



MARSHALL
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FEASIBILITY REPORT

PROJECT ST-009

**W. LYON ST. / N. 3RD ST.
RECONSTRUCTION PROJECT**


January 10, 2023



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

By: 
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FEASIBILITY REPORT

PROJECT ST-009 W. LYON ST. / N. 3RD ST. RECONSTRUCTION PROJECT

CITY OF MARSHALL, MINNESOTA

1.0 SCOPE

This Feasibility Report as authorized by the City Council, covers the following proposed improvements: reconstruction and utility replacement on West Lyon Street from East College Drive to North 5th Street, and North 3rd Street from West Main Street to West Redwood Street. All utilities will be replaced, including watermain, sanitary sewer, and storm sewer on West Lyon and North 3rd Streets. Other items of work included in this project are pavement removal, aggregate base, concrete surfacing, sidewalks, curb and gutter, streetscaping, and other minor work. Also included with this project will include reconstruction of the Addison Parking Lot adjacent to West Lyon Street and East College Drive. Reconstruction of the parking lot will include pavement removal, grading, aggregate base, and concrete surfacing.

2.0 BACKGROUND / EXISTING CONDITIONS

Street

City records indicate that these streets were originally constructed generally in the 1950's. The original pavement section does not meet the City's current standards for thickness and load rating. The existing pavement surface is beginning to show its age with considerable cracking. There are numerous patches due to pavement degradation.

The existing street width of North 3rd Street measures 45-FT as measured from back of curb to back of curb. The existing street width of West Lyon Street measures 56-FT as measured from back of curb to back of curb. Currently, the existing segment of West Lyon Street is marked to include two travel lanes with 45-degree angled parking on both sides of the street. North 3rd Street between West Main Street and West Lyon Street is marked to include two travel lanes with 45-degree angled parking on the north side and parallel parking on the south side. The segment of North 3rd Street between West Lyon Street and West Redwood Street is marked to include two travel lanes and parallel parking on the south side of the street. No parking is allowed on the north side of this segment due to the existing

raised island that used to include the drive-up post office mail drop boxes and the dedicated left turn lane approaching the West Lyon Street intersection.

The existing concrete pavement in the Addison Parking Lot has several deterioration signs including spalling, stripping, cracking, and buckling. The existing stalls are arranged in a 45-degree angled pattern with routing occurring in West Lyon Street and the alley way through 3 separate access points to West Lyon Street.

There are currently variable width sections of sidewalk on the two corridors. On North 3rd Street between West Main Street and West Lyon Street, the existing sidewalk measures approximately 10-FT measured from the back of curb to the building fronts. The remaining block of 3rd Street includes generally 5-FT wide sidewalk with the exception of a segment of 15-FT wide sidewalk on the south side of the street adjacent to the commercial property. On West Lyon Street between East College Drive and North 4th Street, the existing sidewalk measures approximately 10-FT as measured from back of curb to the right-of-way. On West Lyon Street between North 4th Street and North 5th Street, the existing sidewalk has a variable width sidewalk dependent on the segment of the block and side of the street. Widths include 5-FT, 7-FT, and 10-FT wide sidewalk.

The sidewalk along West Lyon Street between East College Drive and North 5th Street and North 3rd Street between West Lyon Street and West Redwood Street has exhibited signs of issues with cracking and buckling observed. The sidewalk on North 3rd Street between West Main Street and West Lyon Street was recently replaced in 2014 and included colored pavement. This sidewalk does not meet the current requirements of ADA accessibility due to several areas that exceed the maximum cross slope. Several of the existing pedestrian ramps are not ADA compliant.

Utilities

The existing watermain along West Lyon Street is 4" ductile iron pipe (DIP) between East College Drive and North 5th Street. The existing watermain under North 3rd Street is a 4" DIP that runs between West Main Street and West Lyon Street. Several of the existing water services in this area have been observed to be lead material and can be inferred that most of the remaining services are made of a similar material. All of the 4" DIP in this project area is in poor condition, undersized, and do not provide for sufficient fire hydrant pressures for today's standards.

The existing sanitary sewer main along West Lyon Street between East College Drive and North 3rd Street is 8" vitrified clay pipe (VCP). This main flows east to an existing main under College Drive. The existing sanitary sewer main along North 3rd Street between West Main Street and West Lyon Street is 8" VCP. This main flows north to West Lyon Street where it continues then westward. On West Lyon Street between North 3rd Street and North 4th Street, the existing sanitary sewer main is 10" VCP. This main collects from North 3rd Street and continues to flow to the west. The remaining block of West Lyon Street between North 4th Street and North 5th Street is 12" VCP. This main collects the previous two segments and flows west to North 5th Street. There is no sanitary sewer main on North 3rd Street between West Lyon Street and West Redwood Street. The age and condition of the sewer in these segments make this sewer a good candidate for replacement with this project.

