

**MEETING AGENDA
ENVIRONMENTAL ADVISORY COMMISSION
August 28, 2017
6:00 PM**

North St. Paul City Hall – Sandberg Room
2400 Margaret Street



- I. CALL TO ORDER**
- II. ROLL CALL**
 - Simba Blood
 - Felicia Tolbert-Ireland
 - Glen Olson, Vice Chair
 - Sue Springborn, Chair
- III. ADOPT AGENDA**
- IV. APPROVAL OF MINUTES**
 - A. Approval of the May 22, 2017 regular meeting minutes.
- V. MEETING OPEN TO THE PUBLIC**

Note: This is a courtesy extended to persons wishing to address the Commission concerning issues that are not on the agenda. This discussion will be limited to 15 minutes.
- VI. PUBLIC HEARINGS**
- VII. PRESENTATION**
- VIII. COMMISSION BUSINESS ACTION ITEMS & RECOMMENDATIONS**
 - A. **Review/Discussion/Possible Action:** Solar Power
 - B. **Review/Discussion/Possible Action:** 2018 Road Reconstruction Project
 - C. **Review/Discussion/Possible Action:** Recycling Survey
 - D. **Review/Discussion/Possible Action:** Fix It Clinic
 - E. **Review/Discussion/Possible Action:** Mid-year goal status
 - F. **Review/Discussion/Possible Action:** Score Grant
 - G. **Review/Discussion/Possible Action:** Cancel or Re-schedule October EAC Meeting
- IX. REPORTS FROM STAFF**
 - A. **Review/Discussion:** Highway 36 Landscape Partnership Update
 - B. **Review/Discussion:** Community Café, September 11, 6:00 p.m. at Casey Lake.
Discussion regarding the environment and active living.
 - C. **Review/Discussion:** Bees and Chickens
- X. REPORTS FROM COMMISSIONERS**
 - A. **Review/Discussion:** Comprehensive Planning Taskforce Update.
- XI. ADJOURNMENT**

Next Meeting: September 25, 2017 City Hall - Sandberg Room

**MEETING MINUTES
ENVIRONMENTAL ADVISORY COMMISSION
May 22, 2017
6:00 PM**

North St. Paul – City Hall/Sandberg Room
2400 Margaret Street



I. CALL TO ORDER

Chair Sue Springborn called the meeting to order at 6:02 p.m.

II. ROLL CALL

Present: Sue Springborn, Chair
Glen Olson, Vice Chair
Simba Blood
Jan Walczak, Council Liaison

Absent: Felicia Tolbert-Ireland

Staff: Keith Stachowski, Public Works
Josh Bond City Forester
Debra Gustafson, Strategic Operations Director

III. ADOPT AGENDA

On motion by Commissioner Blood, seconded by Vice Chair Olson with all present voting aye, motion carried to adopt the agenda as presented.

IV. APPROVAL OF MINUTES

On motion by Vice Chair Olson, seconded by Commissioner Blood with all present voting aye, motion carried to approve the April 24, 2017 meeting minutes as corrected. Correction: Remove text that Vice Chair attended via teleconference, he was present at the meeting.

V. MEETING OPEN TO THE PUBLIC

Note: This is a courtesy extended to persons wishing to address the Commission concerning issues that are not on the agenda. This discussion will be limited to 15 minutes.

VI. PUBLIC HEARINGS-

VII. PRESENTATIONS

VIII. COMMISSION BUSINESS ACTION ITEMS & RECOMMENDATIONS

A. **Review/Discussion/Possible Action:** Forestry Update. City Forester Josh Bond provided the Commission with a forestry update.

- Tree Give Away: Commissioner Blood suggested calling it Tree Adoption instead of Tree Give Away. The Commission suggested taking up to 10 names on a waitlist. Have the tree adoption from 9-10:30am and call people on the waitlist if there are remaining trees from 10:30-11 a.m. The

Commission suggested sticking with the \$2,000 tree give away budget and adopting smaller trees next year. This year several people had difficulty fitting the trees in their cars. The Commission provided City Forester, Josh Bond with the proposed tree list for the 2018 tree adoption. Josh said he would check with the nursey to see what tree options they have available.

1. Black Hills Spruce
 2. Northern White Cedar
 3. Alternative Leaf Dogwood
 4. American Elm-St. Croix
 5. American Plum
 6. Butternut
 7. Kentucky Coffeetree
 8. Ohio Buckeye
 9. River Birch
 10. Serviceberry
 11. Showy Mountain Ash
 12. Swamp White Oak
- EAB Status: Forester Bond stated that EAB has not been detected yet in North St. Paul. The closest that has been detected is seven blocks west of Beaver Lake in St. Paul. Public Works is actively searching for signs and symptoms of EAB in Blvd. and Park trees, as well as private trees when inspection requests come in. Public Works is in the process of getting bids for treating trees. Vice Chair Olson asked what the criteria is to treat trees. Bond stated they are potentially looking to treat high value trees in Park. Vice Chair Olson inquired about tree companies doing work in town if they need to be licensed. Stachowski stated that tree companies that do work in North St. Paul need to be licensed. Community Development Department has the list of licensed tree companies. Josh reviewed the tree inventory images with the Commission from 2011 and 2017. The Ash population has been decreased by 7% so far due to street projects removals and off-project year removals. Chair Olson shared with the Commission information regarding the WASP watcher program.
 - Gravel Bed Dumpster Method: Forester Bond said the Gravel Bed Dumpster is going well. There is a cost savings to growing trees via gravel bed versus buying them at a nursey. Bond shared tree root photos with the Commission.
 - Improving Community Forests Through Citizen Engagement Grant. Forester Bond stated that the grant is going well. He stated that 25-30 volunteers helped plant 100 trees along the state trail. He stated the tree seward class was pushed back to June 20th from 6-9pm. Bond also shared information regarding the citizen pruner program.

B. Review/Discussion/Possible Action: Environmental Newsletter Articles. Gustafson stated that all articles need to be completed by June 30th. She stated that she tried to contact the Master Gardeners Coordinator regarding a pollinator article, but had not heard back. Simba stated that she would follow up with the Master Garden coordinator regarding the article. Listed below is a list of proposed articles.

<u>Article</u>	<u>Coordinating</u>
Fix It Clinic	Debra (completed)
Pollinators	Debra contacted the masters Gardener regarding an article

Organic Compost	Debra (completed)
Adopt A Drain	Simba
Pruning & Watering	Glen
Leaf Management &	Glen
Fall Yard Care	
Recycling Survey Results	Debra, if results are ready time of newsletter
Pumpkin Drop	Debra (completed)
Electric Rebates	Debra (completed)
Clean Energy	Debra (completed)

C. Review/Discussion/Possible Action: Highway 36 Landscaping. Liaison Gustafson stated that she spoke with the Public Works Director regarding the MNDot Landscape Partnership Program, he said he would be on board for one year then would like to review the project and how it went prior to committing to additional project years, The Commission and Liaisons Stachowski and Gustafson thought the Planters would be a good project to start with. Liaison Gustafson stated the next step to move forward with the project is to have City Council approve a Project Resolution to be included with the application.

On motion by Vice Chair Olson, seconded by Chair Springborn with all present voting aye, motion carried to recommend to City Council to approve a Resolution to apply for the MNDOT Landscape Partnership Application to do a planting at a cost of up to \$10,000 along highway 36.

IX. REPORTS FROM STAFF

- A. **Review/Discussion: Review/Discussion:** Opening On EAC. Gustafson stated she asked Laurie in Community Relations to put a notice of the opening on the channel 16 crawl.
- B. **Review/Discussion:** Recycling Survey Update. Gustafson stated 270 people have already completed the survey online. The City will be accepting paper and online surveys until June 30th!

X. REPORTS FROM COMMISSIONERS

- A. **Review/Discussion:** Comprehensive Plan Steering Committee Update. Commissioner Olson stated there has been one community meeting so far, Olson stated he was unable to attend the meeting.
- B. **Review/Discussion:** Historical Society Plant Sale: Chair Springborn stated the event went really well this year. However, since the nursery they receive the plants from is going out of business this year may be the historical societies last plant sale. Chair Springborn said that Commissioner Tolbert-Ireland attended the Plant Sale and did a good job handing out EAC materials to plant sale attendees.

XI. ADJOURNMENT

On motion by Commissioner Blood, seconded by Chair Springborn, with all present voting aye, motion carried to adjourn the meeting at 7:19 p.m.

Next Meeting: The next regularly scheduled meeting June 26, 2017

Agenda Information Memorandum
North St. Paul Environmental Advisory Commission
August 28, 2017



VII. COMMISSION BUSINESS ACTION ITEMS & RECOMMENDATIONS
A. SOLAR POWER

ACTIONS TO BE CONSIDERED

North St. Paul Solar Power

FACTS

Electric Director Brian Frandle is planning to attend the meeting to discuss solar power with the Commission.

ATTACHMENTS

Agenda Information Memorandum
North St. Paul Environmental Advisory Commission
August 28, 2017



VII. COMMISSION BUSINESS ACTION ITEMS & RECOMMENDATIONS
B. 2018 ROAD RECONSTRUCTION PROJECT

ACTIONS TO BE CONSIDERED

2018 Road Reconstruction Project

FACTS

City Engineer Morgan Dawley and James Soltis from WSB are planning to attend the meeting to provide information regarding the 2018 Road Reconstruction Project.

ATTACHMENTS

Proposed 2018 Road Reconstruction Map
Project Feasibility Study



**NORTH
ST. PAUL**
extraordinary.

City of North St. Paul
2400 Margaret Street North
North St. Paul, MN 55109

FEASIBILITY Report

August 15, 2017

2018 Street and Utility Improvement Project 2018 CIP Area

*City of North St. Paul
Ramsey County, Minnesota*

City of North St. Paul Project No. S.A.D. 18-01

WSB Project No. 10077



701 Xenia Avenue South, Suite 300
Minneapolis, MN 55416

Tel: (763) 541-4800 · Fax: (763) 541-1700
wsbeng.com

FEASIBILITY REPORT

2018 STREET AND UTILITY IMPROVEMENT PROJECT 2018 CIP AREA

CITY OF NORTH ST PAUL PROJECT NO. S.A.D. 18-01

FOR THE
CITY OF NORTH ST. PAUL, MINNESOTA

August 15, 2017

Prepared By:

WSB & Associates, Inc.
701 Xenia Avenue South, Suite 300
Minneapolis, MN 55416
763-541-4800
763-541-1700 (Fax)



engineering • planning • environmental • construction

701 Xenia Avenue South
Suite 300
Minneapolis, MN 55416
Tel: 763-541-4800
Fax: 763-541-1700

August 15, 2017

Honorable Mayor and City Council
City of North St. Paul
2400 Margaret Street
North St. Paul, MN 55109

Re: Feasibility Report
2018 Street and Utility Improvement Project
City of North St. Paul Project No. S.A.D. 18-01
WSB Project No. 10077-000

Dear Honorable Mayor and City Council Members:

Transmitted herewith for your review is a feasibility report which addresses improvements associated with the 2018 Street and Utility Improvement Project. Streets included in the proposed improvements are Lake Boulevard, East Poplar Avenue, Swan Avenue, 19th Avenue, 20th Avenue, and Park Row.

We are available at your convenience to discuss this report. Please do not hesitate to contact me at 763-287-7173 if you have any questions regarding this report.

Sincerely,

WSB & Associates, Inc.

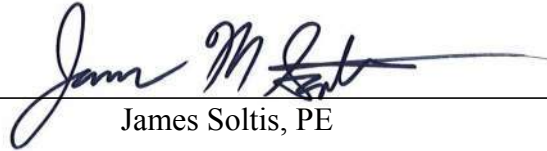
A handwritten signature in black ink, appearing to read 'Morgan Dawley', is written over the typed name and title.

Morgan Dawley, PE
City Engineer

Enclosure

CERTIFICATION

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.

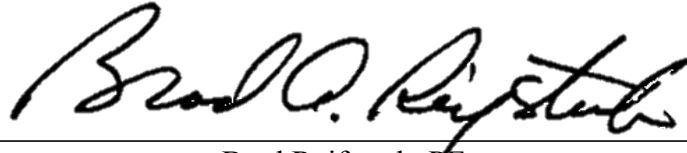


James Soltis, PE

Date: August 15, 2017

Lic. No. 54823

Quality Control Review Completed By:



Brad Reifsteck, PE

Date: August 15, 2017

Lic. No. 47930

TABLE OF CONTENTS

TITLE SHEET

LETTER OF TRANSMITTAL

CERTIFICATION SHEET

TABLE OF CONTENTS

1.	EXECUTIVE SUMMARY	1
2.	2018 STREET AND UTILITY IMPROVEMENT PROJECT	2
	2.1.1 Authorization	2
	2.1.2 Scope.....	2
	2.1.3 Data Available	2
2.2	Existing Conditions.....	3
	2.2.1 Surface	3
	2.2.2 Municipal Utilities	4
	2.2.3 Private Utilities	4
2.3	Proposed Improvements.....	5
	2.3.1 Surface	5
	2.3.2 Municipal Utilities	6
	2.3.3 Stormwater Management.....	7
	2.3.3.1 Ramsey Washington Metro Watershed District	7
	2.3.3.2 Valley Branch Watershed District	7
	2.3.3.3 Stormwater Management Permits and Submittals.....	9
	2.3.4 Right-of-Way	10
	2.3.5 Additional Permits/Approvals	10
	2.3.6 Public Involvement	10
3.	FINANCING	10
	3.1 Opinion of Cost.....	10
	3.2 Funding.....	11
4.	PROJECT SCHEDULE.....	12
5.	FEASIBILITY AND RECOMMENDATION	12

TABLE OF CONTENTS (continued)

Appendix A

- Figure 1: Location Map
- Figure 2: Typical Section – Reconstruction Improvements
- Figure 3: Water Main Utility Map
- Figure 4: Sanitary Sewer Utility Map
- Figure 5: Storm Sewer Utility Map
- Figure 6: Sidewalk & Trail Improvements

Appendix B

- Opinion of Probable Cost

Appendix C

- 2018 CIP Preliminary Assessment Map
- 2018 CIP Preliminary Assessment Roll

Appendix D

- Capital Improvement Plan (CIP) Map

Appendix E

- 2017 Geotechnical Report

Appendix F

- Public Comment Summary

1. EXECUTIVE SUMMARY

The 2018 Street and Utility Improvement Project, City Project No. S.A.D. 18-01, was initiated by the City's Capital Improvement Plan (CIP). The improvement area proposed in the 2018 Street and Utility Improvement Project varies slightly from the area originally proposed in the City's CIP including the removal of the previously reconstructed Helen Streets N and the addition of portions of 19th Avenue, Park Row and 20th Avenue. These additional areas are of approximately the same age and condition as the remainder of the project area. Streets proposed for improvements in 2018 include the following roadways totaling approximately 8800 feet (1.67 miles), approximately 1700 feet (0.35 miles) more than in the 2018 CIP report:

- Lake Boulevard between Lydia Avenue East and 19th Avenue¹
- East Poplar Avenue between Bellaire Avenue and Swan Avenue
- Swan Avenue between East Poplar Avenue and Lake Boulevard
- 19th Avenue between Helen Court and State Highway 120
- Park Row between 19th Avenue and 20th Avenue.
- 20th Avenue between Park Row and State Highway 120

¹Shared improvement between the City of North St Paul and the City of Maplewood.

The 2018 Street and Utility Improvement Project consist of roadway reconstruction improvements based on the current roadway conditions and the overall CIP budget.

Roadway reconstruction consisting of pavement removals, subgrade correction, concrete curb and gutter replacement, and new pavement installation.

Replacing portions of the City's deteriorating utility infrastructure in conjunction with the proposed street improvements provides an opportunity to minimize the replacement costs and traffic disruptions associated with the work. Proposed utility improvements include the following:

- Rehabilitate, spot repair and replacement of damaged or deficient sanitary sewer, sanitary services, and sanitary manholes.
- Replacement of all existing water main including: hydrants, gate valves, and services
- Repair or replacement of structurally deficient storm sewer and storm manholes
- Replacement of all existing storm and sanitary manhole castings that do not meet current City standards

The total estimated project cost for the 2018 Street and Utility Improvements Project is **\$5,482,600** which includes a 10% contingency and 24% indirect costs for legal, engineering, administrative, and financing costs. The project is proposed to be funded through special assessments to benefitting property owners and City funds.

The project is proposed to be substantially completed in 2018, including restoration items. The final wear course of bituminous pavement will be placed in 2019. The project is feasible, necessary, and cost-effective from an engineering standpoint and should be constructed as proposed herein.

2. 2018 STREET AND UTILITY IMPROVEMENT PROJECT

2.1.1 Authorization

On May 16th, 2017 North St. Paul City Council authorized the preparation of an engineering feasibility report for the 2018 Street and Utility Improvement Project. This project has been designated as North St. Paul City Project No. S.A.D. 18-01.

2.1.2 Scope

This report investigates the feasibility of proposed improvements to streets and utilities identified within the City's CIP for 2018 and surrounding streets. Streets proposed within the 2018 Street and Utility Improvement Project were initially considered because of existing pavement conditions and known utility failures. The streets proposed for improvements include:

- Lake Boulevard between Lydia Avenue and 19th Avenue¹
- East Poplar Avenue between Bellaire Avenue and Swan Avenue
- Swan Avenue between East Poplar Avenue and Lake Boulevard
- 19th Avenue between Helen Court and State Highway 120
- Park Row between 19th Avenue and 20th Avenue.
- 20th Avenue between Park Row and State Highway 120

The project area is shown in ***Figure 1*** of ***Appendix A*** of this report.

Improvements outlined within this report include bituminous pavement reclamation and reconstruction, sanitary sewer rehabilitation, water main replacement, and storm sewer improvements.

2.1.3 Data Available

Information and materials used in the preparation of this report include the following:

- City of North St. Paul Assessment/Improvement Policy
- City of North St. Paul Living Streets Plan
- City of North St. Paul Record Plans
- City of North St. Paul Utility Plans
- City of North St. Paul Water Main Repair Records
- Field Observations of the Area and Discussions with City Staff
- Geotechnical Evaluation Report, WSB & Associates, dated August 2017
- Private Utility Maps
- Ramsey County Topography Maps

2.2 Existing Conditions

2.2.1 Surface

The roadways within the proposed project area consist of varying widths, from approximately 21-foot-wide to 36-foot-wide urban street sections (measured from toe of curb to toe of curb). Roadways include bituminous or concrete curb and gutter. The existing right-of-way for Poplar Avenue, Swan Avenue, is approximately 50 feet. Existing right-of-way for 20th Avenue, Park Row, and 19th Avenue is 66 feet. Right-of-way for Lake Boulevard varies between 50 feet and 77 feet.

Geotechnical exploration was performed by WSB & Associates in July of 2017 determined the pavement thickness to range from 3-inches to 5-inches. The streets are showing signs of severe distress, too severe to be addressed with patching and chip sealing. The geotechnical reports can be found in *Appendix E*.

All streets within the City of North St. Paul were rated in 2016 and provided an Overall Condition Index (OCI) rating. Streets within the proposed improvement areas are aging and experiencing differing severities of alligator cracking, edge cracking, longitudinal cracking, and transverse cracking.

The curb and gutter is in fair condition; however, some cracking and settlements have resulted in isolated drainage issues and additional pavement distress. The photos below illustrate the varying levels of pavement distresses found throughout the project.



19th Ave (Between Henry St. and Charles St.)



20th Street (Between Park Row and STH 120)

Concrete sidewalks are located along 19th Avenue on the south side from Henry Street to Lake Boulevard. The sidewalks located within the project area are 5-foot wide and meet the City's current standard for sidewalk widths.

Bituminous trails are located along 19th Avenue on the north side from Lake Boulevard to Park Row. This trail is located within the project area and is 8-foot wide.

All project areas contain landscaping, trees, and numerous other private improvements beyond the edge of the roadway and within City right-of-way (ROW). The Forestry Division for the City of North St. Paul has compiled a tree inventory which identifies tree species, size, and location of street and park trees within the City ROW.

2.2.2 Municipal Utilities

Majority of the existing water main, as shown in **Figure 3** of **Appendix A.**, in the project area consists of 6-inch-diameter cast iron pipe (CIP) that was installed at the same time the road was initially constructed. Along 19th Street, 8-inch-diameter water main was installed at the same time the street was initially constructed around 1967. There is also a small portion of 8-inch-diameter watermain along the north section of Lake Boulevard. Record drawings indicate that the water main along Park Row was constructed around 1991. All of the water main runs under the existing roadway. Utility maintenance records have identified water main breaks throughout the project area with the exception of the newer water main along Park ROW. Additionally, the majority of the existing hydrants and gate valves have been identified as leaking or damaged.

The existing sanitary sewer system as shown in **Figure 4** of **Appendix A.** in the proposed project area consists of 8-inch-diameter vitrified clay pipe (VCP) sewer installed at the same time the roads were originally constructed (1956 - 1960). Additional investigation will be necessary to determine the condition of the remaining sanitary sewer but from records it is expected the mainline sewer is in fair condition with root problems and isolated cracking and separated joints.

The existing storm sewer as shown in **Figure 5** of **Appendix A.** in the project area consists of mainly local collection systems at most intersections and trunk lines running along Poplar Avenue, Lake Boulevard, 20th Avenue and 19th Avenue. The majority of the storm water runoff from the proposed project area is directed to Silver Lake. There is a small portion of the project (East end of 19th Avenue) that discharges to the storm sewer that runs south along STH 120. Historically, much of the existing storm sewer facilities within the project area have proven adequate during smaller rainfall events.

2.2.3 Private Utilities

There are currently private utilities within the proposed project area. Known utility owners include:

- Access Communications [Telephone]
- AT&T [Telephone]
- City of North St. Paul [Electricity]
- Comcast [Television]
- CenturyLink [Telephone]
- Xcel Energy [Gas]
- Zayo Group [Fiber]

2.3 *Proposed Improvements*

2.3.1 *Surface*

The proposed surface improvements consist of a pavement reconstruction and curb and gutter replacement. An on-site review of the pavement distresses indicates that reclamation improvements are appropriately timed to maximize the life of the road. From field observations, the curb and subgrade section along Park Row and 20th Avenue appear to be in good condition. It is proposed that the surface improvements along these streets be a pavement reclamation with spot repair and replacement of broken and settled curb.

Streets proposed to be reconstructed through pavement reconstruction and curb and gutter replacement include:

- Lake Boulevard between Lydia Avenue and 19th Avenue
- East Poplar Avenue between Bellaire Avenue and Swan Avenue
- Swan Avenue between East Poplar Avenue and Lake Boulevard
- 19th Avenue between Helen Court and Park Row

Streets proposed to be reconstructed through full-depth pavement reclamation and spot curb and gutter replacement include:

- Park Row between 19th Avenue and 20th Avenue.
- 20th Avenue between Park Row and State Highway 120
- 19th Avenue between Park Row and State Highway 120

Streets within the proposed project area are proposed to be reconstructed to a 26-foot (toe to toe) street width. Roadways proposed for reconstruction improvements will be constructed to the City's 7-ton design standard and will consist of 1.5 inches of bituminous wearing course, 2 inches of bituminous base course, 8 inches of Class 5 aggregate base, and 18 inches of select granular borrow over an acceptable, compacted subgrade. **Figure 2** of **Appendix A** illustrates the proposed roadway section.

The existing bituminous and concrete curb and gutter within the reconstruction area of the project is proposed to be completely removed and replaced with barrier style concrete curb and gutter.

All existing pedestrian curb ramps will be brought up to current ADA accessibility design standards as part of the 2018 Street and Utility Project.

In 2011, the City of North St. Paul adopted a Living Streets Plan intended to connect neighborhoods with a comfortable, safe walking and biking network for people of all ages and abilities. Within the project area, Lake Boulevard has been identified as a candidate for an off street pedestrian trail and 19th Ave has been identified as a candidate for sidewalk. **Figure 6** of **Appendix A** illustrates the alternative options for sidewalks and trail segments.



Note: Snapshot of 2011 Living Streets Plan Bike & Pedestrian System

Implementation of the Living Street features will be further evaluated during the final design phase of this project.

It will be a goal of the design team to minimize tree impacts as practical to achieve quality reconstruction standards. Further analysis of tree impacts will be completed during final design.

2.3.2 Municipal Utilities

The existing VCP sewer main is in fair condition and in need of rehabilitation. Rehabilitation will include spot repairs, joint repairs and Cured In-Place Pipe CIPP liners for the main and sanitary sewer services to the ROW. Manholes inverts will be repaired and all casting replaced including chimney seals to prevent Inflow and Infiltration.

New water main is proposed to be replaced in all reconstruction areas with 8-inch PVC water main pipe and equipped with new valves and hydrants as necessary for proper operation and fire protection. Water services are also proposed to be replaced with plastic pipe back to the curb stop.

Reconstruction of the streets also provides a timely opportunity to improve drainage conditions within the project areas. Drainage improvements in the project area include removal and replacement of existing infrastructure to meet current City storm sewer standards. Manholes, manhole castings, and catch basin castings are also proposed to be repaired/replaced to meet current City standards.

The existing drainage patterns and discharge locations will be maintained so the hydrologic characteristics of the area are not altered. The majority of stormwater runoff along the project boundaries discharge into Silver Lake. A small portion along the east side of 19th Avenue discharges south along Century Avenue where it is eventually conveyed to a storm pond along highway 36 – Frontage Road.

2.3.3 Stormwater Management

The street reconstruction project falls within two watershed district areas: Ramsey Washington Metro Watershed District (RWMWD) and Valley Branch Watershed District (VBWD). The majority of the project falls within VBWD. The following rules were referred to when determining what the stormwater management requirements would be for this project:

- Ramsey Washington Metro Watershed District Rules, Adopted 09/06/2006 and Revised 04/01/2015
- Valley Branch Watershed District Revised Rules and Regulations, December 2013

Both watershed districts were contacted prior to preparing this feasibility study and informed of the project. The following sections summarize the information provided from each watershed district, along with any stormwater management requirements that will apply to the project.

2.3.3.1 Ramsey Washington Metro Watershed District

It is estimated that less than one acre of the project is located within RWMWD so a permit will not be required. As such there will not be runoff rate, volume or water quality requirements for these areas. An erosion control plan will be provided to RWMWD as listed under the permits section of this report.

2.3.3.2 Valley Branch Watershed District

Water quality improvements are required to meet VBWD rules for reconstruction of public streets. It is anticipated that District requirements will be addressed through a combination of water quality improvements both within and/or in the vicinity of the project area. VBWD encourages the use of new and innovative stormwater management techniques and where feasible this will be factored in to the final design.

Under VBWD rules, water quality improvements should be implemented within the project area. The following apply to the proposed project:

- **Rate Control**
Proposed runoff rates for the 2-year, 10-year, and 100-year critical storm event shall not exceed existing runoff rates. During an initial meeting to discuss what will be required for stormwater management, VBWD

indicated that rate evaluation and modeling will not be required for this project.

- **Volume Control**

For linear projects, the larger of the following must be captured and retained:

1. 1.1 inches of runoff from the net increase in impervious area or;
2. 0.55 inches of runoff from the new and fully reconstructed impervious surfaces

At this time it is anticipated that there will be a net decrease in impervious area from the proposed project so option 2 can be used for volume control.

- **Water Quality**

The project must first attempt to design the site to achieve retention of at least 0.55 inches of runoff from the proposed impervious surfaces and remove 75% of the annual total phosphorus load leaving all points on the site. If the project cannot achieve this standard, alternative Flexible Treatment Options (FTO) can be employed.

- **BMP Design**

In late July 2017, a meeting was held with VBWD to discuss options for achieving the stormwater management requirements in their plan. This project falls within an area that may have conditions that limit the options available for meeting VBWD stormwater management goals. VBWD provided background information for possible alternatives and other considerations that should be factored into the final design. In addition, an open house will be held in August for public input. This will be an opportunity to engage the residents with VBWD and WSB staff and discuss the street reconstruction project.

Infiltration basins near Dorothy Park were considered to meet the District's requirements but the soils at this location are not conducive for infiltration. There may be areas within Silver Lake Park that could be used for stormwater management. VBWD indicated that this may be the best area for an infiltration basin, depending on groundwater levels and soil conditions. Assuming a volume abstraction requirement of approximately 0.26 ac-ft for this project we believe there could be space within the park or street ROW for infiltration practices to be implemented.

If there is the potential to implement North Saint Paul's Living Streets Best Management Practice (BMP) design components into the project including infiltration or rain gardens, those options will be considered. Turf management including reinvigorating existing turf grass and remediating soils for increased infiltration will also be considered as an option to help meet the District's requirements. Turf management could be a good option to utilize areas within the street right of way for stormwater management.

