Evaluation of DB Western's Proposal Regarding the Construction of a Treatment Plant on the North Spit



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May 2015

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ACRONYM LIST

BE	Biological Evaluation
во	Biological Opinion
CMGC	Construction Manager/General Contractor
DBWT	DB (Dennis Beetham) Western Texas
DEQ	Department of Environmental Quality
EA	Environmental Assessment
EIS	Environmental Impact Study
EPA	Environmental Protection Agency
EQ	Exceptional Quality
FDA	Food and Drug Administration
FONSI	Finding Of No Significant Impact
FYE	Fiscal Year Ending
IFA	Infrastructure Finance Authority
1/1	Inflow and Infiltration
MGD	Million Gallons per Day
NEPA	National Environmental Policy Act
NMFS	National Marine Fisheries Service
NPDES	National Pollutant Discharge Elimination System
NPS	Non-Point Source
O&M	Operation and Maintenance
SRF	State Revolving Fund
UGB	Urban Growth Boundary

EXECUTIVE SUMMARY

This City has been working on the expansion and upgrade project for the Empire Wastewater Treatment Plant (Plant 2). The City has completed facility planning, amendments to the facility plan, value analysis, pre-design and 100% final design plans. Currently, the City is processing the environmental reports through the Environmental Protection Agency (EPA) and the National Marine Fisheries Service (NMFS). It is anticipated that environmental and loan approvals will occur fall 2015 and construction will commence no later than January 2016. Recently, the City has received a proposal from Mr. Beetham of DB Western Texas (DBWT) that consists of abandoning the Wastewater Plant 2 Expansion and Upgrade project and move forward with constructing a treatment plant on the North Spit with an ocean outfall.

There are several key issues that have been discussed in DBWT's proposal and then further discussed and evaluated in this document. They consist of water quality and public health, NEPA process, timelines and budgets and have been summarized below:

Water Quality and Public Health

DBWT has stated that the Bay's health is adversely impacted by the sanitary sewer outfalls and that they should be removed (i.e. moved to the Ocean). However, neither current nor future Department of Environmental Quality (DEQ) water quality standards dictate that cities, including Coos Bay, will have to remove the existing outfalls out of the Bay. Furthermore, DEQ states that, in their opinion, the impaired status is not due to the heavily regulated and permitted sewer outfalls, but rather untreated urban stormwater, failing septic tanks, and runoff from rural areas and agricultural land. Removing the sanitary sewer outfalls from the Bay will not remove the impaired status.

NEPA Process

DBWT has made statements that the Plant 2 expansion and upgrade project has not followed the NEPA process. However, the City and their environmental and engineering consultants have coordinated closely with the resource agencies (DEQ, Corps of Engineers, Fish and Wildlife, EPA, and NMFS). Because of this close coordination, it was understood what was required, under NEPA, of the project. As such the City anticipates environmental and SRF approvals in fall 2015, and commencement of construction for the Empire Option no later than January 2016. The proposed plant will be on line by the end of 2017.

Timelines and Budgets

DBWT has stated that their proposal will meet the MAO timeline of having a plant online in 2017. However based on detailed information received from DEQ and conversations with BLM, in addition to the City's own experience of this process, DBWT's timeline in the proposal appears unrealistic. The earliest that a North Spit treatment plant would be online is early 2021.

Capital costs and O&M budgetary numbers have been provided by DBWT. The Capital Costs numbers have significant items missing such as the costs to improve/construct an ocean outfall, interim biosolids plan, and perform value engineering. It is not known if the significant environmental studies, mixing zone studies, facility planning studies are included in DBWT's "engineering" budget. It is not known how much, if any, of escalation, contingency, bonds, insurance, and general conditions have been accounted for in their construction budget. Also,

DBWT does not know if they will be allowed permission to upgrade the Jordan Cove outfall. If permission is not granted the construction of a new outfall will be significant. O&M numbers have been provided, however these numbers are more than what the City is currently paying. DBWT did not provide information as to what the O&M cost included so a comparison could not be made.

If the City abandoned the Empire treatment plant a significant rework would have to be performed to implement DBWT's proposal. Currently, IFA has funded the City for a great deal of the planning and design efforts for the Empire Expansion and Upgrade project through loans and grants. It is unclear if IFA will support this planning and design rework for the North Spit proposal. There is also a potential that the City will lose the \$1.25M grant that was provided to the City as a result of the two IFA loans. The planning and design for a North Spit Option must be completed and approved prior to SRF funding approvals for construction, assuming funding will be available in 3.5 years.

The City and the Port have both investigated constructing a treatment plant on the North Spit. Both studies, prepared by different engineers, resulted in the same conclusion that a treatment plant on the North Spit is not the preferred option. The City has been working on the Plant 2 project since 2004. The City has also prepared detailed alternative analysis (including the North Spit Feasibility Study), facility plan, facility plan amendment, value analysis, pre-design, value engineering, final design plans, environmental assessment, biological evaluation, and cost estimates to support the current design in Empire. DBWT has not provided any of these items to support their North Spit proposal.

There are two other key challenges that need to be addressed, should the City move forward with the North Spit Option: 1) Procurement Requirements and 2) Goal 11. The state has specific procurement and planning requirements that must be adhered to and followed. Both of these state requirements have conflict with DBWT's proposal. The City cannot direct appoint this project to a contractor (such as DBWT) and per Goal 11, it appears that it precludes the City from constructing a treatment plant outside of the UGB. However, if both of these challenges can be overcome, the City must consider the possibility that if the North Spit Option is a regional facility then the City may not be the sole owner of the plant but rather a "shareholder".

At this time, the North Spit Option does not have adequate information to prove that this option is the best option for the City of Coos Bay and their rate payers, this is further discussed in this document. As noted, previously, this option has been studied twice prior by separate agencies and separate engineers and the same overall conclusion was made. Simply stated, it does not appear that a regional facility on the North Spit is feasible today. Should this concept of a regional facility be explored for long term planning? Most likely the answer is "yes". However, that analysis should be prepared by a licensed professional engineer that does not have a conflict of interest. The City needs to upgrade the Plant today for the water quality and health of the bay. The existing Empire plant (Plant 2) is over capacity and past its useful life. Any delay in constructing the Empire Option will only hurt the bay and have the potential to increase wastewater user rates.

I. INTRODUCTION

Currently the City is working on a project that is referred to as the Wastewater Plant 2 Expansion and Upgrade project. This project consists of constructing a new treatment plant located on a 2 acre parcel on the northeast corner of Empire Boulevard and Fulton Avenue, constructing a force main to transmit waste activated sludge from the proposed Plant 2 to Plant 1, and demolition of the existing Plant 2. To date, the City has completed planning documents required for funding, value engineering, and 100% design plans and specifications. However, funding cannot be granted to the City by the Oregon Department of Environmental Quality (DEQ) State Revolving Fund (SRF) program until the federal agencies finish their review of the environmental reports. The two federal agencies that are reviewing the project are the Environmental Protection Agency (EPA) and the National Marine Fisheries Service (NMFS). It is anticipated that the federal review will be completed in June 2015, the City will receive funding for construction in fall 2015, and construction will commence no later than January 2016. Figure 1 below is an overview of the area that is discussed in report.



