



# FEASIBILITY STUDY

## NORMANDALE NEIGHBORHOOD ROADWAY RECONSTRUCTION

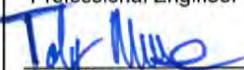
Sherwood Avenue, Ryan Avenue, Parnell Avenue,  
West Shore Drive, 65<sup>th</sup> Street, and 64<sup>th</sup> Street

**IMPROVEMENT NO. BA-394**

**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.

	43364	11/14/12
Toby Muse	Reg. No.	Date
Approved 		11/14/12
Chad A. Millner, PE		Date
Asst. City Engineer		

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## FEASIBILITY STUDY – BA-394

### ENGINEERING DEPARTMENT

### CITY OF EDINA

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#### NORMANDALE NEIGHBORHOOD ROADWAY RECONSTRUCTION

#### NOVEMBER 14, 2012

#### SUMMARY:

The project involves performing spot repairs to existing concrete curb and gutter and reconstructing the bituminous pavement while leaving the aggregate base layer and subgrade soils undisturbed. If poor subgrade soils are encountered, the project will remove and replace them while salvaging the aggregate base layer for reincorporation into the proposed street. The project also involves replacing deficient drainage structures and connecting sump pump drain pipe to the storm sewer system as needed. The project will also involve replacing hydrants and gate valves, trunk water main pipe extensions, water and sewer service pipe reconstruction, and rehabilitating trunk sanitary sewer pipe.

The estimated total project cost is \$3,553,000. Funding for the entire project will be from a combination of special assessment, utility and Active Living Infrastructure funds. The estimated roadway cost is \$1,095,000, and the estimated sanitary sewer service cost is \$175,000. Both of these costs will be 100 percent funded by special assessments at a rate of \$14,800 per REU. Properties not receiving new sanitary sewer services will be assessed at a rate of \$12,300 per REU. Utility improvements and repairs amount to \$1,888,000 and will be funded through respective utility funds. Multi-use path and lighting upgrades adjacent to West Shore Drive amount to \$395,000 and will be funded through the Active Living Infrastructure 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 area includes Sherwood Avenue (66<sup>th</sup> Street to 64<sup>th</sup> Street), Ryan Avenue (Cul-De-Sac to south right-of-way of Highway 62), Parnell Avenue (Cul-De-Sac to south right-of-way of Highway 62), West Shore Drive (66<sup>th</sup> Street to south right-of-way of Highway 62), 65<sup>th</sup> Street (Sherwood Avenue to Ryan Avenue and Parnell Avenue to West Shore Drive), and 64<sup>th</sup> Street (115' west of Sherwood Avenue to West Shore Drive). Figure 1 is a detailed project location map of the Normandale Neighborhood Roadway Improvement Project.

