MINUTES
CITY OF STEVENSON
SPECIAL COUNCIL WORKSHOP
November 19, 2018
6:00 p.m., City Hall

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1. **CALL TO ORDER:** Mayor Anderson called the meeting to order at 6:00 pm and conducted roll call.
   PRESENT: Councilmember Robert Muth, Councilmember Matthew Knudsen

2. **CERB Alternatives Analysis Project:** Overview of scope and discussion.

3. **Pretreatment Discussion**: What other cities/utilities/beverage producers typically do on pretreatment – Presentated by John Mercer, Brewery Wastewater Design (Tetra Tech team).

4. **Data Review and Discussion**: Data comparison from prior testing was provided as a handout and discussed.

More detailed notes are included in the attached document from Tetra Tech.

3. **ADJOURNMENT** – Mayor Anderson adjourned the meeting at 7:52 pm.

   _____ approved; _____ approved with revisions

   _____
   Scott Anderson, Mayor Date

   Minutes by Leana Kinley

TETRA TECH

Meeting Minutes

Date of Meeting:	December 3, 2018
Meeting Topic:	City of Stevenson Additional Wastewater Alternatives Analysis Workshop 1
In Attendance:	Cyndy Bratz (Tetra Tech), Hunter Bennett-Daggett (Tetra Tech), Matt Huxley (Tetra Tech), Bruce Nissen (LDB Beverage Company), Ian Lofberg (City of Stevenson), Tabatha Wiggins (Walking Man Brewing), James Landers (Walking Man), Leanna Kinley (City of Stevenson), Ken Daugherty (Skamania Lodge), Ben Shumaker (City of Stevenson), Steve Waters (Backwoods Brewing), Amy Weissfeld (City of Stevenson), Scott Donoho (Skunk Brothers), Pat Albaugh (Port of Skamania) On Phone: John Mercer (Brewery Wastewater Design), Jim Santroch (Tetra Tech), Troy Vassos (Integrated Sustainability Consultants)
Prepared by:	Cyndy Bratz (Tetra Tech)
Project:	Additional Wastewater Alternatives Analysis ***Project Number:*** 200-48600-19001

These minutes summarize items discussed and issues resolved at the subject meeting to the best of the recorder's recollection. Recipients with different recollections or understandings of the meeting are asked to contact the recorder as soon as possible so that corrections can be made.

SESSION 1

Hunter opened the workshop and summarized efforts to date, schedule, and overview of the workshop alternatives. He distributed the assessment table and explained the scoring methodology. Cyndy explained the list of alternatives under consideration at this workshop (A-1 through C-2).

Alternative C-1 is "Use on-site BMPs at SIUs + install primary filtration and increased solids handling capacity at WWTP". Bruce asked about the primary filter role and Hunter explained it is for load reduction at the existing City of Stevenson Wastewater Treatment Plant (WWTP).

Industry Best Management Practices and Costs

Hunter stressed the impact of the best management practices (BMPs) implemented at Walking Man Brewing.

John stressed the importance of flow equalization to maintain a consistent biological load to the WWTP and clarified the definition of side-streaming (i.e. - removing discharge to the public sewer).

James explained the BMPs implemented at Walking Man. These include screening for solids and sending the trub to a dairy farm. The trub is high in protein and has high value to the dairy farm.

Steve said that Backwoods Brewing side-streamed cold yeast but not the hot side during the second phase of the 2018 testing. He questioned the effectiveness of BMPs at their facility (they are not currently sidestreaming). James acknowledged Walking Man's success may not necessarily be replicated elsewhere. They generate half of the solids that Backwoods Brewing does, but it depends on the beer.

John stressed that BMPs are almost always more cost-effective than treatment, often by orders of magnitude but stated that hauling was often the most expensive part.

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Bruce stated that he had been quoted $0.41 per gallon to haul liquid waste, which he considers prohibitively expensive. They have been collecting high-strength waste in totes and then metering to sewer in the off-hours to avoid shock loading the WWTP. John described Mount Hood Brewing as an example and they are paying $0.10 per gallon to haul, albeit to an unknown destination.

Tabatha questioned if there were other Significant Industrial Users (SIUs) on the system that might account for the high BOD at the WWTP, such as the school, grocery stores, and restaurants. Hunter explained that samples were taken at a manhole near these sources and recorded a BOD concentration of 600 milligrams per liter (mg/L), which is below the Washington Department of Ecology's definition of high-strength wastewater.

Steve questioned if the sewer billing included a unit cost of treatment. Leanna clarified that sewer bills are based on water usage of approximately 2.5 cents per cubic foot (CF).

