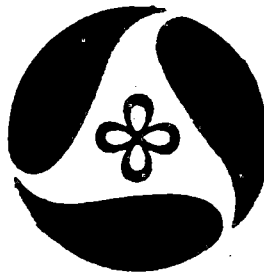


**Supplemental Pre-Location Report
U.S. 18, Mason City Bypass
I - 35 to Rudd**

Cerro Gordo and Floyd Counties

Prepared for
The Iowa Department of Transportation



July 1992

**Supplemental Pre-Location Report
U.S. 18, Mason City Bypass
I-35 to Rudd**

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Executive Summary

U.S. 18 in the Mason City area is a segment of the "Avenue of the Saints," a proposed high-type highway from St. Louis to St. Paul. Previous studies have identified and analyzed various locations for a bypass of Rudd, Nora Springs, and Mason City. The purpose of this report is to compile and update the prior studies in order to select viable alternatives for inclusion in a forthcoming Environmental Assessment.

Comparative analyses and evaluations were made of three alternatives: No-Build, North Corridor (bypassing Mason City to the north), and South Corridor (bypassing Mason City to the south). Qualitative assessments were made of the alternatives in terms of transportation effects, land development impacts, environmental effects, farmland impacts, community acceptance, and cost of implementation.

Transportation. The No-Build alternative could not provide the type of highway envisioned in the "Avenue of the Saints" concept, but is still retained as a comparative benchmark. The North Corridor would require two more miles of new construction than the South Corridor, but would result in a slightly shorter length for long-distance through trips. However, the North Corridor would essentially miss Clear Lake along with other important developing areas of Mason City, would be incompatible with some local roadway plans, and would present future problems in connecting with the extension of U.S. 18 west of I-35.

Land Development. Both the North and South Corridors would be compatible with regional growth and economic development. The South Corridor, however, would best serve current and future land use patterns in both Mason City and Clear Lake. Economic benefits of the South Corridor would also be significantly greater than the North Corridor. Clear Lake supports a South Corridor because it would serve their tourist trade better than a North Corridor. Neither alternative would result in significant displacement of residential or other structures, but the North Corridor would displace at least one mining operation and could create a barrier between the limestone quarries north of Mason City and associated processing facilities.

Environmental Effects. The North Corridor would cross more waterways, potentially affect more designated parks or natural areas, and impact more wooded lands and wildlife habitat than the South Corridor. The North Corridor also would have a greater potential for affecting hazardous waste sites than the South Corridor and, in general, would result in greater environmental impact.

Farmland Impacts. The North Corridor would affect more acres of agricultural land than the South Corridor, and would result in more diagonal severances of agricultural parcels.

Community Acceptance. The South Corridor, which both Mason City and Clear Lake favor, appears to be the preferred alternative at this time.

Cost. The South Corridor should be less expensive and more easily constructed than the North Corridor.

Introduction

Recognizing that the corridor between St. Louis, Missouri, and St. Paul, Minnesota, does not have the type of highway that connects most of the nation's urban centers, Congress authorized the "Avenue of the Saints" Study in 1989. After consideration of more than 30 alternative options, a route following U.S. 218, I-380, and U.S. 18 through Iowa City, Cedar Rapids, Waterloo, and Mason City was selected as the preferred route through Iowa (see Figure 1).

The type of highway proposed for the Avenue of the Saints corridor cannot be implemented easily along the existing U.S. 18 alignment through Rudd, Nora Springs, and Mason City in Floyd and Cerro Gordo Counties. Consequently, the Iowa Department of Transportation (IDOT) has authorized studies to determine the best location for a bypass of Rudd, Nora Springs, and Mason City.

After numerous studies to identify alternative bypass corridors, two alternative corridors for the Avenue of the Saints alignment through Cerro Gordo County and western Floyd County have been selected for further study. Both alternatives begin near the Cerro Gordo and Floyd County boundary south of U.S. 18 and connect to I-35 west of Mason City—one corridor bypassing Mason City to the north and the other to the south. Both of the corridors bypass Rudd and Nora Springs on the south (see Figure 2).

While considerable analysis was dedicated to the development of these alternatives, they only represent general corridor bands, and further refinement is needed to support an Environmental Assessment and subsequent location approval. The purpose of this report is to compile and update the prior studies in order to select viable alternatives for inclusion in the Environmental Assessment to be prepared for this project.

Prior Studies

A highway improvement in the Mason City area has been the subject of several previous studies over the past 20 years. The most recent relevant studies are summarized below.

- *Pre-Location Study of the U.S. 218 and U.S. 18 Corridors*, prepared by the IDOT in March 1988. The purpose of this study was to examine alternatives