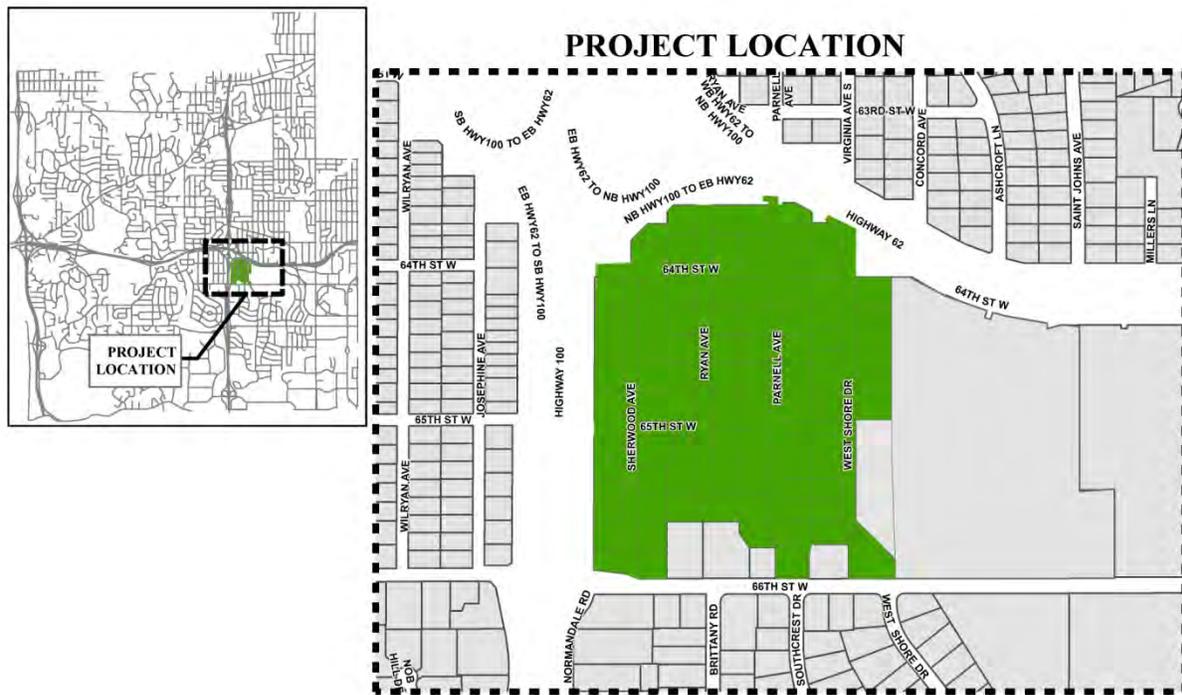


Figure 1 - Project Location Map

**INITIATION & ISSUES:**

The project was initiated by the Engineering Department as part of the City’s street reconstruction program and identified in the Capital Improvement Program. This project addresses updating aging infrastructure issues associated with the pavement condition, storm water, sanitary sewer and water main 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, and the draft Living Streets Policy Framework and the Sustainability 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. Figure 7.11 of Appendix G identifies West Shore Drive as a secondary bicycle route between 66<sup>th</sup> Street and 64<sup>th</sup> Street.

**City of Edina Comprehensive Water Resource Management Plan**

The project is located within the Nine Mile Creek Watershed district. The 2011 Comprehensive Water Resource Management Plan indicates no potential flood areas in the neighborhood. Further evaluation will be performed regarding drainage issues resulting from the questionnaires.

**Draft Living Streets Policy Framework and the Sustainability Project 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 Appendix A for a 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**

In determining the feasibility of the project, the following existing issues and/or features are addressed in this study:

- Poor condition of existing pavement surface.
- Existing landscaping and driveways.
- Sanitary sewer and water main deficiencies.
- Existing mature trees.
- Existing residential roadway lighting.

### **Resident Input**

The Engineering Department follows a practice of notifying residents two years prior to a potential reconstruction project. The residents of this neighborhood were invited to an Open House on September 22, 2011 to discuss the City's process for street reconstruction. A copy of the presentation from this meeting is included in Appendix B.

A resident questionnaire was sent to the property owners on July 13, 2012. The questionnaires were completed and returned by 52 of the 83 property owners, a return rate of 63%.

A second questionnaire was sent to the property owners on August 17, 2012 resulting from the council's decision to amend the assessment policy to no longer include assessments for sidewalks and street lights and instead create a potential franchise fee to fund these improvements. Questionnaire No. 2

was completed and returned by 52 or 83 property owners, a return rate of 63%. Both the full questionnaire and responses are included in Appendices C & D.

The two key issues that were addressed in both of these questionnaires were the addition of new sidewalks and installation of decorative street lighting. The results from the questionnaires are shown in Table 1.

<b>NORMANDALE IMPROVEMENT PROJECT – Results from July 13, 2012 Questionnaire Sheet</b>					
<b>Questionnaires Sent</b>	<b>Questionnaires Returned</b>	<b>Prefer New Sidewalk</b>		<b>Change Existing Lighting</b>	
		<b>Yes</b>	<b>No</b>	<b>Yes</b>	<b>No</b>
83	52	1	51	8	41
<b>% of Returned Questionnaires</b>	<b>63%</b>	<b>2%*</b>	<b>98%*</b>	<b>15%*</b>	<b>79%*</b>
<b>NORMANDALE IMPROVEMENT PROJECT – Results from August 17, 2012 Questionnaire No. 2 Sheet</b>					
<b>Questionnaires Sent</b>	<b>Questionnaires Returned</b>	<b>Prefer New Sidewalk</b>		<b>Change Existing Lighting</b>	
		<b>Yes</b>	<b>No</b>	<b>Yes</b>	<b>No</b>
83	52	6	45	21	27
<b>% of Returned Questionnaires</b>	<b>63%</b>	<b>12%*</b>	<b>87%*</b>	<b>40%*</b>	<b>52%*</b>

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

**Table 1 – Questionnaire Results**

A neighborhood informational meeting was held on September 5, 2012 to discuss the improvements planned for this neighborhood. The meeting was attended by 22 residents representing 20 properties. A copy of the presentation and public input from this meeting are included in Appendix E.

Another neighborhood informational meeting was held on November 7, 2012 to discuss West Shore Drive as a primary bicycle route and sanitary sewer service pipe reconstruction assessments. The meeting was attended by 11 residents representing 10 properties. A copy of the presentation and public input from this meeting are included in Appendix L.

**EXISTING CONDITIONS: Public Utilities**

Trunk Water Main and Sanitary Sewer Pipes

Trunk water main pipe material is cast iron and trunk sanitary sewer pipe material is clay and reinforced concrete pipe. The trunk water main and sanitary sewer pipes were constructed in the early 1960's.