Figure 1: Location Map for Empire and North Spit Options

To date Mr. Dennis Beetham of DB Western Texas (DBWT) has provided the City with a proposal (two iterations) and presented a PowerPoint to the public at the Coos Bay Library on

March 19, 2015. Copies of the each proposal iteration and the PowerPoint presentation is located in Attachments <u>1</u>, <u>2</u> and <u>3</u>. The proposal has several phases. The first phase of the proposal is that the City abandon the Wastewater Plant 2 Expansion and Upgrade project and move forward with constructing a treatment plant on the North Spit with an ocean outfall. The next phase of the proposal is to construct a Class A biosolids facility that will treat the sludge (biproduct of wastewater treatment) from the proposed North Spit plant. This facility could also treat the sludge form North Bend and Coos Bay Plant 1. The final phase of this proposal is that the proposed North Spit treatment plant be expanded to accept the influent from Coos Bay Plant 1 and the North Bend Plant. For the purposes of this report, Mr. Beetham's proposal has been compared and contrasted with the City's Wastewater Plant 2 Expansion and Upgrade project and will be referred to hereon as the "North Spit Option" and the "Empire Option". Unless otherwise stated the "North Spit Option" refers to the first phase of Mr. Beetham's proposal.

Preliminary schedules and budget numbers are presented in Mr. Beetham's proposal for the North Spit Option, however no backup to support these numbers have been provided. Additionally, the proposals present several concepts and statements that are unsubstantiated and need clarification. This document provides that clarification and discusses the schedule and budgetary numbers. For the purposes of this document the discussion has been divided into three categories: Water Quality and Public Health, Planning and Design, and Timelines and Budgets.

II. WATER QUALITY AND PUBLIC HEALTH

DEQ is the regulating authority whose job is to ensure that wastewater discharged from treatment plants do not contain dangerous levels of harmful pathogens such as bacteria and viruses (please see Attachment <u>4</u> for the March 13, 2015 DEQ letter that supports this section). DEQ requires that wastewater receive treatment prior to discharging into downstream waters so that the downstream waters are safe for swimming and harvesting (shellfish consumption). DEQ accomplishes this by requiring compliance with state water quality standards, which are based on federal EPA guidelines which, specifically for the Coos Bay, include both shellfish growing and marine human health state standards. DEQ issues municipalities a National Pollutant Discharge Elimination (NPDES) permit for sanitary sewer. The NPDES permit defines the water quality standards.

The proposed treatment plant (Empire Option) has been designed to meet the current and anticipated NPDES permit requirements. These current and anticipated permit requirements are defined in the planning documents (Facility Plan) for the Empire Option that were reviewed and approved by DEQ. Additionally, City staff and the design team have worked very closely with DEQ so that they are familiar with the proposed plan. This close coordination has provided DEQ the opportunity to make comments throughout the design phases. If the City's proposed plant did not meet DEQ's requirements then DEQ would not be willing to fund this project. As the case is, DEQ is planning to fund the project and per the DEQ report titled, *Proposed Intended Use Plan – Update #3*, dated April 2015 this project is the third highest ranked project for the SRF program for Oregon (http://www.deq.state.or.us/wg/loans/docs/IUP2015up3.pdf).

Mr. Beetham has criticized DEQ for not implementing current regulations. He has also criticized DEQ for supporting this project. Mr. Beetham has accused the City of proposing a project that will adversely impact the environment. He has made statements that the bay's health is in

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jeopardy and this is due to the sanitary sewer outfalls. His solution to the bay's health is to remove all of the sanitary sewer outfalls (Plant 1, Plant 2 and North Bend) and replace with an ocean outfall even though this is not required nor anticipated to be required by DEQ. The following text in this section provides clarification to the water quality and bay health issues that have been presented by Mr. Beetham.

US FOOD & DRUG ADMINISTRATION (FDA) DRAFT REPORT

DBWT has cited a 2011 FDA draft report that is not relevant to the Empire Option. The FDA's report analyzed the dilution in the approved oyster growing areas northeast of the City of Coos Bay. FDA performed testing at Plant 1 and the North Bend Plant. No testing was performed at Plant 2 for the preparation of this report.

The report made the conclusion that the entire oyster growing areas in Coos Bay *should* be reclassified as conditionally restricted. A conditionally restricted classification means that shellfish cannot be harvested directly from Coos Bay and sold into commerce. In other words, the shellfish would have to be harvested from Coos Bay and then put back into the water somewhere else that is not conditionally restricted and allowed to cleanse themselves for a period of time (days) until they could be sold as food. A restricted classification is one used for a growing area that is considered polluted enough you can't eat shellfish directly from the growing area but not too polluted to prohibit their harvest entirely.

The current classification for the oyster growing areas in Coos Bay is Conditionally Approved. This means shellfish can be sold directly into commerce providing some 'conditions' are met. This classification is used for moderately polluted bodies of water which can be managed around using predictable pollution closure thresholds. For Coos Bay these thresholds defined when certain amounts of rainfall over a certain period of time occur. When these are exceeded, the Department of Agriculture will close the bay temporarily for oyster harvesting since the water quality at that time is predicted to be unacceptable. A Restricted classification basically means the water quality is considered to be unacceptable all of the time.

In January 2014 City staff participated in a conference call with DEQ, FDA, and the Department of Agriculture. It was stated by FDA that the report was a draft report that had not been finaled. DEQ stated that both plants analyzed (North Bend and Plant 1) meet permit requirements. The Department of Agriculture stated that FDA's recommendations could not be made based on one day of testing at each plant. They felt more should be obtained. They were also questioning the manner in which the information was obtained.

Since that conference call, the Department of Agriculture has not implemented FDA's recommendation nor has the FDA finaled the draft report. To date, the draft is now over 4 years old. Additionally, the oyster community is aware of this report. The City had a meeting with a representative of the oyster community (Greg Dale, Coast Seafoods Company) and a representative of Oregon Department of Agriculture (Alex Manderson). Mr. Dale has verbally told staff that he is in favor of the City's Plant 2 project because he understands that the improvements to Plant 2 will improve the bay's health. Also it should be noted that Plant 2's outfall, in relation to North Bend and Plant 1, is the closest to the Ocean and is the most tidally influenced, as a result the dilution in this area is anticipated to be different than the area near North Bend and Plant 1's outfall. In addition, there are two major corrections that need to occur in the draft report before it can be finalized:

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US FDA REPORT CORRECTION

There are three major components of wastewater flow in a sanitary sewer system: 1) The base sanitary (or wastewater) flow, 2) Rainfall derived inflow and infiltration (more commonly referred to as inflow), and 3) Groundwater infiltration. Inflow and infiltration (I/I) is not uncommon in sanitary sewer systems, especially with older systems. As a result, during intense storms, Plant 1 receives a high volume of diluted influent due to I/I. DEQ is aware of this and for Plant 1 there is a permitted "split flow" condition during high storm events. In other words, when Plant 1 receives flows over 6 MGD these flows bypass the secondary treatment and are conveyed to a holding tank, where settlement occurs. After settlement, they are combined with the primary flows and disinfected. For flows that exceed 10 MGD, theses flows bypass the primary and secondary but are still receiving disinfection prior to being discharged.

The FDA scientists made two incorrect assumptions in this draft report that need to be clarified. The first assumption that was made is that during intense storms that cause Plant 1 to receive flows greater than 6 MGD, the Plant is not treating the influent prior to discharge. The second assumption is that as the flows increase so do the levels of bacteria. As discussed above the flows greater than 6 MGD are receiving treatment prior to being discharged. As for the bacteria assumption, what the scientist failed to realize that during these high storm events the majority of the flow is not sanitary sewer but rather inflow and infiltration from groundwater and stormwater runoff. Thereby, assuming that the levels of bacteria rise linearly with the influent flow rates during high storm events is incorrect.

Both of these assumptions have been clarified to FDA by staff and if/when the report is updated and finaled, these corrections should be reflected. It should be noted that even during these high flow events Plant 1 must, and does, meet the requirements of the NPDES permit.

Mr. Beetham has spoken to both Greg Dale and Alex Manderson and asked them for a letter of support. Both have declined to provide Mr. Beetham with that letter. Mr. Beetham states that the draft FDA report proves that the sewer outfalls are adversely impacting the bay. However, Plant 2 was not analyzed in the draft report and as noted above there are two major corrections that need to occur and be addressed before this report can be finalized.

