December 2008

Bridge Avenue

Corridor Study

ROAD DESIGN-TYPE EVALUATION

For

Freeborn County
City of Albert Lea
Minnesota Department of Transportation

SRF CONSULTING GROUP, INC.

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I. INTRODUCTION

Bridge Avenue (CSAH 22) serves as one of the primary conduits between Albert Lea's downtown area and its commercial/residential areas to the north and access to I-90. Physical constraints and historic development patterns have led to the absence of parallel alternate routes, which means this corridor plays an important role in the County's and City's transportation system. The Bridge Avenue corridor serves a wide variety of land uses, including the Albert Lea Airport, Riverland Community College, High School, County Fairgrounds, single-family and high-density residential, and significant commercial and industrial developments. The one-mile segment between Hammer Road and I-90 is subject to significant new growth in commercial, industrial and residential land uses. Industrial land uses, such as Northaire Industrial Park, also impact the corridor with their generation of heavy commercial vehicles.

As many communities have grown, changing development patterns have resulted in roadways serving a mix of functions. Presently, Bridge Avenue faces the challenge of safely providing for the movement of traffic, including pedestrians and bicycles, while balancing the need for mobility and access to current residents, businesses and industries. As growth and development occur, local and regional agencies have become increasingly concerned with long-term operational, safety and access needs along the corridor.

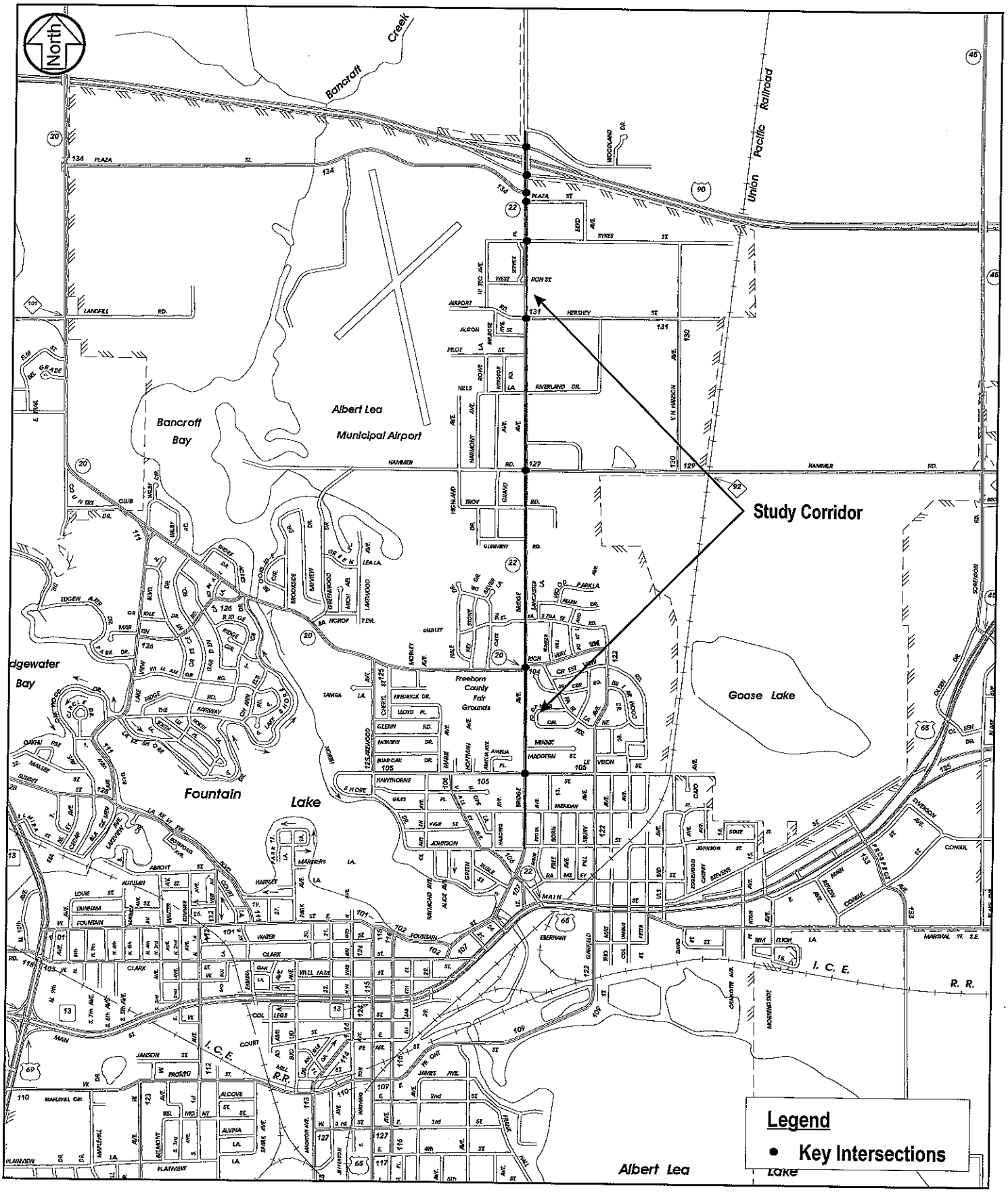
Study Objectives

The Bridge Avenue Corridor Road Design-Type Study was undertaken to review and evaluate safety and operational issues as well as preliminary environmental concerns for the three build alternatives chosen for the corridor. Included are preliminary cost estimates for each alternative, derived using roadway cross-sections (Bridge Avenue Corridor Study, November 2005), existing right-of-way limits (provided by city staff), parcel information (Draft Implementation Plan, July, 2006), and environmental inventory results. The primary result of this analysis is a summary matrix comparing the three alternatives. The study area, as shown in Figure 1, focuses on the segment of Bridge Avenue between I-90 and Marshall Street/TH 65.

Alternatives are evaluated based on the following study objectives:

- Provide adequate capacity on Bridge Avenue
- Limit unsafe roadway geometrics
- Correct existing roadway deficiencies
- Provide facilities that accommodate multi-modal transportation
- Seek to minimize public costs
- Accommodate public/private facilities
- Consistency with County and City plans

As a result of this study, a summary matrix will be developed to provide for comparison of the three alternatives as they relate to the study objectives.



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STUDY CORRIDOR

BRIDGE AVENUE CORRIDOR STUDY
Freeborn County / City of Albert Lea

Figure 1

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II. EXISTING CONDITIONS

Analyzing and assessing existing conditions in the study area establishes a baseline to project future traffic and development trends. In doing so, existing issues and conditions can be placed in context with future local and agency needs. In addition, the alternatives can be evaluated on their ability to address long-term needs.

The evaluation of existing conditions includes the following:

- Daily traffic volumes
- Crash analysis
- Access
- Design characteristics

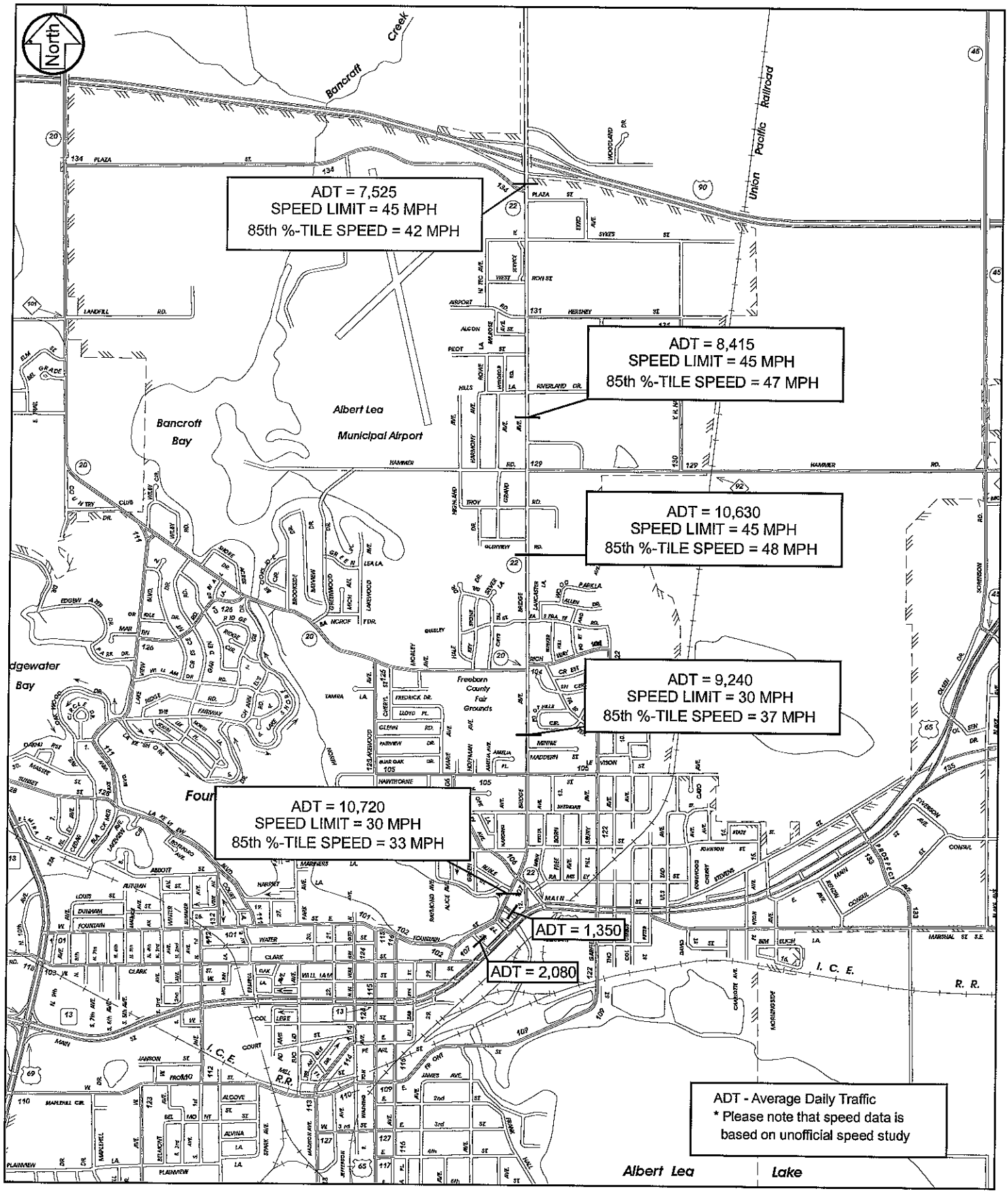
Daily Traffic Volumes

In 2005, the City conducted daily tube counts at the following locations along the study corridor:

- South of Marshall Street
- South of Richway Drive
- North and South of Hammer Road
- South of I-90
- On Wilson Street and Katherine Street between Bridge Avenue and Main Street

The data was collected using tube counters, in order to obtain data for a full 24-hour period. As shown in Figure 2, daily traffic volumes along the Bridge Avenue corridor range from approximately 7,500 to 10,700 vehicles per day. Heaviest volumes are south of Hammer Road and south of Marshall Street. A review of the current daily traffic volumes can identify capacity deficiencies in the corridor.

Based on the current volumes and planning-level capacities, all two-lane segments of Bridge Avenue (areas south of Hammer Road) are theoretically operating near capacity. See Appendix A for planning-level daily traffic capacity thresholds. This suggests the need to plan for corridor upgrades to adequately meet current and future transportation demands.



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EXISTING AVERAGE DAILY TRAFFIC VOLUMES AND SPEEDS

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Figure 2

Safety

Safety is important to both the general public and to those responsible for maintaining roadway facilities. To better understand the extent and severity of safety problems on Bridge Avenue, an intersection crash analysis was reviewed.

The City of Albert Lea performed an intersection crash analysis using crash records from January 1, 2001 through December 31, 2003 (*Bridge Avenue Corridor Crash Analysis Study dated June 15, 2005*). This analysis included all intersection crashes between Hoeger Lane and Clark Street. The study corridor includes four signalized intersections and 23 side-street stop controlled intersections. In addition, three non-street intersections (County Fairgrounds, Northbridge Mall and HyVee) were included.

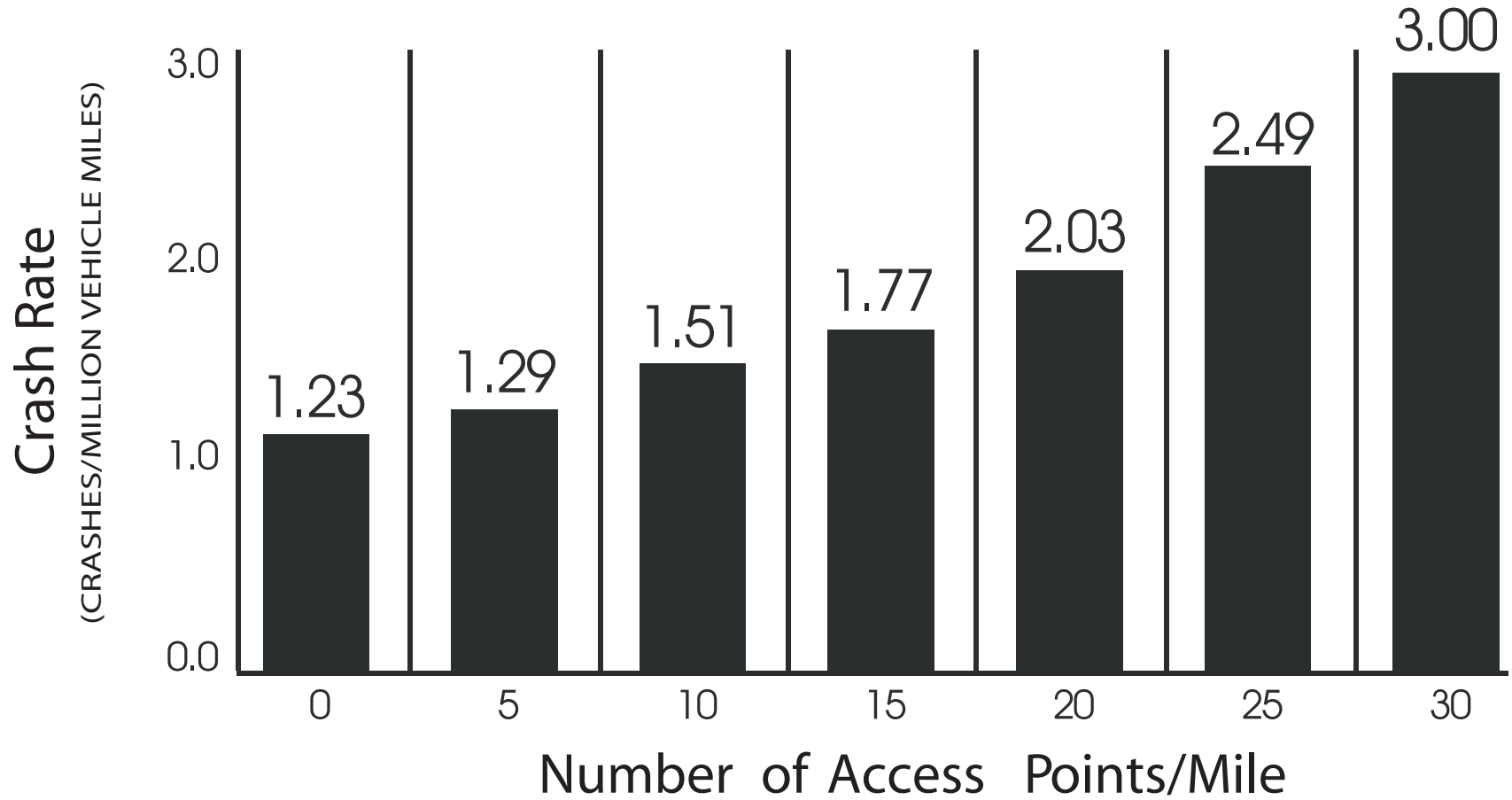
Over the three-year period, there were 164 intersection crashes. Out of the 164 crashes, 59 (36 percent) occurred at a signalized intersection and 105 (64 percent) occurred at a side-street stop controlled intersection. The Bridge Avenue intersections at Hawthorne Street, Johnson Street, Hills Lane/Riverland Drive and Fountain Street are experiencing a crash rate higher than the critical crash rate. If the intersection crash rate is higher than the critical crash rate, the location is considered to exceed the average rate by a statistically significant amount. However, the severity of crashes has been low and no fatalities occurred during the study period. The majority of the crashes at the remaining intersections are rear-end collisions and the main factor is an inattentive driver.