Six-inch (6") diameter trunk water main pipes serve the neighborhood. The valves and fire hydrants along the trunk water main pipe are operable, but 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.

The trunk water main pipe is in satisfactory condition since only four (4) repairs have been needed since 1996. Locations of the repairs are shown in Drawing 1 in the Appendix. Trunk water main pipe and hydrants were not installed at the north dead ends of Ryan Avenue and Parnell Avenue and the south Parnell Avenue cul-de-sac. While hydrants located at adjacent intersections meet fire fighting needs in these areas, they are not optimal.

Eight-inch (8") and nine-inch (9") diameter clay trunk sanitary sewer pipes serve the majority of the neighborhood. A twenty one-inch (21") diameter reinforced concrete trunk sanitary sewer pipe from north of Highway 62 enters the neighborhood at the north end of Parnell Avenue and exits east along 64<sup>th</sup> Street.

Historical records indicate there has been one (1) sewer blockage in the area. Based on the City's closed-circuit television inspections of the clay trunk sanitary sewer pipes, six (6) areas have been identified with problems including cracked pipe and offset joints. In addition to the six identified problems, multiple joint and service pipe locations along the pipe showed extensive root infiltration into the trunk main pipe. Figure 2 below shows one example of extensive root infiltration.

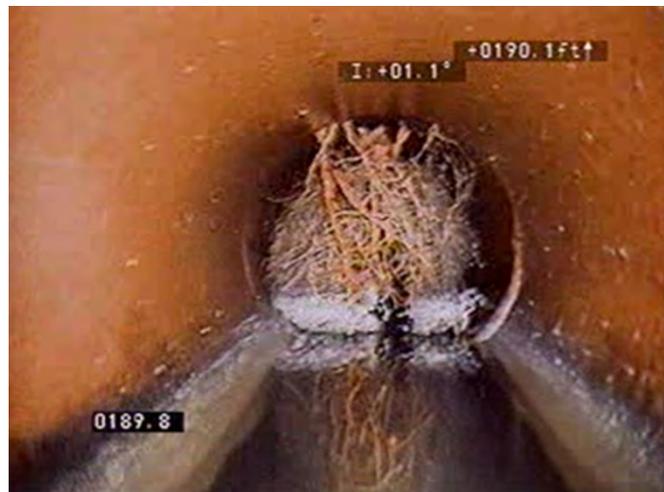


Figure 2 - Sherwood Avenue Root Infiltration

#### Water and Private Sanitary Sewer Service Pipes

Water service pipes within the neighborhood are copper pipes and vary in diameter. A two-inch (2") diameter water service pipe is located in a City utility easement along the south property lines of both 6325 Ryan Avenue and 6324 Parnell Avenue and connects to the trunk water main pipes on Ryan Avenue and Parnell Avenue.

Since 1992, there have been eleven (11) City-owned water service pipe break and leak repairs. Five (5) of the water service pipe repairs have

occurred in the last five (5) years. Locations of the City-owned water service pipe repairs are shown in Drawing 1 in the Appendix.

Private sanitary sewer service pipes are likely 6-inch diameter clay pipes. Based on their age, the City should expect that cracks and separated joints have developed along these pipes similar to the trunk main pipe. These faults in the pipe facilitate tree root intrusion and the inflow and infiltration of clear ground water into the City's sanitary sewer network.

The following unique water and private sanitary sewer service pipe connections exist within the neighborhood.

- Water service pipe connections are made to trunk water main pipes located in back and side yard easements that are not located in the City street ROW.
- Private sanitary sewer service pipe connections are made to trunk sanitary sewer pipes located in back and side yard easements that are not located in the City street ROW.
- Some property owners share a portion of their water service pipe with other property owners.
- Some water service pipes are longer than recommended lengths.

Table 2 below summarizes these unique conditions by property.

<b>Address</b>	<b>Back or Side Yard Easement Water Service Pipe Connection</b>	<b>Longer Than Recommended Water Service Pipe</b>	<b>Shared Water Service Connection</b>	<b>Back or Side Yard Easement Private Sanitary Sewer Service Pipe Connection</b>
4850 64th Street			X	X
4860 64th Street			X	X
4728 66th Street (1)		X		
4730 66th Street (1)		X		
6501 Parnell Avenue	X			X
6509 Parnell Avenue	X			X
6517 Parnell Avenue	X			X
6525 Parnell Avenue	X			X
6526 Parnell Avenue		X		
6529 Parnell Avenue		X		
6533 Parnell Avenue		X		X
6324 Ryan Avenue		X		
6325 Ryan Avenue		X		
6500 West Shore Drive	X			X
6508 West Shore Drive	X			X

Address	Back or Side Yard Easement Water Service Pipe Connection	Longer Than Recommended Water Service Pipe	Shared Water Service Connection	Back or Side Yard Easement Private Sanitary Sewer Service Pipe Connection
6516 West Shore Drive	X			X
6524 West Shore Drive	X			X
6532 West Shore Drive	X			X
<b>Total</b>	<b>9</b>	<b>7</b>	<b>2</b>	<b>12</b>

(1) Property is not included in the project, but is served by a common water service pipe located in the Parnell Avenue cul-de-sac.