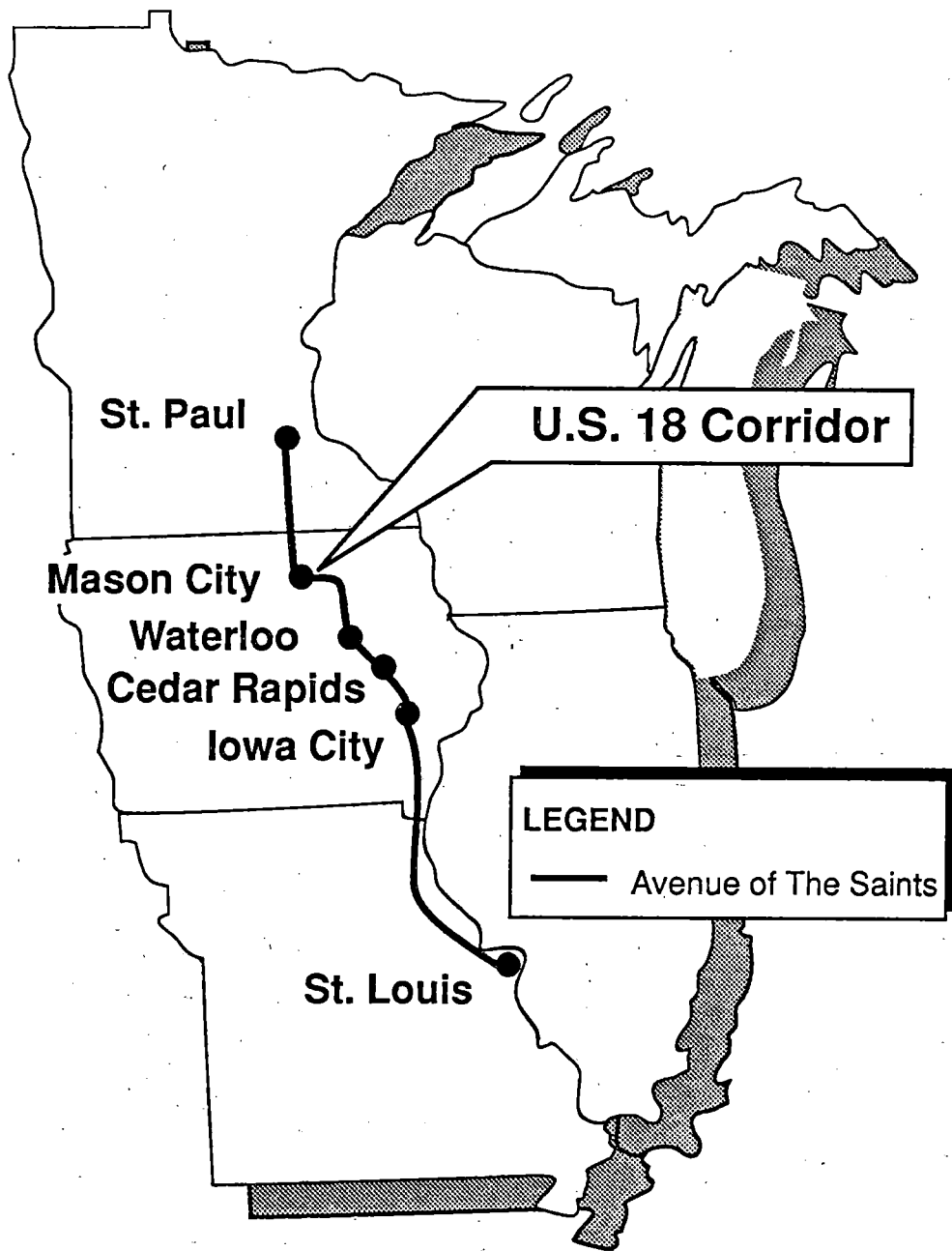


Figure 1
 Project Vicinity and the Avenue of the Saints
 U.S. 18, I-35 to Rudd

CERRO GORDO COUNTY

FLOYD COUNTY



NORTH

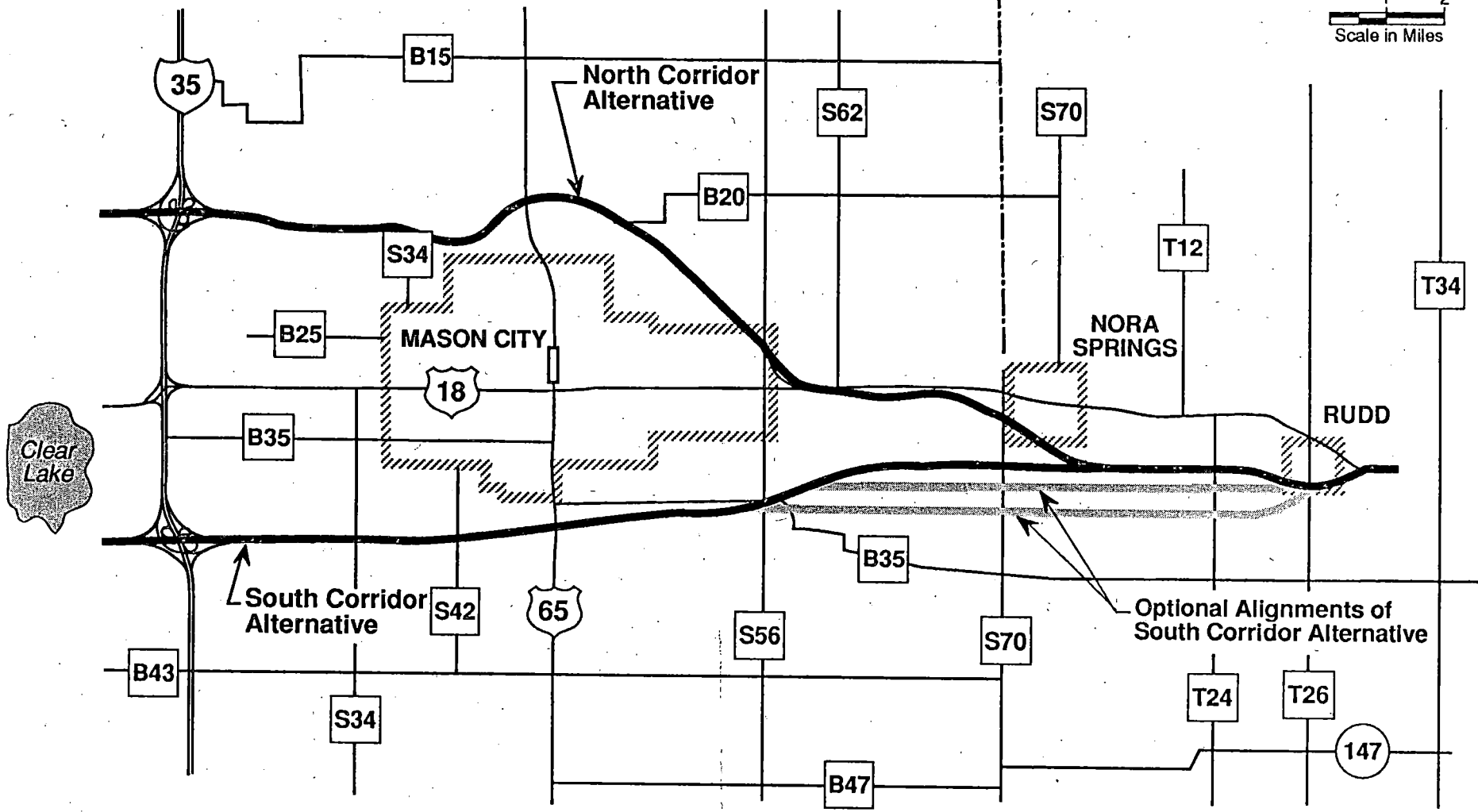
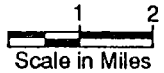


Figure 2
Alternatives Under Consideration
U.S. 18, I-35 to Rudd

for improving sections of the existing facilities and to assist the IDOT in selecting projects for inclusion in the Five-Year Transportation Improvement Program.