Sump catch basins will be placed at strategic locations upstream of the primary outfalls to Silver Lake. Sump catch basins can trap a portion of sediments and other pollutants carried by stormwater runoff. Existing culverts in need of upgrading due to increased capacity demands or deterioration will also be replaced where opportune. Where feasible, permeable pavers will be incorporated into the final design. VBWD indicated that the parking area within Silver Lake Park may be a good location for permeable pavers, depending on groundwater levels and other site conditions.

Field visits to key locations identified in the preliminary review to verify feasibility for potential BMPs and to note limiting factors for design will be completed. Feasible BMP locations are limited due to available public land, locations of underground utilities, proximity to drainage systems, and existing topography. Cooperation of property owners may be needed to allow grading or placement of these features on a portion of their properties. The willingness of homeowners to allow these improvements and the extent that these features can meet District requirements will be evaluated through public involvement and final design of the project.

If it is determined that infiltration is not feasible or advised, VBWD Standard 6D and the design sequence flow chart will be implemented.

2.3.3.3 *Stormwater Management Permits and Submittals*

- Erosion Control Plan (VBWD and RWMWD)
- MPCA NPDES Construction Stormwater Permit
- Department of Natural Resources: A Public Waters Work Permit will be required if any work or impacts are proposed to occur below the Ordinary High Water (OHW) elevation of the public waters. If a Public Waters Work Permit is needed, a permit review fee of up to \$1000 will be required. Permits are generally issued within 60 to 180 days from payment of the review fee.
- US Army Corps of Engineers: The USACE has jurisdiction over aquatic resources that are identified as Waters of the United States (WOUS). Section 404 of the Clean Water Act is regulated by the USACE and requires that impacts to aquatic resources be avoided if practicable alternatives exist. If work will occur within a WOUS, a Joint Application Form will need to be submitted the USACE to obtain a Section 404 permit. A replacement plan will be required for impacts to aquatic resources. If replacement of impacts is to be accomplished through the purchase of wetland bank credits, the credits must be pre-approved by the USACE. The timeline to receive a general permit from the USACE is

generally 6 months to one year. A Section 401 Certification of the Clean Water Act will be issued as a component of a Section 404 general permit from the USACE. The MPCA has issued a water quality certification for projects which qualify for Section 404 general permits so that separate consultation with the MPCA is unnecessary. If the project qualifies for a Letter of Permission or Individual Permit, Section 401 Certification will be obtained through a separate review process by the MPCA

In our review of the project and applicable stormwater related permitting, we believe requirements can be met with the project to allow the project to be permitted.

2.3.4 Right-of-Way

It is anticipated that all street and utility work will take place within the existing roadway right-of-way or within existing drainage and utility easements. Additional right-of-way or easement acquisition (Permanent / Temporary Construction easements) may be needed to construct portions of the trails or sidewalks and water quality features and will be further evaluated with final design of the project.

2.3.5 Additional Permits/Approvals

Permits will be necessary from the following agencies:

- Minnesota Department of Health Extension of Water Main permit
- MnDOT Right-of-Way permit

2.3.6 Public Involvement

A Neighborhood Open House for the proposed improvements was conducted for the project on August 10, 2017, for property owners of North St. Paul. Preliminary information was presented to the attendees regarding the proposed improvements, costs, funding, schedule, and impacts associated with the project. Comment cards were made available to attendees at the meeting. Summaries of the correspondence received and questions and answers provided at the informational meetings are included in ***Appendix H***.

3. FINANCING

3.1 Opinion of Cost

Detailed opinions of cost for the various project areas can be found in ***Appendix B*** of this report. The opinions of cost incorporate estimated 2018 construction costs and include a 10% contingency factor. Indirect costs are projected at 24% of the construction cost and include engineering, legal, financing, and administrative costs. Table 3.1 below provides a summary of the opinions of probable cost for the 2018 Street and Utility Improvement Project and the additional study areas.

Table 3.1 – Project Cost Summary	
Schedule	Total
Schedule A – Surface Improvements	\$2,426,700
¹ Schedule B – Lake Boulevard Improvements (North of City Boundary)	\$175,000
Schedule C – Sanitary Sewer Improvements	\$1,109,400
Schedule D – Water Main Improvements	\$1,336,500
Schedule E – Storm Sewer Improvements	\$435,000
TOTAL	\$5,482,600

¹Improvement within City of Maplewood.

3.2 Funding

Financing for the 2018 Street and Utility Improvement Project will come from City funds and special assessments from the City of North St Paul. North St. Paul and Maplewood will enter into a JPA to share costs for the project.

Special assessments are determined as set forth by the City’s Assessment Policy and current fee resolutions. Per the City of North St Paul’s Assessment Policy, benefitting property owners will be assessed by the actual front footage abutting the improvements. The current fee schedule for assessments is:

- Reclamation Front Foot Assessment Rate.....**\$35.00** per front foot
- Reconstruction Front Foot Assessment Rate.....**\$64.00** per front foot

The total funds proposed to be recovered through special assessments are estimated at **\$671,100**.

The preliminary assessment roll can be found in *Appendix C*. A summary of the proposed project funding is shown below in Table 3.2.

Table 3.2 – Project Funding Summary	
Fund	Total
City Street CIP Funds	\$1,755,600
Waste Water Utility Fund	\$1,109,400
Water Utility Fund	\$1,336,500
Surface Water Utility Fund	\$435,000
Special Assessments*	\$671,100
TOTAL (North St. Paul)	\$5,307,600
Utility Funds/ G.O. Bonds (Maplewood)	\$175,000
GRAND TOTAL	\$5,482,600

*Note: The preliminary assessment roll can be found in *Appendix B* of this report.

4. PROJECT SCHEDULE

The proposed schedule for this improvement is as follows:

Order Feasibility Report.....	May 16, 2017
Neighborhood Open House	August 10, 2017
Present Feasibility Report.....	August 15, 2017
Set Public Hearing.....	September 19, 2017
Public Hearing/Order Project	October 3, 2017
Approve Plans/Order Ad for Bid/Set Assessment Hearing.	January 16, 2017
Open Bids.....	February 16, 2017
Begin Construction	May, 2018
Substantial Completion of Construction	November, 2018
Final Completion of Construction.....	June, 2019

* Schedule assumes any necessary private utility work is completed prior to start of construction.

5. FEASIBILITY AND RECOMMENDATION

The 2018 Street and Utility Improvement Project includes both reconstruction and reclamation improvements, with curb and gutter replacement, utility repair and replacement, and sidewalk and trail improvements along the following roadways:

- Lake Boulevard between Lydia Avenue East and 19th Avenue
- East Poplar Avenue between Bellaire Avenue and Swan Avenue
- Swan Avenue between East Poplar Avenue and Lake Boulevard
- 19th Avenue between Helen Court and State Highway 120
- Park Row between 19th Avenue and 20th Avenue.
- 20th Avenue between Park Row and State Highway 120

The total estimated cost for the 2018 Street and Utility Improvement Project including roadway and utility improvements is **\$5,482,600**. Proposed funding for the project is provided through a combination of special assessments, and City funds.

Based on the information contained in this report, it is recommended to proceed with the improvements in the 2018 CIP project area. This project is feasible, necessary, and cost-effective from an engineering standpoint. The project feasibility is subject to financial review by the City.

APPENDIX A

- Figure 1: Location Map**
- Figure 2: Typical Section**
- Figure 3: Water Main**
- Figure 4: Sanitary Sewer**
- Figure 5: Storm Sewer**
- Figure 6: Sidewalk & Trail Improvements**





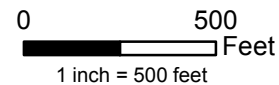
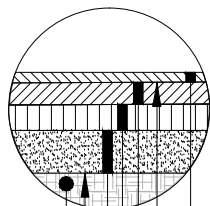
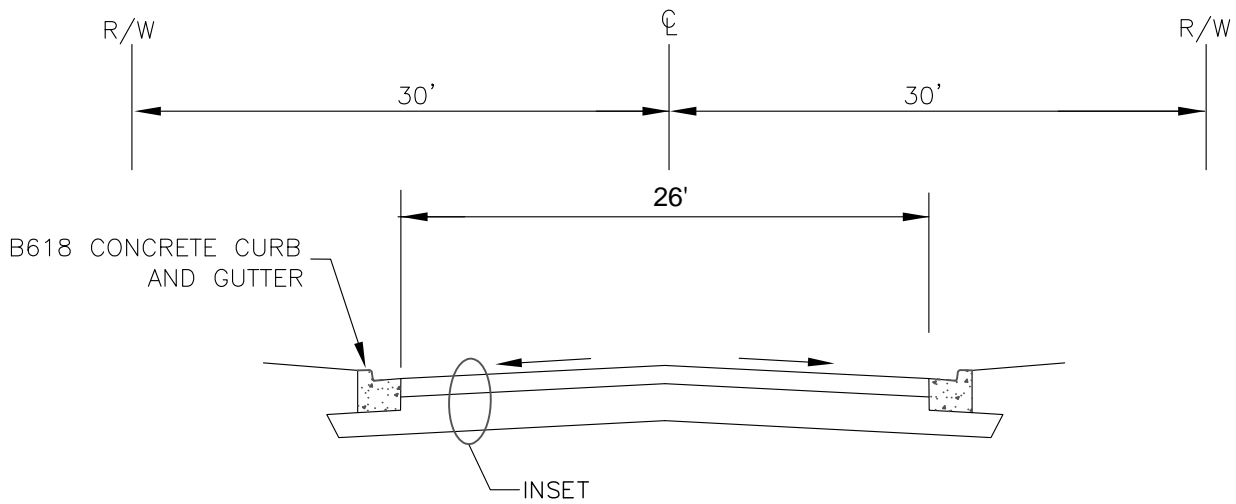
	City Boundary
	2018 CIP



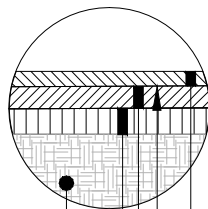
Figure 1
 Location Map
 CIP Project - 2018
 North St. Paul, MN





RECONSTRUCTION

- 1.5" TYPE SP 9.5 WEAR COURSE MIX (2,C) (SPWEB240C)
- 2357 BITUMINOUS TACK COAT
- 2.0" TYPE SP 12.5 NON-WEAR COURSE MIX (2,C) (SPNWB230C)
- 8" AGGREGATE BASE, CLASS 5 (MNDOT 3138) OR RECYCLED EQUAL
- 12" SELECT GRANULAR BORROW (MNDOT 3149)
- TYPE V GEOTEXTILE FABRIC (MNDOT 3733)
- APPROVED SUBGRADE



RECLIMATION

- 1.5" TYPE SP 9.5 WEAR COURSE MIX (2,C) (SPWEB240C)
- 2357 BITUMINOUS TACK COAT
- 2.0" TYPE SP 12.5 NON-WEAR COURSE MIX (2,C) (SPNWB230C)
- 8" INPLACE RECLAIMED AGGREGATE BASE
- EXISTING SUBGRADE



701 Xenia Avenue South, Suite 300
 Minneapolis, MN 55416
 Tel: (763) 541-4800 • Fax: (763) 541-1700
 ws beng.com

**2018 STREET AND UTILITY
 IMPROVEMENT PROJECT**

**TYPICAL SECTION
 RECONSTRUCTION**

NORTH ST. PAUL, MINNESOTA



**NORTH
 ST. PAUL**
extraordinary.





CITY PROJECT NO. S.A.D. 18-01
 WSB NO. 010077

FIGURE

2



Figure 3
 Watermain
 CIP Project - 2018
 North St. Paul, MN

-  City Boundary
-  Water Main
-  Valves
-  Hydrants







0 500
 Feet
 1 inch = 500 feet





Figure 4
 Sanitary Sewer
 CIP Project - 2018
 North St. Paul, MN

-  City Boundary
-  Gravity Main
-  Lift Station
-  Manhole



0 500
 Feet
 1 inch = 500 feet





Figure 5
 Storm Sewer
 CIP Project - 2018
 North St. Paul, MN

- City Boundary
- ▲ Inlet/Outlet
- Catch Basins
- Gravity Main
- Manhole



0 500
 Feet
 1 inch = 500 feet





Figure 6
 Sidewalk Map
 CIP Project - 2018
 North St. Paul, MN



0 500 Feet
 1 inch = 500 feet



APPENDIX B

Opinion of Probable Cost

Opinion of Probable Cost

WSB Project: 2018 Street Reconstruction Project
Project Location: N. St. Paul
City Project No.: S.A.P. 18-01
WSB Project No.: 10077-000

Design By: JMS
Checked By: GCT

Date: 8/8/2017

Item No.	MN/DOT Specification No.	Description	Unit	Estimated Total Quantity	Estimated Unit Price	Estimated Total Cost
A. SURFACE IMPROVEMENTS						
1	2021.501	MOBILIZATION	LUMP SUM	1	\$84,800.00	\$84,800.00
2	2101.502	CLEARING	TREE	100	\$325.00	\$32,500.00
3	2101.507	GRUBBING	TREE	100	\$325.00	\$32,500.00
4	2101.610	TREE TRIMMING	HOUR	10	\$200.00	\$2,000.00
5	2104.501	REMOVE CURB AND GUTTER	LIN FT	15,000	\$4.00	\$60,000.00
6	2104.503	REMOVE CONCRETE WALK	SQ FT	4,000	\$1.50	\$6,000.00
7	2104.505	RECLAIM BITUMINOUS PAVEMENT	SQ YD	30,000	\$2.00	\$60,000.00
8	2104.505	REMOVE BITUMINOUS DRIVEWAY PAVEMENT	SQ YD	500	\$4.00	\$2,000.00
9	2104.505	REMOVE CONCRETE DRIVEWAY PAVEMENT	SQ YD	1,000	\$5.00	\$5,000.00
10	2104.509	REMOVE MAIL BOX SUPPORT	EACH	10	\$25.00	\$250.00
11	2104.509	REMOVE MAIL BOX	EACH	10	\$25.00	\$250.00
12	2104.509	REMOVE SIGN	EACH	26	\$30.00	\$780.00
13	2104.511	SAWING CONCRETE PAVEMENT (FULL DEPTH)	LIN FT	450	\$4.00	\$1,800.00
14	2104.513	SAWING BITUMINOUS PAVEMENT (FULL DEPTH)	LIN FT	775	\$4.00	\$3,100.00
15	2104.601	SALVAGE AND REINSTALL LANDSCAPE STRUCTURES	LUMP SUM	1	\$5,000.00	\$5,000.00
16	2104.602	SALVAGE AND REINSTALL MAILBOX	EACH	125	\$50.00	\$6,250.00
17	2105.501	COMMON EXCAVATION	CU YD	18,000	\$12.00	\$216,000.00
18	2105.507	SUBGRADE EXCAVATION	CU YD	2,000	\$20.00	\$40,000.00
19	2105.522	SELECT GRANULAR BORROW (CV)	CU YD	14,800	\$15.00	\$222,000.00
20	2105.525	TOPSOIL BORROW (CV)	CU YD	1,000	\$30.00	\$30,000.00
21	2105.604	GEOTEXTILE FABRIC TYPE V	SQ YD	28,000	\$1.50	\$42,000.00
22	2123.610	STREET SWEEPER (WITH PICKUP BROOM)	HOUR	30	\$140.00	\$4,200.00
23	2130.501	WATER	MGAL	90	\$40.00	\$3,600.00
24	2131.502	CALCIUM CHLORIDE SOLUTION	GALLON	800	\$2.50	\$2,000.00
25	2211.501	AGGREGATE BASE CLASS 5	TON	5,000	\$20.00	\$100,000.00
26	2357.502	BITUMINOUS MATERIAL FOR TACK COAT	GALLON	1,400	\$3.50	\$4,900.00
27	2360.501	TYPE SP 12.5 WEARING COURSE MIX (2,B)	TON	2,500	\$60.00	\$150,000.00
28	2360.502	TYPE SP 12.5 NON WEAR COURSE MIX (2,B)	TON	3,300	\$55.00	\$181,500.00
29	2360.503	TYPE SP 12.5 WEARING COURSE MIX (2,B) (3.0" THICK)	SQ YD	600	\$30.00	\$18,000.00
30	2504.602	IRRIGATION SYSTEM REPAIR	LUMP SUM	1	\$2,000.00	\$2,000.00
31	2505.601	UTILITY COORDINATION	LUMP SUM	1	\$5,000.00	\$5,000.00
32	2521.501	4" CONCRETE WALK	SQ FT	30,000	\$5.00	\$150,000.00
33	2531.501	CONCRETE CURB & GUTTER DESIGN B618	LIN FT	15,000	\$10.00	\$150,000.00
34	2531.507	7" CONCRETE DRIVEWAY PAVEMENT	SQ YD	900	\$50.00	\$45,000.00
35	2531.618	TRUNCATED DOMES	SQ FT	150	\$45.00	\$6,750.00
36	2540.602	MAIL BOX SUPPORT	EACH	10	\$125.00	\$1,250.00
37	2540.602	MAIL BOX	EACH	10	\$40.00	\$400.00
38	2540.602	TEMPORARY MAIL BOXES	EACH	125	\$50.00	\$6,250.00
39	2557.602	REPAIR DOG FENCE	EACH	5	\$500.00	\$2,500.00

Opinion of Probable Cost

WSB Project: 2018 Street Reconstruction Project
Project Location: N. St. Paul
City Project No.: S.A.P. 18-01
WSB Project No.: 10077-000

Design By: JMS
Checked By: GCT

Date: 8/8/2017

Item No.	MN/DOT Specification No.	Description	Unit	Estimated Total Quantity	Estimated Unit Price	Estimated Total Cost
40	2563.601	TRAFFIC CONTROL	LUMP SUM	1	\$2,000.00	\$2,000.00
41	2564.531	SIGN PANELS TYPE C	SQ FT	75	\$40.00	\$3,000.00
42	2564.602	SIGN PANELS TYPE D	EACH	10	\$275.00	\$2,750.00
43	2564.602	SALVAGE AND REINSTALL SIGN	EACH	5	\$200.00	\$1,000.00
44	2571.501	CONIFEROUS TREE 8' HT B&B	TREE	10	\$500.00	\$5,000.00
45	2571.502	DECIDUOUS TREE 2.5" CAL B&B	TREE	50	\$500.00	\$25,000.00
46	2573.502	SILT FENCE, TYPE MACHINE SLICED	LIN FT	500	\$5.00	\$2,500.00
47	2573.602	TEMPORARY ROCK CONSTRUCTION ENTRANCE	EACH	10	\$800.00	\$8,000.00
48	2573.603	BIOROLL	LIN FT	500	\$3.50	\$1,750.00
49	2575.523	EROSION CONTROL BLANKETS CATEGORY 3	SQ YD	500	\$3.00	\$1,500.00
50	2575.605	TURF MAINTENANCE	LUMP SUM	1	\$10,000.00	\$10,000.00
51	2575.605	HYDROSEEDING	ACRE	4.0	\$5,000.00	\$20,000.00
52	2582.503	CROSSWALK MARKING - EPOXY	SQ FT	400	\$10.00	\$4,000.00
53	2573.530	STORM DRAIN INLET PROTECTION	EACH	40	\$175.00	\$7,000.00

CONSTRUCTION TOTAL **\$1,779,080.00**

CONTINGENCY TOTAL (10%) **\$177,908.00**

SUBTOTAL TOTAL **\$1,956,988.00**

INDIRECT COST TOTAL (24%) **\$469,677.12**

TOTAL - SURFACE IMPROVEMENTS (RECONSTRUCTION) **\$2,426,700.00**

B. LAKE BLVD (MAPLEWOOD)

54	2021.501	MOBILIZATION	LUMP SUM	1	\$6,200.00	\$6,200.00
55	2101.502	CLEARING	TREE	10	\$325.00	\$3,250.00
56	2101.507	GRUBBING	TREE	10	\$325.00	\$3,250.00
57	2104.501	REMOVE CURB AND GUTTER	LIN FT	1,200	\$4.00	\$4,800.00
58	2104.505	REMOVE BITUMINOUS PAVEMENT	SQ YD	2,100	\$3.00	\$6,300.00
59	2104.513	SAWING BITUMINOUS PAVEMENT (FULL DEPTH)	LIN FT	50	\$4.00	\$200.00
60	2104.618	SALVAGE AND REINSTALL RETAINING WALL	SQ FT	50	\$45.00	\$2,250.00
61	2105.501	COMMON EXCAVATION (P)	CU YD	1,500	\$10.00	\$15,000.00
62	2105.507	SUBGRADE EXCAVATION	CU YD	400	\$12.00	\$4,800.00
63	2105.522	SELECT GRANULAR BORROW (CV)	CU YD	1,500	\$12.00	\$18,000.00
64	2105.604	GEOTEXTILE FABRIC TYPE V	SQ YD	2,500	\$2.00	\$5,000.00
65	2211.501	AGGREGATE BASE CLASS 5	TON	500	\$15.00	\$7,500.00
66	2357.502	BITUMINOUS MATERIAL FOR TACK COAT	GALLON	150	\$3.50	\$525.00
67	2360.501	TYPE SP 12.5 WEARING COURSE MIX (2,B)	TON	175	\$72.00	\$12,600.00
68	2360.502	TYPE SP 12.5 NON WEAR COURSE MIX (2,B)	TON	250	\$72.00	\$18,000.00
69	2531.501	CONCRETE CURB & GUTTER DESIGN B618	LIN FT	1,200	\$13.00	\$15,600.00
70	2573.502	SILT FENCE, TYPE MACHINE SLICED	LIN FT	200	\$3.00	\$600.00
71	2573.602	TEMPORARY ROCK CONSTRUCTION ENTRANCE	EACH	1	\$1,200.00	\$1,200.00
72	2573.603	BIOROLL	LIN FT	100	\$3.50	\$350.00
73	2575.523	EROSION CONTROL BLANKETS CATEGORY 3	SQ YD	100	\$3.00	\$300.00

Opinion of Probable Cost

WSB Project: 2018 Street Reconstruction Project
Project Location: N. St. Paul
City Project No.: S.A.P. 18-01
WSB Project No.: 10077-000

Design By: JMS
Checked By: GCT

Date: 8/8/2017

Item No.	MN/DOT Specification No.	Description	Unit	Estimated Total Quantity	Estimated Unit Price	Estimated Total Cost
74	2575.605	HYDROSEEDING	ACRE	0.5	\$5,000.00	\$2,500.00
CONSTRUCTION TOTAL						\$128,230.00
CONTINGENCY TOTAL (10%)						\$12,823.00
SUBTOTAL TOTAL						\$141,053.00
INDIRECT COST TOTAL (24%)						\$33,852.72
TOTAL - LAKE BLVD (MAPLEWOOD)						\$175,000.00

C. SANITARY SEWER IMPROVEMENTS

75	2021.501	MOBILIZATION	LUMP SUM	1	\$38,800.00	\$38,800.00
76	2104.509	REMOVE MANHOLE (SANITARY)	EACH	2	\$500.00	\$1,000.00
77	2104.501	REMOVE SEWER PIPE (SANITARY)	LIN FT	200	\$5.00	\$1,000.00
78	2104.509	REMOVE SANITARY SEWER SERVICE	EACH	3	\$250.00	\$750.00
79	2503.602	TEMPORARY BY-PASS PUMPING	LUMP SUM	1	\$15,000.00	\$15,000.00
80	2503.602	8"X4" PVC WYE	EACH	3	\$700.00	\$2,100.00
81	2503.602	RECONNECT TO EXISTING SANITARY SEWER SERVICE	EACH	3	\$200.00	\$600.00
82	2503.603	4" PVC PIPE SEWER - SDR 26	LIN FT	100	\$30.00	\$3,000.00
83	2503.603	8" PVC PIPE SEWER - SDR 35	LIN FT	200	\$75.00	\$15,000.00
84	2503.602	CONNECT TO EXISTING SANITARY SEWER	EACH	2	\$2,500.00	\$5,000.00
85	2503.603	8" CURED-IN-PLACE PIPE SYSTEM	LIN FT	7,550	\$28.00	\$211,400.00
86	2503.603	LINING SEWER PIPE SERVICE	LIN FT	3,300	\$33.00	\$108,900.00
87	2503.603	LINING SEWER PIPE LATERAL	EACH	110	\$3,200.00	\$352,000.00
88	2503.603	TELEWISE SANITARY SEWER	LIN FT	7,550	\$2.00	\$15,100.00
89	2506.602	CHIMNEY SEALS	EACH	33	\$300.00	\$9,900.00
90	2506.516	CASTING ASSEMBLY	EACH	33	\$750.00	\$24,750.00
91	2506.603	CONST. 48" DIA SAN SEWER MANHOLE	LIN FT	20	\$450.00	\$9,000.00
CONSTRUCTION TOTAL						\$813,300.00
CONTINGENCY TOTAL (10%)						\$81,330.00
SUBTOTAL TOTAL						\$894,630.00
INDIRECT COST TOTAL (24%)						\$214,711.20
TOTAL - SANITARY SEWER IMPROVEMENTS						\$1,109,400.00

D. WATER MAIN IMPROVEMENTS

92	2021.501	MOBILIZATION	LUMP SUM	1	\$46,700.00	\$46,700.00
93	2104.501	REMOVE WATER MAIN	LIN FT	8,300	\$5.00	\$41,500.00
94	2104.509	REMOVE WATER SERVICE AND CURB STOP	EACH	110	\$150.00	\$16,500.00
95	2104.509	REMOVE WATER MAINHOLE	EACH	17	\$500.00	\$8,500.00
96	2104.509	REMOVE GATE VALVE AND BOX	EACH	17	\$150.00	\$2,550.00
97	2104.601	REMOVE HYDRANT ASSEMBLY	EACH	16	\$300.00	\$4,800.00
98	2104.601	TEMPORARY WATER SERVICE	LUMP SUM	1	\$30,000.00	\$30,000.00
99	2504.602	CONNECT TO EXISTING WATER SERVICE	EACH	110	\$200.00	\$22,000.00
100	2504.602	CONNECT TO EXISTING WATER MAIN	EACH	4	\$1,000.00	\$4,000.00
101	2504.602	1" CORPORATION STOP	EACH	110	\$350.00	\$38,500.00
102	2504.602	1" CURB STOP AND BOX	EACH	110	\$350.00	\$38,500.00

Opinion of Probable Cost

WSB Project: 2018 Street Reconstruction Project
Project Location: N. St. Paul
City Project No.: S.A.P. 18-01
WSB Project No.: 10077-000

Design By: JMS
Checked By: GCT

Date: 8/8/2017

Item No.	MN/DOT Specification No.	Description	Unit	Estimated Total Quantity	Estimated Unit Price	Estimated Total Cost
103	2504.602	HYDRANT ASSEMBLY	EACH	16	\$5,000.00	\$80,000.00
104	2504.602	8" GATE VALVE AND BOX	EACH	16	\$2,000.00	\$32,000.00
105	2504.603	1" HDPE WATER SERVICE PIPE	LIN FT	3,750	\$25.00	\$93,750.00
106	2504.603	8" WATER MAIN PVC C900	LIN FT	8,500	\$35.00	\$297,500.00
107	2504.604	4" POLYSTYRENE INSULATION	SQ YD	5,000	\$35.00	\$175,000.00
108	2504.608	DUCTILE IRON FITTINGS (POLY-WRAP)	POUND	12,000	\$4.00	\$48,000.00
CONSTRUCTION TOTAL						\$979,800.00
CONTINGENCY TOTAL (10%)						\$97,980.00
SUBTOTAL TOTAL						\$1,077,780.00
INDIRECT COST TOTAL (24%)						\$258,667.20
TOTAL - WATER MAIN IMPROVEMENTS						\$1,336,500.00

