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**Date of Meeting:** November 19, 2018

**Meeting Topic:** City of Stevenson Special City Council Meeting

**In Attendance:** Mayor Scott Anderson, Matthew Knudsen (City Council), Robert Muth (City Council), Eric Hansen (Public Works), Ben Shumaker (City Planner), Leana Kinley (City Planner), John Mercer (Brewery Wastewater Design), Cyndy Bratz (Tetra Tech)

**Prepared by:** Cyndy Bratz

**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.

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## INTRODUCTION AND PROJECT OVERVIEW

This special City Council meeting was held on November 19 to exchange information regarding the Stevenson Additional Wastewater Alternatives Analysis. Cyndy Bratz introduced John Mercer and said that Tetra Tech added him to the project team because of his extensive experience helping other cities and beverage producers (mostly breweries) resolve the same issues currently facing Stevenson.

Cyndy walked attendees through an overview of the project scope and explained the upcoming workshop to be held on December 3. The objective for the workshop is to set the evaluation table, and short-list alternatives to four.

## DATA SAMPLING RESULTS

Cyndy handed out graphs of sampling data collected from the wastewater of the significant industrial users (SIUs), which are the local beverage producers and Skamania Lodge. Data from individual SIUs was not discussed in detail. Cyndy described the difference between Tetra Tech's method of calculating averages from the data (standard mean calculation) and the methods previously used by Wallis Engineering (flow-weighted average and averages including days when no data was collected). Tetra Tech does not plan to bring the difference in data calculation methods into workshop discussions, but wanted the City to be aware of the different approaches.

## IDENTIFICATION OF SIGNIFICANT INDUSTRIAL USERS

Leana said that Stevenson's pretreatment ordinance identifies limits for flow, BOD and other parameters to identify an entity as an SIU. This triggers an application from each SIU to the Washington Department of Ecology. Ecology may not issue a permit, but the City would enter into a contract with each SIU.

One option that was discussed is for the City to require that new industries (that want to connect to City sewer) do a study that tells the City how much flow and load their industry will generate, and what they could do to comply with the City pretreatment ordinance.

## PRETREATMENT ORDINANCE AND CONTRACTS

The City's pretreatment ordinance uses general language. Individual contracts will provide specifics for each SIU. An industrial pretreatment contract can address the following:

- Limits on biochemical oxygen demand (BOD). These limits could be based on load in pounds per day (ppd) for easy comparison with the Stevenson WWTP influent limits. Sampling and testing can only be done for concentration in milligrams per liter. Load would be calculated using concentration and water use over a certain period of time.
- A range limit for pH
- Limits on total suspended solids (TSS)
- Protocols for accidental spills—how to document and respond to them.
- Could include requirements for “calamity tanks” to contain or prevent accidental spills. A diversion valve could route flow to a calamity tank for containment, if needed. The tank would hold the flow until a decision is made on what to do with it.
- Data collection requirements. In John's experience, municipalities usually perform data collection and they require SIUs to pay for all testing. Another alternative would be for each SIU to self-monitor. Equipment specifications should be established for:
  - Flow meters
  - Data loggers for recording readings of pH, temperature, data from online instrumentation
- Surcharges related to limits. Most cities/utilities charge based on BOD concentration.
- Side-streaming can be required by incorporating language such as, “Spent trub (a brewing process byproduct) must be hauled offsite.”

## COST CONSIDERATIONS

Cyndy asked John who usually pays for improvements at an SIU's location. John said it is typically the SIU, but sometimes the local municipality (which then charges the SIU for the improvements). It is more common to require the SIU to pay, because having made that investment, the SIU is less likely to move to a location in another municipality.

