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MEMORANDUM

TO: Mayor and City Council
Michael Johnson, City Administrator

FROM: Chris Cavett, PE, City Engineer
Chris Knutson, PE, Project Engineer

CC: Glen Sticha, Public Works Director

DATE: December 4, 2015

RE: 2015 Capital Improvements Plan (10 year CIP): 2016-2025
SEH No. NEWPR 124125 14.00

INTRODUCTION

In September of 2009, SEH prepared a 12-year Capital Improvement Plan (CIP) within the City of New Prague. A CIP identifies necessary improvements to the City's infrastructure, primarily as they pertain to streets, sanitary sewer, storm sewer, and water main. The intent is to prioritize, plan, and budget the improvements and outline a schedule of when they will be completed.

The 2009 CIP covered projects between 2010 and 2021. Most projects within that CIP have been reconstructed, some ahead of their original schedules, and only projects originally identified for improvements between the years of 2018 and 2021 still remain. The purpose of this memorandum is to update the original report with current (2015) construction costs and reanalyze the remaining projects needing improvement. The remaining areas identified in the 2009 CIP are generally east of Columbus Avenue N, west of Greenway Park, north of Main Street (TH 19), and south of 4th Street NE. In addition to this area, one block of 6th Street NE west of Pershing Avenue and one block of 1st Street SE between Lexington Avenue and 7th Avenue SE have been added to the CIP.

As Main Street (TH 19) is schedule for reconstruction between 2020 and is within the general project area, it has been added to this CIP update. In addition to the 2020 Main Street project, City staff and SEH have identified streets that should be considered for a mill and overlay as part of a pavement management treatment and have also included overlay streets within this current CIP update.

PROPOSED CAPITAL IMPROVEMENTS PROJECTS

Reconstruction Streets – 2021, 2022 and 2023 CIP's

Most of the pavement and curb and gutter within the CIP areas identified in the current CIP update as years 2021, 2022 and 2023, are in relatively fair condition. As the City Public Works has been regularly maintaining the streets, including seal coats and a paving project approximately 20 years ago, the pavement has only isolated failures. The exception to this would be parts of Sunrise Avenue, the eastern portion of 1st Street NE, and 1st Street SE. These streets have multiple areas of cracking, patches, and necessary curb and gutter replacement.

Sanitary sewer within the 2021–2023 CIP area is primarily comprised of vitrified clay pipe (VCP). This type of material is susceptible to cracking and is built with shorter sections of pipe, which increases the

number of joints. The joints and cracks allow groundwater and root intrusion in to the pipe, which can restrict flow within the sewer from sewage and result in higher maintenance costs while the groundwater is unnecessarily treated. The sanitary sewer was televised and surveyed for the purpose of updating the CIP.

Water main within the 2021–2023 CIP area is primarily 6-inch diameter cast iron pipe. This type of material is susceptible to breaking as it is relatively brittle and doesn't flex as well as newer pipe materials. It is also more likely to corrode, which can either result in a reduced pipe capacity or thinning of the pipe wall, resulting in burst water mains.

Storm sewer within the 2021–2023 CIP area drains to multiple watersheds and stormwater collection systems within the City. Pipe materials are a mixture of plastic, concrete, and metal. Though a hydraulic analysis was not completed for the CIP area, it appears that additional storm inlets and larger pipes will be necessary to meet current standards.

The order of these three improvements was determined primarily due to storm sewer needs:

- The 2021 project needs to occur first due to storm sewer improvements necessary east of Sunset Avenue N.
- Project 2022 is not dependent on either of the other projects could occur at any time, however it has the oldest infrastructure of the three areas.
- All three reconstruction projects are recommended to take place after the Main Street Reconstruction which is tentatively scheduled for 2020.