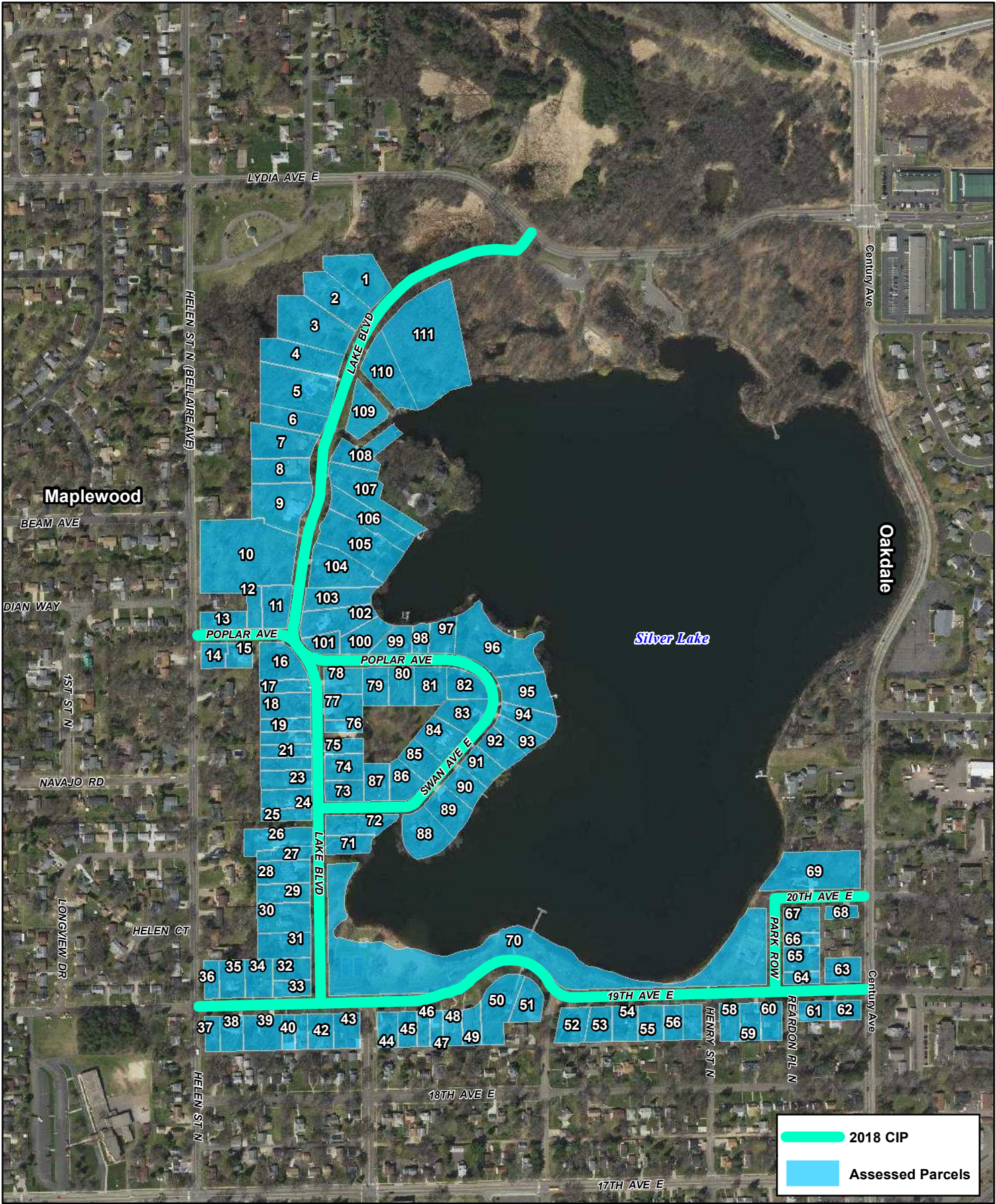
E. DRAINAGE IMPROVEMENTS

109	2021.501	MOBILIZATION	LUMP SUM	1	\$15,200.00	\$15,200.00
110	2104.501	REMOVE SEWER PIPE (STORM)	LIN FT	2,500	\$10.00	\$25,000.00
111	2104.509	REMOVE DRAINAGE STRUCTURE	EACH	51	\$200.00	\$10,200.00
112	2502.541	4" PERF PVC PIPE DRAIN	LIN FT	900	\$20.00	\$18,000.00
113	2503.541	15" RC PIPE SEWER DESIGN 3006 CL V	LIN FT	1,000	\$34.00	\$34,000.00
114	2503.541	18" RC PIPE SEWER DESIGN 3006 CL V	LIN FT	1,000	\$36.00	\$36,000.00
115	2503.541	27" RC PIPE SEWER DESIGN 3006 CL V	LIN FT	400	\$45.00	\$18,000.00
116	2503.602	CONNECT TO EXISTING STORM SEWER	EACH	2	\$1,000.00	\$2,000.00
117	2506.501	CONST DRAINAGE STRUCTURE DES 48-4020	LIN FT	100	\$350.00	\$35,000.00
118	2506.501	CONST DRAINAGE STRUCTURE DES 60-4020	LIN FT	20	\$550.00	\$11,000.00
119	2506.501	CONSTRUCT SUMP/ MANHOLE STRUCTURE	EACH	5	\$5,000.00	\$25,000.00
120	2506.516	CASTING ASSEMBLY	EACH	25	\$700.00	\$17,500.00
121	2506.602	CONSTRUCT DRAINAGE STRUCTURE DESIGN SPECIAL 1	EACH	8	\$1,500.00	\$12,000.00
122	2506.602	RAINGARDEN	EACH	10	\$3,000.00	\$30,000.00
123	2507.602	PARK BMP	LUMP SUM	1	\$30,000.00	\$30,000.00
CONSTRUCTION TOTAL						\$318,900.00
CONTINGENCY TOTAL (10%)						\$31,890.00
SUBTOTAL TOTAL						\$350,790.00
INDIRECT COST TOTAL (24%)						\$84,189.60
TOTAL - DRAINAGE IMPROVEMENTS						\$435,000.00

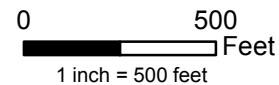
Street and Utility Project Total - 2018 Street & Utility Improvement Project **\$5,482,600.00**

APPENDIX C

Preliminary Assessment Map Preliminary Assessment Roll



Assessed Parcels
CIP Project - 2018
North St. Paul, MN



**CITY OF NORTH ST. PAUL
2018 STREET AND UTILITY IMPROVEMENT PROJECT - S.A.D. 18-01
PRELIMINARY ASSESSMENT ROLL**

Updated: 008/08/17
WSB Project No.: 010077-000
City Project No.: SAD 18-01

North St Paul Assessments:
Reclamation Per foot) \$35
Full Reconstruction (Per foot) \$65

Lake Blvd, 19th Ave, Poplar Ave, Swan Ave, Park Row, 20th Ave E

MAP ID	PID	FEE OWNER TAX NAME 1	FEE OWNER TAX NAME 2	FEE OWNER ADDRESS	CITY/STATE	ZIP CODE	PROPERTY ADDRESS	CITY/STATE	USE DESCRIPTION	FRONT FOOTAGE			SIDE FOOTAGE			PROPOSED TOTAL ASSESSMENT
										ASSESSED FOOTAGE	ASSESSMENT RATE	ASSESSMENT	ASSESSED FOOTAGE	ASSESSMENT RATE	ASSESSMENT	
1	12922130002	John A Vondrachek	Maria L Vondrachek	2959 Lake Blvd	North St. Paul, MN	55109-1652	2959 Lake Blvd	North St. Paul, MN	Residential	100	\$64	\$6,400	0	\$0	\$0	\$6,400
2	12922130003	Christine A Vogl Wiegert	Edward W Wiegert	2935 Lake Blvd	North St. Paul, MN	55109-1652	2935 Lake Blvd	North St. Paul, MN	Residential	100	\$64	\$6,400	0	\$0	\$0	\$6,400
3	12922130004	Trevor C McCooy	Valerie K Wolter	2933 Lake Blvd	North St. Paul, MN	55109-1652	2933 Lake Blvd	North St. Paul, MN	Residential	100	\$64	\$6,400	0	\$0	\$0	\$6,400
4	12922130005	Barbara M Reif Trustee		2931 Lake Blvd	North St. Paul, MN	55109-1652	2931 Lake Blvd	North St. Paul, MN	Residential	90	\$64	\$5,760	0	\$0	\$0	\$5,760
5	12922130006	Michael T Maranda	Rebecca A Maranda	2925 Lake Blvd	North St. Paul, MN	55109-1652	2925 Lake Blvd	North St. Paul, MN	Residential	153.9	\$64	\$9,850	0	\$0	\$0	\$9,850
6	12922130007	Andrew Horstman		2913 Lake Blvd	North St. Paul, MN	55109-1652	2913 Lake Blvd	North St. Paul, MN	Residential	80	\$64	\$5,120	0	\$0	\$0	\$5,120
7	12922130008	Newton H Payne Trustee	Elsie M Payne Trustee	2905 Lake Blvd	North St. Paul, MN	55109-1652	2905 Lake Blvd	North St. Paul, MN	Residential	94.7	\$64	\$6,061	0	\$0	\$0	\$6,061
8	12922130009	David J Czeck	Janey L Czeck	2895 Lake Blvd	North St. Paul, MN	55109-1620	2895 Lake Blvd	North St. Paul, MN	Residential	101.12	\$64	\$6,472	0	\$0	\$0	\$6,472
9	12922130028	Patrick G Blees	Karrie L N Blees	2887 Lake Blvd	North St. Paul, MN	55109-1620	2887 Lake Blvd	North St. Paul, MN	Residential	219.74	\$64	\$14,063	0	\$0	\$0	\$14,063
10	12922420085	Church Of St Peter		2600 Margaret St	North St. Paul, MN	55109-2361	0 Helen St	North St. Paul, MN	Church	227.35	\$64	\$14,550	0	\$0	\$0	\$14,550
11	12922420040	Terrence M Dunklee	K F Dunklee	2529 Poplar Ave	North St. Paul, MN	55109-1627	2529 Poplar Ave	North St. Paul, MN	Residential	92.8	\$64	\$2,970	168.7	\$64	\$5,398	\$8,368
12	12922420041	Church Of St Peter		2600 Margaret St	North St. Paul, MN	55109-2361	0 Poplar Ave	North St. Paul, MN	Church	60	\$64	\$3,840	0	\$0	\$0	\$3,840
13	12922420043	David F Resler	Rylla A Resler	Hauptstrasse 138 Willow	North Carolina	27592-8641	2509 Poplar Ave	North St. Paul, MN	Residential	180	\$64	\$5,760	0	\$0	\$0	\$5,760
14	12922420078	Allen J Lopez	Pamela J Lopez	2639 E 18th Ave	North St. Paul, MN	55109-1828	2832 Helen St	North St. Paul, MN	Residential	105.82	\$64	\$3,386	0	\$0	\$0	\$3,386
15	12922420079	Thomas R Lannier	Kimberly Linda Lannier	2514 Poplar St	North St. Paul, MN	55109-1636	2514 Poplar Ave	North St. Paul, MN	Residential	94.68	\$64	\$6,060	0	\$0	\$0	\$6,060
16	12922420062	Gordon Johnson	Janice J Baltes	2833 Lake Blvd	North St. Paul, MN	55109-1615	2833 Lake Blvd	North St. Paul, MN	Residential	126.3	\$64	\$4,042	154.15	\$64	\$4,933	\$8,974
17	12922420061	Christopher L Gow		2821 Lake Blvd	North St. Paul, MN	55109-1615	2821 Lake Blvd	North St. Paul, MN	Residential	51	\$64	\$3,264	0	\$0	\$0	\$3,264
18	12922420060	Kristopher A Kivel	Angela J Kivel	2815 Lake Blvd	North St. Paul, MN	55109-1615	2815 Lake Blvd	North St. Paul, MN	Residential	100	\$64	\$6,400	0	\$0	\$0	\$6,400
19	12922420059	Gia M Totino	Derek Hansen	2807 Lake Blvd	North St. Paul, MN	55109-1615	2807 Lake Blvd	North St. Paul, MN	Residential	50	\$64	\$3,200	0	\$0	\$0	\$3,200
20	12922420058	Thomas W Marquis	Rebecca L Marquis	2803 Lake Blvd	North St. Paul, MN	55109-1615	2803 Lake Blvd	North St. Paul, MN	Residential	50	\$64	\$3,200	0	\$0	\$0	\$3,200
21	12922420057	John G Myers	James J Myers	2799 Lake Blvd	North St. Paul, MN	55109-1615	2799 Lake Blvd	North St. Paul, MN	Residential	50	\$64	\$3,200	0	\$0	\$0	\$3,200
22	12922420056	Carol F Krueger		2793 Lake Blvd	North St. Paul, MN	55109-1615	2793 Lake Blvd	North St. Paul, MN	Residential	50	\$64	\$3,200	0	\$0	\$0	\$3,200
23	12922420055	Roderick J Koenker	Maureen A Koenker	2787 Lake Blvd St	North St. Paul, MN	55109-1615	2787 Lake Blvd	North St. Paul, MN	Residential	75	\$64	\$4,800	0	\$0	\$0	\$4,800
24	12922420054	Michael M Mikeworth	Elizabeth A Mikeworth	2779 Lake Blvd	North St. Paul, MN	55109-1615	2779 Lake Blvd	North St. Paul, MN	Residential	75	\$64	\$4,800	0	\$0	\$0	\$4,800
25	12922420053	Mark W Long	Sharyn Ann Long	2775 Lake Blvd	North St. Paul, MN	55109-1615	2775 Lake Blvd	North St. Paul, MN	Residential	50	\$64	\$3,200	0	\$0	\$0	\$3,200
26	12922420052	Aaron W Lynch	Jessica V Lynch	2765 Lake Blvd	North St. Paul, MN	55109-1615	2765 Lake Blvd	North St. Paul, MN	Residential	74.52	\$64	\$4,769	0	\$0	\$0	\$4,769
27	12922420051	Patricia A Chalmers		1514 Lane Pl Portsmouth	North St. Paul, MN	55109-1615	2761 Lake Blvd	North St. Paul, MN	Residential	64.52	\$64	\$4,129	0	\$0	\$0	\$4,129
28	12922430002	Michael B Cina	Greta Cina	2753 Lake Blvd	North St. Paul, MN	55109-1615	2753 Lake Blvd	North St. Paul, MN	Residential	90	\$64	\$5,760	0	\$0	\$0	\$5,760
29	12922430003	David J Jungkunz	Julie A Jungkunz	2745 Lake Blvd St	North St. Paul, MN	55109-1615	2745 Lake Blvd	North St. Paul, MN	Residential	75	\$64	\$4,800	0	\$0	\$0	\$4,800
30	12922430004	Dan Galvin	Gayle Galvin	2739 Lake Blvd	North St. Paul, MN	55109-1615	2739 Lake Blvd	North St. Paul, MN	Residential	115.7	\$64	\$7,405	0	\$0	\$0	\$7,405
31	12922430005	Chris A Johnson	Rebecca L Johnson	2729 Lake Blvd	North St. Paul, MN	55109-1615	2729 Lake Blvd	North St. Paul, MN	Residential	100	\$64	\$6,400	0	\$0	\$0	\$6,400
32	12922430006	Alfred B Sorensen	Laurine J Sorensen	2719 Lake Blvd	North St. Paul, MN	55109-1615	2719 Lake Blvd	North St. Paul, MN	Residential	85	\$64	\$5,440	0	\$0	\$0	\$5,440
33	12922430007	Gregory P Luger		2711 Lake Blvd	North St. Paul, MN	55109-1615	2713 Lake Blvd	North St. Paul, MN	Residential	150	\$64	\$4,800	65	\$64	\$2,080	\$6,880
34	12922430008	John Wahl	Kathleen A Vittum	2521 19th Ave E	North St. Paul, MN	55109-1833	2521 19th Ave E	North St. Paul, MN	Residential	108	\$64	\$6,912	0	\$0	\$0	\$6,912
35	12922430009	Michael P Klecker	0	Po Box 409 Sauk Centre	North St. Paul, MN	55109-1841	2511 19th Ave E	North St. Paul, MN	Residential	100	\$64	\$6,400	0	\$0	\$0	\$6,400
36	12922430010	Gail E Bonin	Derek C Bonin	2503 19th Ave E	North St. Paul, MN	55109-1833	2503 19th Ave E	North St. Paul, MN	Residential	60	\$64	\$1,920	0	\$0	\$0	\$1,920
37	12922430021	Brian J Premo		2700 Helen St	North St. Paul, MN	55109-1841	2700 Helen St	North St. Paul, MN	Residential	60	\$64	\$1,920	0	\$0	\$0	\$1,920
38	12922430020	Mark E Lemire	Michelle S Lemire	2518 19th Ave E	North St. Paul, MN	55109-7851	2518 19th Ave E	North St. Paul, MN	Residential	90	\$64	\$5,760	0	\$0	\$0	\$5,760
39	12922430019	Mark W Hodgins		2524 19th Ave E	North St. Paul, MN	55109-1851	2524 19th Ave E	North St. Paul, MN	Residential	150	\$64	\$9,600	0	\$0	\$0	\$9,600
40	12922430018	Jerrold Martin	Plitt Martin	2536 19th Ave E	North St. Paul, MN	55109-1851	2536 19th Ave E	North St. Paul, MN	Residential	50	\$64	\$3,200	0	\$0	\$0	\$3,200
41	12922430017	Zachary J Schlichting		2540 19th Ave E	North St. Paul, MN	55109-1851	2540 19th Ave E	North St. Paul, MN	Residential	50	\$64	\$3,200	0	\$0	\$0	\$3,200
42	12922430016	Kristy I Petersen		2544 19th Ave E	North St. Paul, MN	55109-1851	2544 19th Ave E	North St. Paul, MN	Residential	100	\$64	\$6,400	0	\$0	\$0	\$6,400
43	12922430015	Paul R Flaherty	Jeanne Dyer flaherty	2701 Margaret St	North St. Paul, MN	55109-1859	2701 Margaret S	North St. Paul, MN	Residential	0	\$0	\$0	104.78	\$64	\$3,353	\$3,353
44	12922430053	Sean L Bruce	Shannon M Bruce	2702 Margaret St	North St. Paul, MN	55109-1860	2702 Margaret S	North St. Paul, MN	Residential	0	\$0	\$0	79.93	\$64	\$2,558	\$2,558
45	12922430052	Mark G Connolly		2574 19th Ave E	North St. Paul, MN	55109-1860	2574 19th Ave E	North St. Paul, MN	Residential	75	\$64	\$4,800	0	\$0	\$0	\$4,800
46	12922430051	Allison E Wiski		2580 19th Ave E	North St. Paul, MN	55109-1852	2580 19th Ave E	North St. Paul, MN	Residential	50	\$64	\$3,200	0	\$0	\$0	\$3,200
47	12922430050	Jamey A Schmidt	Keeley A Schmidt	2586 19th Ave E	North St. Paul, MN	55109-1852	2586 19th Ave E	North St. Paul, MN	Residential	50	\$64	\$3,200	0	\$0	\$0	\$3,200
48	12922430079	Summer A Lutgen		2592 19th Ave E	Maplewood, MN	55109-1852	2592 19th Ave E	North St. Paul, MN	Residential	70.11	\$64	\$4,487	0	\$0	\$0	\$4,487
49	12922430080	Robert J Lalor	Mildred E Lalor	2596 19th Ave E	North St. Paul, MN	55109-1852	2596 19th Ave E	North St. Paul, MN	Residential	98.29	\$64	\$6,291	0	\$0	\$0	\$6,291
50	12922430048	Stephen P Maki	Estrella L Maki	2608 19th Ave E	North St. Paul, MN	55109-1852	2608 19th Ave E	North St. Paul, MN	Residential	220	\$64	\$14,080	0	\$0	\$0	\$14,080
51	12922430047	Kjersten A Stadstad		2618 19th Ave E	North St. Paul, MN	55109-1852	2618 19th Ave E	North St. Paul, MN	Residential	0	\$0	\$0	115	\$64	\$3,680	\$3,680
52	12922440029	Lincoln Fetcher Trustee	Kathleen J Kater Trustee	2634 19th Ave E	North St. Paul, MN	55109-1853	2634 19th Ave E	North St. Paul, MN	Residential	0	\$0	\$0	117	\$64	\$3,744	\$3,744
53	12922440028	Richard D Anderson	Michele M Anderson	2640 19th Ave E	North St. Paul, MN	55109-1853	2640 19th Ave E	North St. Paul, MN	Residential	83	\$64	\$5,312	0	\$0	\$0	\$5,312
54	12922440027	Scott G Dacko Trustee	Co John & Joan Dacko	2648 19th Ave E	North St. Paul, MN	55109-1853	2648 19th Ave E	North St. Paul, MN	Residential	100	\$64	\$6,400	0	\$0	\$0	\$6,400
55	12922440026	Patricia Josephine Garvey		2662 19th Ave E	North St. Paul, MN	55109-1853	2662 19th Ave E	North St. Paul, MN	Residential	100	\$64	\$6,400	0	\$0	\$0	\$6,400
56	12922440025	Dana A Shern		2670 19th Ave E	North St. Paul, MN	55109-1853	2670 19th Ave E	North St. Paul, MN	Residential	75	\$64	\$4,800	0	\$0	\$0	\$4,800
57	12922440024	Judy E Burns		2676 19th Ave E	North St. Paul, MN	55109-1853	2676 19th Ave E	North St. Paul, MN	Residential	0	\$0	\$0	75	\$64	\$2,400	\$2,400
58	12922440023	Rochelle M Auge		2700 Henry St	North St. Paul, MN	55109-1858	2700 Henry St	North St. Paul, MN	Residential	0	\$0	\$0	80	\$64	\$2,560	\$2,560
59	12922440022	Paul A Marty	Dawnette M Marty	2694 19th Ave E	North St. Paul, MN	55109-1854	2694 19th Ave E	North St. Paul, MN	Residential	80	\$64	\$5,120	0	\$0	\$0	\$5,120
60	12922440021	Lawrence D Perron	Teri Perron	2702 19th Ave E	North St. Paul, MN	55109-1854	2702 19th Ave E	North St. Paul, MN	Residential	0	\$0	\$0	85	\$35	\$1,488	\$1,488
61	12922440072	Nicholas A Orfei		2702 Reardon Place	North St. Paul, MN	55109-1845	2702 Reardon Pl	North St. Paul, MN	Residential	0	\$0	\$0	122.5	\$35	\$2,144	\$2,144
62	12922440071	Gg Legacy Llc		3728 Oxford Dr Woodbury	North St. Paul, MN	55125-2587	2736 19th Ave E	North St. Paul, MN	Residential	122.5	\$35	\$2,144	0	\$0	\$0	\$2,144
63	12922440007	William K Holmberg		2715 Division St	North St. Paul, MN	55109-1633	2715 Division St	North St. Paul, MN	Residential	140	\$35	\$2,450	0	\$0	\$0	\$2,450
64	12922440008	Laurel R Callaway		2712 Park Row	North St. Paul, MN	55109-1669	2712 Park Row	North St. Paul, MN	Residential	50	\$35	\$875	140	\$64	\$4,480	\$5,355
65	12922440009	Michael P Nessett		2720 Park Row	North St. Paul, MN	55109-1669	2720 Park Row	North St. Paul, MN	Residential	100	\$35	\$3,500	0	\$0	\$0	\$3,500
66	12922440010	David P Knivslund	Marlene G Knivslund	2726 Park Row	North St. Paul, MN	55109-1669	2726 Park Row	North St. Paul, MN	Residential	50	\$35	\$1,750	0	\$0	\$0	\$1,750
67	12922440011	Robert E Jenson		2734 Park Row	North St. Paul, MN	55109-1669	2734 Park Row	North St. Paul, MN	Residential	100	\$35	\$1,750	140	\$64	\$4,480	\$6,230
68	12922440004	Cheri M Brown	0	2736 20th Ave E	North St. Paul, MN	55109-1635	2736 20th Ave E	North St. Paul, MN	Residential	130	\$35	\$2,275	0	\$0	\$0	\$2,275
69	12922440002	Harold R Broman	Margaret R Broman	2711 20th Ave E	North St. Paul, MN	55109-1657	2711 20th Ave E	North St. Paul, MN	Residential	337	\$64	\$10,784	0	\$0	\$0	\$10,784
70	12922430001	City Of North St Paul		2526 7th Ave E	North St. Paul, MN	55109-3003	0 19 th Ave E No	North St. Paul, MN	Park	2618	\$0	\$0	0	\$0	\$0	\$0

CITY OF NORTH ST. PAUL
2018 STREET AND UTILITY IMPROVEMENT PROJECT - S.A.D. 18-01
PRELIMINARY ASSESSMENT ROLL

Updated: 008/08/17
 WSB Project No.: 010077-000
 City Project No.: SAD 18-01

North St Paul Assessments:
 Reclamation Per foot) \$35
 Full Reconstruction (Per foot) \$65

