Warning!

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Figures are missing -- particularly Pref Alt Sheet 3.

FHWA-MN-EIS 92-02-F
Federal Highway Administration

INTERSTATE 494
From
Interstate 394 to the Minnesota River
Hennepin County, Minnesota

Minnesota Project: IM-NH 494-4()
State Project Number: 2785-261

FINAL ENVIRONMENTAL IMPACT STATEMENT AND SECTION 4(f)/6(f) EVALUATION

Submitted Pursuant to 42 U.S.C. 4332(2)(c), 49 U.S.C. 303,
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by
U.S. Department of Transportation,
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and
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Cooperating Agencies

U.S. Environmental Protection Agency
U.S. Army Corps of Engineers
U.S. Fish and Wildlife Service
Federal Transit Administration

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ABSTRACT: The proposed action involves improvements to I-494 from the junction with I-394 to the Minnesota River, a distance of 29.3 kilometers (18.2 miles). The Preferred Alternative analyzed in this Final Environmental Impact Statement and Section 4(f)/6(f) Evaluation includes the construction of one additional through-lane in each direction; auxiliary lanes, access changes, reconfiguration of selected interchanges, and other operational and traffic management improvements; plus preservation of right-of-way in the median (east of TH 169) for future transportation needs.

INTERSTATE 494
FINAL
ENVIRONMENTAL IMPACT STATEMENT AND
SECTION 4(f)/6(f) EVALUATION

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1.0 SUMMARY

The proposed project, described in Section 1.4, is to upgrade Interstate 494 (I-494) between the I-494/I-394 interchange and the Minnesota River (see Figure 1.1). This Final Environmental Impact Statement (FEIS) has been prepared pursuant to the National Environmental Policy Act of 1969 (NEPA), and in accordance with the Council on Environmental Quality regulations for FEIS preparation. The document also meets the environmental documentation requirements of the Minnesota Environmental Policy Act and Rules adopted by the Minnesota Environmental Quality Board for preparation of a state FEIS. The 1992 I-494 reconstruction Draft Environmental Impact Statement (DEIS) is incorporated by reference herein and made a part of the FEIS.

1.1 PURPOSE AND NEED FOR ACTION

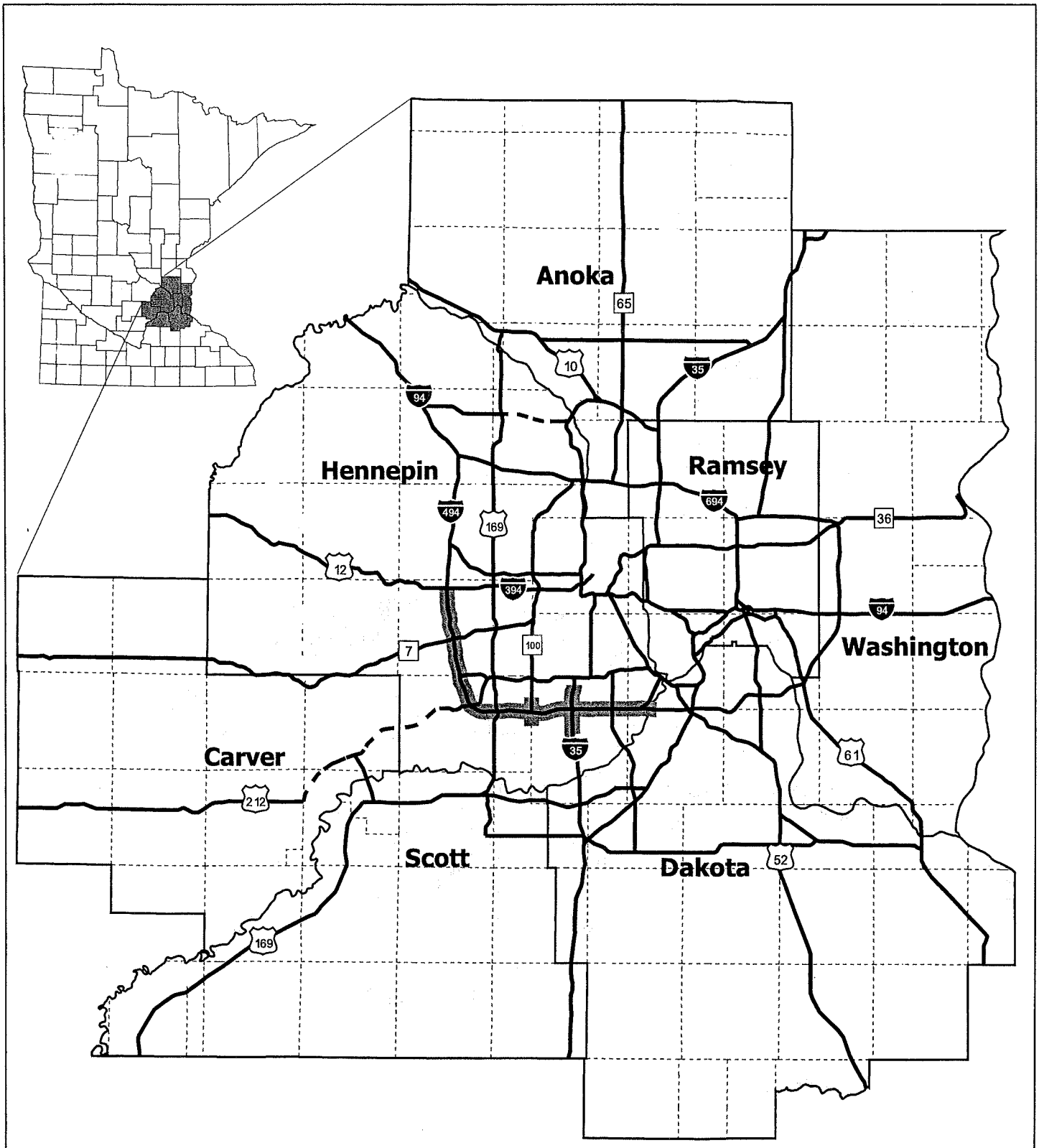
Increasing congestion, outdated facility design, declining physical condition of the existing roadway facilities, and environmental issues have resulted in the identification of a need to initiate roadway improvements along the segment of I-494 from I-394 to the Minnesota River. These issues are of special concern, due to the corridorís importance as a regional and interstate transportation corridor, as described below.

1.1.1 ROLE IN THE REGIONAL AND FEDERAL TRANSPORTATION SYSTEM

Interstate 494 is a principal arterial roadway that serves as a key component of the Twin Cities metropolitan highway system, as defined by the Metropolitan Council in its *Transportation Policy Plan 2000*. Interstate-494 is the southern half of a circumferential route around the Twin Cities, and serves as a collector/distribution facility for other metropolitan area highways, as well as an urban bypass for interstate or interregional trips. In addition, I-494 provides access to/from the rest of the metropolitan area for the rapidly-growing population and employment bases in the southwestern suburbs as well as access to the metro area from Greater Minnesota. Within the study area, I-494 intersects with nine other principal arterial highways that provide access between suburban areas and from the suburbs to downtown Minneapolis.

Interstate 494 is part of the National Highway System, created by the federal Intermodal Surface Transportation Efficiency Act (ISTEA) of 1991. The purpose of establishing the National Highway System was to focus federal resources on roads that are most important to interstate travel and national defense, roads that connect with other modes of transportation, and roads that are essential for international commerce.

As part of the National Highway System, as well as the Twin Cities metropolitan highway system, I-494 plays an important role in maintaining the efficiency and accessibility of the transportation system and in contributing to local and national economic vitality by facilitating the movement of goods and people.



Source: Metropolitan Council Transportation Policy Plan, Dec. 1996

N

6000 0 6000 Meters

2 0 2 4 6 Miles

Project Location

Figure 1.1

Final Environmental Impact Statement

I-494 Reconstruction

I-394 to the Minnesota River

1.1.2 NEED FOR PROPOSED PROJECT

The segment of I-494 under study in this FEIS is currently experiencing congestion problems during peak travel periods. Growing travel demand along the I-494 corridor is anticipated to further increase corridor congestion, thus further reducing vehicle travel speeds and increasing delays over longer periods of time for I-494 users.

The regional travel forecast model was used to reassess existing and future congestion along the corridor. The model indicated that under existing (1999) conditions, 74 percent of the I-494 corridor between I-394 and the Minnesota River currently operates under congested conditions (i.e., level of service [LOS] D or worse) for at least one hour of the day, with 43 percent operating at LOS E or F (slow-and-go/stop-and-go). The model also indicates that 24 percent of the roadway length is operating at LOS D or worse for four or more hours of the day. For future No-Build conditions (year 2022), 83 percent of the freeway would operate at LOS D or worse for at least one hour, but the duration and magnitude of congestion would increase substantially: 52 percent of the freeway would be congested for four or more hours per day and 65 percent would experience at least one hour of LOS E/F conditions. Fourteen percent of the roadway would operate at LOS D or worse for at least six hours of the day for 2022 No-Build conditions.

The forecast model was also used to estimate the existing and 2022 No-Build average peak hour travel speeds along the corridor. The estimated existing (1999) average peak hour speeds are 64 to 68 km/h (40 to 42 mph) in the morning and 58 to 61 km/h (36 to 38 mph) in the afternoon. By 2022, these speeds would drop to 50 to 56 km/h (31 to 35 mph) in the morning and 42 to 48 km/h (26 to 30 mph) in the afternoon. The posted speed limit along the I-494 corridor is currently 96 km/h (60 mph)**.**

Improvements to this corridor are also needed to correct existing facility deficiences, including physical deterioration due to the age of the facility and design deficiences resulting from changes in roadway design standards since construction of I-494 in the 1950s/1960s. In addition, traffic demand along the corridor has grown well beyond the levels the facility was designed to handle. Following are some of the specific deficiences in the I-494 corridor.

- The I-494 pavement has reached the end of its design life and is in need of replacement.
- Several bridges along the I-494 corridor are in need of either deck or total structure replacement.
- Segments of I-494 between TH 100 and TH 77 currently have inadequate shoulder widths, which can create safety concerns.
- There is an inadequate lateral clearance between the edge of the outside traffic lane and the retaining wall for the section of I-494 between Lyndale and Nicollet Avenues.
- Several bridges along I-494 have inadequate vertical clearances between the road surface and the bottom of the bridge.

- There are a number of locations within the I-494 corridor (i.e., between Penn Avenue and 34th Avenue) that do not meet the minimum interchange and ramp spacing guidelines.

- Inadequate storm water drainage capacity and roadway profiles exist in some areas, which can result in flooding under some of the cross-street underpasses during periods of heavy rain.

Reconstruction of I-494 would also provide an opportunity to address existing environmental concerns in the corridor area. The existing roadway was designed prior to implementation of storm water treatment regulations. As a result, most of the roadway runoff is currently discharged untreated from the corridor area. Also, continued congestion on I-494 will also result in increased air quality problems along the corridor, as idling vehicles are a source of carbon monoxide pollution. The existing and projected future congestion on I-494 will also result in increased traffic and congestion on local arterials and on other local residential streets as motorists look for alternatives to the congested routes. The increase in local roadway traffic would, in turn, cause increased traffic noise, safety problems, and air pollution in local neighborhoods.

1.2 PROJECT HISTORY

1.2.1 PROJECT PLANNING AND ENVIRONMENTAL DOCUMENTATION

In 1986, the Metropolitan Council initiated the *I-494 Corridor Study* (ìCorridor Studyî) in cooperation with Mn/DOT, the Regional Transit Board, the Metropolitan Airports Commission, Hennepin County, and the cities of Richfield, Bloomington, Edina, Eden Prairie, and Minnetonka.

The intent of the Corridor Study was to provide a planning framework for further work in the I-494 corridor. The study objectives included: producing a design concept for the major transportation facilities in the corridor; identifying transit and travel demand management strategies; identifying development levels and land use types compatible with the proposed transportation infrastructure; and recommending a strategy for implementation of the proposed transportation improvements. The Corridor Study concluded with recommendations to add one additional lane in each direction, reserve space in the median for future needs, study the high occupancy vehicle (HOV) option, improve interchanges, and enhance the parallel roadway system, specifically 77th Street between TH 77 and I-35W, and 79th/80th Street between 34th Avenue and East Bush Lake Road.

As a result of the recommendations from the Corridor Study, an Environmental Impact Statement (EIS) preparation process was initiated in 1989 through a jointly funded effort of Mn/DOT, the five corridor cities, and Improve I-494, a private sector travel management organization (TMO). In December 1989, a Scoping Document and Draft Scoping Decision Document for the I-494 reconstruction project were published for public review. These documents defined and analyzed an initial group of alternatives considered for the I-494 corridor,

including adding one or more lanes in each direction, potential light rail transit, relocating the freeway, as well as the minimum improvement and no-build options. A public meeting was held in January 1990 to receive comments on the documents.

In September 1990, a Final Scoping Decision Document was prepared. This document defined the alternatives retained from the Scoping Document that were to be considered for more detailed analysis in the Draft Environmental Impact Statement (DEIS). More information regarding the alternatives in the DEIS is provided in Section 1.3.2 of this document.

The DEIS was completed in April 1992 and was followed by a public review period. This review period concluded in June 1992 with a formal Public Hearing. The comments received from agencies, organizations, and the general public in response to the DEIS were considered by Mn/DOT in the identification of a preferred alternative in January 1993.

Following the identification of Alternative 2A (see Section 1.3.2 discussion) as the Preferred Alternative in 1993, Mn/DOT initiated design development and environmental impact analyses for the preparation of a FEIS. However, due to the inability to define a funding source for the 1993 Preferred Alternative improvements, the EIS process was suspended and remained inactive between 1995 and 1999.

The Preferred Alternative currently under consideration in this FEIS has been reduced in scale compared to the 1993 Preferred Alternative, to bring the estimated costs in line with anticipated project funding availability. Phase I of the proposed I-494 reconstruction project (TH 212/Flying Cloud Drive to TH 100) was included in the Metropolitan Councilís 2000-2002 *Transportation Improvement Program* (TIP). The current Preferred Alternative has been defined and discussed within the context of the overall EIS process in a DEIS Re-evaluation, which was prepared by Mn/DOT and FWHA (February 2001). This DEIS Re-evaluation determined that the 1993 DEIS was still valid and that a supplemental DEIS would not have to be prepared prior to moving forward with the FEIS process.

1.2.2 CONSTRUCTION PROJECTS COMPLETED IN THE I-494 STUDY CORRIDOR SINCE THE DEIS

Since the publication of the I-494 DEIS in 1992, a number of maintenance (primarily bridge replacement) and transportation system management (transit and HOV access improvements) projects have been completed within the corridor. Projects for which environmental review documentation was prepared are listed chronologically below.

- Bridge RedeckñI-35W Interchange (completed 1995); a Project Memorandum (Categorical Exclusion determination) for this project (SP 2785-284, and SP 2785-6850) was completed in November 1994.

- MCTO Bus Access to HOV Ramp Meter Bypass at Southbound 24th Avenue to Westbound I-494 (completed 1996); a Project Memorandum (Categorical Exclusion determination) for this project (SP 2785-296) was completed in July 1996.

- Bridge RedeckñBridge 9079 at Portland Avenue over I-494 (completed 1997); a Project Memorandum (Categorical Exclusion determination) for this project (SP 2785-9079) was completed in April 1997.

- Interchange ReconstructionñI-494/TH 169 Interchange (completed 1998); a Project Memorandum (Categorical Exclusion determination) for this project (SP 2785-290) was completed in March of 1997.

- Reconstruction of I-494 from CSAH 5 to Stone Road including Bridge Replacement (completed 1999); a Project Memorandum (Categorical Exclusion determination) for this project (SP 2785-307) was completed in February of 1998.

- Addition of HOV Bypass at Valley View Road Northbound Ramp to I-494 (completed 1999); a Project Memorandum (Categorical Exclusion determination) for this project (SP 2785-320) was completed in January 1999. An Addendum to this Project Memorandum was approved in April 1999.

- Reconstruction of the TH 5/I-494 Interchange (completed 2000); a Project Memorandum (Categorical Exclusion determination) for this project (SP 2785-309) was completed in June 1998.

- Reconstruction of Penn Avenue/I-494 Interchange (to be completed 2002); a Project Memorandum (Categorical Exclusion determination) for this project (SP2785-328) has been prepared by the City of Richfield.

  Additional information on these projects is provided in Appendix A of the FEIS.

1.3 ALTERNATIVES NOT SELECTED

1.3.1 ALTERNATIVES DISMISSED PRIOR TO THE DEIS

New Location Alternative

The construction of a new replacement or supplemental I-494 facility within a new right-of-way was considered to be infeasible because the project area is intensely developed, and the social, economic, and environmental impacts of this alternative would be substantially greater than those that would occur with expansion of the existing facility. The construction of a new supplemental facility would not address the deteriorated condition of the present I-494 roadway or bridge structures.

Light Rail Transit

Light rail transit (LRT) was dismissed as an alternative in the *I-494 Corridor Study* based on the findings of the *Long-Range Transit Analysis*, completed by the Metropolitan Council in 1986 and a ridership forecast developed during the Corridor Study. The Metropolitan Council study established 23,000 daily riders as the minimum viability threshold for LRT in the freeway median. These low ridership projections (6,000 riders per day forecast for the I-494 corridor) and the high capital cost of LRT on a freeway right-of-way lead to a very low cost-benefit ratio and very high cost per rider index for LRT in the I-494 corridor. As a result of the ridership and benefit-cost analyses, the Metropolitan Council does not indicate I-494 as a potential LRT corridor in its most recent *Transportation Policy Plan* (2000) or *Transit 2020 Master Plan* for the Minneapolis-St. Paul Metropolitan Area.

1.3.2 ALTERNATIVES DISMISSED AFTER THE DEIS

The alternatives analyzed in the DEIS included No-Build and Transportation System Management (TSM) options, in addition to the following expansion options:

- Alternative 1 ñ add one general traffic lane in each direction
- Alternative 1A ñ add one high occupancy vehicle lane in each direction
- Alternative 2 ñ add two general traffic lanes, one initially, and reserve right-of-way for a second as needed in the future
- Alternative 2A ñ add two lanes, an HOV lane initially with right-of-way reserved for a general traffic lane as needed in the future

The No-Build Alternative has been dismissed because it would not adequately address existing or future congestion, transportation and infrastructure needs as summarized in Section 1.1 of this document. (However, consistent with state and federal EIS analysis requirements, the No-Build Alternative was retained for study in the FEIS as the basis for comparison with the Preferred Alternative impacts.) Transportation system management, as a separate alternative by itself, was dismissed for the same reason. (Many TSM measures have been implemented in the I-494 corridor since the DEIS, and TSM is now considered part of the No-Build Alternative.) In January 1993, Alternative 2A was selected as the Preferred Alternative on the basis of being considered best able to meet the needs identified for the project as summarized in Section 1.1.

However, in 1994 the I-494 reconstruction project was removed from the Metropolitan Councilís *Transportation Development Guide/Policy Plan* due to federal requirements for financial constraint in regional transportation planning, and insufficient available funding to construct the 1993 Preferred Alternative. In 2000, Mn/DOT reinitiated the I-494 EIS process with corridor improvements that were reduced in scale and cost relative to the 1993 Preferred Alternative.

1.4 PROPOSED ACTION

The current Preferred Alternative combines elements of the various alternatives evaluated in the DEIS to provide many of the benefits of the 1993 Preferred Alternative, but at lower cost. It has the following primary characteristics:

- One additional through lane in each direction for the full length of the project corridor.
- Auxiliary lanes will be provided as follows: one auxiliary lane each direction between TH 5 (Eden Prairie) and TH 100; two auxiliary lanes each direction between TH 100 and I-35W; one auxiliary lane each direction between I-35W and TH 77.
- Between TH 169 and 24th Avenue, 7.3 meters (26 feet) will be reserved in the median for future undetermined transportation use.
- Outside shoulders will be constructed to accommodate buses during peak travel periods to provide transit preference.
- Interchanges and bridges will be reconstructed throughout the corridor to meet current design standards and to improve capacity and operational characteristics to the extent that available funding will allow.
- Transportation Management System (TMS) components will be provided, such as vehicle Detector Systems, Integrated Corridor Traffic Management, and Intelligent Transportation System technology.

Ramp meter HOV bypass ramps will be implemented in the I-494 reconstruction corridor consistent with overall Mn/DOT policy as stated in the *2001 Transportation System Plan* (Mn/DOT Metro Division). This policy indicates that HOV bypasses of ramp meters will be pursued where feasible over the 20-year planning horizon of the *2001 Transportation System Plan*. After results of the ramp meter study (conducted by Mn/DOT in 2000-2001) are finalized, the Metro Division will undertake a system-wide study, working with Metro Transit and other Travel Demand Management (TDM) partners, to determine the locations, scope, and level of priority for candidate HOV bypass projects, which will lead to the more efficient use of the transportation system.

1.5 IMPACTS AND MITIGATION MEASURES

1.5.1 TRANSPORTATION

1.5.1.1 I-494 Corridor and Regional System Operations

The Twin Citiesí regional forecast model was used to compare regional freeway operations for existing, 2022 No-Build and 2022 Build conditions, based on a comparison of forecast volumes to estimated freeway capacities. Regional freeways in the study area are currently operating at congested (LOS D) or heavily congested (LOS E/F) levels. Performance levels will continue to

worsen by the year 2022 for No-Build conditions. Construction of the Preferred Alternative would result in fewer heavily congested regional roadways for 2022 conditions in the peak hour, compared to the No-Build Alternative.

In addition to the location of congestion, the expected duration of congestion can also be estimated using the regional forecast model data. An estimated 74 percent of I-494 currently operates at LOS D or worse for at least one hour of the day, with 43 percent operating at LOS E or F (slow-and-go/stop-and-go). Currently, 24 percent is operating at LOS D or worse for four or more hours of the day.

Under the No-Build Alternative, 83 percent of the freeway would operate at LOS D or worse for at least one hour, but the duration of congestion and magnitude of the congestion would increase substantially compared to current conditions, with 52 percent of the freeway congested four or more hours per day and 65 percent experiencing at least one hour of LOS E/F conditions. Fourteen percent of the roadway would operate at LOS D or worse for at least six hours per day.

Under the Preferred Alternative, most of I-494 would still experience some congestion, but the congestion would not last for as long a time period as it would under the No-Build condition. With the Preferred Alternative, 78 percent of the directional kilometers/miles traveled (i.e., eastbound plus westbound) could be expected to operate at LOS D for at least one hour. However, the duration of congestion falls substantially under the Preferred Alternative, with only four percent of the roadway experiencing LOS D or worse for four hours of the day. None of the facility would operate at LOS E/F outside of a single peak hour.

Based on regional travel forecast model analyses of trip times and travel speeds, projected 2022 Preferred Alternative peak hour trip times are comparable to existing conditions and 20 to 27 percent shorter than 2022 No-Build trip times. The analysis also indicates that the 2022 Preferred Alternative peak hour speeds would be similar to existing speeds and 24 to 38 percent faster than 2022 No-Build trip speeds.

1.5.1.2 Changes in Local and Regional Access

The Preferred Alternative would result in changes in access to/from the I-494 corridor at the following interchange locations:

- I-494/TH 62/CSAH 62
- I-494/East Bush Lake Road
- I-494/TH 100
- TH 100/77th Street
- I-494/I-35W area (including Penn and Lyndale Avenue interchanges)
- I-494/Nicollet Avenue
- I-494/Portland Avenue
- I-494/12th Avenue
- I-494/TH 77
- I-494/24th and 34th Avenues

In all cases, the Preferred Alternative concept includes alternative access provisions to/from the regional system wherever access is changed.

Some changes in local system access to adjacent land uses also result from the proposed I-494 reconstruction, as described below on the following page.

TH 212/Flying Cloud Drive to East Bush Lake Road

Frontage roads exist along the portion of this segment between TH 212/Flying Cloud Drive and West Bush Lake Road. The only impact to frontage roads will be a small portion of Marth Road which would need to be shifted slightly to the south of its current alignment. This shift will not result in change of access to any adjacent land use.

East Bush Lake Road to TH 77

Frontage roads exist along the majority of this corridor segment. Many segments of these frontage roads would be removed as part of the Preferred Alternative. Where possible, new access will be provided to adjacent properties by extending adjacent roadways or by reorienting access to parallel reliever arterials. Properties where existing access is removed and no alternative access can be provided would be acquired as part of the project. Green Valley Drive in the southeast quadrant of the East Bush Lake Road/ I-494 interchange would be realigned to the south, maintaining access to the properties that are not being acquired for the project.

1.5.1.3 Transit

The No-Build Alternative would perpetuate the inability of the existing I-494 mainline to efficiently serve transit use, due to limited areas suitable for bus use of shoulders and limited HOV bypass lanes at metered ramps. The Preferred Alternative includes ìtransit advantageî features such as bus-only use of shoulders throughout the corridor and HOV bypass lanes at meters and ramps where feasible, as discussed in Section 1.4.

There are three proposed transit/rail lines that cross the I-494 corridor study area: the Hiawatha LRT line, the Dan Patch commuter rail corridor, and the Minneapolis Southwest Corridor. The proposed I-494 improvements would have no negative impacts on the development of these transit corridors. The importance of I-494 as a transit route connecting these lines or as a route to access related transit hubs could increase as these lines are developed.

1.5.1.4 Pedestrian and Bicycle Travel

Existing or planned pedestrian/bicycle facilities that cross I-494 will have connections provided as part of the Preferred Alternative construction. Existing crossings will be replaced at or near their present location, and every crossing provided by Mn/DOT will be rebuilt to current Mn/DOT standards (see *Minnesota Bicycle Transportation Planning and Design Guidelines*, Mn/DOT, 1996). Minnesota Department of Transportation staff will work with communities and agencies with facilities in the corridor to assure that any existing or committed pedestrian/bicycle facility improvements are coordinated with I-494 reconstruction plans.

1.5.2 SOCIAL AND ECONOMIC

Right-of-Way and Relocation

Right-of-way acquisitions for the proposed project would affect an estimated 291 parcels. The majority of these parcels are within the Richfield/Bloomington portion of the corridor. Overall parcels affected can be broken down into 96 total acquisitions and 195 partial acquisitions. Of the total acquisitions, 61 are residential parcels and 35 are non-residential. The Minnesota Department of Transportation Property Acquisition and Owner Relocation Program and the availability of suitable alternative property would serve to mitigate the impacts of these acquisitions.

Economic/Fiscal

The Preferred Alternative is anticipated to require the total acquisition of 96 parcels. The year 2000 taxes payable for these properties is approximately $1.0 million. By comparison, 2000 taxes payable for all properties within the five cities in the study area combined is approximately $295.6 million (includes City School District and Housing and Redevelopment Authority levies). Actual tax revenues lost will be a function of how many of the acquired businesses choose to relocate outside the corridor cities.

The cities with the greatest number of acquisitions are Bloomington and Richfield. The 2000 taxes payable associated with the total acquisition properties in Bloomington is $853,000, as compared with overall City of Bloomington taxes payable of $86.5 million. The 2000 taxes payable associated with the total acquisitions in Richfield is $123,400, as compared with the overall City of Richfield taxes payable of $24.3 million.

Environmental Justice

Issues that were considered when evaluating the potential for environmental justice impacts included social impacts, right-of-way, access, transit, pedestrian and bicycle travel, visual quality, air quality, noise, and parks. Of these potential issues, only right-of-way and noise would impact study area households where concentrations of low-income and/or minority persons are likely. However, these impacts would not be disproportionately borne by these populations and/or the impacts would be mitigated. This topic is discussed in detail in Section 5.4.4 of the FEIS.

Land Use and Development

The majority of land within the I-494 corridor is already developed. Implementation of the Preferred Alternative would not induce land use changes, but would support in-fill development which is planned within the project corridor. Mn/DOT has coordinated extensively with local governments regarding the proposed project relative to city planning efforts.

Public Facilities

The Preferred Alternative would require the acquisition of the following public facilities within the study area:

Bloomington

- Total acquisition of one park and recreation facility (Beaverbrook Park);
- Partial acquisition of a park/recreation facility (Hyland-Bush-Anderson Lakes Regional Park Reserve);
- Partial acquisition of park open space (unnamed open space area along Nine Mile Creek east of East Bush Lake Road);
- Partial acquisition of one church (Christ King Lutheran Church ñ 8600 Freemont Avenue); and
- Total acquisition of one transitional housing facility.

Richfield

- Total acquisition of one nursing home (Richfield Health Center ñ 7727 Portland Avenue);
- Partial acquisition of two churches (Church of Christ ñ 7314 Humboldt Avenue; Church of the Assumption ñ 305 East 77th Street); and
- Partial acquisition of one transitional housing facility.

Mitigation of park losses will be performed consistent with applicable Section 4(f)/6(f) requirements. Other public facility acquisition impacts involve churches and residential-use properties.

The transitional housing facility in Bloomington is a single-family home. As discussed in Section 5.2.3.2 of the FEIS, relocation opportunities for single-family housing may be available due to turnover in the existing single-family stock resulting from anticipated construction of new multifamily housing, particularly senior housing. The Minnesota Department of Transportation has procedures in place to ensure that residents of the nursing home are relocated to facilities which can provide the appropriate level of care for each individualís need. The nursing home business itself could be relocated in the metropolitan area where a suitable site can be found. Minnesota Department of Transportation relocation advisors will assist the affected community facilities in addressing special needs they may have during the relocation process. All property acquisitions and relocations would be conducted in accordance with the Uniform Relocation and Real Property Acquisition Act of 1970, as amended, and 49 CFR Part 24. In addition, the policies summarized in the Mn/DOT handbook *Relocation: Your Rights and Benefits,* will be implemented when relocation becomes necessary.

1.5.3 PHYSICAL AND NATURAL IMPACTS

Air Quality

The traffic-related air quality parameter that is generally considered to have the most potential for concern is carbon monoxide (CO). The Environmental Protection Agency recently (1999) reclassified the Minneapolis-St. Paul Metropolitan Area as an attainment area for CO, contingent upon the implementation of measures to assure that CO concentrations remain below applicable standards. The contingency stipulates that future CO concentrations be modeled for proposed transportation projects. Results of modeling done in conformance with federal and state requirements indicates that CO levels will remain below state and federal standards in the project corridor under the Preferred and No-Build Alternatives. In most of the corridor, the Preferred Alternative results showed improved air quality conditions relative to the No-Build Alternative, because of increased capacity and the corresponding decrease in congestion levels associated with the Preferred Alternative.

Noise

State noise standards are lower (more restrictive) than federal noise abatement criteria, and are administered by the Minnesota Pollution Control Agency (MPCA). In 1995, an amendment to Minnesota Statute 116.07 provided an exemption for roadway projects from state noise standards if all reasonably available noise mitigation measures, as approved by Mn/DOT and the MPCA, are utilized in the project to abate noise. Federal noise regulations require that every reasonable and feasible effort be made to provide noise mitigation when applicable federal abatement criteria are approached or exceeded.

For locations at which modeled noise levels exceed applicable state and federal thresholds, Mn/DOT has developed a methodology of determining the cost-effectiveness of implementing noise mitigation (most commonly in the form of noise walls). This methodology has been put into practice since issuance of the DEIS. The MPCA concurs that this methodology to determine cost effectiveness is appropriate for assessing the viability of the implementation of noise walls at given locations.

Using preliminary design information and analytical and assessment methods currently in place for transportation projects in Minnesota, analysis prepared for the FEIS showed noise walls to meet cost effectiveness criteria at the following locations:

- East of TH 100, north of 77th Street (Poppy Lane);
- North of I-494 between Xerxes Avenue and Penn Avenue;
- An apartment complex north of I-494 and west of Portland Avenue;
- North of I-494 between Portland Avenue and 12th Avenue; and
- An apartment building north of I-494 and east of 12th Avenue.

Prior to construction of each phase of the project, Mn/DOT will perform a more detailed analysis of cost effectiveness, utilizing final design plans, including additional receptors and multiple iterations of noise wall length and height to find the most cost effective barrier for each area. The results of this analysis will then be reviewed to determine if the most cost effective barrier

for each area meets the cost effectiveness criteria. If, following identification of all feasible and cost effective mitigation locations, there are still areas along the corridor that would exceed state noise standards for the existing land use type, a ìNoise Reasonableness and Exemption Requestî will be prepared subject to review and final approval by the commissioners of Mn/DOT and the MPCA.

In addition to cost effectiveness, other reasonableness issues such as current and future land use and the desires of adjacent residential and commercial property owners must be taken into account. Commercial property owners (such as with businesses and hotels) may prefer to remain visible to adjacent roads, and this possibility would be considered during the design of any potential noise barriers. In addition, noise barriers would not likely be built in residential areas where future land use is guided for commercial.

Surface Water Drainage/Quality

The proposed project will result in increased impervious surfaces relative to existing and No-Build conditions. This, in turn, would result in increased surface water hydraulic and pollutant loadings in the corridor. The project will include mitigation in the form of new or enhanced detention and treatment facilities to serve the following functions:

- Hydraulic storage (flow control); and
- Treatment and attenuation of pollutant loadings.

Through the EIS process, Mn/DOT has coordinated extensively with cities and watershed districts within the corridor to discuss and confirm appropriate surface water routing and detention/treatment approaches. The Minnesota Department of Transportation has developed a conceptual plan for addressing storm water discharge and water quality issues in the I-494 corridor. For each construction phase of the I-494 reconstruction project, Mn/DOT will develop more detailed surface water conveyance, detention and treatment facility design plans, coordinating with the appropriate local and state surface regulatory agencies, prior to permitting.

Floodplains

Floodplain encroachment from the Preferred Alternative is limited to two watercourses: County Ditch 34 and Nine Mile Creek (North and South Forks). County Ditch 34 would sustain transverse and longitudinal encroachments on both sides of the highway where the ditch passes under I-494, due to widening of lanes and shoulders. However, these encroachments would not result in substantive impacts to the County Ditch 34 floodplain.

The floodplain of Nine Mile Creek would be affected both positively (through pond and mitigation site volumes) and negatively (through roadway encroachments). A complete floodplain analysis for Nine Mile Creek is currently underway in conjunction with final design plan development for the Phase I implementation area, and proposed mitigation, if required to maintain existing floodplain limits, will be finalized after the design and impacts are confirmed. Development of final design floodplain mitigation will include working with the Nine Mile Creek Watershed District to identify appropriate mitigation strategies, involving floodplain

volume replacement and/or changes in discharge rates to achieve the goal of maintaining or reducing existing flood stage levels. Floodplain volume replacement could include construction of ponds or wetland areas within floodplain areas. Discharge rate control would involve increasing or decreasing discharge rates, as needed, by increasing or decreasing system flow capacity (e.g., changing culvert or channel design) and/or storage. The proposed project will conform to all state and local (city and watershed) floodplain protection standards and mitigation requirements.

Groundwater

The Preferred Alternative is not anticipated to have groundwater impacts. There will be increased impervious surfaces in the project area relative to existing and No-Build conditions; however, these increases, relative to overall existing impervious surfaces in the project area, should not be large enough to noticeably affect regional groundwater recharge rates. Proposed new ponding locations and water quality control swales are anticipated to provide a degree of groundwater recharge. No new permanent de-watering activities are anticipated with the Preferred Alternative. For any de-watering required during construction activities, the necessary permits and authorizations will be obtained.

Wetlands

As part of the EIS process, extensive efforts have been utilized to identify, map, and assess existing wetlands in the I-494 corridor. Because the project involves the expansion of an existing roadway with wetlands in close proximity, the degree to which impacts to wetland areas can be avoided or minimized is limited. However, using the existing center median area to add roadway width from I-394 south to the TH 169 interchange area (a distance of approximately 15.3 kilometers [9.5 miles]) will help avoid and minimize wetland impacts for this portion of the project. Design approaches at other individual locations have been used to further limit wetland impacts.

An estimated 35 wetland basins will be impacted by the Preferred Alternative. The fill impacts are estimated to total approximately 9.1 hectares (22.5 acres). State and federal wetland regulations require mitigation in the form of replacement of unavoidable losses of wetland functions and values. Unavoidable wetland losses will be mitigated for each phase of project construction in compliance with requirements of wetland regulations in effect at the time of construction (e.g., the Minnesota Wetland Conservation Act [WCA] and the federal Clean Water Act [Section 404]). Mitigation generally involves replacing lost wetland areas with areas of equal or greater value. Currently, WCA requires replacement at a 2:1 ratio. Every effort will be made to define and implement replacement sites in proximity to the project corridor. However, the fact that the corridor is generally heavily developed limits this approach. To the degree that mitigation must take place outside the project corridor, Mn/DOT will continue to coordinate with Hennepin Conservation District to locate and design off-site wetland replacement. A wetland compensation plan for replacement of affected wetland areas will be developed to conform to permitting requirements during final design for each phase of the Preferred Alternative.

Potential Soil and Water Contamination Sites

A Phase I Environmental Site Assessment (ESA) was performed in November of 2000 for the I-494 reconstruction project corridor. This ESA identified 87 known or potentially contaminated sites that are located within the estimated construction limits for the proposed project. Eighteen of these sites have been categorized as ìSites of Concernî because of the type and magnitude of environmental impact based upon available information. Using information from the ESA, it does not appear that any of the sites identified are serious enough to require the project design concept to be substantially altered or abandoned. Prior to construction, further investigations will be performed consistent with applicable environmental regulations. Where necessary, modifications to the project will be evaluated to minimize or avoid impacts to any contaminated portions of the sites.

Stream or Water Body Modifications

Two streams would be impacted by the Preferred Alternative: County Ditch 34 south of the TH 62/I-494 interchange and Nine Mile Creek between West Bush Lake Road and TH 100 (both the South and North Forks). A total length of 880 meters (2,881 feet) of these two streams would be impacted, and a total area 0.5 hectare (1.2 acres) would be filled. Complete avoidance of stream and water body impacts would not be possible due to several factors, including the presence of streams and water bodies on both sides of the existing roadway alignment, and the need to widen the roadway to meet capacity requirements and current roadway design standards. Impacts will be minimized to the extent practicable by utilizing steep fill slopes or structures for the road improvements, where feasible.

Section 6.7 of the FEIS discusses impacts on water bodies through the discussion of impacts on MnDNR wetlands (public waters). Wetland Basins 8, 25, 37, 54, 63, 64, 69, 70 73, 74A and 75 are MnDNR Protected Waters that may be impacted by the Preferred Alternative. Total impacts on MnDNR Protected Waters are estimated as 5.7 hectares (13.9 acres). Any impacts to these basins will require replacement wetlands as compensation.

Prior to construction of each project phase, the exact areas of impact (and mitigation) will be determined based on final design plans, regulations will be reviewed to determine replacement requirements and ratios and permitting requirements, and detailed mitigation plans for impacts on streams and water bodies would be coordinated with the appropriate regulatory agencies.

1.5.4 CONSTRUCTION IMPACTS

Some impacts associated with construction activities, most notably traffic disruption, are unavoidable. However, every effort will be made to limit or mitigate impacts when feasible. While the overall duration of the project is anticipated to be ten to 15 years, the corridor will be divided into logical and usable sections that can be reconstructed over two- or three-year time periods. This will reduce the length of time over which the impacts may occur in a particular area.

The reconstruction of I-494 will require extensive planning efforts to minimize the disruption associated with construction activities. A construction management plan will be developed

during preliminary and final design which will be used to minimize disruptions and detours, and to ensure access to affected properties. A Mn/DOT Corridor Coordinator will oversee construction phasing and activities to limit traffic and access impacts to the degree practicable. At least two traffic lanes in each direction will be maintained during peak periods to the extent feasible. Disruption of freeway-to-freeway movements at interchanges will be minimized. Local street interchanges may be closed for limited periods of time; however, simultaneous closure of adjacent interchanges will be avoided when possible. Travelers will be kept informed of construction activities and on-going traffic conditions through informational signage, distribution of newsletters and brochures, press releases, and promotional activities coordinated with neighborhoods, cities, retailers, employers, and other groups.

There will be air quality and noise impacts associated with construction activities. Air quality impacts will result from increased traffic congestion levels caused by construction-related traffic disruption and other factors. Traffic congestion problems will be mitigated through the measures identified above. Noise impacts will be caused primarily by the operation of construction equipment. Permanent noise walls will be constructed as early as possible within each construction phase. For both air quality and noise impacts, the staging of construction activities will limit the duration of impacts for individual locations.

1.5.5 SECTION 4(F) AND 6(F) EVALUATION

The Preferred Alternative will impact one Section 4(f)/6(f) property (Hyland-Bush-Anderson Lakes Regional Park Reserve) and two Section 4(f) properties (Beaverbrook Field and Unnamed Open Space). All impacted areas are within the City of Bloomington.

- Hyland-Bush-Anderson Lakes Regional Park Reserveó The Preferred Alternative would require the acquisition of up to 1.8 hectares (4.4 acres) of this 1,038 hectares (2,565 acres) park facility. The acquisition would be within the Highwood Corridor, which is a 44-hectare (108-acre) sub-area jointly owned by the City of Bloomington and Hennepin Parks. Land and Water Conservation (LAWCON) and Metropolitan Council park development funds were used, among other sources, to acquire property within the Highwood Corridor sub-area, therefore requiring impact analysis and mitigation in conformance with Section 6(f) requirements, in addition to Section 4(f) requirements. The impacted area is a linear segment at the northernmost portion of the Highwood Corridor, adjacent to existing I-494.

- Beaverbrook Fieldó The Preferred Alternative would require the total acquisition of this property, which is 3.0 hectares (7.4 acres) and comprises two ball fields and ancillary features. This property is owned by the City of Bloomington and is located east of East Bush Lake Road and immediately south of Green Valley Drive. There is no LAWCON funding associated with this property.

- Unnamed Open Spaceó The Preferred Alternative would require the acquisition of approximately 2.4 hectares (6.0 acres) of this property. The property is a corridor of open space comprising approximately 3.8 hectares (9.3 acres) which follows Nine Mile Creek between Normandale Lake and East Bush Lake Road. It is owned by the City of Bloomington and is maintained as open space; no park improvements are planned. There is no LAWCON funding associated with this property.

A Draft Section 4(f)/6(f) Evaluation was prepared for these properties as part of the I-494 reconstruction DEIS process. (A Supplemental Draft Section 4(f) Evaluation was prepared for the Unnamed Open Space in December 2000.) Because the scale of the overall project has been reduced since the DEIS was prepared, there are now fewer impacts to park areas. Chapter 8.0 of the FEIS provides the Final Section 4(f)/6(f) Evaluation for the I-494 reconstruction project, including discussion of:

- Alternatives to anticipated uses of the identified properties are not feasible.
- Impacts to the Highwood Corridor of the Hyland-Bush-Anderson Lakes Regional Park Reserve will be minimized to the extent practicable through various design measures and mitigated through purchase of replacement land as negotiated with the City of Bloomington and, to address Section 6(f) requirements, the Minnesota Department of Natural Resources. Some of the impacted area may require only a temporary construction easement and not direct acquisition.
- Impacts to Unnamed Open Spaceó Bloomington will be limited to the extent practicable through roadway and landscaping design features. The extent of the impacts to the Beaverbrook Field property requires total acquisition of this property. The City of Bloomington has indicated that they prefer receiving monetary compensation for the appraised value of these properties (including value of improvements) in lieu of a replacement property. The money would then be used to improve other park facilities in the City.

1.5.6 SECTION 106 EVALUATION

The proposed project was reviewed for effects to cultural resources in compliance with Section 106 of the National Historic Preservation Act (36 CFR 800). Phase I and Phase II studies examining archaeological potential and standing structures was conducted for the DEIS and the 1993 Preferred Alternative. Two National Register-eligible properties were identified: The Anna and Joseph Lorence residence, 7335 Marth Road, and the Elizabeth and Frederick H. Carpenter summer residence, 13405 McGinty Road. The 1993 Preferred Alternative was determined to have adverse visual and auditory effects to both properties and a Memorandum of Agreement between FHWA and the State Historic Preservation Office (SHPO) requiring SHPO review of the roadway design in proximity to these properties was signed in 1995.

The Areas of Potential Effect (APEs) for both archaeology and standing structures were re-examined for the current Preferred Alternative. As the project limits of the current Preferred Alternative did not differ substantially from the limits of the 1993 Preferred Alternative, and would not result in the acquisition or demolition of structures beyond those anticipated in the 1993 Preferred Alternative, the APE for standing structures (generally the first row of structures outside of the project limit) was determined appropriate for the current Preferred Alternative. Where construction limits for the current Preferred Alternative, including potential high flow storm water conveyance line (not yet designedó see Section 1.7 information) east of 34th Street, extended beyond those of the 1993 Preferred Alternative, these areas were included

within the archaeological APE and examined for archaeological potential by Mn/DOT Cultural Resources staff. One National Register eligible archeological site (21HE-316) was identified near the potential high flow storm water conveyance line, but is outside the APE for the project. No additional archaeological resources were identified.

The current Preferred Alternative lessens the effects to the two National Register-eligible properties listed above as compared to the 1993 Preferred Alternative. Noise analysis indicates the noise levels in proximity to both properties will rise by only 1 decibel (dB) by the year 2020 under the Preferred Alternative as compared to the No-Build Alternative. Visual impacts to the Carpenter property are reduced (compared to the 1993 Preferred Alternative impacts) as none of the parcel will be acquired for the project under the current Preferred Alternative. As no additional National Register-eligible properties were identified under the current Preferred Alternative and no additional adverse effects were identified, the 1995 Memorandum of Agreement for the project will remain in force.

1.6 AREAS OF CONTROVERSY

Traffic noise impacts and proposed mitigation are an area of controversy for the I-494 reconstruction project. The noise-related controversy primarily involves residences in Eden Prairie and Minnetonka that are in close proximity to the I-494 mainline, and a Bloomington neighborhood south of I-494 between TH 169 and West Bush Lake Road. Preliminary concept layouts showing currently proposed noise wall locations were reviewed with residents, staff, and elected officials from cities along the project corridor in a series of meetings held in January through April of 2001. A number of attendees commented that they thought that the proposed noise wall mitigation was inadequate, particularly given that there currently are fewer noise walls proposed to be included in the I-494 reconstruction project than were indicated in the DEIS document.

The differences between the currently proposed noise wall locations and those identified in the DEIS are due to new mitigation assessment procedures that Mn/DOT (with MPCA concurrence) has put into place since the completion of the DEIS in 1992. This assessment is based upon ìreasonablenessî (including a cost-effectiveness analysis) criteria regarding noise wall implementation at given locations. The noise mitigation cost effectiveness assessment used in the FEIS was developed with MPCA coordination and input, and is consistent with procedures currently used for roadway projects throughout the metropolitan area and the state. This analysis used preliminary roadway design information. It will be refined further as part of project final design, to determine actual noise wall locations and construction as discussed in Section 1.5.3, and in sections 6.2.4 and 6.2.5 of the FEIS.

1.7 UNRESOLVED ISSUES

East Drainage Design

There is one unresolved design issue related to the proposed I-494 reconstruction project. This issue, as discussed in greater detail in Section 6.3.4 of the FEIS, relates to the storm sewer design at the easternmost portion of the corridor study area. The existing trunk storm sewer line

serving I-494 from approximately the I-35W interchange east to the Minnesota River is currently under capacity. With additional flows associated with the Preferred Alternative, this problem will become more pronounced, and additional capacity will have to be provided. There are also capacity and lift station issues that need to be addressed in the vicinity of the Penn Avenue/ I-494 interchange. The Minnesota Department of Transportation is currently conducting a study to evaluate various alignment, construction, and outfall location options for providing additional capacity in these areas.

It is anticipated that, from the line's western terminus in the vicinity of the I-494/I-35W interchange (or possibly the I-494/Penn Avenue interchange) east to 34th Avenue, this added capacity will be provided within Mn/DOT right-of-way. East of 34th Avenue, it is anticipated that added capacity in the form of a new overflow line (for flows greater than 16.8 cms [600 cfs]) will need to be constructed on a new alignment. The specific alignment and outfall location for this line cannot be identified until the evaluation study referenced above is completed. However, alternatives being considered for this line would be located within Mn/DOT or other publicly-owned (MAC or U.S. Air Force) land. It would not affect Fort Snelling State Park or Minnesota River National Wildlife Refuge lands. Since this issue is related to the proposed reconstruction of I-494, an assessment of the potential impacts (based on information that is currently available) is included in the following sections of the FEIS:

- Right-of-way (Section 5.2)
- Surface Water Drainage (Section 6.3)
- Water Quality (Section 6.4)
- Wetlands (Section 6.7)
- Potential Soil and Groundwater Contamination (Section 6.8)
- Vegetation and Wildlife (Section 6.9)
- Rare and Endangered Species (Section 6.10)
- Wild and Scenic Rivers (Section 6.11)
- Construction Impacts (Chapter 7.0)
- Section 106 Evaluation (Chapter 9.0)

Since the study area for new drainage capacity and discharge does not include any wildlife refuge or other Section 4(f) resource, this issue is not discussed in the Final Section 4(f) Evaluation.

An important factor in the assessment of options to enhance capacity of this overall trunk line is the desire to minimize environmental impacts. Design elements and mitigation measures will comply with all applicable federal, state, and local regulatory requirements. A Study Report with recommendations will be issued upon completion of the evaluation study. If environmental issues other than those identified in this FEIS are determined through this report, further investigation and environmental documentation will be performed, consistent with applicable regulatory requirements.

I-494/East Bush Lake Road Interchange Design

There is a Canadian Pacific Railroad line that runs directly adjacent to and west of East Bush Lake Road in the vicinity of I-494. Due to right-of-way and operational constraints in the vicinity of the I-494/East Bush Lake Road interchange and the railroad line, Mn/DOTís preferred design for the westbound ramp of the interchange includes an at-grade crossing of the railroad line.

Concerns have been raised regarding the proposed at-grade crossing due to potential safety issues. On the basis of operational histories at other similar crossings in the United States, Mn/DOT believes that the proposed at-grade crossing at a freeway entrance ramp is not unique to this project, and that safety features can be incorporated into the design to make it a safe crossing. The Minnesota Department of Transportation is preparing analysis and documentation to support its position and is working with FHWA to address concerns with the proposed design.

Three alternate designs Mn/DOT has considered for this interchange that do not involve an at-grade railroad crossing for the westbound freeway entrance ramp are identified and discussed in Section 3.4.3 of the FEIS. Right-of-way and economic/fiscal impacts associated with these alternate designs are discussed in Section 5.2 and 5.3, respectively. For other impact categories, there are not substantial differences between the Preferred Alternative design and the alternate designs identified for this interchange. The alternate designs could be accommodated within the general surface water drainage approach for this portion of the project corridor discussed in Section 6.3.3.2 and 6.3.4.2.

1.8 PROJECT SCHEDULE, COSTS, FUNDING

Project Schedule/Funding

The first phase of the Preferred Alternative is the segment from TH 5 (Eden Prairie) to TH 100. This phase is programmed for a letting date of 2002 and is included in the *State Transportation Improvement Plan* (STIP). This phase is to be funded using state funds. The second phase of the Preferred Alternative is the section from TH 5 (Eden Prairie) to I-394. This phase is programmed for a letting date of 2006, and is currently to be funded using Interstate Maintenance and State Matching funds. The funding sources for subsequent phases of the project have not yet been identified.

Project Costs

The anticipated construction costs (total construction costs, including grading/pavement, bridge work, utilities, surface water conveyance and treatment, engineering, etc.) for the overall corridor project are presented below, by corridor segment:

- TH 5 (Eden Prairie) to TH 100: $50 million
- TH 5 to I-394: $60 million
- TH 100 to Penn Avenue: $110 million

- Penn Avenue to Lyndale Avenue (includes I-35W/I-494 interchange): $125 million
- Lyndale Avenue to 34th Avenue: $105 million

  Total: $ 450 million

Estimated right-of-way acquisition and relocation costs include:

- Total Acquisitions/Relocation ñ Residential: $11.7 million
- Total Acquisitions/Relocation ñ Non-Residential: $39.7 million
- Partial Acquisitions ñ Residential: $5.1 million
- Partial Acquisitions ñ Non-Residential: $106.3 million

  Total: $162.8 million

1.9 COORDINATION

1.9.1 GENERAL COORDINATION

The Minnesota Department of Transportation is the State of Minnesota Responsible Government Unit (RGU) for this project and is taking the lead in preparing environmental documentation for the state and federal environmental review process. The Federal Highway Administration (FHWA) is responsible for environmental decision-making for the project at the federal level. The Metropolitan Council assisted Mn/DOT in early studies, in light of the regional influence of the I-494 corridor, and it participated in the early EIS studies as Joint Lead Agency. However, once the regional decisions were made, the Metropolitan Council chose to participate in an advisory role as part of the I-494 Project Management Team (see below).

Cooperating agencies for this FEIS process are as follows:

- U.S. Environmental Protection Agency
- U.S. Army Corps of Engineers
- U.S. Fish and Wildlife Service
- Federal Transit Administration

Cooperating agencies were sent copies of the draft FEIS for review and comment. The final FEIS document reflects input received from these agencies. The Corps of Engineers stated in their comments that, because they will be evaluating future permit applications for parts of the project, they cannot be either an opponent or proponent of the proposed project and cannot have a preferred alternative.

A Project Management Team (PMT) was established in the early scoping phase of the I-494 reconstruction DEIS to discuss and resolve issues associated with project design and environmental documentation. The PMT was re-established in 2000 when

the I-494 reconstruction project and the FEIS process were reinitiated after a period without formal activity due to funding issues (refer to Section 1.2). Current members of the PMT are as follows:

- Federal Highway Administration
- Minnesota Department of Transportation
- Metropolitan Council
- Metropolitan Airports Commission
- Hennepin County
- City of Minnetonka
- City of Eden Prairie
- City of Bloomington
- City of Edina
- City of Richfield
- Southwest Metro Transit

Section 1.2 provides a summary of the history of the I-494 reconstruction project. The scoping process and the subsequent DEIS process have provided interested parties the opportunity formally have input into the planning and design of improvements for the corridor.

Throughout the DEIS/FEIS process, Mn/DOT has maintained ongoing coordination with a broad range of organizations regarding their particular issues of concern. This has included state environmental regulatory agencies, cities within the project corridor, and affected watershed districts and management organizations. The Minnesota Department of Transportation has also met and coordinated with the I-494 Corridor Commission, a joint powers entity, including all cities within the project corridor plus the Metropolitan Council (ex-officio member), as well as Southwest Metro Transit and Metro Commuter Services (transit subcommittee).

In an effort by Mn/DOT to provide information to cities in the project corridor regarding the reinitiated FEIS process and the current Preferred Alternative, the following meetings were held in early 2001:

- Eden Prairie Open House: February 12, 2001
- Edina Open House: February 6, 2001
- Edina City Council: February 6, 2001
- Bloomington Open House: March 1 and 22, 2001
- Bloomington City Council: January 29, 2001
- Richfield Open House: February 20, 2001

1.9.2 OTHER MAJOR PROJECTS

Planning and design activities for the reconstruction of I-494 have been and continue to be coordinated with other major actions in the Minneapolis-St. Paul Metropolitan Area including those identified and addressed below.

Light Rail Transit (LRT)

The Hiawatha Corridor LRT line will link downtown Minneapolis to the Minneapolis-St. Paul International Airport (MSP) and the Mall of America. The full length of the Hiawatha line is

scheduled to be operational by 2004. The Hiawatha LRT corridor crosses I-494 at 34th Avenue South. The closest LRT stations to I-494 will be MSP Main Terminal, MSP Hubert H. Humphrey Terminal, ìBloomington Southî Station (Ceridian Drive and 28th Avenue South), 34th Avenue/80th Street Station, and the Mall of America. This project is being developed jointly by Mn/DOT and the Metropolitan Council.

Reconstruction of I-35W/TH 62 (Crosstown) Interchange

Mn/DOT is initiating a major reconstruction of this interchange (the ìcommons areaî) to improve its safety and operation. Construction is scheduled to begin in 2001. According to current plans, portions of the interchange and associated ramps will have to be closed for up to four years to allow the necessary construction activities to be performed. Interstate 494 will be used as a detour route to accommodate closure and/or restricted use of the I-35/TH 62 interchange. The interchange reconstruction would not coincide with the scheduled reconstruction of I-494 in the I-35W Bloomington/Richfield area.

Parallel Arterial System

The parallel arterial concept focuses on enhancing the existing parallel street system immediately north and south of the I-494 alignment within the cities of Bloomington, Richfield, and Edina. This system is being developed to provide access to the commercial/office uses along the corridor and to keep local trips off the I-494 mainline. The implementation status of this system is described below.

Seventy-seventh Street in Richfield, between I-35W and TH 77, has been partially completed. The portion near TH 77 is currently under construction. This project, which is being led by the City of Richfield, connects with 76th Street east of I-35W. Seventy-sixth Street continues into Edina to west of Xerxes Avenue, where it becomes 77th Street and Edina Industrial Boulevard. Future City of Richfield plans call for extending 77th Street on the east end under TH 77 and connecting it with 24th Avenue adjacent to the airport.

On the south side of I-494, the 79th/80th Street corridor being developed by the City of Bloomington. The first phase of this project upgrades existing 79th and 80th Streets between 34th Avenue and TH 100, including a bridge across I-35W. Portions of this phase have already been completed. The second phase calls for an extension west from TH 100 to East Bush Lake Road via Bridge Road and Norman Center Drive. Segments of this section have also been completed, including the bridge over TH 100/Normandale Boulevard.

Penn Avenue Bridge Replacement at I-494

This project is being undertaken by the City of Richfield to support a major commercial development project (Best Buy Campus) north of I-494 at Penn Avenue. Construction for this project is scheduled to begin in 2001, with substantial completion by 2002.

1.10 PERMITS AND APPROVALS

Construction of the Preferred Alternative will require the permits and approvals identified in Table 1.1

TABLE 1.1
PERMITS AND APPROVALS

GOVERNMENT AGENCY	ACTION
FEDERAL:	
U.S. Army Corps of Engineers	• Section 404 Permit
Federal Highway Administration	• Access change approvals • Location approvals • Approval of design exceptions • EIS approval • Section 106 Memorandum of Agreement • Record of Decision • Section 4(f) Approval
Federal Aviation Administration	• Part 77 of FAA Regulations Clearance
Advisory Council on Historic Preservation	• Section 106 Memorandum of Agreement
STATE:	
Minnesota Department of Transportation	• EIS Approval and Adequacy Determination • Wetland Conservation Act Permit (as LGU) • Section 106 Memorandum of Agreement • Layout Approval
Minnesota Department of Natural Resources	• Public Waters Permit • Groundwater Appropriation Permit
Minnesota Pollution Control Agency	• Air Quality Indirect Source Permit • 401 Water Quality Certification • National Pollutant Discharge Elimination System Permit • Noise Exemption Process
State Historic Preservation Officer	• Section 106 Memorandum of Agreement

TABLE 1.1 continued
PERMITS AND APPROVALS

GOVERNMENT AGENCY	ACTION
REGIONAL: Metropolitan Council	• Controlled access highway approval • Release park restrictive covenants
LOCAL: Cities of Bloomington, Richfield, Edina, Eden Prairie, and Minnetonka; Hennepin County	• Layout approvals and continued review of construction plans
WATERSHED DISTRICTS: Minnehaha Creek Watershed District, Nine Mile Creek Watershed District, Riley Purgatory Bluff Creek Watershed District, Lower Minnesota River Watershed District	• Surface Water Management Permits

Project Purpose/Need Divider Page
Front Side

Project Purpose/Need Divider Page
Back Side

2.0 PURPOSE OF AND NEED FOR ACTION

The 29-kilometer (18-mile) segment of I-494 from I-394 to the Minnesota River is currently experiencing congestion problems during peak travel periods. Growing travel demand in the corridor will result in increasing delays over longer time periods through the year 2022 (the forecast period for this study). Congestion and its related delay problems are of special concern in this corridor, due to its important role in the metropolitan area highway system. Deficiencies in facility design, declining physical condition, and environmental issues add to the problems in the corridor that resulted in the identification of a need to initiate roadway improvements. Interstate-494 corridor conditions also have an influence on intermodal transportation issues in the area. The following sections describe the role of the I-494 corridor and these identified problems/issues in the corridor in greater detail.

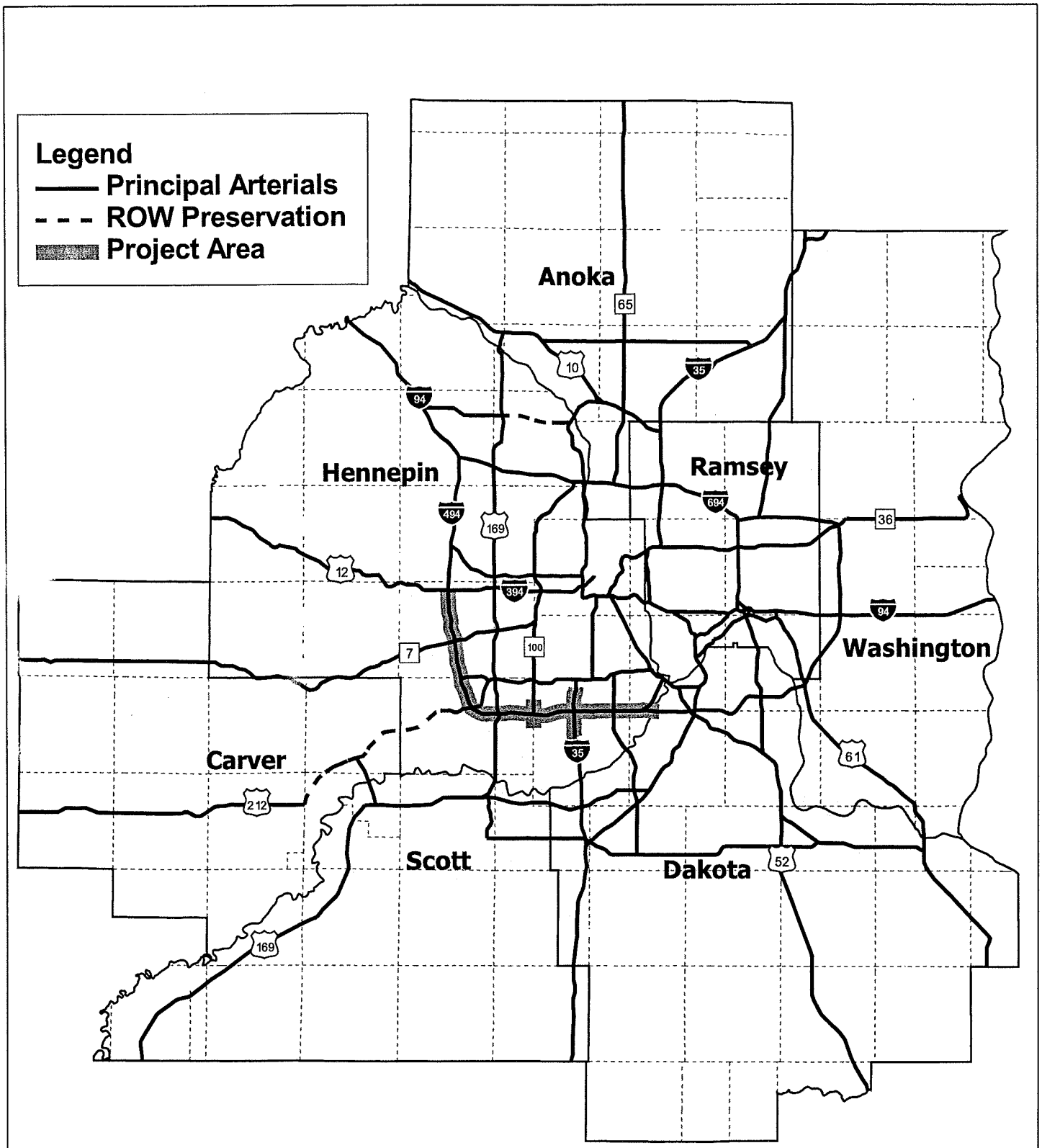
2.1 ROLE IN THE METROPOLITAN AREA

2.1.1 ROLE IN THE TRANSPORTATION SYSTEM

Interstate 494 is a principal arterial roadway that serves a key role in the year 2020 metropolitan highway system (see Figure 2.1) defined by the Metropolitan Council in its *Transportation Policy Plan* adopted January 2001. Interstate 494 is the southern half of a circumferential interstate route around Minneapolis and St. Paul, and therefore, serves as a collection/distribution facility for other metropolitan area highways, as well as an urban bypass for interstate or interregional trips. The study area for this EIS includes the approximately 29-kilometer (18-mile) section of I-494 at the southwest corner of the metro area. In addition to its regional collector-distributor role, I-494 provides access to/from the rest of the metropolitan area for the rapidly-growing population and employment bases in the southwestern suburbs as well as access to the metro area from Greater Minnesota.

Within the study area, I-494 intersects with nine other principal arterial highways on the Metropolitan Councilís 2020 Metropolitan Highway System. These metropolitan highways provide access between suburban areas and from the suburbs to downtown Minneapolis. The metropolitan highways that intersect I-494 in the study area include east-west highwaysó I-394, TH 7, TH 62, and TH 5 ñ and north-south highways ñ TH 212/Flying Cloud Drive, TH 169, TH 100, I-35W and TH 77. Trunk Highway 5 shares the east-west segment of the I-494 corridor from Eden Prairie, at the west end, to a point east of the EIS study area where TH 5 splits from I-494, providing access to the Minneapolis-St. Paul International Airport. Interstate 494 collects and distributes trips between these metropolitan highways as well as serving trips with origins or destinations in the corridor. Several of these highways are interregional corridors that provide connections between the metro area and other trade centers throughout the state.

In addition to the metropolitan highways that intersect with I-494, there are also some major highways that parallel I-494. These provide alternative routes for trips that might otherwise use I-494. However, all of these roadways are experiencing congestion problems, limiting their ability to relieve I-494 trips. TH 62 is a major east-west arterial located approximately 3.2 kilometers (2 miles) north of and running parallel to the east-west section



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6000 0 6000 Meters

2 0 2 4 6 Miles

2020 Metropolitan Highway System

Figure 2.1

Final Environmental Impact Statement

I-494 Reconstruction

I-394 to the Minnesota River

of I-494. TH 13 is a major arterial roadway paralleling the east-west section of I-494 approximately 8 kilometers (5 miles) south (across the Minnesota River) and serves as a connection between the suburban areas of Savage, Burnsville, Eagan, Mendota Heights and West St. Paul. TH 13 interchanges with the major facilities of I-35W, TH 77 and TH 169. The north-south section of I-494 is paralleled by TH 169, approximately 3.2 kilometers (2 miles) to the east.

Analysis of I-494 corridor users (using regional forecast model data) reflects the regional importance of the I-494 corridor and its role as a regional ìbeltway.î Approximately 7 percent of all trips made in the Twin Cities metro region utilize I-494. Of those trips, approximately 80 percent are trips that are 4.8 kilometers (3 miles) or more in total trip length (i.e. not local trips). In the peak hour, this increases to 88 percent of trips on I-494 being 4.8 kilometers (3 miles) or more in length. The average trip on the segment of I-494 from I-394 to the Minnesota River is approximately 8 kilometers (5 miles), and the average total trip length for users is approximately 27 kilometers (17 miles) (over twice the forecast average regional trip length of 13 kilometers [8 miles]). Approximately 28 percent of the trip of an average I-494 user occurs on the I-494 facility itself. These statistics reflect the relatively long (i.e. regional) trips made by the average I-494 user.

2.1.2 RELATIONSHIP TO REGIONAL POLICY

The Metropolitan Council is the metropolitan planning organization (MPO) for the Twin Cities region. The Council has adopted a comprehensive development guide for the metro area. The *Regional Blueprint* component of the guide presents the overall priorities for regional facilities and services in the Twin Cities metro area. The Councilís *Transportation Policy Plan* describes the transportation policies and plans that support the *Blueprint* and describes the Councilís approach to transportation investments through the year 2020. The regional growth strategy described in the *Blueprint* includes a focus on promoting growth and economic development within the 2020 Metropolitan Urban Service Area (MUSA) boundary, which includes the I-694/I-494 beltway. The communities along the I-494 corridor are continuing to grow, consistent with this plan, including a number of increased density redevelopment projects in close proximity to the I-494 corridor in Eden Prairie, Bloomington and Richfield.

The *Transportation Policy Plan* (TPP) includes policies and strategies to help achieve the *Regional Blueprint* vision. Policy 11 ñ Highway System Objectives ñ is relevant to the I-494 corridor. It states that ìThe Metropolitan Council will work with Mn/DOT and local units of government to ensure that the metropolitan highway system and its supporting road system are built and designed to increase system efficiency, serve travel demand to the extent possible, provide for user safety, and integrate and enhance other travel modes.î The TPP identifies principal arterial roadways on the 2020 metropolitan highway system, including the I-494 corridor, and describes the priorities for investment in the regional corridors. The Councilís 2000 ñ 2002 *Transportation Improvement Program* (TIP) includes reconstruction of the I-494 segment from TH 212/Flying Cloud Drive to TH 100 for construction starting in 2002, recognizing the high level of need for improvement in this segment. The remainder of the I-494 study corridor from I-394 to TH 77 is included in the TPP investment strategy as prioritized for ìexpansionî by year 2020. Projects in the expansion strategy category were

included ìÖ because capacity needs clearly cannot be met through management and improvement activitiesÖ î alone ñ consistent with many of the needs stated above. The segment of I-494 in the study area from TH 77 to the Minnesota River is prioritized in the ì managementî category. This includes managing the system to improve its efficiency as opposed to an emphasis on expanding capacity.

It should be noted that the current TPP (unlike the 2010 Highway Plan component of the TPP described in Section 2.2.1 of the I-494 reconstruction DEIS) does not specifically recommend a designated HOV lane on I-494 from I-394 to 34th Avenue. The current TPP decreases emphasis on exclusive HOV lanes, compared to previous plans, acknowledging that the use of bus shoulder lanes, in conjunction with HOV by-pass ramps, has become more attractive due to ease of implementation and low cost.

2.1.3 RELATIONSHIP TO INTERMODAL TRANSPORTATION

Interstate-494 corridor conditions affect or have a relationship to intermodal transportation issues in the area, as described in the following sections.

2.1.3.1 Transit

The federal Intermodal Surface Transportation Efficiency Act (ISTEA), and the Transportation Equity Act for the 21st Century (TEA-21) put increased emphasis on the need to provide alternatives to the single-occupant automobile. The Metropolitan Councilís *Transportation Policy Plan 2000* and *Transit 2020 Master Plan* for the Twin Cities area also reflect this philosophy, incorporating transit features that promote their Smart Growth goals. Currently, I-494 has provision for bus use on shoulders where the shoulders are of adequate width to support such use. However, the existing I-494 facility does not provide adequate shoulder width to allow for bus use of shoulders throughout the corridor. The *Transit 2020 Master Plan* includes incorporating bus shoulder use on I-494 throughout the study area (and extending north to I-94 and east to TH 61) as part of its planned ì Freeway Transit Corridorî system.

Figure 2.2 shows the location of existing transit hubs/stations in the vicinity of the I-494 study area. No additional transit hubs are indicated in the I-494 vicinity in the *Transit 2020 Plan*. However, the existing stations could be served more effectively through the development of the Freeway Transit Corridor system, including incorporation of transit advantage features in the I-494 corridor.

There are also three proposed transit/rail lines (see Figure 2.2) that cross the I-494 corridor study area. The Hiawatha light rail transit (LRT) line (from downtown Minneapolis to the Minneapolis-St. Paul International Airport and the Mall of America) will cross I-494 at 34th Avenue in Bloomington. The proposed Dan Patch commuter rail corridor is planned to cross I-494 in the vicinity of the East Bush Lake Road interchange. The Minneapolis Southwest Corridor (proposed for LRT or busway) is located just north of TH 62 and crosses I-494 in the vicinity of Baker Road. The importance of I-494 as a transit route connecting these lines or as a route to access related transit hubs could increase as these lines are developed.

Figure 2.2

Existing Transit Routes and Transit Facilities and Proposed Transit/ Rail Lines

Legend

- Express Transit Routes
- Local Transit Routes
- Express & Local Transit Routes
- Proposed Transit/Rail Lines
- Park-and-Ride (P)
- Transit Hubs (T)

0 1/2 1 2 kilometers

N

0 1/2 1 2 miles

Scale

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2.1.3.2 Pedestrian and Bicycle Transportation

The I-494 corridor is currently a major barrier to pedestrian and bicycle travel in the study area. The number of local roadway crossings of the I-494 corridor is limited, and most of them are relatively high-traffic arterial roadways that are typically less conducive to pedestrian and bicycle traffic.

Figure 2.3 illustrates existing and planned pedestrian and bicycle routes in the vicinity of I-494. In addition to highlighting the major facilities owned or proposed by the five communities along the corridor, the figure includes connections to facilities owned by Hennepin Parks and the regional system. Existing and planned transit centers to which bicycle routes connect are also illustrated. Pedestrian and bicycle routes shown include facilities that are striped lanes on a roadway, paths adjacent to a roadway or independent trail alignments.

The pedestrian/bicycle routes shown in Figure 2.3 illustrate the relatively extensive network of non-motorized transportation facilities in the vicinity of the I-494 corridor, and the extent of existing and planned crossings of I-494 needed to accommodate this system. The figure also shows locations where trails come to, but not across the I-494 corridor (e.g. France, Penn, Lyndale and Nicollet Avenues). Pedestrian and bicycle movement would be facilitated if additional crossing provisions were made, to increase system connectivity.

