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## M E M O R A N D U M

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DATE November 1, 2018

TO Michael Pinney, PE  
Senior Environmental Engineer, Oregon DEQ

FROM Tyler J. Molatore, PE

SUBJECT City of Molalla  
Wastewater Facility and Collection System Master Plan

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Michael,

Responses to Oregon Department of Environmental Quality's (DEQ) Wastewater Facility and Collection System Master Plan (WWFCSMP) second review letter are provided in this memorandum. A revised copy of the WWFCSMP is enclosed for your final review.

- 1. ES-15 and throughout: Future Potential NPDES Permit: Permit limit negotiation is subject to multiple factors. The facility plan should not count on the "Potential NPDES Permit" limits as the basis for design for a new wastewater treatment plant.***

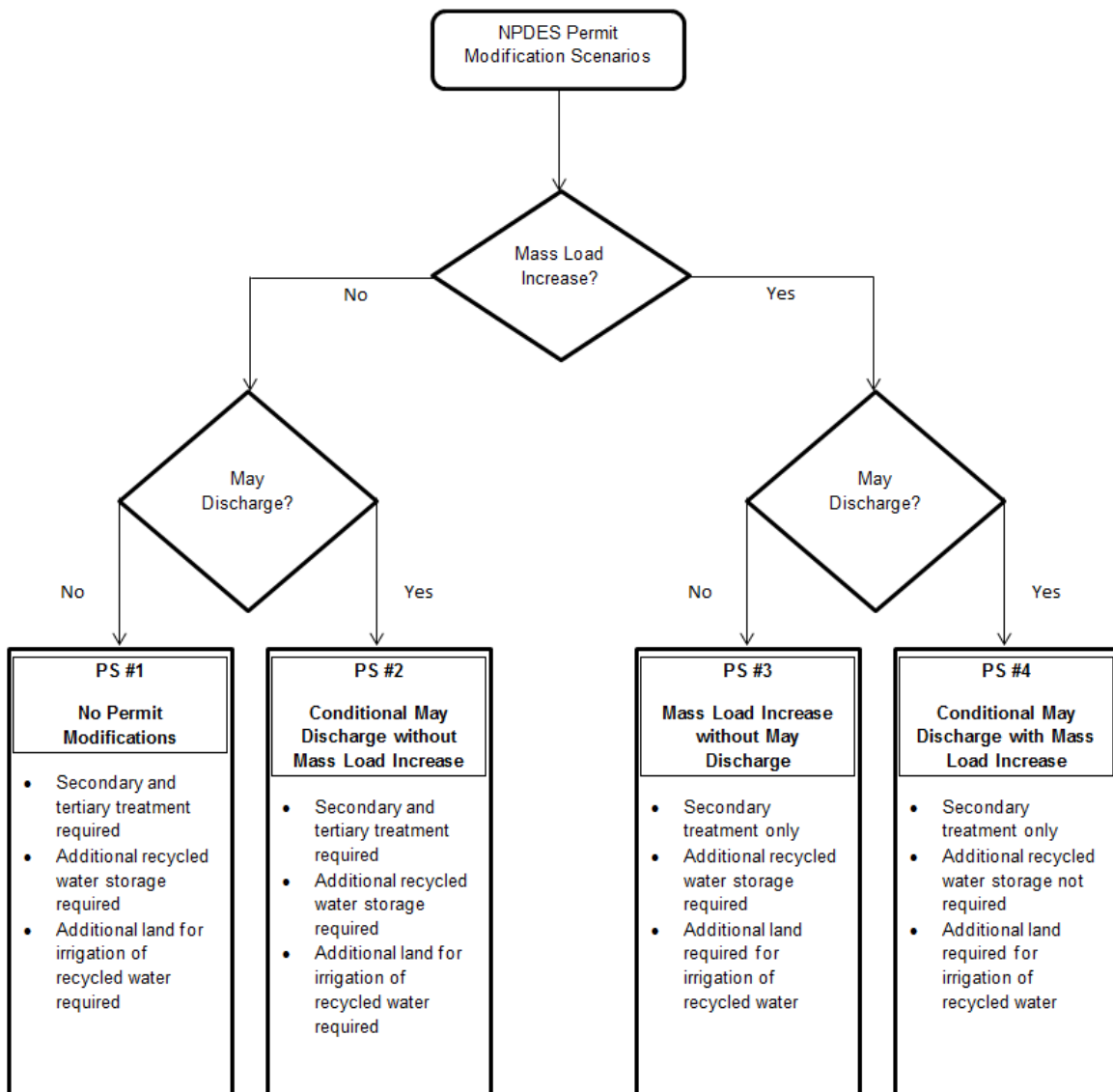
RESPONSE: The previous draft of the WWFCSMP was developed based on the assumption that the City of Molalla is successful in securing modifications to the NPDES permit that provide an increase in the mass load allocation as well as conditional discharge to the Molalla River during the summer months when river conditions allow. The request to address multiple permit conditions represents a substantial change to the WWFCSMP, and is more comprehensive than adding a single alternative.

