# FEASIBILITY REPORT

## 2025 MAPLEWOOD STREET IMPROVEMENTS
## CITY PROJECT, 24-12

***Prosperity-Hazelwood Area:***
*Prosperity Road, Hazelwood Street*

***South Leg Area:***
*Parkview Lane, Parkview Court, Hillwood Drive, Ferndale Street, Oakridge Court, Beth Court, Dahl Circle, Matterhorn Drive, Timber Court, Maime Avenue, Dorland Road, Maida Court, Southcrest Avenue, Crestview Drive, Nemitz Avenue, Marnie Street, Henry Lane, Haller Lane, Haller Court*

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

*SIGNATURE:* Jonathon E. Jarosch
*Jonathon E. Jarosch, P.E.*

*Date: 1/21/2025*
*License No. 49105*

*Document Prepared by: Tyler M. Strong, E.I.T.*

# Table of Contents

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## Executive Summary

This report has been prepared for the 2025 Maplewood Street Improvements, City Project 24-12. The project includes two areas; the Prosperity-Hazelwood area and the South Leg area. A map of the project streets to be improved is shown in Exhibit 1. The streets to be improved total approximately 4.4 miles in length.

The Prosperity-Hazelwood area includes Prosperity Road from County Road B to Larpenteur Avenue and Hazelwood Street from Frost Avenue to Ripley Avenue. The South Leg area is made up of 7 different smaller neighborhoods located in southern leg of Maplewood. These neighborhoods are generally bounded by Lower Afton Road to the north, McKnight Road to the west, Bailey Road to the south and Century Avenue to the east.

This project is a part of the 2025 – 2029 Maplewood Capital Improvement Plan (CIP). After review and approval from City Council, construction would begin in June of 2025. A map showing what type of improvement each street is proposed to receive is shown in Exhibit 2 and is further described below.

Typical Pavement Rehabilitation Improvements:

- Full depth reclamation (grinding/mixing) of pavement and underlying aggregate base.
- Removal of excess reclaim material to accommodate new pavement section.
- Installation of new bituminous pavement over reclaimed aggregate base material.
- Replacement of soft subgrade soils under roadway on an as needed basis.
- Spot replacement of structurally damaged concrete curb and gutter.
- Improvements to existing pedestrian features.
- Saw and seal of control joints for the new bituminous pavement.
- Replacement of outdated utility surface castings and spot replacement of failing structures.
- Installation of sacrificial anodes on water mains as determined by St. Paul Regional Water Services (SPRWS). The anode acts to take the corrosion from the water main and increases its service life.
- Restoration of disturbed driveways, boulevards and landscaping impacted by the project.

Typical Full Reconstruction Improvements:

- Full removal of existing pavement and underlying aggregate base.
- Full replacement of asphalt pavement section.
- Subgrade soil corrections based on soil boring data.
- Construction of new concrete curb and gutter.
- Improvements to existing pedestrian features and potential for new facilities.
- Saw and seal of control joints for the new bituminous pavement.
- Installation on sacrificial anodes on water mains as determined by SPRWS.
- Significant utility improvements to include the expansion of the storm sewer system, replacement of water main on select streets as determined by SPRWS and spot replacement of select sanitary sewer main and services.
- Water quality improvements such as rain gardens and infiltration basins where feasible.
- Restoration of driveways, turf and landscape features impacted by the project.

Additional Improvements Included with Project:

- Sewer lining of deteriorating sanitary mains in miscellaneous areas throughout the City.
- Fog seal of past neighborhood improvement project streets.

The estimated costs, shown below, include a 10% construction contingency and a 12% allowance for geotechnical, legal and fiscal expenses.

| Estimated Project Cost Summary | | |
|---|---|---|
| **Proposed Improvements** | **Total Amount** | **% of Total** |
| Street Improvements | $5,603,900 | 59% |
| Drainage Improvements | $2,496,700 | 26% |
| Sanitary Sewer Improvements | $583,400 | 4% |
| Water System Improvements | $904,300 | 11% |
| **Total Estimated Project Cost:** | **$9,588,300** | **100%** |

The improvements are proposed to be financed through Environmental Utility Fund, General Obligation (GO) Bonds, Sanitary Sewer Fund, Special Benefit Assessments, St. Paul Regional Water Services (SPRWS), Street Revitalization Fund and Water Area Fund.

| Estimated Project Cost Recovery | | |
|---|---|---|
| **Funding Source** | **Total Amount** | **% of Total** |
| General Obligation (G.O.) Improvement Bonds | $2,419,941 | 25% |
| Street Revitalization Fund | $2,451,639 | 26% |
| Environmental Utility Fund | $1,863,000 | 20% |
| Sanitary Sewer Fund | $583,400 | 6% |
| Water Area Fund (WAC) | $133,300 | 1% |
| St. Paul Regional Water Services (SPRWS) | $771,000 | 8% |
| Special Benefit Assessment | $1,366,020 | 14% |
| **Total Estimated Project Funding:** | **$9,588,300** | **100%** |

| Project Schedule | Date |
|---|---|
| Order Preparation of Feasibility Study | 8/12/2024 |
| Neighborhood Meeting #1 (South Leg Area only) | 12/18/2024 |
| Neighborhood Meeting #1 (Prosperity-Hazelwood Area only) | 12/19/2024 |
| City Council Meeting \| Accept Feasibility Study, Order Public Hearing, Authorize Preparation of Plans and Specifications | 1/27/2025 |
| Neighborhood Meeting #2 (South Leg and Prosperity-Hazelwood Area) | February 2025 |
| City Council Meeting \| Public Hearing and Order Improvement | 2/24/2025 |
| City Council Meeting \| Approve Plans and Specifications, Authorize Advertisement for Bids, Authorize Preparation of Assessment Roll | March 2025 |
| Bid Opening | April 2025 |
| City Council Meeting \| Award Contract | May 2025 |
| Neighborhood Meeting #3 (South Leg Area only) | May 2025 |
| Neighborhood Meeting #3 (Prosperity-Hazelwood Area only) | May 2025 |
| Begin Construction | June 2025 |
| City Council Meeting \| Accept Assessment Roll and Order Assessment Hearings | September 2025 |
| Neighborhood Meeting #4 (South Leg Area and Prosperity-Hazelwood Area) | September 2025 |
| City Council Meeting \| Assessment Hearing and Adopt Assessment Roll | September 2025 |
| Complete Construction | November 2025 |
| Assessments Certified to Ramsey County | November 2025 |

# 2025 MAPLEWOOD STREET IMPROVEMENTS

# CITY PROJECT 24-12

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## 1.0 Introduction

On August 12, 2024, the Maplewood City Council ordered the preparation of a feasibility study for the 2025 Maplewood Street Improvements. The project includes two general areas; the Prosperity-Hazelwood area and the South Leg area. The total length of streets to be improved is 4.4 miles. This project is a part of the 2025 – 2029 Maplewood Capital Improvement Plan (CIP). After review and approval from City Council, construction would begin in June of 2025. A map of the streets to be improved is shown in Exhibit 1.

The Prosperity-Hazelwood area streets total 1.3 miles in length and include Prosperity Road from County Road B to Larpenteur Avenue and Hazelwood Street from Frost Avenue to Ripley Avenue. The streets to be improved in the South Leg of Maplewood area are 3.1 miles in length. The South Leg area is made up of 7 different smaller neighborhoods located in southern leg of Maplewood. These neighborhoods are generally bounded by Lower Afton Road to the north, McKnight Road to the west, Bailey Road to the south and Century Avenue to the east.

The existing street pavement and aging utility infrastructure on these streets present an ongoing maintenance problem for the Maplewood Street and Utility Departments. Of the infrastructure elements the city maintains, the bulk of the maintenance activities consist of patching the roadway, crack sealing, filling potholes and maintaining the aging utility infrastructure. These streets are in need significant improvements.

## 2.0 Correspondence

On August 12, 2024, the Maplewood City Council ordered staff to prepare a feasibility study for the 2025 Maplewood Street Improvements. On August 22, 2024, staff mailed a letter to the residents in the project areas to provide information on the council's action and to notify about preliminary project activities would begin during the fall of 2024.

Staff mailed informational packets to impacted residents on December 5, 2024. The packet informs project residents about a number of topics including street construction frequently asked questions, an informational handout about assessments and an invitation to Neighborhood Meeting #1.

Staff held the first informational neighborhood meetings for the project on December 18, 2024 for the South Leg area and December 19, 2024 for the Prosperity-Hazelwood area. Staff mailed out the invitation to 277 property owners with 24 attending the South Leg area meeting and 4 attending the

Prosperity-Hazelwood area meeting. The meetings for each area included a presentation followed by a question and answer session. Items discussed at this meeting included the public improvement process, construction process, existing conditions, proposed improvements, assessment information and an estimated project timeline.

The majority of conversation in the South Leg area revolved around the need for concrete curb and gutter and general scope of improvements in the Haller neighborhood, assessments and general construction questions.

The majority of the conversation in the Prosperity-Hazelwood area meeting revolved around speeding concerns on Prosperity Road, the need for some on street parking on Prosperity Road, roadway widths and streetscape of Prosperity, anticipated impacts to boulevard areas, the proposed trail on Prosperity Road and the need for a four-way stop at the Frost and Prosperity intersection. Following the meeting, staff posted the meeting minutes and the presentation slides on the project website for residents to view.

Similar to past projects, the City utilized a tool called “InputID” to obtain further resident feedback. On December 31, 2024, residents were mailed an informational letter on how to access and use the tool. The InputID system is ‘social-media like’ online tool, with the ability to add comments on the map and the ability to like or dislike comments. Staff have received many questions and comments about the project on this online tool. Some of these comments included concerns regarding speeding and safety along Prosperity Road, drainage concerns, comments on the poor condition of the street pavement and the need for additional street lighting. Staff will continue to monitor these comments throughout design.

Additional neighborhood meetings and stakeholder correspondence are planned throughout the public improvement process to continue conversations with area residents and to ensure that everyone affected by the potential project is well informed and has had multiple chances to provide input. A second neighborhood meeting will be scheduled prior to the public hearing in February 2025. The timing of this meeting provides residents with the opportunity to hear about the latest project developments and to have their questions answered prior to the public hearing.

*Property Owner Concerns*

A few comments were received from residents about the frequency of speeding vehicles along Prosperity Road. Staff will look at options during design to promote lower speeds. Typically, this would include narrowing the street width, adding a barrier curb and narrowing lane striping to make the roadway feel more constricted. The City also can use its mobile speed display sign to help grab the driver’s attention to their current speed. Enforcement by the Police Department is another tool that can help with the more unreasonable drivers.

Staff received mostly positive feedback from residents regarding the proposed asphalt trail on the West side of Prosperity Road running from County Road B to Larpenteur Avenue. Much of the conversation revolved around improving pedestrian safety and connection to points of interest along Prosperity. There was a general concern from a number of residents about how the new trail would impact their front yard.

Staff received many general comments from residents at Neighborhood Meeting #1 about the need for some on-street parking on Prosperity Road north of Frost Avenue.

Staff received a few comments at Neighborhood Meeting #1 about how the project would impact boulevard trees. The City sees boulevard trees as a valuable asset to neighborhoods. During design, the team does everything it can to design around trees to minimize the need for removal. If there is not a way to reconstruct the street and utilities without impacting a boulevard tree we will reach out to the property owner and work with them on the removal and offer a replacement tree. All boulevard ash trees (in the City Right of Way) will be removed as a part of the project due to the impacts of the emerald ash borer.

Area residents also stated a concern for the safety of the intersection of Prosperity Road and Frost Avenue. They stated that there were frequent near-miss situations that occur between vehicles at this intersection and a number of crashes as well.

Staff received a significant amount of feedback at Neighborhood Meeting #1 from residents in the Haller neighborhood of the project regarding the proposed concrete curbing on Haller Lane and Haller Court. Many of the residents in this neighborhood do not support the installation of concrete curb ribbon within their neighborhood. Their reasons included an increased assessment costs associated with concrete curb installation, a general desire to maintain the rural character of the neighborhood (which is zoned as residential estates) and a lack of need for a curb to control drainage in their neighborhood. This area was originally designed for runoff to shed off the roadway into boulevard areas. The residents also brought up concerns with erosion of boulevards in areas of the neighborhood.

## 3.0 Existing Conditions

*Street History*

The project streets were originally constructed between the 1940's and 1990's. Prosperity Road and Hazelwood Street were constructed the earliest, between the 1940's and 1960's. The streets in the South Leg area were constructed between the 1970's and the 1990's. Due to the large gap in infrastructure age and lack of concrete curb and gutter, the type of improvements needed for Prosperity Road and Hazelwood Street will greatly differ from the rest of the project streets.

Prosperity Road is functionally classified as a collector street, with the rest of the project streets classified as local streets. Local streets provide conveyance for vehicle traffic between properties and higher volume collector streets such as Prosperity Road, English Street, Highwood Avenue and Linwood Avenue. Collector streets provide conveyance for vehicle traffic between local streets and higher traffic volume arterial streets such as White Bear Avenue, McKnight Road and Century Avenue. All streets are signed or designated as 30 MPH.

Widths of existing streets vary slightly and some are somewhat irregular with respect to their lengths. Table A summarizes the average widths of all existing streets. The averages are based on topographic data taken in 2024 and measurements along each street length. Where concrete curb and gutter is present, widths are measured from toe-of-curb to toe-of-curb. Where concrete curb and gutter is not present, widths are measured from the edges of the asphalt pavement.

| Table A: Existing Street Widths | | |
|---|---|---|
| 2025 Maplewood Street Improvements | | |
| Prosperity-Hazelwood Area | | |
| **Street** | **From/To** | **Average Width (ft.)** |
| Prosperity Road | County Road B/Larpenteur Avenue | 35 |
| Hazelwood Street | Frost Avenue/Ripley Avenue | 30 |

| South Leg Area | | |
|---|---|---|
| **Street** | **From/To** | **Average Width (ft.)** |
| Parkview Lane | Londin Lane/London Lane | 26 |
| Parkview Court | Cul de sac/Parkview Lane | 26 |
| Hillwood Drive | Sterling Street/Cul de sac | 30 |
| Ferndale Street | Hillwood Drive/Linwood Avenue | 30 |
| Oakridge Court | Hillwood Dr/Cul de sac | 30 |
| Beth Court | Cul de sac/Ferndale Street | 30 |
| Dahl Circle | Cul de sac/Sterling Street | 30 |
| Matterhorn Drive | Cul de sac/Sterling Street | 30 |
| Timber Court | Cul de sac/Sterling Street | 30 |
| Mamie Avenue (West) | Dorland Road/Lakewood Drive | 26 |
| Dorland Road | Southcrest Avenue/Maime Avenue | 26 |
| Southcrest Avenue (West) | Lakewood Drive/Dorland Road | 26 |
| Maida Court | Dorland Rd/Cul de sac | 26 |
| Crestview Drive | Highwood Avenue/Southcrest Avenue | 29 |
| Southcrest Avenue (East) | Crestview Drive/Marnie Street | 29 |
| Marnie Street | Highwood Avenue/Dead end | 29 |
| Mamie Avenue (East) | Crestview Drive/Marnie Street | 29 |
| Nemitz Avenue | Crestview Dr/Marnie Street | 29 |
| Henry Lane | Carver Avenue/Dead end | 25 |
| Haller Lane | Sterling Street/Cul de sac | 25 |
| Haller Court | Haller Lane/Cul de sac | 25 |

*Pavement Condition*

The Pavement Condition Index (PCI) method was used to determine the condition of the project street pavement. The PCI method of rating pavement is based on a visual survey of the pavement and is on a scale from 0 and 100, with zero being the worst possible pavement condition and 100 being the best possible condition (i.e. a new road). The PCI method was developed by the United States Army Corps of Engineers and is widely used in asset management and transportation civil engineering. It is the City's general goal to have 75-percent of local streets at a rating of 70 or above.

| Table B: Pavement Condition Index (PCI) | | | |
|---|---|---|---|
| 2025 Maplewood Street Improvements | | | |
| Prosperity-Hazelwood Area | | | |
| **Street** | **From/To** | **Feet** | **2024 PCI** |
| Hazelwood Street | Ripley Avenue/Frost Avenue | 745 | 51 |
| Prosperity Road | Summer Avenue/Frost Avenue | 700 | 22 |
| Prosperity Road | Harris Avenue/Burke Avenue | 1183 | 39 |
| Prosperity Road | Burke Avenue/County Road B | 416 | 49 |
| Prosperity Road | Frost Avenue/Harris Avenue | 1526 | 49 |
| Prosperity Road | Larpenteur Avenue/Summer Avenue | 2039 | 26 |
| **South Leg Area** | | | |
| Beth Court | Cul de sac/Ferndale Street | 236 | 34 |
| Crestview Drive | Nemitz Avenue/Maime Avenue | 465 | 63 |
| Crestview Drive | Mamie Avenue/Highwood Avenue | 368 | 43 |
| Crestview Drive | Southcrest Avenue/Nemitz Avenue | 411 | 61 |
| Dahl Circle | Cul de sac/Sterling Street | 258 | 58 |
| Dorland Road | Southcrest Avenue/Maida Court | 183 | 60 |
| Dorland Road | Maida Court/Maime Avenue | 477 | 57 |

| | | | |
|---|---|---|---|
| Dorland Road | Southcrest Avenue/Maida Court | 183 | 59 |
| Dorland Road | Maida Court/Maime Avenue | 477 | 57 |
| Ferndale Street | Beth Court/Hillwood Drive | 200 | 42 |
| Ferndale Street | Linwood Avenue/Beth Court | 593 | 51 |
| Haller Court | Haller Lane/Cul de sac | 404 | 25 |
| Haller Lane | Haller Court/Cul de sac | 468 | 28 |
| Haller Lane | Sterling Street/Haller Court | 862 | 18 |
| Henry Lane | Dead End/Carver Avenue | 2116 | 8 |
| Hillwood Drive | Sterling Street/Ferndale Street | 300 | 46 |
| Hillwood Drive | Ferndale Street/Oakridge Court | 255 | 54 |
| Hillwood Drive | Oakridge Court/Cul de sac | 449 | 34 |
| Maida Court | Dorland Road/Cul de sac | 161 | 33 |
| Mamie Avenue | Crestview Drive/Marnie Street | 498 | 74 |
| Mamie Avenue | Dorland Road/End of Plat | 278 | 54 |
| Marnie Street | Southcrest Avenue/Nemitz Avenue | 361 | 48 |
| Marnie Street | Mamie Avenue/Highwood Avenue | 417 | 40 |
| Marnie Street | Nemitz Avenue/Maime Avenue | 358 | 38 |
| Matterhorn Drive | Cul de sac/Sterling Street | 633 | 76 |
| Matterhorn Drive | Sterling Street/Dead end | 169 | 67 |
| Nemitz Avenue | Crestview Drive/Marnie Avenue | 602 | 60 |
| Nemitz Avenue | Marnie Street/150’ E of Marnie Avenue | 178 | 74 |
| Oakridge Court | Hillwood Drive/Cul de sac | 477 | 37 |
| Parkview Court | Cul de sac/Parkview Lane | 212 | 36 |
| Parkview Lane | Parkview Court/Londin Lane | 618 | 41 |
| Parkview Lane | Londin Lane/Parkview Court | 883 | 45 |
| Southcrest Avenue | Crestview Drive/Marnie Street | 510 | 59 |
| Southcrest Avenue | Dorland Road/End of Plat | 340 | 66 |
| Timber Court | Cul de sac/Sterling Street | 317 | 44 |
| | **Total Length (Miles) =** | **4.4** | |
| | **Weighted Average 2024 PCI =** | | **42** |

The existing streets have failures including, but not limited to, transverse and edge cracking, medium to high severity patching, fatigue (alligator) cracking, block cracking and many potholes which need patching yearly. A number of areas within the street section have water pooling in them as well. These puddles undergo freeze thaw cycles in the winter, which deteriorates the pavement at a faster rate. Figures 1 - 8 on the following pages display pictures of the level of pavement deterioration on these streets. The pictures provide an accurate representation of the current state of pavement condition throughout the neighborhood.

**Prosperity Road**


*FIGURE 1: Pavement Condition Photos*

**Parkview Lane**

*FIGURE 2: Pavement Condition Photos*

**Hillwood Drive**

*FIGURE 3: Pavement Condition Photos*

**Timber Court**

*FIGURE 4: Pavement Condition Photos*

**Crestview Drive**


*FIGURE 5: Pavement Condition Photos*

**Maida Court/Dorland Road**


*FIGURE 6: Pavement Condition Photos*

**Oakridge Court**

*FIGURE 7: Pavement Condition Photos*

**Haller Lane**

*FIGURE 8: Pavement Condition Photos*

*Geotechnical Summary*

Independent Testing Technologies (ITT) was hired to prepare a geotechnical investigation report for the purposes of designing and constructing the roadway project. Exhibit 4 contains the summary of the geotechnical investigation report. The report provides information about the existing road section, soils underlying the road section and recommendations on construction means and methods.

Due to past construction methods and patching of the existing roadway, asphalt pavement and aggregate base thicknesses are irregular. This is especially the case on Prosperity Road and Hazelwood Street. The average existing roadway section on each street is shown below in Table C.

| **Table C: Existing Average Pavement Section** | | | |
|---|---|---|---|
| **2025 Maplewood Street Improvements** | | | |
| **Prosperity-Hazelwood Area** | | | |
| **Street** | **From/To** | **Pavement Thickness (in)** | **Aggregate Thickness (in)** |
| Prosperity Road | County Road B/Larpenteur Avenue | 8 | 5 |
| Hazelwood Street | Frost Avenue/Ripley Avenue | 8 | 8 |
| **South Leg Area** | | | |
| Parkview Lane | Londin Lane/Londin Lane | 3.5 | 7 |
| Parkview Court | Cul de sac/Parkview Lane | 3.5 | 7 |
| Hillwood Drive | Sterling Street/Cul de sac | 3.5 | 7 |
| Ferndale Street | Hillwood Drive/Linwood Avenue | 3.5 | 7 |
| Oakridge Court | Hillwood Dr/Cul de sac | 3.5 | 7 |
| Beth Court | Cul de sac/Ferndale Street | 3.5 | 7 |
| Dahl Circle | Cul de sac/Sterling Street | 3.5 | 6 |
| Matterhorn Drive | Cul de sac/Sterling Street | 3.5 | 6 |
| Timber Court | Cul de sac/Sterling Street | 3.5 | 6 |
| Mamie Avenue (West) | Dorland Road/Lakewood Drive | 3.5 | 12 |
| Dorland Road | Southcrest Avenue/Maime Avenue | 3.5 | 12 |
| Southcrest Avenue (West) | Lakewood Drive/Dorland Road | 3.5 | 12 |
| Maida Court | Dorland Rd/Cul de sac | 3.5 | 12 |
| Crestview Drive | Highwood Avenue/Southcrest Avenue | 3.5 | 8 |
| Southcrest Avenue (East) | Crestview Drive/Marnie Street | 3.5 | 8 |
| Marnie Street | Highwood Avenue/Dead end | 3.5 | 8 |
| Mamie Avenue (East) | Crestview Drive/Marnie Street | 3.5 | 8 |
| Nemitz Avenue | Crestview Dr/Marnie Street | 3.5 | 8 |
| Henry Lane | Carver Avenue/Dead end | 2.5 | 4 |
| Haller Lane | Sterling Street/Cul de sac | 3.5 | 8 |
| Haller Court | Haller Lane/Cul de sac | 3.5 | 8 |

Based on the pavement core results, the existing pavement section is past its useful life. The project streets have deteriorated to the point at which routine maintenance is no longer cost-effective or even possible in some situations. A full replacement of the pavement on all streets is recommended.

Many areas of the project streets have an inadequate crown, which allows water to pond in small depressions and deteriorate the pavement surface. As the street ages, depressions in the pavement trap water, subjecting the pavement to freeze-thaw pop-outs and edge cracking. This deterioration eventually forms potholes over time. It is recommended a crown at no less than 2.0 percent be installed on all project streets.

Frost-sensitive soils within the road subgrade have been discovered on Prosperity Road. Under certain conditions, these soils can cause freeze-thaw damage to the roadway over time. If these soils are encountered during the construction process, they will be removed and replaced with a well-draining granular material. Due to the presence of these soils, a full removal and replacement of the existing road section recommended on Prosperity Road from County Road B to Larpenteur Avenue.

*Existing Curb*

During a rain event, concrete curb and gutter channels storm water runoff from streets, buildings and yards into the underground storm sewer system. This method of runoff conveyance is the most effective in preserving streets due to the following:

- Provides a concrete supporting edge for asphalt pavements.
- Channels runoff on a non-erodible surface.
- Contains vehicle traffic and plowing to the street.
- Reduces long-term costs of pavement maintenance.
- Provides an improved aesthetic appearance, or “curb appeal” for adjacent properties.

Existing concrete curb and gutter is present on the following streets:

- Parkview Lane
- Parkview Court
- Hillwood Drive
- Ferndale Street
- Oakridge Court
- Beth Court
- Dahl Circle
- Matterhorn Drive
- Timber Court
- Maime Avenue
- Dorland Road
- Maida Court
- Southcrest Avenue
- Crestview Drive
- Nemitz Avenue
- Marnie Street

The existing curb on the streets listed above is generally in good condition, with only spot repairs needed.

Existing concrete curb and gutter is not present on the following streets.

- Prosperity Road
- Hazelwood Street
- Haller Lane
- Haller Court
- Henry Lane

It should be noted that the Haller neighborhood was designed as a rural section. The roadway profile was designed to shed runoff to the edge of the roadway, with the boulevard areas being designed to accept this runoff.

*Existing Utilities*

Sanitary Sewer:
The majority of the sanitary sewer in the project area was installed between the 1950's and 1990's as properties were developed in the area. The sanitary sewer mains in the Prosperity-Hazelwood area were installed in the 1950's and 1960's, consisting of 8" and 10" vitrified clay (VC) pipe. The sanitary sewer mains in the South Leg area were installed between the 1970's and the 1990's and consist mostly of modern 8" polyvinyl chloride (PVC) pipe.

The Prosperity-Hazelwood area lies within Maplewood Sanitary Sewer District 26. The sewage from properties within District 26 ultimately flows south through a series of pipes towards Larpenteur Avenue and McAfee Street intersection where it discharges into the Metropolitan Council sewer interceptor which flows south under McAfee Street into St. Paul.

The South Leg area lies within Maplewood Sanitary Sewer Districts 47 and 50. The sewage from properties within these districts ultimately flows west through a series of pipes towards Highway 61 where it discharges into the Metropolitan Council sewer interceptor which flows north within the Highway 61 corridor.

During the sanitary sewer manhole inspection in the fall of 2024, Maplewood Public Works Maintenance Staff noted no significant issues with the structures under the project streets. Project staff will review televising tapes taken of the sewer mains to identify any potential main repairs needed.

Water Main:
Cast-Iron (CI) pipe for water main has been installed since the early 1900's. The installation of CI pipe within Maplewood ended in the 1970's. As CI pipe ages, it corrodes (rusts), becomes brittle and susceptible to failure. More modern pipe material, such as plastic or Ductile-Iron (DI), are currently the industry standard. These materials are much more resistant to breakage due to the flexibility and resilience of the material.

The water main on the project streets is currently a combination of DI pipe and CI pipe depending on the street and era it was constructed in. The water main piping within the entire project area is owned, operated and maintained by St. Paul Regional Water Services (SPRWS).

Records indicate existing water main pipe is CI on the following streets:

- Prosperity Road (County Road B to Frost Avenue), 16-Inch
- Prosperity Road (Frost Avenue to Larpenteur Avenue), 12-Inch
- Hazelwood Street (Frost Avenue to Ripley Avenue), 6-Inch
- Crestview Drive (Highwood Avenue to Southcrest Drive), 6-Inch
- Southcrest Avenue (Crestview Drive to Marnie Street), 6-Inch
- Marnie Street (Dead end to Highwood Avenue), 6-Inch
- Nemitz Avenue (Dead end to Crestview Drive), 6-Inch
- Mamie Avenue (Crestview Drive to Marnie Street), 6-Inch

The rest of the project streets have DI water mains.