HEALTH OF THE BAY (COOS BAY)

Mr. Beetham has commented in talks to the public, the City and in his proposals that the health of Coos Bay is at risk/impaired because of the sanitary sewer outfalls. As a result of this statement, City staff asked DEQ questions regarding the impairment status and the health of Coos Bay. DEQ provided information regarding this subject and the letter documenting this is located in Attachment $\underline{4}$.

Currently, the Coos Bay is listed as an "impaired" water body because it does not meet the state water quality standards for fecal coliform bacteria in marine waters. Water quality standards were established to protect human health from diseases caused by eating raw shellfish. DEQ and other agencies regularly collect water quality data throughout the state. DEQ compares this data to the standards and when a water body does not meet one or more of the standards it is

considered "impaired" for the pollutant or pollutants in question. The Oregon DEQ website has more information on Coos Bay's impaired status within the report titled, *Oregon's 2012 Integrated Report*: <u>http://www.oregon.gov/deq/WQ/Pages/Assessment/2012report.aspx</u>.

Common sources of fecal coliform bacteria pollution in Coos Bay, and in other water bodies, include sanitary sewage overflows due to large storm events, municipal storm water discharges, runoff from rural residential areas, and failing and/or poorly situated septic sewage systems. While sewage contains fecal coliform bacteria, the wastewater treatment plants are required to meet the state standard for fecal coliform bacteria prior to discharge. Municipal wastewater treatment plants that comply with their permit limits for bacteria are not typically the cause of bacteria impairments.

DEQ stated that if all of the outfalls (Coos Bay Plants 1 and 2 and North Bend) were removed from the Bay that the Bay would still be listed as "impaired". DEQ does not have a preference for ocean or bay discharges. DEQ issues permits that are protective of the receiving water body be it ocean, bay, estuary, or river. About 200 domestic wastewater treatment plants discharge to Oregon water bodies. Nine of these treatment plants discharge directly to the Pacific Ocean. DEQ does not have a complete list of all the discharges to bays in Oregon. However, there are at least 20 wastewater treatment plants that discharge into water bodies near the ocean and all rivers in Oregon flow to the ocean. Furthermore, DEQ stated that they do not have the authority to close the Bay to wastewater discharges or any other pollutant source. DEQ's responsibility is to establish the requirements needed to meet water quality standards

DEQ requires that wastewater be disinfected so it is safe for swimming and shellfish consumption. It does this by requiring compliance with state water quality standards, which are based on federal Environmental Protection Agency guidelines. For Coos Bay, both the shellfish growing and marine human health state standards are applicable. All of the treatment plants discharging to the bay have stringent water quality requirements to preserve the health of the bay. As stated previously, the impairment is most likely not caused by the sewer outfalls but rather by the non-point source pollution. This is discussed in further detail below:

Point Source vs. Non-Point Source Pollution

DBWT's proposal states that the health of the bay is being impaired because of the three sewer outfalls (North Bend, Coos Bay Plant 1, and Coos Bay Plant 2). These three outfalls are referred to as point sources. Per the EPA, point source pollution is defined as an outfall from an industrial and/or sewage treatment plant. Nonpoint source (NPS) pollution (<u>http://water.epa.gov/polwaste/nps/</u>), unlike pollution from industrial and sewage treatment plants, comes from many diffuse sources. NPS pollution is caused by rainfall or snowmelt moving over and through the ground. As the runoff moves, it picks up and carries away natural and human-made pollutants, finally depositing them into lakes, rivers, wetlands, coastal waters, and even an underground source of drinking water. These pollutants include (<u>http://water.epa.gov/polwaste/nps/</u>):

- Excess fertilizers, herbicides, and insecticides from agricultural lands and residential areas;
- Oil, grease, and toxic chemicals from urban runoff and energy production;
- Sediment from improperly managed construction sites, crop and forest lands, and eroding stream banks;

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- Salt from irrigation practices and acid drainage from abandoned mines;
- Bacteria and nutrients from livestock, pet wastes, and faulty septic systems;

All municipal sewer treatment plants are heavily regulated and have to meet effluent standards as required by the individual NPDES permit for sanitary sewer. DEQ, at this time, has not issued North Bend or the City of Coos Bay NPDES permits for stormwater. As such, all outfalls conveying stormwater runoff from the urbanized areas to the streams and creeks that ultimately discharge to the bay or to the bay directly receive little to no water quality treatment. There are strong opinions, including that of DEQ as shown in Attachment 4, that the bay health and the impairment status is a direct result of this nonpoint source pollution. As DEQ stated above, if all three sewer outfalls were removed from the Bay, it would not remove the impaired status. In fact, DEQ stated that one of the reasons for the impaired status could be "municipal stormwater discharges". In conclusion, Mr. Beetham has repeatedly discounted NPS pollution, however per DEQ and EPA this is a significant factor for water impairment and should not be ignored when addressing the Bay's health.

NATIONAL ENVIRONMENTAL POLICY ACT (NEPA)

Mr. Beetham stated that the City did not follow the NEPA process for the Empire Option. He further states that an Environmental Impact Study (EIS) should have been prepared for the project. Because of this statement, City Staff coordinated with Keith Andersen of Oregon DEQ. Keith confirmed that the project is in compliance with NEPA. He further stated that since the City is proposing to fund the Empire Option with DEQ's Clean Water SRF program they are obligated to meet the requirements of the SRF program. The program was started with federal money. That means compliance with applicable federal environmental laws and Executive Orders (also known as "cross cutters"), which include the applicable NEPA requirements. For reference, the email from DEQ that supports this discussion is included in Attachment <u>5</u>.

Per the direction of both DEQ and the EPA, the City's consultant has prepared an environmental assessment (EA) and a biological evaluation (BE) with the goal that a finding of no significance impact (FONSI) will be issued by the federal agencies. The BE will be utilized by EPA and NMFs to create a biological opinion (BO). Upon completion of the BO, DEQ will release the EA and BO for a 30-day public review period. This must be done prior to SRF loan approval.

The environmental cross-cutters process for the Empire Option was established though several conference calls with DEQ, EPA, and the NMFS. In other words, EPA and NMFS did not direct the City to prepare an EIS because it was not necessary for this project. The following describes the NEPA process in more detail.

THE NEPA PROCESS

The NEPA process consists of an evaluation of the environmental effects for a proposed project, including an alternatives analysis. The following information was obtained directly from the EPA website (<u>http://www.epa.gov/compliance/basics/nepa.html</u>) there are three levels of analysis: categorical exclusion determination, preparation of an environmental assessment/finding of no significant impact (EA/FONSI), and preparation of an environmental impact statement (EIS).

- Categorical Exclusion: At the first level, an undertaking may be categorically excluded from a detailed environmental analysis if it meets certain criteria which a federal agency has previously determined as having no significant environmental impact. A number of agencies have developed lists of actions which are normally categorically excluded from environmental evaluation under their NEPA regulations.
- **EA/FONSI:** At the second level of analysis, a federal agency prepares a written EA to determine whether or not a federal undertaking would significantly affect the environment. If the answer is no, the agency issues a FONSI. The FONSI may address measures which an agency will take to mitigate potentially significant impacts.
- **EIS**: If the EA determines that the environmental consequences of a proposed federal undertaking may be significant, an EIS is prepared. An EIS is a more detailed evaluation of the proposed action and alternatives. The public, other federal agencies and outside parties may provide input into the preparation of an EIS and then comment on the draft EIS when it is completed.