2.1.3.3 Minneapolis-St. Paul International Airport

Interstate 494 is one of the primary routes providing access to the Minneapolis-St. Paul International Airport at the eastern end of the study area. This airport is an international hub for the upper midwest and is an important factor in the economies of the Twin Cities and the state. On-going expansion of the airport continues to increase the amount of travel to and from the airport and, despite the promotion and availability of transit use for airport trips (including planned construction of LRT service from downtown Minneapolis), the number of vehicle trips to and from the airport is projected to continue to increase over the next 20-year forecast period.

Direct access to airport property and airport-related uses is provided at the 24th and 34th Avenue interchanges on I-494. Access to the main terminal is on TH 5, which runs between I-494 and TH 55. Access to the Hubert H. Humphrey charter terminal is via the 34th Avenue interchange. The level of congestion on I-494 has an impact on the accessibility of the airport from a large portion of the metro area. In addition, since TH 62 is a parallel highway, capacity and congestion problems on I-494 can also affect operations on TH 62, which is the primary alternative route for trips to the airport from the west.

2.1.3.4 Trucking

The I-494 corridor is a major truck route for both interstate trucking and for metro area truck traffic. Interstate 494 and I-694 are the interstate circumferential central business district bypass routes for I-94 around Minneapolis and St. Paul, making interstate truck use of the I-494 corridor

relatively high. The I-494 corridor is also an important route serving intermodal (rail, barge, etc.) facilities located in the southeast metro area. In addition, the collector-distributor role of I-494 in the metro region (as described in Section 2.1.1) makes it an important route for truck trips between commerce areas in the metro region.

Heavy truck volumes in the corridor range from approximately 4.6 to 7.2 percent of the total traffic volumes. Recent counts in the corridor indicate an additional 6 percent of traffic is light commercial vehicle (e.g. delivery truck) traffic. Although these percentages of truck traffic are similar to percentages on other Twin Cities freeways, the high daily traffic volumes on I-494 result in approximately 20 percent more commercial vehicles utilizing I-494 on an average day, compared to other Twin Cities freeways (12,350 versus 10,100 commercial vehicles per day for I-494 and average Twin Cities freeways, respectively).

2.2 ROLE IN THE FEDERAL TRANSPORTATION SYSTEM

In 1991, the Intermodal Surface Transportation Efficiency Act (ISTEA) was passed by congress and signed by the president. The purpose of the Act was to develop a national intermodal transportation system that is economically efficient, environmentally sound, provides the foundation for the Nation to compete in the global economy, and will move people and goods in an energy efficient manner. The Act called for the creation of the National Highway System (NHS), consisting primarily of existing interstate routes and a portion of the primary system. The NHS was established to focus federal resources on roads that are the most important to interstate travel and national defense, roads that connect with other modes of transportation, and roads essential for international commerce. Interstate 494 is part of the NHS network.

In May 1998, the U.S. Congress passed the Transportation Equity Act for the 21st Century (TEA-21). TEA-21 builds on the initiatives established in ISTEA. It continues the mission of ISTEA to develop a balanced and sustainable transportation policy.

TEA-21 establishes the following Metropolitan Planning Organization (MPO) planning factors:

1. Support the economic vitality of the metropolitan area, especially by enabling global competitiveness, productivity, and efficiency;

2. Increase the safety and security of the transportation system for motorized and non-motorized users;

3. Increase the accessibility and mobility options available to people and for freight;

4. Protect and enhance the environment, promote energy conservation, and improve quality of life;

5. Enhance the integration and connectivity of the transportation system, across and between modes, for people and freight;

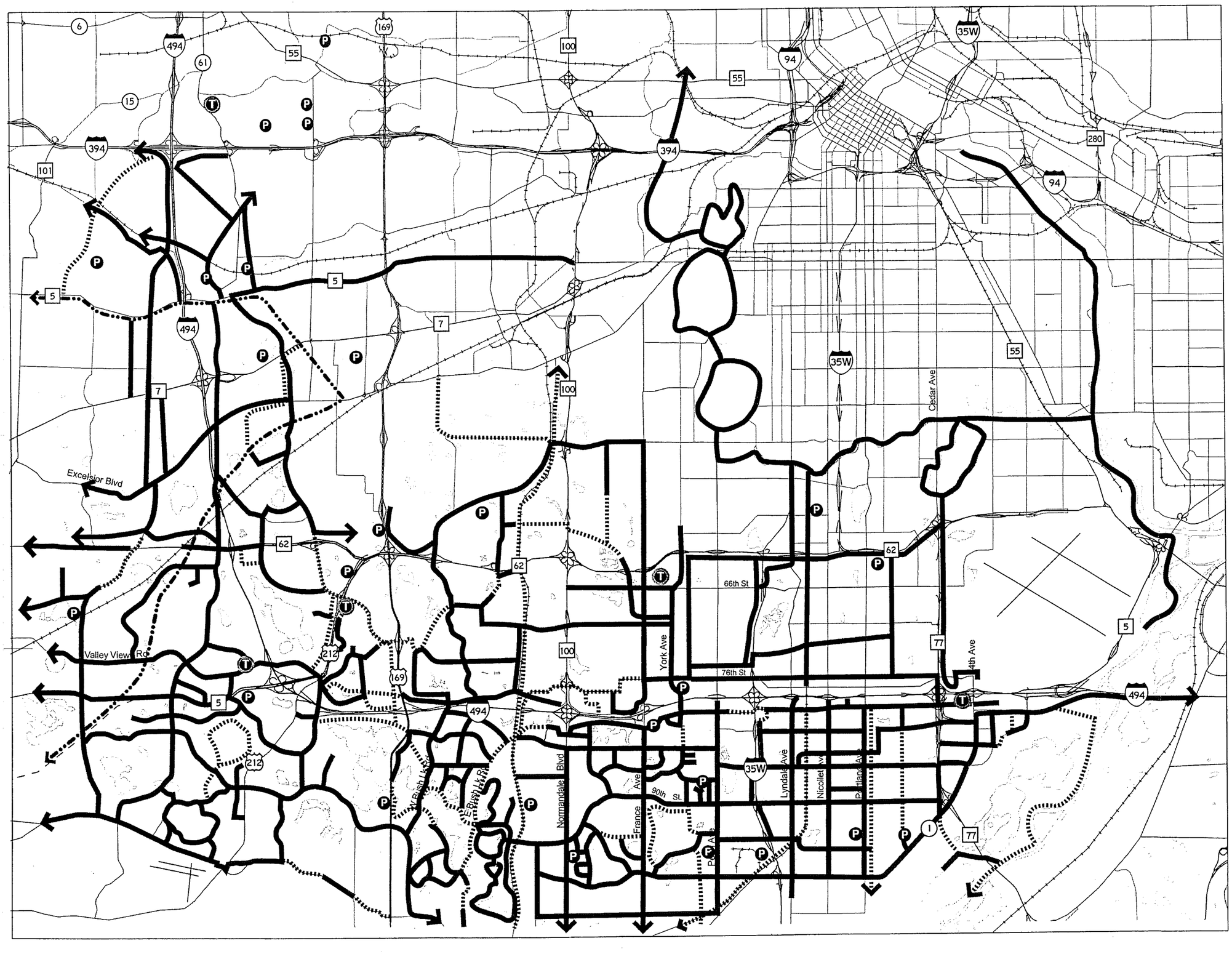

Figure 2.3

Existing and Planned Pedestrian and Bicyclist Routes

Legend

Existing

Planned

Temporary Existing Trail (HCRRA Alignment)

Park-and-Ride

Transit Hubs

0 1/2 1 2 kilometers

0 1/2 1 2 miles

Scale

N

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6. Promote efficient system management and operation; and

7. Emphasize the preservation of the existing transportation systems.

Maintaining the efficiency of I-494 in conveying traffic efficiently and safely is an important factor in meeting factors 2, 4, 6 and 7 of these planning objectives in the Twin Cities metro area. As part of the National Highway System as well as the Metropolitan Highway System, I-494 plays an important role in maintaining the efficiency and accessibility of the transportation system and in contributing to local and national economic vitality by facilitating the movement of goods and people (planning factors 1 and 3). As described in Sections 2.1.3.2 through 2.1.3.4 above, the I-494 corridor provides for intermodal connectivity (rail, barges and air transport), while making accommodations for pedestrian and bicycle access across the corridor (planning factor 5).

2.3 ROADWAY CONGESTION AND RELATED PROBLEMS

2.3.1 ROADWAY CONGESTION

Existing (1999) traffic volumes on I-494 were obtained from the April 2000 Mn/DOT Loop Detector Report (data from 10/99). No-Build travel forecasts for I-494 were completed for the year 2022 using the Metropolitan Councilís regional forecasting models (see Appendix B for details on travel forecasts and for figures showing existing and forecast volumes). Although the forecast No-Build volumes represent a substantial increase over current levels, they will be constrained by the capacity available on I-494. To better estimate the true travel demand for the corridor, an ìunconstrained forecastî that represents the demand for travel on I-494 assuming no congestion-related delay was also modeled. Table 2.1 summarizes the existing and 2022 No-Build and Unconstrained forecast volumes for selected two-way segments of I-494. This table shows that 2022 No-Build volumes in the corridor are projected to increase 7 to 31 percent if constrained by existing roadway capacity, and that unconstrained demand will increase by 28 to 57 percent.

The existing and 2022 forecast peak hour volumes were compared to the roadway capacity (based on existing roadway configurations) to provide an estimate of existing and future levels of service and potential for congestion. Figures 2.4 and 2.5 show relative levels of congestion on regional roadways in the study area, based on this volume-to-capacity-based ìlevel of serviceî analysis. Level of service (LOS) ìDî typically represents crowded but stable conditions. Speed and freedom to maneuver are severely restricted, and there is generally a poor level of driver comfort. Level of service ìEî and ìFî represent ìslow-and-goî and ìstop-and-goî conditions, respectively. Freedom to maneuver within the traffic stream is extremely difficult. In general, freeways in the area are currently congested, and performance levels will continue to worsen by year 2022.

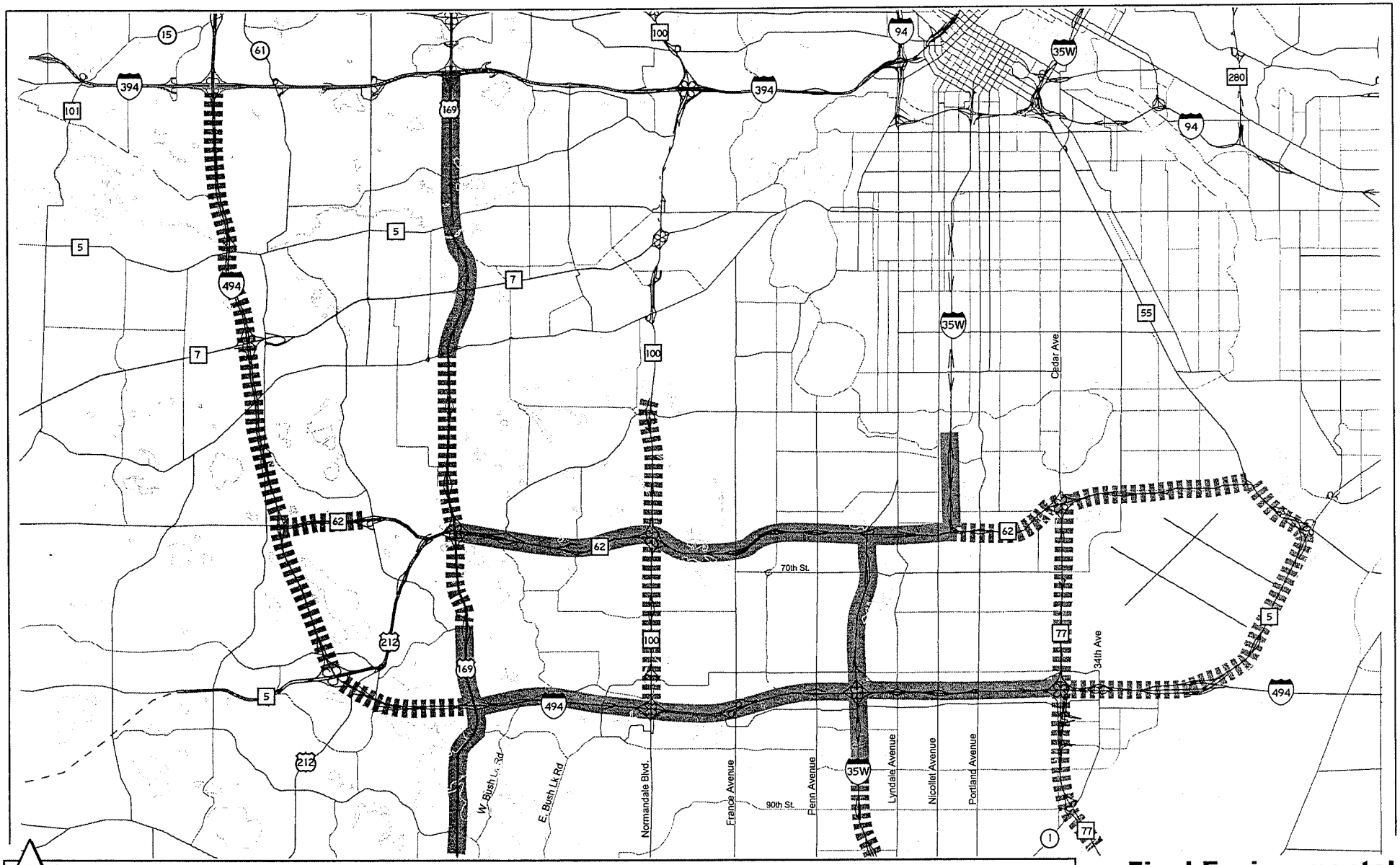

Figure 2.4

Generalized Peak Hour Level of Service on Regional Highway System (1999) Existing

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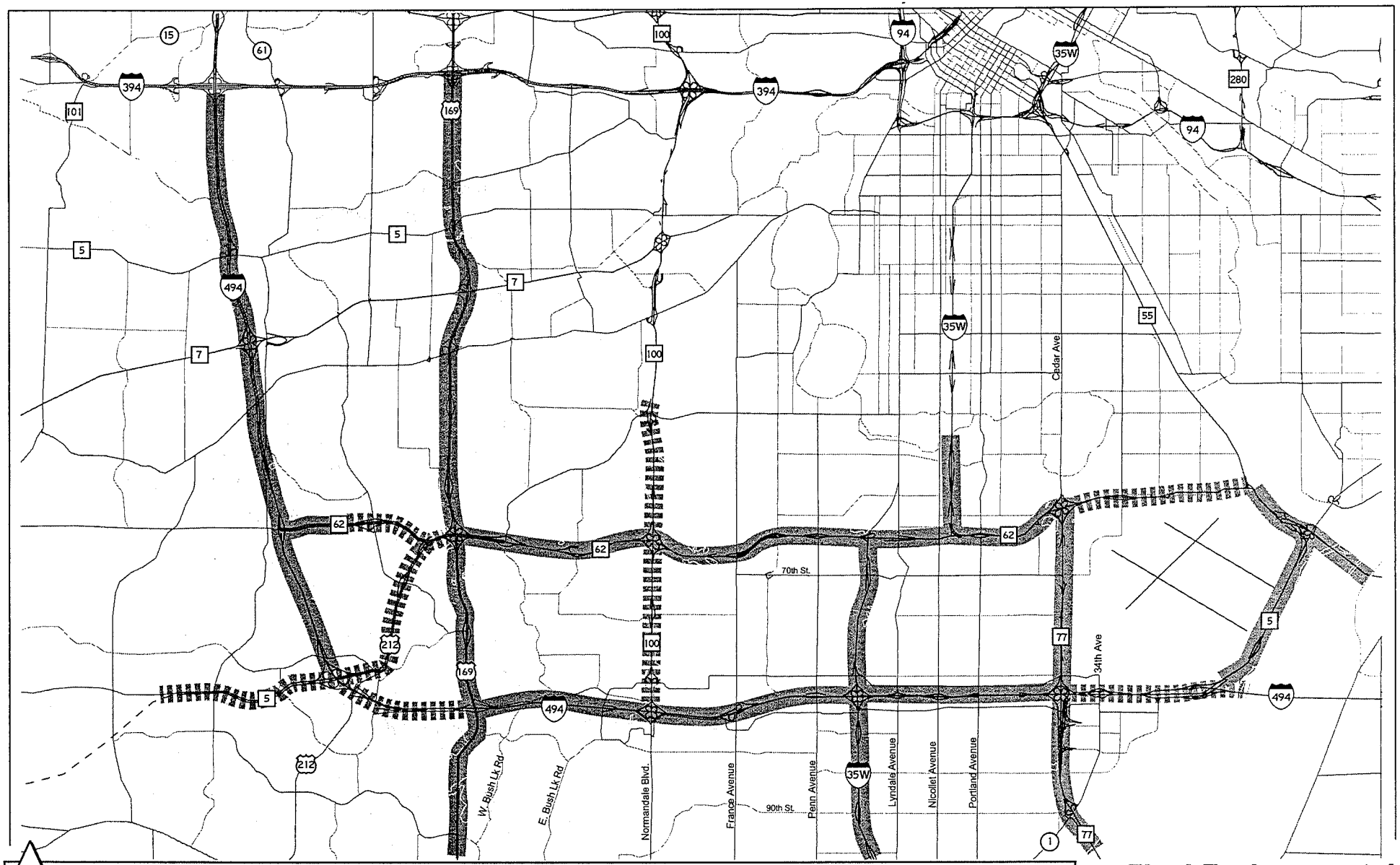
I-394 to the Minnesota River



N

0 .5 1 2 kilometers

0 .5 1 2 miles

scale

Legend

Heavily Congested (Level of Service E/F)[1]

Congested (Level of Service D)[2]

[1]Volume greater than 1950 vehicles per hour per lane.

[2]Volume greater than 0.63 percent of capacity(1250 vehicles per lane per hour).

Figure 2.5

Generalized Peak Hour Level of Service on Regional Highway System
2022 No Build

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I-394 to the Minnesota River

TABLE 2.1
DAILY TRAFFIC FORECAST ON SELECTED TWO-WAY SEGMENTS OF I-494

Segment	1999 Existing	2022 No-Build	2022 Unconstrained
Minnetonka Boulevard and I-394	110,000	135,000	166,000
% Change over existing		*23%*	*51%*
Valley View Road and TH 62	77,000	101,000	120,000
% Change over existing		*31%*	*56%*
TH 212/Flying Cloud Drive and TH 169	100,000	125,000	157,000
% Change over existing		*25%*	*57%*
TH 169 and East Bush Lake Road	123,000	132,000	187,000
% Change over existing		*7%*	*52%*
Penn Avenue and France Avenue	187,000	218,000	272,000
% Change over existing		*17%*	*45%*
Portland Avenue and Nicollet Avenue	175,000	212,000	244,000
% Change over existing		*21%*	*39%*
34th Street and 24th Street	178,000	214,000	228,000
% Change over existing		*20%*	*28%*

Another way to measure congestion is to estimate the duration of periods when roadways are congested (i.e., operate at LOS D or worse). The regional travel forecast model, which estimates daily traffic as the sum of six discrete time periods, was used to assess the number of time periods over which congestion occurs currently and is expected to occur. While this method provides a reasonable overview of congestion levels based on a comparison of forecast volumes to estimated roadway lane capacity, the forecast congestion does not reflect additional congestion due to mainline queues that develop as a result of traffic bottlenecks.

Table 2.2 shows that 74 percent of the 58 directional (i.e. eastbound plus westbound) kilometers (36 directional miles) on I-494 currently operate under congested conditions (i.e. LOS D or worse) for at least one hour of the day, with 43 percent operating at LOS E or F (slow-and-go/stop-and-go). The results also show that 24 percent of the roadway length is operating at LOS D or worse for four or more hours of the day. For 2022 conditions (No-Build), 83 percent of the freeway will operate at LOS D or worse for at least one hour, but the duration and magnitude of congestion would increase substantially: 52 percent of the freeway would be congested for four or more hours per day and 65 percent would experience at least one hour of LOS E/F conditions. Fourteen percent of the roadway would operate at LOS D or worse for at least six hours per day by 2022.

TABLE 2.2
PERCENT OF I-494 WITH CONGESTION[1]

	Existing (1999)	2022 No-Build
Level of Service ì Dî or Worse[2]		
At least one hour per day	74%	83%
At least two hours per day	73%	80%
At least three hours per day	52%	74%
At least four hours per day	24%	52%
At least five hour per day	14%	32%
At least six hours per day	5%	14%
Level of Service ì Eî or Worse[3]		
At least one hour per day	43%	65%
At least two hours per day	39%	59%
At least three hours per day	15%	40%
At least four hours per day	5%	19%
At least five hour per day	4%	7%
At least six hours per day	0%	4%

Source: SRF Consulting Group, Inc./regional travel forecast model

(1) Based on 58 directional kilometers (36 directional miles) of roadway, I-394 to Minnesota River

(2) Level of Service ìDî typically represents crowded, but stable conditions. Speed and freedom to maneuver are severely restricted, and there is generally a poor level of driver comfort.

(3) Level of Service ìEî or ìFî represents ìslow-and-goî or ìstop-and-goî conditions. Freedom to maneuver within the traffic stream is extremely difficult.

2.3.2 AVERAGE SPEED AND TRAVEL TIME

Increasing congestion in the I-494 corridor results in decreased travel speeds and increased travel time for corridor users. The forecast model was used to estimate the existing and 2022 No-Build average peak hour travel speeds. The estimated existing average peak hour speeds are 64 to 68 kph (40 to 42 mph) in the morning and 58 to 61 kph (36 to 38 mph) in the afternoon. By 2022, these speeds would drop to 50 to 56 kph (31 to 35 mph) in the morning and 42 to 48 kph (26 to 30 mph) in the afternoon. As speeds decrease, travel time increases throughout the corridor.

2.3.3 DIVERSION OF TRAFFIC TO OTHER ROADWAYS

Increasing congestion on I-494 results in diversion of traffic to other roadways, including parallel regional and local roadways. This diversion is especially evident when traffic congestion increases on local roads during excessive congestion events on I-494 due to poor weather or crash incidents. However, the diversion takes place on a daily basis, to a lesser extent, as travelers try to find a faster, less congested route for their trips. Ideally, capacity should be

added to I-494 and to other principal arterials (and not to local roads) to meet regional user demands, since additional capacity can be added more efficiently to an arterial than to numerous local roads.

Some local governments have taken steps to promote use of parallel reliever routes as alternatives to the use of I-494 for local trips. The cities of Bloomington and Richfield are implementing improvements to 79th and 77th Streets, respectively, as parallel relievers for I-494. Edina is adding capacity improvements on West 77th and West 78th Streets in 2001, in addition to creating a new frontage road from West 78th Street to the Valley View Road interchange with TH 169. These local improvements include implementation (with Mn/DOT) of an integrated corridor traffic management (ICTM) project area from East Bush Lake Road to 34th Avenue, including a coordinated freeway-arterial traffic management system. However, even with those improvements to accommodate local traffic, the I-494 corridor is currently, and is projected to continue to be, congested.

Safety can be an issue when traffic diverts from the principal arterials to local streets. Local collector streets (with at-grade intersections and other potential conflict points) have an average crash rate of approximately 1.6 incidents per million vehicle kilometers (2.6 incidents per million vehicles), compared to an average of 0.7 to 0.8 incidents per million vehicle kilometers (1.1 or 1.2 incidents per million vehicle miles) for a principal arterial. Diversion of trips to local streets would likely result in an increase in the number of incidents on local roads.

2.4 EXISTING ROADWAY DEFICIENCIES

The existing I-494 corridor suffers from two types of roadway deficiencies: 1) physical deterioration due to the age of the facility and 2) design deficiencies resulting from changes in roadway design standards since construction of I-494 in the 1950s and 1960s. In addition, traffic demand has grown well beyond the levels the facility was designed to handle. Some of the specific needs and deficiencies identified in the I-494 corridor are discussed below (in no particular order of importance).

2.4.1 PHYSICAL DETERIORATION

- **Condition of Roadway and Bridges:** The pavement on I-494 has reached the end of its design life and is in need of replacement. Bituminous overlays present a temporary solution. This approach becomes increasingly inefficient economically over time, because the overlays are required with increasing frequency as the concrete base degrades. Although some bridge construction work has occurred since the DEIS, there are still many bridges along I-494 that will soon need either deck replacement or total replacement. If the deteriorating condition of the roadway and structures is not addressed, temporary repair/maintenance projects will continue. These projects fail to address the long-term rehabilitation needs of the corridor and are generally less cost-effective from a life-cycle perspective, since the increasingly frequent repairs can accumulate to a total cost that is greater than the lifetime cost of roadway reconstruction.

2.4.2 SUBSTANDARD DESIGN ELEMENTS

Some design standardsó including sight distances and interchange ramp designsó have changed since the late 1950s when I-494 was designed. Roadway reconstruction would provide an opportunity to bring the roadway design up to current standards, including design issues, such as those that follow:

Inadequate Shoulder Width

The existing segment of I-494 between TH 100 and TH 77 typically has 1.2-meter (4-foot) inside and 3.0-meter (10-foot) outside shoulders. Current standards recommend 3.6-meter (12-foot) inside and 3.0-meter (10-foot) outside shoulders. Adequate shoulder dimensions are particularly a safety concern, as well as an important operational feature. The wider 3.6-meter (12-foot) shoulders provide an area for emergency vehicles to bypass congested areas in the case of accidents or other incidents and provide space where inoperable vehicles can pull off the road and wait for assistance. The existing narrow shoulders are not adequate for disabled vehicles to move out of the general traffic lanes, causing additional delays for traffic, and increasing the potential for accidents. Therefore, narrow shoulders are a substantial factor in reducing traffic flow during emergency situations. Narrow shoulders also do not allow the movement of buses during congested traffic conditions.

Inadequate Lateral Clearances

In the section of I-494 between Lyndale and Nicollet Avenues, there is only a 1.8-meter (6-foot) berm between the edge of the outside traffic lane and the retaining wall. This condition restricts traffic flow, increases safety concerns, and is not adequate for snow storage in the winter.

Inadequate Vertical Clearances

A number of bridges over I-494 have only 4.4 meters (14.5 feet) of clearance between the road surface and the bottom of the bridge. Current Mn/DOT standards require 8.0 meters (16.3 feet) of clearance. Mn/DOTís records indicate that these substandard clearances have caused numerous accidents in which high loads have hit overhead bridges in the I-494 corridor. Reconstruction of bridges in the I-494 corridor from I-394 to the Minnesota River could provide an opportunity to bring the corridor up to current clearance standards, reducing the number of high-load accidents in the corridor.

2.4.3 CLOSE INTERCHANGE AND RAMP SPACING

The American Association of State Highway and Transportation Officials (AASHTO) recommends that the minimum distance between adjacent interchanges should not be less than 1.6 kilometers (1 mile) in urban areas. There are a number of locations within the I-494 corridor that do not meet this minimum spacing guideline. The longest section of the corridor with closely-spaced interchanges is located between Penn Avenue and 34th Avenue, where average spacing is approximately 0.8 kilometers (0.5 mile).

These closely spaced interchanges create inadequate distances between on-ramps and off-ramps. Insufficient ramp spacing causes increased conflicts between traffic entering the freeway from one interchange and traffic exiting the freeway at the next interchange. These vehicle conflicts reduce the capacity of adjacent lanes and increase the potential for accidents.

2.4.4 POOR DRAINAGE DESIGN/PERFORMANCE

Because of inadequate storm water drainage capacity and roadway profiles in some areas, heavy rains cause flooding under some of the cross-street underpasses within the project corridor. Problems are most frequent at Penn Avenue and in the segment between I-35W and TH 77, where major storms (10-year storm levels or greater) can result in flooding that can cause closure of all or portions of the mainline. The flooding also creates a substantial safety hazard with the heavy traffic flows on I-494. A section of I-494 at East Bush Lake road is approximately 1.5 meters (5 feet) below the 100-year flood elevation of Nine Mile Creek. In 1987, this section of highway was closed for two weeks following a major storm because the road was under water. The cities of Richfield and Bloomington are currently addressing storm water drainage problems within their communities and are aware of the need to coordinate their improvements with I-494 highway drainage plans.

2.4.5 SAFETY CONCERNS

Crash rate data for the I-494 corridor for the years 1997 through 1999 was reviewed and compared to Mn/DOT average crash rates for similar highways in the metro area, to assess whether the congestion and/or roadway design issues described above have a substantial impact on roadway safety. This review indicated that although safety is not a major problem in the I-494 corridor, there are differences in crash statistics within the corridor. The I-494 segment from I-394 to TH 100 had a rate of 0.6 incidents per million vehicle kilometers (0.9 incidents per million vehicle miles) traveled (approximately 18 percent below the average incident rate for metro freeways), and the segment from TH 100 to the Minnesota River had a rate approximately 16 percent above the average incident rate. The lower-than-average rate on the I-394 to TH 100 segment is likely due to greater distances between interchanges, compared to the eastern section of I-494 that has more closely-spaced interchanges.

2.5 ENVIRONMENTAL ISSUES

Increasing congestion on I-494 over time will result in increasing air quality problems along the I-494 corridor, since idling vehicles are a source of carbon monoxide pollution. In addition, as discussed in Section 2.3, the existing and projected future congestion on I-494 would result in increased traffic and congestion on local arterials and on other local residential streets as motorists look for alternatives to the congested routes. The increase in local roadway traffic would, in turn, cause increased traffic noise, safety problems and air pollution in local neighborhoods. Improving operations on I-494 to decrease congestion on the freeway and to decrease traffic diversion would help to minimize these problems.

Section 2.4 discusses the inadequacies of storm water conveyance and storage in the existing I-494 corridor. In addition, there are deficiencies in storm water detention and treatment provisions in the corridor, since much of the roadway was constructed prior to the implementation of current storm water treatment regulations.

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Front Side

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3.0 ALTERNATIVES INCLUDING PROPOSED ACTION

3.1 INTRODUCTION

Formal assessment of alternatives to address growing traffic problems in the I-494 study area began with the preparation of the *I-494 Corridor Study* (October 1987). The participants, process and findings associated with this study are summarized in Section 2.1.2 of the DEIS. The recommendations from the *I-494 Corridor Study* included land use, transit and travel demand management (TDM) strategies, as well as a roadway plan that outlined concepts for physical improvements to I-494 and adjacent roadways. The recommended I-494 improvements were used as the basis for developing alternatives in an EIS scoping process initiated for the I-494 study area.

The *I-494 Scoping Document*, completed in December 1989, identified six Build alternatives with related interchange improvement options along with a No-Build and a Transportation System Management (TSM) alternative. These alternatives were analyzed in relation to social and economic impacts, people-carrying capacity, traffic service, environmental impacts, and community opinion. Two of these alternatives were eliminated prior to the DEIS phase as documented in the *Scoping Decision Document* (September 1990).

After completion of the DEIS in April 1992, the Public Hearing in June 1992, and the conclusion of the public review period on June 26, 1992, the Commissioner of the Minnesota Department of Transportation identified Alternative 2A from the DEIS as the Preferred Alternative for the I-494 corridor in January 1993. However, in 1994 the 1993 Preferred Alternative was removed from the Metropolitan Councilís *Transportation Development Guide/Policy Plan* due to federal requirements for financial constraint in regional transportation planning, and insufficient available funding to construct the 1993 Preferred Alternative. In 2000, Mn/DOT reinitiated the I-494 EIS process with corridor improvements which were reduced in scale and cost relative to the 1993 Preferred Alternative.

Section 3.2 describes alternatives dismissed prior to the DEIS. Section 3.3 describes alternatives addressed in the DEIS. Section 3.4 describes the current Preferred Alternative and provides background regarding design decisions which have been made.

3.2 ALTERNATIVES DISMISSED PRIOR TO THE DEIS

As a result of analysis completed in the Scoping Document and comments received during its public review period, two of the six initial alternatives were screened from consideration. A brief discussion of these two alternative options is provided below.

<u>New Location Alternative</u>

The construction of a new facility within a new right-of-way to replace or supplement I-494 was considered to be unfeasible because the I-494 corridor is intensely developed, and the social, economic, and environmental impacts of this alternative would be substantially greater than

those that would occur with expansion of existing I-494 facilities. The construction of a new facility to supplement I-494 would not address the deteriorated condition or design deficiencies of the present I-494 roadway or bridge structures.

Light Rail Transit

Light Rail Transit (LRT) was dismissed as an alternative in the *I-494 Corridor Study* based on the findings of the Long-Range Transit Analysis, completed by the Metropolitan Council in 1986, and a ridership forecast developed during the preparation of the *I-494 Corridor Study*. The Metropolitan Council study established 23,000 daily riders as the minimum threshold for the viability of LRT in the freeway median. By comparison, a year 2000 patronage forecast prepared by the Metropolitan Council and Regional Transit Board (RTB) staff estimated that LRT in the I-494 corridor would achieve only approximately 6,000 riders per day. This low projected ridership, combined with the high capital cost of LRT on a freeway right-of-way, lead to a very low cost-benefit ratio and very high cost per rider index for LRT in the I-494 corridor.

As a result of the ridership and benefit-cost analyses, the Metropolitan Council does not indicate I-494 as a potential LRT corridor in its most recent *Transportation Policy Plan* (2000) or *Transit 2020 Master Plan* for the Minneapolis-St. Paul Metropolitan Area.

3.3 ALTERNATIVES STUDIED IN THE DEIS AND DISMISSED

3.3.1 NO-BUILD ALTERNATIVE

The No-Build Alternative assessed in the DEIS assumed only maintenance and traffic management improvements underway or committed for construction when the DEIS was prepared (prior to 1992). These projects included bridge redecking or replacement, pavement repair and resurfacing, and ramp metering.

The existing roadway contains a number of deficiencies that would be perpetuated under the No-Build condition. The deficiencies of the existing facility are discussed in detail in Sections 2.3 and 2.4 of this FEIS. The primary deficiencies are identified below:

- Inadequate traffic capacity (travel times, safety, air quality impacts)
- Substandard geometrics and sight distances
- Inadequate shoulder widths
- Inadequate lateral and vertical clearances
- Inadequate ramp spacing
- Poor drainage design/performance (Penn Avenue, and I-35W to TH 77)

The No-Build Alternative was not selected as the Preferred Alternative because existing deficiencies would continue and become more severe as anticipated development in the project area and region will substantially increase traffic levels on the facility in coming years. However, the No-Build Alternative is used as the basis for comparison for the Preferred Alternative in this FEIS. The No-Build Alternative in this FEIS includes the roadway

improvements already implemented in the I-494 corridor area since the DEIS, as described in Section 1.2.2, and construction of a single point interchange at Penn Avenue/I-494 by the City of Richfield (scheduled 2002 completion).

In addition, the No-Build Alternative currently assumes TSM measures including the following:

- Travel Demand Management
- Ramp metering and preferential access for High Occupancy Vehicles (HOVs)
- Increased transit services
- Improvements to and operation of adjacent arterial roadways consistent with the Integrated Corridor Traffic Management System (ICTMS)

Assuming TSM measures to be part of the No-Build Alternative does not change the conclusion that the No-Build Alternative would not adequately meet the corridor needs as described in Sections 2.3 and 2.4 of this FEIS.

3.3.2 TRANSPORTATION SYSTEM MANAGEMENT (TSM) ALTERNATIVE

The DEIS identified TSM as a separate implementation alternative. This alternative was characterized as being able to provide improvements for the I-494 corridor while minimizing many of the environmental impacts associated with major construction activities.

Many of these TSM measures have already been or are being implemented. For this reason TSM is currently considered to be part of the No-Build Alternative. Section 3.4.6 addresses Travel Demand Management (TDM) measures in place or planned for the corridor. Most ramps are currently metered and cameras have been installed to monitor traffic conditions. Seventy-seventh Street in Richfield is being reconstructed and improved to accommodate short and medium length trips currently using I-494 and to serve as a reliever/detour facility during incidents on the freeway. The City of Bloomington started reconstruction of the 79th/80th Street corridor in 1995 and is nearing completion of this roadway (completion anticipated in 2002).

3.3.3 MAINLINE BUILD ALTERNATIVES

The DEIS addressed the following mainline Build alternatives:

- **Alternative 1:** Add one general traffic lane in each direction throughout the entire length of the corridor, except for the section between TH 212/Flying Cloud Drive and TH 100, where two general traffic lanes in each direction would be added. Also, all of the interchanges would be reconstructed.

- **Alternative 1A:** Similar to Alternative 1 except that it would designate the additional lane in each direction as an HOV lane. In addition, the section between TH 212/Flying Cloud Drive and TH 100 would receive one additional general traffic lane in each direction. The HOV lane would be 4.3 meters (14 feet) wide with diamond shapes painted on the pavement to indicate their special purpose. The HOV lanes would not be barrier-separated from the regular traffic lanes, and, therefore, traffic would be able to enter and exit the HOV lanes at any point. However, the additional 0.6 meter (2 feet) of lane width would provide a buffer between the HOV lanes and general traffic lanes.

- **Alternative 2:** Add two lanes in each direction throughout the entire length of the corridor, except for the section between TH 212/Flying Cloud Drive and TH 100 where three general traffic lanes in each direction would be added. One lane in each direction (two lanes between TH 212/Flying Cloud Drive and TH 100) could be added initially, and right-of-way reserved for another lane in each direction to be added as needed in the future.

- **Alternative 2A**: Similar to Alternative 2, except that one lane in each direction would be designated as an HOV lane. With this option, the HOV lanes could be added initially with right-of-way reserved for a general traffic lane in each direction to be added as needed in the future. The HOV lanes would be 4.3 meters (14 feet) wide with the additional 0.6 meter (2 feet) of lane width providing a buffer from the general traffic lanes.

Alternative 2A was identified by Mn/DOT as the Preferred Alternative in 1993 (hereafter referenced to as the ì1993 Preferred Alternativeî). This alternative provided the greatest overall corridor improvement in terms of meeting the corridor needs discussed in Section 2.0 of the DEIS.

Subsequent to the identification of Alternative 2A as the Preferred Alternative, funding constraints required that this determination be reevaluated. In 1994, the I-494 Reconstruction Preferred Alternative was removed from the Metropolitan Councilís *Transportation Development Guide/Policy Plan* due to federal requirements for financial constraint in regional transportational planning, and insufficient available funding to construct Alternative 2A.

3.4 THE PROPOSED PROJECT

The current Preferred Alternative (hereafter referred to as ìPreferred Alternativeî) is reduced in scale relative to the 1993 Preferred Alternative. It combines elements of the various alternatives evaluated in the DEIS to provide many of the benefits of the 1993 Preferred Alternative, but at lower cost. In contrast to the 1993 Preferred Alternative, the current Preferred Alternative does not include designation of an exclusive HOV lane. This change reflects discussions/agreements among FHWA, Mn/DOT and Metropolitan Council staff, as well as the current Metropolitan Council Transportation Policy Plan (TPP) policy regarding HOV accommodations in the I-494 corridor. The current TPP (unlike the 2010 Highway Plan component of the TPP described in Section 2.2.1 of the I-494 reconstruction DEIS) does not specifically recommend a

designated HOV lane on I-494 from I-394 to 34th Avenue. The current TPP decreases emphasis on exclusive HOV lanes, compared to previous plans, acknowledging that the use of bus shoulder lanes, in conjunction with HOV bypass lanes, has become more attractive due to ease of implementation and cost considerations. The proposed I-494 Preferred Alternative is consistent the TPP.

The design features of the Preferred Alternative are described below including, where applicable, the rationale for selecting specific design sub-alternatives (e.g. at interchanges).

3.4.1 LOCATION

The segment of I-494 proposed for reconstruction is located between I-394 and the Minnesota River in Hennepin County. This segment of I-494 serves the Cities of Minnetonka, Eden Prairie, Edina, Bloomington and Richfield and the Minneapolis-St. Paul International Airport. The project segment is 29.3 kilometers (18.2 miles) in length.

3.4.2 LANES AND GEOMETRICS

The Preferred Alternative has the following mainline features:

- One additional through lane in each direction for the full length of the project corridor.
- Auxiliary lanes will be provided as follows: one auxiliary lane each direction between TH 5 (Eden Prairie) and TH 100; two auxiliary lanes each direction between TH 100 and I-35W; one auxiliary lane each direction between I-35W and TH 77.
- Between TH 169 and 24th Avenue, 7.9 meters (26 feet) will be reserved in the median for future transportation needs.
- Outside shoulders will be constructed to accommodate buses during peak travel periods to provide transit preference.

The design concept layouts for the proposed reconstruction are presented as Figures 3.1 through 3.12. Typical cross sections are depicted on Figure 3.13.

3.4.3 INTERCHANGES AND ACCESS

It is currently anticipated that most system-to-system interchange ramps and local access entrance ramps will be metered to control the rate of traffic flow onto I-494. However, Mn/DOT policies regarding ramp meters are currently under review. HOV bypass lanes will be provided at metered ramps consistent with Mn/DOT policies as discussed in Section 1.4 of this FEIS.

The Preferred Alternative includes upgrading the system interchanges (interchanges with other major highways), modifying the local access interchanges to meet current design standards, and improving spacing between entrance and exit ramps. These improvements are presented by interchange area below.

The DEIS included a discussion of the process used to identify and scope alternatives for each of the interchanges on I-494. A number of alternatives were analyzed for each interchange during the scoping phase of the project. The alternatives considered, as well as the alternatives selected for study in the DEIS, are identified in the DEIS. Information regarding the alternative selected at each interchange as part of the Preferred Alternative and the reasons for selecting it is provided under the following headings. Further information regarding access to/from the I-494 corridor is provided in Section 4.3.3.1 of this FEIS.

I-394 Oakland Road Interchange and Oakland Road Access

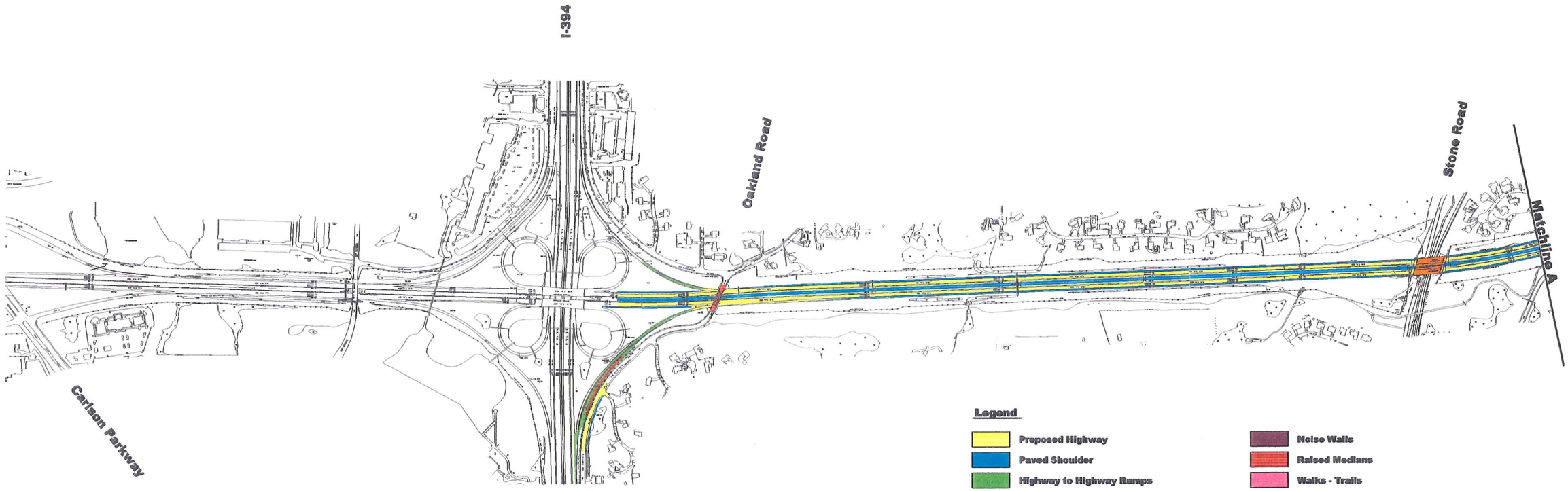
The I-494 *Scoping Document* identified two primary issues for this area: a) where and how to end the additional lanes on I-494, and b) the need for access to and from the south onto I-494 at Oakland Road.

The northern limit for this project is at I-394. Currently, there are only two through lanes in each direction on I-494 over I-394. The additional northbound lane will begin at the southerly ramp from I-494 to I-394. The additional southbound lane will begin at the loop from westbound I-394 to southbound I-494.

A half diamond interchange was initially considered at Oakland Road as an option for alleviating traffic levels on I-394 and at the I-394/Plymouth Road Interchange. The results of the traffic analysis showed that the proposed half diamond interchange at Oakland Road would not result in a substantial improvement in traffic operations at these locations. In addition, Oakland Road residents were concerned about increases in traffic in their neighborhood associated with this access. Finally, federal policies regarding access to interstate highways recommend that only full access interchanges should be provided. For these reasons, the half-diamond interchange at Oakland Road was not included in the Preferred Alternative; there will be no change in the current condition of no access at Oakland Road (refer to Figure 3.1).

Minnetonka Boulevard Interchange

Only one alternative for the Minnetonka Boulevard interchange was analyzed in the DEIS. The changes proposed at this location were intended to improve operational characteristics by eliminating the ìbutton hookî ramp configuration with McGinty Road, and constructing a folded diamond ramp configuration. Since the time of the DEIS, bridges at the Minnetonka Boulevard interchange were determined to be structurally deficient and in need of replacement; as part of that project, the interchange was reconstructed using the existing ìbutton hookî ramps with McGinty Road. As a result, the current Preferred Alternative proposes to use this existing interchange design (refer to Figure 3.2) rather than require it to be reconstructed again.



Legend

- Proposed Highway
- Paved Shoulder
- Highway to Highway Ramps
- Local Access Roads
- Frontage Roads
- Diamond Lanes - HOV Bypass Ramps
- Bridges
- Retaining Walls
- Noise Walls
- Raised Medians
- Walks - Trails
- Proposed Construction *
- Under Construction *
- Partial Acquisition
- Total Acquisition

* Includes Other MnDot Projects & Projects Led By Bloomington, Richfield And Hennepin County

Preferred Alternative

Layout Sheet 1

0 400 800
scale feet
0 150 300 m

Key

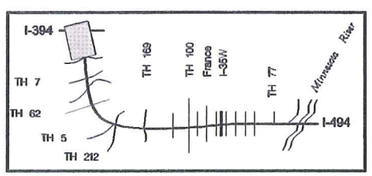


Figure 3.1

Final Environmental Impact Statement

I-494 Reconstruction

I-394 to the Minnesota River

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LEGEND

- Proposed Highway
- Paved Shoulder
- Highway to Highway Ramps
- Local Access Roads
- Frontage Roads
- Diamond Lanes - HOV Bypass Ramps
- Bridges
- Retaining Walls
- Noise Walls
- Raised Medians
- Walks - Trails
- Proposed Construction *
- Under Construction *
- Partial Acquisition
- Total Acquisition

* INCLUDES OTHER MNDOT PROJECTS & PROJECTS LED BY BLOOMINGTON, RICHFIELD AND HENNEPIN COUNTY

Preferred Alternative

Layout Sheet 2

0 400 800
scale feet
0 150 300 m

Key

NORTH

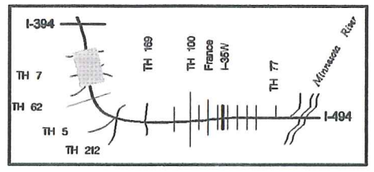

Figure 3.2

Final Environmental Impact Statement

I-494 Reconstruction

I-394 to the Minnesota River

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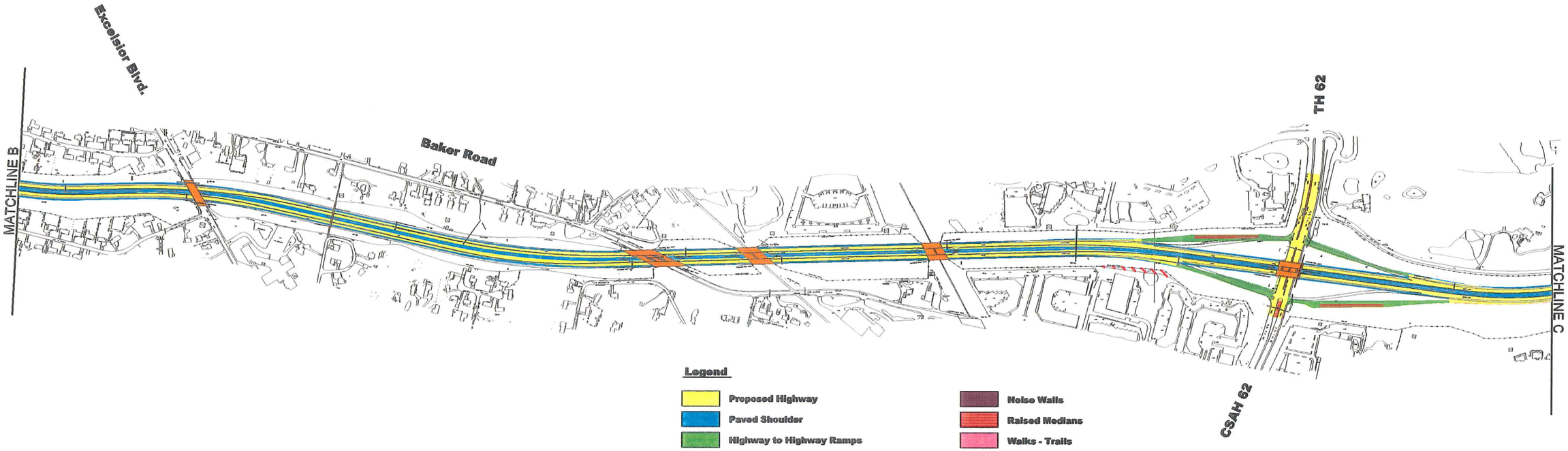

Legend

- Proposed Highway
- Paved Shoulder
- Highway to Highway Ramps
- Local Access Roads
- Frontage Roads
- Diamond Lanes - HOV Bypass Ramps
- Bridges
- Retaining Walls
- Noise Walls
- Raised Medians
- Walks - Trails
- Proposed Construction *
- Under Construction *
- Partial Acquisition
- Total Acquisition

* INCLUDES OTHER MNDOT PROJECTS & PROJECTS LED BY BLOOMINGTON, RICHFIELD AND HENNEPIN COUNTY

Preferred Alternative

Layout Sheet 3

Key

0 400 800
scale feet
0 150 300 m

NORTH

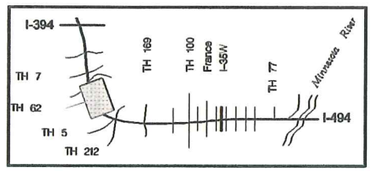

Figure 3.3

Final Environmental Impact Statement

I-494 Reconstruction

I-394 to the Minnesota River

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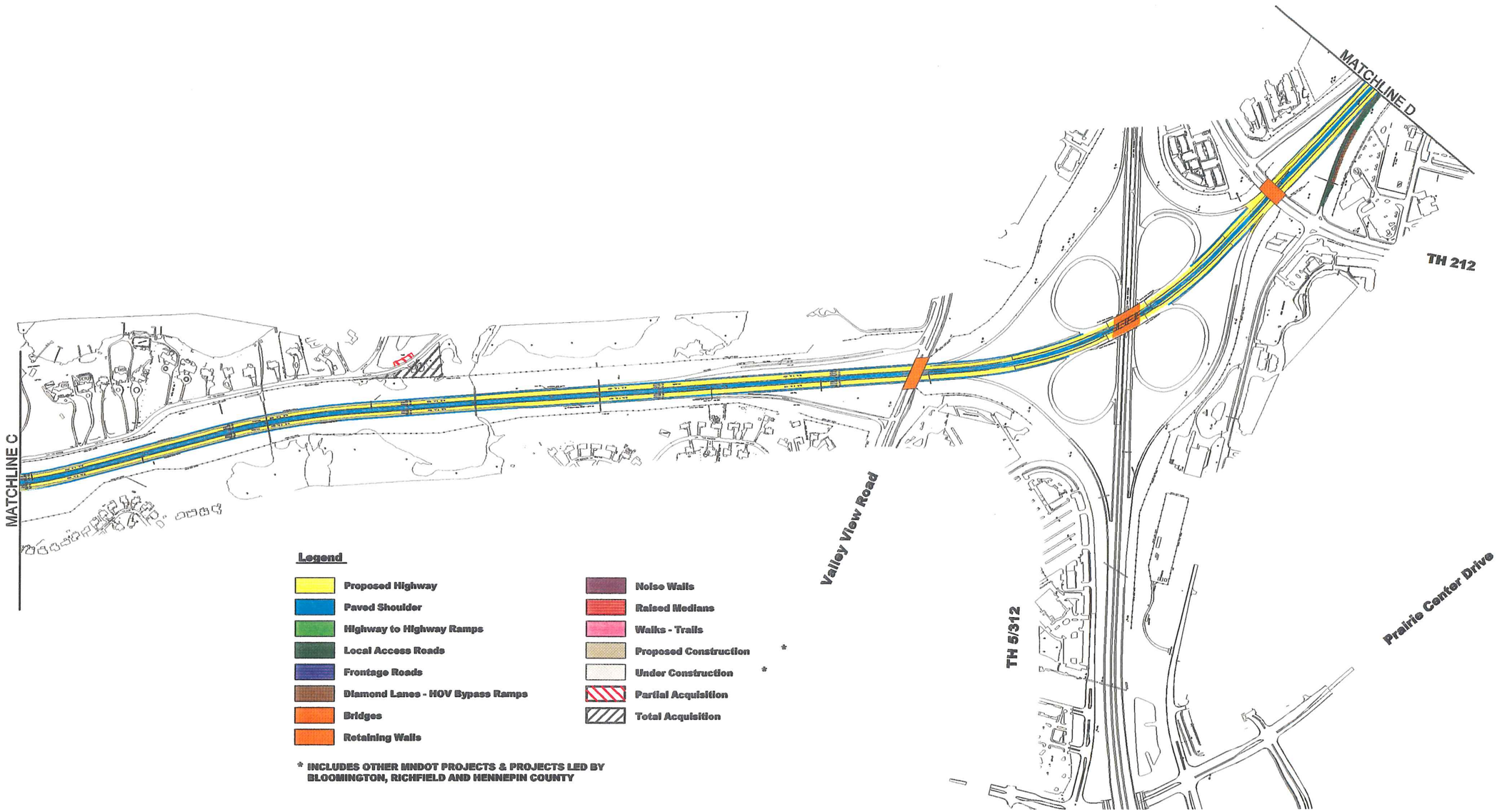

Preferred Alternative

Layout Sheet 4

0 400 800
Scale Feet
0 150 300 m

Key

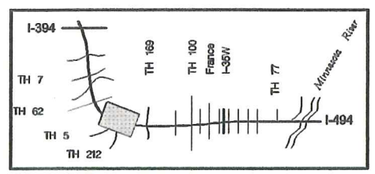

Figure 3.4

Final Environmental Impact Statement

I-494 Reconstruction

I-394 to the Minnesota River

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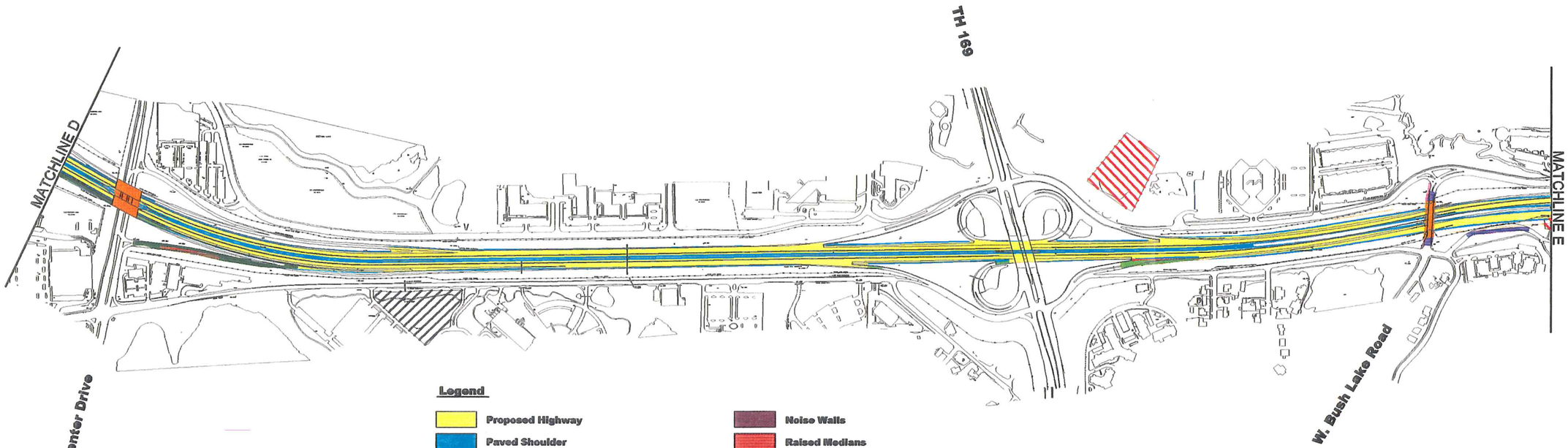

Legend

- Proposed Highway
- Paved Shoulder
- Highway to Highway Ramps
- Local Access Roads
- Frontage Roads
- Diamond Lanes - HOV Bypass Ramps
- Bridges
- Retaining Walls
- Noise Walls
- Raised Medians
- Walks - Trails
- Proposed Construction *
- Under Construction *
- Partial Acquisition
- Total Acquisition

* INCLUDES OTHER MNDOT PROJECTS & PROJECTS LED BY BLOOMINGTON, RICHFIELD AND HENNEPIN COUNTY

Preferred Alternative

Layout Sheet 5

0 400 800 scale feet

0 150 300 m

NORTH

Key

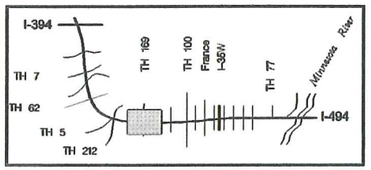

Figure 3.5

Final Environmental Impact Statement

I-494 Reconstruction

I-394 to the Minnesota River

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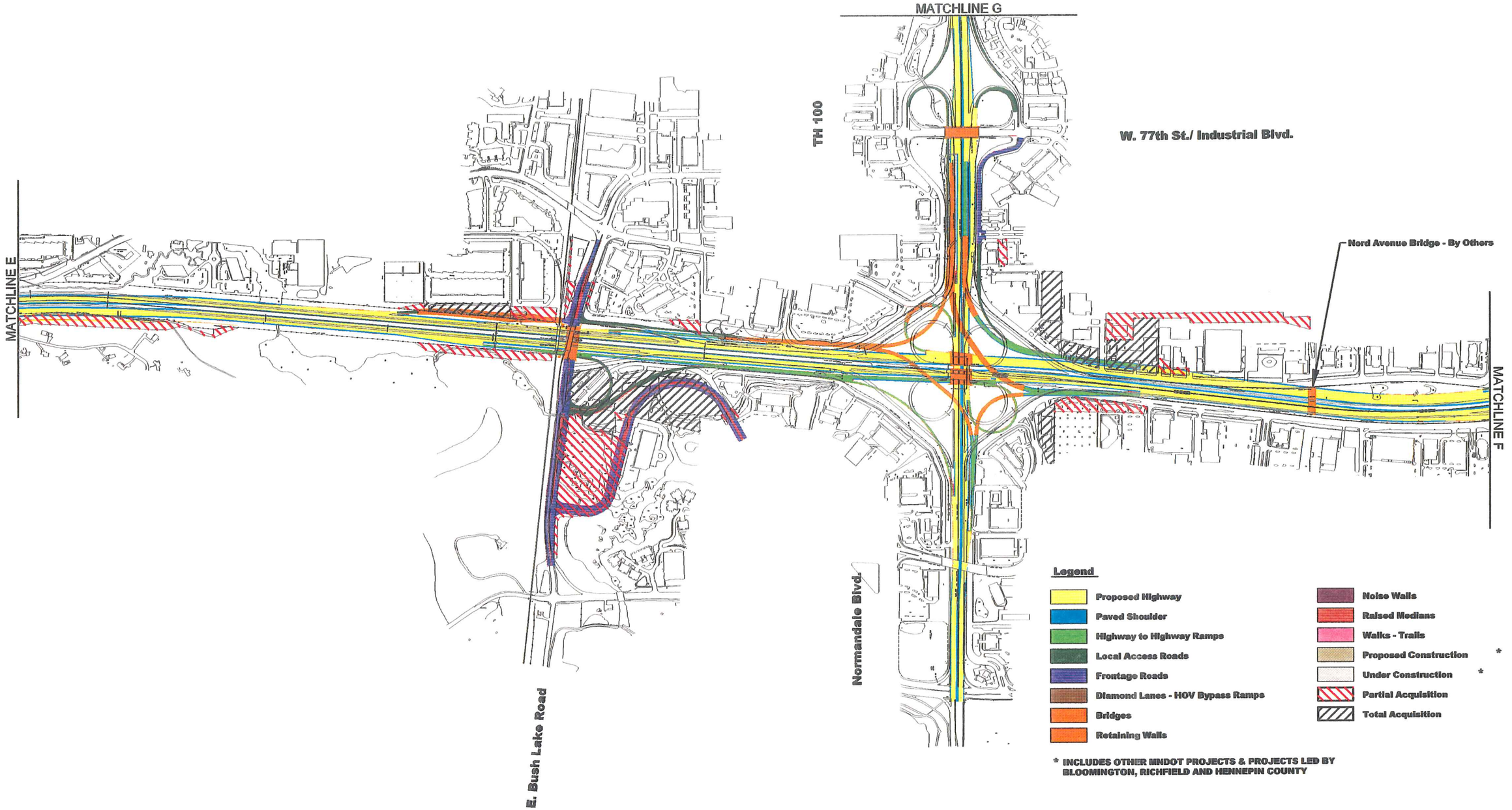

Preferred Alternative

Layout Sheet 6

0 400 800
scale feet
0 150 300 m

NORTH

Key

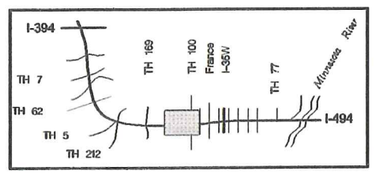

Figure 3.6

Final Environmental Impact Statement

I-494 Reconstruction

I-394 to the Minnesota River

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Legend

- Proposed Highway
- Paved Shoulder
- Highway to Highway Ramps
- Local Access Roads
- Frontage Roads
- Diamond Lanes - HOV Bypass Ramps
- Bridges
- Retaining Walls
- Noise Walls
- Raised Medians
- Walks - Trails
- Proposed Construction *
- Under Construction *
- Partial Acquisition
- Total Acquisition

* INCLUDES OTHER MNDOT PROJECTS & PROJECTS LED BY BLOOMINGTON, RICHFIELD AND HENNEPIN COUNTY

Preferred Alternative

Layout Sheet 7

0 400 800
scale feet
0 150 300 m

NORTH

Key

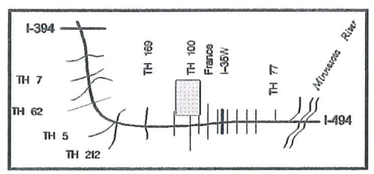

Figure 3.7

Final Environmental Impact Statement

I-494 Reconstruction

I-394 to the Minnesota River

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MATCHLINE I

France Ave.

Xerxes Ave.

Penn Ave.

I-35W

76th St. W.

Lyndale Ave.

