 to 12, grit tanks, screens, and sludge gallery), open primary tanks 7 to 9, exhaust air from P Building (housing grit tanks, screens, and sludge gallery), the biosolids truck loading facility, and the sewage pumping stations on the north side of Lakeshore Boulevard. Furthermore, the report discussed several conceptual odour treatment strategies and provided a recommendation for an odour treatment strategy that included pilot testing of biofilters, studies of grit and aeration systems, followed by construction of a centralized biofilter complex.

The main components of the odour treatment strategy are:

(i) pilot testing of media for the biofilter complex;

(ii) study of aeration system to assess the feasibility of converting to fine pore aeration to optimize the size of the biofilter complex;

(iii) construction of biofilter complexes to treat odorous air and disperse it using the main plant stack;

(iv) construction of an odorous air collection and transport system for exhaust air from the primary treatment buildings, aeration tanks, and de-watering feed tanks;

(v) upgrading of the aerated grit removal channels in D Building;

(vi) construction of a separate odour treatment systems for the raw sewage pumping stations and the sewage distribution (gate chamber) structure;

(vii) enclosing existing open-bed biofilters with exhaust air dispersion directly to the main stack;

(viii) enclosing primary tanks 7 to 9; and

(ix) upgrading of the aerated grit removal channels and ventilation in P Building.

Implementation Strategy:

The scope of the recommendations listed above is too large to be covered under a single project; therefore, the proposed implementation strategy consists of two phases. The first phase, which is the discussion of this report, will include pilot testing of biofilters, studies of the aeration and grit systems, and the design and construction of the main biofilter complexes. In addition, this first phase will include supplementary modelling to further evaluate and refine the proposed odour treatment strategy. The total cost of the first phase, including engineering and construction, has been estimated at one hundred and twenty million dollars.

The second phase may include design and construction of an enclosure for primary tanks 7 to 9, or a conversion to a high rate settling treatment, as well as upgrading of grit handling and ventilation systems in P Building.

In 2003 staff commenced the consultant selection process for the first phase. Subject to approval of the recommendations under this report, it is expected that pilot testing, studies, and the design of the biofilter will be completed by the end of 2006, followed by a six year construction period, and possibly involving up to five separate construction contracts. It is expected that the biofilter complex will be in service by 2012.

The consultant selection process for the second phase is scheduled to commence in 2005. It is expected that the implementation will be completed by 2012.

In order to secure the necessary consulting services, a two-stage competitive consultant selection process was undertaken whereby a Request for Expressions of Interest (REOI) was issued followed by a Request for Proposals (RFP) from the short-listed proponents.

Results of the consultant selection process for the first phase are summarized below.

Comments:

One hundred and forty-one firms comprised of 126 from the City's bidders list and 21 engineering firms that were known to provide the required engineering services were notified and invited to submit Expressions of Interest. The Request for Expressions of Interest was also advertised on the City's Internet website. This resulted in a total of three submissions being received on April 9, 2003.

Using a threshold level of 75 percent stated in the REOI as a criterion, the evaluation of the Expressions of Interest resulted in all three respondents making the short list as follows:

(1) AWS Engineers & Planners Corp.;

(2) CH2M Hill Canada Limited; and

(3) Earth Tech Canada Inc.

On May 4, 2004, the Purchasing and Materials Management Division issued a Request for Proposals to the three proponents.

Proposals were received from all three proponents on July 14, 2004. As required in the RFP Terms of Reference, these detailed written proposals included a separate, sealed cost proposal envelope. The selection process stipulated that the envelope containing the cost proposals would not be opened until the evaluation of the technical proposals had been completed.

As with the evaluation of the Expressions of Interest, a formal consultant selection committee comprised of Works and Emergency Services Department staff evaluated the proposals using the criteria outlined in the Request for Proposals. All technical submissions were evaluated first independently and then jointly by members of the consultant selection committee in accordance with a set of pre-established criteria. A threshold proposal evaluation score of 75% as stated in the RFP had to be met by each technical submission as a criterion for further consideration of the submission through a review of the separate cost proposal. The technical proposals of two firms, CH2M Hill Canada Limited and Earth Tech Canada Inc. met or exceeded this threshold and their separate cost proposal envelopes were opened and reviewed.

On completion of the above process, the proposal from Earth Tech Canada Inc. was ranked first overall with the highest technical rating and the highest overall point score. The latter calculation is based on the points awarded for the costs in the fee proposal, adjusted as required for comparison purposes, combined with the points awarded in the technical evaluation.