One of the additional wastewater alternatives that the Tetra Tech team will evaluate is side-streaming, which is the diversion of waste beer, trub, spent yeast, etc. for treatment or disposal outside the City's wastewater system. Hauling high-strength waste is a subset of side-streaming and should be considered for the Stevenson SIUs. John mentioned that Mt. Hood Brewing at Government Camp has all of its solids and wastewater hauled away. River City Environmental is the hauler and charges Mt. Hood Brewing 10 cents per gallon to haul 17,208 gallons per day. This average cost of about \$1,700 per day equates to \$4 per pound of BOD.

## TREATMENT ALTERNATIVES

### Satellite Facility Location

The Stevenson WWTP is beyond capacity now, and improvements to increase capacity are proposed for completion in 2021. The City would like to have the current moratorium on industry lifted sooner than 2021 and is exploring options to achieve this. The City would consider paying for a satellite treatment facility (possibly at the Port Building or at Skamania Lodge) in order to reclaim enough capacity at the Stevenson WWTP to allow the moratorium to be lifted.

Consideration must be given to what would happen if the City builds a pretreatment facility and then the SIUs now operating in Stevenson leave town. Would the pretreatment facility attract other beverage producers or other types of SIUs? Ben mentioned that the biggest opportunity for growth is the west side of the City, which is an argument for locating a treatment facility there.

## Simple On-Site Pretreatment for pH Adjustment

John advocates for simple, low-cost pretreatment. Typical pretreatment is for pH adjustment only, using an equalization tank with mixer, a pH sensor, and a recirculating/discharge pump. These systems vary in how much automation is provided:

- When the pH comes into range, the pump activates and the system discharges to sewer.
- If pH is out of range, the pump recirculates rather than discharging.
- The system can be programmed to add the appropriate chemical to adjust pH, or pH can be adjusted manually.

Fully automated, the equipment may cost as little as \$20,000 (depending on SIU size). Installation depends on excavation and site conditions, which are site-specific. John seldom sees extensive satellite pretreatment systems and he recommends against them. He thinks side-streaming and small facilities for equalization and pH adjustment are much more cost-effective.

## Side-Streaming

The City asked if enough BOD reduction to lift the moratorium can be achieved with side-streaming, equalization and pH adjustment? John estimated that such measures may remove 320 ppd of BOD from the Stevenson WWTP influent. Cyndy stated that if the equalization tank were larger and aerated, it could reduce BOD even further and significantly reduce shock loads to the treatment plant. John noted that aeration liberates volatile organic compounds and generates odor, so aerated equalization tanks would require odor control.

The following options for side-streaming were discussed:

- Haul offsite for use as animal feed.
- Haul offsite for agricultural land application.
- Haul offsite for another use:
  - Bad batches of beer, cider, etc. are being hauled to Skunk Brothers for use there
  - Haul to an underloaded treatment plant
  - Composting.
- Haul to a wastewater treatment plant with anaerobic digestion and biogas utilization potential (possibly The Dalles).

Leana mentioned the eRIDE grant the City is applying for. This grant would fund a feasibility study for a regional anaerobic digestion facility. There would be additional cost for a biogas utilization system (either cogeneration or renewable natural gas production).

John said he has a client in Ontario, Canada who generated 6,000 ppd of BOD and reduced the load discharged to the sewer to 600 ppd BOD by side-streaming and hauling high-strength waste.

John described a custom-made portable drain (a rectangular basin on wheels) that can be plumbed so that high-strength process wastewater flows or is pumped to a tank that can be hauled offsite, or slowly metered to a sewer.

## **Stevenson WWTP Re-Rating**

Cyndy advocated for collecting more treatment plant performance data to demonstrate actual operating capacity of each unit process. This could be analyzed and presented to Ecology to request re-rating of the treatment plant capacity. Cyndy will email Eric more on this.

