City of Ramsey
Agenda
Public Works Committee
Tuesday, September 19, 2017
5:30 pm
Lake Itasca Room, 7550 Sunwood Drive NW

1. Call to Order

2. Citizen Input

3. Approve Agenda

4. Approve Minutes

1. Approve Public Works Committee Meeting Minutes.

5. Committee Business

1. Consider Recommendation to City Council Regarding Connexus Energy's Special Assessment for Sunwood Drive Reconstruction

2. Improving Pedestrian Crosswalk Visibility in the COR

3. Consider Recommendation for City Council to Order Feasibility Report for 2018 Overlay Improvements

4. Review Feedback and Next Steps for Comprehensive Plan Update Transportation Chapter

6. Committee/Staff Input

1. Staff Updates on Improvement Projects and Items of Interest

2. Review Future Topics Calendar

7. Adjournment

Public Works Committee **4. 1.**

Meeting Date: 09/19/2017
Submitted For: Grant Riemer, Engineering/Public Works
By: MaryJo Warner, Engineering/Public Works

Title:
Approve Public Works Committee Meeting Minutes.

Purpose/Background:
To review and approve the attached Public Works Committee meeting minutes for June 20, 2017 and July 18, 2017.

Timeframe:
5 minutes.

Observations/Alternatives:
n/a

Funding Source:
n/a

Recommendation:

Action:
Motion to approve Public Works Committee meeting minutes for June 20, 2017 and July 18, 2017.

Attachments

June Minutes
July Minutes

Form Review

Inbox	Reviewed By	Date
Grant Riemer	Grant Riemer	09/13/2017 12:58 PM
Kurt Ulrich	Kurt Ulrich	09/14/2017 03:26 PM
Form Started By: MaryJo Warner		Started On: 09/13/2017 08:37 AM
Final Approval Date: 09/14/2017		

PUBLIC WORKS COMMITTEE
CITY OF RAMSEY
ANOKA COUNTY
STATE OF MINNESOTA

The Public Works Committee conducted a regular meeting on Tuesday, June 20, 2017, at the Ramsey Municipal Center, 7550 Sunwood Drive NW, Ramsey, Minnesota.

Members Present:	Chairperson Chris Riley Councilmember Jill Johns Councilmember Mark Kuzma
Absent:	Councilmember Melody Shryock
Also Present:	Public Works Superintendent Grant Riemer City Engineer Bruce Westby

1. CALL TO ORDER

Chairperson Riley called the regular meeting of the Public Works Committee to order at 5:35 p.m.

2. CITIZEN INPUT

There was none.

3. APPROVE AGENDA

Motion by Councilmember Johns, seconded by Councilmember Kuzma, to approve the agenda, as presented.

Motion carried. Voting Yes: Chairperson Riley, Councilmembers Johns and Kuzma. Voting No: None.

4. APPROVE MINUTES

4.01: Approve May 16, 2017, Meeting Minutes

Motion by Councilmember Johns, seconded by Councilmember Kuzma, to approve the following minutes:

Regular Meeting Minutes dated May 16, 2017

Motion carried. Voting Yes: Councilmembers Johns and Kuzma. Voting No: None. Abstained: Chairperson Riley.

5. COMMITTEE BUSINESS

5.01: Pedestrian Crosswalk Applications in the City of Ramsey

Public Works Superintendent Riemer gave a presentation with photos of a variety of crosswalks within the City of Ramsey. He added location, sight distances, traffic speeds, and pedestrian and traffic volumes all factor into the decision about whether to install a crosswalk, and what type of crosswalk to consider. Public Works Superintendent Riemer stated crosswalks in The COR are designated by a different color concrete than the roadway. He added some standard residential crosswalks have a recessed curb so pedestrians can see oncoming traffic even if cars are parked nearby.

Councilmember Kuzma what the textured metal plate is for.

Public Works Superintendent Riemer stated that is an ADA requirement so the crosswalk can be identified by disabled people.

Public Works Superintendent Riemer stated a solar-powered flashing crosswalk on Armstrong Boulevard was installed for the Game Fair, and originally had portable stop lights. He added crosswalks in the roundabout have a middle median which gives pedestrians a place to stop until it is safe to proceed. He noted a crosswalk with a solar-powered rectangular rapid flashing beacon on Armstrong Boulevard is pedestrian activated and flashes for 30 seconds to warn motorists when a pedestrian is using the crosswalk..

Councilmember Kuzma stated this is helpful information, and asked whether it is available to the public.

Public Works Superintendent Riemer stated details about crosswalks have not been presented with this level of detail. Public Works Superintendent Riemer stated HAWK crosswalk systems have traffic signals activated when a pedestrian pushes a button. He added a yellow light flashes, then goes to solid yellow, then a solid red double light located above the yellow lights indicates that pedestrians can safely enter the crosswalk. He noted there is an example of a HAWK crosswalk system in Coon Rapids' Riverdale Village.

Councilmember Kuzma stated he does not think the HAWK crosswalk in Coon Rapids is functional.

Public Works Superintendent Riemer stated the HAWK system is similar to a regular traffic signal.

City Engineer Westby stated the HAWK system lights are only activated if a pedestrian pushes the button, so roadways are more free-flowing.

Public Works Superintendent Riemer stated a ratings system called Pedestrian Level of Service (LOS) is used to determine whether a crosswalk is required at a certain location. He added LOS evaluates and rates how a crossing is functioning.

Councilmember Kuzma asked whether there are any crosswalks in the City of Ramsey that have been rated D.

Public Works Superintendent Riemer stated he only has data for two crosswalks located on high speed roads.

Councilmember Johns asked whether this process is used every time a crosswalk is being considered.

Public Works Superintendent Riemer stated that depends upon various factors, including whether concerns are raised by residents.

Public Works Superintendent Riemer stated a review involves the collection of traffic and roadway data – whether there is a median, width of roadway, and stopping sight distance. He added the State of Minnesota stipulates 20 pedestrians crossing per hour for a crosswalk to be considered. He noted two 24-hour traffic counts are completed and averaged together.

Councilmember Johns stated, with regard to the Variolite Street/161st Avenue intersection, the City Council had requested more enforcement on Thursday evenings due to games at the park.

Public Works Superintendent Riemer confirmed that the Police Department is aware of this request.

Chairperson Riley stated there are many distractions and concerns in residential neighborhoods, including children, other vehicles, and more narrow roadways. He added residential crosswalks can often be overlooked and drivers are past the crosswalk before they realize they should have stopped.

Councilmember Johns stated this is only an issue at certain times of the year.

Public Works Superintendent Riemer stated some of the responsibility needs be on the pedestrian as well as the motorist.

Chairperson Riley asked whether there was an issue regarding the line for the turn lane a few blocks south of the Variolite Street/161st Avenue intersection.

City Engineer Westby stated that is the current design being recommended by the Minnesota Department of Transportation (MnDOT).

Chairperson Riley stated this has been very helpful information. He added the request for a crosswalk at the Variolite Street/161st Avenue intersection could be denied based on the City's evaluation. He added a statement explaining the evaluation process should be prepared.

5.02: Consider Recommending City Council Approval of Plans and Specifications for Riverdale Drive Extension – Traprock Street to Ramsey Boulevard, Improvement Project 16-20

City Engineer Westby stated the Riverdale Extension plans have been submitted to the Minnesota Department of Transportation (MnDOT). City Staff will be meeting with MnDOT representatives this week for a final plan review and to receive comments. The plans will be presented to the City Council at their June 27, 2017, Regular Meeting, for final plan approval and to authorize bids.

City Engineer Westby stated MnDOT has indicated that they have a brief list of comments. He added City Staff plans to have bids advertised by Friday, June 30, 2017. He noted the project is scheduled to be completed in 2017.

Councilmember Kuzma asked whether there was a problem with the grant.

City Engineer Westby stated there is no problem, and that the original agreement with MnDOT required the project to be let by June 30, 2017. He added that he spoke to MnDOT and there is a work around if the project is not let by this date so the funding is secure.

City Engineer Westby stated the interior construction will be completed first and the connections to existing streets at each end will be made last to minimize impacts. He noted Holiday has reviewed and agreed to the plan in general, and that accommodations are being made for pedestrian access.

Chairperson Riley asked whether there will still be access to Highway 10 at Traprock Street.

City Engineer Westby stated the access to Traprock Street will be removed at the end of the project, along with the median crossover for westbound Highway 10.

Motion by Councilmember Kuzma, seconded by Councilmember Johns, to recommend that the City Council approve plans and specifications for Riverdale Drive Extension – Traprock Street to Ramsey Boulevard, Improvement Project 16-20.

Motion carried. Voting Yes: Chairperson Riley, Councilmembers Kuzma and Johns. Voting No: None.

5.03: Consider Recommending City Council Approval of Plans and Specifications for Sunwood Drive Striping Improvements, Improvement Project 17-04

City Engineer Westby stated the Public Works Commission had reviewed this item briefly at their May 16, 2017, meeting. He added the proposed plans include the addition of dedicated right and left turn lanes on Sunwood Drive. He noted these turn lanes will create a safer configuration for pedestrians and better traffic flow.

City Engineer Westby stated the addition of a right turn lane onto Center Street will require the loss of several parking spaces. He added seal coating will be completed from Zeolite Street to Armstrong Boulevard before striping, and from Rhinestone Street to Ramsey Boulevard, and that all striping work will be completed by the end of August 2017.

Chairperson Riley asked whether the old stripes will be removed first.

City Engineer Westby confirmed this.

Motion by Councilmember Kuzma, seconded by Councilmember Johns, to recommend that the City Council approve Plans and Specifications for Sunwood Drive Striping Improvements, Improvement Project 17-04.

Motion carried. Voting Yes: Chairperson Riley, Councilmembers Kuzma and Johns. Voting No: None.

5.04: Consider Recommending City Council Authorization to Prepare Plans and Specifications for Puma Street Utility Extensions, Improvement Project #17-10

City Engineer Westby reviewed the staff report, and explained that two development proposals, Capstone Homes and the Riverstone development, are proposed to be served by City water and sanitary sewer. Utilities must be extended north along Puma Street to serve additional homes in the Riverstone development. Staff proposes to prepare final design plans and specifications for this improvement project. All costs to extend utilities are proposed to be paid through City sewer and water funds. The developer will pay for a portion of the public infrastructure costs via an assessment agreement, plus a portion of the utilities via trunk utility fees which are paid at the time of development. However, some additional costs are required to remove existing pavement and replace it with temporary aggregate surfacing. Capstone will cover all of these costs via their assessment agreement.

Councilmember Kuzma asked whether the house on the corner of Bunker Lake Boulevard and Puma Street will pay anything.

City Engineer Westby stated staff met with the residents and they will not be party to the assessment agreement.

City Engineer Westby stated the utilities are estimated to cost $750,000, and that the additional costs for pavement removal and temporary aggregate surfacing are roughly estimated to cost $100-150,000. The Capstone developers have estimated utilities at $88,000, so that would be an

additional cost. City Engineer Westby stressed the importance of moving forward to make this project work.

Chairperson Riley stated he was initially concerned that the City was getting ahead of itself with this project, and the current plans take it even further. He asked why this needs to be extended down Bunker Lake Boulevard.

City Engineer Westby stated the phasing of the Riverstone development will require Bunker Lake Boulevard utilities to serve homes at the south end of their site. He added, in the next phase, for the development to be graded and more homes constructed over the winter, services need to be extended north along Puma Street.

Chairperson Riley asked whether they have plat approval.

City Engineer Westby stated they do not have plat approval.

Councilmember Kuzma requested clarification regarding the timing of the proposed improvement project and Riverstone's timeline, and whether guarantees can be obtained that they will not back out.

City Engineer Westby stated they are going as fast as they can, and the City has submitted the first draft of the assessment agreement to them.

Chairperson Riley stated they are asking the City to do this out of sequence, without a finalized agreement, following their plan and not the City's own project timeline.

Councilmember Kuzma agreed. He stated it would not be unusual to require a guarantee, as the City is financially committed at this point.

Councilmember Johns agreed. She added a requirement of starting the project could be a guarantee or commitment from the developer, since the City will be out $890,000 if the project falls through.

Chairperson Riley stated he would like to request regular updates from the developer, and some sort of credit to assist with costs.

Councilmember Johns asked what would be the total amount to be requested from the developer as a guarantee.

Chairperson Riley stated the total is $800,000 plus 100% of road construction costs. He expressed concern that the developer is pushing the City to do something that he does not agree with.

Chairperson Riley stated the utilities along Bunker Lake Boulevard are in the right of way, and generally do not affect the roadway. He asked what would happen if they need to extend utilities even further, up Puma Street to Alpine Drive.

City Engineer Westby stated that may happen as the developer will be developing the full 80 acres over the next decade or so.

Chairperson Riley asked whether the utility extensions along Bunker Lake Boulevard and the first half of Puma Street would all be completed as one project if the City moves forward.

City Engineer Westby stated the contract will be awarded this week for utilities for Bunker Lake Boulevard, which is a standalone project. He added this other project will be completed by November.

Chairperson Riley asked whether it would be acceptable to do the rest of the utilities.

City Engineer Westby it is always preferred if possible to tie in to the existing pavement, to ensure that streets are completed.

Chairperson Riley asked why that section of Bunker Lake Boulevard needs to be upgraded.

City Engineer Westby stated the future business park report calls for a 3-lane road with center turn lane. He added that Bunker Lake Boulevard was constructed as a 4-lane section due to the River crossing, and the intersection was originally set up for a four-lane design. He noted it will have to transition to a 3-lane segment towards Puma Street.

Chairperson Riley asked whether that segment will be repaved along with Puma Street, and will be part of the assessment agreement.

City Engineer Westby confirmed this.

Chairperson Riley requested that a specific number, approximately $250,000, be included as a condition of approval. City Engineer Westby agreed to make this request of Capstone.

Motion by Councilmember Kuzma, seconded by Councilmember Johns, to recommend that the City Council authorize Puma Street Utility Extensions, with the following added condition:

> -A letter of credit or some other financial guarantee be requested from the developer to cover engineering expenses and additional City expenses.

Motion carried. Voting Yes: Chairperson Riley, Councilmembers Johns and Kuzma. Voting No: None.

City Engineer Westby reiterated this will be reviewed by the City Council at their June 27, 2017, Regular Meeting.

Chairperson Riley requested that City Staff provide a review of milestones that have been achieved to date.

Councilmember Kuzma stated he is still not comfortable with the 29-foot driveway.

City Engineer Westby requested clarification regarding milestones.

Chairperson Riley stated the developer has continued to move forward with the project even though they do not even own the property, and there is no assessment agreement. He added he would like to know that the developer is staying on track, and what the developer has expended, to ensure their level of commitment to the project.

City Engineer Westby stated a proposed timeline for moving forward could be provided by City Staff. Chairperson Riley agreed.

6. COMMITTEE / STAFF INPUT

6:01 Staff Updates on Improvement Projects and Items of Interest

City Engineer Westby stated a project review document was provided in the meeting packet.

City Engineer Westby stated the City Council Meeting on June 27, 2017, will include a Consent Agenda item related to final payment for River Trail Phase 3.

City Engineer Westby stated North Valley, the contractor for Alpine Drive and Sunwood Drive reconstruction projects, has indicated that these projects will begin in August 2017. He added the projects will be completed and then paved concurrently.

City Engineer Westby stated 2 businesses on Sunwood Drive, Class C Components and In'tech Industries, have indicated that the reconstruct project will negatively impact their ability to receive shipments. He noted their driveways will be repaired over the holiday weekend beginning on June 30, 2017, and both businesses have been very understanding.

City Engineer Westby stated City Staff is compiling a final punch list, and working with property owners to get irrigation systems finished. He reviewed an on-going situation with one residential property that has a colored concrete edge along their concrete driveway. He added the resident has been working with the contractor to replace the concrete, unbeknownst to City Staff.

6:02 Review Future Topics Calendar

City Engineer Westby stated he hopes to review the Gibbon Street and 173rd Avenue drainage issue and Sunfish Lake sedimentation basin at the Public Works Commission's next meeting.

Chairperson Riley stated he would like to request a discussion about changing the name of the segment of Zeolite Street in The COR to something more in keeping with the uses and functions in The COR.

Councilmember Kuzma requested an update on the gas station.

City Engineer Westby stated demolition contracts are being reviewed, including a proposal from Hakanson Anderson. He added demolition should take place this summer. He noted City Staff have been considering future use of the site, including overflow parking for neighboring businesses.

City Engineer Westby asked whether the Public Works Commission is interested in talking about the site.

Chairperson Riley stated he would like to discuss the current tree coverage, to open the space up and make it more visible and less of a parking lot.

City Engineer Westby stated he can add that the July meeting agenda.

Chairperson Riley asked whether the parcel could be divided, and part of it used for parking, if the City does not need the whole parcel.

City Engineer Westby stated stormwater ponding is proposed for part of the site, but there could be a small remnant. He added there are certain restrictions related to the site.

Councilmember Kuzma asked for an update regarding the privacy fence at the Anoka sanitation facility.

City Engineer Westby that is supposed to happen but he has not heard anything, but he agreed to look into it.

7. ADJOURNMENT

Motion by Councilmember Kuzma, seconded by Councilmember Johns to adjourn the Public Works Committee meeting.

Motion carried.

The regular meeting of the Public Works Committee adjourned at 6:47 p.m.

Respectfully submitted,

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Grant Riemer
Public Works Superintendent

Drafted by Mary Mullen
TimeSaver Off Site Secretarial, Inc.

PUBLIC WORKS COMMITTEE
CITY OF RAMSEY
ANOKA COUNTY
STATE OF MINNESOTA

The Public Works Committee conducted a regular meeting on Tuesday, July 18, 2017, at the Ramsey Municipal Center, 7550 Sunwood Drive NW, Ramsey, Minnesota.

Members Present:	Chairperson Chris Riley Councilmember Jill Johns Councilmember Mark Kuzma
Absent:	Councilmember Melody Shryock
Also Present:	Public Works Superintendent Grant Riemer City Engineer Bruce Westby Community Development Director Timothy Gladhill Chief of Police Jeff Katers Captain Tim Frankfurth

1. CALL TO ORDER

Chairperson Riley called the regular meeting of the Public Works Committee to order at 5:30 p.m.

2. CITIZEN INPUT

There was none.

3. APPROVE AGENDA

Motion by Councilmember Johns, seconded by Councilmember Kuzma, to approve the agenda, as presented.

Motion carried. Voting Yes: Chairperson Riley, Councilmembers Johns and Kuzma. Voting No: None.

4. APPROVE MINUTES

4.01: Approve June 20, 2017, Meeting Minutes

Chairperson Riley stated there was a change he wanted to make in the minutes, but he could not find the change. Mr. Gladhill stated this item can be tabled and reviewed.

Motion by Councilmember Johns, seconded by Councilmember Kuzma, to table the June 20, 2017, Public Works Commission Meeting minutes.

Motion carried. Voting Yes: Chairperson Riley, Councilmembers Johns and Kuzma. Voting No: None.

5. COMMITTEE BUSINESS

5.01: Review Anoka County Street Name Grid

Community Development Director Manager Gladhill stated requests have been received from several northern border developments to deviate from the Anoka County street naming grid. He added all streets were laid out in a grid fashion, using an orderly naming convention in general, for ease of use within community, which determines house numbers and street numbers. He noted these requests are based on the perceived quality of the street names.

Mr. Gladhill stated several representatives of the Police Department were present to talk about how they use the grid, and how important it is to them to be able to use it wherever possible. He added the City has the authority to deviate from the street naming grid, but there is a benefit to keeping it. He noted Capstone has indicated they would prefer to deviate from street names like Rabbit, Sloth and Tiger, as well as Zeolite and Quagga.

Mr. Gladhill stated street name deviations were used in the COR on a few projects. He added, for instance, Center Street would have been Variolite Street, and Ramsey Parkway would have been 148th Avenue.

Mr. Gladhill stated changing the street names would impact safety team response, as Geographic Information Systems (GIS) systems technology is not always reliable. He added it is easier for mutual aid partners from other cities to use the grid and follow the street names. He asked the Chief Katers and Captain Frankfurth who were present if they had any comments or feedback on this issue. He noted more details on this issue will be available in the coming weeks, and this is a preliminary review for the Public Works Committee.

Chief of Police Jeff Katers thanked Mr. Gladhill for his accurate summary. He added the Police Department relies heavily on GIS systems, but they can potentially fail, and in times of disaster, they do fail. He noted outside agencies are often relied on for assistance, and if street names are changed, they would have to rely on a map, unless it is a place they know and have been to before.

Chief Katers stated he understands the names are not the best choice. He added maybe other animal names could be used, or a category within a specific zone, so first responders can find the streets. He noted a large wall map is used to train new officers as well as mapping systems, to ensure that they know major thoroughfares, and can respond without a map.

Councilmember Kuzma stated it would be difficult to look at a map at night in the dark.

Chief Katers agreed, adding there is more risk involved in terms of situational awareness, and the risk of officers giving way their position by turning on a light in their vehicle.

Captain Tim Frankfurth stated it is a consistency issue, and responders need to be able to rely on their past training. He added the grid map is consistent from north to south, and dispatchers can name any street to responders and they will know where the street is located. He noted he can understand why the names were changed in the COR, but changing other developments will lead to confusion, and responders have enough to worry about without trying to figure out where they are going.

Captain Tim Frankfurth stated he agrees that names such as Quagga and Sloth are not desirable, and they have not been built yet. He added another animal name using the same letter could be used.

Captain Frankfurth stated Rabbit is a concern because it is a lengthy street, so the whole street would have to be changed.

Councilmember Kuzma asked if these animal street names are used in other parts of Anoka County, and whether changing the names would be a problem for them. He added Ramsey should not deviate from the street names grid if it is established elsewhere.

Chairperson Riley stated the same first letter could be still be used.

Councilmember Johns asked whether are there other names that are not currently being used that could be considered.

Captain Frankfurth confirmed this, adding he was referring to the current development.

Chairperson Riley stated these specific names are being mentioned because they were they likely to be used in the Riverstone addition.

Mr. Gladhill confirmed this, adding Capstone would like to replace those four names.

Councilmember Johns stated she would support changing the names that do not have addresses yet, such as Sloth, and only the grid within City limits.

Mr. Gladhill confirmed that the Public Works Commission has indicated they are not opposed to staying with alphabetical animal names.

Chairperson Riley agreed and stated changing Puma would only affect one address.

Mr. Gladhill confirmed this. He added all new parcels would be based off new internal roads. He added there is not a north/south road in the Riverstone addition.

Chairperson Riley asked whether the developer gets to pick the majority of street names.

Mr. Gladhill stated the City picks the street names. He added this issue will be discussed during the final plat review for Riverstone at next week's City Council meeting.

Chairperson Riley asked whether there is a Zeolite Street in the north that lines up with the COR's temporary road named Zeolite.

Captain Frankfurth confirmed this.

Chief Katers stated he just did an online search, and Nowthen changed Sloth to Sugarbush Road.

Chairperson Riley stated he still would like to see Zeolite changed. He asked whether there will there be any addresses on it.

Mr. Gladhill stated there will not be addresses on the current segment of Zeolite, and the development plan does not show a connection, but plans can change. He agreed to look into that.

Chairperson Riley asked whether Zeolite is a permanent street.

Mr. Westby stated it will eventually be permanent but it is not right now.

5.02: Review Feedback and Next Steps for Comprehensive Plan Update Transportation Chapter

Community Development Director Manager Gladhill stated one of the more important chapters of the Comprehensive Plan is the Transportation chapter. He added City Staff have been working with WSB to come up with technical aspects of the chapter that need to be accomplished by Statute for the Metropolitan Council. He noted the first phase of public engagement is close to completing, and City Staff is looking at the next phase, which is drafting the plan.

Mr. Gladhill stated the City Council wants to take a wholistic approach to the Comprehensive Plan. He added City Staff wants to check with the Public Works Commission to go through existing goals and strategies as well as suggested goals. He noted he would highlight issues that the public helped develop.

Mr. Gladhill stated Highway 10 is a critical point, as well as a potential river crossing. He added that is a long-term vision, as there are other priorities and funding required in other areas. He noted community members have brought up a potential crossing over the Rum River to ease congestion, and City Staff have discussed this with Andover City Staff but a joint work session is necessary.

Mr. Gladhill stated feedback has been received from residents related to adding shoulders and speeds on County roads, in particular Green Valley Road. He added the Anoka County Highway Department seems open to helping with corridor studies. He noted the Transportation chapter will have broad goals, including corridor studies over the next 10 years, but these issues will require follow-up plans after the chapter is complete.

Mr. Gladhill stated the topic of another east/west connection is a high priority. He added Sunwood Drive and Alpine Drive were segments that were the result of planning, and 167th Avenue is planned for another east/west connector. He added a corridor study of Green Valley Road, 173rd Avenue and 179th Avenue might be a good plan as that area attracts a lot of attention. He noted the golf course property owner has developers interested in developing that property, which will put some pressure on that corridor.

Mr. Gladhill stated the Commission should consider whether Transportation sample goals and objectives should be added to the overall plan which has its own strategies and goals. He added it might be good to have some general goals for the plan moving forward.

Scott Mareck, WSB & Associates, stated the requirements and guidelines that are followed for the Comprehensive Plan come from the Metropolitan Council, and broad goals and objectives provide an umbrella as far as what the City wants to achieve. He added Mr. Gladhill has mentioned a few of the overall goals for the City of Ramsey are safe and efficient motorized and non-motorized systems, and connectivity with regional corridors for both transit and roadways. He noted he has provided City Staff with a generic template for the Transportation chapter, and there is no right or wrong way to compile the goals and objectives except to consider that which is most important to the specific community.

Mr. Mareck stated some goals that other communities have included are system preservation, pavement quality, signage and supportive infrastructure. He added strategies to maintain quality conditions, and environmental impacts are often recorded as priorities, and some communities address issues related to major freight and truck corridors, such as Highway 10, as well as access management related to land use and roadways. He noted more access creates less mobility in major corridors.