The NPDES permit is the primary basis of the WWFCSMP. The basis, relative to the future potential permit, of the previous WWFCSMP draft was based in part on input from DEQ. A WWFCSMP kick-off meeting was held with DEQ and City staff on October 3, 2017. For additional input and concurrence, several meetings with DEQ and stakeholders were conducted during the development of the WWFCSMP. Drafts of each section were circulated to DEQ for comment. This approach is consistent with wastewater planning processes, and was interpreted as such. Drafts of each section were reviewed as they were developed, and consensus was granted. This concern was never previously presented.

Nonetheless, with the main goal of maintaining progress towards permit compliance and avoiding time delays, the WWFCSMP was revised to incorporate additional alternatives, evaluations, and recommendations based on four potential permit conditions. The outcome of the

pending NPDES permit modifications is uncertain and unpredictable, but will certainly have a profound impact on the WWTP, effluent disposal requirements, and costs to construct and operate facilities. Consequently, the revised WWFCSMP includes planning level content to address the four potential future permit conditions. The four possible Permit Scenarios (PS) are illustrated in Figure 1.1, below.

**FIGURE 1.1  
 NPDES PERMIT SCENARIOS**



2. *Page 3-4 "The basis for the NPDES Permit requirement of 10/10 mg/L BOD<sub>5</sub>/TSS during high stream flows is presumably a carry-over from when the City discharged to Bear Creek." We have the DMRs that show the treatment plant has managed to treat to 10/10 mg/L for many years and there is no reason to expect it to treat to less than its ability. In fact, the*

***treatment plant is required to operate at no less than its best ability. If Molalla wants the limit raised, they have to prove that the additional pollution load to the Molalla River does not negatively impact the river (anti-degradation review) and that they cannot reasonably meet the limit due to the design of the wastewater treatment plant (anti-backsliding review).***

RESPONSE: Though the existing WWTP has demonstrated the ability to periodically achieve < 10/10 mg/L BOD<sub>5</sub>/TSS concentration limits, the WWTP's historical performance has showed a chronic inability to consistently and reliably achieve < 10/10 mg/L BOD<sub>5</sub>/TSS and adherence to the mass load limits. The confidence level in discharge permit compliance is unsatisfactory, with which the historical violations and Mutual Agreement and Order (MAO) corroborate.

Establishing the permit based exclusively on past flows and the historical ability to perform in compliance with 10/10 mg/L BOD<sub>5</sub>/TSS concentration limits introduces complications with consistent discharge permit compliance in the future.

- The BOD<sub>5</sub>/TSS concentration limits are a function of the mass load limits. The flows in the current permit were not suitable for conditions at the time that the permit was originally developed, or considering the steady population growth since that time. The DEQ Fact Sheet and NPDES Wastewater Discharge Permit Evaluation (12/18/2003) reveals noteworthy facts concerning how the existing flows and discharge limits were etched into the current permit. According to the DEQ Fact Sheet and NPDES Wastewater Discharge Permit Evaluation (12/18/2003) for the City of Molalla, "DEQ has calculated a design average wet weather flow (AWWF) = 1.92 MGD that applies to the new discharge location [at river mile 20 on the Molalla River]." Therefore, in 2003, mass load limits were established based on actual average wet weather flows, not future flows, and not max month flows. In comparison, the Wastewater Facilities Plan as prepared by Tetra Tech/KCM (2000), specified an average wet weather flow in 1999 of 1.85 MGD, not drastically different than the flow established in the 2003 fact sheet. By defining the mass load limits based on historical, presumably pre-2003 flows; the City's WWTP was predestined for non-compliance. Either during max month flow events, or as a result of population growth, the City's WWTP was predisposed to eventually not comply with the discharge requirements. As a frame of reference, the City's population in 2000 was 5,962, compared to 9,939 in 2017. The design population for 2043 is 16,977, which is almost double the current population.
- The periodic ability of the WWTP to perform in compliance with the BOD<sub>5</sub>/TSS mass load and concentration limits also deceptively conceals other wastewater treatment plant deficiencies. Because of the permit's mass load and concentration limit restrictions, coupled with wet weather flows and deficient storage, the WWTP is unable to discharge to the Molalla River during the winter months at rates necessary to satisfy a water balance. The bottle neck, imposed by the mass load and concentration limits, manifests itself in discharges to the Molalla River during the summer months, a violation of the permit. Therefore, even though the wastewater treatment plant may show short-term periods of BOD<sub>5</sub>/TSS mass load and concentration limit compliance, the WWTP deficiencies are interconnected. Solely evaluating BOD<sub>5</sub>/TSS limit compliance, and establishing system capabilities, is incomplete

