



**Highland Creek Treatment Plant
Neighbourhood Liaison Committee (HCTP NLC)**

Meeting #28

Wednesday, November 26, 2014

Morningside Library

4279 Lawrence Avenue East

7:00 pm

Attendees:

Frank Moir, NLC Chair
Desmond Vandenberg
Allen Elias
Karen Buck (ABTP NLC)

Ron Wootton (Coronation Community Association)
Elliotte Boyko (West Rouge Community Association)
Victoria Schei
Per-Inge Schei

Council:

Ron Moeser (Ward 44)

Staff:

Frank Quarisa – Director, Wastewater Treatment
Martin Shigeishi – Plant Manager, Highland Creek Treatment Plant
Anthony Pigaidoulis – Senior Engineer, Highland Creek Treatment Plant
Nancy Fleming – Senior Engineer, Wastewater Treatment
Pritish Roy – Engineering and Construction Services
Josie Franch – City of Toronto Public Consultation Unit
Tim Constantine - CH2M HILL

1. Welcome and Introductions

Frank Moir called the meeting to order at 7:02 pm. All participants introduced themselves.

2. Review of Agenda, Summary Notes and Action Items

2.1 Review Agenda

The agenda was approved.

2.2 January 13, 2014 Summary Notes

Frank Moir noted that on page 1 the notes should refer to Kyle Yin representing the Centennial Community & Recreation Association. On page 2, Paul Lewkoviz is described as representing the Coronation Community Association, but he is a member of the Centennial Community & Recreation Association.

Frank Moir asked if there was any follow up to the ice storm, as mentioned on page 7. He asked if there was any feedback or reports from the investigation of the ice storm. **Martin Shigeishi** said that it was more recovery that they were interested in and there was no further update on that.

- Minutes were approved as amended.

2.3 Action Items

None.

3. Phase 7 firm capacity upgrades & liquid train rehabilitation

Tim Constantine made a presentation describing a study that CH2M HILL carried out on the liquid side of the plant. The solids side of the plant is being handled separately.

For a copy of the presentation, please contact Josie Franch at jfranch@toronto.ca or 416-338-2859.

The main points of the presentation were:

- History: The plant was originally built in the 1950s. It has expanded over time, including the building of new process areas on the site. It serves a population of about 450-500,000 people now. There are 3 liquid trains within the plant each having a rated capacity of 73 ML/Day.
- The need for “firm capacity” at the plant is because the original plant from the 1950s as well as areas of the other liquid trains require major overhaul. The problem is that some areas of the plant cannot be isolated without shutting down an entire liquid train. This is not possible since the rest of the plant would not have enough capacity to provide the treatment for the flows that are coming into the plant. The contemplated treatment train of another 73 ML/Day, will

provide greater flexibility and redundancy to treat existing design flows and maintain the reliability of the plant without re-rating the existing overall capacity. It would require an amendment to the existing Environmental Certificate of Approval (ECA), but would not have any Environmental Assessment requirements.

- The objectives of the study were to focus on the liquid side, conducting condition assessments of the original plant and the other liquid train areas, and investigating options to provide the additional firm capacity on-site.
- CH2M HILL conducted a condition assessment. The outcome of condition assessments is to grade conditions from excellent to very poor. The work is then ranked in terms of whether it needs to be done immediately, in the medium term, or left for the long-term. At the HCTP, some of the piping and mechanical equipment needs some major overhauls. In some cases the piping and other facilities need to be brought up to current Code requirements.
- The study short-listed two treatment options: the first is conventional activated sludge, which is the same as what is currently there; the second is a newer technology called Membrane Bioreactor (MBR) technology. For a new conventional activated sludge train, the projected size is approximately the same as one of the existing liquid trains as it would have the same capacity. Membrane Bioreactor Technology is smaller and more compact. It also includes a filtration step so it typically produces higher quality effluent, but at the expense of higher operating costs than conventional treatment. The capital costs of the two options are similar.
- The next steps are: engineering consultant selection; engineering design and construction.