Lake Blvd, 19th Ave, Poplar Ave, Swan Ave, Park Row, 20th Ave E

MAP ID	PID	FEE OWNER TAX NAME 1	FEE OWNER TAX NAME 2	FEE OWNER ADDRESS	CITY/STATE	ZIP CODE	PROPERTY ADDRESS	CITY/STATE	USE DESCRIPTION	FRONT FOOTAGE			SIDE FOOTAGE			PROPOSED TOTAL ASSESSMENT
										ASSESSED FOOTAGE	ASSESSMENT RATE	ASSESSMENT	ASSESSED FOOTAGE	ASSESSMENT RATE	ASSESSMENT	
71	12922420064	Jane F Hepp		2762 Lake Blvd	North St. Paul, MN	55109-1616	2762 Lake Blvd	North St. Paul, MN	Residential	77.5	\$64	\$4,960	0	\$0	\$0	\$4,960
72	12922420069	Kristen L Rieser		2560 Swan Ave E	North St. Paul, MN	55109-1632	2560 Swan Ave E	North St. Paul, MN	Residential	288	\$64	\$9,216	77.5	\$64	\$2,480	\$11,696
73	12922420026	Stephen R Bates	Denise Bates	2784 Lake Blvd	North St. Paul, MN	55109-1618	2784 Lake Blvd	North St. Paul, MN	Residential	85	\$64	\$2,720	150	\$64	\$4,800	\$7,520
74	12922420025	Joan E Laroue		2792 Lake Blvd	North St. Paul, MN	55109-1618	2792 Lake Blvd	North St. Paul, MN	Residential	103	\$64	\$6,592	0	\$0	\$0	\$6,592
75	12922420024	Joseph P Bigelow	Laurie M Bigelow	2800 Lake Blvd	North St. Paul, MN	55109-1618	2800 Lake Blvd	North St. Paul, MN	Residential	60.8	\$64	\$3,891	0	\$0	\$0	\$3,891
76	12922420023	Jerome P Adam	Michelle T Adam	2806 Lake Blvd	North St. Paul, MN	55109-1618	2806 Lake Blvd	North St. Paul, MN	Residential	48.8	\$64	\$3,123	0	\$0	\$0	\$3,123
77	12922420022	Christopher Unger		2810 Lake Blvd	North St. Paul, MN	55109-1618	2810 Lake Blvd	North St. Paul, MN	Residential	100	\$64	\$6,400	0	\$0	\$0	\$6,400
78	12922420021	Donald B Regan	Jean Regan	2550 Poplar Ave	North St. Paul, MN	55109-1618	2550 Poplar Ave	North St. Paul, MN	Residential	150	\$64	\$4,800	100	\$64	\$3,200	\$8,000
79	12922420037	Catherine A Kress	Kevin B Kress	2564 Poplar Ave	Maplewood, MN	55109-1650	2564 Poplar Ave	North St. Paul, MN	Residential	100	\$64	\$6,400	0	\$0	\$0	\$6,400
80	12922420036	Lawrence H Boyle	Elizabeth A Ruhland	2572 Poplar Ave	North St. Paul, MN	55109-1650	2572 Poplar Ave	North St. Paul, MN	Residential	100	\$64	\$6,400	0	\$0	\$0	\$6,400
81	12922420035	William R Schroeder	Mary E Schroeder	2582 Poplar Ave	North St. Paul, MN	55109-1650	2582 Poplar Ave	North St. Paul, MN	Residential	127	\$64	\$8,128	0	\$0	\$0	\$8,128
82	12922420034	John A Monge	Kristin J Monge	2596 Poplar Ave	North St. Paul, MN	55109-1650	2596 Poplar Ave	North St. Paul, MN	Residential	227	\$64	\$14,528	0	\$0	\$0	\$14,528
83	12922420033	Jason Skoby		2611 Swan Ave	North St. Paul, MN	55109	2611 Swan Ave E	North St. Paul, MN	Residential	168	\$64	\$10,752	0	\$0	\$0	\$10,752
84	12922420032	Barry L Brown Trustee	Kay Brown	277 Runge Ln W	North St. Paul, MN	55118-2912	2601 Swan Ave E	North St. Paul, MN	Residential	145	\$64	\$9,280	0	\$0	\$0	\$9,280
85	12922420070	Christine V Lindermann	0	2589 Swan Ave E	North St. Paul, MN	55109-1650	2589 Swan Ave E	North St. Paul, MN	Residential	100	\$64	\$6,400	0	\$0	\$0	\$6,400
86	12922420071	Kathryn Swor	Christian Swor	2587 Swan Ave E	North St. Paul, MN	55109-1629	2587 Swan Ave E	North St. Paul, MN	Residential	173	\$64	\$11,072	0	\$0	\$0	\$11,072
87	12922420027	Wayne M Wirth	Annalisa Wirth	2583 Swan Ave E	Maplewood, MN	55109-1629	2583 Swan Ave E	North St. Paul, MN	Residential	100	\$64	\$6,400	0	\$0	\$0	\$6,400
88	12922420081	Thomas L Armitage	Eileen T Armitage	2584 Swan Ave E	North St. Paul, MN	55109-1632	2584 Swan Ave E	North St. Paul, MN	Residential	92	\$64	\$5,888	0	\$0	\$0	\$5,888
89	12922420080	Duke J Coborn	Amy S Coborn	2592 Swan Ave E	North St. Paul, MN	55109-1632	2592 Swan Ave E	North St. Paul, MN	Residential	112	\$64	\$7,168	0	\$0	\$0	\$7,168
90	12922420015	Thomas J Lutmer	Jacquelyn A Lutmer	2598 Swan Ave E	North St. Paul, MN	55109-1632	2598 Swan Ave E	North St. Paul, MN	Residential	100	\$64	\$6,400	0	\$0	\$0	\$6,400
91	12922420014	Kurt S Ettlinger	Cheryl L Ettlinger	2600 Swan Ave E	North St. Paul, MN	55109-1630	2600 Swan Ave E	North St. Paul, MN	Residential	100	\$64	\$6,400	0	\$0	\$0	\$6,400
92	12922420013	Paul J Anderson	Mary A Anderson	2612 Swan Ave E	North St. Paul, MN	55109-1630	2612 Swan Ave E	North St. Paul, MN	Residential	100	\$64	\$6,400	0	\$0	\$0	\$6,400
93	12922420012	Jason Lehmer	Rebecca Lehmer	2614 Swan Ave E	North St. Paul, MN	55109-1630	2614 Swan Ave E	North St. Paul, MN	Residential	50	\$64	\$3,200	0	\$0	\$0	\$3,200
94	12922420011	Robin K Lalor		2616 Swan Ave E	North St. Paul, MN	55109-1630	2616 Swan Ave E	North St. Paul, MN	Residential	50	\$64	\$3,200	0	\$0	\$0	\$3,200
95	12922420010	John A Muller	Roxanne Muller	2618 Swan Ave E	North St. Paul, MN	55109-1630	2618 Swan Ave E	North St. Paul, MN	Residential	100	\$64	\$6,400	0	\$0	\$0	\$6,400
96	12922420009	Bangean Khalil Abdullah	Zena Khalil	2605 Poplar Ave	North St. Paul, MN	55109-1638	2605 Poplar Ave	North St. Paul, MN	Residential	185	\$64	\$11,840	0	\$0	\$0	\$11,840
97	12922420008	Andrew J Vitcak		2587 Poplar Ave	North St. Paul, MN	55109-1638	2587 Poplar Ave	North St. Paul, MN	Residential	100	\$64	\$6,400	0	\$0	\$0	\$6,400
98	12922420073	David E Liukonen	Pauline M Liukonen	2579 Poplar Ave	North St. Paul, MN	55109-1638	2579 Poplar Ave	North St. Paul, MN	Residential	65	\$64	\$4,160	0	\$0	\$0	\$4,160
99	12922420072	Joyce W Germscheid		2571 Poplar Ave	North St. Paul, MN	55109-1638	2571 Poplar Ave	North St. Paul, MN	Residential	175	\$64	\$11,200	0	\$0	\$0	\$11,200
100	12922420005	Daniel Holley	Katherine Holley	2561 Poplar Ave N	North St. Paul, MN	55109-1638	2561 Poplar Ave	North St. Paul, MN	Residential	105	\$64	\$6,720	0	\$0	\$0	\$6,720
101	12922420084	Frederick T Gelbmann	Pamela K Gelbmann	2838 Lake Blvd	North St. Paul, MN	55109-1619	0 La ke Blvd	North St. Paul, MN	Residential	87.5	\$64	\$2,800	87.5	\$64	\$2,800	\$5,600
102	12922420083	Frederick T Gelbmann	Pamela K Gelbmann	2838 Lake Blvd	North St. Paul, MN	55109-1619	2838 Lake Blvd	North St. Paul, MN	Residential	105	\$64	\$6,720	0	\$0	\$0	\$6,720
103	12922420082	Arnold Fritsche	Carole Fritsche	8829 Spring View Alcove	North St. Paul, MN	55125-9144	2848 Lake Blvd	North St. Paul, MN	Residential	94	\$64	\$6,016	0	\$0	\$0	\$6,016
104	12922420076	Robert T Bruton	R Diana Bruton	2856 Lake Blvd St	North St. Paul, MN	55109-1619	2856 Lake Blvd	North St. Paul, MN	Residential	181	\$64	\$11,584	0	\$0	\$0	\$11,584
105	12922420077	Mark A Fenner Trustee	Joanne L Rukavina	2870 Lake Blvd	North St. Paul, MN	55109-1619	2870 Lake Blvd	North St. Paul, MN	Residential	141	\$64	\$9,024	0	\$0	\$0	\$9,024
106	12922420066	Karen Cournoyer Norgard		2880 Lake Blvd	North St. Paul, MN	55109-1619	2880 Lake Blvd	North St. Paul, MN	Residential	97	\$64	\$6,208	0	\$0	\$0	\$6,208
107	12922130023	Kenneth F Vick	Tina L Vick	2890 Lake Blvd	North St. Paul, MN	55109-1619	2890 Lake Blvd	North St. Paul, MN	Residential	80.65	\$64	\$5,162	0	\$0	\$0	\$5,162
108	12922130020	Allen D Pearson Trustee	Marilyn C Pearson Trustee	21616 N 153rd Dr	North St. Paul, MN	85375-6601	2904 Lake Blvd	North St. Paul, MN	Residential	113.6	\$64	\$7,270	0	\$0	\$0	\$7,270
109	12922130019	City Of North St Paul		2526 7th Ave E	North St. Paul, MN	55109-3003	2916 Lake Blvd	North St. Paul, MN	Park	213.3	\$0	\$0	0	\$0	\$0	\$0
110	12922130018	Paul & Nichol	Bonnie Lembitz	2928 Lake Blvd	North St. Paul, MN	55109-1653	2928 Lake Blvd	North St. Paul, MN	Residential	176.3	\$64	\$11,283	0	\$0	\$0	\$11,283
111	12922130029	Paul J Swan	Barbara S Swan	2932 Lake Blvd	North St. Paul, MN	55109-1653	2932 Lake Blvd	North St. Paul, MN	Residential	331.4	\$64	\$21,210	0	\$0	\$0	\$21,210

APPENDIX D

Capital Improvement Plan (CIP) Map

Pavement Management
CIP Anticipated Project Years
City of North St. Paul MN

LS Lift Station Rehabilitation

Project Years

- 2014
- 2016
- 2018
- 2020
- 2021-2030
- 2031-2040
- 2041 and Beyond

1 inch = 820 feet



2021-2030 Street & Utility Improvements

2020 Street & Utility Improvements

2018 Lift Station Rehabilitation

2018 Street & Utility Improvements

2020 Lift Station Rehabilitation

2014 Street & Utility Improvements

2016 Street & Utility Improvements

2021-2030 Street & Utility Improvements

2031-2040 Street & Utility Improvements

2022 Lift Station Rehabilitation

2031-2040 Street & Utility Improvements

2031-2040 Street & Utility Improvements

APPENDIX E

2017 Geotechnical Report



NORTH ST. PAUL
extraordinary.

GEOTECHNICAL REPORT

2018 CIP STREET IMPROVEMENTS
NORTH ST. PAUL, MN

August 9, 2017

Prepared for:
Mr. Nick Fleischhacker
Director of Public Works
City of North St. Paul
2400 Margaret Street North
North St. Paul, MN 55109

WSB PROJECT NO. 010077-000



GEOTECHNICAL REPORT

2018 CIP STREET IMPROVEMENTS

FOR
CITY OF NORTH ST. PAUL

August 9, 2017



CERTIFICATION

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.



Mark W. Osborn, PE

Date: August 9, 2017

Lic. No. 41362



August 9, 2017

Mr. Nick Fleischhacker
Director of Public Works
City of North St. Paul
2400 Margaret Street North
North St. Paul, MN 55109

Re: Geotechnical Report
2018 CIP Street Improvements
WSB Project No.: 010077-000

We have conducted a geotechnical subsurface exploration program for the above referenced project. This report contains our soil boring logs, an evaluation of the conditions encountered in the borings and our recommendations for suitable pavement section, utility installation, and other geotechnical related design and construction considerations.

If you have any questions concerning this report or our recommendations, or for construction material testing for this project, please call us at (952) 737-4660.

Sincerely,

WSB & Associates, Inc.

A handwritten signature in blue ink, appearing to read "Mark Osborn".

Mark Osborn, PE
Geotechnical Project Engineer

A handwritten signature in blue ink, appearing to read "Darin Hyatt".

Darin Hyatt, PE
Senior Geotechnical Engineer

Attachment

MWO/tw

TABLE OF CONTENTS

TITLE SHEET

CERTIFICATION SHEET

LETTER OF TRANSMITTAL

TABLE OF CONTENTS

1. INTRODUCTION.....	1
1.1 Project Location.....	1
1.2 Project Description	1
1.3 Purpose and Project Scope of Services.....	1
2. PROCEDURES.....	2
2.1 Boring Layout and Soil Sampling Procedures.....	2
2.2 Groundwater Measurements and Borehole Abandonment.....	2
2.3 Boring Log Procedures and Qualifications	2
3. EXPLORATION RESULTS	3
3.1 Site and Geology	3
3.2 Subsurface Soil and Groundwater Conditions	3
3.3 Strength Characteristics	3
3.4 Groundwater Conditions.....	4
4. ENGINEERING ANALYSIS AND RECOMMENDATIONS	5
4.1 Discussion	5
4.2 Pavement Areas	5
4.3 Utilities	7
4.4 Dewatering.....	7
4.5 Backfill and Fill Selection and Compaction	8
4.6 Construction Considerations	8
4.7 Construction Safety	8
4.8 Cold Weather Construction	8
4.9 Field Observation and Testing.....	8
4.10 Plan Review and Remarks	9
5. STANDARD OF CARE.....	10

Appendix A

Soil Boring Exhibit

Logs of Test Borings

Symbols and Terminology on Test Boring Log

Notice to Report Users Boring Log Information

Unified Soil Classification System (USCS)

1. INTRODUCTION

1.1 Project Location

The borings were located along the following roadways:

- Lake Boulevard from Joy Road to 19th Avenue
- East Poplar Avenue from Helen Street North to Swan Avenue
- Swan Avenue from Lake Boulevard to East Poplar Avenue
- 19th Avenue from Helen Street North to Geneva Avenue North
- Margaret Street from 17th Avenue East to 19th Avenue East
- East 20th Avenue from 19th Avenue East to Geneva Avenue North

The approximate soil boring locations can be found on the Soil Boring Exhibit in **Appendix A**. This site is located in T29N, R22W, Section 1 of Ramsey County.

1.2 Project Description

It is proposed to construct new underground utilities including new storm sewer, sanitary sewer, and watermain. The invert elevations for these utilities will range between 10 and 15 feet below grade. The roadways will be reconstructed as a bituminous pavement section with curb and gutter.

We understand the vertical and horizontal alignments of the roadway will remain relatively unchanged.

WSB has developed recommendations for this project in consideration of the proposed layout, loadings, and configurations as understood at this time. WSB must be made aware of the revised or additional information in order to evaluate the recommendations for continued applicability.

1.3 Purpose and Project Scope of Services

Mr. Fleischhacker with the City of North St. Paul (City) authorized this work. In order to assist the design team in preparing plans and specifications, we have developed recommendations for designing the pavement section and for construction of underground utilities. As such, we have completed a subsurface exploration program and prepared a geotechnical report for the referenced site. This stated purpose was a significant factor in determining the scope and level of service provided. Should the purpose of the report change the report immediately ceases to be valid and use of it without WSB's prior review and written authorization shall be at the user's sole risk.

Our authorized scope of work has been limited to:

1. Mobilization / Demobilization of a Truck Mounted Drill Rig.
2. Clearing underground utilities utilizing the Gopher State One Call.
3. Drilling twenty (20) standard penetration borings to 15 to 20 foot depths.
4. Sealing the borings per Minnesota Department of Health procedures.
5. Perform soil classification and analysis.
6. Review of readily available project information and geologic data.
7. Providing this geotechnical report containing:
 - a. Summary of our findings.
 - b. Discussion of subsurface soil and groundwater conditions and how they may affect the proposed pavements.
 - c. Estimated R-value of the soils.
 - d. Recommended pavement section.
 - e. A discussion of soils for use as structural fill and site fill.

2. PROCEDURES

2.1 Boring Layout and Soil Sampling Procedures

The City requested we complete twenty (20) soil borings along the roadways to be reconstructed. WSB recommended the boring depths and selected the desired locations. The borings were staked by our surveyors. The approximate boring locations are shown on the Soil Boring Exhibit in **Appendix A** which is an aerial photo.

We drilled the borings from July 20 to 25, 2017 with a truck-mounted CME-55 drill rig operated by a two-person crew. There were difficulties with locating the underground watermain and gas utilities at Boring PB-10, therefore it was cancelled. Boring PB-7 encountered an obstruction at about 6 ½ feet below grade. Due to the uncertainty of the watermain in that location the boring was terminated at that elevation.

The drill crew advanced the borings using continuous hollow stem augers. Drilling methods, crew chief, depths, sampling interval, casing usage, groundwater observations, test data, and other drilling information are indicated on the boring logs.

Generally, the drill crew sampled the soil in advance of the auger tip at two and one-half foot (2½') intervals of a depth to fifteen feet (15') and then at five foot (5') intervals thereafter. The soil samples were obtained using a split-barrel sampler which was driven into the ground during standard penetration tests in accordance with ASTM D 1586, Standard Method of Penetration Test and Split-Barrel Sampling of Soils.

The materials encountered were described on field logs and representative samples were containerized, and transported to our laboratory for further examination and testing.

The samples were visually examined to estimate the distribution of grain sizes, plasticity, consistency, moisture condition, color, presence of lenses and seams, and apparent geologic origin. We classified the soils according to type using the Unified Soil Classification System (USCS). A chart describing the Unified Soil Classification System is included in **Appendix A**.

2.2 Groundwater Measurements and Borehole Abandonment

The drill crew observed the borings for free groundwater while drilling and after completion. These observations and measurements are noted on the boring logs. The crew then backfilled the borings with soil cuttings to comply with Minnesota Department of Health regulations.

2.3 Boring Log Procedures and Qualifications

The subsurface conditions encountered by the test borings are illustrated on the Logs of Test Borings in **Appendix A**. Similar soils were grouped into the strata shown on the boring logs, and the appropriate estimated USCS classification symbols were also added. The depths and thickness of the subsurface strata indicated on the boring logs were estimated from the drilling results.

The transition between materials (horizontal and vertical) is approximate and is usually far more gradual than shown. Information on actual subsurface conditions exists only at the specific locations indicated and is relevant only to the time exploration was performed. Subsurface conditions and groundwater levels at other locations may differ from conditions found at the indicated locations. The nature and extent of these conditions would not become evident until exposed by construction excavation. These stratification lines were used for our analytical purposes and, due to the aforementioned limitations, should not be used as a basis of design or construction cost estimates.

3. EXPLORATION RESULTS

3.1 Site and Geology

The Ramsey County Geologic Atlas indicates the surficial soils at this site are mostly glacial deposits consisting of a mixture of silty sands and lean clays with sand. The borings were completed through the drive lanes of the roadways. The roadways were bituminous paved with concrete curb and gutter.

3.2 Subsurface Soil and Groundwater Conditions

The boring profile generally consisted of pavement section materials and fills overlying coarse alluvial deposits and glacial deposits.

Pavement Section

The bituminous asphalt thickness ranged from about 3 to 5 inches and averaged about 3½ inches at our boring locations. The aggregate base thickness ranged from about 5 to 12 inches and averaged about 8½ inches at our borings.

Fills

The fills encountered in the borings generally consisted of a mixture of lean clays, silty sands, clayey sands, and sands. Fills extended to depths of about 2 to 12 feet below grade. Some of the fills appeared to be mixed with organics.

Organics

Boring PB-3 encountered organic clays below the fills, from depths of about 4½ to 7½ feet below grade. These organic clays were black in color and were wet.

Coarse Alluvium

Coarse alluvial deposits consisting of sands and sands with gravel were noted in several of the borings. These soils were generally brown in color and moist to wet to waterbearing.

Glacial Till

Glacial deposits were the predominant soils encountered during the drilling process. These deposits consisted of silty sands, clayey sand, and lean clays with sand. These soils were brown to gray in color and were moist to wet to saturated.

3.3 Strength Characteristics

The penetration resistance N-values of the materials encountered were recorded during drilling and are indicated as blows per foot (BPF). Those values provide an indication of soil strength characteristics and are located on the boring log sheets. Also, visual-manual classification techniques and apparent moisture contents were also utilized to make an engineering judgment of the consistency of the materials. Table 1 presents a summary of the penetration resistances in the soils for the borings completed and remarks regarding the material strengths of the soils.

Table 1: Penetration Resistances

Soil Type	Classification	Penetration Resistances	Remarks
Fills	-	3 to 23 BPF	Variable compaction
Organics	OL	4 BPF	Very soft
Fine Alluvium	CL	1 to 8 BPF Average 6 BPF	Very soft to soft Generally soft
Coarse Alluvium	SP	2 to 13 BPF Average 7 BPF	Very loose to medium dense Generally Loose
Glacial Till	SM, SC, CL	4 to 58 BPF Average 11 BPF	Very loose to very dense Generally medium dense

The preceding is a generalized description of soil conditions at this site. Variations from the generalized profile exist and should be assessed from the boring logs, the normal geologic character of the deposits, and the soils uncovered during site excavation.

3.4 Groundwater Conditions

WSB took groundwater level readings in the exploratory borings, reviewed the data obtained, and discussed its interpretation of the data in the text of the report. Note that groundwater levels may fluctuate due to seasonal variations (e.g. precipitation, snowmelt and rainfall) and/or other factors not evident at the time of measurement.

Of the 19 borings that were put down, only 4 encountered groundwater. Borings PB-2, PB-4, PB-14, and PB-19 encountered groundwater at depth of 8 to 15 feet below grade.

No elevations were taken at the boring locations; therefore we cannot correlate the depth to groundwater across the borings. In addition to the groundwater that was encountered, we noted gray colored soils in many of the borings. Gray colored soils can be an indication of long term saturation conditions and could show potential groundwater elevations.

The borings were completed west and south of Silver Lake in North St. Paul. According to the Minnesota Department of Natural Resources, Silver Lake has an ordinary high water level of 989.57 feet. The groundwater level at the borings will likely rise and fall in correlation with the lake levels.

4. ENGINEERING ANALYSIS AND RECOMMENDATIONS

4.1 Discussion

Fills

No information was provided to us regarding density tests or placement observations for the existing fills encountered at the boring locations. Generally, fills that are not documented are recommended for removal and replacement with an engineered fill. However, these fills were likely placed as fill for the pavement section. In our opinion, these fills can be relied upon as pavement support, however, a partial subcut, surficial compaction of the existing fills, and observations and testing during construction would lessen the risk of detrimental settlements.

Organics

Organic soils and vegetated root zones are not suitable for pavement support, and should be removed from within 3 feet of the pavement section. Based on a review of the boring logs, it appears that the organics encountered in Boring PB-3 already meet this recommendation.

Coarse Alluvium

The coarse alluvial deposits would be suitable for support of pavements and underground utilities.

Glacial Till

The glacial tills are generally suitable to support the pavements and underground utilities.

General

It is our opinion that groundwater could be encountered by excavations at this site and could affect construction of underground utilities. The contractor should be prepared to dewater during the underground utility installation.

Generally, the soils in the upper 4 feet of the subgrade influence pavement performance the most. The soils within the pavement subgrade consist of clays and silty sands, which are frost susceptible soils. Consideration should be given to partially subcutting these soils and replacing with a non-frost susceptible granular fill to reduce the potential frost heave below the pavement section.

4.2 Pavement Areas

Table 2 below presents the existing pavement section thicknesses and the subgrade soils encountered below the pavement.

Table 2: Existing Roadway Soil Boring Profiles

Boring No.	Bituminous Thickness (inches)	Aggregate Base Thickness (inches)	Subgrade Soils (Upper 4 feet)
PB-1	5	12	Fill (Sand with Silt, Lean Clay)
PB-2	3	7	Fill (Sand)
PB-3	4	9	Fill (Silty Sand, a little Lean Clay)
PB-4	3	10	Fill (Silty Sand, Lean Clay)
PB-5	3	11	Fill (Silty Sand, Lean Clay)
PB-6	3 ½	8 ½	Fill (Silty Sand, Sandy Lean Clay)
PB-7	3	11	Fill (Silty Sand, Lean Clay)

Boring No.	Bituminous Thickness (inches)	Aggregate Base Thickness (inches)	Subgrade Soils (Upper 4 feet)
PB-8	3	7	Fill (Sandy Silt, Sand, Sandy Lean Clay)
PB-9	3	8	Fill (Clayey Sand), Sandy Lean Clay
PB-11	3	6 ½	Fill (Lean Clay), Silty Clay
PB-12	4	9	Fill (Sand with Silt), Silty Sand
PB-13	5	9	Fill (Silty Sand, Clayey Sand)
PB-14	4	8	Fill (Sand with Silt), Silty Sand
PB-15	4	10	Fill (Silty Sand, Sand)
PB-16	4	12	Fill (Silty Sand), Clayey Sand
PB-17	3	5	Fill (Silty Sand), Silty Sand
PB-18	3	6	Fill (Silty Sand, Lean Clay)
PB-19	3	7	Fill (Silty Sand, Sand, Lean Clay)
PB-20	4	9	Fill (Lean Clay)

After excavation bottom of pavement section elevation, we recommend removing any organic soils encountered within 3 feet of the pavement section and placement an engineered fill. If wet clays are encountered at the bottom of pavement section, we recommend subcutting 2 feet of clays and replacing with a granular fill. Any sands encountered at the bottom of excavation should be surface compacted with a 10-ton vibrating roller compactor with a minimum width of 60 inches.

After preparation of the area as recommended above, proof-roll tests should be utilized with a loaded dump truck to help identify areas that may require corrective action such as scarifying, diking, and compaction or sub-excavations. We also recommend a proof-roll be performed again on the aggregate base just prior to placement of the bituminous pavement.

Based on traffic data available from the Minnesota Department of Transportation (MnDOT), we understand that Average Daily Traffic (ADT) is 510 to 590 vehicles on 19th Avenue, and 470 vehicles on Margaret Street. No traffic data was available for the other roadways. Our design is based on a twenty (20) year design life of the pavement section.

Once the site has been prepared as recommended, we anticipate the prepared subgrade soils will consist mostly of lean clays, silty sands, clayey sands, and sand. These soils would have R-values ranging from 10 to 70. We recommend using an R-value of 15 for design at this site.

Based on traffic ADT of 470 to 590 vehicles, we calculated the roadway traffic to be equivalent to approximately 78,000 to 98,000 Estimated Single Axle Loads (ESAL's) for flexible pavement design. Based on MnDOT's FlexPave excel design utilizing granular equivalent charts, the granular equivalent of the pavement section should be between 15 and 16.

We recommend the pavement section included in Table 3 below, which provides a granular equivalent of 16

Table 3: Recommended Flexible Pavement Section

Section	Thickness (inches)
Bituminous Wear Course, MnDOT 2360	2
Bituminous Base Course, MnDOT 2360	2
MnDOT Class 5 Aggregate Base	7

As previously mentioned the use of a non-frost susceptible sand cushion will help reduce the effects of frost heave. In our opinion, a 30-inch thick non-frost susceptible pavement section typically provides adequate reduction in frost heave potential. This would include placement of about 20 inches of sand below the aggregate base to meet this recommendation. It should be noted that any sand cushion placed below the pavement section would provide positive benefits and reduced potential frost heave.

Drainage of the sand cushion via drain tile will be necessary. Drain tile wrapped in a sock should be placed at the base of the sand cushion and tied into catch basins. We recommend the sand cushion contain less than ten percent (10%) passing the #200 sieve.

Within several years after initial paving, some thermal shrinkage cracks will develop. We recommend routine maintenance be performed to improve pavement performance and increase pavement life. Pavement should be sealed with a liquid bitumen sealer to retard water intrusion into the base course and subgrade. Localized patch failures may also develop where trucks or buses turn on the pavement. When these occur, they should be cut out and patch repaired. Periodic seal coating should also be applied, to preserve the longevity of the pavement.

The pavement sections above provide options to meet the ESAL requirements. Other pavement design options would be acceptable as well as long as they meet the minimum requirements for bituminous thickness, aggregate base thickness, and can meet the ESAL requirements.

4.3 Utilities

Invert elevations are anticipated to be within ten feet (10') of existing grades and we anticipate the subgrade soils for the utilities will consist chiefly of lean clay, silty sand, clayey sand, and sands. Underground utilities are expected to be installed by backhoes completing the excavations and placing fills. Soil compactors should be used to compact the fill in even lifts to the specified densities.

Where organics are encountered at the utility invert elevations, such as around Boring PB-3, we recommend excavation of 3 feet of organics and replacement with an engineered fill.

In addition, we recommend sand conforming to MnDOT Specification 3149.2F Granular Bedding be placed below the utility pipe and at the bottom of any excavation that is wet. The sand should have 100 percent by weight passing the one inch (1") sieve and less than ten percent (10%) by weight passing the #200 sieve. The granular bedding should be placed to at least the crown of the pipe. Trench backfill above this point may consist of the non-organic excavated soils once properly moisture conditioned.

4.4 Dewatering

Groundwater was encountered at depth so 8 to 15 feet below grade in some of the borings, therefore dewatering may be necessary for placement of underground utilities. Dewatering can likely be accomplished with sumps and pumps placed at low points in the utility trenches where clay soils are present. In sandy areas, sand point wells may be required.

4.5 Backfill and Fill Selection and Compaction

The on-site non-organic soils may be reused as backfill and fill provided they are moisture conditioned and can be compacted to their specified densities. Any wet soils excavated would need to be dried before reuse as an engineered fill. Backfills with cobbles larger than six inches (6") should not be placed below pavement or in contact with utilities. We recommend that sandy soils be moisture conditioned to meet compaction specifications and clayey soils be moisture conditioned to within two percent (2%) below to three percent (3%) above their optimum moisture contents as determined from their standard Proctor tests (ASTM D-698). Fill should be spread in lifts of 8-10 inches for clays and 10-12 inches for sands. Table 4 indicates the recommended compaction levels.

Table 4: Recommended Level of Compaction for Backfill and Fill

Area	Percent of Standard Proctor Maximum Dry Density
Pavement: Within 3 feet of top of subgrade Within 3 foot radius of vertical utility structure	100
Pavement: Greater than 3 feet below top of subgrade	95
Utility Trench	95
Landscaping (non-structural)	90

4.6 Construction Considerations

Good surface drainage should be maintained throughout the work so that the site is not vulnerable to ponding during or after a rainfall. If water enters the excavation, it should be promptly removed prior to further construction activities. Under no circumstances should fill be placed into standing water.

Soil corrections at this site for pavement subgrades may not be continuous in all areas. We recommend tapering the fills back to native soils at a ten to one (10:1) slope.

4.7 Construction Safety

All excavations must comply with the requirements of OSHA 29 CFR, Part 1926, Subpart P "Excavations and Trenches". This document states that excavation safety is the responsibility of the contractor. Reference to this OSHA requirement should be included in the job specifications.

The responsibility to provide safe working conditions on this site, for earthwork, building construction, or any associated operations is solely that of the contractor. This responsibility is not borne in any manner by WSB.

4.8 Cold Weather Construction

It is our understanding that construction is unlikely to occur during the winter months. However, if the construction does continue into the winter months we recommend the following guidelines.

Only unfrozen fill should be used. Placement of fill *must not be permitted* on frozen soil.

4.9 Field Observation and Testing

The soil conditions illustrated on the Logs of Test Borings in **Appendix A** are indicative of the conditions only at the boring locations.

WSB also recommends a representative number of field density tests be taken in all engineered fill and backfill placed to aid in judging its suitability. Fill placement and compaction should be monitored and tested to determine that the resulting fill and backfill conforms to specified density, strength or compressibility requirements. We recommend at least one compaction test for every 300 linear feet of utility trench, at vertical intervals not exceeding 2 feet. Prior to use, any proposed fill and backfill material should be submitted to the WSB laboratory for testing to verify compliance with recommendations and project specifications.

