

**HIGHLAND CREEK TREATMENT PLANT (HCTP)
Neighbourhood Liaison Committee (NLC)**

**Meeting #12
Monday, September 12, 2005**

**Highland Creek Treatment Plant Meeting Room
51 Beechgrove Drive**

7:00 p.m. to 9:30 p.m.

DRAFT SUMMARY NOTES

ATTENDANCE

Residents

Francis Chang, Community Chair

Al Allpress

Allen Elias

Maria Vandenberg

Irene Wyse

A. Smith

William F. Sheehan

Robert McFarlane

John Howes

John Hopkins

Hy Schwartz

City of Toronto

Councillor Gay Cowbourne, Ward 44 Scarborough
East

Lou Di Gironimo, Director of Wastewater

Martin Shigeishi, Plant Manager

Neil Beesley, AWS Engineers & Planners Corp.

Nancy Martins, Public Consultation Unit

Mark Rupke, Toronto Water

Kate Powadiuk, Note Taker

AGENDA

1. Welcome and Introductions
2. Review of Agenda and Summary Notes (June 16, 2003)
3. Presentation
 - . Highland Creek Treatment Plant Odour Assessment Study
 - . Questions and Answers
4. Plant Updates
 - . Process Control System
 - . Facility Forecast Report Overview
 - . August 19, 2005 Storm Impacts
 - . Biosolids Management
5. Other Business
6. Next Meeting Date, Agenda Items, Adjourn

1. INTRODUCTIONS

Nancy Martins called the meeting to order at 7:00 p.m. **Francis Chang** was introduced as the new Community Co-Chair. All participants present introduced themselves.

Councillor Gay Cowbourne introduced herself as Councillor for Ward 44 Scarborough East and as an area resident. She welcomed participants to this neighbourhood liaison committee meeting and commended their volunteerism in the community.

Lou Di Gironimo, Director of Wastewater and Acting General Manager for Toronto Water, welcomed everyone to the meeting and commented that it had been some time since the Highland Creek Treatment Plant Neighbourhood Liaison Committee last met. He committed to meeting more regularly, at least one to two times per year.

2. REVIEW OF AGENDA AND SUMMARY NOTES

• Review of Agenda

In reviewing the agenda, under Other Business, **Francis Chang** asked if with the soaring energy prices, the City is making use of biogas from the digesters. **Martin Shigeishi** replied that a portion of biogas is used to fuel the burners which are heating the digesters. Digester gas has also been tested for the incinerator, which had limited success. **Lou Di Gironimo** added that there is a study where the city is working with Toronto Hydro on ways to use the biogas; it can either be used to off-set natural gas consumption, or to fire something else, like a co-generation facility.

William Sheehan asked what percentage of biosolids are turned into biogas and what is the content of methane in the biogas. Martin replied that all of our biosolids are being digested, and therefore producing biogas. The methane content is approximately 65% of the total digester gas produced and there is a solids reduction of about 25-30%.

• Review of Summary Notes

William Sheehan questioned item 3.16 in minutes from June 16, 2003 minutes. He pointed out that Martin Shigeishi said in the last meeting minutes that industries on Coronation St. didn't receive many odour complaints. William Sheehan questioned whether Martin was in fact referring to the Highland Creek not having received odour complaints. **Martin Shigeishi** replied that he is involved with a group, including companies along Coronation Street, who are being proactive about reducing odours, and that the statement in the minutes is not questionable to him.

William Sheehan questioned the need for the odour study and spending money if the plant is not getting odour complaints. **Lou Di Gironimo** replied that it was important to go ahead with the study and consider it a priority as long as it is supported by the Works Committee and Council, regardless of the number of odour complaints received at the Plant. The City knows that as a sewage treatment plant there are odours, and these are being documented at all the treatment plants. If there are things the City can do to reduce odours, make it better for local community and as long as there are cost effective options, those will be presented to Committee and Council and the politicians will make a decision.

An **area resident** stated that there are concerns from her and her neighbours about the odours and health impacts to area residents. The phone calls may not come, but there are odours.

Another resident questioned whether the odours were a health issue. **Francis Chang**, Community Co-Chair, informed that usually odour is regulated by the Ministry of the Environment and it is considered a nuisance but not a health concern.