MATCHLINE H

MATCHLINE F

W. 82nd St.

MATCHLINE J

Legend

- Proposed Highway
- Paved Shoulder
- Highway to Highway Ramps
- Local Access Roads
- Frontage Roads
- Diamond Lanes - HOV Bypass Ramps
- Bridges
- Retaining Walls
- Noise Walls
- Raised Medians
- Walks - Trails
- Proposed Construction *
- Under Construction *
- Partial Acquisition
- Total Acquisition

* INCLUDES OTHER MNDOT PROJECTS & PROJECTS LED BY BLOOMINGTON, RICHFIELD AND HENNEPIN COUNTY

Preferred Alternative

Layout Sheet 8

0 400 800
scale feet
0 150 300 m

NORTH

Key

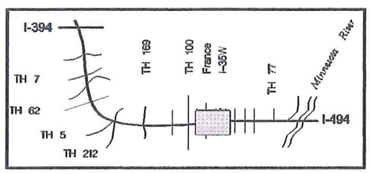

Figure 3.8

Final Environmental Impact Statement

I-494 Reconstruction

I-394 to the Minnesota River

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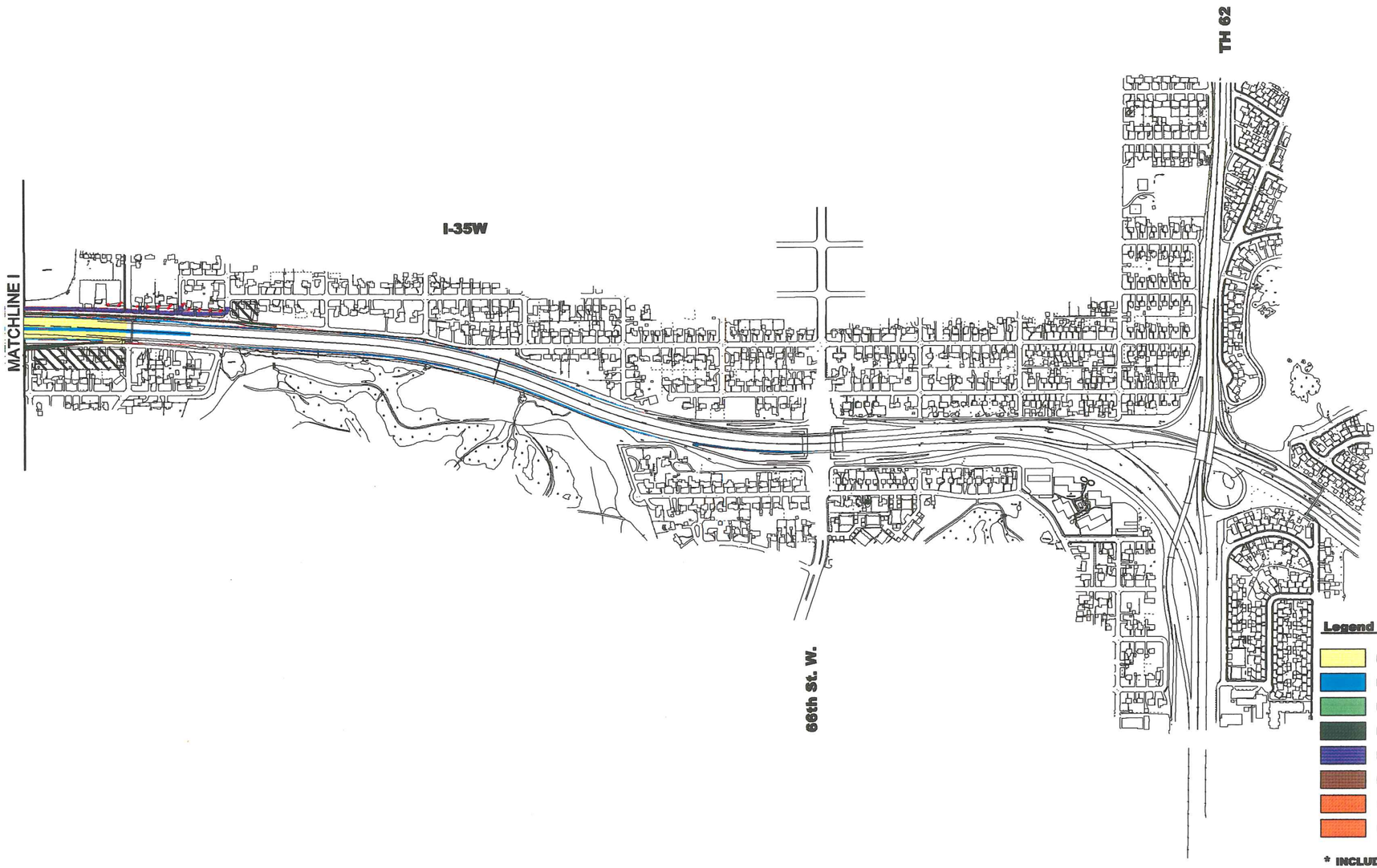

Legend

- Proposed Highway
- Paved Shoulder
- Highway to Highway Ramps
- Local Access Roads
- Frontage Roads
- Diamond Lanes - HOV Bypass Ramps
- Bridges
- Retaining Walls
- Noise Walls
- Raised Medians
- Walks - Trails
- Proposed Construction *
- Under Construction *
- Partial Acquisition
- Total Acquisition

* INCLUDES OTHER MNDOT PROJECTS & PROJECTS LED BY BLOOMINGTON, RICHFIELD AND HENNEPIN COUNTY

Preferred Alternative

Layout Sheet 9

0 400 800
scale feet
0 150 300 m

Key

NORTH

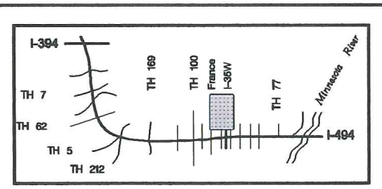

Figure 3.9

Final Environmental Impact Statement

I-494 Reconstruction

I-394 to the Minnesota River

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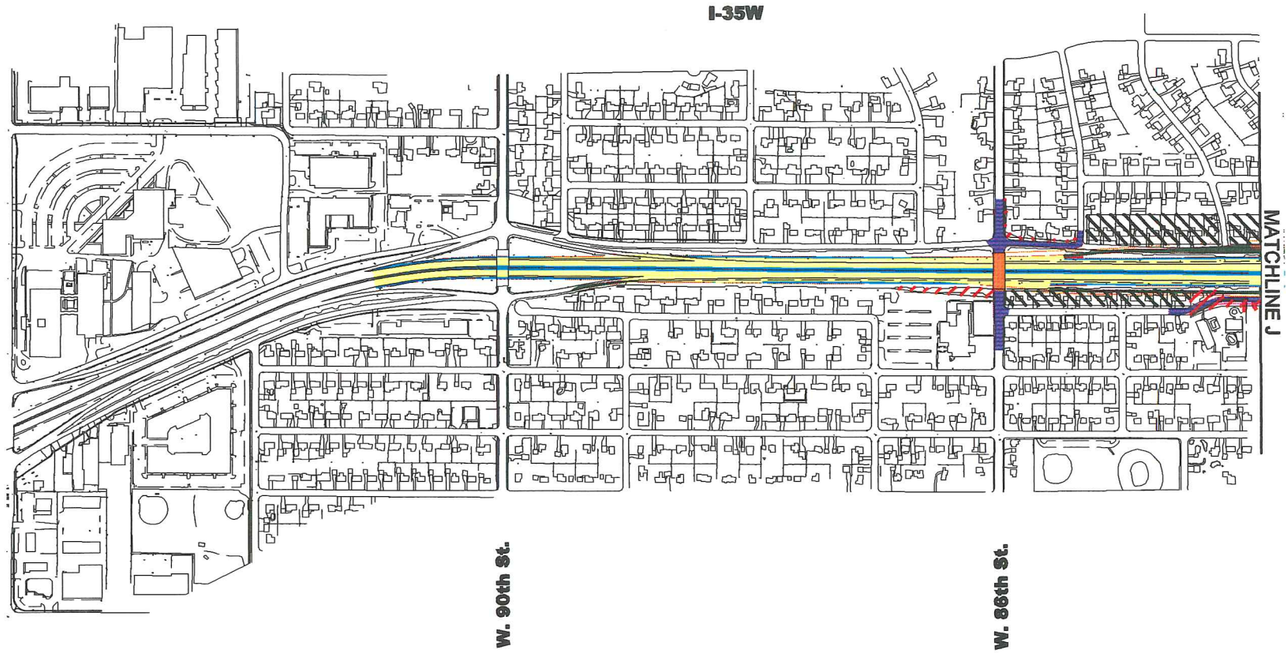

Legend

- Proposed Highway
- Paved Shoulder
- Highway to Highway Ramps
- Local Access Roads
- Frontage Roads
- Diamond Lanes - HOV Bypass Ramps
- Bridges
- Retaining Walls
- Noise Walls
- Raised Medians
- Walks - Trails
- Proposed Construction *
- Under Construction *
- Partial Acquisition
- Total Acquisition

* INCLUDES OTHER MNDOT PROJECTS & PROJECTS LED BY BLOOMINGTON, RICHFIELD AND HENNEPIN COUNTY

Preferred Alternative
LAYOUT SHEET 10

0 400 800
scale feet
0 150 300 m

Key

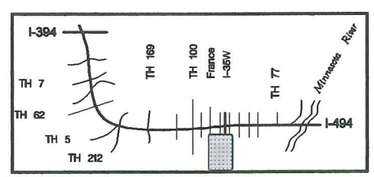

Figure 3.10

Final Environmental Impact Statement

I-494 Reconstruction

I-394 to the Minnesota River

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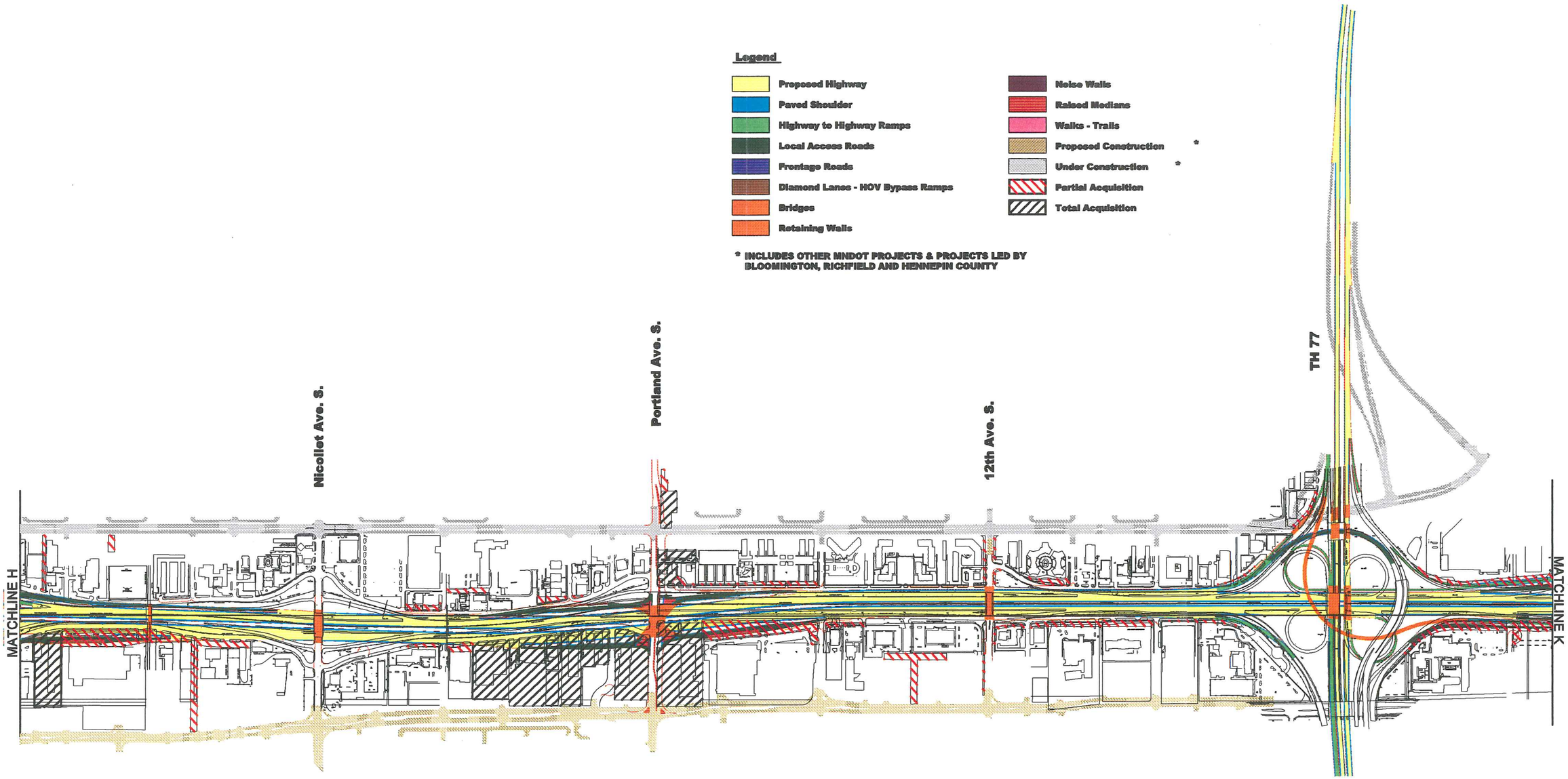

Preferred Alternative

Layout Sheet 11

0 400 800
scale feet
0 150 300 m

NORTH

Key

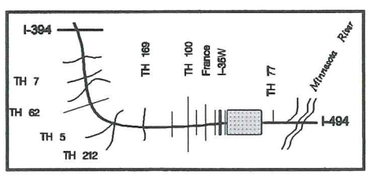

Figure 3.11

Final Environmental Impact Statement

I-494 Reconstruction

I-394 to the Minnesota River

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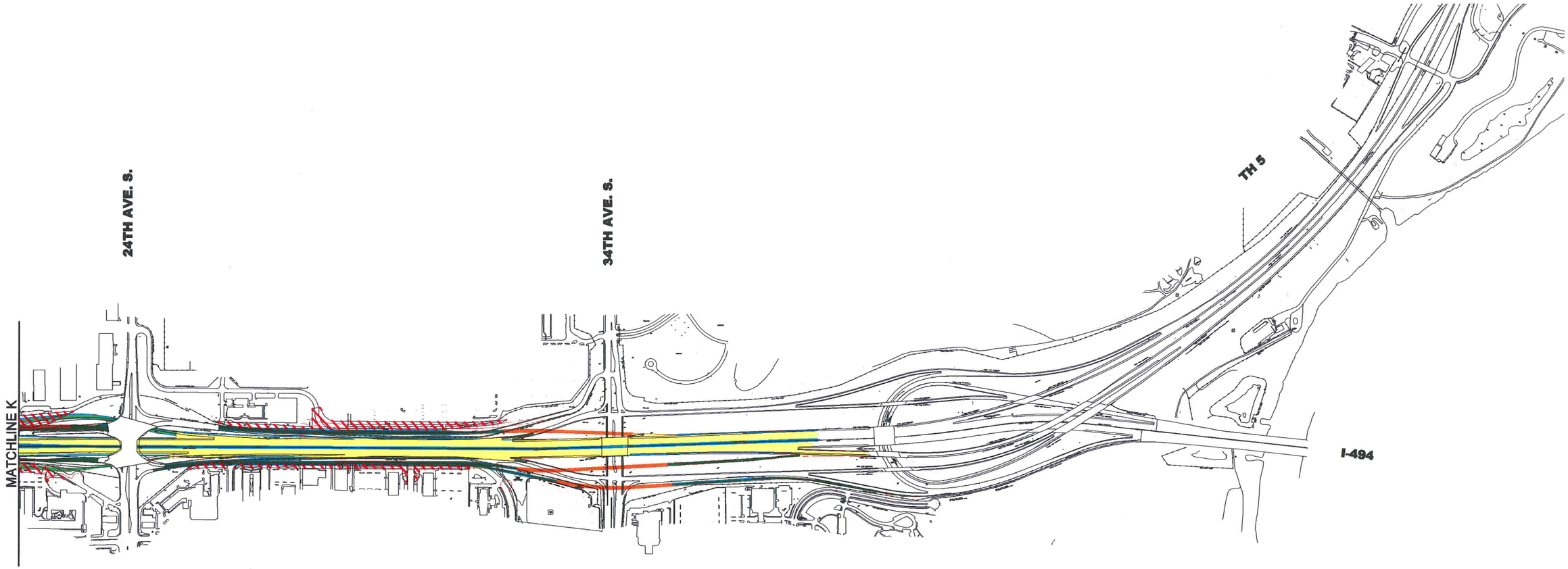

LEGEND

- Proposed Highway
- Paved Shoulder
- Highway to Highway Ramps
- Local Access Roads
- Frontage Roads
- Diamond Lanes - HOV Bypass Ramps
- Bridges
- Retaining Walls
- Noise Walls
- Raised Medians
- Walks - Trails
- Proposed Construction *
- Under Construction *
- Partial Acquisition
- Total Acquisition

* INCLUDES OTHER MNDOT PROJECTS & PROJECTS LED BY BLOOMINGTON, RICHFIELD AND HENNEPIN COUNTY

Preferred Alternative

Layout Sheet 12

Key

0 400 800
scale feet
0 150 300 m
NORTH

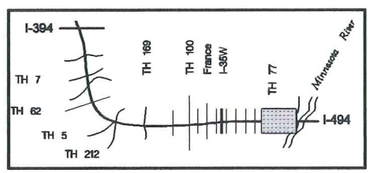

Figure 3.12

Final Environmental Impact Statement

I-494 Reconstruction

I-394 to the Minnesota Ri

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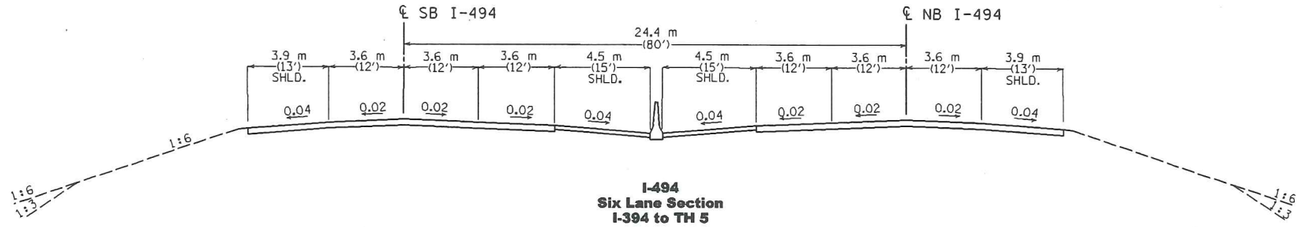
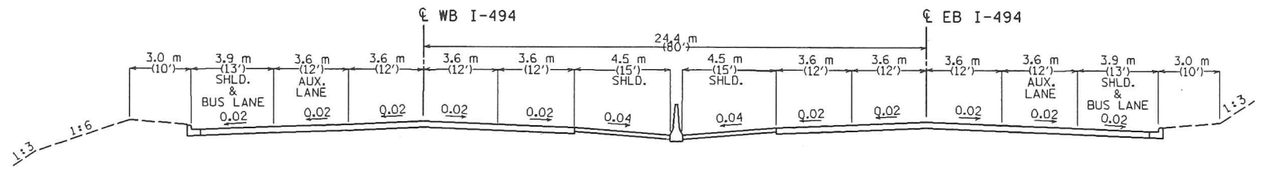
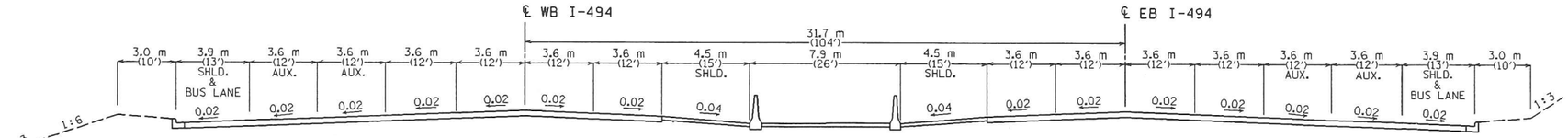


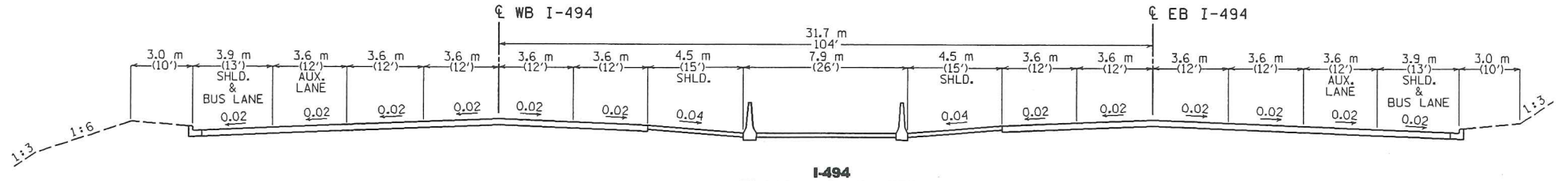
I-494
Six Lane Section
I-394 to TH 5



I-494
Six Lane Section With
1 Auxiliary Lane
(TH 5 to TH 100 and TH 77 to 34th Ave.)



I-494
Eight Lane Section With
7.9 m (26 feet) Reserved Area in Median
and 2 Auxiliary Lanes
(TH 100 to TH 35W)



I-494
Eight Lane Section With
7.9 m (26 feet) Reserved Area in Median
and 1 Auxiliary Lane
(TH 35W to TH 77)

Preferred Alternative

Typical Sections

Figure 3.13

Final Environmental Impact Statement

I-494 Reconstruction

I-394 to the Minnesota River

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TH 7 Interchange

Two alternatives for the TH 7 interchange were analyzed in the DEIS. One alternative was a cloverleaf interchange with collector-distributor roads on I-494. The second alternative was similar except that it had a directional ramp for movements from eastbound TH 7 to northbound I-494.

The cloverleaf option was selected because it accommodates forecast volumes and is less costly in comparison to the directional ramp option (refer to Figure 3.2). Due to fiscal and right-of-way constraints, the collector-distributor roads are not included in the Preferred Alternative.

TH 62 Interchange System

In the DEIS only one alternative, a single point diamond interchange design, was analyzed for this interchange. The Preferred Alternative proposes a diamond interchange (refer to Figure 3.3).

TH 5/212 Interchange System

Two alternatives were analyzed in the I-494 DEIS for this interchange system. Both alternatives proposed the addition of westerly ramps with I-494 from Prairie Center Drive. These new ramps were to be bridged under the TH 212/Flying Cloud Drive and TH 5/312 ramps. The difference between the alternatives involved the ramps along TH 5/312 (future TH 212) between Prairie Center Drive and I-494. One alternative grade separated the Prairie Center ramps from the I-494 ramps, and the other alternative did not include this grade separation. Ultimately, the addition of westerly ramps (and, therefore, the need for bridged ramps) was eliminated from the Preferred Alternative due to funding constraints.

The local access that will be provided to I-494 in this area with the Preferred Alternative is the same as current conditions (refer to Figures 3.4 and 3.5).

TH 169 Interchange

Two alternative interchange designs at TH 169 were evaluated in the DEIS. One was a fully directional, four level interchange. This alternative was considered primarily because of the high traffic volumes forecast for the southbound TH 169 to eastbound I-494 movement, and the northbound TH 169 to westbound I-494 movement. The other alternative was a partial directional interchange, which had loops in the northeast and southwest quadrants of the interchange. The partial directional interchange was selected as the 1993 Preferred Alternative at this location because it had lower construction costs and it had less noise impact for residents of Friendship Village (an apartment complex in the southeast quadrant of the interchange) and the neighborhood located in the southwest quadrant. The Minnesota Department of Transportation concluded that the loop design could accommodate the forecast traffic for the southbound TH 169 to eastbound I-494 movement at an acceptable level of service.

From 1997 to 1999 the I-494/TH 169 interchange was reconstructed because the bridges were in need of replacement. Minnesota Department of Transportation staff selected a reconfigured design for this interchange that provided improvements within existing funding constraints. It eliminated the left turn movements from TH 169 to I-494 by constructing loops in the northeast, northwest, and southwest quadrants, with ramps in all four quadrants. Signals remain on TH 169 at the ramp intersections to accommodate the ramp traffic, and at Highwood Avenue.

The Preferred Alternative does not propose any changes to this interchange area (refer to Figure 3.5).

East Bush Lake Road Interchange

The DEIS analyzed three alternatives for the East Bush Lake Road Interchange. The alternatives included:

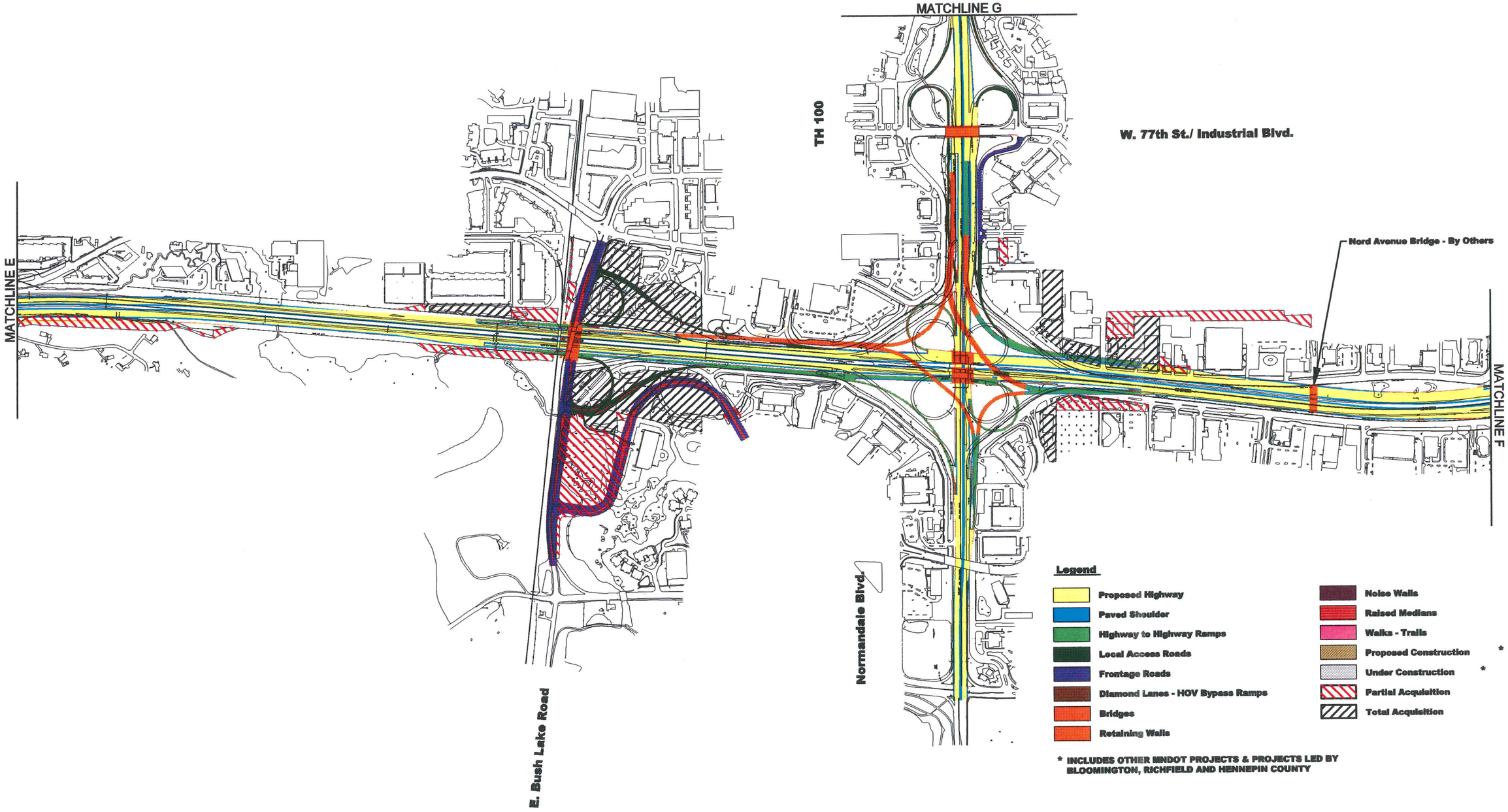
- Single Point Diamond Interchange (DEIS Alternative 1)
- Folded Diamond Interchange in the southeast quadrant with regular diamond ramps in the northeast and northwest quadrants (DEIS Alternative 2)
- Folded Diamond Interchange to the east (DEIS Alternative 3)

After completion of the DEIS, it was determined that the Canadian Pacific railroad line immediately west of East Bush Lake Road would remain. Because a single-point diamond interchange would not be compatible with the close proximity of this railroad due to engineering and traffic management factors, this design approach (DEIS Alternative 1) was discounted from further consideration. The Preferred Alternative proposes folded diamond ramps in the southeast quadrant, and standard diamond ramps in the northwest and northeast quadrants similar to DEIS Alternative 2 (refer to Figure 3.6). This design necessitates an at-grade crossing between the westbound freeway entrance ramp and the Canadian Pacific line. The at-grade crossing is adjacent to the rampís intersection with East Bush Lake Road, which would be signalized. Adequate vehicle storage capacity would be provided on East Bush Lake Road to accommodate all turning movements to the ramp. In addition, the final design will incorporate railroad crossing safety features, as appropriate to ensure the safest possible at-grade crossing.

Concerns have been raised regarding the proposed East Bush Lake Road interchange design due to potential safety issues associated with the at-grade ramp/railroad crossing. Prior to selecting the Preferred Alternative design referenced above, Mn/DOT considered alternate designs which would not involve an at-grade crossing of the Canadian Pacific line. These designs, described individually under the headings below, are not currently preferred by Mn/DOT due to substantial right-of-way impacts and/or operational/safety considerations. Staff from Mn/DOT and FHWA are continuing to review this design issue. The final design will incorporate the design decisions reached between the two agencies. This FEIS includes analysis of the impacts of all three East Bush Lake Road interchange alternate designs where they differ from the Preferred Alternative design, i.e., in right-of-way and economic impacts (Sections 5.2 and 5.3, respectively).

Folded Diamond Interchange to the East

This design, which is similar to DEIS Alternative 3, is depicted in Figure 3.14. The northerly ramps for East Bush Lake Road would be a folded diamond and a mirror image of the southerly ramps associated with the Preferred Alternative design. Specifically, the on-ramp to westbound I-494 would be a loop on the east side of East Bush Lake Road, and the off-ramp from westbound I-494 would be a straight ramp terminating at the same intersection on East Bush Lake Road as the loop. This design would necessitate the acquisition of three multi-story office buildings in the northeast quadrant of the interchange.



I-494/ EAST BUSH LAKE ROAD ALTERNATE DESIGN

EASTERLY FOLDED DIAMOND DESIGN

0 400 800
scale feet
0 150 300 m

NORTH

Key

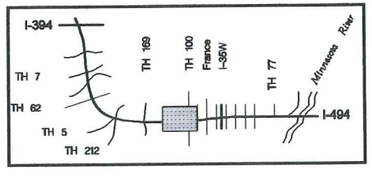


Figure 3.14

Final Environmental Impact Statement

I-494 Reconstruction

I-394 to the Minnesota River

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Picture Drive Westbound Entrance Ramp I-494

This design is depicted on Figure 3.15. It utilizes a folded diamond to the east for the southerly ramps and a non-standard configuration for the northerly ramps. The westbound I-494 entrance ramp would be accessed from East Bush Lake Road by driving east on 78th Street approximately 450 meters (1,500 feet) to Picture Drive and proceeding south on Picture Drive, which would then turn into the freeway entrance to westbound I-494. The transition point from Picture Drive to the ramp would be a 24-kilometer per hour (15-mile per hour) curve. The Picture Drive ramp then merges with the TH 100 collector distributor (C-D) road to connect to westbound I-494. This C-D road travels under East Bush Lake Road and the railroad bridge, and then merges onto I-494. The off-ramp for westbound I-494 to East Bush Lake Road would be built on a bridge that crosses over the C-D road to connect to East Bush Lake Road.

Westbound Entrance Ramp Under Railroad

This design is presented on Figure 3.16. It utilizes a folded diamond to the east for the southerly ramps and diamond ramps with offset intersections for the northerly ramps. The ramp from East Bush Lake Road to westbound I-494 would begin at East Bush Lake Road in the vicinity of its intersection with 78th Street. The ramp would follow between East Bush Lake Road and the Canadian Pacific railroad line south until a 24-kilometer per hour (15-mile per hour) turn directing the ramp westbound under the railroad bridge and roughly parallel to I-494. The off-ramp from westbound I-494 to East Bush Lake Road would be similar to the design associated with the Preferred Alternative.

TH 100 Interchange

The alternatives analyzed in the DEIS for this interchange included different types of directional interchanges. The major difference between the alternatives was the design of the ramps accommodating the movements between TH 100 and I-494. The 1993 Preferred Alternative, which included directional ramps from northbound and southbound TH 100 to I-494, provided a relatively direct route for the large traffic volume between TH 100 and I-494.

Grade separated ramps between France Avenue and TH 100 were also analyzed in the DEIS. However, it was determined that sufficient separation could be provided between the France Avenue ramps and the TH 100 ramps and that the ability to get from TH 100 to France Avenue via I-494 was important. The Preferred Alternative interchange at I-494 and TH 100 consists of a semi-directional interchange with loops in the southeast and northwest quadrants. The flyover ramps to the north are bridged with the TH 100 and 77th Street interchange ramps, as are the northerly I-494 ramp and the westbound I-494 exit ramp to East Bush Lake Road. Additionally, a westbound I-494 ramp will exit directly to 77th Street via the TH 100 east frontage road.

TH 100/77TH Street Interchange Options

Two options were analyzed in the DEIS for the 77th Street interchange on TH 100. One option perpetuated the existing folded diamond interchange configuration. The other option had a folded diamond on the west side of TH 100, and standard diamond legs on the east side of TH 100. The Preferred Alternative assumes the former of these configurations with the southerly ramps bridged as noted above.

France Avenue

The existing interchange configuration at France Avenue is perpetuated under the Preferred Alternative (refer to Figure 3.8). No other alternatives were considered in the DEIS. As addressed in the DEIS, the ramps and loops associated with this interchange will have to be relocated slightly to accommodate the added width of the I-494 mainline.

I-35W Interchange Area

This interchange area also includes the I-494 interchanges at Penn Avenue and Lyndale Avenue, as well as the I-35W interchanges at 76th Street and 82nd Street. Two alternatives for this interchange were addressed in the DEIS. Both of the options would improve operations between I-494 and I-35W. One alternative had a one-way frontage road system connecting ramps at Lyndale Avenue, 76th Street, Penn Avenue, and 82nd Street. The other alternative had overlapping ramps with full access at each of the above cross streets. The I-494 DEIS referenced the I-35W DEIS document (March 1992) for design and impact analyses at the I-35W/I-494 interchange areas since it was anticipated at that time that the I-35W improvements, including reconstruction of this interchange, would occur prior to the I-494 reconstruction project.

The current Preferred Alternative proposes to eliminate the loops in the northeast and southwest quadrants of the I-35W/I-494 interchange by providing northbound to westbound and southbound to eastbound directional ramps (refer to Figures 3.8 and 3.9). The easterly Penn Avenue ramps and the westerly Lyndale Avenue ramps would be bridged with the I-35W ramps, and the I-35W ramps would be bridged with the northerly 82nd Street ramps.

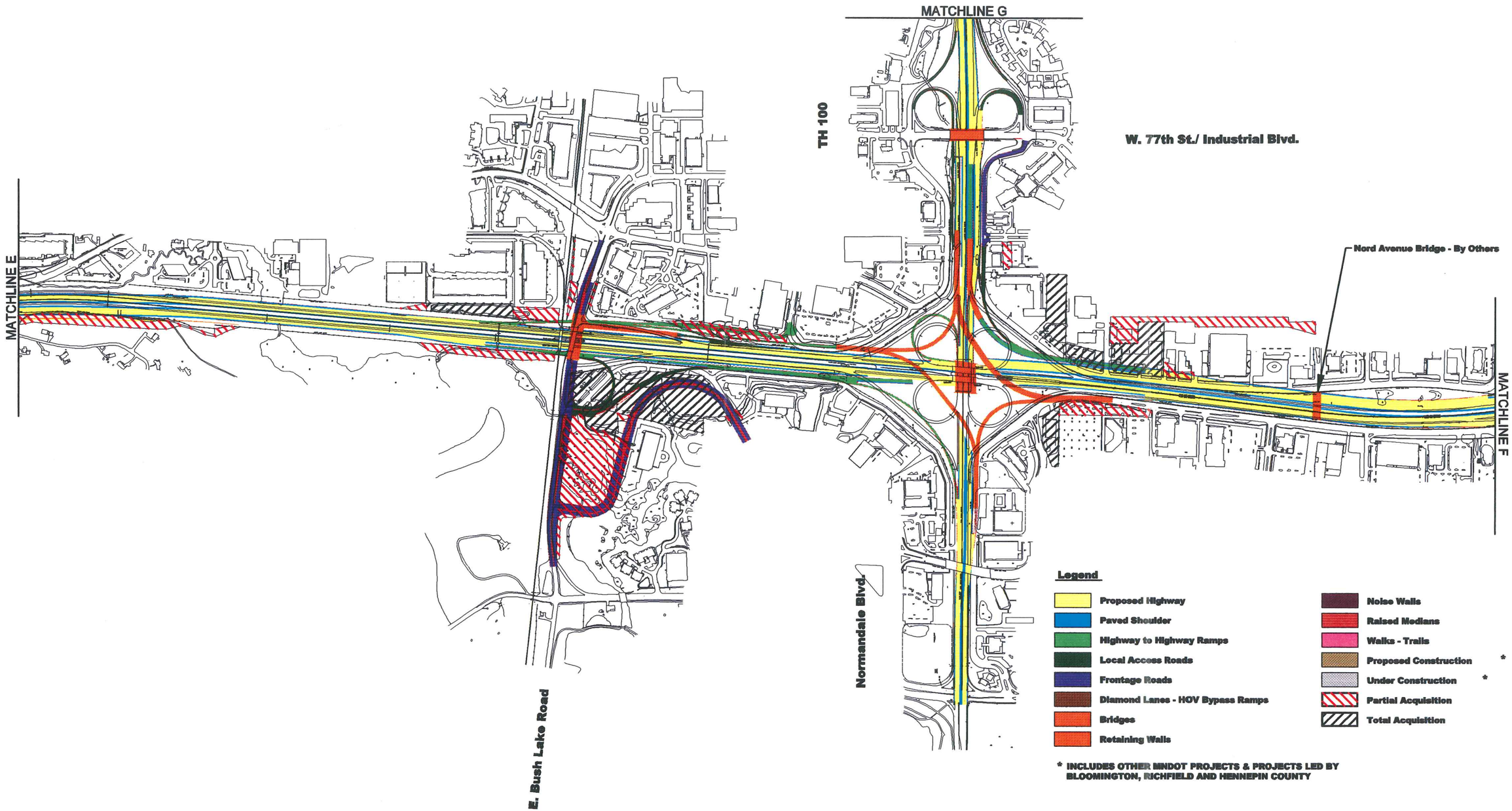
The Penn Avenue interchange is to be reconstructed by the City of Richfield in 2001-2002 as a single-point diamond design in conjunction with a local development project. It is currently anticipated that Mn/DOT will provide HOV bypass lanes at the Penn Avenue interchange as part of the I-494 reconstruction. The Lyndale Avenue interchange is proposed under the Preferred Alternative to be reconstructed as a single point diamond design (refer to Figure 3.8).

Portland Avenue (Nicollet Avenue; 12th Avenue)

The interchanges at Nicollet Avenue and 12th Avenue will be eliminated to provide better traffic operations and improve interchange spacing. A single point diamond interchange at Portland Avenue is included with the Preferred Alternative (refer to Figure 3.11). This was the only option analyzed in the DEIS.

TH 77 Interchange

The DEIS referenced previous analysis of options for this interchange performed as part of the TH 77/I-494 Improvement Project DEIS. The concept identified in the I-494 reconstruction DEIS included a directional flyover ramp for the southbound TH 77 to eastbound I-494 movement. This concept has been maintained in the Preferred Alternative (refer to Figure 3.11).



I-494/ EAST BUSH LAKE ROAD ALTERNATE DESIGN

PICTURE DRIVE WESTBOUND ENTRANCE RAMP

0 400 800
scale feet
0 150 300 m

NORTH

Key

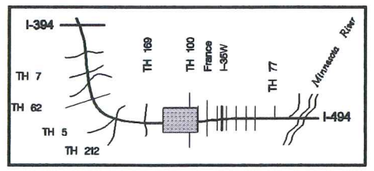


Figure 3.15

Final Environmental Impact Statement

I-494 Reconstruction

I-394 to the Minnesota River

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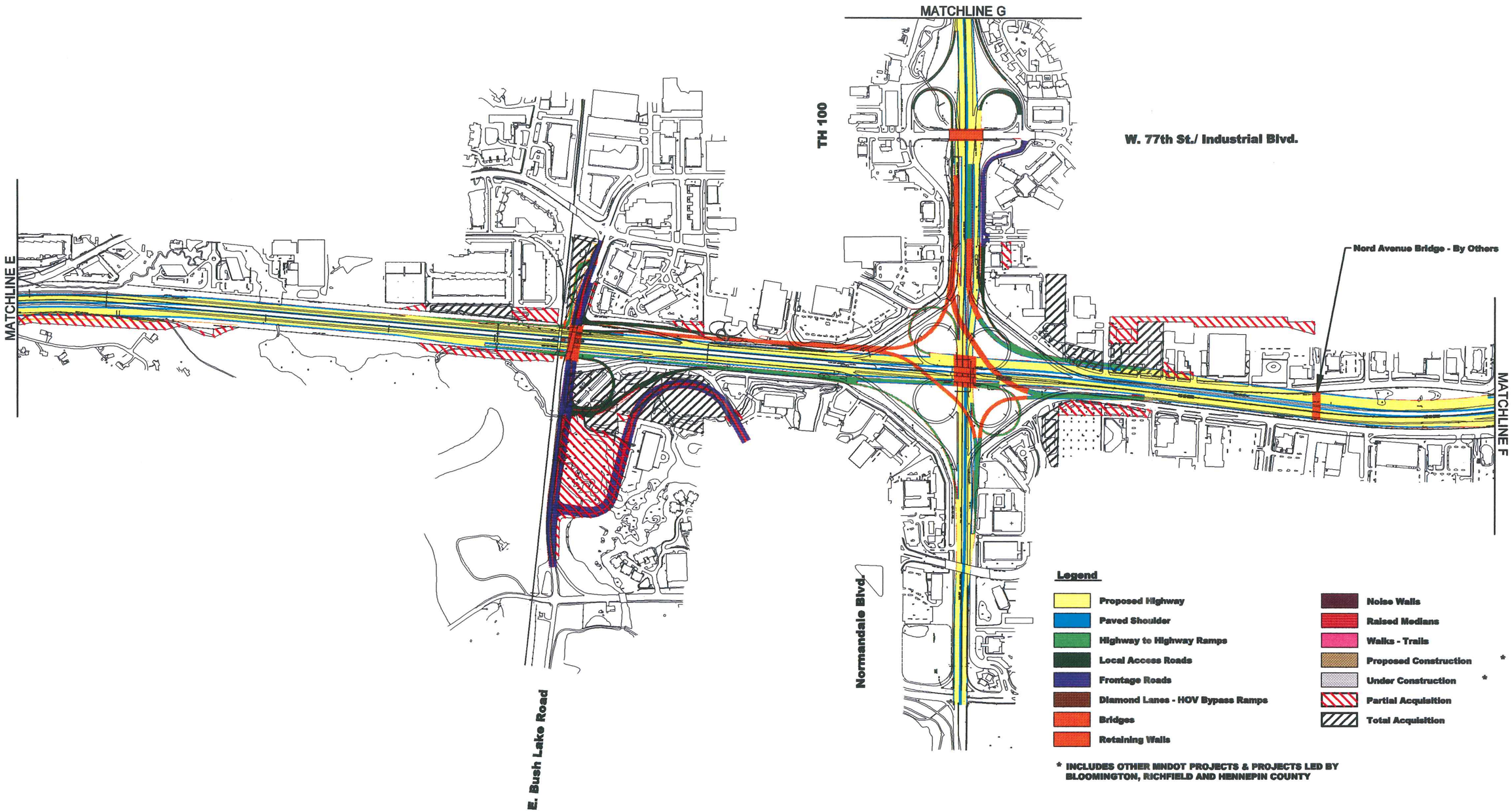

I-494/ EAST BUSH LAKE ROAD ALTERNATE DESIGN

WESTBOUND ENTRANCE RAMP UNDER RAILROAD

0 400 800
scale feet
0 150 300 m

NORTH

Key

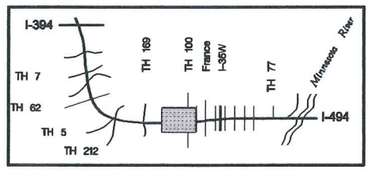

Figure 3.16

Final Environmental Impact Statement

I-494 Reconstruction

I-394 to the Minnesota River

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24th Avenue and 34th Avenue

The existing interchanges at 24th Avenue and at 34th Avenue were perpetuated under the 1993 Preferred Alternative, and are also perpetuated under the current Preferred Alternative. However, the ramps from 24th Avenue to the east would be bridged over the westerly 34th Avenue ramps, eliminating the ability of drivers to enter I-494 from 34th Avenue and exit at 24th Avenue, and vice versa (refer to Figures 3.11 and 3.12). The parallel reliever roadways (77th Street to the north, and 80th Street to the south) constructed by the cities of Bloomington and Richfield and the Metropolitan Airports Commission (from 24th Avenue to 34th Avenue on the north side of I-494) provide the connection between these two interchanges.

3.4.4 FRONTAGE ROAD SYSTEM

I-394 to TH 212/Flying Cloud Drive

This segment of the corridor does not currently have a frontage road system, and no frontage roads are proposed. The predominantly residential character of the area does not necessitate the access and circulation features provided by frontage roads.

TH 212/Flying Cloud Drive to East Bush Lake Road

This segment of the corridor currently has frontage roads from Prairie Center Drive to West Bush Lake Road. The Preferred Alternative includes intersection improvements at West Bush Lake Road.

East Bush Lake Road to TH 77

Much of the existing frontage road system through this portion of the project area will be modified to accommodate the expanded mainline and interchange facilities. The new frontage road system (discussed below) consists of parallel (reliever) arterials, constructed separately by the cities of Bloomington, Richfield and Edina, not as part of the I-494 reconstruction process.

The parallel arterial concept focuses on enhancing the existing parallel street system immediately north and south of the I-494 alignment. This system will provide access to the commercial/office uses along the corridor and help keep local trips from the I-494 mainline.

The first portion of this system, 77th Street in Richfield, between I-35W and TH 77 has been partially completed. The portion near TH 77 is currently under construction. This project, which is being led by the City of Richfield, connects with 76th Street west of I-35W. It is being funded in part by federal demonstration funds. Seventy-sixth Street continues into Edina until west of Xerxes Avenue where it becomes 77th Street and Edina Industrial Boulevard. Future City of Richfield plans call for extending 77th Street on the east end under TH 77 and connecting it with 24th Avenue adjacent to the airport. On the south side of I-494, the 79th/80th Street corridor being developed by the City of Bloomington. The first phase of this project upgrades

existing 79th and 80th Streets between 34th Avenue and TH 100, including a bridge across I-35W planned for construction in 2001-2002. Portions of this phase have already been completed. The second phase calls for an extension west from TH 100 to East Bush Lake Road via Bridge Road and Norman Center Drive. Portions of this section have also been completed, including the bridge over TH 100/Normandale Boulevard.

3.4.5 TRANSIT FACILITIES

The proposed project contains features to encourage and facilitate transit usage within the I-494 corridor. Preferential access will be provided to HOV vehicles at ramp meters, consistent with Mn/DOT policies in effect at the time of construction. The facility will also be designed with outside shoulders that will accommodate buses during peak travel periods. Section 4.4 describes how the transit provisions of the Preferred Alternative compliment the transit system in the study area.

3.4.6 TRAVEL DEMAND MANAGEMENT (TDM)

In addition to the transit service concepts summarized above, there is strong support for travel demand management (TDM) strategies in the I-494 corridor to minimize trip demand during peak travel periods. Promoting TDM and Transportation System Management (described in Section 3.4.7) was one of the recommendations of the 1987 *I-494 Corridor Study*. The I-494 Corridor Commission (ìCorridor Commissionî), a joint powers entity, was initially formed by Richfield, Bloomington, Edina, Eden Prairie and Minnetonka to coordinate land use and transportation, and to facilitate TDM. The cities of Plymouth and Maple Grove joined the Commission in 1994. Some TDM efforts that the Corridor Commission is currently undertaking are listed below:

- The Corridor Commission is currently working with the Metropolitan Council on a project to review TDM ordinances which have been put in place elsewhere in the country. The goal is to use lessons learned from this type of effort to develop such an ordinance which would be workable for the I-494 corridor. The goal of such an ordinance would be to reduce and/or manage (reduce peaks) vehicle trips in the corridor before, during and after reconstruction of I-494.

- The Corridor Commission is working to promote and support Transportation Management Associations (TMAs). These are groups of businesses, typically located in congested traffic areas, which work together to achieve TDM goals.

- The Corridor Commission is working to get standardized TDM language included in the comprehensive plans for all cities within the reconstruction project corridor, as well as Plymouth and Maple Grove.

- The Corridor Commission has a transit providerís sub-committee which meets monthly to discuss issues pertaining to provision and improvement of transit services within the corridor.

3.4.7 TRANSPORTATION SYSTEM MANAGEMENT (TSM)

Transportation system management (TSM) is an integral part of the Preferred Alternative for I-494. Traffic on I-494 will continue to be managed by Mn/DOT's Traffic Management Center using TSM features that promote more efficient operation of the metro regionís highways including:

- **Ramp Metering:** To control the rate of traffic entering the regional highway system. [Note: The Mn/DOT ramp meter policy is currently under review.]

- **HOV Bypass Lanes**: Meter bypass lanes for vehicles with two or more people (HOV preference). [Also under review in conjunction with the ramp meter policy.]

- **Vehicle Detector System:** Vehicle detectors to measure traffic flows and identify potential problems so they can be addressed before major disruptions occur.

- **Camera Monitoring System:** An extensive system of cameras to monitor freeway operations in the corridor.

- **Changeable Message Signs:** To advise drivers of specific operational conditions on I-494.

- **Highway Advisory Radio:** To advise drivers of operational conditions on I-494.

- **Integrated Corridor Traffic Management:** An integrated corridor traffic management system for I-494 that integrates traffic control systems on the parallel and intersecting arterials with the freeway ramp meters to allow adjustment of signal timing based on current traffic flow rates. Variable message signs (VMS) and trailblazer signs on arterials alert motorists of alternate routes when accidents occur on I-494.

- **Advanced Incident Detection and Management:** Several of the systems described above will facilitate managing I-494 during incidents and accidents. I-494 traffic could be rerouted to parallel streets to alleviate congestion on I-494. Improvements to 76th/77th and 79th/80th Streets described previously are key aspects of the incident management program.

- **Intelligent Transportation System (ITS) Technology:** To provide real time information on I-494 conditions to motorists.

- **Accident Investigation Sites:** The need for and location of sites for investigation of accidents on I-494 will be evaluated. Initially, the reserved space in the median may be used for this purpose.

- **Highway Helper:** To help motorists with car trouble in order to reduce traffic delays caused by these minor incidents.

3.4.8 PEDESTRIAN AND BICYCLIST MOVEMENT

Existing crossings of the I-494 mainline will be replaced at or near their present locations. Bridges replaced by Mn/DOT will be rebuilt to current standards (see *Minnesota Bicycle Transportation Planning and Design Guidelines*, Mn/DOT, June 1996). Mn/DOT staff will work with communities and agencies with facilities in the corridor to assure that any existing or committed pedestrian/bicycle facility improvements are coordinated with I-494 reconstruction plans. All improvements will be in compliance with the Americans with Disabilities Act.

3.4.9 RAILROAD BRIDGES

All of the existing railroad crossings in the corridor will be perpetuated. These crossings include the Burlington Northern underpass north of Minnetonka Boulevard, the former Chicago and Northwestern and existing CP Rail/Soo Line underpasses north of TH 62, the CP Rail/Soo Line overpass at East Bush Lake Road, and the Soo Line overpass between Lyndale and Nicollet Avenues. The former Chicago and Northwestern railroad right-of-way is now owned by the Hennepin County Regional Railroad Authority, but is temporarily being used as a trail corridor (refer to Figure 2.3 in Chapter 2.0 of this FEIS). This corridor may be developed in the future for rail transit or interim busway use. Interstate-494 will be designed to allow for these potential future uses.

3.4.10 RIGHT-OF-WAY

The proposed project will be built within the existing right-of-way to the extent possible. However, additional right-of-way will be needed for the project, in particular at the system interchanges. Anticipated right-of-way acquisition areas associated with the Preferred Alternative are depicted on the project layouts (Figures 3.1 through 3.12). Section 5.2 details right-of-way impacts and relocation considerations.

3.4.11 PROJECT COST

The anticipated construction costs (total construction costs, including grading/pavement, bridge work, utilities, surface water conveyance and treatment, engineering, etc.) for the overall corridor project are presented below, by corridor segment.

- TH 5 to TH 100: $50 million
- TH 5 (Eden Prairie) to I-394: $60 million
- TH 100 to Penn Avenue: $110 million
- Penn Avenue to Lyndale Avenue (includes I-35W/I-494 interchange): $125 million
- Lyndale Avenue to 34th Avenue: $105 million

Total: $450 million

Right-of-way acquisition and relocation costs were calculated with a Mn/DOT-approved method as addressed in Section 5.2 of this FEIS. These costs are presented below:

- Total Acquisitions/Relocation: Residential: $11.7 million
- Total Acquisitions/Relocation: Non-Residential: $39.7 million
- Partial Acquisitions: Residential*:* $5.1 million
- Partial Acquisitions: Non-Residential: $106.3 million

  Total: $162.8 million

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4.0 TRANSPORTATION

This chapter compares the effects of the Preferred and No-Build Alternatives on the transportation system, including:

- Forecast traffic volumes
- I-494 corridor operations
- Changes in local and regional access
- Effects on alternative transportation modes
- Role in the regional transportation system

4.1 FORECAST TRAFFIC VOLUMES

4.1.1 INFORMATION FROM THE DEIS THAT REMAINS UNCHANGED

The DEIS traffic forecasts for year 2010 (Section 5.3.1 of the DEIS) no longer reflect 20 years after build conditions. Therefore, all of the forecast information has changed since the DEIS.

4.1.2 CHANGES IN THE IMPACTS OR TECHNICAL ANALYSIS THAT HAVE OCCURRED SINCE THE DEIS

Travel forecasts for the FEIS were updated to reflect 20 years after anticipated construction of the first phase of construction (2002)ó making the FEIS forecast year 2022. Updating the traffic forecasts to reflect 2022 conditions for the FEIS utilized a traffic forecast method and input data that differs from the DEIS analyses. A technical memorandum describing the forecasting process and results for the I-494 study area is included in Appendix B of this FEIS. The process is summarized below.

The travel forecasting process used the Twin Cities regional travel forecasting model, modified to improve responsiveness to issues relating to the specific study. The model includes a series of computerized procedures for systematically predicting travel demand changes in response to development and transportation facility changes. It provides sufficient accuracy for most regional and corridor-level transportation planning. The Metropolitan Council and Mn/DOT completed the current model in 1994 using data from an extensive regional Travel Behavior Inventory (TBI) conducted in 1990. The DEIS analysis was conducted with a ìsub-regionalî model that included only that portion of the Twin Cities region in the I-494 study area. That model was based on a version of the model developed in the 1970ís.

The nine main components of the travel forecasting process are as follows:

1. Highway Network Representation

All of the freeways, expressways, and major arterial roadways in the Twin Cities area are compiled into a computer representation of the regionís highway system. In addition, most

minor arterials and many collector roads and other local streets are included. The attributes of the roadways are described in terms of area type, facility type, distance, free-flow speed, number of lanes and capacity.

To better estimate the effects of different roadway designs, additional roadways in and near the I-494 study area were added to the regional model. The model assumptions were also updated to include specific future-year highway improvements. Additions to the highway network for 2022 modeling conditions are described in the traffic forecasting memorandum in Appendix B.

2. Transit Network Representation

All regional transit routes are included in a computer representation of the transit system, including links (which represent the highway system) and lines (which define a transit routeís frequency and path). Data in the transit network include link speed, link distance, route frequency and route type. These forecasts assume completion of the Hiawatha Corridor light rail transit line from downtown Minneapolis to the Mall of America.

3. Zonal Socio-Economic and Demographic Data

The regional travel forecast model divides the seven county Minneapolis-St. Paul Metropolitan Area into geographic transportation analysis zones (TAZs) based on physical boundaries and major roadways. It also includes as ìexternalî zones the most important points of entry into the region. The zones serve as the beginning and end locations of travel in the region.

To provide more refined analysis of traffic impacts of I-494 reconstruction, the regional model TAZs near I-494 were split into an additional 200 zones. Appendix B includes a figure that shows the location of the TAZ boundaries in the study area.

Various demographic and socio-economic data are allocated into the TAZs for the purposes of forecasting traffic. The source of this information is the May 2000 Metropolitan Council demographic database which includes socio-economic data provided by cities in the I-494 corridor and reflects planned development through year 2020. This TAZ data was modified to distribute activity to the more refined zone level and to pro-rate growth to the design year 2022.

4. Trip Generation

Trip generation is the process that estimates the number of ìperson-tripsî attributable to a zone, based on the amount and type of activity in that zone, such as household size, location and automobile ownership, and employment. Person-trips calculations use trip rates (number of trips per persons, households, or employees) based on the 1990 regional TBI. These rates are applied to each zone to calculate the number and purpose of trips. The 2022 forecast also augmented the regional model with trip generation information from environmental studies for major development projects currently underway in the I-494 corridor area.

5. Trip Distribution

The trip distribution process converts the person-trips estimated in the generation step to movements between pairs of zones based on the amount of travel activity in a zone and the generalized travel time between the producing zone and other zones. The resulting trip tables provide the number of trips between zones. The FEIS analysis did not use any changes to the regional modeling process for trip distribution.

6. Mode Choice

The mode choice phase of forecasting estimates number of person-trips between each pair of zones by mode (single-occupant vehicles, carpools, or transit). The models are further used to determine whether the trip is a candidate for a high occupancy vehicle (HOV) lane.

This study did not make any changes to the regional modeling process for mode choice. However, the HOV component of the mode choice model served as a basis for estimating the number of new HOV users.

7. Time of Day Estimation (Temporal Distribution)

Time-of-day, or ìtemporal distributionî models, take the estimated trips and distribute them across periods of time for the purposes of more accurately reflecting peaking conditions on roadway and transit systems. The basis for the temporal distribution is the 1990 regional TBI. The time periods considered are:

a. A.M. peak hour
b. A.M. peak shoulders
c. First P.M. peak hour
d. Second P.M. peak hour [generally used for operations analysis]
e. P.M. peak shoulders
f. Off peak time periods

Differentiation among peak hours enables better estimates of congested conditions on an hourly basis.

This analysis did not make any changes to the regional modeling process for mode choice. However, refinements were made to the forecast peak hour traffic volumes on specific roadway segments if warranted by traffic counts.

8. Highway and Transit Assignment

The trip assignment models choose the route between zones for any given trip. The highway assignment process chooses routes based on travel times that reflect the appropriate traffic volume, roadway capacity and speed relationship. The regional model uses the TRANPLAN travel forecasting software. This study used the TP-PLUS software package, an updated version of TRANPLAN.

The regional modeling process was modified to provide more accurate freeway and ramp capacities and speed. Transit assignment was not conducted for this study. See Appendix B for detailed discussion of model assumptions and modifications.

9. Model Validation

To measure the usefulness of the regional modeling process, its outputs for current traffic were compared to actual existing traffic counts. The results, which are detailed in Appendix B, indicated that the model is rendering reasonable results for traffic analysis purposes.

4.1.3 PREFERRED ALTERNATIVE IMPACTS

Table 4.1 below shows Average Daily Traffic (ADT) for existing (1999), No-Build (2022) and the Preferred Alternative (2022) at seven selected segments. Appendix B provides additional details and figures showing traffic volumes.

TABLE 4.1
DAILY TRAFFIC FORECAST ON SELECTED TWO-WAY SEGMENTS OF I-494

	Existing (1999)	2022	
Segment	**ADT**	**No-Build**	**Preferred Alternative**
Minnetonka Blvd. and I-494	110,000	135,000	148,000
% Change from existing		*23%*	*35%*
Valley View Rd. and TH 62	77,000	101,000	110,000
% Change from existing		*31%*	*43%*
TH 212/Flying Cloud Drive and TH 169	100,000	125,000	146,000
% Change from existing		*25%*	*46%*
East Bush Lake Rd. and TH 169	123,000	132,000	164,000
% Change from existing		*7%*	*33%*
Penn Ave. and France Ave.	187,000	218,000	255,000
% Change from existing		*17%*	*36%*
Portland and Nicollet Ave.	175,000	212,000	236,000
% Change from existing		*21%*	*35%*
34th Ave. and 24th Street	178,000	214,000	225,000
% Change from existing		*20%*	*26%*

4.1.4 MITIGATION MEASURES

Since the effects of the Preferred Alternative on the capacity and use of I-494 are beneficial, no mitigation is needed.

4.2 I-494 CORRIDOR AND REGIONAL SYSTEM OPERATIONS

4.2.1 INFORMATION FROM THE DEIS THAT REMAINS UNCHANGED

Analysis of corridor operational impacts for Build and No-Build conditions has changed since the DEIS (Section 5.3.1 of the DEIS) to reflect 2022 conditions and the Preferred Alternative.

In addition, the DEIS included analysis of travel times and average travel speeds in the Section 5.3.1 sub-section: ìCorridor Accessibility.î This information is useful for comparison, but needed to be updated for the FEIS to reflect year 2022 conditions and the Preferred Alternative.

4.2.2 CHANGES IN THE IMPACTS OR TECHNICAL ANALYSIS THAT HAVE OCCURRED SINCE THE DEIS

4.2.2.1 Analysis of Regional System Operations Impacts

The FEIS analysis of I-494 corridor and regional highway system operations for year 2022 compares No-Build and Build conditions at a ìplanningî level that compares peak hour (afternoon) forecast traffic volumes to assumed typical lane capacities and number of lanes, similar to the comparisons made in the DEIS.

4.2.2.2 Analysis of I-494 Corridor Operations Impacts

In addition to the analysis of peak hour level of service assessment described above, the forecast model, which estimates daily traffic as the sum of six discrete time periods, was used to assess the number of time periods over which congestion in the I-494 corridor currently occurs and the periods it is expected to occur in the year 2022. While this method provides a reasonable overview of congestion levels, it must be remembered that the forecast congestion is based on link-specific comparison of forecast volumes to estimated roadway capacity volumes and does not account for additional congestion due to mainline queues that develop as a result of traffic bottlenecks.

The forecast model was also used to generate and compare average trip speeds and travel times for the corridor, similar to the process presented in the DEIS.

4.2.3 PREFERRED ALTERNATIVE IMPACTS

4.2.3.1 Regional System Operations Impacts

Figures 2.4, 2.5 and 4.1 show the relative level of congestion (based on level of service) for the peak travel hour on the regional highway system for existing (1999), 2022 No-Build and 2022 Preferred Alternative conditions, respectively. Regional roadways that would operate at various congested-related levels of service are designated on the figures. In general, freeways in the study area are currently operating at congested (level of service D) or heavily congested (level of service E/F) levels. Performance levels will continue to worsen by the year 2022 for No-Build conditions. The Preferred Alternative (Figure 4.1**)** shows fewer heavily congested regional roadways for 2022 conditions in the peak hour, compared to the No-Build Alternative (Figure 2.5). These figures reflect the peak hour but, as discussed in the following section, the Preferred Alternative shows substantial operational improvement on I-494 over the duration of the day.

4.2.3.2 I-494 Corridor Operations Impacts

In addition to the location of congestion, the expected duration of congestion can also be estimated. Table 4.2 shows that 74 percent of I-494 presently operates at level of service D or worse for at least one hour of the day, with 43 percent operating at level of service E or F (slow-and-go/stop-and-go). Currently, 24 percent is operating at level of service D or worse for four or more hours of the day.

Under the No-Build Alternative, 83 percent of the freeway will operate at level of service D or worse for at least one hour, but the duration of congestion and magnitude of the congestion would increase substantially compared to current conditions, with 52 percent of the freeway congested four or more hours per day and 65 percent experiencing at least one hour of level of service E/F conditions. Fourteen percent of the roadway would operate at level of service D or worse for at least six hours per day.

Under the Preferred Alternative, most of I-494 would still experience some congestion, but the congestion would not last for as long if a time period as it would under the No-Build condition. With the Preferred Alternative, 78 percent of the directional kilometers/miles traveled (i.e. eastbound plus westbound) could be expected to operate at level of service D for at least one hour. However, the duration of congestion falls substantially under the Preferred Alternative, with only four percent of the roadway experiencing level of service D or worse for four hours of the day. None of the facility would operate at level of service E/F outside of a single peak hour of the day.

Figure 4.2 shows tható based on regional travel forecast model analysesó projected 2022 Preferred Alternative peak hour trip times are comparable to existing conditions and 20 to 27 percent shorter than 2022 No-Build trip times. Figure 4.3 shows 2022 Preferred Alternative peak hour speeds as being similar to existing speeds and 24 to 38 percent faster than 2022 No-Build trip speeds.

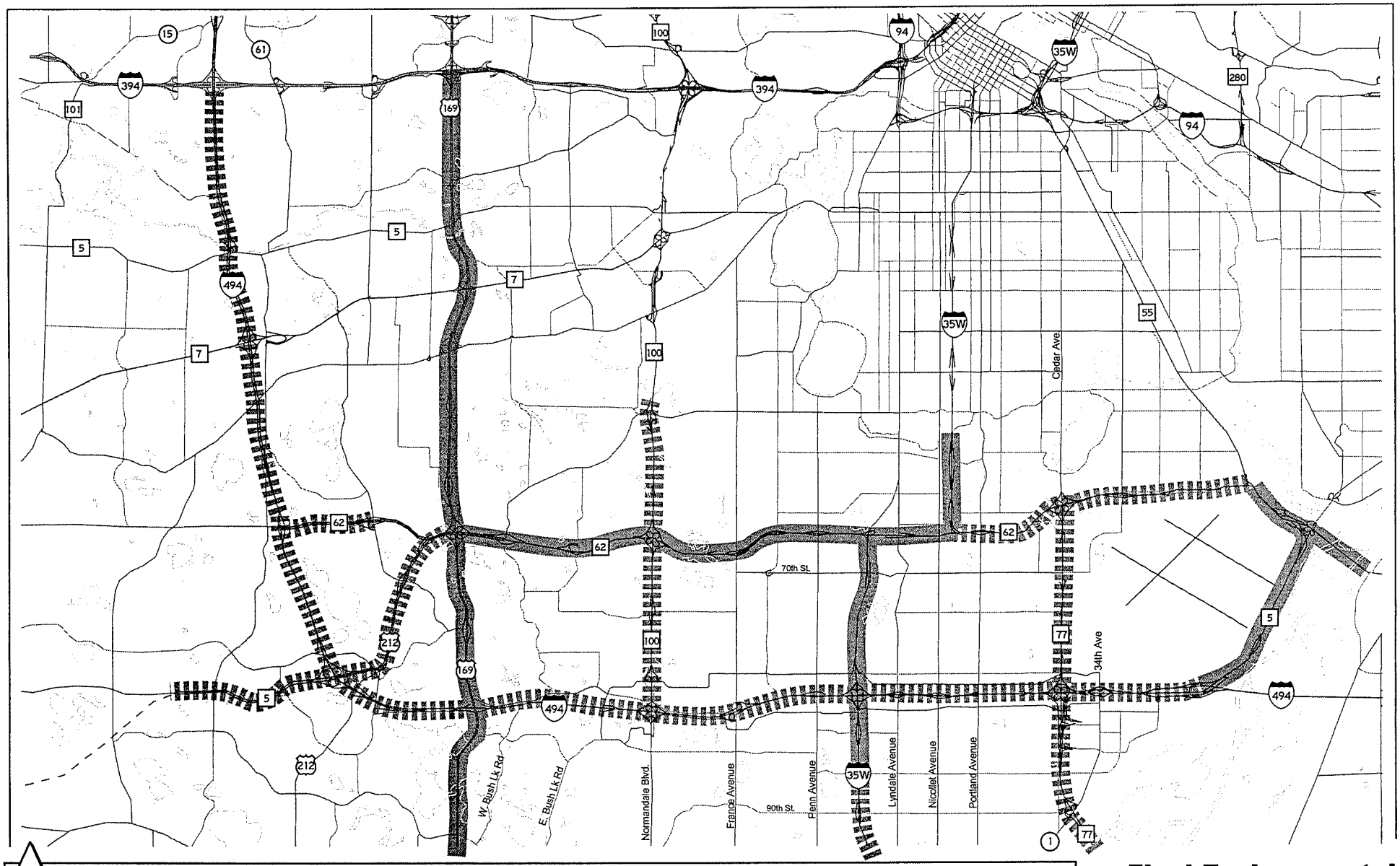

Figure 4.1

Generalized Peak Hour Level of Service on Regional Highway System
2022 Preferred Alternative

Final Environmental Impact Statement

I-494 Reconstruction

I-394 to the Minnesota River

I-494 FINAL EIS
TRAVEL TIME COMPARISONS

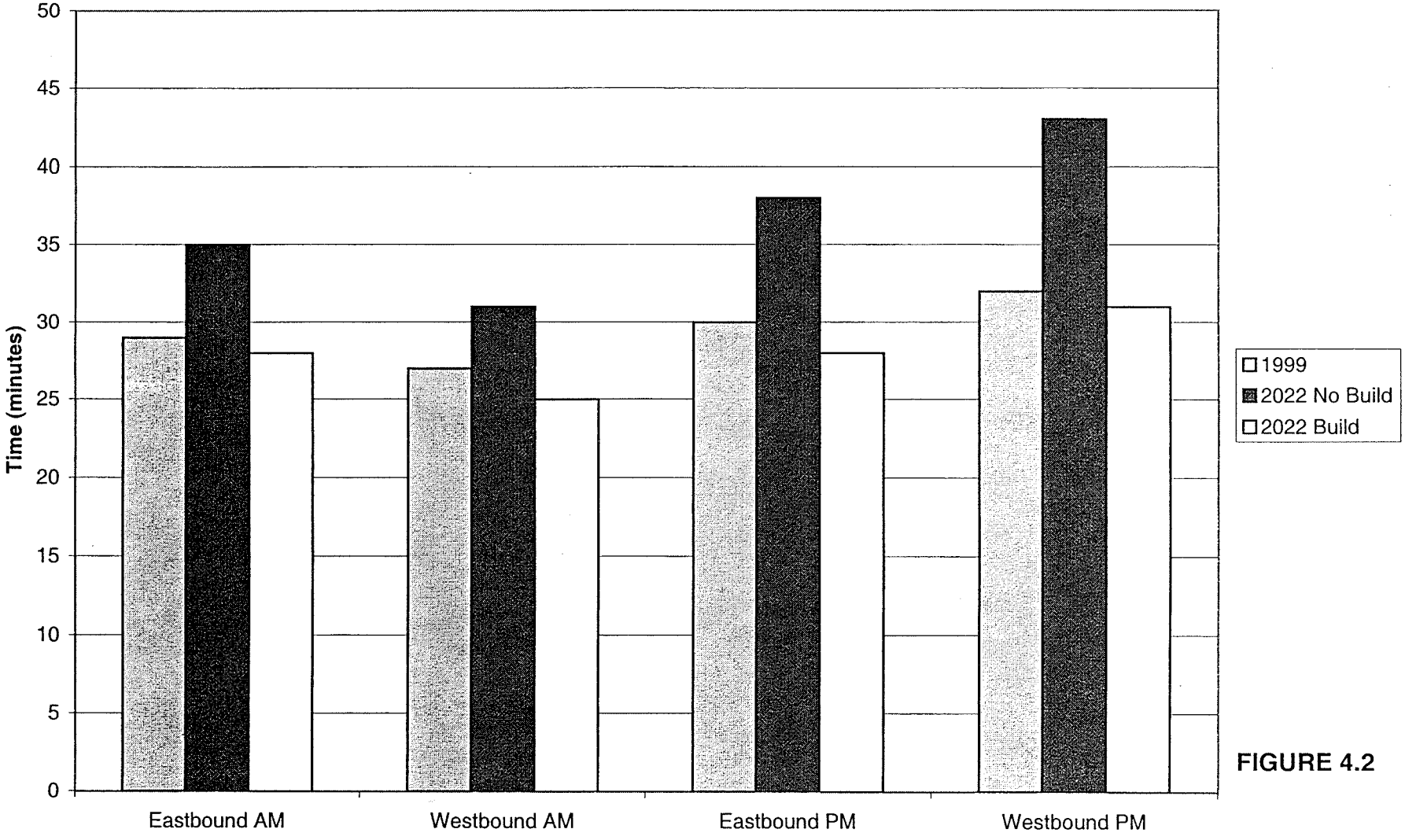

FIGURE 4.2

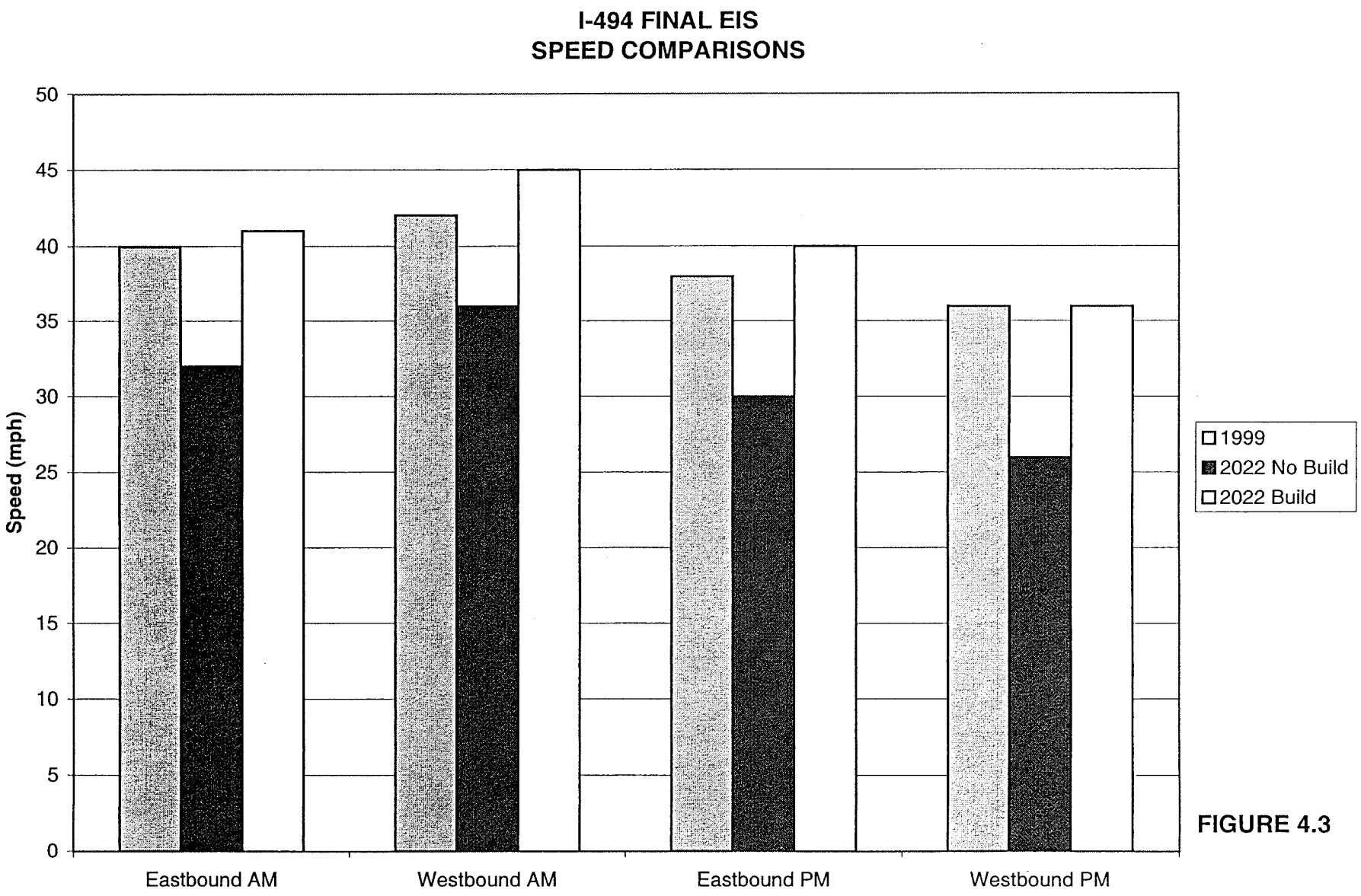
I-494 FINAL EIS
SPEED COMPARISONS
Speed (mph)
50
45
40
35
30
25
20
15
10
5
0
Eastbound AM
Westbound AM
Eastbound PM
Westbound PM
1999
2022 No Build
2022 Build

FIGURE 4.3

TABLE 4.2
PERCENT OF I-494 WITH CONGESTION [1]

		2022	
	Existing	**No-Build**	**Preferred Alternative**
Level of Service ì Dî or Worse[2]			
At least one hour per day	74%	83%	78%
At least two hours per day	73%	80%	38%
At least three hours per day	52%	74%	6%
At least four hours per day	24%	52%	4%
At least five hour per day	14%	32%	0%
At least six hours per day	5%	14%	0%
Level of Service ì Eî or Worse[3]			
At least one hour per day	43%	65%	33%
At least two hours per day	39%	59%	0%
At least three hours per day	15%	40%	0%
At least four hours per day	5%	19%	0%
At least five hour per day	4%	7%	0%
At least six hours per day	0%	4%	0%

Source: SRF Consulting Group, Inc./regional travel forecast model
(1) Based on 58 directional kilometers (36 directional miles) of roadway, I-394 to Minnesota River
(2) Level of Service ì Dî typically represents crowded, but stable conditions. Speed and freedom to maneuver are severely restricted, and there is generally a poor level of driver comfort.
(3) Level of Service ì Eî or ì Fî represents ì slow-and-goî or ì stop-and-goî conditions. Freedom to maneuver within the traffic stream is extremely difficult.

4.2.4 MITIGATION MEASURES

Since the effects of the Preferred Alternative on the capacity and use of I-494 are beneficial, no mitigation is needed.

4.3 CHANGES IN LOCAL AND REGIONAL ACCESS

4.3.1 INFORMATION FROM THE DEIS THAT REMAINS UNCHANGED

Section 5.3.1 of the DEIS describes how access to/from the regional system would be affected by the alternatives and interchange sub-alternatives studied in the DEIS, based on concept-level plans for the alternatives. It is useful for concept-level comparison of alternatives, but more detailed/updated information is needed for FEIS discussions.

4.3.2 CHANGES IN THE IMPACTS OR TECHNICAL ANALYSIS THAT HAVE OCCURRED SINCE THE DEIS

Development of Preferred Alternative preliminary design layouts has allowed for more detailed review of potential changes in access that would result from the Preferred Alternative. Access change impacts in the FEIS were considered at two levels: 1) access to/from the I-494 corridor and 2) access to/from properties adjacent to I-494 due to changes in local roadway configurations resulting from I-494 construction.

4.3.3 PREFERRED ALTERNATIVE IMPACTS

The discussion of access changes that would result from construction of the Preferred Alternative compares this alternative to existing conditions. In all cases, access provisions for the No-Build Alternative would be the same as existing conditions. Access for the Preferred Alternative would also be the same as for existing conditions, except as noted below:

4.3.3.1 Access To/From the I-494 Corridor

I-494/TH 62/CSAH 62 Interchange

Access at this interchange for the Preferred Alternative would remain essentially the same.

I-494/TH 5/TH 212/Flying Cloud Drive Interchange

Interstate 494 access to/from Valley View Road, TH 5/TH 212/Flying Cloud Drive, and Prairie Center Drive for the Preferred Alternative would remain the same as the existing condition except that the existing single eastbound entrance ramp from Flying Cloud Drive/Prairie Center Drive will be separated into two entrances.

I-494/East Bush Lake Road Interchange

A full access interchange is proposed at East Bush Lake Road for the Preferred Alternative. Access to and from the west is not currently provided.

I-494/TH 100 Interchange

This interchange is proposed for reconstruction as a partial directional interchange for the Preferred Alternative. The existing movements would be accommodated, but the southbound TH 100 to eastbound I-494 and northbound TH 100 to westbound I-494 movements would be accommodated by fly-over ramps, in lieu of the existing cloverleaf loops. Several ramps would also be bridged with ramps to both East Bush Lake Road and the TH 100/77th Street interchanges. As a result, vehicles traveling from 77th Street to southbound TH 100 would not be able to access I-494 (although travelers from I-494 to northbound TH 100 will be able to exit at 77th Street).

TH 100/77th Street Interchange

The existing interchange configuration ñ folded diamond to the north with full access to TH 100 ñ would be reconfigured for the Preferred Alternative. Interchange reconstruction would maintain the folded ramps to the north (providing access to 77th Street from I-494 via TH 100). However, the southbound entrance ramp would be bridged by the TH 100 exit ramps to I-494. Thus, access to I-494 from 77th Street via southbound TH 100 would be eliminated. Seventy-seventh Street drivers destined for I-494 would have to use either the East Bush Lake Road or France Avenue interchanges.

I-494/I-35W Interchange Area (including Penn and Lyndale Avenue Interchanges)

The existing cloverleaf interchange configuration would be revised for the Preferred Alternative. The interchange would be constructed with directional (flyover) ramps replacing the loops in the northeast and southwest quadrants.

Collector-distributor roads would be utilized along both I-494 and I-35W for the interstate-to-interstate connections and the interstate-to-interstate ramps would be bridged with local ramps to 82nd Street, Penn Avenue and Lyndale Avenue. Existing full-direction access would be maintained at 82nd Street, Penn Avenue and Lyndale Avenue interchanges. However, access from I-494 to 82nd Street via I-35W would be eliminated, and drivers would have to use the Penn or Lyndale Avenue interchanges for access to the 82nd Street area. Similarly, access to Penn Avenue and Lyndale Avenue from I-35W via I-494 would be eliminated, and I-35W drivers would have to utilize 82nd or 76th Street interchanges for access to these areas.