Dynamic Cone Penetrometer (DCP) tests can be completed in the aggregate base in lieu of density testing. We recommend following MnDOT Specification 2211-3.

WSB would be pleased to provide the necessary field observation, monitoring and testing services during construction.

4.10 Plan Review and Remarks

The observations, recommendations and conclusions described in this report are based primarily on information provided to WSB, obtained from our subsurface exploration, our experience, several necessary assumptions and the scopes of service developed for this project and are for the sole use of our client. We recommend that WSB be retained to perform a review of final design drawing and specifications to evaluate that the geotechnical engineering report has not been misinterpreted. Should there be any changes in the design related to this project or if there are any uncertainties in the report we should be notified. We would be pleased to review any project changes and modify the recommendations in this report (if necessary) or provide any clarification in writing.

The entire report should be kept together; for example, boring logs should not be removed and placed in the specifications separately.

The boring logs and related information included in this report are indicators of the subsurface conditions only at the specific locations indicated on the Soil Boring Exhibit and times noted on the Logs of Test Boring sheets in **Appendix A**. The subsurface conditions, including groundwater levels, at other locations on the site may differ significantly from conditions that existed at the time of sampling and at the boring locations.

The test borings were put down by WSB solely to obtain indications of subsurface conditions as part of a geotechnical exploration program. No services were performed to evaluate subsurface environmental conditions.

WSB has not performed any observations, investigations, studies or testing that is not specifically listed in the scope of service. WSB shall not be liable for failing to discover any condition whose discovery required the performance of services not authorized by the Agreement.

5. STANDARD OF CARE

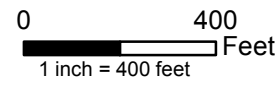
The recommendations and opinions contained in this report are based on our professional judgment. The soil testing and geotechnical engineering services performed for this project have been performed with the level of skill and diligence ordinarily exercised by reputable members of the same profession under similar circumstances, at the same time and in the same or a similar locale. No warranty, either express or implied, is made.

APPENDIX A

Soil Borings Exhibit
Logs of Test Borings
Symbols and Terminology on Test Boring Log
Notice to Report Users Boring Log Information
Unified Soil Classification Sheet (USCS)



Soil Boring Exhibit
 2018 Street Improvements
 North St. Paul, MN
 WSB # 010077-000





LOG OF TEST BORING

PROJECT NAME: 2018 St and Utility Improvements PROJECT LOCATION: North St. Paul, MN
 CLIENT/WSB #: R-010077-000

BORING NUMBER PB-2
 PAGE 1 OF 1

DEPTH (ft)	DESCRIPTION OF MATERIAL	USCS	GEOLOGIC ORIGIN	N	WL	SAMPLE		LABORATORY TESTS					
						No.	TYPE	MC (%)	DD (pcf)	LL (%)	PL (%)		
1	BITUMINOUS 3" AGGREGATE BASE 7" FILL, mostly Sand with a little Gravel, brown		Pavement Section			1	HSA						
2			Fill										
3				18		2	SB						
4													
5													
6				23		3	SB						
7													
8				7		4	SB						
9	SAND WITH A LITTLE GRAVEL, medium to fine grained, brown, wet to water bearing at 9.5', loose to very loose	SP	Coarse Alluvium		▽								
10				2		5	SB						
11													
12				3		6	SB						
13													
14													
15	SANDY LEAN CLAY AND A LITTLE GRAVEL, brown to reddish brown to greenish brown, wet, firm	CL	Glacial Till	9		7	SB						
16													
17													
18													
19													
20	SILTY SAND, dark brown, water bearing, very loose	SM		4		8	SB						
21	End of Boring 21.0 ft.												
22													

WSB BORING LOG - WSB.GDT - 8/9/17 12:21 - K:\010077-000\GEOTECH-CM\TSOIL-BORINGS.GPJ

WATER LEVEL MEASUREMENTS							START: 7/25/2017	END: 7/25/2017	
DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	WATER DEPTH	WATER ELEVATION	METHOD	Crew Chief:	Logged By:
7/25/2017	11:05 am	21	19.5		9.5		3 1/4" HSA 0' - 19.5'	J. Tatro	DAJ
								Notes:	



LOG OF TEST BORING

PROJECT NAME: 2018 St and Utility Improvements PROJECT LOCATION: North St. Paul, MN
 CLIENT/WSB #: R-010077-000

BORING NUMBER PB-3

PAGE 1 OF 1

DEPTH (ft)	DESCRIPTION OF MATERIAL	USCS	GEOLOGIC ORIGIN	N	WL	SAMPLE		LABORATORY TESTS			
						No.	TYPE	MC (%)	DD (pcf)	LL (%)	PL (%)
1	BITUMINOUS 4" AGGREGATE BASE 9" Fabric below Aggregate Base FILL, mostly Silty Sand with a little Lean Clay, brown, dark brown		Pavement Section			1	HSA				
2			Fill								
3				11		2	SB				
4											
5	ORGANIC CLAY, black, wet, very soft	OL	Topsoil								
6				4		3	SB				
7											
8	SANDY LEAN CLAY AND A LITTLE GRAVEL, gray, wet, soft	CL	Glacial Till								
9				6		4	SB				
10											
11	CLAYEY SAND WITH A LITTLE GRAVEL, reddish brown, wet, very soft to soft	SC		4		5	SB				
12											
13				8		6	SB				
14											
15											
16	End of Boring 16.0 ft.			16		7	SB				
17											
18											
19											
20											
21											
22											

WSB BORING LOG - WSB.GDT - 8/9/17 12:21 - K:\010077-000\GEOTECH-CM\T\S\OIL-BORINGS.GPJ

WATER LEVEL MEASUREMENTS

START: 7/25/2017

END: 7/25/2017

DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	WATER DEPTH	WATER ELEVATION	METHOD	Crew Chief:	Logged By:
7/25/2017	10:25 am	16	14.5		None		3 1/4" HSA 0' - 14.5'	J. Tatro	DAJ
								Notes:	



LOG OF TEST BORING

PROJECT NAME: 2018 St and Utility Improvements PROJECT LOCATION: North St. Paul, MN
 CLIENT/WSB #: R-010077-000

BORING NUMBER PB-4
 PAGE 1 OF 1

DEPTH (ft)	DESCRIPTION OF MATERIAL	USCS	GEOLOGIC ORIGIN	N	WL	SAMPLE		LABORATORY TESTS					
						No.	TYPE	MC (%)	DD (pcf)	LL (%)	PL (%)		
0 - 1	BITUMINOUS 3" AGGREGATE BASE 10"		Pavement Section										
1 - 2	FILL, mostly Silty Sand, dark brown		Fill			1	HSA						
2 - 3	FILL, mostly Lean Clay, brown, dark brown												
3 - 4				4		2	SB						
4 - 5													
5 - 6	SILTY CLAY WITH SAND AND A LITTLE GRAVEL, reddish brown, moist to wet, firm to soft	SM	Glacial Till										
6 - 7				10		3	SB						
7 - 8													
8 - 9				6		4	SB						
9 - 10													
10 - 11													
11 - 12				8		5	SB						
12 - 13													
13 - 14				5		6	SB						
14 - 15													
15 - 16					▽								
16 - 17				8		7	SB						
17 - 18													
18 - 19													
19 - 20													
20 - 21													
21 - 22	End of Boring 21.0 ft.			10		8	SB						

WSB BORING LOG - WSB.GDT - 8/9/17 12:21 - K:\010077-000\GEOTECH-CM\T\S\OIL BORINGS.GPJ

WATER LEVEL MEASUREMENTS							START: 7/21/2017	END: 7/21/2017	
DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	WATER DEPTH	WATER ELEVATION	METHOD	Crew Chief:	Logged By:
7/21/2017	9:45 am	21	19		15.0		3 1/4" HSA 0' - 19.5'	J. Tatro	DAJ
								Notes:	



LOG OF TEST BORING

PROJECT NAME: 2018 St and Utility Improvements PROJECT LOCATION: North St. Paul, MN
 CLIENT/WSB #: R-010077-000

BORING NUMBER PB-5

PAGE 1 OF 1

DEPTH (ft)	DESCRIPTION OF MATERIAL	USCS	GEOLOGIC ORIGIN	N	WL	SAMPLE		LABORATORY TESTS				
						No.	TYPE	MC (%)	DD (pcf)	LL (%)	PL (%)	
0 - 1	BITUMINOUS 3" AGGREGATE BASE 11"		Pavement Section									
1 - 2	FILL, mostly Silty Sand, a little Gravel, brown, dark brown		Fill			1	HSA					
2 - 3	FILL, mostly Lean Clay, brown, reddish brown						2	SB				
3 - 5				14								
5 - 6	SILTY SAND, reddish brown, wet, very soft	SM	Glacial Till	4		3	SB					
6 - 8				4		4	SB					
8 - 10				4		5	SB					
10 - 13				4		6	SB					
13 - 14				4		6	SB					
14 - 15				6		7	SB					
15 - 16					6		7	SB				
16 - 22	End of Boring 16.0 ft.											

WSB BORING LOG - WSB.GDT - 8/9/17 12:21 - K:\010077-000\GEOTECH-CM\TSOIL-BORINGS.GPJ

WATER LEVEL MEASUREMENTS

START: 7/21/2017

END: 7/21/2017

DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	WATER DEPTH	WATER ELEVATION	METHOD	Crew Chief:	Logged By:
7/21/2017	10:40 am	16	14.5		None		3 1/4" HSA 0' - 14.5'	J. Tatro	DAJ
								Notes:	



LOG OF TEST BORING

PROJECT NAME: 2018 St and Utility Improvements PROJECT LOCATION: North St. Paul, MN
 CLIENT/WSB #: R-010077-000

BORING NUMBER PB-6
 PAGE 1 OF 1

DEPTH (ft)	DESCRIPTION OF MATERIAL	USCS	GEOLOGIC ORIGIN	N	WL	SAMPLE		LABORATORY TESTS					
						No.	TYPE	MC (%)	DD (pcf)	LL (%)	PL (%)		
1	BITUMINOUS 3 1/2" AGGREGATE BASE 8 1/2"		Pavement Section										
1	FILL, mostly Silty Sand and Sandy Lean Clay, dark brown		Fill			1	HSA						
2													
3				6		2	SB						
4													
5													
6				12		3	SB						
7													
8				9		4	SB						
9													
10													
11				11		5	SB						
12													
12	SAND WITH GRAVEL, fine grained, reddish brown, moist, medium dense	SP	Coarse Alluvium										
13				13		6	SB						
14													
15	SAND, fine grained, reddish brown, moist, loose to medium dense	SP											
16				10		7	SB						
17													
18													
19													
20													
21	End of Boring 21.0 ft.			12		8	SB						
22													

WSB BORING LOG - WSB.GDT - 8/9/17 12:21 - K:\010077-000\GEOTECH-CM\T\SOIL BORINGS.GPJ

WATER LEVEL MEASUREMENTS

START: 7/25/2017

END: 7/25/2017

DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	WATER DEPTH	WATER ELEVATION	METHOD	Crew Chief:	Logged By:
7/25/2017	11:20 am	21	19.5		None		3 1/4" HSA 0' - 19.5'	J. Tatro	DAJ
								Notes:	



LOG OF TEST BORING

PROJECT NAME: 2018 St and Utility Improvements PROJECT LOCATION: North St. Paul, MN
 CLIENT/WSB #: R-010077-000

BORING NUMBER PB-7
 PAGE 1 OF 1

DEPTH (ft)	DESCRIPTION OF MATERIAL	USCS	GEOLOGIC ORIGIN	N	WL	SAMPLE		LABORATORY TESTS					
						No.	TYPE	MC (%)	DD (pcf)	LL (%)	PL (%)		
0	BITUMINOUS 3" AGGREGATE BASE 11"		Pavement Section										
1	FILL, mostly Silty Sand, dark brown		Fill			1	HSA						
2	Fill, mostly Lean Clay, brown, reddish brown						2	SB					
3				7									
4													
5													
6	- Auger terminated at 6 1/2' due to obstruction			14		3	SB						
7	End of Boring 6.5 ft.												
8													
9													
10													
11													
12													
13													
14													
15													
16													
17													
18													
19													
20													
21													
22													

WATER LEVEL MEASUREMENTS

START: 7/21/2017

END: 7/21/2017

DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	WATER DEPTH	WATER ELEVATION	METHOD	Crew Chief:	Logged By:
7/21/2017	12:30 pm	6	6.5		None		3 1/4" HSA 0' - 6.5'	J. Tatro	DAJ
								Notes:	

WSB BORING LOG - WSB.GDT - 8/9/17 12:21 - K:\010077-000\GEOTECH-CMITSOIL-BORINGS.GPJ



LOG OF TEST BORING

PROJECT NAME: 2018 St and Utility Improvements PROJECT LOCATION: North St. Paul, MN
 CLIENT/WSB #: R-010077-000

BORING NUMBER PB-11

PAGE 1 OF 1

DEPTH (ft)	DESCRIPTION OF MATERIAL	USCS	GEOLOGIC ORIGIN	N	WL	SAMPLE		LABORATORY TESTS				
						No.	TYPE	MC (%)	DD (pcf)	LL (%)	PL (%)	
0 - 1	BITUMINOUS 3" AGGREGATE BASE 6 1/2" FILL, Lean Clay, dark brown		Pavement Section Fill			1	HSA					
1 - 3	SILTY CLAY, reddish brown to gray, wet, soft	CL	Fine Alluvium	7		2	SB					
3 - 6				8		3	SB					
6 - 9				6		4	SB					
9 - 10	SILTY SAND, Cobbles from 12-16 feet, brown, moist, loose	SM	Glacial Till	7		5	SB					
10 - 13				58		6	SB					
13 - 16				27		7	SB					
16 - 22	End of Boring 16.0 ft.											

WSB BORING LOG - WSB.GDT - 8/9/17 12:21 - K:\010077-000\GEOTECH-CM\T\SOIL BORINGS.GPJ

WATER LEVEL MEASUREMENTS

START: 7/25/2017

END: 7/25/2017

DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	WATER DEPTH	WATER ELEVATION	METHOD	Crew Chief:	Logged By:
7/25/2017	12:30 pm	16	14.5		None		3 1/4" HSA 0' - 14.5'	J. Tatro	DAJ
								Notes:	



LOG OF TEST BORING

PROJECT NAME: 2018 St and Utility Improvements PROJECT LOCATION: North St. Paul, MN
 CLIENT/WSB #: R-010077-000

BORING NUMBER PB-13

PAGE 1 OF 1

DEPTH (ft)	DESCRIPTION OF MATERIAL	USCS	GEOLOGIC ORIGIN	N	WL	SAMPLE		LABORATORY TESTS					
						No.	TYPE	MC (%)	DD (pcf)	LL (%)	PL (%)		
0 - 1	BITUMINOUS 5" AGGREGATE BASE 9"		Pavement Section										
1 - 2	FILL, mostly Silty Sand, reddish brown		Fill			1	HSA						
2 - 3	FILL, Clayey Sand and a Little Gravel, brown, wet, very soft to soft		Fill			2	SB						
3 - 5				3									
5 - 6				5		3	SB						
6 - 7													
7 - 8	CLAYEY SILT, a few Roots, gray, wet, very soft	ML	Fine Alluvium			4	SB						
8 - 11				1									
11 - 12	SAND WITH CLAY AND A LITTLE GRAVEL, reddish brown, moist, loose	SC	Glacial Till			5	SB						
12 - 13	SILTY SAND, brown, wet, medium dense	SM				6	SB						
13 - 14				16									
14 - 15													
15 - 16				14		7	SB						
16 - 22	End of Boring 16.0 ft.												

WSB BORING LOG - WSB.GDT - 8/9/17 12:21 - K:\010077-000\GEOTECH-CM\T\SOIL BORINGS.GPJ

WATER LEVEL MEASUREMENTS

START: 7/24/2017

END: 7/24/2017

DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	WATER DEPTH	WATER ELEVATION	METHOD	Crew Chief:	Logged By:
7/24/2017	9:30 am	16	14.5		None		3 1/4" HSA 0' - 14.5'	J. Tatro	DAJ
								Notes:	



LOG OF TEST BORING

PROJECT NAME: 2018 St and Utility Improvements PROJECT LOCATION: North St. Paul, MN
 CLIENT/WSB #: R-010077-000

BORING NUMBER PB-15
 PAGE 1 OF 1

DEPTH (ft)	DESCRIPTION OF MATERIAL	USCS	GEOLOGIC ORIGIN	N	WL	SAMPLE		LABORATORY TESTS					
						No.	TYPE	MC (%)	DD (pcf)	LL (%)	PL (%)		
0 - 1	BITUMINOUS 4" AGGREGATE BASE 10"		Pavement Section										
1 - 4	FILL, a mixture of Silty Sand, Sand with a little Gravel, brown, reddish brown		Fill			1	HSA						
4 - 16	SILTY SAND WITH A LITTLE GRAVEL, cobbles 12-15 feet, reddish brown, moist, firm to hard	SM	Glacial Till			2	SB						
				6									
				12		3	SB						
				24		4	SB						
				13		5	SB						
				61/8		6	SB						
				28		7	SB						
16	End of Boring 16.0 ft.												

WSB BORING LOG - WSB.GDT - 8/9/17 12:21 - K:\010077-000\GEOTECH-CM\T\SOIL BORINGS.GPJ

WATER LEVEL MEASUREMENTS

START: 7/24/2017

END: 7/24/2017

DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	WATER DEPTH	WATER ELEVATION	METHOD	Crew Chief:	Logged By:
7/24/2017	2:10 pm	16	14.5		None		3 1/4" HSA 0' - 14.5'	J. Tatro	DAJ
								Notes:	



LOG OF TEST BORING

PROJECT NAME: 2018 St and Utility Improvements PROJECT LOCATION: North St. Paul, MN
 CLIENT/WSB #: R-010077-000

BORING NUMBER PB-16

PAGE 1 OF 1

DEPTH (ft)	DESCRIPTION OF MATERIAL	USCS	GEOLOGIC ORIGIN	N	WL	SAMPLE		LABORATORY TESTS					
						No.	TYPE	MC (%)	DD (pcf)	LL (%)	PL (%)		
0 - 1	BITUMINOUS 4" AGGREGATE BASE 12"		Pavement Section										
1 - 2	FILL, mostly Silty Sand, brown, gray		Fill			1	HSA						
2 - 3	CLAYEY SAND, reddish brown, moist, loose	SC	Glacial Till	5		2	SB						
3 - 4													
4 - 5	SILTY SAND, brown, moist, medium dense to loose	SM											
5 - 6													
6 - 7				12		3	SB						
7 - 8													
8 - 9				12		4	SB						
9 - 10													
10 - 11													
11 - 12				11		5	SB						
12 - 13													
13 - 14				9		6	SB						
14 - 15													
15 - 16	CLAYEY SAND AND A LITTLE GRAVEL, grayish brown, moist, firm	SC		9		7	SB						
16 - 17													
17 - 18	SILTY SAND AND A LITTLE GRAVEL, reddish brown, wet, firm	SM											
18 - 19													
19 - 20													
20 - 21													
21 - 22	End of Boring 21.0 ft.			11		8	SB						

WSB BORING LOG - WSB.GDT - 8/9/17 12:21 - K:\010077-000\GEOTECH-CMITS\SOIL BORINGS.GPJ

WATER LEVEL MEASUREMENTS							START: 7/24/2017	END: 7/24/2017	
DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	WATER DEPTH	WATER ELEVATION	METHOD	Crew Chief:	Logged By:
7/24/2017	2:50 pm	21	19.5		None		3 1/4" HSA 0' - 19.5'	J. Tatro	DAJ
								Notes:	



LOG OF TEST BORING

PROJECT NAME: 2018 St and Utility Improvements PROJECT LOCATION: North St. Paul, MN
 CLIENT/WSB #: R-010077-000

BORING NUMBER PB-17
 PAGE 1 OF 1

DEPTH (ft)	DESCRIPTION OF MATERIAL	USCS	GEOLOGIC ORIGIN	N	WL	SAMPLE		LABORATORY TESTS				
						No.	TYPE	MC (%)	DD (pcf)	LL (%)	PL (%)	
1	BITUMINOUS 3" AGGREGATE BASE 5" FILL, mostly Silty Sand with a little Gravel, brown		Pavement Section Fill			1	HSA					
2	SILTY SAND AND A LITTLE GRAVEL, reddish brown, wet, loose to very loose to loose	SM	Glacial Till	5		2	SB					
3												
4												
5												
6				4		3	SB					
7												
8												
9												
10												
11				6		4	SB					
12												
13	SAND, fine grained, brown, moist, medium dense	SP	Coarse Alluvium	11		6	SB					
14												
15	LEAN CLAY WITH SAND AND A LITTLE GRAVEL, reddish brown, moist, firm	CL	Glacial Till	15		7	SB					
16	End of Boring 16.0 ft.											
17												
18												
19												
20												
21												
22												

WSB BORING LOG - WSB.GDT - 8/9/17 12:21 - K:\010077-000\GEOTECH-CM\TSOIL-BORINGS.GPJ

WATER LEVEL MEASUREMENTS

START: 7/24/2017

END: 7/24/2017

DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	WATER DEPTH	WATER ELEVATION	METHOD	Crew Chief:	Logged By:
7/24/2017	11:05 am	16	14.5		None		3 1/4" HSA 0' - 14.5'	J. Tatro	DAJ
								Notes:	



LOG OF TEST BORING

PROJECT NAME: 2018 St and Utility Improvements PROJECT LOCATION: North St. Paul, MN
 CLIENT/WSB #: R-010077-000

BORING NUMBER PB-18

PAGE 1 OF 1

DEPTH (ft)	DESCRIPTION OF MATERIAL	USCS	GEOLOGIC ORIGIN	N	WL	SAMPLE		LABORATORY TESTS			
						No.	TYPE	MC (%)	DD (pcf)	LL (%)	PL (%)
1	BITUMINOUS 3" AGGREGATE BASE 6" FILL, a mixture of Silty Sand, Lean Clay, a little Gravel, reddish brown, dark brown		Pavement Section	19		1	HSA				
2			Fill								
3						2	SB				
4											
5	SAND WITH SILT AND A LITTLE GRAVEL, fine grained, brown, moist, medium dense	SP-SM	Coarse Alluvium	13		3	SB				
6											
7	SILTY SAND WITH A LITTLE GRAVEL, cobbles 17-19.8 feet, reddish brown, hard	SM	Glacial Till	17		4	SB				
8											
9											
10											
11											
12											
13											
14											
15											
16											
17											
18											
19											
20											
21											
22											

End of Boring 19.8 ft.

WATER LEVEL MEASUREMENTS

START: 7/24/2017

END: 7/24/2017

DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	WATER DEPTH	WATER ELEVATION	METHOD	Crew Chief:	Logged By:
7/24/2017	12:25 pm	19.8	19.5		None		3 1/4" HSA 0' - 19.5'	J. Tatro	DAJ
								Notes:	

WSB BORING LOG - WSB.GDT - 8/9/17 12:21 - K:\010077-000\GEOTECH-CMITS\OIL BORINGS.GPJ



LOG OF TEST BORING

PROJECT NAME: 2018 St and Utility Improvements PROJECT LOCATION: North St. Paul, MN
 CLIENT/WSB #: R-010077-000

BORING NUMBER PB-19
 PAGE 1 OF 1

DEPTH (ft)	DESCRIPTION OF MATERIAL	USCS	GEOLOGIC ORIGIN	N	WL	SAMPLE		LABORATORY TESTS				
						No.	TYPE	MC (%)	DD (pcf)	LL (%)	PL (%)	
0 - 1	BITUMINOUS 3" AGGREGATE BASE 7" FILL, a mixture of Silty Sand, Sand, Lean Clay, a little Organic Clay, dark brown, brown, reddish brown, black		Pavement Section			1	HSA					
1 - 2			Fill									
2 - 3				5		2	SB					
3 - 4												
4 - 5												
5 - 6												
6 - 7				17		3	SB					
7 - 8												
8 - 9	SILTY SAND WITH A LITTLE GRAVEL, reddish brown, moist, firm to hard	SM	Glacial Till	22		4	SB					
9 - 10												
10 - 11				14		5	SB					
11 - 12					∇							
12 - 13				18		6	SB					
13 - 14												
14 - 15												
15 - 16				19		7	SB					
16 - 17	End of Boring 16.0 ft.											
17 - 18												
18 - 19												
19 - 20												
20 - 21												
21 - 22												

WSB BORING LOG - WSB.GDT - 8/9/17 12:21 - K:\010077-000\GEOTECH-CM\T\SOIL BORINGS.GPJ

WATER LEVEL MEASUREMENTS

START: 7/24/2017

END: 7/24/2017

DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	WATER DEPTH	WATER ELEVATION	METHOD	Crew Chief:	Logged By:
7/24/2017	4:00 pm	16	14.5		12.0		3 1/4" HSA 0' - 14.5'	J. Tatro	DAJ
								Notes:	



LOG OF TEST BORING

PROJECT NAME: 2018 St and Utility Improvements PROJECT LOCATION: North St. Paul, MN
 CLIENT/WSB #: R-010077-000

BORING NUMBER PB-20

PAGE 1 OF 1

DEPTH (ft)	DESCRIPTION OF MATERIAL	USCS	GEOLOGIC ORIGIN	N	WL	SAMPLE		LABORATORY TESTS					
						No.	TYPE	MC (%)	DD (pcf)	LL (%)	PL (%)		
1	BITUMINOUS 4" AGGREGATE BASE 9" FILL, Lean Clay with Sand, pieces of Bituminous Asphalt, dark brown, black		Pavement Section Fill			1	HSA						
2													
3				16		2	SB						
4													
5													
6	SILTY SAND, brown to grayish brown, wet, very soft	SM	Glacial Till	5		3	SB						
7													
8				4	∇	4	SB						
9													
10	SANDY LEAN CLAY WITH A LITTLE GRAVEL, grayish brown, wet to moist, soft to firm to hard	SM		7		5	SB						
11													
12													
13				11		6	SB						
14													
15	SILTY SAND, brown, saturated, medium dense	SM		14		7	SB						
16													
17													
18													
19													
20													
21	End of Boring 21.0 ft.			17		8	SB						
22													

WSB BORING LOG - WSB.GDT - 8/9/17 12:21 - K:\010077-000\GEOTECH-CMITS\OIL BORINGS.GPJ

WATER LEVEL MEASUREMENTS

START: 7/24/2017

END: 7/24/2017

DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	WATER DEPTH	WATER ELEVATION	METHOD	Crew Chief:	Logged By:
7/24/2017	3:25 pm	21	19.5		8.0		3 1/4" HSA 0' - 19.5'	J. Tatro	DAJ
								Notes:	



SYMBOLS AND TERMINOLOGY ON TEST BORING LOG

SYMBOLS			
Drilling and Sampling		Laboratory Testing	
Symbol	Description	Symbol	Description
HSA	3-1/4" LD. Hollow stem auger	W	Water content, % (ASTM** D2216)
_FA	4", 6" or 10" diameter flight auger	D	Dry density, pcf
_HA	2", 4", or 6" hand auger	LL	Liquid limit (ASTM D4318)
_DC	2-1/2", 4", 5", or 6" steel drive casing	PL	Plastic limit (ASTM D4318)
_RC	Size A, B or N rotary casing		
PD	Pipe drill or cleanout tube		-Inserts in last column (Qu or RQD)-
CS	Continuous split barrel sampling	Qu	Unconfined compressive strength, psf (ASTM D2166)
DM	Drilling mud	Pq	Penetrometer reading, tsf (ASTM D1558)
JW	Jetting water	Ts	Torvane reading, tsf
SB	2" O.D. split barrel sampling	G	Specific gravity (ASTM D854)
_L	2-1/2" or 3-1/2" O.D. SB liner sampler	SL	Shrinkage limits (ASTM D427)
_T	2" or 3" thin walled tube sample	OC	Organic content-combustion method (ASTM D2974)
3TP	3" thin walled tube using pitcher sampler	SP	Swell pressure, tsf (ASTM D4546)
_TO	2" or 3" thin walled tube using Osterberg sampler	PS	Percent swell under pressure (ASTM D4546)
W	Wash sample	FS	Free swell, % (ASTM D4546)
B	Bag sample	SS	Shrink swell, % (ASTM D4546)
P	Test pit sample	pH	Hydrogen ion content-Meter Method (ASTM D4972)
_Q	BQ, NQ, or PQ wire line system	SC	Sulfate content, parts/million or mg/l
_X	AX, BX, or NX double tube barrel	CC	Chloride content, parts/million or mg/l
N	Standard penetration test, blows per foot	C*	One dimensional consolidation (ASTM D2435)
CR	Core recovery, percent	Qc*	Triaxial compression (ASSTM D2850 and D4767)
WL	Water level	D.S.*	Direct Shear (ASTM D3080)
▼	Water level	K*	Coefficient of permeability, cm/sec (ASTM D2434)
NMR	No measurement recorded, primarily due to presence of drilling or coring fluid.	P*	Pinhole test (ASTM D4647)
		DH*	Double hydrometer (ASTM D4221)
		MA*	Particle size analysis (ASTM D422)
		R	Laboratory electrical resistivity, ohm-cm (ASTM G57)
		E*	Pressuremeter deformation modulus, tsf (ASTM D4719)
		PM*	Pressuremeter test (ASTM D4719)
		VS*	Field vane shear (ASTM D2573)
		IR*	Infiltrimeter test (ASTM D3385)
		RQD	Rock quality designation, percent
			*Results shown on attached data sheet or graph
			**ASTM designates American Society for Testing and Materials

TERMINOLOGY							
Particle Sizes				Soil layering and Moisture			
Type	Size Range	Term	Visual Observation				
Boulders	> 12"	Lamination	Up to 1/4" thick stratum				
Cobbles	3" – 12"	Varved	Altering laminations of any combination of clay, silt, fine sand, or colors				
Coarse gravel	3/4" – 3"	Lenses	Small pockets of different soils in a soil mass				
Fine gravel	#4 sieve – 3/4"	Stratified	Altering layers of varying materials or colors				
Coarse sand	#4 - #10 sieve	Layer	1/4" to 12" thick stratum				
Medium sand	#10-#40 sieve	Dry	Powdery, no noticeable water				
Fine sand	#40-#200 sieve	Moist	Damp, below saturation				
Silt	100% passing #200 sieve and > 0.005mm	Waterbearing	Pervious soil below water				
Clay	100% passing #200 sieve and < 0.005mm	Wet	Saturated, above liquid limit				
Gravel Content				Standard Penetration Resistance			
Coarse-Grained Soils		Fine-Grained Soils		Cohesionless Soils		Cohesive Soils	
% Gravel	Description	% Gravel	Description	N-Value	Relative Density	N-Value	Consistency
2-15	A little gravel	< 5	Trace of gravel	0-4	Very loose	0-4	Very soft
16-49	With gravel	5-15	A little gravel	5-10	Loose	5-8	Soft
		16-30	With gravel	11-30	Medium dense	9-15	Firm
		31-49	Gravelly	31-50	Dense	16-30	Hard
				> 50	Very dense	> 30	Very hard



NOTICE TO REPORT USERS BORING LOG INFORMATION

Subsurface Profiles

The subsurface stratification lines on the graphic representation of the test borings show an approximate boundary between soil types or rock. The transition between materials is approximate and is usually far more gradual than shown. Estimating excavation depths, soil volumes and other computations relying on the subsurface strata may not be possible to any degree of accuracy.