It was recommended that the minutes be adopted as recorded. The motion was seconded and the minutes from June 16, 2003 were adopted as distributed.

3. PRESENTATION

Neil Beesley, consultant working on the odour study from AWS Engineers & Planners Corp., provided an overview of the Highland Creek Treatment Plant Odour Assessment Study. (See Presentation, Attachment A, and also posted at <http://www.toronto.ca/wes/techservices/involved/wws/highnrc/index.htm>) The presentation was based on the Odour Study report which is in draft form.

Study Purpose: Fully investigate and quantify odourous air emissions due to wastewater treatment operations at Highland Creek Treatment Plant (HCTP) and develop conceptual odour mitigation measures.

Technologies evaluated aimed at capture and treatment of odour after release as vapour or gas. The odour technologies examined included:

- Bioscrubbers
 - not considered most appropriate for HCTP because organic odour compounds constitute large percentage of airstream and would be largely untreated
- Wet packed tower scrubbers
 - most maintenance intensive, use very large amounts of chemical, and require that sodium hydroxide and sodium hypochlorite stored on-site; also have been historically ineffective at HCTP.
- Carbon adsorbers and biofilters
 - considered suitable technologies to treat odourous air streams at HCTP.
- Carbon adsorbers preferred technology
 - preferred technology where airstream generally dry with low odour concentrations (e.g., headworks room air.)
- Biofilters
 - preferred technology for airstreams with elevated humidity (e.g., headworks grit channels), as well as high and sustained hydrogen sulphide concentrations and/or volatile organic compounds, providing long-term reliability and treatment efficiency.

Two community odour surveys were conducted. Odours evaluated by experienced and trained observers in structured field observation session. Observation routes developed in advance, based on the HCTP odour complaint log. Odour characterization varied from predominantly “stagnant water” and “raw sewage” closer to HCTP, to predominantly “chlorine” further away from HCTP.

William Sheehan inquired as to the qualifications of those involved in the community odour survey. Were they ‘trained noses’? **Neil Beesley** replied yes and that the general public cannot know definitively what they are smelling, but base their decisions on perception of smell.

Lou Di Gironimo added that these people are trained and do this as a profession, which is what is meant by 'trained noses.'

Neil Beesley continued with the presentation.

HCTP is undergoing several unit process upgrades; "Facility Forecast" and "Biosolids and Residuals Master Plan" will impact odour generating conditions moving forward.

It is suggested that odour control upgrades be considered in two phases:

- o Phase I – install some odour control systems for the highest odour sources first (Headworks, Primary Clarifiers, Aeration Tanks, and Incinerator Complex exhaust.)
- o Phase II – additional measures considered after Phase I constructed and operational, and further monitoring performed to assess level of odour reduction achieved.

William Sheenan requested information about the study costs and recommendation implementation costs. **Neil Beesley** replied that the cost of the study was \$340 000. All of the Phase One recommendations will cost approximately \$11 million and the phase two recommendations will cost about \$22 million.

Francis Chang asked at what point the biofilters become a source of odour. **Neil Beesley** replied that the air exhausted from biofilters generally does have an inoffensive odour commonly compared to woodchips or wet leaves. **Francis Chang** asked if that means it is not an effective means of control. **Neil Beesley** responded that it is viewed as highly effective. **Mark Rupke** stated that biofilters at Ashbridges Bay Treatment Plant are controlling 99.9% of odour and are seen as very effective. Odour is pleasant for most people.

William Sheehan recalled that at the last meeting that MicroSludge technologies were mentioned as having a potential use in this project. He wondered if this project would be using that technology. **Lou Di Gironimo** relayed that they are going to consider a mix of different technologies; not just one. MicroSludge can only deal with digesters, it does not eliminate all odours.

Francis Chang asked if there is a labour law in place that regulates how many odour units a plant worker can be exposed to. **Lou Di Gironimo** explained that there is no specific regulated labour law in place. At HCTP they look at ventilation and make appropriate protections for staff.

Nancy Martins reminded people in the room that if anyone has questions regarding the presentation and the technical ideas presented in it, they can contact her for clarification.