III. PLANNING AND DESIGN

The City of Coos Bay has been working on the Plant 2 Expansion and Upgrade project (Empire Option) for several years. Below is a brief timeline of the major milestones that the City has accomplished. For a more detailed timeline please refer to Attachment $\underline{6}$:



Figure 2: Plant 2 Expansion & Upgrade Timeline

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At this time, the City has completed final design efforts and is completing the environmental cross-cutters with the regulatory agencies. It is anticipated that construction will commence no later than January 2016 and will take 24 months. Prior to commencing with design the City spent nine years planning for this project. During those nine years several options and alternatives were analyzed. The City even analyzed a facility on the North Spit, however the report which was prepared by a licensed professional engineer concluded that a North Spit treatment facility would not be a cost effective option. In addition to the City analyzing the feasibility of a treatment plant on the North Spit, the Oregon International Port of Coos Bay (hereon referred to as "the Port") also performed their own analysis in 2013. The Port and their engineers came to the same conclusion as the City. Both reports have been included in Attachment 7 a and b. Below is the excerpt from the Port's March 14, 2013 titled, *North Spit Regional Wastewater Treatment Facility Plan*:

"The cost of implementing a regional wastewater facility on the North Spit are substantial and would require considerable discussions and agreement with regional partners to outline costs and benefits to each prior to implementation. That said, the existence of the North Spit facilities and associated ocean discharge permit are regional assets which should be leverage in the longer term. In the lifespan of this facilities plan, however, it has been determined that the conditions were not in place to implement domestic wastewater treatment facilities within the next five years, after which another plan would be required. The information in this plan should be helpful in this next phase."

For the past 2 years City Staff has worked with DEQ and the design team of SHN Consulting Engineers and CH2M HILL and as a result of those efforts have completed design for the Empire Option. Mr. Beetham has entered into this picture in the final hours of this process and made statements that he can design, build, and operate a better plant than what the City's current qualified engineering design team has proposed. He has also stated that he will do all of this for less money than what is currently proposed by the Empire Option. As discussed in the previous section Mr. Beetham's North Spit option will not remove the impaired status of our Bay so the question to be asked "is Mr. Beetham's North Spit Option a better alternative than the Empire Option with respect to planning and design?". Another question to ask, "is the North Spit Option in compliance with the State of Oregon's Planning Goals and procurement requirements?".

The following discusses challenges that the North Spit Option has with respect to planning and design, however more importantly the following section discusses Oregon's Statewide Planning Goal 11 (Attachment 8) and procurement rules for a project of this size. If a decision is made to deviate from the Empire Option, it is recommended that the Council receive guidance from a land use attorney to ensure that this type of decision would not be in direct non-compliance with the state's Goal 11.

PROCUREMENT PROCESS

The DBWT proposal uses a design/build/operate procurement process for the North Spit option. The design/build/operate process combines the design, construction and operation process together in one contract. An engineering designer and a contractor team up to design and construct the project. This process allows construction to start prior to final plans being complete. Per State law (ORS 468B.055 and OAR 340-052-0045), the City of Coos Bay's population is too small to use this procurement process. The assumption is that smaller

communities do not have the staff or resources to review and approve plans in-house while the project is under construction.

In the DBWT proposal, the apparent intent is to start construction after the final design plans are complete and approved by DEQ. This has some similarities to both the design/build and the Construction Manager/General Contractor (CMGC) process. Assuming the City could pursue this type of modified procurement process, or if the City pursued the more traditional design/bid/build procurement process, the City cannot simply give the project to DBWT to design, construct and operate. The City's and State's procurement regulations must be followed and thus the project design and construction must be awarded through a competitive process. To meet the procurement rules, use of a Request for Qualifications (RFQ) process to select the most qualified engineering firm or engineering/construction team to prepare design plans meeting DEQ requirements is recommended.

Should the City Council decide to pursue relocating the wastewater treatment plant to the North Spit, it will be necessary to deviate from DBWT's proposed design plan preparation process to qualify for a State Revolving Fund (SRF) loan. A Facility Plan (FP) would need to be created first. The City would select a qualified engineering firm or team to prepare the FP. The most qualified firm/team would be selected using the RFQ process. The procurement process would take approximately 3 months to complete. The FP preparation and approval process would take at least one year to complete. During, but preferably before, the FP preparation phase, several of the current unknowns would be resolved, including the Goal 11 issues (discussed below), determining plant site location and acquiring (purchase or lease) the land, and determining the use of the existing (Jordan Cove, LNG) or a new ocean outfall.

After DEQ approval of the FP, the next step is to prepare a pre-design report followed by value engineering and preparation of final design plans. Selecting a qualified consultant through the RFQ process, preparing reports/plans, value engineering, and report/plan approval could take as long as two and a half to three years (see Figure 3 within this report for the North Spit Option timeline).

Another current unknown that can impact the project schedule is the entirety of the required permitting process. It is quite possible this could add an additional year to the process. However, best case scenario, it would take 4 years to get through the FP to final plan approval process before starting construction of the North Spit option from the date Council makes a decision to relocate. The longer the City delays construction, the more material and labor cost escalation will increase the cost of the project, regardless of which option is chosen.

GOAL 11: PUBLIC FACILITIES AND SERVICES

One of the biggest hurdles with proposing a treatment plant on the North Spit is that it violates Oregon's Statewide Planning Goal 11 (OAR 660-015-0000(11), See Attachment <u>8</u>). The pertinent section of Goal 11 is provided below:

Local governments shall not allow the establishment or extension of sewer systems outside urban growth boundaries (UGB) or unincorporated community boundaries, or allow extensions of sewer lines from within urban growth boundaries or unincorporated community boundaries to serve land outside those boundaries, except where the new or extended system is the only practicable alternative to mitigate a public health hazard and will not adversely affect farm or forest land.

As the DB Western proposal would be an establishment and extension of the City's sewer system outside of the UGB, staff believes it would not be allowed as a City owned system unless the exception is exercised. It is the understanding of staff, that Mr. Beetham is stating that the North Spit Option is the only "practicable alternative to mitigate a public health hazard". However, as DEQ is ready to permit the current plant location proposal (Empire Option), the exception in the goal would almost certainly not be granted.

It is staff understanding that Mr. Beetham has stated that the City does not have to be bound by this goal. Staff believes that this is incorrect as all jurisdictions are bound by all statewide land use goals as the basis for sound planning within the state of Oregon. Additionally, Mr. Beetham has stated that his legal team feels that they can defend constructing a plant on the North Spit, thus not complying with Goal 11. However, to date, no information from his legal team has been provided to the City as to how this would be accomplished. If council moves forward with the North Spit Option, it is recommended that a land use attorney be consulted to ensure that the proposed project would be in compliance with this goal.

One alternative to consider for the North Spit Option is ownership. If the City is not sole owner but rather a shareholder of the North Spit treatment plant, then Goal 11 may not be a hurdle. However Council may not find relinquishing ownership of such an important facility desirable.

PLANNING AND DESIGN RE-WORK

If the Council chooses to move forward with the North Spit Option and the North Spit Option will be funded by SRF dollars, then according to an email received from DEQ (see Attachment 5) additional planning work will have to be performed. Because this option is at a different location, proposes a different outfall, and has a different biosolids management plan, the entire planning and design documents will have to be prepared again from the beginning. A great deal of the planning and design efforts were funded by the Infrastructure Finance Authority (IFA). They provided loans and grants that funded the facility planning amendment, pre-design, value engineering, final design, and the environmental report preparation and processing efforts. To fund the North Spit option all of these items must be reworked and completed prior to securing funding from DEQ's SRF program. It has been stated by Mr. Beetham that he will "pick up" the design from the Empire Option and apply it to his North Spit Option, however this is just not feasible or practicable. Each option has different hydraulic constraints and different site layouts. A significant amount of re-work must be done if the North Spit Option is employed.

DEQ staff recommended that the City should coordinate with IFA to determine if IFA will fund a second design effort if the North Spit Option is chosen. The City used IFA loan and grant funding for the planning, report, and design preparation. Initial conversations with IFA staff indicate that IFA grants may have to be returned if the City selects another course of action. City staff is attempting to obtain written comments from the IFA staff.

