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I/I and BOD at Stevenson

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Hi Eric, Leana and Ben

I noted at the April 19 Council meeting that language in the Facilities Plan/GSP Update may have given city council and others the impression that I/I could contain significant quantities of BOD. Here is information to clarify:

1. Appendix F, Pretreatment and Source Control Alternatives TM, p. 4 bottom half of the page shows TSS loading results for All Other Sources (not from high load dischargers). The TSS loading is higher than typical and the text shows a list of possible explanations. The explanations include:
 - a. "Possible TSS introduced to the system through I/I". TSS (mostly dirt) is frequently introduced to sewer systems with I/I, sometimes with small quantities of organic material (leaves, etc)
 - b. "Steep sewers which convey volatile suspended solids and organic material to the WWTP quickly, so the material does not have time to decompose as it frequently does in a sewer system with shallower slopes". This means that some additional TSS load may be conveyed to the Stevenson WWTP during rainstorms due to steep sewers. To clarify here, the text is talking about TSS, not BOD.
2. To assist with the distinctions, here are definitions of TSS and BOD:
 - a. TSS is suspended material that can be captured on a filter (the TSS test is performed by filtering wastewater, drying the solids captured by the filter and then measuring weight of the solids). TSS can include a wide variety of material, such as silt, decaying plant and animal matter, industrial wastes, and sewage.
 - b. Biochemical Oxygen Demand (BOD) is the amount of dissolved oxygen needed (i.e. demanded) by aerobic microorganisms to break down organic material present in a given water sample at certain temperature over a specific time period
3. We do have information on rainfall, WWTP influent flow and WWTP influent BOD. Hunter assembled this into the attached figures. Here are observations regarding the figures:
 - a. The Rain-Flow-Load Chart 2003 – 2017 shows this data over the past 15 years. As we've described previously, the BOD spikes in the late 2000's spurred Jim to suggest to Eric, and for Eric to require restaurants to install grease traps and to scrape their food waste in the trash (to be hauled to the landfill). This seemed to alleviate the problem from 2012 to early 2015. Then BOD load started increasing again and Eric and the City issued an RFP for the Facilities Plan Update.
 - b. The Rain-Flow-Load Chart 2012 – 2017 shows data over a 4-year period, so you can see correlations more easily. Same for the Rain-Flow-Load Chart 2012 – 2017. The data shows that rainfall has a direct correlation with WWTP influent flow, but not with WWTP influent BOD.
 - c. Generally, WWTP influent BOD appears to trend higher in summer months, although there are sporadic BOD spikes at other times of year.

Again, I hope you find a way to distribute this information to the Council and others interested.

Feel free to call if you'd like to discuss this further.

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3 attachments

 **Rain-Flow-Load Chart 2003-2017.pdf**
1684K

 **Rain-Flow-Load Chart 2012-2017.pdf**
729K

 **Rain-Flow-Load Chart 2014-2017.pdf**
408K