Water Level

WSB & Associates, Inc. took groundwater level readings in the exploratory borings, reviewed the data obtained, and discussed its interpretation of the data in the text of this report. The groundwater level may fluctuate due to seasonal variations caused by precipitation, snowmelt, rainfalls, construction or remediation activities, and/or other factors not evident at the time of measurement.

The actual determination of the subsurface water level is an interpretative process. Subsurface water level may not be accurately depicted by the levels indicated on the boring logs. Normally, a subsurface exploration obtains general information regarding subsurface features for design purposes. An accurate determination of subsurface water levels is not possible with a typical scope of work. The use of the subsurface water level information provided for estimating purposes or other site review can present a moderate to high risk of error.

The following information is obtained in the field and noted under "Water Level Measurements" at the bottom of the log.

Sampled Depth: The lowest depth of soil sampling at the time a water level measurement is taken.

Casing Depth: The depth to the bottom of the casing or hollow-stem auger at the time of water level measurement.

Cave-In Depth: The depth at which the measuring tape stops in the bore hole.

Water Level: The point in the bore hole at which free-standing water is encountered by a measuring tape dropped from the surface inside the casing.

Drilling Fluid Level: Similar to the water level, except the liquid in the bore hole is a drilling fluid.

Obstruction Depths

Obstructions and/or obstruction depths may be noted on the boring logs. Obstruction indicates the sampling equipment encountered resistance to penetration. It must be realized that continuation of drilling, the use of other drilling equipment or further exploration may provide information other than that depicted on the logs. The correlation of obstruction depths on the log with construction features such as rock excavation, foundation depths, or buried debris cannot normally be determined with any degree of accuracy. For example, penetration of weathered rock by soil sampling equipment may not correlate with removal by certain types of construction equipment. Using this information for estimating purposes often results in a high degree of misinterpretation.

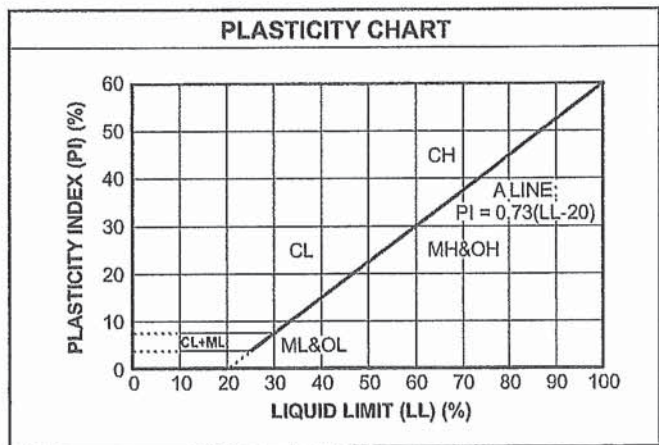
Accurately identifying the obstruction or estimating depths where hard rock is present over the site requires a scope of service beyond the normal geotechnical exploration program. The risk of using the information noted on the boring logs for estimating purposes must be understood.



UNIFIED SOIL CLASSIFICATION SYSTEM

UNIFIED SOIL CLASSIFICATION AND SYMBOL CHART		
COARSE-GRAINED SOILS (more than 50% of material is larger than No. 200 sieve size.)		
GRAVELS More than 50% of coarse fraction larger than No. 4 sieve size	Clean Gravels (Less than 5% fines)	
	GW	Well-graded gravels, gravel-sand mixtures, little or no fines
	GP	Poorly-graded gravels, gravel-sand mixtures, little or no fines
	Gravels with fines (More than 12% fines)	
	GM	Silty gravels, gravel-sand-silt mixtures
	GC	Clayey gravels, gravel-sand-clay mixtures
SANDS 50% or more of coarse fraction smaller than No. 4 sieve size	Clean Sands (Less than 5% fines)	
	SW	Well-graded sands, gravelly sands, little or no fines
	SP	Poorly graded sands, gravelly sands, little or no fines
	Sands with fines (More than 12% fines)	
	SM	Silty sands, sand-silt mixtures
	SC	Clayey sands, sand-clay mixtures
FINE-GRAINED SOILS (50% or more of material is smaller than No. 200 sieve size.)		
SILTS AND CLAYS Liquid limit less than 50%	ML	Inorganic silts and very fine sands, rock flour, silty of clayey fine sands or clayey silts with slight plasticity
	CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays
	OL	Organic silts and organic silty clays of low plasticity
SILTS AND CLAYS Liquid limit 50% or greater	MH	Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts
	CH	Inorganic clays of high plasticity, fat clays
	OH	Organic clays of medium to high plasticity, organic silts
HIGHLY ORGANIC SOILS	PT	Peat and other highly organic soils

LABORATORY CLASSIFICATION CRITERIA		
GW	$C_u = \frac{D_{60}}{D_{10}}$ greater than 4; $C_c = \frac{D_{30}}{D_{10} \times D_{60}}$ between 1 and 3	
GP	Not meeting all gradation requirements for GW	
GM	Atterberg limits below "A" line or P.I. less than 4	Above "A" line with P.I. between 4 and 7 are borderline cases requiring use of dual symbols
GC	Atterberg limits above "A" line with P.I. greater than 7	
SW	$C_u = \frac{D_{60}}{D_{10}}$ greater than 4; $C_c = \frac{D_{30}}{D_{10} \times D_{60}}$ between 1 and 3	
SP	Not meeting all gradation requirements for GW	
SM	Atterberg limits below "A" line or P.I. less than 4	Limits plotting in shaded zone with P.I. between 4 and 7 are borderline cases requiring use of dual symbols.
SC	Atterberg limits above "A" line with P.I. greater than 7	
Determine percentages of sand and gravel from grain-size curve. Depending on percentage of fines (fraction smaller than No. 200 sieve size), coarse-grained soils are classified as follows: Less than 5 percent GW, GP, SW, SP More than 12 percent GM, GC, SM, SC 5 to 12 percent Borderline cases requiring dual symbols		



APPENDIX F

Public Comment Summary

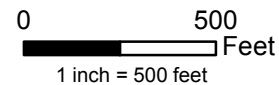
2018 Street and Utility Improvement Project

Thursday August 10th Open House Public Response

Item #	Resident Name	Resident Address	Comment
Raingarden and Storm Water Related Comments			
1		2739 Lake Blvd	Low front yard, lower than street. Culvert is above grade.
2	Paul Flaherty	2701 Margaret St.	Like to see storm water drainage improvements made with the easment on the west side of my house at 2701 Margaret ST. The easement is a drain field from the alley and houses to the south of the alley. Can a catch basin be installed in the alley and run through Eastment to 19th street when the improvements are made. Upgrade storm water catches in the 19th street and Lake Blvd. Upgrade storm water catches in the 19th street and lake blvd intersection to include the water from the alley behind my house.
3		2887 Lake Blvd	Need new apron for rain garden. Need new skimmer at inlet. There is a 4" pvc underground outlet direct to catch basin structure. Owner would like advance notice before raingarden plants are to be remove. Owner would prefer to remove themselves.
4	Carole Fritsche	2848 Lake Blvd	Possibly wants to have a raingarden.
5	David and Janey Czeck	2895 Lake Blvd	We have a berm with bany wildflowers. Hopefully we can keep them. Also want to keep the pagoda dogweed we want to save.
6		2887 Lake Blvd	No mow grass in boulevard are between 2887 and 2895. Owner wants this species of grass to remain. Does not want "normal" grass.
7	Judy Burens	2676 19th Ave	I have a raingarden on Henry and wants one installed on 19th as well.
8	Barry Brown	2601 Swan Ave	Possibly wants to have a raingarden.
9	Cemetary	Cemetary	Problem with standing water in low point.
Pedestrian Sidewalk/Trail/ Tree Related Comments			
10		2813 Division St	Really likes the idea of safe pedestrian routes. Eventually wants a full loop around lake.
11		2529 Poplar Ave	Preserve Trees! Safe walking trail around Lake Blvd, with sepearation from traffic.
12		2739 Lake Blvd	Save the trees along west side of Lake Blvd
13		2729 Lake	BMP at Lake and 19th needs work. No sidewalks or trails.
14		2729 Lake Blvd	Don't lose trees. Put bike trail in front of Paul Anderson's house....Paths breed strangers and hoodlums
15		2596 19th Ave	Does not want a sidewalk in front of his house.
16		2887 Lake Blvd	Loves trails.
17		19th Ave Resident	Remove existing S/W on south side of 19th between Charles and Henry
18		19th Ave Resident	Narrower Road on 19th, parking only on one side, seperate trail, but within the existing footprint of road.



Pavement Management
 Trail/Sidewalk Additions
 CIP Project - 2018
 North St. Paul, MN



Agenda Information Memorandum
North St. Paul Environmental Advisory Commission
August 28, 2017



VII. COMMISSION BUSINESS ACTION ITEMS & RECOMMENDATIONS

C. RECYCLING SURVEY

ACTIONS TO BE CONSIDERED

Review Recycling Survey Data.

FACTS

- The City worked with Ramsey County and Foth to administer a community survey regarding recycling, solid waste and composting. Foth additionally provided a memo regarding billing.
- Included in your packet are the following memos: Foth Billing Memo and Foth Survey Memo.

ATTACHMENTS

Foth Billing Memo
Foth Survey Memo
Ramsey County Master Plan Information

Foth Infrastructure & Environment, LLC
Eagle Point II • 8550 Hudson Blvd. North, Suite 105
Lake Elmo, MN 55042
(651) 288-8550 • Fax: (651) 288-8551
www.foth.com

August 18, 2017

TO: Debra Gustafson and Jason Ziemer (City of North St. Paul)
Jean Buckley (Ramsey County)

CC: Kate Bartelt (Ramsey County)
Susan Young, Jennefer Klennert, Gwen Clendenning (Foth)

FR: Dan Krivit (Foth)

RE: North St. Paul Recycling Survey Results: Review and Discussion

1 Introduction

The City of North St. Paul, in cooperation with Ramsey County, conducted a survey to better understand the needs and wishes of North St. Paul residents for solid waste and recycling services. Foth Infrastructure & Environment (“Foth”), assisted with technical assistance funded by Ramsey County through the ongoing Technical Assistance Program.

The City of North St. Paul provides the billing, administration and contract management for the organized solid waste and recycling services in North St. Paul. Republic Services is the solid waste and recycling Contractor.

In the middle of May 2017, a hard copy survey, together with an official cover letter from the Mayor, was sent by first class U.S. mail by the City to all 3,512 residents with municipal trash and recycling services (see Attachment A – Cover Letter; and Attachment B – Recycling Survey). The cover letter and survey form included instructions that residents could either respond to the survey via the hard copy form or online. A self-addressed, postage paid return envelope was also enclosed for residents that elected to use the hard copy form. If residents elected to use the online survey method of responding, they were eligible to be entered into a drawing to receive a \$25 Target gift card as an incentive to encourage online responses to reduce manual data entry costs.

The recycling survey project was originally pre-announced in the March/April 2017 issue of the City’s *at Home* newsletter before the survey was published and released (see the article “Coming Soon – Garbage & Recycling Survey” in Attachment C). Once the survey was finalized, the May/June 2017 issue of the City’s *at Home* newsletter promoted survey responses (see the article “Share Your Thoughts: Garbage & Recycling Survey” in Attachment D). A city web page was established and other regular social media were also used to promote responses.

Page 1 of 25

The survey had six (6) questions that asked for responses on the:

- ◆ Perceived quality of trash and recycling services;
- ◆ Obstacles to recycling more;
- ◆ Interest in every week recycling collection instead of the current every other week recycling;
- ◆ Willingness to pay more for weekly recycling service;
- ◆ Interest in recycling of food scraps; and
- ◆ Preference different payment methods for bulky item collection services.

Two (2) demographic questions determined the age ranges of survey respondents and home ownership vs. rental status. A final question requested interest in potential focus group participation. After review of the preliminary survey results, the City/County Project Team decided that a focus group was not needed

This survey is part of a larger set of County and City planning processes to improve solid waste/recycling services and increase diversion of waste from landfills. The information will be used to inform discussions about how the next solid waste/recycling Contract and request for proposals (RFP) should be structured on several selected topics (e.g., recycling collection frequency, organics (i.e., food scraps) collection, bulky item collection, etc.).

2 Survey Results

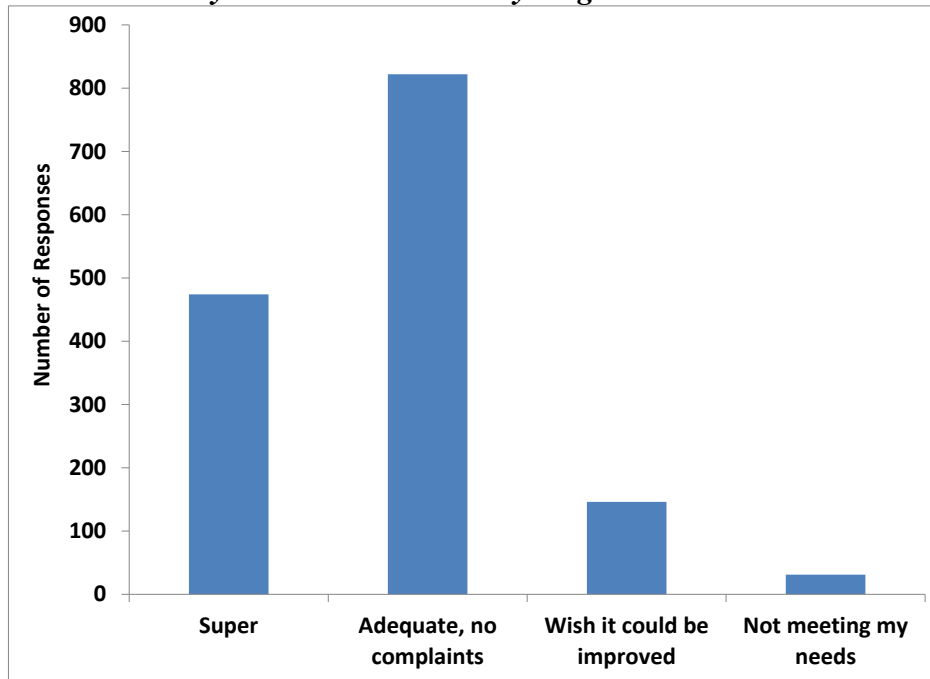
Nine hundred eighty four (984) hard copy surveys were returned and four hundred thirty eight (438) online surveys were returned for a total of 1,422 responses (40 percent of the total number of resident customers served by municipal solid waste / recycling collection services). This rate of response is considered excellent for the community.

Two demographic questions were asked in the survey to help the City better understand the variance in responses by age and home ownership. Both the hard copy respondents and the online respondents overwhelmingly (98 percent) own their own home. Age correlated very well with several survey questions.

2.1 Question 1: “My current trash and recycling service is....”

Responses to Question 1 were positive, with 88 percent of the respondents answering that their service was either “Super” or “Adequate, no complaints.” Figure 1 displays the total number of responses for each optional answer from both the hard copy and online surveys.

Figure 1
Total Responses to Question 1
“My current trash and recycling service is....”

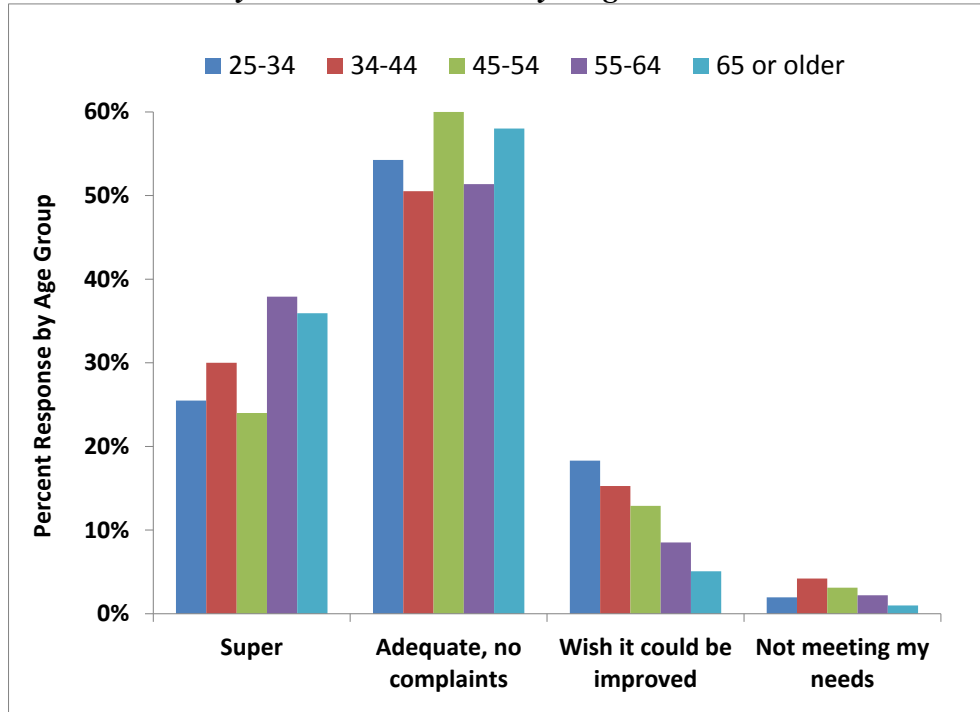


Of the respondents who wish their service could be improved, or whose service was not meeting their needs, the desire for more or weekly recycling was most frequently stated in the comments. 42 percent of respondents submitting comments to question 1 wanted either weekly recycling service or a larger or additional cart. Less frequently mentioned by commenters (11 percent or fewer respondents) were: dissatisfied with customer service at the curb or on the phone; no desire for bulky item collection; unhappiness with the expense of the service; and/or appreciation for the bulky item collection.

To determine if responses differed by age, the survey asked for respondents age within six age groups. Figure 2 displays the response by age group. The response option, “Wish it (the service) could be improved” appears to correlate well with the five older age groups; the younger respondents selected this response option more frequently. (See the clear trend in declining numbers to this response option by age group in Figure 2.)

There were only five (5) responses in the youngest age group (18 – 24 years old) and they all responded that their current trash and recycling service is “Adequate, no complaints”. Therefore, this age group is not shown in Figure 2 because as a group it does not have enough responses for this form of the analysis.

Figure 2
Percent Responses by Age Group to Question 1
“My current trash and recycling service is....”



2.2 Question 2: “What are your current obstacles to recycling more?”

Respondents were instructed to “Check all that apply” when answering question 2. Therefore, there are more responses than the number of survey respondents to this question. Almost 90 percent chose only one response, 6 percent chose two or more responses, and 5 percent had a response other than the options listed.

As shown in Figure 3, respondents chose “I’m doing the best that I can, I can’t recycle more” most frequently. This response option received 636 (47 percent) out of 1,342 total responses to question 2. Responders chose the option “I run out of space in my recycling cart” as the next most frequent option with 400 responses (30 percent of responses to question 2). Very few respondents, less than two percent (2%) of the total, believe that recycling is too much work.

Commenters on this question most frequently (28 percent) stated that they would recycle more if they had a larger cart and/or more frequent service. Several of these commenters stated that they put extra recyclables in the trash when they run out of room in their recycling cart. A few commenters were confused as to what to recycle, or how to prepare recyclables (e.g. whether to wash containers) and others wish to recycle plastic bags. Most commenters indicated that they have no problems with the recycling program, reiterating that they are recycling all that they can.

Figure 4 displays the percent response by age group to the question 2. There were only six (5) responses in the youngest age group (18 – 24 years old). Therefore, this age group is not shown in Figure 4 because as a group it does not have enough responses for this form of the analysis.

The response option, “I run out of space in my recycling cart” appears to correlate well with the five older age groups; the younger respondents selected this response option more frequently. (See the clear trend in declining numbers to this response option by age group in Figure 4.)

Figure 3
Total Responses to the Question 2:
“What are your current obstacles to recycling more? (Check all that apply)”

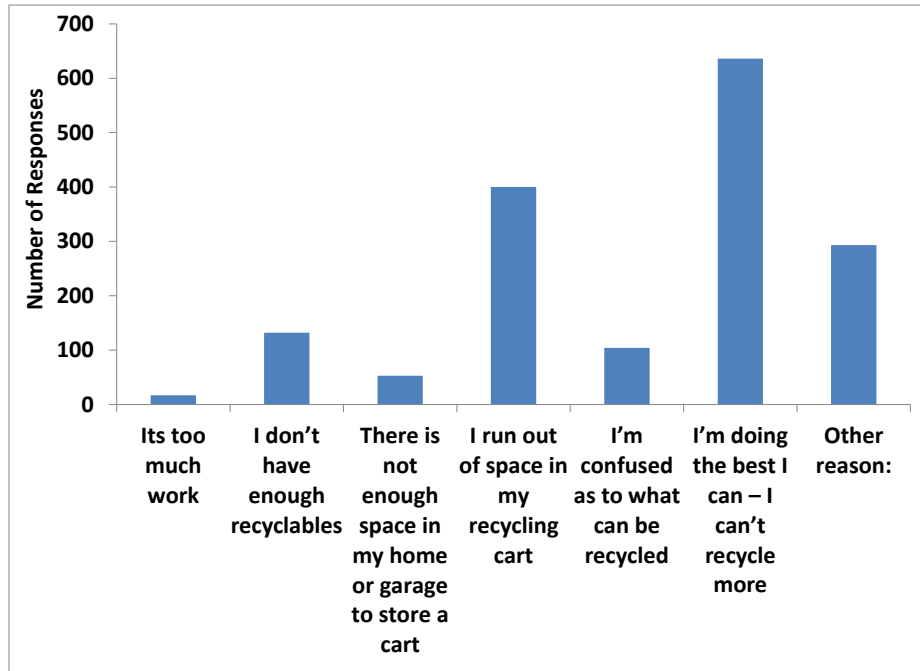
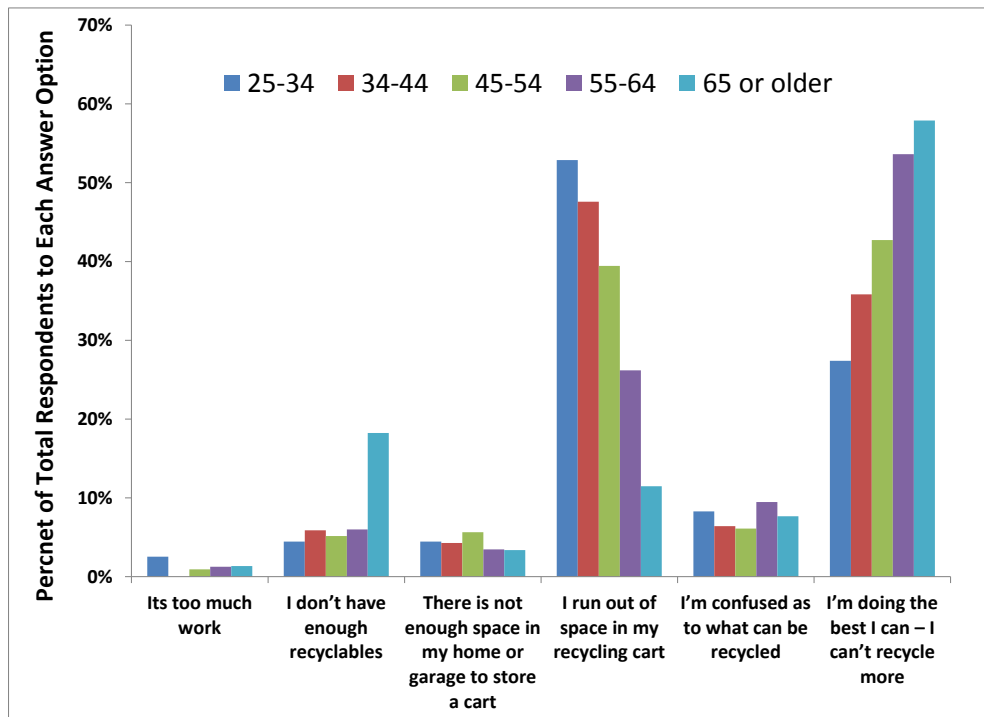


Figure 4
Percent Response by Age Group to the Question 2:
“What are your current obstacles to recycling more? (Check all that apply)”



The response option, “I’m doing the best I can – I can’t recycle more” appears to also correlate well with the five older age groups; the younger respondents selected this response option less frequently. (See the clear trend in increasing numbers to this response option by age group in Figure 4.)

2.3 Question 3: “Would you recycle more if the City collected your recycling every week instead of every other week?”

Figure 5 indicates that 917 (63 percent of the 1,463 respondents to question 3) selected the option “No, probably not” as their response. Conversely, 546 (37 percent of respondents to this question) stated “Yes” (394 respondents) or “Maybe” (152 respondents) to this question. The difference may be in part attributed to the amount of recyclables generated with higher generators hoping for more frequent weekly collection and lower generators wanting to keep the every other week recycling collection frequency. But this “amount of recyclables generated” was not part of this survey project. No comments were allowed for this survey question.

Figure 5
Total Responses to the Question 3:
“Would you recycle more if the City collected your recycling every week instead of every other week?”