I-494/Nicollet Avenue

Existing full access at Nicollet Avenue will be eliminated by the Preferred Alternative. Interstate-494 drivers would need to utilize either the Lyndale or Portland Avenue interchanges for local access to this area.

I-494/Portland Avenue Interchange

The Portland Avenue interchange currently has access only to/from the west. The Preferred Alternative includes reconstructing this interchange for full access to/from I-494, utilizing a single point interchange. This interchange, and the connecting parallel reliever roads north and south of I-494, would serve previous users of the Nicollet and 12th Avenue interchanges that are being eliminated.

I-494/12th Avenue

Existing I-494 access to/from the east at 12th Avenue will be eliminated in the Preferred Alternative. Interstate-494 drivers would need to utilize the Portland Avenue interchange for local access to this area.

I-494/TH 77 Interchange

Existing access at this interchange would not change for the Preferred Alternative, except for replacing the southwest loop (southbound TH 77 to eastbound I-494) with a directional flyover ramp.

I-494/24th Avenue and 34th Avenue Interchanges

Access at the 24th Avenue and 334th Avenue interchanges for the Preferred Alternative would remain the same as the existing condition, except that the easterly ramps from 24th Avenue would be bridged with the western 34th Avenue ramps. This would prohibit traffic from using I-494 to travel between 24th and 34th Avenues.

4.3.3.2 Access To Adjacent Land Uses

TH 212/Flying Cloud Drive to East Bush Lake Road

Frontage roads exist along the portion of this segment between TH 212/Flying Cloud Drive and West Bush Lake Road. The only impact to frontage roads will be a small portion of Marth Road which would need to be shifted slightly to the south of its current alignment. This shift will not result in change of access to any adjacent land use.

East Bush Lake Road to TH 77

Frontage roads exist along the majority of this corridor segment. Many segments of these frontage roads would be removed as part of the Preferred Alternative. Where possible, new access will be provided to adjacent properties by extending adjacent roadways or by reorienting access to parallel reliever arterials. Properties where existing access is removed and no alternative access can be provided are included in the right-of-way acquisition totals in Section 5.2. Green Valley Drive in the southeast quadrant of the East Bush Lake Road/ I-494 interchange would be realigned to the south, maintaining access to the properties that are not being acquired for the project.

4.3.4 MITIGATION MEASURES

4.3.4.1 Access To/From the I-494 Corridor

Most interchange areas maintain the existing access movements to/from the I-494 corridor. In some cases (e.g. TH 100, I-35W and TH 77), strong directional movements are expedited with improved directional ramp provisions.

Local accessibility to the system was modified in the vicinity of the TH 100, I-35W and Nicollet to Portland Avenue interchanges. In all cases where access was limited from existing provisions, mitigation for impacts was achieved by providing alternative access points to the regional system via collector-distributor or frontage road system connections to the next closest interchange access point.

4.3.4.2 Access To Adjacent Land Uses

Where possible, new access will be provided to adjacent properties by extending adjacent roadways. Properties where existing access is removed and no alternative access can be provided are included in the right-of-way acquisition totals in Section 5.2.

4.4 TRANSIT

4.4.1 INFORMATION FROM THE DEIS THAT REMAINS UNCHANGED

Section 2.2.3 of the DEIS described the transit system (existing and planned future) components at that time (1992). However, many changes in the transit system, including future plans, have occurred since that time. An updated description of the transit system is provided below:

4.4.2 CHANGES IN THE IMPACTS OR TECHNICAL ANALYSIS THAT HAVE OCCURRED SINCE THE DEIS

Because many changes in the transit system have occurred since the DEIS was prepared, an updated description of the system (existing and planned) is provided below.

4.4.2.1 Existing Transit Service and Infrastructure

Transit Service

Existing transit service and infrastructure in the I-494 corridor area is shown on Figure 2.2. Most bus routes do not actually travel on I-494 but rather pass through the study area on their way to destinations along I-494 or outside of the study area ñ primarily on parallel collector or arterial routes. There are currently sixty-two routes in the area. The majority of the routes are oriented in a north-south direction providing service into downtown Minneapolis.

Metro Transit (MT), the primary transit provider in the Minneapolis-St. Paul region, directly provides much of the transit service in the I-494 corridor area. Metro Transit service in the area includes seventeen express routes to downtown Minneapolis, eight local routes and two limited stop routes.

In addition to Metro Transit, there are three private transit providers serving the I-494 corridor area. Minnesota Valley Transit Authority (MVTA) provides service between areas south of I-494 (Apple Valley, Burnsville, Eagan, Rosemount, Prior Lake and Savage) and activity centers to the north. Metro Valley Transit Authority contracts with Metro Transit and two other transit providers to operate its service. Metro Valley Transit Authority service in the I-494 corridor area includes nine express routes from the south suburbs to downtown Minneapolis, one express route from the Mall of America to downtown Minneapolis, five local routes serving the Mall of America and the Minneapolis-St. Paul International Airport, and a local route serving the Bloomington strip.

Southwest Metro Transit (SW) provides service between areas southwest of the I-494 corridor (Chanhassen, Chaska, and Eden Prairie) and activity centers to the northeast. Similar to MVTA, SW also contracts with Metro Transit and other transit providers to operate its service. Southwest Metro Transit service in the I-494 corridor includes fifteen express routes from the southwest suburbs to downtown Minneapolis, one local route serving the Bloomington strip to the Mall of America, and one local route serving Eden Prairie Center.

The Bloomington-Edina (BE) Line provides local service in Bloomington and Edina. The BE Line service consists of two local routes between the Mall of America and Southdale.

Several organizations provide specialized transportation services in the I-494 corridor. Metro Mobility, a service of the Metropolitan Council, provides door-to-door transit service for people with disabilities in the Minneapolis-St. Paul area and many adjoining suburbs. Dakota Area Resources and Transportation for Seniors (DARTS) provides door-to-door rides for seniors and people with disabilities in northwestern Dakota County with transfers to other transit providers serving the I-494 corridor. In addition, there are some private non-profit organizations providing service with vans and volunteer drivers.

Transit Support Services

Metro Commuter Services (formerly Minnesota Rideshare), a section of the Transportation and Transit Development unit of the Transportation Division of the Metropolitan Council, provides a variety of services to employers and individual commuters relating to travel demand management.

Transit Facilities

Metro Transit, Southwest Metro Transit, and Minnesota Valley Transit provide transit service to 28 park-and-ride facilities [including transit stations or hubs, private lots (usually located at a church or shopping center), public lots (usually municipal but sometimes Mn/DOT-owned) and transit provider-owned] in the I-494 corridor area (see Figure 2.2). These facilities are used by individuals who either drive and take the bus or drive and use a carpool or vanpool for the remainder of their trip.

In addition to these park-and-ride facilities, the I-494 corridor area is home to Southwest Metro Transitís headquarters and Metro Transitís South Garage. Southwest Metro Transitís Administration Offices are housed in the Southwest Station, a transit station and park-and-ride facility located in the southwest quadrant of TH 5 and Prairie Center Drive.

The South Garage is located in the northeast quadrant of I-494 and TH 77. The garage includes bus storage and maintenance facilities, and can accommodate approximately 176 buses. Approximately 166 buses currently operate out of the facility. Buses housed at the garage serve most of the routes described above. A number of buses operating out the South Garage use I-494 for non-revenue or ìdeadheadî service to get to and from the start or end of regular service.

Transit Advantages

The Minneapolis-St. Paul metropolitan region is continuously investing in transit and HOV advantages such as bus-only shoulders, HOV ramp meter bypasses, HOV lanes, and synchronized lights. The I-494 freeway corridor does not currently have a large number of these transit advantages. There are bus-only shoulders in both directions along I-494 between Highway 5 and East Bush Lake Road. There are HOV ramp meter bypasses at the following locations:

- Northbound and southbound TH 169 to eastbound and westbound I-494
- Northbound and southbound 24th Avenue to westbound I-494 (shared ramp)
- Eastbound and westbound Minnetonka Boulevard to northbound I-494 (shared ramp)
- Eastbound and westbound TH 62 to northbound I-494 (shared ramp)
- Eastbound and westbound Valley View Road to northbound I-494 (shared ramp)
- Eastbound TH 5 to southbound and northbound I-494

4.4.2.2 Planned Transit Service and Infrastructure

Planned Future Transit Facilities

As noted in Section 2.0, the most recent federal transportation legislation ñ the Transportation Equity Act for the 21st Century (TEA-21)ó put increased emphasis on the need to provide alternatives to the single-occupant automobile. This includes high occupancy vehicle (HOV) preference and support of increased transit operations. The Metropolitan Councilís *Transit 2020 Master Plan* for the Minneapolis-St. Paul Metropolitan Area reflects this philosophy and also incorporates transit features that promote their Smart Growth goals.

As noted previously, I-494 has some ramps that include HOV by-pass lanes at ramp meters and there is provision for bus use on shoulders where the shoulders are of adequate width to support such use, however, the existing I-494 facility does not provide HOV advantages throughout the corridor. The *Transit 2020 Master Plan* includes incorporating bus shoulder use on I-494 throughout the study area (and extending north to I-94 and east to TH 61) as part of its planned ìFreeway Transit Corridorî system, but does not include exclusive HOV lanes on I-494 as part of its concept for the corridor.

No additional transit hubs are indicated in the vicinity of the I-494 study corridor in the *Transit 2020 Master Plan*, other than the existing hubs. However, the existing stations, designated on Figure 2.2 could be served more effectively through the development of the Freeway Transit Corridor system, including incorporation of transit advantage features in the I-494 corridor.

Proposed Future Transitways

There are three proposed transit/rail lines that cross the I-494 corridor study area. Implementation of the Hiawatha LRT line (from downtown Minneapolis to the airport and Mall of America) is currently underway. This line will cross I-494 at 34th Avenue in Bloomington and ultimately connects with the transit hub at the Mall of America.

The Dan Patch commuter rail corridor is proposed to link Northfield (Rice County) to Minneapolis. It would utilize an existing rail line that crosses I-494 directly west of East Bush Lake Road. The feasibility of implementing this corridor is currently under study.

The Minneapolis Southwest Corridor is proposed for future LRT or busway use. One potential line crosses I-494 approximately 1.3 kilometers (0.8 miles) north of TH 62 and another crosses Minnetonka Boulevard (see Figure 2.3). These are currently being used as trails, pending potential development as transitways. The importance of I-494 as a transit route connecting these lines or as a route to access related transit hubs could increase as these lines are developed.

4.4.3 PREFERRED ALTERNATIVE IMPACTS

4.4.3.1 Transit Facilities

The No-Build Alternative would perpetuate the inability of the existing I-494 mainline to efficiently serve transit use, due to limited areas suitable for bus use of shoulders and limited HOV bypass lanes at metered ramps. The Preferred Alternative includes ìtransit advantageî features such as bus-only use of shoulders throughout the corridor and HOV bypass lanes at metered ramps, where feasible (see Section 1.4).

4.4.3.2 Transit Facility Plan for the I-494 Corridor Area

In addition to the transit advantage design features (described above) that will be provided by the Preferred Alternative, Mn/DOT, the Metropolitan Council and the cities and transit providers along the I-494 corridor have been working together to define an overall transit facility plan for the corridor. There are 28 ìofficialî park-and-ride lots currently functioning in the I-494 corridor area. These facilities are used by individuals who drive and take the bus and individuals who drive and use a carpool or vanpool for the remainder of their trip. These lots are typically shared-use facilities (often churches) where Metro Transit agrees to provide maintenance and snow plowing in return for a certain number of parking spaces. Use of additional spaces can be negotiated if the need arises. Mn/DOT will work with Metro Transit and the corridor cities if the need arises in the future to develop additional park-and-ride lots beyond those currently in operation.

Population and employment growth in the suburbs of the metropolitan area have created the need for transit services other than the traditional service focused on downtown as a destination. Because of lower densities, more diverse origins and destinations, and the availability of free and convenient parking, the most effective way to meet the growing need for service between suburbs is with a hub timed-transfer system. These hubs serve as timed transfer points for passengers between different types of transit services, such as small local circulators and express buses to the downtowns and other hubs.

There are four existing transit hubs in or close to the project corridor.

- Mall of America
- Southdale
- Southwest Transit Facility
- Ridgedale

There is a proposed high-speed bus line from Burnsville to downtown Minneapolis. This project would be implemented after the planned reconstruction of I-35W. It would include five stops and use of a diamond lanes in the middle of the roadway. The closest stop to the I-494 corridor will be near 82nd Street (ì 82nd Street Stationî).

The system of transit stations and hubs described above will provide comprehensive coverage for the I-494 corridor; no additional hubs are planned to be developed as part of the I-494 reconstruction project. Transit operations plans to maximize transit and shared ride use are being developed by the following organizations: Team Transit, Metro Transit, Minnesota Valley Transit Authority, Southwest Metro Transit, BE Line and the I-494 Corridor Commission. Mn/DOT will coordinate with these organizations in their efforts to implement this plan.

4.4.4 MITIGATION MEASURES

Since the effects of the Preferred Alternative on transit use in the I-494 corridor are beneficial, no mitigation is needed.

4.5 PEDESTRIAN AND BICYCLE TRAVEL

4.5.1 INFORMATION FROM THE DEIS THAT REMAINS UNCHANGED

Section 5.2.7 of the DEIS describes pedestrian/bicycle trail facilities that would be impacted by the Build alternatives. While this information is still correct, there have been additional trails constructed or planned for construction since the DEIS.

4.5.2 CHANGES IN THE IMPACTS OR TECHNICAL ANALYSIS THAT HAVE OCCURRED SINCE THE DEIS

Figure 2.3 summarizes the information currently available on existing and planned pedestrian and bicycle routes in the vicinity of I-494. In addition to highlighting the major facilities owned or proposed by the five communities along the corridor, the figure includes connections to facilities owned by Hennepin Parks and the regional system. Existing and planned transit centers to which bicycle routes connect are also illustrated. Pedestrian and bicycle routes include striped lanes on a roadway, paths/sidewalks adjacent to a roadway and independent trail alignments.

Figure 2.3 shows that the five communities along the corridor, along with Hennepin Parks and the Metropolitan Council, have developed extensive pedestrian and bicycle systems. A number of facilities in these systems currently cross, or are proposed to cross, I-494. Four of these crossings are located on former and existing railroad corridors. Of these four, two of them are interim trails on Hennepin County Regional Railroad Authority property. Trail usage on these corridors is temporary, pending the development of transit facilities. A third route, as illustrated in the Metropolitan Councilís Regional Recreation Open Space System, is planned to be a north-

south Regional Trail between Lyndale and Nicollet Avenues on the Canadian Pacific Railroad grade. The fourth trail, as noted on the City of Bloomingtonís Walkway and Bikeway Plan, is proposed to run on the Canadian Pacific Railroad grade near East Bush Lake Road. These two facilities will be developed if the railroads are abandoned.

4.5.3 PREFERRED ALTERNATIVE IMPACTS

The No-Build Alternative would not impact the existing pedestrian/bicycle facilities. More importantly, it would also not provide an opportunity to improve existing trail crossings at the I-494 corridor or to provide accommodation for planned new facilities in the area.

Existing or planned pedestrian/bicycle facilities that cross I-494 will have connections provided as part of Preferred Alternative construction. Existing crossings will be replaced at or near their present location, and every crossing will be rebuilt to Mn/DOT standards. Current Mn/DOT standards are defined in the *Minnesota Bicycle Transportation Planning and Design Guidelines* (Mn/DOT, June 1996), Chapter 4 (On-Road Designs). Mn/DOT staff will work with communities and agencies with facilities in the corridor to assure that any existing or committed pedestrian/bicycle facility improvements are coordinated with I-494 reconstruction plans. All improvements will be in compliance with the Americans with Disabilities Act.

4.5.4 MITIGATION MEASURES

As described above, the pedestrian/bicycle facilities that cross I-494 will have comparable or improved connections provided as part of Preferred Alternative construction and Mn/DOT staff will work with communities and agencies with facilities in the corridor to assure that any committed facility improvements are coordinated with I-494 reconstruction plans.

4.6 ROLE IN THE REGIONAL SYSTEM

4.6.1 INFORMATION FROM THE DEIS THAT REMAINS UNCHANGED

Section 2.2 of the DEIS described the role of the I-494 corridor in the regional transportation system. It described how the role of I-494 relates to federal and regional policies and to the metropolitan highway system. Although the basic role of I-494 has not changed since the DEIS, a number of the policies and plans referenced in the DEIS discussion have changed in the eight years since the DEIS was published.

4.6.2 CHANGES IN THE IMPACTS OR TECHNICAL ANALYSIS THAT HAVE OCCURRED SINCE THE DEIS

Section 2.1 of this FEIS provides an updated description of the role of I-494 in the regional transportation system, including the role I-494 plays as a collection/distribution facility for other metropolitan area highways and how I-494 provides access to/from the rest of the metropolitan area for the rapidly-growing population and employment bases in the southwestern suburbs.

Sections 2.3 and 4.2 describe existing and forecast congestion problems that limit the ability of I-494 to perform its role in conveying regional traffic in the southwest metro area.

4.6.3 PREFERRED ALTERNATIVE IMPACTS

The No-Build Alternative would perpetuate the deficiencies in the ability of I-494 to meet regional transportation demands, as described above. Over time, as traffic volumes increase and capacity issues become worse, the ability of I-494 to serve in its role would continue to decrease. Section 4.2 describes the forecast level of service for the No-Build condition in year 2022, compared to the Preferred Build Alternative. Construction of the Preferred Alternative results in the ability of the I-494 corridor to convey a larger volume of traffic with fewer periods of congestion than the No-Build condition, providing a benefit to the function of the regional highway system.

4.6.4 MITIGATION MEASURES

Since the effects of the Preferred Alternative on the regional transportation system are beneficial, no mitigation is needed.

Social/Economic Impacts Divider Page

Front Side

Social/Economic Impacts Divider Page

Back Side

5.0 SOCIAL AND ECONOMIC

5.1 SOCIAL

5.1.1 INFORMATION FROM THE DEIS THAT REMAINS UNCHANGED

The population and economic characteristics of the I-494 study area have not changed substantially since publication of the DEIS. Information from the 1980 and 1990 census was used to detail the historic demographic characteristics of the corridor. The demographic information includes census tracts abutting I-494 through the study area. This same demographic information was used in the DEIS for historical trends. The 1990 Census continues to be the most recent source for economic data. The planned release date of 2000 Census economic data at the City level is March 2002.

The anticipated impacts on residents who are not relocated, the anticipated extent of impacts on neighborhood cohesion and the anticipated impacts on businesses that are not relocated, as described in Section 5.2 of the DEIS, have not changed since publication of the DEIS or as a result of the Preferred Alternative.

5.1.2 CHANGES IN THE SETTING OR TECHNICAL ANALYSIS SINCE THE DEIS

The description of demographic characteristics in the DEIS has been updated and expanded to provide a description of each of the five cities within the study area. The description of population in the DEIS was based on the 1990 Census. The description of household data in the DEIS was based on 1988 housing unit data by Metropolitan Council traffic analysis zones (TAZs). Since publication of the DEIS, population data from the 2000 Census have been released and household data from the 1990 Census and 2000 Census have been released and are included in Table 5.1. The most recent Metropolitan Council estimate for employment (1997) is included in Tables 5.1 and 5.2. Table 5.2 also includes historic information on employment for each of the five cities within the study area. In addition, Metropolitan Council forecasts for 2020 have replaced the Metropolitan Councilís 2010 forecasts used in the DEIS to depict the forecast year conditions.

5.1.2.1 Summary of Population and Economic Characteristics

Population and Household Growth

According to the U.S. Census, the population of the Minneapolis-St. Paul Metropolitan Area grew by 15.3 percent between 1980 and 1990 from 1,985,873 to 2,288,729. The number of households increased by 21.4 percent during the same time period from 721,357 to 875,504. Between 1990 and 2000, the population of the Minneapolis-St. Paul Metropolitan Area increased by another 25.3 percent to 2,868,847, and the number of households increased by an additional 25.6 percent to 1,100,190. The most recent Metropolitan Council forecasts show a 2020 population of 3,091,390 and a 2020 household total of 1,269,320. These forecasts have not been revised since the 2000 Census.

Table 5.1 illustrates the growth of cities in the I-494 corridor study area between 1980 and 2000, as well as the forecasted growth through 2020. This growth in households through 2020 is expected to be strongest in Eden Prairie as the community continues to develop. The number of households in Bloomington, Richfield and Minnetonka are also expected to increase as areas within those communities are redeveloped as mixed-use and multiple family developments. The overall more rapid growth in households compared to population, shown in the table, reflects the ongoing metropolitan trend of a decreasing household size.

TABLE 5.1
I-494 CORRIDOR STUDY AREA
MUNICIPAL POPULATION AND HOUSEHOLD GROWTH, 1980 ñ 2020

City	Population/ Households	1980 Census[1]	1990 Census[1]	Percent Change (1980-1990)	2000 Census[1]	Percent Change (1990-2000)	2020 Forecast[2]	Percent Change (2000 ñ 2020)
Bloomington	Population	81,831	86,335	+ 5.5 %	85,172	- 1.3 %	91,000	+ 6.8 %
	Households	28,660	34,488	+ 20.3 %	36,400	+ 5.5 %	38,000	+ 4.4 %
Eden Prairie	Population	16,263	39,311	+ 141.7 %	54,901	+ 39.6 %	59,500	+ 8.4 %
	Households	5,383	14,477	+ 168.9 %	20,457	+ 41.3 %	26,000	+ 27.1 %
Edina	Population	46,073	46,070	0±	47,425	+ 2.9 %	49,000	+ 3.3 %
	Households	17,961	19,860	+ 10.6 %	20,996	+ 5.7 %	21,500	ñ2.4%
Minnetonka	Population	38,683	48,370	+ 25.0%	51,301	+ 6.0 %	50,800	-1.0%
	Households	12,667	18,687	+ 47.5 %	21,393	+ 14.5 %	22,700	+ 6.1%
Richfield	Population	37,851	35,710	- 5.7 %	34,439	- 3.6 %	40,000	+ 16.1 %
	Households	15,258	15,551	+ 1.9 %	15,073	- 3.0 %	17,200	+ 14.1 %
TOTAL	Population	220,701	255,796	+ 15.9 %	273,238	+ 6.8 %	290,300	+ 6.2 %
	Households	79,929	103,063	+ 28.9 %	114,319	+ 10.9 %	125,400	+ 9.6 %

Source: [1]US Census Bureau
[2]Metropolitan Council, 1996 (population forecast revised in 1998)

Economic Conditions

Based upon U.S. census information, the 1989 median household income levels for the municipalities in the study area were as follows:

- Bloomington ñ $41,736
- Eden Prairie ñ $52,956
- Edina ñ $48,936
- Minnetonka ñ $50,659
- Richfield ñ $32,405

The 1989 median household income for Hennepin County was $35,659 and for the Minneapolis-St. Paul Metropolitan Area was $36,565. While certain portions of the study area corridor have somewhat higher concentrations of low- and moderate-income persons than the remainder of the study area, the data did not reveal high concentrations relative to Hennepin County as a whole. Environmental Justice issues are discussed in greater detail in Section 5.4 of the FEIS.

The I-494 corridor includes a wide variety of commercial, office and light industrial businesses with a substantial employment base. Table 5.2 presents information regarding growth of employment, by city, within the study area since 1980. Growth of employment within the five cities in the corridor is projected by the Metropolitan Council to increase from 202,846 in 1990 to 297,100 through 2020. The largest percentage growth is anticipated in Eden Prairie, which is still developing, while the largest numerical growth is anticipated in Bloomington. The construction of Phase II of the Mall of America in the southeast quadrant of TH 77 and I-494 and the redevelopment of land south of I-494 near the Minneapolis-St. Paul International Airport are reflected in the 2020 forecasts, as are new developments and redevelopment along the corridor in all five cities.

TABLE 5.2
I-494 CORRIDOR STUDY AREA
EMPLOYMENT INFORMATION BY CITY, 1980 ñ 2020 (JOBS)

City	1980 Census[(1)]	1990 Census[(1)]	Percent Change (1980-1990)	1997 Estimate[(2)]	Percent Change (1990-1997)	2020 Forecast[(2)]	Percent Change (1997 ñ 2020)
Bloomington	61,098	75,837	+ 24.1 %	90,853	+ 19.8 %	112,000	+ 23.3 %
Eden Prairie	12,807	36,095	+ 181.8 %	44,319	+ 22.8 %	56,500	+ 27.5 %
Edina	36,061	44,534	+ 23.5 %	52,819	+ 18.6 %	60,000	+ 13.6 %
Minnetonka	19,818	35,536	+ 79.3 %	45,283	+ 27.4 %	56,000	+ 23.7 %
Richfield	10,798	10,844	+ 0.4 %	10,405	- 4.0 %	12,600	+ 21.1 %
TOTAL	140,582	202,846	+ 44.3 %	243,679	+ 20.1 %	297,100	+ 21.9 %

Source: [(1)]US Census Bureau
[(2)]Metropolitan Council, 1998

5.1.3 IMPACTS ASSOCIATED WITH THE PREFERRED ALTERNATIVE

The Preferred Alternative should have no discernable impacts on population characteristics at the city or regional levels. The Preferred Alternative will require acquisition of a number of housing units and businesses and relocation of the affected individuals. These impacts are detailed in Section 5.2.3. However, such relocation is not expected to disproportionately affect low income and/or minority populations.

Some parkland will be acquired, as is further discussed in Chapter 8 of this FEIS, but the impact on any social group or neighborhood is not expected to be measurable.

Interstate 494 currently serves and will continue to serve as a boundary between communities and neighborhoods in the study area. As such, no neighborhoods would be split nor would any social groups, neighborhoods, or ethnic groups be isolated. Construction of the Preferred

Alternative would not further separate residents or social groups from community facilities. Access to properties lost due to frontage road removal is being restored through development of parallel transportation facilities. (see Section 4.3.3.2).

5.1.4 MITIGATION MEASURES

No mitigation measures are necessary as the population characteristics and social/community relationship within the study area would not be changed by implementation of the Preferred Alternative.

5.2 RIGHT-OF-WAY AND RELOCATION

5.2.1 INFORMATION FROM THE DEIS THAT REMAINS UNCHANGED

Right-of-way and relocation issues associated with the reconstruction of I-494 were discussed in Section 5.2.1 of the DEIS. The right-of-way acquisition needs for the FEIS were determined using the same general procedures as those for the DEIS.

5.2.2 CHANGES IN THE IMPACTS OR TECHNICAL ANALYSIS THAT HAVE OCCURRED SINCE THE DEIS

The properties affected by corridor reconstruction have been defined based upon the preliminary construction limits developed for the Preferred Alternative.

The property information that was obtained from Hennepin County for the DEIS has been updated to reflect 1999 assessed values. Business counts reflect current conditions. The presentation of the technical analysis has been restructured to present information by municipality rather than by the corridor segment areas and interchange areas detailed in the DEIS. In addition to these changes, the FEIS analysis has been expanded to include consideration of residential and business relocation potential.

Since publication of the DEIS, some conditions in the corridor have changed contributing to the reduction in right-of-way impacts. These changes include:

- The manufactured home park that was located between Chicago and Portland Avenue south of I-494 has been redeveloped into a retail commercial use. Relocation of the affected residents was addressed as part of that project.

- The residential properties identified for acquisition in the DEIS along 77th Street in Richfield have been acquired as part of a project for which a separate Environmental Assessment was completed.

- The area bounded by Lyndale Avenue, I-494, Colfax Avenue and 77th Street has been redeveloped as retail and would accommodate the Preferred Alternative without affecting the retail development due to right-of-way acquisition.

- Cities in the I-494 corridor reoriented access for parcels that were expected to be affected by the proposed reconstruction of I-494 in order to reduce the impacts of right-of-way acquisition.

- The reduction in project scale discussed in Section 3.4 of this FEIS has resulted in a projection of substantially fewer parcel acquisitions than would have been required for the range of Build alternatives analyzed in the DEIS. There are approximately 35 to 40 percent of the number of total acquisitions and 75 to 90 percent of the number of partial acquisitions reported for the range of alternatives assessed in the DEIS. In particular, there are far fewer total residential acquisitions.

5.2.3 PREFERRED ALTERNATIVE IMPACTS AND MITIGATION

5.2.3.1 Methodology

The following guidelines were used to minimize the right-of-way acquisition needs for the reconstruction of I-494:

- To the extent possible, all proposed improvements were designed within existing state and local government-owned right-of-way.

- Where additional right-of-way was required to accommodate the proposed design, the right-of-way acquisition was minimized to the extent possible.

- In areas where it was especially desirable to minimize right-of-way acquisition, for example to avoid impacts to parklands and residential and commercial structures, vertical retaining walls were included instead of more customary backslopes or fill slopes.

The following data sources were used to complete the right-of-way analysis:

Impact Information

- Information on property ownership, estimated market value, and taxes was obtained from Hennepin County property tax records.

- Information on business names was obtained through the *Minneapolis Metro Business Directory* and confirmed through field survey.

- Information on commercial/industrial square footage was obtained from City Assessorsí records.

- Meetings were held with staff from the cities of Bloomington and Richfield to specifically discuss right-of-way issues. These cities provided local/access information which was used to refine right-of-way analysis.

- Information on job impact was based on standard ratio of employees to building area as cited by the Institute of Transportation Engineers (ITE).

Relocation Information

- Information on residential construction activity was obtained from building permit records. Information on sales of residential properties was obtained from the *Residential Real Estate Activity Report*, published by the Minneapolis Area Association of Realtors.

- Information on capacity for job and housing unit growth was obtained from the Metropolitan Council.

- Information on commercial/industrial vacancies was obtained from the *2000 Towle Report*, a periodical published by Towle Real Estate, which reports on the commercial real estate market in the Minneapolis-St. Paul Metropolitan Area.

- Information on redevelopment potential was based on city comprehensive plans.

5.2.3.2 Impact Analysis

Impacts were defined as being either total or partial acquisitions. Total acquisitions were assumed where structures (house, office building) will be removed by the project or where a substantial portion of the parcelís land area would be acquired. Total acquisition costs were estimated using Mn/DOT recommended methodologies.

Partial acquisitions were defined as properties where some level of land acquisition is required, but is limited to boulevard or lawn areas, sections of unmaintained grounds, and minor (replaceable) parking impacts. The acquisition costs were estimated using Mn/DOT recommended methodologies. The costs of partial acquisitions included the value of the land being acquired and the potential for severance compensation.

Impacts were determined by defining right-of-way acquisition needs associated with the Preferred Alternative and construction requirements. Right-of-way impacts were grouped by land use type (residential and non-residential).

For the entire corridor, the Preferred Alternative is estimated to impact 291 properties. Affected are 150 residential and 141 non-residential parcels. The impacts result from widening the mainline, reconstructing the interchanges, reconfiguring the frontage road system, and providing for storm water ponding. The right-of-way needs are illustrated in Figures 3.1 through 3.12.

Table 5.3 presents the number and type of affected parcels, degree of acquisition (total or partial), and total estimated acquisition/relocation costs for each municipality and the corridor in its entirety. The table footnotes indicate assumptions used in compiling the data, including the availability of local access agreements to serve certain impacted properties.

Acquisition Impacts by Municipality

The reconstruction of I-494 will directly impact five municipalities: Minnetonka, Eden Prairie, Edina, Bloomington, and Richfield. It will also directly impact the Minneapolis-St. Paul International Airport, (included within the discussion of Bloomington impacts below). As detailed in the following discussion, each jurisdiction will incur varying impacts in terms of number of parcels, land uses, and acquisition costs. For the past several years, efforts have been made by cities in the corridor to provide alternate access to properties anticipated to be affected by right-of-way acquisition.

Minnetonka

Residential impacts in Minnetonka include one total acquisition and six partial acquisitions. The residential parcel to be totally acquired is vacant. All of the partially impacted residential properties are single-family residences. Non-residential impacts include no total acquisitions and three partial acquisitions. Two of the partial acquisitions are of industrial property; the other is public land.

Eden Prairie

One residential property, which is a free-standing garage on its own lot, will be totally acquired in Eden Prairie. One vacant residential property will be partially acquired. Non-residential impacts include one total acquisition and one partial acquisition. The total acquisition and the partial acquisition are both vacant commercial sites.

Edina

No residential property will be acquired in Edina. Non-residential impacts include one partial acquisition of a tax-exempt vacant property.

Bloomington

Bloomington will incur the largest number of right-of-way impacts of the municipalities along the I-494 corridor. Table 5.3 summarizes the estimated acquisition impacts within the City for the Preferred Alternative, including the preferred concept for the East Bush Lake Road/I-494 interchange (see Section 3.4.3). Preferred Alternative residential impacts include 26 total acquisitions and 64 partial acquisitions. All of the 26 total acquisitions are single-family homes and will require relocation. One of these is a transitional housing facility and is discussed in Section 5.6.3. Of the 64 partial acquisitions, seven properties are single-family, seven are apartment properties, 46 are condominium units, three are garages associated with the condominiums yet assigned individual parcel codes for tax purposes, and one is a common open space parcel for a townhouse development.

TABLE 5.3
SUMMARY OF STUDY AREA RIGHT-OF-WAY IMPACTS BY MUNCIPALITY ñ PREFERRED ALTERNATIVE

	Total Acquisitions						Partial Acquisitions[3]			
	Number of Parcels		Estimated Acquisition/Relocation Cost		Estimated Market Value		Number of Parcels		Estimated Acquisition	
Municipality	Res	Non-res	Res	Non-res	Res[1]	Non-res	Res	Non-res	Res	Non-res
Minnetonka	1 (.02 ha/ 0.6 ac)	0	$ 56,000	$ 0	$ 28,000	$ 0	6 (.02 ha/ 0.6 ac.)	3 (0.2 ha/ 0.6 ac.)	$ 221,065	$ 1,588,100
Eden Prairie	1 (0.4 ha/ 1.1 ac)	1 (1.3 ha/ 3.3 ac.)	$ 159,000	$ 1,142,400	$ 79,500	$ 672,000	1 (0.7 ha/ 1.7 ac.)	1 (0.8 ha/ 2.0 ac.)	$ 9,935	$ 2,246,250
Edina	0	0	$ 0	$ 0	$ 0	$ 0	0	1 (1.6 ha/ 3.9 ac.)	$ 0	$ 1,680,000
Bloomington	26 (2.7 ha/ 6.7 ac.)	32 (20.2 ha/ 50.0 ac.)	$ 4,799,200	$34,636,098	$2,399,600	$20,374,175	64 (0.8 ha/ 1.9 ac.)	75 (12.1 ha/ 29.9 ac.)	$ 1,248,032	$ 83,457,096
Richfield	33 (2.8 ha/ 7.0 ac.)	2 (0.5 ha/ 1.3 ac.)	$ 6,667,200	$ 3,884,500	$3,333,600	$ 2,285,000	18 (1.3 ha/ 3.2 ac.)	24[2] (1.1 ha/ 2.8 ac.)	$ 3,645,267	$ 13,656,280
Airport	0	0	$ 0	$ 0	$ 0	$ 0	0	2 (1.7 ha/ 4.2 ac.)	$ 0	$ 3,647,000
Totals	61 (6.2 ha/ 15.4 ac.)	35 (22.1 ha/ 54.6 ac.)	$11,681,400	$39,662,998	$5,840,700	$23,331,175	89 (2.3 ha/ 5.8 ac.)	106 (17.5 ha/ 43.1 ac.)	$5,124,299	$106,274,726

[1] Includes an estimate of $100,000 for one non-profit-owned housing unit for which Estimated Market Value (EMV) was not available

[2] Includes a 119-bed nursing home

[3] Fifteen (15) of these partial acquisitions have been characterized this way because of local access agreements which landowners reportedly hold. It is possible, pending future negotiations among interested parties regarding individual properties, that some of these 15 properties would not require acquisition at all, or, on the other hand, may require total acquisition, along with three other parcels currently not counted among the acquisitions. A worst case would involve an additional 10 properties requiring total acquisition, and a partial property acquisition increasing in size. This worst case would add $23,791,540 to the right-of-way acquisition costs for the overall project.

Non-residential impacts include 32 total acquisitions and 75 partial acquisitions. Of the total property acquisitions, three are park parcels (two contiguous as part of one park resource), four are vacant commercial parcels, and 25 are commercial/industrial properties. The commercial/industrial properties affected by acquisition comprise 26 retail/service establishments, 13 office businesses, and 10 industrial businesses. (Several parcels are sites of more than one business establishment.)

Forty-four of the partial acquisitions are commercial, four are vacant, 13 are industrial, 11 are park properties, (including multiple parcels within each of the three affected parks) two are church properties, and one is property owned by the Metropolitan Airports Commission. There are also two additional airport properties to be partially acquired, shown separately from Bloomington parcels in Table 5.2.

As discussed in Section 3.4.3 of this FEIS, concerns have been raised regarding the Preferred Alternative design for the I-494/East Bush Lake Road Interchange. Three alternate designs for this interchange have been identified and evaluated. These alternate designs are not preferred by Mn/DOT, but it is possible that one of them could be implemented through discussions with FHWA. Table 5.4 identifies right-of-way impacts for Bloomington (all right-of-way impacts for this interchange for all alternatives are within Bloomington) and the study area total assuming each of the alternate designs for the I-494/East Bush Lake Road interchange.

Richfield

Residential impacts include 33 total acquisitions and 18 partial acquisitions. Twenty-nine of the total residential property acquisitions are single-family homes, one is a two-family dwelling, and three are vacant residential parcels. The partial acquisitions affect nine single-family properties, two vacant residential parcels, and seven apartment properties.

The majority of residential property acquisitions in Richfield would be located in the northeast quadrant of the I-494/I-35W interchange, north of 76th Street (see Figures 3.8 and 3.9). A number of residents of this area and some City officials have raised objections to the extent of acquisitions proposed in this area. However, a review of previous environmental documentation for the I-494/I-35W interchange area indicates that the identification of right-of-way impacts in this area is not new. As discussed in Section 3.4.3 of this FEIS, the I-494 DEIS referenced the I-35W Reconstruction DEIS for information on alternatives and impacts (including right-of-way impacts) for the I-35W/I-494 interchange area. All of the total residential acquisitions in Richfield associated with the reconstruction of the I-35W/I-494 interchange identified on Figures 3.8 and 3.9 and included in the analysis in this FEIS were also identified as total acquisitions in the right-of-way analysis for this interchange in the I-35W DEIS and, therefore by reference, the I-494 DEIS. The I-35W DEIS and the I-494 DEIS each went through a formal public review and comment process, including public hearings. The Minnesota Department of Transportation acknowledges the concerns of residents in this area and will continue to refine this interchange area during final project design to reduce, to the greatest extent feasible, the number of total residential acquisitions east of I-35W and north of 76th Street.

TABLE 5.4
SUMMARY OF RIGHT-OF-WAY IMPACTS FOR ALTERNATE DESIGNS AT I-494/EAST BUSH LAKE ROAD INTERCHANGE ñ BLOOMINGTON AND STUDY AREA

	Total Acquisitions						Partial Acquisitions[3]			
	Number of Parcels		Estimated Acquisition/Relocation Cost		Estimated Market Value		Number of Parcels		Estimated Acquisition	
	Res	Non-res	Res	Non-res	Res[1]	Non-res	Res	Non-res	Res	Non-res
Folded Diamond to the East										
Bloomington	26 (2.7 ha/ 6.7 ac.)	29 (6.0 ha/ 14.7 ac.)	$ 4,799,200	$52,736,098	$2,399,600	$31,882,875	64 (0.8 ha/ 1.9 ac.)	75 (12.1 ha/ 29.9 ac.)	$1,248,032	$ 83,457,096
Study Area Total	61 (6.2 ha/ 15.4 ac.)	38 (25.4 ha/ 62.6 ac.)	$11,681,400	$57,762,998	$5,840,700	$34,839,875	89 (2.3 ha/ 5.8 ac.)	106[2] (7.5 ha/ 43.1 ac.)	$5,124,299	$106,274,726
Picture Drive On-Ramp										
Bloomington	26 (2.7 ha/ 6.7 ac.)	32 (20.2 ha/ 50.0 ac.)	$ 4,799,200	$34,636,098	$2,399,600	$20,374,175	64 (0.8 ha/ 1.9 ac.)	76 (12.6 ha/ 31.1 ac.)	$1,248,032	$ 83,957,096
Study Area Total	61 (6.2 ha/ 15.4 ac.	35 (22.1 ha/ 54.6 ac.)	$11,681,400	$39,662,998	$5,840,700	$23,331,175	89 (2.3 ha/ 5.8 ac.)	107[2] (18.0 ha/ 44.5 ac.)	$5,124,299	$106,774,726
On-Ramp Under Railroad										
Bloomington	26 (2.7 ha/ 6.7 ac.)	33 (20.7 ha/ 51.2 ac.)	$ 4,799,200	$34,936,098	$2,399,600	$20,517,075	64 (0.8 ha/ 1.9 ac.)	74 (12.0 ha/ 29.6 ac.)	$1,248,032	$ 83,336,096
Study Area Total	61 (6.2 ha/ 15.4 ac.)	36 (22.6 ha/ 55.8 ac.)	$11,681,400	$39,962,998	$5,840,700	$23,474,075	89 (2.3 ha; 5.8 ac.)	105[2] (17.4 ha/ 42.8 ac.)	$5,124,299	$106,153,726

[1] Includes an estimate of $100,000 for one non-profit-owned housing unit for which Estimated Market Value (EMV) was not available

[2] Includes a 119-bed nursing home

[3] Fifteen (15) of these partial acquisitions have been characterized this way because of local access agreements which landowners reportedly hold. It is possible, pending future negotiations among interested parties regarding individual properties, that some of these 15 properties would not require acquisition at all, or, on the other hand, may require total acquisition, along with three other parcels currently not counted among the acquisitions. A worst case would involve an additional 10 properties requiring total acquisition, and a partial property acquisition increasing in size. This worst case would add $23,791,540 to the right-of-way acquisition costs for the overall project.

Non-residential impacts include two total acquisitions and 24 partial acquisitions. The total acquisitions include a gas station and a 119-bed nursing home. While the nursing home is listed here among the non-residential properties, it is also a residence and its acquisition will require relocation of the residents to alternate care appropriate to their needs. Twenty of the partial acquisitions are commercial properties, one is vacant, two are churches, and one is industrial.

Residential Relocation Impacts by Municipality

As shown in Table 5.5, reconstruction of I-494 will require relocation of 57 dwelling units. Relocation is not anticipated for any residential parcel identified as a partial acquisition.

Bloomington

Relocation will be required for the 26 single-family homes that will be acquired for right-of-way. In 1999, 31 housing units were built in Bloomington, all of which were single-family units. From 1995 through 1999, an average of 65 single-family residential building permits were issued yearly. However, single-family production is expected to slow substantially over the next several years. Bloomington is projected to add 1,144 households by the year 2020. City staff advised that about ten percent of accompanying housing unit growth will be single-family, for an average net annual growth of only about five single-family units per year. The anticipated construction of new multifamily, particularly senior housing options, may result in turnover in the existing single-family stock, opening up opportunities for relocation of affected households.

The Multiple Listing Service (MLS) reported sales of 899 single-family residences in Bloomington in 1999. Of these, 104 were homes with two or fewer bedrooms, 375 with three bedrooms, 320 with four or more bedrooms. The average price of these homes was $157,828. The MLS distinguishes between the East Bloomington and West Bloomington market areas in its data reporting and reported a median price in the East Bloomington market area of $112,900 and a median price in the West Bloomington market of $155,000 for 1999. Of the 25 single-family structures to be acquired for the project for which estimated market value is available, the average 1999 estimated market value, as determined by the Hennepin County Assessor was $96,000 with a median EMV of $98,500. With the consideration that assessorís estimated market value (EMV) are generally somewhat lower than actual market sales prices, the impacted properties nonetheless have lower value than the average property sold in the Bloomington during 1999. The closest comparability is in the East Bloomington market area. If comparable replacement housing cannot be found within Bloomington, properties in adjacent communities could be considered.

Richfield

Relocation will be required for the 29 single-family homes and one two-family home that will be acquired for right-of-way. In 1999, 12 single-family housing units were built in Richfield, as well as 142 multi-family units. From 1995 through 1999, an average of 12 single-family residential building permits were issued yearly. Richfield is expected to add 1,700 households by 2020. Like Bloomington, Richfield is a fully developed community where most new housing

TABLE 5.5
SUMMARY OF STUDY AREA RESIDENTIAL AND NON-RESIDENTIAL RELOCATION BY MUNICIPALITY[1] ñ PREFERRED ALTERNATIVE

Total residential and business relocations will occur only in Bloomington and Richfield

	Residential[2]	Non-Residential									
		Retail/service		Office		Industrial		Total Number Structures	Total Number of Businesses	Total area of Business Space	Total Number of Employees[4]
	Dwelling Units	Structures	Businesses	Structures	Businesses	Structures	Businesses				
Bloomington	26	8	26	3	13	13	10	24	49	45,829 (m^2) (492,794 sq. ft.)	900
Richfield	31[3]	2	2	0	0	0	0	2	2	5,206 (m^2) 55,975 sq. (ft.)	40
Totals	57	10	28	3	13	13	10	26	51	51,035 (m^2) (548,769 sq. ft.)	940

[1] The relocation impacts are based on right-of-way impacts reported in Table 5.3 in which 14 partial acquisitions are characterized as such because of local access agreements which landowners reportedly hold. It is possible, pending future negotiations among interested parties that some of these 14 properties would not require acquisition at all, or, on the other hand, may require total acquisition along with three other parcels not counted among the acquisitions. A worst case would involve 10 additional properties requiring total acquisitions. This worse case would require relocation of one additional dwelling unit and 13 additional businesses.

[2] These figures do not include the 24-bed residential care facility or the 119-bed nursing home. The nursing home is included in the Non-residential: Retail/service counts.

[3] Includes one two-family structure.

[4] Number of employees is an estimate based upon employees per 93 square meters (1,000 square feet) standards for different land uses and SRF estimates. The figures do not reflect actual employee counts for the current businesses.

options will become available as a result of redevelopment, with an emphasis on attached single-family and higher density multiple family development. While this level of activity in new detached single-family construction may not be sufficient to accommodate the relocation needs within Richfield, construction of new housing alternatives to serve the changing housing market will allow for turnover in the existing single-family housing stock that will help accommodate the relocation needs of affected residents.

The Multiple Listing Service reported sales of 439 single-family residences in Richfield in 1999. Of these, 99 were homes with two or fewer bedrooms, 285 with three bedrooms, and 55 with four or more bedrooms. The average price of these homes was $114,031 with a median price of $114,500. Of the 29 single-family structures to be acquired for the project, the average 1999 estimated market value was $111,100 with a median EMV of $112,500. With EMVs generally lower than actual market sales price, the data suggest that the impacted residential properties have comparable or slightly higher values than the average property sold in 1999.

In addition to these residential relocations, the project will affect residents of a 119-bed nursing home. Relocation of nursing home residents will be determined by the level of care needed by each of the affected residents and the availability of appropriate space at alternate facilities. Impacts on this facility are further discussed in Section 5.6.3.

Non-Residential/Business Relocation

The reconstruction of I-494 will necessitate the acquisition and relocation of retail/service establishments, office space and industrial buildings. Each of these types of businesses has different relocation needs, including highway access, highway visibility, zoning, and structure and parcel size. In addition, successful relocation should minimize negative impacts to employee commuting patterns. Every attempt will be made to allow businesses to relocate in relative proximity to their existing location.

Table 5.5 details, by municipality, the number and types of businesses that will be acquired by the project, and provides an estimate of the number of employees affected by these acquisitions for the Preferred Alternative, including the preferred concept at the East Bush Lake Road/I-494 interchange. Bloomington and Richfield are the only municipalities in the project area that will have businesses acquired. In total, the project will displace 51 businesses employing up to 940 persons, eliminating approximately over 51,150 square meters (550,000 square feet) of commercial/industrial space. Section 5.3.3 discusses these economic impacts in detail.

As discussed under the ìAcquisition Impacts by Municipalityî heading, above, Mn/DOT has identified three alternate designs for the I-494/East Bush Lake Road Interchange. It is possible, through discussions with FHWA, that one of these alternates may be implemented in the future. The non-residential/business relocation impacts for each of these alternates, for Bloomington and the total study area, are presented on Table 5.6.

TABLE 5.6
SUMMARY OF RESIDENTIAL AND NON-RESIDENTIAL RELOCATION BY MUNICIPALITY ñ ASSUMING ALTERNATE DESIGNS FOR I-494/EAST BUSH LAKE ROAD INTERCHANGE ñ BLOOMINGTON AND STUDY AREA

	Residential[2]	Non-Residential									
		Retail/service		Office		Industrial		Total Number Structures	Total Number of Businesses	Total area of Business Space	Total Number of Employees[4]
	Dwelling Units	Structures	Businesses	Structures	Businesses	Structures	Businesses				
Folded Diamond to the East											
Bloomington	26	8	26	6	47	13	10	27	83	65,070 (m^2) (699,674 sq. ft.)	1,520
Study Area	57[3]	10	28	6	47	13	10	29	85	70,275 (m^2) (755,649 sq. ft.)	1,520
Picture Drive On-Ramp											
Bloomington	26	8	26	3	13	13	10	24	49	45,829 (m^2) (492,794 sq. ft.)	900
Study Area	57[3]	10	28	3	13	13	10	26	51	51,035 (m^2) (548,769 sq. ft.)	940
On-Ramp Under Railroad											
Bloomington	26	8	26	3	13	13	10	24	49	45,829 (m^2) (492,794 sq. ft.)	900
Study Area	57[3]	10	28	3	13	13	10	26	51	51,035 (m^2) (548,769 sq. ft.)	940

[1] The relocation impacts are based on right-of-way impacts reported in Table 5.3 in which 14 partial acquisitions are characterized as such because of local access agreements which landowners reportedly hold. It is possible, pending future negotiations among interested parties that some of these 14 properties would not require acquisition at all, or, on the other hand, may require total acquisition along with three other parcels not counted among the acquisitions. A worst case would involve 10 additional properties requiring total acquisitions. This worse case would require relocation of one additional dwelling unit and 13 additional businesses.

[2] These figures do not include the 24-bed residential care facility or the 119-bed nursing home. The nursing home is included in the Non-residential: Retail/service counts.

[3] Includes one two-family structure.

[4] Number of employees is an estimate based upon employees per 93 square meters (1,000 square feet) standards for different land uses and SRF estimates. The figures do not reflect actual employee counts for the current businesses.

5.2.3.3 Mitigation

Two booklets entitled *Relocation: Your Rights and Benefits* and the *Guidebook for Property Owners* have been produced by Mn/DOT to provide information to potential displacees on their rights and benefits under the Relocation Assistance Program. These documents are available from the Mn/DOT Office of Right-of-Way. The relocation assistance program is briefly described below. Further information may be found in the above-mentioned booklets or by contacting Mn/DOT.

In addition, Mn/DOT has procedures in place to ensure that affected nursing home residents are relocated to facilities that can provide the appropriate level of care for each individualís circumstance.

Project Assurance

Mn/DOT will provide relocation payments and services as required under the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended, and as required under state law.

All persons lawfully occupying real property will be given no less than 90 daysí written notice in which to vacate their dwelling or business. In most cases, 120 days would be granted with the possibility of extensions of time on a lease agreement.

Mn/DOT will ensure that comparable replacement residential dwellings would be available within a reasonable period prior to displacement or provided in accordance with the provisions of Last Resort Housing.

Relocation Benefits

Mn/DOTís Relocation Assistance Program has been developed following the guidelines established in federal regulations. The Uniform Relocation Assistance and Real Property Acquisition Assistance Policies Act of 1970, as amended, establishes ìÖ a uniform policy for fair and equitable treatment of persons displaced as a result of federal and federally assisted programs in order that such persons shall not suffer disproportionate injuries as a result of programs designed for the benefit of the public as a whole.î

Mn/DOT is committed to assuring that the relocation process is as simple and straightforward as possible. Relocation Advisors are available to provide information on programs and benefits and to develop individual relocation plans. Relocation resources are available to all residential and business relocatees without discrimination.

Residential Relocation Assistance

Those whose housing would be displaced are entitled to reimbursements for certain expenses such as moving costs, replacement housing costs, and appraisal fees.

Replacement housing units must be ìdecent, safe and sanitaryî and must be functionally equivalent to the present dwelling with respect to the number of rooms and living space, location and general improvements. This functional equivalence standard also pertains to the level of care required for nursing home residents being relocated. The structure must meet all the minimum housing requirements established by federal regulations and conform to applicable housing and occupancy codes.

Although an adequate supply of comparable replacement housing sites can generally be found, an administrative process called Last Resort Housing is available to address situations where the supply of replacement sites is inadequate. Last Resort Housing guarantees that comparable housing will be provided before the owner is required to move.

Business Relocation Assistance

Relocation benefits may also be available for businesses, farms, and non-profit organizations. Payment may be made for:

- Moving costs
- Tangible personal property loss as a result of relocation or discontinuance of an operation
- Re-establishment expenses
- Costs incurred in identifying a replacement site

Businesses, or non-profit organizations may be eligible for fixed payments in lieu of moving and reestablishing costs.

Mn/DOT will assist businesses in finding replacement sites, but is not obligated to provide them with such sites.

5.2.4 OTHER POTENTIAL RIGHT-OF-WAY IMPACTSó EAST DRAINAGE SYSTEM

As discussed in Section 6.3.4 (Surface Water Drainage) of this FEIS, the existing trunk storm sewer line serving the I-494 corridor from approximately the I-494/I-35W interchange area east to the Minnesota River is currently under-capacity, and capacity improvements will need to be made. The Minnesota Department of Transportation is currently conducting a study to address alignment, construction, and outfall options to address this issue. From the I-494/I-35W interchange (or possibly from the I-494/Penn Avenue interchange) east to 34th Avenue, it is anticipated that this added capacity will be provided within existing Mn/DOT right-of-way.

East of approximately 34th Avenue, it is anticipated that added capacity will be provided in the form of a buried overflow line for flows greater than 16.8 cubic meters per second (cms, or 600 cubic feet per second [cfs]). Pending the findings of the above referenced Mn/DOT

drainage study, the location of this line is not known. However, as is discussed in more detail in Section 6.3.4.4 of this FEIS, it is anticipated that this line and its outfall will be located within the review area identified on Figure 6.16.

If the study were to designate Military Reservation Pond (see Figure 6.16) as the outfall location, the line would pass through I-494 right-of-way and other land already owned by Mn/DOT. However, if the alignment to MAC Pond 040 is selected, it may be necessary to obtain an easement from MAC and/or the U.S. Air Force for line installation and maintenance purposes.

Prior to completion of the Mn/DOT drainage study, the right-of-way impacts east of 34th Avenue associated with enhancements to the I-494 drainage system cannot be determined. However, if right-of-way acquisition in this area is required, it would not result in the relocation of businesses or residents nor will it impact any parkland subject to Section 4(f) provisions. Once the drainage study is completed and a determination is made regarding a preferred design, coordination will take place with any affected land holder(s) to secure the necessary right-of-way.

5.3 ECONOMIC AND FISCAL

5.3.1 INFORMATION FROM THE DEIS THAT REMAINS UNCHANGED

The overall economic characteristics of the I-494 corridor study area as described in Section 5.2.3 of the DEIS have not changed substantially since the publication of the DEIS.

5.3.2 CHANGES IN THE SETTING OR TECHNICAL ANALYSIS SINCE THE DEIS

Historic employment data for each of the five cities in the study area have been provided (Table 5.2) and Metropolitan Council employment forecasts for 2020 have replaced the Metropolitan Councilís 2010 forecasts used in the DEIS. The most current data on commercial/industrial vacancy has also been included.

Property tax impact data have been updated to reflect 2000 taxes payable for affected properties. Business counts have been updated with current field surveys and reverse directory information.

5.3.3 IMPACTS ASSOCIATED WITH THE PREFERRED ALTERNATIVE

Business and Job Impacts

As shown in Table 5.5 the acquisition of property for project right-of-way is anticipated to displace 51 businesses and up to 940 jobs (or, as shown in Table 5.6, the Folded Diamond to the East alternate design for the East Bush Lake Road interchange would displace up to 85 businesses and up to 1,520 jobs). This job impact is in the context of current job levels of 240,000 in the study corridor and over 830,000 in the Minneapolis-St. Paul Metropolitan Area.

The majority of these business impacts are in Bloomington, concentrated in the northeast quadrant of the I-494/TH 100 interchange and on the south side of I-494 between Lyndale and 12th Avenue (and, for the Folded Diamond to the East alternate design for the East Bush Lake Road interchange, a concentration of impacts would also occur at the northeast quadrant of the interchange). Two businesses in Richfield will also be affected. No business displacement is anticipated in the remaining cities in the study area.

Together, Bloomington and Richfield are projected to increase by 10,800 jobs by 2010 and 18,500 jobs by 2020. For all municipalities in the project area, the total projected employment growth is 24,000 by 2010 and 31,000 by 2020. This growth indicates capacity within the study area to compensate for the 940 jobs displaced as a result of the project.

Information from *Towle Report 2000*, published by Towle Real Estate, which focuses on the commercial real estate market in the Minneapolis-St. Paul area, was compiled to assess the potential for relocating displaced businesses within existing facilities. For purposes of this analysis, the two sectors defined as Southwest and West in the *Towle Report* are combined and referred to as the southwestern metropolitan area. This area comprises Bloomington, Richfield, Edina, Eden Prairie, Hopkins, Minnetonka, St. Louis Park, Golden Valley, Plymouth, Wayzata and Excelsior. Table 5.7 presents the most recent data as well as trends in industrial, office and retail space.

Industrial Space

Industrial space in *Towle Report 2000* is categorized in a number of ways. For this analysis, the following types of industrial space were grouped into one category: 1) Office Showroom/Business Center which typically includes one-story multi-tenant projects with over 2,325 square meters (25,000 square feet) of rentable space of which at least 30 percent is finished office space. These spaces are typically located near highways and are highly visible; 2) Office Warehouse buildings which are usually multi-tenant facilities with at least 2,325 square meters (25,000 square feet) of rentable space, or larger. These facilities are typically 10 to 20 percent finished office space; and 3) Bulk Warehouse buildings, typically 4,650 square meters (50,000 square feet) or larger of which five to 10 percent is finished office space.

Most of the properties acquired by the Preferred Alternative fall into one of the three categories defined above. A total of 27,564 square meters (296,393 square feet) of industrial space has been identified as requiring relocation. As of the third quarter of 1999, there was approximately 176,700 square meters (1.9 million square feet) of vacant industrial space in the southwest metropolitan area, adequate vacancy to expect that satisfactory relocation sites can be found for most of the industrial properties affected by the reconstruction of I-494.

Office Space

There has been a large increase in office vacancies between 1997 and 1999. The most recent data provided in the *Towle Report* indicate approximately 176,700 square meters (1.9 million square feet) of vacant office space in the southwest metropolitan area. The Preferred Alternative will require relocation of 4,158 square meters (44,705 square feet) of office space, which should be able to be accommodated within the existing office space capacity.

TABLE 5.7
COMMERCIAL REAL ESTATE VACANCIES IN THE SOUTHWEST METROPOLITAN AREA

	Study Date	Number of Buildings	Area m^2 (ft^2)	Amount Vacant m^2 (ft^2)	Percent Vacant
Industrial*	3rd Qtr 97	398	2,543,612 (27,350,663)	219,501 (2,360,226)	8.6
	3rd Qtr 98	409	2,588,819 (27,836,768)	170,966 (1,838,344)	6.6
	3rd Qtr 99	421	2,685,602 (28,877,448)	174,632 (1,877,763)	6.5
Office	2nd Qtr 97	198	1,661,758 (17,868,365)	78,495 (844,032)	4.7
	2nd Qtr 98	201	1,714,333 (18,433,688)	82,949 (891,925)	4.8
	2nd Qtr 99	213	1,830,848 (19,686,538)	178,645 (1,920,914)	9.7
Retail	1998	76	589,107 (6,334,484)	35,539 (382,140)	6.0
	1999	79	609,388 (6,552,559)	34,992 (376,258)	5.7
	2000	78	654,893 (7,041,860)	31,092 (334,322)	4.7

*Includes office showroom/business center, office warehouse, and bulk warehouse space.
Source: *Towle Report 2000*. Towle Real Estate.

The Folded Diamond to the East alternate design for the East Bush Lake Road interchange would increase this relocation requirement to 23,397 square meters (251,585 square feet) which should also be able to be accommodated within the existing office space capacity.

Retail Space

Towle Real Estate classifies retail space as neighborhood, community, regional, super regional and downtown retail mixed use. Approximately 9,486 square meters (102,000 square feet) of business space being acquired for the reconstruction of I-494 can be characterized as falling within the neighborhood/community center category of retail. Table 5.5 shows that vacancy rates of retail space have declined between 1998 and 2000. The available space has declined by 12 percent over this period, with approximately 31,092 square meters (334,326 square feet) of retail space of this nature available as of the most recent report. While at least a portion of the acquired retail properties could locate within existing vacant space within the southwest market area, restoration of the services these businesses provide to the neighborhood markets they now serve would likely occur only in the context of neighborhood redevelopment.

Towle Report 2000 does not provide vacancy rates for retail/service facilities under 2,790 square meters (30,000 square feet). The uses acquired by the Preferred Alternative within this group include a gas station, restaurants, and smaller freestanding retail stores. Typically, these land uses required highly visible and accessible sites which generally are in high demand within developed areas such as the I-494 study area. As with the other acquired properties, the ability to relocate these uses proximate to I-494 will be dependent upon market conditions at the time acquisition activities are initiated.

Redevelopment

New commercial and office development in the two municipalities affected by business acquisitions will occur as a result of redevelopment. The pending *Bloomington Land Use Guide Plan (2000)* identifies several locations along I-494 redevelopment as office, community commercial or regional commercial. The current *Richfield Comprehensive Plan (1997)* projects a 12-hectare (29-acre) net increase in land devoted to commercial or office use in three planning sub-areas along the I-494 corridor. In addition, there are several redevelopment sites elsewhere in both communities, which should provide capacity for restoration of business space and jobs displaced as a result of reconstruction of I-494.

Fiscal Impacts

As is further discussed in Section 5.2, the Preferred Alternative is expected to result in total acquisition of 96 parcels. The 2000 taxes payable for these properties totals $1.0 million. By comparison, 2000 taxes payable for all properties within the five municipalities in the study area combined is approximately $295 million (including City, School District and HRA levies), and for Hennepin County as a whole exceeds $1.6 billion (also including miscellaneous levies).

Table 5.8 compares property tax loss (property taxes payable 2000) for total acquisitions with total taxes payable (2000 City, HRA, and School District spread levies), by study area municipality.

TABLE 5.8
TAXES PAYABLE--TOTAL ACQUISITION PROPERTIES ñ
PREFERRED ALTERNATIVE

	Taxes Payable for Total Acquisition Properties[1]	Total Taxes Payable[2]
Minnetonka[3]	$ 500	$ 47.5M
Eden Prairie	$ 33,000	$ 77.8M
Edina	$ 0	$ 59.5M
Bloomington	$ 853,100	$ 86.5M
Richfield	$ 123,400	$ 24.3M
Total	**$1,010,000**	**$295.6M**

[1] 2000 Property Taxes Payable 2000 for properties affected by total acquisition, rounded to nearest 100.
[2] Includes 2000 City, HRA, and School District spread levies. Does not include miscellaneous spread levies such as county, Metro Council, or watershed districts. Rounded to 0.1 million.
[3] Includes School District 276 spread levy only.

The Folded Diamond to the East (Figure 3.14) alternate design for the East Bush Lake Road interchange increases the taxes payable for total acquisition properties to $1,518,600. The On-Ramp Under Railroad (Figure 3.16) alternate design increases the amount to $1,015,000.

5.3.4 MITIGATION MEASURES

Business and Jobs

Mitigation of business relocation impacts of right-of-way acquisition is described in Section 5.2.3.3. Businesses and jobs lost as a result of the project will be offset by substantial anticipated growth in jobs as a result of redevelopment in the affected municipalities, including redevelopment in the I-494 corridor itself.

Fiscal

Actual net property tax losses within each municipality will depend on the extent to which residents and commercial businesses relocate within the same city. The initial loss in property taxes may be partially or fully offset by potential increases in commercial property value within the corridor with redevelopment and improved access.

5.4 ENVIRONMENTAL JUSTICE

Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, issued in 1994, requires that environmental justice be addressed in all federal planning and programming activities. In compliance with this Executive Order, low-income and minority populations in the study area were identified through review of the 1990 census data and contacts with the affected municipalities.

5.4.1 INFORMATION FROM THE DEIS THAT REMAINS UNCHANGED

The 1992 DEIS was prepared prior to Executive Order 12898 and, therefore, did not directly address environmental justice. Social characteristics of the project area were described in Section 4.1.1 of the DEIS.

5.4.2 CHANGES IN THE SETTING OR TECHNICAL ANALYSIS SINCE THE DEIS

Since environmental justice was not discussed in the DEIS, all of the information in this section is new. This section describes the process used to define potential environmental justice impacts and provides information about the local population.

The steps for defining environmental justice impacts include:

- Identification of the location of low-income population and/or minority population in the project area.

- Identification of the impacts of the project upon the identified low-income population and/or minority population.

- Determination of whether or not the impacts are disproportionately high or adverse.

5.4.3 IDENTIFICATION OF LOW-INCOME OR MINORITY POPULATION

For the purposes of environmental justice, a low-income population or minority population is defined as a geographic concentration of people or households meeting the racial or income criteria set forth in Executive Order 12898. Information on population characteristics of the corridor was obtained primarily from these sources: 1990 Census data, 2000 Census data, discussions with City staff for insights into population trends, review of current property tax information and rental rates for update on low-income population, and review of 1999 public school enrollment demographics for update on minority population.

The portions of the corridor which are likely to have concentrations of low-income and/or minority person include the apartment areas along the north side of I-494 at Penn Avenue and between Nicollet and TH 77, as well as in apartment areas 0.4 kilometer (0.25 mile) south of I-494 between Portland and TH 77.

The details of this finding are described below.

Low Income

Income data at the census tract level from the 2000 Census is scheduled for release June-September 2002, making it unavailable for analysis in this FEIS. The 1990 Census reported poverty levels (the number of persons in poverty as a percent of total population) as being below the Hennepin County level (10.2 percent) in 26 of the 27 project area census tracts. Census Tract 248.02 in Richfield had a 1990 poverty level of 10.9 percent. While this was only slightly higher than the countywide level, all persons at or below the poverty level were located in the block group that includes the apartment area on the north side of I-494 between Nicollet and 12th Avenue. This block group had a 1990 poverty level of 22.4 percent.

One of the apartment buildings in this area is currently a project-based Section 8 facility with 153 one-bedroom units, representing a concentration of low-income persons. Current rental rate comparisons cannot confirm whether or not the other apartment complexes in this area house a concentration of low-income persons. The apartments along I-494, which range in rental rates from $698 to $770 for one-bedroom and from $755 to $790 for two bedroom, are comparable to metropolitan averages of $654 for one-bedroom units and $806 for two-bedroom units and to the average rental rate of $774 for all apartments in the Bloomington, Richfield, Edina area (Source: *Apartment Guide Metro Report*, March 2000). These rents are somewhat lower than those reported for other areas of the I-494 corridor, however, and lower income families have limited choice due to the very low apartment vacancy rates and limited stock of affordable housing in the metropolitan area.

Minority Population

The 2000 Census reported racial minority population levels as being below the countywide level (21.1 percent) in 23 of the 28 project area census tracts. (As indicated above, in 1990, there were 27 census tracts in the project area. A tract split resulted in there being 28 census tracts in the project area in 2000.) The census tracts with higher than county-average minority population include three in Richfield and two in Bloomington.

Census Tract 243 in Richfield is located between Xerxes Avenue and I-35W on the north side of I-494. There is a concentration of rental apartments west of Penn Avenue in this area. This tract had a 2000 minority population of 33.2 percent.

Census Tract 248.02 and Census Tract 249.03 in Richfield are located between Nicollet Avenue and TH 77, with I-494 as their southern boundary. The two tracts abut one another at 12th Avenue and extend to 74th and 73rd Streets, respectively, on the north. Census Tract 248.02 had a 2000 minority population of 38.9 percent. Census Tract 249.03 had a 2000 minority population of 38.3 percent. Land use in these tracts is predominantly residential, with the area closest to the freeway, between 77th Street and I-494, including numerous multi-family dwellings. There is also a 119-bed nursing home located in this area.

Census Tract 252.01 and Census Tract 251 in Bloomington are located between Portland Avenue and the Mississippi River on the south side of I-494, and abut each other at TH 77. Census Tract 252.01, which is located west of TH 77, had a 2000 minority population of 38.1 percent. Census Tract 251 had a 2000 minority population of 23.1 percent. The closest residences to the project area are located approximately 0.4-kilometer (.25-mile) south of I-494 in Census Tract 252.01.

5.4.4 IMPACTS OF THE PREFERRED ALTERNATIVE ON LOW-INCOME POPULATIONS OR MINORITY POPULATIONS

If any minority or low-income population concentrations are found in the study area, Executive Order 12898 requires that the proposed actions be reviewed to determine if there are disproportionately high or adverse effects on these populations. Disproportionate is defined in two ways: the impact is ìpredominately borneî by the minority or low-income population group, or the impact is ìmore severeî than that experienced by non-minority or non-low income populations.

Issues that were considered when evaluating the potential for environmental justice impacts included social impacts, right-of-way, access, transit, pedestrian and bicycle travel, visual quality, air quality, noise and parks. Of these topics, only right-of-way and noise will impact study area households where concentrations of low-income and minority persons are likely. However, these impacts will not be disproportionate to these populations and/or noise mitigation was determined to be cost-effective in the analyses performed for this FEIS (see Section 6.2.4). These findings are detailed below.

Right-of-Way

There is no evidence that property acquisition for right-of-way will cause disproportionate displacement of persons in areas with concentrations of low-income and/or minority populations. The project will acquire one homesteaded (owner-occupied) single family home, one non-homesteaded (rental) single-family home, one homesteaded two-family residence, and a 119-bed nursing home within an area identified as having concentrations of low-income and minority populations.

All other residential property acquisitions required for this project are located in census tracts with 1990 poverty levels ranging from 3.3 to 7.2 percent, compared to the countywide level of 10.2 percent, and 2000 minority population levels ranging from 9.9 to 17.6 percent compared to the countywide level of 21.1. Current (2000) Hennepin County tax records report 51 of the 54 remaining affected occupied residential properties as homesteaded, or owner-occupied, and an average 1999 estimated market value of affected residences of $101,565, indicating that the neighborhoods in which these residents reside have not become low-income areas since the last census. Thus, low-income and/or minority populations would not be disproportionately impacted due to right-of-way acquisition of residential property as the majority of residential right-of-way acquisitions occur in areas where there are no concentrations of low-income and/or minority persons.

Businesses will be displaced near residential areas identified as likely having concentrations of low-income or minority populations. Displaced will be a service station near apartment areas in Census Tract 248.02 on the north side of I-494 and two adjacent small neighborhood shopping centers in and near Census Tract 252.01. There are 21 businesses located within these two shopping centers, providing grocery, drug store, discount household goods, barber/beauty shop, and other neighborhood commercial services. One business is an ethnic Hispanic market.

The business displacements will not cause disproportionately high or adverse impacts on low-income or minority persons. The ethnic market is one of 21 affected businesses in this neighborhood shopping node and one of 51 affected businesses in the project area. Section 5.2.3.2 discusses the nature of non-residential impacts by municipality.

Approximately two-thirds of the area now occupied by the two shopping centers will be available for redevelopment following construction of the project. The City of Bloomington has designated the area for neighborhood commercial use in its current *Comprehensive Plan* in order to continue the availability of neighborhood commercial services to the residential area.

In the interim, pharmacy, household goods, and limited groceries are available at the Walmart store directly to the east of the neighborhood shopping node. The nearest Hispanic market advertised in the current US West Yellow Pages is located approximately 1.6 kilometers (one mile) to the northwest. The nearest full-service grocery is located 2.4 kilometers (1.5 miles) to the west.

Noise

The noise impact analysis presented in Section 6.2 concludes that, before mitigation, future daytime and nighttime noise standards are violated at all receptors in areas identified above as having a concentration of minority and/or low-income persons, specifically the apartment areas along the north side of I-494 between Penn Avenue and TH 77 in Richfield. The areas south of I-494 between Portland Avenue and the Mississippi River in Bloomington which have been identified as having a concentration of minority persons, have no residences closer to the freeway than approximately 400 meters (1,350 feet). Noise mitigation is generally not effective beyond approximately 150 meters (500 feet).

However, the adverse noise impact would not be predominantly borne by these low-income or minority populations because the noise impact analysis also finds that, of the 82 residential receptor sites in the corridor as a whole, future daytime noise standards are violated at 71 sites and nighttime noise standards are violated at 81 sites. Furthermore, while the range of noise levels reported for the apartment areas between Nicollet Avenue and TH 77 and near Penn Avenue are on the whole higher than levels at residential receptor sites in a majority of other segments of the corridor, these higher levels are not exclusively experienced in the segments. The noise impact analysis reveals similar clusters of higher noise levels in two project area segments located in Minnetonka.