# STEVENSON ADDITIONAL WASTEWATER ALTERNATIVES ANALYSIS

## Overview of Scope

### TASK 1. PROJECT MANAGEMENT

### TASK 2. DATA ANALYSIS AND PRELIMINARY MEETINGS

Meetings with City, beverage SIUs, tour beverage facilities, meeting with Skamania Lodge: November 19 and 20, 2018

### TASK 3. WORKSHOPS AND ALTERNATIVES DEVELOPMENT

#### 3.1 Workshop #1: December 3, 2018

##### **3.1.1 Part 1: Prepare List of Alternatives and Evaluation Criteria**

Part 1 of this workshop will include developing an Alternative Assessment Table with a “long list” of potential additional alternatives. A draft Assessment Table with up to 6 (six) potential additional alternatives will be provided at the start of the workshop for review and revision by the workshop participants. The final “long list” of alternatives identified by the Part 1 Workshop is expected to include the following Value Planning strategies and possibly other additional strategies identified during the workshop:

- Side-streaming and resource recovery (which could be included as evaluation criteria).
- Satellite treatment systems at the beverage SIUs (2 levels/types of treatment such as minimum pretreatment including flow and BOD equalization and pH adjustment; or more extensive pretreatment).
- Satellite treatment system at Skamania Lodge such as treatment to meet Class A reclaimed water standards and on-site reuse for irrigation.
- One new treatment alternative at the Stevenson WWTP to increase BOD removal. This alternative will include primary filtration, solids handling processes to accommodate the additional sludge captured, and the effect on downstream liquid process sizing. The solids handling processes will be representative. This scope does not include a detailed comparison of solids handling and treatment processes.
- Botanical garden to be included as an option at potentially three locations.

##### ***Deliverables:***

- Completed preliminary Assessment Table, with no scoring, including the long list of additional wastewater alternatives and evaluation criteria.

### **3.1.2 Part 2: Short List Alternatives**

Part 2 of Workshop #1 will be led by Tetra Tech to preliminarily describe each alternative, to work with stakeholders to score the long list of alternatives, and to select a “short list” of up to four alternatives for further consideration in Tasks 3.2 and 3.3.

## **3.2 Additional Wastewater Alternatives Development**

12/4/18 – 12/21/18

Develop detailed information for each of the four short-listed alternatives from Workshop #1.

### ***Deliverables:***

- Additional Wastewater Alternatives Analysis Assessment Table and other handouts for Workshop #2

## **3.3 Workshop #2 – Score and Select Alternatives:**

January 3, 2019

The City will hold Workshop #2, which will be led by the Tetra Tech, to describe each alternative in detail and work with stakeholders to score the short list of alternatives and develop a recommendation to the Council.

### ***Deliverables:***

- Completed, scored and ranked Final Assessment Table for the Stevenson Additional Wastewater Alternatives Analysis.
- Selection of alternative(s) that will be recommended to City Council.

