

TH 23 & CSAH 75 Corridor Study

March 2007

Prepared for:



District 3

City of

St. Cloud
Minnesota



Prepared by:



St. Joseph
TWP

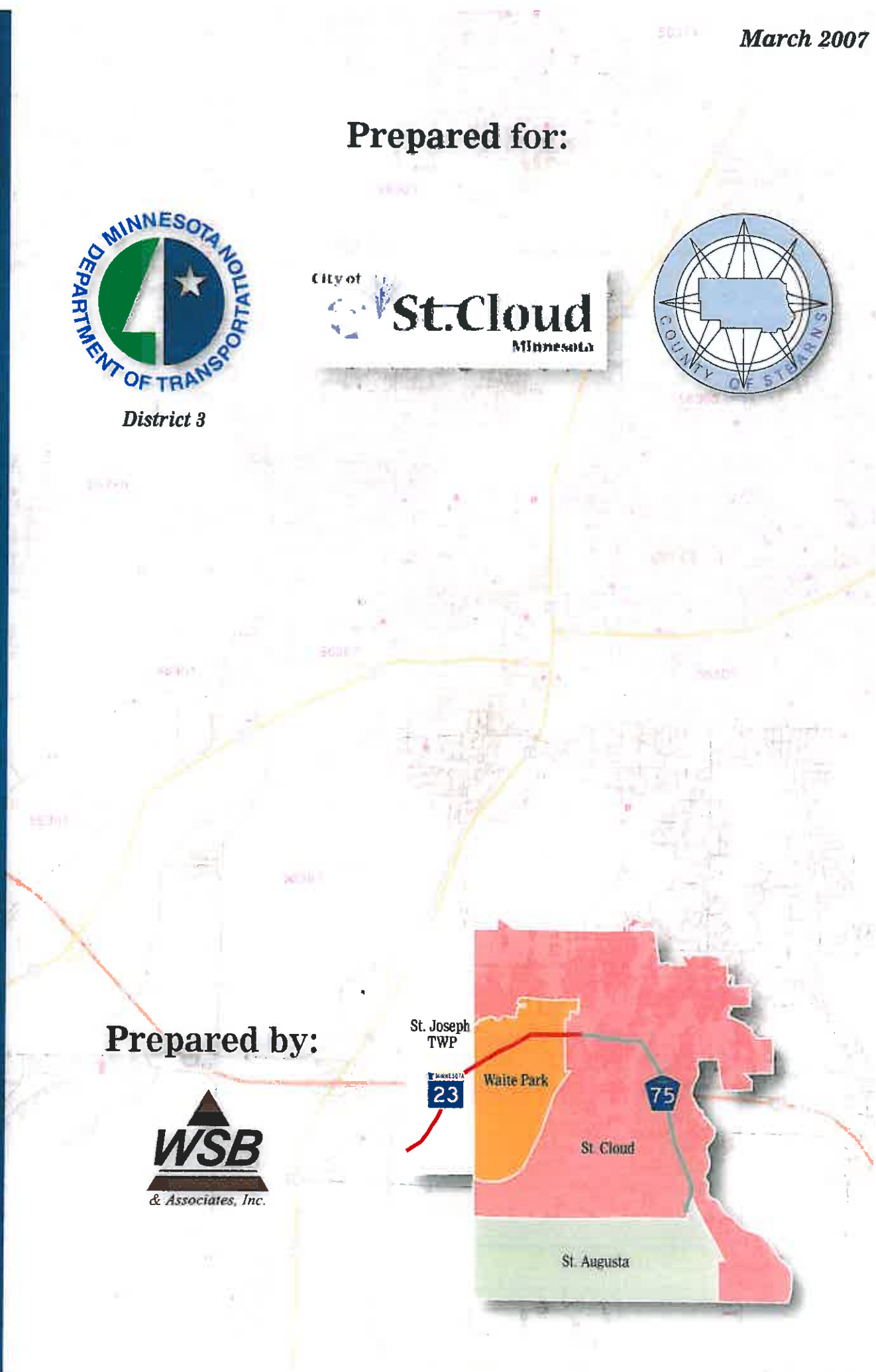


Waite Park

75

St. Cloud

St. Augusta



TH 23 & CSAH 75 Corridor Study

March 2007

Prepared for:

Mn/DOT District 3, St. Cloud, and Stearns County

Partnered with:

**St. Cloud Area Planning Organization,
St. Augusta, Town of St. Joseph, and Waite Park,**

Prepared By:

WSB & Associates

SI. Introduction & Background

A. Study Overview

The Trunk Highway 23 and Stearns County State Aid Highway 75 (TH23/CSAH 75) Corridor Study was undertaken by Mn/DOT District 3 in partnership with Stearns County, the St. Cloud Area Planning Organization (APO) and the communities of St. Joseph Township, St. Augusta, St. Cloud, and Waite Park. The study focuses on building a vision for TH 23/CSAH 75 that can provide a framework for decision making on land use and transportation investments in the corridors. A vision for these corridors will help Mn/DOT, Stearns County and adjacent Cities know where to preserve right-of-way for future expansion and consolidate and/or remove access points to improve mobility throughout the corridors. The vision for these corridors will minimize future impacts on the area's social, economic, cultural, and natural environments. The findings and recommendations discussed in this report will be the basis for future preliminary engineering and environmental studies in the corridors. The schedule for future studies is not determined at this time.