Finally, noise mitigation measures (noise walls) were studied where noise levels are projected to exceed standards in residential areas. Section 6.2.4 describes the feasibility analysis for noise mitigation in detail. This analysis determined that noise walls would be a cost-effective means for mitigating noise impacts in the areas identified as having a concentration of low income and/or minority populations where (unmitigated) noise levels would exceed state standards.

5.4.5 MITIGATION OF IMPACTS ON PROTECTED POPULATIONS

Environmental Justice Finding

Based on the available data, portions of the corridor are likely to have concentrations of low-income and/or minority populations. However, the proposed project will not cause disproportionately high and adverse effects on these populations. Therefore, no mitigation related to environmental justice impacts is required. However, mitigation of right-of-way and noise impacts is discussed, respectively, in Section 5.2.3.3 and Section 6.2.4.

5.5 LAND USE AND DEVELOPMENT

Existing and planned land use in the I-494 corridor were described in Section 4.1.2 of the DEIS. Land use impacts associated with I-494 reconstruction were addressed in Section 5.2.5 of the DEIS.

5.5.1 INFORMATION FROM THE DEIS THAT REMAINS UNCHANGED

As discussed in the DEIS, the I-494 corridor has been one of the major locations of non-residential growth in the Minneapolis-St. Paul Metropolitan Area between 1960 and 2000. The existing pattern of land uses includes a mixture of retail and service businesses, office buildings, light industry, motels, restaurants, automobile sales, apartments, single-family homes, parks and wetlands. Land uses are primarily single-family residential and open space along the north-south segment of the corridor and commercial along the east-west segment of the corridor.

Existing and planned land uses within the study area have not changed substantially since publication of the DEIS, except as noted below. In addition, the pattern of planned land use is not substantially different from the existing land use pattern.

5.5.2 CHANGES IN THE SETTING OR TECHNICAL ANALYSIS SINCE THE DEIS

The existing land use has changed in several locations within the study area since publication of the DEIS. Specific land use changes include the following:

Bloomington

- The manufactured home park that was located between Chicago and Portland Avenue south of I-494 has been redeveloped into a retail commercial use.
- The industrial use that was located between the Soo Line railroad and Lyndale Avenue south of I-494 has been redeveloped into a retail commercial use.
- Additional land has been added to the park and open space system between TH 100 and TH 169 both north and south of I-494.

Eden Prairie

- Additional land has been added to the park and open space system between TH 169 and TH 212/Flying Cloud Drive north of I-494.
- Additional land has been added to the park and open space system between TH 212/Flying Cloud Drive and TH 62 both east and west of I-494.
- A parcel in the northeast quadrant of the intersection of I-494 and Valley View Road has been developed as an office use.
- Several parcels near the intersection of I-494 and Prairie Center Drive have been developed as commercial uses.
- A parcel north of I-494 west of TH 100 has been developed as an office use.

Edina

- There are no changes in the existing land use within the study area in Edina, although some areas have been redeveloped to similar uses.
- An undeveloped parcel north of I-494 between France and York Avenues has been developed into a commercial use.

Minnetonka

- The southeast quadrant of the intersection of I-394 and I-494 has been developed as a commercial and office use.
- The northwest and northeast quadrants of the intersection of TH 62 and Baker Road has been developed as a commercial use.
- The northeast, southeast and southwest quadrants of the intersection of Excelsior Boulevard and Baker Road have been developed as a commercial use.

Richfield

- The area between Lyndale Avenue and I-35W north of I-494 has been redeveloped into a mixed-use development with a retail commercial focus.
- The office use west of I-35W and north of I-494 has been redeveloped into a retail commercial use.

The planned land use has also changed in several locations within the study area since publication of the DEIS. These changes reflect development and redevelopment that have occurred since publication of the DEIS or redevelopment activities that are planned within individual communities. Any future development is anticipated to be consistent with local plans.

5.5.3 IMPACTS ASSOCIATED WITH THE PREFERRED ALTERNATIVE

The majority of the land along the I-494 corridor is already developed. The north-south segment through Eden Prairie and Minnetonka is primarily residential and the east-west segment through Edina, Bloomington and Richfield is primarily commercial. Since the I-494 corridor is an existing facility in place since the 1960s, major changes in existing land use and development patterns within the study area because of implementation of the Preferred Alternative are not likely. However, certain areas will be affected by right-of-way acquisition as described in detail in Section 5.2.3, or modifications in the connections to local roadways and properties could occur as described in Sections 3.4 and 4.3 of this FEIS.

Land use changes are not expected within the five affected communities with construction of the Preferred Alternative, unless redevelopment activities are initiated by the cities. Any changes in traffic patterns resulting from construction of the Preferred Alternative are not expected to be substantial enough to induce land use changes within the individual communities.

5.5.4 MITIGATION MEASURES

The majority of the land along the I-494 corridor is already developed. Implementation of the Preferred Alternative is not expected to induce land use changes. Municipalities in the study corridor recognize I-494 as an existing facility in their future land use planning and have identified areas of redevelopment at several locations along the corridor. Where cities have planned redevelopment, the I-494 reconstruction project may facilitate the implementation of neighborhood and City plans. Mn/DOT has met with City staff to review proposed I-494 reconstruction/interchange concept plans in order to coordinate I-494 reconstruction with local development plans where possible.

Since the proposed I-494 reconstruction is consistent with local land use plans, no mitigation for impacts is needed. Ultimately, each city has and will continue to make its own decisions regarding land use changes along the I-494 corridor. Individual cities will be responsible for addressing potential land use changes through their land use plans, land use controls and the use of incentives for development or redevelopment activities.

5.6 PUBLIC FACILITIES

5.6.1 INFORMATION FROM THE DEIS THAT REMAINS UNCHANGED

The overall number and location of public facilities (park and recreation areas, schools, religious institutions, health care facilities, community centers, libraries, etc.) has not changed substantially since publication of the DEIS. The information included in the DEIS was based on city comprehensive plans, city inventories and field visits. The facilities directly adjacent to the I-494 corridor have been updated as discussed below.

5.6.2 CHANGES IN THE SETTING OR TECHNICAL ANALYSIS SINCE THE DEIS

The list of public facilities within the area of proposed right-of-way acquisition or directly adjacent to proposed right-of-way acquisition for the Preferred Alternative has been updated since publication of the DEIS for this FEIS. This listing is presented below.

The inventory of facilities adjacent to I-494 has been updated and includes the following:

<u>Bloomington</u>

- Mn/DOT maintenance facility, France Avenue south of I-494
- Portland Avenue United Methodist Church, 8000 Portland Avenue South
- Christ the King Lutheran Church, 8600 Freemont

- Hyland-Bush-Anderson Lakes Regional Park Reserve, Highwood Corridor: between West Bush Lake Road and East Bush Lake Road
- Beaverbrook Park, Green Valley Drive
- Unnamed open space along Nine Mile Creek, east of East Bush Lake Road
- Cornerstone Advocacy transition housing facility, Humboldt Avenue

Eden Prairie

- The International School of Minnesota, 6385 Beach Road
- City of Eden Prairie ground reservoir, Baker Road and Pinnacle Drive
- Hennepin County Medical Center paramedic garage, Flying Cloud Drive and Technology Drive
- Eden Prairie Presbyterian Church, 9145 Eden Prairie Road
- Mn/DOT construction offices and maintenance site, Bryant Lake Drive and Willowood

Edina

- Cardinal Stritch College, 3300 Edinborough Way

Minnetonka

- Hopkins West Junior High School, 3830 Baker Road
- St. Paulís Lutheran Church, 13207 Lake Street Extension
- Kingdom Hall of Jehovah Witnesses, 13001 Lake Street Extension
- City of Minnetonka water tower and treatment plant #4, 4300 Baker Road
- Immaculate Heart of Mary Church and School, 13505 Excelsior Boulevard
- Minnetonka City Hall, 14600 Minnetonka Boulevard

Richfield

- St. Richardís Catholic Church and School, 7540 Penn Avenue South
- Berea Lutheran Church, 7538 Emerson Avenue South
- Emerson Congregational United Church of Christ, 7601 Girard Avenue South
- City of Richfield maintenance garage, 7700 Pillsbury Avenue South

- Assumption Catholic Church and School, 305 East 77th Street
- Richfield Health Center, 7727 Portland Avenue South
- House of Prayer Lutheran Church, 7625 Chicago Avenue
- Progress Valley residential care facility, 308 East 78th Street
- Church of Christ, 7314 Humboldt Avenue
- Cornerstone Advocacy transitional housing facility, Portland Avenue

In addition, the Fort Snelling National Cemetery and the Minneapolis-St. Paul International Airport are in proximity to the eastern portion of the project corridor.

5.6.3 IMPACTS ASSOCIATED WITH THE PREFERRED ALTERNATIVE

The Preferred Alternative would require the acquisition of the public facilities within the study area, as listed below. Detailed information follows:

Bloomington

- Total acquisition of one park and recreation facility (Beaverbrook Park)
- Partial acquisition of a park and recreation facility (Hyland-Bush-Anderson Lakes Regional Park Reserve)
- Partial acquisition of Unnamed park open space (Unnamed area along Nine Mile Creek east of East Bush Lake Road)
- Partial acquisition of one church (Christ King Lutheran Church ñ 8600 Freemont Avenue)
- Total acquisition of one transitional housing facility (Cornerstone Advocacy ñ Humboldt Avenue)

Eden Prairie

- None

Edina

- None

Minnetonka

- None

Richfield

- Total acquisition of one nursing home (Richfield Health Center ñ 7727 Portland Avenue)

- Partial acquisition of two churches (Church of Christ ñ 7314 Humboldt Avenue; Church of the Assumption ñ 305 East 77th Street)

- Partial acquisition of one transitional housing facility (Cornerstone Advocacy ñ Portland Avenue)

In Bloomington, acquisition of a small portion of Hyland-Bush-Anderson Lakes Regional Park Reserve (Hyland Park), a portion of an unnamed open space along Nine Mile Creek, and complete acquisition of Beaverbrook Park would be required for the Preferred Alternative.

The acquisition of 1.8 hectares (4.4 acres) of open space and trail from Hyland Park is located along Marth Road. The proposed acquisition is 0.2 percent of the total area of the Park Reserve and is primarily open space. The trail that would be impacted would be reconstructed just south of the existing trail alignment. Beaverbrook Park, a 3.0 hectare (7.3-acre) community ballfield facility, is located along Green Valley Drive. Acquisition of 2.4 hectares (6.0 acres) of the 3.8-hectare (9.3-acre) unnamed open space corridor is located along the east side of East Bush Lake Road. The impact of right-of-way acquisition on both Hyland Park, Beaverbrook Park and the unnamed open space along Nine Mile Creek and the proposed mitigation are fully documented in Chapter 8.0, Section 4(f) and 6(f) Evaluation.

A single-family transitional housing facility in Bloomington is planned for acquisition, which may have an impact on Bloomington residents if the facility is not relocated in the community in that it will remove a housing opportunity for Bloomington families in transition.

In Richfield, a 119-bed nursing home is planned for total acquisition for the Preferred Alternative. If it is not relocated within the community, the loss of services offered by this facility may have an impact on residents of the facilities and/or residents of Richfield who use the facilities.

Partial acquisition of one church in Bloomington, two churches in Richfield and one transitional housing facility in Richfield is also required with the Preferred Alternative. These partial acquisitions are not anticipated to have any impact on the operation or users of these facilities.

5.6.4 MITIGATION

All persons (owners and renters) legally occupying acquired properties, businesses and non-profit organizations will be relocated in accordance with the Uniform Relocation and Real Property Acquisition Act of 1970, as amended, and 49 CFR Part 24. In addition, the policies

summarized in the Mn/DOT handbook *Relocation: Your Rights and Benefits* will be implemented when the relocation becomes necessary. Relocation procedures for residential and commercial properties are described in greater detail in Section 5.2.3.3.

It is important to users of the facilities that the services are not disrupted or permanently lost. The design of the Preferred Alternative attempted to avoid or minimize potential impacts on community services and facilities to the greatest extent possible.

The transitional housing facility in Bloomington is a single-family home. As discussed in Section 5.2.3.2, single-family relocation opportunities may be available due to turnover in the existing single-family stock resulting from anticipated construction of new multi-family, particularly senior housing options. Mn/DOT has procedures in place to ensure that residents of the nursing home are relocated to facilities which can provide the appropriate level of care for each individualsí need. The nursing home business itself could be located in the metropolitan area where a suitable site can be found.

The Minnesota Department of Transportation Relocation Advisors will assist these community facilities in addressing any special needs that they may have during the relocation process.

Mitigation for Hyland Park, Beaverbrook Park and the unnamed open space are discussed in Chapter 8, Section 4(f) and 6(f) Evaluation.

5.7 VISUAL IMPACTS

5.7.1 INFORMATION FROM THE DEIS THAT REMAINS UNCHANGED

The visual impacts of the proposed alternatives in the DEIS were evaluated based on the elements in the Mn/DOT Visual Impact Assessment (VIA) process, which includes the following steps:

1. Identify affected visual resources (natural, cultural and project environment)
    - Question #1 from the DEIS (Section 4.2.8)
2. Identify affected people (neighbors and travelers)
    - Question #2 from the DEIS (Section 4.2.8)
3. Define existing visual quality (natural, cultural and project)
    - Question #3 from the DEIS (Section 4.2.8)
4. Analyze impacts to visual quality (scale, extent, value)
    - Question #4 from the DEIS (Section 5.2.8)

5. Summarize visual impacts by alternative

   - Question #5 from the DEIS (Section 5.2.8)

6. Mitigate adverse visual impacts and enhance existing visual quality

   - Questions #6 and #7 from the DEIS (Section 5.2.8)

Detailed information on the existing visual environment (Steps 1, 2 and 3 of the VIA) was included in Section 4.2.8 of the DEIS, Visual Environment. This information has not changed substantially since publication of the DEIS.

The impacts and mitigation related to the Build alternatives (Steps 4, 5 and 6 of the VIA) was discussed in Section 5.2.8 of the DEIS, Visual Quality. While this information has not changed substantially since publication of the DEIS, a more detailed discussion of the visual impacts and mitigation related to the Preferred Alternative is provided in the FEIS.

5.7.2 CHANGES IN THE SETTING OR TECHNICAL ANALYSIS SINCE THE DEIS

There have been several changes in the visual setting since publication of the DEIS. Additional development has occurred adjacent to the I-494 corridor in Minnetonka and Eden Prairie, while several areas adjacent to the corridor in Bloomington and Richfield have been redeveloped to similar uses. In addition, several of the intersections and bridges within the corridor have been reconstructed since publication of the DEIS, including the Stone Road Bridge (1999), Minnetonka Boulevard interchange (1999), TH 212/Flying Cloud Drive interchange (2000) and TH 169 interchange (1998). In addition, the interchange with Penn Avenue will be reconstructed prior to implementation of the I-494 reconstruction project.

Although the visual resources and anticipated impacts have not changed substantially since publication of the DEIS, the method of presenting that information has been revised to reflect the VIA process. FEIS analysis of the existing conditions, anticipated impacts and proposed mitigation is divided into affected viewer groups, rather than being discussed by sub-area as in the DEIS. Affected viewers are defined in Step 2 of the VIA process as being either neighbors (viewers from the outside) or travelers (viewers from within) the I-494 system.

A summary of existing views is included to provide a basis for analysis of the visual impacts of the Preferred Alternative. Detailed observations of views in the study area are described in Section 4.2.8 of the DEIS.

A. Existing Visual Setting Viewed from Within the I-494 System by Travelers

The I-494 corridor is one of the oldest freeway segments in the Minneapolis-St. Paul Metropolitan Area and one of the most diverse in terms of visual quality. Roadway construction, roadway improvements and development have all occurred over the years on an incremental

basis; therefore, the corridor presents users with a great variety of visual elements and experiences. While the most dominant visual elements within the existing I-494 system are the roadway and corridor structures (interchanges, bridges, retaining walls and noise walls), the visual character of the corridor does vary substantially from the interchange with I-394 at the western edge to the Minnesota River at the eastern edge. There are three clearly distinct visual zones along the corridor: a scenic environment in the western segment; a suburban environment in the central segment; and an urban environment in the eastern segment.

The western segment, from I-394 to TH 212/Flying Cloud Drive, is predominantly low-density residential interspersed with a few office complexes and numerous natural features. The existing right-of-way is wider in this segment with rolling terrain and vegetation providing visual variety and screening most of the adjacent development. The roadway itself is a rural section with two lanes in each direction. The only noise walls located along this segment of the corridor are the noise walls between Excelsior Boulevard and Baker Road, although the weathered wood construction blends well with the adjacent landscape. A high voltage power line is located adjacent to the roadway within this segment; however, it does not appear to be incompatible with the roadway and provides additional open space adjacent to the roadway. Southbound travelers on this segment also have expansive views to the south as they approach the TH 212/Flying Cloud Drive interchange. Lighting within the corridor is limited to interchanges and little light spills over from adjacent development.

The central segment, from TH 212/Flying Cloud Drive to TH 100, is much more suburban in nature, with retail commercial, office complexes and residential developments interspersed with vegetation and natural areas. The existing right-of-way is narrower in this segment and the topography flattens, resulting in fewer opportunities for landscaping adjacent to the roadway. Screening of adjacent development is limited to that provided by vegetation in a few locations, and buildings and parking areas are much more visible to the traveler. Landscaping within this segment is also limited. The roadway itself becomes an urban section with two lanes in each direction. Lighting within the corridor is limited to interchanges, although light from adjacent commercial development is quite visible from the corridor.

The eastern segment, from TH 100 to the Minnesota River, was the first portion of I-494 to be constructed. This segment is urban in character with commercial retail, offices, hotels and higher density residential developments adjacent to the corridor. Although the width of the right-of-way in this segment is similar to the central segment, it appears much narrower. The topography is relatively flat, although the roadway itself is depressed in underpass areas. There is little landscaping in this segment and no screening of buildings or parking areas from the roadway. The roadway itself is an urban section with three lanes in each direction, a curb median and numerous retaining walls, especially in the areas where the roadway is depressed in underpass areas. The entire segment has lighting along the roadway, although the bright lights from the adjacent developments are more pronounced than the roadway lighting. There are also many billboards and advertising signs along this segment that are seen in close sequence over a short period of time.

B. Existing Visual Setting Viewed from Outside the I-494 System by Neighbors

The character of the corridor as viewed by neighbors adjacent to the corridor also varies substantially from the interchange with I-394 at the western edge to the Minnesota River at the eastern edge. In general, the area of a viewshed is inversely related to the density of adjacent development. The view of the corridor also has a greater impact on residential viewers than on retail commercial and office viewers, since a freeway is less in character with residential areas than with commercial areas. As with the visual setting for travelers, there are also three distinct visual zones for neighbors of the corridor: a predominantly low-density environment in the western segment; a suburban environment in the central segment; and an urban environment in the eastern segment.

In the western segment, from I-394 to TH 212/Flying Cloud Drive, the views of the corridor are limited from adjacent development. The rolling terrain and vegetation provide screening of the roadway and related structures from adjacent uses, although the roadway is visible from higher floors within office complexes. The noise walls between Excelsior Boulevard and Baker Road also screen the view of the corridor and the weathered wood construction of the noise walls blends well with the adjacent landscape. Lighting within the corridor is limited to interchanges and little light spills over into adjacent developments because of the topography in this segment.

In the central segment, from TH 212/Flying Cloud Drive to TH 100, the terrain is much flatter and there is less vegetation to screen the views of the corridor from adjacent development. The roadway and related structures are visible from the adjacent buildings, especially from the upper floors of office complexes and hotels. The visual impact is not as great in areas where there is vegetation or natural areas between the development and the roadway. Lighting within the corridor is limited to interchanges; however, the flatness of the terrain results in some light spilling over into adjacent developments. There is limited residential development in this segment of the corridor.

In the eastern segment, from TH 100 to the Minnesota River, the terrain is relatively flat and there is little vegetation to screen the views of the corridor from adjacent development. In areas where the development is one or two stories and the roadway is depressed in underpass areas, the roadway itself is not visible. However, the roadway and related structures are visible in areas where the roadway is at a similar elevation and from upper floors of office complexes, hotels and apartment buildings. In addition, the entire segment has lighting along the roadway, although it may be difficult to discern the roadway lighting from the lights from adjacent developments. There is limited residential development in this segment of the corridor.

While the freeway corridor visually separates some communities, the separation is less apparent in the western portion of the study area where communities developed around the roadway after it was constructed.

5.7.3 IMPACTS ASSOCIATED WITH THE PREFERRED ALTERNATIVE

As presented in the DEIS, visual impacts of the Preferred Alternative may occur to different groups: freeway users (travelers) and people who live along and have views of the highway (neighbors). In general, visual impacts for these two groups will include more and higher

bridges and structures; a more enclosed feeling because of a more extensive network of retaining walls; a general feeling of more pavement and hard surface treatments; and a potential reduction in the area available for landscaping. Since most of the I-494 improvements are being implemented within existing freeway right-of-way, relatively few substantial changes in the surrounding environment are anticipated. In some sections of freeway, adjoining properties will be acquired, but overall, little change is expected in the quality of the visual environment around the freeway.

Visual impacts of the Preferred Alternative for each viewer group (traveler or neighbor) are described below.

The Preferred Alternative will result in the following visual changes for travelers within the system:

- In the western segment, between I-394 and TH 212/Flying Cloud Drive, the corridor will retain much of its current visual character. The roadway will be widened primarily towards the median to accommodate an additional through lane in each direction. The existing wooden noise walls between Excelsior Drive and Baker Road will remain and no new noise walls are proposed. Several bridges and interchanges within this segment will be reconstructed and will generally be similar in elevation but longer (wider as seen from the roadway), and may include high occupancy vehicles (HOV) bypass lanes. The interchange with TH 62 will be reconstructed as a single-point interchange, which would increase the overall height by less than 1.5 meters (5 feet) and include retaining walls. While this segment will remain a rural section, a median barrier and roadway lighting will be installed.

- The central segment, between TH 212/Flying Cloud Drive and TH 100, will have a modified visual character. The I-494 roadway will be widened to accommodate an additional through lane in each direction as well as auxiliary lanes. No noise walls are proposed for this segment of I-494. However, as discussed in Section 6.2.4, a noise wall for a neighborhood east of TH 100 and north of 77th Street meets Mn/DOTís cost-effectiveness criteria and is currently proposed. Noise mitigation cost-effectiveness analyses will be reviewed during the Noise Exemption process which will take place after final roadway design is complete. A public involvement process including neighborhood meetings would be carried out before final determinations are made regarding noise wall implementation and design (technical and aesthetic considerations).

  Several bridges and interchanges within this segment will be reconstructed and will generally be similar in elevation but longer (wider as seen from the roadway). The interchange with West Bush Lake Road will be reconstructed with a wider and longer bridge, which will be 1.5 to 3 meters (5 to 9 feet) higher than the existing bridge and include retaining walls. The interchange with East Bush Lake Road and the railroad bridge will be reconstructed as a longer bridge, which will be 1.5 to 3 meters (5 to 9 feet) higher than the existing bridge, and the number of ramps will be increased. The interchange with TH 100 will be reconstructed as a partial directional interchange with bridged ramps, which would increase the overall height

of the interchange by 9 to 13.5 meters (30 to 44 feet) and include retaining walls. The rural section of roadway between Prairie Center Road and TH 169 will be converted to an urban section with a median barrier and roadway lighting.

- The eastern segment, between TH 100 and the Minnesota River, will also have a modified visual character. The roadway will be widened to accommodate additional through lanes in each direction and auxiliary lanes. The roadway will also be depressed and there will be an extensive system of retaining walls. The retaining walls may create a harder, uniform space, compared to existing vegetated slope conditions. In areas where right-of-way width allows, stepped retaining walls with landscaping may be used to replace the existing vegetation within this segment. As discussed in Section 6.2.4, there are locations in this segment with concentrations of apartments, where the cost of noise walls meets Mn/DOTís cost-effectiveness criteria and are currently proposed. Noise mitigation cost-effectiveness analyses will be reviewed during the Noise Exemption process that will occur after roadway designs are finalized for each phase. A public involvement process including neighborhood meetings will be carried out before final decisions are made on whether to build noise barriers, and if they are built, what wall design is appropriate. If the land use has converted to commercial at the time of project construction, a noise barrier would not be proposed because it would be a visual obstruction for the businesses.
  Several bridges and interchanges within this segment will be reconstructed and will generally be similar in elevation but longer (wider as seen from the roadway). The interchange with I-35W will be reconstructed as a partial directional interchange with bridged ramps, which will increase the overall height of the interchange by 9 to 13.5 meters (30 to 44 feet) and include an extensive system of retaining walls.

- Ramps at the interchanges with TH 100, I-35W and TH 77 will be at substantially higher elevations than the existing interchanges, increasing the viewshed from the system at these locations.

- Architectural features (bridges, retaining walls, etc.) and other corridor elements (lighting, railings, etc.) can be used to provide an identity for individual communities adjacent to the roadway (see Section 5.7.4 below).

The Preferred Alternative will result in the following visual changes for neighbors of the system:

- In the western segment, between I-394 and TH 212/Flying Cloud Drive, the overall visual character will remain unchanged. The roadway will be widened primarily towards the median and no additional noise walls are proposed.

- In the central segment, between TH 212/Flying Cloud Drive and TH 100, the overall visual character will remain unchanged, except for the interchange with TH 100 where the ramps will be 7.5 meters (25 feet) to nine meters (30 feet) higher than the existing bridge. The I-494 roadway will be widened. Construction of a noise wall at the northeast quadrant of the TH 100/77th Street interchange would create a visual barrier between the roadways and the residences in that area.

- In the eastern segment, between TH 100 and the Minnesota River, the overall visual character will be changed somewhat, as the roadway will be depressed throughout this

segment and will be less visible from adjacent developments. If noise walls are constructed at residential areas (see Section 6.2.4 for locations), they would create a visual barrier between I-494 and the residences. In addition, existing buildings will be removed because of right-of-way requirements. This may change the visual character of these areas.

- Architectural features (bridges, retaining walls, etc.) and other corridor elements (lighting, railings, etc.) can be used to provide an identity for individual communities adjacent to the roadway (see Section 5.7.4 below).

- The proposed elevated ramps at the I-494/TH 100, I-494/I-35W, and I-494/ TH 77 interchanges will be more visible from adjoining areas than the existing interchanges.

5.7.4 MITIGATION MEASURES

Mn/DOT will work with appropriate agencies and the affected communities to create a design guide to address the aesthetic features of the I-494 project during the final design phase. The goal of this document is to create a design that will help provide an identity for and enhance the appearance of communities adjacent to the corridor and to improve the visual appearance of the corridor itself.

Development of a design guide for each community will be used to create local points of visual interest and focus in and near the corridor. The design guide will address the following elements:

- Design of bridges, including architectural style, materials, railing details and lighting details.

- Design of retaining walls and noise walls, including materials, detailing and configuration.

- Selection and use of plant materials to soften the visual impacts of roadway improvement, including retaining walls and noise walls. Plant materials may also be used to provide a green space buffer adjacent to residential areas where space is available.

- Lighting, signage, and other streetscape elements may be used in some areas to add visual interest.

Use of the design guide is part of the overall visual mitigation for the project. The proposed visual mitigation is outlined below by affected viewers (travelers or neighbors).

Mitigation of visual impacts on travelers within the system may include:

- Materials, configurations and details of retaining walls within the corridor will be chosen for visual enhancement and to mitigate for any loss of green areas. Green areas may be replaced by new landscaping when space is available.

- Interesting visual elements may be incorporated into the architectural and structural components of the system (interchanges, bridges, retaining walls, noise walls, etc.).

Mitigation of visual impacts on neighbors of the system may include:

- Development of individualized gateway elements that will emphasize the entries into communities adjacent to the roadway. City officials will be involved in the design process.

- Adoption of a community design concept for corridor components to provide visual identity for each of the communities adjacent to the roadway.

- Creation of visually interesting neighborhood spaces where buildings are removed, including street furniture, lighting, plant materials. Design elements would be selected in accordance with city design concept input.

- Bridge designs that provide visual interest and are in character with the area.

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6.0 PHYSICAL AND NATURAL ENVIRONMENT IMPACTS

6.1 AIR QUALITY

The Affected Environment for air quality for the I-494 corridor reconstruction was described in Section 4.2.1 of the DEIS. Impacts and Mitigation Measures for air quality were addressed in Section 5.3.3 of the DEIS.

6.1.1 INFORMATION FROM THE DEIS THAT REMAINS UNCHANGED

The background information on air quality standards presented in the DEIS has not changed. The DEIS presented an analysis of future carbon monoxide (CO) concentrations adjacent to the most congested interchanges in the corridor study area. The maximum CO concentrations were predicted at (among others) the France Avenue and Portland Avenue interchanges (year 2010). The DEIS analysis did not identify any locations where state or federal air quality standards would be exceeded.

6.1.2 CHANGES IN THE SETTING OR TECHNICAL ANALYSIS THAT HAVE OCCURRED SINCE THE DEIS

At the time of the DEIS, the Minneapolis-St. Paul Metropolitan Area was in non-attainment status regarding compliance with federal carbon monoxide (CO) standards. Due to the achievement of decreasing CO levels in recent years, the Environmental Protection Agency (EPA) reclassified the area as an attainment area for this parameter in 1999. The attainment status is contingent upon the implementation of measures to assure that CO levels remain below standards. The contingency stipulates that future CO concentrations be modeled for proposed transportation projects.

Since the completion of the DEIS, the EPA has released a new version of the mobile source emissions model entitled MOBILE5a. The analysis presented in the DEIS based emission factors on the MOBILE4 model. In addition, the DEIS modeling used the CALINE-3 air quality dispersion model to predict average CO concentrations. An update to the CALINE-3 model, CAL3QHC, is now accepted for this type of air quality modeling.

Based upon a review of updated traffic operational analyses with Minnesota Pollution Control Agency (MPCA) staff, new background monitoring and modeling locations were used for the FEIS relative to the DEIS. New background air quality data was collected in March and April of 2000. While the DEIS used 2010 as the design year, the analysis performed for this FEIS used 2022 as the design year. Further information regarding the FEIS monitoring and analysis is presented in 6.1.3.4.

6.1.3 PREFERRED ALTERNATIVE IMPACTS

The EPA designates areas as ìattainmentî or ìnon-attainmentî areas for certain air pollutants. Attainment areas are those areas that consistently meet air quality standards whereas non-attainment areas do not, or have not met standards for specific pollutants. The attainment status

of the primary air quality parameters relevant to roadway projects (ozone, particulate matter, lead, and carbon monoxide) is addressed in the sections below. In Minnesota, air quality is regulated by the EPA and by the MPCA.

6.1.3.1 Ozone

Transportation sources emit nitrogen oxides and hydrocarbons, which are precursors of ozone. Ozone levels in the Twin Cities Metropolitan Area currently meet state and federal standards. Nitrogen oxide and hydrocarbon concentrations are influenced primarily by the total number of vehicle-miles traveled in the metropolitan area and by meteorological conditions. The MPCA has determined that the contribution of a single roadway project to the total concentrations of these pollutants on an area-wide basis is negligible and difficult to accurately quantify. The State of Minnesota is classified by the EPA as an ozone attainment area. Ozone levels in the Twin Cities Metropolitan Area currently meet state and federal standards. Because of these factors, ozone modeling was not conducted for this project.

6.1.3.2 Particulate Matter

Particulate matter (PM) is categorized by the size of particles being measured. For example, the $PM_{2.5}$ value is the measurement of particles smaller than 2.5 microns (a micron is a millionth of a meter) in a particular volume of air. Based on recent (1995) ambient monitoring data, Minnesota meets existing air quality standards except for a small area of St. Paul that exceeded particulate standards in 1995.

Motor vehicles emit small amounts of particulate matter, and wind turbulence from traffic causes these particulates and roadway dirt to be mixed into the air. In urban areas, traffic contributes a small percentage of total ambient particulate concentrations when compared with the percentage of particulates contributed to ambient air by stationary sources. As stated in the U.S. Department of Energyís *Transportation Energy Data Book* in 1999, highway-related sources of particulate matter contributed to the nationís total particulates by 0.8 percent for PM_{10}, and by 2.5 percent for $PM_{2.5}$.

Because particulate matter impacts from vehicular traffic would be limited in both distribution and magnitude (based upon the Build and No-Build traffic volumes, and based upon known particulate matter characteristics), neither the Build or No-Build Alternative would be expected to increase particulate concentrations within the project area. Therefore, particulate matter modeling was not conducted for this project.

6.1.3.3 Lead

The State of Minnesota is designated by the EPA as an attainment area for lead. Lead emissions have steadily declined over the past 20 years as the percentage of vehicles using leaded fuel has decreased. Because of these factors, modeling for lead was not performed for this project.

6.1.3.4 Carbon Monoxide

Carbon monoxide (CO) is the traffic-related pollutant of most concern in the Twin Cities Metropolitan Area. The MPCA has established state standards (or maximum permissible

concentrations) for CO of 30 parts per million (ppm) for a 1-hour period (average concentration), and 9 ppm for an 8-hour period. The MPCA 1-hour standard is more stringent than the federal standard of 35 ppm.

The EPA recently (1999) reclassified Minneapolis/St. Paul as an attainment area for CO. The attainment status is contingent upon the implementation of measures to assure that CO concentrations remain below standards. The contingency stipulates that future CO concentrations be modeled for proposed transportation projects. In compliance with this stipulation, air quality analyses of ìworst-caseî conditions were performed for this FEIS to estimate the effect of the project alternatives on future CO concentrations at key interchanges and freeway segments in the project corridor. These analyses include monitoring of existing conditions and modeling of future conditions. Minnesota Pollution Control Agency staff was consulted in the development of the scope, methods, and procedures used in performing CO analysis as described below.

This project is consistent with the year 2000 Twin Cities Metropolitan Council's Transportation Policy Plan (TPP), and Phase I of the project is in the current (2001-2003) Twin Cities TIP. Subsequent phases will be included in future TIPs. Therefore, this project conforms to the requirements of the Clean Air Act Amendments and to the Conformity Rules, 40 CFR 93.

Background Carbon Monoxide Concentrations

Air quality analysis requires knowledge of background pollutant concentrations. By definition, the background CO concentration in any particular area is the level that exists independent of direct contributions from nearby traffic. The background concentrations are added to micro-scale modeling results to yield projected CO concentrations at specific receptor sites.

Background concentrations are determined by measuring CO levels at locations near the project area but away from local sources of CO such as busy roads and intersections. Background CO concentrations are measured continuously for two weeks. The highest one-hour and eight-hour average concentrations are used.

Background CO concentrations were determined from monitoring conducted at three sites: the Minnesota Department of Transportation (Mn/DOT) Maintenance Garage at 7333 Bryant Lake Drive in Eden Prairie, Poplar Bridge Elementary School at 8401 Palmer Avenue South in Bloomington, and the Mall of America in Bloomington. The first two locations were monitored by Mn/DOT between March 22 and April 9, 2000. The third site was monitored by Interpoll Laboratories, Inc. between February 22 and March 7, 2000.

For the purposes of this analysis, the background concentrations were adjusted for traffic growth (factor for growth between 2000 and 2022) and vehicle emissions (factor for changes in vehicle emissions predicted by the EPA model MOBILE5a resulting from emission control improvements). Because monitoring was performed in the spring, the Holzworth seasonal correction factor was added to simulate worst-case winter temperature conditions. The results of these adjustments are summarized in Table 6.1. It should be noted that existing (2000) CO concentrations measured at the three background monitoring locations and presented on Table 6.1 are below state and federal standards.

Of the seven areas modeled in this analysis, five are located between two monitoring sites. To produce the best estimate of actual background conditions, the background concentrations at these areas are linearly interpolated based on straight-line distance to the two nearest monitoring sites. For the two areas that are not located between two monitoring sites, the background concentration of the nearest site was used.

TABLE 6.1
BACKGROUND CARBON MONOXIDE CONCENTRATIONS

Mn/DOT Eden Prairie		
	1-Hour Avg.	**8-Hour Avg.**
Monitored Year	2000	2000
Future Year	2022	2022
Monitored Background CO	1.61	1.14
Annual Percentage Background Traffic Growth	1.00	1.00
Background Traffic Growth from 1999 to 2022	1.24	1.24
Emissions Factor reduction	0.82	0.82
Holzworth Factor	1.43	1.43
Adjusted 2022 Average Background CO concentration (ppm)	**2.34**	**1.66**
Mn/DOT Bloomington		
	1-Hour	**8-Hour**
Monitored Year	2000	2000
Future Year	2022	2022
Monitored Background CO	0.90	0.72
Annual Percentage Background Traffic Growth	1.00	1.00
Background Traffic Growth from 1999 to 2022	1.24	1.24
Emissions Factor reduction	0.82	0.82
Holzworth Factor	1.43	1.43
Adjusted 2022 Average Background CO concentration (ppm)	**1.31**	**1.05**
Interpoll Bloomington		
	1-Hour	**8-Hour**
Monitored Year	2000	2000
Future Year	2022	2022
Monitored Background CO	2.70	1.60
Annual Percentage Background Traffic Growth	1.50	1.50
Background Traffic Growth from 1999 to 2022	1.39	1.39
Emissions Factor reduction	0.82	0.82
Holzworth Factor	1.43	1.43
Adjusted 2022 Average Background CO concentration (ppm)	**4.40**	**2.61**

CO = Carbon Monoxide ppm = parts per million

Micro-Scale Carbon Monoxide Analysis and Results

The year 2022 is the design year for air quality analysis. MOBILE5a, the current EPA mobile-source emissions model, only produces emission factors up to the year 2020. Based on guidance from the MPCA, it is assumed that the projected trend of decreasing emission rates per vehicle-mile and vehicle-hour will continue, and use of MOBILE5a 2020 factors, thus, would represent conservative (high emission) conditions for 2022.

Forecast traffic data (year 2022) and either existing (ìNo-Buildî) conditions or Preferred Build Alternative preliminary design layouts were used to model predicted No-Build and Build CO concentrations, respectively. Carbon monoxide modeling was performed using the most current versions of EPA CO emission and dispersion modeling software. All methods and procedures used in the air quality analyses are approved or industry standard analyses.

Carbon monoxide concentrations were calculated for year 2022 at key interchanges and freeway segments in the study area with the anticipated highest levels of congestion. MPCA staff reviewed and concurred with the intersections selected for analysis. The analyzed interchanges and freeway sections are as follows:

Modeled Area	Analysis Type	Receptors
• Portland Avenue at I-494	Intersection	Spot Receptors
• Lyndale Avenue at I-494	Intersection	Spot Receptors
• I-494 between Penn Avenue and York Avenue	Free-Flow	Spot Receptors
• France Avenue at I-494	Intersection	Spot Receptors
• TH 169 at I-494	Intersection	Spot Receptors
• TH 62 at I-494	Intersection	Spot Receptors
• I-494 between Minnetonka Boulevard and TH 7	Free-Flow	Spot Receptors

While the TH 100 interchange ramps at 77th Street are projected to operate at LOS D, this interchange was not analyzed for air quality. Intersections at the nearby France Avenue interchange are projected to operate at LOS F and carry more traffic than those at 77th Street, therefore the France Avenue analysis can be considered worst-case air quality analysis for this area.

Micro-scale analyses were performed for CO concentrations at the ìworst-caseî locations identified above for peak traffic conditions. Carbon monoxide concentrations near interchanges were predicted using forecast traffic volumes, existing or proposed (No-Build or Build) intersection geometrics, optimized signal timing, and calculated ramp meter queue times. Carbon monoxide concentrations near freeway segments were predicted using forecast traffic volumes and forecast peak hour (congested) speeds. Emission levels were calculated with the EPA MOBILE5A model and dispersion modeling using the EPA model CAL3QHC. The modeling assumptions used in this analysis are presented in Table 6.2.

Worst-case CO concentrations at spot receptors sites were calculated by the models. Specific spot receptors were chosen at each modeling location with guidance from MPCA staff. The modeling receptor locations used in this analysis are presented on Figure 6.1. These spots represent the nearest locations to the intersection where prolonged human activity is likely to occur. Modeled CO concentrations are reported at each spot individually along with the corresponding worst-case wind direction.

TABLE 6.2
CARBON MONOXIDE MODELING ASSUMPTIONS

Analysis Year:	2022
Cold Start Percentage:	20.6 percent for all traffic
Hot Start Percentage:	27.3 percent for all traffic
Cruising Speed:	• Posted Speed Limits for Streets • Modeled Peak Hour (Congested) Speeds for Freeways • Calculated Queue Speeds for Freeway Ramp Meters
Traffic Mix:	National Default Values
Wind Speed:	1 meter/second (3.3 feet/second)
Temperature:	-6.6 degrees Celsius (20 degrees Fahrenheit)
Surface Roughness:	108 centimeters (42.5 inches)
Stability Class:	D
Inspection Maintenance:	No
Oxygenated Fuel:	Yes
8-Hour Persistence Factor:	0.7
Wind Direction:	36 directions at 10 degree increments

Notes:

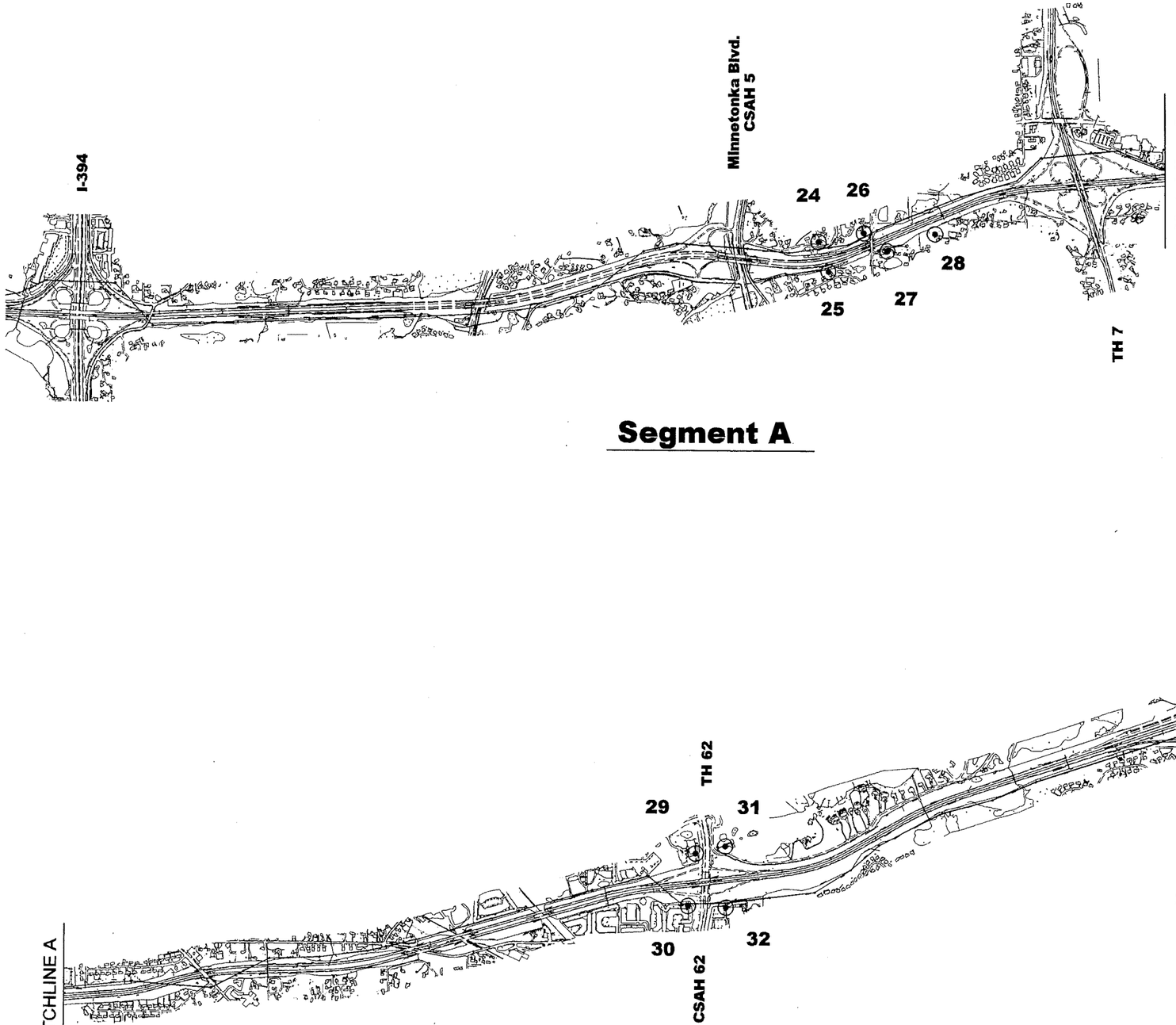
The Surface Roughness, Stability Class and 8-Hour Persistence Factor are discussed in *Guidelines for Air Quality Maintenance Planning and Analysis Volume 9 (Revised): Evaluating Indirect Sources*, U.S. EPA, 1978, and are summarized below.

(1) Surface Roughness indicates the initial ground level turbulence into which the exhaust plume will be released. Generally, the higher the roughness, the lower the concentration. The number used here is conservatively low for the I-494 corridor (results in a worst-case).

(2) Stability Class characterizes the mixing potential of the atmosphere. Stability Class D is used as a worst-case in suburban and urban areas.

(3) The 8-Hour Persistence Factor is used to determine 8-hour localized CO contributions, and takes into account fluctuating wind directions, temperature and traffic, which are more likely to occur over eight hours than during one hour. The factor is multiplied by the 1-hour modeling result.

The results of the CO modeling are presented for the No-Build Alternative in Table 6.3, and for the Preferred Alternative in Table 6.4. Receptor numbers on these tables correspond to the



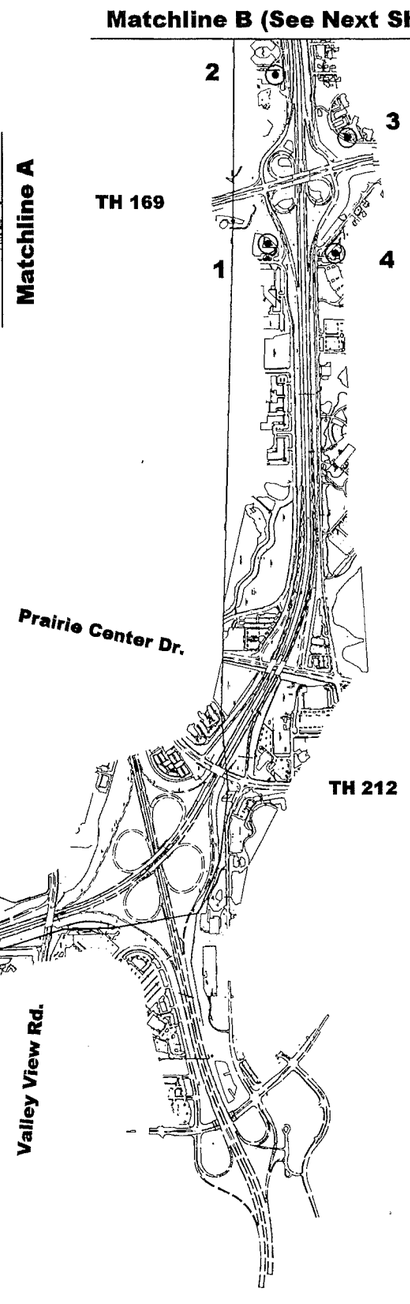


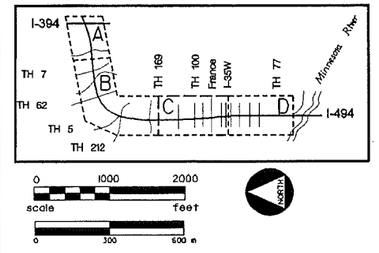
Figure 6.1
Sheet 1 of 2

Carbon Monoxide Modeling Receptor Locations

Legend

Carbon Monoxide Modeling Receptor ⊙

Key



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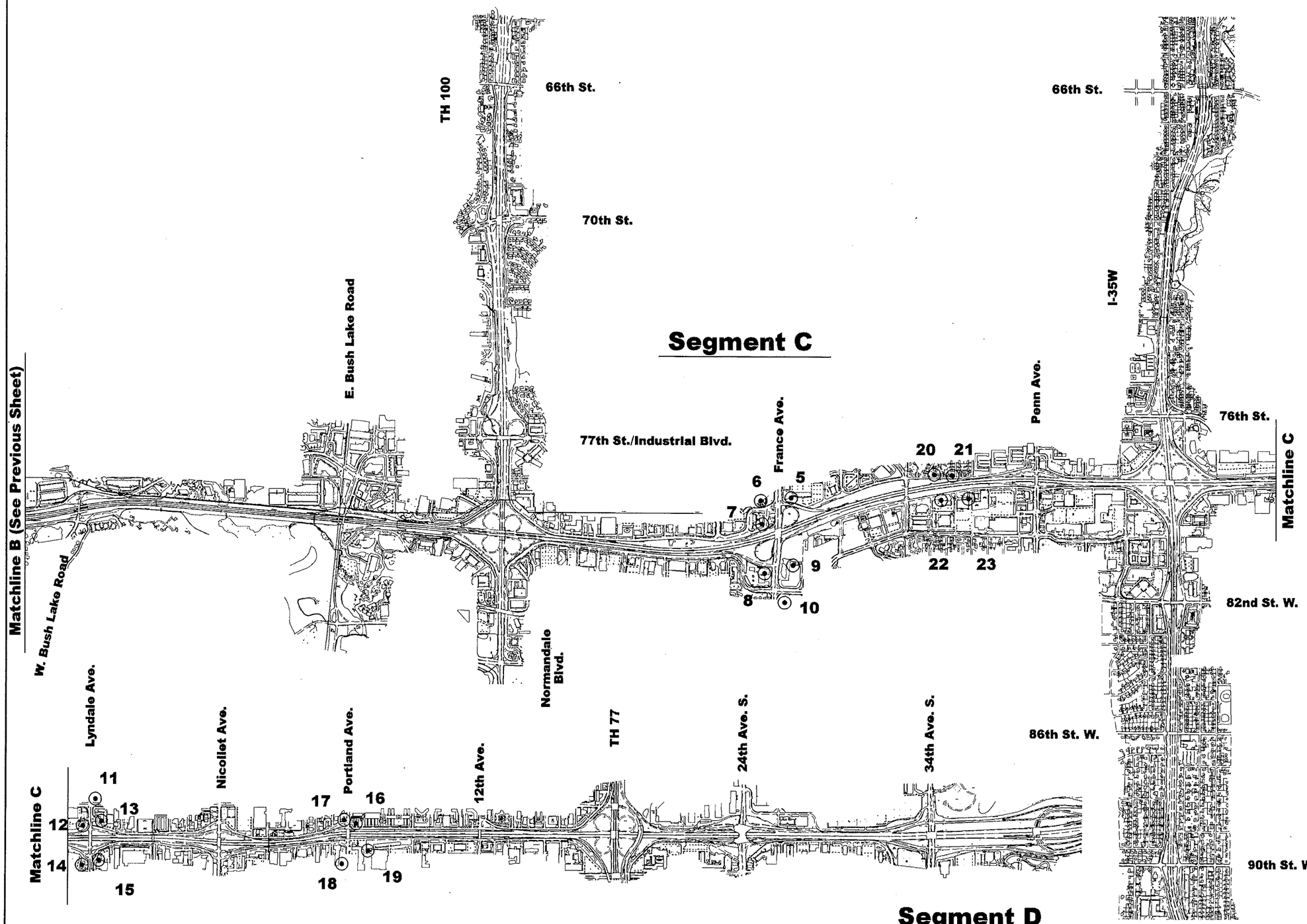


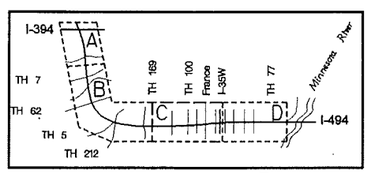
Figure 6.1
Sheet 2 of 2

Carbon Monoxide Modeling Receptor Locations

Legend

Carbon Monoxide Modeling Receptor ⊙

Key



0 1000 2000
scale feet
0 300 600 m
NORTH

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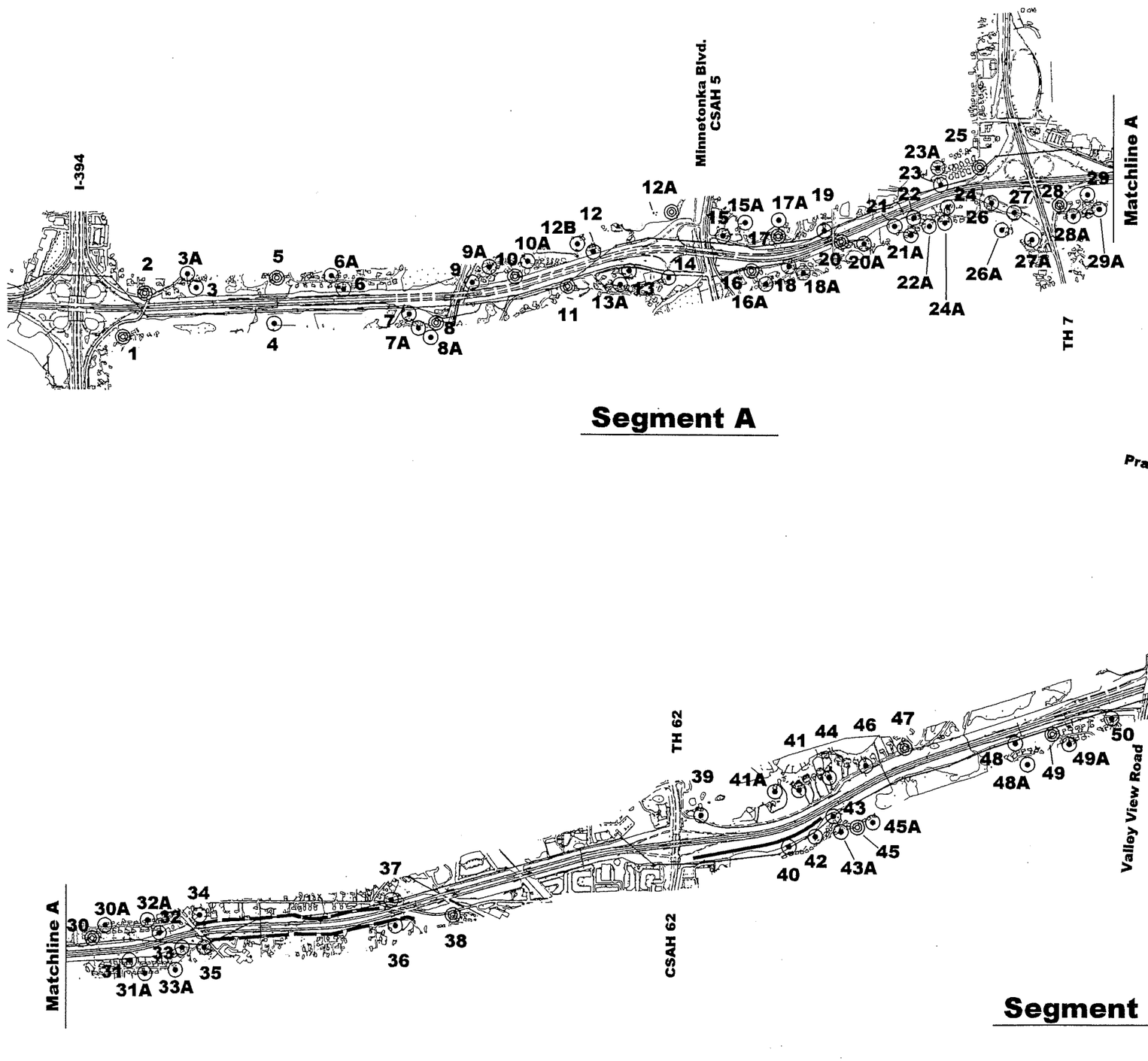

Figure 6.2
Sheet 1 of 2

Noise Monitoring And Modeling Receptor Locations

Legend

- Noise Monitoring And Modeling Receptor
- Noise Modeling Receptor
- Existing Berm
- Existing Noise Wall

Key

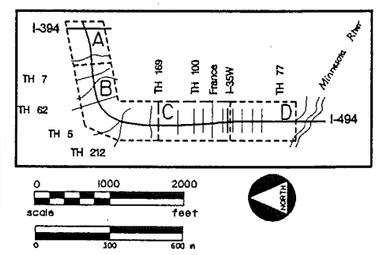

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Figure 6.2
Sheet 2 of 2

Noise Monitoring And Modeling Receptor Locations

Segment C

Segment D

Matchline B (See Previous Sheet)

Matchline C

W. Bush Lake Road

E. Bush Lake Road

TH 100

66th St.

70th St.

77th St./Industrial Blvd.

Normandale Blvd.

France Ave.

Penn Ave.

I-35W

66th St.

76th St.

82nd St. W.

86th St. W.

90th St. W.

Lyndale Ave.

Nicollet Ave.

Portland Ave.

12th Ave.

TH 77

24th Ave. S.

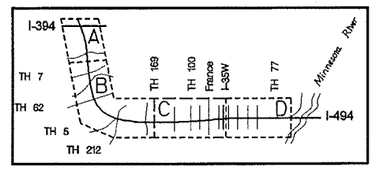
34th Ave. S.

57 58 58A 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100 101 102 103

Legend

- Noise Monitoring And Modeling Receptor
- Noise Modeling Receptor
- Existing Berm
- Existing Noise Wall

Key



0 1000 2000 scale feet

0 300 600 m

NORTH

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receptor locations shown in Figure 6.1. The results may be compared to federal and state standards for CO, presented at the bottom of each of these tables. Summary observations from this analysis are presented below:

- Concentrations of CO near key intersections in the study area remain below state and federal standards at all intersections examined for both the Preferred Alternative and the No-Build Alternative for 2022 conditions.

- For the majority of receptor locations modeled, the Preferred Alternative produces a slightly lower CO concentration than the No-Build due to better intersection operations and a consequent decrease in the number of idling vehicles.

- For the intersection of France Avenue and I-494, the Preferred Alternative produces a slightly higher CO concentration than the No-Build, primarily because the new intersection alignment moves the freeway ramps closer to the receptor locations. In addition, there are projected to be higher traffic levels on the south ramps under the Preferred Alternative than under No-Build.

- At the freeway segment between Penn Avenue and York Avenue, the increase in vehicle speeds lowers CO concentrations slightly in the Preferred Alternative compared to the No-Build.

- At the freeway segment between TH 7 and Minnetonka Boulevard, the increase in traffic volume and freeway width (bringing the roadway closer to the receptors) combine to raise CO concentrations slightly in the Preferred Alternative compared to the No-Build.

- For Receptor 19 at the intersection of Portland Avenue and I-494, the model predicts a higher CO concentration for the Preferred Alternative than for No-Build conditions. This is the result of higher traffic levels in the vicinity of this receptor due to elimination of the I-494/12th Avenue interchange with the Preferred Alternative.

- Modeled CO concentrations near the TH 62/I-494 interchange are slightly higher for the Preferred Alternative compared to the No-Build. This increase is due to the intersections being closer to the receptors in the Preferred Alternative condition.

It should be noted that existing (2000) CO concentrations measured at the three background monitoring locations are below state standards (refer to Table 6.1).

An air quality analysis was also independently performed for the City of Richfield in the vicinity of the Penn Avenue/I-494 interchange. This analysis was part of the *Best Buy Campus Draft EIS* (August 2000), and it assumed the construction of a single point intersection at the Penn Avenue/I-494 interchange ramps. The Penn Avenue/76th Street intersection was identified as having the greatest level of traffic delay in the overall interchange area, so it was used as a ìworst-caseî air quality analysis for the *Best Buy Draft EIS*. The projected year 2003 (one year after completion of the Best Buy Campus) 1-hour and 8-hour average CO concentrations for maximum proposed development conditions were 6.2 and 5.9 parts per million [ppm], respectively. These results are lower than the state standards (30.0 ppm for 1-hour average concentrations, and 9.0 ppm for 8-hour average concentrations).

TABLE 6.3
CARBON MONOXIDE MODELING RESULTS ñ NO-BUILD

Interchange Area or Freeway Segment	Receptor	Background		2022 No-Build		
		1-hr.	8-hr.	One-Hour Average Total* Concentration	Eight-Hour Average Total* Concentration	Wind Angle
TH 169 at I-494	1	2.0	1.5	3.7	2.7	100
	2			3.6	2.6	230
	3			4.5	3.2	300
	4			3.6	2.6	80
France Avenue at I-494	5	2.1	1.4	5.0	3.4	220
	6			4.3	2.9	100
	7			4.0	2.7	90
	8			4.2	2.9	30
	9			3.5	2.4	350
	10			3.4	2.3	350
Lyndale Avenue at I-494	11	3.0	1.9	4.2	2.7	190
	12			6.2	4.1	140
	13			5.0	3.3	210
	14			4.7	3.1	20
	15			5.5	3.6	330
Portland Avenue at I-494	16	3.2	2.0	7.2	4.8	210
	17			7.0	4.7	170
	18			5.0	3.3	30
	19			5.1	3.3	290
Penn Avenue to York Avenue	20	2.3	1.5	4.6	3.1	100
	21			4.9	3.3	240
	22			4.2	2.8	70
	23			3.9	2.6	40
Minnetonka Boulevard to TH 7	24	2.3	1.7	3.3	2.4	180
	25			3.8	2.8	20
	26			4.0	2.9	180
	27			3.8	2.8	0
	28			3.4	2.5	0
TH 62 at I-494	29	2.3	1.7	5.1	3.7	250
	30			5.1	3.7	120
	31			4.5	3.2	310
	32			4.4	3.2	30
State Standard				**30**	**9**	
Federal Standard				**35**	**9**	

Note: All concentrations are in parts-per-million (ppm)
* Total concentrations include background and Modeled CO concentrations.

TABLE 6.4
CARBON MONOXIDE MODELING RESULTS ñ PREFERRED ALTERNATIVE

				2022 Build		
Interchange Area or Freeway Segment	**Receptor**	**Background**		**One-Hour Average Total* Concentration**	**Eight-Hour Average Total* Concentration**	**Wind Angle**
		1-hr.	**8-hr.**			
TH 169 at I-494	1	2.0	1.5	3.6	2.6	100
	2			3.3	2.4	240
	3			4.3	3.1	290
	4			3.4	2.4	80
France Avenue at I-494	5			5.3	3.6	237
	6	2.1	1.4	4.3	2.9	100
	7			4.3	2.9	120
	8			4.9	3.4	50
	9			4.0	2.7	40
	10			4.0	2.7	350
Lyndale Avenue at I-494	11			4.1	2.6	210
	12	3.0	1.9	6.2	4.1	140
	13			5.0	3.3	210
	14			4.7	3.1	20
	15			5.5	3.6	330
Portland Avenue at I-494	16			6.0	4.0	240
	17	3.2	2.0	5.3	3.5	160
	18			4.9	3.2	20
	19			6.0	4.0	280
Penn Avenue to York Avenue	20			4.1	2.8	110
	21	2.3	1.5	4.1	2.8	110
	22			3.9	2.6	60
	23			3.8	2.5	290
Minnetonka Boulevard to TH 7	24			3.4	2.5	180
	25	2.3	1.7	4.0	2.9	20
	26			4.3	3.1	180
	27			3.9	2.8	0
	28			3.5	2.5	0
TH 62 at I-494**	29			5.2	3.7	240
	30	2.3	1.7	5.7	4.1	120
	31			4.5	3.2	300
	32			4.6	3.3	10
State Standard				**30**	**9**	
Federal Standard				**35**	**9**	

Note: All concentrations are in parts-per-million (ppm)

* Total concentrations include background and Modeled CO concentrations.

** Due to projected decreases in level of service for the intersections of Baker Road and Clearwater Road with TH 62 under the worst-case Preferred Alternative condition, air quality was analyzed for these intersections. Receptors were placed close to each corner of each intersection. The maximum CO concentration at Baker Road was 7.3 ppm for the one-hour condition and 5.2 ppm for the eight-hour condition with a wind angle of 280 degrees. The maximum CO concentration at Clearwater Drive was 5.9 ppm for the one-hour condition and 4.2 ppm for the eight-hour condition with a wind angle of 280 degrees. These concentrations all meet state and federal CO standards.

6.1.4 MITIGATION MEASURES

No specific long-range mitigation measures for this project are necessary to maintain air quality standards because projected CO levels for the Preferred Alternative are below state and federal standards.

Air quality modeling will be required for Indirect Source Permits (ISPs) for the project. An individual Indirect Source Permit application will be filed with the MPCA for each project phase. The ISP modeling would project CO levels for one and ten years after project phase completion. It is not anticipated that carbon monoxide projections in the ISP applications will exceed state or federal standards.

6.2 NOISE

The Affected Environment for noise for the I-494 corridor reconstruction was described in Section 4.2.2 of the DEIS. Impacts and Mitigation Measures for noise were addressed in Section 5.3.4 of the DEIS.

6.2.1 INFORMATION FROM THE DEIS THAT REMAINS UNCHANGED

The DEIS monitored existing (1990) noise levels and projected (2010) No-Build noise levels versus Build noise levels (all of the Build alternatives were considered to be equivalent regarding potential noise impacts). The monitoring and the results of the analysis in the DEIS were assessed relative to state noise regulations as administered by the Minnesota Pollution Control Agency (MPCA) and relative to the Federal Highway Administration (FHWA) noise abatement criteria.

The DEIS noise monitoring indicated that there were a number of locations where existing noise levels exceeded state noise standards and/or federal noise abatement criteria. This condition still exists (refer to Section 6.2.3.2 for year 2000 monitoring results). As was indicated in the DEIS, there are noise walls located on the east and west sides of I-494 between Excelsior Boulevard on the north and Baker Road on the south.

6.2.2 CHANGES IN THE SETTING OR TECHNICAL ANALYSIS SINCE THE DEIS

For the I-35W/I-494 interchange area, the DEIS included by reference noise monitoring and analysis from the I-35W DEIS. Noise monitoring and analysis performed for this FEIS updates the I-35W DEIS information for the I-35W/I-494 interchange area, including I-35W from 92nd Street to 66th Street. Noise walls are currently in place on both sides of I-35W from 76th Street to Crosstown Avenue to the north, and between 82nd Street and 90th Street on the west side and 94th Street on the east side to the south. Since the I-35W and I-494 DEISs were published, a noise wall has also been constructed north of 77th Street between Nicollet Avenue and I-35W.

New noise monitoring and modeling were performed for the FEIS to reflect existing and 2022 (20 years after construction start) modeled conditions. The DEIS listed potential noise mitigation measures for locations where state noise standards are exceeded, but did not provide analysis of the noise reduction performance or cost effectiveness of providing mitigation. For

the FEIS, an analysis of mitigation reasonableness was prepared. The assessment of mitigation measures for the FEIS uses the methodological approach outlined in *Mn/DOT Noise Policy for Type I and Type II Federal-Aid Projects as per CFR 772*. The results of the updated noise monitoring and analysis of impacts and mitigation measures are discussed in greater detail in Sections 6.2.3 and 6.2.4.

The state statutes regulating noise standards have been amended since publication of the DEIS. Section 6.2.3.1, below, discusses the current state regulatory requirements.

6.2.3 NOISE IMPACTS

Traffic noise is produced by vehicular engine operation, exhaust and tire-to-roadway contact. The energy or ìloudnessî of sound waves is expressed in units called decibels (dB). When analyzing traffic-generated noise, the units of sound measurement are modified so that measured frequencies generally match those frequencies discernable to the human ear. These units of sound measurements are called ìA-weightedî decibels, or dB(A). In this FEIS, any reference to ìdecibelsî will be A-weighted decibels. Common noise levels from various indoor and outdoor sources are listed on Table 6.5.

TABLE 6.5
NOISE LEVEL COMPARISONS

Common Outdoor Noise Levels	Noise Level dB(A)	Common Indoor Noise Levels
	-110-	Rock Band
Jet flying at 30.5 meters (100 feet)		
	-100-	Inside Subway Train (New York)
Gas Lawn Mower at 0.9 meters (3 feet)		
	-90-	Food Blender 0.9 meters (at 3 feet)
Diesel Truck at 15.2 meters (50 feet)		
Noisy Urban Daytime	-80-	Garbage Disposal at 0.9 meters (3 feet)
		Shouting at 0.9 meters (3 feet)
Gas Lawn Mower at 30.5 meters (100 feet)	-70-	Vacuum Cleaner at 3.0 meters (10 feet)
Commercial Area		Normal Speech at 0.9 meters (3 feet)
Heavy Traffic at 91.4 meters (300 feet)	-60-	
		Large Business Office
Quiet Urban Daytime	-50-	Dishwasher Next Room
Quiet Urban Nighttime Quiet Suburban Nighttime	-40-	Small Theatre Large Conference Room (Background)
	-30-	Library
Quiet Rural Nighttime		Bedroom at Night
	-20-	Concert Hall (Background)
		Broadcast and Recording Studio
	-10-	
		Threshold of Hearing
	-0-	

Source: *Noise Control ñ New Standards*: W.R. Green: California Department of Transportation, Paper presented at AASHTO Annual Meeting; November 14, 1973.

Sound energy from roadway traffic is roughly proportional to the volume of traffic on the roadway. However, because noise is measured on a logarithmic scale, increases of a few decibels of noise are measurable with instrumentation but are barely perceptible to the human ear in an outdoor setting. For example, a doubling of traffic volume (doubling sound energy) results in a noise level increase of approximately 3 decibels. A tenfold increase in traffic volume, resulting in an increase of 10 decibels, sounds to the average person as if the noise has become about twice as loud. According to the MPCA publication, *An Introduction to Sound Basics*, noise level changes of 3 decibels in an outdoor setting are barely perceptible, and changes of less than 3 decibels are imperceptible to most people.

6.2.3.1 Regulatory Background

There are state and federal noise standards for transportation projects. The MPCA is the primary governmental regulatory agency responsible for administering noise regulations in Minnesota. Under Minnesota Statute 116.07, Subdivisions 2 and 4, the MPCA has developed Noise Pollution Rules (Minnesota Rules Chapters 7030.001-7030.1060). The standards established for different Noise Area Classification (NAC) categories in the Noise Pollution Rules are summarized in Table 6.6.

TABLE 6.6
MINNESOTA POLLUTION CONTROL AGENCY STATE NOISE STANDARDS

Code	Day (7:00 a.m. ñ 10:00 p.m.) dBA		Night (10:00 p.m. ñ 7:00 a.m.) dBA	
NAC-1	L_{10} of 65	L_{50} of 60	L_{10} of 55	L_{50} of 50
NAC-2	L_{10} of 70	L_{50} of 65	L_{10} of 70	L_{50} of 65
NAC-3	L_{10} of 80	L_{50} of 75	L_{10} of 80	L_{50} of 75

The NAC-1 category in the above table includes the most sensitive receptors, such as residential, medical, and religious uses. The NAC-2 category generally includes commercial or other land uses which are less sensitive to noise conditions than NAC-1 uses. NAC-2 standards apply for hotels where the building has adequate acoustic insulation, year-round climate control, and has no accommodations that are intended for outdoor use. NAC-3 land uses are generally industrial uses.

In 1995, Minnesota Statute 116.07 was amended. This amendment provided certain exemptions to the state noise standards referenced above. Relevant to the I-494 reconstruction, the 1995 amendment exempts roadway projects from the state noise standards if all reasonably available noise mitigation measures, as approved by commissioners of the Mn/DOT and the MPCA, are utilized in the project to abate noise. This approval process includes a Noise Exemption process, which is discussed further in Section 6.2.4.

As long as a project employs all reasonably available noise mitigation measures, the amended statutes do not necessarily require attainment of the noise standards identified in Table 6.6. To define mitigation measures which are appropriate on a project-specific basis, the Mn/DOT has developed a methodology to evaluate noise barrier implementation. This methodology is summarized in *Mn/DOT Noise Policy for Type I and Type II Federal-Aid Projects as per 23 CFR 772*. The Mn/DOT, in cooperation with the MPCA, uses this methodology to determine the conditions under which exemptions from the state noise standards are justified under the amended Minnesota Statute 116.07.

At the federal level, the FHWA has established Noise Abatement Criteria for given land use categories. FHWA does not view these criteria as absolute and enforceable limits. Rather, the federal regulations require that every reasonable and feasible effort be made to provide noise mitigation when the applicable abatement criteria levels are approached or exceeded.

Within the FHWA system, the applicable land use classification for the I-494 reconstruction is ìCategory Bî (residential and recreational areas). The Category B criteria threshold is 70 dB(A) (L_{10}). From the information provided above, it can be seen that the comparable MPCA standard is 65 decibels (more restrictive). For projects in Minnesota, FHWA has determined that the Mn/DOT noise mitigation evaluation methodology as discussed above is an acceptable method to define reasonable and feasible mitigation measures for situations in which the applicable federal Noise Abatement Criteria are approached or exceeded.