**Task 4.1 Council meeting to confirm alternatives:** week of 1/7/19

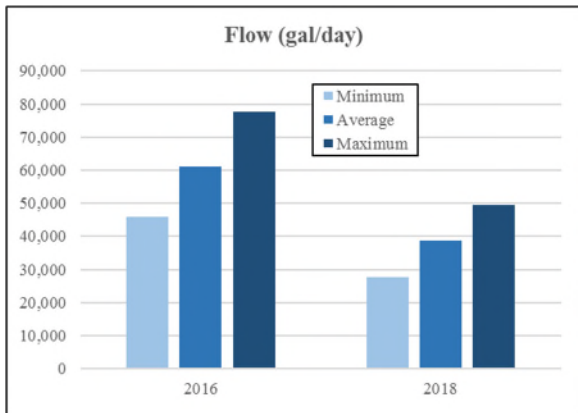
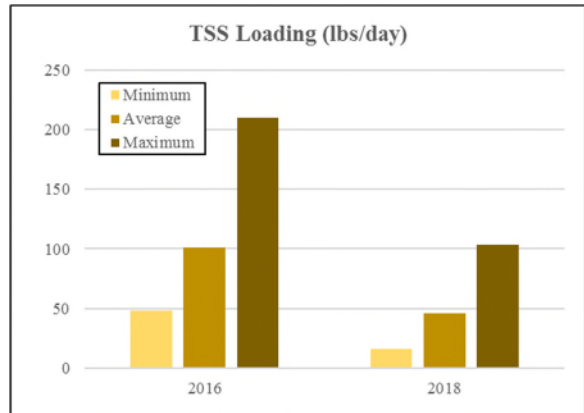
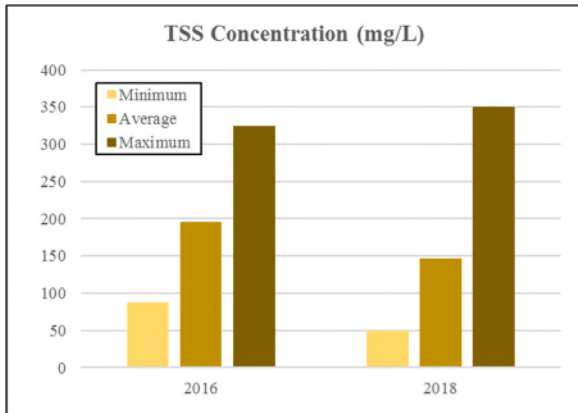
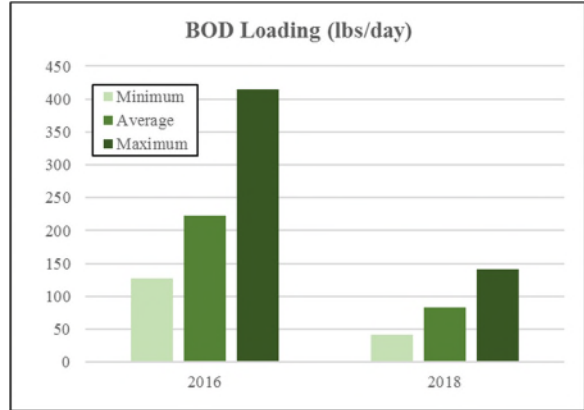
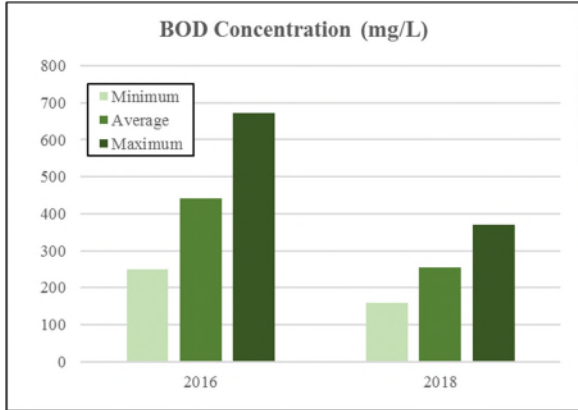
**Task 4.2 Public Hearing:** 1/17/19