Study Purpose

The primary objective of the TH 23/CSAH 75 Corridor Study is to determine what improvements may be needed to handle traffic demand through 2030 and beyond, and identify an implementation plan that would allow improvements to be made over time.

Study Limits

The segment of TH 23 under study begins at its interchange with I-94 and heads northeasterly to its intersection with TH 15. This segment of the TH 23 corridor lies within the Town of St. Joseph and City of Waite Park in Stearns County. The segment of CSAH 75 under study begins at its southern intersection with TH 15 (across from TH 23) and heads southeasterly to its interchange with I-94. The segment of CSAH 75 under study lies within the Cities of St. Cloud and St. Augusta in Stearns County.

Relationship to TH 15 Study

A similar study is being conducted for TH 15 from Stearns CSAH 47/136 to TH 10. Because improvements on TH 23/CSAH 75 will have an impact on TH 15 and improvements on TH 15 will have an impact on TH 23/CSAH 75, these two studies are being conducted jointly to coordinate the decision making for the two roadways.

Study Organization

A Technical Advisory Committee (TAC) and a Policy Advisory Committee (PAC) were established to provide direction and oversight for the study. The TAC is made up of staff from the Cities, Counties, APO, and Mn/DOT. Their role is to provide technical review of the analysis and findings from the study and communicate those findings with elected representatives. The PAC is made up of elected representatives from the affected agencies, and their role is to provide policy direction and input for the study.

SII. Project Purpose and Need

A. Project Goal & Objectives

Goal

The goal for the TH 23 & CSAH 75 corridors is to preserve their integrity as principal arterials moving the longer trips efficiently, safely, and reliably within and through the St. Cloud Metropolitan Area. Specific objectives for the corridor include:

Objectives

- ◆ Meet Mn/DOT's and/or St. Cloud APO access spacing guidelines while maintaining reasonable land access along the corridor.
- ◆ Strive for crash and severity rates that are at or below the statewide rates for similar facilities.
- ◆ Maintain or improve average travel speeds (average speed includes control delay) in the corridor.
- ◆ Provide LOS D on all segments of the corridor with isolated at-grade intersections at the LOS D threshold or better.
- ◆ Proposed improvements in the corridor should have a benefit to cost greater than one (1).
- ◆ Minimize social, environmental, and economic impacts.

B. Summary of Deficiencies

The following summarize the existing and No Build conditions for TH 23 and CSAH 75 and whether the stated objectives are met. Only the first four objectives, access spacing, safety, travel speeds, and LOS are summarized since the benefit/cost and SEE impacts are not influenced by the existing and No Build conditions.

Segment 1: TH 23 – I-94 to 10th Avenue

Access: The current and future access does not meet Mn/DOT's access spacing guidelines.

Safety: Crash rates on this segment are above the statewide and District 3 rates for similar facilities. Since access on this segment is mostly unchanged in the future, it is expected that the crash rates will not change. Therefore, existing and future crash rates are above the statewide and District 3 averages.

Travel Speeds and LOS: The addition of traffic control and increase in traffic volumes along this segment of the corridor are anticipated to have a negative affect on travel speeds. The existing PM peak hour travel speeds are 59 and 58 mph in the eastbound and westbound directions respectively. The modeling indicates that with the future traffic projections, the travel speeds will decrease 38 mph in the westbound and eastbound directions. The average travel speeds will result in segment LOS E for the future

condition on TH 23. The No Build condition also results in one intersection at LOS E which does not meet the objective of LOS D or better at all intersections.

Segment 2: TH 23 – 10th Ave. to TH 15

Access: The spacing of signals and full access points do not meet Mn/DOT's access spacing guidelines on TH 23, from 10th Avenue to 2nd Avenue.

Safety: This segment has a high crash rate of 6.76 which is higher than both the statewide and District 3 averages of 4.8 and 5.8 respectively. Since access remains unchanged in the future No Build condition, it is anticipated that the crash rates along this segment would remain the same.

Travel Speeds & LOS: Currently the average travel speeds in the PM peak hour along this segment are 36 mph in the eastbound direction and 26 mph in the westbound direction. In the future with no improvements, the travel speeds along the corridor are anticipated to decrease significantly up to 26 mph. This results in LOS F along the segment and three intersections operating at LOS E and F.

Segment 3: CSAH 75 – TH 15 to Cooper Ave.

Access: The segment of CSAH 75 from TH 15 to 25th Avenue, does not meet the APO's recommended guidelines for signal spacing, full intersections, and partial and private access.

Safety: This segment of CSAH 75 has a very high crash rate of 10.26, which is two times higher than the statewide average for similar facilities. Again, if the access remains unchanged in the future, the crash rates are not anticipated to change either.