Storm Sewer and Drainage:
The entire project area lies within the Ramsey-Washington Metro Watershed District (RWMWD). The Prosperity-Hazelwood area of the project contributes runoff to the Keller Lake and Wakefield Lake sub-watersheds. The South Leg area of the project contributes runoff to the Snake Creek, Fish Creek,

Blufflands and Carver Lake sub-watersheds. The runoff water within all 6 sub-watersheds ultimately discharges into the Mississippi River.

The existing storm sewer system on project streets was inspected by staff during the fall of 2024. On streets with concrete curb and gutter, staff noted only minor deficiencies to the storm sewer system. Observed deficiencies included a few failed storm sewer structures, failed casting adjustment rings and broken inlet castings.

On streets without concrete curb, there have been a number of drainage issues reported by local residents and maintenance staff, mostly along Prosperity Road. During larger storm events, current inlet and pipe capacity is not great enough in some areas, resulting in flooding of the street and some yards for a period of time. Erosion of pavement edges and icing of the streets due to absence of a storm sewer system and lack of concrete curb is also of concern.

Maintenance staff have also noted other issues, as shown below.

- Improve ability to maintain Wakefield Lake grit chamber.
- Eliminate Prosperity Road (County Road B to Frost Avenue) ditch system due to ongoing drainage problems.
- Replace failing Corrugated Metal Pipes (CMP) on Prosperity Road and within Wakefield Park.
- Improve ability to access manhole at NE quadrant of Prosperity Road and Summer Avenue.
- Improve ability to remove sediment from sump manholes for east and west Wakefield Park basins.

Project staff will look into potential solutions to these issues during design of the project.

## 4.0 Proposed Improvements

*Living Streets – Street Widths and Geometrics*

The City of Maplewood adopted a Living Streets Policy in January of 2013. The high-level goals of the policy include the following:

- Encourage people to travel by walking or bicycling
- Enhance the safety and security of streets
- Maximize the infiltration of storm water
- Improve the quality of storm water runoff
- Enhance the urban forest
- Reduce life cycle costs
- Create aesthetically appealing neighborhoods

The policy promotes narrower streets, traffic calming features, pedestrian walkways where feasible, improved street aesthetics, water quality improvements and additional boulevard trees. Standard design templates for local and collector streets per the policy are attached in Exhibit 5.

Full implementation of this policy is typically recommended for streets which do not have existing concrete curb and gutter and are in an urban setting. Typically, where streets have existing concrete curb and gutter a full implementation of the policy is cost prohibitive and not feasible. Staff recommend implementation of the Living Streets Policy on Prosperity Road and Hazelwood Street.

| Table D: Proposed Street Widths | | | |
|---|---|---|---|
| **2025 Maplewood Street Improvements** | | | |
| **Street** | **From/To** | **Proposed Width (ft.)** | **Existing Width (ft.)** |
| Prosperity Road | County Road B/Frost Avenue | 26-32 | 35 |
| Prosperity Road | Frost Avenue/Larpenteur Avenue | 26-32 | 35 |
| Hazelwood Street | Frost Avenue/Ripley Avenue | 28 | 30 |

Hazelwood Street:
A 26 to 30-foot street width (measured from face of curb to face of curb) is typically utilized on local neighborhood streets similar Hazelwood Street. This street width has proven to be adequate to accommodate lower volume traffic, vehicle parking on one side of the street and space for local pedestrians and bicyclists. Staff recommends a 28-foot street width on Hazelwood Street.

Prosperity Road:
Prosperity Road is classified as a collector street. Collector streets can vary significantly in width and streetscape, depending on a number of factors. Some of these include adjacent property types (commercial/residential), traffic volumes, need for improvements to or addition of pedestrian facilities, availability of right of way, speeding concerns, resident feedback and on-street parking needs.

Based on the factors above and the feedback heard from area residents, staff recommends a 28-foot street width to accommodate two lanes of traffic, an 8-foot asphalt trail on the west side with a 3-foot grass boulevard between and parking bays placed in strategic locations on Prosperity Road.

Haller Neighborhood Discussion:
The Haller neighborhood is a unique neighborhood compared to the rest of Maplewood. This area is zoned as ‘Residential Estates’, reflecting a more rural character than the rest of Maplewood with larger lots and a lack of public utilities. Private wells and private septic systems meet these needs. The existing drainage pattern in this neighborhood carries that rural feel, with roadway runoff being accommodated with boulevard swales and wooded ravines.

Staff proposed the installation of ribbon-style concrete curb and gutter in this neighborhood during neighborhood meeting #1. Ribbon curb is a flat curbing that allows water to shed off into boulevard areas. During the neighborhood meeting, staff received a substantial amount of feedback from the Haller area residents stating that they want to maintain the rural feel of their neighborhood. They were strongly opposed to the addition of concrete curb and gutter, as they did not feel the additional cost gained them anything and would remove the rural feel of the neighborhood.

Taking this feedback into account, staff reviewed the original drainage and roadway design of the neighborhood and considered the ‘residential estate’ zoning unique to this neighborhood. Staff is recommending that the roadway layout remain as-is, maintaining the existing drainage patterns and rural character of the neighborhood without the addition of ribbon-style curbing. During the design of the project, staff will incorporate methods to reduce erosion along the edge of the pavement.

*Street Reconstruction Scope*

This project will have a combination of different construction methods depending on existing street and infrastructure condition. In general, streets where all new concrete curb and gutter is proposed will

receive a full reconstruction (Prosperity Road and Hazelwood Street). Those streets with existing concrete curb and gutter that is in good condition and only requiring spot replacement are proposed to receive a pavement rehabilitation type improvement. Exhibit 2 shows which streets are proposed for full reconstruction and pavement rehabilitation.

Staff recommend the following improvements be made on pavement rehabilitation streets shown in Exhibit 2.

- Full depth reclamation (grinding/mixing) of pavement and underlying aggregate base.
- Removal of excess reclaim material to accommodate volume of new pavement section.
- Installation of new bituminous pavement over reclaimed aggregate base material.
- Replacement of soft subgrade soils under roadway on an as needed basis.
- Spot replacement of structurally damaged concrete curb and gutter.
- Improvements to existing pedestrian features.
- Saw and seal of control joints for the new bituminous pavement.
- Replacement of outdated utility surface castings and spot replacement of failing structures.
- Installation of sacrificial anodes on water mains as determined by St. Paul Regional Water Services (SPRWS).
- Restoration of disturbed driveways, boulevards and landscaping impacted by the project.

Staff recommend the following improvements be made on full reconstruction streets as shown in Exhibit 2.

- Full removal and replacement of pavement and underlying aggregate base.
- Installation of new bituminous pavement over new aggregate base material.
- Removal and replacement of soft and frost susceptible soils as necessary.
- Construction of new concrete curb and gutter.
- Improvements to existing pedestrian features and potential for new facilities.
- Saw and seal of control joints for the new bituminous pavement.
- Installation on sacrificial anodes on water mains as determined by SPRWS.
- Significant utility improvements to include; expansion of the storm sewer system, replacement of water main on select streets as determined by SPRWS and replacement of select sanitary sewer services.
- Water quality improvements such as rain gardens and infiltration basins where feasible.
- Restoration of driveways, turf and landscape features impacted by the project.

*Concrete Curb and Gutter*

Spot Replacement:
Damaged sections of concrete curb often result in standing water in the curb-line or edge of road, which causes further damage to the road pavement over time. Based on an initial site investigation, staff have estimated that about 20% of the existing concrete curb and gutter would need to be replaced on pavement rehabilitation streets. During construction, a city project representative will determine which sections of concrete curb and gutter will need to be removed and replaced.

Staff recommend only structurally deficient portions of the existing concrete curb and gutter be removed and replaced on pavement rehabilitation streets. Curb replacement areas will match the existing curb design.

New Construction:
Concrete curb and gutter, Design B618 (Barrier Curb), has been Maplewood's standard curb and gutter

for its streets in an urban setting since the early 2000's. Barrier curbing provides the following advantages:

- Provides a defined channel (gutter) for storm water runoff to flow without damaging roadway pavement or eroding grass boulevards.
- Provides a concrete edge to support the asphalt street pavement.
- Provides a traffic channelizing barrier, which prevents the probability of vehicles sliding off the roadway during unfavorable weather conditions.
- Protects the grass boulevard areas and mailboxes from damage by snowplows and vehicles.
- Curb depressions at driveways provide clear identification of the driveways and limits blockage of driveways by vehicles parking on the street.

Knockdowns are to be installed at all driveway openings for smooth vehicle transitions into the driveway. Ribbon curb may also be needed in some select areas to facilitate drainage to existing ponding areas.

Staff recommend installing Design B618 (Barrier Curb), as shown in Exhibit 6, on Prosperity Road and Hazelwood Street. This curbing will aid in mitigating drainage issues raised by area residents along with containing street runoff within the street section.

*Pedestrian Improvements*

Sidewalks and Trails:
Staff reviewed the City's 2040 Comprehensive Plan, Parks Master Plan and Living Streets Policy to see what additional guidance these documents could provide for sidewalks and trails in the project area. These guiding documents do not directly call for any additional sidewalks or trails on the project.

In looking at the larger trail and sidewalk network in the region, staff noted that the community as a whole would benefit from a trail along Prosperity Road from County Road B to Larpenteur Avenue. A few residents at Neighborhood Meeting #1 were also in favor of a new trail on Prosperity Road to improve pedestrian and bicyclist safety. The new trail along Prosperity Road would provide a safe, off-street connection to the following features:

- County Road B trail system.
- Frost Avenue trail and sidewalk system.
- Gateway State Trail system.
- Wakefield Park.
- Future Larpenteur Avenue trail/sidewalk system.

A map of the existing pedestrian network with the proposed trail is shown in Exhibit 3.

After considering all of this information, staff recommend an 8-foot wide asphalt trail be installed on the west side Prosperity Road between County Road B and Larpenteur Avenue as a part of this project.

Pedestrian Ramps and Crossings:
Staff will review all existing and proposed pedestrian crossing points and evaluate the need for upgrades or additional crossings based on current American's with Disabilities Act (ADA) requirements and the City of Maplewood's Crossing Policy.

*Sanitary Sewer*

In 2024, the City of Maplewood Sanitary Sewer Department performed manhole inspections within the project area. The department also regularity televises and inspects all sanitary sewer mains in the city over a 3-year period.

Manholes:
After reviewing the manhole inspections performed in 2024, all existing sanitary manhole structures in the project area are in good condition. Outdated castings are to be upgraded to new standard. Replacement of the manhole castings with the new standard will eliminate storm water Inflow and Infiltration (I and I) into the sanitary sewer system. Eliminating the flow of storm water into the sanitary sewer system reduces the amount of water conveyed to the Metropolitan Council Wastewater treatment plant, which is a top priority of the City and Metropolitan Council.

Staff recommend existing sanitary sewer manhole structures remain in place and any outdated sanitary sewer surface castings be replaced with Maplewood's Standard casting.

Main and Services:
After reviewing the sanitary sewer televising tapes, Prosperity Road has a handful of failing sewer main and sewer service locations. Sanitary sewer main and services on all other project streets were in good condition.

Staff recommend spot replacement of the sanitary sewer main and sewer services under Prosperity Road on an as needed basis to prevent costly potential future utility cuts into the newly constructed road.

Sanitary Sewer Lining:
Sewer lining is the process of installing a liner and epoxy resin within an existing pipe to create a new, structurally sound pipe. Lining greatly increases the design life of the pipe and also provides resistance to corrosive substances, increased pipe bearing strength, eliminates tree root intrusion, prevents groundwater intrusion, repairs settled or offset joints and reduces pipe life cycle cost.

The City's sanitary mains will be reviewed to determine which segments would be good candidates for sewer lining. An approximate length of 3,200 linear feet of sanitary sewer lining is included in the cost estimate for this feasibility report.

*Water Main*

Water Main Replacement:
St. Paul Regional Water Services (SPRWS) owns and maintains the water system throughout the project area. SPRWS has looked at the condition and age of the existing water main system and provided staff with the following direction for water main replacement.

At this time, SPRWS is directing replacement of approximately 700-feet of existing cast-iron water main on Hazelwood Street (Frost Avenue to Ripley Avenue). The larger diameter cast-iron water main pipe beneath Prosperity Road has been determined to be structurally sound and is not recommended for replacement at this time.

Sacrificial Anodes:
A sacrificial anode is a sack of magnesium powder which is attached to a water main with conductive wires. Attaching anodes to a water main improves its ability to resist corrosion (rusting) and thus

extends its service life. SPRWS has looked at the condition of the existing water main system and has directed the installation of sacrificial anodes on all new water mains and all existing water mains in the project area at approximately 200-foot intervals.

*Storm Sewer*

Storm sewer piping and inlet capacity is very limited and lacking on some project streets. The addition of a new storm sewer system on a given street provides an opportunity to incorporate water quality and volume reduction Best Management Practices (BMP's) during reconstruction. Some BMP options would include bio-filtration basins (rain gardens), underground infiltration basins and sump manholes. BMP's improve the quality of water entering area water bodies and help control the rate of storm water runoff in the area. BMP's will be designed to meet Ramsey Washington Metro Watershed District (RWMWD) and City of Maplewood requirements. During design, staff will take a close look at potential locations for water quality BMP's.

Staff recommend installing new storm sewer systems on the following street segments.

- Prosperity Road (County Road B to Frost Avenue)
- Prosperity Road (Frost Avenue to Larpenteur Avenue)
- Hazelwood Street (Frost Avenue to Ripley Avenue)

The existing overall storm sewer system on the remaining project streets is functional and in good condition, with only minor repairs needed.

A significant amount of storm sewer and BMP installations are proposed along Prosperity Road. The existing drainage pattern along this roadway utilizes ditches to channelize runoff to area storm sewer, ponds and wetlands. Area residents have noted a number of drainage issues along the corridor. The proposed storm sewer design aims to eliminate the existing ditch system to the extent possible. The proposed concrete curb and gutter will contain street runoff within the street section, channelizing it to the proposed storm sewer. A significant amount of new storm sewer piping and catch basins will be installed along the roadway to convey the runoff to BMP's, before discharging into area ponds, lakes and wetlands. Area drains will be installed to remove boulevard drainage outside of the street section as needed.

*Lighting*

Staff will reference the City's Street Lighting Policy to determine if additional street lighting is needed. The policy notes the need to install lighting for navigational and traffic safety purposes only. In general, street lighting is installed at street intersections, dead-ends, or major curves in the road. Additional lighting will be installed to bring the project streets up to policy standards.

*Private Utilities*

Private utility companies (Xcel Gas, Xcel Electric, CenturyLink/Lumen, Comcast/Xfinity, etc.) have been notified of the project and the potential impacts to private utilities. Staff will continue to coordinate with private utility companies as the project progresses.

*Erosion Control*

As part of the project plans and specifications, staff are required to prepare a Storm Water Pollution Prevention Plan (SWPPP) for the purposes of enforcing erosion and sediment control rules. The SWPPP will include erosion and sediment control methods that will be implemented throughout the

project. Silt fence, bio-rolls, erosion control blanket and other best management practices (BMP's) will be utilized where direct runoff might occur. Inlet protection will be used to protect both the existing and new catch basins during construction. Street sweeping will occur as needed on all paved street surfaces throughout the project, including intersecting streets. Watering of exposed soils and aggregate material would be done as a dust-control measure.

An erosion and sediment control plan sheet and SWPPP will be created during the design phase of this project. After street and utility work is completed, sod or seed will be placed as the permanent turf establishment in all disturbed areas. The City, in coordination with the watershed district, will closely monitor all erosion and sediment control measures throughout the construction process. The selected contractor will be required to install all preventative measures and maintain them as required by the City of Maplewood, Ramsey-Washington Metro Watershed District (RWMWD), Minnesota Pollution Control Agency (MPCA) and any other regulatory agencies.

*Traffic Control and Access*

A construction project of this magnitude will result in some inconvenience and disruption to local traffic. In general, the project will be constructed under through-traffic conditions for local residents. Staff will work with the businesses, residents, general contractor and the traffic control subcontractor to ensure disruptions are kept to a minimum.

Access for emergency vehicles to properties will be available 24-hours a day throughout the project. During short periods of time, some segments of the project may not be passable while certain work is being executed. In these instances, an alternative route and access would be available from another direction. Streets and accesses will be reopened at the end of each working day.

*Additional Project Improvements*

As part of this project, past improvements projects will be reviewed to determine which area or areas will benefit the most from a fog seal. A fog seal helps extend the useful life of the pavement by replenishing oils lost over time in the upper layer of the pavement. This treatment seals micro-cracks in the surface, which prevents water intrusion, along with restoring some flexibility to the pavement. Fog seals typically extend the total life of bituminous pavements by 3-5 years.

## 5.0 Project Cost

The estimated costs for the proposed improvements are detailed in the table on the following page. These costs include a 10% construction cost contingency and a 12% allowance for geotechnical, legal and fiscal expenses.

| Estimated Project Cost Summary | | |
|---|---|---|
| **Proposed Improvements** | **Total Amount** | **% of Total** |
| Street Improvements | $5,603,900 | 59% |
| Drainage Improvements | $2,496,700 | 26% |
| Sanitary Sewer Improvements | $583,400 | 4% |
| Water System Improvements | $904,300 | 11% |
| **Total Estimated Project Cost:** | **$9,588,300** | **100%** |

Exhibit 7 provides a more detailed construction and project cost estimate breakdown.

## 6.0 Cost Recovery

Assessments:
This project includes special assessments to the benefitting properties as one of its funding sources. Special assessments are a charge imposed on properties for an improvement that benefits those selected properties. The City of Maplewood's "Special Assessment Policy" is based on Minnesota State Statutes, Chapter 429. This statute grants cities the authority to use special assessments to help fund a broad range of public improvements.

Per statute, the special assessment amount for a given property cannot be greater than the benefit received by the property from the improvements made. Therefore, an independent appraisal firm has been hired to provide an opinion of benefit received by properties within the neighborhood project areas. The appraisal report will ultimately be utilized to set the special assessment amounts for selected properties.

For the purposes of this report, the current rates established in the City's Special Assessment Policy were utilized. There are 277 assessable residential and commercial parcels within the project area. Exhibit 8 details the preliminary assessment roll. Exhibit 9 shows the preliminary assessment map for the project. The preliminary assessment rates are as follows. Adjustments to the financing plan may be required following the receipt of the special benefits appraisal.

- Residential
    - Full Reconstruction Rate, Single Family = $6,600/Unit
    - Pavement Rehabilitation Rate, Single Family = $3,450/Unit
- Commercial/Multi-Family
    - Full Reconstruction Rate = $132.00/Front-Foot

The improvements are proposed to be financed through Environmental Utility Fund, General Obligation (GO) Bonds, Sanitary Sewer Fund, Special Benefit Assessment, St. Paul Regional Water Services (SPRWS), Street Revitalization Fund and Water Area Fund.

| Estimated Project Cost Recovery | | |
|---|---|---|
| **Funding Source** | **Total Amount** | **% of Total** |
| General Obligation (G.O.) Improvement Bonds | $2,419,941 | 25% |
| Street Revitalization Fund | $2,451,639 | 26% |
| Environmental Utility Fund | $1,863,000 | 20% |
| Sanitary Sewer Fund | $583,400 | 6% |
| Water Area Fund (WAC) | $133,300 | 1% |
| St. Paul Regional Water Services (SPRWS) | $771,000 | 8% |
| Special Benefit Assessment | $1,366,020 | 14% |
| **Total Estimated Project Funding:** | **$9,588,300** | **100%** |

The total estimated project cost is roughly $548,000 higher than the approved CIP. This is due to higher than anticipated drainage improvement costs at the feasibility level versus the CIP. These additional costs will be covered by larger contributions from the Street Revitalization Fund and the Environmental Utility Fund. Overall bonding levels are estimated to be roughly $113,000 less than the CIP estimate.

## 7.0 Schedule

The following schedule may be implemented should it be determined to proceed with the project:

| Project Schedule | Date |
|---|---|
| Order Preparation of Feasibility Study | 8/12/2024 |
| Neighborhood Meeting #1 (South Leg Area only) | 12/18/2024 |
| Neighborhood Meeting #1 (Prosperity-Hazelwood Area only) | 12/19/2024 |
| City Council Meeting \| Accept Feasibility Study, Order Public Hearing, Authorize Preparation of Plans and Specifications | 1/27/2025 |
| Neighborhood Meeting #2 (South Leg and Prosperity-Hazelwood Area) | February 2025 |
| City Council Meeting \| Public Hearing and Order Improvement | February 2025 |
| City Council Meeting \| Approve Plans and Specifications, Authorize Advertisement for Bids, Authorize Preparation of Assessment Roll | March 2025 |
| Bid Opening | April 2025 |
| City Council Meeting \| Award Contract | May 2025 |
| Neighborhood Meeting #3 (South Leg Area only) | May 2025 |
| Neighborhood Meeting #3 (Prosperity-Hazelwood Area only) | May 2025 |
| Begin Construction | June 2025 |
| City Council Meeting \| Accept Assessment Roll and Order Assessment Hearings | September 2025 |
| Neighborhood Meeting #4 (South Leg Area and Prosperity-Hazelwood Area) | September 2025 |
| City Council Meeting \| Assessment Hearing and Adopt Assessment Roll | September 2025 |
| Complete Construction | November 2025 |
| Assessments Certified to Ramsey County | November 2025 |

## 8.0 Conclusions and Recommendations

From the results of the feasibility study and site investigations, it can be concluded that:

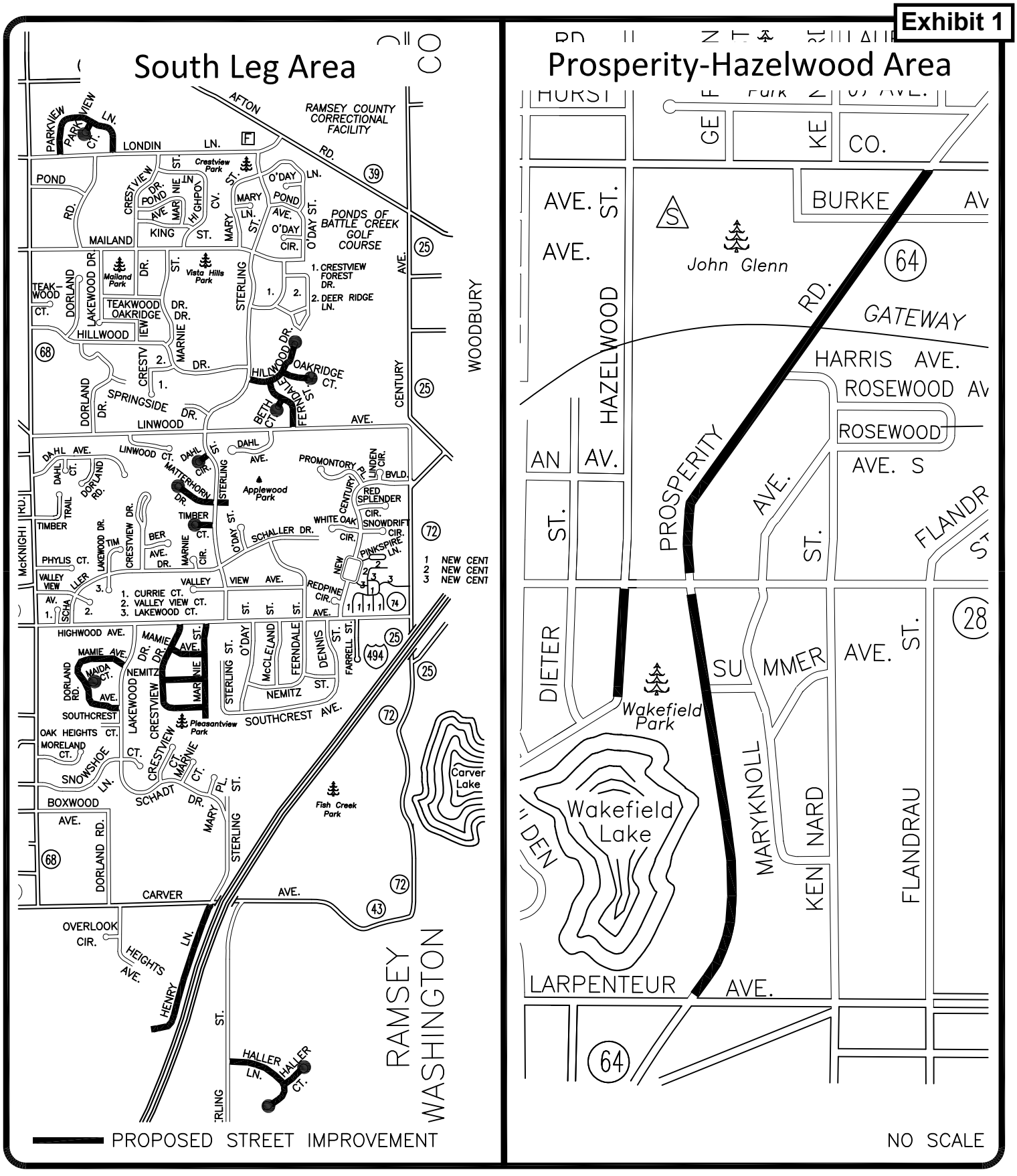
- The project is feasible as it relates to general engineering principles, practices and construction procedures as presented in this report.
- The project is necessary for economic and public quality of life reasons.
- The project is cost effective when all the related costs are considered – environmental, maintenance, private and public.
- The proposed improvement is necessary to maintain its municipal infrastructure.

In consideration of these conclusions, it is recommended that:

- If the City Council deems the project feasible, a public hearing should be held as soon as possible.
- The proposed improvements should be constructed as outlined in this report.
- The cost of the improvements will be recovered as outlined in the Cost Recovery section of this report.