There are limited segments of separate existing storm sewer. Catch basins at the intersection of West Lyon Street and North 3rd Street drain into an existing 12" storm sewer pipe. The 12" storm sewer main flows north towards West Redwood Street. Based on an analysis of the existing drainage area and the downstream storm sewer main, the storm sewer system is undersized under current standards. There is insufficient catch basins to provide adequate surface drainage and downstream storm sewer main under North 3rd Street and further are not large enough to provide sufficient

capacity for the drainage areas. This insufficiency in the existing system leaves risk for street flooding during heaving rain events.

3.0 PROPOSED IMPROVEMENTS

Street

A concrete pavement section will be proposed and discussed in this feasibility report. Staff is proposing a street section comprised of 7" of concrete surfacing, 6" of Class 5 aggregate base, and 12" of Select Granular subbase. A geotextile fabric will be placed on the subgrade prior to the placement of the Select Granular subbase. A 6" perforated drain tile shall be installed at the back of the curb below the aggregate base to provide subsurface drainage for the street section.

A concrete pavement section in the Addison Parking Lot is proposed with a 6" concrete surface and 6" of Class 5 aggregate base. A geotextile fabric will be placed on the subgrade prior to the placement of the Class 5 aggregate base.

The proposed roadway will be 52.5-FT travel way (as measured from curb face to curb face) on West Lyon Street from East College Drive to North 5th Street and North 3rd Street from West Lyon Street to West Redwood Street. The project proposes two 12-FT travel lanes, an 8-FT parallel parking lane, and a 20.5-FT 45-degree angled parking lane. On West Lyon Street, the angled parking lane will be on the north side and the parallel parking will be on the south side of the street. On North 3rd Street between West Lyon Street and West Redwood Street, the angled parking lane will be on the east side of the street and the parallel parking lane on the west side of the street. The proposed roadway on North 3rd Street from West Main Street to West Lyon Street would be changed from a two-way traveled direction to a one-way traveled direction progressing northbound and the travel width (as measured from curb face to curb face) will be variable. South of the alley, the width will be a 34.5-FT travel way. In this segment, there will be a 14-FT travel lane and a 20.5-FT 45-degree angled parking lane on the west side of the street. North of the alley, the width will be a 43.5-FT travel way. In this segment, there will be a 14-FT travel lane, a 20.5-FT 45-degree angled parking lane on the west side, and a 9-FT parallel parking lane on the east side of the street. The existing intersection signal at West Main Street and North 3rd Street will be reconfigured to no longer have signal heads in the direction of North 3rd Street and the signal will be reprogrammed as a "pedestrian signal" that would only stop traffic when a pedestrian activates the crossing push button.

The proposed segment of West Lyon Street between East College Drive and North 5th Street will be 2.5-FT narrower than the existing street. The proposed segment of North 3rd Street between West Lyon Street and West Redwood Street will be 7.5-FT wider than the existing street. The proposed segments of North 3rd Street between West Main Street and West Redwood Street will be 9.5-FT narrower than the existing street south of the alley and 0.5-FT narrower than the existing street north of the alley.

The Addison Parking Lot would be reconfigured to route traffic through a single two-way access to West Lyon Street, utilizing the furthest north existing access location. The two existing accesses east of this location would be closed due to their proximity to the West Lyon Street and East College Drive intersection. The parking stalls would be reconfigured into 90-degree orientations with an internal loop for traffic routing. The existing access to the alley nearby East College Drive would be maintained for an alternative two-way access.

The project is proposing to replace the existing sidewalk on West Lyon Street with a 12.75-FT sidewalk paved from back of curb to right-of-way. A 5-FT sidewalk with a 1-FT grass buffer adjacent to the right-of-way is proposed for the west side of North 3rd Street between West Lyon Street and West Redwood Street. On the east side of North 3rd Street between West Lyon Street and West Redwood Street, a 5-FT sidewalk with a 1-FT grass buffer is proposed north of the alley, and an 11-FT sidewalk paved from back of curb to right-of-way is proposed on the south side of the alley. On the west side of North 3rd Street between West Main Street and West Redwood Street, a 15-FT sidewalk is proposed from back of curb to the right-of-way. On the east side of North 3rd Street between West Main Street and West Lyon Street, there are two different proposed widths of sidewalk. South of the alley, a 29.5-FT sidewalk is proposed to provide a “mini plaza” space for streetscaping features and gathering space. North of the alley, a 20.5-FT sidewalk is proposed.