LOS & Travel Speeds: The PM peak hour travel speeds along this segment are the lowest of the entire corridor at 29 and 14 mph (eastbound and westbound respectively). These are expected to decrease to 15 mph and 8 mph (eastbound and westbound respectively) by 2030 with no improvements. Four of the signalized intersections are anticipated to operate poorly in the future providing LOS F.

Segment 4: CSAH 75 – Cooper Ave. to I-94

Access: The signal spacing along this segment of roadway meets the APO guidelines and even though the signal spacing (or intersections requiring traffic control) decreases in the future due to newly developed corridors accessing CSAH 75 they are still within the APO guidelines. However, the spacing of full and partial access points along the corridor do not meet the APO guidelines. The many private accesses along CSAH 75 do not meet the APO guideline which states it is highly restricted.

Travel Speeds & LOS: The existing PM peak hour travel speeds are 40 and 42 mph in the eastbound and westbound directions respectively. In the future, corridor travel speeds are anticipated to decrease significantly by as much as 26 mph. Four intersections are anticipated to have poor operations of LOS E and F.

SIII. Alternatives & Evaluation of Alternatives

The access recommendations are provided below as well as a summary of the evaluation completed for the corridor wide alternatives. For all of the segments, the appropriate

traffic control (such as a traffic signal or roundabout) was not determined, but will be evaluated in future studies.

Segment 1: TH 23 – I-94 to 10th Avenue

The build alternatives for this segment include:

1A - 4-lane divided roadway

1B - 6-lane divided roadway

Both scenarios would consolidate access points at six full intersections, and provide other right-in/right-out intersections. These intersections would connect into the local roadway network (with the exception of I-94 ramps), which would provide access to properties along TH 23. Access to property fronting on TH 23 would be provided via frontage or backage roads which would be implemented as the area is developed.

The six full access points on TH 23 would include:

1. TH 23 @ I -94 Eastbound Ramps
2. TH 23 @ I-94 Westbound Ramps
3. TH 23 @ Bel Clare Road (with Bel Clare Road being extended to the east)
4. TH 23 @ Julip Road (with Julip Road being extended to the south)
5. TH 23 @ 28th Avenue (existing signal)
6. TH 23 @ 10th Avenue (existing signal)

Segment 2: TH 23 – 10th Avenue to TH 15

The build alternatives include:

2A - 4-lane divided roadway (existing geometry)

2B – Full-width (150' R/W) 6-lane divided roadway with dual left turn lanes (traffic lanes would be 12 feet wide)

2C - Modified 6-lane divided roadway with single left turn lanes (traffic lanes would be 11 feet wide – 133' R/W).

2D - Modified 6-lane divided roadway with single left turn lanes (traffic lanes would be 11 feet wide – 133' R/W). $\frac{3}{4}$ access is provided at mid-block locations.

All Build alternatives would close private access over time and provide consolidated partial access at mid-block. The completion of a backage road system would provide alternative access and circulation for adjacent businesses. Full access (with traffic control such as a signal or roundabout) for all four alternatives (2A, 2B, 2C, and 2D) would be provided at five intersections. These include:

1. TH 23 @ 10th Avenue (existing signal)
2. TH 23 @ 6th Avenue (existing signal)
3. TH 23 @ 2nd Avenue (existing signal)
4. TH 23 @ Waite Avenue (existing signal)
5. TH 23 @ TH 15 (existing signal)

Segment 3: CSAH 75 – TH 15 to Cooper Avenue

As described in the alternatives section the build alternatives include:

3A - 4-lane divided roadway (existing geometry)

3B – Full-width (150' R/W) 6-lane divided roadway with dual left turn lanes (traffic lanes would be 12 feet wide)

3C - Modified 6-lane divided roadway with single left turn lanes (traffic lanes would be 11 feet wide – 133' R/W)

3D - Modified 6-lane divided roadway with single left turn lanes (traffic lanes would be 11 feet wide – 133' R/W). ¾ access points provided at mid-block locations.

All alternatives would close private access over time and provide consolidated partial access at mid-block. The completion of a backage road system would provide alternative access and circulation for adjacent businesses. Full access for all four cross-section scenarios (3A, 3B, 3C, and 3D) would be provided at five intersections. These include:

- 1.CS AH 75 @ TH 15 (existing signal)
- 2.CS AH 75 @ 33rd Avenue (existing signal)
- 3.CS AH 75 @ 29th Avenue (existing signal)
- 4.CS AH 75 @ 25th Avenue (existing signal)
- 5.CS AH 75 @ Cooper Avenue (existing signal)

Segment 4: CSAH 75 – Cooper Avenue to I-94

The build alternatives for Segment 4 include:

4A - 4-lane divided roadway

4B – 4/6-lane divided roadway

Both scenarios would consolidate access points at eight full intersections requiring traffic control, plus one three quarter access intersection, and complete the partial frontage road located on the east side of CSAH 75 between Halliday Road and 43rd Street. All but one private access would be closed over time.