Questions and Answers

Karen Buck asked if the Membrane Bioreactor technology (MBR) is Z Weed. **Tim Constantine** said it is.

Karen Buck asked about MBR's requirements in terms of replacement and the amounts of solid waste produced during replacement. **Tim Constantine** said that the membranes have to be replaced every 10 years or so. That is a negative on the operating costs. MBR operating costs are high because of the high use of electricity and because of replacement costs. Whether it would generate more solids, **Tim** said it would generate a little more solids because of the additional solids that would be captured during the filtration step. He estimated that it would generate about an extra 1% of the current total solids.

Karen Buck asked what the tonnage to be disposed of would be when the whole unit is replaced. **Tim Constantine** answered that the 1% is on a continuous basis. The filters would be cleaned daily and the solids would be taken to the digesters. **Karen Buck** said that one of the reasons membrane technology had been rejected in another study was because of the need to dispose of the actual device every few

years. **Tim Constantine** said that as with any device, it has to be taken off site and disposed of. He was not sure how much it weighs, but the unit is about 10X7X7 feet. Each unit handles about 4000 m³ per day, so there would be about 20-25 of them. The stainless steel frames would not need to be replaced; only the membrane bundles inside would be replaced.

Councillor Moeser said he wanted to understand where things stand following the assessment. He wanted to know how urgent the work is, could some of it be handled through general maintenance, whether it is up to provincial standards, and whether it has been prioritized. **Martin Shigeishi** said that there are other projects that are already happening to address some of the mechanical issues. A lot of the assessment dealt with the structural side. The concrete is in relatively good shape, and there is no concern that anything is going to fail imminently. Some of it is being handled through maintenance, but there is a need to look ahead and decide what the time-line should be to do the bigger work.

Councillor Moeser said that from an investment point of view, the City is looking at spending \$150 million just to upgrade on another technology. He wanted to gauge the urgency of what is being recommended, what capital investment is needed, and in what time frame, to bring the plant up to standard. **Frank Quarisa** said that the City had the firm capacity project on the capital plan for several years, but it was sitting outside the 10 year window. Last year it was felt that it was getting within the time-frame to bring it into the 10 year window. The project is now set to be funded, albeit at the back of that 10 year window, recognizing that some of the issues in the presentation are on the horizon, for example, relating to corrosion. It is evident that there are things that need attention. The capital program has a 10 year window, and staff have made the decision to fund this. Step one is to build the firm capacity, and step two will be to address the long-term major overhaul needs of the plant.

Councillor Moeser wanted to clarify that if the project proceeded, it would involve making bypasses so the plant could continue to function. **Frank Quarisa** said that it is about creating redundancy that is not there now. There have been a number of issues that have come up over the years when it would have been useful to isolate a part of the plant, but it has not been possible without having the required firm capacity. While there are no imminent problems now, within the 10 year window this needs to be addressed.

Councillor Moeser said that the plant has been operating at 80-85% capacity, but wanted to clarify that when the plant went out of service this would be for more than the outstanding 15-20%. **Frank Quarisa** said yes, that is correct. He said that in some ways it's been fortunate because all the facilities' flows have stayed quite constant, which has bought time. However the facilities are aging and are getting to the point where that cannot be ignored.

Frank Moir asked what the capital cost is. **Tim Constantine** said that it is in the range of \$100-130 million, plus.

Karen Buck asked if CH2M HILL looked at biological removals, like biological nitrogen removal, in their

assessment. **Tim Constantine** said that the way the newer systems are designed, they do remove some nitrogen. They could be upgraded for additional nitrogen removal. In this case, where discharge is into deep water, Lake Ontario provides excellent mixing. There has been some talk of imposing nitrate limits, but that is for small receiving streams only. For example, Guelph discharges to Speed River, and that makes up half the flow of the river. If they impose limits, that plant will have to be upgraded. He did not foresee nitrate limits being imposed in the next 20 years when discharge is into the deep water of Lake Ontario. However, there can be some operational cost savings by providing some nitrogen removal.