**Task 5. Preparation of final documents:** 1/21/19 – 1/31/19

# City of Stevenson

## Additional Wastewater Alternatives Analysis

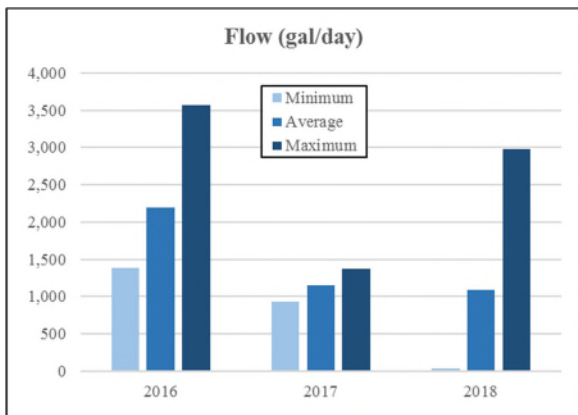
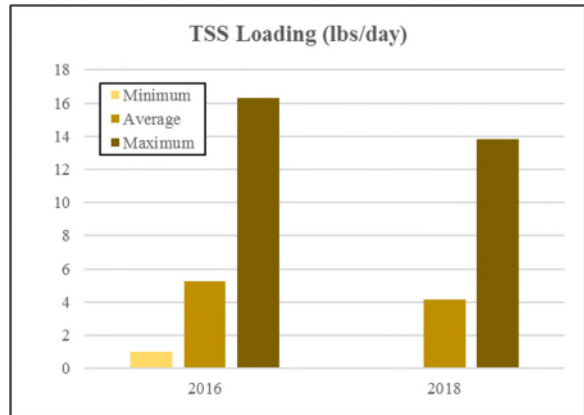
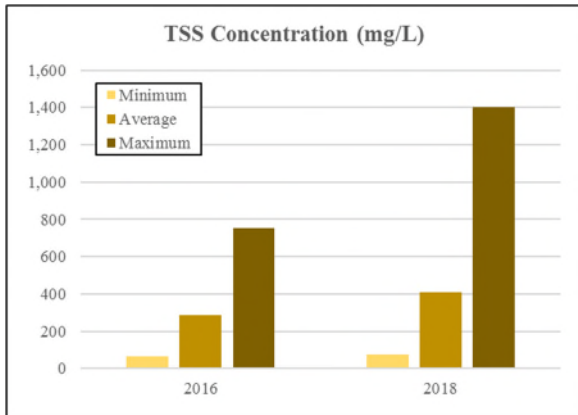
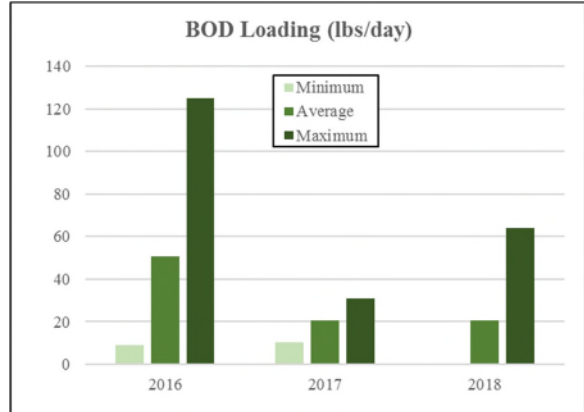
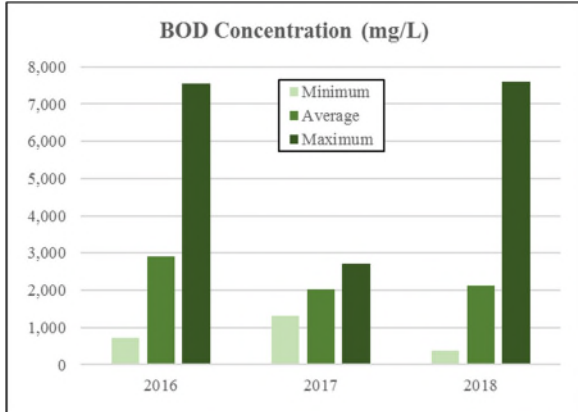
### Sampling Data – Skamania Lodge