To secure construction funding from the SRF program the City would need to do the following:

• Resubmit and receive approval from DEQ on a new facility plan.

- Complete a new environmental study including cross cutters with the state and federal agencies. Upon completion of the study resubmit and receive approval. This is a large undertaking that could take a year or more to complete.
- Complete a new Land Use Compatibility Statement (LUCS) indicating that the proposed use is compatible with local land use regulations and acknowledge comprehensive plan. A new LUCS will be required and will need to be signed by the County as the review authority.
- Resubmit and receive approval from DEQ on new pre-design plans.
- Perform another value engineering study (Value Engineering was not addressed on Mr. Beetham's schedule).
- Resubmit and receive approval from DEQ on new final-design plans.
- Obtain property and easements for North Spit Option and ocean outfall. The City would need to own the property or have a very long lease (about 80 to 99 years).
- Resubmit an application and receive approval from DEQ's SRF program for the new North Spit Option.

CURRENT DESIGN

Mr. Beetham has stated that he will design, construct, and operate a better plant than what the City has designed to date. He has made statements that the North Spit Option will have better disinfection methods, better outfalls, etc. However no documentation has been provided to staff or Council to support these statements. The City, on the other hand, has designed a plant that, per DEQ, meets current and anticipated future requirements. Mr. Beetham has misinterpreted the Empire Option plans, referenced reports published in 1975 that suggest treatment plants discharge harmful aerosols, presented outfall options that he currently does not have approvals for, and presented biosolids handling options that have the potential to increase wastewater rates for the City, including Charleston and potentially Bunkerhill. All of these statements and concepts that Mr. Beetham has presented are discussed in detail below along with clarification that should be considered:

PLAN MISINTERPRETATION

The Empire Option has allowed for potential future growth. The existing design proposes two tanks to treat the influent. If growth in this area dictates that a third tank is necessary, the site layout has been designed in such a manner that this would be possible. Mr. Beetham has made statements, incorrectly, that the third basin (to be built in the future) would be 3 feet from edge of pavement along South Marple Street. But that statement is not true, the third basin would be entirely within the property limits. If the third basin is constructed it will be 3 feet from the property line and then another 20 feet from the edge of pavement.

AEROSOLS

In his presentations, Mr. Beetham expressed concerns about airborne viruses from the wastewater treatment processes. He has referenced a report from 1975 regarding this issue. Staff reviewed the issue and found a few published articles from reputable scientific journals dated from 1975 to 2000 regarding collection of airborne pathogens from treatment plants in the U.S. The data suggests that the amount of airborne bacteria and viruses in the vicinity of wastewater treatment plants is higher than if no

treatment plant existed. The density of these aerosols diminished the further you are from the plants. Researchers have found the highest microbial concentrations were recovered above the waste treatment tanks and in downwind positions, where a linear correlation was found between the quantity of sewage treated and the entities of microbial aerosol dispersion. Researchers have also found that a plant operating with a fine bubble diffused air system (as the Empire Option will have) to generate rather low concentrations of bacteria and fungi; moreover, staphylococci and indicator microorganisms were almost absent. The results indicate dispersion of airborne bacteria and fungi from tanks in which oxygen is supplied via a mechanical agitation of sludge, and suggest the need to convert them to diffused aeration systems. The data is unclear as to the health risk posed by these aerosols to the surrounding human population. If the data showed a clear link to health problems due to exposure to aerosols emanating from wastewater treatment plants, regulating public health and environmental agencies would impose appropriate regulations for the installation of countermeasures to mitigate the risk. However, at this time there are no such requirement regarding this issue. The absence of any EPA and/or DEQ requirements or OSHA regulations for operators could make one think that this aerosol issue is not a threat to treatment plant operators or the neighbors of treatment plants.

OUTFALL OPTIONS

DBWT's proposal is unclear on where the outfall will be located. Mr. Beetham's proposal has two outfall alternatives for the North Spit Option. One alternative is to utilize the existing outfall at the North Spit. This was formerly owned by Weverhaeuser, and is commonly referred to as the "Weyco Outfall', but is now under the ownership of Jordan Cove. At this time DBWT does not have permission to utilize this outfall and based on an email from Robert Braddock, the Senior Project Advisor for Jordan Cove LNG, to Rodger Craddock it was confirmed that Jordon Cove has not made any commitments to upgrade the current ocean outfall or to build a new ocean outfall for Mr. Beetham's project (a copy of this email has been provided in Attachment 9). However, if permission is obtained, this option has challenges. Currently this outfall is only permitted for industrial flows. Additionally, this outfall will require substantial upgrades to fix the significant deficiencies and allow for the capacity to handle effluent from the North Spit Option. The outfall was originally designed in 1971. It was designed for a capacity of approximately 15 million gallons per day (MGD). However today, this outfall has a capacity of approximately 4 MGD because sediment in the outfall has drastically reduced the capacity. It is further known that the diffusers need replacement. The outfall is past its useful design life and most likely will need to be complete revamped. This type of upgrade will require significant environmental permitting and has the potential to be very costly. The other outfall alternative that DBWT appears to be exploring is constructing a new ocean outfall across BLM land. This will also have the same environmental permitting and cost issue in addition to the challenge of obtaining an easement across BLM land (See Section IV titled, Timelines & Budgets).

To be clear, the existing outfall for Plant 2/Empire Option that currently discharges into the Bay may also need to be upgraded in the near future. It has been active for over 40 years and will need maintenance. However, this bay outfall is smaller in size and length and will be cheaper to maintain and upgrade then either of Mr. Beetham's ocean outfall proposals.

BIOSOLIDS OPTIONS

Biosolids are the nutrient-rich organic solids that are a by-product from the treatment of domestic wastewater at municipal wastewater facilities. Once biosolids have been treated to meet state and federal regulations, they can be beneficially used for land application or, in some cases, sold or given away like compost.

Under federal and state regulations, biosolids are designated as either "Class A" or "Class B" depending on the process used to reduce pathogens. More extensive treatment is required for Class A than for Class B, and for each of these classes land application requirements vary. If requirements are met for Class A pathogen reduction, vector control, and the more stringent pollutant concentration limits for metals, the biosolids are defined as "Exceptional Quality" (EQ) and are not subject to land application general requirements and management activities, which is regulated by DEQ. EQ biosolids may generally be used like any other fertilizer or soil amendment product. Class B biosolids requires a DEQ permit for land application.

Currently the City produces Class B biosolids and then land applies it to the several local farms in Coos County. DBWT has proposed to construct a Class A facility on the North Spit (exact location was not disclosed by DBWT). However this construction will not be included with the first phase of the North Spit Option nor is it included in the Capital Cost Comparison in the next section of this report. What staff believes Mr. Beetham is proposing is that for the first phase of the North Spit Option, after the North Spit treatment plant is constructed but prior to the Biosolids Class A facility being on-line, that the untreated biosolids will have to be hauled to Coos Bay Plant 1 and treated in the existing digesters. This haul cost has the potential to increase wastewater user rates. Once DBWT constructs a Class A facility Mr. Beetham has stated that he will not be responsible to dispose of the Class A biosolids. As such, he will transport the treated biosolids back to the City for disposal. With this option the rate payers will have to pay for a Class A facility (which is a substantially higher cost than a Class B facility which the City already has), pay for transporting the Class A biosolids from the North Spit to somewhere within Coos Bay (DBWT will not dispose so the City has to devise a plan for this), incur the increased costs related to Class A testing requirements, and then pay for the implementation of disposal.

As stated previously, Class A biosolids can be used as compost. Several cities within Oregon have implemented Class A facilities. However, there is concern that the community will not embrace utilizing Class A biosolids as fertilizer. Another concern is that the City will not be able to sell or even give away the entire amount of Class A biosolids that are produced. The City will need to analyze this in a facility plan report and evaluate options. It is also recommended that the analysis include a marketing study so that it is understood the viability of selling Class A as biosolids to the public.