# APPENDIX A

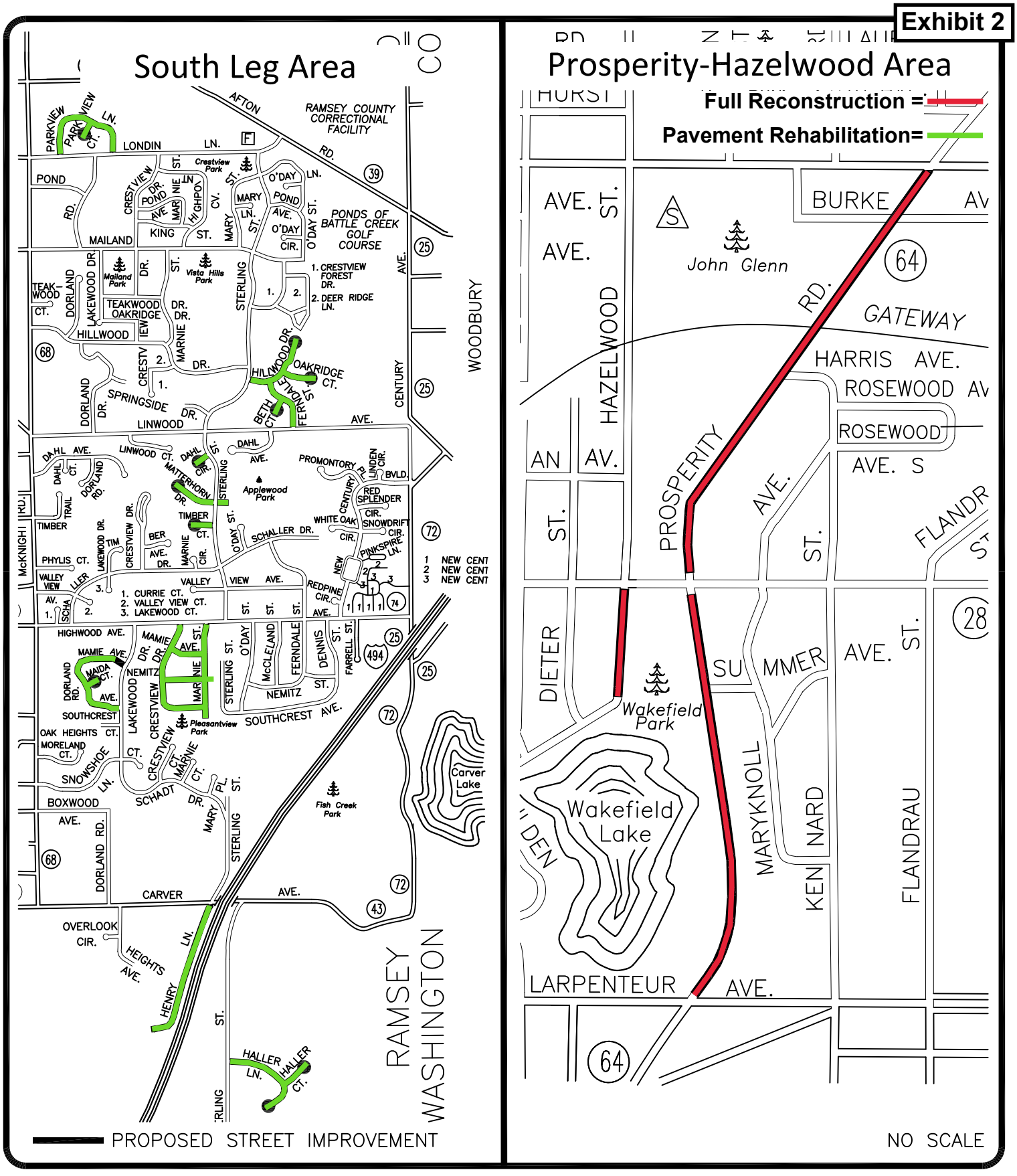
Exhibit 1




# 2025 Maplewood Street Improvements

## City Project 24-12

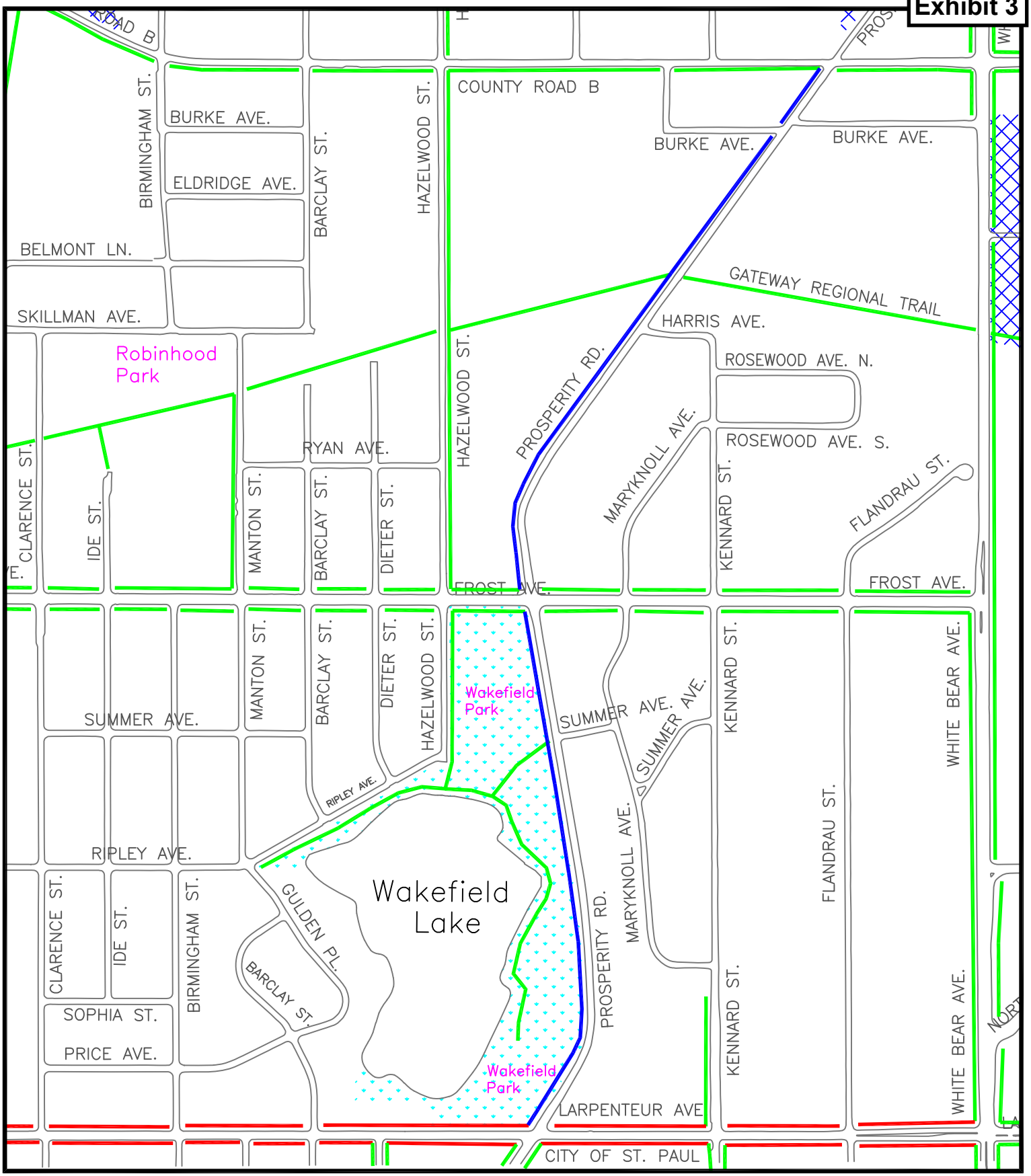
Exhibit 2




# 2025 Maplewood Street Improvements

## City Project 24-12

Exhibit 3




# PEDESTRIAN NETWORK MAP

EXISTING SIDEWALK/TRAIL

PROPOSED TRAIL W/2025 STREET PROJECT

FUTURE SIDEWALK/TRAIL

DESTINATION LOCATIONS

Exhibit 4

INDEPENDENT TESTING TECHNOLOGIES
337 31st Avenue South • Waite Park, MN 56387 • (320) 253-4338 • www.independenttestingtech.com

**NOVEMBER 13, 2024**

# PROJECT 24-366
# REPORT OF GEOTECHNICAL EXPLORATION

**For**

## 2025 STREET IMPROVEMENTS
## CITY PROJECT #24-12
## MAPLEWOOD, MINNESOTA

**Prepared For:**

## CITY OF MAPLEWOOD

INDEPENDENT TESTING TECHNOLOGIES
337 31st Avenue South • Waite Park, MN 56387 • (320) 253-4338 • www.independenttestingtech.com

November 13, 2024

Mr. Tyler Strong
City of Maplewood
1830 County Road B East
Maplewood, MN 55109

RE: 24-366 Report of Geotechnical Exploration
2025 Street Improvements- City Project #24-12
Maplewood, Minnesota

Dear Mr. Strong:

Independent Testing Technologies, Inc. is pleased to submit the results of our subsurface investigation program for this project in Maplewood, Minnesota. This report represents our work on this project as authorized by you. It includes our recommendations regarding earthwork, fill and compaction, utility installation, subgrade preparation, and pavement design with an estimated R-value. An electronic copy is enclosed.

The soils encountered were a mix of glacial till soils consisting of fine grained silty sands (SM), silty clayey sands (SC-SM), clayey sands (SC) and sandy lean clays (CL) with some outwash sands (SP-SM, SP). Organic remnant topsoil was encountered in boring SB-11 from 7.5 to 9.0 feet, in boring SB-38 from 4.5 to 7.0 feet, and in boring SB-46 from 4.0 to 6.5 feet. Otherwise, no organic material of unsuitable material was observed in any of our borings. Groundwater was observed in seven (7) borings at varying depths at the time of drilling.

Mr. Strong, it has been our pleasure to work with you on this project. Independent Testing appreciated the opportunity to perform this geotechnical evaluation and look forward to continuing our participation during the construction phase of this project. Please contact Patrick Johnson if you have any questions regarding this report. Please contact Tyler Burkes if you would like a proposal for the materials testing services that will be needed.

Sincerely,

Patrick A. Johnson, P.E.
Minnesota License #22037

Kevin T. Reller
President

## CERTIFICATION

**I hereby certify that this report was prepared by me or under my direct supervision and that I am a duly Licensed Engineer under the laws of the State of Minnesota.**

_____

**Patrick A. Johnson**

**Date: November 13, 2024 License No.: 22037**

# TABLE OF CONTENTS

**GEOTECHNICAL EXPLORATION**
**CITY OF MAPLEWOOD**
**2025 STREET IMPROVEMENTS- CITY PROJECT #24-12**
**MAPLEWOOD, MINNESOTA**
**PROJECT 24-366**

# A. Introduction

**This report is being prepared for use by our client on this specific project. We intend to present this report and our findings in the same logical manner that led us to arrive at our recommendations. This report is based on some general assumptions regarding the anticipated construction based on experience with similar projects. These assumptions and the entire report should be reviewed immediately upon receipt.**

**Purpose:**

The purpose of our investigation was to evaluate the existing soil and water conditions on this site for the purpose of reconstructing numerous streets throughout the city. The project will consist of reconstruction of Prosperity Avenue between Larpenteur Avenue and County Road B, Henry Lane, south of Carver Avenue, and Hazelwood Street, south of Frost Avenue. Several residential neighborhood areas will also be reconstructed. They are Hallers Woods, Pleasantview Park, Amber Hills, Beth Heights, and the AJ Addition. The improvements will include replacing the storm sewer, sanitary sewer, water mains and services, and reconstructing the streets with new curb and gutter, sidewalks and bituminous surfaced streets. In accordance with your written authorization, we have conducted a subsurface exploration program for the proposed project.

**Scope of Services:**

Our authorized scope of services included the following:

1. To investigate the subsurface soil and water conditions encountered at fifty-one (51) split-spoon soil boring locations. The borings were planned to depths of just under fifteen (15) feet.
2. To investigate the pavement and aggregate base thicknesses at thirty-six (36) shallow pavement cores.

3. To provide a report of our findings including a summary of our findings with pavement thickness at each boring location as well as recommendations regarding earthwork, fill and compaction, utility installation, roadway reclaiming, subgrade preparation, and pavement design with an estimated design R-value.

**General Site Conditions:**

The projects are located throughout the city of Maplewood. The Prosperity Road and Hazelwood Street projects are located on the north end of the city. The other project sites are all located on the south end of the city. Prosperity Road and Hazelwood Street are both bituminous surfaced, rural ditch section roadways. The rest of the streets are all bituminous paved, urban streets with curb and gutter. The sites are mostly rolling, with slopes of 6-25 percent.

**Available Subsurface Information:**

According to the Geologic Map of Minnesota, Quaternary Geology, prepared by Howard C. Hobbs and Joseph E. Goebel (1982, Minnesota Geological Survey), the sites lie within a ground moraine of the St. Croix moraine association. It is associated with the Superior Lobe glaciation of Pleistocene, Late Wisconsinan age. The drift is derived from parent material in the Lake Superior basin including red rhyolite, amygdaloidal basalt, and red sedimentary rocks.

According to the Soil Survey of Ramsey County prepared by the Soil Conservation Service, the Prosperity Road site lies within the Urban Land- Kingsley soil unit. These consist of sandy loams developed in glacial till that have been graded for development. As such, they have no general ratings.

According to the Soil Survey of Ramsey County prepared by the Soil Conservation Service, the Hazelwood Street site lies within the Urban Land- Chetek soil unit. These consist of gravelly sandy loams over gravelly coarse sands developed in glacial outwash material that have been graded for development. As such, they have no general ratings.

According to the Soil Survey of Ramsey County prepared by the Soil Conservation Service, the AJ Addition site lies within silt loam soil units. These consist of silt loams developed in glacial till. The individual soils mapped on this site have moderate limitations due to depth to saturated soils and frost heave.

According to the Soil Survey of Ramsey County prepared by the Soil Conservation Service, the Beth Heights site lies within sandy loam and silt loam soil units. These consist of sandy loams and silt loams developed in glacial till. The individual soils mapped on this site have severe limitations due to depth to saturated soils, frost heave and shrink swell.

According to the Soil Survey of Ramsey County prepared by the Soil Conservation Service, the Amber Hills site lies within loamy sands and silt loam soil units. These consist of loamy sands and silt loams developed in mix of glacial till and glacial outwash. The individual soils mapped on this site are mostly sandy with few limitations for roadway development. However, the soils mapped on Dahl Circle are mapped as silt loams that have severe limitations due to depth to saturated soils and frost heave.

According to the Soil Survey of Ramsey County prepared by the Soil Conservation Service, the Pleasantview Park site lies within the Urban Land- Kingsley Soil Unit. These consist of sandy loams developed in glacial till that have been graded for development. As such, they have no general ratings.

According to the Soil Survey of Ramsey County prepared by the Soil Conservation Service, the Hallers Woods site lies within loamy sands and silt loam soil units. These consist of loamy sands and silt loams developed in mix of glacial till and glacial outwash. The individual soils mapped on this site are mostly sandy with few limitations for roadway development. However, there is one small area on Haller Lane from 300 to 450 feet east of Sterling Street that is mapped as silt loam that is very poor for street construction due to frost heave and low strength.

# B. Exploration Program

**Fifty-one (51) split-spoon soil borings were conducted on this project. The borings were advanced to depths of just under 15 feet using a 3 ¼ inch I.D. hollow stem auger. Samples were obtained every 2 ½ feet for the first 10 feet and every 5 feet, thereafter, using a 2-inch O.D. split-spoon sampler in accordance with the American Society for Testing and Materials (ASTM D1586). Standard penetration values (N-values) were obtained at each sample interval by driving the sampler into the soil using a 140-pound hammer falling 30 inches. After an initial set of 6 inches, the number of blows required to drive the sampler 12 inches is known as the standard penetration resistance or N-value. Where the sampler cannot be driven at least 6 inches by 50 blows of the hammer, the total number of blows as well as the distance driven is reported on the boring logs. See the boring logs in Appendix 3 for the detailed results.**

**Thirty six (36) pavement cores were conducted on this project. The cores were advance through the bituminous pavement into the aggregate base using either a 2.5-inch or a 4-inch diameter diamond core drill bit. A hand auger was used to get through the aggregate base. The aggregate depths were measured in the holes. See the photos of the individual cores in Appendix 2.**

**Groundwater levels were noted during drilling and immediately after completion. The holes were backfilled with the auger cuttings. The holes in the pavement were patched with bituminous cold patch. Some settlement of the bore holes may be expected. All the borings were conducted with a truck mounted rig.**

## Exploration Results:

Thirty-six pavement cores were conducted on various streets throughout town. The results are shown in the table below:

| Boring | Street | Bituminous | Aggregate | Boring | Street | Bituminous | Aggregate |
|---|---|---|---|---|---|---|---|
| PC-1 | Parkview Ln. S. | 3.375” | 7.0” | PC-19 | Henry Ln. S. | 2.75” | 3.0” |
| PC-2 | Parkview Ln. S. | 4.0” | 8.0” | PC-20 | Henry Ln. S. | 2.875” | 4.0” |
| PC-3 | Parkview Ln. S. | 4.0” | 7.0” | PC-21 | Henry Ln. S. | 2.5” | 4.0” |
| PC-4 | Parkview Ln. S. | 3.5” | 5.0” | PC-22 | Henry Ln. S. | 2.75” | 4.0” |
| PC-5 | Parkview Ln. S. | 4.25” | 8.0” | PC-23 | Henry Ln. S. | 3.0” | 4.0” |
| PC-6 | Parkview Ct. S. | 3.75” | 8.5” | PC-24 | Haller Ln. E. | 3.875” | 12.0” |
| PC-7 | Hillwood Dr. E. | 3.875” | 5.0” | PC-25 | Haller Ln. E. | 3.5” | 7.0” |
| PC-8 | Hillwood Dr. E. | 4.75” | 7.0” | PC-26 | Haller Ln. E. | 3.75” | 9.0” |
| PC-9 | Hillwood Dr. E. | 3.25” | 5.0” | PC-27 | Haller Ln. E. | 4.25” | 9.0” |
| PC-10 | Oakridge Ct. E. | 3.5” | 8.0” | PC-28 | Haller Ln. E. | 4.0” | 8.0” |
| PC-11 | Oakridge Ct. E. | 3.75” | 5.0” | PC-29 | Haller Ln. E. | 5.0” | 7.0” |
| PC-12 | Ferndale St. S. | 3.5” | 10.0” | PC-30 | Haller Ct. S. | 3.625” | 10.0” |
| PC-13 | Ferndale St. S. | 3.875” | 8.0” | PC-31 | Haller Ct. S. | 4.0” | 7.0” |
| PC-14 | Beth Ct. E. | 3.5” | 6.0” | PC-32 | Southcrest Ave. E. | 3.75” | 12.0” |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| PC-15 | Dahl Cir. E. | 2.5” | 9.0” | PC-33 | Dorland Rd. S. | 3.375’ | 13.0” |
| PC-16 | Matterhorn Dr. E. | 3.125” | 8.0” | PC-34 | Maida Ct. E. | 4.125” | 6.0” |
| PC-17 | Matterhorn Dr. E. | 3.5” | 11.0” | PC-35 | Dorland Rd. S. | 3.625” | 13.0” |
| PC-18 | Timber Ct. E. | 5.0” | 11.0” | PC-36 | Maimie Ave. E, | 3.5” | 15.0” |

Forty-five (45) of the borings were conducted in the existing bituminous paved streets and encountered 2.75 to 13.625 inches of bituminous over 2.0 to 12.0 inches of aggregate base material. The following table lists the depth of bituminous pavement and aggregate base at each boring location:

| Boring | Street | Bituminous | Aggregate | Boring | Street | Bituminous | Aggregate |
|---|---|---|---|---|---|---|---|
| SB-1 | Prosperity Rd. | 3.5” | 3.0” | SB-25 | Hazelwood St. | 9.0” | 9.0” |
| SB-2 | Prosperity Rd. | 13.0” | 3.0” | SB-26 | Hazelwood St. | 9.0” | 12.0” |
| SB-3 | Prosperity Rd. | 13.625” | 3.0” | SB-27 | Hazelwood St. | 9.0” | 7.0” |
| SB-4 | Prosperity Rd. | 5.75” | 8.0” | SB-28 | Hazelwood St. | 8.5” | 6.0” |
| SB-5 | Prosperity Rd. | 4.0” | 6.0” | SB-29 | Parkview Ln. | 3.875” | 6.0” |
| SB-6 | Prosperity Rd. | 3.875” | 8.0” | SB-30 | Parkview Ln. | 3.5” | 8.5” |
| SB-7 | Prosperity Rd. | 11.5” | 6.0” | SB-31 | Hillwood Dr. | 3.75” | 6.0” |
| SB-8 | Prosperity Rd. | 9.5” | 5.0” | SB-32 | Ferndale St. | 3.25” | 6.5” |
| SB-9 | Prosperity Rd. | 12.25” | 7.0” | SB-33 | Dahl Cir. | 4.0” | 5.0” |
| SB-10 | Prosperity Rd. | 3.125” | 9.0” | SB-34 | Matterhorn Dr. | 3.5” | 7.0” |
| SB-11 | Prosperity Rd. | 9.5” | 6.0” | SB-35 | Timber Ct. | 3.75” | 6.0” |
| SB-12 | Prosperity Rd. | 8.375” | 3.0” | SB-36 | Marnie St. | 3.25” | 6.0” |
| SB-13 | Prosperity Rd. | 9.0” | 4.0” | SB-37 | Marnie St. | 3.375” | 8.0” |
| SB-14 | Prosperity Rd. | 10.0” | 4.0” | SB-38 | Marnie St. | 3.75” | 6.5” |
| SB-15 | Prosperity Rd. | 6.0” | 4.0” | SB-39 | Marnie St. | 3.75” | 7.0” |
| SB-16 | Prosperity Rd. | 9.375” | 4.0” | SB-40 | Southcrest Ave. | 3.75” | 12.0” |
| SB-17 | Prosperity Rd. | 10.0” | 3.0” | SB-41 | Southcrest Ave. | 3.5” | 8.0” |
| SB-18 | Prosperity Rd. | 4.625” | 5.0” | SB-42 | Crestview Dr. | 3.375” | 8.0” |
| SB-19 | Prosperity Rd. | 7.625” | 4.0” | SB-43 | Crestview Dr. | 3.75” | 4.5” |
| SB-20 | Prosperity Rd. | 9.5” | 4.0” | SB-44 | Crestview Dr. | 3.75” | 6.0” |
| SB-22 | Prosperity Rd. | 5.5” | 5.0” | SB-45 | Marnie Ave. | 5.625” | 8.0” |
| SB-23 | Prosperity Rd. | 4.75” | 6.0” | SB-46 | Nemitz Ave. | 4.0” | 12.0” |
| SB-24 | Hazelwood St. | 5.0” | 2.0” | SB-47 | Nemitz Ave. | 2.75” | 7.0” |

Boring SB-21 was conducted in a gravel pull-off by the baseball field west of Prosperity Road near

Larpenteur Avenue and encountered 11 inches of aggregate at the surface. Borings SB-48 through SB-51 were conducted in the west ditch of Prosperity Road, just south of Summer Drive and encountered silty sand (SM) topsoil at the surface to depths of 12 to 16 inches.

Below the pavement and aggregate, most of the borings encountered glacial till soils consisting of fine grained, silty sands (SM), silty clayey sands (SC-SM), clayey sands (SC) or sandy lean clays (CL) with some interlayered sands (SP, SP-SM).

Below the pavement and aggregate, borings SB-12 and SB-18 through SB-21 along Prosperity Road all encountered sand outwash consisting of poorly graded sands (SP) and poorly graded sands with silt (SP-SM) to termination depths. Below the pavement and aggregate, borings SB-24, SB-25, SB-27, and SB-28 on Hazelwood Street encountered mostly sand outwash consisting of poorly graded sands (SP) and poorly graded sands with silt (SP-SM) to nearly termination depths.

Below the pavement and aggregate, borings SB-29 through SB-35 in the AJ Addition and Amber Woods areas encountered sand outwash consisting of poorly graded sands (SP) and poorly graded sands with silt (SP-SM) to depths of at least 5.0 feet, followed by a mix of silty and clayey sand (SC, SC-SM, SM) glacial till.

Below the pavement and aggregate, borings SB-39 and SB-41 through SB-43, and SB-47 in the Pleasantview Park neighborhood also encountered primarily silty sand (SM) poorly graded sand with silt (SP-SM) and poorly graded sand (SP) outwash soil.

**Penetration Test Results:**

The blow counts in the sandy soils (SP, SP-SM, SM, SC-SM) ranged from 3 to more than 50, which are very low to very high, indicating they are in a very loose to very dense condition. The blow counts in the clayey soils (CL, CL-ML, SC) ranged from 4 to 57, which are moderate to high, indicating they are in a firm to hard condition. Refusal of the spoon or auger did not occur in any of the borings. Drilling was relatively easy.

**Water Level Observations:**

Observations of the subsurface water conditions were made during drilling operations. Groundwater was only encountered in seven (7) borings at the time of drilling. Groundwater was not encountered in any of the other borings during drilling. The following table shows the depth of water in all the borings where water was encountered:

| Boring | Water | Boring | Water |
|---|---|---|---|
| SB-3 | 10’ 0” | SB-26 | 10’ 6” |
| SB-5 | 14’ 0” | SB-27 | 10’ 6” |
| SB-24 | 12’ 6” | SB-28 | 9’ 0” |
| SB-25 | 11’ 0” | | |

The water levels were observed over a brief period of time. We feel they are an accurate representation of the true groundwater conditions in the sandy soils (SP, SP-SM) on this site due to the high permeability of the native sandy soils. However, in the clayey soils (SC-SM, SC, CL, CL-ML, ML), we feel they are not an accurate representation of the true water levels due to the low permeability of the native clay soils. The water may not have had time to stabilize in the borehole.

It should be noted that fluctuations in the level of the groundwater can occur due to variations in rainfall, temperature, spring thaw and other factors not evident at the time of our investigation. Mottled soils were observed in most of the clayey soils. Mottled native soils are a historical indication of a temporarily or seasonally saturated soil condition. Grey soils were also observed. Grey native soils are an indication of a permanently saturated soil condition.

**Laboratory Testing**

Moisture Content Tests- Moisture content tests were performed on every split spoon sample in accordance with ASTM method D2216; *Standard Test Method for Laboratory Determination of Water (Moisture) Content of Soil and Rock by Mass*. Individual test results are shown on the

boring logs adjacent to the sample that was tested.

Organic Content Tests- Organic content tests were performed on selected split spoon samples in accordance with ASTM method D2974; *Standard Test Method for Moisture, Ash and Organic matter of Peat and Other Organic of Soils*. Individual test results are shown on the boring logs adjacent to the sample that was tested. Organic content tests from selected borings ranged from 1.6% to 11.3% organic material. Generally, anything with more than 3% organic by weight is unacceptable for use as roadway embankment fill or subgrade material.

Atterberg Limits Tests- Atterberg Limits tests were performed on selected split spoon samples in accordance with ASTM method D4318; *Standard Test Methods for Liquid Limit, Plastic Limit and Plasticity Index of Soils*. Individual test results are shown on the boring logs adjacent to the sample that was tested.

Corrosivity Testing- Selected samples were tested for corrosivity potential. Tests included As-is Resistivity, wet Resistivity, Redus Potential, pH, Chloride, Sulfate and Sulfides. We assigned points to each sample according to *AWWA Standard for Polyethylene Encasement for Ductile- Iron Pipe Systems., Appendix A Table A.1*. The individual test results and points for each sample are included in Appendix 4.

## C. Engineering Review

**Discussion:**

The native soils on most of the site consisting of lean clays (CL) and clayey sands (SC) that are considered fair to poor material for use as fill. They can be difficult to work with if they become wet prior to being compacted. In addition, the natural moisture contents may be above optimum for compaction. Therefore, they may need to be dried before they can be used as structural fill. Natural moisture contents generally ranged from 10% to 18%. Optimum moisture is estimated to be between 11-14% for these soil types. Therefore, drying will likely be needed unless imported material is used as fill.

The sandy soils encountered on the very south end of Prosperity Road, on Hazelwood Street, in the AJ Addition and in the Amber Hills area are predominantly fine grained, silty sands (SM), poorly graded sands with silt (SP-SM) and poorly graded sands (SP). They appear to mostly be outwash materials. The native sands (SM, SP-SM, SP) are considered excellent material for use as roadway subgrade material and for bituminous pavement support.

Based on our observation, it appears the roadway embankment was stable through the entire project area. Unless there is going to be a change in grade of 2 feet or more during construction, or if it is known that there is some issue in the embankment in these areas, it is our opinion that the embankments can remain in place.

# D. Recommendations

**The following recommendations are based on our understanding of the proposed project. If our understanding of the project is not accurate or if changes are made to the project scope, please inform us so that our recommendations can be amended, if necessary. We have included recommendations regarding earthwork and construction that may help in cost estimates and aid in design. We should be allowed to review the proposed construction plans to provide further detailed recommendations, if necessary. Without the opportunity to review the final construction plans, the recommendations made in this report may no longer be valid.**

## Utility Installation:

We recommend that all utility pipes lay in non-organic mineral soils capable of supporting the pipes. Excessive over-excavation beneath the pipes should be avoided. We recommend that 2 to 6 inches of granular bedding material be placed and compacted around the pipe to aid in aligning the pipe for line and grade. Compaction should be done very carefully by hand to prevent the pipe from shifting. We recommend that the backfill be compacted with a vibratory sheep's foot or smooth drum roller after the backfill is 2 feet above the top of the pipe. Vibratory compaction should only be used on clean sands (SP, SP-SM) or silty sands (SM) at or below optimum moisture. Static, sheepsfoot rollers are best suited for clayey soils.

We recommend that excavations slope at a 1.5:1 (horizontal: vertical) ratio from the bottom of the excavation to the surface. Stockpiled material should be kept at least 2 feet from the edge of the excavation. This is the minimum required by OSHA. We recommend all construction

vehicles be kept at least 5 feet from the edge of the excavation. An escape ladder should be provided at all times while workers are in the excavation. All excavations must meet OSHA standards (29 CFR1926).

We recommend that all utility trench backfill below a depth of three feet from finished roadway subgrade elevation be compacted to at least 95% of standard proctor maximum density. Any utility trench backfill placed in the upper three feet of any roadway should be compacted to at least 100% of standard proctor maximum density. We recommend clayey soils (CL, SC, SC-SM) be compacted within plus 3 to minus 2 percent of optimum moisture as determined by a standard proctor. We recommend sandy soils (SP, SP-SM, SM) be compacted within plus or minus 3 percent of optimum moisture as determined by a standard proctor. We recommend compaction tests be taken at a rate of one test per 200 linear feet of trench in each of the upper and lower zones.