Bruce described BMPs implemented at LDB. He explained that operators received training to balance flows between zones and prevent overflowing to the drain. He estimates they have prevented 10,000 to 12,000 gallons per day in overflows to the sewer.

Satellite Treatment Alternatives Overview

Cyndy gave an overview of the satellite treatment alternatives. Troy provided an in-depth description of the three main technologies for satellite treatment: traditional activated sludge, membrane biological reactor (MBR), and moving bed biological reactor (MBBR). MBR and MBBR plants can achieve a higher quality effluent in a more compact space compared to activated sludge. MBBR plants do not produce as high a quality of effluent compared to MBR but are easier to maintain, operate, and remove solids. They also are more flexible, as treatment capacity can be increased in smaller increments. Troy stressed that it is better to treat solids anaerobically and do as much as possible with side-streaming.

Cyndy expressed that satellite treatment with these technologies would be expensive. Troy reiterated this point and stated that an oxidation ditch is the cheapest form of treatment, and the goal of satellite treatment should be to reduce shock loads to the WWTP.

Cyndy described two example MBR technologies: Cloacina and MicroBLOX. Tabatha expressed concerns with the cost, as did Amy who expected satellite treatment to be less expensive. Troy reiterated that the goal of the satellite treatment should be equalization and reducing shock loads to the WWTP, which should have lower cost than MBR or MBBR. Both Bruce and Cyndy stressed the importance of BMPs to reduce treatment costs.

Overall System Improvement Approaches

Ben requested a clarification of terminology for satellite treatment and pre-treatment as it applies to the alternatives analysis. Hunter explained that a satellite treatment plant would not discharge to the sewer, but to a separate outfall or to a beneficial reuse. Wastewater would have to be treated to a high effluent quality (Class A) if reused on a golf course, for landscape irrigation or in a botanical garden. Pre-treatment would discharge to the sewer and only provide enough treatment to reduce shock loading at the WWTP plant such as equalization and reducing BOD and pH at the source.

Steve questioned the cost difference between side-streaming and increased sewer rates to treat.

Ben stated that future residential growth would be focused on the west side of town.

Tabatha asked if it would be more cost-effective overall to make improvements at the WWTP instead of constructing satellite treatment and would prefer to see savings at the WWTP. Hunter answered yes but

improvements would still be needed at the plant such as adding redundancy. Also, timing is important to meet the Ecology schedule and lift moratorium on development.

Amy asked if the goal of the WWTP was to provide capacity for the next 20-years and Eric said yes.

Amy asked if it would make more sense to construct a pre-treatment plant for the entire east side of the City. Cyndy and Hunter stressed that this would not be cost-effective due to the high overall volume and low strength of the wastewater. Capturing high-strength wastewater at the source (i.e. at the Port) would be much more efficient in terms of BOD reduced per gallon treated.

Botanical Garden Beneficial Reuse

Cyndy introduced the botanical garden beneficial reuse concept. Troy gave an overview of two commercial systems including Solar Aquatics and Organica. These have a high appeal from a public perspective and he described Sechelt, BC as an example. Property owners in Sechelt believed a botanical garden increased their home values. It was stressed that in order to use wastewater for a botanical garden it would have to be treated to a very high standard (Class A) and would be implemented in conjunction with a satellite treatment plant.

Cyndy asked if Skamania Lodge would have any interest in constructing a botanical garden in conjunction with satellite treatment. Ken stated that they could not see the benefit to the Lodge and they would not be interested. Nor would they be interested in reclaimed water for irrigation, given that they have no plans to expand the golf course.

Bruce expressed concern with the cost of a botanical garden in addition to necessary satellite treatment. Tabatha said it could make sense if it were grant-funded. Ben also stated the potential benefit to the City for increased tourist revenue and offsetting water usage.

SESSION 2

WWTP Improvements

The session after a break started with an overview of WWTP improvements included in the alternatives analysis:

Cyndy gave an overview of Primary Filtration and noted that it is effective at reducing particulate BOD load to secondary treatment. She gave Caldwell, Idaho as an example where it was evaluated, but not implemented. Depending on the location, the primary filter can remove a significant amount of organic material upstream of the secondary process, which can potentially reduce the size requirements for secondary treatment but increase the size requirements for solids digestion and handling. She stressed that it is not effective at removing soluble BOD and did not get good removal results during pilot testing at The Dalles (approximately 5- to 8-percent removal through the primary filters tested).

She introduced the BioforceTech composting dryer as an example of advanced solids handling technology that produces Class A biosolids and utilizes heat recovery to drive most of the process. The feed solids to the composting dryer must be dewatered. Leanna asked if the drier could accept food waste. Hunter stated that it could but some additional processing (i.e. grinding) is probably required.