**Table 2 – Unique Water and Private Sanitary Sewer Service Connections**

Storm Sewer

The storm sewer system is located within the legal boundary of Nine Mile Creek Watershed. The neighborhood relies on its longitudinal street slopes and concrete curb and gutter to convey storm water to an extensive storm sewer network of existing pipes and inlets located at street intersections, cul-de-sac ends and mid-block of the neighborhood streets. The storm sewer network conveys storm water via pipes to outlet at three (3) separate locations that eventually drain to Lake Cornelia. Based on a hydraulic model of the existing storm sewer trunk pipes in the neighborhood, most are currently large enough to convey storm water following significant storm events. Feedback from residents and City staff indicate undersized storm sewer trunk pipes identified in the model have not caused localized flooding or surface discharges from storm sewer structures following significant storm events.

The existing topography of the site divides runoff into four (4) separate storm sewer areas as shown in Drawing 2 in the Appendix. Runoff from Area 1 is conveyed by a storm sewer system that travels north and connects to a storm sewer interceptor pipe under Highway 62 and eventually outlets into Lake Cornelia.

Runoff from the neighborhood west of Highway 100 enters the Normandale neighborhood via a trunk storm sewer pipe within the 65<sup>th</sup> Street ROW corridor. This storm water combines with runoff from Area 2 and flows east in the trunk storm sewer pipe along 65<sup>th</sup> Street, through a City utility easement along the south property lines of 6433 Ryan Avenue and 6432 Parnell Avenue to 65<sup>th</sup> Street and West Shore Drive, where it combines with storm water from Area 3. Area 3 runoff travels via trunk storm sewer pipe east along 64<sup>th</sup> Street and south along West Shore Drive, where it combines with the offsite/Area 2 storm water and drains via trunk storm sewer pipe into a pond east of West Shore Drive, which flows into Lake Cornelia.

Runoff from Area 4 is conveyed by a storm sewer trunk pipe that begins in the Parnell Avenue cul-de-sac and travels east through a City utility

easement along the south property line of 6525 Parnell Avenue and 6524 West Shore Drive into a pond east of West Shore Drive, which flows into Lake Cornelia.

Storm water runoff travels overland in the neighborhood within portions of flat longitudinally sloped curb and gutter sections that causes pooling along the edges of the streets or at select intersections. One resident reported storm water runoff pooling problems in the street in front of 6500 Parnell Avenue due to poor longitudinal drainage via the questionnaire. Several other residents mentioned storm water ponding at various catch basin locations due to blockage caused by debris.

Seven (7) property owners told us they operate sump pumps via returned questionnaires. They use these pumps to discharge ground water away from their homes. In most cases, their pumps discharge the ground water onto their yards or an adjacent street.

### **Private Utilities**

Providers of privately owned gas, electric, communications and cable television utilities are present in the neighborhood. These utilities are either overhead or buried underground both within and outside the street ROW.

Results from the questionnaire indicate sixteen (16) residents own and operate either an underground pet containment or lawn irrigation system within the project boulevards.

### **Streets**

The roadways in this neighborhood were originally constructed in the early 1960's. The neighborhood's existing streets are surfaced with bituminous pavement. Patches, overlays, and sections of alligator cracking are present at random locations throughout the project area as shown in Figure 3.



Figure 3 - Looking East on 64<sup>th</sup> Street at Sherwood Avenue

The streets vary in width between 29 feet and 30 feet with existing concrete curb and gutter and parking on both sides of the streets. The concrete curb

and gutter is in satisfactory condition. While the pavement condition varies throughout the neighborhood, it is generally in poor condition likely due to its age.

As part of this study, 6 soil borings were taken in the project area. The borings identified a 4- to 9-inch thick layer of sand with traces of gravel beneath the street pavement. Even though the pavement is in poor condition, the presence of this aggregate base layer provides a stable foundation beneath the street surface.

The average pavement condition index (PCI) for the City of Edina is 51 and the average PCI for Normandale as calculated in 2009 is 23. 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 from approximately 0.5 percent to 11 percent.

The pavement surface 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.

There are two (2) driveways featuring brick paver block edging in the project area. Figure 4 depicts a driveway with brick paver block edging found in the project area.