In addition to the federal Noise Abatement Criteria discussed above, the FHWA defines noise impacts as a ìsubstantial increaseî in future noise levels over existing conditions. There is no mandated definition of what constitutes a ìsubstantial increase.î In Minnesota, an increase of five decibels or greater is considered to be a ìsubstantial increase.î In the event of such a projected increase associated with a roadway project, the Mn/DOT noise mitigation evaluation methodology is used to study feasibility and reasonableness of providing noise mitigation.

6.2.3.2 Noise Analysis

Monitoring of Existing Noise Levels

Noise level monitoring is commonly performed during a noise study to document existing noise levels. Existing levels may be used as a baseline against which future scenarios are compared, and also to validate the modeling methods and inputs utilized. Thirty-three sites (see Figure 6.2) were chosen for the monitoring of existing noise levels in the project corridor. The locations were discussed with MPCA staff prior to the field monitoring.

Noise levels were monitored between June 28, 2000 and July 24, 2000. Noise levels were monitored twice for each receptor location, once in the morning, and once in the afternoon. The results, indicated on Table 6.7, are the averages of these morning and afternoon levels for each site.

TABLE 6.7
NOISE MONITORING AND MODELING RESULTS

		Modeled Daytime L10 Noise Levels			Modeled Nighttime L10 Noise Levels		
Neighborhood and	**Monitored**	**Existing**	**No Build**	**Build 2022**	**Existing**	**No Build**	**Build 2022**
Receptors	**L10**	**2000**	**2022**	**no wall**	**2000**	**2022**	**no wall**
A - East of 494, between 394 and Stone Road							
2 (R)	**69**	**70**	**71**	**71**	**69**	**70**	**70**
3 (R)		**69**	**70**	**71**	**68**	**69**	**70**
3a (R)		**66**	**67**	**68**	**66**	**66**	**67**
5 (R)	62	**67**	**67**	**68**	**66**	**67**	**67**
6 (R)		**73**	**74**	**75**	**72**	**73**	**73**
6a (R)		**68**	**69**	**70**	**67**	**68**	**69**
B - West of 494, between 394 and Stone Road							
1 (R)	**68**	**66**	**67**	**67**	**65**	**66**	**66**
4 (R)		**66**	**67**	**68**	**66**	**66**	**67**
7 (R)		**68**	**69**	**70**	**68**	**68**	**69**
7a (R)		**68**	**69**	**70**	**68**	**68**	**69**
8 (R)	57	**66**	**67**	**68**	**65**	**66**	**67**
8a (R)		**67**	**68**	**68**	**66**	**67**	**67**
C - East of 494, between Stone Road and Minnetonka							
9 (R)		**73**	**74**	**75**	**72**	**73**	**74**
9a (R)		**70**	**71**	**72**	**69**	**70**	**71**
10 (R)	**70**	**75**	**76**	**77**	**74**	**75**	**76**
10a(R)		**68**	**69**	**70**	**67**	**68**	**69**
12 (R)		**73**	**74**	**75**	**72**	**73**	**73**
12A (R)	60	63	64	64	**62**	**63**	**63**
12b (R)		64	65	**66**	**64**	**64**	**65**
D - West of 494, between Stone Road and Minnetonka							
11 (R)	**73**	**73**	**74**	**74**	**72**	**73**	**73**
13 (R)		**71**	**72**	**73**	**71**	**71**	**72**
13a (R)		**66**	**67**	**68**	**65**	**66**	**67**
14 (R)		**68**	**69**	**69**	**67**	**68**	**68**
E - East of 494, between Minnetonka and TH 7							
15 (R)		**69**	**70**	**71**	**69**	**70**	**70**
15a (R)		**68**	**69**	**70**	**67**	**68**	**69**
17 (R)	**69**	**69**	**70**	**70**	**68**	**69**	**69**
17a (R)		**68**	**69**	**70**	**67**	**68**	**69**
19 (R)		**72**	**73**	**74**	**71**	**72**	**73**
23 (R)		**71**	**72**	**73**	**71**	**72**	**72**
23a (R)		**67**	**68**	**69**	**67**	**68**	**68**
25 (R)	63	**67**	**68**	**69**	**66**	**67**	**68**
State Standards (R)	**65**	**65**	**65**	**65**	**55**	**55**	**55**
State Standards (H)	**70**	**70**	**70**	**70**	**70**	**70**	**70**

(R) - Residence (H) - Hotel (A) - Apartment

Bold numbers are above state standards

TABLE 6.7 continued
NOISE MONITORING AND MODELING RESULTS

		Modeled Daytime L10 Noise Levels			Modeled Nighttime L10 Noise Levels		
Neighborhood and Receptors	Monitored L10	Existing 2000	No Build 2022	Build 2022 no wall	Existing 2000	No Build 2022	Build 2022 no wall
F - West of 494, between Minnetonka and TH 7							
16 (R)	**66**	**71**	**72**	**73**	**70**	**71**	**72**
16a (R)		**68**	**69**	**70**	**68**	**68**	**69**
18 (R)		**73**	**74**	**75**	**73**	**73**	**74**
18a (R)		**70**	**71**	**72**	**70**	**70**	**71**
20 (R)	**76**	**74**	**75**	**76**	**74**	**75**	**75**
20a (R)		**69**	**70**	**71**	**69**	**69**	**70**
21 (R)		**69**	**70**	**71**	**69**	**70**	**70**
21a (R)		**68**	**69**	**70**	**68**	**68**	**69**
22 (R)		**76**	**77**	**78**	**76**	**76**	**77**
22a (R)		**69**	**70**	**71**	**69**	**70**	**71**
24 (R)		**70**	**71**	**72**	**70**	**71**	**71**
24a (R)		**68**	**69**	**70**	**68**	**68**	**69**
26 (R)		**70**	**71**	**72**	**69**	**70**	**70**
26a (R)		64	65	**66**	**63**	**64**	**64**
27 (R)		**70**	**71**	**72**	**68**	**69**	**70**
27a (R)		65	**66**	**66**	**63**	**64**	**65**
G - East of 494, between TH 7 and TH 62							
30 (R)	**69**	**69**	**70**	**71**	**68**	**70**	**70**
30a (R)		**66**	**67**	**68**	**65**	**66**	**67**
32 (R)		**73**	**74**	**75**	**72**	**74**	**74**
32a (R)		**68**	**68**	**69**	**67**	**68**	**69**
34 (R)		65	**66**	**67**	**64**	**66**	**66**
37 (R)		**70**	**71**	**72**	**70**	**71**	**71**
H - West of 494, between TH 7 and TH 62							
28 (R)	**67**	**70**	**71**	**72**	**71**	**71**	**72**
28a (R)		**68**	**69**	**70**	**67**	**68**	**69**
29 (R)		**67**	**68**	**69**	**67**	**68**	**68**
29a (R)		64	64	65	**63**	**64**	**65**
31 (R)		**71**	**72**	**73**	**71**	**73**	**73**
31a (R)		**68**	**68**	**69**	**67**	**68**	**69**
33 (R)		**70**	**71**	**72**	**70**	**71**	**71**
33a (R)		63	64	65	**63**	**63**	**64**
35 (R)		**69**	**70**	**70**	**69**	**70**	**70**
36 (R)		**68**	**69**	**70**	**68**	**70**	**70**
38 (R)		**68**	**69**	**70**	**68**	**69**	**69**
State Standards (R)	**65**	**65**	**65**	**65**	**55**	**55**	**55**
State Standards (H)	**70**	**70**	**70**	**70**	**70**	**70**	**70**

(R) - Residence (H) - Hotel (A) - Apartment
Bold numbers are above state standards

TABLE 6.7 continued
NOISE MONITORING AND MODELING RESULTS

		Modeled Daytime L10 Noise Levels			Modeled Nighttime L10 Noise Levels		
Neighborhood and	**Monitored**	**Existing**	**No Build**	**Build 2022**	**Existing**	**No Build**	**Build 2022**
Receptors	**L10**	**2000**	**2022**	**no wall**	**2000**	**2022**	**no wall**
I - East of 494, between TH 62 and TH 212/Flying Cloud Drive							
39 (R)		63	64	64	**62**	**64**	**64**
41 (R)		64	65	**66**	**63**	**65**	**65**
41a (R)		63	64	65	**62**	**63**	**64**
44 (R)		64	65	**66**	**64**	**65**	**65**
46 (R)		**67**	**67**	**68**	**66**	**67**	**67**
47 (R)	**67**	65	65	**66**	**64**	**65**	**65**
J - West of 494, between TH 62 and TH 212/Flying Cloud Drive							
40 (R)		51	52	53	51	52	52
42 (R)		60	61	62	**59**	**61**	**61**
43 (R)		**70**	**70**	**71**	**69**	**71**	**71**
43a (R)		64	65	**66**	**64**	**64**	**65**
45 (R)	62	63	64	64	**63**	**65**	**65**
45a (R)		63	64	65	**63**	**63**	**64**
48 (R)		**67**	**68**	**69**	**67**	**69**	**69**
48a (R)		**67**	**68**	**69**	**67**	**67**	**68**
49 (R)	**67**	**68**	**68**	**69**	**67**	**69**	**69**
49a (R)		**68**	**69**	**70**	**68**	**68**	**70**
50 (R)		**67**	**67**	**68**	**66**	**68**	**68**
K - TH 212/Flying Cloud Drive							
51 (H)		56	58	58	**56**	**57**	**57**
52 (H)		70	**71**	**72**	**69**	**69**	**70**
53 (H)		**73**	**74**	**75**	**73**	**74**	**74**
L - South of 494 at 169							
54 (R)		63	64	65	**62**	**63**	**63**
55 (A)		64	65	**66**	**64**	**64**	**65**
56 (R)	**68**	**70**	**71**	**72**	**69**	**70**	**70**
56a (R)		65	**66**	**67**	**65**	**65**	**66**
57 (R)		**66**	**67**	**69**	**66**	**66**	**68**
58 (R)	**69**	**67**	**68**	**68**	**66**	**67**	**67**
58a (R)		**71**	**72**	**72**	**70**	**71**	**71**
61 (R)		**71**	**72**	**71**	**70**	**71**	**70**
M - North of 494 between 169 and E. Bush Lake Rd.							
59 (R)		**68**	**69**	**69**	**67**	**67**	**68**
60 (R)		**69**	**69**	**70**	**68**	**68**	**69**
State Standards (R)	**65**	**65**	**65**	**65**	**55**	**55**	**55**
State Standards (H)	**70**	**70**	**70**	**70**	**70**	**70**	**70**

(R) - Residence (H) - Hotel (A) - Apartment
Bold numbers are above state standards

TABLE 6.7 continued
NOISE MONITORING AND MODELING RESULTS

		Modeled Daytime L10 Noise Levels			Modeled Nighttime L10 Noise Levels		
Neighborhood and	**Monitored**	**Existing**	**No Build**	**Build 2022**	**Existing**	**No Build**	**Build 2022**
Receptors	**L10**	**2000**	**2022**	**no wall**	**2000**	**2022**	**no wall**
N - TH 100							
62 (H)		**68**	**68**	**69**	**67**	**68**	**68**
63 (H)	65	**69**	**69**	**69**	**68**	**69**	**69**
64 (H)		**70**	**70**	**70**	**69**	**70**	**69**
65 (H)	62	**68**	**69**	**69**	**67**	**68**	**68**
102 (R)		**70**	**71**	**71**	**68**	**68**	**69**
103 (R)		**75**	**76**	**76**	**73**	**73**	**74**
O - North of 494 between France and Penn							
66 (H)	62	63	63	64	**62**	**62**	**63**
67 (H)		66	66	67	**65**	**66**	**66**
68 (R)		**73**	**73**	**74**	**72**	**72**	**72**
69 (R)		**75**	**75**	**76**	**74**	**74**	**74**
70 (R)		**73**	**74**	**74**	**72**	**73**	**73**
71 (A)		**74**	**76**	**76**	**73**	**75**	**75**
72 (A)	**72**	**73**	**76**	**76**	**73**	**74**	**74**
73 (A/C)		**71**	**72**	**73**	**71**	**72**	**71**
P - 35W north of 494, existing noise walls							
96 (R)		59	60	62	**58**	**59**	**62**
97 (R)		60	61	62	**60**	**60**	**62**
98 (R)		63	64	60	**62**	**63**	**59**
Q - 35W at 494							
99 (A)		**67**	**67**	**70**	**66**	**67**	**69**
74 (A)		**69**	**70**	**70**	**69**	**69**	**69**
75 (A)		**69**	**69**	**70**	**68**	**69**	**68**
R - 35W south of 494, existing noise walls							
100 (R)		62	63	64	**62**	**63**	**63**
101 (R)		62	63	64	**62**	**63**	**63**
S - North of 494, between Lyndale and Nicollet							
76 (H)	64	**71**	**71**	**72**	**69**	**70**	**71**
77 (A)	65	**71**	**71**	**71**	**69**	**69**	**69**
State Standards (R)	**65**	**65**	**65**	**65**	**65**	**55**	**55**	**55**
State Standards (H)	**70**	**70**	**70**	**70**	**70**	**70**	**70**

(R) - Residence (H) ñ Hotel (A) - Apartment ((R or A)/C) - Current residential area (R) or apartment (A) guided to commercial land use in City Comp. Plan

Bold numbers are above state standards

TABLE 6.7 continued
NOISE MONITORING AND MODELING RESULTS

		Modeled Daytime L10 Noise Levels			Modeled Nighttime L10 Noise Levels		
Neighborhood and	**Monitored**	**Existing**	**No Build**	**Build 2022**	**Existing**	**No Build**	**Build 2022**
Receptors	**L10**	**2000**	**2022**	**no wall**	**2000**	**2022**	**no wall**
T - North of 494, between Nicollet and TH 77							
79 (H)		**77**	**78**	**78**	**76**	**77**	**77**
80 (A/C)	**71**	**75**	**76**	**72**	**74**	**75**	**71**
81 (A/C)		**72**	**74**	**73**	**72**	**73**	**72**
82 (A)		**76**	**77**	**79**	**75**	**76**	**77**
83 (A)		**74**	**75**	**76**	**73**	**74**	**74**
85 (A)	**71**	**74**	**75**	**77**	**73**	**74**	**76**
86 (A/C)	**67**	**73**	**75**	**75**	**73**	**74**	**74**
88 (H)	**74**	**76**	**76**	**77**	**75**	**75**	**75**
90 (H)		69	69	**72**	**68**	**69**	**71**
U - South of 494, between Nicollet and TH 77							
78 (H)	65	70	**71**	**73**	**69**	**70**	**72**
84 (H)	**74**	**73**	**75**	**77**	**73**	**74**	**76**
87 (H)		**72**	**73**	**74**	**71**	**72**	**72**
89 (H)	64	69	70	70	**68**	**68**	**68**
V - South of 494, between TH 77 and 24th Ave.							
91 (H)	**72**	**71**	**72**	**74**	**71**	**71**	**73**
92 (H)		69	69	69	**68**	**68**	**68**
93 (H)	**74**	**75**	**76**	**77**	**74**	**75**	**76**
94 (H)		**71**	**72**	**73**	**70**	**71**	**72**
95 (H)		68	69	70	**67**	**68**	**69**
State Standards (R)	**65**	**65**	**65**	**65**	**55**	**55**	**55**
State Standards (H)	**70**	**70**	**70**	**70**	**70**	**70**	**70**

(R) - Residence (H) ñ Hotel (A) - Apartment ((R or A)/C) - Current residential area (R) or apartment (A) guided to commercial land use in City Comp. Plan

Bold numbers are above state standards

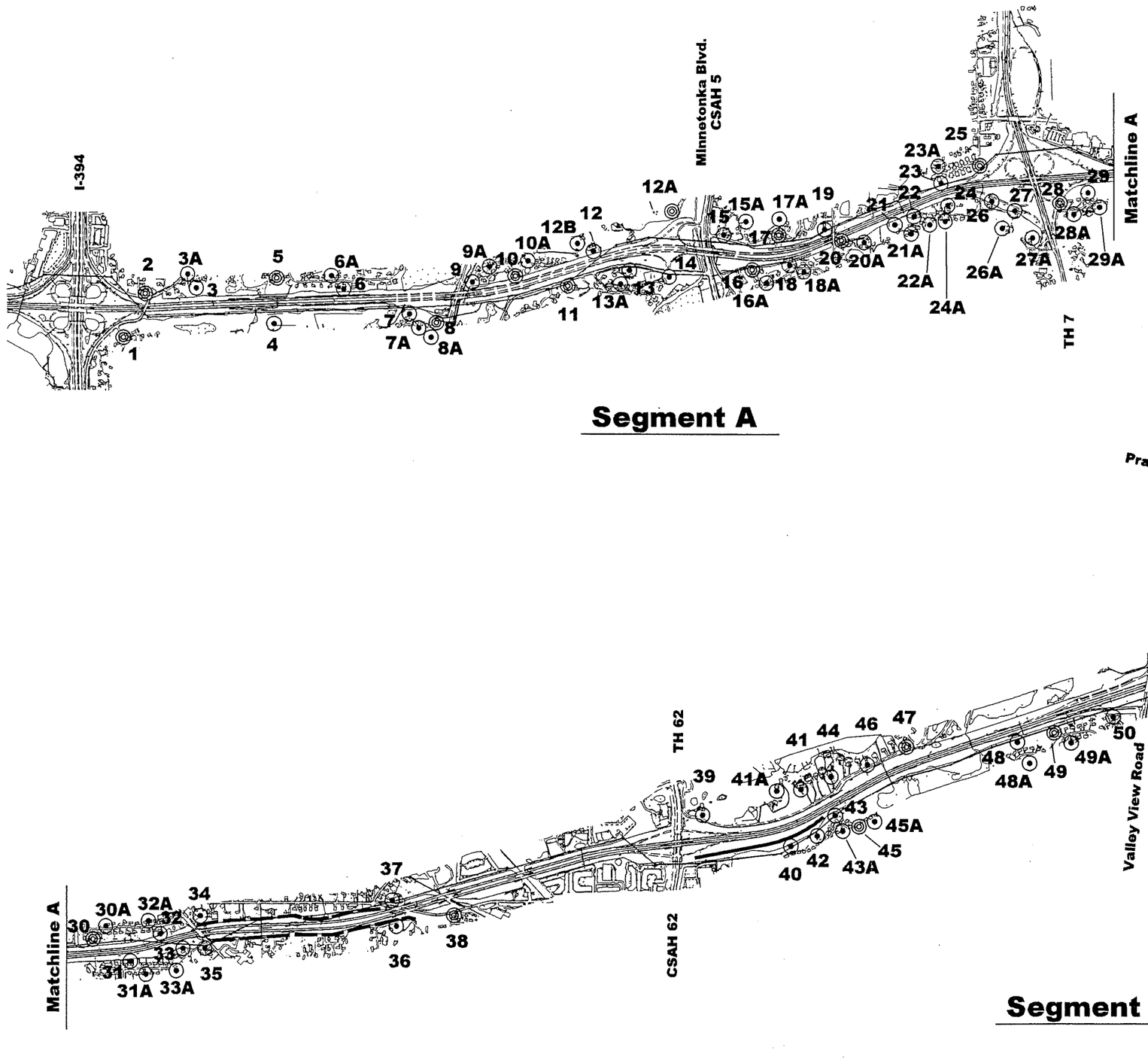


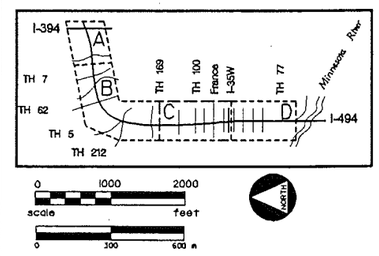
Figure 6.2
Sheet 1 of 2

Noise Monitoring And Modeling Receptor Locations

Legend

- Noise Monitoring And Modeling Receptor
- Noise Modeling Receptor
- Existing Berm
- Existing Noise Wall

Key



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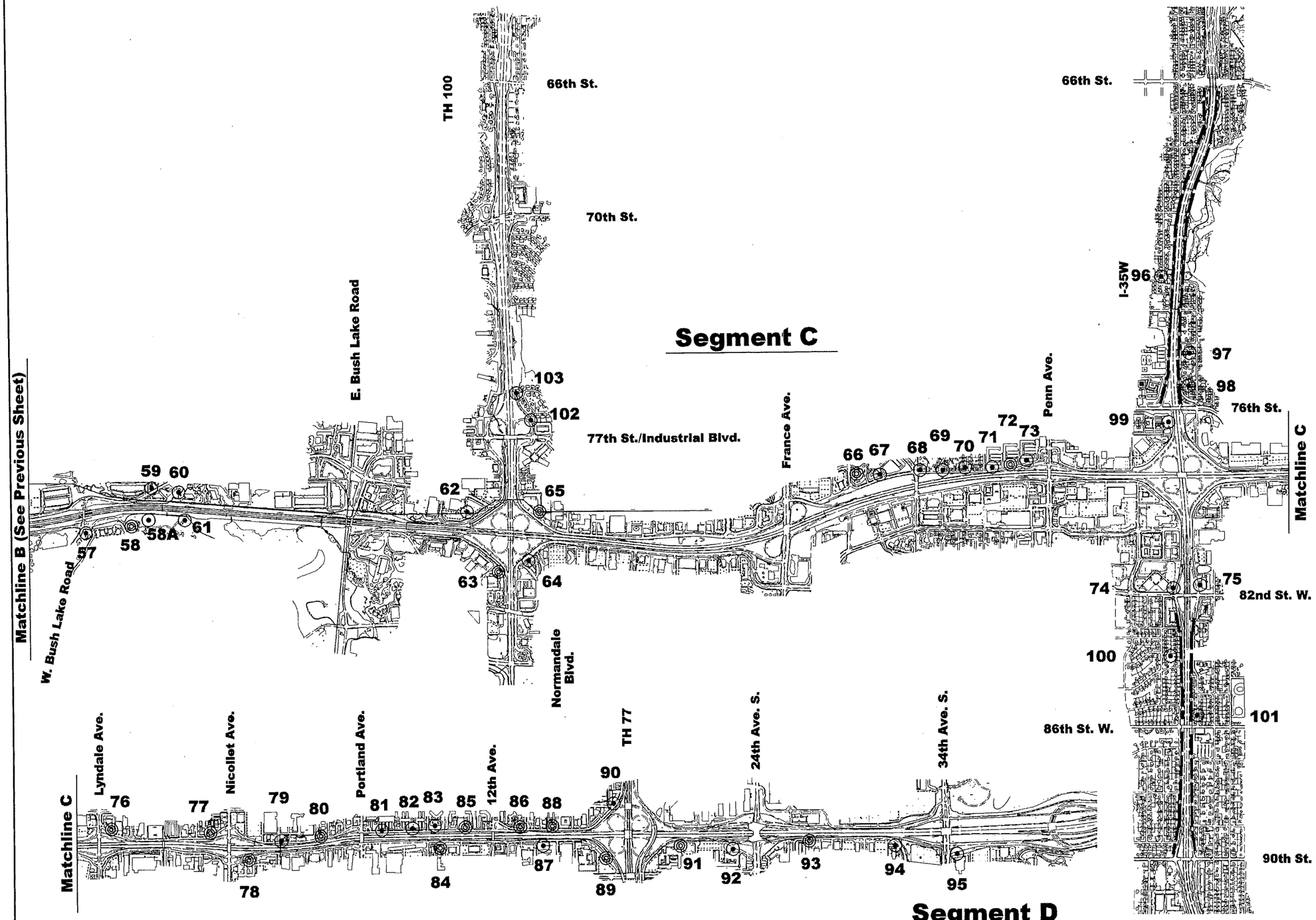
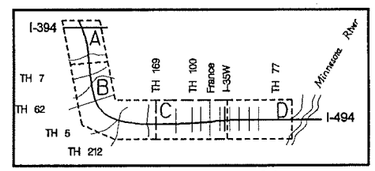
Noise Monitoring And Modeling Receptor Locations

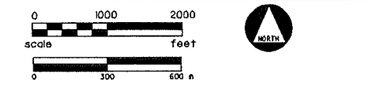


Legend

- Noise Monitoring And Modeling Receptor
- Noise Modeling Receptor
- Existing Berm
- Existing Noise Wall

Key





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Noise Modeling

Noise modeling was performed to project future sound levels associated with the changes in roadway configurations and projected traffic levels. One hundred and thirty-six noise level modeling locations were chosen to model traffic noise levels for the project corridor (the monitoring locations discussed above were a subset of these 136 modeling locations). The noise modeling locations are depicted on Figure 6.2. Minnesota Pollution Control Agency staff provided input into the selection of the modeling locations.

Noise levels were modeled using MINNOISE, a computer software model utilized by Mn/DOT and approved by MPCA staff for traffic noise modeling. MINNOISE uses STAMINA 2.0 (developed by FHWA) as a base, but has been modified by Mn/DOT to reflect conditions in Minnesota and regional emission levels for heavy trucks. Data input to the MINNOISE model included existing and 2022 forecast traffic volumes, vehicular mix, speeds, roadway alignments, and receptor locations. Noise modeling was completed for existing conditions (year 2000) and for the No-Build and Preferred Alternative conditions (both year 2022). Noise levels were modeled for both the L_{10} and L_{50} daytime and nighttime peak traffic hours.

Daytime hours, as defined by state noise regulations, run from 7:00 a.m. to 10:00 p.m. The daytime peak traffic hour within this timeframe is generally within the 4:00 p.m. to 6:00 p.m. range. Nighttime hours, as defined by noise regulations, run from 10:00 p.m. to 7:00 a.m. The nighttime peak traffic hour for the I-494 corridor is 6:00 a.m. to 7:00 a.m.

It should be noted that existing noise walls and berms were programmed into the noise model used for the FEIS analysis. Where the Preferred Alternative that would affect existing noise walls, noise walls of the same height as existing walls were assumed and programmed at the likely location of the replacement noise walls.

The results of the noise modeling analysis are presented in Table 6.7. Receptors are grouped by ìneighborhoodî areas. To simplify the presentation in this table, only the results of the L_{10} noise level analyses are shown. L_{10} and L_{50} levels are similar to each other within the corridor. As discussed in Section 6.2.4, the Mn/DOT noise mitigation analysis methodology uses daytime L_{10} levels to determine cost effectiveness. The full data set, including daytime and nighttime L_{10} and L_{50} modeled results is available for review from Mn/DOT.

From Table 6.7, it can be seen that modeled existing noise levels exceed L_{10} state daytime noise standards at 102 of the 136 receptor sites. Daytime L_{10} standards are projected to be exceeded at 107 receptors under No-Build, and 114 receptors under the Preferred Alternative. Nighttime L_{10} standards are currently exceeded at 135 of the 136 receptor sites, and are projected to be exceeded at 135 receptors for both No-Build and Preferred Alternative conditions. Daytime and nighttime peak hour noise levels in the I-494 corridor are similar (typically within 0 to 3 decibels).

In general, noise levels projected for the Preferred Alternative are 0 to 4 decibels higher than existing noise levels and 0 to 3 decibels higher than the noise levels predicted for the No-Build Alternative. The majority of receptors show only a 0 to 1 decibel increase from No-Build to Build conditions. Noise levels predicted for the No-Build Alternative are 0 to 3 decibels higher than existing noise levels. As described in the background discussion of noise units provided at the beginning of Section 6.2.3, changes in traffic noise levels of 3 decibels are barely perceptible. Increases in noise levels from existing to either the No-Build or Preferred Alternative would be less than 5 decibels. Based on Mn/DOT policy, noise level increases less than 5 decibels would not be considered ìsubstantial.î

In areas where the Preferred Alternative road alignment moves I-494 farther away from receptors (i.e. receptors 71, 72, and 73 in Neighborhood O, and receptors 80, 81, and 82 in Neighborhood T), the projected noise levels for the Preferred Alternative are anticipated to be 0 to 4 decibels lower than noise levels predicted for the No-Build conditions and 0 to 3 decibels lower than existing noise levels. Noise at receptor 98 is projected to decrease by 4 decibels with the Preferred Alternative relative to No-Build. This is likely due to the noise wall being moved closer to this receptor.

To characterize noise levels at locations in the corridor where noise walls currently exist (between Excelsior Boulevard and Baker Road), noise monitoring was conducted behind the noise walls on October 3, 2000 near the pedestrian overpass west of I-494. Daytime L_{10} and L_{50} noise levels were 61 and 59, respectively, both below state standards.

6.2.4 MITIGATION

Because federal noise abatement criteria and/or state noise standards would be exceeded along the project corridor, measures to mitigate traffic noise were studied. The most common traffic noise mitigation is construction of a barrier (ìnoise wallî) between the roadway and receiver. Other noise abatement measures such as traffic control devices and signing for prohibition of certain vehicle types, time-use restrictions for certain vehicle types, modified speed limits, exclusive land designations, etc. as listed in CFR 23, 772.13(c) were not considered feasible or practical for this project. The I-494 corridor is part of the interstate highway system. It is an important truck route. Restricting vehicle types, time of use and reducing speed limits would not be consistent with the required functions of I-494. Therefore, noise mitigation measures studied in this document are limited to noise barriers.

Noise mitigation measures (noise walls) were studied where year 2022 Preferred Alternative noise levels were projected to exceed state standards in residential areas. This analysis included the evaluation of feasibility, noise reduction performance and cost effectiveness, based on currently available preliminary project layouts. As stated previously, state daytime L_{10} standards are projected to be exceeded at 114 of the 136 receptors modeled with Preferred Alternative conditions.

Noise mitigation decisions were based on a study of the feasibility and reasonableness of noise walls. Feasibility is determined by physical and/or engineering constraints, i.e. whether a noise wall could feasibly be constructed on the site. Reasonableness addresses the setting and

effectiveness of a noise wall; for a noise wall to be considered effective, at least a 5-decibel decrease in daytime L_{10} noise levels needs to be achieved. Economic reasonableness or cost effectiveness is determined by the following formula:

$$\frac{\text{Cost of noise wall}^{1}}{\text{Average decibel reduction x total number of residences affected}}$$

[1]The cost of a noise wall is calculated using $161 per square meter ($15 per square foot) of wall.

Only residences that experience a 5 or greater decibel decrease in noise following construction of a noise wall are considered in this analysis. Noise reduction at apartment buildings is calculated using the average reduction of all ground floor units receiving a 5-decibel or greater reduction. The result of the above formula is a cost per decibel per residence; Mn/DOT has established $3,250 per decibel per residence as the limit for noise wall cost effectiveness. This overall approach is outlined in *Mn/DOT Noise Policy for Type I and Type II Federal-Aid Projects as per 23 CFR 772*. The MPCA concurs with the methodological approach established in this document and with the monetary threshold of $3,250 per decibel per residence referenced above.

Results of the noise mitigation study, including neighborhood areas and cost effectiveness of each noise wall segment, are shown in Table 6.8. Cost-effectiveness numbers are based on preliminary design information that could change as designs are finalized. Prior to construction of each phase of the project, Mn/DOT will perform a more detailed analysis of cost-effectivness, utilizing final design plans, including additional receptors and multiple iterations of noise wall length and height to find the most cost-effective barrier for each area. The results of this analysis will then be reviewed to determine if the most cost-effective barrier for each area meets the cost-effectiveness criteria. If it does, then the local government officials (with input from residents) will be given the opportunity to approve/deny construction of noise wall mitigation, and if they are to be built, what wall design is appropriate. If, following identification of all feasible and cost-effective mitigation locations, there are still areas along the corridor that would exceed state noise standards for the existing land use type, a ìNoise Reasonableness and Exemption Requestî will be prepared and would be reviewed and subject to final approval by the commissioners of Mn/DOT and the MPCA.

In addition to cost effectiveness, other reasonableness issues such as current and future land use and the desires of adjacent residential and commercial property owners must be taken into account. Commercial property owners (such as with businesses and hotels) may prefer to remain visible to adjacent roads, and this possibility would be considered during the design of any potential noise barriers. In addition, noise barriers would not likely be built in residential areas where future land use is guided for commercial.

While engineering constraints were not studied in detail, it was assumed that construction of noise walls would be feasible at all locations that were found to be cost effective.

As Table 6.8 shows, analysis for the FEIS indicate that five areas potentially qualify for noise walls based on Mn/DOTís cost effectiveness criteria of $3,250 per decibel per residence. These

five potential mitigation areas are discussed in the following paragraphs. As noted previously, noise mitigation analyses will be performed in greater detail during the final design and approval process for each phase of the project.

Neighborhood N ñ East of TH 100 North of 77th Street (Receptors 102 and 103)

This neighborhood consists of single-family residences. A 6.1-meter (20-foot) wall would provide up to 16 dBA in noise reduction. The projected cost per decibel per residence ($2,615) meets Mn/DOTís reasonableness criterion.

TABLE 6.8
NOISE MITIGATION COST EFFECTIVENESS ANALYSIS

Neighborhood and Receptors	Daytime L10 Noise Build 2022 no wall	Daytime L10 Noise Build 2022 6 m wall	Reduction (in dBA) with 6 m noise wall	Number of residences	Number of affected residences	Length of wall m (ft)	Total cost of wall [$161/sq m($15/sq ft)]	Cost per decibel per residence*
A - East of 494, between 394 and Stone Road								
2 (R)	**71**	**70**	1	5	0	643 (2108)	$632,400	$21,080
3 (R)	**71**	**66**	5	6	6			
3a (R)	**68**	64	4	2	0			
5 (R)	**68**	64	4	4	0	818 (2682)	$804,600	$4,598
6 (R)	**75**	**68**	7	13	13			
6a (R)	**70**	63	7	12	12			
B - West of 494, between 394 and Stone Road								
1 (R)	**67**	**67**	0	9	0	774 (2539)	$761,700	< 5 dB reduction
7 (R)	**70**	63	7	5	5	377 (1236)	$370,800	$7,416
7a (R)	**70**	**68**	2	2	0			
8 (R)	**68**	63	5	3	3			
8a (R)	**68**	**67**	1	2	0			
C - East of 494, between Stone Road and Minnetonka								
9 (R)	**75**	**67**	8	5	5	1348 (4423)	$1,326,900	$6,702
9a (R)	**72**	**69**	3	5	0			
10 (R)	**77**	62	15	4	4			
10a (R)	**70**	60	10	3	3			
12 (R)	**75**	**67**	8	6	6			
12A (R)	64	63	1	4	0			
12b (R)	**66**	61	5	4	4			
State Standards (R)	**65**	**65**						
State Standards (H)	**70**	**70**						

(R) - Residence (H) - Hotel (A) - Apartment

Bold numbers are above state standards

* calculated by: Total cost of Noise Wall/(Total number of affected residences x average decibel reduction)

Affected residences only include those experiencing ≥ 5 dBA reduction

TABLE 6.8 continued
NOISE MITIGATION COST EFFECTIVENESS ANALYSIS

Neighborhood and Receptors	Daytime L10 Noise Build 2022 no wall	Daytime L10 Noise Build 2022 6 m wall	Reduction (in dBA) with 6 m noise wall	Number of residences	Number of affected residences	Length of wall m (ft)	Total cost of wall [$161/sq m($15/sq ft)]	Cost per decibel per residence*
D - West of 494, between Stone Road and Minnetonka								
11 (R)	**74**	**70**	4	5	0	1016 (3334)	$1,000,200	$22,227
13 (R)	**73**	**68**	5	4	4			
13a (R)	**68**	63	5	5	5			
14 (R)	**69**	**68**	1	2	0			
E - East of 494, between Minnetonka and TH 7								
15 (R)	**71**	65	6	5	5	665 (2181)	$654,300	$9,347
15a (R)	**70**	**68**	2	3	0			
17 (R)	**70**	62	8	5	5			
17a (R)	**70**	**66**	4	2	0			
19 (R)	**74**	**70**	4	2	0			
23 (R)	**73**	62	11	5	5	717 (2352)	$705,600	$12,829
23a (R)	**69**	**67**	2	4	0			
25 (R)	**69**	65	4	4	0			
F - West of 494, between Minnetonka and TH 7								
16 (R)	**73**	61	12	4	4	608 (1995)	$598,500	$3,541
16a (R)	**70**	61	9	1	1			
18 (R)	**75**	61	14	5	5			
18a (R)	**72**	**66**	6	7	7			
20 (R)	**76**	**67**	9	4	4	1260 (4134)	$1,240,200	$6,493
20a (R)	**71**	64	7	3	3			
21 (R)	**71**	65	6	3	3			
21a (R)	**70**	63	7	2	2			
22 (R)	**78**	62	16	2	2			
22a (R)	**71**	64	7	1	1			
24 (R)	**72**	65	7	3	3			
24a (R)	**70**	**69**	1	4	0			
26 (R)	**72**	63	9	2	2			
26a (R)	**66**	65	1	3	0			
27 (R)	**72**	60	12	2	2			
27a (R)	**66**	64	2	1	0			
State Standards (R)	**65**	**65**						
State Standards (H)	**70**	**70**						

(R) - Residence (H) ñ Hotel (A) - Apartment

Bold numbers are above state standards

* calculated by: Total cost of Noise Wall/(Total number of affected residences x average decibel reduction)

Affected residences only include those experiencing ≥ 5 dBA reduction

TABLE 6.8 continued
NOISE MITIGATION COST EFFECTIVENESS ANALYSIS

Neighborhood and Receptors	Daytime L10 Noise Build 2022 no wall	Daytime L10 Noise Build 2022 6 m wall	Reduction (in dBA) with 6 m noise wall	Number of residences	Number of affected residences	Length of wall m (ft)	Total cost of wall [$161/sq m($15/sq ft)]	Cost per decibel per residence*
G - East of 494, between TH 7 and TH 62								
30 (R)	**71**	63	8	9	9	708 (2322)	$696,600	$3,913
30a (R)	**68**	64	4	8	0			
32 (R)	**75**	64	11	6	6			
32a (R)	**69**	64	5	8	8			
37 (R)	**72**	**72**	0	2	0	161 (527)	$158,100	< 5 dB reduction
H - West of 494, between TH 7 and TH 62								
28 (R)	**72**	60	12	3	3	1294 (4243)	$1,272,900	$5,217
28a (R)	**70**	**69**	1	2	0			
29 (R)	**69**	**68**	1	6	0			
29a (R)	65	62	3	2	0			
31 (R)	**73**	64	9	8	8			
31a (R)	**69**	62	7	10	10			
33 (R)	**72**	61	11	6	6			
33a (R)	65	61	4	4	0			
35 (R)	**70**	**69**	1	2	0			
38 (R)	**70**	64	6	2	2	256 (841)	$252,300	$21,025
I - East of 494, between TH 62 and TH 212/Flying Cloud Drive								
41 (R)	**66**	58	8	3	3	1146 (3760)	$1,128,000	$10,846
41a (R)	65	65	0	1	0			
44 (R)	**66**	58	8	5	5			
46 (R)	**68**	58	10	4	4			
47 (R)	**66**	62	4	2	0			
J - West of 494, between TH 62 and TH 212/Flying Cloud Drive								
43 (R)	**71**	60	11	4	4	348 (1141)	$342,300	$3,721
43a (R)	**66**	63	3	4	0			
45 (R)	64	56	8	6	6			
45a (R)	65	65	0	6	0			
State Standards (R)	**65**	**65**						
State Standards (H)	**70**	**70**						

(R) - Residence (H) - Hotel (A) - Apartment
Bold numbers are above state standards

* calculated by: Total cost of Noise Wall/(Total number of affected residences x average decibel reduction)

Affected residences only include those experiencing ≥ 5 dBA reduction

TABLE 6.8 continued
NOISE MITIGATION COST EFFECTIVENESS ANALYSIS

Neighborhood and Receptors	Daytime L10 Noise Build 2022 no wall	Daytime L10 Noise Build 2022 6 m wall	Reduction (in dBA) with 6 m noise wall	Number of residences	Number of affected residences	Length of wall m (ft)	Total cost of wall [$161/sq m($15/sq ft)]	Cost per decibel per residence*
J ñ West of 494, between TH 62 and TH 212/Flying Cloud Drive continued								
48 (R)	**69**	63	6	7	7	637 (2091)	$627,300	$4,267
48a (R)	**69**	65	4	4	0			
49 (R)	**69**	59	10	7	7			
49a (R)	**70**	63	7	5	5			
50 (R)	**68**	**68**	0	2	0			
L - South of 494 at 169								
55 (A)	**66**	60-65**	5***	5	5	537 (1760)	$528,000	$10,560
56 (R)	**72**	**67**	5	5	5			
56a (R)	**67**	63	4	7	0			
58 (R)	**68**	65	3	3	0	418 (1372)	$411,600	$51,450
58a (R)	**72**	64	8	1	1			
61 (R)	**71**	**67**	4	1	0			
N - TH 100								
102 (R)	**71**	58	13	4	4	308 (1011)	$303,300	$2,615
103 (R)	**76**	60	16	4	4			
O - North of 494 between Xerxes and Penn								
68 (R)	**74**	**72**	2	3	0	732 (2400)	$720,000	$2,257
69 (R)	**76**	**70**	6	6	6			
70 (R)	**74**	**69**	5	2	2			
71 (A)	**76**	62-**68****	13***	8	8			
72 (A)	**76**	62-65**	12***	8	8			
73 (A/C)	**73**	63-64**	10***	8	8			
Q - 35W at 494								
75 (A)	**70**	64-**66****	6***	6	6	152 (500)	$150,000	$4,286
S - North of 494, between Lyndale and Nicollet								
77 (A)	**71**	62-64**	7***	4	4	102 (335)	$100,500	$3,466
State Standards (R)	**65**	**65**						
State Standards (H)	**70**	**70**						

(R) - Residence (H) - Hotel (A) - Apartment (A/C) - Current apartment guided to commercial land use in City Comp. Plan

Bold numbers are above state standards

* calculated by: Total cost of Noise Wall/(Total number of affected residences x average decibel reduction)

Affected residences only include those experiencing ≥ 5 dBA reduction

** Range given is noise levels modeled at each apartment unit within the complex; takes into account edge effects

*** The average decibel reduction of all groundfloor units receiving ≥ 5 dBA reduction

TABLE 6.8 continued
NOISE MITIGATION COST EFFECTIVENESS ANALYSIS

Neighborhood and Receptors	Daytime L10 Noise Build 2022 no wall	Daytime L10 Noise Build 2022 6 m wall	Reduction (in dBA) with 6 m noise wall	Number of residences	Number of affected residences	Length of wall m (ft)	Total cost of wall [$161/sq m($15/sq ft)]	Cost per decibel per residence*
T - North of 494, between Nicollet and TH 77								
80 (A/C)	**72**	63-64**	9***	3	3	70 (230)	$69,000	$2,654
81 (A/C)	**73**	**67-70****	7***	7	7	684 (2247)	$674,100	$2,182
82 (A)	**79**	**67-69****	10***	8	8			
83 (A)	**76**	62-65**	7***	10	10			
85 (A)	**77**	63-64**	15***	8	8			
86 (A/C)	**75**	62-**66****	12***	4	4	122 (399)	$119,700	$2,602
State Standards (R)	**65**	**65**						
State Standards (H)	**70**	**70**						

(R) - Residence (H) - Hotel (A) - Apartment (A/C) - Current apartment guided to commercial land use in City Comp. Plan

Bold numbers are above state standards

* calculated by: Total cost of Noise Wall/(Total number of affected residences x average decibel reduction)

Affected residences only include those experiencing ≥ 5 dBA reduction

** Range given is noise levels modeled at each apartment unit within the complex; takes into account edge effects

*** The average decibel reduction of all groundfloor units receiving ≥ 5 dBA reduction

Neighborhood O ñ North of 494 between Xerxes and Penn (Receptors 68 ñ 73)

This neighborhood consists of single-family residences with three apartment buildings on the eastern portion (near Penn Avenue). The easternmost apartment building is designated in the *Richfield Comprehensive Plan* (1997) for future commercial land use. A 6.1-meter (20-foot) wall would provide up to 12 dBA in noise reduction. The projected cost per decibel per residence ($2,257) meets Mn/DOTís reasonableness criterion. If the land use at the easternmost portion of the neighborhood has converted to commercial at the time of project construction, a noise barrier would not be proposed for this area because it would be incompatible with the land use.

Neighborhood T ñ North of 494 between Nicollet and TH 77

Receptor 80

This receptor represents one apartment building north of I-494 and west of Portland Avenue. The cost effectiveness of a noise wall in this area is projected to be $2,654 per decibel per residence. The city of *Richfieldís Comprehensive Plan* (1997) has designated this area for commercial land use in the future. If, at the time of project construction, residential use is still in place, a public involvement process including neighborhood meetings would be carried out

before final decisions are made on whether to build noise barriers and if they are to be built, what wall design is appropriate. If the land use has converted to commercial at the time of project construction, a noise barrier would not be proposed for this area because it would be incompatible with the land use.

Receptors 81, 82, 83 and 85

These receptors represent eleven apartment complexes north of I-494 between Portland Avenue and 12th Avenue. The westernmost section of this area (represented by Receptor 81) is designated in the *Richfield Comprehensive Plan* (1997) for future commercial land use. A 6.1-meter (20-foot) wall in this area would provide 7 dBA in noise reduction. If, at the time of project construction, residential use is still in place, the City of Richfield will be requested to provide input before final decisions are made on whether to build noise barriers and if they are to be built, what wall design is appropriate. If the land use has converted to commercial at the time of project construction, a noise barrier would not be proposed for this area because it would be incompatible with the land use.

For the remainder of this area, a 6.1-meter (20-foot) wall would provide up to 15 dBA in noise reduction. The projected cost per decibel per residence ($2,182) meets Mn/DOT reasonableness criterion.

Receptor 86

This receptor represents one apartment building north of I-494 and east of 12th Avenue. The cost per decibel per residence is projected to be $2,602. The *City of Richfieldís Comprehensive Plan* (1997) has designated this area for commercial land use in the future. If, at the time of project construction, residential use is still in place, the City of Richfield will be requested to provide input before final decisions are made on whether to build noise barriers and if they are to be built, what wall design is appropriate. If the land use has converted to commercial at the time of project construction, a noise barrier would not be proposed for this area because it would be incompatible with the land use.

6.2.5 SUMMARY OF RESULTS

Modeled existing noise levels exceed L_{10} daytime noise standards at 102 of the 136 receptor sites. Daytime L_{10} standards are projected to be exceeded at 107 receptors under No-Build, and 114 receptors under the Preferred Alternative. Nighttime L_{10} standards are currently exceeded at 135 of the 136 receptor sites, and are projected to be exceeded at 135 receptors for both No-Build and Preferred Alternative conditions. No-Build noise levels are 0 to 3 decibels higher than existing noise levels. In general, noise levels under the Preferred Alternative are 0 to 4 decibels higher than existing noise levels and 0 to 3 decibels higher than the noise levels predicted for the No-Build Alternative, except in areas where the Preferred Alternative road alignment moves I-494 farther away from receptors; in this case noise levels are 0 to 4 decibels lower than existing or No-Build noise levels.

Analyses performed for the FEIS indicate that Mn/DOT cost-effectiveness criteria for noise mitigation would be met at five areas within the project area: east of TH 100 north of 77th Street, north of I-494 between Xerxes and Penn Avenue, an apartment complex north of I-494 and west of Portland Avenue, north of I-494 between Portland Avenue and 12th Avenue, and an apartment complex north of I-494 and east of 12th Avenue. All other noise wall segments analyzed for the FEIS did not meet Mn/DOTís cost-effectiveness criteria. For areas designated by the *City of Richfieldís Comprehensive Plan* (1997) as commercial land use in the future (the apartment complexes west of Portland Avenue and east of 12th Avenue), noise walls will be proposed if residential land use is still present at the time of project construction. If the area has converted to commercial land use, noise barriers will not be proposed. Prior to construction of each phase of the project, Mn/DOT will perform a more detailed analysis of cost-effectiveness, utilizing final design plans, including additional receptors and multiple iterations of noise wall length and height to find the most cost-effective barrier for each area. The results of this analysis will then be reviewed to determine if the most cost-effective barrier for each area meets the cost-effectiveness criteria. If it does, then the local government officials (with input from residents) will be given the opportunity to approve/deny construction of noise wall mitigation, and if they are to be built, what wall design is appropriate. If, following identification of all feasible and cost-effective mitigation locations, there are still areas along the corridor that would exceed state noise standards for the existing land use type, a ìNoise Reasonableness and Exemption Requestî will be prepared and would be reviewed and subject to final approval by the commissioners of Mn/DOT and the MPCA.

6.3 SURFACE WATER DRAINAGE

The Affected Environment for surface water drainage for the I-494 corridor reconstruction was described in Section 4.2.6 of the DEIS. Impacts and mitigation measures were addressed in Section 5.3.5 of the DEIS.

6.3.1 INFORMATION FROM THE DEIS THAT REMAINS UNCHANGED

The general descriptions of existing watershed boundaries found in the DEIS, except for one realignment that is discussed in Section 6.3.2.1 below, remain unchanged. Watershed districts and management organizations through which the I-494 corridor from I-394 to the Minnesota River passes are as follows:

- Minnehaha Creek Watershed District (MCWD)
- Nine Mile Creek Watershed District (NMCWD)
- Riley-Purgatory-Bluff Creek Watershed District (RPBCWD)
- Bloomington-Richfield Watershed Management Organization (BRWMO)
- Lower Minnesota River Watershed District (LMRWD)

Project terminus boundaries and, therefore, the northernmost (at I-394) and easternmost (at the bridge across the Minnesota River) drainage boundaries have not changed. General existing flow directions and outlet locations from the I-494 corridor to receiving waters have not changed since the DEIS was completed. See Figure 6.3 for watershed district and watershed management organization boundaries and Figure 6.4 for existing surface water flow directions and outlets.

6.3.2 CHANGES IN THE SETTING, REGULATORY FRAMEWORK OR TECHNICAL ANALYSIS THAT HAVE OCCURRED SINCE THE DEIS

6.3.2.1 Setting

Figure 6.3 shows the most recent watershed district and WMO boundaries. The only change in boundaries involved the realignment of the Bloomington/Richfield Watershed Management Organization boundaries to include Wood and Richfield Lakes which introduces additional flow into the I-494 corridor trunk storm sewer (see further information under Bloomington-Richfield Watershed Management Organization heading below). The two lakes were previously landlocked and included in the MCWD.

A number of changes have occurred since the DEIS in 1992 along the I-494 corridor that have impacted internal drainage boundaries. Of note, five interchanges have been reconstructed. These reconstruction projects have increased storm water runoff which in turn has been mitigated, in most cases, through the construction of ponds. These interchanges include, from northwest to southeast, Minnetonka Boulevard (two new ponds), TH 62 (one new pond), Valley View Road (one new pond), TH 5 (one new pond), TH 169 (two new ponds).

These changes in setting are discussed below in the context of their respective watershed.

Minnehaha Creek Watershed District (MCWD)

Currently, I-494 drainage comprises median and outside ditch flow that periodically empties via culverts into off-line areas either through grassed ditches or through constructed ponds. Rate and quality control ponds have been constructed in the Minnetonka Boulevard interchange and where Stone Road passes under I-494. The Stone Road pond (Stone Pond) currently accepts limited flow from within the I-494 right-of-way and from a housing development to the northeast. During the reconstruction of the Minnetonka Boulevard interchange two ponds were added that provide rate control for runoff from the interchange into Minnehaha Creek.

Nine Mile Creek Watershed District (NMCWD)

Changes to I-494 within the NMCWD include the reconstruction of the TH 62, Valley View Road ramps, TH 5, and TH 169 interchanges. Wet detention basins, providing both water quality and rate control, have been provided as part of these construction projects in accordance with applicable regulations. The ponding areas have been designed to accommodate the future expansion of I-494.

Riley-Purgatory-Bluff Creek Watershed District (RPBCWD)

Changes to I-494 within the RPBCWD include the reconstruction of the TH 312/ TH 5 interchange area. Detention basins, providing both water quality and rate control, have been provided as part of the reconstruction project, in accordance with regulatory requirements.

Bloomington-Richfield Watershed Management Organization (WMO)

A substantial change to the WMOís boundaries was put into effect in October 2000. These boundaries now include Richfield and Wood Lakes that were previously in the MCWD. In the mid-1990ís, a pumped connection from Wood Lake south to the I-494 storm sewer trunk was established to provide an outlet for the lake. In addition, a connection was made between Richfield and Wood Lakes to provide an outlet for Richfield and Grass Lakesí drainage areas.

Lower Minnesota River Watershed District

No changes have been made in the LMRWD portion of the I-494 corridor.

6.3.2.2 Regulatory Framework

Water quantity control regulations, including both runoff volume and discharge rates, have been in effect since before the DEIS. Storm water discharge from the highway corridor would typically use existing conveyance systems or would be required to construct new systems. Recent municipal storm water management plans include more stringent regulations for development in an effort to utilize existing systems and provide flood protection. Recent storm events have also heightened awareness of existing system deficiencies. Additional discharge requirements have created considerable added challenges to the design of control and treatment schemes, including accommodation of differences in quantity and quality requirements among the watershed regulators along the I-494 corridor. Table 6.9 provides a brief summary of watershed regulations for the major surface water management components.

In the process of defining the overall surface water management system for the Preferred Alternative as presented in the following sections, Mn/DOT and its representatives have had extensive contact with the cities, watershed districts, and the watershed management organization within the corridor, as well as the Metropolitan Airports Commission. These meetings and discussions have been very beneficial in terms of exchanging information and ideas to incorporate into appropriate surface water management and control features.

6.3.2.3 Technical Analysis

A number of municipal storm water management plans, updates and drainage studies have been completed since the DEIS and utilized in preparation of this FEIS[1]. They include plans from the cities of Bloomington, Richfield, Minnetonka and Eden Prairie.

[1] See City of Eden Prairie, *Local Drainage Plan Update*, (Eden Prairie, August 1999). See also studies completed by Richfield and Bloomington on the Best Buy campus development (WSB, 2000) and Upper and Lower Penn Lakes respectively (Barr, 2000), and MAC studies of the joint ponding area located on MAC and VA properties (BRW, 2000; Leisch, 1999).

Figure 6.3

Watershed District Boundaries

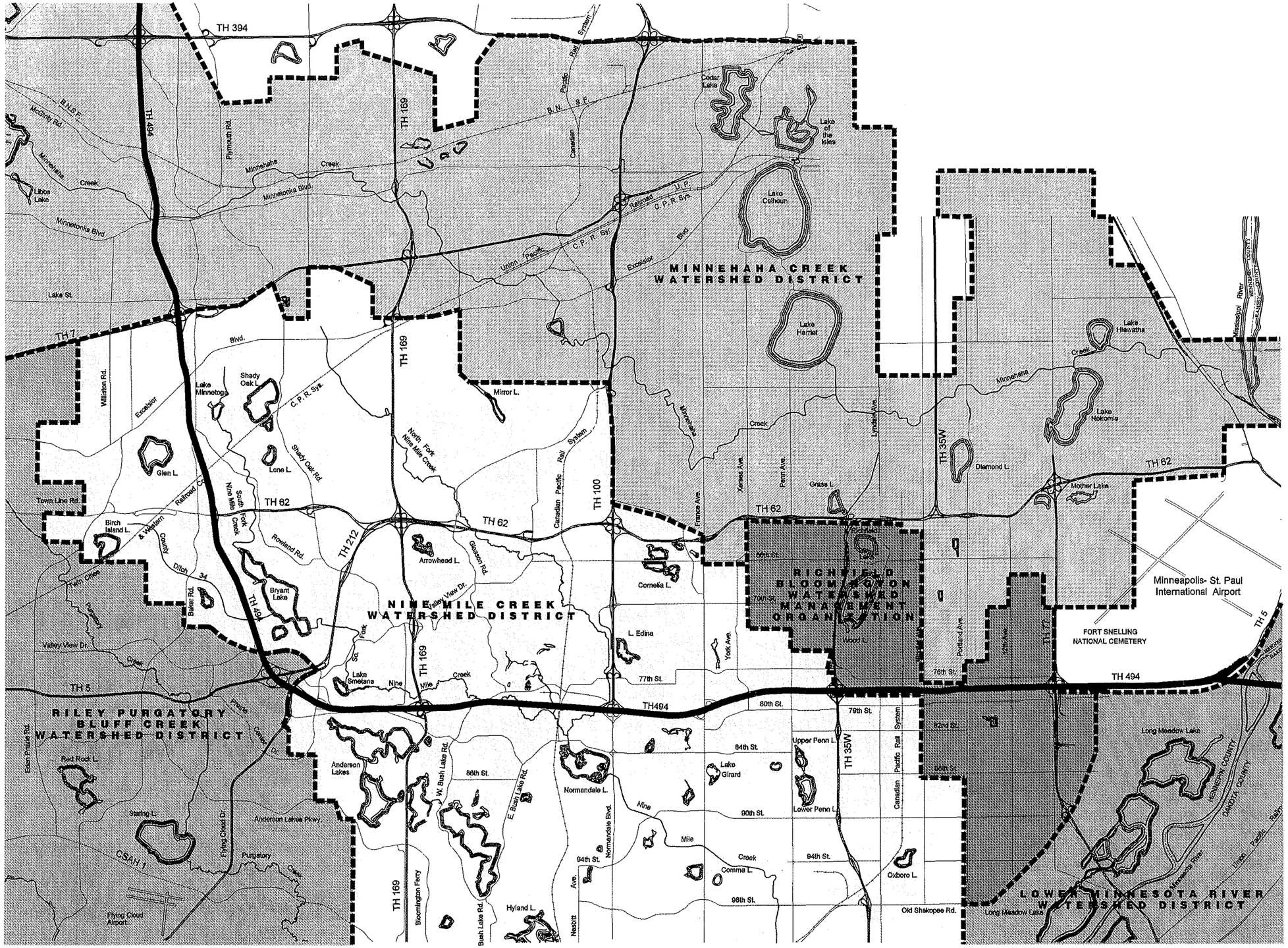

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Figure 6.4

Existing Storm Water Drainage Pattern

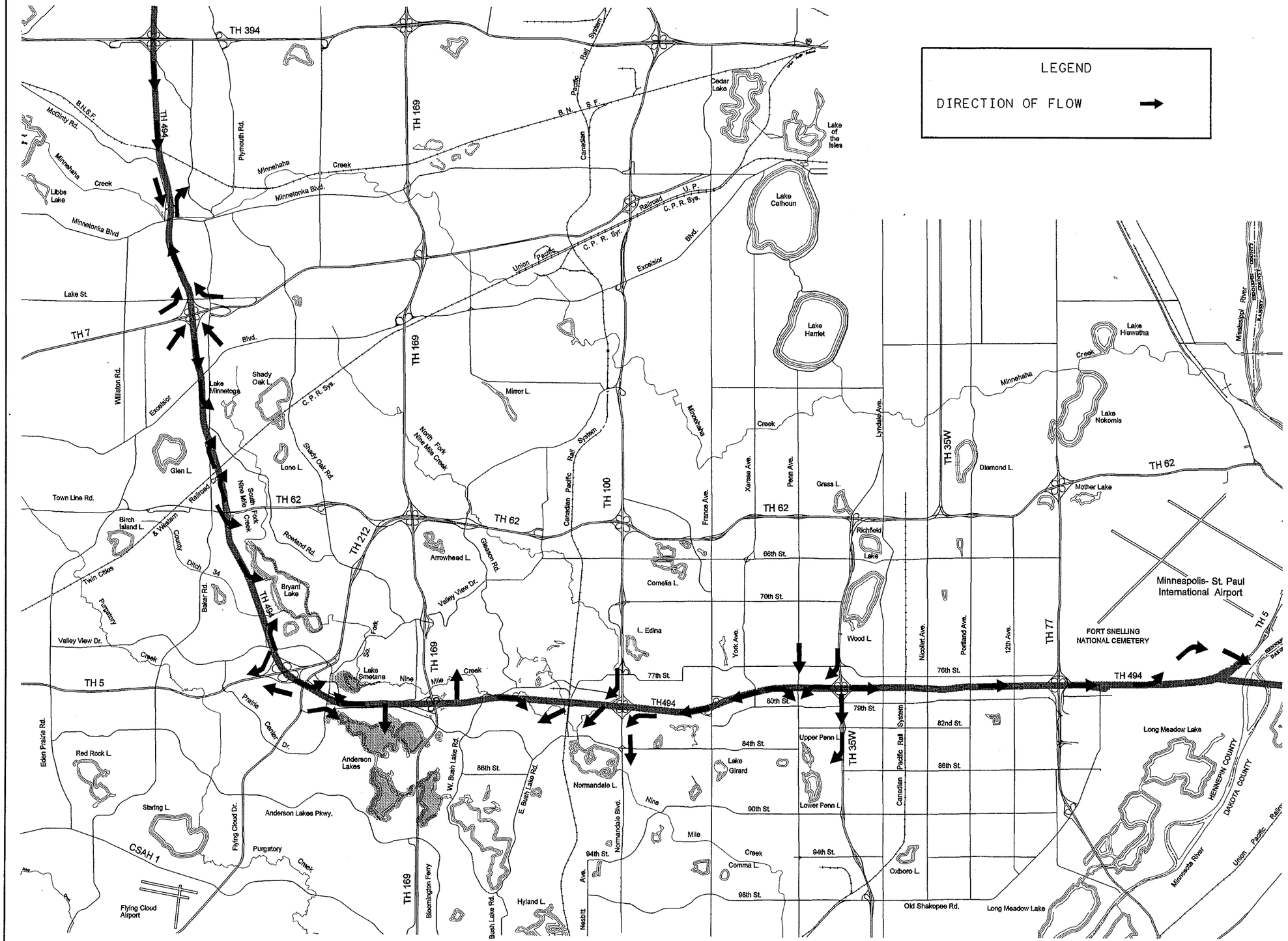

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TABLE 6.9
SUMMARY OF I-494 WATERSHED STORM WATER REQUIREMENTS[1]

Watershed District / City	Water Quality	Water Quantity	BMPs/Pond geometrics	Floodplain	Erosion Control	Other
Riley-Purgatory-Bluff Creek Watershed District	• ì Water quality basinsî must meet NURP Guidelines; • Skimming of floatable materials.	• Rate control not required except where downstream system can not convey higher rates; • Discharge velocity < 5 fps.	• Pond must provide active storage for 100-year storm; • Manhole sump may be used together with ponds. Sump to be 1,524-millimeter (60-inch) diameter, 0.9-meter (3 feet) deep.	• Development permitted within 100-year floodplain, but < 0.2-meter (<0.5-foot) stage increase required based on volume;	• Plan required to submit with permit application.	• Setback 31-meter (100-foot) minimum from creek centerline.
Nine Mile Creek Watershed District	• As per MPCA guidelines[2].	• No increase in peak rate for 100-year storm.	• As per MPCA guidelines [2]; • Manhole sump size for pond outlets = 1,524-millimeter (60-inch) diameter.	• Development permitted within 100-year floodplain, but < 0.2-meter (<0.5-foot) stage increase required based on volume.	• As per MPCA erosion control BMPs (NPDES permit).	
Minnehaha Creek Watershed District	• > 20 acres ñ BMPs for 50 percent TP[3] removal (average annual); • Skimmer required for 1-year event.	• No peak rate increase for 1-, 10- and 100-year storms; • If landlocked, runoff volume must not increase. Back-to-back 100-year events used to analyze; • >8.1 hectares (>20 acres) ñ no increase in rate for 10- and 100-year storms.	• In general, as per MPCA guidelines; • Natural existing low areas to be used for ponding; • >8.1 hectares (>20 acres) ñ Drainage area used to size dead pool. Pond needs 3.1-meter (10-foot) bench and 0.6-meter (2-foot) freeboard above 100-year high water level (HWL); • >3.2 hectares (>8 acres) ñ wet pond + BMPs; • <3.2 hectares (<8 acres) ñ other BMPs.	• Development permitted within 100-year floodplain, but with no net decrease in flood storage.	• See Rule B [4] (no specific quantitative requirements). • Detailed plan required.	

[1] References: Watershed District Water Management Plans, Watershed District, Government internet web sites, NPDES Phase I Rule, MPCA Permits, NURP Guidelines, Met Council Strategy for Non-point Source Pollution Reduction.
[2] MPCA, *Protecting Water Quality in Urban Areas*, (2000).
[3] Total Phosphorus
[4] The MCWD has issued a general permitting and licensing rule that is supplemented by individual rules, numbered A through N, which govern specific improvements and impacts within the watershed district.

TABLE 6.9 continued
SUMMARY OF I-494 WATERSHED STORM WATER REQUIREMENTS[1]

Watershed District / City	Water Quality	Water Quantity	BMPs/Pond geometrics	Floodplain	Erosion Control	Other
Lower Minnesota River Watershed District	• See Plan for detailed list of water quality requirements per sub-watershed per pollutant; • Dependent upon sub-watershedís water quality category (see Water Management Plan Section 5.13.3 for specific design criteria).	• Requires Runoff Management Plan; • No increase in peak flow rate for 5 or 10- and 100-year storm.	• Encourages storm water storage facilities and infiltration techniques; • Supports regional detention and treatment facilities; • Use NURP or MPCA design criteria. Type is BMP dependent upon sub-watershedís water quality category (see Water Management Plan section 5.13.3 for specific design criteria).		• Plan required as per MPCAís general permit to discharge storm water from construction sites (NPDES Phase 1 permit).	• See Water Management Plan for detailed list of water quality categories for sub-watersheds.
Bloomington-Richfield WMO	• No I-494 storm water detention/treatment required, since corridor storm water flows through, but is not discharged, within WMO boundaries.	• No I-494 storm water detention/treatment required, since corridor storm water flows through, but is not discharged, within WMO boundaries.	• No I-494 storm water detention/treatment required, since corridor storm water flows through, but is not discharged, within WMO boundaries.	• Not applicable for I-494 project.	• As per MPCA erosion control BMPs (NPDES permit).	• No I-494 storm water detention/treatment required, since corridor storm water flows through, but is not discharged, within WMO boundaries.

As described in the previous sections, much of the roadway includes rural ditches and medians. Two terms used to describe impacts of the Preferred Alternative require definition:

- ìWithin-crownî refers to drainage area that discharges toward the center of the roadway inside the crowns of each directional road alignment.

- ìOutside-crownî refers to the drainage area that discharges from the crowns toward the shoulder of the roadway.

6.3.3 IMPACTS ASSOCIATED WITH THE PREFERRED ALTERNATIVE

This section provides information pertaining to the locations and volumes of surface water that will have to be managed with the proposed project. Mitigation measures that are intended to be used with the Preferred Alternative to address surface water quantity control requirements are more specifically addressed in Section 6.3.4. Water quality impacts and mitigation are discussed in Section 6.4 of this FEIS.

At present, the I-494 corridor segment under study comprises both urban and rural roadway sections. An urban section from the high point between Xerxes and Penn Avenues east to the Minnesota River incorporates curb and storm sewer that conveys storm water to either Upper Penn Lake or the Minnesota River. The rural section from Xerxes Avenue west and then north to I-394 incorporates a combination of grass ditches and culverts.

It is proposed that the rural section from Xerxes Avenue west to a point between Prairie Center Drive and TH 5 be converted to an urban section. Thus, curb, gutter and storm sewer together with surface water management will be required. An expected increase in runoff flow rate at defined discharge points along the new urban section necessitates careful attention to both rate control and water quality measures.

The corridor segment from I-394 to a point south of the TH 5 interchange will remain a rural roadway design. Two methods of storm water conveyance for within-crown runoff are utilized: 1) storm sewer located in the center median with outlets into treatment areas, and 2) periodic drop inlets that outlet into ditches or water quality swales that, in turn, lead either to an outfall or a treatment area. Where outside-crown runoff is not conveyed into treatment areas, existing patterns have generally been maintained.

Drainage boundaries for the Preferred Alternative are similar to existing conditions. Figures 6.5 through 6.15 show proposed drainage areas and patterns along the highway. Table 6.10 summarizes drainage area characteristics, comparing existing conditions to the Preferred Alternative. A segment-by-segment discussion follows.

TABLE 6.10
DRAINAGE AREA ANALYSIS ñ EXISTING CONDITION AND PREFERRED ALTERNATIVE

Watershed District	Drainage Area Location and Description	EXISTING CONDITION							PREFERRED ALTERNATIVE								
		Total Area (2)		Highway R/W		Highway Imperv.		Percent Imperv.	Total Area (2)		Highway R/W		Highway Impervious		Percent Impervious	Preferred Alternative Proposed Receiving Water	Notes
		(hectares)	(acres)	(hectares)	(acres)	(hectares)	(acres)	(R/W Only)	(hectares)	(acres)	(hectares)	(acres)	(hectares)	(acres)	(R/W Only)		
Minnehaha Creek	**I-394 to TH 7**																
	MC100	29	72	20.7	51	5.3	13	25%	29.6	73.0	19	47.0	9.7	24.0	51%	Minnehaha Creek	Increase pond size
	MC101	10	25	6.1	15	1.6	4	27%	10.1	25.0	6.5	16.0	3.2	8.0	50%	Minnehaha Creek	Proposed pond
	MC102	66	163	46.2	114	10.9	27	24%	74.1	183.0	55.9	138.0	21	52.0	38%	Minnehaha Creek	Proposed pond
	Totals	105	260	73	180	17.8	44	24%	113.8	281	81.4	201	33.9	84	42%		
Nine Mile Creek	**TH 7 to Valley View Rd**																
	NM100	9.84	24.3	6.9	17.1	1.7	4.3	25%	8.22	20.3	5.35	13.2	1.3	3.1	23%	Wetland 571B	
	NM101	0.3	0.8	0.3	0.8	0	0	0%	0.3	0.8	0.3	0.8	0	0.0	0%	Wetland 592A	
				9.4		2.5			18.5		11.8		7.0				Through Catalina Pond
	NM102	16.6	41.1		23.2		6.2	27%		45.6		29.1		17.2	59%		
	NM103	1.3	3.2	1.3	3.2	0.2	0.6	19%	1.3	3.2	1.3	3.2	0.1	0.3	9%	Wetland 614	
	NM104	1.2	2.9	1.2	2.9	0.4	1	34%	0.9	2.1	0.9	2.1	0.4	1.0	48%	Wetland 573	
	NM105	0.49	1.2	0.5	1.2	0.2	0.4	33%	0.97	2.4	1.0	2.4	0.2	0.4	17%	Wetland 616	
	NM106	3.3	8.2	3.3	8.2	0.9	2.1	26%	2.4	6.0	2.3	5.8	1.5	3.7	64%	Wetland 576A	
	NM107								0.57	1.4	0.6	1.4	0.2	0.4	29%	Wetland 616	
	NM108	2.9	7.1	1.6	4	0.5	1.3	33%	4.13	10.2	2.9	7.1	2.3	5.6	79%	Wetland 623A-1	
	NM109	1.1	2.6	0.7	1.8	0.2	0.4	22%	1.0	2.5	0.7	1.8	0.1	0.3	17%	Wetland 628	
	NM110	3.6	8.9	3.5	8.6	1.3	3.1	36%	2.6	6.3	2.3	5.8	0.7	1.8	31%	Wetland 623A	
	NM111	0.1	0.2	0.1	0.2	0	0	0%	0.1	0.2	0.1	0.2	0	0.0	0%	Wetland 623A-6	
	NM112	1.4	3.4	1.4	3.4	0	0	0%	1.2	2.9	1.2	2.9	0.4	1.1	38%	Wetland 623B	
		11		8.7		2.5			9.15		8.67		3.9				Through Grasshopper Pond
	NM113		26.0		21.4		6.1	29%		22.6		21.4		9.6	45%		
	NM114	6.9	17.0	6.2	15.3	1.1	2.7	18%	5.22	12.9	4.54	11.2	1.1	2.8	25%		Delray Pond
	NM115	10.6	26.2	10.2	25.1	3.2	7.8	31%	14.0	34.5	13.5	33.3	9.19	22.7	68%		Delray Pond
		16.6		14.2		17.9			14.9		12.5		2.9				
	NM116		40.9		35.0		7.8	22%		36.8		30.9		7.2	23%	Cardinal Creek Conservation Area	
	Totals	87.2	214.0	69.5	171.4	17.9	43.8	26%	85.46	210.7	69.96	172.6	31.29	77.2	45%		
Riley-Purgatory Creek	**Valley View Rd to TH 212/Flying Cloud Drive**																
	RPB 100								2.1	5.1	2.1	5.1	2.1	5.1	100%	Purgatory Creek	
	RPB 101	66.7	164.7	45.56	112.5			0%	65.73	162.3	39	96	10	25	26%	Purgatory Creek	No proposed change

TABLE 6.10 continued
DRAINAGE AREA ANALYSIS ñ EXISTING CONDITION AND PREFERRED ALTERNATIVE

Watershed District	Drainage Area Location and Description	EXISTING CONDITION							PREFERRED ALTERNATIVE								
		Total Area (2)		Highway R/W		Highway Imperv.		Percent Imperv.	Total Area (2)		Highway R/W		Highway Impervious		Percent Impervious	Preferred Alternative Proposed Receiving Water	Notes
		(hectares)	(acres)	(hectares	(acres)	(hectares)	(acres)	(R/W Only)	(hectares	(acres)	(hectares	(acres)	(hectares	(acres)	(R/W Only)		
	TH 212/Flying Cloud Drive to TH 100																
Nine Mile Creek	NM 200	11.7	28.8	11.6	28.7	4.70	11.6	40%	10	24.7	10.0	24.7	5.06	12.5	51%	Lake Smetana	
	NM 203	0.97	2.4	0.97	2.4	0.3	0.7	29%	1.1	2.6	1.1	2.6	0.3	0.7	27%	Lake Smetana	
	NM 202	2.7	6.6	1.1	2.8	0.57	1.4	50%	2.4	5.9	0.85	2.1	0.3	0.7	33%	Anderson Lake	
	NM 201	3.1	7.7	2.9	7.1	1.4	3.4	48%	5.87	14.5	5.63	13.9	4.37	10.8	78%	Anderson Lake	
	NM 204	4.09	10.1	3.5	8.6	1.3	3.2	37%	2.1	5.2	1.5	3.7	0.4	1	27%	Anderson Lake	
	NM 205	21.2	52.4	17.5	43.3	8.38	20.7	48%	23.9	59.1	20.6	50.9	10	24.7	49%	Nine Mile Creek	
		4.5		2		0			4.5		2		0				No proposed
	NM 206		11		5		0	0%		11		5		0	0%	Nine Mile Creek	change
	NM 207	8.95	22.1	2.1	5.2	1	2.5	48%	9.07	22.4	2.2	5.5	1.0	2.5	45%	Nine Mile Creek	
	Wetland @ 494/169 NE Quadrant	2.9	7.1	2.9	7.1		2.6	37%								Nine Mile Creek	Area added to Molar Pond
									3.5		3.5						Area for E. Bush Lake Rd.
	NM 211									8.7		8.7					reconstruction
	NM 208	4.58	11.3	4.58	11.3	1.4	3.4	30%	5.35	13.2	5.35	13.2	3.2	7.8	59%	Nine Mile Creek	
		13.2		5.35		1.6											Area added to NM 210 in proposed
	Northwest Athletic Club		32.6		13.2		4	30%								Nine Mile Creek	condition
		9.44		7.33		2.5											Area added to NM 210 in proposed
	Low point		23.3		18.1		6.2	34%								Nine Mile Creek	condition
	NM 209	12.2							7.3	18.0							Offsite area
	NM 210		30.1	7.41	18.3	2.4	5.9	32%	21.7	53.6	21.7	53.6	15	38	71%	Nine Mile Creek	
	NM 212								2.2	5.5							Offsite area
	NM 213								4.66	11.5							Offsite area
	NM 214								4.13	10.2							Offsite area
	NM 215								1.5	3.6							Offsite area
	Totals	99.53	245.5	69.24	171.1	26.65	65.6	38%	109.28	269.7	74.43	183.9	39.63	98.7	54%		
	TH 100 - 70th to 494																
	NM 216	18.1	44.6		44	9.6	23.7	54%	22.8	56.3	22.4	55.2	11.8	29.1	53%		Picture Pond
									1.1		1.1		0.3				Edina Pond (by
	NM 217									2.8		2.8		0.8	29%		others)
	NM 218	1..1	2.8		2.8			0%	1.1	2.8	1.1	2.8			0%		Lake Edina
	TH 100 to Xerxes Ave																
	NM300	5.75	142		99	15	37	37%	62.2	161	50.2	124	26	63	51%	Nine Mile Creek	
Nine Mile Creek	**Xerxes Ave to I-35W**																
	NM 400	7.57	18.7		17.6	3.1	7.7	44%	7.57	18.7	71.3	17.6	6.24	15.4	88%	Upper Penn Lake	
	NM 401	45.4	112.0		72.0	8.9	22.0	31%	47.4	117.0	37	92.0	22	54.0	59%	Upper Penn Lake	
	Totals	52.97	130.7		89.6	12	29.7	33%	54.97	135.7	44.13	109.6	28.24	69.4	63%		

TABLE 6.10 continued
DRAINAGE AREA ANALYSIS ñ EXISTING CONDITION AND PREFERRED ALTERNATIVE

Watershed District	Drainage Area Location and Description	EXISTING CONDITION							PREFERRED ALTERNATIVE								
		Total Area (2)		Highway R/W		Highway Imperv.		Percent Imperv.	Total Area (2)		Highway R/W		Highway Impervious		Percent Impervious	Preferred Alternative Proposed Receiving Water	Notes
		(hectares)	(acres)	(hectares)	(acres)	(hectares)	(acres)	(R/W Only)	(hectares)	(acres)	(hectares)	(acres)	(hectares)	(acres)	(R/W Only)		
Bloomington - Richfield WMO/Lower Minnesota WD	**I-35W to Minnesota River**																
	BR 100	27.3	67.3	15.5	38.2	5.75	14.2	37%	27.3	67.3	15.9	39.2	9.8	24.3	62%	Minnesota River	All Drainage Areas ñ first 200 cfs treated in Almaz Pond
	BR 101	25.0	61.7	12.7	31.3	7.17	17.7	57%	25	61.7	14.3	35.3	8.18	20.2	57%	Minnesota River	
	BR 102	14	34.5	8.14	20.1	5.02	12.4	62%	14	34.5	8.14	20.1	5.35	13.2	66%	Minnesota River	
	BR 103	16.7	41.2	7.0	17.2	5.31	13.1	76%	16.7	41.2	7.53	18.6	5.71	14.1	76%	Minnesota River	
	BR 104	14	34	6.56	16.2	5.18	12.8	79%	14	34	7.13	17.6	5.35	13.2	75%	Minnesota River	
	LMR 100	34.5	85.1	31.1	76.7	17.9	44.3	58%	34.5	85.1	31.1	76.7	21.5	53.1	69%	Minnesota River	
	LMR 101	43.62	107.7	26.9	66.4	18.1	44.7	67%	59.82	147.7	26.9	66.4	17.5	43.1	65%	Minnesota River	VA 40 acres added
	Totals	175.12	431.5	107.9	266.1	64.434	159.2	60%	181.32	471.5	111	273.9	73.39	181.2	66%		

[1] Numbers as per Minnetonka Water Resources Management Plan watershed ID numbers.