Main Street / TH 19 Reconstruction – 2020

Over a period of three years between 2013 and 2015, MnDOT District 7 staff, City staff and SEH have continued to have planning discussions about the future improvement options for Main Street/TH 19 in downtown New Prague. Both agencies have targeted a complete street and utility reconstruction improvement for 2020. In June 2015, the City Council approved a resolution in support of the project and supported the city leading the project, pending written assurance from MnDOT for financial participation in the project. In January 2016, both agencies are expected to enter into a Memorandum of Understanding to begin the preliminary design and planning phase for the project.

The proposed project area under consideration is Main Street from just east of the intersection with Fourth Avenue (TH 21) to Seventh Avenue SE. This segment of Main Street is approximately 4,950 feet (0.93 miles) long. This segment of Main Street passes through the central business district of the City, and existing land use along the corridor includes Memorial Park and mixed residential on the east end of the project area.

Overlay Streets – 2019, 2024 and 2025 CIP's

City staff and SEH have identified a number of streets over the next 10 years that will be exceeding 20 years in age. Most of the streets identified as likely candidates for overlays in the years 2019, 2024 and 2025 were constructed during development in the 1990's and early 2000's. From a pavement management standpoint, these streets should be considered for a mill and overlay improvement to protect the investment in the infrastructure.

At this point, specific street segments have not been specifically identified in this CIP as City staff and SEH are recommending that a formal street rating and prioritization process be implemented prior to the 2019 overlay project in order to identify the specific overlay streets and confirm the years for the proposed overlay improvements.

COST ESTIMATES

Cost estimates were developed for the projects described above and are summarized in the table below and in the attached cost estimate and funding summary.

These costs estimates are based on most recent 2015 bid pricing on local area projects. Costs were then summarized with an assumed annual inflation factor of 3% to project the estimated 2015 costs into future dollars for each respective year. These costs estimates and funding projections are intended for budgeting purposes only, as well as to understand the magnitude of cost associated with these potential projects.

The cost estimates as presented in this report are estimated "Total Project" costs, which include estimated construction costs, 10% construction contingency, and 25% project related costs. Project related costs include engineering, administrative, fiscal (bonding), and legal fees.

TOTAL SUMMARY OF ALL PROJECTS BY YEAR 2016–2025					
<u>PROJECT YEAR</u>	<u>TOTAL</u>	<u>WATER</u>	<u>SANITARY</u>	<u>STORM</u>	<u>STREET*</u>
2016**	\$0	\$0	\$0	\$0	\$0
2017**	\$0	\$0	\$0	\$0	\$0
2018**	\$0	\$0	\$0	\$0	\$0
2019 - Overlay	\$1,232,000	\$33,000	\$44,000	\$55,000	\$1,100,000
2020 - TH19/Main St*	\$8,711,500	\$851,300	\$698,400	\$325,500	\$6,836,300
2021 CIP - Reconstruct	\$2,821,500	\$404,784	\$342,693	\$274,632	\$1,799,437
2022 CIP - Reconstruct	\$3,249,300	\$522,696	\$435,375	\$316,078	\$1,975,177
2023 CIP - Reconstruct	\$3,270,800	\$534,577	\$354,696	\$255,888	\$2,125,640
2024 - Overlay	\$1,344,000	\$36,000	\$48,000	\$60,000	\$1,200,000
2025 - Overlay	\$1,456,000	\$39,000	\$52,000	\$65,000	\$1,300,000
Total	\$22,086,000	\$2,422,000	\$1,976,000	\$1,353,000	\$16,337,000

* Main Street costs include street reconstruction, streetscaping, landscaping and lighting costs.

** No improvements are currently proposed for years 2016 – 2018.

PROJECT FUNDING

Estimated project funding is presented in the attached cost estimate and funding summary and includes funding from water utility, sanitary utility, storm water utility, electric utility, general levy, assessments, and MnDOT.

