



FEASIBILITY STUDY

MENDELSSOHN A NEIGHBORHOOD ROADWAY IMPROVEMENTS

Belmore Ln, Grove Pl, John St, Kresse Cir,
Maloney Ave and Spruce Rd

IMPROVEMENT NO. BA-393

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 43790 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-393

ENGINEERING DEPARTMENT

CITY OF EDINA

MENDELSSOHN A NEIGHBORHOOD ROADWAY IMPROVEMENTS

NOVEMBER 14, 2012

SUMMARY:

The project involves localized rehabilitation of the sanitary sewer, upgrades to the storm sewer system, and upgrades to fire hydrants, curb and gutter spot repair, and reconstruction of bituminous pavement.

The estimated total project cost is \$1,824,259. Funding for the entire project will be from a combination of special assessment and utility funds. The estimated roadway construction cost is \$1,044,259 and will be 100 percent funded by special assessments at a rate of \$16,150 per REU. Utility improvements and repairs amount to \$780,000 and will be funded through the 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 Belmore Ln, Grove Pl, John St, Kresse Cir, Maloney Ave and Spruce Rd. The drawing below is a detailed project location map of the Mendelsohn A Neighborhood Roadway Improvement Project (Figure 1).

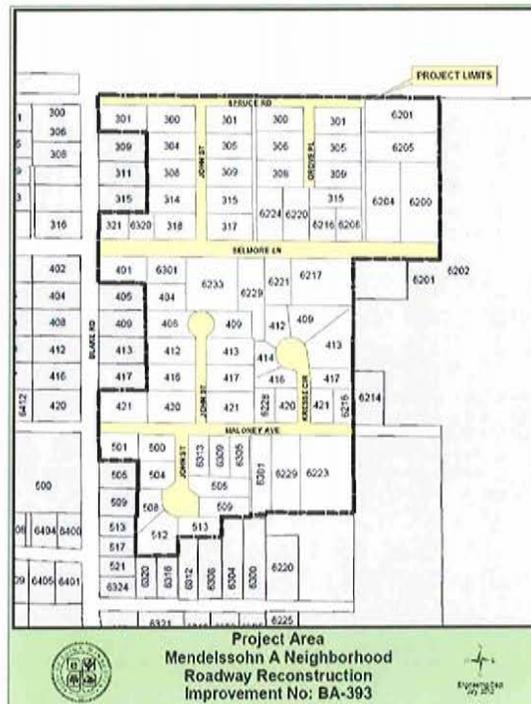


Figure 1. Project Area Map

INITIATION & ISSUES: The Mendelssohn A 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 the pavement condition, storm water, sanitary sewer and watermain systems.

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 and funding options within the City. As shown in Figure 7.10 of Appendix G 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 G a primary bike route is designated along Blake Road outside of the project limits.

City of Edina Comprehensive Water Resource Management Plan

The Mendelssohn A Neighborhood project is located within the Minnehaha Creek Watershed district. The Comprehensive Water Resource Management Plan indicates no storm water issues in the neighborhood. Further evaluation will be done by staff regarding drainage issues resulting from the questionnaires.

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 HR Green 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
- North/South segment of Spruce Rd

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.

This meeting was followed up with a questionnaire sent to the property owners on July 13, 2012. The questionnaire was completed and returned by 38 of the 68 property owners, a return rate of 56%.

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 funds these improvements, a second questionnaire was sent to the property owners on August 17, 2012. Questionnaire No. 2 was completed and returned by 31 of 67 property owners, a return rate of 46%. The full questionnaires and responses can be found in Appendix B and C.

The two key issues that were addressed in these questionnaires were the addition of new sidewalks and installation of decorative lighting. The responses to those questions are shown in Table 1.

**MENDELSSOHN A IMPROVEMENT PROJECT –
Results from July 13, 2012 Questionnaire Sheet**

Questionnaires Sent	Questionnaires Returned	Prefer New Sidewalk		Change Existing Lighting	
		Yes	No	Yes	No
68	38	1	36	6	31
% of Returned Questionnaires	56%	3%*	95%*	16%*	82%*

MENDELSSOHN A IMPROVEMENT PROJECT –
Results from August 17, 2012 Questionnaire No. 2 Sheet

Questionnaires Sent	Questionnaires Returned	Prefer New Sidewalk		Change Existing Lighting	
		Yes	No	Yes	No
67	31	1	28	9	18
% of Returned Questionnaires	46%	3%*	90%*	29%*	58%*

* 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 have been included in Appendix D.