LEGEND

MAJOR DRAINAGE BOUNDARY

MINOR DRAINAGE BOUNDARY

PROPOSED STORM SEWER

DIRECTION OF FLOW

EXISTING POND

PROPOSED POND

Minnehaha Creek Watershed District

I-394

Oakland Road

MC 100

Stone Road

MATCHLINE A

Carlson Parkway

STONE POND

Proposed Storm Drainage Plan

Layout Sheet 1

0 400 800 feet

0 150 300 m

NORTH

Key

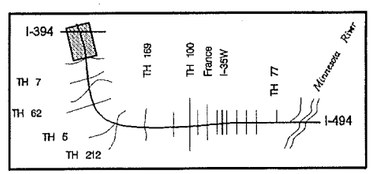

Figure 6.5

Final Environmental Impact Statement

I-494 Reconstruction

I-394 to the Minnesota River

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LEGEND

MAJOR DRAINAGE BOUNDARY

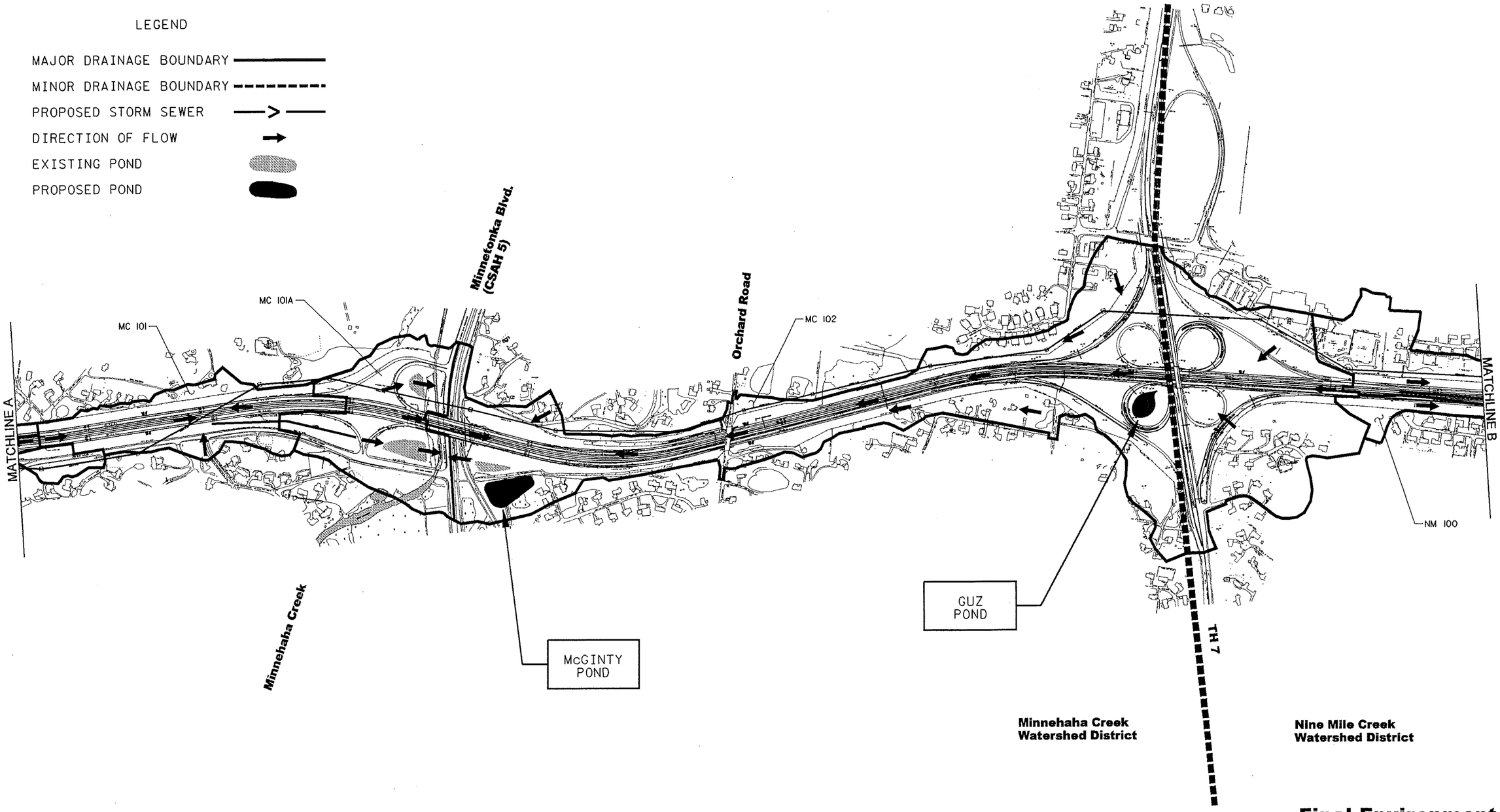
MINOR DRAINAGE BOUNDARY

PROPOSED STORM SEWER

DIRECTION OF FLOW

EXISTING POND

PROPOSED POND



Proposed Storm Drainage Plan

Layout Sheet 2

0 400 800
scale feet
0 150 300 m

NORTH

Key

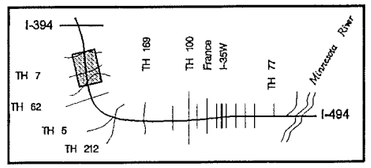


Figure 6.6

Final Environmental Impact Statement

I-494 Reconstruction

I-394 to the Minnesota River

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LEGEND

MAJOR DRAINAGE BOUNDARY

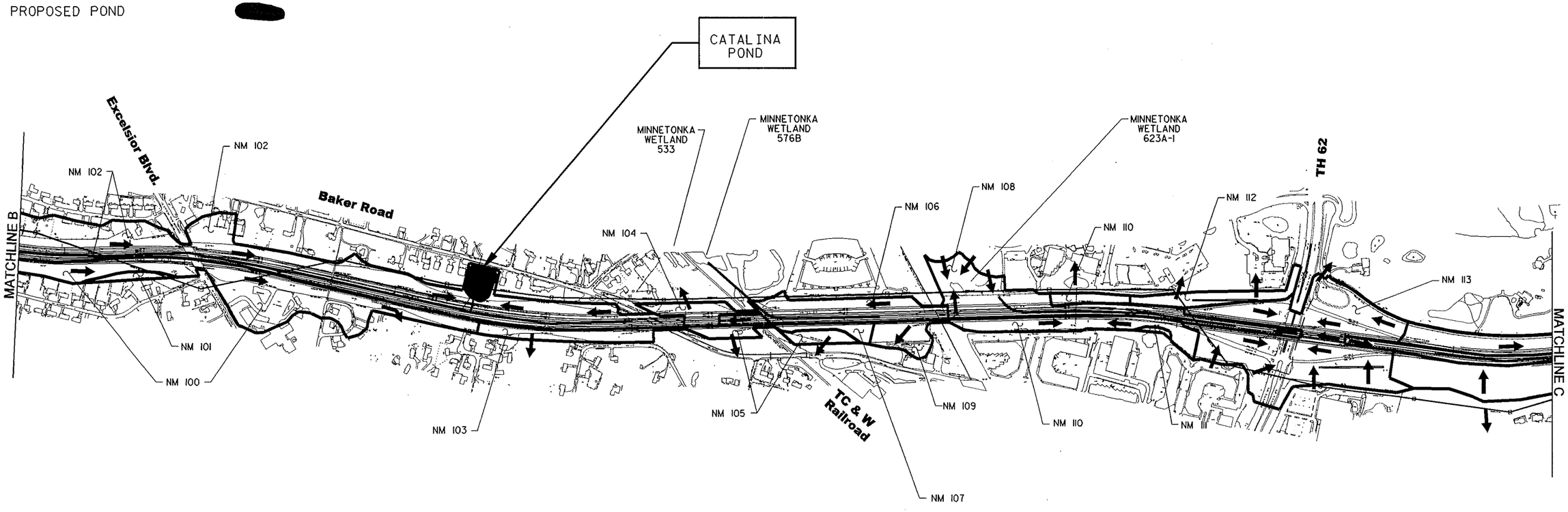
MINOR DRAINAGE BOUNDARY

PROPOSED STORM SEWER

DIRECTION OF FLOW

EXISTING POND

PROPOSED POND



Proposed Storm Drainage Plan

Layout Sheet 3

0 400 800
scale feet
0 150 300 m

NORTH

Key

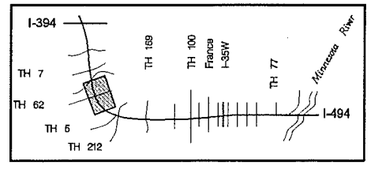


Figure 6.7

Final Environmental Impact Statement

I-494 Reconstruction

I-394 to the Minnesota River

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LEGEND

MAJOR DRAINAGE BOUNDARY

MINOR DRAINAGE BOUNDARY

PROPOSED STORM SEWER

DIRECTION OF FLOW

EXISTING POND

PROPOSED POND

Bryant Lake

FRANCIS POND

NM 114

NM 115

NM 115

NM 116

NM 116

MATCHLINE C

CARDINAL CREEK PRESERVE

DELRAY POND

Valley View Road

TH 494

TH 212

NM 200

Nine Mile Creek Watershed District

MATCHLINE D

TH 212

RPB 100

RPB 101

LEAPFROG POND

TH 5/212

Praire Center Drive

Nine Mile Creek Watershed District

Riley Purgatory Creek Watershed District

Proposed Storm Drainage Plan

Layout Sheet 4

0 400 800
scale feet
0 150 300 m

NORTH

Key

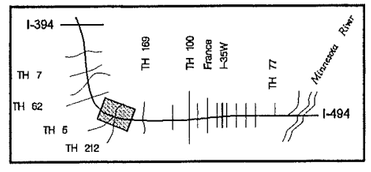

Figure 6.8

Final Environmental Impact Statement

I-494 Reconstruction

I-394 to the Minnesota River

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LEGEND

MAJOR DRAINAGE BOUNDARY

MINOR DRAINAGE BOUNDARY

PROPOSED STORM SEWER

DIRECTION OF FLOW

EXISTING POND

PROPOSED POND

Riley Purgatory Creek Watershed District

SCHOONER POND

Lake Smetana

MOLAR POND

TH 169

MATCHLINE D

MATCHLINE E

NM 200

NM 201

NM 202

NM 203

NM 204

NM 205

NM 206

NM 207

NM 208

Prairie Center Drive

CAPITOL POND OPTIONS

TADPOLE POND

W. Bush Lake Road

Anderson Lakes

Nine Mile Creek Watershed District

Proposed Storm Drainage Plan

Layout Sheet 5

0 400 800 scale feet

0 150 300 m

NORTH

Key

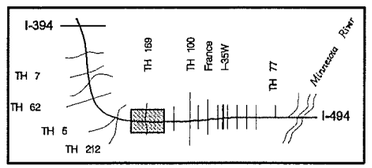

Figure 6.9

Final Environmental Impact Statement

I-494 Reconstruction

I-394 to the Minnesota River

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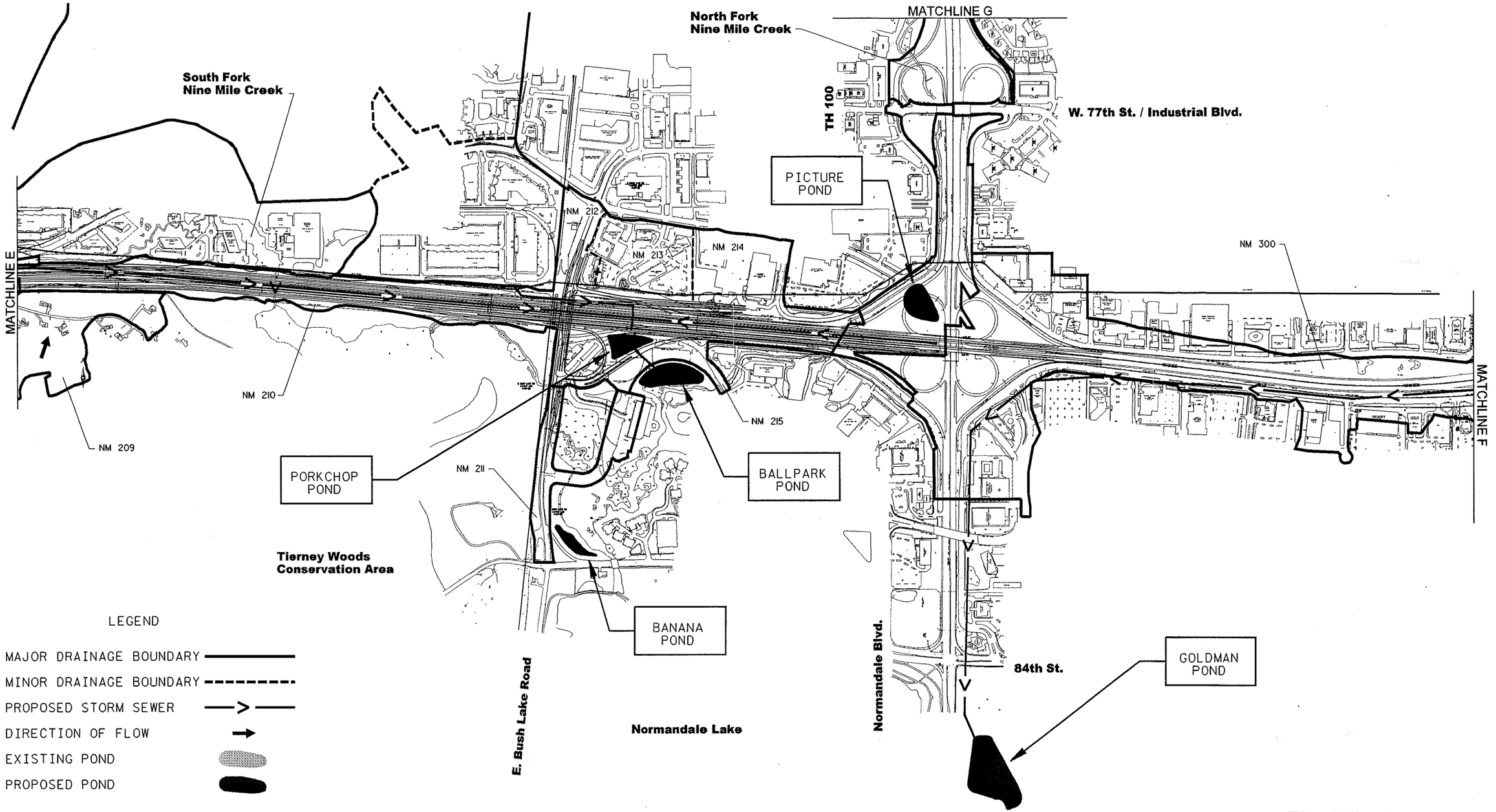

Proposed Storm Drainage Plan
Layout Sheet 6

0 400 800
scale feet
0 150 300 m

NORTH

Key

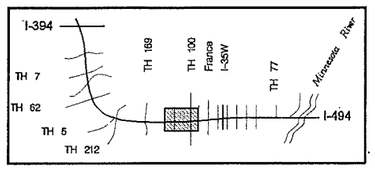

Figure 6.10

Final Environmental Impact Statement

I-494 Reconstruction

I-394 to the Minnesota River

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LEGEND

MAJOR DRAINAGE BOUNDARY

MINOR DRAINAGE BOUNDARY

PROPOSED STORM SEWER

DIRECTION OF FLOW

EXISTING POND

PROPOSED POND

Nine Mile Creek Watershed District

Richfield Bloomington Watershed Management Organization

I-35W

NM 401

76th St. W.

NE POND

Penn Ave.

Xerxes Ave.

France Ave.

Lyndale Ave.

MATCHLINE H

MATCHLINE F

NM 400

SE POND

BR 100

W. 82nd St.

IRVING POND

MATCHLINE J

Proposed Storm Drainage Plan

Layout Sheet 7

0 400 800
scale feet
0 150 300 m

NORTH

Key

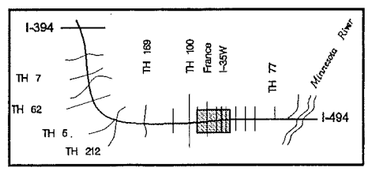

Figure 6.11

Final Environmental Impact Statement

I-494 Reconstruction

I-394 to the Minnesota River

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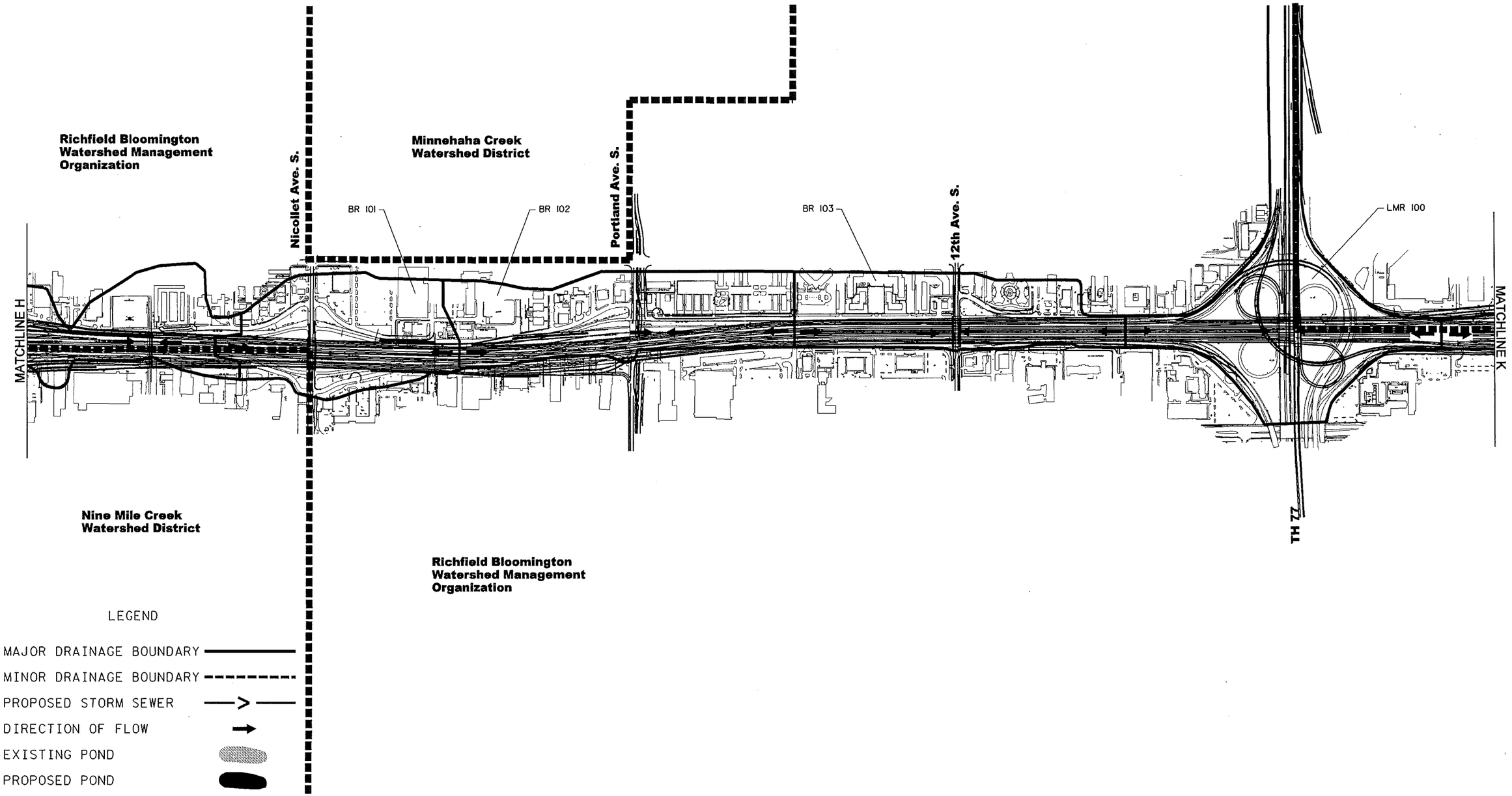

Proposed Storm Drainage Plan
Layout Sheet 8

0 400 800
scale feet
0 150 300 m

NORTH

Key

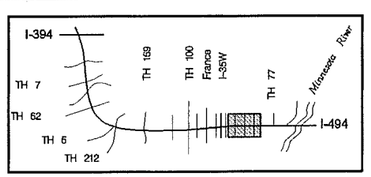

Figure 6.12

Final Environmental Impact Statement

I-494 Reconstruction

I-394 to the Minnesota River

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LEGEND

MAJOR DRAINAGE BOUNDARY

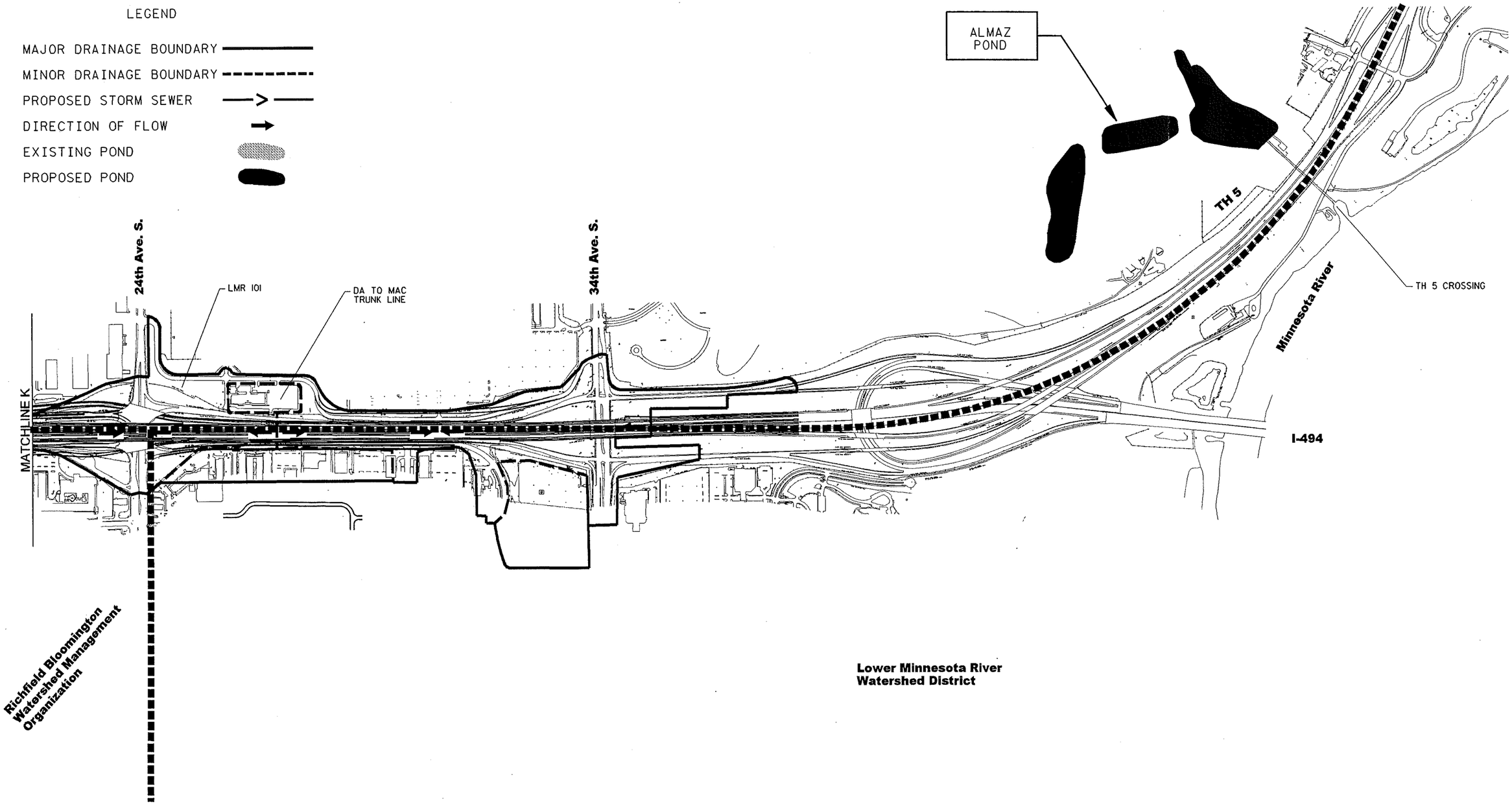
MINOR DRAINAGE BOUNDARY

PROPOSED STORM SEWER

DIRECTION OF FLOW

EXISTING POND

PROPOSED POND



Proposed Storm Drainage Plan

Layout Sheet 9

0 400 800
scale feet
0 150 300 m

NORTH

Key

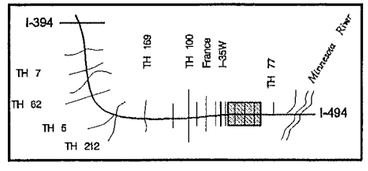


Figure 6.13

Final Environmental Impact Statement

I-494 Reconstruction

I-394 to the Minnesota River

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LEGEND

MAJOR DRAINAGE BOUNDARY

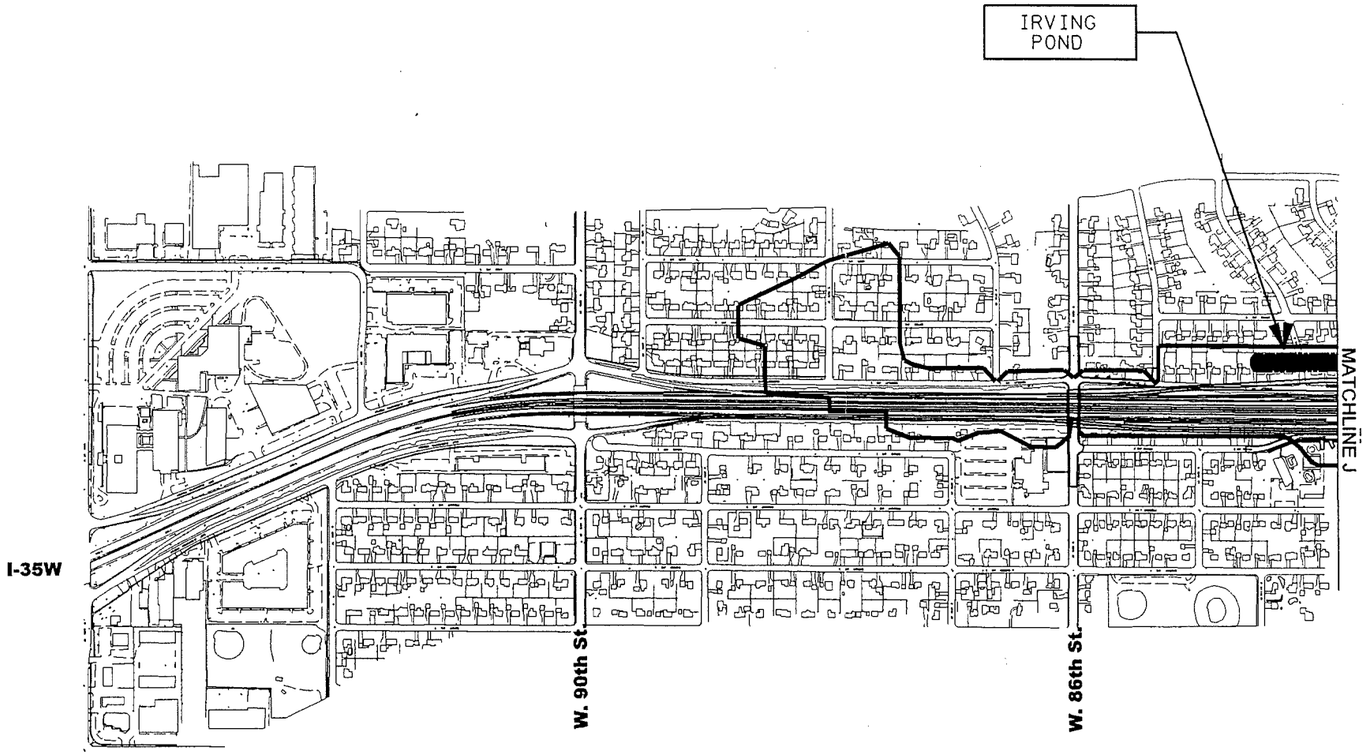
MINOR DRAINAGE BOUNDARY

PROPOSED STORM SEWER

DIRECTION OF FLOW

EXISTING POND

PROPOSED POND



Proposed Storm Drainage Plan

Layout Sheet 11

scale 0 400 800 feet

0 150 300 m

NORTH

Key

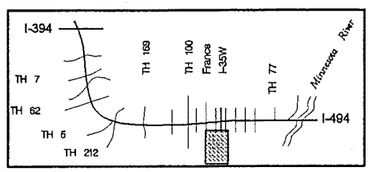


Figure 6.15

Final Environmental Impact Statement

I-494 Reconstruction

I-394 to the Minnesota River

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6.3.3.1 Minnehaha Creek Watershed District (I-394 to TH 7)

Preferred Alternative improvements consist of adding two lanes (one in each direction) on the inside of the highway converting the existing pervious grassed median to impervious surface, resulting in an increase in runoff volume and peak discharge. Widening the highway by as much as 3.4 meters (11.0 feet) on each side is also envisioned in this segment, although the actual impervious areas outside of the crowns will increase very little. A net increase from existing to the Preferred Alternative of approximately eighteen percent impervious area within the highway right-of-way is expected.

- **I-394 to TH 7 (Figures 6.5 and 6.6):** Based upon an assessment of the physical nature of the area, the overall approach of leaving outside-crown drainage generally unchanged has been taken. Inside-crown storm water runoff from MC100 will be directed to a storm sewer trunk line that will discharge into an expanded Stone Pond (an existing pond in the northwest quadrant of Minnetonka Boulevard), and MC102 will flow into McGinty and Guz Ponds (proposed new ponds).

6.3.3.2 Nine Mile Creek Watershed District (from TH 7 to I-35W)

Preferred Alternative improvements within the Nine Mile Creek Watershed District include both rural and urban sections. Drainage area numbers are identified in Figures 6.6 through 6.11. A net increase of approximately nineteen percent impervious area within the highway right-of-way is anticipated as a result of Preferred Alternative construction.

- **Excelsior Boulevard to Valley View Road (Figures 6.7 and 6.8):** Improvements to the highway include the addition of two inside lanes and improving the TH 62 interchange. From the TC&W Railroad south to the TH 62 interchange, outside-crown drainage will continue to flow overland to a variety of wetland complexes, or be collected in ditches prior to discharging to the wetlands. For inside-crown drainage in this stretch, the proposed trunk line will discharge into two wetlands on the east side, as it does now. Though the TH 62 interchange will be modified to some extent, Grasshopper Pond will still provide adequate rate control into the Minnetonka storm water system. Drainage for outside-crown runoff (NM104-113) would continue to flow overland to existing ditches and wetland complexes. Catalina Pond is proposed to accept storm water runoff for NM100 ñ NM103 while Delray Pond is proposed to accept runoff for NM114 ñ NM116.

- **Trunk Highway 5/312 to Prairie Center Drive (Figure 6.8 and 6.9):** Drainage from TH 5/312 to the Prairie Center Drive interchange (NM200), will continue to be directed either to Schooner Pond, located at the northwest end of Smetana Lake or through grassed swales to Anderson Lake, located along the south edge of I-494. City of Eden Prairie staff have indicated that Schooner Pond has limited capacity to accept additional storm runoff. Therefore, additional runoff volumes to the pond have been limited by directing additional runoff volume to other locations (Leapfrog Pond and Capitol Pond, for example).

- **Prairie Center Drive to TH 100 (Figures 6.9 and 6.10):** The drainage area characteristics along this segment of the corridor (NM201-NM215 drainage areas) will see notable changes.

Much of the highway will be urban section, with some rural sections intertwined. The roadway will incorporate storm sewer with specific discharge points, water quality swales where appropriate, and ditches. Several drainage areas will continue to discharge through grassed swales into existing water bodies as they do today. However, most storm water runoff will be collected and conveyed to treatment areas. In two locations, Nine Mile Creek crosses under I-494 ñ the South Fork crossing just east of West Bush Lake Road and the North Fork crossing just west of TH 100.

The greatest changes to the Nine Mile Creek drainage system configuration are in the vicinity of East Bush Lake Road. In 1987, a six-hour storm produced 25 centimeters (10 inches) of rainfall in the Minneapolis-St. Paul Metropolitan Area. This storm resulted in serious flooding at several low points in the project corridor from East Bush Lake Road to the Minnesota River. Of particular concern was that Nine Mile Creek flooded onto I-494 at East Bush Lake Road and did not recede for several days, closing the freeway. As a result, Mn/DOT studied the Nine Mile Creek crossings, and has recommended several changes to drainage patterns in this area. These proposed changes will be discussed in Section 6.3.4.

Another important change results from the proposed reconfiguration of the TH 100/ I-494 interchange area (including the East Bush Lake Road/I-494 and TH 100/77th Street interchanges). The interchange design concept includes the proposed construction of a westbound entrance ramp from East Bush Lake Road to I-494. With the Preferred Alternative, an important pond located between the I-494 right-of-way and Normandale Technical Center that provides rate control for storm water from the immediate vicinity and from 140 hectares (346 acres) in Edina will likely be impacted by the East Bush Lake Road interchange construction. The functions of this pond would be replaced by the proposed Ballpark Pond and Porkchop Pond. Further east, the North Fork of Nine Mile Creek abuts TH 100 at 77th Street (north of I-494) and travels south along the west side of TH 100 and the TH 100 to I-494 westbound ramp until it crosses underneath I-494. Several alternatives have been assessed for the reconstruction of the TH 100/I-494 interchange. The alternative selected includes an extension of the TH 100 southbound to I-494 westbound ramp over the southbound TH 100 ramp from 77th Street. Both ramps would be constructed on bridge structures over Nine Mile Creek between 77th Street and I-494. This area is also described in Section 6.12 (Stream and Water Body Modification) of this FEIS.

- **Trunk Highway 100 to Xerxes Avenue (Figures 6.10 and 6.11):** Between TH 100 and the high point that exists between Xerxes and Penn Avenues (NM300 drainage area), the existing semi-urban section will be converted to a fully urban section necessitating the construction of additional storm sewer and treatment facilities. Storm water will continue to be directed west to Normandale Boulevard, then south to Nine Mile Creek south of 84th Street through the proposed Goldman Pond.

- **Xerxes Avenue to I-35W (Figure 6.11):** Currently, a lift station located at Penn Avenue dewaters the low point and directs storm water (from NM400 drainage area) into a trunk storm sewer that discharges into Upper Penn Lake. This lift station has failed a number of times in the past, flooding the interchange. The existing lift station will be replaced in conjunction with the planned reconstruction of the Penn Avenue interchange

(2001 construction). This new lift station should improve the reliability of the system. In addition, the possibility of providing a gravity feed line for this area is being considered as part of the I-494 east end high-flow analysis currently underway (see Section 6.3.4.4).

- **Interstate 35W Interchange (Figures 6.11 and 6.15):** Improvements along I-35W from 66th Street to 90th Street are also included in this FEIS. The area from 66th Street to 76th Street has already been reconstructed, with the highway runoff directed towards a ponding system within the Wood Lake Nature Area. The northern portion of the interchange (NM401) currently drains to the storm sewer system that conveys runoff down Penn Avenue to Upper Penn Lake. The southern portion of the interchange drains south to a storm sewer system that conveys runoff to Upper Penn Lake along 82nd Street/84th Street. According to the *I-35W FEIS*, ìthe proposed drainage plan includes routing the I-35W/I-494 interchange runoff south and constructing a new outlet to Upper Penn Lake along 84th Street.î[2] Since notable increases in impervious areas are proposed within the I-35W/I-494 interchange, corresponding increased runoff rates and volumes are anticipated. The planned construction of Irving Pond (south of I-494 on I-35W) and NE and SE ponds (at the interchange loops) will provide detention treatment prior to surface water discharge to Upper Penn Lake.

6.3.3.3 Riley-Purgatory-Bluff Creek Watershed District

- **Trunk Highway 5 Interchange (Figure 6.8):** Reconstruction of the I-494/TH 5 interchange was recently completed. With the proposed addition of two internal lanes along I-494 for the Preferred Alternative construction, an increase in quantity and runoff rate is expected for drainage areas RPB100 and RPB101. This increase was anticipated in the design of storm water treatment west of the interchange and has been addressed in the design and permitting of the interchange. However, additional detention capacity will be needed to provide adequate rate control for the proposed I-494 reconstruction roadway areas. Leapfrog Pond, located in the southeast quadrant of Prairie Center Drive and TH 5, accepts and treats storm water runoff from the TH 5 interchange improvements. However, due to complex soil conditions, neither pond size nor depth can be increased to accept additional runoff volume associated with Preferred Alternative improvements. Thus, additional flow attenuation would be provided in drainage swales upstream of the pond. Construction of a water quality swale is proposed within the southeast TH 5/I-494 loop to attenuate flows and treat drainage from RPB101.

6.3.3.4 Lower Minnesota River Watershed District/Bloomington ñ Richfield WMO (From I-35W to the Minnesota River)

Two additional lanes in each direction and a 7.9-meter (26-foot) median are proposed to be added to I-494 from I-35W to 34th Avenue, with the corresponding width adjustment of between 31 and 37 meters (100 and 120 feet). The entire section of roadway is proposed as urban

[2] Mn/DOT, *I-35W Final Environmental Impact Statement*, (January, 1995).

section design consistent with current conditions. No roadway construction is proposed east of the 34th Avenue interchange; however, storm sewer improvements will likely extend to the Minnesota River.

- **I-35W to the Minnesota River (Figures 6.11 to 6.13):** This drainage area begins just east of the I-35W/I-494 interchange and encompasses areas along the corridor from I-35W east to 34th Avenue (areas BR100-BR103, LMR100 and LMR101). The I-494 storm sewer also conveys 16.2 ha (40 acres) of drainage area from the National Cemetery. A trunk storm sewer, beginning at Humboldt Avenue, receives and discharges storm water from this section of the I-494 corridor into a flume located on the Fort Snelling National Cemetery property. The flume conveys the water for a distance of 275 meters (900 feet) along the bottom of a ravine to a 1.8-meter (72-inch) conduit that passes underneath TH 5 to the Minnesota River. Analysis (modeling) and field observation have confirmed that this storm sewer currently carries up to a 5.1-centimeter (2-inch) rainfall event before it begins to flood onto the highway mainline. This condition would worsen with the increased impervious area resulting from the proposed I-494 reconstruction, making improvements in drainage to the entire trunk line critical. Section 6.3.4.4 describes options being considered to address this issue.

  A regulated discharge from Wood Lake into the storm sewer and a high flow discharge near 12th Avenue are two additional existing offsite connections made to the I-494 watershed in this area. Runoff from the Wood Lake connection is treated prior to being pumped into the system during off-peak times. During the I-494 reconstruction, this is proposed to become a gravity connection.

6.3.4 MITIGATION OF IMPACTS

The mitigation of water quantity impacts involves limiting discharge rates as closely as possible to existing rates for a variety of storm events. Since watershed districts and municipalities may have different requirements for a given drainage location, the most restrictive has been assumed for the assessment in this FEIS. For water quantity this implies an overall goal of maintaining the proposed peak discharge from the corridor to the existing rates for the 1-, 10- and 100-year storms. Rate control will allow existing infrastructure to be utilized without reconstructing offsite conveyance systems. Methods of accomplishing rate control involve both wet and dry detention basins and storage within water quality swales.

As with any project that involves conversion of pervious areas to impervious surface, an increase in runoff volume is also likely to occur. Maintaining rural roadway sections and subsequent overland flow provides for some opportunities for infiltration, as does rural drainage within some of the interchanges. In addition, there are occasions where a particular ponding area cannot be expanded and is particularly sensitive to additional runoff volume. In one such case, Schooner Pond in Eden Prairie has been noted by the City to be particularly susceptible to problems given increased volumes of runoff. In this case, a portion of the drainage area has been routed south to Capitol Pond.

6.3.4.1 Minnehaha Creek Watershed District (from I-394 to TH 7)

Two major drainage areas exist along I-494 in the Minnehaha Creek Watershed District that discharge from Stone Pond near Stone Road and McGinty Pond within the Minnetonka Boulevard interchange. In both cases, the ultimate receiving water is Minnehaha Creek. Rate control will be addressed according to the requirements found in the MCWD Rule N[3].

- **Interstate 394 to Stone Road (Stone Pond):** In order to provide adequate drainage for the two additional lanes throughout this segment, inside-crown storm water runoff is directed to a wet detention basin (Stone Pond) either through a centrally located trunk storm sewer or by conveying it through one of the outside ditch systems. Stone Pond, located in the northwest quadrant of I-494 and Stone Road, will need to be expanded to include runoff from the center of the road. Outside-crowns runoff would continue to discharge into ditches that would, in turn, discharge into existing open channels. Portions of the outside ditches will be directed towards the various ponding areas.

- **Stone Road to TH 7 (northwest pond, McGinty and Guz Ponds):** As with the Stone Pond drainage area, a centrally located trunk line is proposed in this segment that would direct storm water runoff from inside the highway crowns to a wet detention basin. Storm water runoff from north of Minnetonka Boulevard will be directed to an existing pond in the northwest quadrant of the interchange. A small berm that exists today will be removed to allow more efficient flow from the north into this pond. McGinty Pond is proposed as a regional rate control and treatment facility that would accept storm water from both the I-494 corridor south of Minnetonka Boulevard and the Minnetonka Storm Water Management System. Currently, runoff from as far south as the TH 7 interchange is directed north into a wetland located in the southwest quadrant of the Minnetonka Boulevard interchange. The proposed condition will redirect this runoff into McGinty Pond and then into Minnehaha Creek.

  It is proposed that Guz Pond be constructed in the northwest loop of the TH 7 interchange, to be utilized to treat most storm water runoff from the interchange. The pond would outlet into a ditch that would then convey the water into McGinty Pond together with all runoff from outside the southbound (west side) highway crown. Along the north-bound (east side) portion of the highway, ditch flow would convey storm water north from the TH 7 interchange to a point just prior to Minnetonka Boulevard where it would enter a culvert, as it does today, to be discharged into McGinty Pond.

6.3.4.2 Nine Mile Creek Watershed District (from TH 7 to Nicollet Avenue)

- **Trunk Highway 7 to TC&W Railroad (Catalina Pond):** Along the northbound (east of the highway) side of I-494 between TH 7 and Baker Road, ditch flow and a center trunk storm sewer are proposed to discharge drainage areas NM100-NM103 into a new pond (Catalina Pond) located 214 meters (700 feet) north of the Baker Road crossing on the east side of I-494 (see Figure 6.7). From Baker Road to the Soo Line Railroad, inside-crown

[3] Minnehaha Creek Watershed District, ìRule Nî, in *Watershed Management Plan*, (Minnehaha Creek Watershed District, 2000).

storm water would be directed into a trunk line and then discharged directly into the Minnetonka Storm Water Management System. If rate control is required, an outlet structure could be installed. Catalina Pond and the drainage area between Baker Road and the railroad discharge into the Minnetonka Storm Water Management System and ultimately into Minnetoga Lake.

- **NM104 ñ NM109 (Bryant Lake):** Runoff from these two areas comprises within-crown and outside-crown flow. Within-crown runoff will be collected by a drop inlet and conveyed via a culvert to the east side of the highway where it will exit into a filter strip and grassed swale system, eventually leading to a storm water wetland107 meters (350 feet) east of the highway.

- **NM113 (Grasshopper Pond):** Drainage from the TH 62 roadway and ramps is currently directed into several small depressions that then flow via culverts into Grasshopper Pond. Grasshopper Pond can be expanded to the south for additional capacity that would be able to accommodate higher discharges from an expanded interchange.

- **NM114 ñ NM116 (Delray Pond, Cardinal Creek Conservation Area):** Bryant Lake watershed is considered by the NMCWD to be one of their most sensitive, and measures will be taken to treat storm water adequately prior to discharging into the lake. Between the Soo Line Railroad and TH 62, a small drainage area is proposed to be directed into wetland # 623-A1, similar to existing drainage routing. Beginning at the high point located 61 meters (200 feet) south of the I-494/TH 62 bridge and ending at Valley View Road, all inside-crown runoff would be directed into Delray Pond, located just north of County Ditch 34 along Beach Road east of I-494 (see Figures 6.7 and 6.8). Outside-crown runoff will not be altered from existing patterns and will continue to drain to existing wetland complexes including Cardinal Creek Conservation Area via existing grassed swales with ditch blocks.

- **NM200 ñ NM203 (Schooner Pond, Capitol Pond):** NM200 has been reduced in area in order to minimize runoff volumes being conveyed to Schooner Pond. Capitol Pond will receive runoff from NM201. NM202 and NM203 will retain their current runoff patterns.

- **NM204 ñ NM215 (Porkchop, Ballpark, Banana and Picture Ponds):** From midway between Prairie Center Drive and TH 169 to TH 100, the roadway will be an urban section, with a storm sewer trunk line periodically discharging into a variety of ponding areas for treatment. These ponding areas (Molar, Ballpark, Porkchop) discharge into Nine Mile Creek at their respective locations. The roadway expansion is expected to be pushed to the south between West Bush Lake Road and TH 100 in order to eliminate any impact to the South Fork of Nine Mile Creek where it enters the I-494 right-of-way along the north side.

  Following Mn/DOTís analysis of the 1987 ìsuper-storm,î (a 500-year storm event), it was recommended that drainage from the low point east of East Bush Lake Road be isolated from the northern portions of the corridor, and be redirected east around the interchange to a point downstream of the East Bush Lake Road Nine Mile Creek crossing. Currently, a berm

isolates the highway from a large wetland complex that carries Nine Mile Creek (located southwest of the interchange) along the south side of I-494. The berm has an opening to allow storm water flow to enter the wetland through a culvert from north of I-494. Storm water backed up through this opening into the I-494 corridor during the super-storm. According to Mn/DOT recommendations, this opening would be closed, the existing culvert under I-494 removed and the berm and highway grade raised approximately 0.6 meters (2 feet) in order to fully isolate the highway from flooding. Storm water runoff would then be directed along the north of I-494 to a point east of the interchange upon which it would be directed under the highway, into Porkchop and Ballpark Ponds (see Figure 6.10) and then into Nine Mile Creek. These two ponds are designed to function as a two-cell system for quality and rate control prior to discharging in the Creek.

East Bush Lake Road and Green Valley Drive are both proposed to be reconstructed under the Preferred Alternative. Both roads are proposed as urban sections with curb and gutter. Banana Pond, located in the northeast quadrant of East Bush Lake and 84th Street, is proposed to accept runoff from East Bush Lake Road south of I-494 and from Green Valley Drive. Storm sewer along Green Valley Drive and East Bush Lake Road would convey storm water runoff south to Banana Pond. A small drainage area of the TH 100/I-494 interchange west along I-494 will be redirected from direct discharge into Nine Mile Creek to Picture Pond, located in the northwest loop. Picture Pond will then discharge directly into Nine Mile Creek upstream of the I-494 crossing.

- **TH 100 to Xerxes (NM300 [Goldman Pond]):** Runoff from this drainage area will be conveyed to Goldman Pond (located south of 84th Avenue and east of Normandale Boulevard) prior to discharge to Nine Mile Creek.

- **Xerxes Avenue to I-35W Interchange (Upper Penn Lake):** Runoff from this segment of I-494 will continue to collect at Penn Avenue and be pumped via lift station to Upper Penn Lake through an existing trunk storm sewer. Current plans to reconstruct the interchange at Penn Avenue include construction of a new lift station as well as portions of the upstream system north of I-494. These measures should reduce the risk of flooding seen at this location in the past. In addition, there is the potential of providing a gravity connection to this interchange via a potential new trunk storm sewer east to the Minnesota River, as described in Section 6.3.4.4.

- **Intersection 35W Interchange (Upper and Lower Penn Lakes):** Along the I-35W/ I-494 interchange, most flow that currently enters Lower Penn Lake would be diverted along 84th Street to Upper Penn Lake. Re-evaluation of the *I-35W FEIS and Preliminary Design Report* from 60th to 90th Street, which includes the I-35W/I-494 interchange, resulted in a recommendation that the proposed ponding within the interchange continue to be utilized but that only two ponds are needed at the interchange loops (NE and SE Ponds) due to changes from recent construction. Irving Pond, also recommended by the previous I-494 drainage design, is still included in the proposed I-494 reconstruction improvements.

6.3.4.3 Riley-Purgatory Creek Watershed District (TH 5 Interchange)

- **Trunk Highway 5 Interchange (Leapfrog Pond, Purgatory Creek):** As discussed in Section 6.3.3.3, the Preferred Alternative modifications have not been accommodated in the recently-completed interchange reconstruction project, and Leapfrog Pond is unable to be enlarged to accept a greater runoff volume for treatment. However, it is anticipated that with a water quality swale constructed in the southeast loop of the TH 5 interchange, the treatment and attenuation provided by the swale will adequately mitigate peak flow rates into Leapfrog Pond and the pond will operate with flows as originally designed.

6.3.4.4 Lower Minnesota River Watershed District/Bloomington ñ Richfield WMO (From I-35W to the Minnesota River)

- **Interstate 35W to 34th Avenue (Almaz Pond, Minnesota River):** As noted in Section 6.3.3.4, the trunk sewer in this segment of the I-494 corridor is severely under capacity for the existing conditions, and therefore will require a new system to supplement or replace the existing system.

  A study is currently underway to determine the feasibility of constructing a system that would provide the Wood Lake outlet with a gravity connection to replace the existing pump station. The study also includes investigating the feasibility of constructing a gravity outfall for the Penn Avenue interchange. If this is possible, the interchange area (approximately 7.7 hectares or 19 acres) would be redirected from Upper Penn Lake to the Minnesota River.

- **Thirty-Fourth Avenue to the Minnesota River (Minnesota River):**

  At 34th Avenue, the existing system discharges to a flume system where storm water is combined with the Metropolitan Airports Commission (MAC) runoff. The MAC has proposed a series of ponds and a conveyance system that would provide conveyance and treatment for various expansion projects (see Figure 6.13). The middle pond, Almaz Pond, is designed to provide treatment for I-494 runoff. The conveyance connection into Almaz pond is designed for I-494 ìlow flowî drainage of up to 5.6 cms or 200 cfs (i.e. less than a 5.1 cm (2-inch) 24-hour storm event). Flows from 5.6 cms (200 cfs) up to16.8 cms (600 cfs) would be routed directly to discharge to the river. Extensive coordination has occurred with the MAC to provide for both the planned airport expansion projects as well as the future highway corridor.

  Almaz Pond and the 5.6 cms (200 cfs) to 16.8 cms (600 cfs) bypass system for I-494 drainage is scheduled to be constructed in 2001/02 as part of a larger MAC project covered in an Environmental Assessment Worksheet prepared by the MAC in 2000. This proposed storm sewer system will require additional overflow capacity to adequately drain the roadway for flows greater than 16.8 cms (600 cfs).

A study is currently being conducted by Mn/DOT to evaluate drainage issues for I-494 from the I-494/Penn Avenue and I-494/I-35W interchange areas east to the Minnesota River. One of the issues being addressed is the preferred alignment, design, and outfall location for the overflow capacity east of 34th Avenue referenced above. While this study has not been completed, work performed to date has narrowed down discharge and associated alignment options for an overflow line east of 34th Avenue to the following:

- Outlet to Military Reservation Pond (see Figure 6.16)ó under this option, the conveyance alignment would stay within Mn/DOT right-of-way or Mn/DOT-owned land. It is anticipated that a forebay pond for treatment upstream of Military Reservation Pond would be utilized. From Military Reservation Pond, discharge would be routed to the Minnesota River.

- Outlet to MAC treatment pond ì040î north of the I-494 Bridge (see Figure 6.16)ó under this option, the conveyance alignment could stay within Mn/DOT right-of-way except possibly for a portion south and east of TH 5 where easement would have to be obtained from the United States Air Force and/or the MAC. The Minnesota Department of Transportation would work with the MAC to enhance treatment pond ì040î as appropriate. From this pond, discharge is routed to the Minnesota River.

Until the Mn/DOT water resources study referenced above is completed, the preferred outlet location and conveyance alignment for the east overflow line will not be known. However, it is anticipated that one of the above approaches will be utilized and, thus, that the system will be within the boundaries of the ì review areaî as identified on Figure 6.16. Since the specific location of this line is not known at the time of the completion of the FEIS, impact assessments for relevant environmental parameters in subsequent sections of this FEIS use the inclusive review area identified on Figure 6.16. Once the water resources study is complete and recommendations are made, design concept decisions can be made and further environmental review and documentation can be prepared if needed.

6.4 WATER QUALITY

The Affected Environment for water quality for the I-494 reconstruction was addressed in Section 4.2.6 of the DEIS. Impacts and mitigation measures for water quality were discussed in Section 5.3.6

6.4.1 INFORMATION FROM THE DEIS THAT REMAINS UNCHANGED

Criteria for the design of wet detention basins (storm water treatment ponds) as promulgated and administered by the Minnesota Pollution Control Agency (MPCA) has not changed since the DEIS. In addition, MPCA water quality standards for pollutants of the most potential concern as promulgated in Minnesota Rules Chapter 7050.0220 remain unchanged, and are presented in Table 6.11.

TABLE 6.11
MPCA STANDARDS FOR CLASS 2Bd WATERS

Item	MPCA Standards for Class 2Bd Waters (total hardness = 100)	
	Chronic Standard[(1)]	Maximum Standard[(2)]
Copper, µg/l	9.8	18
Lead, µg/l	3.2	82
Zinc, µg/l	106	117
Chloride, mg/l	230	860

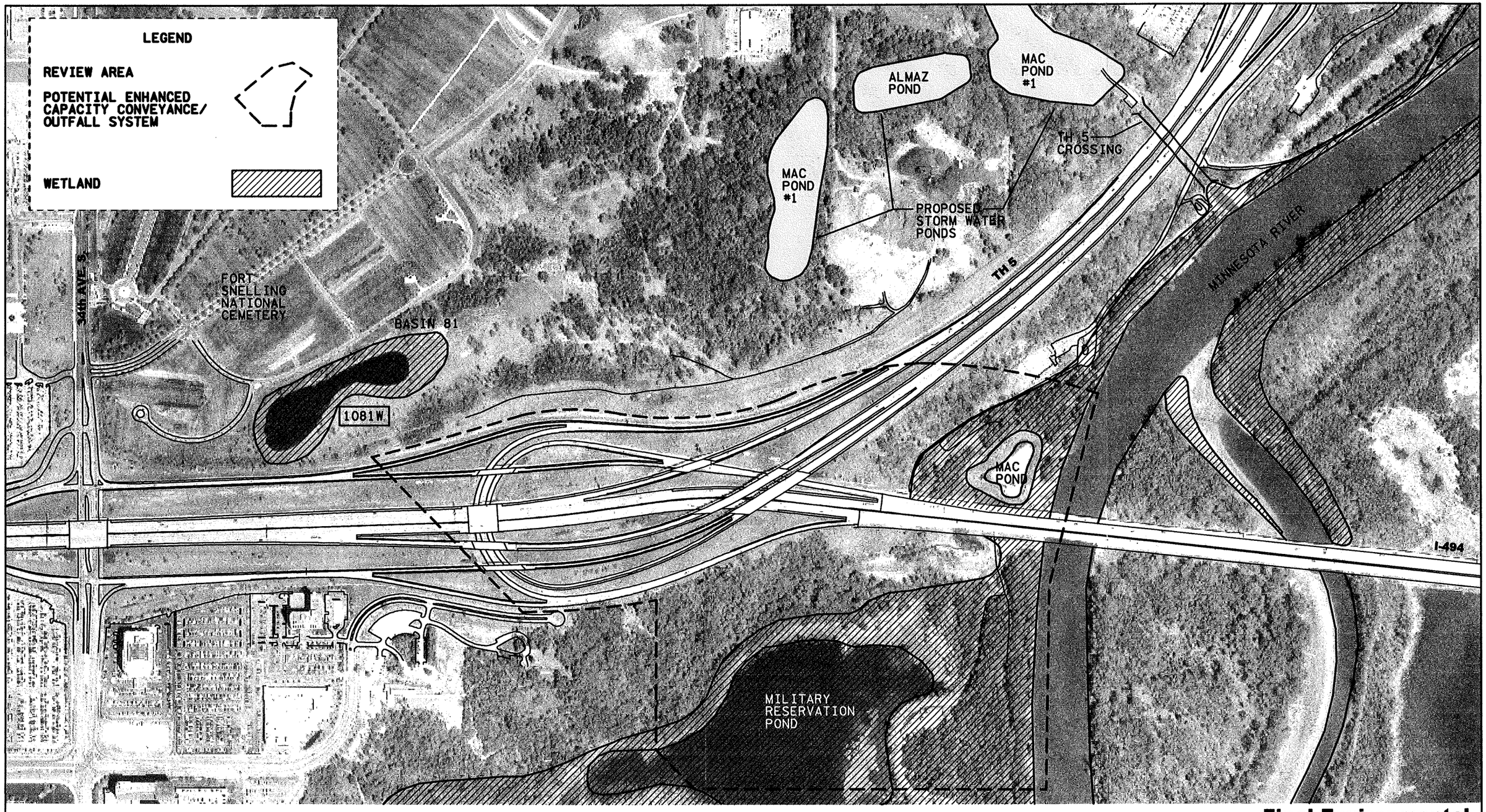
[(1)]Highest concentration allowed on average.
[(2)]Greatest peak concentration allowable.

Lake impact analyses in the DEIS utilized a FHWA procedure to predict whether phosphorus is likely to contribute to eutrophication. The FHWA procedure was also used to determine resulting concentrations of soluble portions of metals in river or streams. The overall results of the DEIS analysis for the Build alternatives addressed in that document may be summarized as follows:

- There would be no adverse impacts to the water quality of Minnehaha Creek.
- With the implementation of appropriate best management practices (BMPs) no adverse water quality impacts to Bryant Lake were anticipated.
- Concentrations of phosphorus in Lake Smetana would remain well below the target levels.
- With recently constructed and proposed ponding in several locations along the corridor, all pollutant concentrations were anticipated to be well below the threshold criteria for storm water entering Nine Mile Creek.

In general, the Preferred Alternative has been reduced in scale relative to the most extensive Build Alternative considered in the DEIS (refer to Section 1.2.1 discussion), so the water quality impacts of the current Preferred Alternative would likely be less than those identified for the Build Alternatives in the DEIS analysis. In several locations additional ponds are being proposed relative to the DEIS analysis that are deemed necessary due to changes in proposed roadway geometrics or drainage patterns[4]. With the proposed surface water drainage design summarized in Section 6.3 of this FEIS, and the water quality mitigation information presented in Sections 6.4.3 and 6.4.4 of this FEIS, it is concluded that the findings of the DEIS as summarized above remain valid for the Preferred Alternative.

[4] Locations include Prairie Center Drive, East Bush Lake Road, TH100 and I-35W (between 83rd and 85th Streets).



East Storm Water Drainage Information

SOURCE: Metropolitan Council / Digital Ortho-photo Quadrangle, May 2000

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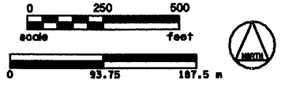

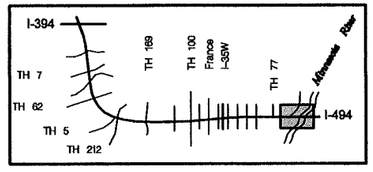

Figure 6.16

Final Environmental Impact Statement

I-494 Reconstruction

I-394 to the Minnesota River

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6.4.2 CHANGES IN THE SETTING, REGULATORY FRAMEWORK OR TECHNICAL ANALYSIS THAT HAVE OCCURRED SINCE THE DEIS

6.4.2.1 Setting

A number of interchanges and new ponds have been constructed since the DEIS was published. Information on these changes is provided in Section 6.3.2 of this FEIS.

6.4.2.2 Regulatory Framework

Over the time that has ensued since the DEIS, municipalities have become more proactive regarding their role in ensuring that high levels of water quality are maintained for storm water runoff within their jurisdictions. In response, substantive dialogue and a great deal of information and input regarding surface water quantity and quality has been gathered from the municipalities through which the Preferred Alternative passes. Furthermore, the cities of Minnetonka, Eden Prairie, Richfield and Bloomington have all updated their storm water management plans since the DEIS[5].

New and often innovative Best Management Practices (BMPs) that improve water quality are seen by municipalities as increasingly important. Moreover, the most recent edition of the MPCAís, *Protecting Water Quality in Urban Areas*, includes a new chapter on vegetative, bio-engineered and structural embankment and stream bank stabilization techniques that utilize sustainable, environmentally sound BMP designs[6]. Though storm water detention ponds remain the most accepted treatment method, other structural BMPs such as infiltration basins and trenches, vegetated swales and filter strips are becoming increasingly accepted active methods for nutrient, heavy metal and sediment removal.

The watershed districts in the project area have also updated their water management plans[7]. These updates include, among other matters, an expanded treatment of BMPs together with endorsement of a number of BMPs as alternatives to traditional ponding. Moreover, non-structural BMPs such as storm water wetlands, street sweeping and fertilizer management are becoming more and more important in the overall reduction of pollutants. (see Rule N, Minnehaha Creek Watershed District, for an example of a BMP selection criteria table that includes innovative structural and non-structural BMPs for storm water treatment.)

Watershed districts continue to place increasingly rigorous quality requirements on storm water runoff over and above the current National Pollutant Discharge Elimination System (NPDES) requirements as administered by the MPCA[8]. In areas where especially sensitive water bodies

[5] Minnetonka (1996), Eden Prairie (2000), Richfield (1995), Bloomington (2000).
[6] Minnesota Pollution Control Agency, *Protecting Water Quality in Urban Areas*, (Minneapolis, March 2000), Chapter 4.
[7] Nine Mile Creek (1996), Minnehaha Creek Watershed District (1997) (Rule N, which addresses storm water management, was updated May 25, 2000), Riley-Purgatory-Bluff Creek Watershed District (1996), Lower Minnesota River Watershed District (1999).
[8] MPCA, *General Permit Authorization To Discharge Storm Water Associated With A Construction* Activity Under The National Pollutant Discharge Elimination System/State Disposal System Permit Program, (MPCA, St. Paul, 1998), Appendix A and B.

(e.g. Waters of the State) are located (Bryant Lake in Minnetonka, Smetana Lake in Eden Prairie, Minnehaha Creek, Nine Mile Creek and the Minnesota River, in particular), loading reductions of suspended solids, phosphorus, certain heavy metals and sediment load have become high priorities.

6.4.2.3 Technical Analysis

Further refinement by the EPA[9], MPCA[10] and NRCS[11] of design and expected treatment efficiencies of specific BMPs have provided the foundation upon which BMPs have been selected for the Preferred Alternative.

6.4.3 IMPACTS ASSOCIATED WITH THE PREFERRED ALTERNATIVE

6.4.3.1 Pollutant Sources

Highway storm water runoff may contain a number of pollutants including particulates, heavy metals, organic matter, pesticides, nutrients and chlorides (from winter de-icing). Phosphorus, copper, lead and zinc have been identified by the FHWA as the four major pollutants in highway runoff[12]. Sources and characteristics of each of these pollutants follow:

- **Heavy metals ñ paint, atmospheric deposition, tire and brake wear, rust**: The primary heavy metal pollutants attributed to highway storm water runoff are copper, zinc, and lead. The total concentration of these metals in water includes a portion in particulate form, due to being affixed to soil particles, and a portion in soluble form. The variance in the percentage of soluble metals can be substantial, up to 50 percent for copper and zinc, and approximately ten percent for lead. Wet detention basins will remove the majority of the pollutants in particulate form. Wetland complexes have been found to remove some of the soluble form of the metals. While lead continues to be attributed to highway runoff, lead levels are expected to continue to steadily decline, as they have over the past ten years due to the elimination of the use of leaded fuel.

- **Nutrients ñ fertilizers, leaf litter, organic matter:** Nutrients of primary concern with respect to water quality are phosphorus and nitrogen. Phosphorus and nitrogen can enter waterways via runoff from fertilizers, agricultural wastes and soil erosion, direct discharges from municipal and industrial wastewater treatment facilities, livestock feedlots, precipitation

[9] See EPA Storm Water Technology Fact Sheets for Vegetative Covers, Floatables Control, Flow Diversions, Storm Water Wetlands and Infiltration Trenches as examples. See also EPA, Source Water Protection Technologies Environmental Technology Verification (ETV) pilot program begun in 2000 to assess structural storm water BMP technologies.
[10] MPCA, *Protecting Water Quality in Urban Areas*, Chapters 4,5.
[11] See NRCS Conservation Practice Standards for Channel Vegetation (code 322), Filter Strips (code 393), and Lined Waterways (code 468). See also NRCS, *Ponds ñ Planning, Design, Construction*, Handbook no. 590 (NRCS, revised 11/1997).
[12] FHWA, *Design Procedure for Pollutant Loadings from Highway Runoff* as quoted in I-494 DEIS (1992), 4-66.

(including runoff from roadways) and from groundwater inflow. Increasing the levels of these nutrients over the natural levels can cause increases in weed growth and algae blooms that can decrease both the clarity of water and the dissolved oxygen content.

Mean pollutant concentrations in runoff from urban and rural highways contain nitrogen and phosphorous as byproducts of combustion and from atmospheric deposition, in precipitation or as dust. Studies published in 1990 by the FHWA (*Pollutant Loadings and Impacts from Highway Storm Water Runoff*) show that in urban areas with average daily traffic counts above 30,000 vehicles per day, concentrations of nitrogen and phosphorous are sufficient to promote eutrophication (1.83 mg/l total nitrogen and 0.40 mg/l phosphorous [as PO_4]). In rural areas, concentrations are much lower (0.87 mg/l total nitrogen and 0.16 mg/l phosphorous). Typical ìbackgroundî concentrations in streams predominantly draining forests and rangelands are 0.6 mg/l nitrogen and less than 0.1 mg/l phosphorous.

Fortunately, phosphorus in its usable form (as a nutrient) is highly reactive, and will chemically form a settleable particulateó especially in oxygen-rich environments. Nitrogen, on the other hand, occurs more often in a soluble form than in a particulate form. However, phosphorus availability is usually the limiting nutrient for plant growth. Therefore, the control of phosphorus is most important from a water quality perspective.

- **Chlorides ñ winter de-icing:** De-icing agents placed on the roadway surface during the winter driving season create seasonal fluctuations of chloride loadings to roadway runoff. The Preferred Alternative will result in increased impervious surfaces and associated deicing chemical usage relative to existing conditions and, thus, annual mass loading of chlorides may increase. However, the enhanced treatment measures associated with the Preferred Alternative (measures such as detention ponds and biofiltration techniques as discussed in Section 6.4.4) should provide attenuation and dilution of snowmelt runoff. Overall seasonal fluctuations are not expected to change considerably from existing conditions.

- **Particulates ñ sediment from erosion, winter sanding:** Particulates in storm water can result from a variety of sources. Many methods for removing particulates from storm water (grit chambers, screens, detention ponds and overland or swale flow) have been developed and are common in storm water systems.

Of particular concern in this study is the potential increase of and thus need for removal of phosphorus, since this nutrient has been linked most directly to the lake eutrophication process. Copper and zinc are considered to be the primary concern for streams. Lead is also of concern although lead levels are expected to decline due to decreasing use of leaded gasoline as a fuel.

6.4.3.2 Assessment of Impacts

As discussed in Section 6.4.1, the analysis presented in the DEIS concluded that the Build Alternatives reviewed in that document were not anticipated to result in adverse impacts to the water quality of receiving waters. Due to the fact that the Preferred Alternative is reduced in scale relative to the most extensive Build Alternative considered in the DEIS, and with the

mitigation measures anticipated to be implemented (as discussed in Section 6.4.4 below), the conclusion that no substantial water quality impacts to receiving waters would result from the proposed I-494 reconstruction project is still valid.