Of the eight proposed full access intersections, only three currently exist, with the remaining being new, or relocated intersections. The eight full intersections would include:

- 1.CS AH 75 @ Cooper Avenue (existing signal).
- 2.CS AH 75 @ Halliday Road (with Halliday Road connecting to the future extension of 24th Street; 22nd would be converted to right-in, right-out)
- 3.CS AH 75 @ Cheryl Drive (existing signal)
- 4.CS AH 75 @ 33rd Street (existing signal)
- 5.CS AH 75 @ 36th Street (approximate location, 36th Street would be constructed to intersect with CSAH 75 from the west)
- 6.CS AH 75 @ 40th Street (intersection at 43rd Street would be converted to right-in, right-out as the analysis for 2030 conditions concluded it would not function at an acceptable level, particularly given it's proximity to the I-94 on/off ramps.)
- 7.CS AH 75 @ I-94 Westbound Ramps

Evaluation Summary and Conclusion

The evaluation indicates that adding capacity on TH 23 and CSAH 75 in the core area (Segment 2 and 3) is needed and cost effective. Using narrower (11 feet) traffic lanes reduces the impacts on parking and circulation of adjacent properties and will maximize the benefits from adding an additional lane on TH 23 and CSAH 75. With a wider cross-section, the parking and circulation impacts quickly increase the costs and offset the benefits of improved travel time and traffic operations. Access management is also necessary and cost effective along the entire length of the corridor if it is performed over time as the adjacent properties develop and/or redevelop. The following summarizes the recommended improvements throughout the corridor.

- ◆ **Segment 1: Access Management and Improve Intersection Capacity**
- ◆ **Segment 2 & 3: Access Management and Widen to 6-lanes (Narrowed Typical Section)**
- ◆ **Segment 4: Access Management, Improve Intersection Capacity, and Widen to 6-lanes from 40th Street to I-94.**

The recommended plan is also illustrated in Figure S1 through Figure S4.

SIV. Public Involvement

The public involvement plan for this study was comprised of monthly study update meetings with the Technical Advisory Committee, periodic study update meetings with the Policy Advisory Committee, and two public information meetings. Two public meetings were held to gather public input on the needs in the TH 23 and CSAH 75 corridors and potential solutions. In addition, information was mailed to interested property owners and citizens. The draft report and recommendations will be posted on Mn/DOT's website and all adjacent property owners will be notified of the availability of the draft recommendations and report.

SV. Implementation

A. Staging

The following is a staging plan for improvements on TH 23 and CSAH 75. While specific construction improvements are not in the near future, the preservation of right-of-way and consolidation of access as development or redevelopment occurs along the corridor could happen as the opportunities present themselves.

Short Term (0 to 10 Years)

- ◆ Improve the intersection capacity at TH 23 and 28th Avenue with the extension of 28th Avenue project.
- ◆ As development/redevelopment occurs on TH 23, between 28th Avenue and 10th Avenue remove access to local roadways system per this reports Recommended Plan.

- ◆ As development/redevelopment occurs at CSAH 75 and 43rd Street, relocate the full access at 43rd Street to 40th Street

Long Term (10 plus Years)

- ◆ Upgrade Segments 2 and 3 (TH 23 from 10th Avenue to TH 15 and CSAH 75 from TH 15 to Cooper Avenue) to 6-lanes.

B. Next Steps

The following actions are recommended by the agencies responsible for implementation of elements of the TH 23 and CSAH 75 Plan:

Approval of Study through Local Resolutions

- ◆ The St. Cloud Area Planning Organization approves study through Resolution from APO Board.
- ◆ Cities of St. Cloud, St. Augusta, and Waite Park approve the study through City Council Resolutions.
- ◆ Stearns County approve study through Resolution from County Board

Planning Updates

- ◆ Mn/DOT incorporates study into District 3 Plan Update.
- ◆ Stearns County incorporates study into County Transportation Plan.
- ◆ St. Cloud APO incorporates study into Metropolitan Transportation Plan.
- ◆ Cities of St. Cloud, St. Augusta, and Waite Park incorporate study in Transportation Elements of Comprehensive Plans.

Environmental Documentation

Mn/DOT completes the environmental review for the TH 23 corridor.

Stearns County complete the environmental review for the CSAH 75 corridor.

Staff Approved Layout and Official Map

Mn/DOT should work with the local agencies to create a staff approved layout for TH 23 for municipal consent. The layout will provide the footprint for an official map that would be adopted after the environmental review is complete.

Stearns County should work with the local agencies to create a layout for CSAH 75 which provides a footprint for an official map that would be adopted after the environmental review is complete.