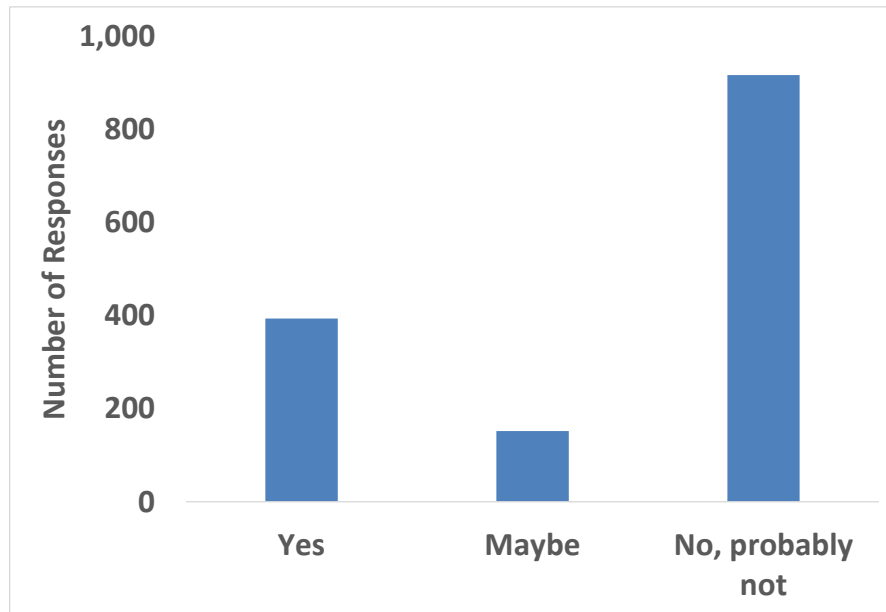
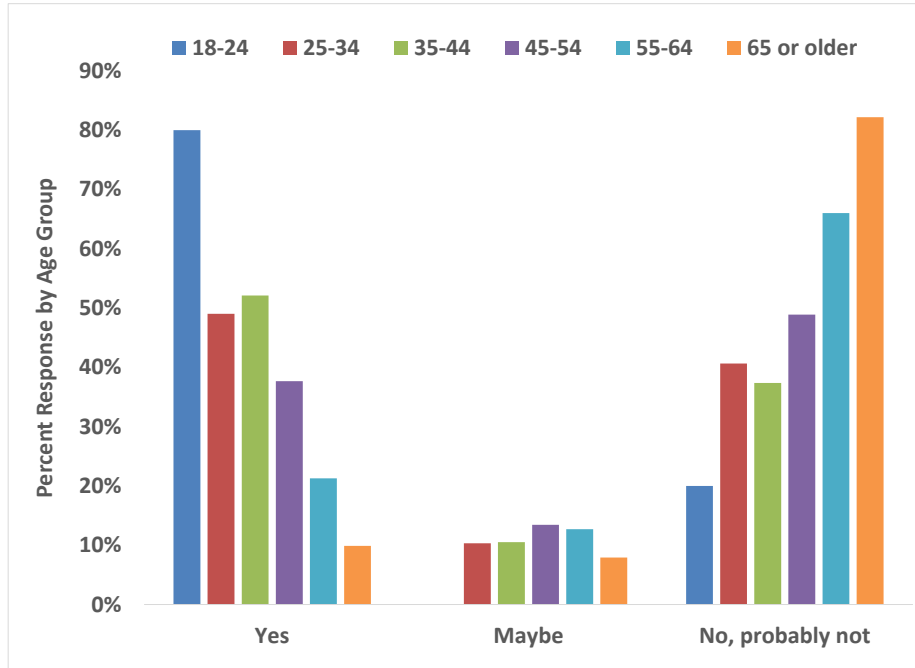


Figure 6 displays the percent response by age group to the question 3. This analysis is a clear indication of correlation by age. The response option, “Yes” appears to correlate very well with the six age groups; the younger respondents selected this response option more frequently. (See the clear trend in declining numbers to this response option by age group in Figure 5.)

The response option, “No, probably not” also appears to correlate very well with the six age groups; the younger respondents selected this response option less frequently. (See the clear trend in increasing numbers to this response option by age group in Figure 6.)

Figure 6
Percent Response by Age Group to the Question 3:
“Would you recycle more if the City collected your recycling every week instead of every other week?”



2.4 Question 4: “Weekly recycling curbside collection may cost more. Would you be willing to pay more for this convenience? If yes, how much more?”

Figure 7 displays the total responses to question 4 and indicates strong price sensitivity to the option of paying more for the convenience of weekly collection. 212 respondents (15 percent of the total 1,459 respondents to this question) indicated they were willing to pay a \$1.00 per month increase for weekly collection. 158 respondents (11 percent of the total responding to this question) indicated they were willing to pay a \$2.00 per month increase for weekly collection. 106 respondents (7 percent) indicated they were willing to pay a \$3.00 per month increase. The sum total of respondents willing to pay more was 476 (33 percent of the total respondents to this question). Understandably, the lower price options were more favorably rated by those who were willing to pay an additional amount for weekly recycling.

983 respondents (67 percent of the total responding to this question) were not willing to pay any increased amount to receive weekly recycling service.

No comments were allowed for this question, but consideration of the comments to Questions 1 and 2 indicate that providing larger or extra recycling carts with every other week recycling could allow/encourage additional amounts of recycling to be collected, potentially satisfying the desire to recycle more. This option for an additional recycling cart is currently available to residents from the City’s Contractor.

Figure 7
Total Responses to the Question 4:
“Weekly recycling curbside collection may cost more. Would you be willing to pay more for this convenience? If yes, how much more?”

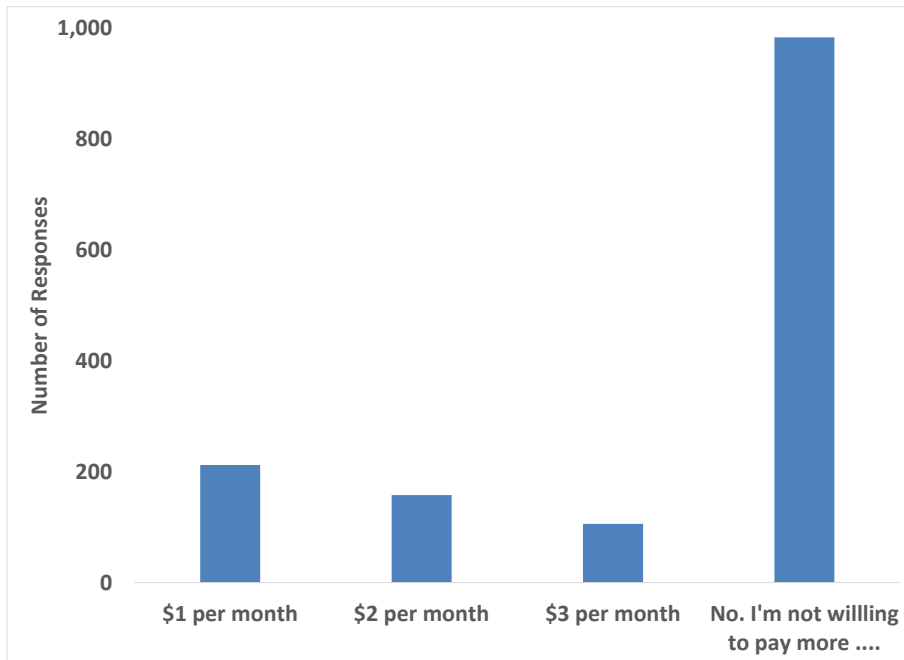
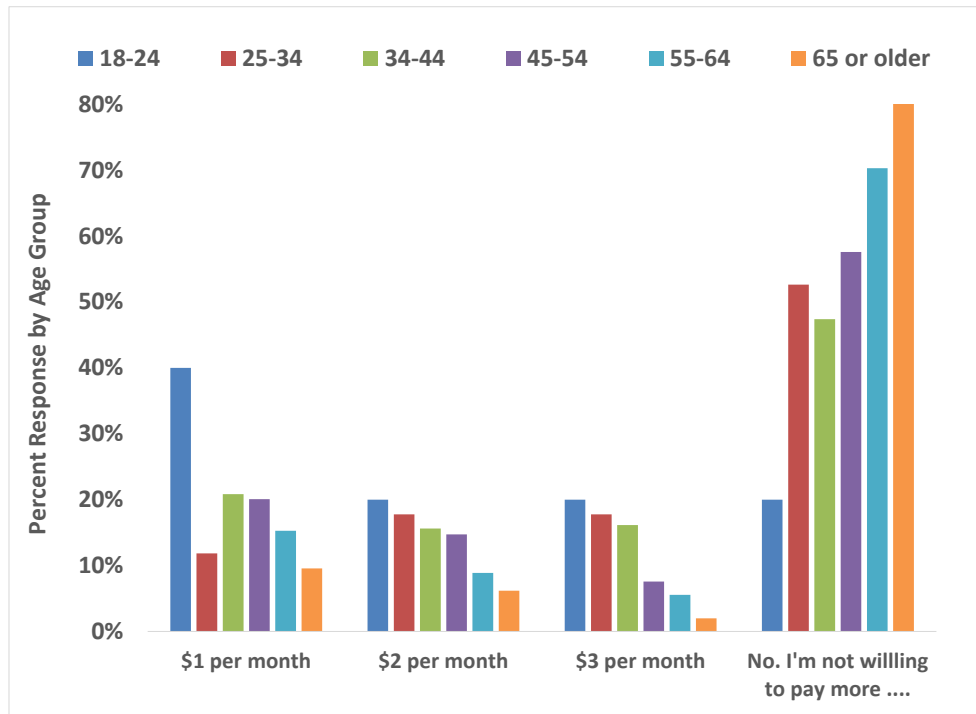


Figure 8 displays the percent response by age group to the question 4. This analysis is another clear indication of correlation by age. For each response option, the response appears to correlate very well with the six age groups; the younger respondents are more willing to pay than the older respondents. (See the clear trends in declining numbers to the first three response options by age group in Figure 8.)

The response option, “No, I’m not willing to pay more for the change to weekly curbside recycling....” also appears to correlate very well with the six age groups; the younger respondents selected this response option less frequently. (See the clear trend in increasing numbers to this response option by age group in Figure 8.)

Figure 8
Percent Response by Age Group to the Question 4:
“Weekly recycling curbside collection may cost more. Would you be willing to pay more for this convenience? If yes, how much more?”



2.5 Question 5: “Would you recycle your food scraps (e.g. banana peels, bones, unwanted food, etc.) if curbside collection were made available by the City?”

Figure 9 displays the total responses to Question 5 and indicates mixed results about the option of food scraps collection (sometimes referred to as curbside organics recycling). 584 respondents (41 percent of the total 1,421 respondents to question 5) indicated that “Yes” they would recycle their food scraps if a curbside collection service were provided. Conversely, 836 respondents (59 percent) of respondents to this questions replied “No” they would not be willing to recycle food scraps if a curbside collection service was made available. It is not believed that price was a consideration in the responses, since no additional fee was implied in this question.

Respondents that answered “No” were asked to explain why they were opposed to recycling organics. In the hard copy responses, 204 comments were made. Of these, 38 percent were concerned with smell, the “yuck” factor, or attracting flies and other animals. Secondary reasons for not wanting to recycle organics included it being too much extra work, or not having a place to put a fourth cart in their garage.

Figure 9
Total Responses to the Question 5:
“Would you recycle your food scraps (e.g., banana peels, bones, unwanted food, etc.) if curbside collection were made available by the City?”

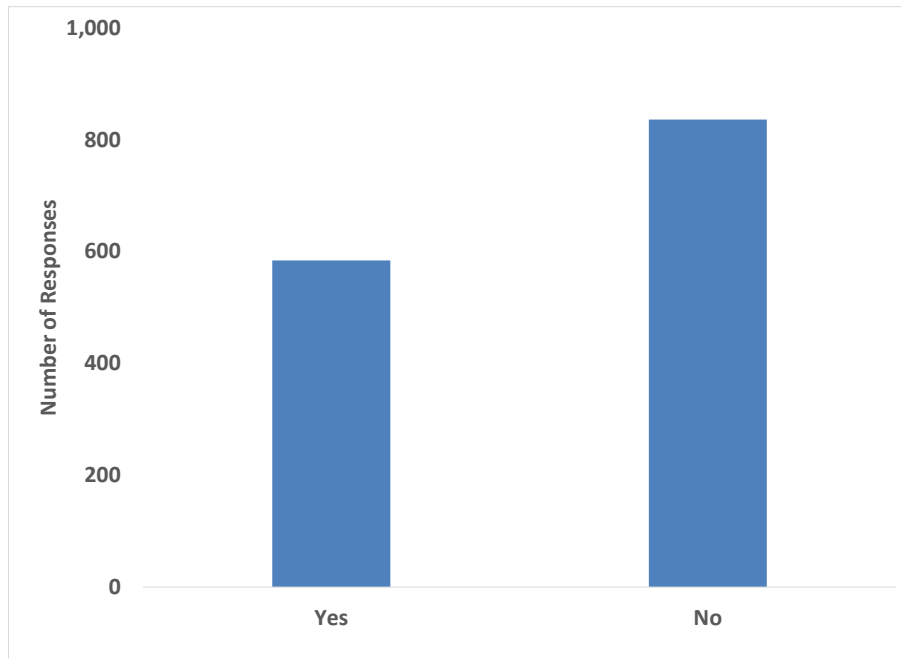
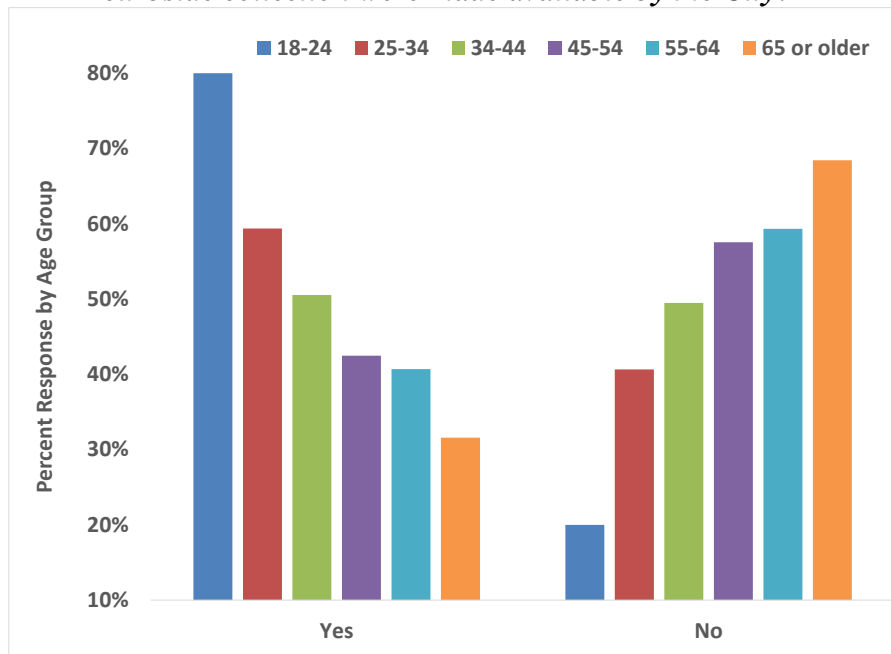


Figure 10 displays the percent response by age group to the question 5. This analysis is another clear indication of correlation by age. For each response option “Yes” or “No”, the response appears to correlate very well with the six age groups; the younger respondents are more willing to recycle food scraps if a curbside collection system were put in place. The response option, “No” also appears to correlate very well with the six age groups; the younger respondents selected this response option less frequently. (See the clear trend in both response options by age group in Figure 10.)

Figure 10
Percent Response by Age Group to the Question 5:
“Would you recycle your food scraps (e.g., banana peels, bones, unwanted food, etc.) if curbside collection were made available by the City?”



Although they were only asked to explain a “no” answer, 46 respondents (22 percent of commenters) indicated that they already compost food scraps, including one respondent that feeds food scraps to their pet pig. There appears to be good awareness of the benefits of organics recycling, especially among the younger age groups.

2.6 Question 6: “The City is considering three options for changing the bulky item service. Which option do you prefer?”

Figure 11 displays the results of total respondents for questions 6. This was a more complicated and nuanced issue and therefore needed a more detailed background statement to give residents an accurate summary of funding for the current bulky item collection program. The survey preface to the question stated:

“The City collects extra, large (“bulky”) items such as furniture, mattresses, appliances and electronics. The current cost is \$3.18 per household per month, or \$38.16 per year. This is charged to all residents with City curbside service and is part of the monthly utility bill regardless of use. Currently there is no limit on the number of bulky items that can be set out for pick up”

The response options were also more detailed as well. (See Attachment B, Question 6, for the exact wording of the question and three response options.)

Respondents were strongly supportive of the existing bulky item collection program, with 896 of total respondents (62 percent of the total 1,444 respondents to question 6) indicating preference for the current unlimited-items program with the monthly fee that everyone pays as part of their base solid waste utility bill. The second option, in which residents would pay a lower monthly

fee and have a limit of three (3) items per year, was favored by 423 (29 percent of all respondents to this question). 125 respondents (9 percent) wished to change to a pay-per-item bulky item system.

Figure 11
Total Responses to the Question 6:
“The City is considering three options for changing this bulky item service. Which option do your prefer (select only one)”

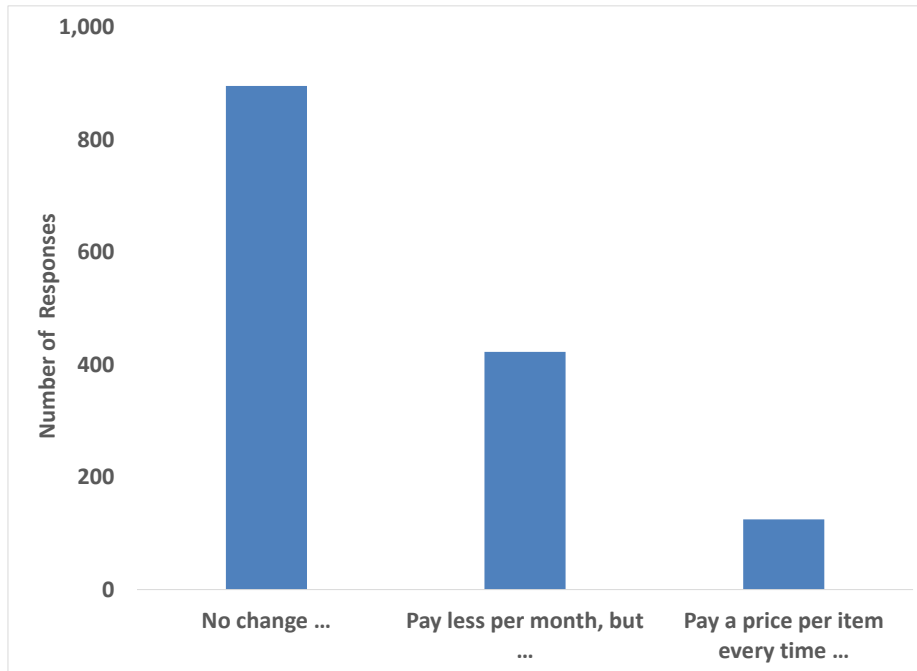
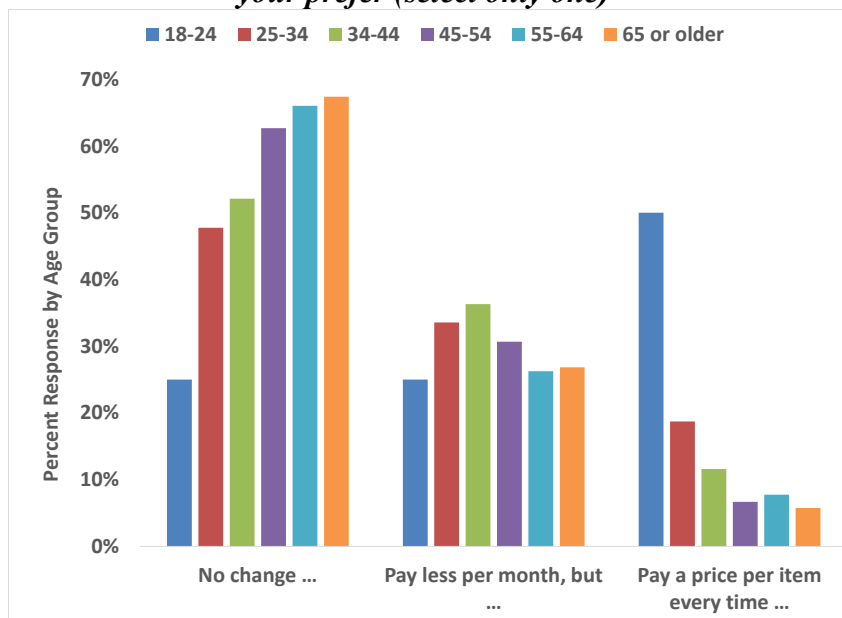


Figure 12 displays the percent response by age group to the question 6. This analysis is another clear indication of correlation by age. For the first response option “No change. Continue paying the monthly fee for *unlimited* use”, the response appears to correlate very well with the six age groups; the older respondents want to continue the current program. For the third response option, “Pay a price per item every time I use the service ...”, also appears to correlate very well with the six age groups; the younger respondents selected this response option less frequently. (See the clear trend in both the first and third response options by age group in Figure 10.)

Figure 12
Percent Response by Age Group to the Question 6:
“The City is considering three options for changing this bulky item service. Which option do your prefer (select only one)”



Although no comments were allowed for this question, the persons who felt strongly about ending the bulky item issue did comment in previous questions. All of the commenters who were very strongly opposed to the current unlimited bulk item collection program, commented at multiple comment opportunities, for example stating that:

- ◆ “The City has failed to track household bulk pickup items which cost the City more (example: mattresses, non-residents drop off their junk at a family member’s home for pickup.)”
- ◆ “No More Bulk Pickup! Please!” (Commenter wrote this at every opportunity)
- ◆ “No bulk pick up. I have never used it, make it a pay per use option.”
- ◆ “Would like to give input on bulk item question.”
- ◆ “I hate that I am charged each month for bulk pick up, a service that I do not use, would like an option to opt out of that.”
- ◆ “I truly RESENT paying a monthly fee for large object disposal when I rarely use it. Why should I pay for something I do not use??”
- ◆ “Calling for bulk pick up is really bad, the wait time is very very long.”

There were also commenters in Question 1 that mentioned the bulk item program favorably, stating that:

- ◆ “Love it! It is far superior than any other city! The large bulk service keeps our city/homes looking neat and (not) cluttered or junky looking. Makes North St. Paul look like a nice and appealing place to live!”
- ◆ “I like the bulk pickup.”
- ◆ “I like that bulk pick up is included.”

3 Analysis and Recommendations

3.1 Weekly vs. Every Other Week Recycling Service

A frequently cited barrier to recycling more is that residents fill their recycling carts before collection day. The City could address this barrier with two options in the next RFP:

1. Require the Contractor to provide additional recycling carts (without additional charge) to residents that request them.
2. Change to weekly recyclables collection frequency.

The results of the survey indicate that most residents do not want to move to weekly recycling collection, especially if it means increased costs. In general, increasing from 26 recycling collections per year to 52 recycling per year comes with a higher cost. However, the City of Afton found in a competitive RFP process that changing to weekly service did not increase recycling prices; in fact, the charge to customers decreased in the new contract with the same hauler and weekly recycling service. A change to a weekly recycling could be an option in the next RFP to allow the City to evaluate actual proposed price differences. Alternatively, if RFP responses indicate that weekly recycling is a financially unreasonable option, providing larger or extra carts with every other week recycling (as is the current practice) could allow or encourage additional amounts of recycling to be collected, potentially satisfying the desire to recycle more with minimal additional costs to the City.

3.2 Organics

The results of the recycling survey indicate that a majority of residents do not want the City to start curbside organics collection service. A surprisingly large number of comments in the survey indicate that they use backyard composting, or the County's central organics collection programs to manage their food scraps. The most frequent reason that respondents gave for not wanting separate collection of food scraps was the concerns about an adverse smell and potential to attract flies and critters. Secondary reasons included concern about the additional work involved in separating food scraps and lack of space for a fourth cart in the garage. If an organics recycling program is promoted, it should emphasize that food scraps are the same material that residents now place in their garbage containers and that weekly collection of organics, if managed properly, would not change the smell of the material or its attractiveness to animals. It appears that an organics recycling program would be most popular with the younger age groups.

Ramsey County is currently in the process of revising its Solid Waste Master Plan and may have more direction for its municipalities to implement organics recycling. The County has published an Organics Recycling Guidebook for Decision-Makers (May 2017) that City staff could review for more information about the various organics collection methods and implementation alternatives. When the City begins to plan for its next RFP for solid waste and recycling, there should be more direction from Ramsey County on best practices to include in the contract specifications for potential organics collection.

3.3 Bulky Items

The City has expressed a wish to contain its costs for bulky item services, but needs to provide adequate service levels for residents. Bulky items have the potential to make a neighborhood

look “trashy” if not promptly removed, and once an item is at the curb it often seems to be ignored by the person that put it there, absent a regular removal program. Experience in other cities has been that between 10 to 20 percent of residents in any given year have some bulky item, either an appliance, furniture, carpet, outdoor accessories, etc. There is strong support in North St. Paul for the existing bulky item program, especially by older respondents. There is little support for a “pay-per-item” program, although younger respondents are clearly more willing to make this change. This may be an indication of the ability of residents to manage bulky items themselves; older residents may be less able to self-haul their bulky items to a drop-off location. Supporters of the option to change to a “pay-per-item” system of funding were quite passionate in their comments. A “compromise” approach of three items per year at a reduced monthly fee, which may satisfy the supporters of the existing program, received moderate support (29 percent of respondents to this question).

The City could consider two alternates in an RFP, one for unlimited collection of bulky items and one for the compromise program. The responses to the RFP may provide information for the final contract provisions.

DRAFT

Attachment A
Cover Letter from the Mayor

DRAFT



Dear Resident,

Now is the time for you to provide us with input about your garbage and recycling service. The City, in partnership with Ramsey County, is conducting a survey to gauge a better understanding of your needs regarding these services.

Enclosed is the survey. You can either complete and mail back the survey or complete the survey online. If you respond to this survey online, your name will be entered in a drawing to receive a \$25 Target gift card.

The survey will take place from June 1 to June 30. More information, and the link to the online survey is available at www.NorthStPaul.org/RecycleSurvey. The results of the survey will also be posted on the City Web site at the address listed above.

Thanks for taking the survey! We look forward to your response.

Mayor Mike Kuehn

A handwritten signature in black ink that reads "Michael R. Kuehn".



**Attachment B
Hard Copy Survey**

DRAFT



RECYCLING SURVEY

What matters to YOU?

Help us make decisions on our future residential trash and recycling programs for single family households.

If you prefer to respond to this survey online, go to: <https://www.surveymonkely.com/r/nsprecycle>. Otherwise, please mail the survey in the provided postage paid envelope. Thanks!

1. My current trash and recycling service is...

- Super
- Adequate, no complaints
- Wish it could be improved
- Not meeting my needs

Any comments? _____

2. What are your current obstacles to recycling more? (Check all that apply)

- It's too much work
- I don't have enough recyclables
- There is not enough space in my home or garage
- I run out of space in my recycling cart
- I'm confused as to what can be recycled
- I'm doing the best I can – I can't recycle more

Other reason: _____

3. Would you recycle more if the City collected your recycling every week instead of every other week?

- Yes
- Maybe
- No, probably not

4. Weekly recycling curbside collection may cost more. Would you be willing to pay more for this convenience? If yes, how much more?

- \$1 per month
- \$2 per month
- \$3 per month
- No. I'm not willing to pay more for the change to weekly curbside recycling.

5. Would you recycle your food scraps (e.g., banana peels, bones, unwanted food, etc.) if curbside collection were made available by the City?

Yes

No

If no, explain why: _____

The City collects extra, large (“bulky”) items such as furniture, mattresses, appliances and electronics. The current cost is \$3.18 per household per month, or \$38.16 per year. This is charged to all residents with City curbside service and is part of the monthly utility bill regardless of use. Currently there is no limit on the number of bulky items that can be set out for pick up.

6. The City is considering three options for changing this bulky item service. Which option do you prefer?
(select only one)

No change. Continue paying the monthly fee for *unlimited* use.

Pay less per month, but have *limit* of three (3) items per year, with the option of paying more per item if a household has above three (3) items per year

Pay a price per item every time I use the service. (Price depends on the type and size of item and could range from \$20 to \$58 per item).

7. How old are you?

18-24

25-34

35-44

45-54

55-64

65 or older

8. Do you own or rent the home where you reside?

Own

Rent

9. If needed, the City may hold a series of in-person focus groups to learn more about residents’ solid waste and recycling needs and opinions. If the City holds these additional meetings, would you be interested in participating?

Yes (If yes, please provide an email address or phone number)

No

Email: _____ Phone: _____

Thank you completing the survey.