**Construction Dewatering:**

Dewatering is needed for utility installation below water. The following table shows the depth of water in all the borings where water was encountered:

| Boring | Street | Water | Boring | Street | Water |
|---|---|---|---|---|---|
| SB-3 | Prosperity Road | 10’ 0” | SB-26 | Hazelwood Street | 10’ 6” |
| SB-5 | Prosperity Road | 14’ 0” | SB-27 | Hazelwood Street | 10’ 6” |
| SB-24 | Hazelwood Street | 12’ 6” | SB-28 | Hazelwood Street | 9’ 0” |
| SB-25 | Hazelwood Street | 11’ 0” | | | |

The soils on Prosperity Road are mostly fine grained silty sands (SM) and clayey sands (SC) that are not conducive to dewatering with well points. It is our opinion that a sump with a pump will be best suited for dewatering on that site.

The soils on Hazelwood Street are mostly sands (SP, SP-SM) that are conducive to dewatering with well points. It is our opinion that a series of well points would be best suited for any

dewatering needed in the sand soils on this site. Such a system will need to be designed and installed by a licensed dewatering contractor.

**Embankment/ Road Fill:**

The on-site soils consisting of fine grained, poorly graded sand (SP), poorly graded sand with silt (SP-SM) and silty sands (SM) are considered excellent material for use as roadway subgrade material. These soils are easy to compact using vibratory compaction equipment near their optimum moisture contents.

The native soils on the northern one-third of the site consisting of lean clays (CL) and clayey sands (SC, SC-SM) are considered fair to poor material for use as fill. They can be difficult to work with if they become wet prior to being compacted. In addition, the natural moisture contents may be above optimum for compaction. Therefore, they may need to be dried before they can be used as structural fill.

We recommend that any imported fill and utility trench backfill material consist of mineral soils meeting the requirements specified below. No organic soils, roots, stumps, logs, brush, etc. should be used as structural fill below any utility structure or pavement section. We recommend that all fill and utility trench backfill material be free of soft, wet, or frozen soils, highly expansive soils, rubble, debris, and rocks in excess of 6 inches in diameter. The fill material should be as uniform as possible both in composition and moisture content.

No organic soils with organic content in excess of 3.0% by weight should be used as roadway embankment fill or as subgrade material. Some of the fill was dark brown. It is our opinion that most of the dark silty sand fill will be suitable for re-use.

We recommend that all embankment fill material be placed in 12-inch loose lifts and compacted to a minimum of 95% of standard proctor maximum density (ASTM D698). Any fill placed in the top 3 feet of the road subgrade should be compacted to at least 100% of the standard proctor

maximum density. We recommend clayey soils (CL, SC, SC-SM) be compacted within plus 3 to minus 2 percent of optimum moisture as determined by a standard proctor. We recommend sandy soils (SP, SP-SM, SM) be compacted within plus or minus 3 percent of optimum moisture as determined by a standard proctor. We recommend compaction tests be taken at a rate of one test per 200 linear feet of trench in the upper and lower zones.

**Reclaiming:**

We understand that several streets may be resurfaced using reclaiming and resurfacing. The areas proposed for potential reclaiming include Highwood Estates, Henry Lane, and Haller's Woods. The streets include Maimie Lane, Manda Court, Henry Lane, Haller Lane, and Haller Court.

The bituminous thickness in the Highwood Estates area ranged from 2.5 to 4.125 inches with 6 to 15 inches of aggregate base. The minimum total thickness was 10.125 inches. The bituminous thickness in the Haller's Woods area ranged from 3.5 to 5.0 inches with 7 to 12 inches of aggregate base. The minimum total thickness was 10.5 inches. The bituminous thickness on Henry Lane ranged from 2.5 to 3.0 inches with only 3 to 4 inches of aggregate base. The minimum total thickness was 5.75 inches, and the maximum total thickness was only 7.0 inches.

It appears there is sufficient bituminous and aggregate base to allow for a full depth reclaim in all areas except on Henry Lane. The minimum bituminous and aggregate thickness is less than 6 inches on Henry Lane. Additional gravel should be added to the street prior to the in-place reclaiming to achieve a minimum of 8 inch depth of reclaim.

In-place reclaiming consists of pulverizing and blending the in-place bituminous pavement and a portion of the underlying aggregate material to produce a uniform graded aggregate base. This would include spreading, watering, compacting, shaping, and maintaining the blended reclaim material to the specified profile and cross-section or as directed by the Engineer. We recommend the reclaiming be performed to a minimum depth of 8 to 9 inches. After compacting the reclaimed aggregate base, a new bituminous surface is constructed on the reclaimed areas.

We recommend the road reclaimer be a self-propelled machine designed to pulverize the in-place bituminous pavement structure to the specified maximum particle size. It should be capable of uniformly blending the pulverized material with the underlying aggregate base material to the required depths. The machine shall have a control system to automatically control the elevation of the cutting head to the specified depth. The machine shall be approved by the Engineer prior to the start of the pulverizing operation.

We recommend any bituminous pieces larger than 3 inches, which are visible on the grade during the reclamation process, be removed from the grade. Any additional aggregate material required to reach the proposed grade should be uniformly spread across the roadway surface prior to being incorporated into the reclaim mixture.

Since the proposed grade will closely match the existing grade, we would assume that no additional material would be needed beyond sufficient aggregate to blend to plan depth. Water may be needed during the blending and spreading operations so that at the time of compaction the moisture content is not less than 3 percent nor more than 7 percent based on the dry weight.

It is critical that the reclaimed material be graded to tolerance at the end of the day, or as soon as practical, especially if the roadway will be open to traffic. The traffic will tend to compact the reclaim material very densely in a very short period of time, making it very difficult to tolerance later.

After reclaiming the existing bituminous pavement, we recommend placing a new bituminous surface, consisting of 4.0 inches of MnDot 2360 SP Wear for a 10-ton roadway and 3.0 inches for a 9-ton roadway.

## E. Pavement Recommendations

The silty sand (SM), poorly graded sand with silt (SP-SM) and poorly graded sand (SP) outwash soils on the very south end of Prosperity Road, on Hazelwood Street, in the AJ Addition area, and in the Amber Hills area sites are classified as A-3 soils in accordance with the American

Association of State Highway Transportation Officials (AASHTO) classification system. A-3 soils are rated as excellent material for use as roadway subgrade material. Without benefit of a laboratory R-value determination and based on Mn/Dot guidelines, we recommend an R-value of 70 be assumed for the sandy soils on these sites.

The fine grained silty sand (SM), clayey sand (SC), silty clayey sand (SC-SM) soils encountered on other sites are classified as A-4 soils in accordance with the American Association of State Highway Transportation Officials (AASHTO) classification system. A-4 soils are rated fair to poor material for use as roadway subgrade material. In no instance should organic soils be used as roadway subgrade material. Without benefit of a laboratory R-value determination and based on Mn Dot guidelines, an R-value of 20 can be assumed for these materials.

The fine grained clayey sand (SC), sandy lean clay (CL) and silty clay (CL-ML) soils encountered on some of the other sites are classified as A-6 soils in accordance with the American Association of State Highway Transportation Officials (AASHTO) classification system. A-6 soils are rated poor material for use as roadway subgrade material. In no instance should organic soils be used as parking lot subgrade material. Without benefit of a laboratory R-value determination and based on Mn Dot guidelines, an R-value of 12 can be assumed for these materials.

In using the above R-value for bituminous pavement design, it is essential that the subgrade be constructed of uniform soils at a moisture content and density in accordance with Mn Dot specification 2105 and capable of passing a test roll in accordance with Mn Dot specification 2111. The native, undisturbed soils may need preparation (drying and compacting) to pass a proof roll. If the subgrade is not compacted, uniform and capable of passing a test roll, then we recommend the subgrade be scarified and recompacted or subcut and geotextile fabric placed along with select granular material meeting Mn Dot specification 3149. The top of subgrade should be compacted to a minimum of 100% of standard proctor maximum density. The subgrade should be sloped towards the edges to provide drainage.

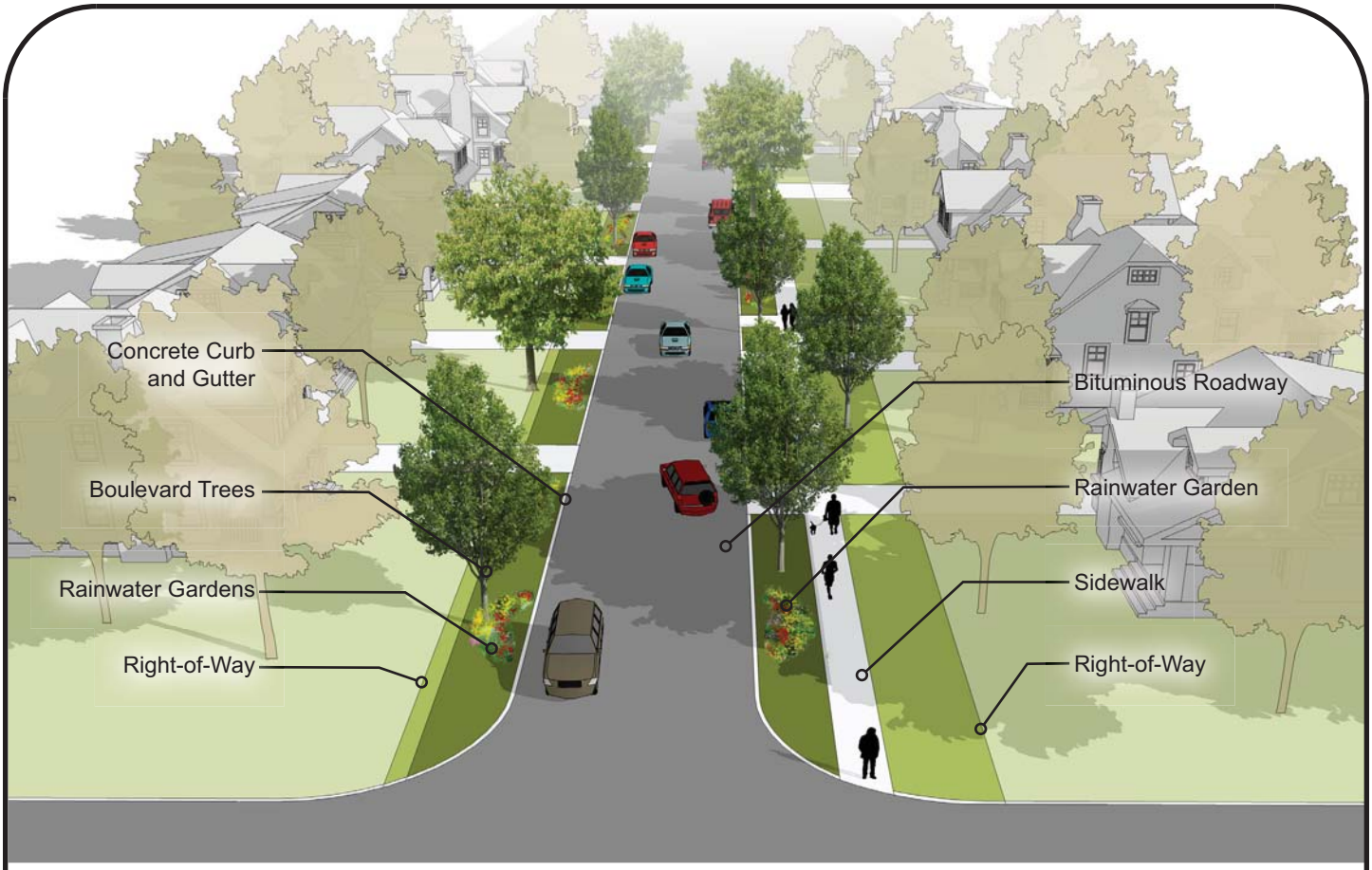
# F. Closing

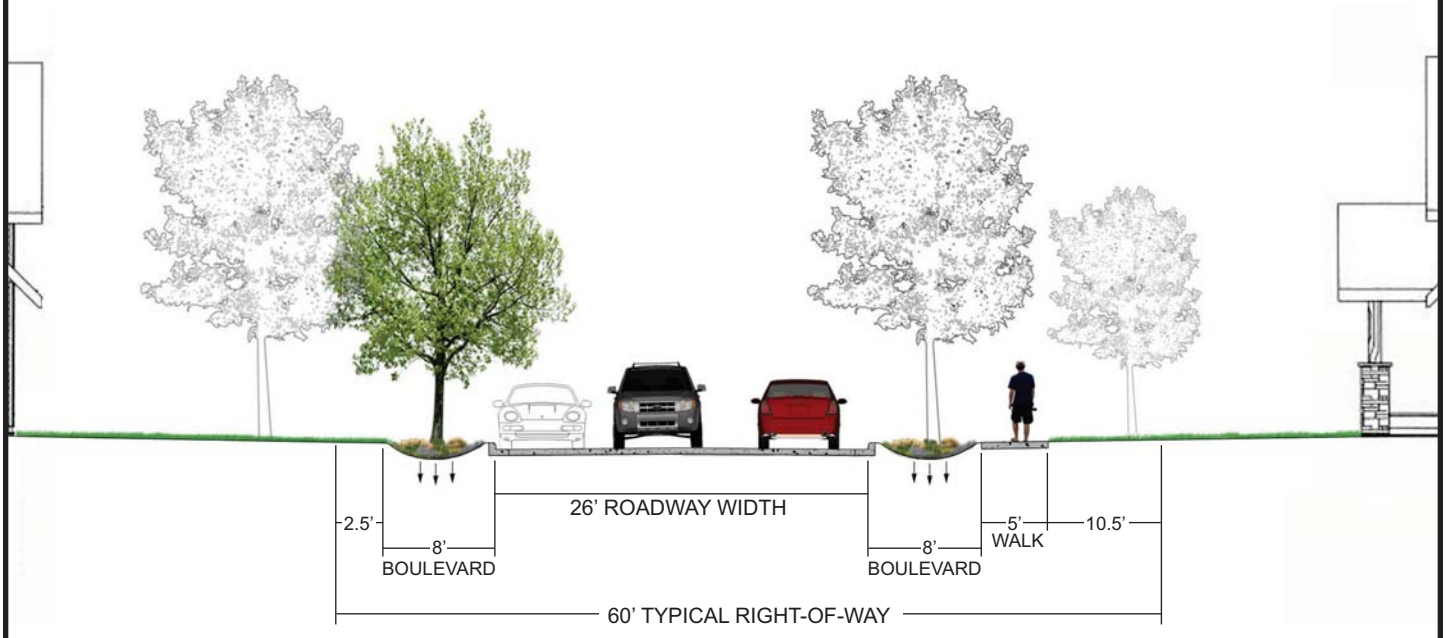
Our work was performed for geotechnical purposes only and not to document the presence or extent of any contamination on the site. We can note that our crew did not detect any obvious contamination by sight or smell during drilling operations. However, human senses are limited in terms of contamination detection and, therefore, the lack of detection through human sensing does not preclude the possibility of the presence of contamination of the site.

This report represents the result of our subsurface investigation and is based on information gathered at specific locations. Subsurface conditions can change a great deal over short horizontal distances. Also, the actual interface between strata will likely be a gradual transition rather than an abrupt change as represented on the boring logs.

Geotechnical engineering is based extensively on opinion. Therefore, the data contained in this report should be used as a guide, and we recommend that construction monitoring be performed by a qualified geotechnical engineer or technician. We recommend ITT be retained to perform construction observation and materials testing on this project due to our familiarity with the soils. Any changes in the subsurface conditions from those found during this geotechnical exploration should be brought to the attention of a soils engineer.