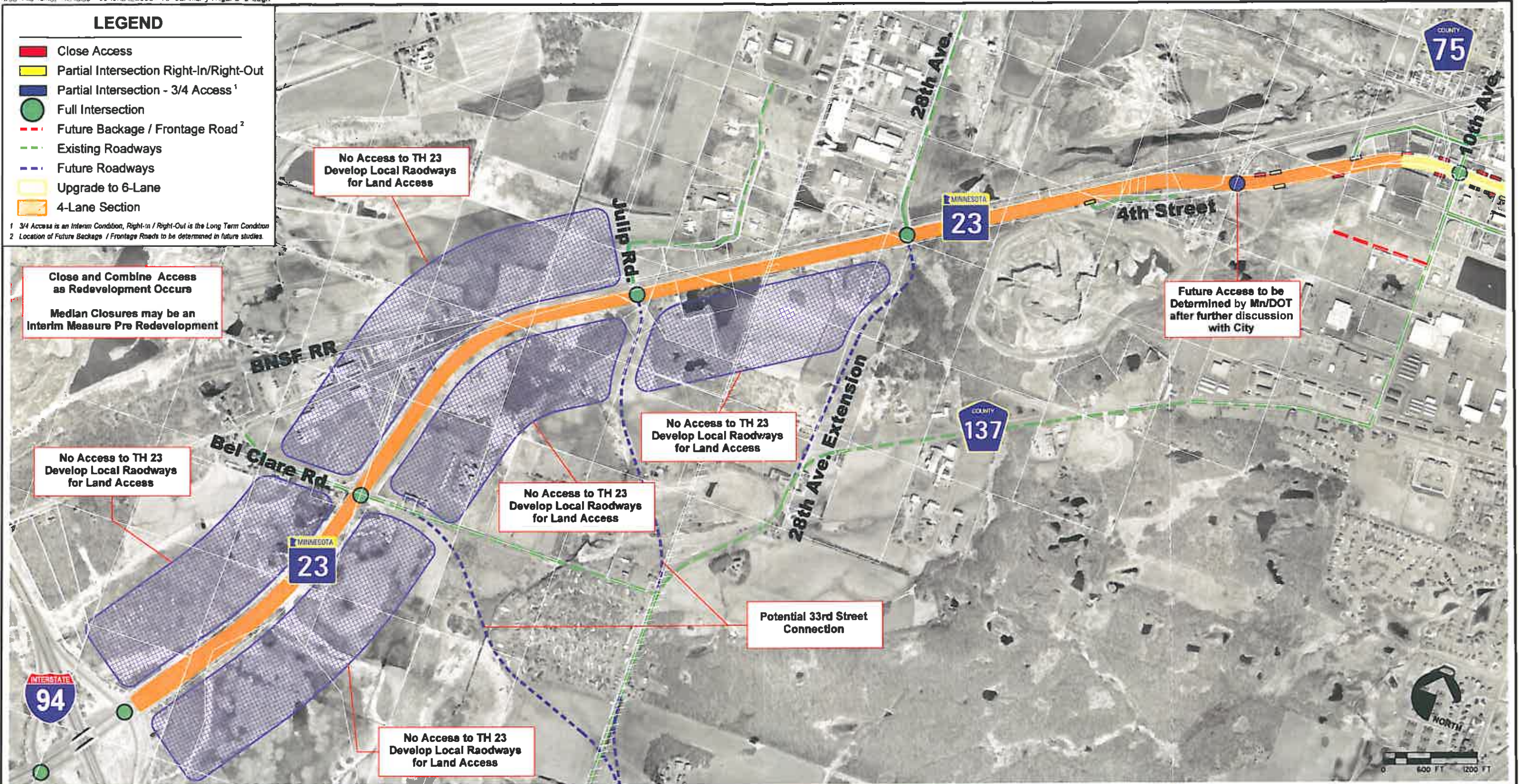
Pursue Funding

Mn/DOT, Stearns County, and the St. Cloud APO should pursue funding for the TH 23 and CSAH 75 improvements.

LEGEND

- Close Access
- Partial Intersection Right-In/Right-Out
- Partial Intersection - 3/4 Access¹
- Full Intersection
- Future Backage / Frontage Road²
- Existing Roadways
- Future Roadways
- Upgrade to 6-Lane
- 4-Lane Section

