

Date:	October 29, 2014	File:	20132344.00.A.04.01
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Project:	Stage 2 LWMP		
Subject:	WAC Meeting #6		
Client:	The City of Port Alberni		
Location:	City Hall, Port Alberni		
Present:	Guy Cicon, The City Ken Watson, The City Tom Robinson, AE Quinn Crosina, AE Hugh Hamilton, AE Michal Simhon, AE Members of the WAC		
Distribution:	Those Present		

RECORD OF MEETING

This Record of Meeting is considered to be complete and correct. Please advise the writer within one week of any errors or omissions, otherwise this Record of Meeting will be considered to be an accurate record of the discussions.

Action by

Discussion:

1 INTRODUCTION

Info New Wastewater Advisory Committee (WAC) meeting attendees, Ian Birtwell, Margaret Wright, Ron Kyle and Gina Pearson, were introduced.

2 OVERALL OBJECTIVE

Info Tom summarized the overall objectives of the LWMP for the City of Port Alberni.

3 SUMMARY OF EFFLUENT DISCHARGE LOCATION SCREENING EXERCISE

Info Quinn reviewed the screening table from the last WAC Meeting (#5). Discharge Option 2b (Estuarine Inlet Discharge) was the preferred discharge location. However, a number of unknowns (displayed in the Screening Table as Yellow) were left.

Info The Screening Table from the last WAC meeting was provided to WAC members, with some of the unknowns (in yellow) for the preferred discharge location (Option 2b) revised.

4 WORK PROGRESS SINCE WAC MEETING #5

4.1 FEEDBACK FROM THE MOE

Info Quinn explained that an unofficial draft of the Stage 2 LWMP report was submitted to the MOE shortly after the last WAC meeting. The purpose was to have productive dialogue for the development of the point of discharge.

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4.2 FINDINGS FROM INVESTIGATIONS

Info Hugh presented the previous investigations relating to the sediment investigation, the shellfish survey, and the current, tide, and water quality survey. The purpose of these investigations was to address some of the unknowns in the screening table pertaining to the preferred discharge location (Option 2b).

4.3 UPDATE ON EIS PART 1

Info Hugh updated the WAC on the submission and acceptance of the EIS Part 1 Report by the MOE. This portion of the EIS was essentially based on a desktop review.

4.4 UPDATE ON EIS PART 2

Info Hugh summarized the field program that was conducted in September 2014 to support Part 2 of the EIS.

4.5 DISCHARGE AT DEPTH / SEACONSULT MODEL

Info Hugh began with an explanation of Dissolved Oxygen (DO) and Biological Oxygen Demand (BOD).

Info The BC Municipal Wastewater Regulations (MWR) stipulates a BOD effluent quality requirement as well as a minimum depth for discharge into an estuary.

Info Since the last WAC meeting, members of the WAC raised the topic relating to discharge at depth with respect to effects on aquatic life (i.e. does an outfall location at depth affect the DO conditions in the lower layer for the salmon)

Info Hugh introduced and summarized the model created by Don Hodgins (Seaconsult) to address the DO levels in the lower layer.

Phil Edgell indicated that the model should also demonstrate that the water quality in the estuary will not negatively impact juvenile salmon (not only adult salmon). Hugh said this would be further addressed.

Ken Watson stated that the model inputs (high flowrate **and** maximum BOD concentration of 45 mg/L) may be overly conservative as the likelihood of such a condition occurring is unlikely. Hugh said this would be considered.

Ian Birtwell asked if the model includes particulates or if it is only focussed on the liquid portion. This would be important because of the potential of particulates to trap and accumulate over time if washing out via the tidal cycle is limited. Tom responded that the presence of particulates would be reflected in the BOD measure if an oxygen demand exists.

Margaret Wright pointed out the importance of temperature effects on the BOD and DO levels.

There was discussion that the model focussed only on the lower layer of the saline water, but should in fact account for the entire salt water level below the halocline.

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5 LUNCH BREAK

6 SCENARIO DEVELOPMENT

6.1 SCENARIO IMPLICATIONS

Info Tom explained the significance associated with pumping or gravity flow from an engineering perspective.

6.2 DEFINING SCENARIOS

Info All 7 scenarios were presented to the WAC by Tom. All of the scenarios meet the MWR requirements and incorporate the preferred discharge option from the screening exercise.

