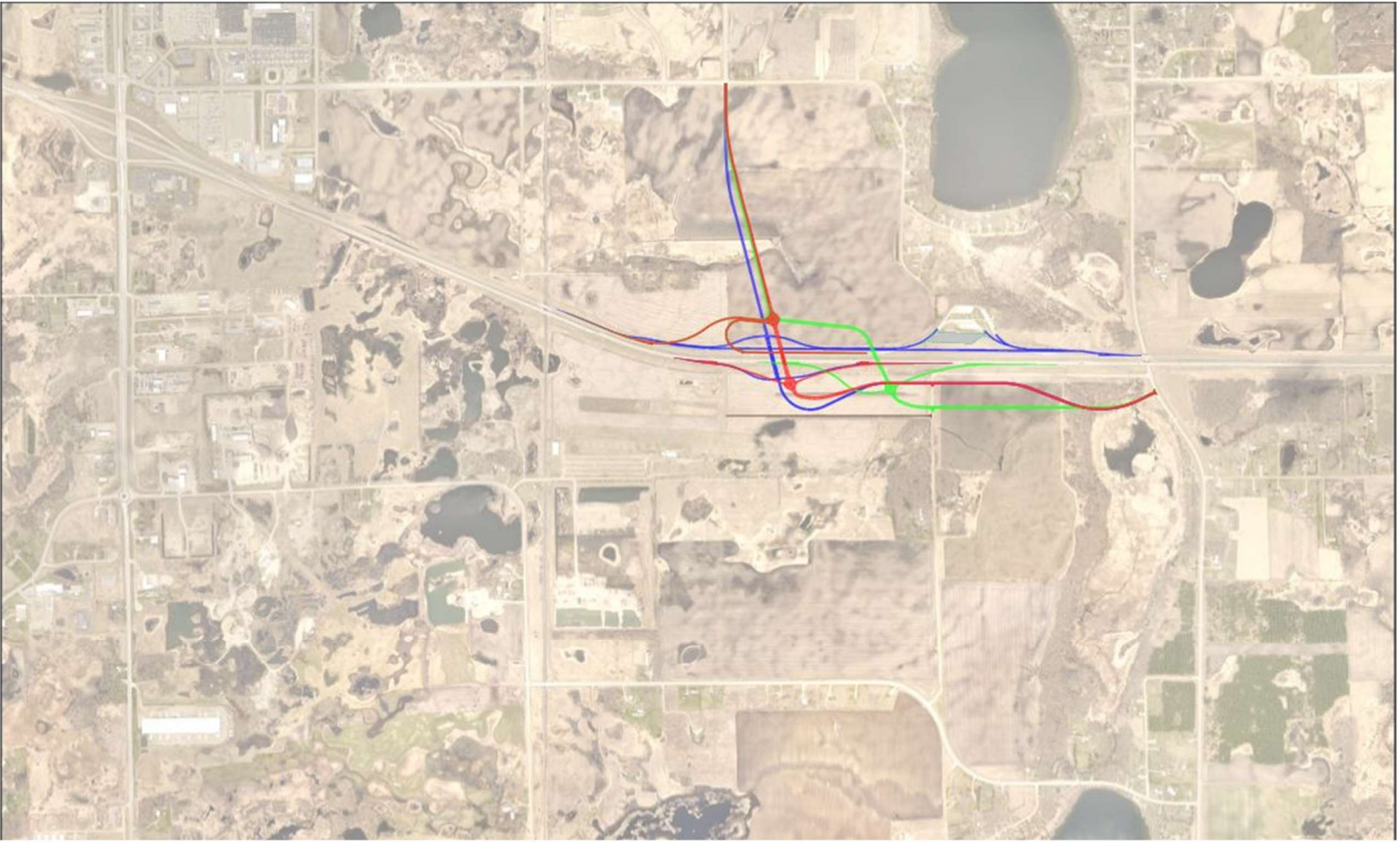

I-94 Lake Burgen Interchange Study

March 24, 2022

SP No. 2180-124
TKDA No. 17430.000

TKDA®

Executive Summary

The Lake Burgen Interchange Location Study was completed by the Minnesota Department of Transportation (MnDOT) to develop interchange alternatives at Interstate-94 (I-94) and Pioneer Road. The interchange study investigated how the interchange would connect with adjacent transportation facilities, the Burgen Lake Rest Area, and the surrounding communities. Conceptual layouts were developed with input from local government agencies and the public. The final deliverable of the study was a summary report including the evaluation of three interchange conceptual layouts and a fourth no-build concept.

Study Setting

The study area is located outside of Alexandria, Minnesota on I-94, Pioneer Road, and Hamann Road in Hudson Township, Douglas County, Minnesota. It is approximately 2 miles east of the Trunk Highway (TH) 29 Interchange and approximately 0.6 miles west of the County Road (CR) 23 Underpass. Adjacent to the study area is the Burgen Lake Rest Area. The rest area serves Westbound I-94 and is eligible for the National Register of Historic Places. Rest area improvements, including a truck parking expansion, were under development as a separate project at the same time as the interchange study. Surrounding land use is agricultural, residential, and recreational. The Alexandria Shooting Park is located southwest of the study area.

Study Purpose and Need

The purpose of the new interchange is to improve access and support future growth and development in the City of Alexandria and the surrounding communities.

The *Alexandria Area 2030 Transportation Study Final Report* identified the need for a new interchange that serves the City of Alexandria east of the TH 29 Interchange. The need was reiterated in the *City of Alexandria 2040 Comprehensive Plan* due to anticipated growth and development. The project need includes improvements to motorist mobility, safety, walkability and bikeability.

The need of an interchange includes the following:

- Provide efficient access to the City of Alexandria to/from I-94
- Alleviate anticipated/projected congestion on TH 29 near Exit 103 by providing alternate access
- Provide efficient access for freight traffic to CR 45 and CR 46 to/from I-94
- Support transportation needs for future growth and development in the City of Alexandria

Agency Coordination and Public Involvement

During the preparation of the Lake Burgen Interchange Study Report, a study team consisting of representatives from MnDOT, Douglas County, the City of Alexandria, and consultants TKDA and HFTE, Inc. met periodically and held regular conference calls to discuss the progress of the study.

Once the conceptual layouts were developed by the study team, the layouts were presented to the Federal Highway Administration (FHWA) and the MnDOT Geometric Design Support Unit (GDSU) for comment. Directly impacted stakeholders were informed of the study by MnDOT, Douglas County, and the City of Alexandria as well.

A public information meeting was held on December 16, 2021 at the Douglas County Public Works Building to present information and gather public input on the study. The meeting was hosted in a hybrid format, which consisted of an in-person component and a live video stream component. In addition to the general public, local elected officials, agency representatives, and other community organizations were invited to attend, and many participated in the meeting. Approximately 100 individuals attended the meeting and provided input on a range of topics including conceptual layout geometry, property impacts, safety, and projected traffic

impacts. The study team provided verbal responses to the comments during the meeting and accommodated follow-up requests for additional information.

In addition to the public information meeting, study information was posted on the MnDOT Lake Burgen Interchange Study Website. The website included an area to submit study comments and an option to complete an interactive survey. The study team responded to comments as requested by the commenter.

The following action was taken with the study given input from the public information meeting and the website:

- The realignment of the Hamman Road and CR 23 Intersection
- The realignment of the Alexandria Shooting Park Emergency Access Road
- Additional traffic analysis
- The study team meet to confirm that the directly impacted property owners and the Townships were notified of the study prior to the public information meeting.

Concepts Evaluated

Four concepts were identified by the study team for evaluation, three considered interchanges incorporating an overhead bridge structure while the fourth considered the no-build option. All of the interchange concepts utilized common cross-sections and design speeds.

The following alternatives were evaluated:

- Concept 1 – Folded Diamond Interchange with Weave
- Concept 2 – Offset Interchange Intersections
- Concept 3 – Diamond Interchange with C-D Road
- Concept 4 – No-Build

Concept Evaluation

The following criteria were used for evaluation of the concepts:

- Responsiveness to the Purpose and Need
- Rest Area Impacts
- Traffic Impacts
- Utility Impacts
- Right-of-Way Impacts
- Drainage Impacts
- Wetland Impacts
- Public Input
- Cost

Concepts 1 through 4 were evaluated considering both qualitative and quantitative metrics. A preferred alternative was not selected.

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I-94 Lake Burgen Interchange Study

Prepared for MnDOT

1.0 Introduction and Study Background

The following document consists of a summary of the Lake Burgen Interchange Study at Interstate-94 (I-94) and Pioneer Road. The study was progressed on input received from the Minnesota Department of Transportation (MnDOT), Douglas County, and the City of Alexandria. This study summary documents the in-depth evaluation of the three interchange alternatives considered for implementation of the interchange. Evaluation of a no-build concept was also considered in this study.

1.1 Study Location

The study area is located outside of Alexandria, Minnesota on I-94, Pioneer Road, and Hamann Road in the Hudson Township, Douglas County, Minnesota. It is east of the Trunk Highway (TH) 29 Interchange, west of the County Road (CR) 23 Underpass and adjacent to the Lake Burgen Rest Area. Figure 1.1-1 depicts the study area.

