LIONS GATE SECONDARY Wastewater Treatment Plant

September 17, 2013

# Issues, Comments, Questions and Metro Vancouver Responses

## Community Workshop

*Summary*

September 17, 2013, 6:00 – 9:00 p.m.
Delbrook Community Centre
600 West Queens Road, North Vancouver, BC

metrovancouver
SERVICES AND SOLUTIONS FOR A LIVABLE REGION

7907287

# TABLE OF CONTENTS

# 1. Introduction

Marie Griggs, Manager, Public Involvement (PI), Metro Vancouver (MV), called the Workshop to order at 6:09 p.m.

# 2. Lions Gate Public Advisory Committee (LGPAC) Presentation on Study Tour

Jan Timmer, LGPAC member, provided a presentation during which he reviewed the tour in June, 2013 of four modern wastewater treatment facilities in Washington State, and offered the following comments:

- The tour of four distinct plants was very informative
- Clean and/or reclaimed water were the terms used at all the plants; sewage was rarely mentioned
- Top insights about all four plants:
  - No odours were detectable in all but the oldest of the plants toured
  - Automation of monitoring saves operating costs
  - Future proofing for tertiary treatment in the event that regulations change and to allow the water to be used for different purposes
  - Create community partnerships early
  - Develop satellite stations in neighbourhoods.
- Lighthouse Point, Blaine:
  - Located on the water in a park on a peninsula with a small footprint
  - Works well: "Cute"; excellent fit in the park; shell fish habitat restored
  - Concerns: All major mechanical equipment below high water mark; dam planks retaining wall already leaking.
- Brightwater Center, Seattle:
  - Very large vehicle-oriented plant which has a significant energy requirement and impressive level of automation; a park was created by restoring the habitat around the plant and an education centre was built (however programming was not integrated at outset)
  - Works well: Superb odour control; automated monitoring; junkyards became restored wetlands
  - Concerns: Extremely expensive (e.g., odour control works very well but the cost was $70 million); over-engineered; distant from community; delayed education component.

- LOTT Alliance, Olympia:
  - A pedestrian-oriented plant, LOTT undertook significant efforts to engage the community including an education centre, a multi-use building, and a children's water museum
  - Works well: Focus on clean reclaimed water; pursued active partnerships early on; engages entire community; pedestrian-oriented facilities; functioning community satellite treatment centres
  - Concerns: People and timing are critical to bringing the project together.

- Edmonds:
  - Next door to a residential area, this twenty-year-old site incorporates a mini-park that is used by the community; the plant uses incineration and large open ponds that emit odours occasionally
  - Works well: Pride in keeping costs low; pleasant mini-park
  - Concerns: Open tanks emit odours during maintenance; reactive.

John Hunter, LGPAC Member, offered the following additional comments as a result of the study tour:

- The modern sewage treatment plants do not look at all like sewage treatment plants
- Odour was a problem at one plant, however odour can be controlled if a reasonable investment is made to do so
- One plant did not produce reclaimed water because they had no use for it and as such, did not see rationale for the added cost for reclamation
- Pride at keeping cost low prevents the Edmonds plant from funding projects that they should have in place – it was also the only plant where there was odour
- Invest the money necessary to build something that residents will not even guess is a sewage treatment plant.

The meeting recessed between 6:30 p.m. and 6:40 p.m.

## **3**. Opening Remarks

*Ms. Griggs reviewed the main objectives of the workshop: to provide information and report progress; obtain input on community integration elements of the project; and to receive feedback on the public involvement process to date.*

MV has been holding meetings since March 2012 with the community around the project definition, and has had specific meetings to consider the interests of community, business, residents, political representatives, and First Nations. Additional business and public meetings are planned before the conclusion of the first phase, which is Project Definition. During the next phase, Design and Construction, there will be consultation processes as well. Ms. Griggs reviewed the schedule of meetings planned over the next several months relative to Indicative Design and Procurement. A survey will also be available for completion on the MV website as another option for people to provide input. These meetings and survey will conclude the public process for the Project Definition phase of the project.