Ken said they are looking at installing a food dryer for composting. Jim is familiar with a company called Impact Bioenergy that manufactures small food waste-to-energy equipment. It was asked if this unit can handle municipal sewage waste and Jim believed it can.

Cyndy gave an overview of the Selector Basin alternative in conjunction with BMPs. Ecology is strongly in favor of adding a selector basin at the WWTP since they expect it to increase solids settleability. This is a Phase 1 project in the Stevenson Facilities Plan which could be advanced as Phase 1a (as a small project that would be fairly quick to implement). Jim stated that Ecology might acknowledge a 33-percent increase in WWTP influent BOD loading (equivalent to 200 ppd) with the addition of a Selector Basin. Cyndy questioned whether a new headworks and other upgrades may be necessary with the Selector Basin. Hunter stated that adding a Selector Basin in conjunction with BMPs might be enough to raise the moratorium on development.

Eric asked if a Selector Basin would increase capacity by 50-percent, given that the WWTP is known to have a higher capacity than rated. Jim said it possibly could, but Ecology would require modeling and testing. Initial rating might be 700 ppd and could increase to 800 ppd with successful testing. The maximum BOD rating is limited to 800 ppd unless aeration capacity is increased. New staff at Ecology may be more in favor of re-rating.

Assessment of Alternatives

Hunter presented the Assessment Table and described each alternative and the evaluation criteria.

Steve questioned the cost-effectiveness of BMPs with Alternative A-3 and wanted to consider pre-treatment without BMPs. He felt that it would be better to own assets (i.e. pre-treatment facility) than pay fees.

Cyndy stressed the risk to the City of constructing a pre-treatment facility specifically for SIUs that may relocate in the near term. If this were to occur, Steve proposed piping other areas of the City to the plant. Hunter and Cyndy pointed out the cost of this would be prohibitive.

Tabatha proposed eliminating all of the satellite treatment options (B-1, B-2, B-3) given their apparent cost and lack of perceived benefit. This was agreed to by all.

Bruce questioned the overall cost to the community of the WWTP improvements with pre-treatment. Cyndy reiterated that it would be necessary to upgrade the plant regardless to meet Ecology requirements. Jim reiterated this as the WWTP is at capacity even without the SIUs. However, implementing BMPs could move the timeline for improvements to the WWTP out by as much as 5 years.

Tabatha and Bruce expressed concern that they do not want to pay for improvements required for the whole City. Steve reiterated that BMPs will be expensive.

Ken questioned the cost of required WWTP improvements with and without the Port contribution. Hunter stated that without the Port the BOD load would fall within the current plant rating. Cyndy stressed that many improvements would still be required, such as adding redundancy and replacing 30- to 50-year-old equipment.

Cyndy asked Eric if there had been any progress on setting up a primary filter pilot test at the WWTP. Eric said there had not been as it would be expensive and require pumping from the filter to the oxidation ditch. Hunter stressed that it might not help reduce brewery BOD as it is mostly soluble and quoted the poor results of The Dalles pilot project as an example. Eric believes it may still be worthwhile in conjunction with anaerobic digestion as it will offset solids hauling costs. He will pursue the pilot study further.

Bruce felt the need to understand the cost, timeline, and benefits of each of the options. He specifically wanted to know the cost per pound of BOD removed for each option.

Pat questioned the cost of the packaged treatment plants. It was pointed out that their unit cost (cost per gallon) is usually higher than costs for municipal treatment but that they can be sized for current flows, as opposed to a public WWTP, which has to take into account future flow projections. The stakeholders agreed that the pretreatment facility would be sized for current flows plus the 5-year growth projections provided by each SIU.

Pat pointed out three locations on Port-owned property where a satellite plant could be installed: in front of the Port building, directly across the street by the railroad tracks, and at the north end of Cascade Avenue.

Next Steps

By removing the three B options, no scoring was necessary to reduce the total list to four alternatives (A-1, A-2, C-1, C-2). Tetra Tech will develop detailed information for each alternative, to present at Workshop #2 in January. It was agreed that Tetra Tech would score the alternatives prior to Workshop #2 to provide a starting point for discussion.

In order to guide the scoring, the criteria were discussed and modified. "Education and Conservation" was removed and "Impact on Project Phasing" was added. Each stakeholder voted on a preferred weight for each option, and the average weights were calculated and discussed. Although the group collectively scored "Implementation Speed" lower, Amy stated that the City Council would likely assign a higher priority to this category, so it was increased to 4.0.