The study was limited to this area because other locations had been evaluated in previous studies. Therefore, only the study area location represented by the interchange concepts was taken into consideration (as opposed to location alternatives on a broader scale).

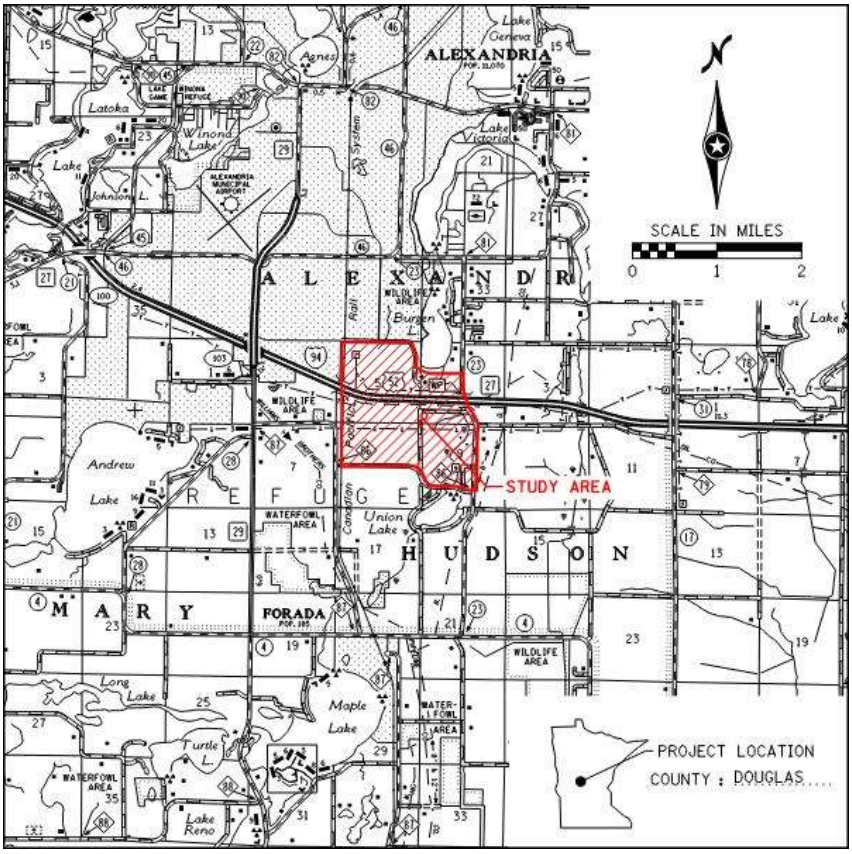

Figure 1.1-1 Index Map

1.2 Study Scope

The goal of the interchange study report was to establish a project purpose and need, engage stakeholders, identify constraints, and develop conceptual layouts, including the no-build option. These goals have been summarized in the study report, so that it can be used as a tool to secure funding and advance the interchange development.

1.3 Study Team

The Lake Burgen Interchange Study was developed by the following study team:

- MnDOT
- Douglas County
- City of Alexandria
- TKDA
- HFTE, Inc.

1.4 Study Process

The interchange study was prepared to summarize interchange concepts within the study area. The study served to develop, evaluate, and refine the range of possible concepts to achieve a need for proposed action.

The evaluation of the conceptual layouts was used to summarize and develop concepts that best address needed operational improvements for the Alexandria area, and to determine the general interchange geometry for the proposed project. Concepts were developed to address project needs, while avoiding or minimizing environmental and community impacts and addressing the issues identified by the major stakeholders.

Various concepts were considered as part of the Evaluation of Conceptual Layouts Process. Ultimately, four alternatives were chosen for consideration, including a no-build option. Figure 1.4-1 depicts the conceptual layout alignments. Section 5, Description of Conceptual Layouts, describes the layouts in greater detail, as well as key terminology. The four alternatives are:

- Concept 1 – Folded Diamond Interchange with Weave
- Concept 2 – Offset Interchange Intersections
- Concept 3 – Diamond Interchange with C-D Road
- Concept 4 – No-Build

The three concepts and the no-build concept were presented during a public information meeting held on December 16, 2021. In addition to the public information meeting, a Lake Burgen Interchange Study website was created. The website provided a study summary and collected public input via a comment field and an interactive survey.

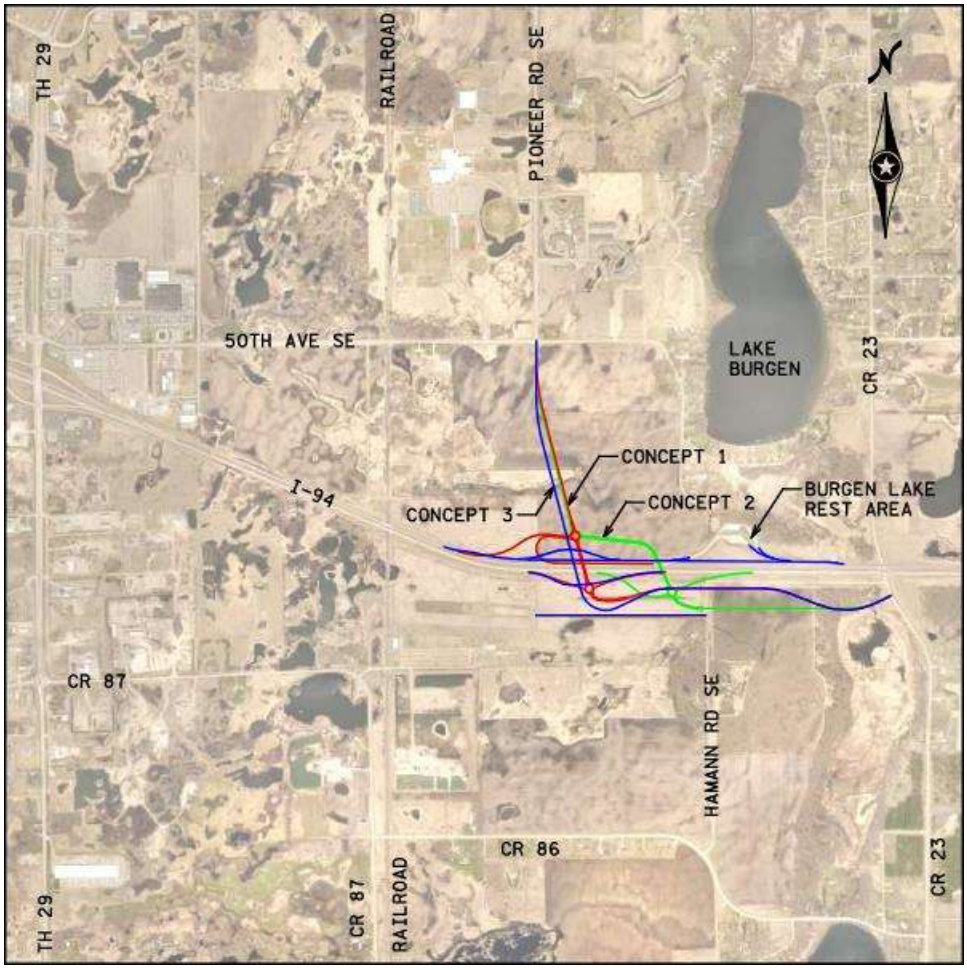

Figure 1.4-1 Conceptual Layout Alignments

2.0 Purpose and Need

The purpose of the new interchange is to improve access and to support future growth and development in the City of Alexandria and the surrounding communities.

The *Alexandria Area 2030 Transportation Study Final Report* identified the need for a new interchange that serves the City of Alexandria east of the TH 29 Interchange. The need was reiterated in the *City of Alexandria 2040 Comprehensive Plan* due to anticipated growth and development. The project need includes improvements to motorist mobility, safety, walkability and bikeability.

The need of an interchange includes the following:

- Provide efficient access to the City of Alexandria to/from I-94
- Alleviate anticipated/projected congestion on TH 29 near Exit 103 by providing alternate access
- Provide efficient access for freight traffic to CR 45 and CR 46 to/from I-94
- Support transportation needs for future growth and development in the City of Alexandria

3.0 Agency Coordination and Public Involvement

Agency coordination and public involvement were important elements of the interchange study for gathering feedback and input during the study process. Community and agency representatives, members of the public, affected stakeholders, and study team members all played a role in communicating information and issues about the study. The goal of this process is to produce a transportation project that fits the context of a community and responds to the needs of the public who use this transportation resource.