William Sheehan asked why the committee was not included in the study and in the selection of a consultant, despite the interest shown at previous meetings. **Nancy Martins** advised that survey was sent out to six hundred households in the area around the plant approximately two years ago. The questions that community wanted answered in the odour assessment study were considered when putting the RFP together. **Mark Rupke** added that scheduling and a need to move ahead and issue the RFP were two reasons why the committee was not more involved.

Councillor Cowbourne inquired as to how often the group will meet in the future. **Nancy Martins** offered that the group usually meets one to two times per year. If there are urgent issues that arise between meetings, committee members can let Nancy know about the need for a meeting, and also call to have HCTP related items added to the agenda. **William Sheehan** expressed concern that meetings were not being held often enough. He pointed out that previous meeting minutes had included this concern. **Lou Di Gironimo** suggested meetings be held when there are items to report on. He admitted meetings were not held frequent enough in the past. In the future this will be taken into consideration.

Hy Schwartz asked for a definition or concept of 'odour units' as he was unable to find a definition, and an explanation of how is it measured. **Neil Beesley** replied that it is the level at which about 50% of the population detects an odour.

Action Item #1 - Francis Chang requested that information on the concept of odour units be forwarded to the committee. (See Attachment B)

4. PLANT UPDATES

- **August 19, 2005 Storm Impacts**

Martin Shigeishi presented an update on the August 19, 2005 storm impacts. The intense storm took place late afternoon on Friday August 19, 2005. The storm caused problems as demonstrated by photos shown from the damage. Some areas of concern were: intense flows at the plant headworks, the large amounts of vegetation and silt that washed into the plant, and low spots of the tunnels that saw water levels rise as high as nine to ten feet. **Lou Di Gironimo** informed that they were able to contain sewage water that was going into Highland Creek on Monday night after a pipe broke open. This was the source of debris inside the plant.

William Sheehan asked if the storm will have any effect on future planning for the plant? **Lou Di Gironimo** replied that no one died, and no significant damage occurred to public or private property. This is contrasted with the devastation facing Toronto following Hurricane Hazel in 1954. This shows that implementations put in place have been effective. There are still more implementations to be taken in Toronto and it will take decades to implement them.

William Sheehan asked how much the cleanup will cost. He also inquired why there was not a better plan in place to ensure that the tunnels were not flooded. **Martin Shigeishi** estimated that the cost of the storm cleanup was several hundreds of thousands of dollars. He advised that the tunnels are there for staff to access plants. The tunnels were not built to withstand extreme intensity. **Lou Di Gironimo** pointed out that the intensity of storm was unique. Rain came down very hard in certain areas of city in a short period of time which caused flash flooding.

William Sheehan asked what lessons have been learned as a result of the storm. **Martin Shigeishi** explained that little can be done about the tunnel infrastructure. However, there needs to be a bypass strategy in place. Also, it is important to look at a structure that is more of an overflow type of bypass than manually having to do this.

- **Process Control System Project**

Martin Shigeishi updated the committee on the new Process Control System, it was just completed this summer, and was a multi-year project part of the Works Best Practices Program.

It was intended to update and replace obsolete process control equipment and add a degree of process automation. Various locations throughout plant can now be monitored and controlled remotely. The project has brought the plant to current state of affairs in terms of automation.

- **Facility Forecast Report Overview**

Martin Shigeishi stated that the report, prepared by a consultant, will act as a road map for capital planning. It will help identify the needs of the plant. One of the main components was looking at the National Fire Protection Association (NFPA) standards and seeing whether there were areas of the plant that were lacking. It was found that such things as gas monitoring and fire protection require improvements.

Also, the report looked at flow projections to see if future community needs can be met. In the coming years, there may be a need to bring the level of capacity of the plant up.

The report also included a condition assessment. From an architectural/ structural/ mechanical/ electrical/instrumental point of view it assessed all equipment in the plant that is being used. This will aid in planning to gradually replace aging/obsolete equipment.

Hy Schwartz inquired whether meters for water usage will be installed all over the city. In North York they have meters, whereas downtown there are none in some areas. **Lou Di Gironimo** advised that there is a pilot project in Toronto with approximately 10 000 homes using a new automatic meter reading technology. Seventy-eight thousand homes in Toronto, mostly in the old Toronto and some in Etobicoke, are still on a flat rate. Council has approved the pilot project and depending on the results, this meter technology could be implemented further. Full metering will take a number of years.