Karen Buck asked about phosphorus removal. **Tim Constantine** said that phosphorous removal here would continue in the same form as it is, by adding ferrous chloride that binds with phosphorous and drops out. In Ontario there is still a fairly cheap supply of that chemical, and it is effective, so it is the method of choice. Where that is scarce, they use biological forms of removal but that requires more space and more money.

Karen Buck asked if there is fine bubbling in the tanks here. **Tim Constantine** said yes. Fine bubble diffusers would be looked at because they use a lot less air and less energy. There are even newer technologies that can be looked at to provide even less air and better energy savings. Often, it is not easy to retrofit older plants, but it would be looked at.

Allen Elias asked if the Environmental Assessment (EA) that is happening outside of this is unrelated, and whether this would be done regardless of what happens in that EA. **Tim Constantine** said yes, because this is providing firm capacity which does not require a Schedule B or Schedule C EA. It is common to provide firm capacity therefore this work isn't subject to any stringent EA requirements.

Frank Moir said that since this would not increase capacity, he imagined it wouldn't impact biosolids. **Tim Constantine** confirmed that is correct. **Tim Constantine** confirmed that this project would not impact the amount of solids, but rather provides flexibility to move the flow to different areas. **Frank Quarisa** said that the day before and after the firm capacity is built, the flows to the facility will remain the same, so it is a completely separate issue to biosolids.

Karen Buck asked when the treatment plant uses ferrous chloride, whether there is an assay required that would show if there are any co-contaminants that the plant would not be treating that would end up in the solids. **Karen Buck** said that she was raising the issue because fluoride is added to the water and that comes from industry. The assays show that there are some raw constituents that end up as co-contaminants that with enough fluoride being released, that results in some increases in cancers. **Tim Constantine** said that a chemical analysis would be needed to answer the question of the purity of the chemical being used. It is not something that could be answered right then.

Allen Elias asked whether the Horgan Treatment Plant would remove any cancer causing chemical that gets into the water. **Frank Quarisa** said that due to the mechanics of diffusion that happens in the lake, there is no cross contamination from the HCTP outfall and the Horgan intake. **Tim Constantine**

said that anything coming out of the HCTP outfall is so well mixed that the concentrations are extremely low. **Allen Elias** asked what the issue would be with the cancer-causing chemical. **Frank Quarisa** said that he didn't think there is an issue. A waste product from the steel industry is bought from one of the suppliers as part of a reuse and recycling program. The benefits of the product are well understood for phosphorous removal. It is the industry standard across North America.

Frank Moir clarified that Karen Buck was talking about fluoride and wondering if there are similar issues with removing phosphorus. **Tim Constantine** said he had not heard of any issues with it. **Karen Buck** said that it would end up in the biosolids. They are the sensitive receptors. There are 39 parameters that are being worked on to be reduced. For example, if there were arsenic attached to the iron salts, that could come out in the biosolids. **Tim Constantine** said that would be picked up in the measurements for the biosolids. The iron does sequester several things, not just phosphorous, from the liquid side. It would show up in the testing of the biosolids.

Councillor Moeser asked if the City is prioritizing the issues that have been raised by this report, and whether any additional finances are needed. **Frank Quarisa** said that a number of the existing projects capture the higher priority issues. The capital program captures the priorities of what is left. He said City staff are confident that through maintenance and the capital program, the issues are being addressed. There is already a fairly high level of construction activity on the site at the moment, and he said that he would be reluctant to push for more in the short term, but in the 5-10 year period, the priorities have been outlined.

Councillor Moeser said a more strategic way forward would be if some of these items could be brought forward by a few years and thereby save on maintenance. **Frank Quarisa** answered that it is a balance. He said that it is a costly item. On an annual basis, staff prioritizes along with everything else they are doing. He said that on the wastewater side, they probably have the biggest piece of capital with Toronto Water. The wastewater side is huge – one facility alone has \$1 billion worth of capital programmed in over the next 10 years. This facility has about \$400-500 million worth of capital in the next 10 year period. He said that they have to make sure they don't displace other needs, like basement flooding, wet weather flow program expenditures etc. Overall staff are satisfied with the capital funding they are getting over the next 10 years.