3.1 Stakeholders

Stakeholders for this study were generally divided into three categories: (1) those directly affected by the study, (2) those indirectly affected by the study, and (3) agencies with jurisdictional authority over the infrastructure or land use within the study area. The stakeholder groups are identified below:

1. Directly Impacted Stakeholders
    - Those with properties located directly adjacent to any of the study concepts
    - Owners of adjoining properties that may be affected by the study through changes in access and the visual or auditory environment, or other factors
    - Those who frequently travel through the study area
    - Residents of the City of Alexandria, Hudson Township, Alexandria Township, and other local communities
    - Commuters
    - Goods transportation
    - Alexandria Public School District (school bus operators)
    - Police, fire, and emergency services providers
    - Utilities in the study corridor

2. Indirectly Impacted Stakeholders
    - Chamber of Commerce
    - Local citizens' groups
    - Elected officials
    - Community groups/ neighborhood associations

3. Government Agencies
    - City of Alexandria
    - Alexandria Township
    - Hudson Township
    - Douglas County
    - Minnesota Department of Transportation (MnDOT)
    - Federal Highway Administration (FHWA)

3.2 Public Involvement

During the study process, public involvement was completed both formally and informally. This included reaching out to directly impacted stakeholders, a public information meeting, and a study website. The public involvement served to inform the public and to collect input about the study.

3.2.1 Outreach to Directly Impacted Stakeholders

Throughout the development of the interchange study, the study team reached out to directly impacted stakeholders. This involved representatives from MnDOT, Douglas County, or the City of Alexandria initiating a conversation with the directly impacted townships, property owners, and utility owners. The purpose of the outreach was notify these stakeholders of the study and to collect their input.

3.2.2 Public Involvement Meeting – December 16, 2021

The first public involvement meeting for the study was held on Thursday, December 16, 2021, from 5:00 to 7:00 PM, at the Douglas County Public Works Building, 526 Willow Drive, in Alexandria, Minnesota.

The meeting was advertised in:

- the Alexandria Echo Press on December 10, 2021
- KMRS/KKOK on December 14, 2021
- Voice of Alexandria on December 8, 2021
- MnDOT Social Media

The objectives of the meeting were:

- To introduce the study and the study team
- To present work-to-date on various conceptual layouts to the community
- To obtain comments regarding key transportation, safety, and other related issues for the study team to consider during the study

The study team attending the meeting included representatives from MnDOT, Douglas County, the City of Alexandria, and TKDA. Approximately 50 members of the public attended the meeting in person and approximately another 50 attended the meeting virtually. Sign-in sheets from the information meeting are included in the Appendix D.

Initially, attendees were given an opportunity to review display boards and discuss the study informally with the study team members. At approximately 5:30 PM, a formal presentation was given with PowerPoint slides, including an introduction to the study team, description of the organization and agenda for the meeting, purpose and need, study overview, 2045 traffic forecast overview, conceptual layouts overview, concept evaluation summary, and next steps. The strengths and weaknesses of each alternative were discussed in terms of the conceptual layout evaluation criteria that include responsiveness to the purpose and need, rest area impacts, traffic impacts, utility impacts, right-of-way impacts, drainage impacts, wetland impacts, public input, and cost.

At approximately 6:00 PM, the meeting was opened to public comment. Fifty verbal comments and no written comments were received at the meeting. The comments are summarized by topic below. Public Information Meeting Comments and Responses are included in Appendix E.

Clarification of Study Conceptual Layouts

- What are the impacts to the transmission lines?
- There is an emergency exit road that serves the shooting park that intersections with Hamman Road. Will this be accommodated in the concepts?
- What clearance is required for the bridge over the interstate?
- What is the speed limit on the C-D Road? Whose jurisdiction will it fall under?
- Can the rest area connect to roads outside of the interstate system?
- All three interchanges have the same outcome.
- What is the importance of the rest area?
- Why not provide access to CR 23?
- The realignment of the intersection at Hamman Road and CR 23 is preferred.

Safety

- What safety improvements will be provided at the Hamman Road and CR 23 intersection? There are poor sight lines there today.
- Pioneer Road is a “people corridor.” How is this being taken into account?
- How has safety been taken into account along Pioneer Road, given it is a “People Corridor?”
- Students and senior citizens use 50th Avenue and Pioneer Road.
- Safety along Pioneer Road is a concern.

Traffic

- Was future development taken into account for the traffic forecasts?
- What are the traffic forecasts south of the I-94?
- What has been done to take into account traffic impacts along Pioneer Road, specifically near the senior living facility and the high school?
- What are the traffic forecasts along CR 23?
- What is the distribution of traffic past 50th Avenue?
- The new interchange provides additional access to retail off of 50th Ave.

Future Development

- Will driveways be allowed off of Pioneer Road for future development?
- Can the land north of proposed Hamman Road in Concept 2 be developed?
- What are the plans for the City and County to accommodate increased traffic along Pioneer Road?

Real Estate

- How was property value taken into account in the cost estimate? When will property owners be approached for right-of-way acquisition?
- Is eminent domain an option?

Alternate Location

- Why is CR 17 not being considered for a new interchange?
- CR 17 has less obstructions for an interchange.
- Have other locations been considered? This does not seem to be a good location for an interchange.
- No support for the project connecting to 50th Avenue and Pioneer Road.

Noise

- Will noise pollution be addressed with the new interchange?
- Noise pollution should be considered as part of this project.

Stakeholder Involvement

- How can people provide input about the study?
- Will the townships be involved in the study?
- A public information mailer was not sent out.
- There have been discussions with the Hudson Township regarding the study. The concepts have been updated to accommodate input from the township.
- When will public engagement occur for this project?
- Will public support be required for this interchange to move forward?
- Please provide better descriptions of the traffic distributions in future presentations.

Miscellaneous Comments

- The new interchange will provide better access to the apartments and the high school from the I-94. This is an improvement. Highway noise near the interstate is expected. The study has been advertised and the study website has the option to submit comments.
- General support for the project.
- Who makes the decision which option is chosen?
- Concept 2 is preferred because it has less impacts to the shooting park.

3.2.3 Study Website

The study website was launched on November 23, 2021. Approximately, 260 notices were mailed out to property owners, institutions, businesses, elected officials, agency representatives, and other stakeholders in the study area. These mailers provided information about the study and provided a link to the website. The website link was included in the public involvement advertisements as well. The website included a study summary, a comment field, an interactive survey, and a link to the public information meeting video recording. 24 comments were submitted on the website and 162 interactive surveys were completed. Comments from the website are summarized by topic below. A list of comments and responses are provided in Appendix F.

Safety

- There is a concern about safety and increased traffic along Pioneer Road near Grand Arbor and the high school. Stoplights and reduced speed limits could help improve the situation.

- There is concern about the proposed interchange being close to the high school, specifically the safety of students in regards to human trafficking.
- A roundabout at Pioneer Road and 50th in addition to another at the High School/Grand Arbor entrance would be a must to slow traffic and keep students and older residents safe.

Traffic

- There is a concern for increasing traffic near the high school and residential neighborhoods.
- What are the plans for traffic beyond the high school, specifically at Nokomis Street and Noonan's park?
- There is little information about how traffic will be addressed outside of the immediate interchange area.
- Traffic may get routed away from downtown.
- Why would you want to put all the extra traffic in front of the high school? The interchange would make it easier for truck traffic and oversized loads to avoid congestion in and around Alexandria.
- The proposed interchange is too close to TH 29, some traffic will still head in that direction. Westbound traffic might naturally take the first exit and still end up on TH 29 due to close proximity.

Alternate Location

- Why is another interchange needed? There are other locations along TH 29 for commercial development.
- Why not improve Exit 103 to better fit traffic needs?
- Why would you not just add exit/entrance ramps to CR 23?

Noise

- Noise pollution is a concern with the new interchange.

Stakeholder Involvement

- The public notice about the interchange was received in the mail after the information meeting, on December 21st.

Future Development

- Residential development should be considered near the proposed interchange.

Concept Preference

- Option 3 appears to be smoother
- Options 1 & 3 look good. Option 2 looks confusing. Option 4 would be bad as this is a needed project.
- Alexandria already has 2 exits off of I-94, and honestly I don't see a need for a 3rd interchange. My vote is for option 4, no interchange.
- If I had to choose one of your options it would be #1. It seems like the simplest design.

- Concept 4 is preferred. Why not build a new interchange near CR 17 or build out the roads near Exit 103. Pioneer Road, CR 46, and CR 23 is too congested already.
- After experiencing similar roads in other places, Option 3 is simple, safe, and offers the greatest growth potential. The other options are a hazard for I-94 drivers with trucks entering from the rest area while the interchange is that close.

Study Support

- This project is greatly needed. I can't wait to see this work complete. This interchange will help move traffic in and out of the area more efficiently. The schools, homes, and growth in this area will all benefit. In addition, the community will benefit as this area grows, more jobs, more housing. What a win-win for all.
- I see additional benefit for the people looking to go to the Maple Lake/Forada area. They can totally avoid TH 29 by using the new exit. At that point you are removing traffic from TH 29 for a good 4 miles.
- This new exit will benefit everyone in the Lake Burgen area - East and West sides. It will also directly help anyone living South of CR 27 East and East of anyone living East of Nokomis area. Many square miles of homes.
- This is very exciting for our community. We will all benefit from this interchange including our schools, tourists and will bring more jobs to the community as this area expands.
- I think this is a good idea and would be very helpful for those trying to avoid the traffic on TH 29.

