Memorandum

DATE: November 2, 2022

TO: Abbey Stockwell,
Department of Ecology, Phase II Municipal Stormwater Permit Writer

FROM: Zachary Richardson, PE
City of Shoreline Surface Water Engineer II

RE: Pumping Direction in SWMMWW

CC: Amanda Heye,
Department of Ecology, Stormwater Engineer

Thank you for the opportunity to provide comments on the early draft of the SWMMWW update for 2024. Our comment pertains not to a new or revised provision of the manual, but to something we believe is needed in the manual, but which does not currently appear included in the update. **We believe the SWMMWW needs to include more clear and consistent direction on meeting the minimum requirements with pumped discharges.**

Shoreline is developing quickly with the approach of the 2024 light rail station openings, which corresponds with a major re-zone effort within the City to developed density hubs around the transit centers resulting from the new stations. Small plats, previously the bread and butter of the City's development, are becoming more scarce and large, multi-level, multi-family projects are becoming the predominant project type we are reviewing for compliance with Appendix A and SWMMWW. Typically, these projects include zero-lot-line construction with sub-grade garage spaces, and require pumping their stormwater in order to discharge to the City MS4 and receiving waters.

In reviewing these projects, staff have continued to implement the full provisions of each minimum requirements, without forgiveness for the impacts of a pumped discharge. However, pumps typically either sit idle (zero discharge) or discharge at the pump maximum flow rates instantly. Even if a costly variable-speed pump is used, the lower thresholds of the requirements (50% of 2-year and 2-year storms) are still smaller than most controllers can throttle the flow too. We routinely hear from designers that it is nearly impossible to meet the exact Flow Control (MR #7) standard as written and still provide a safe amount of overflow control or fail safes for pump failures.

It has been done successfully on a few occasions by utilizing a system of 4 small pumps or providing an additional stilling basin to help 're-mitigate' the pumped discharge. However, such small pumps create additional concern for managing flows in the event of extreme storm events, failed detention, and/or failed pumps. And the urban nature of these developments rarely affords enough room for another large diameter stilling basin at an elevated level. Neither option has been ideal.

We find, in our discussion with designers struggling to meet these requirements, that our interpretation is apparently stricter than most; with the general suggestion being that most jurisdictions have no concern for flow rates downstream of the detention system control structure, or that they prohibit pumped discharges all together. If true, the receiving waters are experiencing peaks flow rates at the maximum pump discharge rates, and are not receiving the benefit of matching peaks or durations per the Flow Control requirement (MR #7), nor the low-flow control per the LID requirement (MR #5).

City of Shoreline staff are of the opinion that the lack of direction around how to manage and treat pumped discharges in the context of meeting the minimum requirements has led to varied local interpretations that have resulted in, unintentional negative receiving water impacts, unintentional inequitable application of drainage standards across jurisdictions, and unintentional barriers to certain development types which are critical to regional housing efforts.

Accordingly, the City of Shoreline would like to request that Ecology consider and include new, additional, direction in the SWMMWW update to help ensure the minimum requirements are universally applied to pumped discharges per Ecology's intent. Even if Ecology decides that detention prior to a pumped discharge meets the intent of the minimum requirements without additional need (and designers have suggested peak-averaging may lead to this conclusion), simply adding a line to this effect would be a significant help to local reviewers.

We thank you again for the opportunity to comment and be included in SWMMWW development so early in the process. We appreciate the collaborative approach and look forward to the final results!