**Exhibit 5**

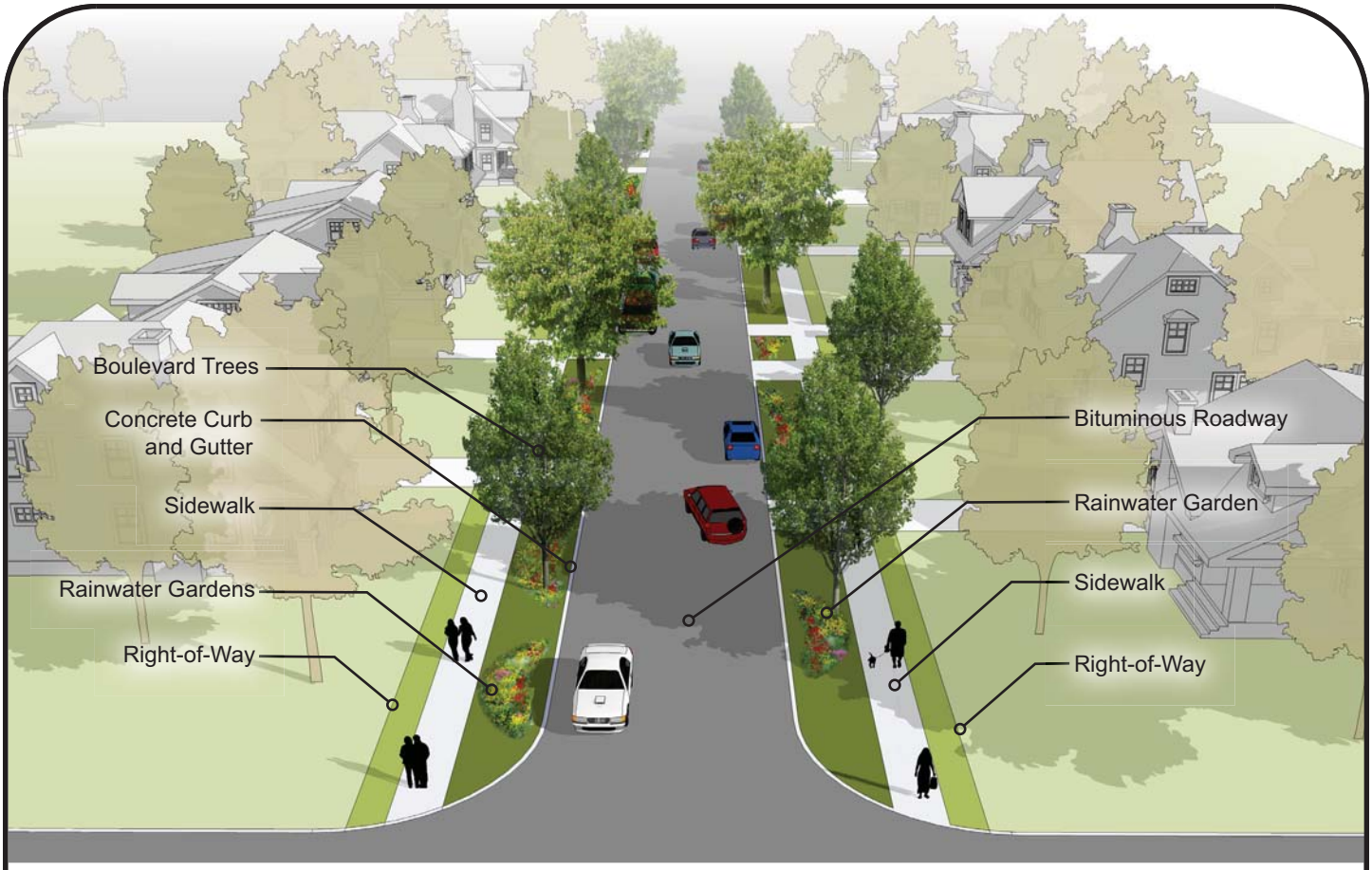


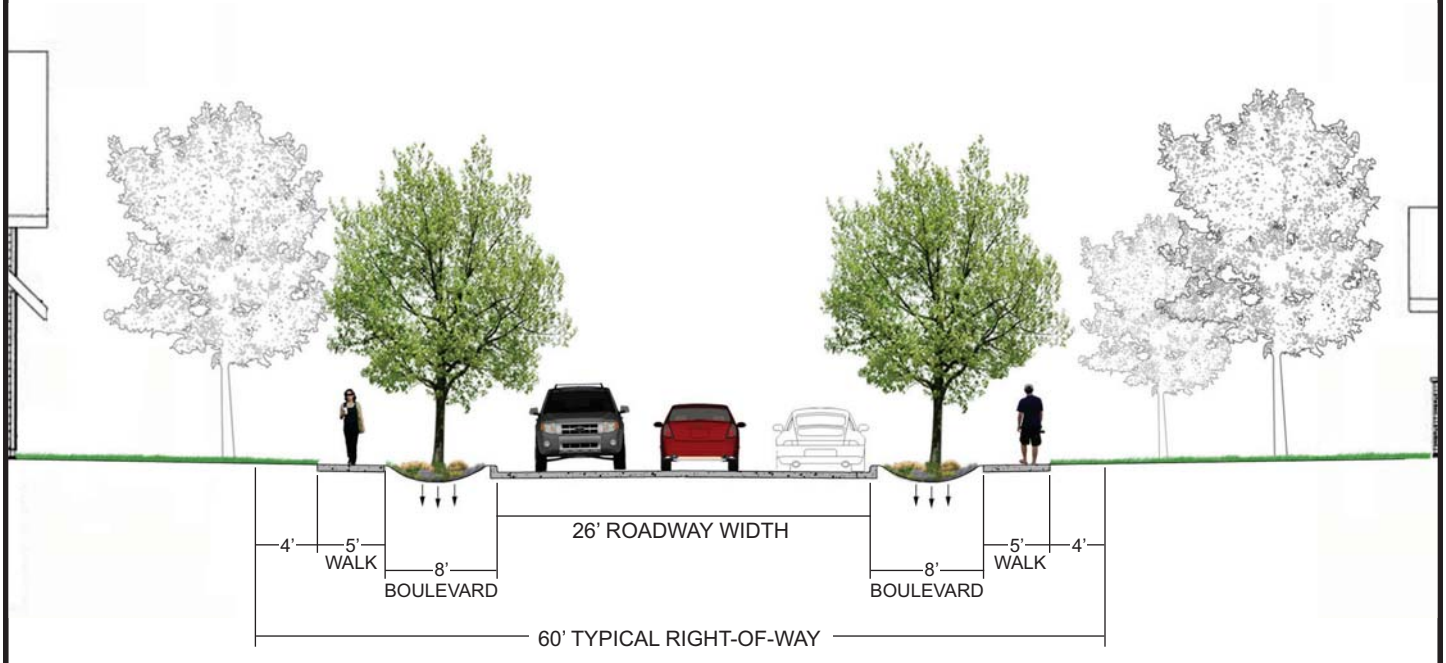




*Note: 24' roadway width may be considered in appropriate context*

**Local Street** | Option 1

MAPLEWOOD

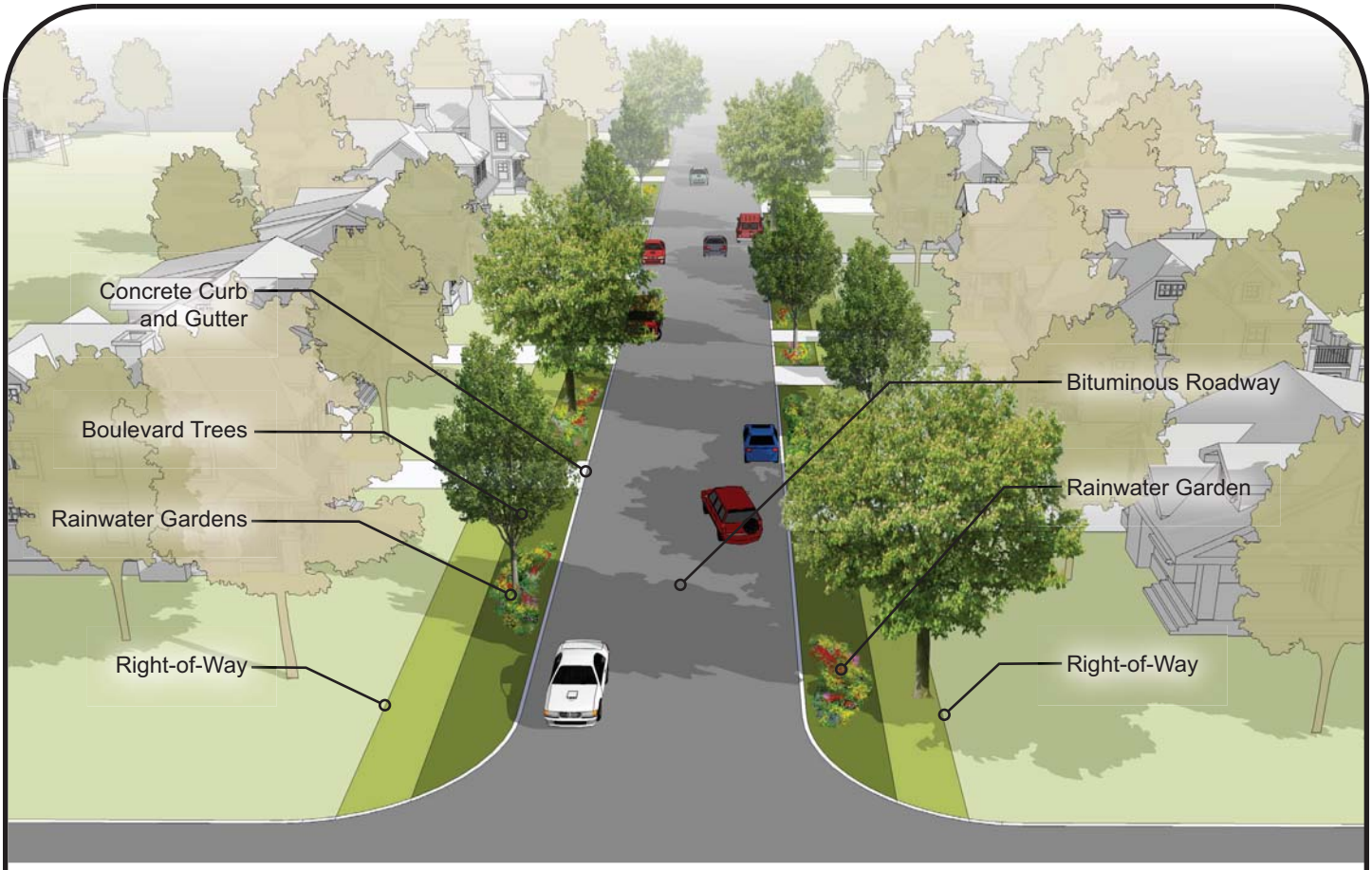


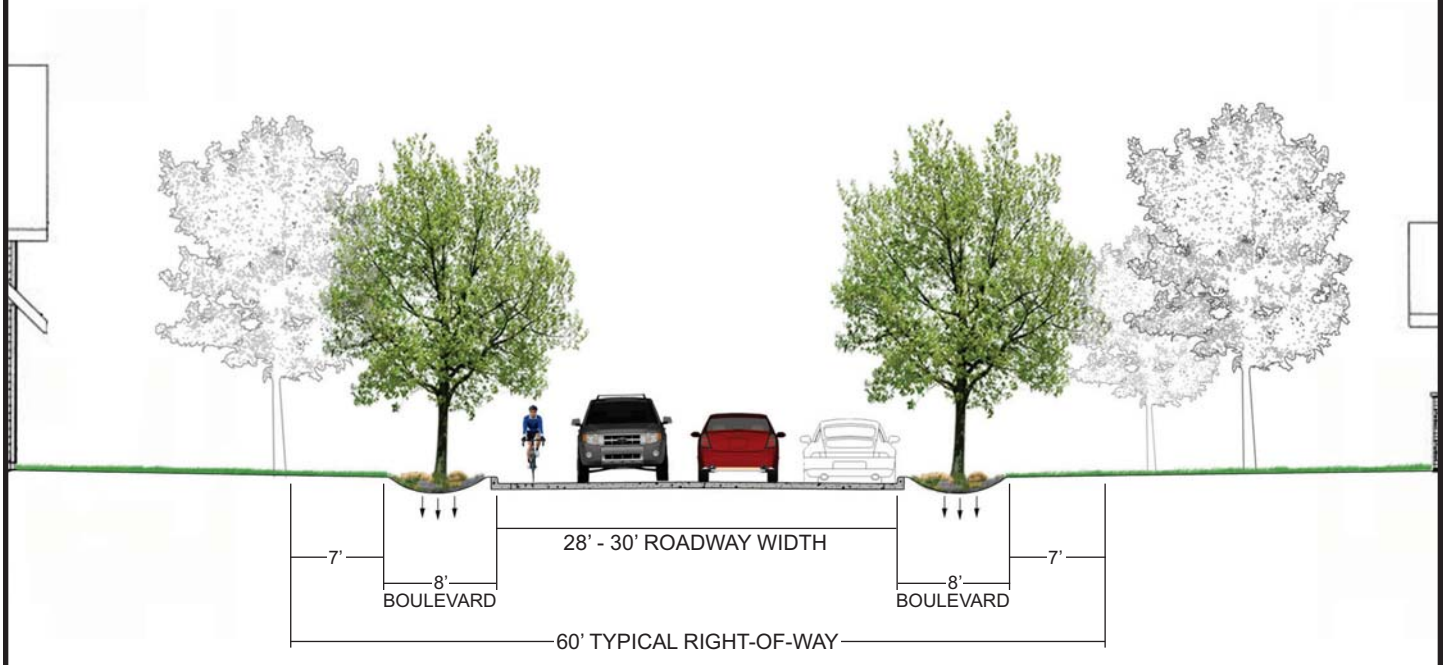




*Note: 24' roadway width may be considered in appropriate context*

**Local Street** | Option 2

MAPLEWOOD

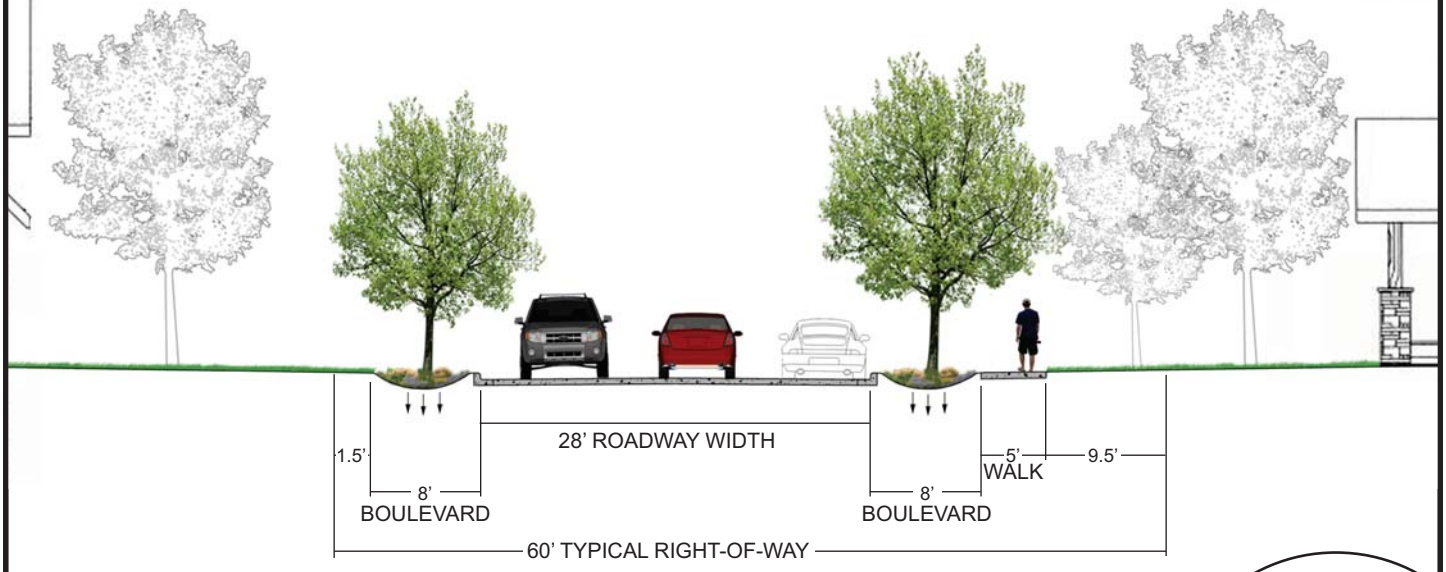



*Note: Sidewalk required if street abuts or is in vacinity of a school or park*

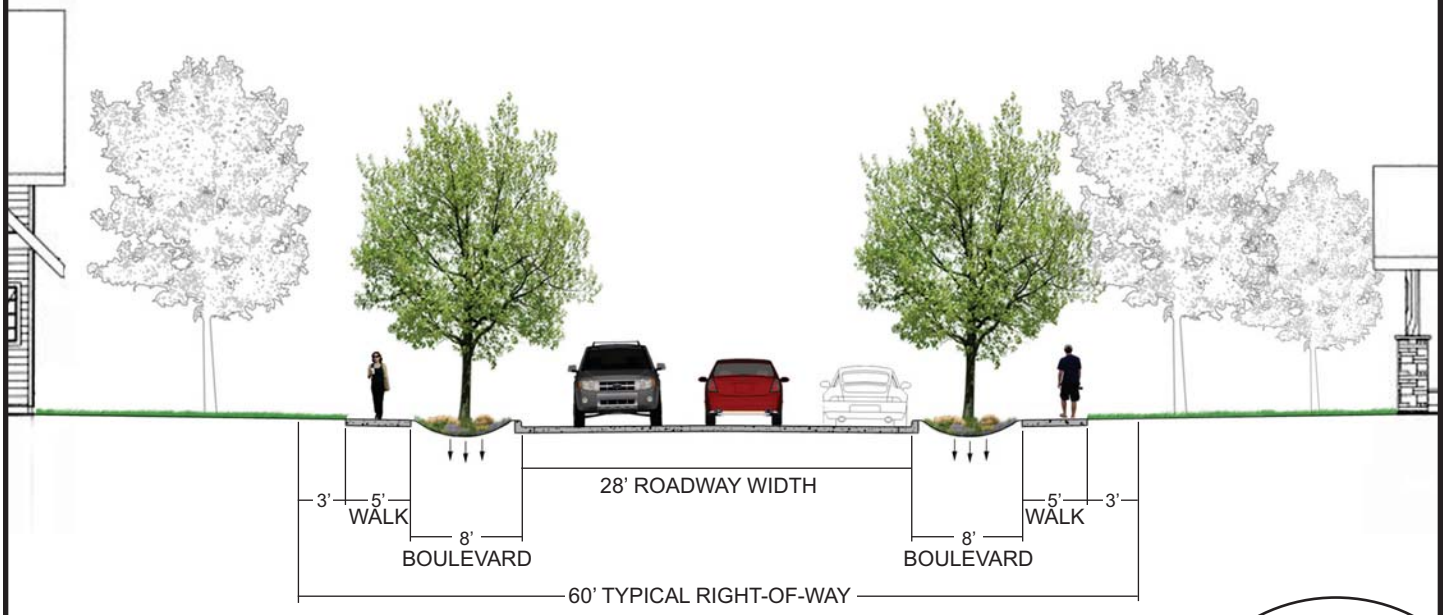
**Local Street** | Option 3

MAPLEWOOD

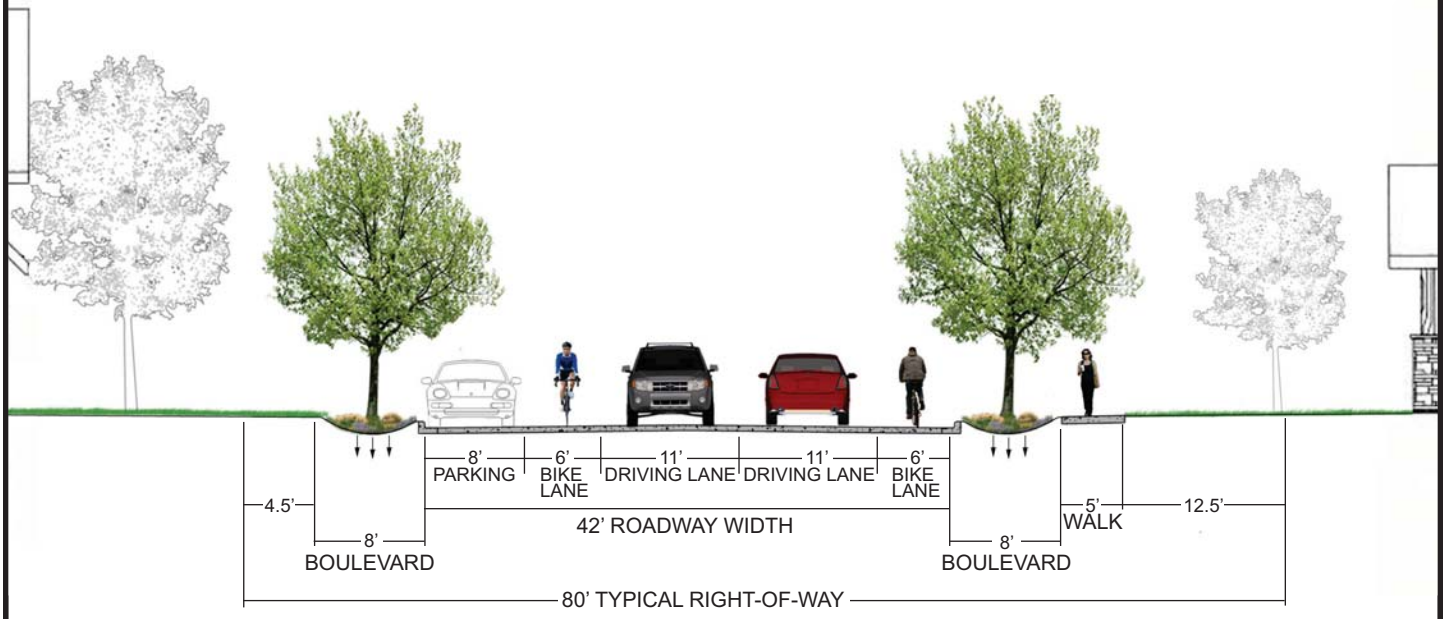

# Local Connector Street | Option 1

MAPLEWOOD

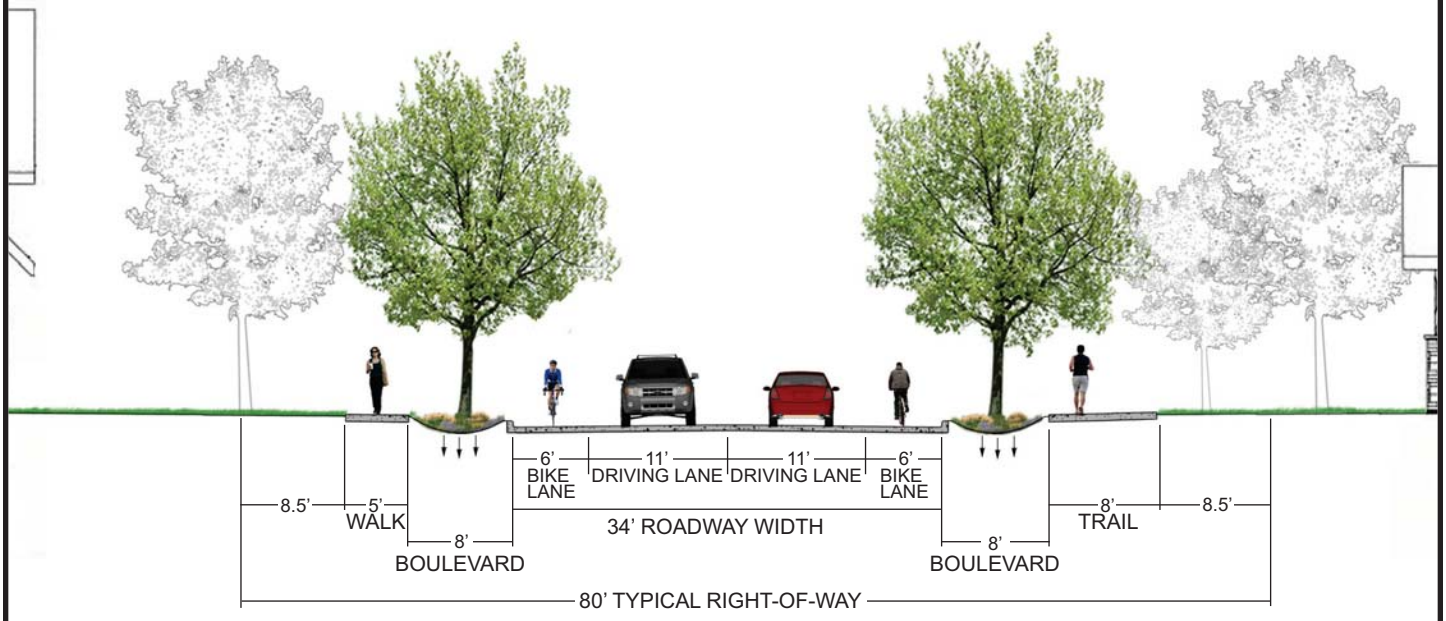

# Local Connector Street | Option 2

MAPLEWOOD

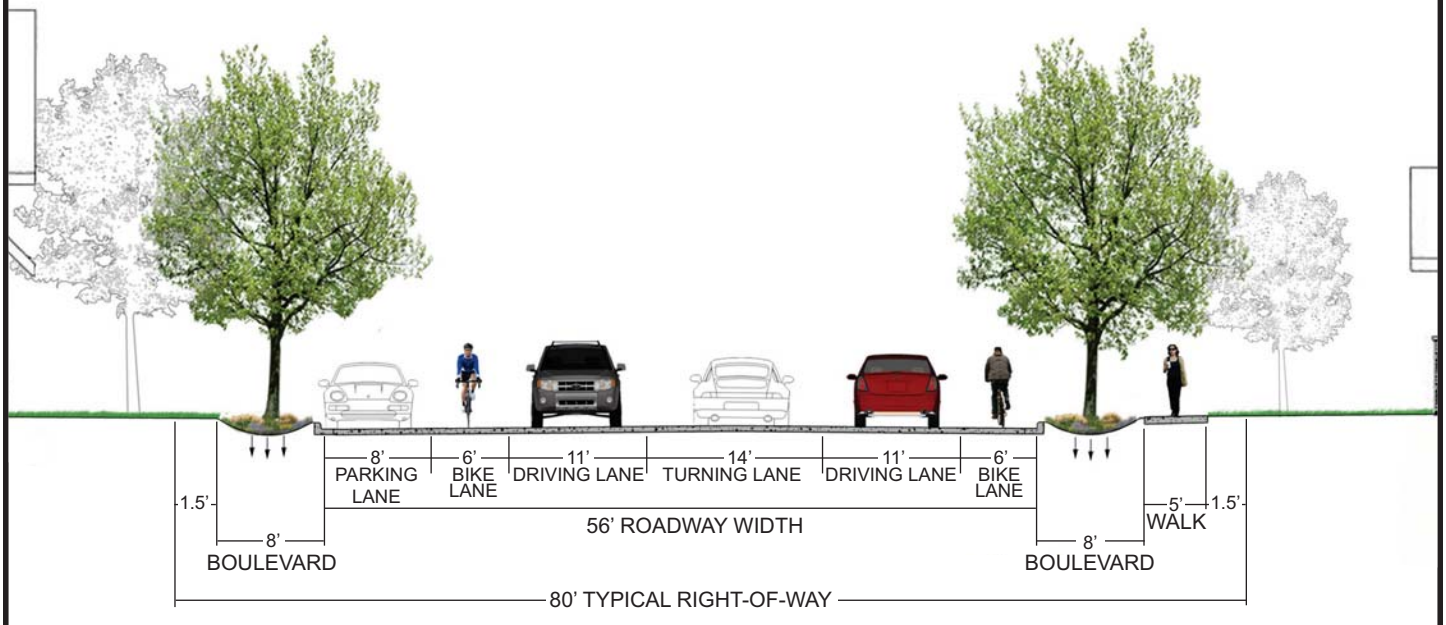

**Collector** | Option 1

MAPLEWOOD

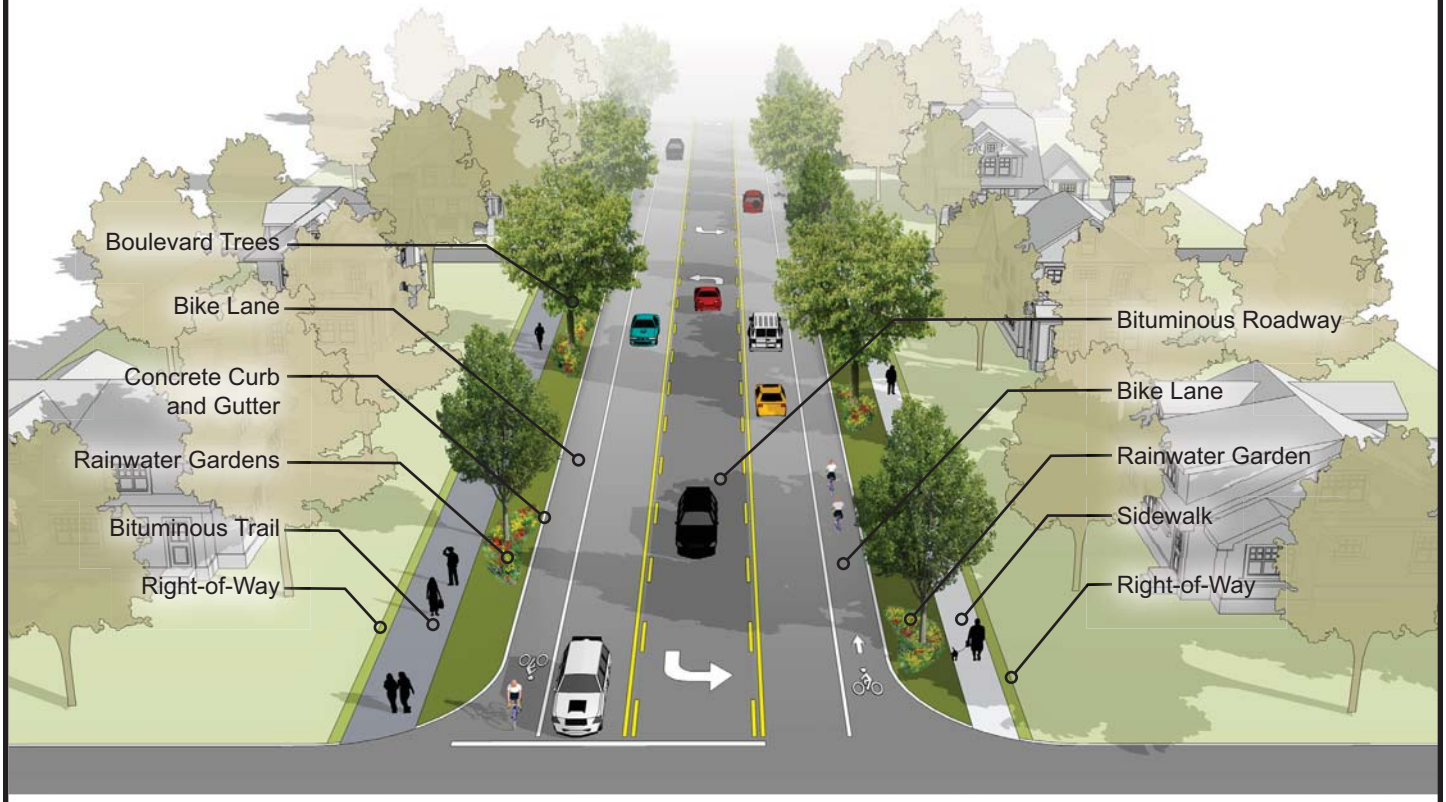

**Collector** | Option 2

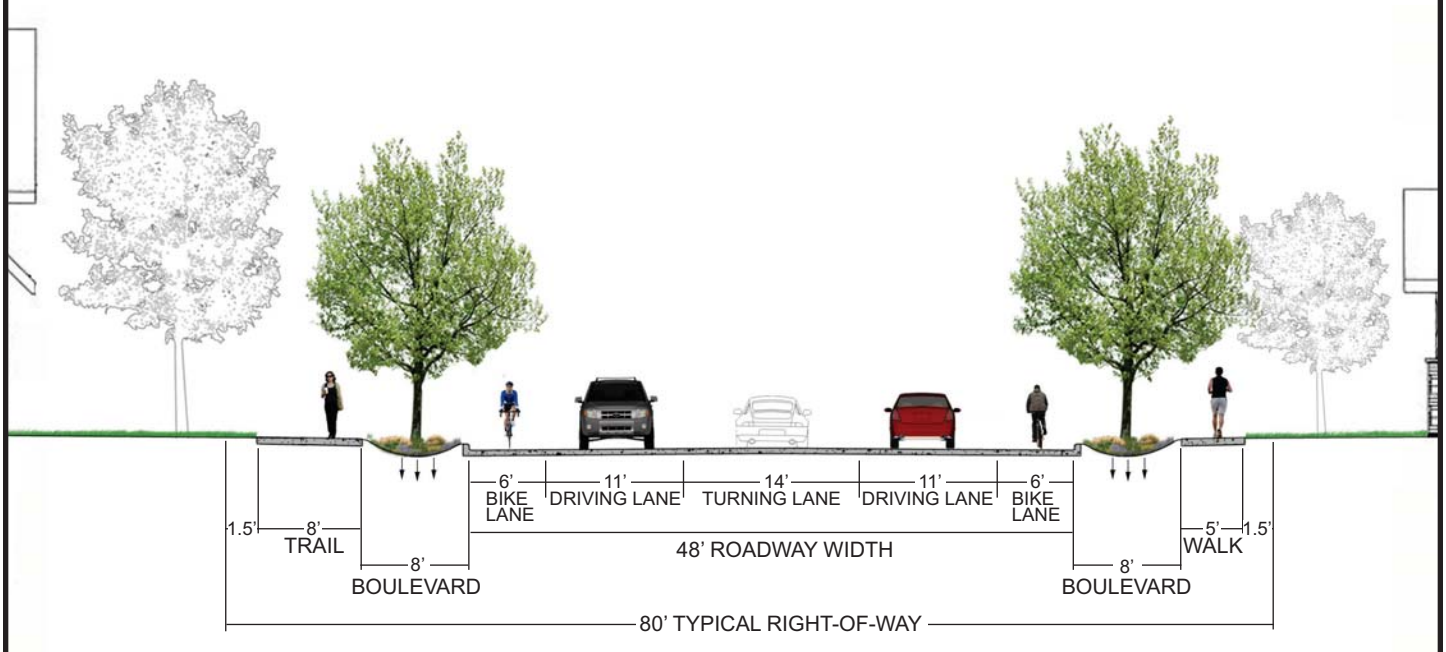
MAPLEWOOD


**Collector** | Option 3

MAPLEWOOD

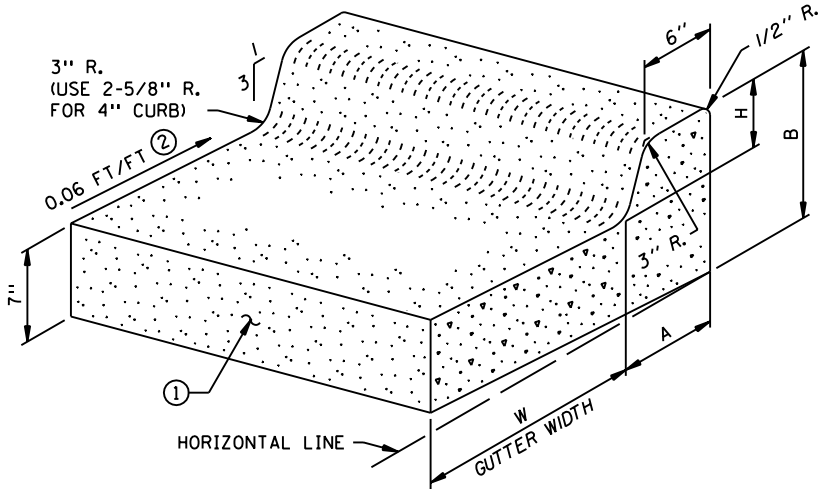


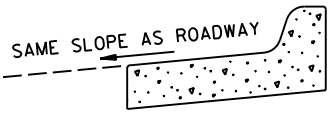

**Collector** | Option 4

MAPLEWOOD

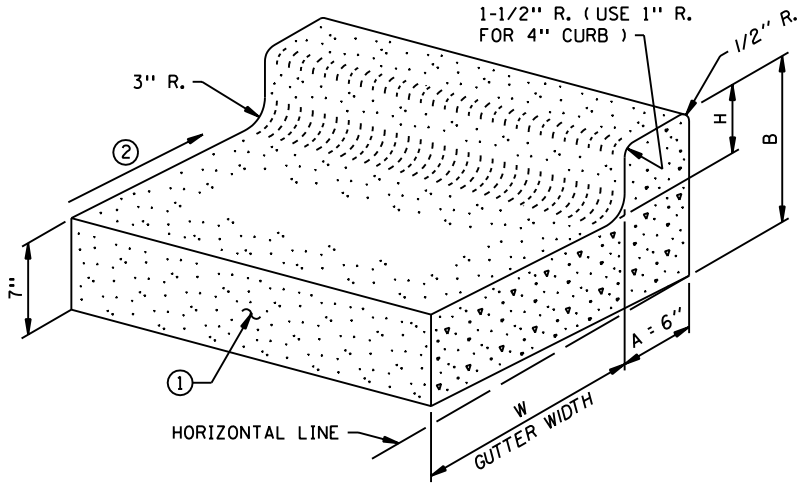
**Exhibit 6**




DESIGN B




REVERSE SLOPE GUTTER SECTION
( FORMS MAY BE TILTED )




DESIGN V

NOTES:

① LONGITUDINAL JOINT WHEN ADJACENT TO RIGID PAVEMENT OR BASE.

SEE STANDARD PLANS MANUAL FOR JOINT INFORMATION.