Mr. Beetham has made statements that Class B biosolids are banned in Europe. Staff has done extensive research on the internet, consulted with our wastewater contractor (CH2M HILL), and asked DEQ if they have any knowledge of this ban. At this time, no one can seem to provide proof to support this statement of a ban in Europe. Mr. Beetham has stated that there are states within the US that have banned the land application of Class B biosolids. According to Paul Kennedy, who is the DEQ regulator

for the City's biosolids permit, several counties throughout the United States have tried to ban the land application of Class B biosolids. However, to date no county has been successful. In fact some of the bans have been ruled unconstitutional.

Staff has concern that the Class A biosolids will increase wastewater rates. The City has been land applying Class B biosolids for over 25 years. Like the NPDES permits, the biosolids permit is just as regulated and monitored. It too, requires reporting and testing, however both of these items are considerably less than the testing requirements for Class A, and are only allowed at certain times of the year to avoid contamination with receiving waters and groundwater. The City has had a successful partnership with private farm owners who have received a product that supports the local agriculture in this area. Additionally, the City has recently analyzed how they handle biosolids. The Dyer Partnership prepared a report titled, *Biosolids System Analysis*, dated April 2015. The report analyzed how the City currently handles biosolids (convert the biosolids to Class B, store in lagoon, and land apply in the summer) along with alternatives, including converting the biosolids to Class A.

"The current disposal alternative of annual removal of biosolids and land application appear to remain the most cost-effective disposal alternative."

Another consideration for the North Spit Option, and discussed more in the next section, is the interim plan for Biosolids between the time the North Spit Plant is on-line to the time that the proposed North Spit Class A facility is on-line. DBWT has not provided a time frame for the Class A facility, so staff does not know how long the interim biosolids plan will last. There was no information provided in Mr. Beetham's proposals. Furthermore, there was no capital costs associated with this issue in Mr. Beetham's original cost comparison. However, DEQ will require a plan to manage the biosolids, treat, and dispose of accordingly. This will need to be investigated further if Council moves forward with the North Spit Option.

In conclusion, whether Mr. Beetham is discussing the site layout, "dangerous" aerosols, outfall configurations, or Class A vs. Class B biosolids he provides very little documented support to substantiate his statements. As you will see in the next section, his North Spit Option has the very real potential of costing the City's, Charleston's, and Bunker Hill's rate payer higher user rates.

IV. TIMELINES AND BUDGETS

DEQ issues municipalities National Pollutant Discharge Elimination System (NPDES) permits for sanitary sewer discharges. The City of Coos Bay has two permits, one for each treatment plant. In addition to the NPDES permit for Plant 2, DEQ has also issued the City a mutual agreement order (MAO). As part of this MAO, the City must update the existing Plant 2 and expand its capacity. The City is currently in compliance with the MAO, however a delay in construction has the potential to place the City in non-compliance. According to an email received from DEQ (see Attachment 5), the City can renegotiate the MAO timeline and request an extension, however there must be compelling reasons to do so. If the MAO is not adhered to there is a potential that the City will be fined.

DEQ is reviewing the City's final design plans for the Empire Option and expects to have comments back to the City in summer 2015 to allow the City's CMGC to put the project out for bid in the fall. Since City Staff and the engineers have worked closely with DEQ throughout the entire design process, no significant comments are anticipated.

Per the MAO, once the contract for construction of the plant improvements is awarded, the City has two years to place the new facilities into service (December 2017). The City entered into the MAO with DEQ in August 2003. Since then DEQ and the City have negotiated several amendments. The City requested additional time to reduce inflow and infiltration in the collection system prior to designing a new treatment plant. This work has resulted in fewer sanitary sewage overflows in the collection system and lower design flows for the treatment plant. The City also requested additional time to conduct value analysis and value engineering studies. This work has allowed for peer review and resulted in a better design.

Mr. Beetham understands that the City has concerns with respect to budgetary and timeline constraints of the treatment plant option. He has provided information in his proposal that he believes addresses and solves the City's concerns. The following text discusses complications and challenges that staff sees with Mr. Beetham's budgets and timelines.

NORTH SPIT OPTION TIMELINE

Mr. Beetham understands that the City has both financial and mandated time restrictions with respect to upgrading Plant 2. Every month that the City delays construction of the Plant, is another month of escalation that occurs in the construction costs. Additionally, the City is under a DEQ Mutual Agreement and Order (MAO), which states that the upgrades to Plant 2 must be complete in 2017.

Mr. Beetham presented a schedule for the North Spit Option. The schedule consisted of constructing a pump station in Empire, force main under the bay, and a new treatment plant and outfall on the North Spit. Please note that this schedule does not include a solution for biosolids management (the Class A facility is not proposed in the first phase). Mr. Beetham's schedule is divided into two parts, "A. Preliminary" and "B. Permits", please refer to a copy of the schedule in Attachment 10. Staff asked the Bureau of Land Management (BLM) and DEQ to comment on the schedule provided in Mr. Beetham's March 19 presentation (at the City Library). For reference, the email that supports the information received from DEQ regarding the timeline has been included in Attachment 5. Based on information obtained from these agencies, Mr. Beetham's schedule needs to be extended a minimum of 3.5 years.

There is a risk with the "path forward" that Mr. Beetham has outlined. The risk involves possible rework if the pre-design is changed by DEQ's review of the Facility Plan. Based on conversations with DEQ, Attachment <u>5</u>, it was determined that the path forward does not comply with SRF funding requirements. Therefore for the purposes of the timeline presented in Figure 3, after the RFQ process has been completed to obtain a qualified engineer for this project, the selected engineer will begin with the facility planning first rather than pre-design.

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Figure 3: Timeline for North Spit Option

If Council directed staff to implement the North Spit Option "tomorrow", the above timeline is anticipated. The email that supports this timeline is located in Attachment 5. The key points that support Figure 3 are:

- Procurement Process The City must submit a Request for Qualifications and contract with an engineer that is selected by a Qualification Based Selectin format, per the ORS 279 A, B and C.
- DBWT's schedule has pre-design prior to facility planning. The risk involved with potential rework is too great so Facility Planning should occur prior to pre-design.
- According to DEQ, facility planning will take 1 year, however city staff consulted with the Dyer Partnership and they concluded that facility planning could be as short as 8 months. As such 8 months was utilized.
- According to DEQ, time is required by them to review the facility plan as wells as public review, 4 months was assumed.

- According to DEQ, pre-design will take 6-12 months. 6 months was assumed.
- Value Engineering (VE) was omitted from DBWT's original scheduled. If the project is funded by SRF dollars then a VE is required. 2 months was assumed.
- Environmental processing through local, state, and federal agencies must occur. The necessary environmental reports cannot be prepared until an adequate level of design is obtained. This is typically at 60% design. 12 months was assumed.
- The 2 month estimate for final design review, according to DEQ, seemed appropriate. However, DEQ cautioned that this review time may be increased if the review included a new ocean outfall. For the purposes of this schedule, DBWT's 2 month estimate was utilized.
- DEQ agreed with the 9 months for final design, however observed that the timeline was
 missing bidding document preparation, advertisement, bid, selection, and potential
 bidder challenges. DEQ suggested 4 months however city staff consulted with the Dyer
 Partnership and they concluded that the bidding process could be as short as 2 months.
 As such 2 months was utilized.
- The 24 months for construction was utilized because that is what is estimated for the Empire Option. The Empire option consists of the construction of a new treatment plant, construction of a pump station and force main from the proposed plant to Plant1, and the demolition of the existing Plant 2. The North Spit Option should consist of the construction of a new treatment plant, construction of a pump station and under the bay force main to transmit the Plant 2 influent to the North Spit, the construction of one of two ocean outfall alternatives, and the demolition of Plant 2. This North Spit scope of work is larger than the Empire scope, however the same construction schedule for the Empire Option was applied to the North Spit Option.