Earth Tech Canada Inc.'s proposal provided the required consulting services for the total upset limit of $17,826,167.00 including disbursements, contingency, and GST. This amount includes a base amount of $15,783,901.00 (including disbursements, contingency, and GST) and an additional cost of $2,042,266.00 (including disbursements and GST) for engineering services for the following options/enhancements:

(1) Primary treatment D Building upgrades to fully comply with National Fire Protection Association, NFPA 820 Standard for Fire Protection in Wastewater Treatment and Collection Facilities for an additional fee for design and contract administration in the amount of $506,110 including disbursements and GST.

(2) Two separate biofilter complexes with treated air dispersion through existing stack for an additional fee for design and contract administration in the amount of $1,161,656 including disbursements and GST.

(3) Alternative air management plan to reduce the capacity of the biofilter for an additional total fee for design $374,500.00 including disbursements and GST.

Option 1:

This option was identified, by the City, in the RFP. It includes additional costs for design and contract administration services for upgrading of the ventilation system in primary treatment D Building to meet the NFPA 820 standard, thus increasing ventilation rates to 12 air changes per hour. A consultant recently assessed the existing conditions under the ABTP Facility Forecast project and established that upgrading of the ventilation system for compliance with NFPA 820 standard may not be required. The consultant recommended that the City consult with the Ontario Ministry of Labour, Ministry of the Environment, and the Electrical Safety Authority to demonstrate that a reduced ventilation rate of 3 air changes per hour, as well as an upgraded gas detection system and safety interlocks will meet safety and occupational health requirements.

The RFP required the proponent to carry under the base scope all design and contract administration costs for upgrading of the ventilation system to 3 changes per hour, and for consultation and negotiations with the approval agencies on behalf of the City.

The additional engineering costs under Option 1 will be used, if the negotiations with the approval agencies are not successful, and a full compliance with NFPA 820 is required. The estimated capital cost of full compliance with NFPA 820 is five million dollars.

Option 2:

This option was identified, by the City, in the RFP. It includes additional cost for design and contract administration services for two smaller biofilter complexes in place of one large central biofilter complex.

The RFP required the proponent to evaluate, at the pre-design stage of the project, an alternative of constructing two smaller biofilter complexes. This approach has several advantages such as faster implementation of the odour control strategy resulting from a shorter construction period for a smaller biofilter, the provision of partial odour treatment with one complex out of service, a possible reduction in size of the ducts and fans, easier access to the biofilter for operation and maintenance, and removal of spent media, as well as a reduced impact on the existing area of the Transportation Division yard for snow removal equipment.

The preferred alternative will be selected upon completion of the pre-design stage of the project. The consultant will be authorized to proceed with Option 2, if selected, prior to the commencement of detailed design.

Option 3:

This option was proposed by Earth Tech Canada Inc., as an enhancement in its proposal. It includes additional costs for design effort associated with an alternative air management strategy which, if successfully implemented, would reduce the volume of air requiring biofilter treatment by over 40 percent thus significantly reducing both capital and operating costs.

The proposed alternative is based on maximum utilization of the aeration tanks for biological treatment of odorous air by diffusing the odorous air from the grit tanks and primary tanks to the

aeration tanks. This alternative offers potential reduction in capital cost (smaller biofilter) and in energy consumption through a decrease of the length and size of the ductwork. The design effort required is mostly associated with the modifications and upgrading of the blower building.

Earth Tech Canada Inc. confirmed that this strategy has been successfully implemented in approximately 40 plants in North America. This alternative may reduce capital costs by an estimated four million dollars that will more than offset the additional engineering costs.

Contingency allowances are also recommended to cover the cost of any extended services during design, construction, and the two-year warranty period, if necessary and authorized by the Acting Commissioner of Works and Emergency Services, for a total cost not to exceed $1,050,000.00 including GST. Any extended services required during construction would be limited to a maximum rate not to exceed $11,235.00 per week including disbursements and GST.

The selection committee concluded that the proposal submitted by Earth Tech Canada Inc. satisfied the overall project requirements at a reasonable cost and demonstrated an appropriate level of effort for the proposed work.

The Fair Wage Office has reported that the recommended firm has indicated that it has reviewed and understands the Fair Wage Policy and Labour Trades requirements and has agreed to comply fully.