In the Rudd, Nora Springs, and Mason City area, the IDOT report examined 13 distinct highway segments that could be combined to provide for nine possible bypass alternates (see Figure 3). The study presented estimates of length, cost, displacements, and future traffic demand for each alternative, and did not recommend a preferred alternative.

- *St. Louis to St. Paul Corridor Feasibility and Necessity Study*, prepared by Wilbur Smith Associates, March 1990. As previously discussed, Congress authorized the "Avenue of the Saints" study in 1989. The purpose of the study was to provide information and perform analyses to allow the most feasible alternative corridor to be chosen between St. Louis and St. Paul (see Figure 1). Although the consultant did not choose a recommended alternative corridor within this study, the report was later used for that purpose. Overall, the consultant was to analyze whether a major north-south highway was warranted. The study evaluated the feasibility of the corridor alignments, the appropriate level of investment, and design standards (freeway, expressway, or a combination) for the various alternatives. Use of existing roadways and new alignments, or a combination of both, was examined. The consultant started with more than 30 alternative corridors which were evaluated and then screened to four finalist routes. These four alternatives then were subjected to a detailed analysis based on need, engineering constraints, environmental issues, travel efficiency, and economic feasibility. The analysis of the four finalist alternatives is presented in the report.
- *Proposed Avenue of the Saints Corridors, Cerro Gordo County, Alternate Route Selection Criteria*, by Dunbar/Jones Partnership, September 19, 1991. Cerro Gordo County and the Cities of Mason City and Clear Lake commissioned a study by the Dunbar/Jones Partnership to determine the preferred alternative through Cerro Gordo County based on appropriate route selection criteria. The two alternatives evaluated in the study were the North and South Alternative Corridors described above (see Figure 2). The study compared the routes on the basis of various issues including social, economic, environmental, and physical concerns. The criteria used to evaluate the two alternate corridor alignments were prioritized from analysis and synthesis of identified concerns and issues gathered in public workshops. The study concluded that the South Alternative Corridor would provide the most desirable environmental, social, visual, and economic development conditions for the area. Table 1 is a summary of the information presented in the Dunbar/Jones report.

**Table 1
Corridor Information From the Dunbar/Jones Study**

Issue	North Corridor	South Corridor
• Length	20.7 Miles	18.7 Miles
• Cost	\$54.7 Million	\$46.8 Million
• Number of residences within corridor	40 Residences	8 Residences
• Commercial area within 1 mile of corridor	23.75 Acres of retail use	38.75 Acres of retail use
• Industrial area within 1 mile of corridor	518 Acres of industrial use (mostly quarries north of Mason City)	86 Acres of industrial use
• Urban industrial area near corridor (in Mason City or Clear Lake)	1,100 Acres of urban industrial use north of U.S. 18	1,647 Acres of urban industrial use south of U.S. 18
• Amount of diagonal corridor length	11.0 Miles	4.2 Miles
• Number of farmsteads within corridor	49 Farmsteads	50 Farmsteads
• Amount of farmland within corridor	11,724 Acres	10,879 Acres
• Corn yield per acre within corridor	<ul style="list-style-type: none"> - >100 Bushels/acre - 75-100 Bushels/acre - <75 Bushels/acre 	<ul style="list-style-type: none"> 7,795 Acres (72%) 2,477 Acres (23%) 607 Acres (5%)
• Farm tracts larger than 40 acres split by corridor centerline	21 Agricultural parcels of which 17 are split diagonally	10 Agricultural parcels of which 8 are split diagonally
• Number of drainage districts within corridor	5 Drainage districts	10 Drainage districts
• Elevation change along corridor	150 Feet (from 1,200 feet to 1,050 feet)	200 Feet (from 1,240 feet to 1,040 feet)
• Slope	<ul style="list-style-type: none"> - 0-2% Slope along corridor - 2-4% Slope along corridor - 4-6% Slope along corridor - 6% Slope and above 	<ul style="list-style-type: none"> 10,520 Acres 68 Acres 10 Acres 0 Acres
• Soil suitability for highways	<ul style="list-style-type: none"> - High suitability - Medium suitability - Low suitability 	<ul style="list-style-type: none"> 30 Acres (<1%) 1,505 Acres (14%) 9,345 Acres (86%)
• Timbered areas within corridor	393.1 Acres	4.4 Acres
• Number of designated parks or natural areas within corridor	2	1