Allen Elias asked whether thermal reduction would destroy contaminants if they are contained in the biosolids. **Tim Constantine** answered that it depends on the contaminant in question. If it is organic, it is burned up and substantially removed. If it is a metal, it would drop out in the ash. That is typical of the process. **Allen Elias** wanted clarification that it would be contained if burned, but not if it were not burned. **Tim Constantine** said it would be contained in the solids moved off site. **Allen Elias** said that it would not be contained because it would be spread on a farm. **Tim Constantine** replied that it would depend what is done with it, but that is beyond his area of expertise.

4. Plant Updates

4.1 Stack source testing update

Anthony Pigaidoulis provided an update on the annual stack testing. He said that two parameters were measured. The first was mercury and the average was 22.4 micrograms per reference cubic meter. The limit is 70, so it is well below the limit (about 32% of the limit). The other parameter that is measured is total dioxins and furans. It was 2.09 picograms TEQ per reference cubic meter. The limit is 100 (so the average was about 2% of the limit). The source testing contractor is Ortech Environmental. He said that the one main difference is that the stub-stack capping project had been completed so there are no fugitive emissions from the stub-stacks, and therefore no testing there. These results are for testing of the main stack and they are the average of three tests over three days. The source testing was, as usual, witnessed by representatives of the Ministry of the Environment and Climate Change.

Frank Moir asked if the costs were lower this year. **Anthony Pigaidoulis** replied that they were, because of less testing. **Frank Moir** asked if any other parameters were measured. **Anthony Pigaidoulis** replied that these are the two parameters that must be measured according to the Environmental Compliance Approval. The frequency for more comprehensive voluntary testing is every other year. Last year, staff reported on the more comprehensive testing.

Karen Buck wanted to confirm that the mercury that measured so high in the stub-stack last time was controlled, and asked if there is air pollution control equipment on the main stack. **Anthony Pigaidoulis** clarified that the 2014 numbers he gave were from the main stack. There are no longer fugitive emissions from the stub-stacks. **Karen Buck** asked how the problem was rectified. **Anthony Pigaidoulis** clarified that the mercury limit at the stub-stack was not exceeded in previous testing, but the problem of the fugitive emissions was solved by constructing a cap damper on the stub stack. He also said that there is air pollution control equipment on the main stack.

Frank Moir noted that levels are lower than last year. **Anthony Pigaidoulis** agreed that they are marginally lower.

Councillor Moeser asked if staff knew what the expectation would be on those figures if a fluidized bed system were used. **Anthony Pigaidoulis** said that he didn't have exact numbers, but some other municipalities use other technologies that have specific treatment processes scrubbers to remove mercury.

Councillor Moeser said that he wanted to understand those figures and how they would compare to a fluidized bed system. **Frank Quarisa** said that newer technologies achieve a better burn so the figures are better for a number of parameters. Also, the newer technologies also have enhanced scrubber technology, compared to the one at this facility which is from the 1970s. So, it is not just the improved incinerator technologies, but also the improved, separate scrubbing technologies.

Councillor Moeser noted that Council will be discussing incinerators and so he wanted to get a handle on the figures. **Nancy Fleming** said that the EA is going to update all those figures, and will show what the figures will look like with a fluidized bed system.

4.2 Plant capital projects overview

Anthony Pigaidoulis updated the group on the Thickened Waste Activated Sludge facility, which is a new process that has been added. This project also included upgrades to the four storage tanks. Now both of these processes have enhanced odour control with bio-filtration. They are phasing in the full TWAS processing production as they are taking the digester facility off-line to allow capital works construction in that area. They are in the beginning stages of taking the four primary digesters out of service to accommodate work on the high pressure gas system which will allow for the better use and drying of digester gas, so it can be utilized in the boilers on-site to produce hot water for heating loads in the plant. That contract is underway and should take another year.