William Sheehan wondered if there were any studies on the optimization of the plant. **Lou Di Gironimo** explained this evaluation is happening all the time. **Martin Shigeishi** explained that the Process Control System assisted with this. It is an ongoing process.

- **Biosolids Management**

Martin Shigeishi informed the committee that the new anaerobic digesters are in service and plant has been feeding raw sludge into the digesters since late last year. Currently they are dewatering and incinerating digested sludge. Master plan public review period still open and comments can be forwarded to Nancy Martins. A Peer Review is to take place in the near future and will hopefully be completed this fall.

William Sheehan asked if the city was ever going to complete a marketing study for biosolids? **Mark Rupke** confirmed that this market study is contained in the master plan.

- **Toronto Hydro Initiative**

Martin Shigeishi explained that other initiatives included the Toronto Hydro Initiative. Toronto Hydro is preparing a Feasibility Study to see how digester gas can be used most efficiently. The plan is to use gas as much as possible through process and plant heating, and incineration. Now, the City is also looking at renewable generation with this initiative.

Councillor Cowbourne understood that the City is looking to combine different areas so that together they can produce the required volume of gas to sell it to the grid system so that, in turn, they can get a reduced rate of hydro. **Lou Di Gironimo** confirmed the Councillor's statement. He added that Toronto Hydro is seeing if it can generate enough electricity through various

initiatives to qualify for the provincial requests for proposals. The province will provide a guaranteed rate which might make it economical to proceed with this. Within Wastewater there are two potential sites: HCTP and Ashbridges Bay. At the Humber the city already invested in co-generation technology there. He explained that it will be interesting to see how much you need to invest in electrical generation to get a certain return, versus how much we need to invest to use the gas and offset our natural gas consumption. That work is being done right now.

Councillor Cowbourne explained that this is going on all over the province, and is not unique to Toronto.

William Sheehan asked if this initiative would have any impact on odour recommendations. **Lou Di Gironimo** advised that this would not have an effect on odour. It would, however, have an effect on future biosolids issues.

- **Security**

Martin Shigeishi provided information on security upgrades. Some examples of security improvements to be installed include: perimeter fencing, improved lighting, access cards to get into plant, and cameras. Hopefully the construction phase will begin in 2006.

- **Stack Emission Testing**

Martin Shigeishi explained that stack emission testing is mandated to be done every year now. Sampling was done by Ortech in mid-August and a draft of report will hopefully be delivered in mid-October. **Lou Di Gironimo** advised that these emission test results will be available to the public on the website, libraries and information will be presented at future NLC meetings.

William Sheehan asked if the odour study would be available on the internet. **Neil Beesley** responded that the presentation portion will be released online. **Lou Di Gironimo** explained that the report is still in the draft stage. Once the final report is done it will be publicly released.

5. OTHER BUSINESS

- **Biosolids**

William Sheehan informed that MicroSludge is a Canadian service from British Columbia, and they have a system to significantly reduce the amount of biosolids. He added that the company is the recipient of the 2004 Canadian BC/Yukon Region Environmental Technology Award.

Lou Di Gironimo advised that he has met with the company on several occasions and that they have read the City of Toronto's Biosolids and Residuals Master Plan: MicroSludge is quite supportive of the direction proposed in the Master Plan.

John Hopkins asked if another engineering firm would confirm information in the Master Plan. For example, CH2M. **Lou Di Gironimo** explained that he has talked with them. They are supportive of the Master Plan's direction. The timelines are slightly delayed as we are going through a peer review of the Master Plan.

Francis Chang asked when the Master Plan is finalized if a special copy will become available to the committee. **Lou Di Gironimo** agreed that it is important for the committee to be informed as it could impact the plant. The draft Master Plan is available at certain libraries and the final version will also be made available. *(In addition to the information provided at the meeting, information on the draft Biosolids and Residuals Master Plan is available at www.toronto.ca/biosolids_masterplan)*

Action Item #2 - Staff to add an update on the Biosolids Master Plan to the next agenda.

- **Liaising with the Community**

Councillor Cowbourne asked how the committee was liaising with the rest of the community. She wondered if and how the attendees were planning on taking information back to communities, committees, and neighbours. She would like to see the liaising expanded.