CERRO GORDO COUNTY

FLOYD COUNTY



NORTH

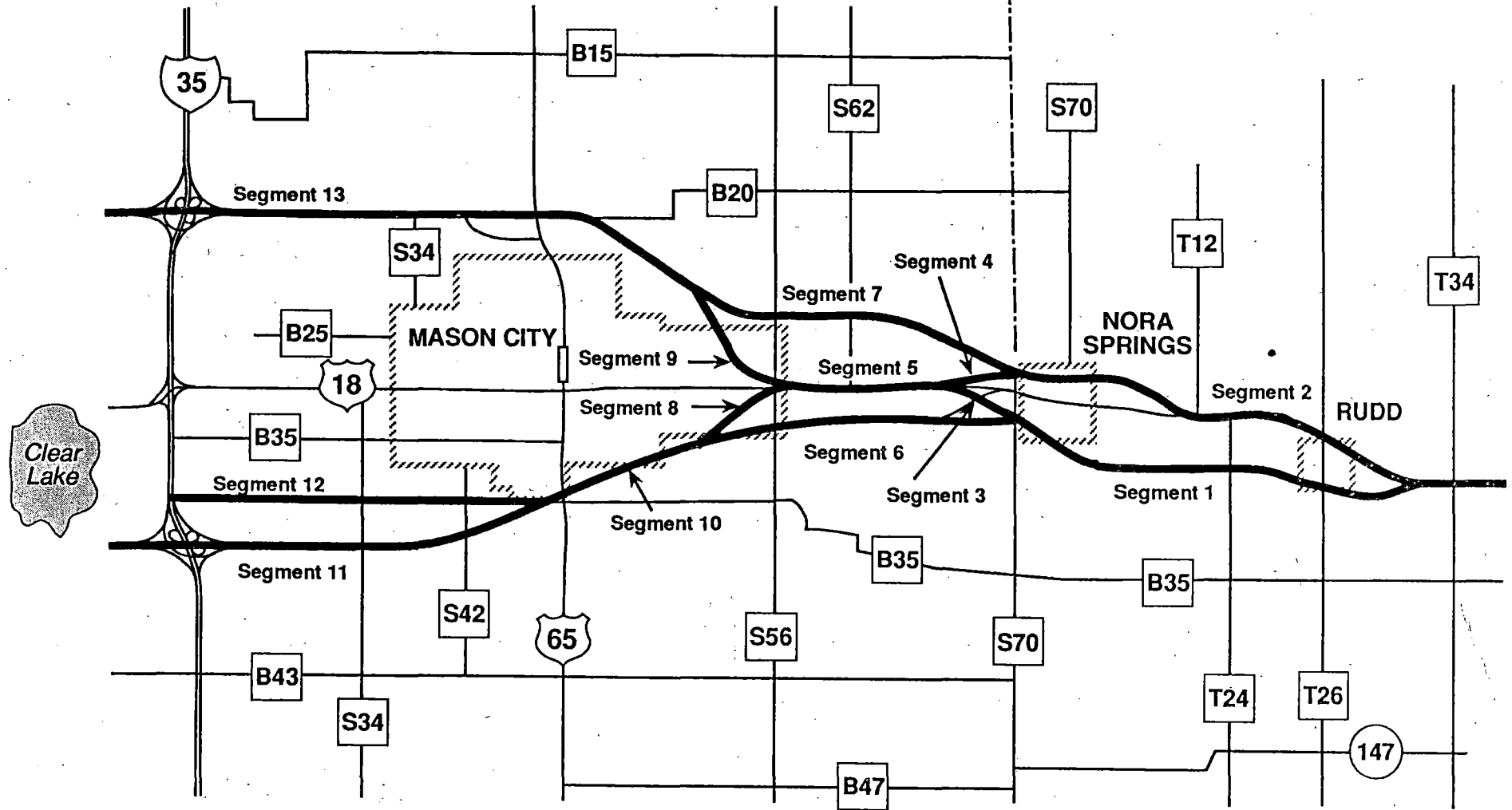
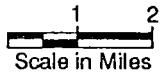


Figure 3
Segments Studied for U.S. 218 and U.S. 18
IDOT Pre- Location Report (1988)
U.S. 18, I-35 to Rudd

Comparison of Alternatives

Alternatives Considered

Alternatives that were evaluated for this Supplemental Pre-Location Report are described below. The selected alternative is expected to function as the "Avenue of the Saints" corridor between Rudd and I-35.

No-Build

Although it does not address the need for improving U.S. 18 within the project study area, or improving regional access, the No-Build option was still considered in this comparison. The No-Build option will not improve safety or level of service in the study corridor. Additionally, the use of existing U.S. 18 is not compatible with the larger "Avenue of the Saints" concept designed to connect St. Louis and St. Paul with a four-lane facility.

The major constraints of the No-Build option begin approximately 4 miles east of Mason City, where existing U.S. 18 becomes a four-lane undivided urban roadway with unrestricted access and a speed limit of 35 miles per hour (mph). Within the Mason City Central Business District, there are three busy at-grade railroad crossings, and U.S. 18 splits into a one-way pair. The roadway also has numerous closely-spaced traffic signals within the urban area. These particular characteristics of existing U.S. 18 are the most obvious constraint to the No-Build alternative as a viable option. U.S. 18 currently carries between 12,000 and 19,000 vehicles per day (vpd) in the Mason City urban area.

North Corridor

The North Corridor alternative (see Figure 2) bypasses Mason City to the north. It is considered to be compatible with the "Avenue of the Saints" corridor concept. The alternative begins at existing U.S. 18 immediately east of Rudd where U.S. 18 begins curving to the northeast. The North Corridor separates from existing U.S. 18 at this point, and bypasses Rudd to the south. It then curves northward to parallel the south side of 160th Street in Floyd County. Just west of Cameo Avenue, the corridor turns northwesterly across S70 to existing U.S. 18, which it parallels until approximately 1 mile east of S56. From there, the corridor continues northwesterly to bypass Mason City to the north. The North Corridor crosses U.S. 65 immediately north of B20 and Winnebago Heights before shifting approximately ½ mile south and continuing west to I-35. The corridor joins I-35 at the existing B20 interchange. The North Corridor is approximately 27 miles long.

South Corridor

The South Corridor alternative (see Figure 2) bypasses Mason City to the south. It is also compatible with the "Avenue of the Saints" corridor concept. The alignment of the South Corridor would be identical to the North Corridor until just west of Cameo Avenue, where the South Corridor would continue west across the Shell Rock River and S70, paralleling 250th Street in Cerro Gordo County (160th Street in Floyd County). From there, the corridor continues west to the vicinity of Illinois Avenue, where it turns southwesterly for 1 mile and then proceeds due west, running parallel to and approximately ½ mile south of B35. At Quail Avenue, the alignment turns southwesterly again and crosses U.S. 65 approximately ¼ mile south of 240th Street. The South Corridor continues in a southwesterly direction until just west of Olive Avenue, where it turns west along a property line ½ mile south of 240th Street until it reaches I-35. The South Corridor is approximately 25 miles long. Figure 2 also shows the general locations of several optional South Corridor alignments between S56 and Rudd.

Evaluation of Analysis Issues

The No-Build, North Corridor, and South Corridor alternatives were evaluated and compared in various categories (see Table 2). The analysis issues have been classified into transportation effects, land development impacts, environmental effects, farmland impacts, community acceptance, and cost of implementation. Because extensive field reviews and detailed analyses, which are to be performed for preparation of location studies and an Environmental Assessment, have not yet been completed, this report presents a qualitative, rather than quantitative, evaluation of the three alternatives. Table 2 presents a summary of the evaluation.

Transportation Effects

The "Avenue of the Saints" concept calls for provision of a high-type highway facility from St. Louis to St. Paul. Just improving existing U.S. 18 in the study area (the No-Build alternative) would not fulfill the ultimate purpose of this project. The No-Build option was retained for further evaluation, however, only as a benchmark against which other alternatives may be measured.