3.2.4 Response to Public Involvement

The study team provided verbal responses during the public information meeting. Responses to comments submitted via the website were provided as requested by the commenter. A list of comments and responses are included in Appendices E and F.

Many of the comments related to items outside of the study scope. They are documented in the report for reference in future stages of the interchange project. There were four items that warranted action in the study:

- The realignment of the Hamman Road and CR 23 Intersection
- The realignment of the Alexandria Shooting Park Emergency Access Road
- Additional traffic analysis
- The study team met to confirm that the directly impacted stakeholders were notified of the study prior to the public information meeting.

These items were implemented into the study report and conceptual layouts.

4.0 Existing Conditions

The study area is located outside of Alexandria, Minnesota on I-94, Pioneer Road, and Hamann Road in Hudson Township, Douglas County, Minnesota. It is approximately 2 miles east of the TH 29 interchange and approximately 0.6 miles west of the CR 23 underpass. Adjacent to the study is the Burgan Lake Rest Area. The rest area serves Westbound I-94 and is eligible for the National Register of Historic Places. Rest area improvements, including a truck parking expansion, were under development as a separate project at the same time as the location study. Surrounding land use is agricultural, residential, and recreational. The

Alexandria Shooting Park is located southwest of the study. Figure 4.0-1 depicts the study area.

Section 4 summarizes the following existing conditions:

- Roadway Geometry
- Traffic
- Utilities
- Right-of-Way
- Drainage
- Wetlands

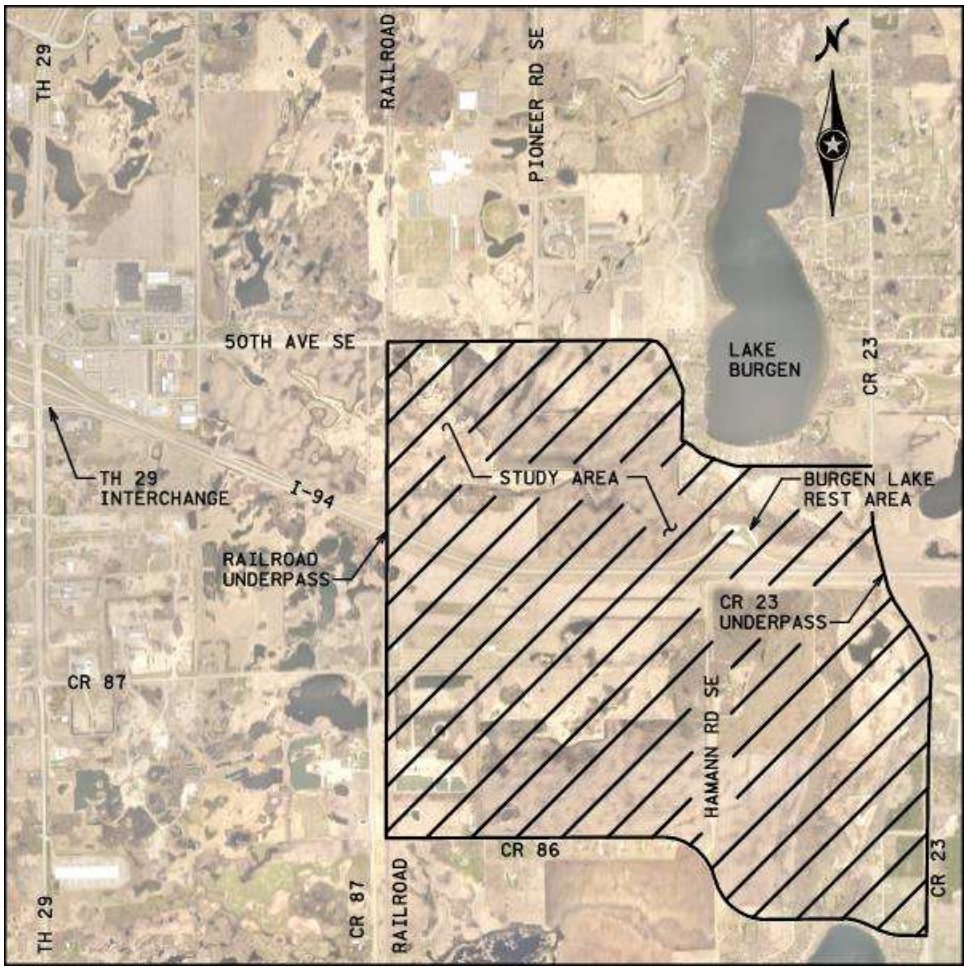

Figure 4.0-1 Study Area

4.1 Roadway Geometry

The interchange study investigated a new interchange facility on the I-94 system. The following is a summary of the facilities that the concepts connect to.

4.1.1 Interstate 94 (I-94)

I-94 is a four-lane, divided, rural, interstate facility with a bituminous overlay. It runs east-west through the City of Alexandria and the Township of Hudson. In the vicinity of the study area, I-94 passes over CR 23, has a westbound rest area, passes over CP Railway Tracks, and

has an interchange with TH 29. Eastbound and Westbound I-94 have similar cross sections within the study area. The cross section consists of two 12 ft. travel lanes, a 10' outside shoulder, a 4' inside shoulder, and graded inslopes. There is a grass median between the two sections.

4.1.2 Pioneer Road SE

Pioneer Road SE is a bituminous two-lane undivided rural, minor collector facility with various right and left turn lanes. It runs north-south through the City of Alexandria from 50th Avenue SE through Nokomis Street. It provides access to the Alexandria Area High School, Apartment Complexes, the Alexandria Technical College/3M/Hospital area, Downtown Alexandria, and a mix of residential and commercial properties. The existing cross section of Pioneer Road within the study area consists of two 12 ft. travel lanes, two 8 ft. shoulders, and graded inslopes.

4.1.3 50th Avenue SE

50th Avenue SE is a bituminous, two-lane, undivided, rural, minor collector facility. It runs east-west through the City of Alexandria from TH 29 through W Lake Burgen Road SE. It provides access to the commercial shopping area near the TH 29 and I-94 Interchange, the Alexandria Area High School, and a mix of agricultural and residential properties. There are two existing cross sections of 50th Avenue SE within the study area. East of Pioneer Road, the section consists of two 12 ft. travel lanes and graded inslopes. West of Pioneer Road, the section consists of two 12 ft. travel lanes, two 10 ft. shoulders, and graded inslopes.

4.1.4 Hamann Road SE

Hamann Road is a gravel, two-lane, undivided, rural, local facility. It runs north-south from CR 86 to the I-94 right-of-way line, where it takes a ninety degree turn and runs east-west to CR 23 in the Hudson Township. It provides access to a mix of residential and agricultural properties. The existing cross section of Hamann Road within the study area consists of two 12 ft. travel lanes, and graded inslopes.

4.1.5 County Road (CR) 23 SE

CR 23 SE is a bituminous, two-lane, undivided, rural, minor collector facility. It runs north-south through Hudson Township and Alexandria Township from CR 4 SE through Hazel Hill Road SE. It serves a mix of agricultural and residential properties. The existing cross section of CR 23 SE within the study area consists of two 12 ft. travel lanes, 5 ft. shoulders, and graded inslopes.

4.1.6 Burgen Lake Rest Area

The Burgen Lake Rest Area is located off of Westbound I-94 between CR 23 and the study area. The parking facilities consist of an auto parking lot with 18 stalls, a camper/trailer parking lot with 20 stalls, and a truck/bus parking lot with 10 stalls. The Rest Area building is located on the east side of the facility near the auto parking lot. This rest area is identified as a key location in the MnDOT Statewide Rest Area Strategic Plan and is eligible for the National Register of Historic Places.

The rest area ramp deceleration and acceleration lanes off of I-94 are a tapered design with bituminous overlays. The exit and entrance ramp cross sections consists of 16 ft. concrete driving lanes, 4 ft. left bituminous shoulders, and 6 ft. right bituminous shoulders.

The rest area is slated for a truck parking expansion. The parking expansion project is separate from the interchange study. In the conceptual layouts, the future parking expansion

geometry is depicted. The rest area parking expansion geometry shown is a placeholder and is subject to change.

4.1.7 Shooting Park Emergency Access Road

The Alexandria Shooting Park has an emergency access road that runs north-south from the shooting stations to the north property line adjacent to the MnDOT right-of-way. The road turns and runs east-west, following the property line, to an intersection with Hamman Road. The road serves as an alternate access point to the park, specifically when trains block the main entrance road.