DEQ will require an approved facility plan prior to approving a Clean Water State Revolving Fund loan application so the City would be taking some risk to move directly to predesign, as proposed by DBWT, without an approved facility plan. The City would be conducting predesign without the assurance that the new proposal will be funded by the state. If the City were funding the new proposal on its own, it could forgo the development of a facility plan and proceed directly to predesign without such risk. However, that is not currently the case so since the scope of the North Spit option is different; a new facility plan will likely be required by DEQ and other funding agencies. Public input on the plan, review of public comments, and final approval of the plan by the City Council will also be required. As such, for the purposes of the revised timeline, facility planning will take place prior to pre-design thus reducing the risk of re-work and added costs.

At this time, DBWT is unclear on the outfall location. If a new ocean outfall is proposed, the project must obtain a right of way permit through BLM. BLM staff stated that a right of way permit for the outfall may take 6 months to 2 years, it depends on the size and impacts of the project. Without seeing detailed plans, BLM staff recommended that when assessing schedules it is always best to be conservative.

One component that is not shown on this schedule in detail but is vital to the success of a North Spit Option is the coordination on the required federal and state permits along with the reports that will be needed with DEQ, ODOT, private land owners, Department of State Lands, the Army Corps of Engineers, Bureau of Land Management, National Marine Fisheries Service, United States Fish and Wildlife, Oregon Fish and Wildlife, Oregon Parks, Oregon Department of Geology and Mineral Industries, Coos County, the Jordan Cove project, Coastal Zone Management Commission, and Port of Coos Bay. While it is conceivable that much of this coordination, processing, and report preparation can occur concurrently with the schedule defined in Figure 3, this process cannot start until a plan has been examined and approved (i.e. after Facility Planning). Development of a typical wastewater treatment plant in the state of Oregon has a defined plan development and approval process for agencies seeking funding from the DEQ Clean Water State Revolving Fund. The process is to create a facility plan, prepare a predesign report, perform a value engineering analysis, and then develop final plans. The DBWT preliminary schedule, included in Attachment 10, does not take into account all of the necessary steps, nor does it provide enough time to prepare plans and receive approvals. However it is believed that the revised schedule in Figure 3 accounts for the required DEQ and SRF process for the North Spit Option. In conclusion, this option anticipates that a new treatment plant will be online early-2021.

Capital Cost Comparison

DBWT has submitted several cost comparisons. The most recent was presented at the March 19, 2015 library presentation, see Attachment <u>10</u>. DBWT's has not provided backup to support their projected cost. There are also significant unknowns associated with the North Spit Option (land acquisition, biosolids plans, outfall locations, environmental approvals, easements, etc.). However, the City has backup for the Empire Option. The City has detailed costs estimates based on 100% complete final design plans. The Cost Estimates have been prepared by a contractor that has over 30 years' experience in building municipal treatment plants. The City's CMGC has separated the plans into 18 different bid packages. These cost estimates are not "best guesses", they have been diligently analyzed and based on 100% complete final design plans.

At this time, it is very difficult to make a capital cost comparison with DBWT's proposal, because DBWT's proposal is not substantiated. However, Mr. Beetham has supplied the following costs for his project. Staff has inserted the costs for the Empire Option. The engineering and land acquisition costs for the Empire Option have already been expended. As such they have not been shown on Figure 4 titled, *Capital Cost Comparison to Move Forward*. But if Council decides to move forward with the North Spit Option, then these engineering and land acquisition costs associated with the Empire Option will need to be included with the total costs for the North Spit Option. Staff is concerned that Mr. Beetham has not included a contingency number for all of the "unknowns" that always occur with a project of this size. It also should be noted that either outfall option for the North Spit will be significantly more costly than the outfall upgrade for the Empire Option. Furthermore, DBWT's proposal does not provide an interim solution for biosolids. The table and corresponding notes discuss this in more detail:

FIGURE 4: CAPITAL COST COMPARISON TO MOVE FORWARD			
Item	Empire Option	North Spit Option	
Engineering	Already Expended	\$2.0M ⁽¹⁾	
Value Engineering	Already Expended	\$0.1M ^(1,5)	
Plant Construction	\$22.6M	\$16.9M	
PS and WAS FM/Interim Biosolids Plan	\$2.7M	Not Addressed	
Demolition of Existing Plant 2	\$0.4M	\$0.4M ⁽⁶⁾	
Pump Station and Under Bay Pipeline	Not Required	\$4.0M	
1.5 Mile Effluent Pipeline	Not Required	\$1.1M	
Other Costs	\$1.8M	\$1.9M	
Land	Already Expended	\$0.1M ⁽²⁾	
Class A Biosolids Treatment Facility	Not Required	?	
Total Installed Complete Plant	\$27.5M ⁽⁸⁾ + Outfall Upgrade ⁽⁴⁾	\$26.5M ^(3,8) + Outfall Upgrade ⁽⁴⁾ + Biosolids ⁽⁷⁾	

PS = Pump Station

WAS = Waste Activated Sludge

FM = Force Main

Note 1: The City has already spent \$4.2M in engineering costs and value engineering (a State Revolving Fund, SRF, Requirement) on Plant 2 since 2004 (this includes the report that analyzed the North Spit option). If the Council decides to move the plant to the North Spit the City will still have expended the \$4.2M but will also have to expend an additional \$2M (this number was provided by DBWT for the North Spit option.

Note 2: The City has already purchased the land for the Empire Treatment Plant. If the Council decides to move the plant to the North Spit the City will still have expended the \$650,000 to purchase the land but will also have to expend an additional \$100,000 (this number was provided by DBWT) for the North Spit Option.

Note 3: This cost does not include handling and management of the biosolids, the Empire Option has accounted for this. DBWT proposes to install and construct a Class A biosolids facility after the construction of the North Spit treatment plant. This option is more expensive from a Capital Cost. Additionally, testing of the Class A biosolids is very costly. See Note 7.

Note 4: Neither the Empire or North Spit Option includes the construction or improvements for an outfall. Both options will require this at some point. DBWT has two proposed options for an Ocean outfall, both of which will cost more than the upgrade of the existing Plant 2 bay outfall and to date they do not have permission from the land owners or environmental approvals to do either.

Note 5: This cost was not included in DBWT's original proposal. However, this component is required by DEQ/SRF program and must be completed.

Note 6: This cost was not included in DBWT's original proposal. However, it is part of project and thus included for the comparison of the two options.

Note 7: The North Spit Option will require an interim plan for Biosolids handling and management between the time the North Spit Plant is on-line to the time that the Class A facility

is on-line. DBWT has not provided a time frame for the Class A facility, so staff does not know how long the interim biosolids plan will last. There was no information provided in Mr. Beetham's proposals. Furthermore, there was no capital costs associated with this issue in Mr. Beetham's original cost comparison but there will be a capital cost for this item and should be included in the comparison.

Note 8: The City of Coos Bay's cost for the Total Installed Complete Plant includes escalation, contingency, bonds, insurance, and general conditions. It is unclear if DBWT's total estimate has taken these considerations into account.

Mr. Beetham presented many of the same numbers for his proposed project that you see above. Unfortunately, to compare the two options additional categories had to be added. Once the categories were added a more adequate comparison of the two project costs could be made. A major unknown on Mr. Beetham's capital costs for the North Spit Option is the outfall. As stated previously, there are two options for the Ocean Outfall. Mr. Beetham, at this time, does not have permission for either (Attachment 9). Both will require extensive work and studies. One of which is a mixing zone study. This process could take over a year to obtain approval prior to construction. This was not included in the timeline analysis because it is not known what option will obtain approvals. This is another issue that, if the North Spit Option is chosen, will have to be resolved in the facility planning.