In 2007, Freeborn County performed a Road Safety Audit which included five intersections on Bridge Avenue between Marshall Street and I-90. They were the intersections at Marshall Street, Hawthorne Street, CSAH 20, Hammer Road and Sykes Street.

In the draft Road Safety Audit suggestions, it was recommended that Bridge Avenue be upgraded and widened to a 3 or 4/5 lane facility to accommodate future traffic volumes and improve safety.

Access

A comprehensive inventory was conducted for all access points along the corridor. Two basic types of access points were identified, public and private. The inventory shows 110 access points over the 2.85 mile corridor, or approximately 39 access points per mile. Access guidelines are important because they define a starting point for balancing property access, safety and mobility concerns. A number of studies have demonstrated a relationship between the number of access points and the number of crashes, including *FHWA Access Research Report No. FHWA-RD-91-044*. The results of this federal study are presented in Figure 3.



Source: FHWA, Publication number FHWA-RD-91-044 (Nov. 1992)
Note: Study Data is from Two-Lane Highways in Minnesota

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ACCESS/CRASH RELATIONSHIP

BRIDGE AVENUE CORRIDOR STUDY
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Figure 3

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Design Characteristics

A review of the existing roadway sections, including right-of-way, lane geometry and pedestrian/bicycle accommodations were considered. Bridge Avenue is currently a three-lane roadway between I-90 to Sykes Street and a two-lane roadway for the remaining corridor. Right-of-way along the corridor is 100 feet (44 feet of paved roadway) from I-90 to north of Minnie Maddern Street. From a point north of Minnie Maddern Street to Marshall Street, the right-of-way is limited to 66 feet (34 feet of paved roadway). There are currently sidewalks on both sides of the corridor between Minnie Maddern Street and Marshall Street. In addition, there are sidewalks on the east side of the corridor between Hershey Street and Minnie Maddern Street.

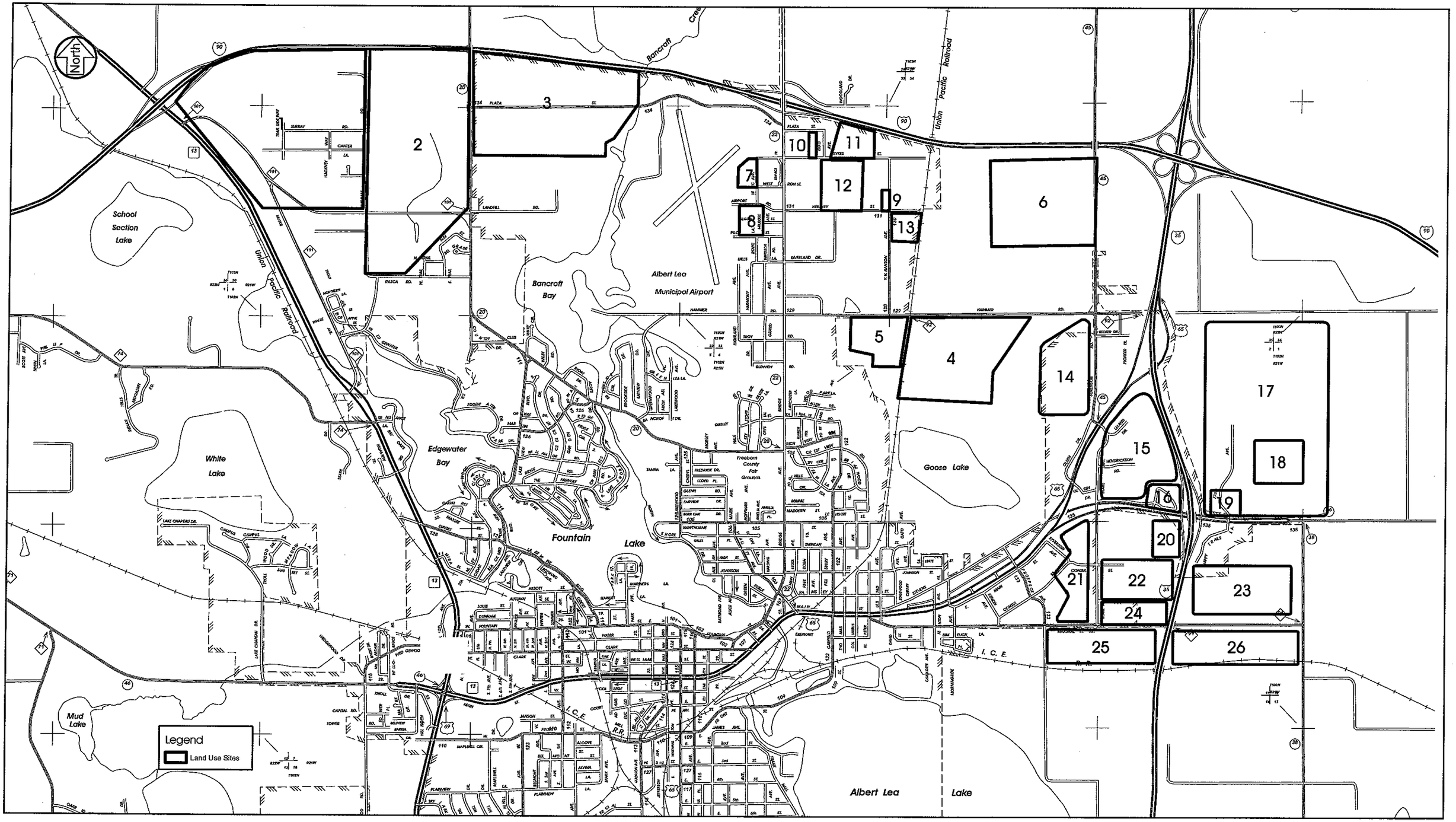
III. FUTURE CONDITIONS

There are a number of factors that influence how a roadway and/or a system functions. Because these facilities take a long time to plan and construct, and are expected to serve future demands, it is important to evaluate them for future conditions (growth trends and other expected changes). Evaluating the corridor for these future conditions will enable the study partners to develop and work toward a plan that meets the long-term needs of the area. This section highlights future conditions that will influence the function of Bridge Avenue.

Traffic Forecasts

In order to develop a long-term plan for the corridor, traffic forecasts for year 2025 were developed for the Bridge Avenue corridor in the 2005 Bridge Avenue Study. Working with City staff, future proposed/planned developments/redevelopments were identified, including land use type and size. These developments are expected to generate additional trips that will use the Bridge Avenue corridor. Future land uses that will impact the corridor are illustrated in Figure 4.

Trip generation estimates for the a.m. and p.m. peak hours and daily volumes were calculated for future 2025 conditions, based on land use type and size, and trip generation rates from the 2003 ITE Trip Generation Reports. These future trips were then distributed to the supporting roadway network, based on current travel patterns in the area. Using the combination of existing and future peak hour trips generated by target parcels, daily traffic volumes were developed for the study corridor. As shown in Figure 5 daily traffic volumes along the Bridge Avenue corridor are estimated to range from approximately 17,900 to 20,600 vehicles per day north of Eastgate Road. At the south end, volumes are estimated to range from approximately 11,600 to 14,500 vehicles per day. If the proposed land use changes are realized over the next 20 years, the increase in traffic volume that is projected to use the corridor suggests the need to plan for increased capacity in most segments of the corridor (i.e. most segments will need to be widened to four-lanes with turn lanes to adequately accommodate future traffic demands). See Appendix A for planning-level daily traffic capacity thresholds. **It should be noted that future growth north of I-90 was <u>not</u> included, and as a result the forecasts may be conservative.**



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PROPOSED LAND USE DEVELOPMENTS

BRIDGE AVENUE CORRIDOR STUDY
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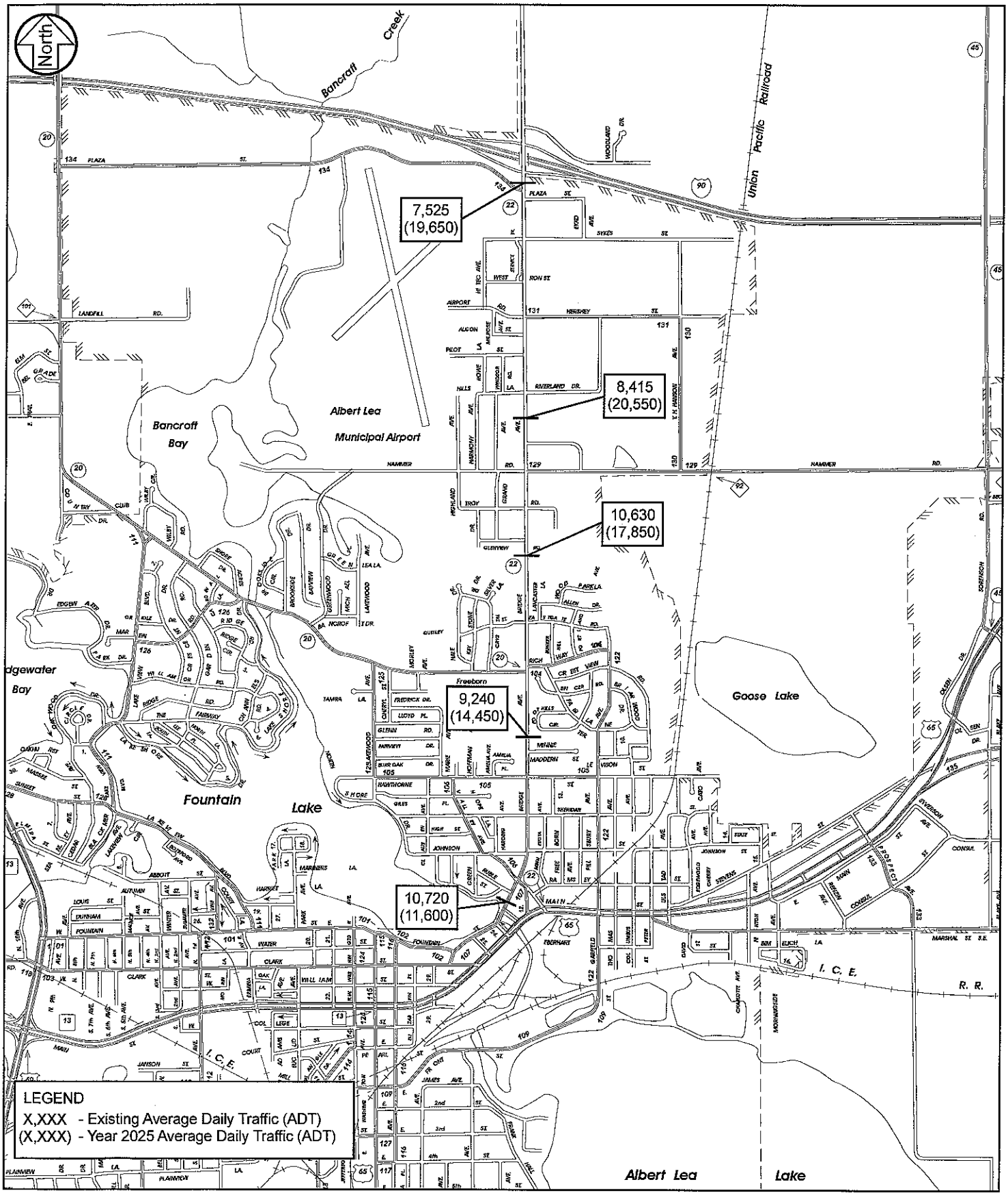
Figure 4



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EXISTING AND FUTURE AVERAGE DAILY TRAFFIC VOLUMES

BRIDGE AVENUE CORRIDOR STUDY
Freeborn County / City of Albert Lea

Figure 5

IV. FUTURE CORRIDOR PLAN

The primary focus of the corridor study is to maintain the safe and efficient movement of people through the corridor, as well as to provide appropriate access to residents, businesses and other facilities. Limiting access has been demonstrated to have positive safety and traffic flow benefits. However, with the high volume of traffic projected in the corridor, it should be recognized that access modifications alone will not provide the necessary benefits to achieve the desired levels of safety and function (mobility). As a result, access strategies should focus not only on mitigating current safety issues but also support the development of future roadway improvements that are necessary to adequately meet corridor mobility needs.

In order to clarify the roadway improvements necessary to address safety and mobility issues in the study area, this chapter identifies roadway improvements and their associated design characteristics. The recommended improvements will reduce conflicts throughout the corridor and improve north-south traffic flow.