RECOMMENDATION

From discussions with City staff and our own engineering review, we recommend:

1. The improvement projects be considered in the years outlined above.
2. At this time, no capital improvements are proposed for years 2016 – 2018.
3. The street and utility conditions in 2021, 2022 and 2023 CIP areas be reevaluated on an annual basis to verify if their conditions have deteriorated significantly enough to warrant a change in the programed year of improvement.
4. The entire New Prague street system should be formally inventoried and rated utilizing an industry accepted pavement management system.

5. Streets should be programmed for mill and overlay or other appropriate improvements in a timely manner in order to preserve investment in the street infrastructure.
6. The City Council should consider formally accepting this CIP update and holding a public hearing to memorialize the plan.

STANDARD OF CARE

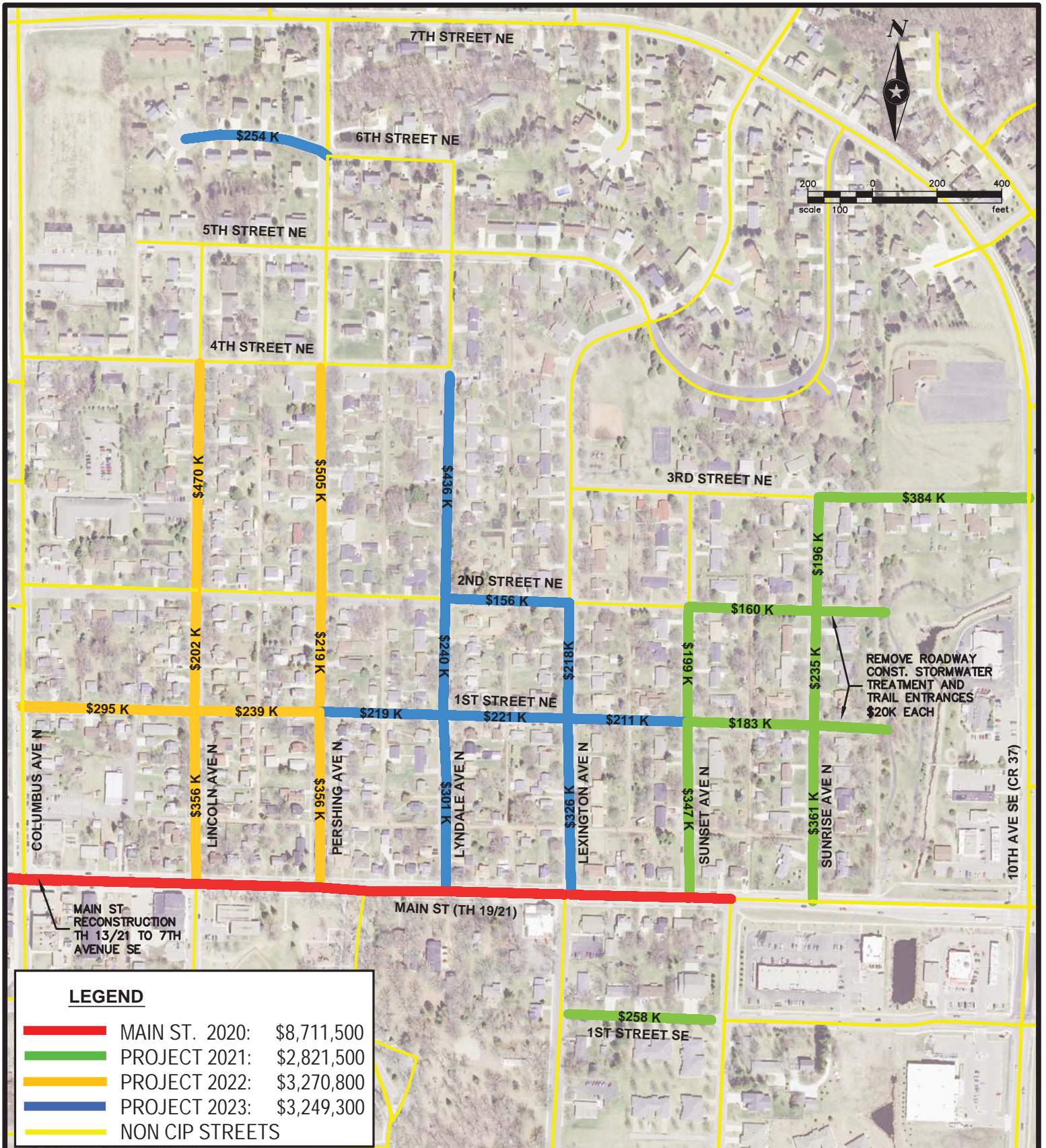
The conclusions and recommendations contained in this memorandum were arrived at in accordance with generally accepted professional engineering practice at this time and location. Other than this, no warranty is implied or intended.

