



FEASIBILITY STUDY

LAKE EDINA NEIGHBORHOOD ROADWAY IMPROVEMENTS

Aspasia Cir, Aspasia Ln, Hibiscus Ave, Kellogg Ave,
Lantana Ln, Larkspur Ln, Monardo Ln,
Normandale Rd, Phlox Ln, Poppy Ln, Sedum Ln,
Trillium Ln and West Shore Dr

IMPROVEMENT NO. BA-398

November 14, 2012

**ENGINEERING DEPARTMENT
CITY OF EDINA**

I hereby certify that this feasibility study was prepared by me or under my direct supervision and that I am a duly Registered Professional Engineer under the laws of the State of Minnesota.

Chad A. Millner 43970 11/13/12
Chad A. Millner Reg. No. Date

Approved Wayne D. Houle 11/13/12
Wayne D. Houle, PE Date
Director of Engineering



FEASIBILITY STUDY – BA-398

ENGINEERING DEPARTMENT

CITY OF EDINA

LAKE EDINA NEIGHBORHOOD ROADWAY IMPROVEMENTS

NOVEMBER 14, 2012

SUMMARY:

The project involves spot repairs to the sanitary sewer trunk pipe, upgrades to the watermain and storm sewer systems, spot repairs to the concrete curb and gutter, and reconstruction of the bituminous pavement.

The total estimated project cost is \$5,587,500 (Table 2). The total cost includes direct costs for engineering, clerical and construction finance costs from start of project to final assessment hearing. Funding for the entire project will be from a combination of special assessment, utility funds and Active Living Infrastructure Fund (ALIF).

The estimated cost for roadway and cosmetic sound wall improvements is \$3,092,500 and will be 100 percent funded by special assessments. If sidewalks are approved, it will be funded by the Active Living Infrastructure Fund at an estimated cost of \$395,000. The new concrete curb and gutter is included under the storm sewer fund not under the roadway special assessment. Utility improvements and repairs amount to \$2,100,000 and will be funded through their respective utility fund.

The project can be completed during the 2013 construction season. Staff believes the project is necessary, cost effective and feasible to improve the infrastructure as initiated by the vision of Edina's Vision 20/20 – "Livable Environment" and "A Sound Public Infrastructure".

LOCATION:

The project includes Aspasia Cir, Aspasia Ln, Hibiscus Ave, Kellogg Ave, Lantana Ln, Larkspur Ln, Monardo Ln, Normandale Rd, Phlox Ln, Poppy Ln, Sedum Ln, Trillium Ln and West Shore Dr. The drawing below is a detailed project location map of the Lake Edina Neighborhood Roadway Improvement Project (Figure 1).



Figure 1. Project Area Map

INITIATION & ISSUES:

The Lake Edina Neighborhood project was initiated by the Engineering Department as part of the City's street reconstruction program and as identified in the Capital Improvement Program. This project addresses updating aging infrastructure issues associated with watermain, storm sewer, and sanitary sewer systems and the pavement condition.

All Engineering projects are reviewed for compatibility with the City of Edina 2008 Comprehensive Plan Update, Comprehensive Bicycle Transportation Plan, the Comprehensive Water Resource Management Plan, the draft Living Streets Policy Framework, and sustainable project evaluation.

City of Edina 2008 Comprehensive Plan Update

Sidewalk Facilities

Chapter 7 of the plan addresses locations of proposed sidewalks facilities within the City. As shown in Figure 7.10 of Appendix F there are no proposed sidewalk facilities indicated within the project limits.

Bicycle Facilities

Chapter 7 of the plan addresses locations of proposed bicycle facilities within the City as part of the Comprehensive Bicycle Transportation Plan. As

shown in Figure 7.11 of Appendix F, a primary bike route is designated along West Shore Drive to Hibiscus Avenue, east on Hibiscus Avenue to Kellogg Avenue, and south along Kellogg Avenue to the cul-de-sac bordering Fred Richards Golf Course.

City of Edina Comprehensive Water Resource Management Plan

The Lake Edina Neighborhood project is located within the Nine Mile Creek Watershed district. The Comprehensive Water Resource Management Plan indicates one known or modeled storm water issue in the neighborhood. An area on Hibiscus Avenue between West Shore Drive and Phlox Lane including a backyard area at 4708 and 4712 Hibiscus Avenue. This area will be evaluated by staff for possible mitigation measures.