# City of Stevenson

## Additional Wastewater Alternatives Analysis

### Sampling Data – Walking Man Brewing

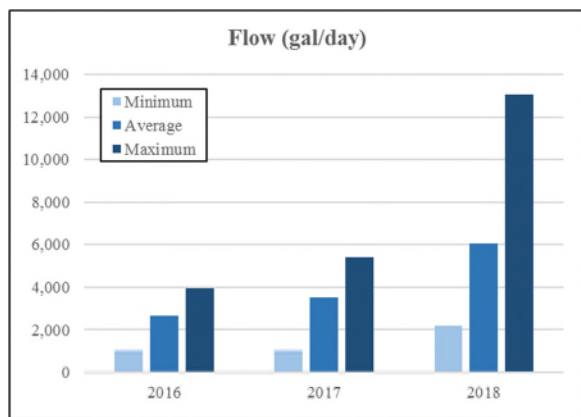
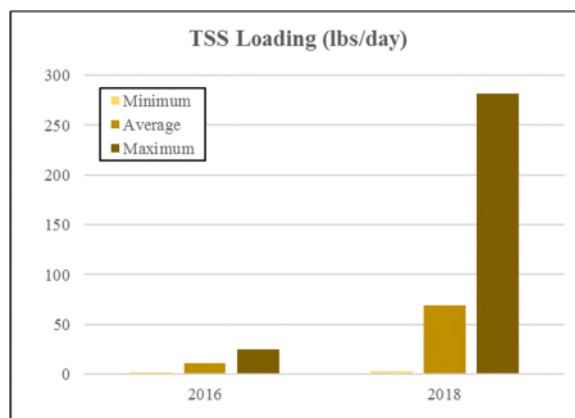
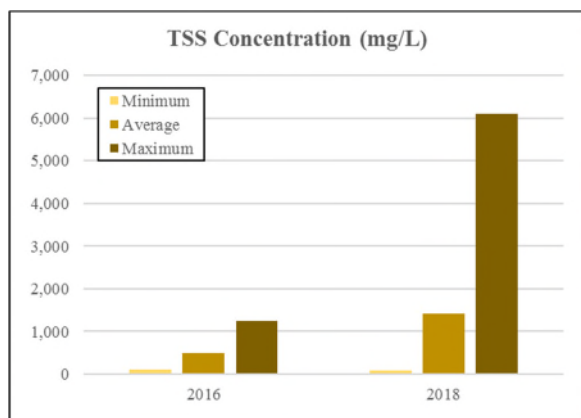
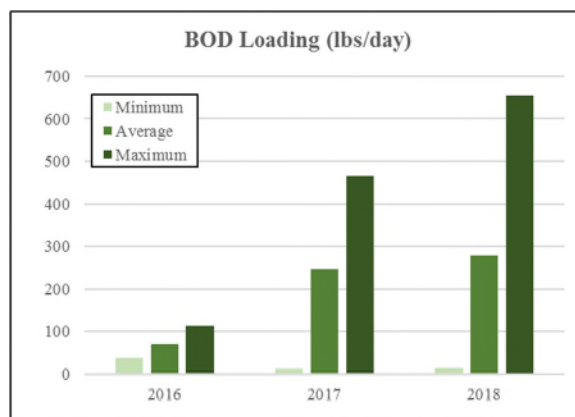
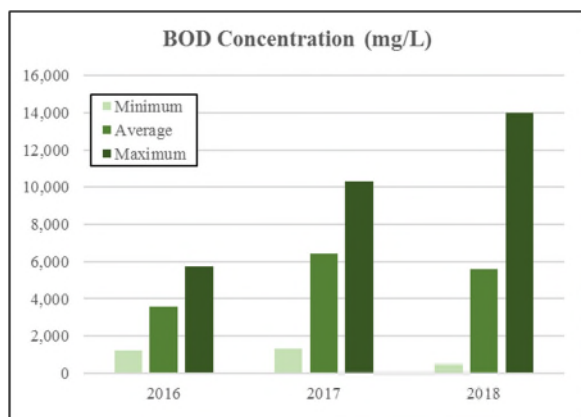