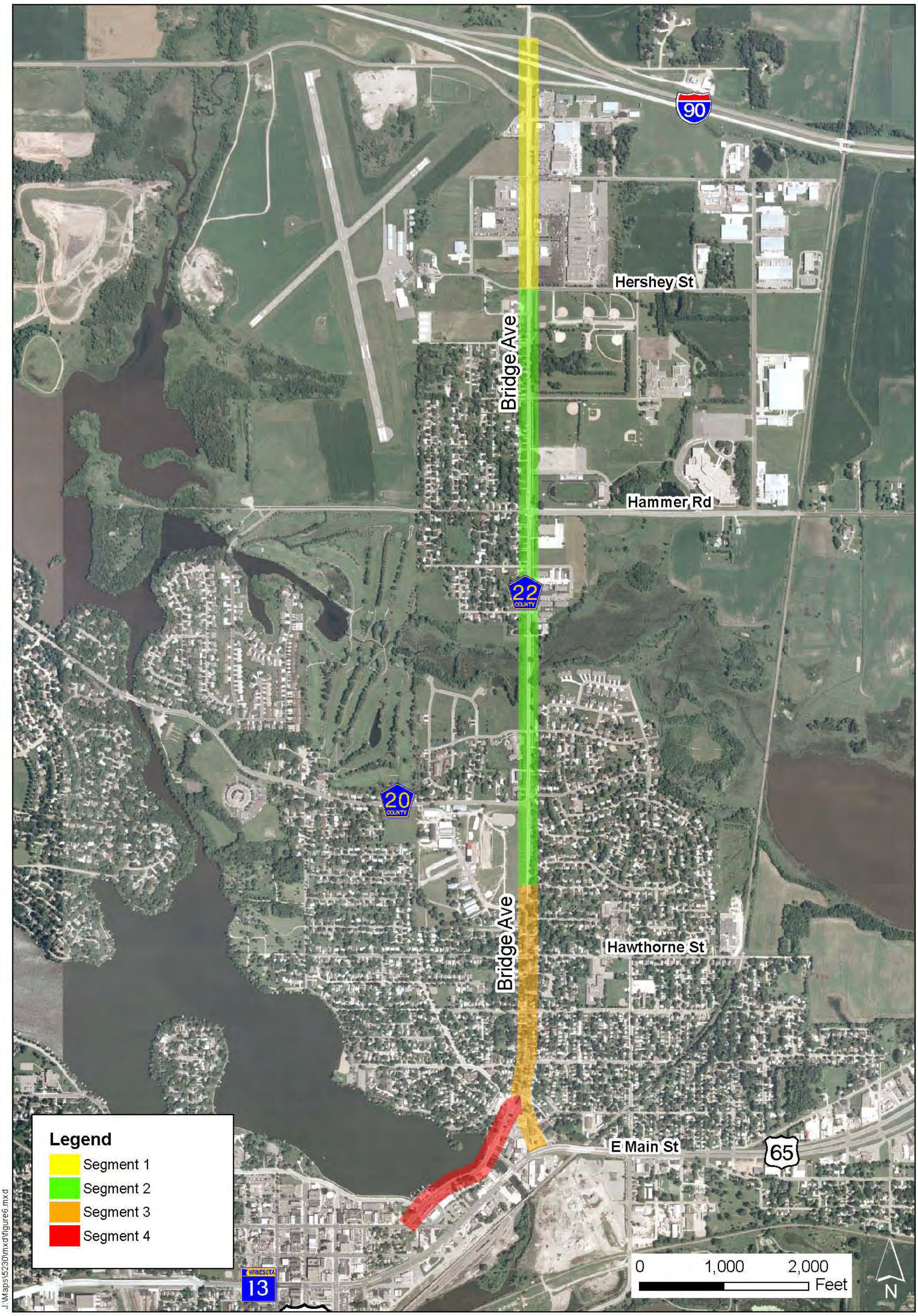
Roadway Improvements and Design Characteristics

As shown in Figure 6, the corridor was divided into three segments:

- Segment 1 – I-90 to Hershey Street
- Segment 2 – Hershey Street to north of Minnie Maddern Street
- Segment 3 – Minnie Maddern Street to Main Street

The following elements were considered while developing capacity improvements and design characteristics for each study segment and intersection areas:

- Existing roadway design (curb to curb width)
- Existing right-of-way width
- Existing and future adjacent developments
- Existing access
- Existing and forecast traffic volumes



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May, 2008

ROADWAY DESIGN SEGMENTS

Figure 6

BRIDGE AVENUE CORRIDOR STUDY

Freeborn County / City of Albert Lea

Roadway Characteristics

- **Segment 1:** This segment of Bridge Avenue is currently a three-lane roadway between I-90 and Sykes Street and a two-lane roadway between Sykes Street and Hershey Street. It currently carries approximately 7,500 vehicles per day (19,700 vehicles per day in 2025). Segment 1 has a 44-foot curb-to-curb paved width and 100-foot right-of-way.

- **Segment 2:** This segment of Bridge Avenue is currently a two-lane roadway between Hershey Street and north of Minnie Maddern Street that carries approximately 10,600 vehicles per day north of Eastgate Road (20,600 vehicles per day in 2025 north of Hammer Road). Segment 2 has a 44-foot curb-to-curb paved width, 100-foot right-of-way and numerous residential driveways.

- **Segment 3:** This segment of Bridge Avenue is a two-lane roadway north of Minnie Maddern Street to Marshall Street that currently carries approximately 9,200 vehicles per day (14,500 vehicles per day in 2025). Segment 3 has a 34-foot curb-to-curb paved width, 66-foot right-of-way and numerous residential driveways.

Roadway Improvements Based on Traffic Volumes

In evaluating the different design choices as to ability to accommodate future traffic volumes (2025), Appendix A Planning-Level Average Daily Traffice (ADT) Thresholds were compared to the projected volumes as follows:

- **2-lane urban design** accommodates an ADT of 8,000 to 10,000 vehicles per day (vpd). Future ADT's on Bridge Avenue range from 14,500 to 20,600 vpd. These future volumes are well beyond the capacity of a 2-lane design to accommodate them.
- **3-lane urban design** accommodates an ADT of 14,000 to 17,000 vpd. The future ADT on Bridge Avenue between Marshall Street and Minnie Maddern Street is 14,500 vpd which falls within the maximum range of ADT that a 3-lane design can accommodate. However, from Minnie Maddern Street to I-90, the 2025 traffic volumes are in excess of what a 3-lane facility can accommodate. Additionally, with funding constraints, a facility needs to have a life well beyond the 20 year design frame. Given that and the conservative forecast volumes, a 3-lane design would not be expected to accommodate the future volumes beyond 2025 in the segment from Marshall Street to Minnie Maddern Street.
- **4-lane divided urban design** accommodates an ADT from 28,000 to 32,000 vpd which is well above the 2025 forecasted volumes. With the additional capacity in the 4-lane divided design, this facility will be able to accommodate considerably more future growth on the corridor beyond 2025.
- **Segment 1, 2, and 3**: Based on this analysis of existing and future traffic volumes, roadway segments 1, 2, and 3 should be reconstructed into a four-lane divided section (72-foot curb-to-curb paved width) with turn lanes at key intersections (72-foot curb-to-curb paved width).

Other Improvements

The recreational trail system around the lakes, into the intersection of Marshall Street and Main Street and continuation to the south and east to Blazing Star Trail is an important component of the Plan. Providing a complete recreational trail system supports the goal to maintain the safe and efficient movement of people through the corridor.

Another roadway alternative studied, including the segment from Bridge Avenue to TH 65 on Marshall Street is described below:

Bridge Avenue/Marshall Street Realignment Alternative

As part of the study, the realignment of Bridge Avenue to improve its connection to Main Street was considered. As shown in Figure 7, a realignment concept for the intersection of Bridge Avenue and Marshall Street was developed. The realignment of Bridge Avenue to connect Main Street could reduce overall trips using Bridge Avenue to the downtown area. It would also improve intersection operations and safety at the intersection of Bridge Avenue and Marshall Street. With a supporting feasibility analysis, installation of a roundabout at this intersection could be considered. Additional analysis is required to provide adequate sight distance and address the need for a future traffic signal (with advance warnings) at the intersection of Bridge Avenue and Main Street.

Minnesota Ave
Ramsey St
65
22
COUNTY
Johnson St
Marshall St
Harding Ave
Ruble Ave
Albert Lea St
Bridge Ave
Wilson St
Shellrock St
N
100
0
100
Feet
Photo Source: City of Albert Lea

V. DESIGN-TYPE EVALUATION

The following table presents SRF staff's initial effort, at qualitatively estimating design-type's relative ability to address the key transportation goals and criteria. Study information collected to-date was used for this comparison.

This table's assessment is presented to assist decision makers in the review of each alternative's merits according to an acceptable range of factors that measured transportation goals. A "✓" signifies the alternative's ability to satisfy the corresponding goal/criteria. Blank cells represent an alternative's inability to satisfy the respective goal/criteria, or the alternative's ability is less than that of other alternatives.

This matrix assessment is intended to provide documentation of the preliminary evaluation process, so that rejected design-types need not be re-analyzed during the environmental assessment. The three alignment alternatives with the selected design-type should be more fully analyzed in a quantitative fashion, during later phases of the corridor study.

Figure 8

ALTERNATIVE DESIGN-TYPE EVALUATION

Goals/Criteria	No Build	Modified 2 Lane	3 Lane	4 Lane Divided	Notes
▪ Provide Adequate Capacity Criteria: Volume/Capacity ratios existing and future traffic volumes	--	--	✓ (Marshall to CSAH 20 Only)	✓	▪ Existing—Signalized intersections operate at Level C or better and unsignalized operate at Level A (individual approaches are as low as Level C). Existing traffic volumes on various segments of Bridge Avenue range from 7525 vpd, south of I90 to 10,720 vpd north of Marshall. 2 lane segments operating near capacity. 2025 forecasted traffic volumes range from 11,600 vpd, north of Marshall to 20,550 vpd north of Hammer Road. 2 lane segments would operate at or above capacity ▪ No Build—Operates near capacity now. Operates at or over capacity in near future. ▪ 2-lane Modified—Signalized intersections would operate at an acceptable LOS under existing traffic volumes and fair/poor under future volumes. Segments operate near capacity now and at or over capacity in future. Unsignalized intersections at side street approaches would experience significant delays in future. ▪ 3-Lane—Signalized intersections would operate okay now. In future segments would exceed or be near capacity ▪ 4-Lane Divided—Okay for both existing and future traffic volumes
▪ Correct Roadway Deficiencies Criteria: Number of deficient intersections upgraded (capacity and/or geometrics)	--	--	--	✓	▪ Existing—Approximately 110 access points between Marshall and I90 ▪ No Build—No intersection improvements. No access removal or restrictions. No roadway segments upgraded to current design standards. ▪ 2-Lane Modified—( ) intersections improved. ( ) access removed or restricted. Roadway segments upgraded for design standards but not to capacity standards. ▪ 3-Lane—All intersections would be improved to provide left turn lanes on Bridge Avenue. Provides turning lane for all access points. Does remove access points in segments requiring full takes in ROW. ▪ 4-Lane Divided—Removes access points in segments requiring full takes in ROW. Restricts access points not at intersections to right in/right out only throughout entire corridor due to raised medians. Provides protected left turn lanes on Bridge Avenue at all intersections.
▪ Limit Overall & Long-Term Construction Costs Criteria: seek to minimize public cost	--	--	--	✓	▪ No Build—No cost initially but No Build is not a realistic or feasible Alternative as existing roadway will require reconstruction in future to maintain structural integrity. ▪ 2-Lane Modified—Initial construction cost lower than other build alternatives. However, roadway will not be adequate to handle traffic by or before 2025. This is well ahead of its design life (25 years) or more realistically its expected life (50-75 years) based on current funding levels. As a result the roadway will need to be reconstructed and upgraded for capacity prior to its expected life span. Therefore, the roadway will be reconstructed twice. Freeborn County's Roadway Life Cycle is in excess of 50 years under current funding levels. ▪ 3-Lane—Initial construction cost slightly higher than 2-Lane Modified design, but less than 4-Lane Divided design. Design will be at or near capacity on most segments by 2025 which is well ahead of its design life (25 years) and expected life (50-75 years). Result is the roadway will need to be reconstructed and upgraded at least from CSAH 20 to I90 prior to its expected life span. Therefore the segment from CSAH 20 to I90 will be reconstructed twice. ▪ 4-Lane Divided—Highest initial cost but roadway will be able to handle future traffic through its design life and should handle traffic through its expected life of 50-75 years. As a result, 4-lane divided has lowest overall cost
▪ Provide Facilities that Accommodate Multi-Modal Transportation Criteria: Accommodate trucks, bicycle/pedestrians, transit	--	--	✓	✓	▪ No Build—As roadway deteriorates, road restrictions will need to be imposed. Road restrictions would continue to be lowered as structural capacity of road deteriorates, finally resulting in no truck traffic. Limited intersection geometrics restrict good truck movements. Segments of Bridge Avenue do not have adequate right-of-way to accommodate both trails and sidewalks. ▪ 2-Lane Modified—Segments of Bridge Avenue that are not upgraded at the intersections would restrict good truck turning movements. Segments of Bridge Avenue would not have adequate right-of-way to accommodate both trails and sidewalks (assumes no additional ROW except at modified intersection areas). ▪ 3-Lane—Would accommodate multi-modal forms of transportation ▪ 4-Lane Divided—Would accommodate multi-modal forms of transportation. Median provides safety island for crossing at non-signalized intersections.
▪ Promote Safety Criteria: limit unsafe roadway geometrics	--	--	--	✓	▪ No Build—No access restrictions. No separate turn lanes. Restricted intersection geometrics. Some segments do not meet current design standards. ▪ 2-Lane Modified—Minimal access removal or restrictions. No separate turn lanes except at modified intersections. Restricted intersection geometrics except at modified intersections. ▪ 3-Lane—Access removal in segments requiring full take ROW. Provides center left turning lane throughout corridor. Winter conditions could negate/minimize benefit of center turn lane due to poor visibility of the striping. ▪ 4-Lane Divided—Access removal and access restrictions (RI/RO at non-intersection access points) throughout the corridor. Raised median provides safety island for pedestrians at non-signalized intersections. Raised median provides better delineation for left turn lane than painted center left turn lane.
▪ Limit Overall & Long-Term ROW Costs Criteria: seek to minimize public costs	--	--	--	✓	▪ No Build—Not feasible or realistic. Road will require reconstruction in the future to accommodate traffic demand and deteriorating structural capacity. This will require the acquisition of ROW at a later date and based on past history, at a higher cost. (ROW costs have consistently risen at a greater rate than the Cost of Living) ▪ 2-Lane Modified—Initial ROW required at modified intersections and segments with current inadequate ROW to accommodate design. In addition, ROW will be required in the future when design cannot accommodate traffic volumes. ▪ 3-Lane—Initial ROW required on segments with inadequate ROW to accommodate the design. In addition, ROW will be required in the future on segments not able to accommodate the traffic demand ▪ 4-Lane Divided—Highest initial ROW cost but no additional ROW required for the life of the roadway or for future reconstruction after its life span (50-75 years in the future). 4-lane divided has lowest overall cost. ▪ See Appendix B for a Design-Type cost comparison.
▪ Accommodate other Infrastructure Improvements & Operations Criteria: Area and location for other infrastructure	--	--	✓	✓	▪ No Build—Infrastructure improvements, public and private utilities, will require portions or all of the existing roadway to be removed and replaced over time. Considerable impact to traffic during these improvements. Considerable safety issues in maintaining utilities within the roadway. ▪ 2-Lane Modified—Infrastructure improvements would be made during roadway construction. However, main utilities would need to be placed within the roadway due to limited ROW. Maintenance and operation of the utilities would impact traffic movements and safety. ▪ 3-Lane—Infrastructure improvements would be made during construction of the roadway in those segments requiring upgrade. Utilities would still be in some roadway segments not upgraded which would impact traffic and safety but to a lesser degree than the 2-Lane Modified design. ▪ 4-Lane Divided—Infrastructure improvements would be made during construction and all or most of the utilities could be located outside of the roadway due to the extra ROW available. Maintenance and operation of the utilities would have no or minimal affect on traffic and safety.

VI. NEXT STEPS

Freeborn County CSAH 22/Bridge Avenue Corridor Study Matrix

CSAH 22/Bridge Avenue Preliminary Cost Estimates/Time Frame	
1. Alternatives Scoping/Traffic Analysis Phase	
Task	**Costs**
Alternatives Analysis Documentation of previous study alternatives including traffic conditions/forecasts Identify additional alternatives Evaluate Alternatives Develop/refine preliminary layouts and cross-sections Prepare preliminary cost estimates Identify preliminary right-of-way impacts	**$25,000-30,000***
Scoping Total	**$25,000-$30,000**
Estimated Time Frame: 6-12 months	
2. ENVIRONMENTAL DOCUMENTATION (EA/EAW)	
Environmental Assessment (EA/EAW) Conceptual design work Environmental analysis and report Public participation and project management	
Phase 2 Total	**$45,000-$65,000**
Estimated Time Frame: 6-9 months	
3. RIGHT OF WAY PRESERVATION	
Preliminary layout for Official Map Prepare official map	$80,000-$100,000** $40,000-$60,000
Phase 3 Total	**$120,000-$160,000**
Estimated Time Frame: 6 months	
4. FINAL DESIGN	
Final Design Fees (Assumes total project design)	$800,000 to $1 Million
Phase 4 Total	**$800,000 to $1 Million**
Estimated Time Frame: 6-9 Months	

*Assumes that the 2005 study data for traffic conditions and future traffic forecasts are still valid
**Portions of this work/cost may be done in the Alternatives Analysis and/or Environmental Documentation to determine impacts.