Figure 4 - 6525 Parnell Avenue - Paver Edge Driveway

Sidewalks and Bicycle Routes

Drawing 5 in the Appendix illustrates the segment of Rosland Park’s park pathway that is east of West Shore Drive. West Shore Drive between 66<sup>th</sup> Street and 64<sup>th</sup> Street and 64<sup>th</sup> Street east of West Shore Drive are both identified as secondary bicycle routes.

Residential Lighting

Street lighting in the project area consists of standard cobra head lights mounted on wood poles that are typically located at intersections in order to illuminate the streets. The locations of the existing street lights are shown in Appendix K.

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 1,259 cars per day with 85<sup>th</sup> percentile speed ranging from 24.0 to 34.6 mph. The traffic and crash data is shown in Appendix I.

Landscaping

Twenty nine (29) decorative landscaping features are located in the ROW in the project area. 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. Figure 5 shows a typical landscaping feature found in the project’s ROW.



Figure 5 - 6517 Parnell Avenue - Landscaping Feature

**PROPOSED  
IMPROVEMENTS:**

The project involves performing spot repairs to existing concrete curb and gutter and reconstructing the bituminous pavement while leaving the aggregate base layer and subgrade soils undisturbed. If poor subgrade soils are encountered, the project will remove and replace them while salvaging the aggregate base layer for reincorporation into the proposed street. The project also involves replacing deficient drainage structures and connecting sump pump drain pipe to the storm sewer system as needed. The sump

pump drain pipe will allow property owners to discharge ground water from their sump pumps into the trunk storm sewer pipe network. The project will also involve replacing hydrants and gate valves, trunk water main pipe extensions, water service pipe reconstruction, and rehabilitating trunk sanitary sewer pipe.

The scope of the water main, sanitary and storm sewer reconstruction should meet the following parameters.

- Protect boulevard trees.
- Provide continuous sewer and water service to residents.
- Maintain pedestrian and vehicle access in the neighborhood.
- Reconstruct private sanitary sewer service pipes between the trunk sanitary sewer pipe and ROW line.
- Encourage property owners to reconstruct their private sanitary sewer service pipe between the ROW line and their homes prior to construction.
- Reconstruct the City-owned water service pipe between the trunk water main pipe and curb stop box within the City's ROW. Reconstruction should also include replacing all of the curb stops.
- Encourage property owners to reconstruct their private water main service pipes between the curb stop and their homes.

### **Public Utilities**

#### **Trunk Water Main and Sanitary Sewer Pipes**

Since the existing trunk water main pipe is in relatively good condition, reconstruction is not proposed as part of the project. New trunk water main pipe and hydrants will be installed at the north dead ends of Ryan Avenue and Parnell Avenue and the south Parnell Avenue cul-de-sac.

New trunk water main pipe will be installed in the City utility easement along the south property lines of both 6325 Ryan Avenue and 6324 Parnell Avenue and will connect to the trunk water main pipes on Ryan Avenue and Parnell Avenue. Drawing No. 3 in the Appendix shows the proposed combination of open cut and horizontal directional drill reconstruction methods to be deployed in these areas.

The project will replace all of the existing fire hydrants with new City standard hydrants and will replace all existing gate valves. New hydrants will also be added in locations where the distance between the existing hydrants exceeds the recommended 500-foot spacing.

All of the proposed improvements to the water main system will optimize water flow for fire fighting and improve water quality.

During improvements to the trunk water main pipe network, residents will have continuous water service. If necessary, temporary water main and service pipes will be strung out on the ground along the boulevards and front yards of the neighborhood's streets. These temporary pipes are connected to sections of the existing water main. Continuous water service is provided to each home via its outside garden hose spigot. The contractor will need access into each affected home to make a proper temporary water main connection.

The project will reconstruct the trunk sanitary sewer pipes using a trenchless reconstruction method called cured in place pipe lining. Spot repairs will be made to the trunk sanitary sewer pipes that have sagged, cracked or where offset joints occur. The City's closed circuit television inspections provide the exact locations of these repairs. Wherever necessary, the repairs will be completed using open cut repair methods. In sensitive locations, repairs will be completed using trenchless repair methods.

Block sanitary manholes will be lined with cement mortar and all sanitary manholes will have castings and adjustment rings replaced.