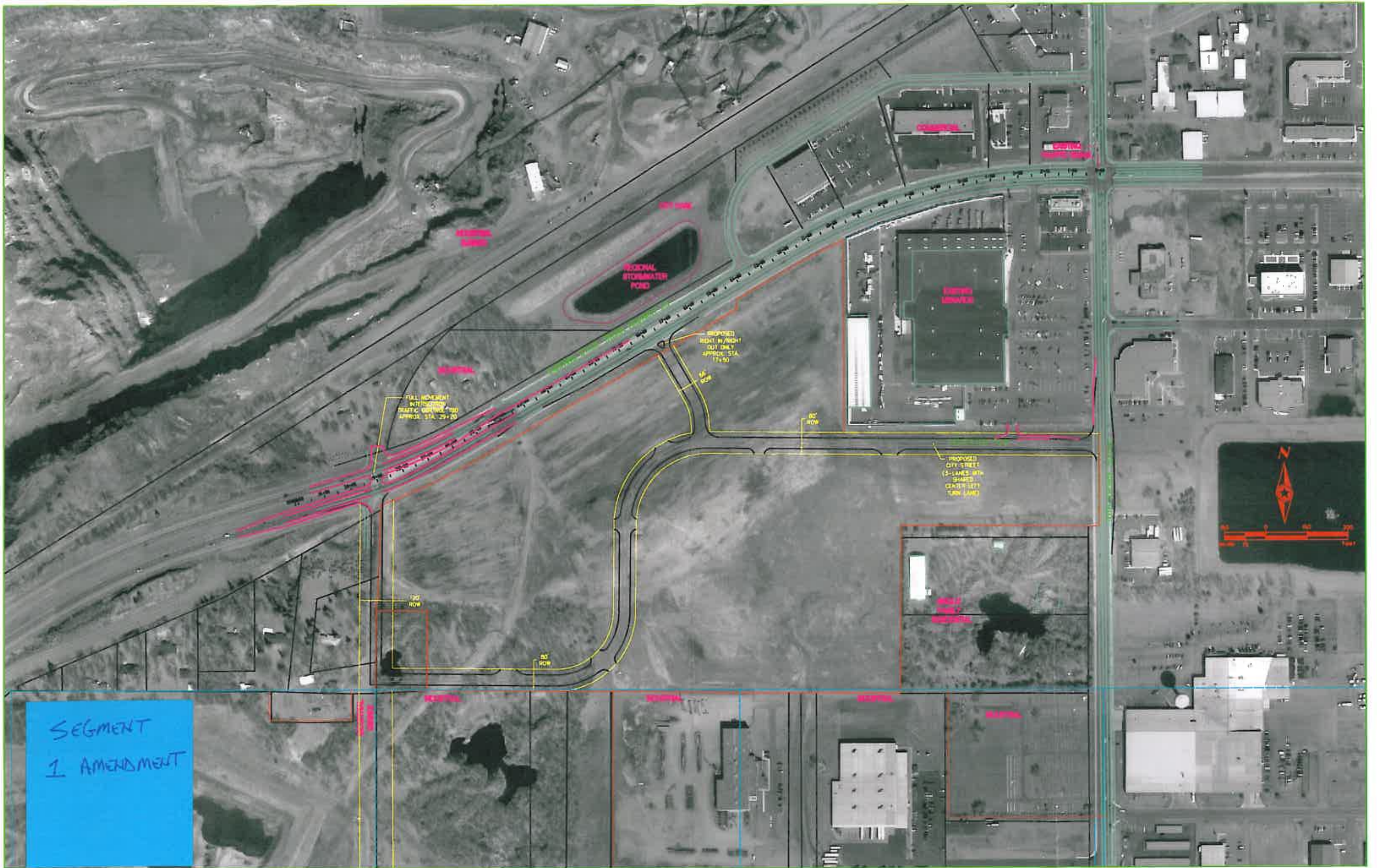
¹ 3/4 Access is an Interim Condition, Right-in / Right-Out is the Long Term Condition
² Location of Future Backages / Frontage Roads to be determined in future studies.