Mr. Mareck stated the Comprehensive Plan Transportation chapter identifies long and short-term goals and issues in association with the Minnesota Department of Transportation (Mn/DOT), as well as Ramsey County, and provides confirmation that these are the transportation issues with the City of Ramsey is most concerned for the future.

Councilmember Kuzma asked what Mr. Mareck's role is in connection with the City's Comprehensive Plan.

Mr. Mareck stated WSB is retained by the City to help prepare the Transportation chapter.

Councilmember Kuzma stated everything Mr. Mareck has said seems to be redundant in terms of what has already been reviewed and discussed. He added the real problem is the lack of funding that would allow the City to be able to follow through with the plans that are identified in the Comprehensive Plan. He asked what WSB is contracted to provide for the City, and what it will cost.

Mr. Gladhill stated strategies are developed by City Staff to ensure that the Comprehensive Plan moves forward toward completion. He added WSB provides assistance with and support for technical aspects of the Transportation chapter, traffic forecasts, as well as analysis for transportation and land use issues. He noted City Staff does not have those types of services in-house.

Mr. Gladhill stated a $32,000 grant was received by the City to help with Comprehensive Plan completion. He added Land Use is another important component of the Comprehensive Plan. He noted many grants are received by the City for projects because they have already been identified as priorities in the Comprehensive Plan.

Chairperson Riley stated the Comprehensive Plan document is a way of documenting goals and plans that the City is already talking about and in some cases, in the process of completing.

Mr. Gladhill agreed and stated a few topics that will garner attention from residents are the Variolite Street connection from the north to the COR, which has been a heated topic. He added it would be helpful to identify an appropriate plan for resolving that issue. He added another topic for discussion is the proposed rail station circulator shuttle pilot project that has been suggested by Anoka County for the City of Ramsey.

Chairperson Riley stressed the importance of taking public comment, but identifying specific resident complaints as opposed to goals and strategies that need to be developed.

Mr. Gladhill agreed, adding City Staff tries to provide its own analysis, and then looks to the Public Works Commission for further direction.

Chairperson Riley stated a new corridor has been discussed for access to new neighborhoods, but it has also been acknowledged that Highway 47 is a problem that cannot be fixed. He added Highway 10 is also a real problem that the City is doing its best to figure out. He expressed concern about looking at a new corridor when the existing corridors do not work.

Mr. Gladhill stated there are no resources to study that issue. He added the solution could be to look at an intersection as development occurs, or potential re-alignment, but not construct an entire corridor.

Councilmember Johns asked whether a potential pedestrian crossing is still being considered.

Mr. Mareck stated that is part of the plan.

Councilmember Johns stated a pedestrian crossing is important especially as it relates to a potential river crossing project. She expressed support for keeping a pedestrian access plan in the Transportation chapter.

Councilmember Johns stated they were doing a trail crossing at Highway 47, and she asked whether any of that has changed.

Mr. Gladhill stated that can be identified in the Comprehensive Plan as an area for further study, and if a plan can be determined that includes support from Coon Rapids, that might improve the chances of receiving funding. Chairperson Riley stated he supports that idea.

Chairperson Riley stated, with regard to a Rum River crossing, pressure would be removed If we Highway 47 is not upgraded. He added there is already a right of way under the wires at Alpine Drive, and the longer the City goes without acting, the more development will occur in the meantime. He noted a river crossing at Highway 47 would be very beneficial for Ramsey residents.

Mr. Gladhill stated there been some pressure to take it out of the Transportation plan. He added if it stays in the plan, that will keep it as a priority goal in terms of Mn/DOT projects.

Chairperson Riley stated the City has a trail plan already but having it in the Transportation plan will make it more formalized, and create the possibility of strategic connections.

Mr. Gladhill stated City Staff is working on the Park and Trails Map. He added that will be reviewed by the Park and Recreation Commission.

Councilmember Johns stated the School District will having a referendum vote in the fall 2017. She asked whether the results of that vote will be in by the time the Comprehensive Plan is due for submission. She stressed the importance of ensuring that trails and pedestrian connectivity are included in conversations with the School District.

Mr. Gladhill stated it is hoped that a significant draft will be done by the end of 2017.

Councilmember Johns reiterated that a trails plan must be included.

Mr. Gladhill stated City Staff is planning an internal coordination meeting and community workshop to review transitions within neighborhoods, and how to get traffic across Brookfield.

Councilmember Johns stated there is not a lot of trail connection there, and it is important to capture that.

Chairperson Riley asked whether this will be reviewed again in a month or two.

Mr. Gladhill stated it is hoped that the planning maps will be reviewed by the City Council at an upcoming work session. He added more detail can be provided for the Public Works Commission's review before it goes to the full City Council. He noted chapter narrative can be developed after the planning maps are reviewed, and the Public Works Commission should determine priority issues that require study but which the City is not able to execute.

6. COMMITTEE / STAFF INPUT

6.01: Staff Updates on Improvement Projects and Items of Interest

City Engineer Westby reviewed current projects, including Alpine Drive and Sunwood Drive reconstruction projects. He added conferences are planned for those two projects on Wednesday, July 19, 2017, at 10:00 a.m.

Mr. Westby stated curb and gutter replacement on Alpine Drive will start on July 25, 2017, with construction on Sunwood Drive starting on July 31, 2017. He added the north closure of Alpine Drive won't occur until the end of August, and some signage will be placed this week. He noted signage is required to be posted 10 days before the road can be closed.

Mr. Westby stated 2017 crack seal and seal coat improvements will start in late July and run into August 2017. He added Sunwood Drive striping bids open on Friday, July 19, 2017. He noted this will be reviewed by the City Council at their July 25, 2017, Regular Meeting.

Mr. Westby stated Bunker Lake Boulevard utilities extension will start late this month and be completed by August 25, 2017.

Mr. Westby stated the City Council will be asked to authorize preparation of plans for the Puma Street extension as well as review several issues related to Riverstone utilities.

Mr. Westby stated an Items of interest that was discussed at the Commission's last meeting related to temporary fencing. He added there are no requirements for that, and it is up to the owner. He noted the property owner is aware that the City of Ramsey has been discussing this issue, and they wanted to comment that there was no request made by the owner.

Councilmember Johns stated she thought someone stated at the last meeting that they were going to put the fence in.

Mr. Westby stated they said they were open to that, but have no plans to complete that in the near future.

Councilmember Johns asked for an update on the patching on 167th Avenue.

Mr. Riemer stated the patching must set for 3 days before the project can be swept.

6.02: Review Future Topics Calendar

Chairperson Riley stated he appreciates that most of the topics on the calendar are scheduled out with dates for completion. He asked if there are any additions or changes.

City Engineer Westby stated City Staff is assuming there will not be a meeting in August 2017, as there are no topics with August 2017 deadlines. He added it is the Commission's preference.

It was the consensus of the Ramsey Public Works Commission that there would be no meeting held in August 2017.

7. ADJOURNMENT

Motion by Councilmember Kuzma, seconded by Councilmember Johns to adjourn the Public Works Committee meeting.

Motion carried.

The regular meeting of the Public Works Committee adjourned at 6:30 p.m.

Respectfully submitted,

_____

Grant Riemer
Public Works Superintendent

Drafted by Mary Mullen
TimeSaver Off Site Secretarial, Inc.

Public Works Committee **5. 1.**

Meeting Date: 09/19/2017

By: Bruce Westby, Engineering/Public Works

Title:

Consider Recommendation to City Council Regarding Connexus Energy's Special Assessment for Sunwood Drive Reconstruction

Purpose/Background:

Up to 25 percent of project funding for the Sunwood Drive Reconstruction project is proposed to come from special assessments to benefiting properties. A total of nine properties were identified as benefiting properties with this project. One of the nine properties is Connexus Energy whose primary access for their service vehicle fleet uses their access onto Sunwood Drive.

Connexus Energy has never formally objected to their preliminary assessment, but they have voiced concerns with their assessment on several occasions, and have met with Staff numerous times to discuss their assessment. However, Connexus Energy is now requesting to discuss their assessment with the Public Works Committee prior to the Assessment Hearing scheduled for October 10, 2017.

Attached is a copy of the Sunwood Drive Reconstruction project Feasibility Report which discusses how special assessments were calculated for this project, and includes a preliminary assessment map and roll as approved by the City Council. Also attached is a copy of the City's Special Assessments Policy.

Staff is preparing a brief presentation to summarize how special assessments were calculated for this project, including the Connexus Energy parcel. Mike Bash, Vice President and Chief Financial Officer for Connexus Energy, will be in attendance and will be prepared to present additional information to the Committee to explain why they believe their preliminary assessment should be reduced.

Timeframe:

Staff anticipates approximately 30 minutes will be needed for this case.

Observations/Alternatives:

Observations:

It is important to note that contributing traffic volumes and/or vehicle types were not considered in calculating assessments for any of the benefiting properties. Based on vehicle impacts of all existing benefiting properties, Connexus Energy's service vehicle fleet likely has the greatest negative long-term impact on the service life of Sunwood Drive.

Staff has discussed and reviewed Connexus Energy's concerns and arguments regarding their assessment on several occasions and believes that the assessment proposed is defensible and in accordance with state law. Consequently, we do not recommend reducing their assessment prior to the Assessment Hearing.

If Connexus Energy's assessment is reduced, all other assessment amounts will need to be reviewed and adjusted accordingly and concurrently, which could delay the Assessment Hearing and increase the City's overall contribution to the project.

Alternatives:

Alternative #1 - Motion recommending City Council adoption of special assessments for the Sunwood Drive Reconstruction project consistent with the preliminary assessment calculations outlined within the Feasibility

Report.

Alternative #2 - Motion recommending City Council adoption of special assessments for Sunwood Drive Reconstruction project based on the following assessment calculation adjustments; _____.

Funding Source:

Reducing special assessment amounts for this project would increase the City's contribution for this project.

Recommendation:

Staff recommends alternative #1.

Action:

No action is required at this time. Staff will include a copy of the minutes from this meeting as an attachment to the City Council case to be presented prior to the Assessment Hearing on October 10, 2017.

Attachments

Feasibility Report IP1700

Special Assessments Policy

Form Review

Inbox	Reviewed By	Date
Grant Riemer	Grant Riemer	09/14/2017 03:10 PM
Kurt Ulrich	Kurt Ulrich	09/14/2017 03:32 PM
Form Started By: Bruce Westby		Started On: 09/13/2017 10:52 AM
Final Approval Date: 09/14/2017		

FEASIBILITY REPORT

SUNWOOD DRIVE RECONSTRUCTION

CITY IMPROVEMENT PROJECT NO. 17-00

March 9, 2017

Prepared By:

City of Ramsey
Engineering Department
7550 Sunwood Drive
Ramsey, MN 55303
763-433-9820
763-433-9848 (Fax)

March 9, 2017

Honorable Mayor and City Council
City of Ramsey
7550 Sunwood Drive
Ramsey, MN 55303

Re: Feasibility Report - City of Ramsey Improvement Project #17-00
Sunwood Drive Reconstruction

Dear Mayor and City Council Members:

Transmitted herewith is a Feasibility Report for the proposed Sunwood Drive Reconstruction project between Ramsey Boulevard/CSAH 56 and Bunker Lake Boulevard/CSAH 116 which examines the feasibility of reconstructing the bituminous street section and completing other appurtenant improvements.

This Feasibility Report examines the scope of the proposed improvements, explores estimated costs and available funding sources, defines a preliminary project schedule, and determines the necessity, feasibility and general cost-effectiveness of the proposed improvements, including any alternate designs, as well as whether the improvements would best be completed separately or in conjunction with another project.

I would be happy to discuss this report with you at your convenience. Please feel free to contact me at 763-433-9825 or bwestby@cityoframsey.com with any questions.

Sincerely,
City of Ramsey

Bruce Westby, PE
City Engineer

Enclosure

C: Kurt Ulrich, City Administrator
Diana Lund, Finance Director
Grant Reimer, Public Works Superintendent
Leonard Linton, Civil Engineer IV

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.

Bruce Westby, PE

Date: March 9, 2017 License No. 40116

I hereby certify that this plan, specification or report was reviewed for Quality Control and Quality Assurance purposes and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.

Leonard Linton, PE

Date: March 9, 2017 License No. 21112

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1. EXECUTIVE SUMMARY

City Improvement Project 17-00 proposes to reconstruct Sunwood Drive between Ramsey Boulevard/CSAH 56 and Bunker Lake Boulevard /CSAH 116 which totals approximately 3,050 linear feet (0.58 miles) in length. A map showing the location and scope of the proposed improvements is included as ***Figure 1*** in ***Appendix A***.

This segment of Sunwood Drive was constructed in 1996 with 3.5 inches bituminous pavement, 5 inches class 5 aggregate base, B618 concrete curb and gutter, and concrete storm sewer. The street was constructed to a width of 40 feet from face-of-curb to face-of-curb, and is centered within an 80 foot wide right-of-way. The storm sewer system consists of numerous catch basins which drain runoff from the street to adjacent low-lying areas using concrete storm sewer pipes.

City staff evaluates and rates the condition of pavement sections on all city streets on an annual basis using the Pavement and Surface Evaluation Rating (PASER) system. In the fall of 2016, this segment of Sunwood Drive was rated with PASER ratings of 3 (between Bunker Lake Boulevard/CR 116 and Jaspar Street) and 4 (between Jaspar Street and Ramsey Boulevard/ CSAH 56). This indicates this segment of Sunwood Drive is past the point of completing mill and overlay improvements. The current condition of this street requires City staff to patch the street at least once per year, particularly before winter so the street can be plowed without further damaging the pavement in the process. Pictures of this segment of Sunwood Drive are located in ***Appendix A***.

Proposed improvements include removing and replacing all damaged concrete curb and gutter sections, and reconstructing the existing bituminous pavement section using a Stabilized Full Depth Reclamation, or SFDR, process. The SFDR process would involve milling the top 3 inches or so of existing bituminous pavement and disposing of the millings off site, after which the remaining existing bituminous pavement would be ground up and mixed with the existing aggregate base. This reclaim material would then be spread back over the existing subgrade, which will be reshaped and compacted as needed. An asphalt emulsion stabilizing agent will then be mixed into the reclaim material before it is shaped and compacted in place. Then 4 inches of new bituminous pavement will be placed on top. This will result in a 10-ton pavement design meeting current State Aid pavement design standards.

The existing storm sewer system is in good condition and based on preliminary review appears to meet all applicable current State Aid design standards so no improvements are proposed.

An off-street 10 foot wide bituminous trail exists along the north side of Sunwood Drive and is in relatively good condition so no improvements are proposed with this project.

The engineer's opinion of probable costs for completing the proposed improvements on Sunwood Drive as outlined in this report is $607,000. Estimated costs include 23% indirect costs for administrative, engineering, finance and legal costs. A summary of the engineer's opinion of probable costs is included in ***Appendix B***.

A total of 9 parcels have been identified as receiving special benefit from the improvements. These parcels are identified in the preliminary Assessment Map and Roll which are attached in ***Appendix C***.

A total of four pavement corings were completed by WSB and Associates (WSB) to assist with the preparation of this report. In addition, eleven soil borings were completed by Northern Technologies, Inc. (NTI). Both firms offered pavement design recommendations which were considered and incorporated to varying degrees while preparing this report. Copies of WSB's and NTI's reports are attached in ***Appendix D***.

This improvement project, which is listed in the City's current Capital Improvement Program, is proposed to be funded using a combination of special assessments to benefiting properties, street reconstruction bond proceeds, and stormwater utility funds.

Staff recommends using special assessments to pay for up to 25% of eligible improvement costs, which totals $151,750. A total of nine (9) assessable properties exist along the project corridor. Staff recommends using the "adjusted front footage" method of assessment. All costs for the proposed improvements are eligible for special assessments since the street is proposed to be reconstructed at its existing width, which meets current State Aid standards, and since both the existing and proposed pavement sections meet 10-ton design standards and are therefore equivalent sections.

Staff recommends ordering a special benefit consultation report for this project to verify that the proposed assessment amounts will not exceed the amount of benefit to any assessable property. If the report concludes that the benefit to any property is less than the proposed preliminary assessment rate, Staff will propose to lower the final assessment amount accordingly before the Assessment Hearing scheduled for October 10, 2017. And if the report verifies that the proposed assessments for certain properties are justified, Staff will propose to adopt the final assessments for those properties as preliminarily proposed.

Staff has discussed the proposed improvements and the proposed use of special assessments to pay for up to 25% of the improvements with all but one of the assessable property owners. Staff will present a general summary of the comments received prior to the Public Hearing on March 14th.

This project would best be constructed as a stand-alone project and is necessary, feasible, and cost-effective from an engineering standpoint, and can be constructed as proposed herein.

2. INTRODUCTION

2.1 Authorization

The preparation of this report was authorized by the Ramsey City Council on August 8th, 2016. This project has been designated as City Improvement Project No. 17-00.

2.2 Program Overview

In support of the City's long-term Street Maintenance Program, the existing bituminous pavement section is proposed to be reconstructed using a stabilized full-depth reclamation (SFDR) process, all damaged concrete curb and gutter sections will be removed and replaced, and other appurtenant work will be completed as outlined in this report.

The City's pavement evaluation process involves a visual evaluation of each street's pavement surface based on the type, extent and severity of each pavement distress observed. Numerous types of pavement distresses may exist within a pavement section including, but not limited to, alligator cracking, block cracking, longitudinal cracking, transverse cracking, rutting, raveling, shoving, potholes and patches. This field data is then used to rate the pavement condition.

The City uses the Pavement and Surface Evaluation Rating (PASER) system to rate pavement condition. A PASER rating is a numerical index between 1 and 10 indicating the condition of a pavement based on the various pavement distresses recorded during visual observations. A PASER rating of 10 represents brand new pavement, while a PASER rating of 1 represents a pavement section that has fallen into complete disrepair requiring full reconstruction.

In the fall of 2016, this segment of Sunwood Drive was rated with PASER ratings of 3 and 4, depending on location.

2.3 Scope

City of Ramsey Improvement Project 17-00 proposes to reconstruct the existing bituminous pavement, to remove and replace damaged concrete curb and gutter sections, and to complete other appurtenant work on Sunwood Drive between Ramsey Boulevard/CSAH 56 and Bunker Lake Boulevard /CSAH 116 which totals approximately 3,050 linear feet (0.58 miles) in length.

The existing bituminous pavement is proposed to be reconstructed using a Stabilized Full Depth Reclamation, or SFDR, process. The SFDR process would involve milling roughly the top 3 inches of existing bituminous pavement and disposing of the millings off site. All remaining existing bituminous pavement would then be ground and mixed into the existing aggregate base. This reclaim material would then be spread over the existing subgrade, which will be reshaped and compacted as needed. A stabilizing agent, such as an asphalt emulsion, will be mixed into the reclaim material prior to shaping and compacting it. Four (4) inches of new bituminous pavement will then be placed on top of the stabilized reclaim material. This will result in a 10-ton pavement design meeting current State Aid pavement design standards.

A map showing the location and scope of the proposed improvements is included as ***Figure 1*** in ***Appendix A***.

3. EXISTING CONDITIONS

3.1 Existing Pavement and Soil Conditions

As-built record drawings show that the segment of Sunwood Drive between Ramsey Boulevard/ CSAH 56 and Bunker Lake Boulevard/CR 116 was constructed in 1996 using 3.5 inches of bituminous pavement, 5 inches of class 5 aggregate base, B618 concrete curb and gutter, and concrete storm sewer. The street was constructed to a width of 40 feet from face-of-curb to face-of-curb, and is centered within an 80 foot wide right-of-way. Delineated parking lanes exist along both sides of the street. The existing posted speed is 35 mph along this entire segment of Sunwood Drive. The storm sewer system consists of numerous catch basins which drain runoff from the street to adjacent low-lying areas using concrete storm sewer pipes.

In 2002 and 2008 the pavement was cracksealed and sealcoated, and spot patching has been applied on an as-needed basis since. In the fall of 2016, this segment of Sunwood Drive was rated with PASER ratings of 3 between Bunker Lake Boulevard/CR 116 and Jaspar Street, and 4 between Jaspar Street and Ramsey Boulevard/CSAH 56.

In 2015, City Staff recorded an average annual daily traffic volume of 3,500 (AADT). While truck counts are not available, Staff believes it is reasonable to assume between 5 and 10 percent of vehicles using this street segment can be classified as truck traffic, and that the percentage of trucks using this corridor may increase over time due to current business expansion projects and since several undeveloped but developable parcels exist along the corridor.

Northern Technologies, Inc. (NTI) was employed to complete a Geotechnical Exploration and Engineering Review for this project, including eleven (11) soil borings spaced approximately 200 feet apart along Sunwood Drive. The locations of the borings are shown in the Boring Location Diagram in Appendix C of NTI's report, attached in ***Appendix D.***

The NTI soil borings provide information on existing bituminous pavement and aggregate base course thicknesses, subsurface soil conditions, existing ground water elevations, and potential issues that may be encountered during construction. All soil borings terminated at a nominal depth of 11 feet below the existing ground surface. Groundwater was observed in all soil borings at depths ranging between 7 and 9.5 feet below the existing ground surface. Based on the work proposed and the recorded water level depths, groundwater is not anticipated to be an issue for work completed with this proposed project.

The soil borings generally indicate that existing bituminous pavement thicknesses range between 4.3 to 8.3 inches, with an average thickness of around 5 inches. Apparent aggregate base was not observed in any of the boring locations. Previously placed fill soils, generally consisting of poorly graded sand with silt (SP-SM), are present at depths ranging from 2.0 to 7.0 feet below the top of the pavement. Native alluvial soils consisting of poorly graded sand (SP), silty sand (SM), and poorly graded sand with silt (SP-SM) generally extend to the bottom of the borings.

WSB and Associates (WSB) was employed to complete a total of four pavement corings. Their results showed an average bituminous pavement thickness of close to 5 inches, constructed over a class 5 aggregate base.

3.2 Watermain

Watermain was installed in 1996 under the pavement along this segment of Sunwood Drive. Staff believes the existing watermain is in good condition, and that no repairs will be required prior to reconstructing the pavement. However, if plans and specifications are ordered for the proposed improvements, staff proposes to hire a leak detection expert to ensure no detectable leaks exist. If leaks are detected, repairs will be made under a separate contract before work commences on this project. Leak detection testing is estimated to cost $500.

3.3 Sanitary Sewer

Sanitary sewer was installed in 1996 under the pavement along the entire segment of Sunwood Drive. Staff believes the existing sanitary sewer is in good condition, and that no repairs will be required prior to reconstructing the pavement. However, if plans and specifications are ordered for the proposed improvements, staff proposes to hire a firm to televise the sewers to ensure the pipes are not deformed, cracked, or broken, and that all joints are sealed. If issues are detected, repairs will be made under a separate contract before work commences on this project. Sewer televising for this project is estimated to cost $3,300.

3.4 Storm Sewer/Drainage

Storm sewer exists along this segment of Sunwood Drive. Stormwater runoff is currently conveyed within the concrete curb and gutter along Sunwood Drive, where it is then collected in concrete catch basins and routed through concrete storm sewer pipes to existing wetlands, stormwater drainage ditches, and ponding facilities. Based on preliminary calculations by City Staff, no modifications will be required to the existing storm sewer system to meet current State Aid standards. Staff will inspect all existing storm sewer infrastructure during preparation of plans in case repairs are required, in which case repairs would be completed with the project.

3.5 Streets

3.5.1 Existing Typical Sections

The street was constructed to a width of 40 feet from face-of-curb to face-of-curb, and is centered within an 80 foot wide City-owned right-of-way. Eight-foot parking lanes are delineated along both sides using striping.

3.5.2 Maintenance History

The bituminous pavement was cracksealed and sealcoated in 2002, and again in 2008. Spot patching has been completed on an as-needed basis since.

3.6 Land Use

Properties abutting this segment of Sunwood Drive are zoned E1 or E2, with the exception of the City-owned parcel containing Cottonwood Park which is undevelopable.

4. PROPOSED IMPROVEMENTS

4.1 Street and Stormwater Improvements

The segment of Sunwood Drive between Ramsey Boulevard/CSAH 56 and Bunker Lake Boulevard/CR 116 is part of the City's Municipal State Aid System (MSAS). Any proposed improvements must therefore be designed and constructed in accordance with current Minnesota Department of Transportation (MnDOT) State Aid standards, which are generally based on the street's functional classification, projected traffic volume, design speed, lane designations and widths, and proposed pedestrian facilities.

Based on the proposed design, Sunwood Drive must be reconstructed in accordance with State Aid Rule 8820.9936 (Minimum Design Standards, Urban; New or Reconstruction Projects) or 8820.9946 (Minimum Design Standards, Urban; Reconditioning Projects). This will depend on the percentage of damaged curb and gutter that needs to be removed and replaced, which will be determined during final design. If more than 20 percent of the existing curb and gutter needs to be removed and replaced, the minimum design standards for State Aid Rule 8820.9936 must be followed. Otherwise, State Aid Rule 8820.9946 will govern.

The general location and scope of the proposed improvements is shown in ***Figure 1*** in ***Appendix A***.

4.1.1 Street Improvements

Sunwood Drive is proposed to be reconstructed at a width matching the existing width which permits on-street parking along both sides of Sunwood Drive. This design will meet current State Aid standards. All damaged B618 concrete curb and gutter is proposed to be removed and replaced in kind. A typical section for the proposed pavement reconstruction improvements is shown in ***Figure 2*** in ***Appendix A.***

The proposed reconstructed bituminous pavement design must accommodate a 10-ton design in accordance with MnDOT State Aid design standards. City staff is proposing a pavement section design of 2 inches bituminous wear course, 2 inches bituminous base course, and 5 inches of base composed of stabilized full depth reclamation material. This pavement section would be constructed over the existing subgrade after reshaping and compacting.