Attachments:

Location Map

Cost and Funding Summary

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LOCATION MAP - CIP UPDATE

NEW PRAGUE, MINNESOTA

DATE
12-4-2015

NEWPR
124125

CITY OF NEW PRAGUE
 CAPITAL IMPROVEMENT PLAN AMENDMENT
 CIP YEARS 2019 - 2025
 CIP UPDATE: December 7, 2015

OVERLAY PROJECTS SUMMARY						
		TOTAL	WATER	SANITARY	STORM	STREET
2019 Overlay	2019 \$'s	\$ 1,232,000	\$ 33,000	\$ 44,000	\$ 55,000	\$ 1,100,000
2024 Overlay	2024 \$'s	\$ 1,344,000	\$ 36,000	\$ 48,000	\$ 60,000	\$ 1,200,000
2025 Overlay	2025 \$'s	\$ 1,456,000	\$ 39,000	\$ 52,000	\$ 65,000	\$ 1,300,000
PROJECT TOTAL		\$ 4,032,000	\$ 108,000	\$ 144,000	\$ 180,000	\$ 3,600,000

ESTIMATED FUNDING						
TOTAL	WATER UTILITY	SANITARY UTILITY	STORM UTILITY	MUN. STATE AID	GENERAL LEVY	TOTAL ASSESSMENT
\$ 1,232,000	\$ 33,000	\$ 44,000	\$ 55,000	\$ -	\$ 660,000	\$ 440,000
\$ 1,344,000	\$ 36,000	\$ 48,000	\$ 60,000	\$ -	\$ 720,000	\$ 480,000
\$ 1,456,000	\$ 39,000	\$ 52,000	\$ 65,000	\$ -	\$ 780,000	\$ 520,000
\$ 4,032,000	\$ 108,000	\$ 144,000	\$ 180,000	\$ -	\$2,160,000	\$ 1,440,000

TH 19/MAIN STREET RECONSTRUCTION						
		TOTAL	WATER	SANITARY	STORM	STREET
PROJECT 2020	2020 \$'s	\$ 8,711,500	\$ 851,300	\$ 698,400	\$ 325,500	\$ 6,836,300
SUBTOTAL		\$ 8,711,500	\$ 851,300	\$ 698,400	\$ 325,500	\$ 6,836,300

ESTIMATED FUNDING								
TOTAL	WATER UTILITY	SANITARY UTILITY	STORM UTILITY	MUN. STATE AID	GENERAL LEVY	TOTAL ASSESSMENT	ELECTRIC UTILITY	MNDOT
\$ 8,711,500	\$ 701,000	\$ 560,700	\$ 32,700	\$ 248,000	\$1,003,000	\$ 1,540,000	\$ 626,100	\$4,000,000
\$ 8,711,500	\$ 701,000	\$ 560,700	\$ 32,700	\$ 248,000	\$1,003,000	\$ 1,540,000	\$ 626,100	\$4,000,000