## **4**. Agenda Review/Staff Introduction

*Andrea Winkler, Policy Coordinator, PI, MV, provided an overview of the agenda and introduced MV staff and support personnel in attendance. Participants were asked to complete and return the evaluation survey provided prior to their departure.*

# 5. Project Process – Evolution of Current Design

*Fred Nenninger, Project Manager, Wastewater Secondary Treatment Upgrades, MV, provided a presentation during which he discussed:*

- *Previously examined options to divert Northshore flow to Iona, in the context of today's dollars*
- *Comparison of capital cost estimates for Indicative Design Scenario B ($610,000); Diversion Option Route 1 ($900,000); or diversion option – Option 4 ($870,000)*
- *Risks associated with diversion options*
- *Staff does not recommend a diversion option.*

*Laurie Ford, Senior Engineer, MV, provided a presentation during which she highlighted:*

- Build Scenario B – one of three potential build scenarios that was presented at the public meeting in April 2013 – fared the best during the evaluation of the three scenarios and will form the basis of the indicative design that is currently being developed
- Elements from Scenario B to be included in the indicative design concept:
  - Secondary treatment
  - Discharge to existing outfall
  - Digestion on site (sewage only)
  - Biosolids sent off site for beneficial use
  - Energy recovery
  - Odour control system.
- Elements from Build Scenario B that will not be included in the indicative design concept:
  - Food waste imported to site
  - Thermal reduction of solids.
- Odour control strategy components:
  - Equipment containment
  - Foul air treatment and dispersion of treated air
  - Redundant covers over access hatches.
- Odour monitoring equipment is currently being tested at existing plants
- Chemical storage and use:
  - Sodium hypochlorite, commonly known as liquid bleach, will be used and stored safely on-site
  - Chlorine gas will not be used on this site.
- Energy recovery for district energy.

# 6. Site Amenities & Urban Design Opportunities

*Jeff Cutler, Space2Place, provided a presentation during which he highlighted:*

Jeff Cutler, Space2Place Landscape Architects, provided a presentation during which he highlighted community context, public art, interior and exterior public space development, the opportunity to use the property at the foot of Pemberton to increase community integration, and plant functions.

Mr. Cutler posed three questions to the workshop participants:

- How might the project affect your community along First Street?
- How might a public space at the foot of Pemberton Avenue affect your community?
- What uses for the plant rooftop space would best strengthen your community?

*Participants' responses to each of the timed questions included the following:*

Question 1 – How might the project strengthen your community along First Avenue?

- Has the potential to bring pedestrians into the area
- Reflect that the community is made up of both residents and businesses
- Honour the fact that this is an industrial area and strengthen that industrial use
- Educate residents on the importance of the area for economic health and on the issue of responsible use of resources
- Explore potential for a centre of excellence with a theme of interaction between water and the environment with reuse, source control, and public education
- Create learning opportunities about wastewater treatment for children and adults
- Provide the community with access to vistas of the city, Stanley Park, etc. from the roof
- Add a degree of integration between business and industry
- Every plant on the recent Washington tour included picnic tables and picnic areas.

Question 2 – How might a public space at the foot of Pemberton Avenue strengthen your community?

- Ensure the intersection between pedestrian and industrial traffic is safe
- Limit/control access to plant operations to ensure safety.

Question 3 – What uses for the plant rooftop space would best strengthen your community?

- Include safe viewing opportunities on the top floor including telescopes.

## 7. Evaluation of Consultation Process

*Ms. Winkler conveyed MV's interest in receiving feedback on the consultation process, via completing the feedback forms provided, noting that it would be very helpful in the next phase of the project if MV has a clear understanding of what mechanisms are working, what can be improved in the consultation process. It will also help MV in planning for the next public meeting on October 10, 2013 at Norgate Elementary School.*

## 8. Wrap-up

*Ms. Winkler thanked attendees for their participation and concluded the Workshop at 8:44 p.m.*