Conclusion:

The proposal submitted by Earth Tech Canada Inc., achieved the highest technical ranking as well as the highest overall score, satisfies the requirements of the City's RFP and the fee proposal is fair and reasonable in comparison with other projects of a similar size and complexity. Therefore, it is recommended that Earth Tech Canada Inc. be retained to provide professional services required for the design, construction contract administration, and post construction monitoring for the ABTP Odour Control Facilities at an estimated cost of $17,826,167.00 including all taxes and charges.

Contact:

K. Blom, P.Eng., Senior Project Engineer, Technical Services Division, Tel. (416) 392-8474

L.A. Pagano, P.Eng., Director, Purchasing and Materials Management, Tel. (416) 392-7312

———

City Council – October 26, 27 and 28, 2004

Council also considered the following:

Report dated October 20, 2004, from the Acting Commissioner of Works and Emergency Services:

Subject: Supplemental report on Ashbridges Bay Treatment Plant, Odour Control Facilities Provision of Engineering Services for Pre-Design, Detailed Design, Construction Contract Administration, and Post Construction Monitoring RFP No. 9117-04-7188 Beaches - East York (Ward 32)

Purpose:

The purpose of this report is to provide supplemental information on item 13(i) of Works Committee Report No. 9, related to the Requests for Proposal (RFP) No. 9117-04-7188, for the pre-design, detailed design, construction contract administration, and post-construction monitoring for the Ashbridges Bay Treatment Plant (ABTP) Odour Control Facilities.

Financial Implications and Impact Statement:

There are no financial implications arising from this supplemental report.

Recommendation:

It is recommended that this supplemental report be received for information.

Background:

At its meeting of October 6, 2004, the Works Committee requested that "staff meet with Councillor Del Grande prior to Council, and provide a supplementary report directly to Council for its meeting on October 26, 2004, providing a breakdown of how the various components of the contract and their costs address, by percentage, solution of the outstanding odour issues".

ABTP odour study results had been previously reported to the Works Committee and Council in a report dated December 18, 2002, which was accepted for information by Council as Works Committee Report No. 2, Clause No. 5(q) at its meeting of February 4, 5 and 6, 2003.

Comments:

Staff met with Councillor Del Grande on October 19, 2004. The following supplemental information, which was the basis for the discussion with Councillor Del Grande, is in response to the Works Committee request.

Odour control at the Ashbridges Bay Treatment Plant (ABTP) has evolved over the life of the plant. The main driving forces behind the changes in odour control at the plant over time have

been operational and technological changes to the wastewater treatment process, changes in the land use area, as well as the public expectations.

Since the early 1970's the plant has implemented over 30 projects with a significant odour control component. Some of these projects are listed below:

Covering the aeration tanks	*1973*
Chemical scrubbers and ozonators on aeration tank off gas	*1974*
Main plant stack and aeration off gas collection ducts	*1977*
D Building exhaust air ducting to aeration manifold	*1988*
P Building exhaust air scrubbers	*1991*
T Building carbon filter	*1999*
Biosolids loading area biofilter	*2000*

Many of the previously installed odour control systems are over 20 years old and are in need of replacement. There is also a need to address a few remaining areas of the plant that have not had odour control systems previously installed.

It is the City's objective to develop a long-term plant wide odour control strategy. In 2002 a comprehensive odour assessment of the ABTP was completed by a specialized odour professional. The results and conclusions of this study were provided to Council through Works Committee Report No. 2, Clause No. 5(q) in February 2003. Subsequently, the results of the odour assessment study were combined with the recommendations of other recently completed studies including the ABTP Facility Forecast, electrical code area classifications, the Landscape Plan, as well as the ongoing equipment refurbishment and process upgrades, thus creating a structured approach to a plant wide odour treatment.

The comprehensive odour assessment identified and quantified the following major odour sources at the plant:

Aeration Tanks and D Building (housing primary tanks 10-12, grit tanks, screens, and sludge gallery)	*47%*
Open primary tanks 7-9	*37%*
P Building (housing primary tanks, grit tanks, screens, and sludge gallery)	*11%*
Biosolids handling areas	*2%*
Raw sewage pumping stations (M and T Buildings)	*1%*
Other sources	*2%*

The odour assessment recommended an odour treatment strategy that would, upon full implementation, meet the Ministry of the Environment guideline for odour concentration of no more than 1 odour unit at the plant property. The strategy firstly utilizes treatment process

upgrades, where they can economically reduce the amount of odourous air being generated. The odourous air from all of the main sources listed above are then captured, conveyed to an odour treatment system and then properly dispersed to ensure proper odour control. The primary means of odour treatment to be employed is biofiltration.