Even though the North Corridor alternative would require two additional miles of new construction, it would result in a slightly shorter trip for long-distance, regional trips, such as those between places southeast of Mason City and locations on I-35 north of Mason City. The main failing of the North Corridor alternative lies in the poor service provided to the local communities. The North Corridor alternative essentially would avoid Clear Lake and some of the important developing areas of Mason City. Review of traffic data obtained in the "Avenue of the Saints" study

Table 2
Summary Evaluation of U.S. 18 Corridor Alternatives

Issue	No-Build Alternative	North Corridor Alternative	South Corridor Alternative
Transportation Impacts			
<ul style="list-style-type: none"> • Length • Horizontal Alignment • Capacity • Level of Service (LOS) • Safety • Directness of Travel <ul style="list-style-type: none"> –Locally (Service to local communities) –Regionally (Avenue of the Saints) • Compatibility with Local Roadway Plans 	<p>24 miles</p> <p>Relatively straight</p> <p>Inadequate for future demand</p> <p>Unacceptable LOS in some segments</p> <p>No improvement over existing</p> <p>Adequate</p> <p>Incompatible with Avenue of the Saints concept</p> <p>No effect</p>	<p>27 miles</p> <p>Multiple curves</p> <p>Adequate</p> <p>Acceptable</p> <p>Improved safety</p> <p>Poor service to Clear Lake and developing areas of Mason City and problems in connecting to U.S. 18 west of I-35</p> <p>Shorter route for long-distance regional trips</p> <p>Least compatible</p>	<p>25 miles</p> <p>Relatively straight</p> <p>Adequate</p> <p>Acceptable</p> <p>Improved safety</p> <p>Adequate</p> <p>Longer route for long-distance regional trips</p> <p>Most compatible</p>

Table 2
Summary Evaluation of U.S. 18 Corridor Alternatives

Issue	No-Build Alternative	North Corridor Alternative	South Corridor Alternative
Land Development Effects			
<ul style="list-style-type: none"> • Effects on Existing Residential Properties 	Minor impacts as traffic increases	Potential impacts on Winnebago Heights neighborhood; Greatest number of potential residential displacements	Minor impacts; Lower number of potential residential displacements than North Corridor
<ul style="list-style-type: none"> • Effects on Existing Commercial Properties 	No conflicts	Potential impact on Clear Lake's existing tourist developments; Minor impacts on commercial development along existing US 18 due to diversion of through traffic	Better serves existing tourist development in Clear Lake; Minor impacts on commercial development along existing US 18 due to diversion of through traffic
<ul style="list-style-type: none"> • Effects on Existing Industrial Development 	Minor impacts due to decreased efficiency in the movement of goods	Potential conflicts with quarry operations north of Mason City; Does not serve existing industrial development south of Mason City and east of Clear Lake	Better serves existing industrial development south of Mason City and east of Clear Lake
<ul style="list-style-type: none"> • Compatibility with Local Land Use Plans 	Does not support planned industrial growth in project area	Incompatible with Clear Lake's tourism plan; Does not serve Clear Lake's and Mason City's planned industrial growth	Better serves tourist market for Clear Lake, and planned industrial growth southeast of Clear Lake and southwest of Mason City; Provides a better "Gateway" into Mason City
<ul style="list-style-type: none"> • Compatibility with Regional Growth/Economic Development 	Hinders economic development of the region	Improves movement of goods and accessibility of the region	Improves movement of goods and accessibility of the region; South Corridor more centralized for economic development of region; Supports future growth of industry and tourism in region
<ul style="list-style-type: none"> • Utility Accessibility/Connections to Existing Utilities 	No conflicts	Difficult due to rock formations	Easier than for area along North Corridor

Table 2
Summary Evaluation of U.S. 18 Corridor Alternatives

Issue	No-Build Alternative	North Corridor Alternative	South Corridor Alternative
Environmental Effects			
<ul style="list-style-type: none"> • Park and Conservation Land Impacts 	None	Proximity to Mather's Forest, Shell Rock Preserve, Spring Park, and Lime Creek Conservation area	Proximity to Mather's Forest, Grover's Meadow, and Fin and Feather Park
<ul style="list-style-type: none"> • Number of River/Stream Crossings 	No additional crossings	8 River/Stream Crossings	6 River/Stream Crossings
<ul style="list-style-type: none"> • Wetland Impacts 	None	Impacts more potential wetland areas than South Corridor	Impacts less potential wetland areas than North Corridor
<ul style="list-style-type: none"> • Upland Vegetation/Habitat Impacts 	None	Impacts wooded areas north of Mason City	Minor impacts on upland vegetation
<ul style="list-style-type: none"> • Wildlife and Wildlife Habitat Impacts 	None	Crosses designated Bluebird trail; Potential impact on important spawning area of Spring Creek; Potential impact on Deer population near Spring Creek	Minor impacts on wildlife habitat
<ul style="list-style-type: none"> • Historic/Archaeological Impacts 	None	No known impacts	No known impacts
<ul style="list-style-type: none"> • Impacts on Hazardous Waste Sites 	None	Potential impacts on waste sites north and east of Mason City	No known impacts
<ul style="list-style-type: none"> • Noise Impacts 	Minor impacts on abutting residences	Potential impact on Winnebago Heights neighborhood	Possible minor impacts on residences
<ul style="list-style-type: none"> • Air Quality Considerations 	Minor impacts as traffic increases	No expected impacts	No expected impacts

**Table 2
Summary Evaluation of U.S. 18 Corridor Alternatives**

Issue	No-Build Alternative	North Corridor Alternative	South Corridor Alternative
Farmland Impacts			
<ul style="list-style-type: none"> Amount of Farmland Affected 	None	Impacts more farmland than South Corridor	Impacts less farmland than North Corridor
<ul style="list-style-type: none"> Diagonal Farmland Severances 	None	Diagonally cuts more than double the amount of farmland than the South Corridor	Diagonally cuts less than half the amount of farmland than the North Corridor
Community Acceptance			
<ul style="list-style-type: none"> Known Agency Support for Corridor 	No known support	No known support	Preference for South Corridor indicated by: <ul style="list-style-type: none"> – Cerro Gordo County – Cerro Gordo County Conservation Board – Mason City – Clear Lake
<ul style="list-style-type: none"> Indicated Public Preference for Corridor 	To be completed following Public Hearing	To be completed following Public Hearing	To be completed following Public Hearing
Costs of Implementation			
<ul style="list-style-type: none"> Construction Costs <ul style="list-style-type: none"> –River Crossings –Railroad Crossings 	N/A	Higher than South Corridor alternative 8 crossings 6 crossings	Lower than North Corridor alternative 6 crossings 5 crossings
<ul style="list-style-type: none"> Right-of-Way Costs 	N/A	Higher than South Corridor alternative	Lower than North Corridor alternative
<ul style="list-style-type: none"> Constructibility 	N/A	New quarry operation near alignment of north corridor	No apparent serious problems

indicates that, while long-distance through trips are an important component of future travel demand, they will account for less than 15 percent of the total volume. The largest categories of traveler who will use this facility are motorists with origins or destinations in the Mason City/Clear Lake area. The North Corridor alternative would be seriously deficient in serving this demand since it would not provide convenient traffic service either to Clear Lake or the developing areas south of Mason City.