VII. FUNDING SOURCES

The passage of the 2008 Transportation Funding Bill and Constitutional Amendment dedicating all of the Motor Vehicle Sales Tax (MVST) to transportation is a step in the right direction for providing funding for transportation. While this will provide additional revenue to Freeborn County and the City of Albert Lea, it does not come close to funding the needs identified on their systems.

Financial Strategies

Implementation strategies should consider present funding constraints; however, the funding picture will likely fluctuate many times over the next 20 years. Therefore, agencies need to employ a number of funding and implementation strategies aimed at building the infrastructure that will support their long-term growth strategies.

In general, this means:

- Public-private partnerships should be considered for every project as a way to fairly distribute construction or reconstruction costs of routes that can be shown to provide improved transportation benefits to selected areas, business or both.
- Agencies may have to partner, pool resources and jointly lobby for outside funding assistance to fund major projects that could provide significant long-term benefits to the region.
- Pursue a State Aid transportation needs analysis to increase annual funding allotments.
- Pursue identified changes to State Aid system to increase needs.
- Consider non-traditional funding for major system projects, such as, bonding.

Freeborn County has transportation needs that substantially exceed current local agency funding revenue sources. This suggests that agencies will need to be creative and more aggressive in seeking funds. The following are examples of strategies that the agencies could pursue to obtain funds for developing the needed infrastructure.

Federal Funds

There are projects in the Freeborn County area that lend themselves to consideration of federal funding. These projects tend to be large capital projects that affect the greater region. A prime example is the upgrade of CSAH 22 that will provide transportation benefits not only to the community, but also to the state highway system.

Annual Appropriations

Annually the federal government passes Appropriation bills to finance the operation of the government for the coming year and fund the federal programs. Transportation funding is one of the Appropriation bills. In the past, Congress has included appropriations to special “earmarked”

projects that have been requested by an individual or a delegation of congressmen. While the large majority of local requests do not get special appropriations due to the limited funds available, some projects that have significant impact to the community and transportation system do. In most cases the projects receiving appropriation have been earlier included in the multi-year Authorization bill for Transportation. The new Congress leaders are looking at whether to cut back or eliminate earmarks in appropriation bills in the future.

Future Transportation Reauthorization Bill

For projects that could be funded beyond the current Transportation bill's time period, 2010 and beyond, the county should pursue federal earmarking in the next Transportation Reauthorization bill (FY 2010). To position the county project for favorable consideration by your congressman and Minnesota senators, advanced work on the project is helpful. All preliminary design activities should follow federal guidelines to ensure the project will be eligible for federal funding.

Congressional High Priority Project (HPP) Funds

For county road projects that have a significant impact to communities and the county's transportation system. (Applicability: reconstruction, future major connectivity routes, and reliever for congested routes with appropriate functional classification)

Area Transportation Partnership (ATP) Funds

Agencies should aggressively pursue these funds by documenting the transportation needs, level of support, environmental work, and right-of-way preservation activities. Freeborn County has benefited in the past on ATP projects eligible to receive federal funds.

County State Aid Highway (CSAH) Funds

Minnesota law dictates that all counties in the state receive a portion of the funds that the state collects from the gas tax and motor vehicle license fees known as the Highway User Tax Distribution Fund. CSAH funds can only be used for eligible items on designated County State Aid Highways.

Local Road Program

In 2002, the Legislature created the Local Road Improvement Program and established two accounts to provide funding assistance to local agencies in construction, reconstruction, or reconditioning projects with regional significance. The two accounts are the Trunk Highway Corridor Projects Account and the Local Road Account for Routes of Regional Significance.

State Roads of Regional Significance Funds (from biennial bonding bills) for construction or reconstruction of county roads that address major system deficiencies, contribute to economic development, or redevelopment efforts.

Other potential state funding sources are:

- **Comprehensive Highway Safety Plan (CHSP) Central Fund** for grants to implement safety projects (i.e., safety audits, cost-effective lane departures or intersection improvements). (Applicability: high crash sites, county-wide signing, lighting, guardrail and/or shouldering upgrades)

- **Mn/DOT Local Agreement Program**, which is meant to assist the state and local jurisdictions, resolve spot transportation issues such as channelization or signal projects on the state system. (Applicability: New CSAH 22/TH65 intersections)

- **Mn/DOT Access Management Program Funding** to help county/cities close, consolidate or otherwise develop access alternatives that maximize the capacity of TH's. (Applicability: TH 65)

- **State Gas Tax Increase**, which will increase the state-aid allocation to Freeborn County and the City of Albert Lea. (Applicability: CSAH improvements)

- **County Sales Tax**: The 2008 legislature included a County Sales Tax option as part of the overall transportation funding bill. The option would although Counties outside the metro area to add a 1/2 cent sales tax to the current State sales tax to be spent for transportation purposes only. The 1/2 cent sales tax would have to be approved by the county's voters in a referendum.

- **Local Property Tax:** Local contributions through local property taxes (city and county) can generate revenues for smaller projects, project development, access management and right-of-way preservation on CSAH projects and full funding on county road projects. The magnitude of these funds is unlikely to be able to fully fund major high cost projects; however, they can contribute a portion and fund smaller projects. The key is that Freeborn County should establish and maintain a stable property tax revenue dedicated for transportation.

- **Bonding** is a potential source of revenue for major projects. The county and the city should investigate this to determine the level of bonding that could be captured and paid. Secondly, as current bonds are paid off, the county should shift the bond payments to the transportation budget or issue new bonds for transportation projects and continue the current bond payments to finance the repayment of the transportation bonds.

- **Development/Infrastructure Fees:** One of the reasons for the substantial infrastructure needs is the growth that is occurring with the communities. Therefore, it is a reasonable expectation that cities should capture revenues from these developments to help fund the infrastructure needs. Cities should be aggressive in their negotiations with developers to ensure that revenues are obtained to fund necessary improvements, and/or the developers make the improvements as part of the development. In this time of growing financial constraints and budget issues, many cities and counties are no longer able to completely fund the infrastructure or improvements needed to address the traffic impacts generated by the new developments. Development fees may provide the cities

and counties with a portion of the costs for improving existing roadways or creating new roadways.

- **Freeborn County's Cost Participation Policy** should be reviewed and revised to ensure that the cost participation by the county and local agencies reflect the appropriate benefit each agencies receives from the proposed improvements.

- **Cooperative Agreements** with cities or townships for mutually-desired capacity expansion, reconstruction, or trail improvements. (i.e., city secures the right of way and the county constructs the improvement as part of a county roadway project).

- **Dedication/Donation of Right-of-Way:** All agencies, especially cities, should preserve right-of-way for the key arterial and collector corridors. Agencies should pay special attention to intersections of major facilities (e.g., provide additional width for potential turn lanes, bus stops). Agencies should first attempt to have right-of-way designated as part of the platting process. In other instances, agencies may consider official mapping, and/or direct purchase.

- **Third-Party Agreements** (i.e., city, county or private developer) to construct turning lanes, traffic signals, intersection or access improvements where all parties have an interest in, and agree to share in, the responsibility for a roadway improvement. (*Applicability:* CSAH/CR improvements that are impacted by the development within a city.)

- **Environmental Documentation:** Even though funding may not be available, agencies should pursue environmental documentation for selected key projects that have a significant need. This will better position the project for future funding. Past history has shown that projects with completed environmental work and public support often receive funding when new funding is approved.

VIII. FINDINGS AND RECOMMENDATIONS

The Road Design-Type Evaluation was undertaken as part of the Bridge Avenue Corridor Study, in order to identify the pros and cons, preliminary right-of-way impacts, and develop preliminary cost estimates for each alternative. This study will also includes a comparison matrix of the three Bridge Avenue corridor alternatives, developed as part of the alternative evaluation process (Figure 8). The study findings and recommendations are summarized below.

Study Findings

1. Bridge Avenue is an important north-south transportation facility within the City of Albert Lea and Freeborn County. As a main arterial, it will continue to carry a significant volume of traffic and play an important role in the region.

2. There is a lack of parallel facilities to this corridor due to physical constraints and historic development patterns.

3. Traffic volumes on Bridge Avenue are currently 7,500 to 10,700 vehicles per day. All two-lane segments of Bridge Avenue are from a planning-level analysis operating at or over capacity. Daily traffic volumes for year 2025 are expected to increase to 14,500 to 20,550 vehicles per day.

4. Based on the 2025 daily traffic volumes the comparison of road design types in Chapter 4, Roadway Improvements Based on Traffic Volumes, only the 4-lane divided urban design will be able to accommodate the 2025 volumes on all segments of Bridge Avenue. The 4-lane divided urban design will also have excess capacity to accommodate considerably more traffic growth beyond the 2025 time frame and more in line with the realistic highway life of 50 – 75 years due to funding constraints.

5. Based on an operational analysis of both the a.m. and p.m. peak hours, the level of service results for the intersections and side-street approaches indicate delays within normal ranges. However, there are currently a significant number of direct access points along the study corridor. Due to the number of access points dispersed along the corridor, volumes on the side-street approaches of the intersections are lower. Therefore, the intersections themselves operate at a better level of service, while the overall corridor operations may be affected.

6. A comprehensive access inventory conducted for the corridor identified 110 access points over the 2.8 mile corridor, or approximately 39 access points per mile. The number of access points along the corridor far exceeds general access guidelines (one-half mile spacing for full-access intersections and signals along a principal arterial). The consolidation and elimination of some existing access points, developing frontage roads where feasible and proposing the conversion of some existing access points to right-in/right-out is needed to increase overall mobility and improve safety along the corridor. The timing of these changes will depend upon development along the corridor and availability of construction and/or right-of-way funds.

7. In evaluating the 3-lane design to the 4-lane design on minimizing or restricting access to Bridge Avenue, a “Catch-22” situation becomes evident. The 3-lane design will work for

the 2025 projected traffic volumes in the segment from Marshall Street to CSAH 20. However, the key feature of constructing a 3-lane design is to remove left turning vehicles out of the through-lane. Road segments, such as Bridge Avenue between Marshall Street and Minnie Maddern, have numerous accesses along it and would normally be considered for a 3-lane design. The "Catch-22" is due to the narrow right-of-way on this segment and the close proximity of the buildings and homes to the road and right-of-way.

The lightly scenario is that property on one side of Bridge Avenue will need to be taken in full, thereby leaving few or no accesses on one side of Bridge Avenue, even with possible redevelopment of excess property, if any.

Couple that with the situation that the road design chosen will need to handle future traffic growth not just for the next 25 years, but realistically for 50-75 years, which leads to the conclusion that only a 4-lane divided facility can both reduce and/or restrict access along Bridge Avenue and be capable of handling future traffic volumes over the realistic life of the roadway.

8. Freeborn County's Roadway Life Cycle is shown to be greater than 50 years and more realistically around 75 years based on current and expected future revenue needed to reconstruct the existing County highway system. This statistic is of extreme importance in determining what design of Bridge Avenue should be constructed.

   Even with the conservative 20 year (2025) projected traffic volumes, that **does not** include future development north of I-90, a 2-lane design or a 3-lane design between CSAH 20 and I-90 **will not** be capable of handling the traffic volumes. Therefore, Bridge Avenue will have to be **reconstructed twice**, in possibly less than 20 years to meet the traffic demand. Also, the second reconstruction would need to be a 4-lane divided facility which is a current design choice.

   If you consider that revenue sources only will provide funding to reconstruct Freeborn County's highways, including Bridge Avenue, on an approximate 75 year cycle which is at least 3 times longer than the expected capacity life of the 2-lane or 3-lane facility. Therefore, not only will Bridge Avenue need to be reconstructed again to a 4-lane divided facility but due to funding shortfalls, the community may well have to endure many years of congestion and safety issues until funds become available for the reconstruction.

   In all cases, with the exception of the 4-lane divided design, the other design-types if constructed will require upgrading and reconstruction to a 4-lane design during the current County highway life cycle of 50 to 75 years.

Study Recommendations

1. Based on future growth projections and lack of alternative routes, this facility will continue to be heavily used. The County and City should consider developing Bridge Avenue to a four-lane divided roadway with turn lanes at key intersections over time to address safety, operational and mobility issues.

2. The City and County should continue to define the alignment and right-of-way needed on the south end of the corridor. This will enable them to be more proactive in obtaining future right-of-way.

APPENDIX A

Roadway Traffic Capacity Planning-Level Daily Thresholds

Roadway Traffic Capacity
Planning-Level Daily Thresholds

Cross-Section	Maximum Two-way ADT			
Two-lane undivided rural	ADT =	14,000	-	15,000
Two-lane undivided urban	ADT =	8,000	-	10,000
Two-lane divided urban (Three-lane)	ADT =	14,000	-	17,000
Four-lane undivided urban	ADT =	18,000	-	22,000
Four-lane divided urban (Five-lane)	ADT =	28,000	-	32,000
Four-lane divided rural	ADT =	35,000	-	38,000
Four-lane freeway	ADT =	60,000	-	80,000
Six-lane freeway	ADT =	90,000	-	120,000

Definitions:

Undivided – An undivided roadway does not have a raised median separating opposing traffic or left-turn lanes for turning traffic.

Divided – A divided roadway has a raised median separating opposing traffic, left-turn lanes and right-turn lanes.

Rural – A rural design implies higher speeds, fewer cross streets/accesses and cross streets/accesses with low volumes.

Urban – An urban design implies lower speeds, more cross streets/accesses and cross streets/accesses with higher volumes.

Freeway – A freeway is a divided roadway with limited access and no traffic signals or other traffic control.

The above table provides planning-level capacity thresholds for different roadway cross-sections. These thresholds can be used to identify existing and future capacity problems. However, because of variations in traffic as well as roadway characteristics, which do not always fall neatly into the above categories, capacity/operational issues should be confirmed through other sources if possible.