RECONSTRUCTION PROJECTS SUMMARY						
		TOTAL	WATER	SANITARY	STORM	STREET
PROJECT 2021 ("A")	2021 \$'s	\$ 2,821,500	\$ 404,784	\$ 342,693	\$ 274,632	\$ 1,799,437
PROJECT 2022 ("C")	2022 \$'s	\$ 3,249,300	\$ 522,696	\$ 435,375	\$ 316,078	\$ 1,975,177
PROJECT 2023 ("B")	2023 \$'s	\$ 3,270,800	\$ 534,577	\$ 354,696	\$ 255,888	\$ 2,125,640
SUBTOTAL		\$ 9,341,600	\$ 1,462,057	\$ 1,132,764	\$ 846,597	\$ 5,900,254

ESTIMATED FUNDING						
TOTAL	WATER UTILITY	SANITARY UTILITY	STORM UTILITY	MUN. STATE AID	GENERAL LEVY	TOTAL ASSESSMENT
\$ 2,821,546	\$ 323,827	\$ 291,289	\$ 274,632	\$ -	\$1,079,662	\$ 852,135
\$ 3,249,327	\$ 418,157	\$ 370,069	\$ 223,837	\$1,192,117	\$ 85,230	\$ 959,917
\$ 3,270,800	\$ 427,662	\$ 301,491	\$ 202,683	\$ 867,738	\$ 460,851	\$ 1,010,376
\$ 9,341,673	\$1,169,646	\$ 962,849	\$ 701,152	\$2,059,854	\$1,625,743	\$ 2,822,428

TOTAL SUMMARY OF ALL PROJECTS BY YEAR 2016 - 2025						
PROJECT YEAR		TOTAL	WATER	SANITARY	STORM	STREET
2016		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
2017		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
2018		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
2019 - Overlay	2019 \$'s	\$1,232,000	\$33,000	\$44,000	\$55,000	\$1,100,000
2020 - TH19/Main St	2020 \$'s	\$8,711,500	\$851,300	\$698,400	\$325,500	\$6,836,300
2021 CIP - Reconstruct	2021 \$'s	\$2,821,500	\$404,784	\$342,693	\$274,632	\$1,799,437
2022 CIP - Reconstruct	2022 \$'s	\$3,249,300	\$522,696	\$435,375	\$316,078	\$1,975,177
2023 CIP - Reconstruct	2023 \$'s	\$3,270,800	\$534,577	\$354,696	\$255,888	\$2,125,640
2024 - Overlay	2024 \$'s	\$1,344,000	\$36,000	\$48,000	\$60,000	\$1,200,000
2025 - Overlay	2025 \$'s	\$1,456,000	\$39,000	\$52,000	\$65,000	\$1,300,000
Total		\$22,086,000	\$2,422,000	\$1,976,000	\$1,353,000	\$16,337,000

ESTIMATED FUNDING								
TOTAL	WATER UTILITY	SANITARY UTILITY	STORM UTILITY	MUN. STATE AID	GENERAL LEVY	TOTAL ASSESS	ELECTRIC UTILITY	MNDOT
\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
\$1,232,000	\$33,000	\$44,000	\$55,000	\$0	\$660,000	\$440,000	\$0	\$0
\$8,711,500	\$701,000	\$560,700	\$32,700	\$248,000	\$1,003,000	\$1,540,000	\$626,100	\$4,000,000
\$2,821,546	\$323,827	\$291,289	\$274,632	\$0	\$1,079,662	\$852,135	\$0	\$0
\$3,249,327	\$418,157	\$370,069	\$223,837	\$1,192,117	\$85,230	\$959,917	\$0	\$0
\$3,270,800	\$427,662	\$301,491	\$202,683	\$867,738	\$460,851	\$1,010,376	\$0	\$0
\$1,344,000	\$36,000	\$48,000	\$60,000	\$0	\$720,000	\$480,000	\$0	\$0
\$1,456,000	\$39,000	\$52,000	\$65,000	\$0	\$780,000	\$520,000	\$0	\$0
\$22,086,000	\$1,979,000	\$1,668,000	\$914,000	\$2,308,000	\$4,789,000	\$5,803,000	\$627,000	\$4,000,000