Due to the unique nature of the north / south segment of Spruce Road, a meeting was held onsite with residents whose property abuts this road. This segment of roadway and the right-of-way is 16-ft wide. Potential curb options were presented to the 6 properties represented. Input from this meeting has been included in Appendix E.

EXISTING CONDITIONS: Public Utilities

Sanitary Sewer

Historical records indicate there have been only a few sewer backups or blockages in the area. The trunk sanitary sewer system has been televised and has been evaluated for areas that will need repair.

Watermain

The existing watermain system consists of cast iron pipe (CIP). The system has not experienced any 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 Minnehaha Creek Watershed. Resident questionnaires commented on a few locations of localized surface drainage issues that will be addressed where feasible.

Private Utilities

Providers of privately owned gas, electric, communications and cable television utilities are present in the neighborhood. All the utilities are overhead with the exception of the gas lines and some of the communication.

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

Streets

The majority of the roadways in this neighborhood were originally constructed in the early 1960's. The majority of the neighborhood currently has concrete curb and gutter and the roadway widths vary from 14 to 31 feet wide. 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 Mendelssohn as calculated in June 2009 is 25. 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.

In 2009, City street crews completed a thin overlay patch along the north / south segment of Spruce Road due to failed pavement conditions and to prevent city plows from gouging chunks of bituminous and throwing them towards boulevards.

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

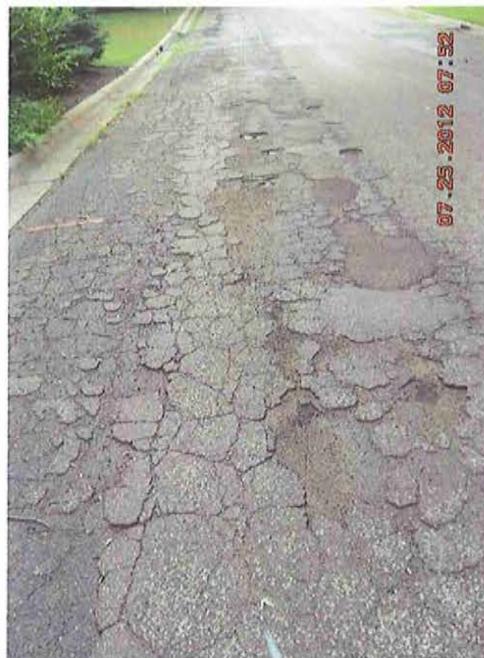


Photo 2. Existing Pavement Condition

Landscaping

Some properties have vegetation, hardscapes 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 five locations within or near the neighborhood. Average daily traffic volumes ranged from 55 to 273 cars per day with 85th percentile speed ranging from 22.9 to 27.4 mph. The traffic and crash data is shown in Appendix H and K.

PROPOSED IMPROVEMENTS:

The Mendelssohn A project involves localized rehabilitation of the sanitary sewer, upgrades to the storm sewer system, and upgrades to fire hydrants, curb and gutter spot repair, and reconstruction of bituminous pavement.

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.

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, has indicated that they may upgrade or replace gas mains 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 while maintaining the majority of the existing curb and gutter. The existing pavement will be recycled for use in the new roadway.

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.

The north / south segment of Spruce Road will remain 16-ft wide. The 16-ft existing width of the right-of-way limits the types of concrete curb and gutter that can be installed. Staff is recommending a 6-inch wide edger curb be installed along both edges of the pavement (Photo 3). The edger curb will be installed at the same elevation as the pavement. This will allow cars to utilize the entire width of the roadway when passing but yet protect the edge of pavement from snow plowing operations.



Photo 3. Example of Edger Curb

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 do not want to reconstruct the street lights. The lighting of the neighborhood is sufficient to delineate the intersections. Staff is recommending no revisions to the current street lighting.

Sidewalks

At the August 8, 2012 neighborhood informational meeting staff indicated to the residents that sidewalks were unlikely. This was based on both the results of the first questionnaire and the Comprehensive Plan.