The proposed pavement design should result in a minimum pavement life of 30 years, assuming that proactive, regular pavement maintenance treatments are performed during the life of the pavement. While a 60-year design life would typically be targeted for a reconstructed street, this project is not proposing a full reconstruction due to the good condition of the majority of existing 20 year old curb and gutter. Therefore, only the aggregate base and bituminous pavement are proposed to be reconstructed at this time. At the time the rest of the existing curb and gutter needs to be replaced, which may be 30 or more years in the future, Staff will evaluate the condition of the existing pavement section and the existing utilities to determine what improvements are needed at the time, if any.

4.1.2 Stormsewer Improvements

The existing storm sewer system is in good condition and appears to meet all current State Aid design standards and is therefore not proposed to be improved. The only proposed storm sewer improvements include adjusting and/or repairing catch basin castings as needed. No stormwater quality treatment improvements are required for this project since the street is proposed to be reconstructed at its current width.

4.1.3 Geotechnical Considerations

Northern Technologies, Inc. (NTI) completed a Geotechnical Exploration and Engineering Review including eleven (11) soil borings spaced at approximate 200 foot intervals along Sunwood Drive. The locations of the borings are shown in the Boring Location Diagram in Appendix C of NTI's report, attached in ***Appendix D.*** NTI recommends completing a full reconstruction with subgrade corrections and the removal and replacement of all concrete curb and gutter. This work would result in project costs approximately twice as much as the current estimate included in this report, and would result in significant site access and traffic impacts during construction.

WSB completed four (4) pavement cores along Sunwood Drive as shown in their Pavement Evaluations and Recommendations report, attached in ***Appendix D***. WSB recommends leaving all intact existing curb and gutter in place, which staff estimates accounts for over 80% of the existing curb and gutter, which is only 20 years old. WSB also recommends reconstructing only the aggregate base and bituminous pavement by incorporating additional strength in the aggregate base using a Stabilized Full Depth Reclamation process. In total, this work is estimated to cost half as much as a total reconstruction yet would result in a pavement design life of 30-plus years. In considering that the remaining curb and gutter will likely need to be replaced in 30 to 40 years, a total reconstruction could be evaluated at that time. Another benefit to this design is that it would result in minimal impacts to site access and traffic during construction.

4.1.4 Other Considerations

Driveways:
Existing driveways will need to be reconstructed to varying degrees. The limits of construction will vary with each driveway based on the elevations of the street and the parking lot, as well as the driveway pavement type. During design, staff will evaluate the construction limits for each driveway and will incorporate this into the plans, but as with all street reconstruction projects the exact limits of construction will be determined in the field during construction. Right-of-entry forms would be obtained from private property owners if work is required outside City right-of-ways and easements.

Irrigation Systems:
Developed properties along the project corridor may have private irrigation systems. Impacts to these systems may occur where the existing curb and gutter is being replaced. On past street reconstruction projects, the City repaired private irrigation systems that were damaged as part of the project. Staff recommends foregoing this practice on future projects. Instead, staff recommends notifying property owners in writing of the pending

construction as far in advance of construction as possible to allow them adequate time to move their irrigation systems out of the construction area, and then to replace the systems once work is complete. Staff recommends allowing the private irrigation systems to be replaced in their original locations within City right of way if desired by property owners.

Parking Restrictions:
Parking is currently provided along both sides of the streets and is not currently restricted except for overnight parking per City code. During this project, parking is also proposed to be restricted during allowable working hours.

4.2 Stormwater Treatment

Stormwater retention and/or treatment improvements are not required for this project.

4.3 Water Main Improvements

No watermain improvements are proposed with this project.

4.4 Sanitary Sewer Improvements

No sanitary sewer improvements are proposed with this project.

4.5 Construction Methods

The existing bituminous pavement section will be reconstructed using the SFDR process outlined within this report. See WSB and Associates Pavement Evaluations and Recommendations report in ***Appendix D*** for additional details on the proposed SFDR process.

4.6 Private Utilities

Staff has not yet met with the telephone, gas, power and cable utilities regarding this project. During preparation of plans and specifications, staff will meet with the private utility companies to discuss the proposed improvements as noted in the project schedule within this report. The alignment and footprint of the streets will be considered to minimize impacts to private utilities. No impacts to power poles or street lights are anticipated with this project.

Should any utility companies indicate they wish to upgrade, replace and/or otherwise modify their services during this project, any such upgrades, replacements and/or modifications will be at the sole discretion and cost of the utility companies.

4.7 Permits

Permits that are anticipated to be required as part of the proposed improvements include:

- MPCA General Stormwater Permit (NPDES)..... Grading and Storm Water

A stormwater permit from the Lower Rum River Watershed Management Organization will not be required with this project.

4.8 Right-of-Ways/Easements

It is anticipated that all improvements will occur within existing City right-of-ways and/or easements, with the possible exception of tying into private driveways and green areas. It is therefore not anticipated that the City will need to acquire additional permanent right-of-way or easements for this project. As such, costs for right-of-way or easement acquisitions are not included in the probable project costs.

City staff will work with private property owners as needed to obtain any required right of entries.

5. FINANCING

5.1 Opinion of Cost

A detailed opinion of probable costs for the proposed improvements can be found in ***Appendix B*** of this report. The opinion of probable costs incorporates anticipated 2017 construction costs for the proposed improvements plus 23% indirect costs for administrative, engineering, financing and legal costs. Construction contingency costs are not included in the estimated costs.

City staff prepared the Feasibility Report in-house as part of staff's normal duties.

NTI prepared the Geotechnical Exploration and Engineering Review, included in ***Appendix D***, at a cost of $4,400. WSB and Associates, Inc. prepared the Pavement Evaluations and Recommendations included in ***Appendix D***, at a not-to-exceed cost of $2,687.50.

5.2 Funding

5.2.1 Assessments

The City's adopted Special Assessments Policy allows special assessments to be levied against all benefiting properties in an amount not to exceed 25% of eligible street reconstruction project costs. Eligible project costs include costs required to reconstruct the street at its current width, and to reconstruct the pavement without increasing its structural capacity. Benefiting properties are considered to be any developable parcel that has, or has the ability to create, one or more direct accesses onto the segment of Sunwood Drive being reconstructed. A total of 9 benefitting properties have been identified for this project, including two City-owned parcels. The Preliminary Assessment Map and Roll are included in ***Appendix C***.

The engineer's opinion of probable costs for eligible assessment costs totals $607,000. Assessable industrial parcels are preliminarily proposed to be assessed for up to 25 percent of eligible project costs, which totals $151,750. Assessment terms are proposed at ten years. Interest rates are proposed at two percent above the bond interest rate.

The "adjusted front footage" method of assessment as identified in the City of Ramsey's Special Assessments Policy was applied to assign preliminary assessment amounts for this project. Staff then enlisted Patchin Messner Dodd and Brumm, the firm the City has used to complete special benefit consultation reports for residential street reconstruction projects, to assign estimated special benefit amounts to all assessable parcels. Staff then applied the lesser of the two amounts to assign proposed preliminary assessments to each assessable property as shown in the Preliminary Assessment Roll.

Special assessments for industrial parcels have never been developed using the recently adopted Special Assessments Policy. In addition, State Statute and the City Charter do not allow for assessments to exceed benefit to the property. Therefore, Staff wants to ensure that all assessments applied with this project will not exceed the benefit to assessed properties. Staff therefore recommends ordering a benefit appraisal consultation report for this project in accordance with the City's Special Assessments Policy at the time a construction contract is awarded.

5.2.2 City Contribution

The City contribution to the project will include all funding in excess of the amount collected through special assessments to benefiting properties. This will equal 75 percent or more of eligible project costs. No funds have been budgeted for this project.

The City's share of eligible project costs related to surface (street) improvements is proposed to come from the previously encumbered 5-year Street Reconstruction and Overlay Program bonds. Stormwater Utility Funds are proposed to pay for all storm sewer improvements.

Special assessments are proposed to pay back a portion of these costs based on the final assessments adopted by Council at the end of the project. Based on the estimated costs and funding program developed within this report, approximately 22% of project costs will be assessed.

Table 1 illustrates the proposed project funding based on the proposed design and funding program outlined within this report. This funding program assumes construction will occur in 2017.

TABLE 1
Proposed Project Funding

	ASSESSMENTS	**CITY FUNDS**	**TOTAL**
Estimated Costs	**$133,779.60**	**$473,220.40**	**$607,000**

Total Estimated Project Cost		**$607,000.00**
Less Special Assessments (22%)	-	$133,779.60
Subtotal	**=**	**$473,220.40**
Less City Bonding Funds	-	$465,920.40
Subtotal	**=**	**$7,300.00**
Less Stormwater Utility Funds	-	$7,300.00
Total Remaining Cost	**=**	**$0.00**

6. PROJECT SCHEDULE

The proposed project schedule is as follows:

Council Orders Feasibility Report ..... August 8, 2016

Council Accepts Feasibility Report/Orders Public Hearing ..... January 24, 2017

Staff Publishes Notice of Public Hearing .....January 27 & February 3, 2017

Public Input Meetings .....January 27 – March 9, 2017

Council Conducts Public Hearing/Orders Plans and Specifications..... March 14, 2017

Staff Conducts Private Utility Coordination Meeting .....March/April, 2017

Council Approves Plans and Specifications/Authorizes Ad for Bids..... April 11, 2017

Staff Advertises for Bids..... April 14 & 21, 2017

Staff Receives Bids ..... May 15, 2017

Council Awards Contract ..... May 23, 2017

Contractor Begins Construction ..... June, 2017

Contractor Completes Construction ..... September 8, 2017

Council Orders Assessment Roll/Hearing ..... September 12, 2017

Council Conducts Assessment Hearing.....October 10, 2017

7. CONCLUSIONS AND RECOMMENDATIONS

City of Ramsey Improvement Project 17-00 proposes to reconstruct the bituminous pavement section, to remove and replace damaged concrete curb and gutter, and to complete miscellaneous appurtenant work on Sunwood Drive between Ramsey Boulevard/CSAH 56 and Bunker Lake Boulevard /CSAH 116.

It is the recommendation of City staff that City Project No. 17-00 is feasible, necessary, and cost-effective from an engineering standpoint, and that this project would best be constructed as a stand-alone project as proposed herein.

The following Staff recommendations related to the proposed project are presented for Council consideration and concurrence:

1. Staff recommends reconstructing the segment of Sunwood Drive between Ramsey Boulevard/CSAH 56 and Bunker Lake Boulevard /CSAH 116 as proposed herein in 2017 thereby meeting current State Aid design standards and allowing all project costs to be eligible for the use of special assessments per the City's Special Assessments Policy.

2. Staff recommends ordering an benefit appraisal consultation report to ensure that the preliminary special assessments proposed herein will not exceed the benefit received as a result of the improvements in accordance with the City's Special Assessments Policy.

3. Staff recommends reconstructing the off-road bike trail along the north side of Sunwood Drive at a later date pending adoption of the City's Trail Maintenance Policy/Program.

4. Staff recommends excluding private irrigation system work from this project, and from all future City Improvement Projects, and instead recommends notifying property owners of pending construction as far in advance as possible and instructing them to relocate their private irrigation system(s) away from the construction area during construction, then allow replacement in or near the original location after construction is complete.

The City Council is asked to act on the following items related to the proposed project:

1. Adopt Resolution #17-03-057 accepting the Feasibility Report, including the preliminary assessment roll as proposed, and ordering preparation of Plans and Specifications for City Improvement Project #17-00, Sunwood Drive Reconstruction.

APPENDIX A

Figure 1 – Project Scope
Figure 2 – Typical Section
Project Site Pictures

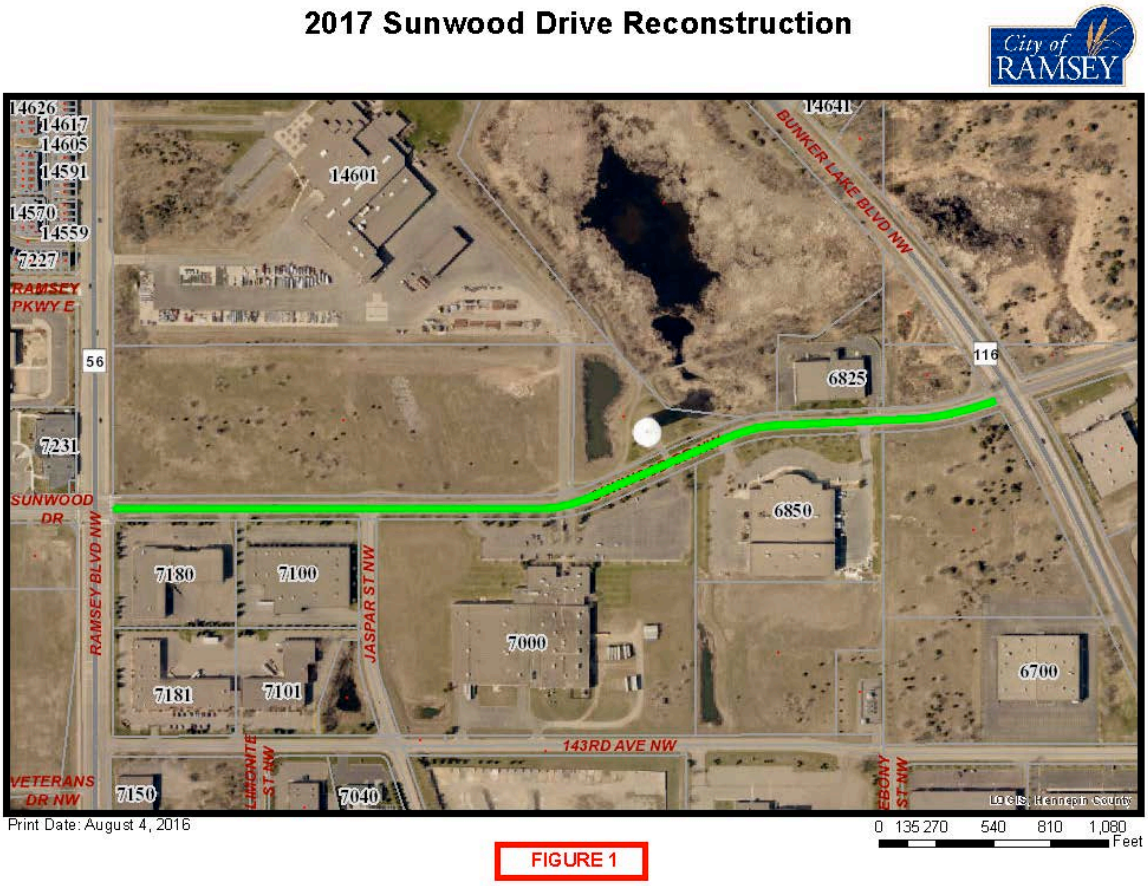


FIGURE 1
PROJECT SCOPE

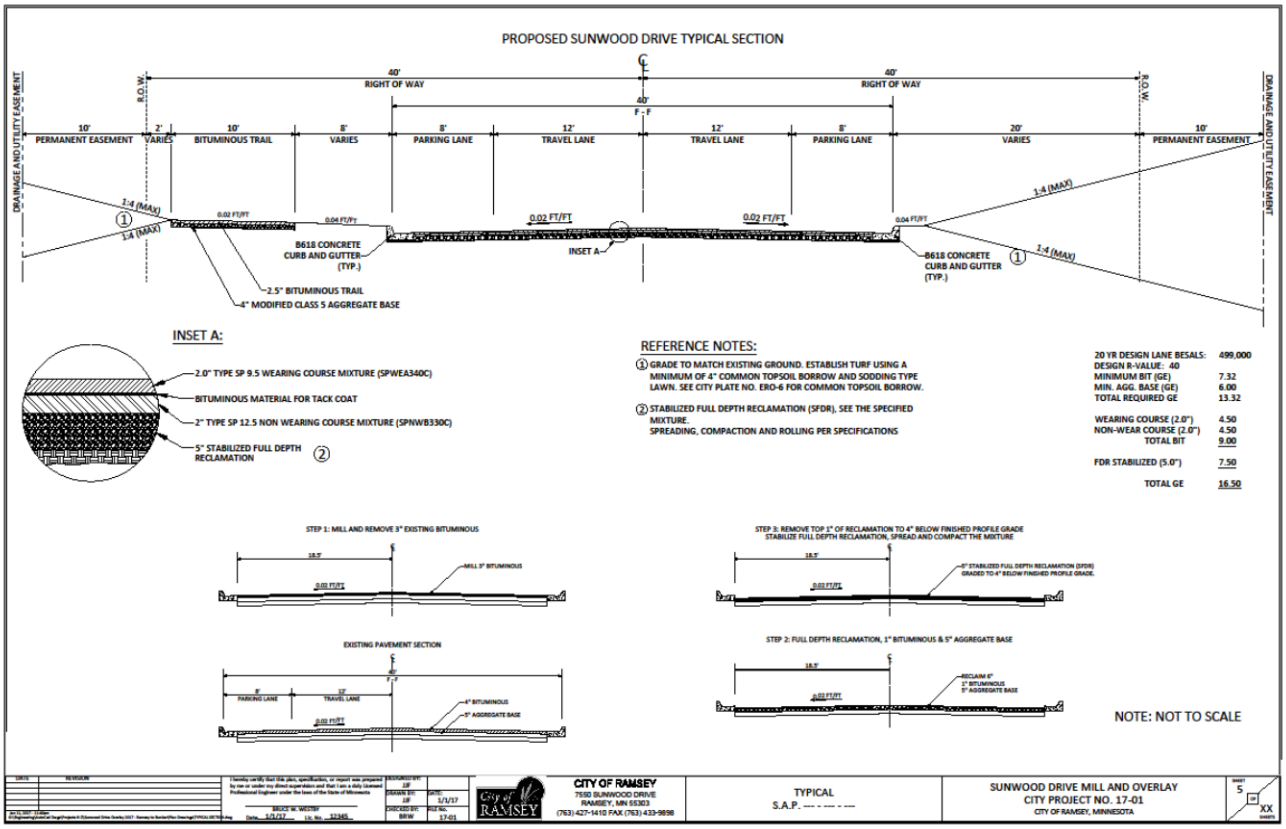


FIGURE 2
TYPICAL SECTION

PROJECT SITE PICTURES

APPENDIX B

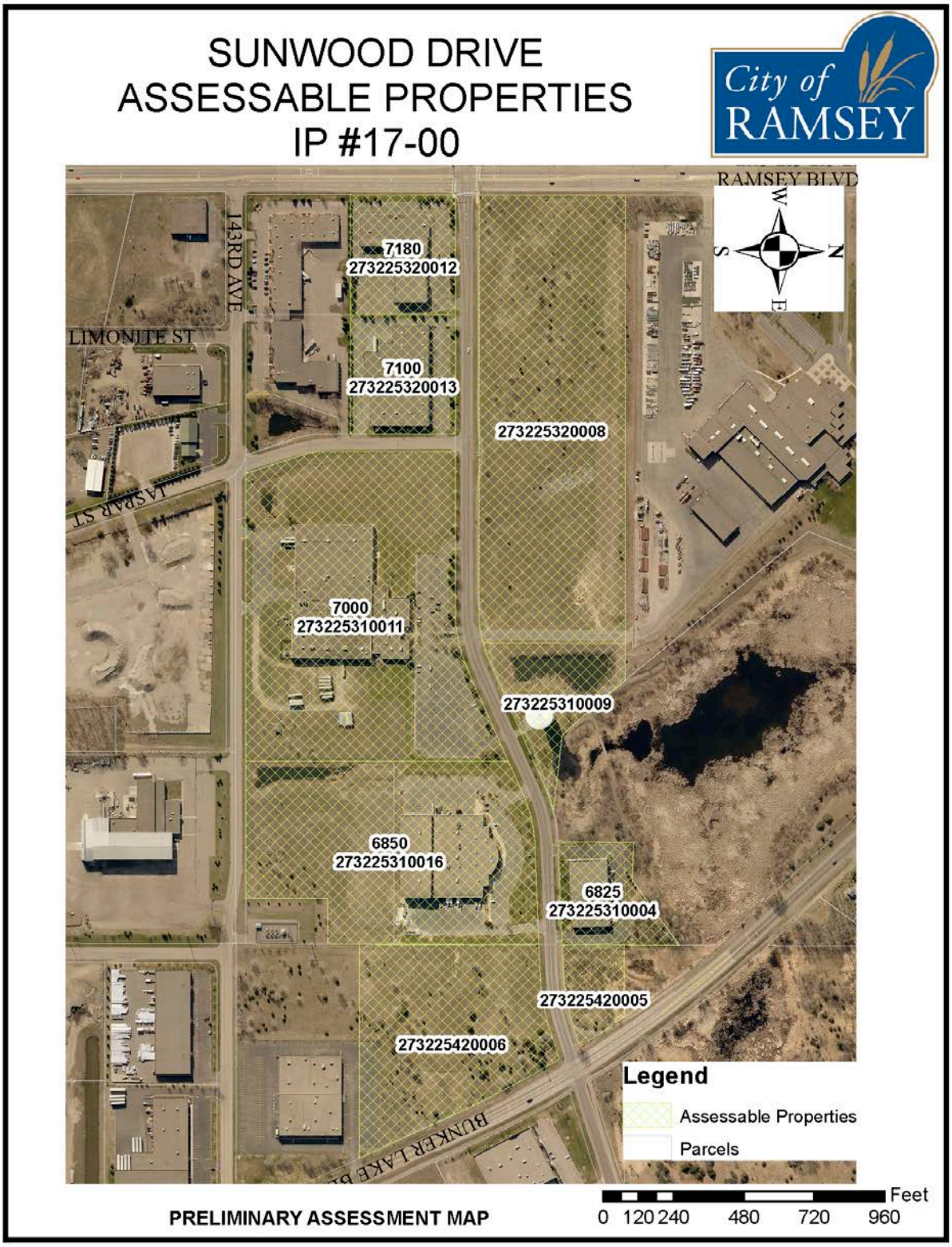
Opinion of Probable Costs

17-00 SUNWOOD DRIVE RECONSTRUCTION: RAMSEY BLVD. to BUNKER LAKE BLVD.
ENGINEER ESTIMATE
1/11/2017

ITEM No.	MNDOT No.	DESCRIPTION	UNIT	ESTIMATED QUANTITY	UNIT COST	COST EXTENSION
1	2021.501	MOBILIZATION (10%)	LS	1	$ 44,841.03	$ 45,000.00
2	2104.501	REMOVE CONCRETE CURB AND GUTTER	LF	1100	$ 6.00	$ 6,600.00
3	2104.505	REMOVE BITUMINOUS PAVEMENT	SY	317	$ 4.50	$ 1,426.50
4	2104.505	REMOVE CONCRET VALLEY GUTTER	SY	179	$ 20.00	$ 3,580.00
5	2104.511	SAWING CONCRETE PAVEMENT - FULL DEPTH	LF	200	$ 8.50	$ 1,700.00
6	2104.513	SAWING BITUMINOUS PAVEMENT - FULL DEPTH	LF	564	$ 5.50	$ 3,102.00
7	2130.501	WATER	MGAL	50	$ 32.50	$ 1,625.00
8	2232.501	MILL BITUMINOUS PAVEMENT (1.5" DEPTH X 2' WIDTH)	SY	62	$ 15.00	$ 930.00
9	2232.501	MILL BITUMINOUS PAVEMENT (3.0" DEPTH)	SY	12707	$ 1.25	$ 15,883.75
10	2215.501	STABILIZED FULL DEPTH RECLAMATION (6" DEPTH)	SY	12707	$ 3.50	$ 44,474.50
11	2331.607	HAUL BIT PAVEMENT RECLAMATION (LV)	CY	459	$ 10.00	$ 4,590.00
12	2331.609	BITUMINOUS MATERIAL FOR MIXTURE	TON	133	$ 600.00	$ 79,800.00
13	2357.502	BITUMINOUS MATERIAL FOR TACK COAT	GAL	896	$ 2.36	$ 2,114.56
14	2360.502	TYPE SP 9.5 WEARING COURSE MIXTURE (SPWEA340C) (2.0")	TON	1719	$ 65.00	$ 111,735.00
15	2360.502	TYPE SP 12.5 NON-WEARING COURSE MIXTURE (SPNWB330C) (2.0")	TON	1689	$ 61.00	$ 103,029.00
16	2506.602	GROUT CATCH BASIN	EA	11	$ 300.00	$ 3,300.00
17	2506.602	ADJUST CATCH BASIN CASTING	EA	4	$ 1,000.00	$ 4,000.00
18	2531.501	CONCRETE CURB & GUTTER DESIGN B618 (ESTIMATED 20% REPLACE)	LF	1100	$ 13.00	$ 14,300.00
19	2504.602	ADJUST VALVE BOX	EA	6	$ 250.00	$ 1,500.00
20	2506.522	ADJUST FRAME AND RING CASTING (SANITARY MH IN STREET)	EA	9	$ 550.00	$ 4,950.00
21	2531.604	7" CONCRETE VALLEY GUTTER	SY	179	$ 85.00	$ 15,215.00
22	2563.601	TRAFFIC CONTROL	LS	1	$ 10,000.00	$ 10,000.00
23	2573.503	SILT FENCE	LF	100	$ 3.00	$ 300.00
24	2573.530	STORM DRAIN INLET PROTECTION	EA	17	$ 200.00	$ 3,400.00
25	2575.525	COMMON TOPSOIL BORROW (LV)	CY	35	$ 30.00	$ 1,050.00
26	2575.505	SODDING TYPE LAWN	SY	262	$ 7.00	$ 1,834.00
27	2582.501	PAVT MSSG (LT ARROW) EPOXY	EA	2	$ 135.00	$ 270.00
28	2582.501	PAVT MSSG (RT-THRU ARROW) EPOXY	EA	1	$ 200.00	$ 200.00
29	2582.502	24" SOLID LINE WHITE - EPOXY	LF	29	$ 10.00	$ 290.00
30	2582.502	24" SOLID LINE YELLOW - EPOXY	LF	52	$ 10.00	$ 520.00
31	2582.502	4" DOUBLE SOLID LINE YELLOW - EPOXY	LF	3182	$ 1.00	$ 3,182.00
32	2582.502	4" SOLID LINE WHITE - EPOXY	LF	5038	$ 0.50	$ 2,519.00
33	2582.503	CROSSWALK MARKING - EPOXY	SF	198	$ 5.00	$ 990.00
				TOTAL CONSTRUCTION COST		*$ 493,410.31*
				23% INDIRECT COST		*$ 113,484.37*
					TOTAL PROJECT COST	***$ 606,894.68***

APPENDIX C

Preliminary Assessment Map
Preliminary Assessment Roll



PRELIMINARY ASSESSMENT MAP

PRELIMINARY ASSESSMENT ROLL - IP #17-00										
PID No.	Property Owner	Property Front Footage (Lin Ft)	Front Footage Rate ($/Lin Ft)	Property Address	City	State	Zip	Calculated Front Footage Assessment	Estimated Special Benefit	Proposed Preliminary Assessment
273225310004	NORTH SUBURBAN MANAGEMENT LLC	355.29	$26.09482179	6825 SUNWOOD DR NW	RAMSEY	MN	55303	$9,271.23	$8,500.00	**$8,500.00**
273225310009	RAMSEY CITY OF	622.49	$26.09482179		RAMSEY	MN	55303	$16,243.77	$10,500.00	**$10,500.00**
273225310011	VISION EASE LP	1,098.25	$26.09482179	7000 SUNWOOD DR NW	RAMSEY	MN	55303	$28,658.64	$25,500.00	**$25,500.00**
273225310016	KNOLL PROPERTIES LLC	641.97	$26.09482179	6850 SUNWOOD DR NW	RAMSEY	MN	55303	$16,752.09	$27,000.00	**$16,752.09**
273225320008	CONNEXUS ENERGY	1,530.01	$26.09482179		RAMSEY	MN	55303	$39,925.34	$47,500.00	**$39,925.34**
273225320012	RMR CAPITAL LLC	408.06	$26.09482179	7180 SUNWOOD DR NW	RAMSEY	MN	55303	$10,648.25	$6,500.00	**$6,500.00**
273225320013	OBRIEN PROP OF MINNESOTA LLC	408.07	$26.09482179	7100 SUNWOOD DR NW	RAMSEY	MN	55303	$10,648.51	$6,500.00	**$6,500.00**
273225420005	RAMSEY CITY OF	353.22	$26.09482179		RAMSEY	MN	55303	$9,217.21	$10,500.00	**$9,217.21**
273225420006	PHILLIPS ALAN C & D V TRUSTEES	397.97	$26.09482179		RAMSEY	MN	55303	$10,384.96	$10,500.00	**$10,384.96**
	TOTALS	5,815.33						$151,750.00	$153,000.00	**$133,779.60**

PRELIMINARY ASSESSMENT ROLL

APPENDIX D

Geotechnical Exploration and Engineering Review (NTI – 30 pages)
Pavement Evaluations and Recommendations (WSB & Associates – 8 pages)

NTI™
NORTHERN TECHNOLOGIES, LLC

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www.NTIgeo.com

Unearthing confidence™

November 23, 2016

City of Ramsey
Attention: Mr. Bruce Westby, P.E.
7550 Sunwood Drive NW
Ramsey, Minnesota 55303

Subject: Geotechnical Exploration and Engineering Review
Sunwood Drive – Street Improvements
Ramsey, Minnesota
NTI Project No. 16.61770.100

Northern Technologies, LLC (NTI) has completed a total of eleven (11) borings for the Sunwood Drive project area in the City of Ramsey, Minnesota.