# 9. Issues, Comments, Questions

*The following table summarizes MV's responses to questions and concerns provided by attendees, organized by topic, throughout the meeting:*

| Issue, Comment, Question | MV Response |
|---|---|
| **Cost of Project** | |
| How does the cost of the current plan compare with the projected costs calculated in 2005 to divert waste to Iona? | All of the figures have to be compared based on project costs today. The vulnerability and risks of diversion options also require consideration. Under the regional cost sharing formula the conveyance costs would be North Shore costs. |
| Separate the costing of non-industrial uses so that the costs of providing those is clear and the public can comment on it. | Other community uses would rely on partnerships with MV and outside organizations, i.e. local municipalities. There may be a private sector partner that uses the space but does not add to the public cost. |
| **Integrated Design Process** | |
| What is meant by the term Indicative Design? | It is a representative design. It defines the scoping to the point that people know what you need and want, but there is room and flexibility for how to realize the final design. |
| Does Indicative Design include the technology choice? | It can assume a certain technology that design alternatives are compared against. |
| **Sensory Impacts** | |
| What would be the height of the building along First Avenue? | The digesters are about 27 meters above grade elevation. The digesters are the highest component of the site. 80% of the plant is closer to a four storey building height. |
| What is the height of the silos on the nearby Kinder Morgan site? | Those silos are similar in scale. |
| Have you considered massing ideas that would be more reflective of the narrative of the sea and mountains? | The building design is evolving. One challenge is that we have big wastewater volumes to accommodate. We also have a constrained site that is leading us to consider the most efficient form. At the same time, we will break the form in some interesting ways. |

| Issue, Comment, Question | MV Response |
|---|---|
| **Sensory Impacts** | |
| Can we ensure that a lack of effective odour control is a deal breaker? There should be no doubt that the community concern around odour is critical. | Staff will be recommending strongly that odour control needs to be part of the plant design. |
| Will the tanks have odour control? | There are different tanks for different purposes – some will have hatches with redundant cover over their tops for odour control. |
| **Traffic Impacts** | |
| How will large trucks get into the site? | Access would be from Pemberton Avenue at the southeast side of the site and the exit will be onto First Avenue. We would design the turning radiuses to accommodate that. We have been meeting with the District of North Vancouver (DNV) on this matter. |
| Why is the Pemberton Avenue connection being closed? | It is an initiative to increase efficiency to Port access via the overpass. However, emergency vehicle access will be maintained. The existing road area will no longer be required for road and could provide an opportunity for green space. It is under jurisdiction DNV and would need to be coordinated with them. |
| **Environmental Impact** | |
| Has MV received any input from an independent group to re-develop the foreshore for salmon enhancement from Capilano River to MacKay Creek and then Mosquito Creek? | No, there has been no contact on this matter. |
| **Community Integration** | |
| There is a combined education opportunity between the LGSWWTP and the Burrard Inlet Pilot Restoration Project. When MacKay Creek is restored and re-generated, an interpretive centre could be linked to the LGSWWTP through the Spirit Trail. | Comment noted. |

| Issue, Comment, Question | MV Response |
|---|---|
| **Community Integration** | |
| In one of the nine original scenarios that were presented, there were small incubator industries weaved into the design. Are there still opportunities to capitalize on that? | In one scenario there were a number of buildings for light industry; however, that scenario had a smaller footprint, which allowed for that. |
| I think it should be an industrial site only – other uses present issues particularly in regard to safety | Comment noted. |
| Public access to portions of the site will make safety and expansion costs more expensive in future. When you include public use and amenities you are compromising the fundamental purpose of the space. | Comment noted. |
| **Integrated Resource Recovery (IRR) – Biogas** | |
| Is the energy recovery envisioned similar to what they are doing in the South East False Creek (SEFC) Athletes' Village? | SEFC is using untreated sewage and we would be looking at treated effluent; however the heat pump would be the same. It is similar to the Whistler Athletes' Village. |
| What district energy system would you use that heat for? | There are a number of different potential energy users in the area. |
| **IRR – Water** | |
| MV has been using paretic acid in Langley. It is biodegradable, and does not provide chlorine residual, but the regulation does not require that if it has effective disinfectant. It is more environmentally friendly. | Comment noted. MV is considering a small-reclaimed water stream within the plant, and additional reclaimed production if there is a business case for use by neighbouring industries. |