#### Sanitary Sewer Service and Water Service Pipes

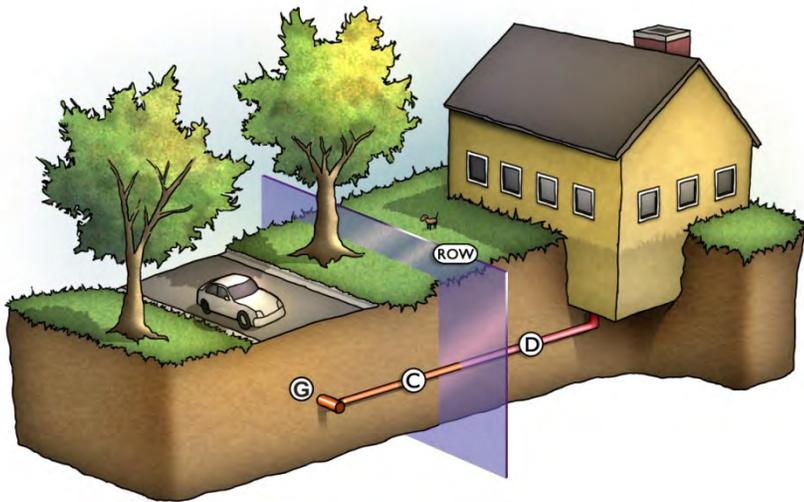
Along with upgrading the street, the City also plans to upgrade the publicly owned water main and sanitary sewer pipes that are underground. Upgrading these pipes will ensure that the water and sanitary sewer services will be safe and reliable for the foreseeable future.

Besides helping to keep safe, reliable sanitary sewer services and water services, upgrading all of the private and public underground utility lines helps ensure that the new street stays looking new and in good condition by decreasing the chances that the street will need to be cut into in order to repair old or leaking underground utilities.

Property owners will be allowed to have the cost of any sanitary sewer service or water service upgrades financed through the City's special assessment financing system. Staff will provide the interested property owners with information on how to proceed with this option.

#### Sanitary Sewer Services:

Because the City is upgrading the publicly owned pipes and the roadway above these pipes, we will require that property owners upgrade the privately owned sanitary sewer service line shown as segment "C" below; both segments "C & D" are privately owned. The only exception will be for properties whose pipes have been upgraded in the past 15 years.



<u>SEGMENT</u>	<u>OWNERSHIP</u>
C	Property Owner
D	Property Owner
G	City

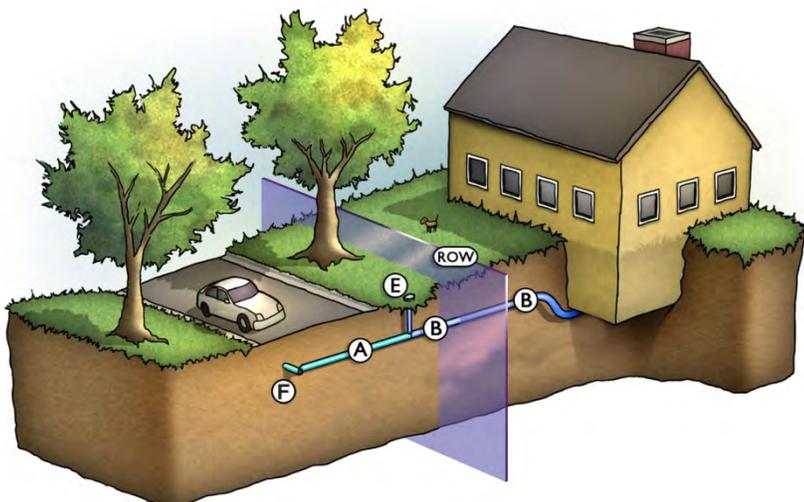
Figure 6 – Typical Section Showing Sanitary Sewer Service

A property owner will have two options to upgrade their sanitary sewer service line:

1. They may hire their own private contractor to do the upgrading work. This option allows the property owner to choose their own contractor, have some flexibility for the project schedule and to finance the cost of the work at their discretion.
2. Join a contract organized and managed by the City. The City's contractor will replace the segment of private sanitary sewer service line shown as segment "C" above for a flat cost of \$2,500.

Water Service Pipes:

The City will also be upgrading the publicly owned portion of the water service shown as segments "A & E" below.



<u>SEGMENT</u>	<u>OWNERSHIP</u>
B	Property Owner
A	City
E	City
F	City

Figure 7 – Typical Section Showing Water Service

Unique Water and Private Sanitary Sewer Service Connections

The project will:

- not reconstruct segments “A & E” if they are located in a back or side yard easement that is not located in the City’s street ROW,
- not reconstruct segment “C” if it is located in a back or side yard easement that is not located in the City’s street ROW.
- shorten individual water service connections that are too long to acceptable lengths,
- separate shared water service connections

On a per property basis, Table 3 summarizes how the project will address unique service pipe connections.

