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Item 6Bii.
BCWMC 2-18-16

February 9, 2016
File: 193803348

Attention: Laura Jester
Keystone Waters, LLC
BCWMC Administrator
16145 Hillcrest Lane
Eden Prairie, MN 55346

Reference: New Hope Northwood South Area Infrastructure Improvements – BCWMC Treatment Requirements & Linear Projects Discussion
City Project No.: 974

Dear Laura,

As discussed, the City of New Hope plans on providing storm water treatment for the full reconstruction impervious area as required with the Minimal Impact Design Standards (MID'S). As described in the attached memo from Tyler Johnson, the amount of phosphorous removal proposed falls just short of the required 7 pounds of phosphorous removal per year. The City of New Hope requests credit to be applied from the Northwood Lake Improvements project (2016 BCWMC Capital Improvement Project) to satisfy the phosphorous removal requirement.

Storm Water Treatment

The table below provides additional detail on the MID's Improvement Options explored for this project.

MID's Improvement Options	Quantity (CY)	Est. Total Cost	Total Phosphorous Removal (lb/yr)	Replacement Cost at 20 years	Annual Cost per Phosphorous Removal Over 30 Years (\$/lb)
Filtration Trench	455	\$130,755	4.47	\$177,600	\$4,423
Iron-Enhanced Filtration Trench	455	\$160,809	6.6	\$177,600	\$3,292

The iron-enhanced filtration trenches show a higher initial cost, but do provide for a more efficient phosphorous removal as identified in the Annual Cost per Phosphorous Removal Over 30 Years. For this reason, we will be using the iron-enhanced filtration trenches as the treatment option with this project.



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Linear Projects & MID's Discussion

Attached is a map of the existing and future storm water quality features within the Northwood Lake area west of Boone Avenue. The 2016 work includes the Northwood Lake CIP (Concept A & C) project, as well as the Northwood South Area. In 2017, it is in the City's CIP to improve the streets and utilities to the north of the lake. By the end of 2017, it is the intention to complete and provide some type of storm water treatment prior to all outlets into Northwood Lake.

Meeting the new MID's requirements for linear projects places a burden on municipalities, not only financially, but also with the maintenance and future replacement of these storm water treatment assets. The City of New Hope is a fully developed city, and has soils generally not conducive for infiltration. As shown in the table below, it is estimated that the City of New Hope will be paying an additional \$160,809 in efforts to meet the MID's required 60% phosphorous removal.

City Storm Water Improvement	Est. Total Cost	Comments
General City Storm Sewer Improvements	\$295,600	Typical improvements for replacement of failing storm sewer, upsizing, sump structures, and additional inlet capacity.
Iron-Enhanced Filtration Trench Improvements	\$160,809	Additional treatment required for MID's FTO #2 Goal of 60% phosphorous reduction
Total City Storm Water Related Costs	\$456,409	
Percent Cost Increase Beyond General City Storm Sewer Improvements	154%	

New Hope plans to request phosphorous removal credit in future from the Northwood Lake CIP project, specifically for the drainage area which provides water quality treatment with the storm water reuse and rain gardens in Concept A. New Hope may be limited on completing reconstruction improvements due to storm water funding constraints.

As New Hope currently provides street sweeping once a week around Northwood Lake, and following rain events, credit from the sweeping should also be considered with the MID's requirements for linear projects. Within the past year, New Hope purchased and utilizes a \$230,000 waterless street sweeper which collects sediment and fugitive dust containing phosphorous.

We request additional discussion and review occur in the future in regards to linear projects and MID's requirements by the BCWMC and/or Technical Advisory Committee (TAC).



February 9, 2016
Ms. Laura Jester
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If you have any questions or require further information please call me at (651)604-4808.

Sincerely,

STANTEC

Christopher W. Long, P.E.

Attachments: Northwood South Area – Revised Storm Water Plan Sheets (C5.01-C5.08, C8.06); 2016 & 2017 Improvement Areas Map; Technical Memo from Tyler Johnson

Cc: Bob Paschke, Kirk McDonald, Bernie Weber – New Hope; Karen Chandler, Candice Kantor, Jennifer Koehler – Barr Engineering; Tyler Johnson, Jeremy Hauser, Kellie Schlegel, Adam Martinson – Stantec.