4.2 Traffic

Analysis indicates that a new interchange and its connected roadways will draw some of the traffic currently using the I-94/TH 29 interchange. Travel patterns will change on TH 29, and some local roadways east of TH 29 will be impacted. Study intersections and existing traffic control are listed below:

- CR 46/TH 29 – Traffic Signal
- CR 46/South Broadway Street – 4-Way Stop
- CR 46/Pioneer Road – Traffic Signal
- CR 46/Hazel Road – Single Lane Roundabout
- Hazel Hill/Maple Drive – 4-Way Stop
- 50th Avenue/TH 29 – Traffic Signal
- 50th Avenue/South Broadway Street– Sideroad Stop
- 50th Avenue/Pioneer Road – 3-Way Stop (T-Intersection)
- TH 29/I-94 WB Ramps – Traffic Signal
- TH 29/I-94 EB Ramps – Traffic Signal
- CR 28/CR 87/TH 29 – Single Lane Roundabout with NE and NW Quadrant Bypasses
- CR 86/CR 87 – Sideroad Stop (T-Intersection)
- CR 86/CR 23 – Sideroad Stop (T-Intersection)
- High School Driveway #1 – Sideroad Stop (T-Intersection)
- High School Driveway #2 – Sideroad Stop East Leg / Enter Only West Leg (WB Only)
- High School Driveway #3 – Sideroad Stop (T-Int.) / Exit Only North Leg (SB Only)
- Pioneer Rd / 46th Avenue – Sideroad Stop (T-Intersection)
- Pioneer Rd/I-94 WB Ramps – N/A (not existing)
- Pioneer Rd/I-94 EB Ramps – N/A (not existing)

4.3 Utilities

A high level existing utility analysis was performed as part of the interchange study. Utilities were identified from files provided by MnDOT. If the study receives funding and the design process moves forward, a detailed utility analysis should be completed.

Both buried and overhead utilities exist within the Lake Burgen Interchange Study Area. If additional right-of-way is required for the Lake Burgen Interchange, it is possible that additional existing utility owners would be impacted. There are two major utilities running through the study area. The CAPX Transmission Lines run east-west along the south side of the I-94 Corridor. The NuStar Gas Line runs east-west along the north side of the I-94 Corridor. Utility owner information is summarized in Table 4.3-1. Figure 4.3-1 depicts the existing utilities.

Directly impacted property owners have notified the study group of utilities that they own and operate that may be impacted by the project. Locates of those utilities were scheduled to be completed after the Lake Burgen Interchange Study Report was completed.

Table 4.3-1 Existing Utility Owner Information

Utility	Owner
Electric Transmission Line	Grid North Partners
Gas	NuStar
Power	MnDOT
Communication	Connect MN
Communication	CenturyLink
Electric	Unknown (Along adjacent roads)
Private Utilities	Directly Impacted Property Owners

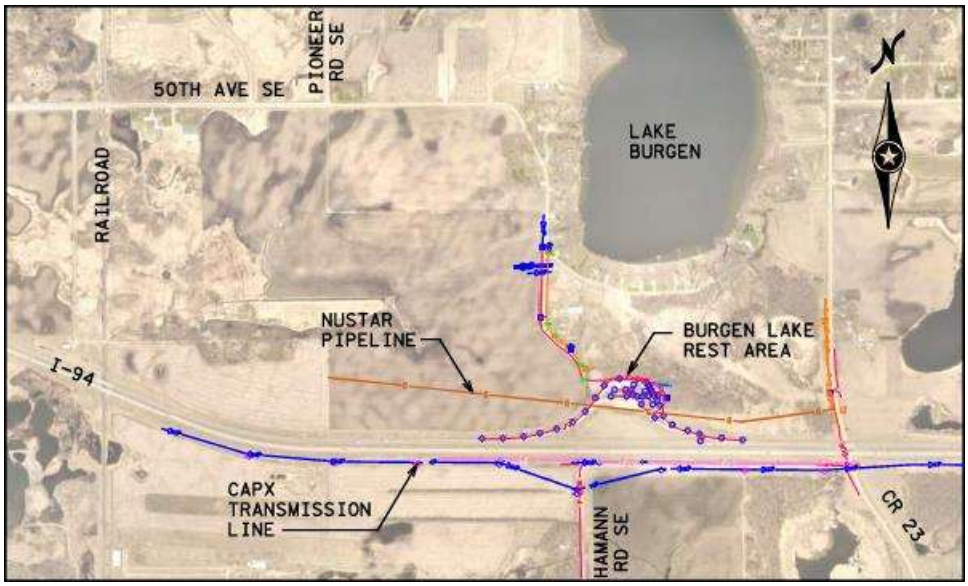

Figure 4.3-1 Existing Utilities

4.4 Right-of-Way

There are three areas of MnDOT right-of-way within the study area. Section 1 is the area between the railroad bridges and the rest area. Section 2 is the area adjacent to the rest area. Section 3 is at CR 23. Table 4.4-1 summarizes the MnDOT right-of-way widths. Figure 4.4-1 depicts the right-of-way areas.

Table 4.4-1 MnDOT Right-of-Way Summary

Area	Location	Approximate Right-of-Way Widths
1	Railroad to Rest Area	280' – 320'
2	Rest Area	280' – 1000'
3	CR 23	280' – 1600'

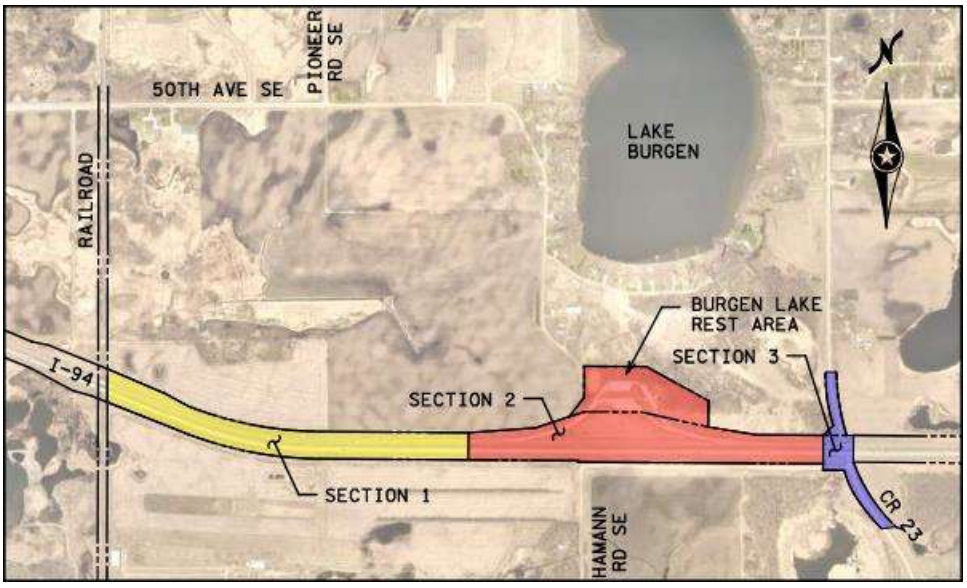

Figure 4.4-1 Right-of-Way Areas

4.5 Drainage

Stormwater runoff within and surrounding the study area primarily drains to two discharge points. The main discharge point is Lake Burgen fed by an unnamed stream crossing I-94 in the east portion of the study area. The second is an unnamed wetland located in the northwest portion with no apparent outlet. Figure 4.6-1 depicts the existing drainage elements.

Runoff along the south side of I-94 discharges east toward the unnamed stream before ultimately discharging to the north into Lake Burgen. The remaining runoff along the north side of I-94 is roughly split between the two discharge points at the lake and the wetland. Runoff is primarily conveyed via overland flow, through minor streams, or roadway ditches.

The study area is located outside of any watershed management organizations, wellhead protection zones, or designated floodplains. On the east side of the study area, Lake Burgen, the unnamed stream, and Doebben's Marsh are designated Minnesota Department of Natural Resources (MDNR) public waterways and wetlands. The Minnesota Pollution Control Agency (MPCA) has designated Lake Burgen an impaired water with an approved Total maximum Daily Load allocation for mercury in fish tissue, which is non-construction related.

4.6 Wetlands

There are numerous scattered wetlands surrounding the interchange study area, based on the National Wetland Inventory maps, with potential impact locations. Field delineations have not been completed. Lake Burgen in the northeast and Doebben's Marsh in the southeast are additionally designated as MDNR public waterways and wetlands. Figure 4.6-1 depict the study area wetlands.