Address	No Water Service Pipe or Curb Stop Box Reconstruction	Shorten Water Service Connection	Separate Shared Water Service Connections	No Private Sanitary Sewer Service Reconstruction
4850 64th Street			X	X
4860 64th Street			X	X
4728 66th Street (1)		X		
4730 66th Street (1)		X		
6501 Parnell Avenue	X			X
6509 Parnell Avenue	X			X
6517 Parnell Avenue	X			X
6525 Parnell Avenue	X			X
6526 Parnell Avenue		X		
6529 Parnell Avenue		X		
6533 Parnell Avenue		X		X
6324 Ryan Avenue		X		
6325 Ryan Avenue		X		
6500 West Shore Drive	X			X
6508 West Shore Drive	X			X
6516 West Shore Drive	X			X
6524 West Shore Drive	X			X
6532 West Shore Drive	X			X
<b>Total</b>	<b>9</b>	<b>7</b>	<b>2</b>	<b>12</b>

(1) Property is not included in the project, but is served by a common water service pipe located in the Parnell Avenue cul-de-sac.

**Table 3 – Unique Water and Private Sanitary Sewer Service Connections**

Storm Sewer

Spot repairs will be made to the concrete curb and gutter that are no longer functioning properly. No improvements are proposed to the existing trunk storm sewer pipe since the majority of the trunk storm sewer pipes in the neighborhood are adequately sized and localized flooding of the system has not been observed following large storm events. Existing storm structures in

poor condition will be replaced. Remaining drainage structures will have castings and adjustment rings replaced. The City will consider adding a future storm water runoff treatment manhole on City property east of the West Shore Drive and 65<sup>th</sup> Street intersection as part of a separate project.

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 the start of construction.

The City will coordinate other private utility relocations or upgrades prior to the start of construction.

Any damage to privately-owned pet containment and irrigation systems caused by street and City utility reconstruction activities will be repaired by the City.

### **Streets**

The project will reconstruct the streets with a new bituminous surface to their existing widths between the existing curb and gutter. The project will recycle and mix together all of the existing bituminous street pavement and approximately 1-inch of the existing aggregate base course below it. The recycled aggregate base product will be reincorporated into the project to replace poor subgrade soils or as utility trench backfill.

Spot repairs will be made to the concrete curb and gutter in utility service reconstruction areas.

As part of the project, staff will investigate inclusion of a no parking condition along the east side of West Shore Drive between 66<sup>th</sup> Street and 65<sup>th</sup> Street based on responses from resident questionnaires and comments received at the informational meetings.

The proposed improvements acknowledge 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.

### **Sidewalks and Bicycle Routes**

At their October 25 meeting, the ETC recommended staff incorporate a separate bicycle lane on West Shore Drive between 64<sup>th</sup> and 66<sup>th</sup> Streets. Copies of the ETC meeting minutes are included in Appendix K.

**Feasibility Study  
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At a neighborhood informational meeting on November 7 staff presented an option to add this bicycle lane to West Shore Drive. This option is shown in Drawing 6 of the Appendix.

Property owners at the November 7 meeting asked staff to consider adding a separate bicycle lane adjacent to Rosland Park's park pathway as shown in Drawing 7 of the Appendix. Property Owner input from this meeting is given in Appendix L.

Drawings 6 & 7 were sent to the City Park Board for their review and consideration at their November 19 meeting. Staff will provide an update of comments received from the City Park Board in their December 11, 2012 Public Hearing report.

Residential Lighting

The questionnaire asked if residents wanted to upgrade the street lights in the project area. The results from Table 1 show that property owners do not want to reconstruct the street lights. Since the lighting of the neighborhood is sufficient to delineate the intersections, no revisions to the current street lighting system are proposed.

Staff is including installation of City standard pendant style lighting units along the multi-use path shown in both Drawing 6 and 7 of the Appendix. Both Drawing 6 and 7 depict the type, style and location of pendant luminaire lighting proposed. Staff shared the locations of these lights with property owners at the November 7 neighborhood meeting.

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

Existing right-of-way on all streets in the project area is 60 feet wide. No additional right-of-way or easements are anticipated to complete the proposed improvements.

**PROJECT COSTS:**

The estimated total project cost is \$3,553,000. Funding for the entire project will be from a combination of special assessment, utility and Active Living Infrastructure funds. The estimated roadway cost is \$1,095,000, and the estimated sanitary sewer service cost is \$175,000. Both of these costs will be 100 percent funded by special assessments at a rate of \$14,800 per REU. Properties not receiving new sanitary sewer services will be assessed at a rate of \$12,300 per REU. Utility improvements and repairs amount to \$1,888,000 and will be funded through respective utility funds. Multi-use path and lighting upgrades adjacent to West Shore Drive amount to \$395,000 and will be funded through the Active Living Infrastructure fund.

**The total estimated project cost is \$3,553,000 (2013 Dollars).** The estimated total project cost is summarized in Table 4.