Info A table summarizing the scenarios and a schematic including the layouts were handed out to the WAC. A very brief summary of the scenarios is presented below:

Scenario	Description
Scenario 1	The entire flow discharged by gravity through a single pipe and discharged at a 10m depth in the estuary.
Scenario 2a	The flow is split between two large pipes, both discharged by gravity at a depth of 10m in the estuary.
Scenario 2b	The flow is split between two pipes, one of which discharges by gravity and the other is pumped. Both pipes discharge at a depth of 10m in the estuary.
Scenario 3	The flows are split between two gravity pipes, with Pipe #1 discharging at a depth of 10m in the estuary, and Pipe #2 discharging adjacent to the lagoons. Flows up to 30 ML/d will be discharged through Pipe #1. The excess flow will be discharged through a short Surplus Effluent Discharge (SED) (Pipe #2) near the existing City effluent channel. The existing City lagoon is restored as a natural habitat.
Scenario 4	The flows are split between two gravity pipes, with Pipe #1 discharging at a depth of 10m in the estuary, and with Pipe #2 discharging into the existing city lagoon. Flows up to 30 ML/d will be discharged through Pipe #1. The excess flow (during wet weather flow events) flows through the existing City Lagoon before being discharged through the existing effluent channel.
Scenario 5	The entire flow is pumped (using a low head high flow pump) through a single pipe and discharged at a 10m depth in the estuary.
Scenario 6	The entire flow is pumped (using a large pump) through a single pipe and discharged at a 10m depth in the estuary.

Questions were posed to the AE team as to why a scenario that incorporated Department of Fisheries and Oceans (DFO)'s concerns was not included (i.e. a scenario with a discharge at the

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surface)

Following discussion between the AE team and the City, it was agreed that the evaluation exercise for the comparative evaluation would be carried forward in this meeting. The consensus made in this meeting would be applied to an additional Scenario that would be developed by the AE team to address the DFO concerns and present a surface discharge.

7 COMPARATIVE EVALUATION USING A TBL ANALYSIS

7.1 DEFINING TBL ANALYSIS

Info Quinn presented the comparative evaluation, which incorporates social implications, economics, and environmental considerations.

7.2 QUANTIFIABLE ATTRIBUTES

Info Michal presented the quantifiable attributes for each scenario. A summary table was handed out to the WAC.

7.3 POPULATED TABLE FOR SCENARIOS

Info Margaret Wright indicated that the costs should include the compensation costs required by the DFO for laying pipe along a seabed.

Phil Edgell indicated that the Net Present Values (NPV) should be extended to 50 years so that the effects of the capital costs are not as significant on the overall life cycle costs.

8 BREAK

9 EVALUATION OF IMPORTANCE/WEIGHTING OF QUANTIFIABLE ATTRIBUTES

9.1 CONSIDERATIONS FOR EVALUATION

Info Quinn presented the considerations the WAC members should keep in mind when filling out the ballots.

9.2 EVALUATION EXERCISE

Info Michal carried out the evaluation exercise. A consensus among the group was reached with respect to each sub criteria, and each main criteria. The consensus for the weightings are listed below:

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Attributes	Description	Attribute Weightings	Main Category Weightings
Environmental			100
Carbon footprint	Disturbed terrestrial + foreshore / estuary area in locations	50	--
Physical footprint disturbance	GHG emissions associated with operations over an analysis horizon from Year 2015 to 2035	50	--
Aquatic life	The Biochemical Oxygen Demand discharged through the outfall(s) using Maximum Month Flows (MMF)	100	--
Natural habitat restoration area	Footprint of restored area (i.e. existing City lagoon)	50	--
Social			50
Recreational water use	Fecal coliform concentration at the edge of the IDZ using Maximum Month Flows (MMF)	100	--
Economic			75
Capital cost	Initial capital costs incurred for works constructed in the first 5 years of implementation	100	--
Life - cycle cost	Total NPV of all construction and O&M costs over an analysis horizon from Year 2015 to 2035	90	--

The category that was most heavily weighted was Environmental. Within the Environmental Category, the Aquatic Life attribute (relating to the salmon) was the most heavily weighted.

9.3 REAL-TIME RESULTS FROM THE TBL SOFTWARE

Info

The model results were presented by Michal in Decision Criterium Plus software using the weightings reached in the consensus.

Using the weightings reached in the consensus, Scenario 3 scored the highest, with Scenarios 5 and 6 closely behind.

The WAC was curious to see the effects of making the Social category have a total weighting of zero, given the relative similarity between the scenarios, and that the MWR regulations with respect to the fecal coliform concentrations were met. Using this revised weighting, Scenario 3 once again scored the highest, with a larger gap to Scenario 4 (which increased to the second best score). Scenarios 5 and 6 followed closely behind.

9.4 TBL VS. MITIGATION STRATEGIES



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Info

Quinn presented mitigation strategies that are incorporated to any scenario development.

10 NEXT STEPS

Info

Quinn presented the next steps for this project. Given the feedback that was received from the WAC, an additional scenario would first have to be developed. Further discussions with the MOE (who could not be in attendance) are required.

11 QUESTIONS