The scope of services included determining existing bituminous and aggregate base thicknesses, and subsurface conditions, and providing recommendations for site preparation, excavations, engineered fill and compaction, depths of unsuitable soils to be removed, groundwater management, potential difficulties during construction, utility installation, and pavement design.

Our services were performed in accordance with our proposal dated October 25, 2016.

PROJECT AND SITE DESCRIPTION

The project includes street and possibly utility improvements to a section of Sunwood Drive between Ramsey Boulevard and Bunker Lake Boulevard in Ramsey, Minnesota.

The pavement sections are proposed to be designed using the average annual daily traffic (AADT) information and based on a 20-year design pavement life. The AADT information noted on the Mn/DOT Traffic Data webpage indicates an AADT of 3500 for the project section of Sunwood Drive. NTI was not aware of invert elevations or other design details of the proposed utilities at the time this report was prepared.

SUBSURFACE EXPLORATION SUMMARY

NTI performed the subsurface exploration program on November 8, 2016 with a two-person crew using a truck-mounted CME-55 drill rig. Samples were generally collected in accordance with ASTM D 1586 "Standard Test Method for Standard Penetration Testing (SPT) and Split-Barrel Sampling of Soils."

The boring locations and depths were determined by a representative with the City of Ramsey. The boring locations were staked in the field by NTI. The borings terminated at nominal depths 11.0 feet below the existing pavement surface. .

Elevations were not provided to NTI, therefore, NTI has assumed a ground surface elevation of 100.0 feet for each of the boring locations. Please refer to the Boring Location Diagram, the Boring Logs in Appendix C, and the Pavement Core Photographs in Appendix D.

Sunwood Drive - (Borings S-1 through S-11)

Bituminous pavement thickness in this project area ranged from approximately 4.3 to 8.3 inches at the boring locations. Apparent aggregate base was not observed at the boring locations. Previously placed fill soils, generally consisting of poorly graded sand with silt (SP-SM), were encountered extending to depths ranging from approximately 2.0 to 7.0 feet below the top of pavement.

Native alluvial soils consisting of poorly graded sand (SP), silty sand (SM), and poorly graded sand with silt (SP-SM) were generally observed extending to the boring termination depths. Varying amounts of gravel were encountered throughout the boring locations.

Groundwater was observed in the boreholes at depths ranging from approximately 7.0 to 9.5 feet below the top of pavement at the time of drilling. Table 1 summarizes the encountered subsurface conditions for these project areas.

Table 1: Pavement and Subgrade Summary[1]
Sunwood Drive

Boring No.	Bituminous Pavement Thickness[2] (inches)	Apparent Aggregate Base Thickness[3] (inches)	Fill Subgrade Material[4]	Native Subgrade Material
S-1	8.3	None	SP-SM	SP-SM
S-2	4.5	None	SP-SM	SP, SP-SM
S-3	4.5	None	SP-SM	SM, SP, SP-SM
S-4	4.5	None	SP-SM	SP-SM
S-5	4.8	None	SP-SM	SP-SM
S-6	4.8	None	SP-SM	SP-SM
S-7	4.3	None	SP-SM	SP, SP-SM
S-8	5.8	None	SP-SM	SP-SM
S-9	4.5	None	SP-SM	SP, SP-SM
S-10	5.0	None	SP-SM	SP, SP-SM
S-11	4.8	None	SP-SM	SP, SP-SM

1. Table summary is a generalization of subsurface conditions at the individual soil boring locations only. They may not reflect variations in subsurface strata occurring on site between boring locations. The general geologic origin of retained soil samples is listed on the boring logs.
2. Measured thickness of the pavement core.
3. Apparent aggregate base thickness, at time of our fieldwork, by visual inspection only and is not mean to confer conformance with DOT specifications.
4. Undocumented fill soils.

GROUNDWATER AND GROUNDWATER CONTROL

Groundwater was observed in the boreholes at depths ranging from approximately 7.0 to 9.5 feet below the top of pavement at the time of drilling.

Depending upon elevations of underground utilities, groundwater may be an issue during construction. It should be noted that if excavations are proposed below the groundwater level, the granular nature of the majority of the on-site soils will likely result in significant volumes of water entering the excavations unless proper dewatering measures are implemented. Well points embedded into the underlying sands will likely be the most suitable method for controlling excess water in deeper excavations. If dewatering is needed during construction, we recommend that the groundwater be maintained a minimum of 2 feet below the bottom of the excavation.

LABORATORY TEST PROGRAM

Our analysis and recommendations of this report are based upon our interpretation of the standard penetration test resistance determined while sampling soils, laboratory test results and experience with similar soils from other sites near the project. The results of such tests are summarized on the boring logs or attached laboratory test reports.

UTILITY LINE CONSTRUCTION

The native sand soils observed in soil borings were generally suitable for utility support and utility backfill. Due to the encountered groundwater levels and depending on the installation depth of the utilities, temporary dewatering may be required during the utility trench excavations. Stabilization of the trench subgrade may be required in order to provide a stable platform for construction. Stabilization could consist of a one half to one foot layer of crushed rock or sand with a maximum 5 percent material passing the No. 200 sieve and 50 percent passing the No. 40 sieve.

The Geotechnical Engineer of Record or their designated representative should observe the project excavations to determine that unsuitable materials have been properly removed and adequate bearing support is provided by the exposed soils. The exposed soil at the base should be compacted to no less than 95 percent standard Proctor maximum dry density (ASTM D698). Such observations and testing should be performed prior to backfilling.

The on-site non-organic soils are anticipated to be suitable for reuse if properly moisture conditioned and compacted. Replacement backfill required in utility trenches should consist of non-organic material similar to the surrounding soil. All import fill should be approved by NTI or the City's representative.

It is especially important that trench backfill for utility construction within paved areas be thoroughly compacted to minimize future pavement damage. We recommend that such soils be compacted in accordance with the recommendations noted in the "Placement and Compaction of Engineered Fill" section in Appendix B of this report.

The stability of embankments along utility excavations is dependent on soil strength, site geometry, moisture content, and any surcharge load for excavated soils and equipment. We present cautionary remarks concerning stability of excavation sideslopes in the "Excavation Stability" section of this report.

The Contractor is solely responsible for assessing the stability of and executing underground utility and project excavations using safe methods. The contractor is also responsible for naming the "competent individual" as per Subpart P of 29 CFR 1926.6 (Federal Register - OSHA).

The Geotechnical Engineer of Record or their designated representative should observe the project excavations to determine that conditions are similar to those encountered in the borings, and that adequate bearing support is provided by the exposed soils.

Excavation Stability

Excavation depth and sidewall inclination should not exceed those specified in local, state or federal regulations. Excavations may need to be widened and sloped, or temporarily braced, to maintain or develop a safe work environment. Contractors must comply with local, state, and federal safety regulations including current OSHA excavation and trench safety standards. Temporary shoring must be designed in accordance with applicable regulatory requirements.

Excavations that penetrate the groundwater surface will require dewatering with sand points or wells. We recommend that the groundwater surface be maintained a minimum of 2 feet below the bottom of the exposed excavation.

Engineered Fill and Winter Construction

The silty sand soils on this site will be susceptible to frost action if not provided adequate drainage, insulation or coverage. Frozen soil should not be used as backfill. When the ambient air temperature falls below freezing for an extended period of time, frost forms, and soil near the surface grade expands. Settlement of the fill may occur as the frozen soils thaw.

If frost penetrates the soil prior to paving, soils must be thawed, scarified, and re-compacted as recommended in this report. Subgrade soils should be inspected prior to paving to verify frozen conditions are not present.

PAVEMENT RECOMMENDATIONS

Mill and Overlay Recommendations

Consideration could be made to milling and overlaying the existing pavement. The roadway sections appear to have a sufficiently thick in place pavement section, over a majority of the project alignment, which would lend itself to rehabilitation via mill and overlay techniques.

In general, pavement sections consisting of 3 inches or less of bituminous asphalt can be difficult to effectively mill and overlay as often times the entire pavement section is reclaimed during the attempted partial section milling process. Additionally, in locations where the existing pavement thickness is less than the recommended thickness, a mill and overlay would not be recommended unless a structural overlay were applied to increase the overall thickness.

Pavement Reconstruction

If the pavement section is to be removed and replaced in its entirety, the most conservative method of subgrade preparation would be remove the undocumented fill soils and replace them in their entirety with properly compacted engineered fill. This method of subgrade preparation would provide the most uniform subgrade but would also be the most costly method of construction and would be relatively a-typical method of subgrade preparation for improvements to existing municipal roadways.

If the City is willing to accept some risk in potential long term detrimental performance for the significant upfront savings, the roadway can be reconstructed over the existing fill. NTI recommends that prior to installing the aggregate base, the existing subgrade should be scarified and re-compacted to a depth of at least 12 inches. A proof roll test should then be performed to determine soft or unstable subgrade areas. The proof roll should be performed with a tandem axle dump truck loaded to gross capacity (at least 20 tons). Acceptance criteria of the proof roll shall be limited to rut formation no more than one inch depth (front or rear axles) and no pumping (rolling) observed during the visual inspection. Proof roll tests should be observed by an experienced technician or geotechnical engineer prior to placement of the aggregate base course to verify the subgrade will provide adequate pavement support.

If rutting or localized unstable subgrade areas are observed, those areas should be subcut, moisture-conditioned, and re-compacted or removed to a stable depth.

If imported fill is required in paved areas it should consist of debris free, non-organic, mineral soil similar in composition to the subgrade soils encountered in the surrounding areas. If sand is imported into areas that are underlain by relatively impervious fine grained soils the sand layer must be drained with drain tile in order to prevent frost heave from water trapped within the imported sand layer during freezing temperatures. Individual lifts of engineered fill should be tempered for moisture content, placed and compacted as noted in the "Placement and Compaction of Engineered Fill" section in Appendix B of this report.

The performance of stabilometer or similar tests, were beyond the scope of this report; however, they may be performed, upon request, for an additional fee. Based on the encountered soil conditions, we estimate that a properly prepared poorly graded sand with silt (SP-SM) soils will have an average stabilometer R-Value of 40.

For a 20-year design pavement life, Table 3 presents our thickness recommendations for flexible (bituminous) pavement. These recommendations were based upon the encountered subgrade conditions, estimated R-value for the existing subgrade soils, the assumed AADT volumes, and the City of Ramsey's typical pavement section for the respective project area.

Table 3: Flexible Pavement Thickness Design[1]
Sunwood Drive

Pavement Section	Calculated Required Pavement Section	City's Typical Pavement Section[2]
Bituminous Wear Course (inches)	1.5	1.5
Bituminous Base Course (inches)	2.0	2.0
Class 5 or 7 Aggregate Base (inches)	6.0	4.0

1. Assumed AADT volume of 3500 and an estimated R-value of 40.
2. The calculated required section was greater than the City's typical section for residential streets, thus NTI recommends that the Calculated Required Pavement Section be implemented.

Pavement recommendations assume the subgrade soils and aggregate section below paved surfaces will drain to subsurface piping for eventual discharge into storm sewer, or above grade to ditching, or similar acceptable systems. Lack of surface and subsurface drainage will significantly reduce the capacity and longevity of the pavement systems indicated above.

We recommend pavements receive annual maintenance, as a minimum, to correct damages to the pavement structure, clean and infill cracks which develop, and repair or resurface areas which exhibit reduced subgrade performance. The lack of maintenance can lead to moisture infiltration of the pavement structure and softening of the subgrade soils. This, in turn, can degrade the performance of the pavement system and result in poorly performing pavements with shortened life expectancy.

CLOSURE

As the widely spaced, small diameter borings provide only a limited amount of data regarding the existing fill, the existing fill may contain soft zones, debris or significantly greater amounts of unsuitable materials than could be reasonably inferred from the boring information. Unsuitable materials may not be discovered during construction and may remain buried within the fill below the slabs and pavements, resulting in greater than anticipated settlements of the slabs and pavements. These risks cannot be eliminated without completely removing the fill, but can be reduced by thorough exploration and testing during site preparation and construction.

Our conclusions and recommendations are predicated on observation and testing of the earthwork directed by Geotechnical Engineer of Record. Our opinions are based on data assumed representative of the site. However, the area coverage of borings in relation to the entire project is very small. For this and other reasons, we do not warrant conditions below the depth of our borings, or that the strata logged from our borings are necessarily typical of the site. Deviations from our recommendations by plans, written specifications, or field applications shall relieve us of responsibility unless our written concurrence with such deviations has been established.

The scope of services for this project does not include either specifically or by implication any environmental or biological assessment of the site or identification or prevention of pollutants, hazardous materials or conditions. If the owner is concerned about the potential for such contamination or pollution, other studies should be undertaken.

This report has been prepared for the exclusive use of The City of Ramsey and its agents for specific application to the proposed Sunwood Drive – Street Improvements project in the City of Ramsey, Minnesota. Northern Technologies, LLC has endeavored to comply with generally accepted geotechnical engineering practice common to the local area. Northern Technologies, LLC makes no other warranty, express or implied.

Northern Technologies, LLC

Debra A. Schroeder, P.E.
Senior Engineer

Steven D. Gerber, P.E.
Senior Engineer

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.

Debra A. Schroeder
Date: 11/23/2016 Reg. No. 52743

Attachments
Appendix A - General Notes
Appendix B - Groundwater Issues, Compaction and Placement of Fill
Appendix C - Attachments: Boring Location Diagram (1), Soil Boring Logs (11)
Appendix D - Photographs (11 cores)

APPENDIX A

GEOTECHNICAL EVALUATION OF RECOVERED SOIL SAMPLES

FIELD EXPLORATION PROCEDURES

GENERAL NOTES

WATER LEVEL SYMBOL

DESCRIPTIVE TERMINOLOGY

RELATIVE PROPORTIONS

PARTICLE SIZES

CLASSIFICATION OF SOILS FOR ENGINEERING PURPOSES

GEOTECHNICAL EVALUATION OF RECOVERED SOIL SAMPLES

We visually examined recovered soil samples to estimate distribution of grain sizes, plasticity, consistency, moisture condition, color, presence of lenses and seams, and apparent geologic origin. We then classified the soils according using the Unified Soil Classification System (ASTM D2488). A chart describing this classification system and general notes explaining soil sampling procedures are presented within appendices attachments.

The stratification depth lines between soil types on the logs are estimated based on the available data. In-situ, the transition between type(s) may be distinct or gradual in either the horizontal or vertical directions. The soil conditions have been established at our specific boring locations only. Variations in the soil stratigraphy may occur between and around the borings, with the nature and extent of such change not readily evident until exposed by excavation. These variations must be properly assessed when utilizing information presented on the boring logs.

We request that you, your design team or contractors contact NTI immediately if local conditions differ from those assumed by this report, as we would need to review how such changes impact our recommendations. Such contact would also allow us to revise our recommendations as necessary to account for the changed site conditions.

FIELD EXPLORATION PROCEDURES

Soil Sampling – Standard Penetration Boring:

Soil sampling was performed according to the procedures described by ASTM D-1586. Using this procedure, a 2 inch O.D. split barrel sampler is driven into the soil by a 140 pound weight falling 30 inches. After an initial set of six inches, the number of blows required to drive the sampler an additional 12 inches is recorded (known as the penetration resistance (i.e. “N-value”) of the soil at the point of sampling. The N-value is an index of the relative density of cohesionless soils and an approximation of the consistency of cohesive soils.

Soil Sampling – Power Auger Boring:

The boring(s) was/were advanced with a 6 inch nominal diameter continuous flight auger. As a result, samples recovered from the boring are disturbed, and our determination of the depth, extend of various stratum and layers, and relative density or consistency of the soils is approximate.

Soil Classification:

Soil samples were visually and manually classified in general conformance with ASTM D-2488 as they were removed from the sampler(s). Representative fractions of soil samples were then sealed within respective containers and returned to the laboratory for further examination and verification of the field classification. In addition, select samples were submitted for laboratory tests. Individual sample information, identification of sampling methods, method of advancement of the samples and other pertinent information concerning the soil samples are presented on boring logs and related report attachments.

GENERAL NOTES

DRILLING and SAMPLING SYMBOLS		*LABORATORY TEST SYMBOLS*	
SYMBOL	**DEFINITION**	**SYMBOL**	**DEFINITION**
C.S.	Continuous Sampling	W	Moisture content-percent of dry weight
P.D.	2-3/8" Pipe Drill	D	Dry Density-pounds per cubic foot
C.O.	Cleanout Tube	LL, PL	Liquid and plastic limits determined in accordance with ASTM D 423 and D 424
3 HSA	3 ¼" I.D. Hollow Stem Auger	Q_U	Unconfined compressive strength-pounds per square foot in accordance with ASTM D 2166-66
4 FA	4" Diameter Flight Auger		
6 FA	6" Diameter Flight Auger		
2 ½ C	2 ½" Casing		
4 C	4" Casing		
D.M.	Drilling Mud	Pq	Penetrometer reading-tons/square foot
J.W.	Jet Water	S	Torvane reading-tons/square foot
H.A.	Hand Auger	G	Specific Gravity – ASTM D 854-58
NXC	Size NX Casing	SL	Shrinkage limit – ASTM 427-61
BXC	Size BX Casing	Ph	Hydrogen ion content-meter method
AXC	Size AX casing	O	Organic content-combustion method
SS	2" O.D. Split Spoon Sample	M.A.	Grain size analysis
2T	2" Thin Wall Tube Sample	C*	One dimensional consolidation
3T	3" Thin Wall Tube Sample	Q_C	Triaxial Compression
		* See attached data Sheet and/or graph	

WATER LEVEL SYMBOL

Water levels shown on the boring logs were determined at the time and under the conditions indicated. In sand, the indicated levels can be considered relatively reliable for most site conditions. In clay soils, it is not possible to determine the ground water level within the normal scope of a test boring investigation, except where lenses or layers of more pervious water bearing soil are present; and then a long period of time may be necessary to reach equilibrium. Therefore, the position of the water level symbol for cohesive or mixed soils may not indicate the true level of the ground water table. The available water level information is given at the bottom of the log sheet.

DESCRIPTIVE TERMINOLOGY

RELATIVE DENSITY		*CONSISTENCY*	
TERM	**N_{60} Value** (corrected)	**TERM**	**N_{60} Value** (corrected)
Very Loose	0 – 4	Soft	0 – 4
Loose	5 – 8	Medium	5 – 8
Medium Dense	9 – 16	Rather Stiff	9 – 15
Dense	16 – 30	Stiff	16 – 30
Very Dense	Over 30	Very Stiff	Over 30

RELATIVE PROPORTIONS

TERMS	**RANGE**
Trace	0 – 5%
A little	5 – 15%
Some	15 – 30%

PARTICLE SIZES

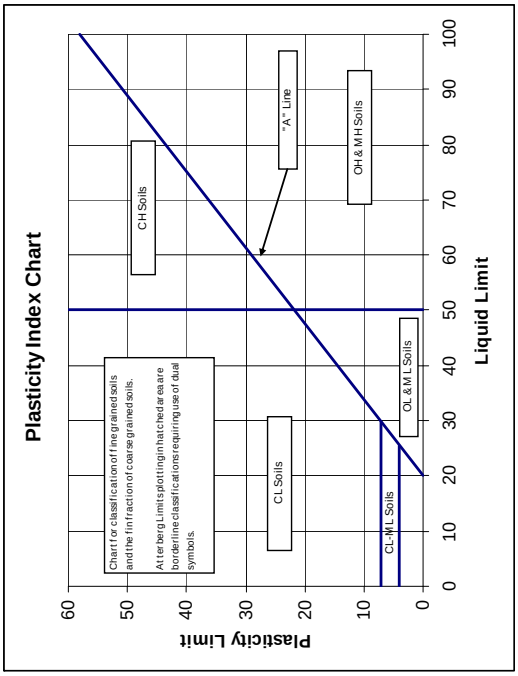
MATERIAL	**DESCRIPTION**	**U.S. SIEVE SIZE**
Boulders		Over 3"
Gravel	Coarse	3" to ¾"
	Medium	¾" to #4
Sand	Coarse	#4 to #10
	Medium	#10 to #40
	Fine	#40 to #200
Silt and Clay	Determined by Hydrometer Test	

CLASSIFICATION of SOILS for ENGINEERING PURPOSES

ASTM Designation D-2487 and D2488 (Unified Soil Classification System)

Major Divisions			Group Symbol	Typical Name	Classification Criteria
Course Grained Soils More than 50% retained on No. 200 sieve *	Gravels 50% or more of coarse fraction retained on No. 4 sieve.	Clean Gravels	GW	Well –graded gravels and gravel-sand mixtures, little or no fines.	Cu = D60 / D10 greater than 4. Cz = (D30)2 / (D10 x D60) between 1 & 3.
			GP	Poorly graded gravels and gravel-sand mixtures, little or no fines.	Not meeting both criteria for GW materials.
		Gravels with Fines	GM	Silty gravels, gravel-sand-silt mixtures.	Atterberg limits below "A" line, or P.I. less than 4. / Atterberg limits above "A" line with P.I. greater than 7. — Atterberg limits plotting in hatched area are borderline classifications requiring use of dual symbols.
			GC	Clayey gravels, gravel-sand-clay mixtures.	
	Sands More than 50% of coarse fraction passes No 4 sieve.	Clean Sands	SW	Well-graded sands and gravelly sands, little or no fines.	Cu = D60 / D10 greater than 6. Cz = (D30)2 / (D10 x D60) between 1 & 3.
			SP	Poorly-graded sands and gravelly sands, little or no fines.	Not meeting both criteria for SW materials.
		Sands with Fines	SM	Silty sands, sand-silt mixtures.	Atterberg limits below "A" line, or P.I. less than 4. / Atterberg limits above "A" line with P.I. > 7. — Atterberg limits plotting in hatched area are borderline classifications requiring use of dual symbols.
			SC	Clayey sands, sand-clay mixtures.	
Fine Grained Soils More than 50% passes No. 200 sieve *	Silts and Clays Liquid Limit of 50% or less		ML	Inorganic silts, very fine sands, rock flour, silty or clayey fine sands.	
			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 greater than 50%.		MH	Inorganic silts, micaceous or diatomaceous fine sands or silts, elastic silts.	
			CH	Inorganic clays of high plasticity, fat clays.	
			OH	Organic clays of medium to high plasticity.	
	Highly Organic Soils		Pt	Peat, muck and other highly organic soils.	