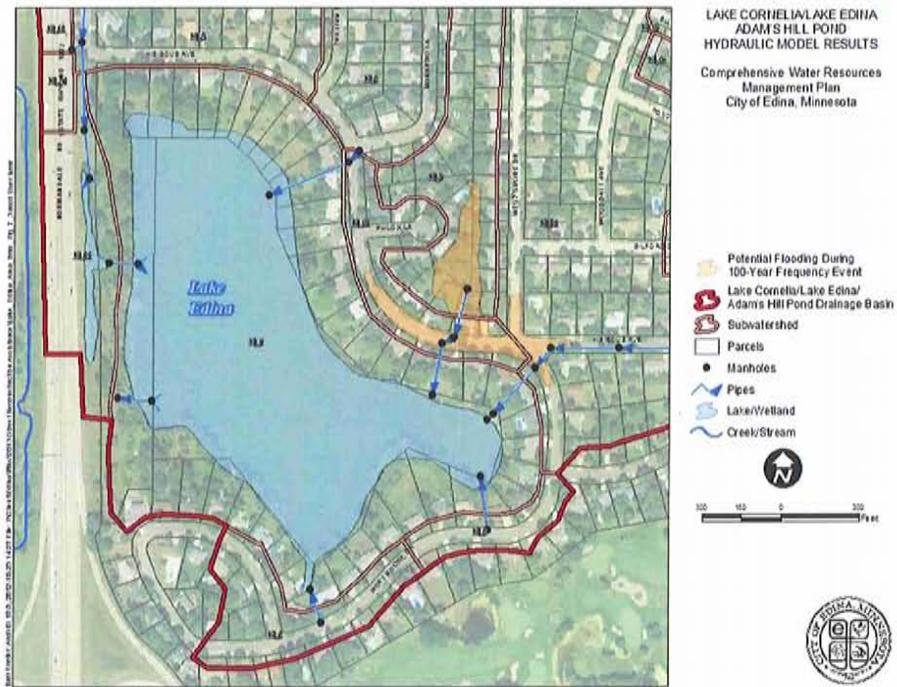


Figure 2. Potential Storm Water Drainage Issue

Draft Living Streets Policy Framework and Sustainability Evaluation

The Edina Transportation Commission (ETC) is currently developing a Living Streets Policy Framework, which will then progress to developing a Living Street Policy and Plan for the City, see attached Memo from HRGreen and BARR Engineering; consultants helping the ETC with this project. The vision statement expresses the need to look at projects differently in the future:

Living Streets balance the needs of motorists, pedestrians, bicyclists, and transit riders in ways that promote safety and convenience, enhance

community identity, create economic vitality, improve environmental sustainability, and provide meaningful opportunities for active living and better health.

Although the Living Streets Policy and Plan has not been developed, staff has included elements that pertain to residential neighborhoods in the rehabilitation of the infrastructure and replacement of the roadways.

Staff is also including a simple sustainability analysis for this project. This is the first year to include this analysis and we anticipate a more refined analysis in the future that will include review and input from a sustainability team.

Sustainability in engineering projects means delivering our services in a manner that ensures an appropriate balance between the environment, the community, and funding. This is essentially the "Triple Bottom Line" of sustainability; Equity, Environment, and Economy. We look at sustainability as maximizing our resources, creating lasting environments, improving and shaping both the present and future of our community so that future generations are not burdened by the decisions of today.

The project was evaluated based on the following key indicators to look for strengths, weaknesses, opportunities and risks.

- **Equity:** How well does the project provide or maintain core city services such as transportation, sanitation, clean water, emergency access, and emergency service? How does the project influence the well-being of the community?
- **Environment:** How does the project influence the natural environment; such as surface or ground water health, forest canopy, natural resource diversity, wildlife habitat, air quality, noise and others?
- **Economy:** How does the project influence the local economy, what are the short term and long term costs? Is the continued service worth the price?

The following is a summary of this evaluation:

Equity: The project maintains access to the transportation network. Updates to the fire hydrants provide public safety staff the ease of connection needed during an emergency.

Environment: The project provides for an increase in the sediment control capacity of the storm sewer network and helps to control localized flooding. The project provides homeowners a piping system to discharge ground water into; this will eliminate standing water and/or algae buildup along the street curb lines. Construction operations are required to use the smallest footprint necessary to complete the work thus protecting the existing natural environment. The project also analyzes the sanitary sewer to ensure that inflow and infiltration of clear water is kept out of the sewer system, which minimizes regional wastewater treatment.