The scope and complexity of the plant wide odour treatment strategy combined with other studies identified above is to too large to be covered under a single project. Therefore, the proposed plant wide implementation strategy consists of two separate design assignments:

(1) ABTP Odour Control Facilities (RFP No. 9117-04-7188)
(2) ABTP P Building and Primary Tanks Upgrades

The first assignment is the subject of the report dated September 29, 2004, which was approved by the Works Committee and to which this report is a supplement. The design work on the first assignment will commence in January 2005. Staff will shortly commence work on the Request for Proposal (RFP) for the second assignment, which will include engineering studies, design, and contract administration. The RFP for the second assignment is scheduled for release in early 2005.

The scope of work under the first assignment includes pilot testing of biofilter media, studies of the aeration and grit systems, pre design, detailed design and engineering services for the construction of process upgrades, biofilter complexes, and the collection and transport systems for the odorous air. The biofilter complexes will be designed to handle air from the entire plant including the volumes to be delivered by the P building contract. This project will ultimately treat 98% of the odours currently emitted by the plant.

Biofilters are a relatively new "Green" technology for odour control, that have quickly established a proven ability to economically control a wide variety of odours. While the functional media of the biofilters, with an estimated cost of 10 million dollars, is a relatively small part of the overall projects cost, the selection of the particular media and the design loading rates it can achieve has a much larger impact on the overall cost of the project, as it affects the sizing of many other components. In order to select the best biofilter media type, vendor, and design loading rates for the particular odours to be treated at the ABTP, the project will undertake a series of pilot tests. This work will be done in parallel with the initial pre-design work and will provide necessary details to the detailed design phase of the project, without impacting the overall project schedule. The pilot testing has minimal cost associated with it and will reduce any risk of the project not meeting its objectives and could lead to significant cost savings in the overall cost of the project.

It has been estimated that the scope of work under the first assignment will be implemented under five construction contracts with an estimated total value for engineering and construction of $148 million dollars. The scope of work of these contracts will be confirmed, and revised as required, upon the completion of pilot testing, engineering studies and pre-design. Detailed construction costs will also be developed at the pre-design stage, and then updated during the detailed design stage. Given the integrated plant wide nature of the strategy, and its conceptual level of detail, it is not practical to provide costs related to the treatment of odours from any individual source at this time.

The complexity of work under the second assignment, the P Building and primary tanks upgrades, rendered that this work be undertaken as a separate assignment. The process equipment, as well as some of the structures in those areas are old, nearing the end of their design life, and have been recommended to be replaced in the near term. The proposed scope of work will include studies, design, and contract administration of the future process upgrades, and collection and transmission systems of the odorous air. A cost-benefit analysis will be performed to determine if these areas should be rehabilitated in their present form, or if an alternative technology such as a high rate settling process, would be more cost effective. Furthermore, the study may recommend process changes to the P building systems that could significantly reduce the amount of odourous air being generated resulting in a reduction in size, and cost savings, of the odour control systems to be constructed under the first assignment. It is estimated that the scope of work under this second assignment will be implemented under two construction contracts at an estimated total cost of $80 million dollars. Detailed construction costs will be developed upon completion of the design stage.

Contract Description	*Estimated Year of Completion*
Odour control system design	*2006*
Pumping stations odour control construction	*2008*
Main Biofilter for odour control	*2010*
Aeration tanks retrofit	*2012*
P building study	*2005*
P building design	*2007*
P building odour control construction	*2011*

As shown in the above table, the engineering work for both assignments will proceed concurrently, and the P Building study will be completed in time to allow for the incorporation of its results into the final design of the ABTP odour control facilities. Construction contracts for both assignments will most likely proceed at the same time, and the estimated completion of the entire odour control strategy at the ABTP is 2012. Given the degree of overlap between these projects, the options currently under consideration, and the plant wide nature the proposed odour treatment strategy, it is not practical to provide separate costs related to the treatment of odours from any individual source. At present, the total estimated capital cost of the odour control systems and related process improvements is $150 to $230 million dollars.

Contact:

K. Blom, P.Eng.
Senior Project Engineer
Technical Services Division
Tel. (416) 392-8474