Classification on basis of percentage of fines.
Less than 5% passing No. 200 Sieve: GW, GP, SW, SP
More than 12% passing No. 200 Sieve: GM, GC, SM, SC
From 5% to 12% passing No. 200 Sieve: Borderline Classification requiring use of duel symbols.



APPENDIX B

GROUNDWATER ISSUES

PLACEMENT and COMPACTION OF ENGINEERED FILL

GROUNDWATER ISSUES

The following presents additional comment and soil specific issues related to measurement of groundwater conditions at your project site.

Note that our groundwater measurements, or lack thereof, will vary depending on the time allowed for equilibrium to occur in the borings. Extended observation time was not available during the scope of the field exploration program and, therefore, groundwater measurements as noted on the borings logs may or may not accurately reflect actual conditions at your site.

Seasonal and yearly fluctuations of the ground water level, if any, occur. Perched groundwater may be present within sand and silt lenses bedded within cohesive soil formations. Groundwater typically exists at depth within cohesive and cohesionless soils.

We anticipate that a system of sump pits and pumps located outside of the excavation areas would be suitable for control if groundwater were to be encountered. However, a well point system would be more suitable for control of groundwater if excavations were to be advanced into the ground water table at depth in free draining granular soils. Additionally, we caution such seepage from such formations and any water entry from excavations below the groundwater table may be heavy and will vary based on seasonal and annual precipitation, and ground related impacts in the vicinity of the project. The groundwater surface should be maintained a minimum of 2 feet below the bottom of the excavation at all times.

PLACEMENT and COMPACTION OF ENGINEERED FILL

Unless otherwise superseded within the body of the Geotechnical Exploration Report, the following criteria shall be utilized for placement of engineered fill on project. This includes, but is not limited to earthen fill placement to improve site grades, fill placed below structural footings, fill placed interior of structure, and fill placed as backfill of foundations.

Engineered fill placed for construction, if necessary should consist of natural, non-organic, competent soils native to the project area. Such soils may include, but are not limited to gravel, sand, or clays with Unified Soil Classification System (ASTM D2488) classifications of GW, SP, or SM. Use of silt or clayey silt as project fill will require additional review and approval of project Geotechnical Engineer of Record. Such soils have USCS classifications of ML, MH, ML-CL, MH-CH. Use of topsoil, marl, peat, other organic soils construction debris and/or other unsuitable materials as fill is not allowed. Such soils have USCS classifications of OL, OH, Pt.

Engineered fill, classified as clay, should be tempered such that the moisture content at the time of placement is equal to and no more than 3 percent above the optimum content for as defined by the appropriate proctor test. Likewise, engineered fill classified as gravel or sand should be tempered such that the moisture content at the time of placement is within 3 percent of the optimum content.

All engineered fill for construction should be placed in individual 8 inch maximum depth lifts. Each lift of fill should be compacted by large vibratory equipment until the in-place soil density is equal to or greater than the criteria established within the following tabulation.

	Compaction Criteria (% respective Proctor)[1]	
Type of Construction	**Clay**	**Sand or Gravel**
General Embankment Fill	Min. 95	Min. 95
Engineered Fill below Foundations	NA	Min. 98
Engineered Fill below Floor Slabs	NA	Min. 98
Engineered Fill placed as Pavement Aggregate Base	NA	Min. 100
Engineered Fill placed to within 3 feet of pavement aggregate base	Min. 95	Min. 95
Engineered Fill placed within 3 feet of pavement aggregate base	Min. 100	Min. 100

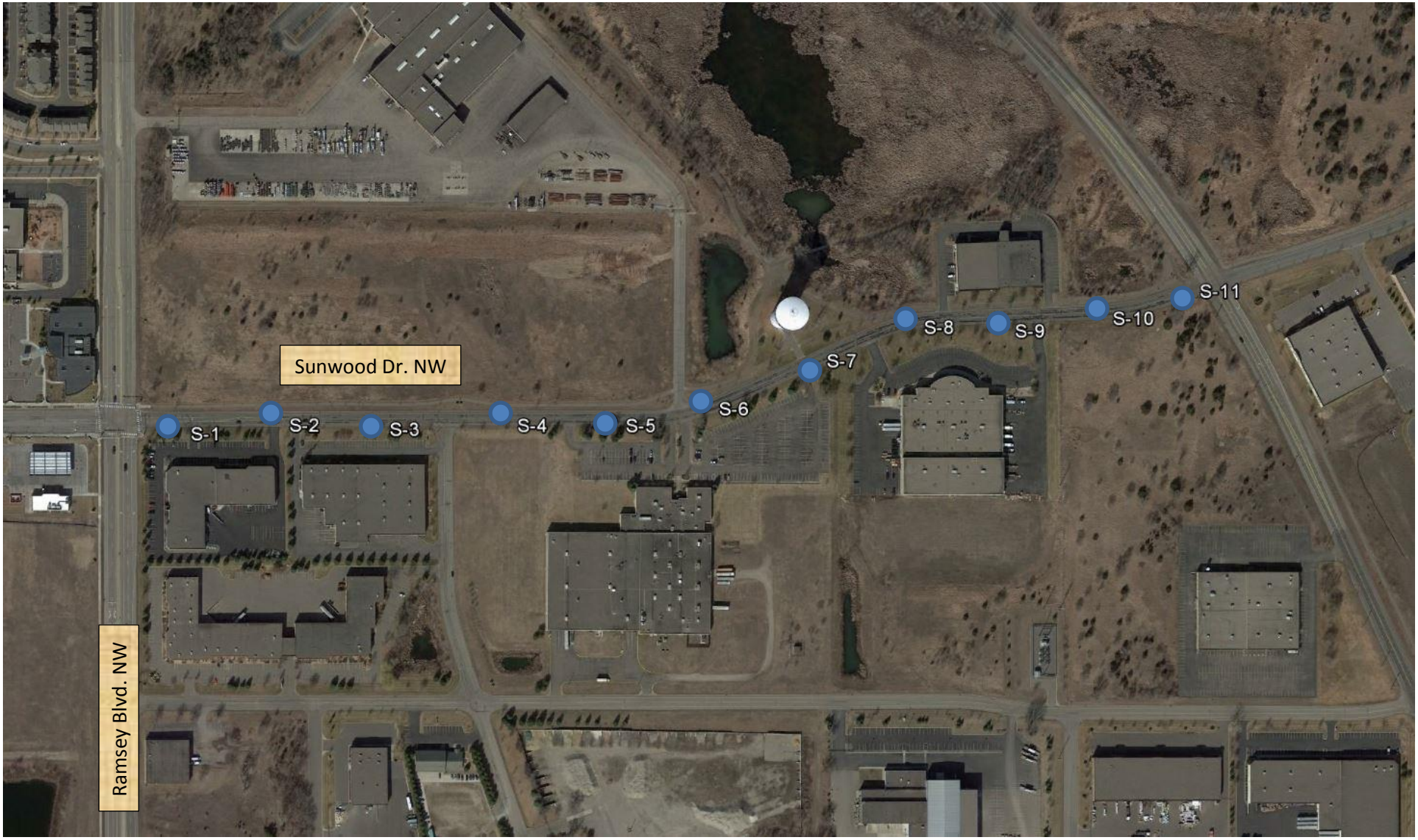
1 Unless otherwise required, compaction shall be based on the Standard Proctor Test (ASTM D698).

Density tests should be taken during engineered fill placement to document earthwork has achieved necessary compaction of the material(s). Recommendations for interior fill placement and backfill of foundation walls are presented within other sections of this report.

APPENDIX C

BORING LOCATION DIAGRAM

SOIL BORING LOGS



Boring Location Diagram

Completed Soil Borings:

Alpine and Sunwood Drive – Street Improvements – Sunwood Drive

Ramsey, Minnesota

NTI Project #: 16.61770.100

N

NOTE: Boring locations are approximate.

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BORING NUMBER S-1

CLIENT City of Ramsey
PROJECT NAME Alpine and Sunwood Drive - Street Improvements
PROJECT NUMBER 16.61770.100
PROJECT LOCATION Ramsey, MN
DATE STARTED 11/8/16 **COMPLETED** 11/8/16
GROUND ELEVATION 100 ft **HOLE SIZE** 6 1/2 in.
DRILLING CONTRACTOR NTI
GROUND WATER LEVELS:
DRILLING METHOD 3 1/4 in H.S.A
▽ **AT TIME OF DRILLING** 9.50 ft / Elev 90.50 ft
LOGGED BY Robert Hawkins **CHECKED BY** DAS
AT END OF DRILLING ---
CAVE IN (ft) --- **FROST DEPTH (ft)** ---
AFTER DRILLING ---
NOTES Elevation assumed 100.0 Feet.

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES
0		0.7 BITUMINOUS PAVEMENT (8.3 Inches) 99.3	AU 1									
		POORLY GRADED SAND WITH SILT, (SP-SM) brown, fine to medium grained, moist, trace gravel (Fill) NOTE: Brown to dark brown below 2.0 feet.	SS 2	100	7-8-9 (17)			9				
		4.5 95.5										
5		POORLY GRADED SAND WITH SILT, (SP-SM) brown to light brown, fine to medium grained, moist to saturated, medium dense to loose, trace gravel (Alluvial)	SS 3	89	6-7-6 (13)							
			SS 4	94	3-2-3 (5)							
10		▽	SS 5	89	4-6-5 (11)							
		11.0 89.0										

Bottom of borehole at 11.0 feet.

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BORING NUMBER S-2

CLIENT City of Ramsey
PROJECT NAME Alpine and Sunwood Drive - Street Improvements
PROJECT NUMBER 16.61770.100
PROJECT LOCATION Ramsey, MN
DATE STARTED 11/8/16 **COMPLETED** 11/8/16
GROUND ELEVATION 100 ft **HOLE SIZE** 6 1/2 in.
DRILLING CONTRACTOR NTI
GROUND WATER LEVELS:
DRILLING METHOD 3 1/4 in H.S.A
▽ **AT TIME OF DRILLING** 7.00 ft / Elev 93.00 ft
LOGGED BY Robert Hawkins **CHECKED BY** DAS
AT END OF DRILLING ---
CAVE IN (ft) 4 **FROST DEPTH (ft)** ---
AFTER DRILLING ---
NOTES Elevation assumed 100.0 Feet.

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES
0		0.4 BITUMINOUS PAVEMENT (4.5 Inches) 99.6	AU 1									
		POORLY GRADED SAND WITH SILT, (SP-SM) brown to dark brown, fine to medium grained, moist, trace gravel (Fill)	SS 2	67	3-6-8 (14)							
5			SS 3	83	5-6-5 (11)			6				
		7.0 ▽ 93.0										
		POORLY GRADED SAND, (SP) light brown, fine to medium grained, saturated, loose, trace gravel (Alluvial)	SS 4	100	3-4-3 (7)							
		9.5 90.5										
10		POORLY GRADED SAND WITH SILT, (SP-SM) brown to dark brown, fine to medium grained, saturated, loose, trace gravel (Alluvial)	SS 5	78	3-3-5 (8)							
		11.0 89.0										

Bottom of borehole at 11.0 feet.

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BORING NUMBER S-3

CLIENT City of Ramsey
PROJECT NAME Alpine and Sunwood Drive - Street Improvements
PROJECT NUMBER 16.61770.100
PROJECT LOCATION Ramsey, MN
DATE STARTED 11/8/16 **COMPLETED** 11/8/16
GROUND ELEVATION 100 ft **HOLE SIZE** 6 1/2 in.
DRILLING CONTRACTOR NTI
GROUND WATER LEVELS:
DRILLING METHOD 3 1/4 in H.S.A
▽ **AT TIME OF DRILLING** 7.50 ft / Elev 92.50 ft
LOGGED BY Robert Hawkins **CHECKED BY** DAS
AT END OF DRILLING ---
CAVE IN (ft) 3.5 **FROST DEPTH (ft)** ---
AFTER DRILLING ---
NOTES Elevation assumed 100.0 Feet.

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION		SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES
0		0.4 BITUMINOUS PAVEMENT (4.5 Inches)	99.6	AU 1									
		POORLY GRADED SAND WITH SILT, (SP-SM) brown to dark brown, fine to medium grained, moist, little gravel (Fill)	98.0	SS 2	94	4-5-4 (9)			9				16
5		4.5 SILTY SAND, (SM) brown, fine to medium grained, moist, medium dense, trace gravel (Alluvial)	95.5	SS 3	94	5-6-7 (13)							
		▽ POORLY GRADED SAND, (SP) light brown, fine to medium grained, moist to saturated, medium dense to loose, trace gravel (Alluvial)		SS 4	89	3-4-3 (7)							
10		9.5	90.5										
		11.0 POORLY GRADED SAND WITH SILT, (SP-SM) brown, fine to medium grained, saturated, loose, trace gravel (Alluvial)	89.0	SS 5	83	3-3-4 (7)							

Bottom of borehole at 11.0 feet.

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BORING NUMBER S-4

CLIENT City of Ramsey
PROJECT NAME Alpine and Sunwood Drive - Street Improvements
PROJECT NUMBER 16.61770.100
PROJECT LOCATION Ramsey, MN
DATE STARTED 11/8/16 **COMPLETED** 11/8/16
GROUND ELEVATION 100 ft **HOLE SIZE** 6 1/2 in.
DRILLING CONTRACTOR NTI
GROUND WATER LEVELS:
DRILLING METHOD 3 1/4 in H.S.A
▽ **AT TIME OF DRILLING** 7.00 ft / Elev 93.00 ft
LOGGED BY Robert Hawkins **CHECKED BY** DAS
AT END OF DRILLING ---
CAVE IN (ft) --- **FROST DEPTH (ft)** ---
AFTER DRILLING ---
NOTES Elevation assumed 100.0 Feet.

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES
0		0.4 BITUMINOUS PAVEMENT (4.5 Inches) 99.6	AU 1									
		POORLY GRADED SAND WITH SILT, (SP-SM) dark brown, fine to medium grained, moist, trace gravel (Fill) 2.0 98.0	SS 2	94	5-6-7 (13)			8				9
		POORLY GRADED SAND WITH SILT, (SP-SM) dark brown, fine to medium grained, moist, trace gravel (Fill) 4.5 95.5										
5		POORLY GRADED SAND WITH SILT, (SP-SM) brown, fine to medium grained, moist to saturated, medium dense to loose, trace gravel (Alluvial) ▽	SS 3	89	5-6-6 (12)							
			SS 4	83	3-4-3 (7)							
10		11.0 89.0	SS 5	89	3-3-4 (7)							

Bottom of borehole at 11.0 feet.

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BORING NUMBER S-5

CLIENT City of Ramsey
PROJECT NAME Alpine and Sunwood Drive - Street Improvements
PROJECT NUMBER 16.61770.100
PROJECT LOCATION Ramsey, MN
DATE STARTED 11/8/16 **COMPLETED** 11/8/16
GROUND ELEVATION 100 ft **HOLE SIZE** 6 1/2 in.
DRILLING CONTRACTOR NTI
GROUND WATER LEVELS:
DRILLING METHOD 3 1/4 in H.S.A
▽ **AT TIME OF DRILLING** 7.50 ft / Elev 92.50 ft
LOGGED BY Robert Hawkins **CHECKED BY** DAS
AT END OF DRILLING ---
CAVE IN (ft) 4 **FROST DEPTH (ft)** ---
AFTER DRILLING ---
NOTES Elevation assumed 100.0 Feet.

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES
0		0.4 BITUMINOUS PAVEMENT (4.8 Inches) 99.6	AU 1									
		POORLY GRADED SAND WITH SILT, (SP-SM) brown to dark brown, fine to medium grained, moist, trace gravel (Fill) NOT: Brown to dark brown below 2.0 feet.	SS 2	78	6-6-8 (14)			5				
		4.5										
5		POORLY GRADED SAND WITH SILT, (SP-SM) brown, fine to medium grained, moist to saturated, medium dense to loose, trace gravel (Alluvial) ▽	SS 3	83	5-5-6 (11)							
			SS 4	72	3-4-3 (7)							
10		11.0	SS 5	89	3-4-5 (9)							
		89.0										

Bottom of borehole at 11.0 feet.

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BORING NUMBER S-6

CLIENT City of Ramsey
PROJECT NAME Alpine and Sunwood Drive - Street Improvements
PROJECT NUMBER 16.61770.100
PROJECT LOCATION Ramsey, MN
DATE STARTED 11/8/16 **COMPLETED** 11/8/16
GROUND ELEVATION 100 ft **HOLE SIZE** 6 1/2 in.
DRILLING CONTRACTOR NTI
GROUND WATER LEVELS:
DRILLING METHOD 3 1/4 in H.S.A
▽ **AT TIME OF DRILLING** 7.00 ft / Elev 93.00 ft
LOGGED BY Robert Hawkins **CHECKED BY** DAS
AT END OF DRILLING ---
CAVE IN (ft) 3.5 **FROST DEPTH (ft)** ---
AFTER DRILLING ---
NOTES Elevation assumed 100.0 Feet.

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES
0		0.4 BITUMINOUS PAVEMENT (4.8 Inches) 99.6	AU 1									
		POORLY GRADED SAND WITH SILT, (SP-SM) brown, fine to medium grained, moist, little gravel (Fill)	SS 2	67	4-6-7 (13)							
		4.5 95.5										
5		POORLY GRADED SAND WITH SILT, (SP-SM) brown to light brown, fine to medium grained, moist to saturated, medium dense to loose, trace gravel (Alluvial) ▽	SS 3	89	5-6-6 (12)			12				
			SS 4	94	3-4-3 (7)							
10		11.0 89.0	SS 5	50	3-4-4 (8)							

Bottom of borehole at 11.0 feet.

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BORING NUMBER S-7

CLIENT City of Ramsey
PROJECT NAME Alpine and Sunwood Drive - Street Improvements
PROJECT NUMBER 16.61770.100
PROJECT LOCATION Ramsey, MN
DATE STARTED 11/8/16 **COMPLETED** 11/8/16
GROUND ELEVATION 100 ft **HOLE SIZE** 6 1/2 in.
DRILLING CONTRACTOR NTI
GROUND WATER LEVELS:
DRILLING METHOD 3 1/4 in H.S.A
▽ **AT TIME OF DRILLING** 7.00 ft / Elev 93.00 ft
LOGGED BY Robert Hawkins **CHECKED BY** DAS
AT END OF DRILLING ---
CAVE IN (ft) 3.5 **FROST DEPTH (ft)** ---
AFTER DRILLING ---
NOTES Elevation assumed 100.0 Feet.

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES
0		0.4 BITUMINOUS PAVEMENT (4.3 Inches) 99.7	AU 1									
		POORLY GRADED SAND WITH SILT, (SP-SM) brown, fine to medium grained, moist, trace gravel, occasional bituminous debris (Fill)	SS 2	89	4-5-5 (10)			4				
5		4.5 95.5 POORLY GRADED SAND, (SP) light brown, fine to medium grained, moist, loose, trace gravel (Alluvial)	SS 3	83	4-4-4 (8)							
		7.0 ▽ 93.0 POORLY GRADED SAND WITH SILT, (SP-SM) brown to light brown, fine to medium grained, saturated, medium dense, trace gravel (Alluvial)	SS 4	89	3-4-5 (9)							
10		11.0 89.0	SS 5	100	3-5-6 (11)							

Bottom of borehole at 11.0 feet.

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BORING NUMBER S-8

CLIENT City of Ramsey
PROJECT NAME Alpine and Sunwood Drive - Street Improvements
PROJECT NUMBER 16.61770.100
PROJECT LOCATION Ramsey, MN
DATE STARTED 11/8/16 **COMPLETED** 11/8/16
GROUND ELEVATION 100 ft **HOLE SIZE** 6 1/2 in.
DRILLING CONTRACTOR NTI
GROUND WATER LEVELS:
DRILLING METHOD 3 1/4 in H.S.A
▽ **AT TIME OF DRILLING** 7.00 ft / Elev 93.00 ft
LOGGED BY Robert Hawkins **CHECKED BY** DAS
AT END OF DRILLING ---
CAVE IN (ft) 4 **FROST DEPTH (ft)** ---
AFTER DRILLING ---
NOTES Elevation assumed 100.0 Feet.

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES
0		0.5 BITUMINOUS PAVEMENT (5.8 Inches) 99.5	AU 1									
		POORLY GRADED SAND WITH SILT, (SP-SM) brown, fine to medium grained, moist, trace gravel (Fill) NOTE: Brown to dark brown with occasional bituminous debris below 2.0 feet.	SS 2	78	7-8-7 (15)			5				
		4.5		95.5								
5		POORLY GRADED SAND WITH SILT, (SP-SM) brown to light brown, fine to medium grained, moist to saturated, loose, trace gravel ▽ (Alluvial)	SS 3	83	3-4-4 (8)							
			SS 4	94	4-3-4 (7)							
10			SS 5	89	3-4-3 (7)							
		11.0		89.0								

Bottom of borehole at 11.0 feet.

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BORING NUMBER S-9

CLIENT City of Ramsey
PROJECT NAME Alpine and Sunwood Drive - Street Improvements
PROJECT NUMBER 16.61770.100
PROJECT LOCATION Ramsey, MN
DATE STARTED 11/8/16 **COMPLETED** 11/8/16
GROUND ELEVATION 100 ft **HOLE SIZE** 6 1/2 in.
DRILLING CONTRACTOR NTI
GROUND WATER LEVELS:
DRILLING METHOD 3 1/4 in H.S.A
▽ **AT TIME OF DRILLING** 7.50 ft / Elev 92.50 ft
LOGGED BY Robert Hawkins **CHECKED BY** DAS
AT END OF DRILLING ---
CAVE IN (ft) 4 **FROST DEPTH (ft)** ---
AFTER DRILLING ---
NOTES Elevation assumed 100.0 Feet.

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION		SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES
0		0.4 BITUMINOUS PAVEMENT (4.5 Inches)	99.6	AU 1					6				8
		2.0 POORLY GRADED SAND WITH SILT, (SP-SM) brown, fine to medium grained, moist, trace gravel (Fill)	98.0	SS 2	89	6-10-8 (18)							
5		4.5 POORLY GRADED SAND WITH SILT, (SP-SM) orange brown, fine to medium grained, moist, trace gravel (Fill)	95.5	SS 3	100	5-6-5 (11)							
		7.0 POORLY GRADED SAND, (SP) light brown, fine to medium grained, moist, medium dense, trace gravel (Alluvial)	93.0	SS 4	89	3-4-4 (8)							
10		▽ POORLY GRADED SAND WITH SILT, (SP-SM) brown, fine to medium grained, moist to saturated, loose to medium dense, trace gravel (Alluvial)		SS 5	89	3-4-5 (9)							
		11.0	89.0										

Bottom of borehole at 11.0 feet.

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Inver Grove Heights, MN 55076
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BORING NUMBER S-10

CLIENT City of Ramsey
PROJECT NAME Alpine and Sunwood Drive - Street Improvements
PROJECT NUMBER 16.61770.100
PROJECT LOCATION Ramsey, MN
DATE STARTED 11/8/16 **COMPLETED** 11/8/16
GROUND ELEVATION 100 ft **HOLE SIZE** 6 1/2 in.
DRILLING CONTRACTOR NTI
GROUND WATER LEVELS:
DRILLING METHOD 3 1/4 in H.S.A
▽ **AT TIME OF DRILLING** 7.50 ft / Elev 92.50 ft
LOGGED BY Robert Hawkins **CHECKED BY** DAS
AT END OF DRILLING ---
CAVE IN (ft) 5 **FROST DEPTH (ft)** ---
AFTER DRILLING ---
NOTES Elevation assumed 100.0 Feet.

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES
0		0.4 BITUMINOUS PAVEMENT (5.0 Inches) 99.6	AU 1									
		POORLY GRADED SAND WITH SILT, (SP-SM) brown, fine to medium grained, moist, trace gravel, occasional bituminous debris (Fill)	SS 2	100	16-7-8 (15)			4				
		4.5 95.5										
5		POORLY GRADED SAND, (SP) light brown, fine to medium grained, moist, loose, trace gravel (Alluvial)	SS 3	100	3-4-4 (8)							
		7.0 93.0										
		▽ POORLY GRADED SAND WITH SILT, (SP-SM) gray, fine to medium grained, moist to saturated, loose, trace gravel (Alluvial)	SS 4	100	2-2-3 (5)							
10			SS 5	89	5-4-4 (8)							
		11.0 89.0										

Bottom of borehole at 11.0 feet.

NTI NORTHERN TECHNOLOGIES, LLC

Inver Grove Heights
6160 Carmen Avenue East
Inver Grove Heights, MN 55076
P: 651-389-4191
www.NTIgeo.com

BORING NUMBER S-11

CLIENT City of Ramsey
PROJECT NAME Alpine and Sunwood Drive - Street Improvements
PROJECT NUMBER 16.61770.100
PROJECT LOCATION Ramsey, MN
DATE STARTED 11/8/16 **COMPLETED** 11/8/16
GROUND ELEVATION 100 ft **HOLE SIZE** 6 1/2 in.
DRILLING CONTRACTOR NTI
GROUND WATER LEVELS:
DRILLING METHOD 3 1/4 in H.S.A
▽ **AT TIME OF DRILLING** 9.50 ft / Elev 90.50 ft
LOGGED BY Robert Hawkins **CHECKED BY** DAS
AT END OF DRILLING ---
CAVE IN (ft) 4 **FROST DEPTH (ft)** ---
AFTER DRILLING ---
NOTES Elevation assumed 100.0 Feet.