Economy: The project is designed to reduce construction costs now and into the future. The proposed roadway section can easily be maintained in the long term with the use of mill and overlays and/or seal coating operations. These maintenance operations will extend the life of the pavement. The project will also use less intense construction methods, such as trenchless technology; i.e., lining the pipes versus removing and replacing them.

This is a simplified analysis of the projects sustainability. In the future we anticipate correlating this analysis to an in-depth scoring system displaying the City's sustainability to the community.

Staff Issues

The following is a list of issues, some generated by resident comments, addressed in this report:

- Storm water drainage
- Poor condition of existing pavement
- Existing landscaping, retaining walls, and driveways.
- Sanitary sewer and watermain deficiencies
- Existing mature trees
- Existing lighting

Resident Input

As part of the Engineering Departments practice of notifying residents 18 - 24 months prior to a potential reconstruction project, the residents were invited to an open house on September 22, 2011 to discuss the City's process for street reconstruction.

A resident questionnaire was sent to the property owners on July 13, 2012. The questionnaires were completed and returned by 141 of the 247 property owners, a return rate of 57%.

Due to the council's decision to amend the assessment policy to no longer include assessments for sidewalks and street lights and the potential creation of a franchise fee to fund these improvements, a second questionnaire was sent to the property owners on August 17, 2012. Questionnaire No. 2 was completed and returned by 130 or 247 property owners, a return rate of 53%.

The two key issues that were addressed in this questionnaire were the addition of new sidewalks and installation of decorative lighting. The responses to those questions are shown in Table 1. The full questionnaire and responses can be found in Appendix B and C.

Lake Edina Neighborhood Roadway Improvements –
 Results from July 13, 2012 Questionnaire Sheet

Questionnaires Sent	Questionnaires Returned	Prefer New Sidewalk		Change Existing Lighting	
		Yes	No	Yes	No
247	141	12	128	47	88
% of Returned Questionnaires	57%	9%*	91%*	33%*	62%*

Lake Edina Neighborhood Roadway Improvements –
 Results from August 17, 2012 Questionnaire No. 2 Sheet

Questionnaires Sent	Questionnaires Returned	Prefer New Sidewalk		Change Existing Lighting	
		Yes	No	Yes	No
247	130	23	100	64	62
% of Returned Questionnaires	53%	18%*	77%*	49%*	48%*

* Percentages are based on responses of returned questionnaires and may not equal 100% if questions were not answered on questionnaire.

Table 1. Results from Questionnaires

A neighborhood informational meeting was then held on August 8, 2012 to discuss the improvements planned for this neighborhood. The meeting was attended by 20 residents representing 17 properties. Input from this meeting and comments received throughout the planning of this project have been included in Appendix.

A second informational meeting was held on November 7, 2012 to discuss the recommendation of sidewalks from the ETC and the cosmetic issues associated with the sound wall along Highway 100. The meeting was attended by 34 residents representing 29 properties. Details from that meeting can be found in Appendix K.

EXISTING CONDITIONS: Public Utilities

Sanitary Sewer

Historical records indicate only a few sewer backups or blockages in the area. The majority of the trunk sanitary sewer system has been televised and evaluated for areas that will need repair. Portions of the sanitary sewer along Hibiscus Avenue will be televised in the next few weeks by public works staff. This portion of the sanitary sewer trunk pipe is a collector pipe with high flows.

Watermain

The existing watermain system consists of 6", 8", and 12" cast iron pipe (CIP). The system has experienced relatively few breaks since being installed. The fire hydrants are original to the neighborhood and lack the

STORZ nozzle fittings desired by the Edina Fire Department for quick connection of fire hoses.

Storm Sewer

The storm sewer system is located within the legal boundary of Nine Mile Creek Watershed. Resident questionnaires commented on a few locations of localized surface drainage issues that will be addressed where feasible with storm sewer additions and sump pump drain pipe. The larger street network of storm sewer is being reviewed with the help of BARR Engineering to determine if storm sewer upgrades are feasible for the issue raised in the Comprehensive Water Resources Management Plan (Figure 2).

Private Utilities

Providers of privately owned gas, electric, communications and cable television utilities are present in the neighborhood. The utilities are a combination of overhead and underground facilities located in the backyards or along the boulevard.

Street lighting consists of standard "cobra head" lights mounted on wood poles that are typically located at intersections. Locations of the street lights are shown in Appendix J.