ITEM	ESTIMATED COST <sup>2</sup>	
	CITY	RESIDENTS
Sanitary Sewer Trunk Pipe	\$869,000	
Sanitary Sewer Service Pipe Between the Trunk Pipe and the Right-Of-Way Line <sup>1</sup>		\$175,000
Water Main Trunk Pipe and Service Pipe Up To and Including Curb Stop Box	\$728,000	
Storm Sewer	\$291,000	
Street Reconstruction <sup>1</sup>		\$1,095,000
Multi-Use Path	\$324,000	
Lighting for Multi-Use Path	\$71,000	
<b>Sub-total</b>	<b>\$2,283,000</b>	<b>\$1,270,000</b>
<b>Total</b>	<b>\$3,553,000</b>	

<sup>1</sup> Cost to be assessed to residents

<sup>2</sup> Costs are given in 2013 dollars

**Table 4 - Summary of Total Estimated Project Cost**

**ASSESSMENTS:**

The assessments are based on the City's Special assessment policy, dated August 21, 2012.

An estimated special assessment rate of approximately \$14,800 (2013 Dollars) per residential equivalent unit (REU) is proposed to be levied against property owners in the project area who receive benefit from the proposed street improvements and have a sanitary sewer service connection in the City's ROW. There are 70 REU's in the project area that qualify for this assessment rate. The remaining 19 REU's in the project area with no sanitary sewer service connection in the City's ROW will be exempt from the sanitary sewer service assessment. The estimated total assessment rate is summarized in Table 5.

ITEM	ESTIMATED ASSESSMENT <sup>1</sup>	NUMBER OF REU'S
Street Reconstruction	\$12,300	89
Sanitary Sewer Service Pipe Between the Trunk Pipe and the Right-Of-Way Line	\$2,500	70
<b>Total</b>	<b>\$14,800</b>	

<sup>1</sup> Assessment rate is given in 2013 dollars

**Table 5 - Summary of Total Estimated Assessment Rates per REU**

Drawing 4 in the Appendix of this study summarizes the application of the estimated assessment rates. The methodology for calculating the REUs for City owned property along the east side of West Shore Drive is described as follows:

Park Property:

Rosland Park:

Seven (7) REUs = Layout of park property with similar size buildable lots in the neighborhood.

According to City policy, properties that abut the project but their addresses are not included in the project are either not assessed due to past assessments or assessed at either 1/3 or 2/3 of the estimated rate. No 1/3 or 2/3 assessments are proposed for this project.

The City will consider deducting that portion of the assessment rate for the sanitary sewer service pipe repair if the resident:

- Repairs, using their own contractor, their own private sanitary sewer service pipe between at least the trunk sanitary sewer pipe and ROW line before reconstruction is underway, or
- Reconstructed their sanitary sewer service pipe between at least the trunk sanitary sewer pipe and ROW line with PVC pipe or by use of trenchless methods in the last 15 years.

A copy of the preliminary assessment roll is included in Appendix F.

**PROJECT SCHEDULE:**

The following schedule is feasible from an Engineering standpoint:

Project Open House 2011	September 22, 2011
Neighborhood Informational Meeting	September 5, 2012
Edina Transportation Commission Meeting	October 25, 2012
Neighborhood Informational Meeting About Private Sanitary Sewer Service Reconstruction and Multi-use Path Along West Shore Drive	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 Normandale Neighborhood.

**Feasibility Study  
Normandale Neighborhood Improvement No. BA-394  
November 14, 2012**

**APPENDIX:**

- Drawing 1 – Normandale Neighborhood Water Main and Service Breaks
- Drawing 2 – Normandale Neighborhood Drainage Areas
- Drawing 3 – Normandale Neighborhood Water Main Reconstruction
- Drawing 4 – Normandale Neighborhood Assessment Summary
- Drawing 5 – Normandale Neighborhood Nearby Bicycle and Park Routes
- Drawing 6 – Normandale Neighborhood West Shore Drive Multi-use Path  
Option A
- Drawing 7 – Normandale Neighborhood West Shore Drive Multi-use Path  
Option B

- A. Draft Living Streets Policy Framework
- B. 2011 Open House Meeting Letter and Presentation
- C. Property Owners Questionnaire
- D. Property Owners Questionnaire Results No. 1 and No. 2
- E. September 5, 2012 Normandale Neighborhood Informational Meeting
- F. Preliminary Assessment Roll
- G. City Comprehensive Plan Update – Sidewalk and Bicycle Facilities (Fig. 7.10 and 7.11)
- H. Plumbers Contact Information Summary
- I. 2013 Normandale Traffic and Crash Data
- 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. November 7, 2012 Normandale Neighborhood Informational Meeting