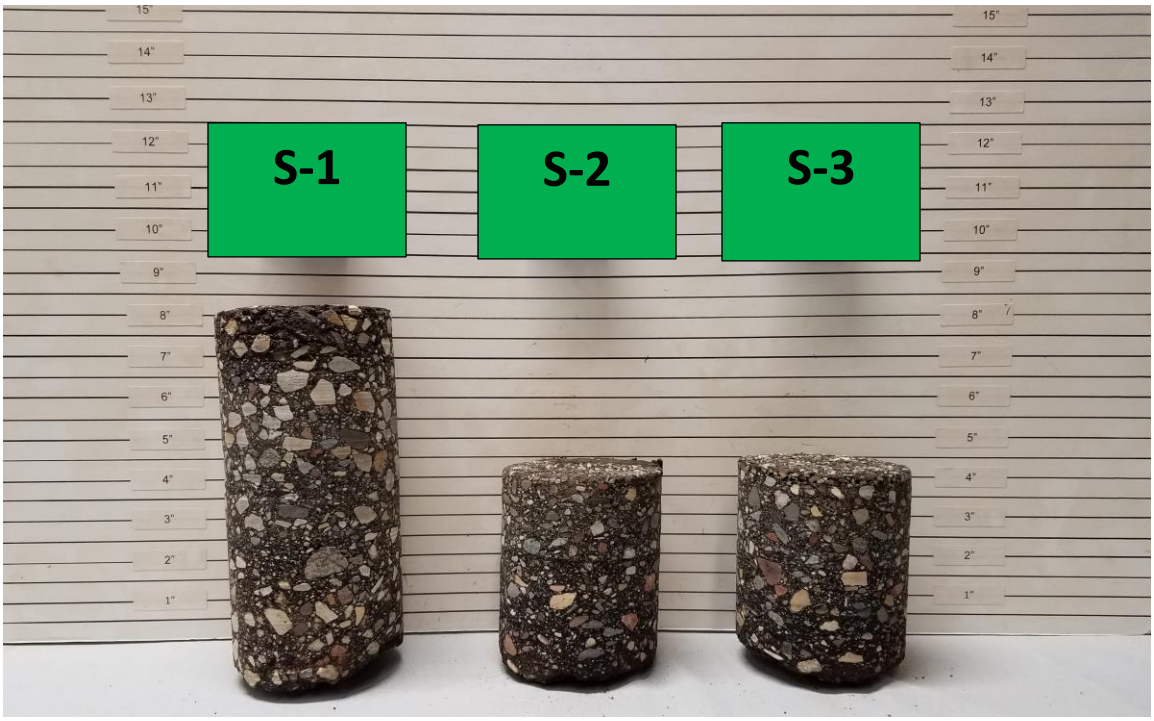
DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION		SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES
0		0.4 BITUMINOUS PAVEMENT (4.8 Inches)	99.6	AU 1									
		2.0 POORLY GRADED SAND WITH SILT, (SP-SM) brown to dark brown, fine to medium grained, moist, trace gravel (Fill)	98.0	SS 2	89	3-4-5 (9)							
5		POORLY GRADED SAND, (SP) light brown, fine to medium grained, moist, medium dense to very loose, trace gravel (Alluvial)		SS 3	94	3-3-3 (6)			5				4
				SS 4	83	2-2-2 (4)							
10		9.5 ▽	90.5										
		11.0 POORLY GRADED SAND WITH SILT, (SP-SM) brown to light brown, fine to medium grained, saturated, loose, trace gravel (Alluvial)	89.0	SS 5	78	3-3-4 (7)							

Bottom of borehole at 11.0 feet.

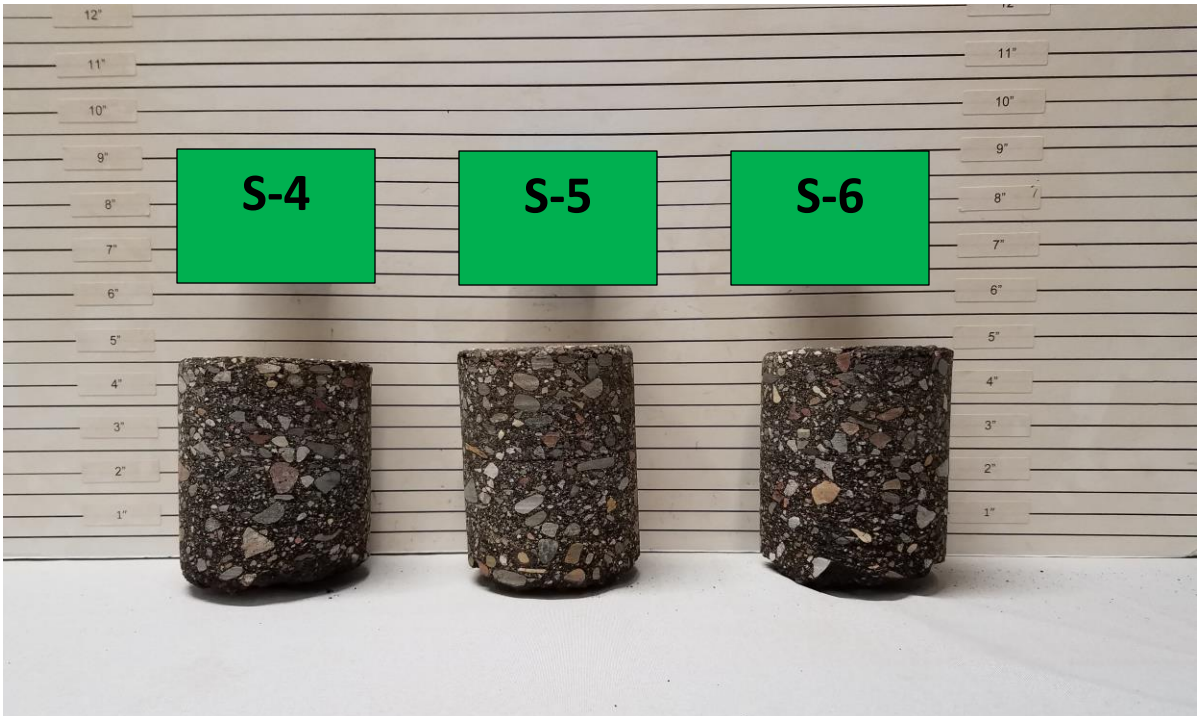
APPENDIX D

PAVEMENT CORE PHOTOGRAPHS

Bituminous Pavement Cores, S-1: 8 ¼ Inches, S-2: 4 ½ Inches, S-3: 4 ½ Inches.



Bituminous Pavement Cores, S-4: 4 ½ Inches, S-5: 4 ¾ Inches, S-6: 4 ¾ Inches.



Bituminous Pavement Cores, S-7: 4 ¼ Inches, S-8: 5 ¾ Inches, S-9: 4 ½ Inches.

Bituminous Pavement Cores, S-10: 5 Inches, S-11: 4 ¾ Inches.

701 Xenia Avenue South | Suite 300 | Minneapolis, MN 55416 | (763) 541-4800

December 27, 2016

Mr. Bruce Westby P.E.
City Engineer
7550 Sunwood Drive NW.
Ramsey, MN 55303

Re: Pavement Evaluations and Recommendations for City of Ramsey Improvement Project #17-00
2017 Sunwood Drive Reconstruction

Observation: On December 20, 2016 WSB & Associates cored Sunwood Drive from Ramsey Blvd. to Bunker Lake Blvd in Ramsey, MN, to verify the thickness of the Hot Mix Asphalt (HMA) and to determine what type of granular base was under the HMA. The pavement is in a light industrial park area and was constructed in 1980s. The main observed distress was cracking caused by aging of the HMA. Some fatigue cracks were observed in the wheel paths which are to be expected as a pavement meets its design life. One other observation was that the some of the warehouses were expanding their building which leads me to believe the truck traffic will only increase over the next 20 years. The cores measured 4 inches thick with a granular base material that appears to be Class 5.

Recommendations: Based on the information above our first recommendation would be to mill off 3 inches of the HMA and then do a 6 inch Stabilized Full Depth Reclamation (SFDR) using asphalt emulsion. The concept of doing SFDR over removing and repaving is that we can increase the structural capacity of the pavement by building down deeper into the pavement structure. This option would completely break up the existing crack pattern. Properly designed and constructed SFDR should yield gravel equivalencies of 1.5 to 2.0 with 1.8 being a good design value to use. Then repave the last 3 inches using SPWEB440C Super Pave. MnDOT gives this option the same value as a complete reconstruction at approximately 40 to 60 percent of the cost.

Option 2 would be to remove all the HMA and re-compact the base and repave. This option should be less expensive than Option 1. The one issue that we have with this option is the belief that truck traffic on Sunwood is only going to increase and that this option may fail prematurely compared to the existing pavement. If this option is chosen we would recommend using 4 inches of the same HMA as spelled out above.

Please let me know if you have any other questions of comments regarding this report.

Sincerely,

WSB & Associates, Inc.

Thomas J. Wood
Project Manager

Appendix A

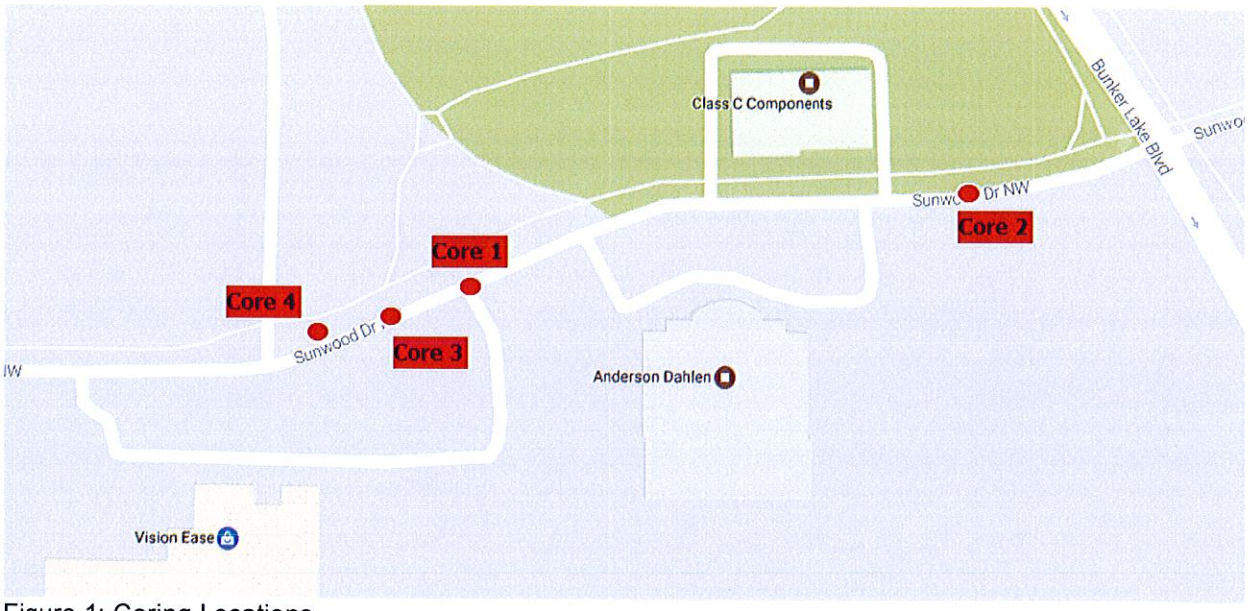


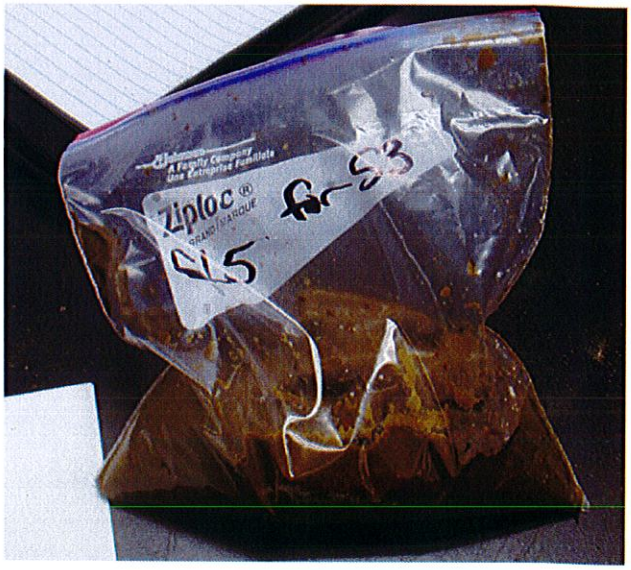
Figure 1: Coring Locations

Appendix B

Core 1

Core 2

Core 3



Core 4

SPECIAL ASSESSMENTS POLICY AND PROCEDURES FOR PUBLIC IMPROVEMENTS AND MAINTENANCE COSTS

SECTION 1. GENERAL POLICY STATEMENT.

The purpose of this policy is to establish a fair and equitable manner of assessing the increase in market value (special benefit) associated with public improvements. The procedures used by the City for levying special assessments are those specified by the City Charter and Minnesota Statutes Chapter 429, which provide that all or a part of the cost of improvements may be assessed against benefiting properties.

Three basic criteria must be satisfied before a particular parcel can be assessed. The criteria are as follows:

1. The land must have received special benefit from the improvement.
2. The amount of the assessment must not exceed the special benefit.
3. The assessment must be uniform in relation to the same class of property within the assessment area.

It is important to recognize that the actual cost of extending an improvement past or through a particular parcel is not the controlling factor in determining the amount to be assessed. However, in many cases the method for assigning the value of the benefit received by the improvement, and therefore the amount to be assessed, will focus on calculating the proportionate cost of providing the improvement, provided the cost does not exceed the increase in property market value resulting from the improvement. The entire project shall be considered as a whole for the purpose of calculating and computing an assessment rate. In the event City staff has doubt as to whether the costs of the project may exceed the special benefits to the property, the City Council may obtain such appraisals as may be necessary to support the proposed assessment.

The assessment policy is intended to serve as a guide for a systematic assessment process in the City. There may be exceptions to the policy or unique circumstances or situations that may require special consideration and discretion by City staff and the City Council.

SECTION 2. IMPROVEMENTS AND MAINTENANCE COSTS ELIGIBLE FOR SPECIAL ASSESSMENT.

Subd. 1. Public improvements, and related acquisition, construction, extension, and maintenance of such improvements, authorized by Minnesota Statutes, Sections 429.021 and 459.14, subd. 7, that are eligible for special assessment within the City include the following:

1. Streets, sidewalks, pavement, curbs and gutters, including the beautification thereof.
2. Parking lots.
3. Water works systems and appurtenances, within and without the corporate limits.
4. Sanitary sewer and storm sewer systems including appurtenances, within and without the corporate limits.
5. Street boulevard trees.
6. Street lights, street lighting systems and special lighting systems.
7. Steam heating mains.
8. Parks, playgrounds, and recreational facilities, including the purchase of equipment, within or without the corporate limits.
9. Abatement of nuisances, including but not limited to, draining and filling swamps, marshes, and ponds on public and private property.
10. Dikes and other flood control works.
11. Retaining walls and area walls.
12. A pedestrian skyway system upon a petition pursuant to section 429.031, subdivision 3.
13. Underground pedestrian concourses.
14. Public malls, plazas or courtyards.
15. District heating systems.
16. Fire protection systems in existing buildings upon a petition pursuant to section 429.031, subdivision 3.
17. Highway sound barriers.
18. Gas and electric distribution facilities.

Subd. 2. The City is also authorized by ordinance adopted pursuant to Minnesota Statutes Section 429.101 to recover, through special assessment, certain costs, including the following:

1. Snow, ice, or rubbish removal from sidewalks.
2. Weed elimination from streets or private property.
3. Removal or elimination of public health or safety hazards from private property excluding any structure included under the provisions of Minnesota Statutes, sections 463.15 to 463.26.
4. Installation or repair of water service lines, street sprinkling, sweeping, or other dust treatment of streets.
5. The trimming and care of trees and the removal of unsound trees from any street.
6. The treatment and removal of insect infested or diseased trees on private property.
7. The repair of sidewalks and alleys.
8. The operation of a street lighting system.
9. The operation and maintenance of a fire protection or a pedestrian skyway system.

SECTION 3. INITIATION OF PUBLIC IMPROVEMENT PROJECTS.

Public improvement projects can be initiated in the following ways.

1. Public improvement projects may be initiated by petition of owners of not less than 50% in frontage of the property abutting the proposed improvement in accordance with the provisions of Section 8.4.2 of the City Charter.

2. Public improvements also may be initiated by the City Council when, in its judgment, such action is required and is in accordance with the provisions of Chapter 8 of the City Charter.

3. A resolution ordering any improvements initiated by the Council requires a four-fifths majority vote of all members of the Council. A resolution ordering any improvements petitioned for by owners of not less than 50% of abutting property owners requires a majority vote of all members of the Council. A resolution ordering any improvements initiated by all owners of abutting property, and assessing the entire cost against their property, may be adopted without a public hearing. The Council may consider the request of a Developer to construct the improvements and assess them.

SECTION 4. PUBLIC IMPROVEMENT PROCEDURE.

The following is the general procedure followed by the City Council for all public improvement projects from initiation of such a project through certification of the assessment roll to the County Auditor. Formats for the various reports and resolutions referenced in this section are made a part of the policies and procedures of the City**. Applicable state law and City Charter provisions take precedence over the following general procedure.**

1. Staff reviews the petition or Developer's request for submission to Council.
2. Council accepts or rejects the petition or request. If based upon a petition, the Council adopts a resolution declaring whether the required percentage of property owners signed the petition. If the petition or request is accepted, Council orders the preparation of a feasibility report.
3. Staff prepares the feasibility report. The report shall preliminarily evaluate whether the proposed improvement is necessary, cost-effective, and feasible and whether it should be made as proposed or in conjunction with another project. The report shall include an estimate of the cost of the improvement as proposed. Council may refer the report to the Planning and Zoning Commission.
4. Council accepts or rejects the feasibility report. If accepted, Council orders a public hearing on the improvements.
5. Staff posts and publishes the hearing notice and mails notices to affected property owners as provided in Minn. Stat. § 429.031(a).
6. Council conducts a public hearing.
7. Within six (6) months of the hearing date, but no sooner than sixty (60) days after per City Charter § 8.4.1, Council adopts or rejects a resolution ordering the improvement to be constructed and advertisement of bids. If adopted, staff prepares final plans, advertises for and opens bids as provided in Minn. Stat. § 429.041, prepares a bid tabulation, makes a recommendation to City Council for award, and prepares a proposed assessment roll. Bonds to finance project costs may be issued at any time after the improvements are ordered.

8. Council reviews the proposed assessment roll and orders an assessment hearing.
9. Staff publishes a hearing notice and mails notice of the hearing date and proposed assessments to the affected property owners as provided in Minn. Stat. § 429.061.
10. Council conducts the assessment hearing and adopts, revises, or rejects the resolution determining the amount of the total expense the City will pay, if any, and establishing the assessment roll. If adopted, Council authorizes certification of the assessment to the County Auditor.
11. Council awards contracts based on the bids received.
12. Staff certifies the assessment roll to the County Auditor.
13. Staff supervises construction and prepares payments.

SECTION 5. FINANCING OF PUBLIC IMPROVEMENTS.

The City encourages public improvement projects when the area benefiting and needing such improvements develop. Examples of this policy can be seen through the subdivision regulations, zoning ordinance, and building codes. Developers are required to provide the needed improvements and services before development occurs, thereby avoiding unexpected hardships on the property owners purchasing such property and the general public. However, it is recognized that certain areas of the City have developed without all needed public improvements (e.g. parks, water, sewer, and street improvements) and that methods must be found to provide these improvements without causing undue hardships on the general public or the individual property owners.

Special assessments are generally accepted as a means by which areas can obtain improvements or services; however, the method of financing assessment is a critical factor to both the City and the property owner. Full project costs spread over a very short term can cause an undue hardship on the property owner and, likewise, city costs and systems costs spread over a long period of time can cause an undue hardship on the City.

It is the policy of the City to not defer assessments except in cases where hardship to senior citizens 65 years of age or older, or persons retired by virtue of a permanent and total disability, would result. Also, the City Council may elect to defer assessments on undeveloped land for a specified length of time or until the lands are developed. Terms and conditions of any such deferral will be established in the resolution adopting the assessments.

SECTION 6. GENERAL ASSESSMENT POLICIES APPLICABLE TO ALL TYPES OF IMPROVEMENTS.

The cost of any improvement shall be assessed based upon benefits received. The following general principles shall be used as a basis of the City's assessment policy:

1. **Project Cost.** The "project cost" of an improvement includes the costs of all necessary construction work required to accomplish the improvement (direct costs), plus engineering, legal, administrative, financing and other contingent costs, including acquisition of right-of-way and other property (indirect costs). The finance charges include all costs of financing the project. These costs include, but are not limited to, financial consultant's fees, bond rating agency fee, bond attorney's fees, and capitalized interest. The interest charged to the project shall be included as financing charges.

2. **City Cost.** The "city cost" of an improvement is the amount of the total improvement expense the City will pay as determined by Council resolution. Where the project cost of an improvement is not entirely attributed to the need for service to the area served by the improvement, or where unusual conditions beyond the control of the owners of the property in the area served by the improvement would result in an inequitable distribution of special assessments, or for any other reason determined by the City, the City, through the use of other funds, may pay such "city cost."
3. **Assessable Cost.** The "assessable cost" of an improvement is equal to the "project cost" minus the "city cost."
4. **Interest.** The City will charge interest on special assessments at a rate specified in the resolution approving the assessment roll. If bonds were sold to finance the improvement project, the interest rate shall be equal to the interest rate of the bonds plus 2% (2% above bond rate), rounded to the nearest quarter of a percent. If no bonds were sold, the interest rate shall be set at the U.S. Treasury rate (10-year for 10 year assessment; 15-Year for 15 year assessment) plus 2 percentage points.
5. **Prepayment.** Property owners may pay their assessments in full, interest free, for a period of 30 days after the assessment hearing. After such period interest shall be computed from the date specified in the assessment resolution. The City will transmit a certified duplicate of the assessment roll with each installment, including interest, to the County Auditor, or in lieu of such certification, annually certify to the County Auditor by November 30 in each year, the total amount of installments of and interest on assessments on each parcel that are to become due in the following year.
6. **Extensions.** Where an improvement is designed for service of an area beyond that receiving the initial benefit, the City may pay for increased project costs due to such provisions for future service extensions. The City will levy assessments to cover this cost when a new improvement is installed as an extension of the existing improvement upon identification of such additional amount in the notice of hearing for the extensions or new improvements. As an alternative, the City may assess these costs to the area of future extension immediately based on the value of benefit received.
7. **Project Assistance.** If the City receives financial assistance from the Federal Government, the State of Minnesota, the County, or from any other source to defray a portion of the costs of a given improvement, such aid will be used first to reduce the "city cost" of the improvement. If the financial assistance received is greater than the "city cost," the remainder of the aid will be placed in the Public Improvement Revolving Fund to be applied towards other City projects.
8. **Assessable Property.** Property owned by the City and other political subdivisions including municipal building sites, parks and playgrounds, but not including public streets, alleys, and right-of-way, shall be regarded as being assessable on the same basis as if such property was privately owned. Private right-of-way shall be assessable.
9. **Individual Benefits.** The City may construct improvements specifically designed for or shown to be of benefit solely to one or more properties. The costs for these improvements will be assessed directly to such properties, and not included in the assessments for the remainder of the project. An example would be utility service lines running from the main lines to the property.
10. **Benefit Appraisals.** In the event that City staff has doubt as to whether the proposed assessments exceed the special benefits to the property(ies) in question, the City Council may order benefit appraisals or benefit appraisal consultations as deemed necessary to support the proposed assessments. As a general rule, benefit appraisals or benefit appraisal consultations may be ordered when the proposed assessment exceeds $5,000 for a standard city street

reconstruction project on a residential lot, or $20,000 per acre for commercial or industrial property.

11. **Condemnation Awards.** A property owner may elect to offset special assessments against condemnation awards. In such case, the property owner must execute an agreement (Net Assessment Agreement) with the City.
12. **Subgrade Corrections.** All costs relative to subgrade soil corrections deemed necessary to construct or reconstruct City streets will be considered a "city cost" and will not be assessed.
13. **Rural to Urban Conversion.** All costs relative to converting an existing rural street section to an urban street section by filling roadside drainage ditches and adding curb and gutter and storm sewer will be considered a "city cost" and will not be assessed.
14. **Oversizing.** All costs relative to oversizing an existing City street by increasing the width of the street and/or the load carrying capacity of the pavement section will be considered a "city cost" and will not be assessed.

SECTION 7. METHODS OF ASSESSMENT.

Subd. 1. General Statement. There are three different methods of assessment: adjusted front footage, area, and per lot. The feasibility report will recommend one or a combination of these methods for each project, based upon which method would best reflect the benefit received for the area to be assessed. The City Council will select the preferred method of calculating the assessments along with other applicable assessment criteria.

Subd. 2. Policy Statement. The following methods of assessment, as described and defined below, are hereby established as the preferred methods of assessment in the City.

A. "Adjusted Front Footage" Method of Assessment.

The "adjusted front footage" method of assessment is based on the quotient of the "assessable cost" divided by the total assessable frontage benefiting from the improvement. This method is typically applied to commercial, industrial, and multi-family residential properties. For the purpose of determining the "assessable frontage," all properties, including those owned by governmental entities, shall have their frontages included in such calculation.

The actual physical dimensions of a parcel abutting an improvement (i.e., street, sewer, water, etc.) shall not be construed as the frontage utilized to calculate the assessment for a particular parcel. Rather, an "adjusted front footage" will be determined. The purpose of this method is to equalize assessment calculations for lots of similar size. Individual parcels by their very nature differ considerably in shape and area. The following procedures will apply when calculating adjusted front footage. The selection of the appropriate procedure will be determined by the specified configuration of the parcel. All measurements will be scaled from available plat and section maps and will be rounded down to the nearest foot dimension with any excess fraction deleted.

