



FEASIBILITY STUDY

BRAEMAR HILLS B, ST PATRICKS LANE AND GLEASON CIRCLE NEIGHBORHOOD ROADWAY IMPROVEMENTS

Scotia Drive, Tupa Circle, Tupa Dr, St Patricks Lane
and Gleason Circle

IMPROVEMENT NO. BA-395, BA-396
& BA-397

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-395, BA-396, and BA-397

ENGINEERING DEPARTMENT

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BRAEMAR HILLS B, ST PATRICKS LANE, AND GLEASON CIRCLE NEIGHBORHOOD ROADWAY IMPROVEMENTS NOVEMBER 14, 2012

SUMMARY:

The Braemar Hills B Neighborhood, St Patricks Lane and Gleason Circle Roadway Improvement Projects were combined into one feasibility study to create economies of scale for the bidding process due to their small individual size and geographical proximity to one another. Each improvement number will have an estimated assessment associated with it. The Council should consider each improvement project number separately.

The Braemar Hills B Neighborhood, St Patricks Lane and Gleason Circle 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 \$1,220,580. Funding for the project will be from a combination of special assessments and utility funds. The estimated roadway construction cost is \$560,580 and will be 100 percent funded by special assessments at a rate of \$9,310, \$11,300 and \$11,600 per REU, for Braemar Hills B, St. Patricks Lane, and Gleason Circle, respectively. Utility improvements and repairs amount to \$660,000 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 three areas: Braemar Hills B, including Scotia Dr, Tupa Cir and Tupa Dr; St Patricks Ln and Gleason Cir. The drawing below is a detailed project location map of the project (Figure 1).

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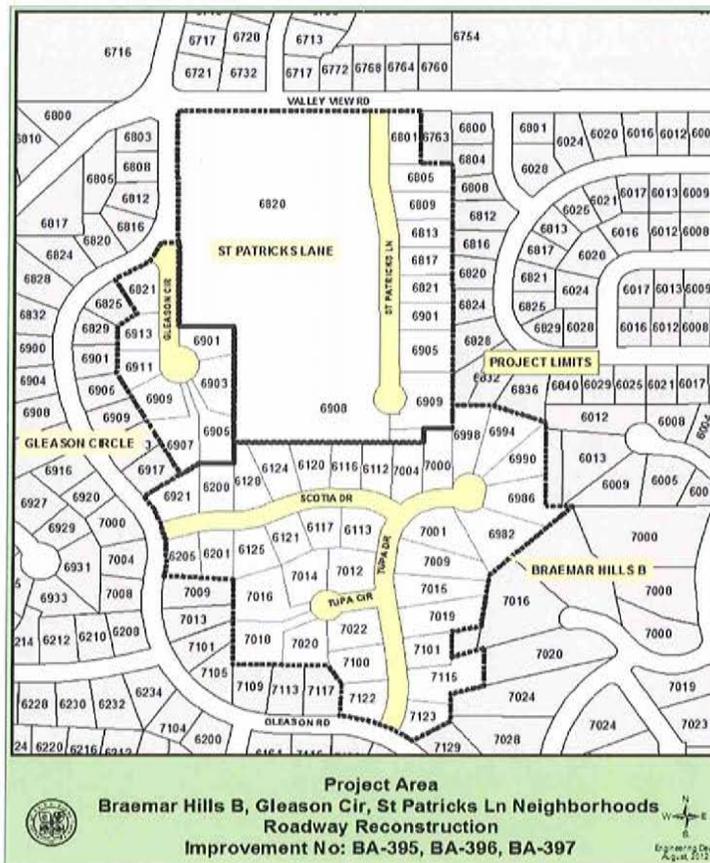


Figure 1. Project Area Map

INITIATION & ISSUES:

The Braemar Hills B, St. Patricks Lane and Gleason Circle 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 and funding options 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 there are no bicycle primary or secondary routes indicated within the project limits.

City of Edina Comprehensive Water Resource Management Plan

The Braemar Hills B, St. Patricks Lane and Gleason Circle Neighborhood Project is located within the Nine Mile 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 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.

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- **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

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- 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.

This meeting was followed up with a questionnaire sent to the property owners on July 13, 2012. The questionnaires were completed and returned by 35 out of 53 property owners, a return rate of 66%. The full questionnaire and responses can be found in Appendix B.

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 27 out of the 53 property owners, a return rate of 51%. The full questionnaire and responses can be found in Appendix C.

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, 2 and 3.