The South Corridor alternative would also be the most compatible with plans for other highway development in the study area. The North Corridor alternative would be less compatible with some local roadway plans, such as the possible extension of Eisenhower Avenue and/or Pierce Avenue to the south, and the upgrade of the 19th Street and U.S. 65 intersection. The North Corridor alternative also would present future problems in connecting with the extension of U.S. 18 west of I-35 in the Clear Lake area.

Land Development Impacts

Conformance with Land Use Planning. Land use and transportation are closely linked, each one having the potential to influence the other. In a classical land use planning model, planners would choose to define the best use of land, which is then followed by the supporting infrastructure (i.e., roads, highways, sewer, water, etc.). However, the classical model is rare, and it is well understood that land use and infrastructure must be coordinated to avoid inconsistencies with land use policies. Land use and transportation planners recognize that highway improvements are a major factor in land use change, particularly in rural areas close to an urban fringe such as Mason City. Research clearly shows that highways influence land use patterns and encourage growth and development on adjacent lands. For example, in areas where bypasses have been built, the "attractor" qualities of the facility have played an important role in shaping the urban structure. The foregoing discussion suggests that decisions to locate a highway are important to the land use policies of a community.

Both Mason City and Clear Lake are carefully guiding the growth of their communities. An examination of their individual planning processes suggests a strong preference for a South Corridor. Both have concluded that a South Corridor best serves their current development as well as future land use patterns. Mason City has been growing to the east, west, and south. Future land use planning continues to support growth in these three directions, including: commercial/retail development to the west, residential development to the east, and a combination of industrial and residential development to the south. Other factors supporting these directions of growth are the availability of sewer and water and the economical expansion of these facilities in all directions but the north. Industrial development is firmly entrenched to the south of Mason City, and the City's current land use plan strongly demonstrates expansion of the southern industrial complex. Conversely, industrial

development to the north of the City is static. Future plans reflect the long-term presence of the cement industry, but future expansion will be limited. The City also believes that several other features are best served by a South Corridor: the County fairground complex, the hospital facilities west of the City, and the Mason City Airport.

Clear Lake, like its neighbor, has established its industrial development on the south side of the community. Future plans provide for the growth of the existing industrial nucleus, which would straddle both sides of I-35, south of existing U.S. 18.

The communities' preference for the South Corridor is linked to existing development and the direction of planned growth. Each community understands the importance of a South Corridor to its long-range land use plans, and is seeking a highway location that best serves the community's needs. The South Corridor would clearly support the land use goals of the local municipalities, whereas, the North Corridor would be seriously incompatible with the future plans of the communities.

Economic Development. Major roadways are known to have a beneficial effect on economic development, assuming that development is compatible with local land use policy. Research has shown that areas near new highway facilities experience: (1) more dense commercial, industrial, and institutional developments around interchange locations, (2) a concentration of large retail complexes at junctions with major roads, and (3) accelerated residential development near the facility. Roadway planners have been cognizant of these factors and, in recent years, have chosen to locate roadways that maximize both travel service and economic benefits.

An evaluation of the North and South Corridors shows that the economic benefits of the South Corridor are significantly greater. Two reasons are preeminent in this conclusion: (1) the South Corridor would be compatible with community comprehensive plans, and (2) Clear Lake tourism is better served by a South Corridor.

Land use associated with the South Corridor would be consistent with prevailing land use policy, therefore, the "attraction" factor of the roadway would be viewed as an economic benefit and would serve to accommodate planned growth. The North Corridor, however, would be incompatible with community plans and would offer minimal economic benefit, assuming the attraction factor of the roadway is controlled. Once again, research has shown that where market forces are relatively unrestrained by land use regulation and water and sewer extension, gains in accessibility can have a major impact on development patterns. However, in communities that exercise strong land use controls, development would be controlled to enforce conformance with comprehensive plans.

The principal entrance into a community can play an important role in the "attraction" factor of the roadway. The North Corridor would provide access into Mason City from the north side. Visual features, such as existing cement plants and quarry pits, detract from the visual quality of the north entrance. Thus, the North Corridor does not offer an aesthetically appealing approach into the City. The South Corridor, on the other hand, provides a better "gateway" into Mason City, passing through more uniform land uses, and providing a long-distance view of the City ahead.

Tourism is the principal factor in the economic base of the City of Clear Lake. Clear Lake is the third largest natural lake in Iowa, and tourist development has evolved around this natural feature. A significant portion of the City's tourism dollars are derived from unplanned short stays (i.e., 4 to 6 hours, or 1 to 2 nights). Travelers are attracted by the highway signing or other forms of advertising and are drawn to Clear Lake for unscheduled stops. For Clear Lake, tourism traffic would be maximized if U.S. 18 was improved on the existing alignment, since potential tourists would be funneled directly to the downtown area. However, improvements to existing U.S. 18 do not achieve the transportation goals of this planned highway project, therefore, a north or south bypass corridor must be considered.

The City of Clear Lake supports a South Corridor because it would serve their tourist trade better than a North Corridor. Research has clearly shown that a traveler is less likely to backtrack for an unscheduled stop. Because the North Corridor would require backtracking, it is less likely to serve the economic development goals of Clear Lake as effectively as the South Corridor.

From a regional standpoint, both the North and South Corridor alternatives would be compatible with regional growth and economic development. A North or South Corridor would improve the movement of goods and accessibility of the region, thus supporting future growth of industry and tourism in northern Iowa. The South Corridor would be more centralized for economic development of the region than the North Corridor. The No-Build alternative would hinder economic development of the region by reducing the efficiency of the movement of goods and limiting the accessibility of global markets.