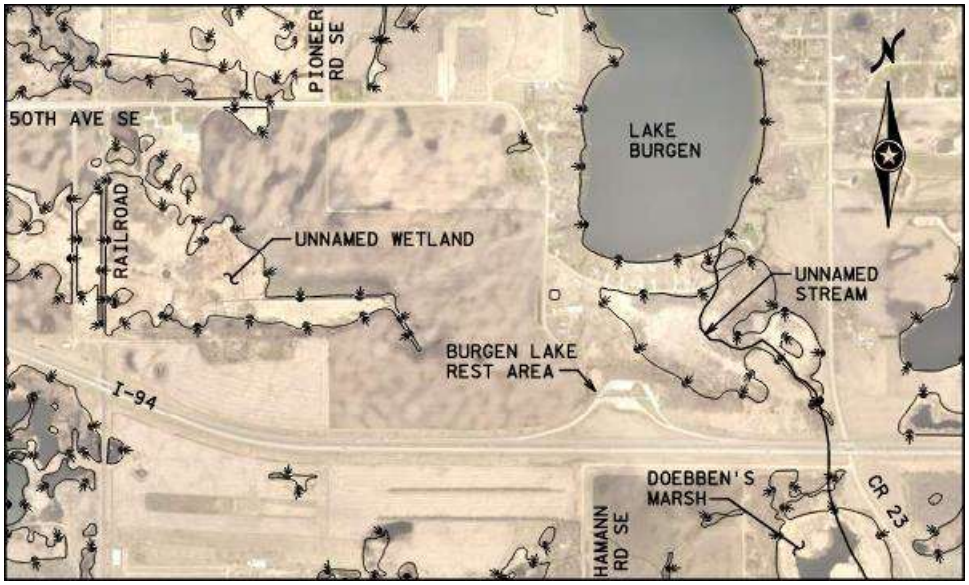

Figure 4.6-1 Wetland and Drainage Map

5.0 Description of Conceptual Layouts

The Lake Burgen Interchange Study area is located approximately 2 miles east of the I-94 and TH 29 Interchange outside of Alexandria, Minnesota; with the Westbound (WB) I-94 Lake Burgen Rest Area located east of the study area. Three interchange concepts were developed within the study area, as well as a no-build concept. The three interchange concepts will connect to an extension of Pioneer Road SE and CR 23 SE via Hamann Road SE.

The following is a summary of the three interchange concepts and the no-build option:

- Concept 1 – Folded Diamond Interchange with Weave
- Concept 2 – Offset Interchange Intersections
- Concept 3 – Diamond Interchange with C-D Road
- Concept 4 – No-Build

Concept development was driven by four areas: purpose and need, stakeholder input, existing conditions, and roadway design requirements. Sections 2, 3, and 4 cover purpose and need, public involvement, and existing conditions, respectively. Section 5 covers the roadway design criteria, defines key terminology, and summarizes the four concepts.

5.1 Roadway Design Criteria

The roadway design criteria for this study were based on meeting or exceeding the current design standards presented in the MnDOT Road Design Manual. Table 5.1-1 depicts the roadway design speeds.

Table 5.1-1 Design Speeds

Roadway	Design Speed (MPH)
I-94	70
C-D Road	60
Pioneer	40
Hamman Rd	30

5.2 Key Terminology

The following are descriptions of key terminology from the conceptual layouts.

5.2.1 Diamond Interchange

A diamond interchange is a simple configuration where a one-way diagonal ramp is provided in each quadrant of an interchange. These four ramps create a diamond shape. Concepts 1 through 3 use partial and full diamond interchanges.

5.2.2 Folded Diamond

A folded diamond (also known as a partial cloverleaf or parclo) is a situation where four ramps are provided, but one or two quadrants have two ramps (one diagonal ramp and one loop ramp). Concepts 1 and 2 include partial folded diamond interchanges.

5.2.3 Weave Area

A weave area is a location where paths of one-way traffic merge and diverge within a relatively short distance. Concepts 1 through 3 include weave areas between the Burgen Lake Rest Area WB I-94 Entrance Ramp and the Pioneer Road WB I-94 Exit Ramp.

5.2.4 Collector-Distributor (C-D) Road

A C-D road eliminates a weave area on main line freeway by providing an additional lane that is divided from the main line. Concept 3 includes a C-D Road that accommodates the Burgen Lake Rest Area Ramps, a weave area, and the WB I-94 Pioneer Road Ramps.

5.3 Conceptual Layouts

Concepts 1 through 4 are described in this section. Detailed conceptual layouts can be found in Appendix A. There are a few items to note while reviewing the three conceptual layouts:

- Intersections: All intersection configurations shown in the concepts are subject to change. A mix of conventional intersections and roundabout intersections are shown.
- Shooting Park Emergency Access Road: Concepts 1 through 3 depict the realignment of the Alexandria Shooting Park Emergency Access Road.
- MnDOT and State Patrol Facility: Concepts 1 through 3 depict a MnDOT and State Patrol Facility. The locations are place holders and the location is subject to change. The facility is identified as a separate project from the interchange.
- Burgen Lake Rest Area Truck Parking Expansion: The Burgen Lake Rest Area truck parking expansion was under development during the study. It is part of a separate project from the interchange study. The truck parking expansion geometry is subject to change.

5.3.1 Concept 1 (Folded Diamond Interchange with Weave)

Concept 1 has the north portion of the interchange as a folded diamond and the south portion as a conventional diamond. The interchange bridge passes over I-94 at a northwest skew. A weave area is located between the Rest Area Entrance Ramp and the NW Loop. Roundabouts are proposed at the interchange at-grade intersections. Figure 5.3.1-1 depicts Concept 1. Appendix A contains a detailed conceptual layout of Concept 1.

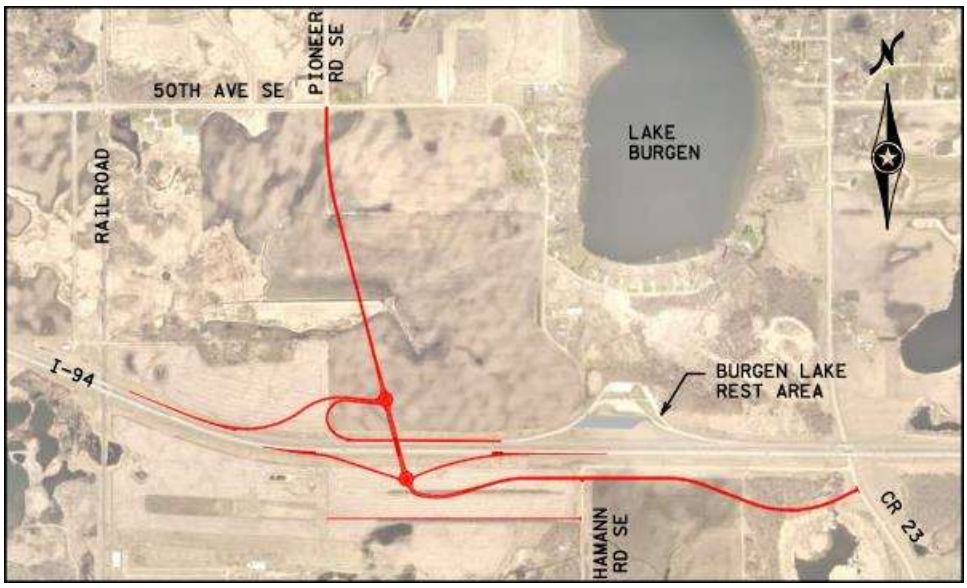

Figure 5.3.1-1 Concept 1 Layout

5.3.2 Concept 2 (Offset Interchange Intersections)

Concept 2 is similar to Concept 1, with the north portion of the interchange being a folded diamond and the south portion a conventional diamond. The interchange bridge passes over I-94 at a northwest skew. A weave area is located between the Rest Area Entrance Ramp and the NW Loop. Roundabouts are proposed at the interchange at-grade intersections. Concept 2 is different from Concept 1 in that the interchange at-grade intersections are offset 1500 feet along I-94. This pushes the south ramps to the East, closer to CR 23 SE. Figure 5.3.2-1 depicts Concept 2. Appendix A contains a detailed conceptual layout of Concept 2.

Figure 5.3.2-1 Concept 2 Layout

5.3.3 Concept 3 (Diamond Interchange with C-D Road)

Concept 3 has the interchange as a conventional diamond with a C-D road along WB I-94. The C-D road accommodates the rest area ramps, the north interchange ramps, and the weave area between the Rest Area Entrance Ramp and the NE Ramp. The C-D road requires the rest area ramps to be partially reconstructed. The interchange bridge passes over I-94 at a northwest skew. Figure 5.3.3-1 depicts Concept 3. Appendix A contains a detailed conceptual layout of Concept 3.

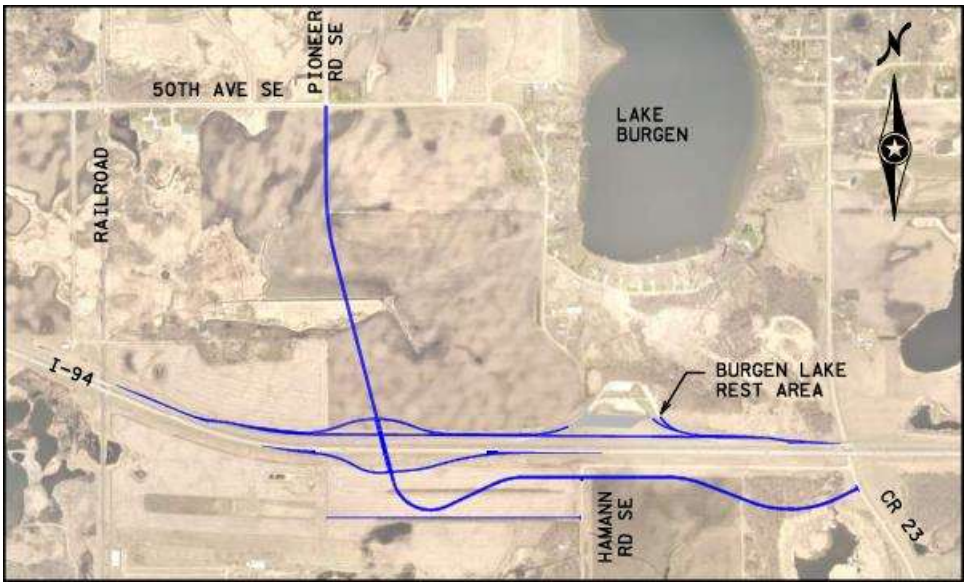

Figure 5.3.3-1 Concept 3 Layout

5.3.4 Concept 4 (No-Build)

Concept 4 is the no-build alternative. No interchange is proposed for this concept.