**BRAEMAR HILLS B IMPROVEMENT PROJECT –
Results from July 13, 2012 Questionnaire Sheet**

Questionnaires Sent	Questionnaires Returned	Prefer New Sidewalk	
		Yes	No
35	25	1	24
% of Returned Questionnaires	71%	4%*	96%*

**BRAEMAR HILLS B 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
35	22	1	21	14	6
% of Returned Questionnaires	63%	5%*	95%*	67%*	29%*

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

Table 1. Results from Braemar Hills B Questionnaires

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ST PATRICKS LN IMPROVEMENT PROJECT –

Results from July 13, 2012 Questionnaire Sheet

Questionnaires Sent	Questionnaires Returned	Prefer New Sidewalk		Change Existing Lighting	
		Yes	No	Yes	No
10	7	0	7	1	6
% of Returned Questionnaires	70%	0%*	100%*	14%*	86%*

ST PATRICKS LN 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
10	7	2	5	4	3
% of Returned Questionnaires	70%	29%*	71%*	57%*	43%*

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

Table 2. Results from St. Patricks Lane Questionnaires

GLEASON CIR IMPROVEMENT PROJECT –

Results from July 13, 2012 Questionnaire Sheet

Questionnaires Sent	Questionnaires Returned	Prefer New Sidewalk		Change Existing Lighting	
		Yes	No	Yes	No
8	3	0	3	2	1
% of Returned Questionnaires	38%	0%*	100%*	67%*	33%*

GLEASON CIR 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
8	3	1	2	2	1
% of Returned Questionnaires	38%	33%*	67%*	67%*	33%*

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

Table 3. Results from Gleason Circle Questionnaires

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A neighborhood informational meeting was then held on August 8, 2012 to discuss the improvements planned for this neighborhood. The meeting was attended by 10 residents representing 10 properties. Input from this meeting and comments received throughout the planning of this project have been included in the Appendix.

EXISTING CONDITIONS: Public Utilities

Sanitary Sewer

Historical records indicate there have not been any 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 6" ductile iron pipe (DIP), 6" cast iron pipe (CIP) and two areas of 1 ½" copper. The system has experienced no breaks since being installed. The fire hydrants lack the newer 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.

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 communication lines.

Street lighting consists of standard "ladder rack", "cobra" and "coach lantern" lights mounted on wood and fiberglass poles located at each end of St. Patricks Lane and Gleason Circle and throughout Scotia Drive and Tupa Drive.

Streets

The majority of the roadways in this neighborhood were originally constructed in the 1960's and early 1970's. The roadway widths vary from 26 to 31-foot 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 Braemar Hills B, St. Patricks Lane and Gleason Circle is 20 as calculated in June 2009. 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;

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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 widely 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

Traffic and Crash Data

City staff measured traffic volumes and speeds at two locations within or near the neighborhood. The traffic and crash data is shown in Appendix G and J.

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.

PROPOSED IMPROVEMENTS:

The Braemar Hills B, St Patricks Lane and Gleason Circle 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 1 ½" copper pipes with 6" DIP pipe and associated city owned water service pipes, all 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, and cable utility company have indicated that they may 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.

Residential Roadway Lighting

The questionnaire asked if residents wanted to reconstruct the street lights in the project area. The Braemar Hills B neighborhood showed strong support to reconstruct the street lights with a coach style light. St. Patricks Lane and Gleason Court showed split support to reconstruct the street lights.

Staff is recommending upgrading the current street light system in the Braemar Hills B neighborhood. The light poles would be removed and

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replaced in their existing location with the installation of new conduit. The location of the lighting is sufficient to delineate the intersections.

Due to the split support from property owners and the limited access nature of St. Patricks Lane and Gleason Court, staff feels the benefits do not outweigh the costs. Staff is not recommending upgrading the current street light system along St. Patricks Lane and Gleason Court.

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 both questionnaires show limited support for sidewalks within this project.

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 Scotia Dr, Tupa Circle and Tupa Dr, St Patricks Lane and Gleason Circle 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 \$1,220,580 (Table 4). 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 and utility funds. The estimated roadway construction cost is \$560,580 and will be 100 percent funded by special assessments. Any new or replaced concrete curb and gutter is included under the storm sewer fund and not special assessed. Utility improvements and repairs amount to \$660,000 and will be funded through the respective utility fund.

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	Item	Amount	Total Cost
Roadway:	Breamar Hills B	\$ 319,612	
	St. Patricks Lane	\$ 155,940	
	Gleason Circle	\$ 85,028	
Roadway Total:			\$ 560,580
Utilities:	Breamar Hills B:		
	Storm Sewer	\$ 186,000	
	Watermain	\$ 91,000	
	Sanitary Sewer	\$ 33,500	
	Lighting	\$ 74,000	
	St. Patricks Lane:		
	Storm Sewer	\$ 69,100	
	Watermain	\$ 36,900	
	Sanitary Sewer	\$ 65,500	
	Gleason Circle:		
	Storm Sewer	\$ 33,700	
Watermain	\$ 27,500		
Sanitary Sewer	\$ 42,800		
Utilities Total:			\$ 660,000
Total Project:			\$ 1,220,580

Table 4. Estimated Project Costs

ASSESSMENTS:

The assessments are based on the City's Special assessment policy, dated August 6, 2012. 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:

6821 and 6921 Gleason Road, 0.33 REU = (1 REU) x (1/3 side yard)

Churches: Church of St. Patrick

6820 and 6908 St. Patricks Lane

4.8 REU's = Average [4.1 REU's (Method 1) + 5.4 REU's (Method 2)]

Method 1: 4.1 REU's = 57 (Church ADT) / 14 (Average trips per day per property)

Method 2: 5.4 REU's = (60,555 sf / 1000 sf) x (0.8 REU's per 1000 sf) / (9 accesses)

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Based on this policy, the residential equivalent units for Braemar Hills B, St. Patricks Lane and Gleason Cir are shown below with the estimated assessment per REU (Table 5).