② SLOPE 0.06 FT/FT NORMAL, UNLESS OTHERWISE SPECIFIED. IF A DIFFERENT GUTTER SLOPE IS PERMITTED, THE FORM MAY BE TILTED.

| DESIGN B | | | W = 12" | | | W = 18" | | | W = 24" | | | W = 30" | | | W = 36" | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DIMENSIONS | | | DESIGN NO. | CONCRETE | | DESIGN NO. | CONCRETE | | DESIGN NO. | CONCRETE | | DESIGN NO. | CONCRETE | | DESIGN NO. | CONCRETE | |
| H | A | B | | CU. YDS. PER LIN. FT. | LIN. FT. PER CU. YD. | | CU. YDS. PER LIN. FT. | LIN. FT. PER CU. YD. | | CU. YDS. PER LIN. FT. | LIN. FT. PER CU. YD. | | CU. YDS. PER LIN. FT. | LIN. FT. PER CU. YD. | | CU. YDS. PER LIN. FT. | LIN. FT. PER CU. YD. |
| 4 | 7-3/8" | 11-1/2" | B412 | 0.0421 | 23.8 | B418 | 0.0529 | 18.9 | B424 | 0.0637 | 15.7 | B430 | 0.0745 | 13.4 | B436 | 0.0853 | 11.7 |
| 6 | 8" | 13-1/2" | B612 | 0.0474 | 21.1 | B618 | 0.0582 | 17.2 | B624 | 0.0690 | 14.5 | B630 | 0.0798 | 12.5 | B636 | 0.0906 | 11.0 |
| 8 | 8-5/8" | 15-1/2" | B812 | 0.0529 | 18.9 | B818 | 0.0637 | 15.7 | B824 | 0.0745 | 13.4 | B830 | 0.0853 | 11.7 | B836 | 0.0962 | 10.4 |
| 9 | 9" | 16-5/8" | B912 | 0.0559 | 17.9 | B918 | 0.0667 | 15.0 | B924 | 0.0775 | 12.9 | B930 | 0.0883 | 11.3 | B936 | 0.0991 | 10.1 |
| 10 | 9-3/8" | 17-5/8" | B1012 | 0.0589 | 17.0 | B1018 | 0.0697 | 14.4 | B1024 | 0.0805 | 12.4 | B1030 | 0.0913 | 11.0 | B1036 | 0.1021 | 9.8 |

| DESIGN V | | | W = 12" | | | W = 18" | | | W = 24" | | | W = 30" | | | W = 36" | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DIMENSIONS | | | DESIGN NO. | CONCRETE | | DESIGN NO. | CONCRETE | | DESIGN NO. | CONCRETE | | DESIGN NO. | CONCRETE | | DESIGN NO. | CONCRETE | |
| H | A | B | | CU. YDS. PER LIN. FT. | LIN. FT. PER CU. YD. | | CU. YDS. PER LIN. FT. | LIN. FT. PER CU. YD. | | CU. YDS. PER LIN. FT. | LIN. FT. PER CU. YD. | | CU. YDS. PER LIN. FT. | LIN. FT. PER CU. YD. | | CU. YDS. PER LIN. FT. | LIN. FT. PER CU. YD. |
| 4 | 6" | 11-3/8" | V412 | 0.0396 | 25.3 | V418 | 0.0504 | 19.9 | V424 | 0.0612 | 16.4 | V430 | 0.0720 | 13.9 | V436 | 0.0828 | 12.1 |
| 6 | 6" | 13-3/8" | V612 | 0.0426 | 23.5 | V618 | 0.0534 | 18.7 | V624 | 0.0642 | 15.6 | V630 | 0.0750 | 13.4 | V636 | 0.0858 | 11.7 |
| 8 | 6" | 15-3/8" | V812 | 0.0457 | 21.9 | V818 | 0.0565 | 17.7 | V824 | 0.0673 | 14.9 | V830 | 0.0781 | 12.8 | V836 | 0.0889 | 11.3 |
| 9 | 6" | 16-3/8" | V912 | 0.0472 | 21.2 | V918 | 0.0580 | 17.2 | V924 | 0.0688 | 14.5 | V930 | 0.0796 | 12.6 | V936 | 0.0904 | 11.1 |
| 10 | 6" | 17-3/8" | V1012 | 0.0487 | 20.5 | V1018 | 0.0595 | 16.8 | V1024 | 0.0703 | 14.2 | V1030 | 0.0811 | 12.4 | V1036 | 0.0919 | 10.9 |

APPROVED MARCH 11, 1994

R H. Cortfod

ACTING STATE DESIGN ENGINEER

STATE OF MINNESOTA
DEPARTMENT OF TRANSPORTATION

# CONCRETE CURB AND GUTTER

DESIGN B AND DESIGN V

SPECIFICATION REFERENCE
2531

REVISION DATE
2-28-05

STANDARD PLATE NO.
7100H

**2025 Maplewood Street Improvements**
**Preliminary Cost Estimate**
**Street and Utility Improvements**
**Maplewood City Project, 24-12**

**Exhibit 7**

| Preliminary Cost Estimate, 2025 Maplewood Street Improvements, City Project 24-12 | | | | | |
|---|---|---|---|---|---|
| | | | | TOTAL | |
| Item | Description | Unit | Estimated Unit Price | Estimated Quantity | Estimated Cost |
| **STREET IMPROVEMENTS** | | | | | |
| 2021.501 | MOBILIZATION | LS | $ 325,000.00 | **1.00** | **325,000.00** |
| 2101.502 | CLEARING AND GRUBBING | EACH | $ 950.00 | **45.00** | **42,750.00** |
| 2104.502 | SALVAGE MAIL BOX ASSEMBLY, ALL TYPES | EACH | $ 128.00 | **90.00** | **11,520.00** |
| 2104.503 | REMOVE CONCRETE CURB & GUTTER | L F | $ 5.50 | **4,590.00** | **25,245.00** |
| 2104.503 | SAW BITUMINOUS ROADWAY PAVEMENT (FULL DEPTH) | L F | $ 3.15 | **1,700.00** | **5,355.00** |
| 2104.504 | REMOVE BITUMINOUS DRIVEWAY PAVEMENT | S Y | $ 3.50 | **2,497.00** | **8,739.50** |
| 2104.504 | REMOVE CONCRETE DRIVEWAY PAVEMENT/APRON/WALK | S Y | $ 13.00 | **585.00** | **7,605.00** |
| 2104.504 | REMOVE BITUMINOUS ROADWAY PAVEMENT (INCLUDES BIT. CURB) | S Y | $ 3.35 | **24,247.00** | **81,227.45** |
| 2106.507 | GRANULAR EMBANKMENT MATERIAL (CV) | C Y | $ 15.00 | **706.00** | **10,590.00** |
| 2106.507 | SELECT GRANULAR EMBANKMENT MATERIAL (CV) | C Y | $ 27.00 | **7,060.00** | **190,620.00** |
| 2106.507 | SUBGRADE EXCAVATION (EV) | C Y | $ 29.00 | **7,060.00** | **204,740.00** |
| 2106.507 | COMMON EXCAVATION (EV) (P) | C Y | $ 32.00 | **10,543.00** | **337,376.00** |
| 2106.507 | SALVAGE, STOCKPILE, INSTALL RECLAIM MATERIAL | C Y | $ 28.00 | **695.00** | **19,460.00** |
| 2123.610 | STREET SWEEPER (WITH PICKUP BROOM) | HOUR | $ 155.00 | **132.00** | **20,460.00** |
| 2130.523 | WATER FOR DUST CONTROL | MGAL | $ 60.00 | **477.00** | **28,620.00** |
| 2211.504 | AGGREGATE BASE CLASS 6 FOR RESIDENTIAL CONCRETE DRIVEWAYS, 4" THICK | S Y | $ 9.60 | **380.00** | **3,648.00** |
| 2211.504 | AGGREGATE BASE CLASS 6 FOR BITUMINOUS DRIVEWAYS, 6" THICK | S Y | $ 12.00 | **2,483.00** | **29,796.00** |
| 2211.504 | AGGREGATE BASE CLASS 6 FOR CONCRETE WALKS/PEDESTRIAN RAMPS, 4" THICK | S Y | $ 14.00 | **2,860.00** | **40,040.00** |
| 2211.504 | AGGREGATE BASE CLASS 6 FOR BITUMINOUS TRAILS, 6" THICK | S Y | $ 12.00 | **4,226.00** | **50,712.00** |
| 2211.509 | AGGREGATE BASE CLASS 6 FOR STREETS | TON | $ 22.00 | **11,860.00** | **260,920.00** |
| 2215.504 | FULL DEPTH RECLAMATION (8-INCH DEPTH) | S Y | $ 4.50 | **46,310.00** | **208,395.00** |
| 2232.503 | EDGE MILL BITUMINOUS SURFACE, 2.5-INCH DEPTH | L F | $ 3.50 | **1,700.00** | **5,950.00** |
| 2331.603 | JOINT ADHESIVE | L F | $ 0.60 | **35,640.00** | **21,384.00** |
| 2331.603 | BITUMINOUS ROAD PAVEMENT CONTROL JOINT SAW AND SEAL | L F | $ 3.75 | **16,120.00** | **60,450.00** |
| 2355.506 | BITUMINOUS FOG SEAL | GAL | $ 9.90 | **9,800.00** | **97,020.00** |
| 2357.506 | BITUMINOUS MATERIAL FOR TACK COAT | GAL | $ 1.25 | **5,040.00** | **6,300.00** |
| 2360.504 | TYPE SPWEA330B BITUMINOUS MIXTURE (1 - 3-INCH LIFT, RESIDENTIAL DRIVEWAY) | S Y | $ 32.00 | **2,247.00** | **71,904.00** |
| 2360.504 | TYPE SPWEA230B BITUMINOUS MIXTURE (1 - 3-INCH LIFT, TRAIL) | S Y | $ 27.00 | **3,760.00** | **101,520.00** |
| 2360.509 | TYPE SPWEA330C BITUMINOUS WEARING COURSE MIXTURE | TON | $ 103.00 | **6,590.00** | **678,770.00** |
| 2360.509 | TYPE SPWEB330C BITUMINOUS NON-WEARING COURSE MIXTURE | TON | $ 90.00 | **8,080.00** | **727,200.00** |
| 2360.509 | WAKEFIELD PARK PARKING LOT IMPROVEMENTS | EACH | $ 50,000.00 | **1.00** | **50,000.00** |
| 2360.509 | WAKEFIELD PARK BALL FIELD IMPROVEMENTS | EACH | $ 50,000.00 | **1.00** | **50,000.00** |
| 2502.503 | 4-INCH PERFORATED DRAIN TUBING WITH TYPE 1 SOCK (STREET SUBCUT, INCLUDES FINE-FILTER AGGREGATE) | LF | $ 13.00 | **2,250.00** | **29,250.00** |
| 2521.518 | 4" CONCRETE WALK | S F | $ 7.50 | **500.00** | **3,750.00** |
| 2531.503 | CONCRETE CURB & GUTTER DESIGN B618, RIBBON OR TRANSITION (MACHINE-PLACED) | L F | $ 21.50 | **13,940.00** | **299,710.00** |

## Preliminary Cost Estimate, 2025 Maplewood Street Improvements, City Project 24-12

| Item | Description | Unit | Estimated Unit Price | TOTAL Estimated Quantity | TOTAL Estimated Cost |
|---|---|---|---|---|---|
| 2531.503 | CONCRETE CURB & GUTTER DESIGN B618, RIBBON OR TRANSITION (HAND-FORMED) | L F | $ 36.00 | **4,590.00** | **165,240.00** |
| 2531.504 | 6" CONCRETE DRIVEWAY PAVEMENT, RESIDENTIAL | S Y | $ 85.00 | **1,144.00** | **97,240.00** |
| 2531.618 | 6-INCH CONCRETE PEDESTRIAN CURB RAMP | S F | $ 15.00 | **2,600.00** | **39,000.00** |
| 2531.618 | TRUNCATED DOMES | S F | $ 65.00 | **368.00** | **23,920.00** |
| 2540.602 | INSTALL SALVAGED POST WITH SINGLE MAIL AND/OR NEWS BOX | EACH | $ 225.00 | **90.00** | **20,250.00** |
| 2540.602 | FURNISH & INSTALL POST WITH SINGLE MAIL AND/OR NEWS BOX | EACH | $ 250.00 | **18.00** | **4,500.00** |
| 2563.601 | TRAFFIC CONTROL - NEIGHBORHOOD | L S | $ 25,000.00 | **1.00** | **25,000.00** |
| 2563.601 | TRAFFIC CONTROL - OFFSITE BITUMINOUS FOG SEAL | L S | $ 10,000.00 | **1.00** | **10,000.00** |
| 2563.601 | TRAFFIC CONTROL - OFFSITE SANITARY SEWER LINING | L S | $ 5,000.00 | **1.00** | **5,000.00** |
| 2571.502 | DECIDUOUS TREE NO 20 CONT | EACH | $ 670.00 | **45.00** | **30,150.00** |
| 2573.501 | EROSION CONTROL, CONTRACTOR'S PLAN | LS | $ 10,000.00 | **1.00** | **10,000.00** |
| 2573.502 | STORM DRAIN INLET PROTECTION (ALL TYPES) | EACH | $ 160.00 | **218.00** | **34,880.00** |
| 2573.502 | STABILIZED CONSTRUCTION EXIT | EACH | $ 1,100.00 | **19.00** | **20,900.00** |
| 2573.503 | FLOTATION SILT CURTAIN TYPE STILL WATER | L F | $ 35.00 | **400.00** | **14,000.00** |
| 2573.503 | SILT FENCE; TYPE HEAVY DUTY | L F | $ 4.00 | **8,000.00** | **32,000.00** |
| 2573.503 | SEDIMENT CONTROL LOG TYPE COMPOST | L F | $ 3.50 | **8,000.00** | **28,000.00** |
| 2574.504 | LOAM TOPSOIL BORROW (4-INCH) | S Y | $ 4.25 | **19,550.00** | **83,087.50** |
| 2574.508 | COMMERCIAL FERTILIZER TYPE 1, 10-10-10 FOR SODDED/SEEDED AREAS (300 LBS/ACRE) | LB | $ 2.00 | **1,210.00** | **2,420.00** |
| 2575.504 | SODDING TYPE MINERAL | S Y | $ 13.50 | **13,360.00** | **180,360.00** |
| 2575.504 | EROSION CONTROL BLANKET (FUTERRA F4 NETLESS, BY RAMY TURF PRODUCTS OR APPROVED EQUAL) | S Y | $ 4.50 | **6,190.00** | **27,855.00** |
| 2575.508 | TURF ESTABLISHMENT STREET SIDE BOULEVARD SALT TOLERANT SEED BY RAMY TURF (300 LB/ACRE) | L B | $ 20.00 | **383.00** | **7,660.00** |
| 2575.523 | WATER FOR TURF ESTABLISHMENT (ADDITIONAL) | MGAL | $ 35.00 | **230.00** | **8,050.00** |
| 2582.503 | STRIPING & PAVEMENT MARKINGS | L S | $ 15,000.00 | **1.00** | **15,000.00** |
| | | | | **TOTAL =** | **5,000,539.45** |

**STORM SEWER SYSTEM IMPROVEMENTS**

| | | | | | |
|---|---|---|---|---|---|
| 2104.502 | REMOVE & DISPOSE OF STORM SEWER PIPE (ANY SIZE & TYPE) | EACH | $ 13.00 | **1,530.00** | **19,890.00** |
| 2104.502 | REMOVE/ABANDON DRAINAGE STRUCTURE (CB, MH OR CB-MH) | EACH | $ 350.00 | **51.00** | **17,850.00** |
| 2104.502 | SALVAGE STORM SEWER CASTING | EACH | $ 235.00 | **79.00** | **18,565.00** |
| 2451.603 | PIPE BEDDING MATERIAL FOR STORM SEWER, MAPLEWOOD STANDARD PLATE 340 & 341 | L F | $ 21.00 | **5,485.00** | **115,185.00** |
| 2501.502 | 12" RC PIPE APRON | EACH | $ 1,350.00 | **6.00** | **8,100.00** |
| 2501.502 | 15" RC PIPE APRON | EACH | $ 1,600.00 | **2.00** | **3,200.00** |
| 2501.502 | 24-INCH HDPE PIPE APRON | EACH | $ 1,350.00 | **3.00** | **4,050.00** |
| 2501.502 | 36-INCH HDPE PIPE APRON | EACH | $ 2,900.00 | **1.00** | **2,900.00** |
| 2503.503 | 12-INCH CORRUGATED SMOOTH WALL HDPE PIPE SEWER | L F | $ 49.00 | **685.00** | **33,565.00** |
| 2503.503 | 15-INCH CORRUGATED SMOOTH WALL HDPE PIPE SEWER | L F | $ 50.00 | **1,350.00** | **67,500.00** |
| 2503.503 | 18-INCH CORRUGATED SMOOTH WALL HDPE PIPE SEWER | L F | $ 51.00 | **1,130.00** | **57,630.00** |
| 2503.503 | 24-INCH CORRUGATED SMOOTH WALL HDPE PIPE SEWER | L F | $ 75.00 | **1,485.00** | **111,375.00** |
| 2503.503 | 36-INCH CORRUGATED SMOOTH WALL HDPE PIPE SEWER | L F | $ 120.00 | **200.00** | **24,000.00** |
| 2503.503 | 15" RC PIPE SEWER CLASS V | L F | $ 68.00 | **595.00** | **40,460.00** |
| 2503.503 | 24" RC PIPE SEWER CLASS IV | L F | $ 120.00 | **40.00** | **4,800.00** |
| 2503.502 | CONNECT TO EXISTING STORM SEWER PIPE | EACH | $ 800.00 | **24.00** | **19,200.00** |
| 2503.502 | CONNECT TO EXISTING STORM SEWER STRUCTURE | EACH | $ 1,200.00 | **11.00** | **13,200.00** |

# Preliminary Cost Estimate, 2025 Maplewood Street Improvements, City Project 24-12

| Item | Description | Unit | Estimated Unit Price | TOTAL Estimated Quantity | TOTAL Estimated Cost |
|---|---|---|---|---|---|
| 2506.502 | CONSTRUCT DRAINAGE STRUCTURE, DESIGN 24-INCH NYLOPLAST | EACH | $ 2,100.00 | **12.00** | **25,200.00** |
| 2506.502 | CONSTRUCT DRAINAGE STRUCTURE, DESIGN 2' x 3' BOX | EACH | $ 2,200.00 | **36.00** | **79,200.00** |
| 2506.502 | CONSTRUCT DRAINAGE STRUCTURE, DESIGN 48-INCH CB/MH | EACH | $ 4,000.00 | **38.00** | **152,000.00** |
| 2506.502 | CONSTRUCT DRAINAGE STRUCTURE, DESIGN 60-INCH CB/MH | EACH | $ 7,500.00 | **10.00** | **75,000.00** |
| 2506.502 | CONSTRUCT DRAINAGE STRUCTURE, DESIGN 72-INCH CB/MH | EACH | $ 10,000.00 | **1.00** | **10,000.00** |
| 2506.502 | CONSTRUCT DRAINAGE STRUCTURE, DESIGN 84-INCH CB/MH | EACH | $ 16,000.00 | **1.00** | **16,000.00** |
| 2506.502 | CONSTRUCT DRAINAGE STRUCTURE, DESIGN 96-INCH CB/MH | EACH | $ 24,000.00 | **2.00** | **48,000.00** |
| 2506.502 | FURNISH & INSTALL R-1678-A FRAME & SOLID LID FOR STORM SEWER | EACH | $ 1,500.00 | **16.00** | **24,000.00** |
| 2506.502 | FURNISH & INSTALL R-3067-V FRAME & V GRATE FOR STORM SEWER | EACH | $ 1,200.00 | **78.00** | **93,600.00** |
| 2506.502 | FURNISH & INSTALL 24-INCH NYLOPLAST GRATE FOR STORM SEWER | EACH | $ 1,000.00 | **13.00** | **13,000.00** |
| 2506.502 | ADJUST EXISTING STORM SEWER CASTING (ALL TYPES) | EACH | $ 1,000.00 | **55.00** | **55,000.00** |
| 2506.601 | REHABILITATE EXISTING STORM SEWER ADJUSTMENT RINGS W/FLEX SEAL UTILITY SEALANT, MAPLEWOOD STANDARD PLA | EACH | $ 850.00 | **17.00** | **14,450.00** |
| 2506.601 | REHABILITATE EXISTING STORM SEWER INVERT(S)/DOGHOUSE(S) | EACH | $ 500.00 | **15.00** | **7,500.00** |
| 2506.601 | TUCKPOINT & EPOXY LINE MANHOLE | EACH | $ 4,000.00 | **11.00** | **44,000.00** |
| 2506.601 | WAKEFIELD LAKE GRIT CHAMBER REHABILITATION | EACH | $ 20,000.00 | **1.00** | **20,000.00** |
| 2507.503 | LINING CMP CULVERT PIPE 12" | L F | $ 65.00 | **490.00** | **31,850.00** |
| 2507.503 | LINING CMP CULVERT PIPE 15" | L F | $ 75.00 | **90.00** | **6,750.00** |
| 2511.507 | GEOTEXTILE FILTER FABRIC TYPE 4 NON-WOVEN FOR RIPRAP | S Y | $ 5.00 | **125.00** | **625.00** |
| 2511.507 | RANDOM RIPRAP CLASS III | C Y | $ 150.00 | **105.00** | **15,750.00** |
| 2573.501 | WATER QUALITY IMPROVEMENTS | LS | $ 450,000.00 | **1.00** | **450,000.00** |
| | | | | **TOTAL =** | **1,743,395.00** |

**SANITARY SEWER SYSTEM IMPROVEMENTS**

| | | | | | |
|---|---|---|---|---|---|
| 2104.502 | SALVAGE SANITARY SEWER CASTING | EACH | $ 322.00 | **19.00** | **6,118.00** |
| 2451.603 | PIPE BEDDING MATERIAL FOR SANITARY SEWER, MAPLEWOOD STANDARD PLATE 340 & 341 | L F | $ 11.00 | **420.00** | **4,620.00** |
| 2503.503 | 4-INCH OR 6-INCH SCHEDULE 40 SANITARY SEWER SERVICE REPLACEMENT PER MAPLEWOOD PLATE 410 OR 410A | L F | $ 65.00 | **360.00** | **23,400.00** |
| 2503.503 | 8-INCH SDR-35 SANITARY SEWER MAIN | L F | $ 120.00 | **60.00** | **7,200.00** |
| 2503.602 | 6"X8" SDR-35 PVC WYE | EACH | $ 1,000.00 | **1.00** | **1,000.00** |
| 2503.602 | CONNECT TO EXISTING SANITARY SEWER MAIN | EACH | $ 1,200.00 | **12.00** | **14,400.00** |
| 2503.603 | LINING SEWER PIPE 8" | L F | $ 52.00 | **3,200.00** | **166,400.00** |
| 2506.502 | FURNISH & INSTALL R-1678-A FRAME & R-1422-0015 LID FOR SANITARY SEWER | EACH | $ 1,500.00 | **19.00** | **28,500.00** |
| 2506.502 | ADJUST EXISTING SANITARY SEWER CASTING (ALL TYPES) | EACH | $ 1,200.00 | **66.00** | **79,200.00** |
| 2506.503 | RECONSTRUCT SANITARY SEWER MANHOLE | L F | $ 2,550.00 | **30.00** | **76,500.00** |
| | | | | **TOTAL =** | **407,338.00** |

**WATER SYSTEM IMPROVEMENTS**

| | | | | | |
|---|---|---|---|---|---|
| 2104.502 | REMOVE HYDRANT | EACH | $ 700.00 | **14.00** | **9,800.00** |
| 2104.503 | REMOVE WATER MAIN (ANY SIZE) (OPEN CUT AREAS ONLY) | L F | $ 5.00 | **840.00** | **4,200.00** |
| 2451.609 | GRANULAR BACKFILL (FOR WATER MAIN) | TON | $ 13.00 | **934.00** | **12,142.00** |
| 2504.602 | ADJUST CURB BOX | EACH | $ 140.00 | **16.00** | **2,240.00** |
| 2504.602 | REPAIR VALVE BOX | EACH | $ 520.00 | **36.00** | **18,720.00** |
| 2504.602 | ADJUST VALVE BOX | EACH | $ 470.00 | **36.00** | **16,920.00** |
| 2504.602 | HYDRANT (MAPLEWOOD STANDARD) | EACH | $ 9,000.00 | **14.00** | **126,000.00** |

## Preliminary Cost Estimate, 2025 Maplewood Street Improvements, City Project 24-12

| Item | Description | Unit | Estimated Unit Price | TOTAL Estimated Quantity | TOTAL Estimated Cost |
|---|---|---|---|---|---|
| 2504.602 | 6-INCH GATE VALVE AND BOX | EACH | $ 4,000.00 | **16.00** | **64,000.00** |
| 2504.602 | 8-INCH GATE VALVE AND BOX | EACH | $ 4,400.00 | **1.00** | **4,400.00** |
| 2504.602 | 12-INCH GATE VALVE AND BOX | EACH | $ 7,500.00 | **6.00** | **45,000.00** |
| 2504.602 | 16-INCH GATE VALVE AND BOX | EACH | $ 10,000.00 | **6.00** | **60,000.00** |
| 2504.602 | 1.0-INCH CORPERATION STOP | EACH | $ 1,300.00 | **11.00** | **14,300.00** |
| 2504.602 | SACRIFICIAL ANODE | EACH | $ 550.00 | **180.00** | **99,000.00** |
| 2504.603 | 6" - 8" WATERMAIN DUCTILE IRON CL 53 | L F | $ 87.00 | **700.00** | **60,900.00** |
| 2504.603 | 1.0-INCH TYPE K COPPER | L F | $ 40.00 | **100.00** | **4,000.00** |
| 2504.604 | 4-INCH INSULATION | S Y | $ 55.00 | **1,220.00** | **67,100.00** |
| 2504.608 | DUCTILE AND GREY IRON FITTINGS | L B | $ 7.50 | **2,600.00** | **19,500.00** |
| 2506.602 | CASTING ASSEMBLY SPECIAL (SPRWS STANDARD PLATE D14) | EACH | $ 270.00 | **12.00** | **3,240.00** |
| | | | | **TOTAL =** | **631,462.00** |

**TOTAL =** **$ 7,782,734.45**

| | |
|---|---|
| Subtotal: | $ 7,782,734.45 |
| + 10% Contingencies: | $ 778,273.45 |
| **Subtotal Estimated Construction Costs:** | **$ 8,561,007.90** |
| + Estimated Easement Costs: | |
| + 12.0% Geotechnical, Legal, and Fiscal Expenses: | $ 1,027,320.95 |
| **Total Estimated Project Costs:** | **$ 9,588,328.84** |

**Exhibit 8**

**Preliminary Assessment Roll**
**2025 Maplewood Street Improvements**
**City Project 24-12**

| Parcel ID | Site Address | Property Type | Improvement Type | Units/Front Footage | Assessment Amount |
|---|---|---|---|---|---|
| 152922310024 | 1909 HAZELWOOD ST N | Residential, Single Family | Full Reconstruction | 1 | $ 6,600.00 |
| 152922420040 | 1808 PROSPERITY RD N | Residential, Single Family | Full Reconstruction | 1 | $ 6,600.00 |
| 152922420037 | 1840 PROSPERITY RD N | Residential, Single Family | Full Reconstruction | 1 | $ 6,600.00 |
| 152922420038 | 1830 PROSPERITY RD N | Residential, Single Family | Full Reconstruction | 1 | $ 6,600.00 |
| 152922420039 | 1818 PROSPERITY RD N | Residential, Single Family | Full Reconstruction | 1 | $ 6,600.00 |
| 152922310023 | 1901 HAZELWOOD ST N | Residential, Single Family | Full Reconstruction | 1 | $ 6,600.00 |
| 152922310019 | 1883 HAZELWOOD ST N | Residential, Single Family | Full Reconstruction | 1 | $ 6,600.00 |
| 152922420031 | 1872 PROSPERITY RD N | Residential, Single Family | Full Reconstruction | 1 | $ 6,600.00 |
| 152922420036 | 1848 PROSPERITY RD N | Residential, Single Family | Full Reconstruction | 1 | $ 6,600.00 |
| 152922420028 | 1898 PROSPERITY RD N | Residential, Single Family | Full Reconstruction | 1 | $ 6,600.00 |
| 152922310015 | 1861 HAZELWOOD ST N | Residential, Single Family | Full Reconstruction | 1 | $ 6,600.00 |
| 152922310022 | 1897 HAZELWOOD ST N | Residential, Single Family | Full Reconstruction | 1 | $ 6,600.00 |
| 152922310016 | 1865 HAZELWOOD ST N | Residential, Single Family | Full Reconstruction | 1 | $ 6,600.00 |
| 152922310018 | 1877 HAZELWOOD ST N | Residential, Single Family | Full Reconstruction | 1 | $ 6,600.00 |
| 152922310020 | 1887 HAZELWOOD ST N | Residential, Single Family | Full Reconstruction | 1 | $ 6,600.00 |
| 152922310017 | 1873 HAZELWOOD ST N | Residential, Single Family | Full Reconstruction | 1 | $ 6,600.00 |
| 152922420030 | 1884 PROSPERITY RD N | Residential, Single Family | Full Reconstruction | 1 | $ 6,600.00 |
| 152922420029 | 1890 PROSPERITY RD N | Residential, Single Family | Full Reconstruction | 1 | $ 6,600.00 |
| 152922310021 | 1891 HAZELWOOD ST N | Residential, Single Family | Full Reconstruction | 1 | $ 6,600.00 |
| 152922430021 | 1792 PROSPERITY RD N | Residential, Single Family | Full Reconstruction | 1 | $ 6,600.00 |
| 152922430020 | 1778 PROSPERITY RD N | Residential, Single Family | Full Reconstruction | 1 | $ 6,600.00 |
| 152922430019 | 1764 PROSPERITY RD N | Residential, Single Family | Full Reconstruction | 1 | $ 6,600.00 |
| 152922430018 | 1756 PROSPERITY RD N | Residential, Single Family | Full Reconstruction | 1 | $ 6,600.00 |
| 152922420027 | 1910 PROSPERITY RD N | Residential, Single Family | Full Reconstruction | 1 | $ 6,600.00 |
| 152922130048 | 1955 PROSPERITY RD N | Residential, Single Family | Full Reconstruction | 1 | $ 6,600.00 |
| 152922130066 | 2032 PROSPERITY RD N | Residential, Single Family | Full Reconstruction | 1 | $ 6,600.00 |
| 152922130041 | 2011 PROSPERITY RD N | Residential, Single Family | Full Reconstruction | 1 | $ 6,600.00 |
| 152922110049 | 2080 PROSPERITY RD N | Residential, Single Family | Full Reconstruction | 1 | $ 6,600.00 |
| 152922130042 | 2005 PROSPERITY RD N | Residential, Single Family | Full Reconstruction | 1 | $ 6,600.00 |
| 152922130043 | 1999 PROSPERITY RD N | Residential, Single Family | Full Reconstruction | 1 | $ 6,600.00 |
| 152922130047 | 1965 PROSPERITY RD N | Residential, Single Family | Full Reconstruction | 1 | $ 6,600.00 |
| 152922130046 | 1977 PROSPERITY RD N | Residential, Single Family | Full Reconstruction | 1 | $ 6,600.00 |
| 152922130045 | 1985 PROSPERITY RD N | Residential, Single Family | Full Reconstruction | 1 | $ 6,600.00 |
| 152922130044 | 1995 PROSPERITY RD N | Residential, Single Family | Full Reconstruction | 1 | $ 6,600.00 |
| 152922130049 | 1945 PROSPERITY RD N | Commercial | Full Reconstruction | 275 | $ 36,300.00 |
| 152922420041 | 1800 PROSPERITY RD N | Residential, Single Family | Full Reconstruction | 1 | $ 6,600.00 |
| 152922110050 | 2055 WHITE BEAR AVE N | Commercial | Full Reconstruction | 91 | $ 12,012.00 |
| 152922120021 | 2044 PROSPERITY RD N | Residential, Single Family | Full Reconstruction | 1 | $ 6,600.00 |
| 152922130029 | 1954 PROSPERITY RD N | Residential, Single Family | Full Reconstruction | 1 | $ 6,600.00 |
| 152922110007 | 2138 PROSPERITY RD N | Residential, Single Family | Full Reconstruction | 1 | $ 6,600.00 |
| 152922110028 | 2141 PROSPERITY RD N | Residential, Single Family | Full Reconstruction | 1 | $ 6,600.00 |
| 152922110029 | 2137 PROSPERITY RD N | Residential, Single Family | Full Reconstruction | 1 | $ 6,600.00 |
| 152922130036 | 2006 PROSPERITY RD N | Residential, Single Family | Full Reconstruction | 1 | $ 6,600.00 |
| 152922130027 | 1930 PROSPERITY RD N | Residential, Single Family | Full Reconstruction | 1 | $ 6,600.00 |
| 152922130035 | 1998 PROSPERITY RD N | Residential, Single Family | Full Reconstruction | 1 | $ 6,600.00 |
| 152922130038 | 2026 PROSPERITY RD N | Residential, Single Family | Full Reconstruction | 1 | $ 6,600.00 |
| 152922130037 | 2020 PROSPERITY RD N | Residential, Single Family | Full Reconstruction | 1 | $ 6,600.00 |
| 152922130028 | 1946 PROSPERITY RD N | Residential, Single Family | Full Reconstruction | 1 | $ 6,600.00 |
| 152922130033 | 0 PROSPERITY RD N | Residential, Single Family | Full Reconstruction | 1 | $ 6,600.00 |
| 152922130031 | 1970 PROSPERITY RD N | Residential, Single Family | Full Reconstruction | 1 | $ 6,600.00 |
| 152922130030 | 1962 PROSPERITY RD N | Residential, Single Family | Full Reconstruction | 1 | $ 6,600.00 |
| 152922430016 | 1725 KENNARD ST N | Commercial | Full Reconstruction | 690 | $ 91,080.00 |
| 152922430017 | 1744 PROSPERITY RD N | Residential, Single Family | Full Reconstruction | 1 | $ 6,600.00 |
| 152922110039 | 2115 PROSPERITY RD N | Residential, Single Family | Full Reconstruction | 1 | $ 6,600.00 |
| 152922110040 | 2111 PROSPERITY RD N | Residential, Single Family | Full Reconstruction | 1 | $ 6,600.00 |
| 152922110006 | 2152 PROSPERITY RD N | Residential, Single Family | Full Reconstruction | 1 | $ 6,600.00 |
| 152922110023 | 2128 PROSPERITY RD N | Residential, Single Family | Full Reconstruction | 1 | $ 6,600.00 |
| 152922130034 | 1994 PROSPERITY RD N | Residential, Single Family | Full Reconstruction | 1 | $ 6,600.00 |
| 152922130032 | 1978 PROSPERITY RD N | Residential, Single Family | Full Reconstruction | 1 | $ 6,600.00 |
| 152922120016 | 2095 PROSPERITY RD N | Residential, Single Family | Full Reconstruction | 1 | $ 6,600.00 |