6.0 Traffic Impacts

Traffic operations impacts are based on existing traffic volumes and forecast No Build and Build traffic volumes for the study. See the 'Lake Burgen Traffic Forecast Memorandum' in Appendix G for AM and PM peak hour turning movement volumes for Existing, 2045 No Build, 2045 Build Concept 1, 2045 Build Concept 2 and 2045 Build Concept 3. Note that while the High School AM peak hour traffic volumes occurred concurrent with the background AM peak hour, the High School PM peak hour occurred earlier, from 3:00-4:00pm, different from the background peak hour of 4:30-5:30pm. As such, PM peak hour traffic operations for nearby school intersections were developed separately.

Initial intersection analysis was performed with existing traffic control, with the exception of roundabouts at the new ramp intersections on Pioneer Road at I-94. Initial results for AM peak hour, PM peak hour and School PM peak hour are shown in Appendix H, Tables H1, H2 and H3.

Per Appendix H, Tables H1 and H2, all modeled intersections along CR 46, and on Hazel Hill at Maple Drive, experience LOS D, E, or F at some point during the day under future No Build or Build alternatives with existing intersection control. Review of modeling simulation indicates the existing all-way stop on CR 46 at S. Broadway Street, and retention of the existing roundabout on CR 46 at Hazel Hill significantly impact the CR 46 corridor under future volume scenarios. If the all-way stop and the existing roundabout are replaced with a traffic signal, corridor operations are as follows in Tables 6.1 and 6.2:

Table 6.1: Intersection Operations Analysis Results (AM) with Signal on CR 46 at S Broadway Street and Hazel Hill								
Intersection	Level of Service - AM							
	No Build		Concept 1		Concept 2		Concept 3	
	Delay(s)	LOS	Delay(s)	LOS	Delay(s)	LOS	Delay(s)	LOS
CR 46/TH 29	17.9	B	23.2	C	23.2	C	23.2	C
CR 46/S Broadway St	23.2	C	19.5	B	19.5	B	19.5	B
CR 46/Pioneer Rd	14.0	B	34.9	C	34.9	C	34.9	C
CR 46/Hazel Hill	88.8	F	38.3	E	38.3	E	38.3	E
Hazel Hill/Maple Dr	75.6	F	18.3	C	18.3	C	18.3	C

Table 6.2: Intersection Operations Analysis Results (PM) with Signal on CR 46 at S Broadway Street and Hazel Hill								
Intersection	Level of Service - PM							
	No Build		Concept 1		Concept 2		Concept 3	
	Delay(s)	LOS	Delay(s)	LOS	Delay(s)	LOS	Delay(s)	LOS
CR 46/TH 29	47.0	D	53.5	D	53.5	D	53.5	D
CR 46/S Broadway St	37.6	D	42.0	D	42.0	D	42.0	D
CR 46/Pioneer Rd	82.6	F	35.6	D	35.6	D	35.6	D
CR 46/Hazel Hill	48.6	E	23.9	C	23.9	C	23.9	C
Hazel Hill/Maple Dr	10.9	B	14.2	B	14.2	B	14.2	B

A second option was examined to address CR 46 operations. If the all-way stop at Broadway is replaced with a traffic signal, a SB left turn lane is added on Pioneer at CR 46, and an additional EB lane is added between Pioneer and the existing roundabout - plus a separated free right at the roundabout to EB Hazel Road, corridor operations are as follows in Tables 6.3 and 6.4:

Table 6.3: Intersection Operations Analysis Results (AM) - with Signal on CR 46 at S Broadway, SB LTL on Pioneer at CR 46, 2 lanes EB from Pioneer to existing RDBT - plus separated free right at RDBT to EB Hazel Rd								
Intersection	Level of Service - AM							
	No Build		Concept 1		Concept 2		Concept 3	
	Delay(s)	LOS	Delay(s)	LOS	Delay(s)	LOS	Delay(s)	LOS
CR 46/TH 29	18.2	B	17.8	B	17.8	B	17.8	B
CR 46/S Broadway St	23.7	C	21.8	C	21.8	C	21.8	C
CR 46/Pioneer Rd	13.7	B	27.4	C	27.4	C	27.4	C
CR 46/Hazel Hill	86.0	F	52.8	F*	52.8	F*	52.8	F*
Hazel Hill/Maple Dr	62.5	E	52.2	D	52.2	D	52.2	D

* Note LOS F is >50. As such, result is close to LOS D and may be acceptable for a short period during AM peak.

Table 6.4: Intersection Operations Analysis Results (PM) - with Signal on CR 46 at S Broadway, SB LTL on Pioneer at CR 46, 2 lanes EB from Pioneer to existing RDBT - plus separated free right at RDBT to EB Hazel Rd								
Intersection	Level of Service - PM							
	No Build		Concept 1		Concept 2		Concept 3	
	Delay(s)	LOS	Delay(s)	LOS	Delay(s)	LOS	Delay(s)	LOS
CR 46/TH 29	54.2	D	35.4	D	35.4	D	35.4	D
CR 46/S Broadway St	39.0	D	33.4	C	33.4	C	33.4	C
CR 46/Pioneer Rd	18.4	B	27.4	C	27.4	C	27.4	C
CR 46/Hazel Hill	7.7	A	7.5	A	7.5	A	7.5	A
Hazel Hill/Maple Dr	11.8	B	11.2	B	11.2	B	11.2	B

A third option was examined to address CR 46 operations. If the all-way stop at Broadway is replaced with a traffic signal, a SB left turn lane is added on Pioneer at CR 46, and an additional EB lane is added between Pioneer and the existing roundabout - and the existing single lane roundabout is converted to a double lane roundabout, corridor operations are as follows in Tables 6.5 and 6.6:

Table 6.5: Intersection Operations Analysis Results (AM) - with Signal on CR 46 at S Broadway, SB LTL on Pioneer at CR 46, 2 lanes EB from Pioneer to existing RDBT - plus convert existing RDBT to double lane.

Intersection	Level of Service - AM							
	No Build		Concept 1		Concept 2		Concept 3	
	Delay(s)	LOS	Delay(s)	LOS	Delay(s)	LOS	Delay(s)	LOS
CR 46/TH 29	17.7	B	17.5	B	17.5	B	17.5	B
CR 46/S Broadway St	22.4	C	21.3	C	21.3	C	21.3	C
CR 46/Pioneer Rd	14.7	B	28.9	C	28.9	C	28.9	C
CR 46/Hazel Hill	37.2	D	15.4	C	15.4	C	15.4	C
Hazel Hill/Maple Dr	57.8	E	18.2	C	18.2	C	18.2	C

Table 6.6: Intersection Operations Analysis Results (PM) - with Signal on CR 46 at S Broadway, SB LTL on Pioneer at CR 46, 2 lanes EB from Pioneer to existing RDBT - plus convert existing RDBT to double lane.

Intersection	Level of Service - PM							
	No Build		Concept 1		Concept 2		Concept 3	
	Delay(s)	LOS	Delay(s)	LOS	Delay(s)	LOS	Delay(s)	LOS
CR 46/TH 29	50.7	D	43.4	D	43.4	D	43.4	D
CR 46/S Broadway St	38.3	D	35.3	D	35.3	D	35.3	D
CR 46/Pioneer Rd	16.7	B	29.1	C	29.1	C	29.1	C
CR 46/Hazel Hill	14.9	B	13.2	B	13.2	B	13.2	B
Hazel Hill/Maple Dr	11.8	B	11.4	B	11.4	B	11.4	B

The other observation made outside the Pioneer Rd corridor occurred at the intersection on TH 29 at 50th Avenue. The westbound left turn movement fails under both existing and future No Build traffic volumes. A new interchange placed east of TH 29 reduces traffic volumes along 50th Avenue resulting in a notable westbound left turn delay reduction under all three Build conditions. See Table 6.7 and 6.8 below:

Table 6.7: Intersection Operations Analysis Results (AM)
WB Left Turn at TH 29/50th Ave

Intersection	Level of Service - AM					
	Left Turn		Thru		Right Turn	
	Delay(s)	LOS	Delay(s)	LOS	Delay(s)	LOS
Existing	38.9	D	3.9	A	5.5	A
No Build 2045	38.6	D	3.6	A	6.3	A
2045 Concept 1	29	C	6	A	4.1	A
2045 Concept 2	30.1	C	6.1	A	3.7	A
2045 Concept 3	29.7	C	6.2	A	5.1	A