Mr. Beetham has made statements that the City is spending money unnecessarily on the façade of the plant and covers/roofs for the facility. The City Council has performed a detailed architectural analysis. In the end of that analysis, the option for the façade was the one of the least expensive options. With respect to the roofs, the City is committed to building a plant with current technology that meets permit requirements. To meet permit requirements, the plant requires generators, pumps, grit removal systems, and UV disinfection. These components are costly and should be protected by a cover or roof. Per the City's cost estimates for the Empire Option this protection is costing the project an additional \$158,000 which is less than 1 percent of the total cost to complete the Empire plant. This type of protection extends the life of the components and protects the City's investment.

Operation and Maintenance (O&M) Comparison

In a presentation at the Library on March 19, 2015, Mr. Beetham told the audience that he could operate and maintain the proposed plant on the North Spit cheaper than what the City is currently paying. He further quoted a cost of \$550,000. It is assumed that this rate will increase annually. Currently the City has contracted with OMI-CH2M HILL to operate and maintain our treatment and collection system. For the FYE 2015, the City has budgeted \$491,828 for O&M. As of March, 75% of the fiscal year completed, the City is under budget and has spent an actual O&M budget of \$357,776. The actual amount expended on the O&M for Plant 2 for the last 10 years has been summarized in Figure 5 and shown below. Based on this information, it appears that Mr. Beetham's O&M budget is more costly than we are currently paying today.

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Figure 5: O&M History for Plant 2

In analyzing the long term costs to operate and maintain both options it appears that the Empire Option will have less pumping costs than the North Spit Option. The Empire Option will have pumping cost to transmit the sludge from Plant 2 to Plant 1, however this will be offset by the fact that the Empire Option is completely eliminating sludge handling and truck hauling from the Plant 2 location and isolating this operation at Plant 1. The Empire Option offers far easier option to maintain the force main that would be located along streets in the public right of way as opposed to a force main that is located under the bay or within environmental sensitive areas (BLM land). Other items to note is that Mr. Beetham's proposal does not include biosolids handling or treatment and the construction of a new biosolids facility is not included in his original budgetary numbers for capital costs. It is also unclear if the biosolids handling is included in his O&M costs. For these reasons, it is further believed that Mr. Beetham's O&M budget will cost the City's rate payer more if the North Spit Option is implemented.

V. CONCLUSION

The City and the Port have both investigated constructing a treatment plant on the North Spit. Both studies, prepared by different engineers, resulted in the same conclusion that a treatment plant on the North Spit is not the preferred option. The City has been working on the Plant 2 project since 2004. The City has also prepared detailed alternative analysis (including the North Spit Feasibility Study), facility plan, facility plan amendment, value analysis, pre-design, value engineering, final design plans, environmental assessment, biological evaluation, and cost estimates to support the current design in Empire. DBWT has not provided any of these items to support their North Spit proposal.

There are several key issues that have been discussed in DBWT's proposal. They consist of water quality, public health, NEPA process, timelines and budgets.

Water Quality/Health of the Bay - Neither current nor future water quality standards dictate that cities, including Coos Bay, will have to remove the existing outfalls out of the Bay. DEQ states that, in their opinion, the impaired status is not due to the heavily regulated and permitted sewer outfalls, but rather

untreated urban stormwater, failing septic tanks, and runoff from rural areas and agricultural land. Removing the sanitary sewer outfalls from the Bay will not remove the impaired status.

NEPA Process – The City and their environmental and engineering consultants have coordinated closely with the resource agencies (DEQ, Corps of Engineers, Fish and Wildlife, EPA, Coastal Zone Management Commission and NMFS). Because of this close coordination, it was understood what was required, under NEPA, of the project. As such the City anticipates environmental approvals summer 2015, SRF approvals in fall 2015, and commencement of construction for the Empire Option no later than January 2016. The proposed plant will be on line by the end of 2017.

Timelines – DBWT has stated that their proposal will meet the MAO timeline of having a plant online in 2017. However based on detailed information received from DEQ and conversations with BLM, in addition to the City's own experience of this process, DBWT's timeline in the proposal appears unrealistic. The earliest that a North Spit treatment plant would be online is early-2021.

Budget – Capital costs and O&M budgetary numbers have been provided by DBWT. The Capital Costs numbers have significant items missing such as the costs to improve/construct an ocean outfall, interim biosolids plan, and perform value engineering. It is not known if the significant environmental studies, mixing zone studies, facility planning studies are included in DBWT's "engineering" budget. It is not known how much, if any, of escalation, contingency, bonds, insurance, and general conditions have been accounted for in their construction budget. Also, DBWT does not know if they will be allowed permission to upgrade the Jordan Cove outfall (Attachment 9). If permission is not granted the construction of a new outfall will be significant. O&M numbers have been provided, however these numbers are more than what the City is currently paying. DBWT did not provide information as to what the O&M cost included so a comparison could not be made.

Another item to note is the significant rework that would have to be performed if the North Spit Option is pursued. Currently, IFA has funded the City for a great deal of the planning and design for the Empire Option through loans and grants. It is unclear if IFA will support this planning and design rework for the North Spit Option. There is also a potential that the City will lose the \$1.25M grant that was provided to the City as a result of the two IFA loans. The planning and design for a North Spit Option must be completed and approved prior to SRF funding approvals for construction, assuming funding will be available in 3.5 years.

Negotiating with DEQ will also have to occur to revamp the MAO timeline. DEQ has stated that they would grant an extension if the City could provide documentation that the current situation is significantly different than the information presented in the previously prepared North Spit Feasibility Study/Facility Plan (The City's and The Port's). This effort will need to be performed by a licensed engineer and may be costly. A risk, associated with this path, is that the outcome of such an analysis is unknown. In all likelihood the additional efforts may come to the same conclusion as the earlier reports (Attachment <u>11</u>).

There are two other key challenges that need to be addressed, should the City move forward with the North Spit Option: 1) Procurement Requirements and 2) Goal 11. The state has specific procurement and planning requirements that must be adhered to and followed. Both of these state requirements have conflict with DBWT's proposal. The City cannot direct appoint this project to a contractor (such as DBWT) and per Goal 11, it appears that it precludes the City from constructing a treatment plant outside of the UGB. However, if both of these challenges can be overcome, the City must consider the possibility that if the North Spit Option is a regional facility then the City may not be the sole owner of the plant but rather a "shareholder".

At this time, the North Spit Option does not have adequate information to prove that this option is the best option for the City of Coos Bay and their rate payers. As noted, previously, this option has been studied twice prior by separate agencies and separate engineers and the same overall conclusion was made. Simply stated, it does not appear that a regional facility on the North Spit is feasible today. Should this concept of a regional facility be explored for long term planning? Most likely the answer is "yes". However, that analysis should be prepared by a licensed professional engineer that does not have a conflict of interest. It is not staff's intent to discredit Mr. Beetham and his proposal, however, the City needs to upgrade the Plant today for the water quality and health of the bay. The existing Empire plant (Plant 2) is over capacity and past its useful life. Any delay in constructing the Empire Option will only hurt the bay and have the potential to increase wastewater user rates.

First DBWT Proposal

Updated DBWT Proposal

DBWT's March 19, 2015 PowerPoint Presentation

DEQ's March 13, 2015 Letter to Support Health of the Bay Discussion

DEQ's March 30, 2015 Email to Support NEPA and Timeline Discussion

Planning and Design History for Empire Option

Attachment 7 \underline{a} and \underline{b}

North Spit Feasibility Studies (The City and The Port)

Goal 11: Public Facilities & Service

LNG's April 17, 2015 Email to Support Current Design Discussion

DBWT's Timeline and Capital Cost Comparison

ATTACHMENT 11

The Dyer Partnership Critique of the City of Coos Bay's Evaluation of DBWT's Proposal