Project	REU's	Assessment per REU
Braemar Hills B	34.33	\$ 9,310
St Patricks Ln	13.80	\$ 11,300
Gleason Cir	7.33	\$ 11,600

Table 5. Preliminary Assessments

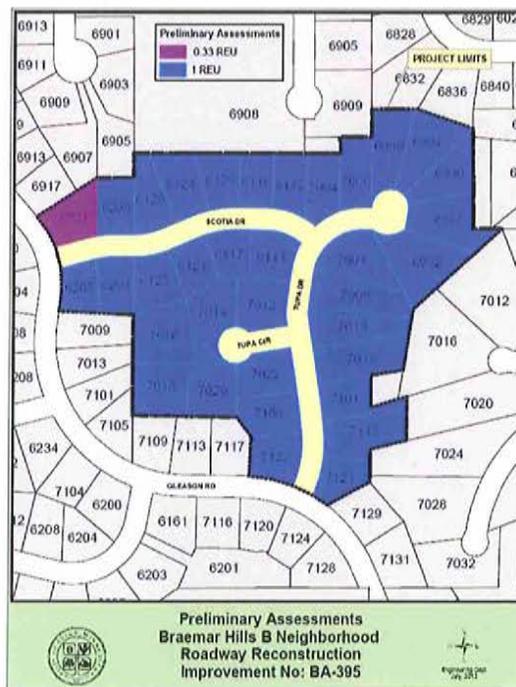


Figure 2. Preliminary Assessment Map – Braemar Hills B

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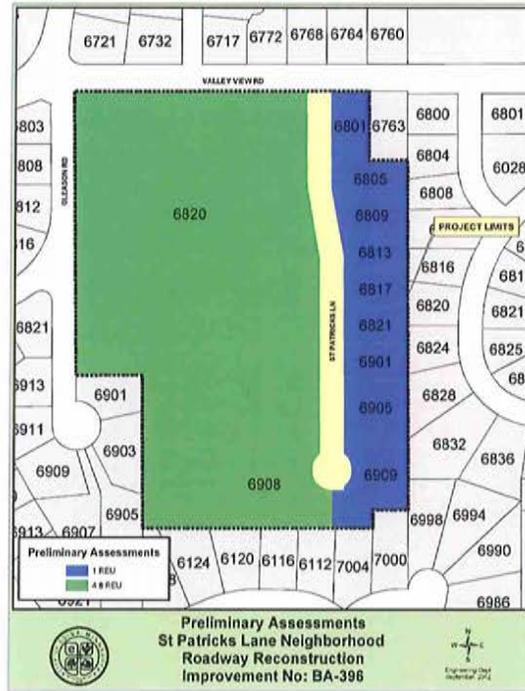


Figure 3. Preliminary Assessment Map – St Patricks Lane

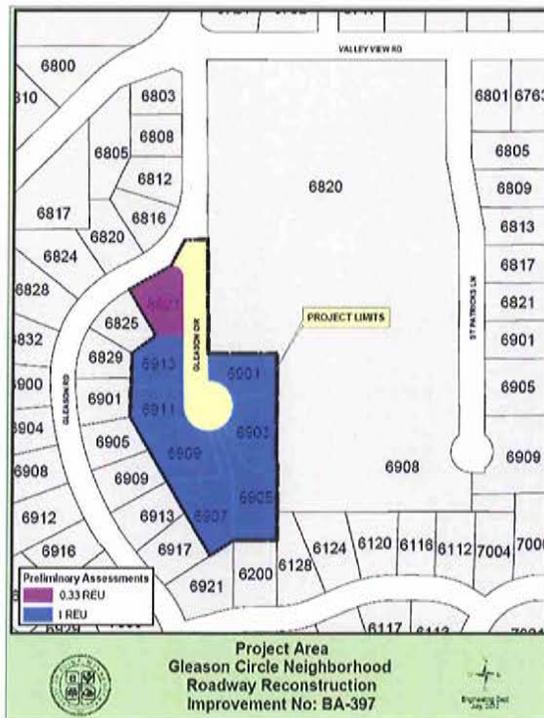


Figure 4. Preliminary Assessment Map – Gleason Circle

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

Project Open House 2011	September 12, 2011
Neighborhood Informational Meeting	August 8, 2012
Edina Transportation Commission Meeting	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: Staff believes the construction of this project is necessary, cost effective and feasible to improve the public infrastructure in the Braemar Hills B, St. Patricks Lane and Gleason Circle Neighborhoods.

- APPENDIX:**
- A. 2011 Open House Meeting
 - B. Property Owners Questionnaire
 - C. Property Owners Questionnaire No. 2
 - D. 2013 Neighborhood Roadway Reconstruction Informational Meeting
 - E. Preliminary Assessment Role
 - F. City Comprehensive Plan Update – Sidewalk and Bicycle Facilities (Fig. 7.10 and 7.11)
 - G. 2013 Braemar Hills B, St. Patricks Lane, and Gleason Circle Traffic / 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