Table 6.8: Intersection Operations Analysis Results (PM) WB Left Turn at TH 29/50th Ave						
Intersection	Level of Service - PM					
	Left Turn		Thru		Right Turn	
	Delay(s)	LOS	Delay(s)	LOS	Delay(s)	LOS
Existing	72	E	6.4	A	1.3	A
No Build 2045	150	F	17.8	B	5.2	A
2045 Concept 1	38.2	D	6	A	7	A
2045 Concept 2	41.8	D	5.6	A	6.5	A
2045 Concept 3	40.7	D	5.4	A	8.1	A

Build condition intersections located along Pioneer Road from the EB I-29/South Ramps intersection north to 50th Avenue were modeled with varying intersection control alternatives. Modeled results are shown in Table 6.9 and 6.10:

Table 6.9: Intersection Control Alternatives – Pioneer Road from I-94 to 50th Avenue								
Intersection	Level of Service - AM							
	2-Way Stop		All-Way Stop		Roundabout		Signal	
	Delay(s)	LOS	Delay(s)	LOS	Delay(s)	LOS	Delay(s)	LOS
50th Avenue	43.9	E	20.2	C	7.6	A	17.1	B
WB I-94 Ramps	50.5	F	13.2	B	6.1	A	16.9	B
EB I-94 Ramps	5.7	A	7.5	A	4.2	A	13.4	B

Table 6.10: Intersection Control Alternatives – Pioneer Road from I-94 to 50th Avenue								
Intersection	Level of Service - PM							
	2-Way Stop		All-Way Stop		Roundabout		Signal	
	Delay(s)	LOS	Delay(s)	LOS	Delay(s)	LOS	Delay(s)	LOS
50th Avenue	47.4	E	21.6	C	4.3	A	19.1	B
WB I-94 Ramps	103.9	F	13.6	B	5.9	A	15.9	B
EB I-94 Ramps	6.6	A	7.6	A	4.1	A	13.6	B

Intersection control alternatives were not evaluated further at the remaining intersections along Pioneer Road north of 50th Avenue. The intersections located at 46th Avenue and at High School Driveway No. 1 operate at LOS A under existing 2-way stop control for No Build and all Build scenarios. The intersection at CR 46 currently operates as a traffic signal.

The intersection at High School Driveway No. 2 involves the west approach operating as WB only (enter-only). The single stop sign at the intersection controls WB traffic from the east approach. High School Driveway No. 2 operates at LOS B or C under all No Build or Build scenarios. All LOS C results are in the low range with the highest delay recorded at 17.9 seconds during the High School PM peak hour, which is relatively close to LOS B. The range for LOS C is 15 – 25 seconds delay.

Pioneer Road will accommodate future traffic volumes with a two-lane section including separate left and right turn lanes. Forecast ADT is 12,700 vehicles per day (vpd) south of 50th Street, and 19,200 vpd north of 50th Street to CR 46. The Federal Highway Administration (FHWA) estimates the existing section can accommodate up to 20,000 vpd, and potentially more depending on traffic modeling. Queue analysis for Concepts 1-3 show acceptable operations. See Appendix I for the queue analysis report.

7.0 Evaluation of Conceptual Layouts

An evaluation of conceptual layouts was completed to assess how the alternatives meet the purpose and need and to identify impacts within the study area. Evaluation criteria is summarized in Section 7.1 and an evaluation summary is provided in Section 7.2.

7.1 Evaluation Criteria

7.1.1 Responsiveness to the Purpose and Need

The purpose and need were established in Section 2. This metric addressed the degree that the concepts meet the purpose and need. Concept 4, the no-build alternative, did not meet the purpose and need because it did not improve operations along the TH 29 corridor. All other alternatives satisfied the purpose and need because they provided improved operations.

7.1.2 Rest Area Impacts

Impacts to the rest area considered impacts during and after construction. Concepts 1 and 2 did not greatly impact the rest area. Concept 3 requires the reconstruction of the rest area ramps to accommodate the C-D road.

7.1.3 Traffic Impacts

For each alternative, traffic impacts considered the ability of an alternative to respond to purpose and need. Specifically, the ability to reduce future traffic volumes and impacts on TH 29, and correspondingly, to mitigate increased traffic volume impacts along Pioneer Road.

7.1.4 Utility Impacts

Utility impacts were considered where there were conflicts between in-place utilities and the conceptual layout foot prints. No major utility impacts were identified.

7.1.5 Right-of-Way Impacts

For each concept considered, approximate ROW requirements were determined using parcel boundaries provided by MnDOT. The construction limits were compared against the parcel map and impacted properties were identified. If the finished footprint engaged a portion of private property without engaging a structure, a portion of the parcel was identified for acquisition by adding a buffer to the construction limit. No structures were identified as being impacted. Determination of the overall ROW take requirement was estimated by summing the total area impacted.

7.1.6 Drainage Impacts

Regardless of concept, each layout largely preserves the overall stormwater runoff discharge patterns of the existing condition. Due to the size of the study area and increased impervious area, stormwater basins will be required to provide water quality treatment and flood control detention. Approximate basin locations are based on existing grades and maintaining existing discharge points. Appropriately designed drainage ditches, culverts, and minor storm sewer systems will be required to route as much of the site's runoff through these basins as feasible to meet permit and internal MnDOT design requirements. The only anticipated stormwater related permit is the MPCA NPDES Construction Stormwater Permit for water quality treatment and construction related erosion and sediment control. A MDNR Public Waters Work Permit will be required for the unnamed creek crossing. Appendix B depicts the existing drainage features in the conceptual layouts.

7.1.7 Wetland Impacts

Each of the conceptual layouts impact existing wetlands in two locations. The first location is a narrow section of Doebben's Marsh in the southeast portion of the study area. The second is a narrow portion of a large unnamed wetland basin in the northwest corner of the study area. Both impacts are not anticipated to adversely affect the wetland basins.

7.1.8 Public Input

Public Input was mixed for all four concepts. There was no clear preference for any specific conceptual layout.

7.1.9 Cost

A high level cost estimate was created for the three interchange conceptual layouts. There was no cost associated with the no-build concept. The estimate included right-of-way acquisition, design engineering, construction, construction administration, and local road improvements outside of the interchange concept areas. Given the conceptual layouts were at the study level, a 20% contingency was applied to the construction and right-of-way acquisition portions of the estimate. Additionally, a three million dollar range was applied to each cost. See Appendix C for the cost breakdown.

7.2 Evaluation Matrix

Table 7.2-1 Rating Criteria

Rating	Value	Description
↑	+1	Positive Effects
↔	0	Negligible or No Effects
↓	-1	Negative Effects

Table 7.2-2 Evaluation Matrix

Criteria	Concept 1 (Folded Diamond with Weave)	Concept 2 (Offset Intersections)	Concept 3 (Diamond with C-D Road)	Concept 4 (No-Build)
Responsiveness to the Purpose and Need (P&N)	↑ P&N addressed	↑ P&N addressed	↑ P&N addressed	↓ P&N not addressed
Rest Area Impacts	↑ Limited construction impacts	↑ Limited construction impacts	↔ Exit and entrance ramps impacted during construction	N/A
Traffic Impacts	↑ Reduced future traffic on TH 29 and mitigated traffic along Pioneer Road	↑ Reduced future traffic on TH 29 and mitigated traffic along Pioneer Road	↑ Reduced future traffic on TH 29 and mitigated traffic along Pioneer Road	N/A
Utility Impacts	↔ Limited impacts	↔ Limited impacts	↔ Limited impacts	N/A
Right-of-Way Impacts	↓ 67.3 Acres	↓ 76.9 Acres	↓ 66.8 Acres	N/A
Drainage Impacts	↔ Limited impacts	↔ Limited impacts	↔ Limited impacts	N/A
Wetland Impacts	↓ 1.2 Acres	↓ 1.4 Acres	↓ 1.4 Acres	N/A
Public Input	↔ Mixed Public Preference	↔ Mixed Public Preference	↔ Mixed Public Preference	N/A
Cost	↑ $30 - $33 Million	↔ $33 - $36 Million	↑ $30 - $33 Million	N/A
Total	+2	+1	+1	-1

8.0 Conclusion

The goal of the I-94 Lake Burgen Interchange Study was to establish a purpose and need, engage stakeholders, identify existing constraints, and to develop conceptual layouts. These goals have been summarized in the study report, so that it can be used as a tool to secure funding and advance the interchange development.

In addition to the development of conceptual layouts, a traffic analysis was performed to support the project purpose and need. The modeling demonstrated the ability of the concepts to reduce future traffic volumes and impacts on TH 29, and correspondingly, to mitigate increased traffic impacts along Pioneer Road.

In order to accommodate the future traffic needs, it is anticipated that the City of Alexandria and Douglas County will work together to study and potentially improve the Pioneer Road and CR 46 Corridors.

Given the I-94 Lake Burgen Interchange development is at a study level, a preferred concept was not chosen. This report is intended to be a tool to secure funding and to advance the development of the interchange. A decision will be made on the final proposed geometrics once funding is secured and the project moves through the environmental documentation and design phases.