Disruption to Existing Land Uses. The North and South Corridors were evaluated to determine their respective disruption to existing land use patterns. The analysis revealed that neither alternative would result in significant displacement of residential or other structures. The disruption associated with the South Corridor would be mainly confined to farmlands. The South Corridor alignment would effectively use property lines and fence lines to minimize disruption to farm operations. Diagonal property splits, the most disruptive effect to farm operations, would be minimized with the South Corridor alternative.

The North Corridor is potentially more disruptive to a greater variety of land use types. Farmland practices, for example, would be significantly disrupted by a long diagonal alignment east of Mason City. These diagonal splits result in irregular parcel shapes that are more difficult to farm, and could even be rendered unsuitable for farming. The area north of Mason City is well known for its limestone deposits, which are mined by the cement industry. Extensive quarry operations and mineral rights are concentrated heavily in the area north of the City. The North Corridor alternative, which is aligned through this area would displace at least one mining operation, affect mineral rights, and could create a barrier between the quarries and the processing facilities. Other locational problems associated with the North Corridor include the corridor's proximity to the Winnebago Heights neighborhood. This residential area would be subjected to proximity impacts, including an increase in traffic noise levels that could be substantially higher than current background noise levels.

Environmental Effects

The North Corridor would conflict the most with environmental resources due to the greater environmental diversity that exists along the northern route. Table 2 includes a summary of the environmental effects of the bypass alternatives.

The North Corridor would have a greater impact on wetland areas than the South Corridor, based on information from the National Wetland Inventory Maps. The North Corridor impacts a larger number of potential wetland areas and, therefore, would require more mitigation measures, including the construction and/or restoration of comparable wetlands in the project area.

The 12-mile reach of the Winnebago River on the north side of the project area is considered to be the best section of this river in the region¹. Characteristics of this reach include high-quality riparian habitat, high-quality canoeing and fishing opportunities, and diverse wildlife. The North Corridor would have a greater effect on the Winnebago River than the southern route due to the sensitive northern stretch of the Winnebago River. A crossing of the Winnebago River south of Mason City would have minimal impact because the agricultural land surrounding the river has affected the quality of the River in that stretch.

The North Corridor has a greater potential for impacting wildlife and wildlife habitat in the project area than the South Corridor. The North Corridor would impact

¹Based on conversation with the Executive Director of the Cerro Gordo County Conservation Board, June 4, 1992.

wooded areas north of Mason City that provide habitat for various wildlife species. The North Corridor also crosses Spring Creek, which is an important fish spawning area, north of Mason City. A large deer population also exists in the north area, especially along Spring Creek. The Iowa Department of Natural Resources (DNR) stated that a large portion of the North Corridor would probably have to be enclosed with large chain link fences to reduce the impact on the deer. A significant deer wintering area exists along the Shell Rock River greenbelt, with deer migration paths along the river. However, the Shell Rock River crossing by either the north or south route would have minimal impact on deer since the roadway crossing would be designed to allow deer accessibility along the river. The South Corridor would have minimal impact on upland vegetation and wildlife habitat in the project area.

The North Corridor would pass closer to designated County conservation areas than the South Corridor (see Figure 4). The Cerro Gordo County Conservation Board has indicated that the northern route could result in proximity impacts to the Shell Rock River Preserve. The Shell Rock River Preserve provides for multi-use activities. The preserve has 7 miles of unlimited public access and public activities, which include horseback riding, cross-country skiing, fishing, snowmobiling, primitive camping, canoeing, and hunting. In addition, the North Corridor could affect lands that are planned for future conservation areas. The Cerro Gordo County Conservation Board has future plans to expand the Lime Creek Conservation Area boundaries, which would be affected by a northern route. Also, the Iowa DNR has considered the future acquisition of the northern section of the Winnebago River (from Fertile to Mason City) for a State greenbelt, a section that would include the location where the North Corridor is proposed to cross.

The North Corridor would cross a designated Bluebird trail that has been established near county road B20. In 1980, the National Audubon Society listed the Bluebird in the number two position on its Bluebird list. This list is an early warning roster of birds that are becoming endangered. A Bluebird trail was established in Mason City to foster the repopulation of the Bluebird. Bluebird boxes built along the trail have been successful in hatching fledglings, with a 6-year total of 3,105 fledglings. The northern route may affect nestings near the project area by disturbing Bluebird habitat.