1. *Rectangular Interior Lots.* The rectangular lot is defined as having no more than 2 feet of difference between the front and rear lot lines. The adjusted front footage is the actual front footage of the lot. For rectangular lots whose frontage is greater than its depth, the "odd shaped lot" method shall be used.

2. *Odd Shaped Lots.* For odd shaped lots such as exist on cul-de-sacs and curved streets where there is more than 2 feet of difference between the front and rear lot lines, and where the lots frontage is greater than its depth, the "odd shaped lot" method of determining the adjusted front footage shall be used. The adjusted front footage shall be computed by dividing the area of the lot by 12,000 square feet to determine the equivalent number of front footage units in the parcel. The number of units multiplied by 65 feet will give the adjusted front footage.

3. *Corner Lot Adjustment.* For street and trail assessments, the short side will be assessed the actual front footage. The long side will be assessed one-half the actual side footage. Sanitary sewer and watermain will only be assessed on the short side of a corner lot.

4. *Zonal Assessment.* When the street along the long side of a corner lot is improved, the cost shall be assessed equally to all lots within ½ block in each direction of the street improved. This method may be selected rather than the "corner lot adjustment".

5. *Double Fronting Lots.* When a lot has frontage on two streets, the lot is subject to assessments for improvements to both streets, consistent with this policy, regardless of the timing of the improvements.

B. "Area" Method of Assessment.

The "area" method of assessment is based on the number of square feet or acres within the boundaries of the appropriate property lines of the parcels benefiting from the project. This method is most often applied to commercial and industrial lots. The assessment rate (i.e., cost per square foot) shall be calculated by dividing the total assessable cost by the total assessable area. On large lots, the City Engineer may determine that only a portion of the lots receives the benefit and may select a lot depth for the calculations equal to the benefit received.

All properties included in the benefited area, including those owned by governmental entities, churches, etc., shall be assessable. The following items may not be included in area calculations: public right-of-ways, and natural waterways, swamps and lakes and other wetlands designated by the Minnesota Department of Natural Resources or the City. The City Engineer will make a recommendation on the boundaries or parameters of the benefited area in the feasibility report.

C. "Per Lot" Method of Assessment.

The "per lot" method of assessment is based on equal assessment of all lots within the benefited area. This method is typically applied to single-family residential lots with similar sizes and configurations. The "assessment per lot" shall be the quotient of the "assessable cost" divided by the total assessable lots or parcels benefiting from the improvement. For the purpose of determining the "lots" or "parcels" all parcels, including those owned by governmental entities, shall be included in such calculations.

SECTION 8. STANDARDS FOR PUBLIC IMPROVEMENT PROJECTS.

The following standards are hereby established by the City to provide a uniform guide for improvements within the City.

A. Surface Improvements

Surface improvements shall normally include all improvements visible on or above the ground within the right-of-way, and include, but are not limited to, trees, lighting, sidewalks, trails, signing, street and accessory improvements such as drainage ponds and facilities, parking lots, parks and playgrounds. Surface improvements shall also normally include aggregate or granular base materials for bituminous and concrete pavements.

Policy Statement. Prior to construction or completion of surface improvements, all utilities and utility service lines (including sanitary sewers, storm sewers, water lines, gas and electric service) shall be installed to all planned service locations such as residences or buildings.

When practicable, no surface improvements to less than both sides of a full block of street shall be approved except as necessary to complete partially completed improvements initiated previously. Concrete or bituminous curbing, or concrete curb and gutter, shall be installed at the same time as street surfacing.

B. Sub-Surface Improvements

Sub-surface improvements shall normally include such items as water distribution, sanitary sewer and storm sewer lines and appurtenant infrastructure, and electric and gas utilities.

Main lines are the publicly owned and maintained lines or facilities such as trunk lines, interceptors, mains, and laterals. Service lines are those privately owned lines or facilities extending from the main line to the property line.

Policy Statement. Sub-surface improvements shall be made to serve current and projected land use. All installations shall conform to applicable standards established by local, state and/or federal agencies of competent jurisdiction. All installations shall also comply, to the maximum extent feasible, with nationally recognized standards such as those of the American Insurance Association.

Service lines from the lateral or trunk utility to the property line of all planned service locations such as residences or buildings on properties whose owner has requested service shall be installed in conjunction with the construction of the mains.

C. Subgrade Improvements

Subgrade improvements shall normally include such items as subgrade corrections (removing layers/pockets of unsuitable soils and replacing them with aggregate base, select granular material, or other more suitable soils) and installation of geotextile fabrics.

Policy Statement. Prior to construction or completion of subgrade improvements, all utilities and utility service lines (including sanitary sewers, storm sewers, water lines, gas and electric service) shall be installed to all planned service locations such as residences or buildings.

SECTION 9. POLICIES OF REASSESSMENT.

The City shall design public improvements to last for a definite period. The life expectancy or service life shall be as stated in the policy statement of this section, or if different, shall be as stated in the resolution ordering improvement and preparation of plans.

Policy Statement

The following are the "life expectancies" or "service lives" of public improvements except as may be otherwise stated in the resolution ordering improvement and preparation of plans.

1. Sidewalks and Trails – 30 years.
2. Street improvements, including surfacing and curb and gutter – 60 years.
3. Ornamental street lighting – 30 years.
4. Water Mains – 60 years.
5. Sanitary Sewers – 60 years.
6. Storm Sewers – 60 years.

SECTION 10. ASSESSMENT COMPUTATIONS.

The following is the typical city assessment for various specified improvements. The City Council reserves the right to vary from the following computations when conditions warrant. All computations are subject to the criteria set forth in Section 1.

A. Street and Curb and Gutter Improvements

1. ***New Construction.*** New streets are assessed 100% to the abutting benefited properties. Street and curb and gutter improvements will normally be assessed by the adjusted front footage method for commercial, industrial and multi-family residential properties, or by the per lot method for single-family residential properties, however other methods including the area method may be utilized if conditions warrant. Cost of construction of streets shall be assessed based on the minimum design of 7-ton axle load in residential areas and 9-ton axle load in commercial and industrial areas. Oversizing costs that are incurred in excess of the above may be paid by: (1) State funds, (2) larger assessment rates to other benefited properties, (3) general obligation funds, or (4) any other method or combination of methods authorized by the City Council.
2. ***Reconstruction and Overlays.*** Street reconstructions and overlays, including the associated removal and replacement of curb and gutter, are assessed 25% to the abutting benefited properties or as otherwise determined by Council ordered benefit appraisals.
3. ***Gravel Streets.*** Upgrading existing gravel streets by adding pavement, curb and gutter, and storm sewer are assessed 50% to the abutting benefited properties or as otherwise determined by Council ordered benefit appraisals.
4. ***Seal Coats.*** Sealcoats are not assessed.
5. ***Alleys.*** Upgrading existing gravel alleys by adding pavement is assessed 50% to all lots abutting on the alley in the block being improved or as otherwise determined by Council ordered benefit appraisals. Reconstructing existing paved alleys is 25% assessed to all lots abutting on the alley or as otherwise determined by Council ordered benefit appraisals.

B. Sidewalks and Trails

1. ***New Construction.*** New sidewalks and trails are not assessed to the abutting property on which the sidewalk is located, but rather are funded 100% by the City. In new subdivisions, the City will require the developer to finance sidewalk and trail improvements rather than assessing the cost.
2. ***Reconstruction.*** Replacement sidewalks are assessed 25% to the abutting property owner and 75% City funded.

C. Storm Sewer Improvements

Storm sewers are assessed on a project-by-project basis. Storm sewers in new subdivisions are considered an assessable improvement on an area basis.

Oversizing costs due to larger mains and larger appurtenances are paid for by a combination of availability charges, user charges and/or trunk area assessment charges. Trunk area storm sewer charges are levied to all unplatted property at the time of platting, to re-plats that have not been charged trunk area charges when the land was originally platted, and to re-plats that have been charged trunk area charges when the land was originally platted but where the use is increasing (only the cost difference based on current and prior use is charged). The charges will be set in the annual fee schedule approved by the City Council.

Normally, storm sewers are assessed on an area basis (square foot or acres), but in certain situations the per lot method or adjusted front footage method may be utilized at the City Council's discretion.

The replacement of existing storm sewers is paid for entirely through the Stormwater Utility Fund.

D. Sanitary Sewer Assessments

Assessments for sanitary sewer in residential areas are based upon the cost of construction of 8-inch mains, which is the smallest size installed in residential areas of the City. Assessments for sanitary sewers in commercial and industrial areas are based upon a standard size of 12-inch mains. Sanitary sewer assessments must conform to Chapter 8 of the City Charter.

Oversizing costs due to larger mains and larger appurtenances will be paid for by a combination of availability charges, user charges and/or trunk area assessment charges. Trunk area sanitary sewer charges shall be levied on all un-platted property at the time of platting and on re-plats that have not been charged trunk area charges when the land was originally platted. The charges will be set in the annual fee schedule approved by the City Council. Services installed to individual properties are assessed to the benefiting property as allowed under Chapter 8 of the City Charter.

Normally, sanitary sewers are assessed on an area basis (square foot or acres), but in certain situations the per lot method or adjusted front footage method may be utilized at the City Council's discretion.

Lateral benefit from major trunk sewers or interceptors is assessed to the properties benefited by the sewer. Any oversizing cost is assessed as described above.

The replacement of existing sewers is funded entirely by the City through the sewer enterprise funds.

Individual sanitary sewer service lines installed directly to specified properties are fully assessed directly to the benefited properties. Properties that have existing private sanitary services, but do not have mainline sewers adjacent to, across or abutting their property lines pay 0% of the assessment rate for the new mainline sanitary sewer, and 100% of the cost associated with replacing the service lines.

Any existing sanitary sewer service lines found to be defective as part of a project are replaced as part of the project and are assessed to the benefiting property as allowed under Chapter 8 of the City Charter.

Property owners electing to connect to City sewer during street reconstruction projects will receive a credit to offset those costs that would have been incurred by the City to reconstruct the street and boulevard after connecting to City sewer if the street were not being reconstructed. The amount of the credit will be set in the annual fee schedule approved by the City Council. Connecting to City sewer requires a City water connection.

E. Watermain Assessments

Assessments for watermains in residential areas are based upon the cost of construction of 8-inch mains, which is the smallest size installed in residential areas of the City. Assessments for watermains in commercial and industrial areas are based upon the standard size of 12-inch mains. Watermain assessments must conform to Chapter 8 of the City Charter.

Oversizing costs due to larger mains and larger appurtenances are paid for by a combination of availability charges, user charges and/or trunk area assessment charges. Trunk area water charges shall be levied on all un-platted property at the time of platting and on re-plats that have not been charged trunk area charges when the land was originally platted. The charges will be set in the annual fee schedule approved by the City Council. Services installed to individual properties shall be fully assessed to the benefiting property.

Normally, watermains are assessed on a per lot basis, but in certain situations the area or adjusted front footage method may be utilized at the City Council's discretion.

The replacement of existing watermains is funded entirely by the City through the water enterprise funds.

Lateral benefit from major trunk watermains is assessed to properties benefited by the watermain. Lateral watermain assessments are based on the costs for an equivalent 8-inch diameter watermain for residential properties and for an equivalent 12-inch diameter watermain for commercial/industrial properties.

Individual water service lines installed directly to specified properties are fully assessed directly to the benefited properties. Properties that have existing private water services, but do not have

mainline watermains adjacent to, across or abutting their property lines pay 0% of the assessment rate for the new watermain but 100% of the cost associated with replacing their service lines.

Any existing water service lines found to be defective as part of the project, are replaced as part of the project and are assessed directly to the benefiting property as allowed under Chapter 8 of the City Charter.

Property owners electing to connect to City water during street reconstruction projects will receive a credit to offset those costs that would have been incurred by the City to reconstruct the street and boulevard after connecting to City water if the street were not being reconstructed. The amount of the credit will be set in the annual fee schedule approved by the City Council.

F. Street Boulevard Trees

All street boulevard trees installed as part of new street constructions or in reconstructing existing streets shall be included as part of the overall project costs included in the assessment calculations.

G. Street Lights

All costs for new streetlights installed as part of constructing new streets or streetlights relocated as part of reconstructing streets are included in the overall project costs and included in the assessment calculations, unless otherwise directed by the City Council. In new subdivisions, the City will require the developer to finance street light improvements rather than assessing the cost.

H. Other Improvements

Based on the City Council's determination, any other eligible improvements may be fully assessed or assessed in part.

SECTION 11. DEFERMENT OF SPECIAL ASSESSMENTS.

Subd. 1. The Council may defer the payment of any special assessment on homestead property owned by a person who is 65 years of age or older, or who is retired by virtue of permanent and total disability, and the City Clerk is hereby authorized to record the deferment of special assessments where all of the following conditions are met:

1. The applicant must apply for the deferment not later than 90 days after the assessment is adopted by the City Council.
2. The applicant must be 65 years of age or older or retired by virtue of permanent and total disability at the time the assessment is adopted.
3. The applicant must be the owner of the property.
4. The applicant must occupy the property as his or her principal place of residence.
5. The average annual payment for assessments levied against the subject property exceed one percent of the adjusted gross income of the applicant as evidenced by the applicant's most recent federal income tax return. The average annual payment of an assessment shall be the total cost of the assessment divided by the number of years over which it is spread.

Subd. 2. The deferment shall be granted for as long a period of time as the hardship exists and the conditions in subdivision 1 remain true. It shall be the duty of the applicant to notify the City Clerk of any change in his or her status that would affect eligibility for deferment.

Subd. 3. The entire amount of deferred special assessments shall be due within sixty days after loss of eligibility by the applicant. If the special assessment is not paid within the sixty (60) days, the City Clerk shall add thereto interest accruing from the first date the applicant loses eligibility at the rate as defined in section 6.4 and the total amount of principal and interest shall be certified to the County Auditor for collection with taxes the following year. Should the applicant demonstrate to the satisfaction of the Council, that full repayment of the deferred special assessment would cause the applicant particular undue financial hardship, the Council may order that the applicant pay within sixty days a sum equal to the number of installments of deferred special assessments outstanding and unpaid to date, including principal and interest, with the balance thereafter paid according to the terms and conditions of the original special assessments.

Subd. 4. The option to defer the payment of special assessments shall terminate and all amounts accumulated plus applicable interest shall become due upon the occurrence of any one of the following:

1. The death of the owner when there is no spouse who is eligible for deferment.
2. The sale, transfer or subdivision of all or any part of the property.
3. Loss of homestead status on the property.
4. Determination by the Council for any reason that immediate or partial payment would impose no hardship.

State Law References(s): Minn. Stat. § 435.193, Senior Citizens or retired & disabled persons hardship special assessment deferral.

*Original Adoption: 12/9/14 by Resolution #14-12-250
*Amended: 1/13/15 by Resolution #15-01-016 – *Section 6 - #4 Interest to reflect interest rate on bonded projects*

Public Works Committee **5. 2.**

Meeting Date: 09/19/2017

Submitted For: Grant Riemer, Engineering/Public Works

By: Grant Riemer, Engineering/Public Works

Title:

Improving Pedestrian Crosswalk Visibility in the COR

Purpose/Background:

Purpose:

The purpose of this case is to provide options for improving the visibility of existing pedestrian crosswalks in the COR.

Background:

Staff has received comments on the lack of compliance by motorists for people using the crosswalks near city hall on Sunwood Drive. Staff has witnessed this behavior and had similar experiences when crossing Sunwood Drive as well. Colored concrete was used to designate pedestrian crossings in the COR and is a legal and acceptable method. There are a total of 12 marked crosswalks on Sunwood Dr between Ramsey Blvd and Zeolite St., but at this time the main concentration of pedestrian traffic is near the Municipal Center campus on Center St and Sapphire St.

Timeframe:

15 Minutes

Observations/Alternatives:

One of the more effective crosswalk warning signs is the "In Street Pedestrian Marking Signs" which have a motorist yield rate calculated at 87%-90% when used on roads with posted speed limits of 25-30 mph. The recommended treatment would be four of the in street pedestrian signs, two at the intersection of Sapphire St/Sunwood Dr and two at Center St/Sunwood Dr. Traffic counts for this area are 3608 ADT. Because the signs would be used on a concrete road section, staff would recommend using the portable weighted sign bases. This would eliminate the need to drill into the concrete road surface to mount the signs. Staff would also recommend adding 2 advance warning signs, mounted on existing light standards in the general area, one east of Sapphire St and one west of Center St.

Funding Source:

General Fund

Recommendation:

Staff recommends installing four "In Street Pedestrian Marking Signs" on Sunwood Dr at the intersections of Sapphire St/Sunwood Dr and Center St/ Sunwood Dr. Staff would also recommend adding 2 advance warning signs in the general area, one east of Sapphire St and one west of Center St

Action:

Motion to accept staff recommendation or reject staff recommendation and approve alternative recommendation based on committee discussion.

Attachments

In Street Ped Crossing Sign

Sign Locations

Form Review

Inbox	Reviewed By	Date
Kurt Ulrich	Kurt Ulrich	09/14/2017 03:22 PM
Form Started By: Grant Riemer		Started On: 08/14/2017 12:46 PM
Final Approval Date: 09/14/2017		

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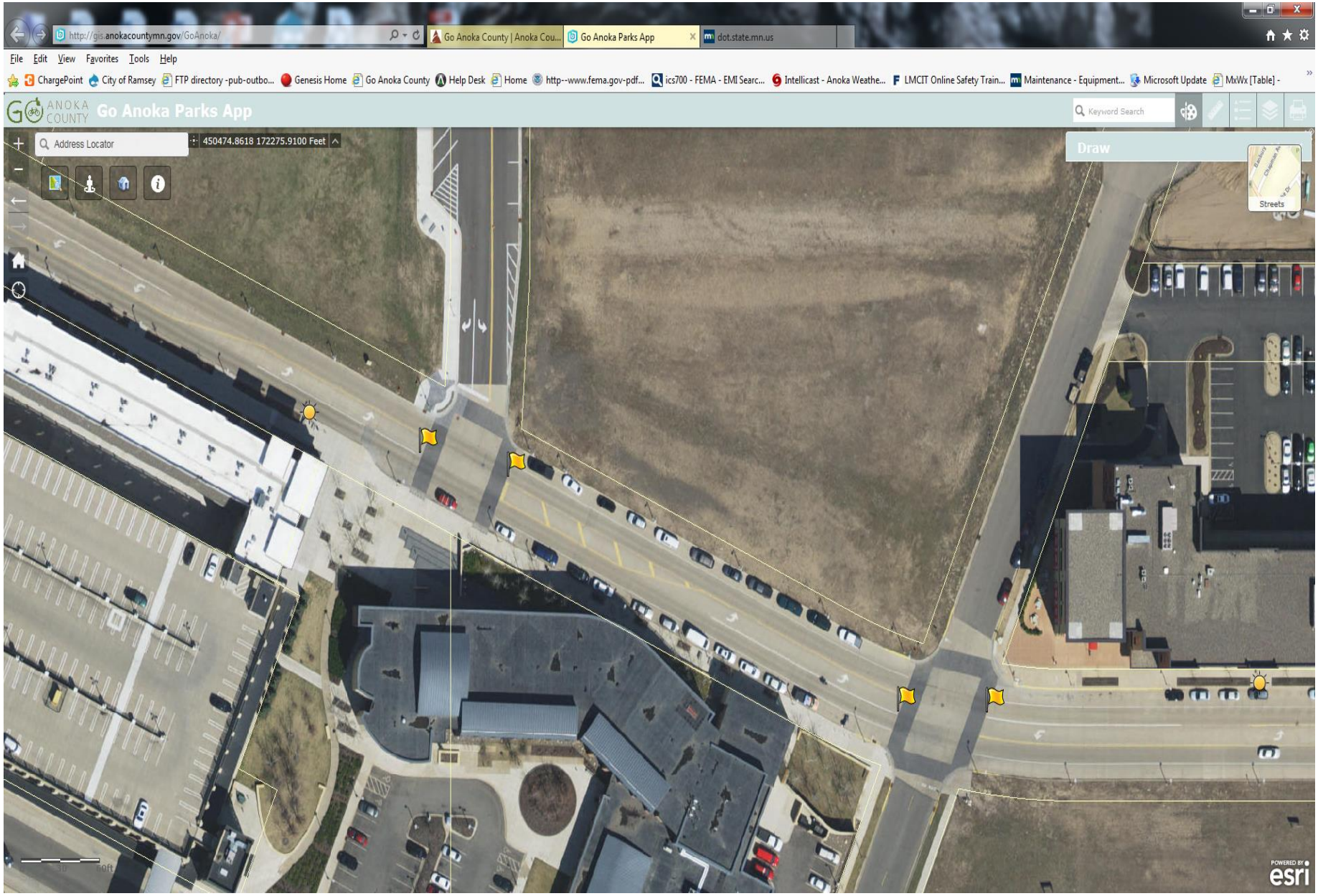
R1-6a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Public Works Committee **5. 3.**

Meeting Date: 09/19/2017

By: Bruce Westby, Engineering/Public Works

Title:

Consider Recommendation for City Council to Order Feasibility Report for 2018 Overlay Improvements

Purpose/Background:

Staff will present maps of the proposed 2018 Overlay Project areas, along with estimated project costs and estimated assessments for each project area. Staff will also present information on each street segments dimensions, construction materials, age, maintenance operations history, current pavement condition (PASER) ratings, and Ground Penetrating Radar evaluation results.

Staff plans to request City Council approval to prepare a Feasibility Report for this project on September 26, 2017. The Public Works Committee's recommendation will be included in the Staff report.

Timeframe:

Staff anticipates 10 minutes will be required to present and discuss this case.

Observations/Alternatives:

Alternatives:

Alternative #1– Motion recommending that the City Council order a Feasibility Report for the 2018 Overlay Improvements, City Improvement Project #18-03.

Alternative #2 – Motion of other.

Funding Source:

Attached is the 2018 Overlay Improvements sheet from the 2017 - 2026 Capital Improvement Plan which identifies a total project cost of $753,700.

No additional costs will be incurred to complete the Feasibility Report. All required work has already been completed or will be completed in-house.

Recommendation:

Staff recommends alternative #1.

Action:

Motion recommending that the City Council order a Feasibility Report for the 2018 Overlay Improvements, City Improvement Project #18-03.

Attachments

CIP 2018 Overlays

Form Review

Inbox	Reviewed By	Date

Grant Riemer	Grant Riemer	09/14/2017 03:07 PM
Kurt Ulrich	Kurt Ulrich	09/14/2017 03:33 PM
Form Started By: Bruce Westby		Started On: 09/13/2017 10:58 AM
Final Approval Date: 09/14/2017		

Project # 15-STR-011

Project Name 2018 Overlay Projects

Department Street Improvements
Contact
Type Improvement
Useful Life 20 Years
Category Street Improvement
Priority 3-Existing Obligation (Med)
Status Active

Total Cost **$753,700**

Description

Each paved street within the City is scheduled to receive preventative maintenance on a regularly scheduled basis, including reconstruction at the end of its useful life.

2018 Projects: Woodland Green, North Forty 2nd, North Forty 3rd, Northfork Oaks, Northfork, Northfork 2nd, Northfork 3rd, Northfork Itasca Shores

There is a total of $2.2M designated to maintain streets annually.

Overlays will be assessed at 25% of cost

Justification

Regular scheduled maintenance safeguards the considerable investment the City has in its pavements by cost effectively maximizing pavement life and minimizing emergency repairs.

Overlaying streets provides additional pavement life. These streets were selected based on Paser rating and time since last pavement maintenance treatment.

Look at Possibility of Using MSA or PIR funds for portion of costs instead of bonding.

Revisit Program for 2020-2025

Expenditures	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	Total
Improvements Other than Building Cost		753,700									753,700
Total		753,700									753,700

Funding Sources	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	Total
Special Assessment - Bonded		188,425									188,425
GO Bonding (Road Funding)		565,275									565,275
Total		753,700									753,700

Public Works Committee **5. 4.**

Meeting Date: 09/19/2017
Submitted For: Grant Riemer, Engineering/Public Works
By: Grant Riemer, Engineering/Public Works

Title:
Review Feedback and Next Steps for Comprehensive Plan Update Transportation Chapter

Purpose/Background:
Staff will review the Comprehensive Transportation Plan

Timeframe:
20 Minutes

Observations/Alternatives:
Staff will present items collected for the Comprehensive Transportation Plan and discuss next steps.

Funding Source:
N/A

Recommendation:
N/A

Action:
Informational only, no action required at this time.