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|---|---|---|---|---|---|
| 152922120028 | 2049 PROSPERITY RD N | Residential, Single Family | Full Reconstruction | 1 | $ 6,600.00 |
| 152922120030 | 2075 PROSPERITY RD N | Commercial | Full Reconstruction | 293 | $ 38,676.00 |
| 152922110047 | 0 WHITE BEAR AVE | Commercial | Full Reconstruction | 411 | $ 54,252.00 |
| 152922130061 | 2033 PROSPERITY RD N | Residential, Single Family | Full Reconstruction | 1 | $ 6,600.00 |
| 152922130063 | 2021 PROSPERITY RD N | Residential, Single Family | Full Reconstruction | 1 | $ 6,600.00 |
| 152922120022 | 2053 PROSPERITY RD N | Residential, Single Family | Full Reconstruction | 1 | $ 6,600.00 |
| 152922120029 | 2041 PROSPERITY RD N | Residential, Single Family | Full Reconstruction | 1 | $ 6,600.00 |
| 122822220028 | 358 PARKVIEW LN S | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 122822220030 | 354 PARKVIEW LN S | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 122822220031 | 352 PARKVIEW LN S | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 122822220041 | 322 PARKVIEW LN S | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 122822220042 | 318 PARKVIEW LN S | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 122822220019 | 335 PARKVIEW LN S | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 122822220033 | 342 PARKVIEW LN S | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 122822220018 | 337 PARKVIEW LN S | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 122822220020 | 333 PARKVIEW LN S | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 122822220021 | 331 PARKVIEW LN S | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 122822220022 | 329 PARKVIEW LN S | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 122822220029 | 356 PARKVIEW LN S | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 122822220032 | 350 PARKVIEW LN S | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 122822220034 | 340 PARKVIEW CT S | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 122822220035 | 338 PARKVIEW CT S | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 122822220036 | 336 PARKVIEW CT S | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 122822220037 | 334 PARKVIEW CT S | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 122822220038 | 332 PARKVIEW CT S | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 122822220039 | 330 PARKVIEW LN S | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 122822220040 | 326 PARKVIEW LN S | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 122822220010 | 353 PARKVIEW LN S | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 122822220009 | 355 PARKVIEW LN S | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 122822220008 | 357 PARKVIEW LN S | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 122822220011 | 351 PARKVIEW LN S | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 122822220027 | 319 PARKVIEW LN S | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 122822220007 | 359 PARKVIEW LN S | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 122822220023 | 327 PARKVIEW LN S | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 122822220024 | 325 PARKVIEW LN S | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 122822220017 | 339 PARKVIEW LN S | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 122822220016 | 341 PARKVIEW LN S | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 122822220015 | 343 PARKVIEW LN S | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 122822220013 | 347 PARKVIEW LN S | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 122822220026 | 321 PARKVIEW LN S | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 122822220025 | 323 PARKVIEW LN S | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 122822220014 | 345 PARKVIEW LN S | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 122822220012 | 349 PARKVIEW LN S | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 122822430041 | 2534 HILLWOOD DR E | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 122822430060 | 2519 BETH CT E | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 122822430061 | 2525 BETH CT E | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 122822430062 | 2533 BETH CT E | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 122822430030 | 2545 HILLWOOD DR E | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 122822430029 | 2535 HILLWOOD DR E | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 122822430048 | 707 FERNDALE ST S | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 122822430047 | 715 FERNDALE ST S | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 122822430057 | 2556 BETH CT E | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 122822430054 | 676 FERNDALE ST S | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 122822430020 | 662 STERLING ST S | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 122822430050 | 663 FERNDALE ST S | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 122822430049 | 699 FERNDALE ST S | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 122822430058 | 2546 BETH CT E | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 122822430059 | 2536 BETH CT E | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 122822430063 | 2541 BETH CT E | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 122822430053 | 668 FERNDALE ST S | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 122822430027 | 2519 HILLWOOD DR E | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 122822430055 | 684 FERNDALE ST S | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 122822430056 | 692 FERNDALE ST S | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 122822430028 | 2527 HILLWOOD DR E | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 122822430026 | 2556 OAKRIDGE CT E | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |

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|---|---|---|---|---|---|
| 122822430025 | 2564 OAKRIDGE CT E | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 122822430038 | 2555 OAKRIDGE CT E | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 122822430037 | 2547 OAKRIDGE CT E | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 122822430031 | 2553 HILLWOOD DR E | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 122822430033 | 2569 HILLWOOD DR E | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 122822430034 | 2570 HILLWOOD DR E | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 122822430035 | 2562 HILLWOOD DR E | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 122822430032 | 2561 HILLWOOD DR E | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 122822430036 | 2552 HILLWOOD DR E | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 122822430024 | 2572 OAKRIDGE CT E | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 122822430046 | 716 FERNDALE ST S | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 122822430045 | 708 FERNDALE ST S | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 122822430039 | 2563 OAKRIDGE CT E | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 122822430044 | 700 FERNDALE ST S | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 122822430040 | 2573 OAKRIDGE CT E | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 132822210070 | 2447 MATTERHORN DR E | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 132822210073 | 2479 MATTERHORN DR E | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 132822210061 | 2458 MATTERHORN DR E | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 132822210062 | 2448 MATTERHORN DR E | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 132822210069 | 2437 MATTERHORN DR E | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 132822210071 | 2457 MATTERHORN DR E | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 132822210072 | 2469 MATTERHORN DR E | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 132822240095 | 2478 TIMBER CT E | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 132822240094 | 2482 TIMBER CT E | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 132822240097 | 2474 TIMBER CT E | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 132822210044 | 2471 TIMBER CT E | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 132822210074 | 2462 DAHL CIR E | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 132822210075 | 2452 DAHL CIR E | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 132822210076 | 2455 DAHL CIR E | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 132822210079 | 2476 DAHL CIR E | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 132822210077 | 2465 DAHL CIR E | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 132822210059 | 2478 MATTERHORN DR E | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 132822210048 | 2483 TIMBER CT E | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 132822210047 | 2479 TIMBER CT E | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 132822210046 | 2477 TIMBER CT E | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 132822210045 | 2475 TIMBER CT E | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 132822210064 | 2428 MATTERHORN DR E | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 132822210065 | 2418 MATTERHORN DR E | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 132822210067 | 2421 MATTERHORN DR E | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 132822210068 | 2427 MATTERHORN DR E | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 132822210063 | 2438 MATTERHORN DR E | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 132822210060 | 2468 MATTERHORN DR E | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 132822210066 | 2417 MATTERHORN DR E | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 132822210078 | 2475 DAHL CIR E | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 132822240096 | 2476 TIMBER CT E | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 132822310043 | 2451 SOUTHCREST AVE E | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 132822310041 | 2435 SOUTHCREST AVE E | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 132822310045 | 1047 MARNIE ST S | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 132822310042 | 2443 SOUTHCREST AVE E | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 132822310017 | 980 CRESTVIEW DR S | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 132822310020 | 2451 MAMIE AVE E | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 132822310021 | 2459 MAMIE AVE E | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 132822310033 | 1017 MARNIE ST S | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 132822310032 | 2461 NEMITZ AVE E | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 132822310036 | 2442 NEMITZ AVE E | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 132822310038 | 1038 CRESTVIEW DR S | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 132822310023 | 2460 MAMIE AVE E | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 132822310037 | 2434 NEMITZ AVE E | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 132822310034 | 1037 MARNIE ST S | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 132822310031 | 2453 NEMITZ AVE E | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 132822310039 | 1052 CRESTVIEW DR S | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 132822310024 | 2452 MAMIE AVE E | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 132822310035 | 2450 NEMITZ AVE E | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 132822310014 | 963 MARNIE ST S | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 132822310022 | 983 MARNIE ST S | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |

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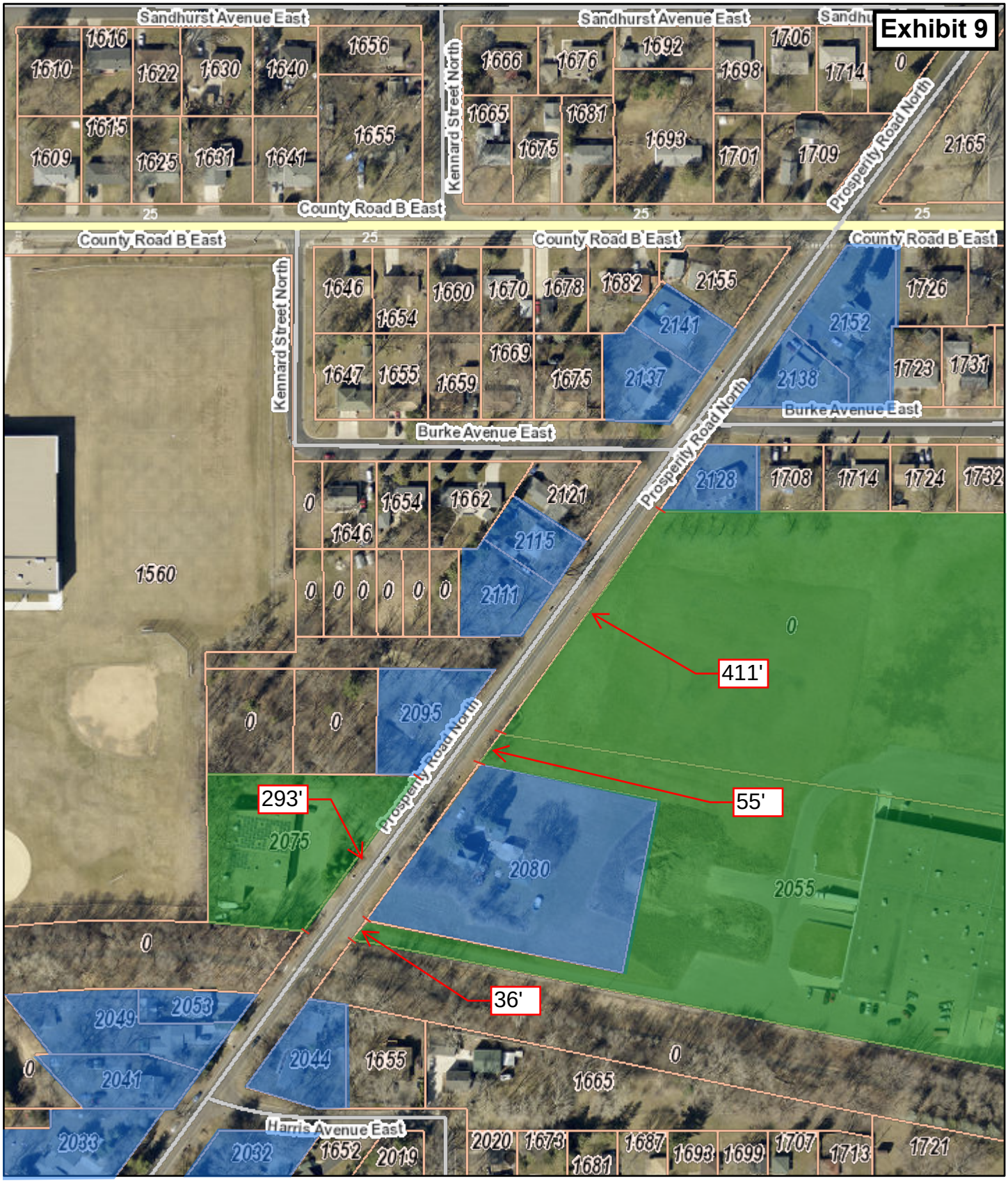
|---|---|---|---|---|---|
| 132822310018 | 992 CRESTVIEW DR S | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 132822310019 | 2443 MAMIE AVE E | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 132822310040 | 1062 CRESTVIEW DR S | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 132822310044 | 2475 SOUTHCREST AVE E | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 132822310090 | 1015 CRESTVIEW DR S | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 132822310070 | 1049 CRESTVIEW DR S | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 132822310069 | 1025 CRESTVIEW DR S | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 132822310071 | 1059 CRESTVIEW DR S | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 132822310072 | 1069 CRESTVIEW DR S | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 132822310073 | 1011 CRESTVIEW DR S | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 132822310059 | 979 CRESTVIEW DR S | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 132822310057 | 1001 CRESTVIEW DR S | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 132822310060 | 0 CRESTVIEW DR S | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 132822310091 | 1021 CRESTVIEW DR S | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 132822310058 | 991 CRESTVIEW DR S | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 132822310029 | 2433 NEMITZ AVE E | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 132822310030 | 2441 NEMITZ AVE E | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 132822310026 | 1004 CRESTVIEW DR S | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 132822310025 | 2444 MAMIE AVE E | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 132822310027 | 1014 CRESTVIEW DR S | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 132822310028 | 1024 CRESTVIEW DR S | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 132822310011 | 1058 MARNIE ST S | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 132822310012 | 1068 MARNIE ST S | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 132822310046 | 2462 SOUTHCREST AVE E | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 132822310010 | 1048 MARNIE ST S | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 132822310048 | 2444 SOUTHCREST AVE E | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 132822310007 | 1008 MARNIE ST S | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 132822310008 | 1016 MARNIE ST S | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 132822310013 | 1078 MARNIE ST S | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 132822310065 | 1038 MARNIE ST S | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 132822310005 | 992 MARNIE ST S | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 132822310006 | 1000 MARNIE ST S | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 132822310009 | 1024 MARNIE ST S | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 132822310049 | 2434 SOUTHCREST AVE E | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 132822310003 | 962 MARNIE ST S | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 132822310004 | 982 MARNIE ST S | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 132822310050 | 2426 SOUTHCREST AVE E | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 132822310047 | 2452 SOUTHCREST AVE E | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 132822320069 | 2322 MAMIE AVE E | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 132822320070 | 2332 MAMIE AVE E | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 132822320055 | 2311 MAMIE AVE E | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 132822320056 | 2321 MAMIE AVE E | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 132822320062 | 2323 SOUTHCREST AVE E | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 132822320063 | 2324 MAIDA CT E | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 132822320067 | 1040 DORLAND RD S | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 132822320068 | 1028 DORLAND RD S | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 132822320048 | 1079 DORLAND RD S | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 132822320049 | 1069 DORLAND RD S | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 132822320050 | 1059 DORLAND RD S | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 132822320051 | 1049 DORLAND RD S | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 132822320052 | 1039 DORLAND RD S | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 132822320053 | 1029 DORLAND RD S | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 132822320057 | 2331 MAMIE AVE E | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 132822320058 | 2341 MAMIE AVE E | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 132822320045 | 2336 SOUTHCREST AVE E | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 132822320029 | 2352 MAMIE AVE E | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 132822320036 | 2347 MAMIE AVE E | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 132822320046 | 2328 SOUTHCREST AVE E | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 132822320047 | 2320 SOUTHCREST AVE E | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 132822320061 | 2333 SOUTHCREST AVE E | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 132822320064 | 2334 MAIDA CT E | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 132822320065 | 2333 MAIDA CT E | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 132822320054 | 1019 DORLAND RD S | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 132822320071 | 2342 MAMIE AVE E | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |
| 132822320066 | 2323 MAIDA CT E | Residential, Single Family | Pavement Rehabilitation | 1 | $ 3,450.00 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 132822320037 | 2357 MAMIE AVE E | Residential, Single Family | Pavement Rehabilitation | 1 | $ | 3,450.00 |
| 242822420015 | 1529 HALLER CT S | Residential, Single Family | Pavement Rehabilitation | 1 | $ | 3,450.00 |
| 242822430009 | 2574 HALLER LN E | Residential, Single Family | Pavement Rehabilitation | 1 | $ | 3,450.00 |
| 242822430010 | 2564 HALLER LN E | Residential, Single Family | Pavement Rehabilitation | 1 | $ | 3,450.00 |
| 242822430011 | 2554 HALLER LN E | Residential, Single Family | Pavement Rehabilitation | 1 | $ | 3,450.00 |
| 242822420021 | 2544 HALLER LN E | Residential, Single Family | Pavement Rehabilitation | 1 | $ | 3,450.00 |
| 242822420022 | 2534 HALLER LN E | Residential, Single Family | Pavement Rehabilitation | 1 | $ | 3,450.00 |
| 242822420023 | 2520 HALLER LN E | Residential, Single Family | Pavement Rehabilitation | 1 | $ | 3,450.00 |
| 242822420024 | 2504 HALLER LN E | Residential, Single Family | Pavement Rehabilitation | 1 | $ | 3,450.00 |
| 242822420012 | 2513 HALLER LN E | Residential, Single Family | Pavement Rehabilitation | 1 | $ | 3,450.00 |
| 242822420011 | 2503 HALLER LN E | Residential, Single Family | Pavement Rehabilitation | 1 | $ | 3,450.00 |
| 242822420017 | 1509 HALLER CT S | Residential, Single Family | Pavement Rehabilitation | 1 | $ | 3,450.00 |
| 242822420018 | 1518 HALLER CT S | Residential, Single Family | Pavement Rehabilitation | 1 | $ | 3,450.00 |
| 242822420019 | 1528 HALLER CT S | Residential, Single Family | Pavement Rehabilitation | 1 | $ | 3,450.00 |
| 242822420020 | 1538 HALLER CT S | Residential, Single Family | Pavement Rehabilitation | 1 | $ | 3,450.00 |
| 242822430005 | 2543 HALLER LN E | Residential, Single Family | Pavement Rehabilitation | 1 | $ | 3,450.00 |
| 242822430006 | 2553 HALLER LN E | Residential, Single Family | Pavement Rehabilitation | 1 | $ | 3,450.00 |
| 242822420013 | 2523 HALLER LN E | Residential, Single Family | Pavement Rehabilitation | 1 | $ | 3,450.00 |
| 242822420014 | 2533 HALLER LN E | Residential, Single Family | Pavement Rehabilitation | 1 | $ | 3,450.00 |
| 242822420016 | 1519 HALLER CT S | Residential, Single Family | Pavement Rehabilitation | 1 | $ | 3,450.00 |
| 242822430007 | 2563 HALLER LN E | Residential, Single Family | Pavement Rehabilitation | 1 | $ | 3,450.00 |
| 242822430008 | 2573 HALLER LN E | Residential, Single Family | Pavement Rehabilitation | 1 | $ | 3,450.00 |
| | | | | | **$** | **1,366,020.00** |

| | | | |
|---|---|---|---|
| Full Reconstruction, Residential Single Family | $ | 6,600.00 | /Unit |
| Full Reconstruction, Commercial | $ | 132.00 | /Front-Foot |
| Pavement Rehabilitation, Residential Single Family | $ | 3,450.00 | /Unit |

# 2025 Maplewood Street Improvements, Preliminary Assessment Map




12/3/2024, 11:10:33 AM

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0 0.02 0.04 0.08 mi

0 0.03 0.07 0.13 km

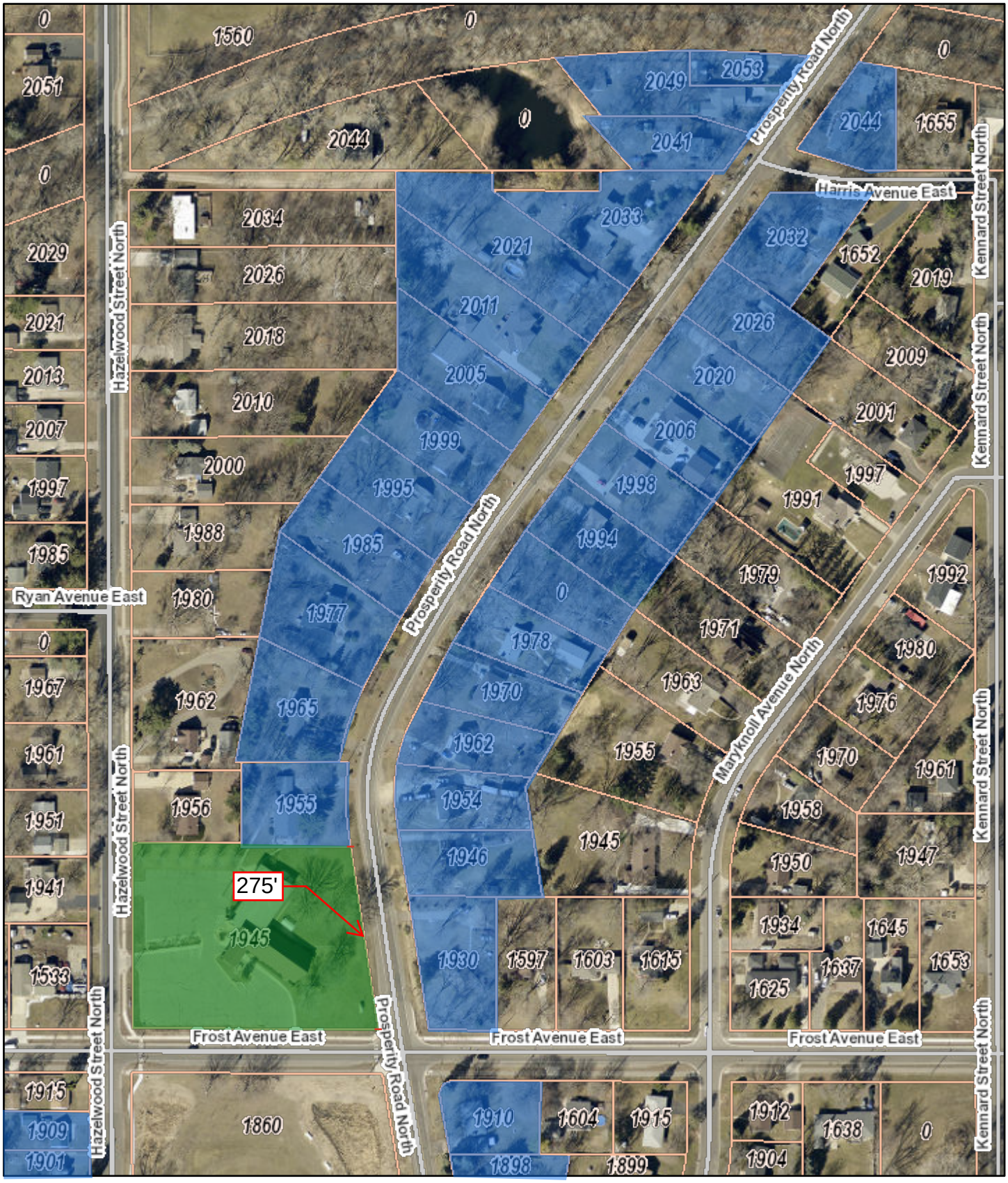
= Full Reconstruction, Residential Single Family, $6,600/Unit