Anthony Pigaidoulis updated the group about the biosolids treatment upgrades project. The main parts of that project is the replacement of dewatering centrifuges as well as some upgrades on the incinerators.

Anthony Pigaidoulis continued the updates with odour control. He said that residents may have noticed that a lot of trees have been removed. That is the location of the new head house that will be located directly north of the existing head house. The main parts of the project are the head house itself, and bio-filtration for that facility, as well as treating odours from a large portion of the primary tanks with bio-filtration. This project will take about four years. Substantial excavation is going on right now. They are slated to manage a lot of the soil on site. They are trying to minimize the impact to the public and manage the trucks. There will be truck traffic with concrete coming in. They will update the NLC when there are more numbers on that.

Anthony Pigaidoulis said that another big project in 2015 is an upgrade to the main administration building, including the main control room of the plant. That project is expected to start in Spring 2015.

Councillor Moeser asked if a traffic management plan regarding trucks going in and out had been done and whether it had looked at the impact on the community. **Anthony Pigaidoulis** said that traffic management is part of the contractor's scope of the project. They are going to be entering from a temporary gate on the last turn on Beechgrove. They're trying to receive trucks in that area to offset driving in through the main gate. There is going to be some construction of new sewers on Beechgrove that will impact traffic. There were some City-owned houses that were taken down. A chamber is being built under the road.

Councillor Moeser asked if the traffic division had seen the plan. **Anthony Pigaidoulis** replied that they had. **Councillor Moeser** said it is important to make sure the traffic is distributed throughout the community, and managed evenly through the community. **Anthony Pigaidoulis** recognized that it is a

significant number of trucks and said that staff will take under advisement the request to spread the trucks over a number of arteries. **Councillor Moeser** requested that staff keep his office updated.

Ron Wooten said that there is a concern about the school and traffic with children coming to school. Trucks should stay away from there between 8:45 and 9:15am, and between 3:15-3:45pm. **Anthony Pigaidoulis** noted that there is a sign requiring no trucks during those hours.

Frank Quarisa asked if it was known when concrete operations start. **Anthony Pigaidoulis** said not for a while still. There is time to develop more plans for this.

Councillor Moeser stressed that truck drivers must know the rules and why they are there, and that obligation has to be with the contractor as well. **Anthony Pigaidoulis** said that the impact to the public will definitely be addressed. There was some surveying done. They already had to address traffic plans.

Karen Buck asked about digesters and whether all current digesters are being replaced. **Anthony Pigaidoulis** replied no, they are upgrading the gas collection system to ensure that it is better utilized in the boilers.

4.3 Odour Complaints review

Martin Shigeishi said that there was one odour complaint this whole year so far, and that was actually attributed to a manhole on Lawrence. There were no others.

Martin Shigeishi said that regarding power interruptions and the impact to the incineration process, that had occurred 12 times so far this year. There were five in the first quarter, none in the second, two in the third, and five in the fourth quarter so far. They were all short duration, usually in the order of seconds.

Martin Shigeishi said that there had been no sewage bypasses at this facility so far this year.

Martin Shigeishi said that ash taken to Green Lane Landfill occurred in May and June of this year. There were approximately 3,300 tonnes that were removed and hauled to Green Lane. This is an annual activity so staff would plan to do that again next year. Staff tried to be mindful of how the contractor was leaving the site, making sure to wash down thoroughly.

Karen Buck asked, regarding the sewer treatment bypasses, whether this is a service area that receives flows only from separated sewers. **Martin Shigeishi** said predominantly, yes.