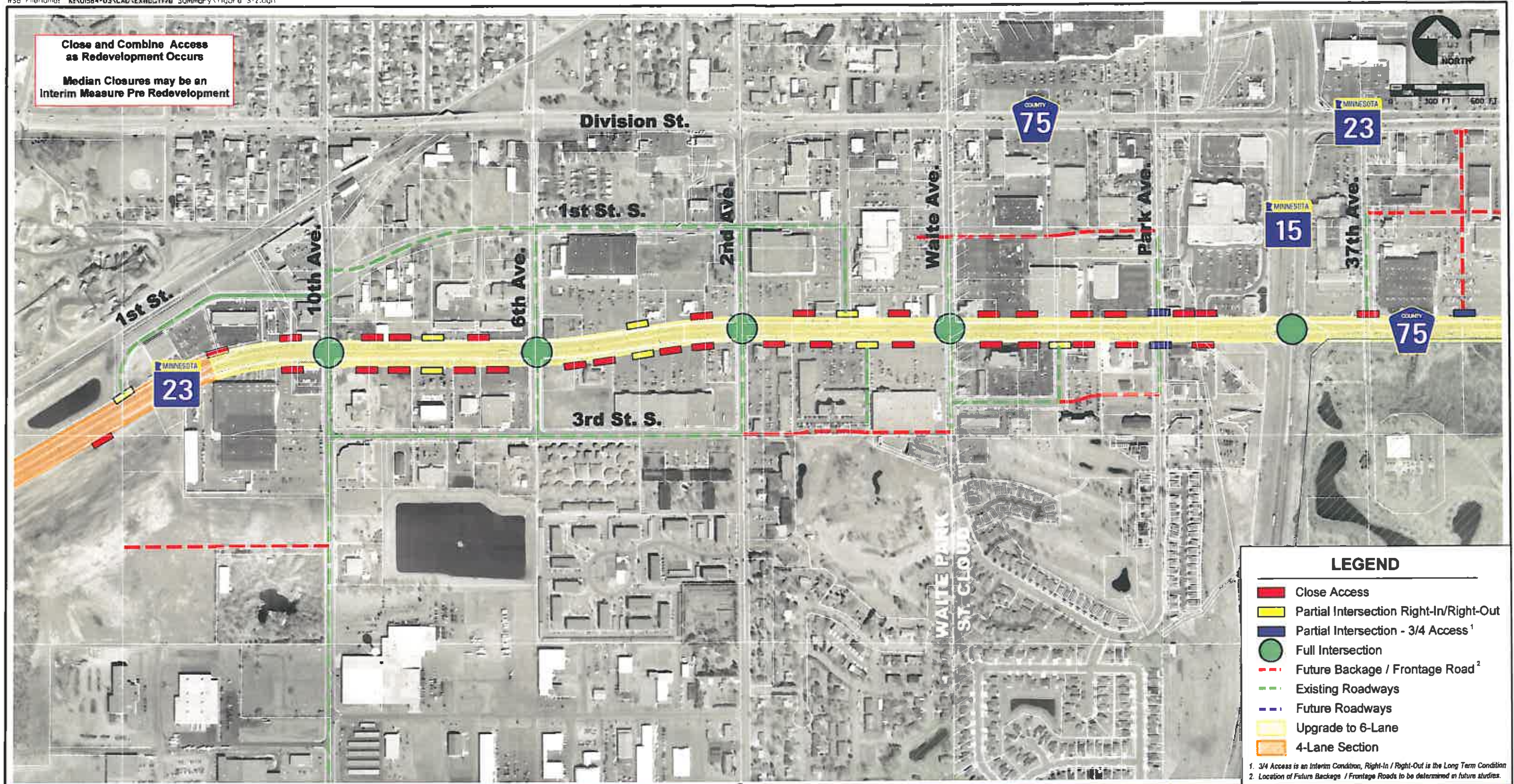


TH 23 / CSAH 75 Corridor Study
Recommended Plan - Segment 1



Figure S1

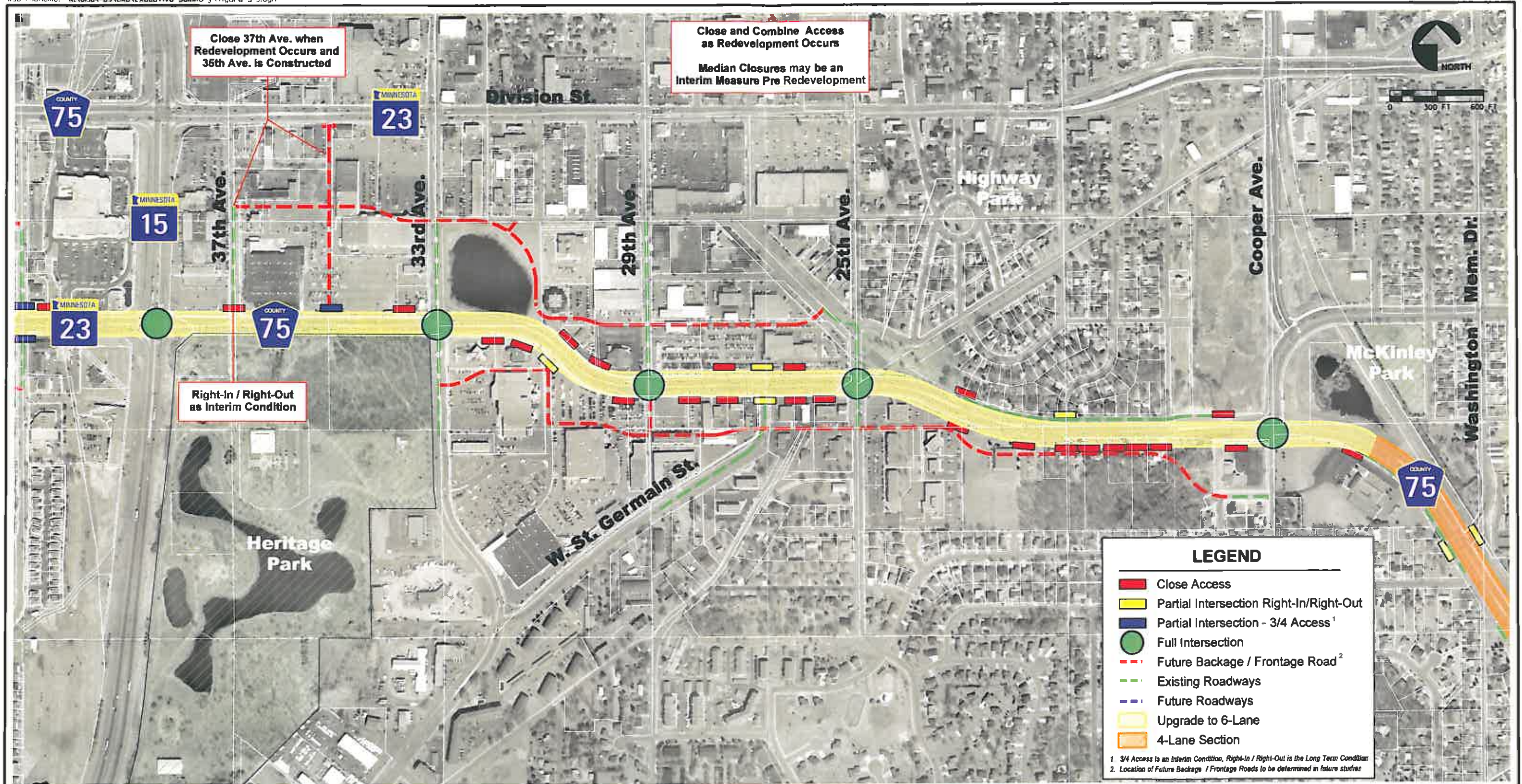




TH 23 / CSAH 75 Corridor Study
Recommended Plan - Segment 2



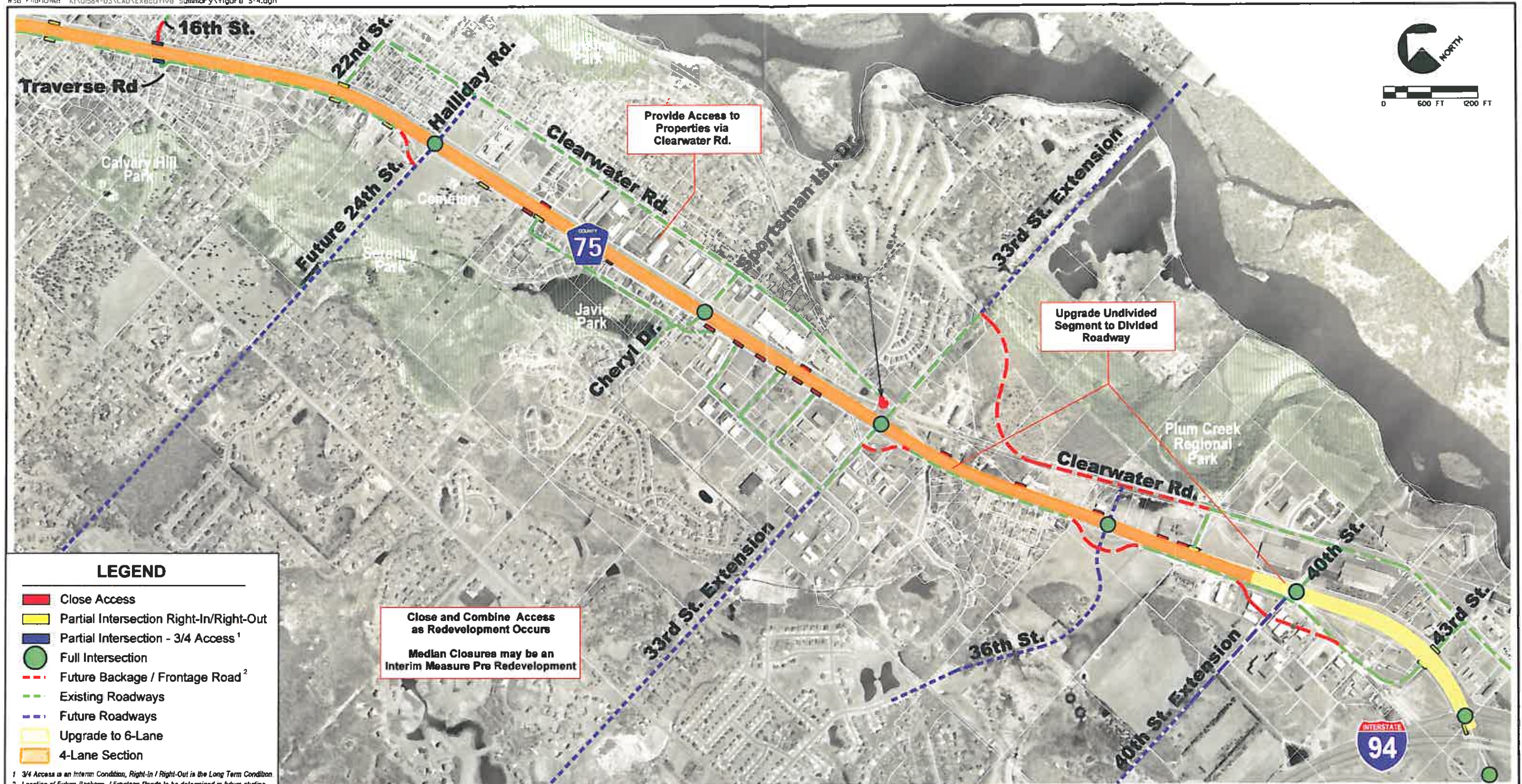
Figure S2



TH 23 / CSAH 75 Corridor Study
Recommended Plan - Segment 3



Figure S3



LEGEND

- █ Close Access
- █ Partial Intersection Right-In/Right-Out
- █ Partial Intersection - 3/4 Access ¹
- Full Intersection
- - - Future Backage / Frontage Road ²
- - - Existing Roadways
- - - Future Roadways
- █ Upgrade to 6-Lane
- █ 4-Lane Section

Close and Combine Access as Redevelopment Occurs
 Median Closures may be an Interim Measure Pre Redevelopment

¹ 3/4 Access is an Interim Condition, Right-In / Right-Out is the Long Term Condition
² Location of Future Backage / Frontage Roads to be determined in future studies.

**TH 23 / CSAH 75 Corridor Study
 Recommended Plan - Segment 4**



Figure S4