= Full Reconstruction, Commercial, $132/Front-Foot

= Pavement Rehabilitation, Residential Single Family, $3,450/Unit

Ramsey County
Ramsey County MN

# 2025 Maplewood Street Improvements, Preliminary Assessment Map

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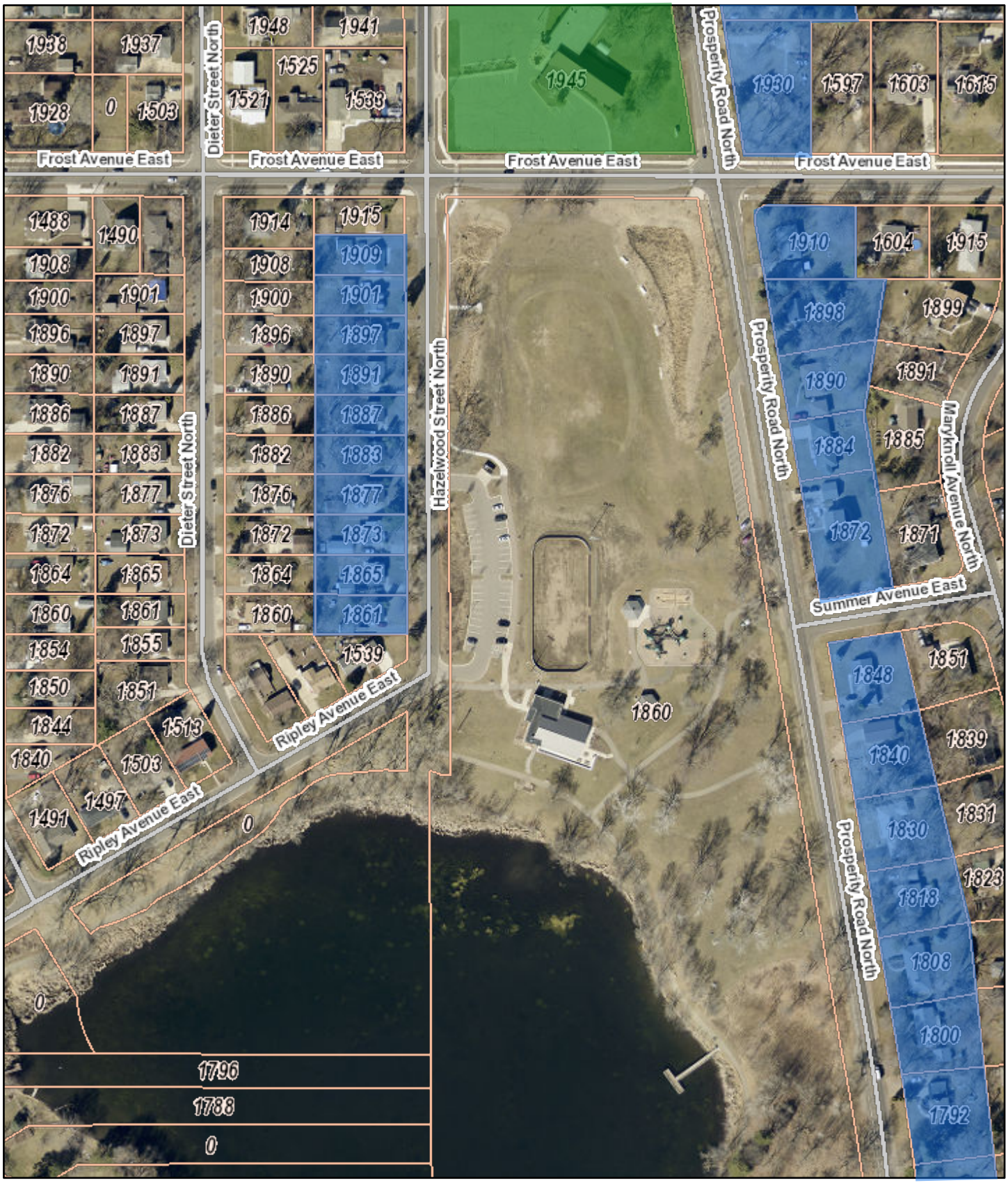
= Full Reconstruction, Residential Single Family, $6,600/Unit

= Full Reconstruction, Commercial, $132/Front-Foot

= Pavement Rehabilitation, Residential Single Family, $3,450/Unit

Ramsey County
Ramsey County MN

# 2025 Maplewood Street Improvements, Preliminary Assessment Map

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= Full Reconstruction, Residential Single Family, $6,600/Unit

= Full Reconstruction, Commercial, $132/Front-Foot

= Pavement Rehabilitation, Residential Single Family, $3,450/Unit

Ramsey County
Ramsey County MN

# 2025 Maplewood Street Improvements, Preliminary Assessment Map


12/3/2024, 11:14:02 AM

1:2,400

0 0.02 0.04 0.08 mi

0 0.03 0.07 0.13 km

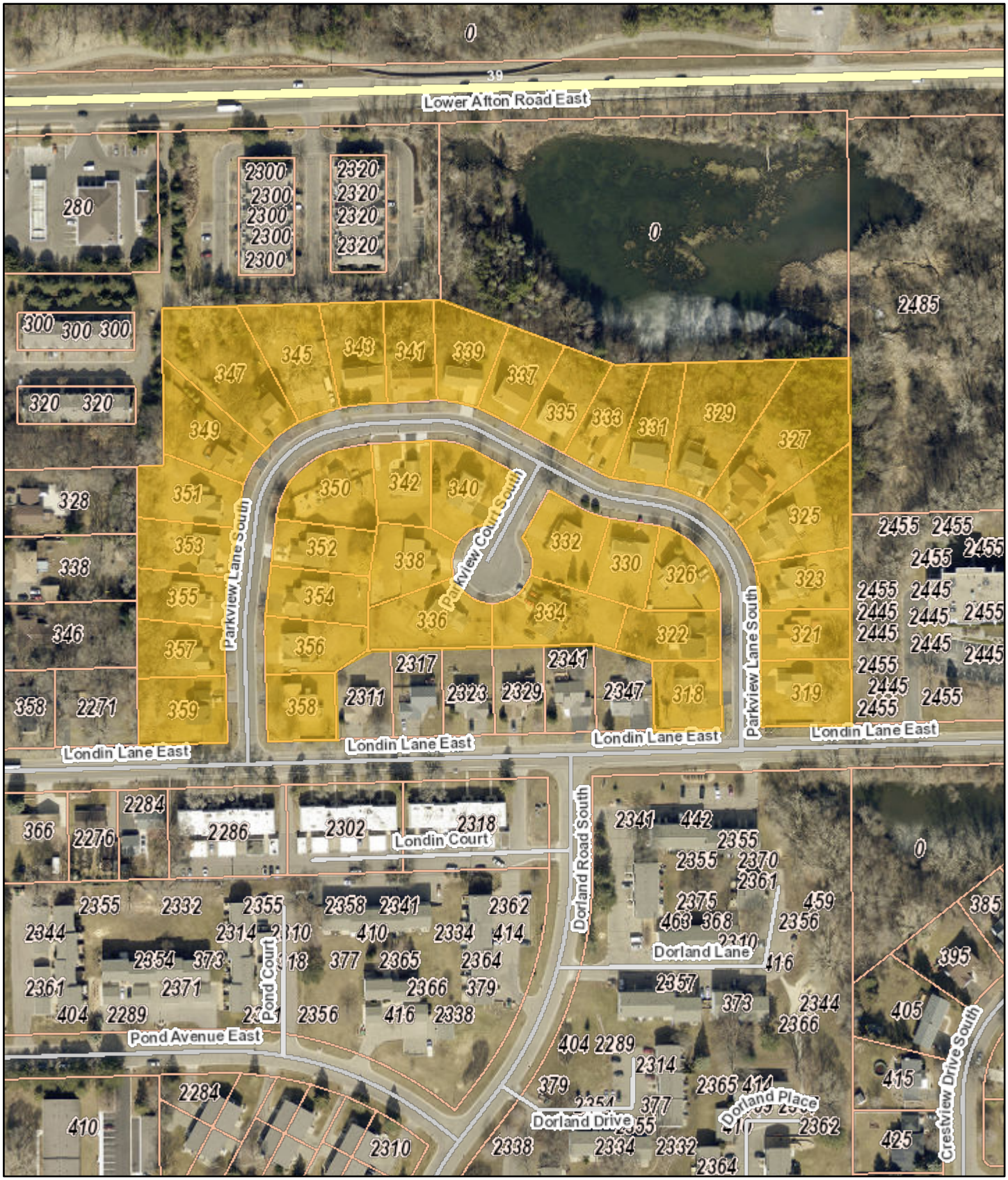
= Full Reconstruction, Residential Single Family, $6,600/Unit

= Full Reconstruction, Commercial, $132/Front-Foot

= Pavement Rehabilitation, Residential Single Family, $3,450/Unit

Ramsey County
Ramsey County MN

# 2025 Maplewood Street Improvements, Preliminary Assessment Map




12/3/2024, 11:16:15 AM

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0 0.03 0.07 0.13 km

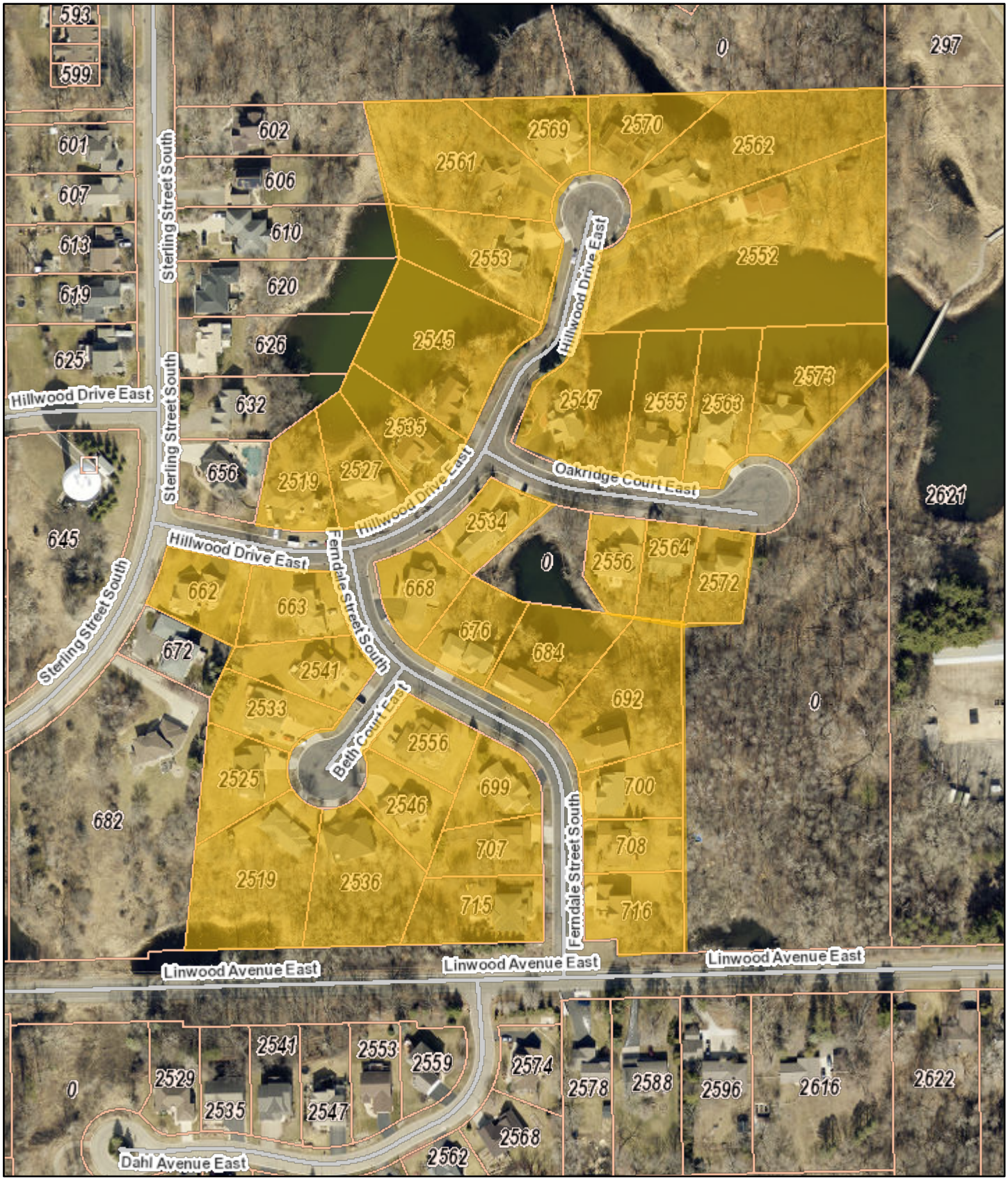
= Full Reconstruction, Residential Single Family, $6,600/Unit

= Full Reconstruction, Commercial, $132/Front-Foot

= Pavement Rehabilitation, Residential Single Family, $3,450/Unit

Ramsey County
Ramsey County MN

# 2025 Maplewood Street Improvements, Preliminary Assessment Map




12/3/2024, 11:16:56 AM

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0 0.03 0.07 0.13 km

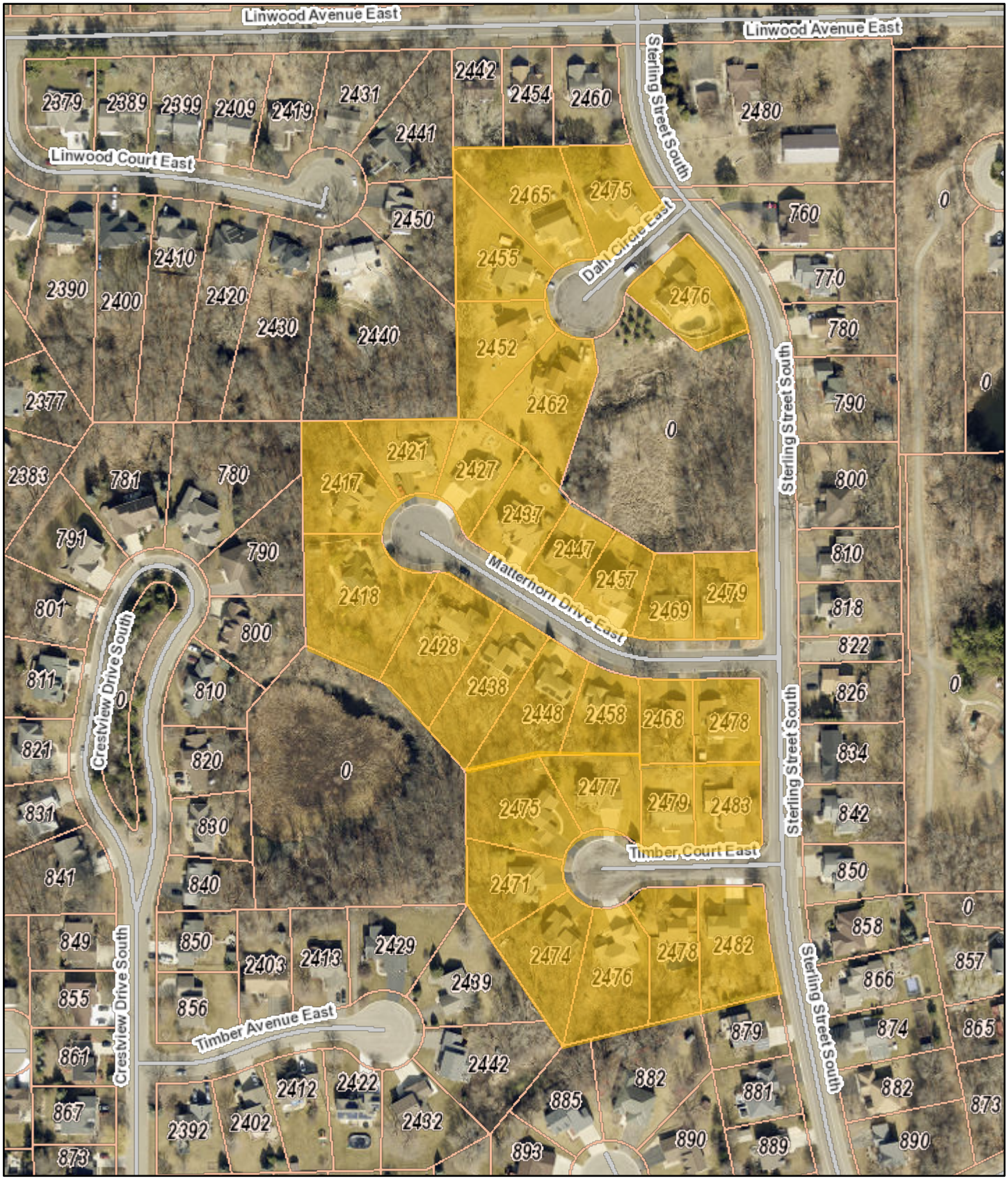
= Full Reconstruction, Residential Single Family, $6,600/Unit

= Full Reconstruction, Commercial, $132/Front-Foot

= Pavement Rehabilitation, Residential Single Family, $3,450/Unit

Ramsey County
Ramsey County MN

# 2025 Maplewood Street Improvements, Preliminary Assessment Map




12/3/2024, 11:22:40 AM

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0 0.03 0.07 0.13 km

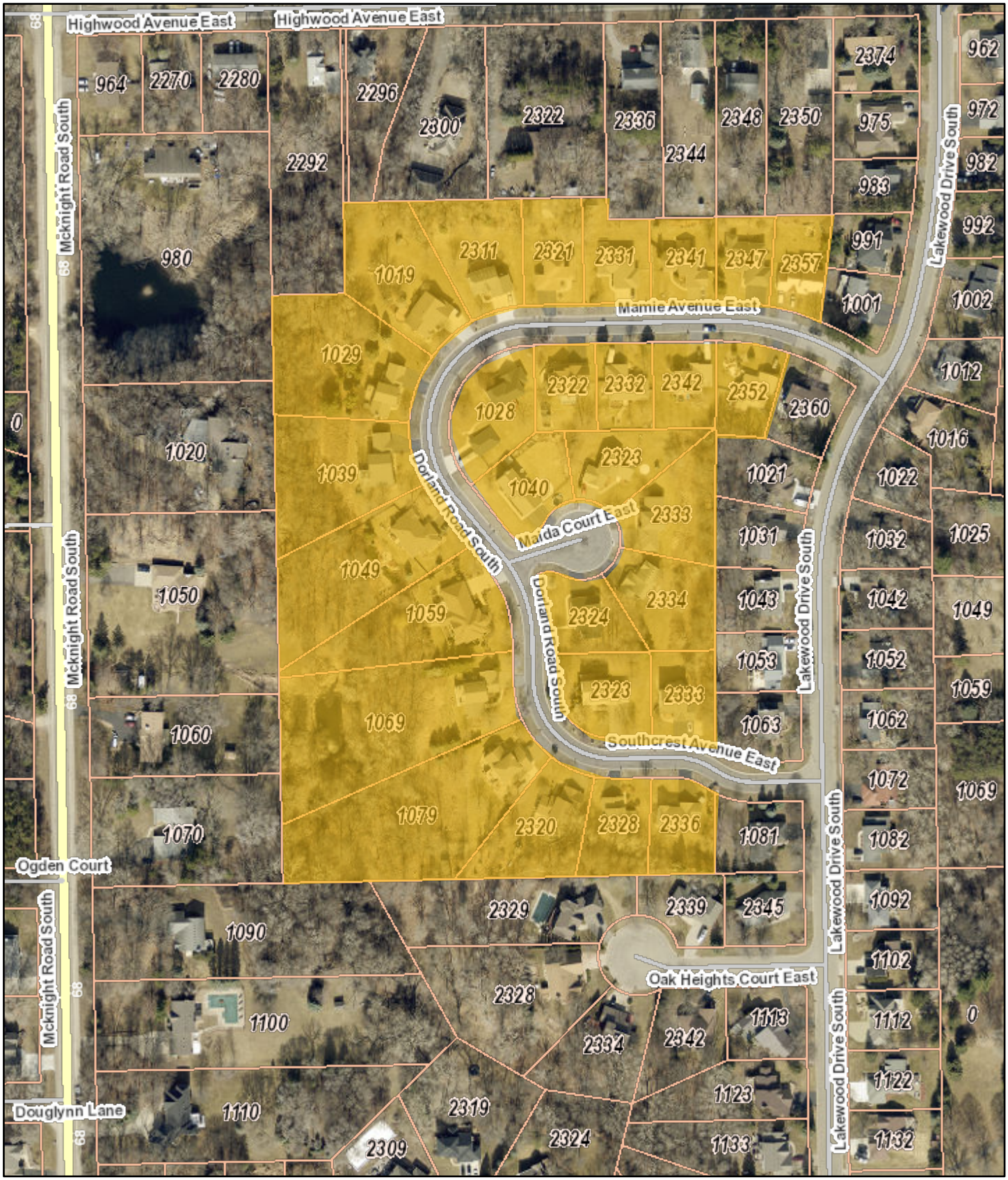
= Full Reconstruction, Residential Single Family, $6,600/Unit

= Full Reconstruction, Commercial, $132/Front-Foot

= Pavement Rehabilitation, Residential Single Family, $3,450/Unit

Ramsey County
Ramsey County MN

# 2025 Maplewood Street Improvements, Preliminary Assessment Map

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0 0.03 0.07 0.13 km

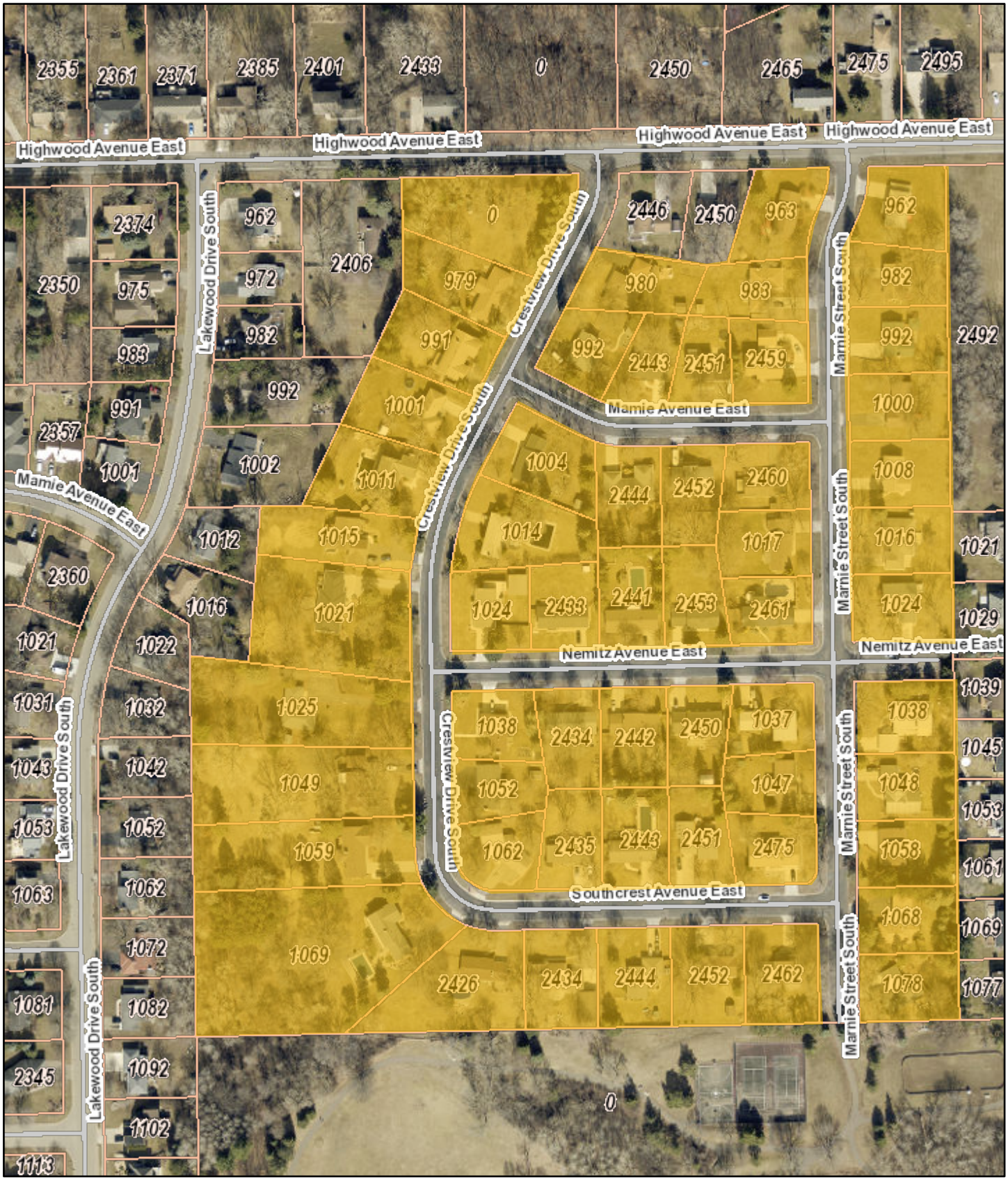
= Full Reconstruction, Residential Single Family, $6,600/Unit

= Full Reconstruction, Commercial, $132/Front-Foot

= Pavement Rehabilitation, Residential Single Family, $3,450/Unit

Ramsey County
Ramsey County MN

# 2025 Maplewood Street Improvements, Preliminary Assessment Map

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= Full Reconstruction, Residential Single Family, $6,600/Unit

= Full Reconstruction, Commercial, $132/Front-Foot

= Pavement Rehabilitation, Residential Single Family, $3,450/Unit

Ramsey County
Ramsey County MN

# 2025 Maplewood Street Improvements, Preliminary Assessment Map


12/3/2024, 11:29:40 AM

1:2,400

0 0.02 0.04 0.08 mi

0 0.03 0.07 0.13 km

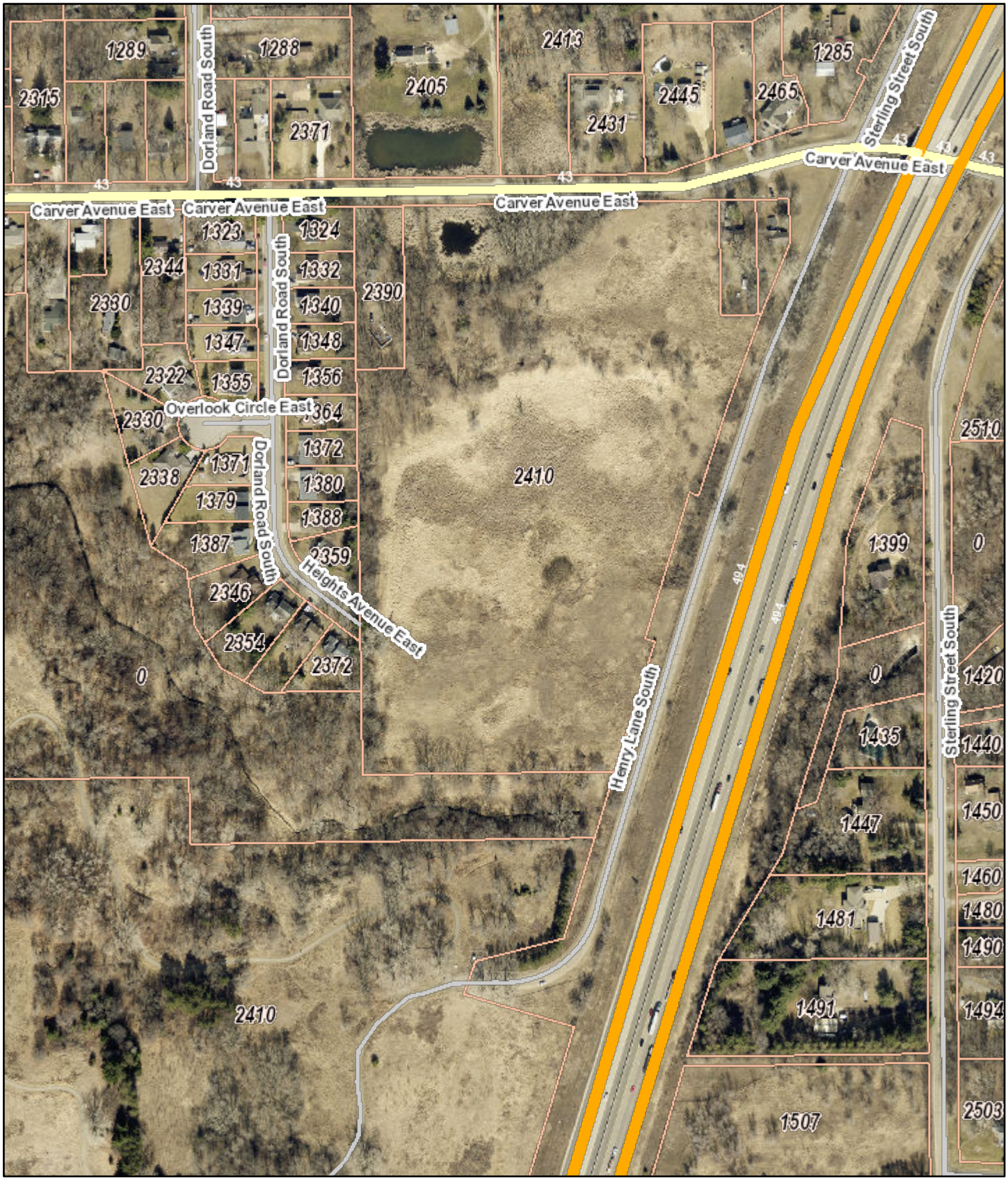
= Full Reconstruction, Residential Single Family, $6,600/Unit

= Full Reconstruction, Commercial, $132/Front-Foot

= Pavement Rehabilitation, Residential Single Family, $3,450/Unit

Ramsey County
Ramsey County MN

# 2025 Maplewood Street Improvements, Preliminary Assessment Map

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0 0.05 0.1 0.2 km

= Full Reconstruction, Residential Single Family, $6,600/Unit

= Full Reconstruction, Commercial, $132/Front-Foot

= Pavement Rehabilitation, Residential Single Family, $3,450/Unit

Ramsey County
Ramsey County MN