| **Wastewater Treatment** | |
|---|---|
| What are you planning to use for secondary treatment? | Deep tank activated sludge. |
| Was consideration given to using technologies other than deep tank activated sludge? | Other technologies were looked at in the original nine scenarios. A key benefit of deep tank activated sludge is that in the future if we want to intensify the treatment we can. |
| The concentration of organic loading will increase by 40-60% in the liquid waste stream over time. We do not want the plant to be obsolete by the time it is built. | The design anticipates this. |
| Is there room to put in an incinerator on site to accommodate tertiary treatment in future? | Liquid tertiary treatment would be achievable with a retrofit of tanks. There is flexibility with the tanks to do that. We will not have the option to put an incinerator on the site. |
| Why are incineration and food waste not included in the design? | The original idea was to see if there was an advantage to co-managing the liquid and solid waste (food part) streams. However, MV found that there is not a benefit to co-management, and it generates issues of concern to the community in terms of odour and truck traffic. As such, processing of food waste is no longer being considered. In regard to incineration, MV compared that process against digestion and it was more expensive. As well you are generating an ash at the end of the process that has no beneficial use and that has disposal requirements. |

| **Wasterwater Treatment** | |
|---|---|
| Will the design have the capacity with tertiary treatment to address pharmaceuticals and other chemicals in the water? | The evolving issue of contaminants is of concern. The presence of other chemicals in trace amounts is a question being considered by researchers and environmental agencies. If those substances get on the Canadian Environmental Agency toxics list there will need to be action plans developed. However, there is no regulatory direction at this time regarding treatment processes to address them. |
| Why not build half the tank since tankage volume is so expensive? | The space is expensive to develop. The idea is to develop once and do mechanical upgrades over time. The amount of piling and structural building will be the most expensive elements. |
| Can you design in anticipation of future construction so that you will not have to drive piles in future? Why invest in a 30-year design horizon when there is potential that it could be much longer? | Given the slow rate of growth a multi-phase build approach is not justified. |
| The design horizon was 50-60 years for this plant. However, industry seldom plans beyond 25-30 years because you cannot predict what will happen over that span of time | The growth rate over the next 30 years is low. Initially, it will be at 75-80% capacity. We are starting the plant well loaded from the beginning. The flows may drop but the loading will not. All of the tanks will be used from the start. |
| What is the contingency for when we exceed the capacity of this plant? | The projected population increase is from 200,000 to 300,000 over the next 75 years. It is not a fast rate of growth as compared with other areas of the region. For example, in the Fraser sewage area we are doing one of these plants every decade for the next four decades. On the North Shore we are doing one plant which will address the need for the next 75 years. The initial build will get us to 2050 at which time we will have to make a process adjustment to address demand – but we will not need to build new tanks at that point. |

| **Location** | |
|---|---|
| Will the existing outfall be used as opposed to replacing it in the near future? | The outfall has been there since the 1960s. It is fiberglass and is still performing well. The estimates for asset life do not anticipate that it will be in the capital plan for several decades. However, eventually, it will be the oldest part of this system. The Narrows is an excellent location, and so the plan is to utilize the existing outfall at this point. |
| In regard to the outflow, have we resolved the issue of getting from the new plant back to the outfall? There was at one point reference to a right-of-way or easement issue. | The issue is in the process of being resolved. We need to move West Vancouver and Squamish Nation wastewater to the new plant and the effluent needs to get back to the outfall. We need one additional pipe and are in the process of determining how to fit it in. |

## Attendance

***LGPAC Members:*** *Christine Banham (Chair), Darlene Clarke, Dave Dunbar, John Hunter, Diana Sollner (Vice Chair), Peter Thompson, Jan Timmer, Troy Vassos*

***CRF Members:*** *Deborah Carlson, Derek Lunden, Don Mavinic, Art McGillvray, Amanda Nichol, Kim Stephens, Hamed Tahari*

***Guests:*** *(Councillor) Robin Hicks*

***Metro Vancouver Resources:*** *Paul Dufault (MV), Laurie Ford (MV), Marie Griggs (MV), Jaspal Marwah (MV), Fred Nenninger (MV), Andrea Winkler (MV) Joy William (JW) Carrie McIntosh (Context), Jeff Cutler (space2place),*

***Recording Secretary:*** *Rae Ratslef, Raincoast Ventures Ltd.*

## Reference Material Distributed

Attachment A – Agenda for Lions Gate Secondary Wastewater Treatment Plant Community Workshop – September 17, 2013

Attachment B – Lions Gate Secondary Wastewater Treatment Plant Upgrade Project and Consultation Timeline, Draft as of September 13, 2013 (Doc ID #7591469)