Streets

The majority of the roadways in this neighborhood were originally constructed in the 1960's. The neighborhood has concrete curb and gutter and the roadway width is approximately 31 feet. The pavement condition varies throughout the neighborhood and is in relatively poor condition (Photos 1 & 2).

The average pavement condition index (PCI) for the City of Edina is 51 and the average PCI for Lake Edina Neighborhood as calculated in June 2009 is 18. Examples of the raveling and alligator cracking can be seen in photos 1 & 2. The City of Edina recently hired a consultant to evaluate all bituminous roadways within the City. The streets were graded based on a number of conditions such as sagging, alligator cracking, raveling and potholes. Streets are rated on a scale from 0 to 100; with 0 being extremely poor and 100 representing a brand new road surface. The City evaluates the PCI values of streets to determine a proper maintenance program. Streets with a PCI less than 45 are evaluated for total reconstruction, PCI's between 45 and 65 are evaluated for mill and overlays, and PCI's greater than 65 are considered for seal coats.

Street grades vary throughout the area with some areas that are extremely flat allowing storm runoff to collect along the edges of the roadway causing additional deterioration of the pavement.

The pavement throughout these streets appears to be near the end of its useful life while the costs to maintain and repair the roadways are steadily increasing. Overlaying or seal coating the pavement is no longer feasible.



Photo 1. Existing Pavement Condition



Photo 2. Existing Pavement Condition

Landscaping

Some properties have vegetation, hardscapes (such as boulders and retaining walls) or other landscaped items within the City right-of-way. Many of these landscape items are located directly behind the curb or around

existing fire hydrants. Some of these landscape items will need to be removed in order to complete the necessary reconstruction work.

Traffic and Crash Data

City staff measured traffic volumes and speeds at ten locations within or near the neighborhood. Average daily traffic volumes ranged from 117 to 1259 cars per day with 85th percentile speed ranging from 24.0 to 34.6 mph. The traffic and crash data is shown in Appendix G.

Sound Wall

A concrete sound wall exists along the west side of Normandale Road from 70th Street to Hibiscus Avenue to reduce noise and sight of traffic from Highway 100. In the past, the wall has been tagged with graffiti. MnDOT is responsible for the maintenance of the sound wall. MnDOT maintenance paints over the graffiti with a variety of colors (Photo 3). Over the past 5-years a neighborhood group on Larkspur Lane has planted ivy and junipers to create a natural covering on the wall (Photo 4).



Photo 3. Sound Wall at Hibiscus Avenue



Photo 4. Sound Wall at Larkspur Lane

MnDOT is responsible for the maintenance of the sound wall. They do not have a budget for sound wall cosmetic improvements other than graffiti control. MnDOT has indicated that cosmetic improvements to the sound wall can be completed by the neighborhood.

PROPOSED IMPROVEMENTS:

The Lake Edina Neighborhood Improvement project involves spot repairs to the sanitary sewer trunk pipe, upgrades to the watermain and storm sewer systems, spot repairs to the concrete curb and gutter, reconstruction of the bituminous pavement, cosmetic improvements to the sound wall and potentially sidewalk installation.

The proposed improvements acknowledges many of the comments and concerns raised by residents throughout the information gathering process while still maintaining the desired minimum standards of the engineering and public works staff.

Public Utilities

Sanitary Sewer

The trunk sanitary sewer has been televised and based on our evaluation; portions of the trunk sewer will be repaired using a combination of open cut and cured-in-place-pipe (CIPP) methods.

Watermain

Watermain upgrades include replacing all the gate valves and upgrading fire hydrants to City standard.

Storm Sewer

Spot repairs will be made to the concrete curb and gutter that are no longer functioning properly.

The storm sewer network will have modifications to improve existing drainage issues at various locations throughout the neighborhood. Some of the existing structures will be removed and replaced due to their poor condition. The installation of a storm water treatment structure is anticipated to collect sediment from storm water prior to discharging into Lake Edina.

The project will install additional storm sewer pipe between 4708 and 4712 & 4709 and 4713 Hibiscus Ave to address the potential storm water ponding issue in the backyards of 4708 and 4712 Hibiscus Avenue (Figure 3). This installation may occur this winter to reduce disturbance to existing turf. It will be installed by horizontal directional drilling methods.



Figure 3. Hibiscus Storm Sewer Improvements

The project will also extend storm sewer pipe along Aspasia Ln from Normandale Rd to Larkspur Ln to address storm water drainage on Larkspur Ln.

Installation of sump drains will be installed where feasible to allow the property owners to connect their sump pump discharges directly into the storm sewer system.