APPENDIX B

Bridge Avenue Corridor Design-Type Cost Comparison

Bridge Avenue Corridor
Design-Type Cost Comparison

2-lane Urban (replace as is)
Segment 1—I-90 to Hershey St (3000 ft=0.57 miles)

• Roadway	$1,083,000
• Signals (0)	0
• Sidewalk—both sides	63,000
	$1,146,000
• ROW	0
• Utilities	$850,000
Total	$1,996,000 or $2.0 Million

Segment 2—Hershey to Minnie Maddern (7200 ft = 1.36 miles)

• Roadway	$2,584,000
• Signals (2)	450,000
• Sidewalk—both sides	150,000
	$3,184,000
• ROW	0
• Utilities	$575,000
Total	$3,759,000 or $3.8 Million

Segment 3—Minnie Maddern to Marshall (2150 ft = 0.41 miles)

• Roadway	$779,000
• Signals (2)	450,000
• Sidewalk—both sides	45,000
	$1,274,000
• ROW	0??
• Utilities	$330,000
Total	$1,604,000 or $1.6 Million

2-lane urban Modified
Segment 1

• Roadway	$1,083,000
• Signals (add Sykes)	225,000
• Sidewalk—both sides	63,000
• Modified Intersection (1)	250,000
	$1,621,000
• ROW	0

- Utilities $850,000
  Total $2,471,000 or $2.5 Million

Segment 2

- Roadway $2,584,000
- Signals (2) 450,000
- Sidewalk—both sides 150,000
- Modified Intersections (2) 500,000
  $3.684,000

- ROW 0
- Utilities $575,000
  Total $4,259.000 or $4.3 Million

Segment 3

- Roadway $779,000
- Signals (2) 450,000
- Sidewalk—both sides 45,000
- Modified Intersections (2) 500,000
  $1,774,000

- ROW $700,000
- Utilities 330,000
  Total $2,804,000 or $2.8 Million

3-Lane Urban

Segment 1

- Roadway $1,368,000
- Signals (add Sykes) 225,000
- Sidewalk—both sides 63,000
  $1,656,000

- ROW 0
- Utilities $850,000
  Total $2,506,000 or $2.5 Million

Segment 2

- Roadway $3,264,000
- Signals (2) 450,000
- Sidewalk—both sides 150,000
  $3,864,000

• ROW	0	
• Utilities	$575,000	
Total	$4,439,000	or $4.5 Million

Segment 3

• Roadway	$984,000	
• Signals (2)	450,000	
• Sidewalk—both sides	45,000	
	$1,479,000	
• ROW	$3,266,400	
• Utilities	330,000	
Total	$5,075,400	or $5.1 Million

4-lane Urban Divided
Segment 1

• Roadway	$2,565,000	
• Signals (add Sykes)	225,000	
• Sidewalk—both sides	63,000	
	$2,853,000	
• ROW	$15,000	easements
• Utilities	850,000	
Total	$3,718,000	or $3.8 Million

Segment 2

• Roadway	$6,120,000	
• Signals (2)	450,000	
• Sidewalk—both sides	150,000	
	$6,720,000	
• ROW	$33,000	easements
• Utilities	575,000	
Total	$7,328,000	or $7,4 Million

Segment 3

• Roadway	$1,845,000	
• Signals (2)	450,000	
• Sidewalk—both sides	45,000	
	$2,340,000	
• ROW	$3,791,400	
• Utilities	330,000	
Total	$6,461,400	or $6.5 Million

Segment 4—Bridge Ave to TH 65 on Marshall (.20 miles)

• Roadway	$900,000
• Signal (1)	225,000
• Sidewalk—both sides	22,000
	$1,147,000
• ROW	$660,000
• Utilities	$100,000
• TH 65 Intersection	$1,000,000
Total	$2,907,000 or $2.9 Million

SUMMARY

2-lane Urban

- **Segment 1 $2.0 Million**
- **Segment 2 $3.8 Million**
- **Segment 3 $1.6 Million**

  Total $7.4 Million

2-lane Urban Modified

- **Segment 1 $2.5 Million**
- **Segment 2 $4.3 Million**
- **Segment 3 $2.8 Million**

  Total $9.6 Million

3-lane Urban

- **Segment 1 $2.5 Million**
- **Segment 2 $4.5 Million**
- **Segment 3 $5.1 Million**

  Total $12.1 Million

4-lane Urban Divided

- **Segment 1 $3.8 Million**
- **Segment 2 $7.4 Million**
- **Segment 3 $6.5 Million**
- **Segment 4 $2.9 Million**

  Total $20.6 Million

APPENDIX C

Environmental Review Summary

SRF No.0076259

MEMORANDUM

TO: Bradley Larson, P.E.
Senior Associate

FROM: Chad Holtmeyer
Environmental Planner

DATE: January 7, 2009

SUBJECT: BRIDGE AVENUE CORRIDOR STUDY
ALBERT LEA, MINNESOTA
ENVIRONMENTAL REVIEW SUMMARY

This memorandum provides a summary of the environmental documentation that has occurred to date for the proposed Bridge Avenue improvement project in Albert Lea, Minnesota.

The National Wetland Inventory Map is included on the attached Figure 1.

The Minnesota State Historic Preservation Office (SHPO) was notified of the project as part of the early coordination efforts. The SHPO provided the results of a file search for archaeological and historic properties within the project area on October 12, 2007 (see attached). The identified properties include:

- County Fairgrounds (multiple buildings, most of which have since been moved)
- Four properties with residential dwellings
- Bridge No. 4754
- New Denmark Park (Lincoln Park)

An inventory of parks and community facilities within or near the project corridor was prepared. Parks, community facilities, and identified historic properties are depicted on the attached Figure 2.

The Minnesota Department of Natural Resources (DNR) Natural Heritage database was also consulted as part of early coordination efforts. In its response on October 29, 2007, the DNR identified two threatened species as being recorded within the project area (see attached). The species identified include the Blanding's Turtle and the Tuberous Indian-plantain.

U.S. Census Year 2000 database research yielded no quantifiable minority or low-income populations within the project area. The block groups within the project area contain fewer minorities than both the city of Albert Lea and Freeborn County. Income data also represent negligible differences in income between the block groups and their larger geographies (the city of Albert Lea and Freeborn County).

Based on a Minnesota Pollution Control Agency (MPCA) online contaminated site search, no known contaminated properties within or adjacent to the project corridor were located (October 4, 2007). A Phase I Environmental Site Assessment (ESA) was not conducted.

Research on soil types represented in the project area was also performed as part of the preliminary analysis. Dickinson fine sandy loam, Lester loam, and udorthents each made up over 10 percent of the soil types in the project area.

CRH/smf

Attachments: SHPO Letter
MnDNR Letter
Figure 1: National Wetlands Inventory Map
Figure 2: Parks, Community Facilities and Identified Historic Properties

H:\Projects\6259\ENV\Environmental Review Memo\Environmental Review Memo 010709.docx

Chad Holtmeyer - RE: Request for search: Albert Lea East

From: "Cinadr, Thomas" <Thomas.Cinadr@MNHS.ORG>
To: "'Chad Holtmeyer'" <choltmeyer@srfconsulting.com>
Date: 10/12/2007 9:31 AM
Subject: RE: Request for search: Albert Lea East
Attachments: Archaeology.doc; Historic.doc

THIS EMAIL IS NOT A PROJECT CLEARANCE.

This message simply reports the results of the cultural resources database search you requested. The database search produced results for only previously known archaeological sites and historic properties. Please read the note below carefully.

For further information contact Kelly Gragg-Johnson by phone at 651-259-3455 or email at kelly.gragg-johnson@mnhs.org.

Archaeological sites and historic properties were identified in a search of the Minnesota Archaeological Inventory and Historic Structures Inventory for the search area requested. Reports containing the results of the search are attached.

The result of this database search provides a listing of recorded archaeological sites and historic architectural properties that are included in the current SHPO databases. Because the majority of archaeological sites in the state and many historic architectural properties have not been recorded, important sites or structures may exist within the search area and may be affected by development projects within that area. Additional research, including field survey, may be necessary to adequately assess the area's potential to contain historic properties.

With regard to Environmental Assessment Worksheets (EAW), a negative known site/structure response from the SHPO databases is not necessarily appropriate information on which to base a "No" response to EAW Question 25a. It is the Responsible Governmental Unit's (RGU) obligation to verify the accuracy of the information contained within the EAW. A "No" response to Question 25a without written justification should be carefully considered.

If you require a comprehensive assessment of a project's potential to impact archaeological sites or historic architectural properties, you may need to hire a qualified archaeologist and/or historian. Please contact the SHPO by phone at 651-259-3450 or by email at mnshpo@mnhs.org for current lists of professional consultants in these fields.

The Minnesota SHPO Survey Manuals and Database Metadata can be found at http://www.mnhs.org/shpo/survey/inventories.htm

Tom Cinadr
Survey and Information Management Coordinator
Minnesota State Historic Preservation Office
Minnesota Historical Society
345 Kellogg Blvd. West
St. Paul, MN 55102

651-259-3453 (voice)
651-282-2374 (fax)

-----Original Message-----
From: Chad Holtmeyer [mailto:choltmeyer@srfconsulting.com]
Sent: Monday, October 08, 2007 3:51 PM
To: Cinadr, Thomas
Subject: Request for search: Albert Lea East

Dear Mr. Cinadr,

SRF Consulting Group, Inc., on behalf of Freeborn County, is completing an alternatives scoping evaluation for Bridge Avenue (CSAH 22) in Albert Lea, Minnesota. The proposal includes the evaluation of three alternatives to identify the pros and cons, identify preliminary right-of-way impacts and develop preliminary cost estimates for each alternative.

We wish to identify resources in the area to avoid or accommodate in future planning. Therefore, we are requesting a search of the MNHS Report database for the project area and file searches of the Architectural/History Sites, Known Archaeological Sites, and Railroad Databases for the sections within the project area.

The sections located in the study area are: T 102 N R 21 W Sections 4, 9; and T 103 N R 21 W Sections 28, 30.

The search results can be sent to me via reply email or mailed to the address below. Please let me know if you have any questions about this request, or if you need the GIS shape files of the project area.

Thank you for your assistance.

Sincerely,
Chad Holtmeyer

Attachments:
Map 1: USGS quadrangles project location map

Chad Holtmeyer | Environmental and Community Planner
SRF Consulting Group, Inc.
One Carlson Parkway North, Suite 150
Minneapolis, MN 55447-4443
Phone: 763.475.0010 x 6897 | Fax: 763.475.2429
choltmeyer@srfconsulting.com | www.srfconsulting.com

History/Architecture

PROPERTY NAME	ADDRESS	Twp	Range	Sec	Quarters	USGS	Report	NRHP	CEF	DOE	Inventory Number
COUNTY	**Freeborn**										
CITY/TOWNSHIP:	**Albert**										
Municipal Parking Lot	130 Clark St. E	102	21	9	N-NW-SW	Albert Lea East	LE-2003-1H				FEA-AEA-196
CITY/TOWNSHIP:	**Albert Lea**										
Albert Lea City Hall	202 Broadway Ave. N.	102	21	9	NW-NW-SW	Albert Lea East	FE-85-1H	Y		Y	FE-AEA-001
Morlea Dairy	132 Broadway Ave. N.	102	21	9	NW-NW-SW	Albert Lea East	FE-85-1H	Y			FE-AEA-002
Johnson Laundry Co.	206 Broadway Ave. N.	102	21	9	NW-NW-SW	Albert Lea East	FE-85-1H	Y			FE-AEA-003
Upin Building	243-45 Broadway Ave. S.	102	21	9	SW-NW-SW	Albert Lea East	FE-85-1H	Y			FE-AEA-005
Southern Minnesota Gas & Electric Co.	100 Broadway Ave. N.	102	21	9	NW-NW-SW	Albert Lea East	FE-85-1H	Y			FE-AEA-008
First National Bank	139 Broadway Ave. S.	102	21	9	SW-NW-SW	Albert Lea East	FE-85-1H	Y			FE-AEA-012
Albert Lea State Bank	201 Broadway Ave. S.	102	21	9	SW-NW-SW	Albert Lea East	FE-85-1H	Y			FE-AEA-014
Henry J. Harm Jewelers	211 Broadway Ave. S.	102	21	9	SW-NW-SW	Albert Lea East	FE-85-1H	Y			FE-AEA-015
Skinner-Chamberlain Department Store	223-41 Broadway Ave. S.	102	21	9	SW-NW-SW	Albert Lea East	FE-85-1H	Y			FE-AEA-020
apartment building	321 Broadway Ave. S.	102	21	9	NW-SW-SW	Albert Lea East	FE-85-1H				FE-AEA-022
Freeborn County Courthouse	411 Broadway Ave. S.	102	21	9	NW-SW-SW	Albert Lea East	FE-85-1H				FE-AEA-023
Albert Lea Post Office	141 Newton Ave. S.	102	21	9	SW-NW-SW	Albert Lea East	FE-85-1H	Y	Y		FE-AEA-024
Albert Lea Post Office		102	21	9	SW-NW-SW	Albert Lea East	FE-2003-1H	Y	Y		FE-AEA-024
commercial building	241-45 Newton Ave. S.	102	21	9	SW-NW-SW	Albert Lea East	FE-85-1H				FE-AEA-025
Home Improvement Building	135-141 William St. E.	102	21	9	SW-NW-SW	Albert Lea East	FE-2003-1H	Y			FE-AEA-026
Home Improvement Building		102	21	9	SW-NW-SW	Albert Lea East	FE-85-1H	Y			FE-AEA-026
Danish Brotherhood Society Building	137 Clark St. E.	102	21	9	NW-NW-SW	Albert Lea East	FE-85-1H	Y			FE-AEA-027
Danish Brotherhood Society Building		102	21	9	NW-NW-SW	Albert Lea East	FE-2003-1H	Y			FE-AEA-027
commercial building	119-123 Clark St. E.	102	21	9	NW-NW-SW	Albert Lea East	FE-2003-1H	Y			FE-AEA-028

PROPERTY NAME	ADDRESS	Twp	Range	Sec	Quarters	USGS	Report	NRHP	CEF	DOE	Inventory Number
COUNTY	**Freeborn**										
CITY/TOWNSHIP:	**Albert Lea**										
commercial building	119-123 Clark St. E.	102	21	9	NW-NW-SW	Albert Lea East	FE-85-1H	Y			FE-AEA-028
commercial building	113-115 Newton Ave. S.	102	21	9	NW-NW-SW	Albert Lea East	FE-2003-1H	Y			FE-AEA-029
commercial building		102	21	9	NW-NW-SW	Albert Lea East	FE-85-1H	Y			FE-AEA-029
Freeborn County Cooperative Oil	116 Elizabeth Ave.	102	21	9	SW-NW-SW	Albert Lea East	FE-85-1H				FE-AEA-036
commercial buiding	xxx Newton Ave. S.	102	21	9	NW-SW-SW	Albert Lea East	FE-85-1H				FE-AEA-039
Farmstead Plant	xxx Pillsbury Ave.	102	21	9	NW-NW-SE	Albert Lea East	FE-85-1H				FE-AEA-042
Big Oak District School No. 58 (moved)	xxx Bridge St. N. (County Fairgrounds)	102	21	4	SE-SE-SW	Albert Lea East	FE-85-1H				FE-AEA-051
Ole Livdahlen Log House (moved)		102	21	4	SE-SE-SW	Albert Lea East	FE-85-1H				FE-AEA-052
District School No. 83 (moved)		102	21	4	SE-SE-SW	Albert Lea East	FE-85-1H				FE-AEA-053
log cabin (moved)		102	21	4	SE-SE-SW	Albert Lea East	FE-85-1H				FE-AEA-054
blacksmith, wagon & woodwork shop (moved)		102	21	4	SE-SE-SW	Albert Lea East	FE-85-1H				FE-AEA-055
Round Prairie Norsk Evangelical Lutheran Church (moved)		102	21	4	SE-SE-SW	Albert Lea East	FE-85-1H				FE-AEA-056
house (moved)		102	21	4	SE-SE-SW	Albert Lea East	FE-85-1H				FE-AEA-057
hardware store (moved)		102	21	4	SE-SE-SW	Albert Lea East	FE-85-1H				FE-AEA-058
house	502 High St.	102	21	9	SE-NW-NW	Albert Lea East	FE-85-1H				FE-AEA-061
house	701 Sheridan St.	102	21	9	NE-NW-NW	Albert Lea East	FE-85-1H				FE-AEA-062
house	709 Sheridan St.	102	21	9	NW-NW-N	Albert Lea East	FE-85-1H				FE-AEA-063
house	309 Johnson St.	102	21	9	SE-NE-NW	Albert Lea East	FE-85-1H				FE-AEA-064
house	209 Elizabeth Ave.	102	21	9	SW-NW-SW	Albert Lea East	FE-85-1H				FE-AEA-070
house	320 William St. E.	102	21	9	SE-NW-SW	Albert Lea East	FE-85-1H				FE-AEA-071
house	311 William St. E.	102	21	9	SE-NW-SW	Albert Lea East	FE-85-1H				FE-AEA-072
house	110 Lake Ave.	102	21	9	SE-NW-SW	Albert Lea East	FE-85-1H				FE-AEA-073
house	101 Lake Ave.	102	21	9	SE-NW-SW	Albert Lea East	FE-85-1H				FE-AEA-074