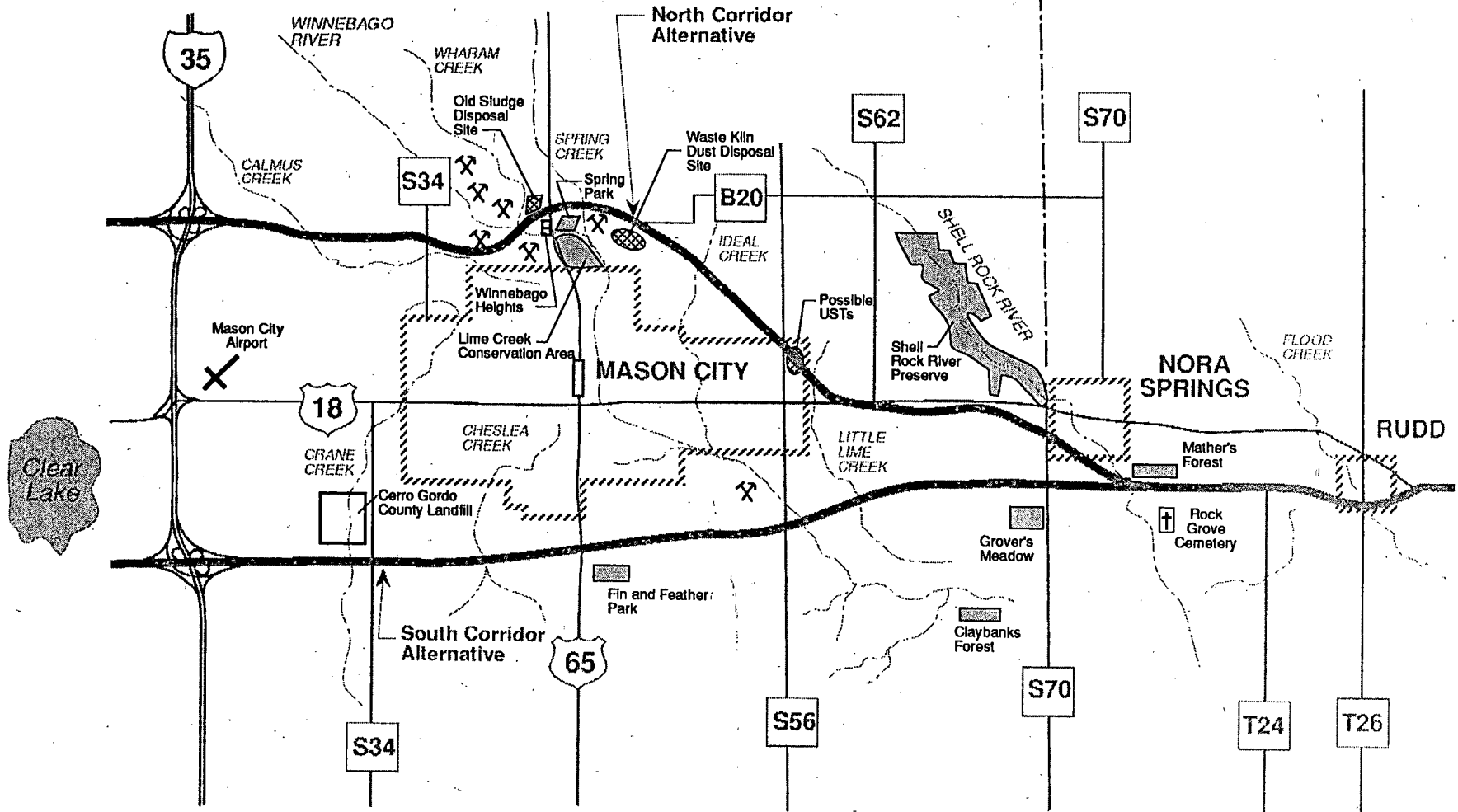
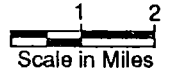
Several hazardous waste sites are located near the North Corridor (see Figure 4). The sites are contaminated by kiln dust, which was disposed by nearby cement plants. The kiln dust has a high pH and could be a source of water contamination. Other potentially hazardous areas that could be affected by the North Corridor include an old sludge disposal site located near Wharam Creek, and potential underground storage tanks located east of Mason City. The Cerro Gordo County Landfill is located near the South Corridor but would not be affected by the proposed alignment.

CERRO GORDO COUNTY

FLOYD COUNTY



NORTH






-  County Conservation Area
-  Potential Hazardous Waste Site
-  Quarry Activity

Figure 4
Environmental Issues
U.S. 18, I-35 to Rudd

The North Corridor would cross more waterways, potentially affect more designated parks or natural areas, and impact more wooded lands and wildlife habitat than the South Corridor. The northern route also has a greater potential for affecting hazardous waste sites than the south. In general, the North Corridor alternative would result in much greater environmental impact than the South Corridor due to the environmental diversity that exists along the northern route.

Farmland Impacts

Farmland represents the majority of the land use affected by the proposed project. New highway corridors in farming communities can impose adverse farmland impacts—cropland severances, altered field access, farm building relocation, and possible farm displacement. The corridor alternatives use fence lines and property lines where possible, and avoid diagonal property splits when practical. In general, the North Corridor would have a greater impact on farmland and farming operations than the South Corridor. The North Corridor is greater in length than the south (about 2 miles longer) and would affect more acres of agricultural land than the South Corridor. In addition, because the southern route would require about 4 miles of diagonal highway (compared to 11 miles for the northern route), it would result in fewer diagonal severances of agricultural parcels.

Community Acceptance

The South Corridor appears to be the preferred alternative at this time. The South Corridor presently receives support from Mason City, Cerro Gordo County, and the City of Clear Lake. These preferences are generally linked to the Dunbar/Jones Study, which concluded that a South Corridor alignment would provide more efficient travel patterns, would favor development patterns, and would impose less environmental conflict. Clear Lake officials believe that a South Corridor would be most compatible with the community's tourist trade, whereas a northern bypass would route traffic away from their community. Mason City favors the South Corridor because it would support present and future patterns of growth.

Cost Consideration

The costs of implementation were divided into construction costs, right-of-way costs, and constructibility. Table 1 gives preliminary cost estimates for both the North and South Corridor alternatives as determined in a prior study. Cost comparisons were not applicable to the No-Build alternative. The costs and constructibility of the North and South Corridor options were compared in qualitative terms. The North Corridor is longer and would have more river and railroad crossings than the South Corridor. Bedrock is close to the surface in some areas of the North Corridor, which makes this alignment less suitable for highway construction. Recently, a new quarry has been excavated directly in the path of the previously-proposed alignment of the North

Corridor. Right-of-way costs should also be higher for the northern bypass because of its greater length and larger number of diagonal severances. Thus, the South Corridor should be less expensive and more easily constructed than the North Corridor.

Conclusion

Continuing Planning Activity

The recommended plan for the U.S. 18 corridor will evolve from careful consideration of engineering and environmental issues that are important to the affected communities. Following data gathering, studies will be undertaken to refine the alignment location within the selected corridors. Projected traffic demand, regional highway system requirements, safety concerns, physical constraints, and environmental issues will be evaluated during location refinement. An Environmental Assessment addressing the proposed project's environmental effects will be prepared and circulated for public review. During the comment period, a corridor public hearing will be held. All comments received during the comment period will be assembled and recommendations for a preferred alignment will be made.

Issues to Be Addressed in the Environmental Assessment

Field reviews and detailed analyses of the alternatives will be conducted during alternative location refinement and preparation of the Environmental Assessment. Some of the primary issues to be addressed are:

- Agricultural land acquisition and severance
- Residential, business, and farm building relocation
- Wetland and floodplain impact
- Wildlife corridors and woodlands
- Location of river, stream, or railroad crossings
- Archaeological and historic sites
- Potential hazardous waste sites
- Noise and air quality impacts
- Economic, land use, and secondary development impact
- Bypass proximity to the local communities
- Extension or re-routing of existing intersecting highways
- Utility relocation
- Provision of access to abutting properties
- Location and type of interchanges and intersections
- Traffic operations and control