Private Utilities

The local gas utility company, CenterPoint Energy, and cable utility company, CenteryLink, have indicated that they will upgrade or replace portions of their infrastructure within the project limits. CenterPoint Energy may also coordinate moving gas meters to the exterior of the homes. This work is not

part of the City's project but will be coordinated to occur prior to our construction activities.

The other privately utility owners have expressed some interest in upgrading some of their networks within the project limits.

Streets

The project will reconstruct the streets with a bituminous surface to the same width as today while maintaining the majority of the existing curb and gutter. In addition to the new bituminous pavement surface, staff is also recommending to tighten up the oversized intersection at Hibiscus Avenue and West Shore Drive. Reconfiguration of this intersection reduces storm water runoff, maintenance requirements of the pavement, and provides some traffic calming.

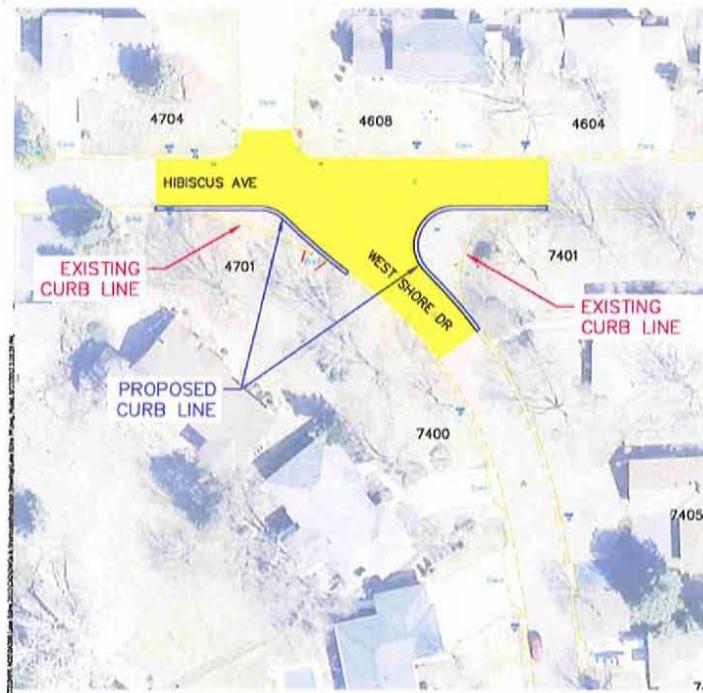


Figure 4. Reconfiguration of Hibiscus Ave and W. Shore Dr

Residential Roadway Lighting

The questionnaire asked if residents wanted to reconstruct the street lights in the project area. The results from Table 1 show that property owners are split on whether or not to reconstruct the street lights. The lighting of the neighborhood is sufficient to delineate the intersections. Staff feels the benefits do not outweigh the costs for a new lighting system. Staff is not recommending making any revisions to the current street lighting.

Sidewalks

At the August 8, 2012 neighborhood informational meeting staff indicated to the residents that sidewalks within the neighborhood were unlikely. This was based on both the results of the first questionnaire and the Comprehensive Plan. The results of questionnaire No. 2 also showed limited support for sidewalks within this project.

The Edina Transportation Commission (ETC) reviewed the proposed reconstruction plan at their October 25, 2012 meeting. The ETC is recommending a sidewalk along the following roadways:

- East side of Normandale Road from West 70th Street to Hibiscus Avenue
- North side of Hibiscus Avenue from Normandale Road to Kellogg Avenue

If sidewalk is approved for the ETC route, staff would like the council to consider a sidewalk along the east side of Kellogg Ave towards the Fred Richards Golf Course. The City's Parks Department has preliminary plans for a path from Kellogg Ave to Parklawn Ave. traveling east along the golf course (Figure 5).

The proposed ETC recommendation to construct sidewalk in the neighborhood was communicated to the residents at a sidewalk informational meeting on November 7, 2012. Details from that meeting can be found in Appendix K.

There are 30+ existing mature trees along the recommended streets for sidewalks. In order to accommodate sidewalks along these streets without removing any of the existing trees, the east and north curb lines of Normandale Dr. and Hibiscus Ave. would be shifted approximately 3-ft west and south, respectively. It would be the adjacent homeowner's responsibility to remove snow from these sidewalks based on current City policy.