Attachment C
March April 2017 Issue of the *at Home* Newsletter:
Excerpt including the Survey Announcement
(front page only)

DRAFT

Making the City Clean & Green

Spring Means Managing Yard Waste

As the snow starts melting, we start thinking about spring clean-up and getting back into our yards and gardens. Uncovering your gardens to get rid of last year's begonias and the mounds of leaves may be high on your weekend task list. Here are some tips for managing the yard waste that comes along with spring yard clean-up.

Composting: Leaves, grass and plant trimmings, along with some types of food waste, can be combined in a backyard compost bin to create a valuable soil additive for your lawn and garden. Putting yard waste in your garbage is illegal in Minnesota. Composting bins are available at local garden centers, hardware stores or home improvement stores. Some counties also sell bins, and the Recycling Association of Minnesota is selling bins and rain barrels at a reduced rate this spring. You can even build your own compost bin! For more information visit RamseyRecycles.com.

Curbside pickup: Yard waste collection is a weekly service for residents that runs mid-April through November and is picked up on the same day as trash pickup. The service begins the week of April 17 (weather permitting). Contact the City for the cost of the service at (651) 747-2413. You may also go to RamseyRecycles.com or call (651) 633-EASY (3279) answered 24/7 for a list of yard waste sites.

Spring Landscaping Workshops – April 6, 6:30 pm



The East Metro Water Resource Education Program and Master Gardeners in Washington County invite you to join them for some Spring Dreaming!

The informal workshop is designed to help you with

ideas and how-tos for your own property. Enjoy an evening at Casey Lake Park Facility with your community and get helpful advice from Master Gardeners and Water Resource Educators. *RSVPs received at least 2 days before the workshop will receive a free aerial print out of their property to use during the workshop. RSVP at: tinyurl.com/SpringDream2017. For more information contact Jenn Radtke: jradtke@mnwcd.org or (651) 330-8220 x44*

Did you know...

When recycling, combine all your recyclables in one



In 2016, residents recycled just over 896 tons.

container for your paper, cardboard, plastic and metal (but no plastic bags). All items should be placed in the container loose and bottle caps should be on bottles. Make sure your recyclables are empty, clean and dry.

Coming Soon - Garbage & Recycling Survey

To help us better understand the needs and interests of the community related to garbage, recycling, and possibly (future) organics collection services, the City is partnering with Ramsey County to conduct a community survey. The survey is funded by Ramsey County Environmental Health. Be on the lookout for how you can get involved to share your thoughts. The information will help the City Council determine the type(s) of services when preparing to negotiate its next garbage and recycling contract. The current contract with Republic Services expires on August 31, 2019.

in this
ISSUE:



2—Plant a Tree



3—Roddy's



4—New City Signs

Attachment D
May June 2017 Issue of the *at Home* Newsletter:
Excerpt including the Survey Article
(front page only)

DRAFT

Connecting the Community

City to Launch New Web Site

The City of North St. Paul is excited to announce the launch of its newly designed Web site. The new design is intended to be better navigation and improved access to information, and the ability to subscribe to different calendars and alerts to receive prompt notices as they happen, from community events and volunteer opportunities, to road closures and power outages. A mobile app will also be made available in the near future. **The new Web site is set to launch on May 19.** The Web site redesign was one part of the City's Strategic Plan: to promote community stewardship through an involved and informed citizenry and increase the quality of information made available to the community.



Share Your Thoughts: Garbage & Recycling Survey

The City, in cooperation with Ramsey County, are asking for resident input on garbage and recycling services. The goal is to better understand the needs and interests of the community related to these services.

The survey will be mailed to all residents currently receiving City garbage and recycling curbside collection service. Residents can either complete and mail back the survey. Or complete the survey online and your name will be entered in a drawing to receive a **\$25 Target gift card.**

The survey will take place from June 1 to June 30. More information, and the link to the online survey, is available at www.NorthStPaul.org/RecycleSurvey

Residents living in an apartment may also provide feedback to the survey by sharing your comments via email to RecycleSurvey@NSP.org.

The information will help the City Council as it decides how to improve these services for a new garbage & recycling contract. The current contract expires on August 31, 2019.



Officer Steve Ronnie: Reflections from Behind the Badge

By Jason Ziemer, City Manager

After nearly 24 years of public service – all in North St. Paul – Police Officer Steve Ronnie has reached his end of tour. When asked, he admits “it is time” time to move on, time to shift his focus, time to do things that interest him – and crossing things off his bucket list. Albeit, he is in no rush.

“I’ve always wanted to do the North Atlantic crossing – a 7 day voyage with no stops. It’s the same route the Titanic followed,” he paused and smirked, “and hopefully without the same end result.”

Amongst his colleagues and those that know him well, “Ronnie,” as he was affectionately called, is known as a man of few words. Yet, as we sat down to reflect on his time in North St. Paul blue, he opened up – a little.

Being a Police Officer was not his original path. He graduated from the University of North Dakota with a degree in aviation. But, jobs were difficult to come by after graduation, so Ronnie opted to go back to school to earn his Associates degree in law enforcement from Minneapolis College. Prior to arriving in North St. Paul he was an officer for Madison Lake (1 year), a community service officer in Columbia Heights, and did security work for the Mall of America and Valleyfair.

– Continued on page 4

in this
ISSUE:



2—Car Cruze Season



3—Museum



3—New Magnolias Trees



Foth Infrastructure & Environment, LLC
Eagle Point II • 8550 Hudson Blvd. North, Suite 105
Lake Elmo, MN 55042
(651) 288-8550 • Fax: (651) 288-8551
www.foth.com

July 28, 2017

TO: Debra Gustafson and Jason Ziemer (City of North St. Paul)
Jean Buckley (Ramsey County)

CC: Kate Bartelt (Ramsey County)
Jennefer Klennert (Foth)

FR: Dan Krivit and Susan Young (Foth)

RE: Review and Discussion of City Solid Waste Billing vs. Contractor Billing

As part of the Ramsey County Technical Assistance Program, Foth was asked by the County and the City of North St. Paul to help conduct a survey of City residents on selected recycling issues. The recycling survey results can be viewed to indicate that improvements in service could be made to the contract through the next request for proposals (RFP) to help increase waste diversion.

Separate from the resident survey, Foth was also asked to analyze the advantages and disadvantages of the City continuing to administer the billing for solid waste and recycling services compared to specifying that this billing function be assigned to the hauling contractor.

These two initiatives are part of a larger set of County and City planning processes to improve solid waste/recycling services and increase diversion of waste from landfills. The information will be used to inform discussions about how the next solid waste/recycling contract and request for proposals (RFP) should be structured on several selected topics (e.g., recycling collection frequency, bulky item collection, billing, etc.).

Billing

The City of North St. Paul currently bills resident trash and recycling services out of the City's Utility Billing Department. Residents pay a monthly utility bill that also includes electricity, water, sewer and surface storm water rates. The garbage and recycling rates are specified each year by City Council resolution and specify variable charges by size of trash carts, recycling, and optional yard waste collection services. (For more details on

garbage and recycling rates, see the City's "2017 Municipal Fee Schedule and Utility Rates¹".)

The City's solid waste and recycling system has evolved over the years, including a transition to organized residential collection about ten years ago. In the past, under the old open hauling system, each hauling company did their own billing to their residential customers in North St. Paul. As part of this transition to organized residential collection, the City took on the billing for solid waste/recycling services.

The current City Agreement for solid waste services expires in August 31, 2019. While considering the parameters of the next contract, the City is evaluating whether or not to continue billing for trash and recycling services. An alternative is for the City to require the contractor to provide these billing services as a specification in the next Request for Proposals (RFP). There are advantages and disadvantages to the City continuing to provide solid waste billing services.

Advantages of City Billing:

- ◆ North St. Paul has an existing utility billing system in place. Utility Billing Department staff integrate their administrative tasks for billing and customer service for solid waste/recycling services into their normal routine with other City utility services.
- ◆ All residents receive a standardized utility bill. The formatting and content of the City's utility bill is completely under City control.
- ◆ City administration of the solid waste/recycling billing system allows for:
 - City ownership and direct management of the utility data (e.g., number and addresses of households served, service levels by household, etc.).
 - Local, City-specific customer service (i.e., answering telephone and email questions from residents) related to solid waste/recycling billing.
 - The City's utility bill can be used for citywide public education and information (e.g., bill inserts). Messaging about solid waste/recycling services is easily managed and consistent with City direction.
 - Data to complete County reports and determine compliance with County solid waste directives is directly available to the City.
- ◆ There is accountability for contractor performance issues because the residents contact the City for service level changes and service issues.
- ◆ Liquidated damages can be administered by the City by immediately withholding contractor payment, rather than requiring the contractor to create an escrow account or billing the contractor.
- ◆ Trash disposal costs are paid directly by the City. Direct payment of trash disposal costs helps keep rates charged to residents low and allows the City to

¹ City of North St. Paul, *2017 Municipal Fee Schedule and Utility Rates*, (Adopted December 20, 2017): <http://www.northstpaul.org/DocumentCenter/View/496>

more closely monitor trash tonnages to evaluate compliance with the County Solid Waste Master Plan requirements.

- ◆ The City has capacity to provide residents with access to information, e.g.:
 - Printed materials in languages other than English.
 - Availability of translation services.
- ◆ Management of unpaid bills (i.e., bad debt) can be administered by the City. Because trash and recycling is not typically the only part of the City bill that is unpaid, there is no incremental cost to management of unpaid bills for trash and recycling. This is an incremental cost to a contractor, which is passed through to customers.

Disadvantages of City Billing:

- ◆ The City may have higher administrative costs compared to a private hauling company doing the billing.
- ◆ The billing and customer phone service for trash and recycling are part of the City staff workload.
- ◆ There is a cash flow impact due to the bad debt payment schedule through the City's assessment process and revenues from residents' payments from assessments come in after expenditures to the contractor for services.
- ◆ Coordination is required with three entities: (1) the resident calling for a service issue that affects their solid waste rates; (2) the City administering the billing; and (3) the contractor that must adjust the service to the resident.

Advantages of Contractor Billing:

- ◆ Collection service costs are not a line item in the municipal budget.
- ◆ Many administrative functions related to trash and recycling are performed by the contractor.
- ◆ There are no cash flow impacts to the City, unless it allows the contractor to have the City responsible for unpaid trash and recycling bills.
- ◆ The same entity that provides the collection service also provides billing services. This may avoid confusion by streamlining communication between the contractor and residents.

Disadvantages of Contractor Billing:

- ◆ If the City allows the contractor to invoice the City for unpaid bills, the contractor's bad debt collection procedures will require close monitoring and contract enforcement efforts by the City. The contractor will need to follow specified bad debt collection procedures before submitting unpaid bills to the City for assessment.
- ◆ There is less direct municipal ability to affect resident customer service.

- ◆ The City will need to ensure contract compliance with billing requirements through enforcement without direct access to customer bills.
- ◆ Billing format and language is controlled by the contractor. The ability of the City to insert City-specific language in the trash and recycling bill is limited. Billing format and language will change if a different contractor is awarded the solid waste/recycling contract, if a contractor is bought out, or changes its billing system.
- ◆ Customer service functions for several local contractors are not locally based, which can lead to unfamiliarity with North St. Paul-specific customer service issues.

While each community is unique with a different set of needs and priorities, other cities have found that the advantages of City billing outweigh the advantages of contractor billing. North St. Paul should retain the City billing function but work in the new contract and next RFP to help further streamline customer service communications between the residents, the City billing staff and the contractor.

From: [Buckley, Jean C](#)
To: [William Joynes](#); [Sack Thongvanh](#); [Robert Uzpen](#); [Heather Butkowski](#); [Joel Hanson](#); [Coleman, Melinda](#); [Jim Ericson](#); [Lotter, Dean](#); [Mike Robertson](#); [Jason Ziemer](#); [Pat Trudgeon](#); [Schwerm, Terry](#); dbuchholtz@slpmn.org; [Mark Casey](#); Anne.Hunt@ci.stpaul.mn.us; [Kevin Watson](#); [Richter, Ellen](#); [Bill Short](#)
Cc: [Kerrie Kane](#); [Janice Gundlach](#); Scott.Gigrich@newbrightonmn.gov; [Stephanie Marty](#); [Debra Gustafson](#); [Keith Stachowski](#); [Marc Culver](#); [Ryan Johnson](#); ebrenna@shoreviewmn.gov; twesolowski@shoreviewmn.gov; [Nicole Miller](#); Aubrey.fonfara@ci.stpaul.mn.us; [Hageman, Kris](#); [Kathy Keefe](#); ctailon@whitebearlake.org; rjuba@whitebearlake.org; [Patti Walstad](#); [Tom Riedesel](#); [Matthew Bachler](#); [Paul Moretto](#); [Gloria Tessier](#); [Jim Bownik](#); [Lauri Pickett](#); [Bartelt, Kate](#); [Swanson, Chris](#); [Finwall, Shann](#); [Frank, Rachel E](#); [Berglund, Mary Elizabeth](#); [Hansen, Zack](#)
Subject: 2017 Solid Waste Master Plan
Date: Thursday, August 10, 2017 2:16:39 PM

To: City Managers, Administrators and Recycling Coordinators
From: Ramsey County
Re: Ramsey County Solid Waste Management Master Plan Input Sought

The Minnesota Pollution Control Agency establishes goals for recycling and waste management. Counties are responsible under State law to prepare plans and ensure that the State's goals are met. In April 2017, the Minnesota Pollution Control Agency (MPCA) released the [Metropolitan Solid Waste Management Policy Plan 2016-2036](#). Under State law, Ramsey County must revise its [Solid Waste Management Master Plan by the end of 2017](#), and submit it to the MPCA for approval.

Ramsey County is seeking input on proposed changes to its revised Solid Waste Management Master Plan (master plan). The master plan is a strategy-based community "blueprint" for a waste management system that supports healthy people, a healthy economy and a healthy environment. The master plan was prepared after an active public engagement and dialogue process including meetings of a Solid Waste Advisory Committee (SWAC) made up of residents, municipalities, haulers and others from the solid waste industry. We also met with the City Recycling Coordinators on April 13, 2017, where we sought input on key city priorities and discussed thoughts/concerns on project areas identified in the MPCA's Metropolitan Solid Waste Policy Plan.

The draft plan is available for review on the county's website at ramseycounty.us/masterplan. Input will be accepted through **September 1, 2017**. There are several opportunities available to provide input:

- Call, email, or set-up a meeting by contacting [Rae Eden Frank](#) (651-266-1153)
- Share feedback on our website: www.RamseyRecycles.com/MasterPlan
- City Recycling Coordinators will have a chance to discuss the plan with county staff at their **August 17** Recycling Coordinators meeting.

Areas of Interest for Municipalities

Please review the master plan to ensure your municipality is fully aware of all its proposed responsibilities as well as the resources available to guide, assist and support your efforts.

Work between the county and municipalities is proposed to continue in much the same way as it is in the current master plan. Municipalities would prepare annual work plans to identify how they would provide services and engage with residents. Those work plans will be used in preparation of the SCORE funding agreements and as a tool for monitoring performance. The 2018 master plan has increased the focus on performance outcomes, collaboration to meet those outcomes and ensuring

programs are offered to all residents regardless of where they live.

In addition to the responsibilities borne by municipalities in previous plans, the items outlined below identify proposed new municipal responsibilities.

MSW Management Objectives (Page 5)

- A. The Policy Plan sets forth aggressive MSW management objectives to reduce land disposal of waste through 2036.

Residential Recycling and Organics (Page 27)

- A. Multiunit dwellings will be required to have recycling service by 2020. [Residential Recycling Policy 1, Strategy 3]
- B. Municipalities shall have organized recycling services by 2023. [Residential Recycling Policy 5]
- C. Municipalities shall ensure textile recycling collection is available to residents through curbside collection, special collection, or drop-off by 2019. [Residential Recycling Strategy 6]
- D. SCORE funding incentives will be offered to municipalities to implement new service elements beginning in 2019. No changes will be made to 2018 SCORE funding and no changes will be made to the base funding amount in 2019-2023. Incentive payments are available for four specific program elements (see plan for specific elements). [Residential Recycling Strategy 7]

Residential Organics (Page 31)

- A. Municipalities shall have curbside organics collection service available by 2025. [Residential Organics Strategy 1]
- B. Ramsey County will partner with municipalities to co-develop and fund organics drop-off sites with a goal of locating a site in each municipality. [Residential Organics Strategy 3]
- C. Ramsey County will provide funding for compostable bags for residents if a municipality begins a pilot or full scale curbside co-collection of organics with MSW collection program as an incentive to begin the program. [Residential Organics Strategy 6]

Construction, Demolition and Industrial Waste Management (Page 44)

- A. Ramsey County will encourage municipalities to consider the adoption of deconstruction ordinances and provide technical assistance. [*Construction, Demolition and Industrial Waste Strategies 4 & 7*]

The Master Plan notes that these new areas of emphasis and requirements will be supported by the county in a variety of ways including a robust communications and engagement program, technical assistance and financial support.

Timeline

Input on the draft will be accepted through September 1, 2017 at 4:30pm.

Saint Paul – Ramsey County Public Health’s Environmental Health Division is expected to finalize the plan by mid-September, and the County Board is scheduled to consider adoption of the plan in October 2017.

Thank you

Your insight is valuable to the Master Plan development team to ensure a strong and continued partnership with all of our cities. We look forward to hearing from you.

Jean Buckley

Ramsey County
Environmental Health
2785 White Bear Ave. N. #350
Maplewood, MN 55109
(651)266-1179
www.co.ramsey.mn.us



VII. COMMISSION BUSINESS ACTION ITEMS & RECOMMENDATIONS
D. FIX-IT CLINIC

ACTIONS TO BE CONSIDERED

Fix-It Clinic Planning

FACTS

- The Fix-It Clinic is scheduled at Casey Lake Shelter from 10 a.m. – 1 p.m. on Saturday, September 23rd.
- The County said they plan to arrive at 8:30 a.m. and should be out of the building by 1:30 p.m.
- Staff is planning to meet with County staff at the site on September 20th.
- We just need to provide them with tables and chairs. They will bring all the supplies they need. They have several extension cords and power strips, so they should be good with power, too.
- They are planning to bring brown craft paper and cover the tables.

ATTACHMENTS

Fix It Clinic Flyer

2017 FREE FIX-IT CLINICS

Have broken stuff lying around? Don't trash it – fix it!

Bring things like small household appliances, clothing, electronics and more. Volunteer fixers will help you to disassemble, troubleshoot and repair your item.

Saturday, September 23

10 a.m. - 1 p.m.

Casey Lake Park Shelter
2101 17th Ave. East
North St. Paul, MN 55109

Saturday, November 18

12 - 3 p.m.

Co-hosted with Dakota County
Wentworth Library
199 Wentworth Ave. East
West St. Paul, MN 55118

Saturday, October 28

10:30 a.m. - 1:30 p.m.

Ramsey County Library - Maplewood
3025 Southlawn Dr.
Maplewood, MN 55109

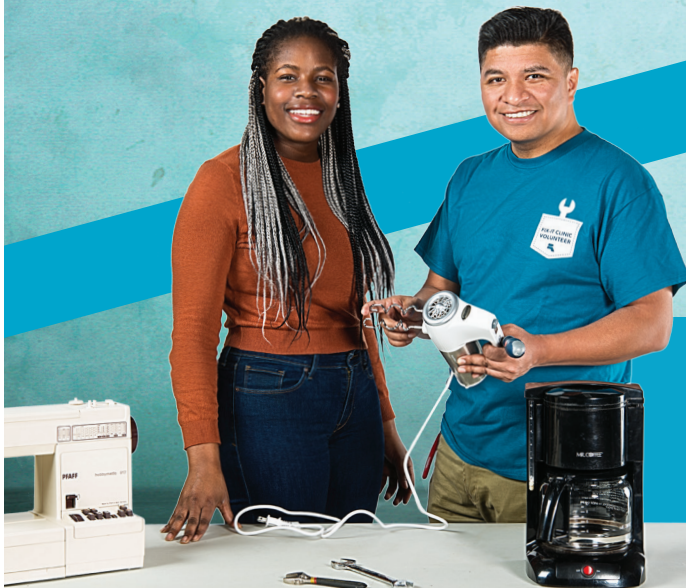
Saturday, December 16

10 a.m. - 1 p.m.

Co-hosted with Dakota County
Our Lady of Guadalupe Church
401 Concord St.
Saint Paul, MN 55107

First come, first served. Items must be carry-in — no oversized items.

For more information or to volunteer, call 651-266-1199 or email
AskEH@co.ramsey.mn.us.



REUSE

SEE BACK
FOR MORE
DETAILS

RamseyRecycles.com

#RamseyRecycles


RAMSEY
COUNTY

HOW FIX-IT CLINICS WORK



ALL ARE WELCOME!



- 1 Sign a consent form and weigh your item at the welcome table.
- 2 Stay with your item in the waiting area until your name is called.
- 3 Once your name is called, you will be paired up with a volunteer fixer.
- 4 Work with your volunteer fixer to disassemble, troubleshoot and repair your item.
- 5 All done? Make sure to stop by the welcome table to tell us if your item was fixed.
- 6 Fill out a survey about your experience.

PLEASE NOTE

- ✓ We can't guarantee an item will be fixed, but we'll give it our best shot!
- ✓ You are responsible for properly disposing of non-fixable items.
- ✓ Not sure how to get rid of something? Ask us or call 651-633-EASY (3279).

TIPS FOR A GREAT EXPERIENCE

- ✓ Bring any parts/tools you think may be helpful to repair your item.
- ✓ Learn from your fixer! Ask questions. Be an active participant in the repair process.
- ✓ Please be patient. Clinics can get busy, but we'll do the best we can.

RamseyRecycles.com

#RamseyRecycles

 RAMSEY COUNTY



VII. COMMISSION BUSINESS ACTION ITEMS & RECOMMENDATIONS

E. MID-YEAR GOAL STATUS

ACTIONS TO BE CONSIDERED

2017 Mid-Year Goal Status

FACTS

Listed below are the 2017 EAC Goals and the status of the goals.

- Revisit Highway 36 Landscaping. *Todd Carroll attended the March EAC meeting to discuss with the EAC. City Council adopted a resolution in support of submitting an application to MNDot for the landscape partnership program on June 6, 2017. Staff wrote MNDot a letter requesting project design assistance on July 13, 2017. Received an email back from Todd Carroll, MNDot said they would meet with NSP staff regarding the project at the end of August.*
- Offer Fix It Clinic in partnership with Ramsey County. *Fix It Clinic is scheduled on Saturday, September 23.*
- Continue to offer successful events/programs: tree give away, big tree registry, plant sale and pumpkin drop. *Tree giveaway and plant sale have taken place this year. The big tree registry is ongoing, EAC presented awards at the March 21 City Council Meeting. The Pumpkin drop is scheduled November 1-5.*
- Start planning for the 2018 Street Project. *The EAC met with the City Engineer at the June EAC meeting. City Engineer is planning to attend the August meeting to discuss further.*
- Use feedback from the demonstration projects to guide educational outreach for future living streets projects. *Presented Demonstration Data in conjunction with Ramsey County at the March 21 City Council Meeting*
- Collaborate with the Ramsey Conservation District to provide public education regarding invasive species. *Carole Gernes gave an educational class on May 22, 2017.*
- Partner with the Electric Department on energy conservation efforts. *Staff emailed the Electric Director regarding a status update on this project on 7/17/17.*

ATTACHMENTS

Email from MNDOT
Email from Electric Director

From: [Brian Frandle](#)
To: [Debra Gustafson](#)
Subject: RE: EAC
Date: Friday, July 21, 2017 4:51:04 PM

Hi Debra,

I am still working with Franklin apartments. It is taking a while since they have so many different style of bulbs they need. I'm not sure exactly how this one will work out as far as having the bulbs be put into the separate bags like we did with the Cottages. It may be a bulk drop off to them. I will keep you informed.

Also, I emailed Holophane again today since I sent them an email over a week ago and haven't heard back.

Thanks,

Brian Frandle
Electric Director

direct 651.747.2472
office 651.747.2410
fax 651.747.2445
Brian.frandle@northstpaul.org



From: Debra Gustafson
Sent: Monday, July 17, 2017 3:06 PM
To: Brian Frandle <Brian.Frandle@northstpaul.org>
Subject: EAC

Hi Brian,

Wanted to touch base with you regarding the LED light bulb exchange program.

Do you have an estimated timeline regarding when you could use the EAC's assistance for that program?

I'm reviewing the status of the EAC goals with them at their next meeting and am anticipating that they will ask. They listed the following as one of their 2017 goals "Partner with the Electric Department on energy conservation efforts".

Thanks for your help.

Debra

Debra Gustafson

From: [Carroll, Todd \(DOT\)](#)
To: [Debra Gustafson](#)
Cc: [Nick Fleischhacker](#); [Keith Stachowski](#); [Sodd, Ryan \(DOT\)](#)
Subject: RE: Request: Design assistance from MnDOT Landscape Architects/Designers
Date: Tuesday, August 1, 2017 11:24:51 AM
Attachments: [image001.png](#)

Hi Debra,

I did receive your request and I was in the process of checking with some of our internal folks to determine if we would be okay with a planting project in the planters. There are issues, such as the location and height of the planters, so we would not be able to use volunteers to plant them, it would have to be city staff. Also, the city would have to be willing to maintain them before we would agree to planting them.

I think through the design process, we would want to try and make the planters as low maintenance as possible. That was the original idea, but I don't think our contractor really maintained them like he should have in the first place, which is why they didn't really take hold. We would need some type of consistent establishment during the first couple of years (maybe even 3 or 4) to make sure the plants will survive and do well. After the 2nd year, we would work out an establishment plan that starts to reduce the amount of maintenance in the planters to try and get the plants used to less maintenance.

Let's plan on getting together here towards the end of August, and start planning on a project for next spring.

I will get back to you with some dates that could work.

Thanks,

Todd Carroll, PLA

Senior Landscape Architect

[Statewide Landscape Partnership Coordinator](#)

MNDOT | Office of Environmental Stewardship | Environmental Planning & Design Unit
395 John Ireland Blvd., MS 686 | Saint Paul, MN 55155 | Todd.Carroll@state.mn.us
(Work) 651-366-4617



 *Please consider the environment and print only if necessary.*

From: Debra Gustafson [mailto:Debra.Gustafson@northstpaul.org]
Sent: Tuesday, August 01, 2017 10:25 AM
To: Carroll, Todd (DOT) <todd.carroll@state.mn.us>

Cc: Nick Fleischhacker <Nick.Fleischhacker@northstpaul.org>; Keith Stachowski <Keith.Stachowski@northstpaul.org>
Subject: RE: Request: Design assistance from MnDOT Landscape Architects/Designers

Good Morning Todd,

Wanted to follow up with you to confirm you received the email listed below.

Thank you,

Debra

Debra Gustafson
Strategic Operations Director

direct 651.747.2423
office 651.747.2400
fax 651.747.2425
debra.gustafson@northstpaul.org



From: Debra Gustafson
Sent: Thursday, July 13, 2017 11:19 AM
To: 'todd.carroll@state.mn.us' <todd.carroll@state.mn.us>
Cc: Nick Fleischhacker <Nick.Fleischhacker@northstpaul.org>; Keith Stachowski <Keith.Stachowski@northstpaul.org>
Subject: Request: Design assistance from MnDOT Landscape Architects/Designers

Todd Carroll
Office of Environmental Stewardship, M.S. 686
395 John Ireland Blvd., St. Paul, MN 55155
Mr. Carroll,
The City of North St. Paul would like to request design assistance for a landscaping project on Highway 36. Listed below is requested information:
Community Name: City of North St. Paul
Project Location: Margaret Street Bridge Both Planter Boxes
Highway: 36
Contact Person: Debra Gustafson, contact information listed below.
There is City support for this project from the Environmental Advisory Commission. North St. Paul City Council also approved a resolution supporting submitting an application for the MNDOT Landscape Partnership Program on June 6, 2017. Ideally the Commission would like the planting to be completed in 2018. Please feel free to contact me if you have any questions.
Thanks, Debra

Debra Gustafson

Agenda Information Memorandum
North St. Paul Environmental Advisory Commission
August 28, 2017



VII. COMMISSION BUSINESS ACTION ITEMS & RECOMMENDATIONS
G. CANCEL OR RESCHEDULE OCTOBER EAC MEETING

ACTIONS TO BE CONSIDERED

To cancel or reschedule the October EAC Meeting.

FACTS

- The PRC Liaison will be at conference on the October meeting night.
- The Commission has the option of canceling the meeting or rescheduling it on Monday, October 16. Before the community café from 5-6pm or after the café from 7-8 p.m.

ATTACHMENTS