relative to the wastewater treatment plant's ability to perform in complete compliance with the discharge limits.

The City is in the process of preparing a memorandum to prove that the additional pollution load to the Molalla River does not negatively impact the river (anti-degradation review) and that they cannot reasonable meet the limit due to the design of the wastewater treatment plant (anti-backsliding review).

3. ***Page 3-7: Remove the statement: "Independent of how the current discharge requirements were derived, the existing WWTP's violations are the end-product of a deficient average wet weather flow in combination with unnecessarily strict BOD<sub>5</sub>/TSS concentration limits. Given the population growth, mass load limits, and concentration limits, the WWTP was prearranged to violate the discharge requirements." This statement is incorrect. The WWTP has been meeting these limits for many years. The treatment plant violations are as much a result of deferred maintenance as increased infiltration and inflow.***

RESPONSE: As supported by the MAO and violations summarized therein, the WWTP is unable to comply with BOD<sub>5</sub>/TSS concentration and mass load limits. This is largely due to deficient flows and concentration limits specified in the permit. Due to the existing BOD<sub>5</sub>/TSS mass load limits, and historical flows (driven by population growth), the BOD<sub>5</sub>/TSS concentration limits are increasingly restrictive.

Independent of deferred maintenance and infiltration and inflow opinions, the WWTP was predisposed to violate the permit given the permit requirements, existing wastewater treatment facilities, and influent loads based on population growth. Ostensibly, mass load limits, derived in the early 2000s, were not developed with an allowance for steady population growth, and didn't appear to take into account the imminent hydraulic and organic limitations of the existing wastewater treatment processes.

The facultative lagoons are undersized and overloaded organically, and have been for years. Properly designed and operated facultative lagoons, even with tertiary filtration systems, are not usually suitable for performing in compliance with strict BOD<sub>5</sub>/TSS limits.

4. ***TABLE 2.3.12 SUMMARY OF WWTP DEFICIENCIES: Some of the problems listed have been remedied this past year. Either list them with a "date the deficiency was addressed" or remove them from the list.***

RESPONSE: Table 2.3.12 was revised to take into account improvements to the wastewater treatment plant that have occurred during to the time elapsed for development and review of the WWFCSMP.

**5. *Alternative analysis: State the design basis for the competing wastewater treatment plant proposed.***

RESPONSE: Page 4-15 was revised to clarify that Tables 3.6.1 and 3.6.2 were used as the basis for the WWTP alternatives evaluations and improvement requirements.

**6. *Alternative analysis: What are the alternatives cost estimates based on? Which SBR, which Oxidation Ditch, and which MBR manufacturers?***

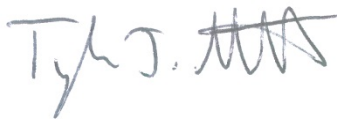
RESPONSE: Multiple proposals were secured from wastewater treatment and unit process manufacturers during the development of the cost estimates for each alternative. In our opinion, the facilities plan should be manufacturer neutral. To address DEQ's comment, page 4-23 was revised to specify the multiple manufacturers that were evaluated for each biological treatment technology.

**7. *Alternative analysis: One alternative is missing: Present an alternative treatment system under the assumption that the current concentration and load limit remain. Show what would a treatment system look like and cost as a comparison.***

RESPONSE: Per the response to question number one, the WWFCSMP was revised to include content for our potential permit scenarios (PS #1, PS #2, PS #3, and PS #4).

We believe that the recent changes to the WWFCSMP completely and adequately address DEQ's comments and requirements for wastewater facilities plans. We look forward to your final review and approval.

Respectfully,



Tyler J. Molatore, PE  
**THE DYER PARTNERSHIP  
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