# City of Stevenson

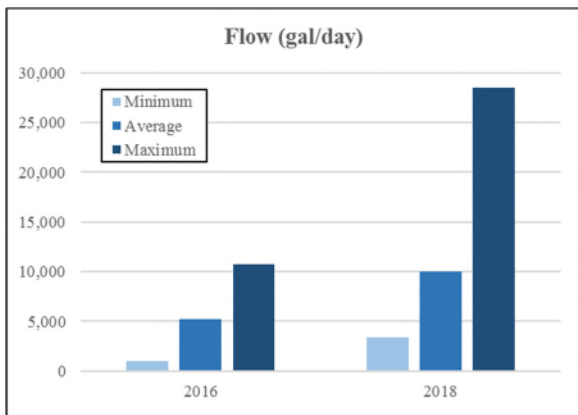
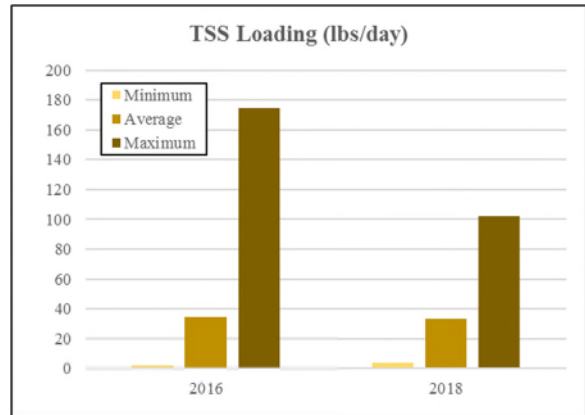
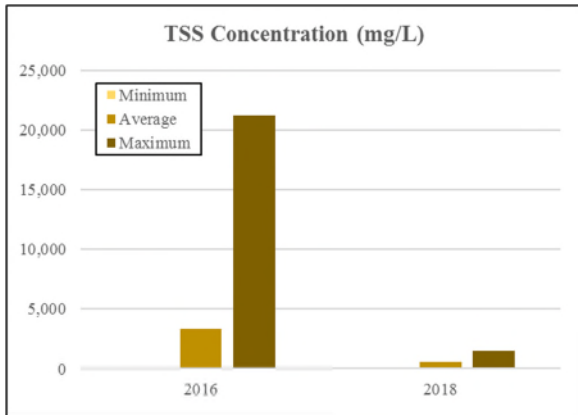
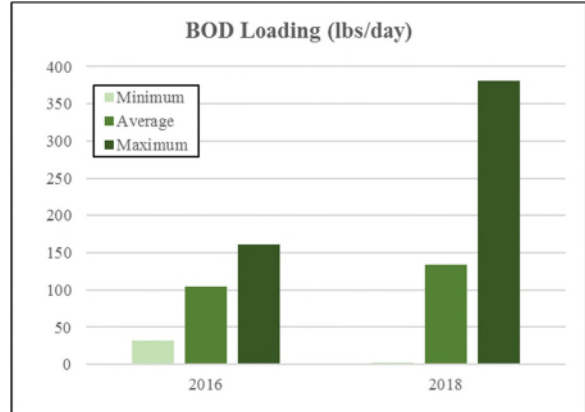
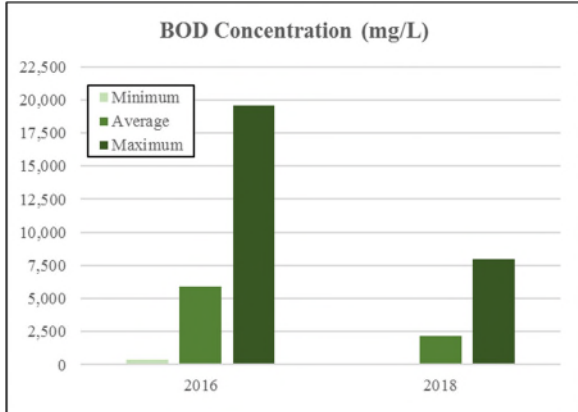
## Additional Wastewater Alternatives Analysis