Utilities

The proposed utility improvements include replacing existing VCP sanitary sewer, existing DIP watermain, and existing storm sewer.

The watermain improvements will consist of replacing all DIP watermain with Polyvinyl Chloride (PVC) watermain pipe. Watermain improvements are planned in close coordination with MMU staff input. The existing 4” and 6” DIP in the project will be replaced with 8” PVC pipe. All water services would be replaced with new PVC and curb stops at the right-of-way.

The sanitary sewer system improvements will include replacing all manholes, sewer main, and sewer services along West Lyon Street and North 3rd Street. Generally, the VCP main will be replaced with 8” PVC main. All sewer services will be replaced to the right-of-way (ROW) with a minimum 4” pipe size.

The existing storm sewer pipe along North 3rd Street will be replaced with new reinforced concrete pipe. Additional catch basins would be installed on North 3rd Street at the alley between West Main Street and West Lyon Street. A new reinforced concrete storm sewer main would be installed on West Lyon Street from the intersection of North 3rd Street to East College Drive. This new main would serve as the “primary” flow direction for the stormwater drainage for this area. As part of MnDOT’s 2025 College Drive reconstruction project, MnDOT would make a connection to the storm sewer main under East College Drive. Until this construction takes place, the drainage would continue to flow east on North 3rd Street as currently. By redirecting the “primary” flow to College Drive, this will reduce the drainage area that enters the downstream storm sewer that is currently undersized. The work in this area will also include replacing all catch basin leads and existing manholes.

4.0 STATEMENT OF PROBABLE COST

The estimated costs to complete the proposed improvements are shown below. The estimated construction costs include a 10% allowance for contingencies and a 16% allowance for administrative and engineering costs. The unit prices for each item of work used in determining the estimated cost of construction is based on previous projects similar in nature and is subject to change.

<i>Street and Curb and Gutter</i>	<i>\$1,335,000.00</i>
<i>Watermain Replacement</i>	<i>\$405,000.00</i>
<i>Sanitary Sewer Replacement</i>	<i>\$380,000.00</i>
<i>Storm Sewer Replacement</i>	<i>\$380,000.00</i>
<i>Streetscaping Enhancements</i>	<u><i>\$500,000.00</i></u>
<i>Subtotal Estimated Construction Cost</i>	<i>\$3,000,000.00</i>
<i>Contingencies (10%)</i>	<u><i>\$300,000.00</i></u>
<i>Total Estimated Construction Cost</i>	<i>\$3,300,000.00</i>
<i>Estimated Engineering, & Administration (16%)</i>	<u><i>\$528,000.00</i></u>
<i>Total Estimated Project Cost</i>	<u><u><i>\$3,828,000.00</i></u></u>

5.0 PROPOSED ASSESSMENTS

The adjacent properties will not be assessed for the watermain improvements. All costs for watermain and related work will be paid by MMU.

The adjacent properties will not be assessed for sanitary sewer main improvements. All costs for sanitary sewer main will be paid by the City of Marshall Wastewater Department. Sanitary sewer service lines and connection points to the main will be assessed to the adjacent property owners according to current sanitary sewer assessment procedures.

Costs for the street replacements will be partially assessed to the adjacent property owners in accordance with the most recent Special Assessment Policy and partially funded by the Wastewater Department, MMU, and Surface Water Management Utility fund.

Streetscaping improvements will be partially assessed to the adjacent property owners as directed through Council action describing the split amounts.

A preliminary assessment roll showing the estimated assessments for each benefiting parcel, City Participation, and utility participation will be prepared at a later date for consideration by the City Council in accordance with the most recent Special Assessment Policy.

6.0 FEASIBILITY/CONDITIONS/QUALIFICATIONS

The proposed improvements as described in this report are necessary, cost-effective, and feasible from an engineering standpoint. The feasibility of this project is contingent upon the findings of the City Council pertaining to project financing and public input.

7.0 PROPOSED PROJECT SCHEDULE

The following is the anticipated schedule for the project, assuming the City Council elects to proceed with the proposed improvements.

- January 24, 2023 Public Hearing on Improvement/Order Plans & Specs
Approve Plans & Specs/Authorize Call for Bids
- January 27-February 22, 2023 Advertise for Bids
- February 22, 2023 Bid Opening Date
- February 28, 2023 Award Contract
- April 17, 2023 Notice to Proceed
- May 2023 Begin Construction
- September 2023 End Construction
- December 12, 2023 Public Hearing on Assessment/Adopt Assessment

APPENDIX

PROJECT LAYOUTS



3RD STREET & LYON IMPROVEMENTS DRAFT CONCEPT DESIGN