PROPERTY NAME	ADDRESS	Twp	Range	Sec	Quarters	USGS	Report	NRHP	CEF	DOE	Inventory Number
COUNTY	**Freeborn**										
CITY/TOWNSHIP:	**Albert Lea**										
Lex Burglund Garage	138-48 Broadway Ave. N.	102	21	9	NW-NW-SW	Albert Lea East	FE-85-1H	Y			FE-AEA-102
commercial building	101-05 Broadway Ave. S.	102	21	9	NW-NW-SW	Albert Lea East	FE-85-1H	Y			FE-AEA-103
commercial building	115 Broadway Ave. S.	102	21	9	NW-NW-SW	Albert Lea East	FE-85-1H	Y			FE-AEA-106
commercial building	117-19 Broadway Ave. S.	102	21	9	SW-NW-SW	Albert Lea East	FE-85-1H	Y			FE-AEA-107
commercial building	121 Broadway Ave. S.	102	21	9	SW-NW-SW	Albert Lea East	FE-85-1H	Y			FE-AEA-108
commercial building	127 Broadway Ave. S.	102	21	9	SW-NW-SW	Albert Lea East	FE-85-1H	Y			FE-AEA-109
commercial building	133 Broadway Ave. S.	102	21	9	SW-NW-SW	Albert Lea East	FE-85-1H	Y			FE-AEA-111
commercial building	137 Broadway Ave. S.	102	21	9	SW-NW-SW	Albert Lea East	FE-85-1H	Y			FE-AEA-113
commercial building	215 Broadway Ave. S.	102	21	9	SW-NW-SW	Albert Lea East	FE-85-1H	Y			FE-AEA-117
commercial building	219 Broadway Ave. S.	102	21	9	SW-NW-SW	Albert Lea East	FE-85-1H	Y			FE-AEA-119
commercial building	107 Clark St. E.	102	21	9	NW-NW-SW	Albert Lea East	FE-85-1H				FE-AEA-128
Blacklin Building	111-113 Clark St. E.	102	21	9	NW-NW-SW	Albert Lea East	FE-2003-1H	Y			FE-AEA-129
Blacklin Building		102	21	9	NW-NW-SW	Albert Lea East	FE-85-1H	Y			FE-AEA-129
commercial building	115 Clark St. E.	102	21	9	NW-NW-SW	Albert Lea East	FE-85-1H	Y			FE-AEA-130
commercial building		102	21	9	NW-NW-SW	Albert Lea East	FE-2003-1H	Y			FE-AEA-130
commercial building	125-129 Clark St. E.	102	21	9	NW-NW-SW	Albert Lea East	FE-2003-1H	Y			FE-AEA-131
commercial building		102	21	9	NW-NW-SW	Albert Lea East	FE-85-1H	Y			FE-AEA-131
commercial building	127 Clark St. E.	102	21	9	NW-NW-SW	Albert Lea East	FE-85-1H				FE-AEA-132
commercial building	129 Clark St. E.	102	21	9	NW-NW-SW	Albert Lea East	FE-85-1H				FE-AEA-133
commercial building	131 Clark St. E.	102	21	9	NW-NW-SW	Albert Lea East	FE-2003-1H	Y			FE-AEA-134
commercial building		102	21	9	NW-NW-SW	Albert Lea East	FE-85-1H	Y			FE-AEA-134
commercial building	201 Clark St. E.	102	21	9	NW-NW-SW	Albert Lea East	FE-2003-1H	Y			FE-AEA-135
commercial building		102	21	9	NW-NW-SW	Albert Lea East	FE-85-1H	Y			FE-AEA-135
commercial building	212 Clark St. E.	102	21	9	NW-NW-SW	Albert Lea East	FE-2003-1H	Y			FE-AEA-136

PROPERTY NAME	ADDRESS	Twp	Range	Sec	Quarters	USGS	Report	NRHP	CEF	DOE	Inventory Number
COUNTY	**Freeborn**										
CITY/TOWNSHIP:	**Albert Lea**										
commercial building	212 Clark St. E.	102	21	9	NW-NW-SW	Albert Lea East	FE-85-1H	Y			FE-AEA-136
commercial building	216 Clark St. E.	102	21	9	NW-NW-SW	Albert Lea East	FE-85-1H	Y			FE-AEA-137
commercial building		102	21	9	NW-NW-SW	Albert Lea East	FE-2003-1H	Y			FE-AEA-137
commercial building	218 Clark St. E.	102	21	9	NW-NW-SW	Albert Lea East	FE-2003-1H	Y			FE-AEA-138
commercial building		102	21	9	NW-NW-SW	Albert Lea East	FE-85-1H	Y			FE-AEA-138
commercial building	222-224 Clark St. E.	102	21	9	NW-NW-SW	Albert Lea East	FE-2003-1H	Y			FE-AEA-139
commercial building		102	21	9	NW-NW-SW	Albert Lea East	FE-85-1H	Y			FE-AEA-139
Freeport County Oil Co-Op	226 Clark St. E.	102	21	9	NW-NW-SW	Albert Lea East	FE-2003-1H	Y			FE-AEA-140
Freeport County Oil Co-Op		102	21	9	NW-NW-SW	Albert Lea East	FE-85-1H	Y			FE-AEA-140
garage	232 Clark St. E.	102	21	9	NW-NW-SW	Albert Lea East	FE-85-1H				FE-AEA-141
telephone exchange	107 Main St. E.	102	21	9	SW-NW-SW	Albert Lea East	FE-85-1H	Y			FE-AEA-157
commercial building	123-139 Main St. E.	102	21	9	SW-NW-SW	Albert Lea East	FE-85-1H				FE-AEA-158
commercial building	125 Newton Ave. N.	102	21	9	NW-NW-SW	Albert Lea East	FE-85-1H				FE-AEA-162
commercial building	202 Clark St. E.	102	21	9	NW-NW-SW	Albert Lea East	FE-85-1H				FE-AEA-163
commercial building	109 Newton Ave. S.	102	21	9	NW-NW-SW	Albert Lea East	FE-2003-1H	Y			FE-AEA-164
commercial building		102	21	9	NW-NW-SW	Albert Lea East	FE-85-1H	Y			FE-AEA-164
service station	110 Newton Ave. S.	102	21	9	NW-NW-SW	Albert Lea East	FE-85-1H				FE-AEA-165
commercial building	201-33 Newton Ave. S.	102	21	9	SW-NW-SW	Albert Lea East	FE-85-1H				FE-AEA-166
commercial building	235 Newton Ave. S.	102	21	9	SW-NW-SW	Albert Lea East	FE-85-1H				FE-AEA-167
Hatteburg Building (razed)	126-130 William St. E.	102	21	9	SW-NW-SW	Albert Lea East	FE-2003-1H	Y			FE-AEA-179
Hatteburg Building (razed)		102	21	9	SW-NW-SW	Albert Lea East	FE-85-1H	Y			FE-AEA-179
commercial building	126 William St. W.	102	21	9	SE-NE-SE	Albert Lea East	FE-2003-1H	Y			FE-AEA-180
commercial building		102	21	9	SE-NE-SE	Albert Lea East	FE-85-1H	Y			FE-AEA-180
Hellie Apartments	133 William St. W.	102	21	9	SE-NE-SE	Albert Lea East	FE-2003-1H	Y			FE-AEA-181

PROPERTY NAME	ADDRESS	Twp	Range	Sec	Quarters	USGS	Report	NRHP	CEF	DOE	Inventory Number
COUNTY	**Freeborn**										
CITY/TOWNSHIP:	**Albert Lea**										
Hellie Apartments	133 William St. W.	102	21	9	SE-NE-SE	Albert Lea East	FE-85-1H	Y			FE-AEA-181
commercial building	130 William St. W.	102	21	9	SE-NE-SE	Albert Lea East	FE-2003-1H	Y			FE-AEA-182
commercial building		102	21	9	SE-NE-SE	Albert Lea East	FE-85-1H	Y			FE-AEA-182
commercial building	134 William St. W.	102	21	9	SE-NE-SE	Albert Lea East	FE-2003-1H	Y			FE-AEA-183
commercial building		102	21	9	SE-NE-SE	Albert Lea East	FE-85-1H	Y			FE-AEA-183
commercial building	138 William St. W.	102	21	9	SE-NE-SE	Albert Lea East	FE-85-1H	Y			FE-AEA-184
commercial building		102	21	9	SE-NE-SE	Albert Lea East	FE-2003-1H	Y			FE-AEA-184
gas station	140 William St. W.	102	21	9	SE-NE-SE	Albert Lea East	FE-85-1H				FE-AEA-185
house (razed)	412 Grove Ave.	102	21	9		Albert Lea West					FE-AEA-187
Albert Lea Commercial Historic District	Broadway Ave. N., Water St. & Main St. E.	102	21	9	W-NW-SW	Albert Lea East	FE-85-1H	Y			FE-AEA-188
Bridge 4753	TH 65 over the Shell Shock River	102	21	9	SE-SE-NW	Albert Lea East					FE-AEA-190
Bridge No. 4754	TH 65 over trackage of the Chicago and Nort Wesern Railway	102	21	9	SE-SW-NE	Albert Lea East					FE-AEA-191
Western Grocery Building (Razed	SE corner of Broadway and Pearl	102	21	9	NW-SW-SW	Albert Lea East	FE-2001-1H				FE-AEA-194
Hotel Freeborn	120 Clark St. E	102	21	9	N-W-SW	Albert Lea East	FE-2003-1H	Y			FE-AEA-196
Commercial Buildings	123-133 E. William St.	102	21	9	N-W-SW	Albert Lea East	FE-2003-1H	Y			FE-AEA-197
commercial building	120 Elizabeth Ave.	102	21	9	N-W-SW	Albert Lea East	FE-2003-1H	Y			FE-AEA-198
Johnson Laundry Company	212 N. Broadway Ave.	102	21	9	N-W-SW	Albert Lea East	FE-2003-1H				FE-AEA-199
commercial building	115 N. Newton Ave.	102	21	9	N-W-SW	Albert Lea East	FE-2003-1H	Y			FE-AEA-200
Emstad's Liquors	101 S. Newton Ave.	102	21	9	N-W-SW	Albert Lea East	FE-2003-1H	Y			FE-AEA-203
gas station	114 S. Newton Ave.	102	21	9	N-W-SW	Albert Lea East	FE-2003-1H	Y			FE-AEA-204
Lincoln Park	Bridge Ave & Green Ave.	102	21	9	SW-SE-NW	Albert Lea East					FE-AEA-228

Archaeological Site Locations

Site Number	Site Name	Twp.	Range	Sec.	Quarter Sections	Acres	Phase	Site Description	Traditio	Context	Reports	NR	CEF	DOE
County:	**Freeborn**													
21FE0003		102	21	9	NW-SE	0		EW	W-2					
21FE0005		102	21	9	SE-NW	0		EW	W-2					
21FEx	Albert Lea Mill	102	21	9	NE-SW	0		HD						

Minnesota Department of Natural Resources

Natural Heritage and Nongame Research Program, Box 25

500 Lafayette Road

St. Paul, Minnesota 55155-4025

Phone: (651) 259-5107 Fax: (651) 296-1811 E-mail: krista.larson@dnr.state.mn.us

October 29, 2007

Mr. Chad Holtmeyer
SRF Consulting Group, Inc.
One Carlson Parkway North
Plymouth, MN 55447

Re: Request for Natural Heritage information for vicinity of proposed Bridge Avenue Alternative Scoping Evaluation, T102N R21W Sections 4 & 9 and T103N R21W Sections 28 & 33, Freeborn County
NHNRP Contact #: ERDB 20080304

Dear Mr. Holtmeyer,

Please note that the Township, Range, or Section information that was listed on the Data Request Form did not exactly match the project area as outlined on the map that was submitted with the form. The enclosed search results are for the area indicated on the map. Please contact me if the location description of your project area, as listed in the subject line of this letter, is in error.

The Minnesota Natural Heritage database has been reviewed to determine if any rare plant or animal species or other significant natural features are known to occur within an approximate one-mile radius of the area indicated on the map enclosed with your information request. Based on this review, there are 2 known occurrences of rare species or native plant communities in the area searched. For details, please see the enclosed database printouts and the explanation of selected fields.

The Natural Heritage database is maintained by the Natural Heritage and Nongame Research Program, a unit within the Division of Ecological Resources, Department of Natural Resources. It is continually updated as new information becomes available, and is the most complete source of data on Minnesota's rare or otherwise significant species, native plant communities, and other natural features. Its purpose is to foster better understanding and protection of these features.

Because our information is not based on a comprehensive inventory, there may be rare or otherwise significant natural features in the state that are not represented in the database. A county-by-county survey of rare natural features is now underway, but has not been completed for Freeborn County. Therefore ecologically significant features for which we have no records may exist on the project area.

The enclosed results of the database search are provided in two formats: short record report and long record report. To control the release of locational information, which might result in the damage or destruction of a rare element, both printout formats are copyrighted.

The short record report provides rare feature locations only to the nearest section, and may be reprinted, unaltered, in an Environmental Assessment Worksheet, municipal natural resource plan, or report compiled by your company for the project listed above. If you wish to reproduce the short record report for any other purpose, please contact me to request written permission. **The long record report includes more detailed locational information, and is for your personal use only. If you wish to reprint the long record report for any purpose, please contact me to request written permission.**

Please be aware that review by the Natural Heritage and Nongame Research Program focuses only on *rare natural features*. It does not constitute review or approval by the Department of Natural Resources as a whole. If you require further information on the environmental review process for other natural resource-related issues, you may contact your Regional Environmental Assessment Ecologist, Todd Kolander, at (507) 359-6073.

An invoice in the amount of $69.38 will be mailed to you under separate cover within two weeks of the date of this letter. You are being billed for the database search and printouts. Thank you for consulting us on this matter, and for your interest in preserving Minnesota's rare natural resources.

