



MEMO TO: Mayor Vandernail and the Board of Trustees  
FROM: Michael Brack, Town Manager and Joe Fuqua, Wastewater Superintendent  
DATE: April 19, 2023  
SUBJECT: Industrial Pre-Treatment Program Options

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**MATTER BEFORE BOARD:**

Consideration of two industrial pre-treatment program (IPP) options to better address industrial waste coming into the wastewater treatment plant (WWTP), ensure that the plant can meet state discharge requirements, and enhance the WWTP's capacity to provide treatment for current and future development in the Fraser Valley.

**BACKGROUND:**

For the last several years, the expansion and establishment of breweries and distilleries in the Fraser Valley have led to issues regarding consistently increasing levels of industrial waste that is a byproduct of brewing and distilling manufacturing options. This waste comes to the WWTP which contains extremely high levels of chemical biochemical oxygen demand (CBOD) & Total Suspended Solids (TSS) i.e., organic load. CBOD is the first one removed by the "bugs", which are bacteria that remove compounds such as fats, sugars, proteins, and ammonia so that water can be further treated and discharged back into Fraser River. However, due to the excessively high organic loads coming into the WWTP, the bugs are not able to completely remove the ammonia during the treatment process which has resulted in discharge permit violations from the State of Colorado.

In 2022, a Bio-Solids Study was conducted that measured the organic load coming into the WWTP as compared to the flow of wastewater coming into the plant. The findings were based on the amount of BOD & TSS total suspended solids (TSS) coming into the plant. The plant was receiving loads that were equal to 8,333 Equivalent Residential Units (EQRs) when the total EQRs for 2022 allocated to all three of the sanitation districts were 6,088. This shows that the equivalent of 2,245 (8,333-6088) additional residential units' worth of suspended solids are coming into the plant.

This study, along with other supportive documentation, has demonstrated the need to implement an IPP that can work to reduce the amount of organic load coming into the plant so that the plant can effectively treat wastewater, specifically ammonia. This can also prevent further state violations and makes better use of the EQRs provisioned for current and future development.

### **IPP Option #1: Treat Industrial Waste at the WWTP**

The JFOC approves installation of Project N (nitrogen) at the cost of \$12 Million (estimated) to add an additional organic waste treatment facility to enhance nitrogen removal. This would require breweries and distilleries to meet zero discharge requirements with a supplied organic waste collection tank that would be collected by WWTP operators to be used as a carbon source to enhance nitrogen removal at the WWTP.

Northern Colorado Water Conservancy District has a driven interest in supporting both installation and operational costs towards this project with a contribution of 70% (~\$8.4M) towards this capital project. This leaves an estimated \$3.6M for the JFOC to pay including any financial burden passed through to the industrial waste source i.e., Breweries, distilleries.

### **IPP Option #2: Mandate Breweries and Distilleries to install IPP on Site**

Individual breweries, distilleries, and wineries install treatment systems that treat the organic waste and then dispose down the sewer. This will also remove the grains and wheats. This requires a more work intensive approach from the breweries, distilleries and WWTP staff to enforce and monitor compliance. The cost for breweries is approximately \$35-50k and is contingent on space available for this added equipment. The cost for distilleries is approximately \$1M and the cost for wineries is approximately \$20-\$35k.

### **RECOMMENDATION:**

Staff recommends the Board approve an option for presentation of an ordinance at the May 3, 2023 Town Board Meeting that will include code changes to the Town of Fraser municipal code that lays the ground work for Project N and the installation of IPP at the WWTP. This approach keeps the WWTP in control of IPP instead of sourcing out users and better ensures the WWTP's ability to meet regulatory requirements for their discharge into the Fraser River.

### **APPENDIXES:**

IPP Option #1: Treat Industrial Waste at the WWTP Handout

IPP Option #2: Mandate Breweries and Distilleries to install IPP on Site Handout