Francis Chang replied that information goes out to a group of people on the mailing list.

Councillor Cowbourne wondered if she could help in spreading news about the plant happenings. She suggested that if everyone reported back to their community organization that communication could be improved: also, people should be including information about this liaison committee in their own community newsletters.

Lou Di Gironimo suggested that extra newsletter copies can be made available to include in future community group mailings. Simply inform Nancy Martins of your needs. **Nancy Martins** advised that beyond the 150 contacts on the HCTPNLC mailing list, the newsletter goes out to 4000 people living near the plant. The newsletters include contact information. **Councillor Cowbourne** thought it would be helpful to have a summary of meetings included in the newsletter.

Action Item #3 - Staff to consider including a summary of recent NLC meetings in future Highland Creek Resource (newsletter).

Councillor Cowbourne advised that sometimes community members smell the sewage plant and think there is a problem. People need to have the message communicated the smell is normal. **Lou Di Gironimo** explained that once you build up the community relationships dialogue helps everyone.

Councillor Cowbourne suggested linking a possible open house/tour at the plant with Doors Open Toronto, in the Spring. **Lou Di Gironimo** advised that this would be looked into, but that for security reasons, it would likely need to be a controlled tour of the Treatment Plant.

Action Item #4 - Staff to investigate the possibility of hosting a plant tour in the Spring of 2006 and possibly linking the tour with "Doors Open Toronto".

6. NEXT MEETING DATE

Francis Chang asked for suggestions for the next meeting date. **Nancy Martins** confirmed with the group that early February 2006 was reasonable. She explained that if there was something that needed reporting on immediately, that a meeting could be called. **William Sheehan** objected to this meeting date and thought that meetings should be held more often and suggested meeting four times a year. **Councillor Cowbourne** added that there is no point in having a meeting if there is nothing new to report.

Meeting adjourned at 9:30 p.m.

Attachment B – Response to Action Item # 1, from September 12, 2005 meeting

Action Item #1 - Francis Chang requested that information on the concept of odour units be forwarded to the committee.

Neil Beesley, AWS Engineers & Planners Corp., forwarded the following description of ORTECH's total odour concentration testing procedure excerpted from Section 4 of the draft "HCTP Plant Wide Odour Control Assessment" report. The excerpt essentially explains what "odour unit" means and how they go about determining total odour concentration in terms of "odour units".

4.1.1 Total Odour Sampling

Total odour concentration testing (reported as "odour units" – ou or "dilutions to threshold" – D/t) was conducted using an odour panel to measure mixtures of odours that may otherwise be non-detectable for specific odour compounds. The odour samples were evaluated within 12 hours after collection by the dynamic dilution olfactometer at ORTECH's odour test facility. This facility contains a specialized room, designed to provide an odour-free environment for accurate evaluations. The olfactometer is a binary port system operated in a non-forced choice mode.

The sample bag was pressurized in a pressure vessel, and the resulting flow metered through an electronic mass flow controller at a predetermined rate. The sample was diluted with flow-controlled odourless air, and passed to the panel members through one of two sample ports. A three-way valve allowed the operator to direct the sample through either of the two ports. Each evaluation began at a high dilution level, which was lowered in a step-wise sequence by a factor of 1.41 at each step. At each dilution level, the panelists registered their responses by entering the letter of the port at which they detected the odour. The range of dilution ratios of ORTECH's odour test facility is from 5,793 times to 5 times.

The panelists' responses were processed to determine the odour threshold value for the sample. This was done by a regression analysis of the log of the dilution level versus the probit value of the percent of the panel responding. The point at which statistically 50% of the panel can just detect the odour was recorded as the ED50 (effective dilution to 50% response) or the odour threshold value (OTV). The odour threshold value is a dilution factor and, therefore, has no units. For convenience, however, the OTV may be expressed in "odour units" (ou).

In the first round, odour samples were taken from the major unit process emission sources outlined in the Sampling Plan, and the odour strength was estimated for these sources using the olfactometry technique. Triplicate and duplicate samples were taken from each sample location for the first and second round of monitoring, respectively. The odour emission rates for each source were calculated based on detection threshold values and the measured or design volumetric flowrate for each source.