### Sampling Data – Waterfront Building (Backwoods Brewing and Skunk Brothers)



**City of Stevenson**  
**Additional Wastewater Alternatives Analysis**

**Sampling Data – LDB Beverage**



**City of Stevenson**  
**Additional Wastewater Alternatives Analysis**

**Sampling Data – All Sources**

Discharger	September 2016 Sampling														
	BOD Concentration (mg/L)			BOD Loading (ppd)			TSS Concentration (mg/L)			TSS Loading (ppd)			Flow (gpd)		
	Min	Avg	Max	Min	Avg	Max	Min	Avg	Max	Min	Avg	Max	Min	Avg	Max
Skamania Lodge	251	440	672	127	223	414	88	196	324	48	101	210	45,972	61,043	77,538
Waterfront Bldg (Backwoods/Skunk Bros)	1,200	3,564	5,730	38	69	114	106	503	1,240	2	11	25	1,031	2,646	3,944
Walking Man	726	2,903	7,550	9	51	125	66	285	754	1	5	16	1,380	2,195	3,573
LDB Beverage / Jester & Judge	361	5,922	19,600	32	105	161	60	3,343	21,200	2	34	175	987	5,187	10,771
Beverage Industries Combined					225					5	51	216	3,398	10,028	18,288
Significant Industrial Users Combined					448					53	151	425	49,370	71,071	95,826
WWTP	546	869	1,753	519	903	1,828	390	808	2,180	317	831	2,273	53,000	115,000	152,000

Discharger	October 2017 Sampling								
	BOD Concentration (mg/L)			BOD Loading (ppd)			Flow (gpd)		
	Min	Avg	Max	Min	Avg	Max	Min	Avg	Max
Skamania Lodge									
Waterfront Bldg (Backwoods/Skunk Bros)	1,310	6,413	10,300	11	245	465	1,031	3,509	5,409
Walking Man	1,320	2,020	2,720	10	21	31	928	1,148	1,367
LDB Beverage / Jester & Judge									
Beverage Industries Combined									
Significant Industrial Users Combined									
WWTP									

Discharger	June-July 2018 Sampling														
	BOD Concentration (mg/L)			BOD Loading (ppd)			TSS Concentration (mg/L)			TSS Loading (ppd)			Flow (gpd)		
	Min	Avg	Max	Min	Avg	Max	Min	Avg	Max	Min	Avg	Max	Min	Avg	Max
Skamania Lodge	160	255	370	42	82	141	49	146	350	16	45	103	27,646	38,612	49,615
Waterfront Bldg (Backwoods/Skunk Bros)	480	5,572	14,000	15	279	655	88	1,418	6,100	3	69	282	2,181	6,069	13,076
Walking Man	370	2,114	7,600	0	20	64	73	408	1,400	0	4	14	38	1,084	2,976
LDB Beverage / Jester & Judge	33	2,203	8,000	3	134	380	55	563	1,500	4	33	102	3,411	10,054	28,499
Beverage Industries Combined				18	434	1,099				7	106	397	5,630	17,208	44,550
Significant Industrial Users Combined				60	516	1,240				23	152	501	33,276	55,819	94,165
WWTP	685	977	1,635	654	989	1,596	570	881	1,340	496	897	1,334	85,000	121,313	169,000



**City of Stevenson**  
**Additional Wastewater Alternatives Analysis**

**Sampling Data – Notes**

- Number of data points:
  - Skamania Lodge: 16 in 2016, 26 in 2018
  - Waterfront Building: 7 in 2016, 3 in 2017, 31 in 2018
  - Walking Man: 9 in 2016, 2 in 2017, 28 in 2018
  - LDB Beverage: 7 in 2016, 33 in 2018
  
- Comparison with General Sewer Plan projections:
  - Combined beverage industry flow is at level projected for 2039; BOD load is at level projected for 2043
  - Combined industry flow is at level observed for 2015; BOD load is at level projected for 2028 (this is due to drop in loading flow and load from Skamania Lodge)



# City of Stevenson Additional Wastewater Alternatives Analysis

## DMR Data – Influent BOD Loading

