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MEMO

TO: **Nine Mile Creek Watershed District Board of Managers**

FROM: **Randy Anhorn**

DATE: **December 11, 2019**

RE: **Lake Cornelia Stormwater BMP_Rosland Park**

Background

At the Board's August 21, 2019 special and regular meetings, the Board ordered the Lake Cornelia in-lake alum treatment project and directed staff to analyze options for a project to reduce nutrient loading coming to the lake from stormwater runoff from the surrounding watershed.

One of the recommendations to reduce the phosphorus reaching Lake Cornelia from stormwater runoff was to construct a stormwater management BMP in Rosland Park and staff has begun a feasibility study to further evaluate stormwater management opportunities within the park.

Because the District would need approval from the City of Edina to implement a stormwater management BMP in the city park, staff met with City of Edina staff in mid-October, 2019, to discuss a couple stormwater management BMP project concepts for Rosland Park. These included a gravity driven underground filtration vault (Concept #1) and a pump-driven filtration stream with bioretention pools (Concept #2).

In Concept #1, water from Swimming Pool Pond would enter a treatment bypass where it would be routed by gravity to a subsurface filter constructed in the North Parking Lot, located between Swimming Pool Pond and Lake Cornelia. After passing through the filtration system, treated water would discharge via gravity to Lake Cornelia.

In Concept #2, water from Swimming Pool Pond would be pumped into a surface filter feature that resembles a creek. Water would filter through treatment media and a series of bioretention pools in the filtration stream and would then discharge downstream into Lake Cornelia. The pump would be powered by solar energy generation. This feature was proposed to be located in the open green space northwest of the North parking Lot. Concept #2, as originally proposed, would require considerable use of park land.

Following the mid-October meeting, the stormwater management BMP conceptual designs were revised to address feedback received from the city. The most significant changes were to

Concept #2 in response to the City's desire to minimize the BMP footprint to lessen impacts on current or future park use.

These revised concepts were presented to city staff (including representation from the Parks and Natural Resources, Engineering, and Public Works departments) in mid-November 2019.

The revised Concept #2 includes a pump-driven filtration treatment vault located at the edge of the North Parking Lot. In this revised option, water would be pumped from Swimming Pool Pond into an above-ground treatment vault, with the pump preferably powered (or offset) by solar energy generation. After passing through the filtration system, treated water would be discharged to Lake Cornelia. Following the presentation of the revised concepts, it was the consensus of city staff that revised Concept #2 was the preferred BMP. The main reasons this concept was selected as the preferred option was:

- The above-ground nature of revised Concept #2 allows for more design flexibility and increased treatment capacity, and will simplify the operation and maintenance of the filtration system
- The siting of the stormwater feature on the edge of the North Parking Lot will minimize park impacts and provide an opportunity to incorporate public art into the feature to make the system not only a functional means of reducing phosphorus to Lake Cornelia, but an attractive element of the park as well.

Staff presented this revised Concept #2 to the Edina Parks Commission on December 10, 2019 to get their feedback. In general, they seemed in favor of the project.

Request

Staff will present concepts to the board and discuss next steps which would include the development of a more detailed feasibility analysis to further evaluate the revised Concept #2 alternative (including, estimated costs, a hydraulic analysis, an estimate of treatment capacity and associated pollutant removals, consideration of options for pump operation, including solar power generation versus traditional gas or electric operation).