Sincerely,

Krista Larson
Endangered Species Environmental Review Technician

encl: Database search results
Rare Feature Database Print-Outs: An Explanation of Fields
Fact sheets: Blanding's Turtle

Minnesota Natural Heritage & Nongame Research Program
Short Record Report of Element Occurrences within 1 mile radius of:
Bridge Avenue Alternative Scoping Evaluation
T102N R21W Sections 4 & 9 and T103N R21W Sections 28 & 33
Freeborn County

Element Name and Occurrence Number	Federal Status	MN Status	State Rank	Global Rank	Last Observed Date	EO ID #
Freeborn County, MN						
Arnoglossum plantagineum (Tuberous Indian-plantain) #18 Location Description: T102N R21W S18, T102N R21W S17, T102N R21W S7, T102N R21W S6, T102N R21W S8, T102N R22W S13, T102N R22W S1, T102N R21W S5, T102N R22W S12		THR	S2	G4G5	1954-08-02	3880
Emydoidea blandingii (Blanding's Turtle) #296 Location Description: T102N R21W S4		THR	S2	G4	1988-05-26	9051

Records Printed = 2

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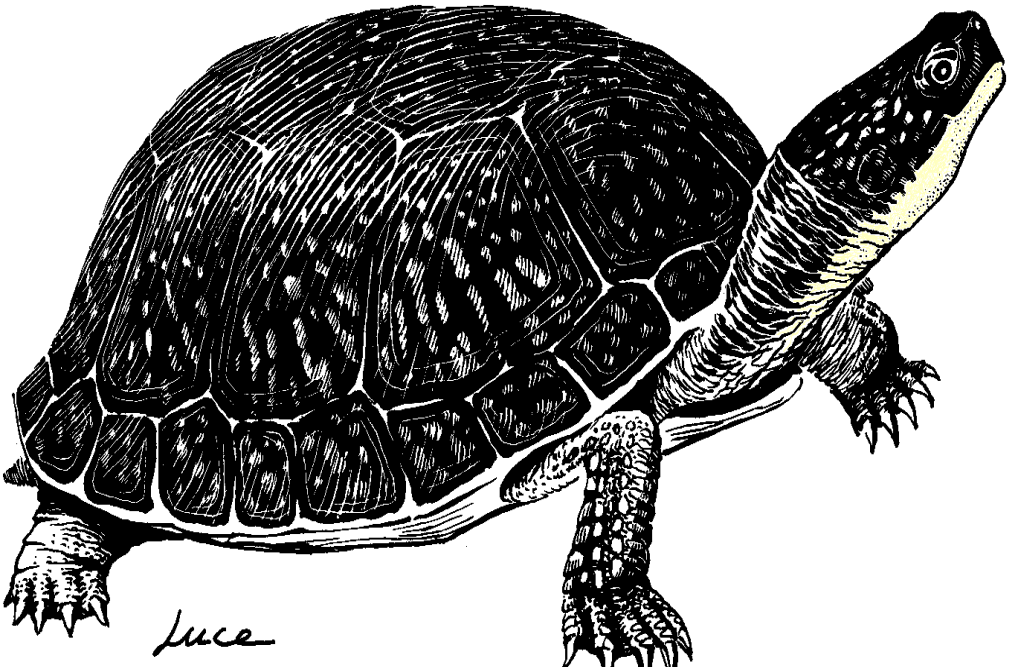
CAUTION



BLANDING'S TURTLES

MAY BE ENCOUNTERED IN THIS AREA

The unique and rare Blanding's turtle has been found in this area. Blanding's turtles are a State Threatened species and are protected under Minnesota Statute 84.095, Protection of Threatened and Endangered Species. Please be careful of turtles on roads and in construction sites. For additional information on turtles, or to report a Blanding's turtle sighting, contact the DNR Nongame Specialist nearest you: Bemidji (218-755-2976); Brainerd (218-828-2228); New Ulm (507-359-6033); Rochester (507-280-5070); or St. Paul (651-772-7978).

DESCRIPTION: The Blanding's turtle is a medium to large turtle (5 to 10 inches) with a black or dark blue, dome-shaped shell with muted yellow spots and bars. The bottom of the shell is hinged across the front third, enabling the turtle to pull the front edge of the lower shell firmly against the top shell to provide additional protection when threatened. The head, legs, and tail are dark brown or blue-gray with small dots of light brown or yellow. A distinctive field mark is the bright yellow chin and neck.

Illustration by Don Luce, from Turtles in Minnesota, Natural History Leaflet No. 9, June 1989, James Ford Bell Museum of Natural History

SUMMARY OF RECOMMENDATIONS FOR AVOIDING AND MINIMIZING IMPACTS TO BLANDING'S TURTLE POPULATIONS

(see Environmental Review Fact Sheet Series for full recommendations)

- A flyer with an illustration of an adult Blanding's turtle should be given to all contractors working in the area. Homeowners should also be informed of the presence of Blanding's turtles in the area.
- Turtles which are in imminent danger should be moved, by hand, out of harms way. Turtles which are not in imminent danger should be left undisturbed to continue their travel among wetlands and/or nest sites.
- If a Blanding's turtle nests in your yard, do not disturb the nest, and do not allow pets near the nest.
- Blanding's turtles do not make good pets. It is illegal to keep this threatened species in captivity.
- Silt fencing should be set up to keep turtles out of construction areas. It is critical that silt fencing be removed after the area has been revegetated.
- Small, vegetated temporary wetlands should not be dredged, deepened, or filled.
- All wetlands should be protected from pollution; use of fertilizers and pesticides should be avoided, and run-off from lawns and streets should be controlled. Erosion should be prevented to keep sediment from reaching wetlands and lakes.
- Roads should be kept to minimum standards on widths and lanes.
- Roads should be ditched, not curbed or below grade. If curbs must be used, 4" high curbs at a 3:1 slope are preferred.
- Culverts under roads crossing wetland areas, between wetland areas, or between wetland and nesting areas should be at least 36 in. diameter and flat-bottomed or elliptical.
- Culverts under roads crossing streams should be oversized (at least twice as wide as the normal width of open water) and flat-bottomed or elliptical.
- Utility access and maintenance roads should be kept to a minimum.
- Below-ground utility construction sites should be returned to original grade.
- Terrain should be left with as much natural contour as possible.
- Graded areas should be revegetated with native grasses and forbs.
- Vegetation management in infrequently mowed areas -- such as in ditches, along utility access roads, and under power lines -- should be done mechanically (chemicals should not be used). Work should occur fall through spring (after October 1st and before June 1st).

Environmental Review Fact Sheet Series

Endangered, Threatened, and Special Concern Species of Minnesota

Blanding's Turtle

(*Emydoidea blandingii*)

Minnesota Status:	Threatened	State Rank[1]:	S2
Federal Status:	none	Global Rank[1]:	G4

HABITAT USE

Blanding's turtles need both wetland and upland habitats to complete their life cycle. The types of wetlands used include ponds, marshes, shrub swamps, bogs, and ditches and streams with slow-moving water. In Minnesota, Blanding's turtles are primarily marsh and pond inhabitants. Calm, shallow water bodies (Type 1-3 wetlands) with mud bottoms and abundant aquatic vegetation (cattails, water lilies, etc.) are preferred, and extensive marshes bordering rivers provide excellent habitat. Small temporary wetlands (those that dry up in the late summer or fall) are frequently used in spring and summer -- these fishless pools are amphibian and invertebrate breeding habitat, which provides an important food source for Blanding's turtles. Also, the warmer water of these shallower areas probably aids in the development of eggs within the female turtle. Nesting occurs in open (grassy or brushy) sandy uplands, often some distance from water bodies. Frequently, nesting occurs in traditional nesting grounds on undeveloped land. Blanding's turtles have also been known to nest successfully on residential property (especially in low density housing situations), and to utilize disturbed areas such as farm fields, gardens, under power lines, and road shoulders (especially of dirt roads). Although Blanding's turtles may travel through woodlots during their seasonal movements, shady areas (including forests and lawns with shade trees) are not used for nesting. Wetlands with deeper water are needed in times of drought, and during the winter. Blanding's turtles overwinter in the muddy bottoms of deeper marshes and ponds, or other water bodies where they are protected from freezing.

LIFE HISTORY

Individuals emerge from overwintering and begin basking in late March or early April on warm, sunny days. The increase in body temperature which occurs during basking is necessary for egg development within the female turtle. Nesting in Minnesota typically occurs during June, and females are most active in late afternoon and at dusk. Nesting can occur as much as a mile from wetlands. The nest is dug by the female in an open sandy area and 6-15 eggs are laid. The female turtle returns to the marsh within 24 hours of laying eggs. After a development period of approximately two months, hatchlings leave the nest from mid-August through early-October. Nesting females and hatchlings are often at risk of being killed while crossing roads between wetlands and nesting areas. In addition to movements associated with nesting, all ages and both sexes move between wetlands from April through November. These movements peak in June and July and again in September and October as turtles move to and from overwintering sites. In late autumn (typically November), Blanding′s turtles bury themselves in the substrate (the mud at the bottom) of deeper wetlands to overwinter.

IMPACTS / THREATS / CAUSES OF DECLINE

- loss of wetland habitat through drainage or flooding (converting wetlands into ponds or lakes)
- loss of upland habitat through development or conversion to agriculture
- human disturbance, including collection for the pet trade* and road kills during seasonal movements
- increase in predator populations (skunks, racoons, etc.) which prey on nests and young

*It is illegal to possess this threatened species.

RECOMMENDATIONS FOR AVOIDING AND MINIMIZING IMPACTS

These recommendations apply to typical construction projects and general land use within Blanding's turtle habitat, and are provided to help local governments, developers, contractors, and homeowners minimize or avoid detrimental impacts to Blanding's turtle populations. **List 1** describes minimum measures which we recommend to prevent harm to Blanding's turtles during construction or other work within Blanding's turtle habitat. **List 2** contains recommendations which offer even greater protection for Blanding's turtles populations; this list should be used *in addition to the first list* in areas which are known to be of state-wide importance to Blanding's turtles (contact the DNR's Natural Heritage and Nongame Research Program if you wish to determine if your project or home is in one of these areas), or in any other area where greater protection for Blanding's turtles is desired.

List 1. Recommendations for all areas inhabited by Blanding's turtles.	**List 2. *Additional* recommendations for areas known to be of state-wide importance to Blanding's turtles.**
GENERAL	
A flyer with an illustration of a Blanding's turtle should be given to all contractors working in the area. Homeowners should also be informed of the presence of Blanding's turtles in the area.	Turtle crossing signs can be installed adjacent to road-crossing areas used by Blanding's turtles to increase public awareness and reduce road kills.
Turtles which are in imminent danger should be moved, by hand, out of harms way. Turtles which are not in imminent danger should be left undisturbed.	Workers in the area should be aware that Blanding's turtles nest in June, generally after 4pm, and should be advised to minimize disturbance if turtles are seen.
If a Blanding's turtle nests in your yard, do not disturb the nest.	If you would like to provide more protection for a Blanding's turtle nest on your property, see "Protecting Blanding's Turtle Nests" on page 3 of this fact sheet.
Silt fencing should be set up to keep turtles out of construction areas. It is critical that silt fencing be removed after the area has been revegetated.	Construction in potential nesting areas should be limited to the period between September 15 and June 1 (this is the time when activity of adults and hatchlings in upland areas is at a minimum).
WETLANDS	
Small, vegetated temporary wetlands (Types 2 & 3) should not be dredged, deepened, filled, or converted to storm water retention basins (these wetlands provide important habitat during spring and summer).	Shallow portions of wetlands should not be disturbed during prime basking time (mid morning to mid- afternoon in May and June). A wide buffer should be left along the shore to minimize human activity near wetlands (basking Blanding's turtles are more easily disturbed than other turtle species).
Wetlands should be protected from pollution; use of fertilizers and pesticides should be avoided, and run-off from lawns and streets should be controlled. Erosion should be prevented to keep sediment from reaching wetlands and lakes.	Wetlands should be protected from road, lawn, and other chemical run-off by a vegetated buffer strip at least 50' wide. This area should be left unmowed and in a natural condition.
ROADS	
Roads should be kept to minimum standards on widths and lanes (this reduces road kills by slowing traffic and reducing the distance turtles need to cross).	Tunnels should be considered in areas with concentrations of turtle crossings (more than 10 turtles per year per 100 meters of road), and in areas of lower density if the level of road use would make a safe crossing impossible for turtles. Contact your DNR Regional Nongame Specialist for further information on wildlife tunnels.
Roads should be ditched, not curbed or below grade. If curbs must be used, 4 inch high curbs at a 3:1 slope are preferred (Blanding's turtles have great difficulty climbing traditional curbs; curbs and below grade roads trap turtles on the road and can cause road kills).	Roads should be ditched, not curbed or below grade.

ROADS cont.	
Culverts between wetland areas, or between wetland areas and nesting areas, should be 36 inches or greater in diameter, and elliptical or flat-bottomed.	Road placement should avoid separating wetlands from adjacent upland nesting sites, or these roads should be fenced to prevent turtles from attempting to cross them (contact your DNR Nongame Specialist for details).
Wetland crossings should be bridged, or include raised roadways with culverts which are 36 in or greater in diameter and flat-bottomed or elliptical (raised roadways discourage turtles from leaving the wetland to bask on roads).	Road placement should avoid bisecting wetlands, or these roads should be fenced to prevent turtles from attempting to cross them (contact your DNR Nongame Specialist for details). This is especially important for roads with more than 2 lanes.
Culverts under roads crossing streams should be oversized (at least twice as wide as the normal width of open water) and flat-bottomed or elliptical.	Roads crossing streams should be bridged.
UTILITIES	
Utility access and maintenance roads should be kept to a minimum (this reduces road-kill potential).	
Below-ground utility construction sites should be returned to original grade (trenches can trap turtles).	
LANDSCAPING AND VEGETATION MANAGEMENT	
Terrain should be left with as much natural contour as possible.	As much natural landscape as possible should be preserved (installation of sod or wood chips, paving, and planting of trees within nesting habitat can make that habitat unusable to nesting Blanding's turtles).
Graded areas should be revegetated with native grasses and forbs (some non-natives form dense patches through which it is difficult for turtles to travel).	Open space should include some areas at higher elevations for nesting. These areas should be retained in native vegetation, and should be connected to wetlands by a wide corridor of native vegetation.
Vegetation management in infrequently mowed areas -- such as in ditches, along utility access roads, and under power lines -- should be done mechanically (chemicals should not be used). Work should occur fall through spring (after October 1st and before June 1st).	Ditches and utility access roads should not be mowed or managed through use of chemicals. If vegetation management is required, it should be done mechanically, as infrequently as possible, and fall through spring (mowing can kill turtles present during mowing, and makes it easier for predators to locate turtles crossing roads).

Protecting Blanding's Turtle Nests: Most predation on turtle nests occurs within 48 hours after the eggs are laid. After this time, the scent is gone from the nest and it is more difficult for predators to locate the nest. Nests more than a week old probably do not need additional protection, unless they are in a particularly vulnerable spot, such as a yard where pets may disturb the nest. Turtle nests can be protected from predators and other disturbance by covering them with a piece of wire fencing (such as chicken wire), secured to the ground with stakes or rocks. The piece of fencing should measure at least 2 ft. x 2 ft., and should be of medium sized mesh (openings should be about 2 in. x 2 in.). It is ***very important*** that the fencing be **removed <u>before August 1st</u>** so the young turtles can escape from the nest when they hatch!

REFERENCES

[1]Association for Biodiversity Information. "Heritage Status: Global, National, and Subnational Conservation Status Ranks." NatureServe. Version 1.3 (9 April 2001). http://www.natureserve.org/ranking.htm (15 April 2001).

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The Natural Heritage & Nongame Research Program recently adopted a new database system called Biotics. As a result of this change, the layout and contents of the database reports have been revised. Many of the fields included in the new reports are the same or similar to the previous report fields, however there are several new fields and some of the field definitions have been slightly modified. We recommend that you familiarize yourself with the latest field explanations.

Rare Features Database Reports: An Explanation of Fields

The Rare Features database (Biotics) is part of the Natural Heritage Information System, and is maintained by the Natural Heritage and Nongame Research Program, a unit within the Division of Ecological Resources, Minnesota Department of Natural Resources (DNR).

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Field Name: [Full (non-abbreviated) field name, if different]. Further explanation of field.

-E-

Element Name and Occ #: [Element Name and Occurrence Number]. The Element is the name of the rare feature. For plant and animal species records, this field holds the scientific name followed by the common name in parentheses; for all other elements (such as native plant communities, which have no scientific name) it is solely the element name. Native plant community names correspond to Minnesota's Native Plant Community Classification (Version 2.0). The Occurrence Number, in combination with the Element Name, uniquely identifies each record.