The results of both questionnaires show limited support for sidewalks within this project. At their October 25 meeting, the Edina Transportation Commission (ETC) reviewed the proposed reconstruction plan for the neighborhood and is not recommending the addition of sidewalks.

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

The right-of-way for Maloney Ave and Belmore Ln is 65 feet wide. The right-of-way on all other streets is 40 feet wide; excluding the north / south portion of Spruce Rd which is 16 feet wide. All proposed improvements stay within the right-of-way and no additional easement requirements are anticipated.

PROJECT COSTS:

The total estimated project cost is \$1,824,259 (Table 2). The total cost includes direct costs for engineering, clerical and construction finance costs from the start of the project to the final assessment hearing. Funding for the entire project will be from a combination of special assessment and utility funds. The estimated roadway construction cost is \$1,044,259 and will be 100 percent funded by special assessments. Any new or replaced concrete curb and gutter is included under the storm sewer fund, not under the roadway special assessment. Utility improvements and repairs amount to \$780,000 and will be funded through their respective utility fund.

Item	Amount	Total Cost
Roadway:	\$1,044,259	
Roadway Total:		\$ 1,044,259
Utilities:		
Storm Sewer	\$ 411,000	
Watermain	\$ 135,000	
Sanitary Sewer	\$ 234,000	
Utility Total:		\$ 780,000
Total Project:		\$ 1,824,259

Table 2. Estimated Project Costs

ASSESSMENTS:

The assessments are based on the City's Special assessment policy, dated August 21, 2012. Based on the policy there are 64.66 residential equivalent units (REU). The assessments will be levied against the benefiting adjacent properties, see attached preliminary assessment role in the Appendix. The methodologies for calculating the REU's for properties other than one REU are described below:

Residential Corner Lots:

301, 321, 401, 421, and 501 Blake Road, 0.33 REU = (1 REU) x (1/3 side yard)

The estimated assessment per REU is \$16,150 (Figure 2).

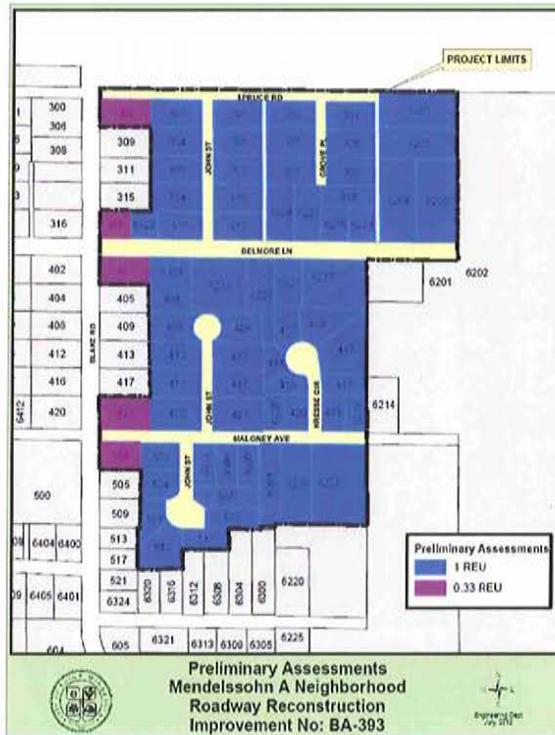


Figure 2. Preliminary Assessment Map

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
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 Study
Mendelssohn A Neighborhood Improvements No. BA-393
November 14, 2012

FEASIBILITY: Staff believes the construction of this project is necessary, cost effective and feasible to improve the public infrastructure in the Mendelssohn A 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. Mendelssohn Neighborhood Roadway Reconstruction – Spruce Road Meeting
 - F. Preliminary Assessment Roll
 - G. City Comprehensive Plan Update – Sidewalk and Bicycle Facilities (Fig. 7.10 and 7.11)
 - H. 2013 Mendelssohn Traffic and Crash Data
 - I. Memo: Edina Living Streets – Review of Existing Plan and Policies, Peer Review Lessons, and Draft Living Streets Policy Framework
 - J. Recommendation to Set Public Hearing, Notice of Public Hearing to Residents and Notice of Public Hearing Advertisement
 - K. Edina Transportation Commission Review Data and Meeting Minutes
 - L. Resident Correspondence