4.4 Biosolids update

Nancy Fleming updated the NLC about the Biosolids EA. The first Health Impact Assessment (HIA) stakeholder meeting was held on November 12. These meetings are being run by Toronto Public Health (TPH). They sent out many invitations to solicit people to come from different organizations within the community. 13 stakeholder groups attended the first meeting. Josie Franch will post the list of invitees and participating organizations on the project website. It was a very good meeting, and a lot of good information came out of the process. That information will go back to Habitat, the consultant that was hired. They are now preparing a scoping tool to be used as a starting point for the in-depth HIA that will be undertaken for the EA. It is hoped that will be ready shortly.

Nancy Fleming said that the HIA Plan, outlining how they intend to conduct the whole HIA, has been recently completed. TPH signed off on it with the Ministry of Health and that should be posted on the project website by the end of the week. Other updates will be posted to the website as well.

Nancy Fleming said that PIC #2 should be held in February and that will feed into the in-depth stakeholder HIA. All information being compiled for the HIA is feeding into a Human Health Risk Assessment that Intrinsik, a third party analyst group, is doing. They are working with TPH to revisit Contaminants of Concern that will be looked at for emissions from trucks, as well as from potential thermal facilities that could be built in the future. That will feed into the cumulative air impact assessment that all parties are working on together with Golder and Associates. In parallel with that process, staff is undertaking a transportation analysis, and working with colleagues in Transportation Services on the issue of different routes to get from the treatment plant to the main artery, the 401. Staff is collecting collision data, and other data regarding smaller and larger vehicles.

Councillor Moeser asked if there is a schedule for the different meetings. **Nancy Fleming** said that it is on the website, and she could send him the link.

Ron Wooten said that at the June meeting, he had commented that the assessment of transportation didn't include Greenhouse Gases (GHG) emitted during transportation from the 401 to the final destination. **Frank Moir** said that it looked at contaminants of health concerns, but that GHG emissions will be looked at for the shortest and longest routes. **Nancy Fleming** said that the analysis is different than the Contaminants of Concern where the emissions come from a diesel truck or thermal emissions. The study area is Wards 43 and 44. **Frank Moir** noted that it even includes stops and starts, and **Nancy Fleming** said that it includes left turns, stop signs, etc.

Allen Elias asked about the format of the next public meeting. At the meeting in October 2012, about 150 people that were there that sat in a room, rather than people walking through looking at signs and talking to people. **Nancy Fleming** said that the format of the first PIC was chosen to allow people to walk through and speak to the project team. For the second PIC, there is still discussion about what the format will be to best capture the feedback, but it will likely be changed, and the NLC will be kept informed on that. It may be include a presentation and round-table discussions.

Karen Buck asked when they would find out the long and short list of options. **Nancy Fleming** said it would be at the next PIC. **Karen Buck** said that the HIA already knows what those lists are. **Nancy Fleming** said that the HIA process had generated a shortlist, and both lists would be presented in more details. **Karen Buck** asked if the people on the HIA were permitted to communicate it. **Nancy Fleming** explained what the shortlist of options included. Option 1 involves thermal technology with trucking the ash, Option 2 is a pelletization process with 2-3 trucks leaving the treatment plant per day, and Option 3 is hauling the biosolids cake from the treatment plant in about 4-6 trucks per day. She said there would be more details at the public meeting.

Allen Elias wondered if the meeting in late February would be in the last 10 days of the month. **Nancy Fleming** said that is her aim right now. She is dealing with a lot of external players, including TPH, the Environment and Energy Office, the consultants and their sub-consultants, etc. The team is on schedule so they are aiming for the end of February. **Allen Elias** wanted to confirm that it would precede the next health impact assessment step. **Nancy Fleming** said yes, the aim for the next HIA meeting is March 2015.

Councillor Moeser requested that staff contact his office to coordinate the PIC meeting date. **Nancy Fleming** assured him that they would co-ordinate with him and Councillor Ainslie.

Karen Buck said that there is one other large emission coming out of any burning process whether in trucks or the incineration process, and those are the nitrogen oxides. **Nancy Fleming** assured her that some of the best emissions experts are on the team, as well as TPH, and that they would be looking at everything.

5. Other business

There was none.

6. Adjourn

The meeting was adjourned at 8:20 pm.