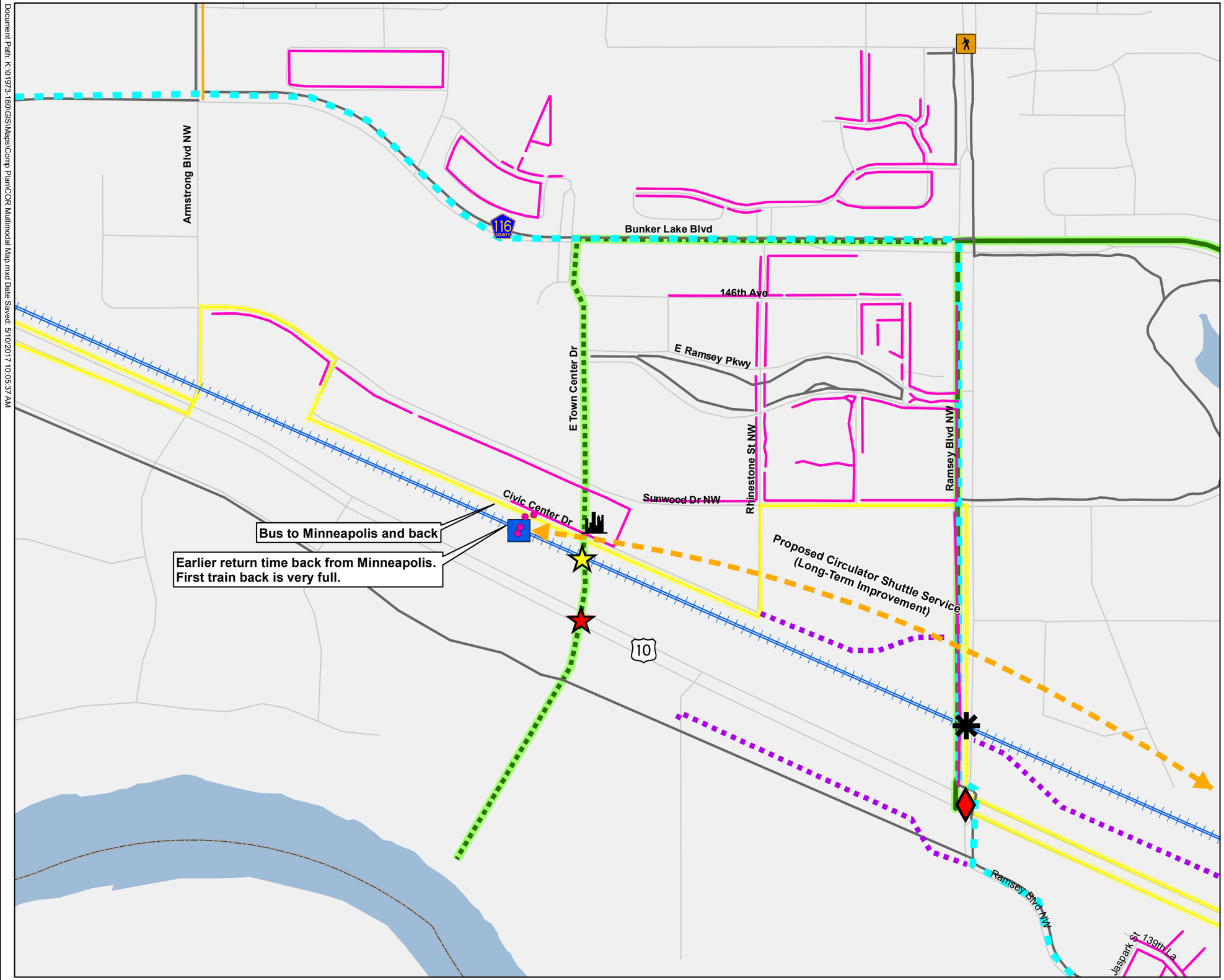
Attachments

COR Multimodal Map
Non-Motorized Network Map
Roadway Issues Map
Transportation Issues
Sample Goals and Objectives

Form Review

Inbox	Reviewed By	Date
Kurt Ulrich	Kurt Ulrich	09/14/2017 03:26 PM
Form Started By: Tim Gladhill		Started On: 09/12/2017 10:07 AM
Final Approval Date: 09/14/2017		

Document Path: K:\01973-160\GIS\Maps\Comp Plan\COR Multimodal Map.mxd Date Saved: 5/10/2017 10:05:37 AM



COR Multimodal Transportation Map
Ramsey, MN

- Ramsey Boundary
- Proposed Frontage Road
- Proposed Interchange
- Proposed Railroad Grade Separation
- Northstar Commuter Rail
- Northstar Station
- Northstar Link (Fridays Only)
- Northstar Link Bus Stop

Regional Trails

- Existing
- Planned
- Mississippi River Trail Route

City Trails

- Asphalt
- Existing Pedestrian Overpass
- Proposed Pedestrian Overpass
- On Street Bike Lanes
- Sidewalks
- City Hall
- Crosswalks

0 650 Feet

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Ramsey Comprehensive Plan Non-Motorized Transportation Network Ramsey, MN

City of RAMSEY

Need Safe trail across Green Valley Rd

Safety improvement for PED

PED

PED

Repair Boardwalk

Bike Trail needs to continue to park

Unsafe PED Crossing

Put Trail

Elmcrest needs lights Drainage Issues

Bike trail for new school

PED lines/ traffic concern

School Traffic

161st and variolite needs ped crossing - high speed of cars

Resurface trail

Speed Concern

PED Kings

Bike path gap

Dangerous 4 way

Splash Pad

Flashing Yellow

Sidewalk gap

Bike Racks

Turn light timing- 6 cars or less?

Work with City on RR Overpass

Trott Brook

Rum River

Rum River Central Regional Trail

Central Anoka Regional Trail

Mississippi River

Lake Itasca

Eddy Lake

Roger's Lake

Sunfish Lake

DEERWOOD PARK

CAROLINE ACRES PARK

RABBIT PARK

SHAWN ACRES PARK

FORD BROOK PARK

RIVERWOOD HILLS PARK

RIVERWOOD HILL SOUTH PARK

RUM RIVER CENTRAL REGIONAL PARK

TROTT BROOK PARK

FOX PARK

BROOKVIEW PARK

OAKRIDGE PARK

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TROTT BROOK TRAIL CORRIDOR

RUM RIVER HILLS GOLF COURSE

CENTRAL PARK

TITTERUD PARK

FOREST HIDEAWAY PARK

RUM RIVER BOY SCOUT CAMP

LAKE ITASCA TRAIL

LINKS GOLF COURSE

WHISPERING PINES NORTH

LAKE ITASCA PARK

REILLEY WEST PARK

WOODLAND GREEN PARK

BEAR PARK

STANHOPE RIVER HILLS

GREENLAND HILLS WEST PARK

GREENLAND HILLS EAST PARK

BEAUDRY'S PARK

ALPINE PARK

PELTZER PARK

WAYSIDE REST

COTTONWOOD PARK

Ramsey Elementary School

SOLSTICE PARK

EMERALD POND

RAMSEY TERRACE PARK

RIVERS BEND PARK

Rum River Library

Anoka High School

PROPOSED PARK

MISSISSIPPI WEST REGIONAL PARK

RIVERDALE PARK

- Ramsey Boundary

Regional Bicycle Transportation Network Alignment
- Tier 2 Alignment

Regional Bicycle Transportation Network Corridor
- Tier 1 Priority Corridor
- Mississippi River Trail Route

Regional Trails
- Existing
- Planned
- Trott Brook Trail Corridor

City Trails
- Asphalt (37.52 miles)
- Tunnel (0.05 miles)
- Wooden Walkway (0.48 miles)
- Proposed Pedestrian Crossing (Grade Separation)
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- Sidewalks

Parks and Open Space
- Parks
- Open Space/Trail Corridor
- Proposed Park
- Quasi-Public
- Regional
- Proposed Trailhead
- City Hall
- Fire Station
- Existing Trailheads
- Crosswalks
- Proposed Underpass
- Existing Underpass

N

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WSB

Ramsey Comprehensive Plan
Roadway Issues
Ramsey, MN

DRAFT FOR DISCUSSION

Shoulders on 181st

Height of Cattails Saftey Concern

Intersection Evaluation

Multi Modal Corridor Study

Safety Issues for Kids and Pets. Speed Study? Shoulders

Additional East/West Roadway Needed between Green Valley Rd & Bunker Lake Blvd

Enhance/Update Crosswalk Signs and make more visible

Expand Park More Parking

Lot Sizes too Small

Resurface and Bike Trail

Sign conflict w/ turn

Bypass Lane Review Costs To Pave Improve Safety

Keep Showing as planning effort

Drop Speed

Traffic Crossing 4-way stop?

Stop Sign Reinforcement

Noise from RR

Yes please!

Corridor Study

Left Turn Lanes

Slow Speed on Alpine

Andover Park (Destination)

NOTE: This map is out of date and needs direction.
City staff and public workshop mark-up COPY.

Possible Rum River Crossing??
(even if just ped crossing)

Widen to a 4 Lane

Widen to a 4 Lane

Stoplight

Slowing SB5/SB47

Right Turn Improvement

Train Approching Sign - Advance Routing

Impacts of Eagle Brook Tungsten

Concerned about truck turns

Nowthen

Roger's Lake

Andover

Elk River

Rum River

Lake Itasca

Eddy Lake

Beaudrys Pond

Sunfish Lake

Mississippi River

Dayton

Anoka

Baugh St NW

Armstrong Blvd NW

Variolite St NW

Puma St NW

Uranium St NW

Ramsey Blvd NW

Sunfish Lake Blvd NW

Waco St NW

Roanoke St NW

Liama St NW

Jaspar St NW

Bunker Lake Blvd NW

Nowthen Blvd NW

Green Valley Rd NW

175th Ave NW

173rd Ave NW

179th La NW

167th Ave NW

164th La NW

161st Ave NW

160th La NW

156th Ln NW

Alpine Dr

Sunwood Dr NW

Riverdale Dr NW

Mckinley St NW

Bunker Lake Blvd

64 COUNTY | 83 COUNTY | 63 COUNTY | 5 COUNTY | 56 COUNTY | 27 COUNTY | 7 COUNTY | 57 COUNTY | 116 COUNTY | MINNESOTA 47 | 10 | 169

- Potential Future Signal
- Existing Interchange
- Proposed Interchange
- Proposed Railroad Grade Separation
- Proposed Pedestrian Crossing (Grade Separation)
- Proposed RCUT Intersection
- Possible River Crossing (Long Term)
- Capacity/Safety Improvement
- Proposed Connection
- Proposed Frontage Road
- Ramsey Boundary
- Parcel Boundary

Note: The illustrated issues have been taken from existing city of Ramsey & Anoka County 2030 Transportation Plans for discussion purposes

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WSB

May 2017

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Variolite St NW

Puma St NW

Uranium St NW

Ramsey Blvd NW

Sunfish Lake Blvd NW

Waco St NW

Roanoke St NW

Liama St NW

Jaspar St NW

Bunker Lake Blvd NW

Nowthen Blvd NW

Green Valley Rd NW

175th Ave NW

173rd Ave NW

179th La NW

167th Ave NW

164th La NW

161st Ave NW

160th La NW

156th Ln NW

Alpine Dr

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WSB

May 2017

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WSB

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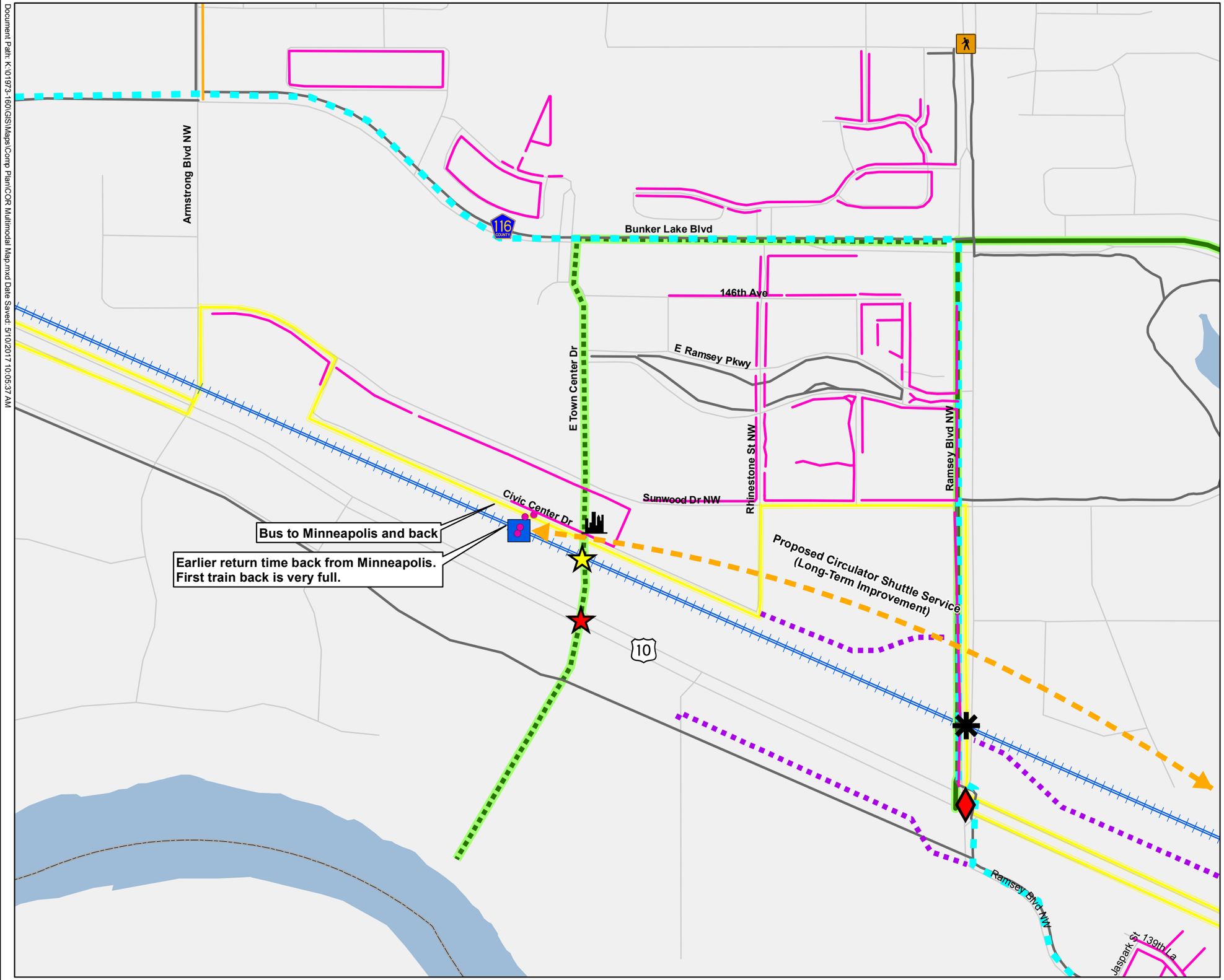

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Ramsey, MN

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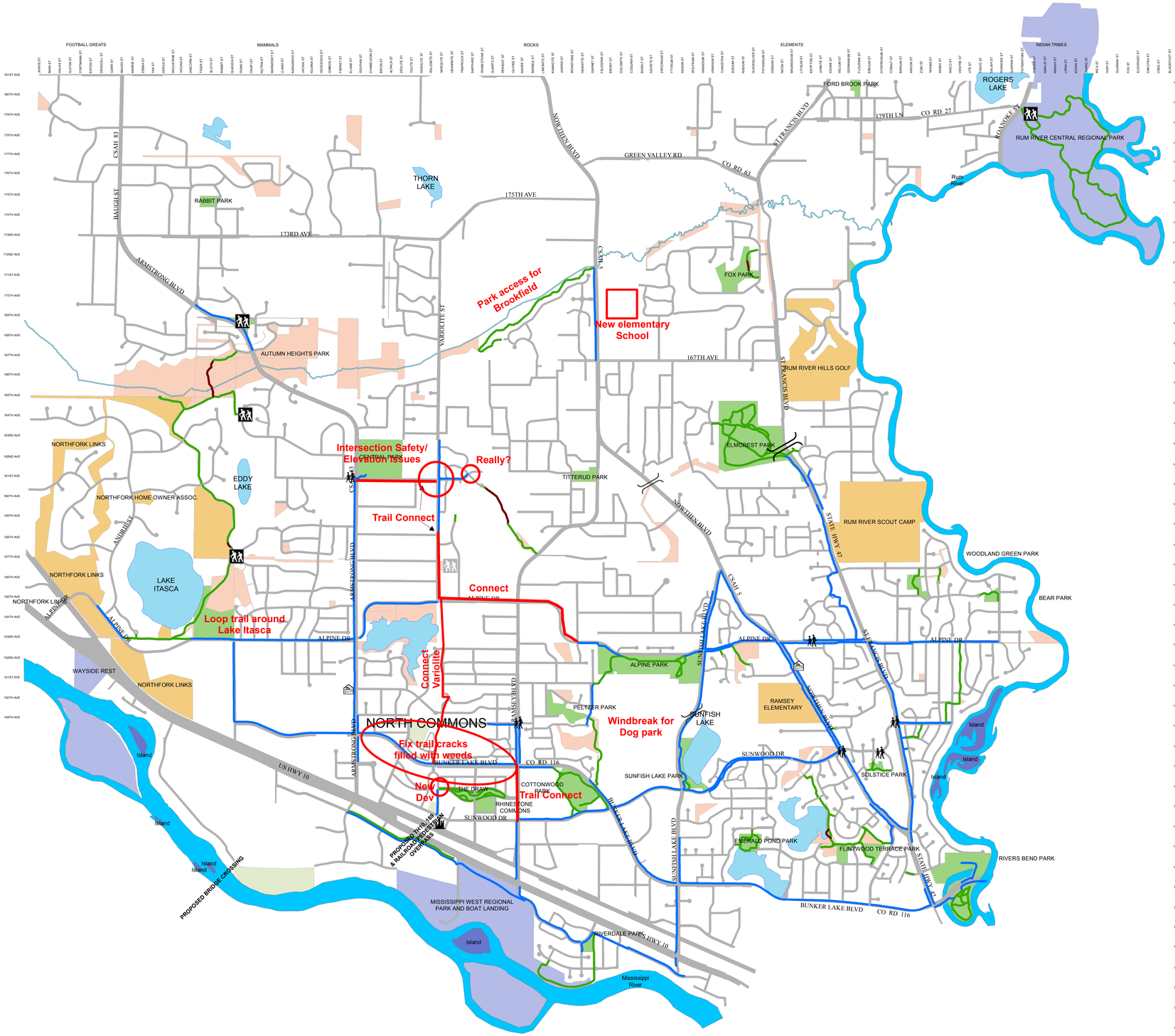
- Proposed Pedestrian Overpass
- On Street Bike Lanes
- Sidewalks
- City Hall
- Crosswalks

0 650 Feet

N

City of Ramsey 2016 Park and Trail User Map



Legend

Park Map Symbols

- Underpass
- Proposed Underpass
- Crosswalk
- Existing Trailhead
- Fire Station
- City Hall
- Proposed Trailhead

TYPE

- OFF-ROAD (OUT OF ROW)
- BOARWALKS
- ON-ROAD (WITHIN ROW)
- Right of Way (ROW)

Park and Open Space

- PARKS
- OPEN SPACE/ TRAIL CORRIDOR
- PROPOSED PARK
- QUASI-PUBLIC
- REGIONAL

Prepared by City of Ramsey
Revised May 2016

Table xx: City of XXX Transportation Goals and Objectives

Goals	Objectives
1. Facilitate efficient movement of people within and through the City	1.1. Improve local roadway system connectivity to county roadways and state highways.
	1.2. Provide safe and efficient routes for emergency and public safety vehicles.
	1.3. Provide adequate capacity to relieve congestion.
	1.4. Encourage sound access management.
	1.5. Preserve necessary rights-of-way for the 20-year planning horizon and beyond.
2. Facilitate efficient movements of goods within and through the City	2.1. Maintain a safe and effective network of roadways for freight movement.
	2.2. Coordinate with MnDOT and XX County to proactively address freight safety.
3. Provide a transportation system that is integrated with land use and development	3.1. Coordinate transportation system investments with the City of XX Land Use Plan.
	3.2. Connect land use districts and provide safe access to major activity areas.
	3.3. Design, construct, and maintain roadways that fit the character of the adjacent land use (rural vs. urban development areas).
	3.4. Require private residential streets be designed to City standards.
4. Improve transportation safety for all users and modes of transportation	4.1. Implement safety improvements to address high crash locations.
	4.2. Proactively address bicycle and pedestrian safety concerns along roadways and at crossings.
	4.3. Bring sidewalks, trails, and intersections into compliance with ADA.
	4.4. Support traffic calming and design to minimize speed on minor City collectors and local roadways.
5. Develop a safe and convenient multimodal transportation system	5.1. Invest in multi-modal transportation solutions including bicycle and pedestrian infrastructure.
	5.2 Consider a "complete streets" approach to designing and constructing roadways in high pedestrian and bicycle traffic corridors.
	5.2. Preserve adequate right of way for sidewalk and trail construction.
6. Conserve and enhance environmental resources	6.1. Support investments in bicycle, pedestrian, and transit infrastructure to reduce environmental impacts of transportation.
	6.2. Manage storm water effectively and minimize the construction of new impervious surfaces.
	6.3. Support native plant landscapes along roadways.
	6.4. Design new roadways to preserve natural features.
7. Maintain the Existing Transportation System	7.1. Regularly assess transportation maintenance needs and include roadway, trail pavement, and other transportation infrastructure maintenance in the City of XX Capital Improvement Program.

Public Works Committee **6. 1.**

Meeting Date: 09/19/2017

By: Bruce Westby, Engineering/Public Works

Title:

Staff Updates on Improvement Projects and Items of Interest

Purpose/Background:

The purpose of this case is to update the Public Works Committee on current and proposed improvement projects within the City, and on other items of interest to the Committee.

City Improvement Projects

- **Riverdale Drive Extension - Traprock St. to Ramsey Blvd. (#16-20)**
  - This project completes the south Highway 10 frontage road between Llama Street and Tungsten Street
  - Construction began last week
  - Construction will be substantially complete by November 2017
  - Final completion will occur in 2018
- **Sunwood Drive Reconstruction (#17-00)**
  - Construction is substantially complete
  - Final completion will occur in 2018
- **Alpine Drive Reconstruction (#17-01)**
  - Construction is substantially complete
  - Final completion will occur in 2018
- **2017 Crackseal and Sealcoat Improvements (#17-03)**
  - Approximately 13.6 miles of public streets throughout the City were crack sealed and sealcoated
  - Construction is substantially complete, but striping remained as of the time this report was prepared
- **Sunwood Drive Striping Improvements (#17-04)**
  - The concrete pavement on Sunwood Drive between Zeolite Street and Rhinestone is being restriped
  - Construction is scheduled to be complete before September 19
- **Bunker Lake Boulevard Utilities Extensions (#17-09)**
  - Construction is complete

Anoka County Improvement Projects

- **Hanson Boulevard/CSAH 78 Grade Separation @ BNSF Railway Crossing (2017)**
  - Reconstruct County State Aid Highway 78 (CSAH 78) / Hanson Boulevard to a 4-lane divided section
  - Construct a grade-separated overpass for Burlington Northern Sante Fe (BNSF) railway crossing
- **Hanson Boulevard/CSAH 78 Reconstruction (2018)**
  - Expand CSAH 78 / Hanson Blvd between 139th Ave and CSAH 18 / Crosstown Blvd to 4-lane divided section
- **Foley Boulevard/CSAH 11 Grade Separation @ BNSF Railway Crossing**
  - This project is currently unscheduled and unfunded

MnDOT Improvement Projects

- **Trunk Highway 10 Cable Median Barrier Installation (2018)**
  - Install cable median barrier along Highway 10 between Thurston Avenue and Highway 101
- **Ferry Street / Trunk Highway 47 Grade Separation @ BNSF Railway Crossing (2017)**
  - Preliminary design in progress

Items of Interest
Puma St Infrastructure Improvements

Timeframe:
Staff estimates that 5 minutes will be needed for updates and discussion.

Observations/Alternatives:
N/A

Funding Source:
N/A

Recommendation:
N/A

Action:
No formal action is required. For Committee review and discussion purposes only.

Attachments

No file(s) attached.

Form Review

Inbox	Reviewed By	Date
Grant Riemer	Grant Riemer	09/13/2017 03:03 PM
Kurt Ulrich	Kurt Ulrich	09/14/2017 03:34 PM
Form Started By: Bruce Westby		Started On: 09/13/2017 10:59 AM
Final Approval Date: 09/14/2017		

Public Works Committee **6. 2.**

Meeting Date: 09/19/2017

By: Bruce Westby, Engineering/Public Works

Title:

Review Future Topics Calendar

Purpose/Background:

Attached is a calendar of future topics for review and discussion by the Public Works Committee. The list includes topics drawn from Committee requests received during meetings and/or topics previously discussed by the Committee that are not yet resolved. All dates shown are estimated based on availability of information, staff workload, and competing objectives and are therefore subject to change.

Timeframe:

Staff estimates 5 minutes will be necessary to review the future topics calendar and address Committee questions.

Observations/Alternatives:

N/A

Funding Source:

N/A

Recommendation:

N/A

Action:

No formal action is required. For Committee review and discussion purposes only.

Attachments

Future Topics Calendar Sept2017

Form Review

Inbox	Reviewed By	Date
Grant Riemer	Grant Riemer	09/13/2017 03:03 PM
Kurt Ulrich	Kurt Ulrich	09/14/2017 03:35 PM
Form Started By: Bruce Westby		Started On: 09/13/2017 11:00 AM
Final Approval Date: 09/14/2017		

Public Works Committee Future Topics Calendar *

Date	Topics for Discussion – Committee Action
October 2017	Sunfish Lake Sedimentation Basin Improvements *(Westby)*
October 2017	Gibbon Street & 173rd Avenue Drainage Improvements *(Westby)*
November 2017	Well Siting Study - Well #9
November 2017	Sunwood Drive Roundabout Landscaping
Future	County Ditch Maintenance / Buffer Law *(Westby)*
Date	**Topics for Discussion – Regulatory**
Future	Sunfish Lake Boulevard Speed Zone Study Results *(Westby)*
Future	Wellhead Protection Plan Update *(Westby)*
Date	**Topics for Discussion – Policy**
Future	Landscaped Median Maintenance Policy *(Riemer)*
February 2018	Draft Trail Maintenance Policy *(Westby)*
February 2018	Draft Stormwater Pond Maintenance Policy *(Westby)*
Date	**Topics for Discussion – Planning and Budget**
January 2018	Municipal State Aid System (MSAS) Revisions *(Westby)*
Future	Review 1996 and 2007 (unadopted) TH 47 Corridor Studies *(Westby)*
Future	Public Works Facility Review/Update *(Riemer/Brama)*
Future	Comprehensive Plan for Long-Term Water Supply *(Westby)*
Date	**Topics for Discussion – Staff Updates**
Future	Water Conservation Opportunities / Incentives

* Dates are estimated and are subject to change based on availability of information, staff workload, and competing objectives.