EO Data: [Element Occurrence Data]. For species elements, this field contains data collected on the biology of the Element Occurrence* (EO), including the number of individuals, vigor, habitat, soils, associated species, peculiar characteristics, etc. For native plant community elements, this field is a summary text description of the vegetation of the EO, including structure (strata) and composition (dominant/characteristic species), heterogeneity, successional stage/dynamics, any unique aspects of the community or additional noteworthy species (including animals). Note that this is a new field and it has not been filled out for many of the records that were collected prior to conversion to the new database system. Some of the information meeting the field definition may be found in the General Description field.

EO ID#: [Element Occurrence Identification Number]. Unique identifier for each Element Occurrence record.

EO Rank: [Element Occurrence Rank]. An evaluation of the quality and condition of an Element Occurrence (EO) from A (highest) to D (lowest). Represents a comparative evaluation of: 1) quality as determined by representativeness of the occurrence especially as compared to EO specifications and including maturity, size, numbers, etc. 2) condition (how much has the site and the EO itself been damaged or altered from its optimal condition and character). 3) viability (the long-term prospects for continued existence of this occurrence - used in ranking species only). EO Ranks are assigned based on recent fieldwork by knowledgeable individuals.

Extent Known?: A value that indicates whether the full extent of the Element is known (i.e., it has been determined through field survey) at that location. If null, the value has not been determined.

-F-

Federal Status: Status of species under the U.S. Endangered Species Act: LE = endangered; LT = threatened; LE,LT = listed endangered in part of its range, listed threatened in another part of its range; LT,PDL = listed threatened, proposed for delisting; C = candidate for listing. If null or "No Status" the species has no federal status.

First Observed Date: Date that the Element Occurrence was first reported at the site in format YYYY-MM-DD. A year followed by "Pre" indicates that the observed date was sometime prior to the date listed, but the exact date is unknown.

-G-

General Description: General description or word picture of the area where the Element Occurrence (EO) is located (i.e., the physical setting/context surrounding the EO), including a list of adjacent communities. When available, information on surrounding land use may be included. Note that the information tracked in this field is now more narrowly defined than it was in the old database system, and some of the information still in this field more accurately meets the definition of the new EO Data field. We are working to clean up the records so that the information in the two fields corresponds to the current field explanations described herein. Also note that the use of uppercase in sentences in this field is not significant but rather an artifact of transferring data from the old database system to the new system.

Global Rank: The global (i.e., range-wide) assessment of the relative rarity or imperilment of the species or community. Ranges from G1 (critically imperiled due to extreme rarity on a world-wide basis) to G5 (demonstrably secure, though perhaps rare in parts of its range). Global ranks are determined by NatureServe, an international network of natural heritage programs and conservation data centers.

-L-

Last Observed Date: Date that the Element Occurrence was last observed to be extant at the site in format YYYY-MM-DD.

Last Survey Date: Date of the most recent field survey for the Element Occurrence, regardless of whether it was found during the visit. If the field is blank, assume the date is the same as the Last Observed Date.

Location Description: County or Counties in which the Element Occurrence was documented followed by Township, Range, and Section information (not listed in any particular order). Each unique Township, Range, and Section combination is separated by a comma. In some cases, there are too many Township, Range, and Section combinations to list in the field, in which case, the information will be replaced with, "Legal description is too lengthy to fit in allotted space".

-M-

Managed Area(s): Name of the federally, state, locally, or privately managed park, forest, refuge, preserve, etc., containing the occurrence, if any. If this field is blank, the element probably occurs on private land. If "(Statutory Boundary)" occurs after the name of a managed area, the location may be a private inholding within the statutory boundary of a state forest or park.

MN Status: [Minnesota Status]. Legal status of plant and animal species under the Minnesota Endangered Species Law: END = endangered; THR = threatened; SPC = special concern; NON = tracked, but no legal status. Native plant communities, geological features, and colonial waterbird nesting sites do not have any legal status under the Endangered Species Law and are represented by a N/A.

-N-

NPC Classification (v1.5): Native plant community name in Minnesota's Native Vegetation: A Key to Natural Communities (Version 1.5). This earlier classification has been replaced by Minnesota's Native Plant Community Classification (Version 2.0).

-O-

Observed Area: The total area of the Element Occurrence, in acres, which is measured or estimated during fieldwork. If null, the value has not been determined.

Ownership Type: Indicates whether the land on which the Element Occurrence was located was publicly or privately owned; for publicly owned land, the agency with management responsibility is listed, if known.

-S-

Site Name: The name of the site(s) where the Element Occurrence is located. Sites are natural areas of land with boundaries determined and mapped according to biological and ecological considerations.

Survey Site #/Name: The name of the survey site, if applicable, where the Element Occurrence is located. Survey sites are sites that provide a geographic framework for recording and storing data, but their boundaries are not based on biological and ecological considerations. Minnesota County Biological Survey site numbers, if applicable, are also listed in this field.

Survey Type: Information on the type of survey used to collect information on the Element Occurrence.

Surveyor(s): Name(s) of the person(s) that collected survey information on the Element Occurrence.

State Rank: Rank that best characterizes the relative rarity or endangerment of the taxon or plant community in Minnesota. The ranks do not represent a legal status. They are used by the Minnesota Department of Natural Resources to set priorities for research, inventory and conservation planning. The state ranks are updated as inventory information becomes available. S1 = Critically imperiled in Minnesota because of extreme rarity or because of some factor(s) making it especially vulnerable to extirpation from the state. S2 = Imperiled in Minnesota because of rarity or because of some factor(s) making it very vulnerable to extirpation from the state. S3 = Vulnerable in Minnesota either because rare or uncommon, or found in a restricted range, or because of other factors making it vulnerable to extirpation. S4 = Apparently secure in Minnesota, usually widespread. S5 = Demonstrably secure in Minnesota, essentially ineradicable under present conditions. SH = Of historical occurrence in the state, perhaps having not been verified in the past 20 years, but suspected to be still extant. An element would become SH without the 20-year delay if the only known occurrences in the state were destroyed or if it had been extensively and unsuccessfully looked for. SNR = Rank not yet assessed. SU = Unable to rank. SX = Presumed extinct in Minnesota. SNA = Rank not applicable. S#S# = Range Rank: a numeric range rank (e.g., S2S3) is used to indicate the range of uncertainty about the exact status of the element. S#B, S#N = Used only for migratory animals, whereby B refers to the breeding population of the element in Minnesota and N refers to the non-breeding population of the element in Minnesota.

-V-

Vegetation Plot: Code(s) for any vegetation plot data that have been collected within this Element Occurrence (i.e., either Releve Number or the word "RELEVE" indicates that a releve has been collected).

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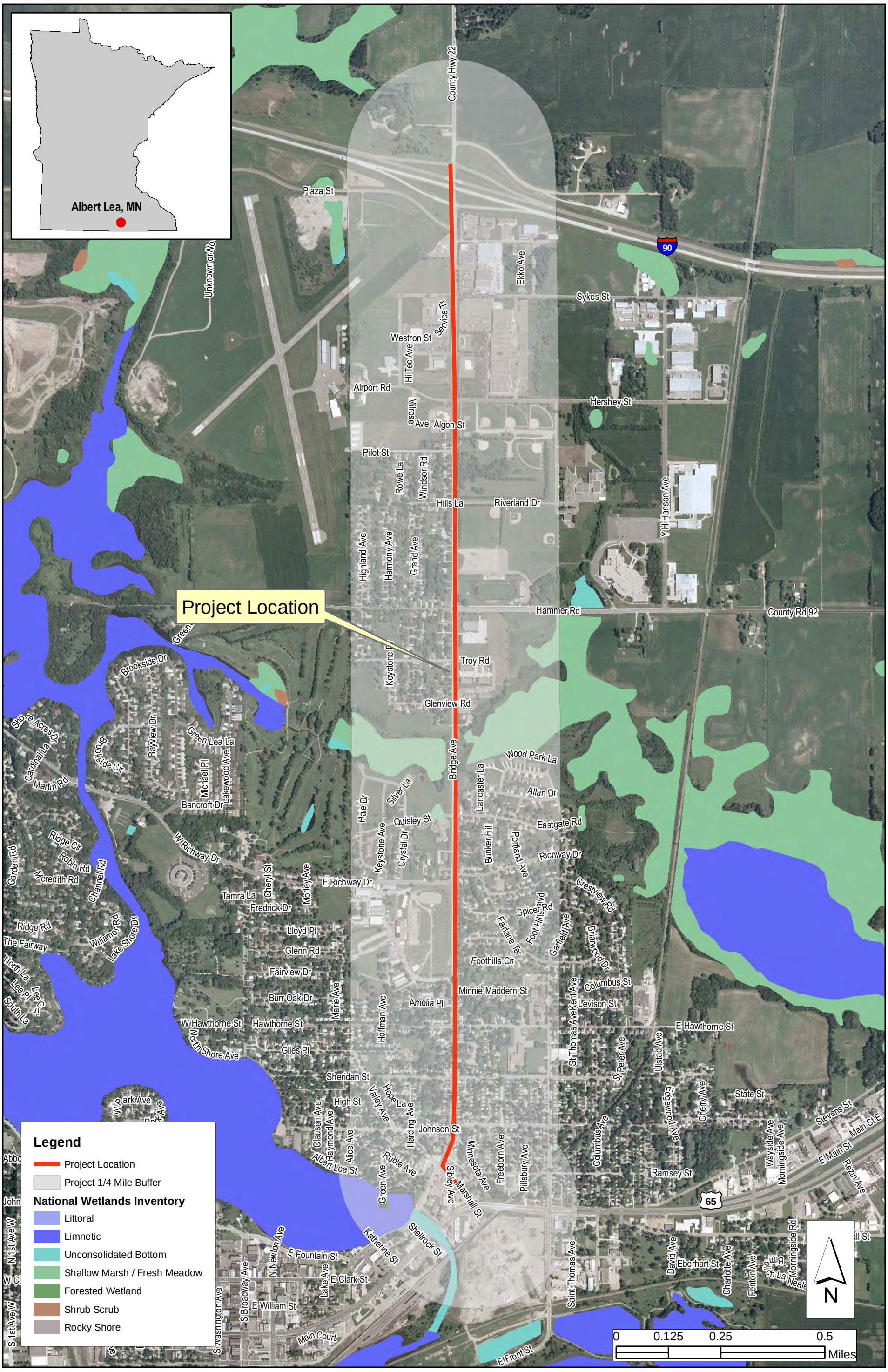
* Element Occurrence – an area of land and/or water in which an Element (i.e., a rare species or community) is, or was, present, and which has practical conservation value for the Element as evidenced by potential continued (or historical) presence and/or regular recurrence at a given location. Specifications for each species determine whether multiple observations should be considered 1 Element Occurrence or 2, based on minimum separation distance and barriers to movement.

Data Security

Locations of some rare features must be treated as sensitive information because widespread knowledge of these locations could result in harm to the rare features. For example, wildflowers such as orchids and economically valuable plants such as ginseng are vulnerable to exploitation by collectors; other species, such as bald eagles, are sensitive to disturbance by observers. For this reason, we prefer that publications not identify the precise locations of vulnerable species. We suggest describing the location only to the nearest section. If this is not acceptable for your purposes, please call and discuss this issue with the Endangered Species Environmental Review Coordinator for the Natural Heritage and Nongame Research Program at (651) 259-5109.



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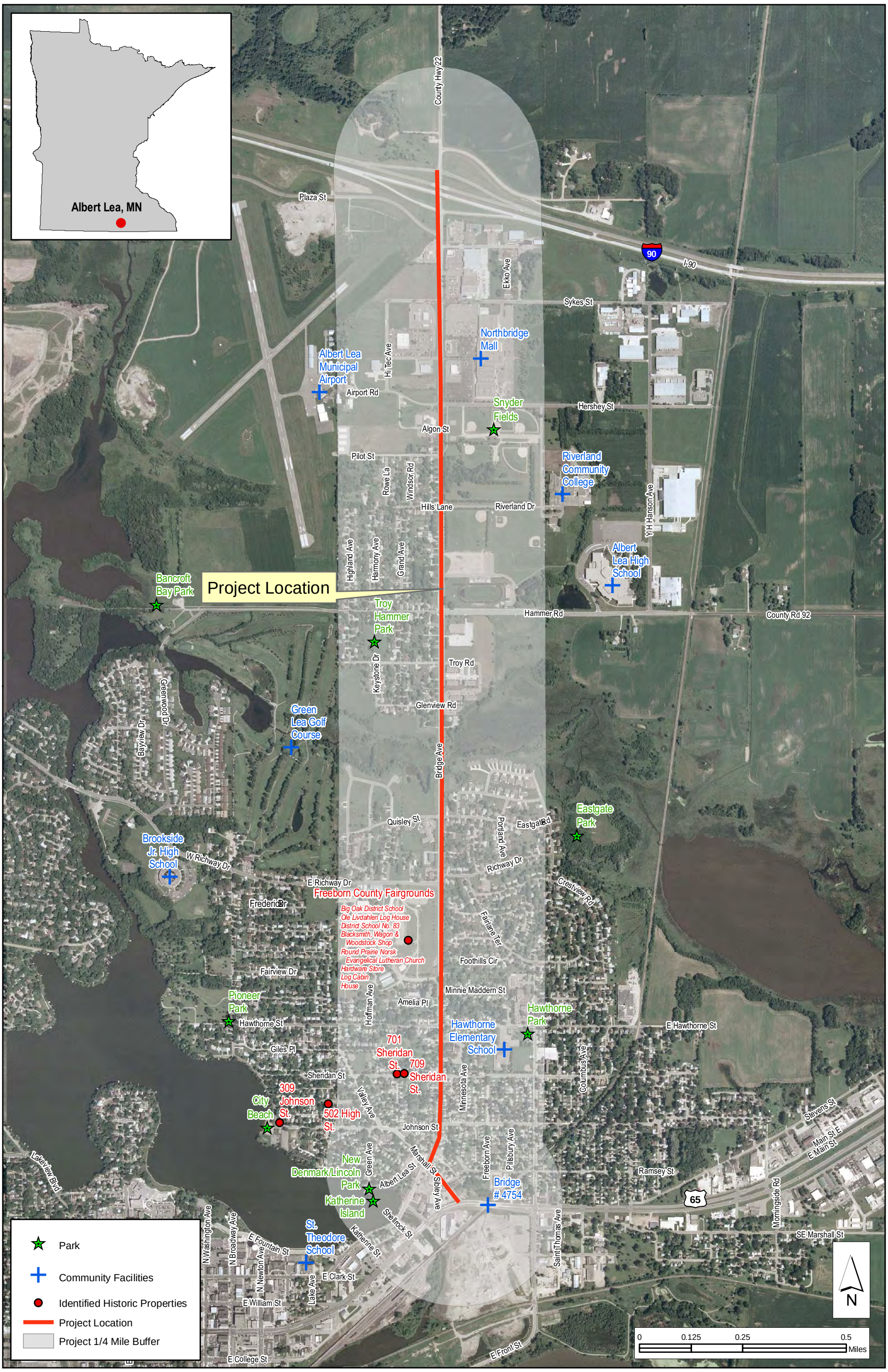
NATIONAL WETLANDS INVENTORY MAP

BRIDGE AVENUE CORRIDOR STUDY

Albert Lea, Freeborn County

Figure 1



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PARKS, COMMUNITY FACILITIES AND IDENTIFIED HISTORIC PROPERTIES

Figure 2

BRIDGE AVENUE CORRIDOR STUDY

Albert Lea, Freeborn County