Lake Edina Neighborhood
 Improvement No: BA-398
 Proposed Sidewalk



- Proposed 5ft Concrete Sidewalk
- Proposed Park and Rec Lake Edina Path



Figure 5. Sidewalk and Path Alignments

Sound Wall

Staff discussed cosmetic improvement options with the residents at the November 7, 2012 Informational Meeting. Options presented at the meeting were painting the wall, continue the planting style started near Larkspur Lane over the entire wall or a combination of both. Estimated resident costs for each were presented at the meeting.

Based on discussions with residents at the November 7, 2012 Informational Meeting, residents supported removing the existing paint by pressure washing, protecting the existing plantings along the wall started by residents of Larkspur Ln, and installing new plantings along the remainder of the wall. The new plantings would match the ivy and junipers planted at Larkspur Lane.

**Feasibility Study
Lake Edina Neighborhood Improvements No. BA-398
November 14, 2012**

**RIGHT-OF-WAY
& EASEMENTS:**

The right-of-way for Phlox Lane and Poppy Lane is 50 feet wide. Hibiscus Ave right-of-way is 65 feet wide; All other street right-of-way is 60 feet wide. All proposed improvements stay within this right-of-way and no additional easement requirements are anticipated.

PROJECT COSTS:

The total estimated project cost is \$5,587,500 (Table 2). The total cost includes direct costs for engineering, clerical and construction finance costs from start of project to final assessment hearing. Funding for the entire project will be from a combination of special assessment, utility funds and Active Living Infrastructure Fund.

The estimated cost for roadway and cosmetic sound wall improvements is \$3,092,500 and will be 100 percent funded by special assessments. If sidewalks are approved, it will be funded by the Active Living Infrastructure Fund at \$395,000. The new concrete curb and gutter is included under the storm sewer fund not under the roadway special assessment. Utility improvements and repairs amount to \$2,100,000 and will be funded through their respective utility fund.

Item	Amount	Total Cost
Roadway:		\$ 3,043,020
Sound Wall:		\$ 49,480
Sidewalks:		\$ 395,000
Utilities:		
Storm Sewer	\$ 1,370,000	
Watermain	\$ 393,000	
Sanitary Sewer	\$ 337,000	
Utility Total:		\$ 2,100,000
Total Project:	T	\$ 5,587,500

Table 2. Estimated Project Costs

ASSESSMENTS:

The assessments are based on the City's Special assessment policy, dated August 21, 2012. Based on this policy there are 247.40 residential equivalent units (REU); four of the properties are duplexes with individual ownership and are shown as a 0.8 REU's, and two of the properties are duplexes, where the owner owns both units, are shown as 1.6 REU's. The roadway assessment is \$12,300 per REU and the cosmetic sound wall improvements assessment is \$200 per REU for a total estimated assessment per REU of \$12,500 (Figure 4).



Figure 4. Preliminary Assessment Map

PROJECT SCHEDULE: The following schedule is feasible from an Engineering standpoint:

Project Open House 2011	September 22, 2011
Neighborhood Informational Meeting	August 8, 2012
ETC Feasibility Study Review	October 25, 2012
Neighborhood Sidewalk Informational Meeting	November 7, 2012
Receive Feasibility Report and Public Hearing	December 11, 2012
Bid Opening	March/April 2013
Award Contract	Spring 2013
Begin Construction	Spring 2013
Complete Construction	Fall 2013
Final Assessment Hearing	Fall 2014

FEASIBILITY: Staff believes the construction of this project is necessary, cost effective and feasible to improve the public infrastructure in the Lake Edina Neighborhood.

- APPENDIX:**
- A. 2011 Open House Meeting Letter and Presentation
 - B. Property Owners Questionnaire
 - C. Property Owners Questionnaire No. 2
 - D. 2013 Neighborhood Roadway Reconstruction Informational Meeting
 - E. Preliminary Assessment Roll

Feasibility Study
Lake Edina Neighborhood Improvements No. BA-398
November 14, 2012

- F. City Comprehensive Plan Update – Sidewalk and Bicycle Facilities (Fig. 7.10 and 7.11)
- G. 2012 Lake Edina Traffic and Crash Data
- H. Memo: Edina Living Streets – Review of Existing Plan and Policies, Peer Review Lessons, and Draft Living Streets Policy Framework
- I. Recommendation to Set Public Hearing, Notice of Public Hearing to residents and Notice of Public Hearing Advertisement
- J. Edina Transportation Commission Review Data and Meeting Minutes
- K. 2013 Neighborhood Roadway Reconstruction – Sidewalk Informational Meeting