6.4.4 MITIGATION OF IMPACTS

Most heavy metals, nutrients, chlorides and particulate matter (sediment) can be removed through the use of some type of passive treatment involving either a settling or filtering process. According to the MPCA, ìin addition to the physical sedimentation process, pollutants associated with urban runoff Ö will accumulate in sediments.î[13] Thus, when sediment is removed from storm water, pollutants will also be removed albeit at a lower rate. As a benchmark, then, BMPs for the I-494 project will be selected based upon Total Suspended Solids (TSS) removal efficiency assuming that with sediment removal, adequate removal of other relevant pollutants (in particular phosphorus, copper and zinc) will occur.

Wet detention basins (ponds) are the primary form of water quality treatment utilized for storm water runoff, since TSS removal is relatively high (as much as 90 percent)[14,15] and maintenance requirements are relatively low. In most cases they also provide the rate control into receiving waters such as lakes, wetlands and creeks. Other BMPs such as filter strips and water quality swalesó otherwise known as biofiltration techniques[16]ó or infiltration basins and trenches will work either in concert with or function independently of wet detention ponds for sediment removal.

For the I-494 reconstruction project, storm water will be treated with dry or extended wet detention, biofiltration or infiltration techniques. For storm water ponds, removal rates for TSS and phosphorus are expected to be 80 and 50 percent respectively. The TSS removal efficiency of vegetated or water quality swales is expected to be between 75 and 80 percent during the design storm event with a corresponding phosphorus removal rate of about 40 percent assuming no fertilizer utilization within the drainage area. Removal rates for zinc and copper are expected to reach 60 and 50 percent respectively. With this overall treatment approach, the water quality of discharge from the project area to receiving waters (lakes and creeks) is expected to remain unchanged or be improved relative to existing conditions, since there are currently few storm water detention/treatment facilities within the I-494 corridor.

Consistent with standard Mn/DOT procedures, the ponds associated with the I-494 reconstruction project will be constructed with a 25-year design life, accounting for sedimentation. After 25 years, the ponds will be dredged per standard Mn/DOT management practices. Skimmer structures and trash racks will be cleared every one or two years.

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[13] MPCA, *Protecting Water Quality in Urban Areas*, (Minneapolis, 2000), 5.08.
[14] Ibid, 5.02-2.
[15] It should also be noted here that infiltration when all storm water is treated results in the highest removal efficiencies for all pollutants. However, there are inherent challenges in the design and maintenance of infiltration basins and trenches that may restrict their use. These will be considered in depth and applied during final design.
[16] Washington State Department of Ecology, *Storm Water Management Manual for Western Washington Volume V ñ Runoff Treatment BMPs*, (2000), 253.

Table 6.9 (in Section 6.3) lists current water quality requirements for each watershed district in the project corridor. Sections 6.4.4.1 through 6.4.4.4 describeó for each watershed areaó proposed BMPs intended to meet water quality standards.

6.4.4.1 Minnehaha Creek Watershed District (Figures 6.5 ñ 6.6)

As noted in Section 6.3 of this FEIS, runoff from the inside-crown drainage area and portions of the outside-crown area will be collected and taken via storm sewer to specific treatment areas. The remainder of the runoff will continue to drain as it does today. Within the Minnehaha Creek Watershed District (MCWD), these include Stone Pond (existing, proposed to be enlarged), Northwest Pond (existing), McGinty Pond (proposed) and Guz Pond (proposed). It should be noted that McGinty Pond is also intended to be utilized as a sedimentation pond by the City of Minnetonka. Ultimate design of all three ponds will meet MCWD water quality criteria established at the time when final design is performed. A portion of the existing rural section will remain, with treatment of outside-crown runoff comprising biofiltration methods such as filter strips (overland flow) and water quality swales. Ultimate discharge is directed to Minnehaha Creek.

6.4.4.2 Nine Mile Creek Watershed District (Figures 6.6 ñ 6.12)

With the exception of two locations to be discussed below, areas for proposed ponds have already been identified and discussed in Section 6.3.3. The two exceptions involve utilizing existing outfalls into the Minnetonka Storm Water Management System that do not require pre-treatment. These are referred to as storm water wetlands, design of which will conform either to Minnetonka or EPA criteria, whichever is more rigorous. Of greatest concern is the Bryant Lake drainage area. Bryant Lake is considered to be a Level I, pristine water body with a shoreline classification by the DNR as a recreational development lake. Even though storm water is neither currently nor proposed to be discharged directly into Bryant Lake, the Nine Mile Creek Watershed District (NMCWD) staff have requested that any additional runoff be treated prior to entering the Bryant Lake system. Delray Pond is proposed to treat all water draining from within the highway crowns thus adequately satisfying the watershed district request. Further south at the Valley View Road interchange, all runoff from the northbound high occupancy vehicle (HOV) bypass ramp will be treated in Francis Pond as it is today.

For the urban section of I-494, from Prairie Center Drive to Xerxes Avenue, storm water runoff will be treated as follows:

- **Prairie Center Drive/TH 212/Flying Cloud Drive interchange**: Runoff will continue to discharge into Schooner Pond for treatment. Through a reduction in drainage area, storm water volumes conveyed to Schooner Pond have been limited. East of the interchange, runoff from the additional lanes will be diverted to the proposed Capitol Pond. A small area of 2.0 hectares (4.9 acres) outside of the eastbound highway crown will continue to discharge into a natural swale and then into a wetland attached to Anderson Lake as it does today.

- **TH 169:** This interchange was rebuilt recently together with the construction of two ponds: Molar and Tadpole. Expected additional runoff from the I-494 expansion was incorporated

into the TH 169 final design of Molar Pond. However, changes to the I-494 geometrics have increased impervious areas and more than absorbed the additional dead pool already present in Molar Pond. Additional dead pool volume will be constructed in conjunction with the I-494 reconstruction, to provide adequate treatment capacity.

- **East Bush Lake Road:** The drainage area from 366 meters (1,200 feet) west of West Bush Lake Road to a point within the TH 100/I-494 interchange is quite complex. The background of this area and the effect of the 1987 super-storm has been dealt with Section 6.3 of this FEIS. To mitigate for water quality, all runoff from the highway internal to the crowns will be captured in a storm sewer trunk line which will then discharge into Porkchop and Ballpark ponds located southeast of the interchange. Runoff from portions of East Bush Lake Road (from 78th Street to the I-494 bridge) will also be captured in this storm sewer. Runoff along East Bush Lake Road south of Green Valley Drive will be conveyed via storm sewer to Banana Pond, located just north of 84th Street and East Bush Lake Road. A small drainage area west along I-494 from the TH100 interchange will drain and be treated in Picture Pond.

- **TH 100:** Curb and gutter along TH 100 from 77th Street north to 83rd Street south is expected to keep runoff from entering directly into Nine Mile Creek. Storm water will be directed into storm sewer and will be discharged in Goldman Pond located on the southeast quadrant of Normandale Boulevard and 84th Street.

- **TH 100 to Xerxes Avenue:** This section is currently a semi-urban highway comprising internal storm sewer that conveys runoff from within the crowns to a trunk line that then turns and parallels Normandale Boulevard. A fully urban section is proposed under the Preferred Alternative that necessitates additional storm sewer capacity. All storm water will be directed west along I-494 and then south along the east side of Normandale Boulevard to Goldman Pond. The pond will then discharge into Nine Mile Creek.

- **Xerxes Avenue to I-35W:** This section of roadway drains to the low point at Penn Avenue, and is pumped and discharged into a southbound trunk storm sewer that conveys the water to Upper Penn Lake. The northern portion of the I-35W/I-494 interchange is drained by gravity to the same southbound trunk storm sewer and into Upper Penn Lake. Likewise, the southern portion of the interchange together with I-35W from the interchange to 86th Street drains to either Upper or Lower Penn Lakes. The Preferred Alternative may include changes to this system, most notably by directing the Penn Avenue interchange runoff via gravity flow directly to the Minnesota River. As noted Section 6.3 of this FEIS, the proposed storm sewer for the corridor could be extended west to Penn Avenue and lowered to provide a gravity connection for the Penn Avenue low point. South along I-35W from the interchange to 86th Street, drainage would be directed into a proposed pond (Irving Pond) and then into Upper Penn Lake, diverting much of the Lower Penn Lake discharge to Upper Penn Lake. The northern portion of the I-35W/I-494 interchange would be ponded within the loopís NE and SE Ponds and discharged into Upper Penn Lake.

6.4.4.3 Riley-Purgatory-Bluff Creek Watershed District (Figure 6.8)

Treatment for the two drainage systems within this area of I-494 drainage will be provided by: a) Leapfrog Pond (existing), built during the reconstruction of TH 5/I-494 interchange and located in the southeast quadrant of Prairie Center Drive and TH 5, and b) a proposed water quality swale located in the southeast TH 5 loop.

6.4.4.4 Lower Minnesota River Watershed District and Bloomington-Richfield Watershed Management Organization (Figures 6.11ñ6.13, 6.15)

Beginning at Humboldt Avenue, a large trunk storm sewer currently conveys runoff between Humboldt and 34th Avenues directly to the Minnesota River. The TH 5/I-494 interchange also currently discharges directly to the River. Mn/DOT has coordinated with the Metropolitan Airports Commission (MAC) on implementation of joint water quality improvement facilities for this drainage area. As discussed in Section 6.3.4.4, 5.6 cms (200 cfs) ìlow flowsî (less than the 5.1 cm [2-inch] 24-hour storm event) from these areas (and potentially the I-494/Penn Avenue interchange) will soon be routed through Almaz Pond, located on MAC property (see Figure 6.13) prior to discharge to the Minnesota River.

Almaz Pond has been designed utilizing the Pitt method and conforms to an 80 percent TSS removal efficiency. While it is substantially smaller than what would normally be required under the Walker Pond Design Protocol, a careful design and analysis has been completed that shows adequate TSS removal given the pondís 1.2-ha (3.0-acre) size and two-cell treatment system[17]. Limited ponding area and steep slopes compelled the use of the Pitt method rather than the Walker method. This method of pond design has been accepted by the Minnehaha Creek Watershed District under a permit for water quality treatment utilizing two ponds ñ an upper MAC pond and Almaz Pond ñ issued to the MAC. The LMRWD has also agreed to this design and treatment approach.

There will be a net gain in water quality treatment under the proposed approach. Currently, there is no treatment of runoff coming from the I-494 corridor east of Humboldt Avenue. For the Preferred Alternative, the 5.1 cm (2.0-inch) 24-hour storm (i.e. the first 5.6 cms [200 cfs]), representing approximately the six-month 24-hour or one-year 12-hour storm frequency, would be treated with Almaz Pond, with higher flows (5.6 to 16.8 cms or 200-600 cfs) being conveyed directly to the Minnesota River. This pond layout has been proposed and coordinated with MAC to account for both the I-494 reconstruction and MAC expansion plans, and will be constructed by the end of 2002 by MAC.

As discussed in Sections 6.3.3.4 and 6.3.4.4, the existing storm water line from Humboldt Avenue to the Minnesota River is undersized, and additional capacity will be required for Mn/DOT flows greater than 16.8 cms (600 cfs). Mn/DOT is currently studying alternatives to address this need. The ultimate design for these high flow capacity and discharge requirements will be coordinated with applicable regulatory bodies including the Lower Minnesota River Watershed District.

[17] Liesch Associates, Inc., *Preliminary Design of Retention Pond for I-494 Watershed at Fort Snelling National Cemetery*, (1999).

6.4.4.5 Erosion and Sediment Control and Permit (NPDES)

Sections 6.4.4.1 through 6.4.4.4 describe the surface water routing and water quality mitigation strategies proposed for each of the watershed areas along the I-494 corridor. Final construction plans for each phase of the project will include more detailed surface water drainage analysis and mitigation plans, incorporating detention/treatment facilities, erosion and sedimentation controls and other BMPs. These plans will be coordinated with and reviewed by local watersheds for conformance to their plans and requirements at the time of permitting and project construction. Mitigation measures will also conform to National Pollutant Discharge Elimination System (NPDES) permit[18] requirements at the time each project phase is constructed.

6.5 FLOODPLAINS

Floodplain resources and impacts were discussed in Sections 4.2.6 and 5.3.7 of the DEIS.

6.5.1 INFORMATION FROM THE DEIS THAT REMAINS UNCHANGED

The DEIS described the need to prepare a floodplain assessment for waterways affected by the proposed alternatives, as required under Executive Order 11988, Floodplain Management and Minnesota Statutes 103F.101 to 103F.155. Findings related to County Ditch 34 floodplain impacts along the east and west sides of I-494 south of the TH 62 interchange have not changed since the DEIS assessment. However, impacts to Minnehaha Creek at Minnetonka Boulevard and Nine Mile Creek between West Bush Lake Road and TH 100 have changed, as described in Sections 6.5.2 and 6.5.3.

6.5.2 CHANGES IN THE SETTING, REGULATORY FRAMEWORK OR TECHNICAL ANALYSIS THAT HAVE OCCURRED SINCE THE DEIS

6.5.2.1 Physical Setting

For this study, references that were used for floodplain assessment were the following:

- FEMA NFIP Flood Insurance Rate Maps (FIRM) for the Cities of Bloomington (1981, 1998) and Minnetonka;
- Flood Insurance Study for the City of Bloomington (1981);
- Digital Q3 Flood Data maps (based on FIRMs);

[18] MPCA, *General Permit Authorization to Discharge Storm Water Associated with a Construction Activity Under the National Pollutant Discharge Elimination System/State Disposal System Permit Program,* (1998).

- Nine Mile Creek Watershed District Water Management Plan (1996);

- Minnehaha Creek Watershed District Water Management Plan (revised 2000);

- Special study conducted by Mn/DOT utilizing XP-SWMM and HEC-RAS models of the East Bush Lake Road area (1999).

The existing waterway conditions as they relate to I-494 and how they have changed since the DEIS are described below:

- **County Ditch 34**: This ditch conveys surface water through the Cardinal Creek Conservation Area, passes underneath I-494 through a 1.4-meter (54-inch) culvert from west to east and into Bryant Lake (see Figure 6.17).

- **Minnehaha Creek**: Minnehaha Creek crosses underneath I-494 at the Minnetonka Boulevard underpass in Minnetonka. Several years ago, the Minnetonka Boulevard interchange was rebuilt and floodplain impacts were considered and mitigated at that time. Under the I-494 Preferred Alternative, no further floodplain impacts are expected.

- **Nine Mile Creek**: Nine Mile Creek, its forks and one tributary intersect I-494 in several locations. From west to east:

  - The South Fork passes from Lake Smetana under TH 169 just north of the I-494 corridor. Floodplain encroachments have been addressed during the reconstruction of the TH 169/I-494 interchange and thus no longer are an issue for this FEIS. The South Fork then turns south into the study area (refer to Figure 6.18), passes under the 78th Street frontage road through a 2.0-meter (78-inch) culvert and daylights within the I-494 right-of-way along the north side. The South Fork then leaves the I-494 right-of-way to the north, passes under Creek Ridge Circle, turns south again and passes under I-494 in a 2.4-meter (96-inch) culvert into the Highwood Corridor area of the Hyland-Bush-Anderson Lakes Regional Park Reserve located along the south edge of the roadway. The South Fork continues south and east and crosses under the Canadian Pacific Railroad and then immediately under East Bush Lake Road where it joins the North Fork.

  - The North Fork enters study the area by passing onto the TH 100 right-of-way under Metro Boulevard north of Lake Edina. It then follows TH 100 south, crosses under 77th Street, turns southwest with the southbound TH 100 to westbound I-494 ramp and then passes under I-494 through a 3.1-meter (120-inch) culvert (refer to Figure 6.19). Upon daylighting on the south side of I-494, the North Fork passes under Green Valley Drive and, a short distance later, joins the South Fork.

  - At the confluence of the North and South Forks (refer to Figure 6.18), Nine Mile Creek travels south, passes under 84th Street and into Normandale Lake.

In addition to roadway changes at the noted crossings, a considerable amount of work outside of the corridor has affected the floodplain mapping for the cities within the study area. A number of Letters of Mapping Changes (LOMC) and Mapping Revisions (LOMR) have been issued since the DEIS. These have been considered in the analysis performed for this FEIS.

6.5.2.2 Regulatory Framework

Methodologies used to conduct floodplain assessments have evolved over the past ten years and are summarized in the Mn/DOT *HPDP Handbook*[19], which is based on Presidential Executive Order 11988 ñ Floodplain Management. Other codes, standards and policies such as, but not limited to, the FHWAís, *Location and Hydraulic Design of Encroachments on Flood Plains* (1994), FEMA National Flood Insurance Programís *Title 44 Code of Federal Regulations* (1994 ñ 1999) and the MnDNRís Minnesota Rules Chapter 6115, *Bridges and Culverts, Intakes and Outfalls* (2000) have all been updated. The assessments carried out as part of this FEIS reflect the most current standards, policies, practices and formats.

6.5.2.3 Technical Analysis

The assessment completed for this FEIS follows Mn/DOTís HPDP Handbook Part II, Section D, Appendix #1, *How to Prepare a Floodplain Assessment*. The Regional Flood[20] elevations for County Ditch 34 have been taken from flood profiles published in the Nine Mile Creek Watershed District Water Management Plan (1996). In the East Bush Lake Road Area where the North and South Forks of Nine Mile Creek converge, Regional Flood elevations have been taken from an XP-SWMM model developed by Mn/DOT in 1999. Base Flood extents for Minnehaha Creek have been taken from available FIRM maps.

6.5.3 IMPACTS ASSOCIATED WITH THE PREFERRED ALTERNATIVE

6.5.3.1 Description of Impacts

Minnehaha Creek

As noted above, the Preferred Alternative will not impact the Minnehaha Creek floodplain.

County Ditch 34

Due to some widening of lanes and shoulders that will occur with the Preferred Alternative, transverse and longitudinal encroachments are likely on both sides of the highway where the ditch passes under I-494. Table 6.12 summarizes the nature of these encroachments. These encroachments have not changed since the DEIS analysis, where they were found to have no substantial impacts on the County Ditch 34 floodplain.

[19] Minnesota Department of Transportation, *Highway Project Development Process Handbook*, (Mn/DOT, 1999)

[20] Regional Flood is defined by the HPDP as, ìthe flood which can be expected to occur on average once every 100 years.î It is equivalent to FEMAís ìBase Flood.î

LEGEND

100-YEAR FLOODPLAIN BOUNDARY

EXISTING CHANNEL

FLOODPLAIN IMPACT AREA

Lake Smetana

Schooner Pond

Bryant Lake

TH 212

FP 1

GRASSHOPPER POND

DELRAY POND

County Ditch 34

Valley View Road

TH 5 / 312

AREA OF IMPACT ON COUNTY DITCH 34 CHANNEL

100 Year Floodplain Boundary And Stream Modifications County Ditch 34 Area

0 400 800
scale feet
0 150 300 m

NORTH

Key

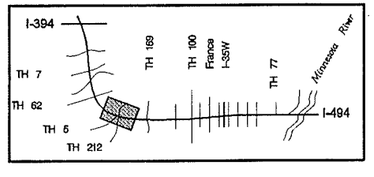

Figure 6.17

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I-494 Reconstruction

I-394 to the Minnesota River

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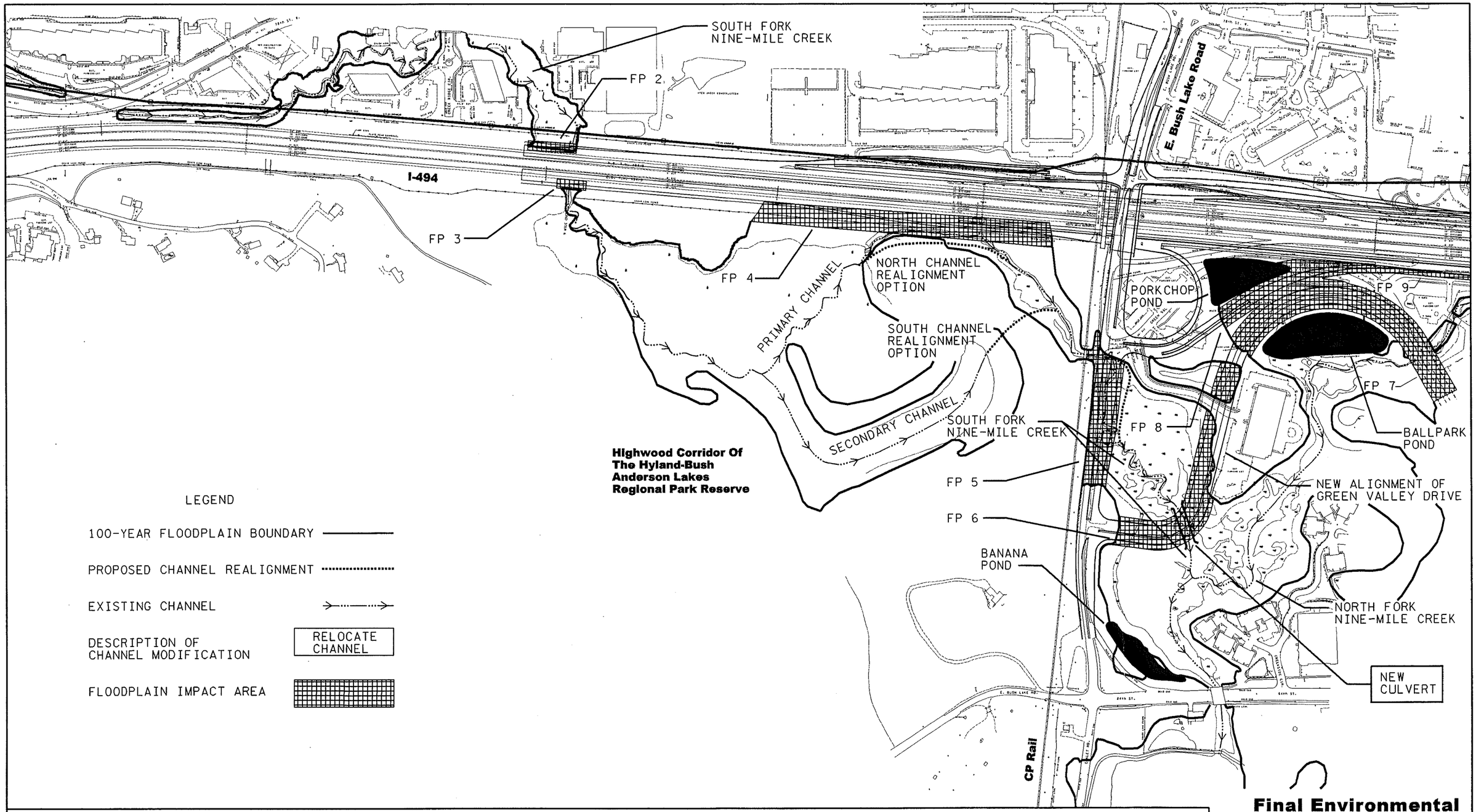

100 Year Floodplain Boundary And Stream Modifications East Bush Lake Road Area

0 200 400
scale feet
0 75 150 m

NORTH

Key

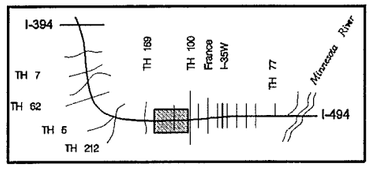

Figure 6.18

Final Environmental Impact Statement

I-494 Reconstruction

I-394 to the Minnesota River

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REMOVE CULVERT; REALIGN CREEK

RELOCATE CHANNEL

NORTH FORK NINE-MILE CREEK

FP 12

STREAM REMAINS DAYLIGHTED

FP 11

FP 10

PICTURE POND

REPLACEMENT CULVERT

CREEK IN CULVERT

77th Street

TH 100

LEGEND

100-YEAR FLOODPLAIN BOUNDARY

PROPOSED CHANNEL REALIGNMENT

EXISTING CHANNEL

DESCRIPTION OF CHANNEL MODIFICATION — RELOCATE CHANNEL

FLOODPLAIN IMPACT AREA

100 Year Floodplain Boundary And Stream Modifications Trunk Highway 100 Area

0 200 400 scale feet

0 75 150 m

NORTH

Key

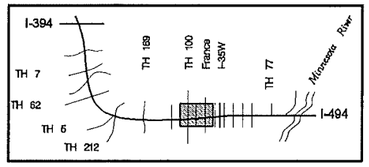

Figure 6.19

Final Environmental Impact Statement

I-494 Reconstruction

I-394 to the Minnesota River

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North and South Branches of Nine Mile Creek

Nine Mile Creek is being impacted differently from the effects anticipated in the DEIS. Following an extensive analysis and issuance of a technical memorandum by Mn/DOT (August 2000) regarding the 1987 super-storm, discharge into the South Fork west of East Bush Lake Road is proposed to be re-routed east of East Bush Lake Road prior to reentering the creek. The 3.1-meter (120-inch) culvert that conveys the North Fork underneath I-494 near the TH 100 interchange was also recommended to be replaced by a 3.1-meter by 3.7-meter (10-foot by 12-foot) box culvert. The memorandum also recommended that the low point, located 174 meters (570 feet) west of the East Bush Lake Road overpass, should be raised 0.6 meter (2 feet) together with the berm that separates the highway from the Highwood Corridor area of the Hyland-Bush-Anderson Lakes Regional Park Reserve. According to these recommendations, the analysis shows a net elevation reduction of the North Fork of approximately 0.6 meters (2 feet) prior to crossing under I-494 and less than 15 centimeters (0.5-foot) difference in elevation at and below the North Fork/South Fork confluence. Flood elevations for the South Fork west of East Bush Lake Road were reduced by approximately 0.3 meter (1 foot). However, the Mn/DOT analysis did not foresee construction of up to three storm water treatment ponds in the southeast quadrant of East Bush Lake Road and I-494. Layout revisions for I-494, East Bush Lake Road, TH 100 and Green Valley Drive have also impacted these revisions. All these developments will impact floodplain both positively (pond and mitigation site volumes) and negatively (roadway encroachments). A complete floodplain analysis is currently underway and proposed mitigation, if required to maintain existing floodplain limits, will be finalized after the design and impacts are confirmed.

TABLE 6.12
FLOODPLAINS ENCROACHMENT ASSESSMENT

Floodplain	Figure No.	Location	Base Flood Elevation		Type of Encroachment	Length	
			meters	Feet		meters	feet
County Ditch 34	6.17	FP1	262	859*	Transverse	76.3	250
County Ditch 34	6.17	FP1	260.2	853*	Longitudinal	91.5	300
Nine Mile Creek	6.18	FP2	249.2	817*	Transverse	9.2	30
Nine Mile Creek	6.18	FP3	249.6	815**	Transverse	27.5	90
Nine Mile Creek	6.18	FP4	248.6	815**	Longitudinal	195.2	640
Nine Mile Creek	6.18	FP5	248.6	815**	Longitudinal	64.1	210
Nine Mile Creek	6.18	FP6	248.3	814**	Transverse	61	200
Nine Mile Creek	6.18	FP7	248.3	814**	Longitudinal	283.7	930
Nine Mile Creek	6.18	FP7	248.3	814**	Transverse	61	200
Nine Mile Creek	6.18	FP8	248.3	814**	Longitudinal	79.3	260
Nine Mile Creek	6.18	FP9	248.6	815**	Longitudinal	143.4	470
Nine Mile Creek	6.19	FP10	248.6	815**	Transverse	10.7	35
Nine Mile Creek	6.19	FP11	249	817**	Transverse	18.3	60
Nine Mile Creek	6.19	FP12	249	817**	Longitudinal	335.5	1,100

* From NMCWD Water Management Plan, higher number represents upstream of culvert, lower number represents downstream of culvert under I-494.

** From Mn/DOT XP-SWMM model

6.5.3.2 Floodplain Assessment

According to Presidential Executive Order - 11988, four areas must be addressed in a floodplain assessment. These are:

- Area 1: No significant potential for interruption of a transportation facility that is needed for emergency vehicles or provides a communityís only evacuation route.
- Area 2: No significant impact on natural or beneficial floodplain values;
- Area 3: No significant increased risk of flooding will result;
- Area 4: Will the project support and/or result in incompatible floodplain development?

The following discussion addresses the four areas noted above for the watercourses that would be affected by the I-494 Preferred Alternative floodplain encroachments.

County Ditch 34

First, no interruption of transportation facilities will occur, as the flood elevation is 3.4 meters (11 feet) below the roadway surface. Secondly, the fill is limited to inslopes to allow for a wider embankment (i.e. at a ditch culvert). Due to the nature of encroachment, no adverse impact on floodplain values will occur. Thirdly, while a small transverse encroachment into the floodplain is anticipated, the regional flood elevation, when compared to the large flood extent within the Cardinal Creek Conservation Area, will not be increased, based on DEIS analyses. Thus, no increase in flooding will result. Finally, both the City of Eden Prairie and the Nine Mile Watershed District have instituted floodplain encroachment policies so that no incompatible floodplain development will occur.

North and South Forks of Nine Mile Creek

First, no potential for interruption of a transportation facility will occur. There are a number of alternative routes in and out of the area and where roadway is either being reconstructed or newly constructed, elevating the surface above the 100-year base flood elevation will occur.

Second, floodplain encroachments and/or stream channel realignments have been planned to minimize impacts to natural and beneficial floodplain values. Use of closed conveyance systems has been minimized to the extent possible; and open, meandering stream channels are planned in a number of areas where channel realignments are required.

Third, the principle of avoidance, minimization and mitigation has been followed to avoid flooding risks. Avoiding impacts has been exercised along the north side of I-494 by moving the proposed roadway alignment south out of the South Fork floodplain prior to where it crosses the roadway. Impacts to the North Fork on the west side of TH 100 could not be avoided without substantial roadway realignments and acquisition of a number of commercial development parcels on the east side of TH 100. Minimization of impacts has been pursued by choosing roadway alignments that skirt the flood fringe (e.g., portions of Green Valley Drive), that

maintain the existing alignment (e.g., at East Bush Lake Road) or that pass over the creek (e.g., bridge structures in lieu of fill/culverts at TH 100 area). Accurate assessment of impacts and needed mitigation requires additional refinement of project design. The final design will incorporate mitigation measures, as necessary, to prevent substantive increases in flood levels. The ultimate outcome will be no substantive changes to floodplain levels or values. Examples of potential mitigation measures are provided in Section 6.5.4.2.

Fourth, no incompatible floodplain development would result from the proposed project. Watershed, state, and city guidelines and policies regulate floodplain development, including the Nine Mile Creek Watershed District floodplain encroachment policy[21] and city floodplain ordinances.

Summary of Floodplain Assessment

Although floodplain encroachments would occur as a result of the proposed Preferred Alternative, no substantial floodplain impacts would result since either: 1) the encroachment impact is not substantive; or 2) the proposed project will include measures to mitigate impacts ultimately resulting in no substantial impacts. The proposed project will conform to all state and local (city and watershed) floodplain protection standards and mitigation requirements. Since no substantial floodplain impacts would result from the proposed project, preparation of a floodplain finding (ì only practicable alternativeî) is not required.

6.5.4 MITIGATION MEASURES

As described above, floodplain encroachment is limited to two watercourses: County Ditch 34 and the North and South Forks of Nine Mile Creek. Mitigation plans for each of these areas are described below.

6.5.4.1 County Ditch 34

Based on DEIS analysis, no substantial impacts to this floodplain are anticipated. However, during final design of this portion of I-494, further impact analysis will be completed and at that time mitigation measures, if required, will be recommended.

6.5.4.2 North and South Forks of Nine Mile Creek

Section 6.5.3.2 describes avoidance and minimization measures incorporated into the project design concept. Additional analysis of impacts and required mitigation will be performed as final design progresses. Development of final design floodplain mitigation will include working with the Nine Mile Creek Watershed District to identify appropriate mitigation strategies, involving floodplain volume replacement and/or changes in discharge rates, to achieve the goal

[21] Nine Mile Creek Watershed District, *Water Management Plan*, (NMCWD, 1996), section 4.2.3.

of maintaining or reducing existing flood stage levels. Floodplain volume replacement would involve measures such as construction of ponds or wetland areas within floodplain areas. Discharge rate control would involve increasing or decreasing discharge rates, as needed, by increasing or decreasing system flow capacity (e.g., changing culvert or channel design) and/or storage.

6.6 GROUNDWATER

The Affected Environment for groundwater for the I-494 reconstruction study area is described in Section 4.2.6 of the DEIS. Impacts and mitigation measures for groundwater are discussed in Section 5.3.8 of the DEIS.

6.6.1 INFORMATION FROM THE DEIS THAT REMAINS UNCHANGED

The hydrogeology of the project area remains as described in the DEIS. The general bedrock profile in the project area is as follows:

- St. Peter Aquifer
- Prairie du Chien-Jordan Aquifer
- Franconia-Ironton-Galesville Aquifer
- Mount Simon-Hinkley Aquifer

The most widely used water supply aquifer in the Minneapolis-St. Paul Metropolitan Area is the Prairie du Chien-Jordan formation. The potentiometric elevation of this aquifer within the study area ranges from approximately 265 meters (870 feet) to 235 meters (770 feet) above mean sea level. The roadway surface elevations along the I-494 reconstruction corridor range from approximately 299 meters (980 feet) near the I-394/I-494 interchange to 249 meters (815 feet) above mean sea level near the TH 5/I-494 junction just west of the Minnesota River.

The surficial geology of the project area is broadly characterized as follows:

- West and north of the France Avenue/I-494 interchangeó mainly glacially deposited till, including loam, clay loam, and sandy loam.

- East of the France Avenue/I-494 interchangeó mainly outwash and terrace deposits, including gravelly sand, sand, and loamy sand.

The water table gradient, and thus movement, within the project area is generally south-southeast to the Minnesota River. Hennepin County Geological Atlas C-4, Quaternary Hydrogeology, depicts water table elevation of approximately 281 meters (920 feet) at the I-494/I-394 interchange location, and approximately 238 meters (780 feet) at the split between I-494 and TH 5 in the vicinity of the Mississippi River.

The municipal well locations within approximately 0.8 kilometer (0.5 mile) of the mainline and interchanges within the project area are as follows:

- Minnetonka Well # 10
- Minnetonka Well # 14
- Edina Well # 10
- Edina Well #11
- Edina Well # 14

There currently are two known areas within the project corridor at which dewatering operations are currently in place. They are described below.

I-494/Penn Avenue Interchange: The elevation of the roadway at this location is approximately three meters (10 feet) below the natural elevation of the water table. A lift station is currently used to drain this area, depress the water table, and convey the diverted water to Penn Lake.

I-494/34th Avenue Interchange: There currently is a subdrain system for this area which is used to depress the water table elevation below the roadway profile. The perforated pipe collection system has a low invert of 245 meters (803 feet). This drainage is routed via a trunk storm sewer to an outfall at the Minnesota River in the vicinity of the Minneapolis-St. Paul International Airport.

6.6.2 CHANGES IN THE SETTING OR TECHNICAL ANALYSIS SINCE THE DEIS

The DEIS Build alternatives included raising the profile of the roadway in the vicinity of the I-494/Penn Avenue interchange above the natural water table elevation. This design approach would have eliminated the need for depressing the water table and the lift station currently used to accomplish this.

The Preferred Alternative includes very minor changes to raising the profile of the roadway at this location. Thus, there will still be a need to depress the water table. The Preferred Alternative will continue to require permanent dewatering, but may discharge to Penn Lake via a lift station, or to the Minnesota River via a gravity system. The conveyance systems are discussed in more detail in Section 6.3.4.

6.6.3 GROUNDWATER IMPACTS ASSOCIATED WITH THE PREFERRED ALTERNATIVE

The Preferred Alternative is not anticipated to negatively impact groundwater resources in the project area. There will be increased impervious surfaces in the project area associated with expanded roadways and interchange features. However, the percentage increase, relative to existing conditions (refer to Table 6.10), is not anticipated to be large enough to noticeably affect regional groundwater recharge rates. Dewatering operations at the I-494/Penn Avenue

and I-494/34th Avenue locations will continue to be performed in accordance with Minnesota Department of Natural Resources permit requirements. No additional permanent dewatering is anticipated to be required as part of the Preferred Alternative construction.

A small amount of temporary dewatering may be required during construction of the additional storm sewer line proposed to serve the eastern I-494 corridor (see Section 6.3.4.4). Construction plans for this line currently include tunnel boring through unconsolidated material (soil) areas that contain groundwater. However, the tunnel boring process would require little, if any, temporary dewatering, and the tunnel shaft would be sealed immediately after excavation to prevent groundwater seepage into the shaft and/or storm water leakage to groundwater. This method of construction would prevent impacts to groundwater quality and/or groundwater surface elevations from construction of the proposed storm sewer line.

There will be limited increases in pollutant loadings in surface water run-off associated with the Preferred Alternative due to increased impervious surfaces and related facility operations. However, this runoff will be treated utilizing ponds and other BMPs in accordance with watershed district and Minnesota Pollution Control Agency requirements. These facilities, as discussed in Sections 6.3 and 6.4, will reduce pollutant loadings prior to discharge to receiving surface waters, and thus reduce pollutant loadings to groundwater via recharge from these surface waters. In addition, the storm water detention ponds and water quality swales (ditches with ditch blocks) provide an opportunity for infiltration, thus reducing surface water runoff volumes and providing groundwater recharge areas.

The proposed construction will not physically impact any of the municipal wells. Any private wells, abandoned wells or unused commercial, industrial or irrigation wells encountered during reconstruction will be sealed, following the well abandonment procedures required by the Minnesota Department of Health.

6.6.4 MITIGATION MEASURES

As addressed in the preceding section:

- Dewatering operations at the 34th Avenue and Penn Avenue locations will continue to be performed in accordance with Minnesota Department of Natural Resources permit requirements.

- Temporary dewatering may be required in conjunction with installation of new storm water conveyance facilities. If required, the temporary dewatering is anticipated to be of short duration. Storm water conveyance lines installed within groundwater zones will be sealed to prevent infiltration into or leakage out of the conveyance system.

- Surface water drainage will be treated utilizing ponds and other appropriate BMPs in conformance with appropriate regulatory requirements.

- Any wells that are encountered during the reconstruction of I-494 will be sealed and abandoned in accordance with Minnesota Department of Health standards as defined in Minnesota Rules, Part 4725.2700.

- Storm water detention ponds and water quality swales reduce pollutant loadings and provide groundwater recharge opportunities.

6.7 WETLANDS

The DEIS addressed wetlands in Section 4.0 Affected Environment (Section 4.2.4 Wetlands) and in Section 5.0 Environmental Consequences and Potential Mitigation Measures (Section 5.3.9 Wetlands).

6.7.1 INFORMATION FROM THE DEIS THAT REMAINS UNCHANGED

Much of the information presented in the DEIS is still accurate. The DEIS included an inventory of the wetlands that exist in the I-494 corridor that could potentially be impacted by the I-494 expansion and reconstruction project. The inventory noted the size, classification, location and distribution of each wetland. The inventory identified wetland basins in aggregate in the project area covering over 162 hectares (400 acres), with the majority of these wetlands being Types 3, 4 or 5 (shallow to deep marshes or ponds). These wetlands are concentrated along the northern- and western-most sections of the project area, with the highest concentration occurring between Oakland Road and TH 7 in Minnetonka, and between TH 62 and TH 100 in Eden Prairie and Bloomington. Several sections of the corridor do not have wetlands, including the area from TH 7 to Baker Road in Minnetonka, the section between France Avenue and Penn Avenue in Edina, Bloomington and Richfield, and the section between Lyndale Avenue and 24th Avenue South in Richfield and Bloomington.

As was indicated in the DEIS, the study area is primarily urban in use, and several man-made ponds are present in the study area, created for storm water management or aesthetic reasons. The field verifications performed for the DEIS indicated some wetlands were not identified on the U.S. Fish and Wildlife Service (FWS) National Wetland Inventory (NWI) maps, and that some NWI classifications were incorrect. The DEIS identified several wet ditches in the corridor.

6.7.2 CHANGES IN THE SETTING OR TECHNICAL ANALYSIS SINCE THE DEIS

6.7.2.1 Changes in the Existing Environment

Several projects have occurred in the I-494 corridor since the DEIS, resulting in alteration of some wetlands in these project areas. These projects are described in greater detail in Section 1.2.2 of this FEIS. These projects included reconstruction of the interchanges of I-494 with TH 169, TH 5 and Minnetonka Boulevard/CSAH 5. In these three project areas,

wetlands were filled, storm water ponds were created and surface water drainage patterns were altered. To avoid confusion, the numeric designations originally assigned to the wetland basins in the DEIS have been retained in the FEIS analysis where possible. It should be noted that because some wetlands have been eliminated by the previously completed projects, the current numbering sequence has gaps.

For the DEIS, the wetland basins in the project area were located using NWI maps, and approximate wetland boundaries were confirmed with site visits. Wetlands in the corridor were then classified according to *Wetlands of the United States* (USFWS Circular 39; Shaw and Fredine, 1971), and *Wetlands and Deepwater Habitats of the United States* (FWS/OBS Publication 79/31; Cowardin et al., 1979).

In August and September of 2000, the wetland basins in the I-494 corridor were field verified for the FEIS to identify notable changes in the field conditions since the DEIS. The wetland basins were identified through the use of NWI maps, Minnesota Department of Natural Resources Protected Waters and Wetlands maps, U.S. Geological Survey topographic maps, Natural Resource Conservation Service soil maps, and aerial photography. Additionally, each potential wetland was field-checked to verify the NWI wetland type classification. The wetlands were classified using both the Circular 39 System and the Cowardin system utilized in the DEIS. Brief definitions of the wetland types identified in the project area are illustrated in Table 6.13. Further discussion of wetland classification was included in the 1992 *Water Resources Technical Report* for the I-494 reconstruction project.

TABLE 6.13
WETLAND CLASSIFICATION SYSTEM DESCRIPTORS/MODIFIERS

Circular 39 System		
Type 1	Seasonally flooded basins and flats	
Type 1L	Seasonally flooded hardwoods	
Type 2	Inland fresh meadow, saturated at or near the surface after heavy rains or seasonally	
Type 3	Inland shallow fresh marsh, flooded up to 1.8-meter (6-foot) depth	
Type 4	Inland deep fresh marsh, flooded up to 0.9-meter (3-foot) depth	
Type 5	Inland open fresh water, flooded up to 3.1-meter (10-foot), marshy border may be present	
Type 6	Shrub swamp, flooded up to 15-centimeter (6-inch) depth	
Cowardin System		
System/Subsystem	**Class/Subclass**	**Water Regime**
P ñ Palustrine	EM ñ Emergent	A ñ Temporarily Flooded
	1 ñ Persistent	B ñ Saturated
R ñ Riverine		C ñ Seasonally Flooded
	FO ñ Forested	F ñ Flooded
L ñ Lacustrine		G ñ Intermittently Exposed
1 ñ Limnetic	SS ñ Scrub-Shrub	
2 ñ Littoral		H ñ Permanently Flooded
	UB ñ Unconsolidated Bottom	J ñ Intermittently Flooded
		D ñ Partially Drained/Ditched

In general, the I-494 corridor conditions have not changed substantially since the DEIS. The project area extends through an urban environment where the surrounding land use is residential development, office, commercial/industrial, retail space, and public roads. Most of the wetlands are altered from their original undisturbed (pre-development) condition by surrounding development. Nearly all have previously undergone changes in watershed size and in the amount and quality of the runoff they receive. Several man-made ponds created for storm water management and/or aesthetic reasons are also present within the project study area.

The DEIS discussed a total of 81 wetland basins covering approximately 166 hectares (410 acres) in close proximity to the I-494 corridor. For the FEIS, a total of 81 wetlands, covering approximately 159 hectares (392 acres) were identified within close proximity to the I-494 corridor (Table 6.14 and Figure 6.20). Most wetland basins did not change in size or type from 1992 to 2000. The difference in total area of wetlands in the project corridor is slight (7 hectares or 18 acres), and is attributed to the three interchange reconstruction projects that have occurred in the corridor since 1992 (TH 169, TH 5 and Minnetonka Boulevard/CSAH 5), and to differences in total area estimated for the larger wetlands whose boundaries extended beyond the project corridor.

Note that the wetlands in the area of the east storm water drainage system described in Section 1.7 and Section 6.3.4.4 are not included in the discussion of wetlands in Section 6.7.2 to 6.7.4 and are not included on Table 6.15. Because details of the drainage system design and configuration are still being studied, the wetlands in that area and impacts on those wetlands are discussed separately in Section 6.7.5.

Specific changes with respect to the basins identified are as follows, from west to east:

- Basin 16A was added at CSAH 5.
- Basin 31 was not considered to be within the corridor boundary for the FEIS.
- Basins 31A (comprised of several small wetlands) and 36A and B, which were not counted as wetlands in the DEIS were added near TH 62.
- Basin 28A was added near the CP Rail/Soo Line bridge.
- Basins 41, 44 and 46 from the DEIS no longer exist, and these numbers were reassigned as 41A, 44A and 46A to other basins in the general area of the TH 5/312 improvements.
- Several basins were eliminated (Basins 56, 57 and 58) and Basin 60A was added in the area of TH 169.
- Basin 74 from the DEIS was determined to be outside the project corridor and the Basin 74 designation was reassigned (as 74A) to the large MnDNR wetland along Normandale Boulevard.

TABLE 6.14
I-494 CORRIDOR PROJECT AREA WETLAND INVENTORY

Wetland Basin Number	NWI Map Classification [1] (Cowardin)	Field-Verified Cowardin Classification[1]	Circular 39 Type [2]	MnDNR No.	Dominant Vegetation
1	PEMC	PEMC	3	-	Cattails
2	PSS1/EMCd	PSS1/EMC	3/6	736W	Willow/reed canary grass
3	PEMC	PEM1A	2	-	Cattails
4	PEMC	PEMC	3	-	Cattails/reed canary grass
5	PSS1/EMC	PSS1/EMC	3/6	-	Cattail/sedge
6	PEMC	PEMC	3	-	Cattails
7	PEMC	PEM1A	2	-	Cattails
8	PEMC	PEMC	3	755W	Cattails
9	PEMC	PEMC	3	-	Cattails
10	PSS1C	PSS1C	6	-	Cattails/willow
11	PEMC	PEM1A/C	2/3	-	Cattails
12	PEMC	PEMC	2/3	-	Cattails
13	PFO1C	PFO1C	1	-	Box elder/poplar
14	PEMC	PEMC	3	-	Cattails
15	PEMC	PEMC	3	-	Reed canary grass
16	PEM/FO1C	PEM/FO1C	1/3	-	Poplar/box elder
16A	PEMC	PEMC	3	-	Reed canary grass
17	PEM/SS1Cd	PEM/SS1Cd	3	761W	Buckthorn/reed canary grass
18	PEMC	PEMC	3	-	Cattails
18A	PEMC	PEMC	3	-	Reed canary grass/cattails
19	PEMC	PEMC	3	-	Reed canary grass/cattails
20	PEMC	PEMC	3	-	Reed canary grass/cattails
21	PEMF	PEMF	3	-	Cattails
22	PEMF	PEMF	3	-	Cattails
23	PUBF/PEMF	PEMF	4	-	Open water
24	PEMF	PEMF	3	-	Sedge/cattail
25	PEMC	PEMC	3	773W	Reed canary grass/cattails
26	PUBG	PUBG	5	771W	Open water
27	PEMB/PUBF	PEMB/PUBF	2/4	789W	Reed canary grass/cattails
28	PEMC	PEMC	3	-	Cattails

TABLE 6.14 continued
I-494 CORRIDOR PROJECT AREA WETLAND INVENTORY

Wetland Basin Number	NWI Map Classification [1] (Cowardin)	Field-Verified Cowardin Classification[1]	Circular 39 Type [2]	MnDNR No.	Dominant Vegetation
29[3]	PUBF	PUBGx	5	-	Open water
30	PSS1C	PSS1C	6	-	Willow
31[3]	PEM/SS1C	PUBGx	5	-	Open water
32	PEMF	PEMF	4	-	Open water/willow
33	ñ	PEMC	3	-	Reed canary grass/cattails
34	PUBF	PUBF	5	-	Open water
35	PEMC	PEMC	3	-	Reed canary grass/cattails
36	PEMF	PEMF	3	-	Cattails
36A	-	PEMC	3	-	Reed canary grass/cattails
36B	-	PEMC	3	-	Cattails
37	L1UBH/PEMF	L1UBH/PEMF	3	67P	Sedges
38	PEMCd	PEMC	3	814W	Cattails
39	PUBGx	PEMF/PSS1	3/6	813W	Box elder/reed canary grass
40	PUBF	PEMF	3	72P	Cattails
41A	-	PEMC	3	-	Reed canary grass/cattails
42	PEM/SS1C	PFO1C	1	-	Reed canary grass
43	ñ	PEMF	3	-	Cattails
44A	ñ	PEMF	3	-	Cattails
45	ñ	PEMC	3	-	Cattails
46A	L1UBH	L1UBH	5	74P	Open water
47	PEMF	PEMF	4	-	Sedges/cattails
48	PSSI/EMC	PSSI/EMC	3/6	1088W	Cattails
49	PEMF/L1UBH	PEMF/L1UBH	3/4	73W	Sedges/cattails
50	PUBG	PUBG	5	-	Open water
51[3]	PUBG	PUBG	5	-	Open water
52	L2UBG	L2UB	5	62P	Open water
53	R2UBG	R2UB	4	1012W	Reed/sedge
54	PEM/SS1C	PEMC/SS1C	3/6	1013W	Box elder/willow
60	PEMC	PEMC	3	-	Cattails
60A	PEMC	PEMC	3	-	Cattails
61	PEM/SS1C	PEM/SS1C	6	-	Cattail/poplar

TABLE 6.14 continued
I-494 CORRIDOR PROJECT AREA WETLAND INVENTORY

Wetland Basin Number	NWI Map Classification [1] (Cowardin)	Field-Verified Cowardin Classification[1]	Circular 39 Type [2]	MnDNR No.	Dominant Vegetation
62	PEM/SS1C	PEM/SS1C	6	1013W	Cattails
63[3]	R2UBGx/PUBG	R2UBGX/PUBG	5	1013W	Open water
64	R2UBG	PEMF/R2UBG	3	1013W	Poplar
65	R2UBGx	PUBGx	5	-	Open water
66	R2UBGx	PUBGX	5	-	Open water
67	-	PSS/EMC	6/3	-	Alder/cattails
68	PUBGx	PUBG	5	-	Open water
69	PEMC/PUBGx	PEMC/PUBGx	3/4	1043W	Cattails
70	PEMC	PEMC	3	1042W	Cattails
71[3]	ñ	PUBGx	5	-	Open water
72[3]	ñ	PUBGx	5	-	Open water
73	R2UBG/PUBGx	PUBGx	5	1044W	Open water
74A[3]	PUBGx	PUBGx	5	1045W	Open water
75	R2UBGx	R2UBGx	3	1044W	Sedges
76	PUBGx	PUBGx	5	-	Open water
77	PUBGx	PUBGx	5	-	Open water
78	PEMC	PEMC	2	-	Cattails
79[3]	PUBGx	PUBGx	5	-	Open water
80	PEMC	PEMC	2	-	Cattails/reed canary grass
81	PUBGx	PUBGx	5	1081W	Open water

Table includes streams and waterbodies. Table does not include wetlands in the area of the east storm water drainage system (discussed in Section 1.7) with the exception of #81.

Notes: [1] Given the complexity of many of the larger wetlands, only the dominant wetland habitat(s) are listed in the Cowardin Classification columns for each wetland basin. Also see Table 6.14 for letter code definitions.

[2] It is not possible to directly equate the Circular 39 system with the Cowardin system. The Cowardin system classifies wetland habitats, whereas the Circular 39 system maps wetland basins.

[3] These wetlands are excavated open water ponds with fountains.

6.7.2.2 Changes in Wetland Regulations

Since the DEIS, the regulation of wetland impacts in Minnesota has evolved due to implementation of regulations and guidelines for enforcement of the Wetland Conservation Act of 1991 (Minnesota Statute 103G.222-2373 amended 2000; Minnesota Rules Chapter 8420), referred to as ìWCA.î At the time of completion of the DEIS in April 1992, WCA had been in effect for a short time and full implementation of WCA did not occur until 1994. Therefore, essentially all WCA procedures can be considered ìnewî or changes since the DEIS.

Prior to 1992 (the date of the DEIS), several federal laws and actions, including the Clean Water Act, the Food Securities Act, Presidential Executive Order 11990, the Rivers and Harbors Act and other coastal zone and natural resource protection laws evolved into a complex federal regulatory structure that established the principal guiding steps for wetland impacts (avoid,

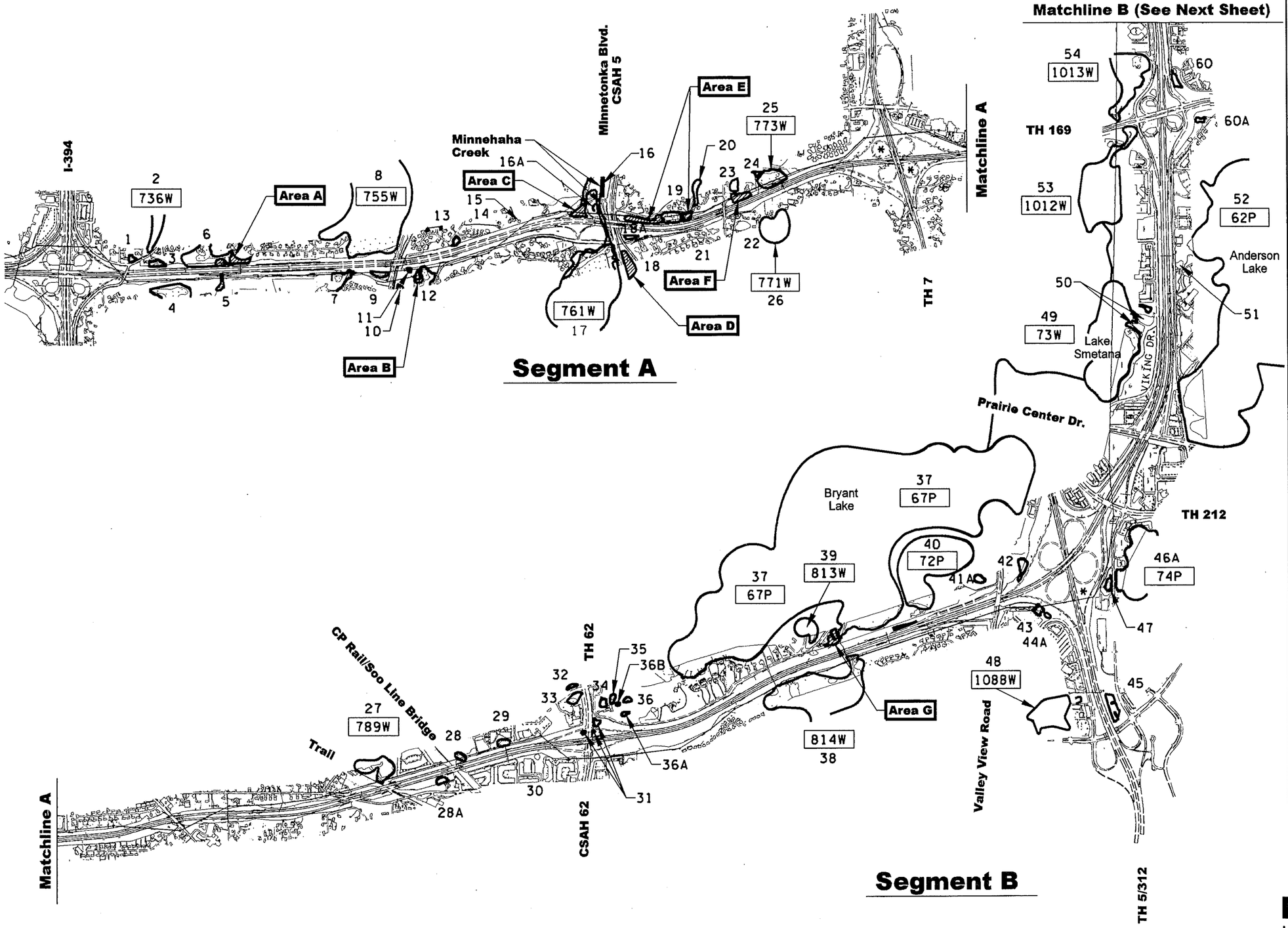


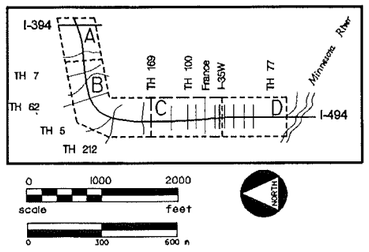
Figure 6.20
Sheet 1 of 2

Wetland Inventory

Legend

- **Basin Number** — 80
- **DNR Protected Wetland** — 755W
- **Wetland Boundary**
- **Wet Ditch** — *
- **Potential Onsite Mitigation Area**
- **Mitigation Area Name** — Area H

Key



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I-394 to the Minnesota River

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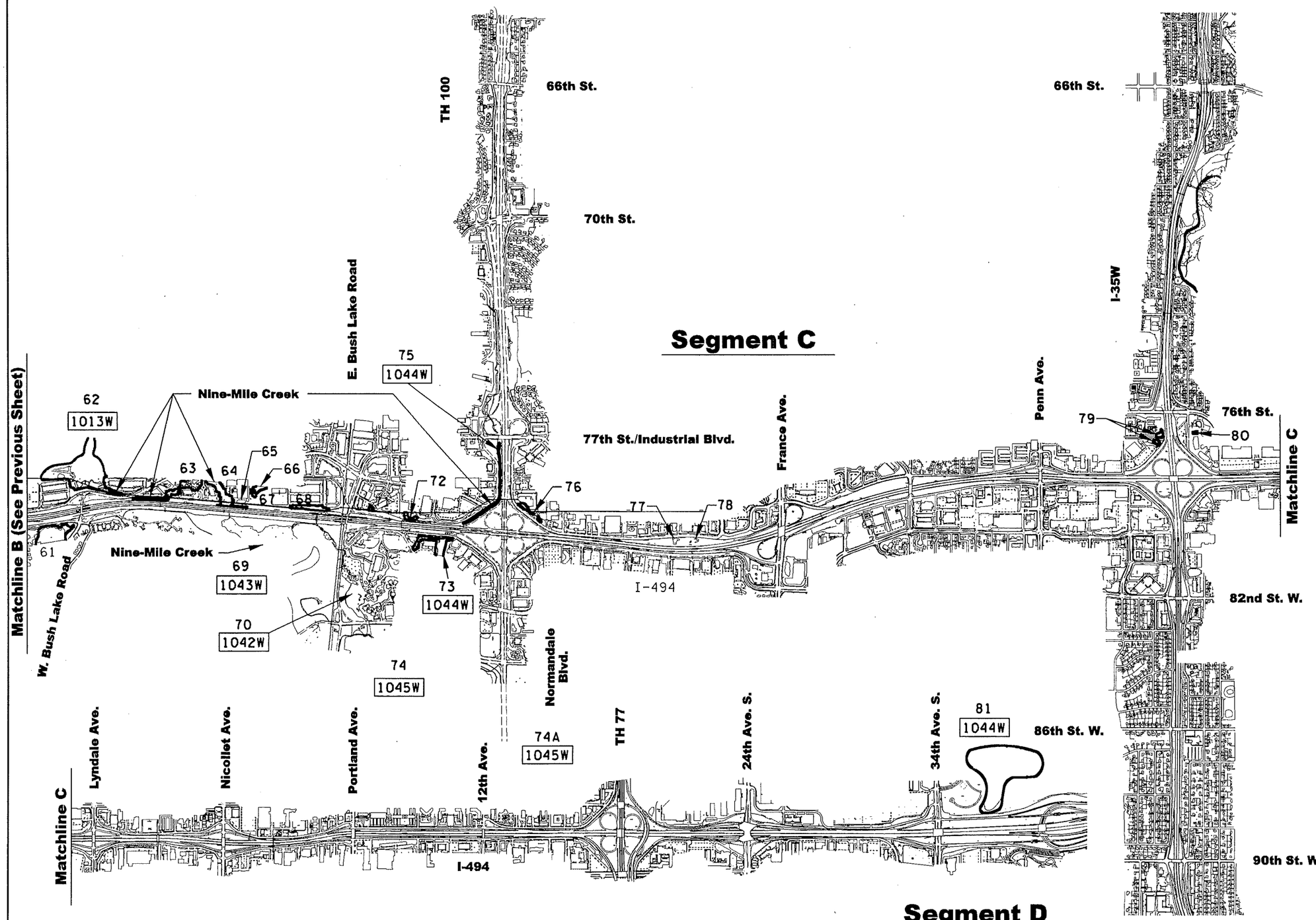


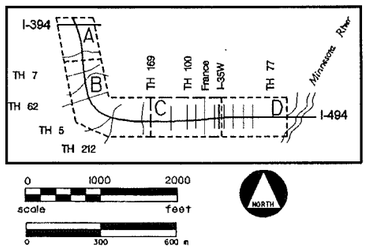
Figure 6.20
Sheet 2 of 2

Wetland Inventory

Legend

- **Basin Number** — 80
- **DNR Protected Wetland** — 755W
- **Wetland Boundary**
- **Wet Ditch** — *
- **Potential Onsite Mitigation Area**
- **Mitigation Area Name** — Area H

Key



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I-394 to the Minnesota River

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minimize and mitigate/replace). As a result of this regulatory framework, federal wetland protection jurisdiction is shared among the U.S. Environmental Protection Agency (EPA), the Army Corps of Engineers (COE) and other federal agencies with the COE being the primary permitting authority.

The three principal guiding steps (avoid, minimize and mitigate/replace) were perpetuated at the state level in Minnesota through WCA and the Minnesota Governorís Executive Order 91-3, which established the ìno net lossî policy with regard to wetlands. The WCA established that wetland protection in Minnesota will be administered by the Board of Water and Soil Resources (BWSR), and requires Local Governmental Units (LGUs) to oversee the wetland permitting process and to enforce mitigation requirements. The law regulates the draining and filling of wetlands in Minnesota and requires replacement via approved plans when wetland draining or filling is unavoidable. The Minnesota Department of Natural Resources (MnDNR) was afforded joint permitting authority for impacts on MnDNR-protected waters (a sub-set of wetlands in Minnesota).

In 1994, state and federal agencies developed (and later amended) a state wetland banking program for wetland replacement. The BWSR and the COE developed a process to provide both state and federal approval of wetland banking sites. An applicant using a site that satisfies both WCA replacement and COE (Section 404 of the Clean Water Act) mitigation requirements would comply with both state and federal replacement requirements.

In 1998, a new reporting system to track WCA (and other natural resource program) numbers was developed: the Local Government Annual Reporting System, or LARS. Local governments that implement the WCA (such as Mn/DOT) are required to report data more specifically and completely than had been required previously. As an LGU, Mn/DOT developed and maintains its own tracking system for banking and impacts.

The functional assessment of wetlands received attention in 1997. The Minnesota Interagency Wetland Group developed the Minnesota Routine Assessment Method for Evaluating Wetland Functions (MnRAM), a tool for evaluating wetlands based on function rather than size and type. Greater emphasis has been placed in recent years on replacing wetlands with same-type wetlands.

In January 2000 a ìletter of permissionî (LOP) process for COE wetland permitting was adopted, replacing the nationwide permitting process, in an effort to streamline wetland permit approvals. The LOP uses many of the standards contained in WCA, meaning that a project permitted through WCA would generally also be permitted through the COE.

Amendments to WCA rules (Chapter 8420) in 2000 added excavation of wetlands (excluding Type 1 and Type 2) to the activities that WCA regulates; established new permitting application forms (to be more useful in conjunction with the LOP, above); and modified wetland replacement procedures, strongly encouraging mitigation to occur within the same county as the impact. Modification of Chapter 6115 (pertaining to MnDNR wetlands) allows for the MnDNR to waive jurisdiction of lake-like (ìPî) wetlands to the LGU, and categorically waives regulation of shallow wetlands (ìWî) from MnDNR to the LGU.

6.7.2.3 Changes in Wetland Impact Areas

Wetland impacts determined for the DEIS were presented as a range reflecting the various mainline and interchange options considered in that document. For this FEIS, only the Preferred Alternative impacts were examined. These design differences, as well as changes resulting from the three interchange reconstruction projects implemented since 1992 result in wetland impacts differing from those discussed in the DEIS.

6.7.3 IMPACTS ASSOCIATED WITH THE PREFERRED ALTERNATIVE

Existing wetlands in the project area are described in Section 6.7.2.1. Wetland impacts that would result from the Preferred Alternative are summarized below. Note that the wetland impacts identified in this section include stream and water body modifications identified in Section 6.12 of this FEIS. Also note that the potential wetland impacts from the east storm water drainage system described in Section 1.7 and Section 6.3.4.4 are not included in the discussion of wetland impacts in Section 6.7.3.1. Because details of the drainage system design and configuration are still being studied, these impacts are discussed separately in Section 6.7.5.

6.7.3.1 Wetland Area Impacts

Because the project involves the expansion of an existing roadway, the extent that wetland impacts can be avoided or minimized is limited. The amount of impact on each wetland in the I-494 corridor will vary depending in part upon the wetlandís proximity to the roadway and if the road alignment can or cannot be shifted to avoid wetland impacts.

This section addresses direct impacts on wetlands resulting from excavation or filling necessary for the Preferred Alternative (described in Section 3.4). The impacts were determined using anticipated construction limits and the identified wetlands described in the previous section. The construction limit lines were overlain onto the wetland inventory to identify potential wetland impact areas; i.e., all wetland areas within the construction limit lines were assumed to be impacted. Some smaller wetlands that were partially within the construction limits were assumed to be completely filled (i.e., 100 percent impacted) because the unfilled portion of wetland that would remain would likely cease to function as a wetland.

In some locations, site constraints and the need to construct storm water ponds to detain/treat surface water runoff may necessitate construction of a storm water pond in a wetland. These potential impacts are shown in italic print in Table 6.15 ñ Estimated Wetland Impact Summary. While the storm water pond would provide water quality and flood control functions, this may result in a change in wetland type and/or function. In each case that this would be proposed, the value of the storm water pond will be compared against the value of the wetland. Avoidance and mitigation of storm water pond wetland impacts will be reviewed with regulatory agency staff on a case-by-case basis during final design and permitting.

The wet ditches identified within the existing right-of-way would be affected by the road construction. The ditches were not identified as wetlands because these ditches were incidentally created by the grading and drainage patterns of the roadway. The ditches would not likely be considered wetlands because the ditches have probably not developed hydric soils. In addition, similar wet ditches would develop with the Preferred Alternative, just as the existing ones developed, as construction is completed and culvert and drainage systems are extended or replaced.

Wetland impacts were avoided/minimized to the extent possible by widening the roadway within the existing median and where possible, shifting the roadway alignment. Anticipated wetland basin impacts (including fill and excavation) from the Preferred Alternative are summarized in Table 6.15 (by basin) and Table 6.16 (by wetlands type) and are described in the remainder of this section.

I-394 Area - Basins 1 through 6: The proposed I-494 project would avoid impacts on basins in this area by utilizing the median between the northbound and southbound lanes for much of the roadway widening and shoulders. Three of the six wetlands (Basins 1, 2 and 4) would not be impacted and the remaining three basins (3, 5 and 6) directly adjacent to the existing roadway would be impacted.

North of Stone Road to North of McGinty - Basins 7 through 12: The proposed I-494 widening would avoid impacts on these basins by utilizing the median for the expansion area, rather than expanding on the outside travel lanes. Impacts would result on portions of three of the six basins (Basins 7, 8 and 12) that are nearest to the roadway. Stone Pond (as shown on Figure 6.5) would impact Basin 9.

South of McGinty Road - Basins 13 through 15: Impacts on these wetlands would be minimized by utilizing the median for the expansion area. The two wetlands closest to the road would be impacted.

I-494/Minnetonka Boulevard Interchange - Basins 16 through 18: Improvements to this interchange were completed as part of a previous separate project. No additional impacts on these wetlands would occur as a result of the I-494 Preferred Alternative, with the exception of impacts to Basin 18 from the construction of McGinty Pond (shown on Figure 6.6).

Orchard Road Bridge - Basins 19 through 26: Impacts on these wetlands would be minimized by utilizing the median for the roadway construction. Impacts on Basins 20, 21, 22, 23, 24 and 26 would be avoided, but Basins 19 and 25 would be impacted.

Trail Bridge and CP Rail/Soo Line Bridge - Basins 27 through 30: Impacts on these wetlands would be minimized by utilizing the median for the roadway construction. Basins 27, 29 and 30 will not be impacted, while Basins 28, 28A and 30 will be impacted. Basin 30 is assumed to be fully impacted because approximately half of this wetland would be filled.

TABLE 6.15
ESTIMATED WETLAND IMPACT SUMMARY

Wetland Basin Number	Verified Type (Cowardin) [1]	Type [1] (Circ. 39)	Total Wetland Area		Estimated Impact Area		Percent of Wetland Impacted
			Acres	Hectares	Acres	Hectares	
1	PEMC	3	0.3	0.1	-	-	-
2	**PSSI/EMC**	**3/6**	**5.3**	**2.1**	**-**	**-**	**-**
3	PEM1A	2	0.8	0.3	0.3	0.1	33
4	PEMC	2/3	>5	>2	-	-	-
5	PSSI/EMC	3/6	0.5	0.2	0.03	0.01	6
6	PEMC	3	3.50	1.4	0.8	0.3	23
7	PEM1A	2	>5	>2	0.04	0.02	<1
8	**PEMC**	**3**	**>25**	**>10**	**0.02**	**0.01**	**<1**
9	PEMC	3	0.2	0.1	-	-	-
9	*PEMC*	*3*	*0.6*	*0.2*	*0.6*	*0.2*	*100*
10	PSS1C	6	0.8	0.3	-	-	-
11	PEM1A/C	2/3	0.1	0.04	-	-	
12	PEM1A	2/3	0.9	0.4	0.02	0.01	2
13	PFOIC	1	0.4	0.2	0.1	0.04	2
14	PEMC	3	0.1	0.04	0.04	0.02	4
15	PEMC	3	0.1	0.04	-	-	-
16	**PEM/FO1**	**1/3**	**0.7**	**0.3**	**-**	**-**	**-**
16A	PEMC	3	0.4	0.2	-	-	-
17	**PEM/SS1Cd**	**4**	**>10**	**>4**	**-**	**-**	**-**
18	*PEMC*	*3*	*0.8*	*0.3*	*0.8*[2]	*0.3*[2]	*100*[2]
18A	PEMC	3	0.4	0.2	0.4	0.2	100
19	PEMC	3	1.8	0.7	0.8	0.3	44
20	PEMC	3	1.6	0.6	-	-	-
21	PEMF	3	0.3	0.1	-	-	-
22	PEMF	3	2.0	0.8	-	-	-
23	PEMF	4	0.8	0.3	-	-	-
24	PEMF	3	0.2	0.1	-	-	-
25	**PEMC**	**3**	**3.6**	**1.5**	**0.9**	**0.4**	**25**
26	**PUBG**	**5**	**5.1**	**2.1**	**-**	**-**	**-**
27	**PEMB/PUBF**	**2/4**	**4.1**	**1.7**	**-**	**-**	**-**
28	PEMC	3	0.6	0.2	0.1	0.04	17
28A	PEMC	3	0.5	0.2	0.2	0.1	40
29	PUBGx	5	0.7	0.3	-	-	-
30	PSS1C	6	0.2	0.1	0.2[2]	0.1[2]	100[2]
31	PUBGx	5	0.5	0.2	0.5	0.2	100
32	PEMF	4	0.9	0.4	0.03	0.01	3
33	PEMC	3	0.9	0.4	0.01	<0.01	1
34	PUBF	5	0.5	0.2	-	-	-

TABLE 6.15 continued
ESTIMATED WETLAND IMPACT SUMMARY

Basin	Verified Type (Cowardin) [1]	Type[1] (Circ. 39)	Total Wetland Area		Estimated Impact Area		Percent of Wetland Impacted
			Acres	Hectares	Acres	Hectares	
35	PEMC	3	0.4	0.2	-	-	-
36	PEMF	3	0.3	0.1	-	-	-
36A	PEMC	3	0.1	0.04	-	-	-
36B	PEMC	3	0.2	0.1	-	-	-
37	**L1UBH/PEMF**	**3**	**>10**	**>4**	**0.2**	**0.1**	**<2**
38	**PEMC**	**3**	**>15**	**>6**	**-**	**-**	**-**
39	**PEMF/PSS1**	**3/6**	**>50**	**>20**	**-**	**-**	**-**
40	**PEMF**	**3**	**>15**	**>6**	**-**	**-**	**-**
41A	PEMC	3	0.9	0.4	-	-	-
42	PFO1C	1	1.0	0.4	-	-	-
43	PEMF	3	0.6	0.2	-	-	-
44A	PEMF	3	0.2	0.1	-	-	-
45	PEMC	3	1.7	0.7	-	-	-
46A	**L1UBH**	**5**	**>10**	**>4**	**-**	**-**	**-**
47	PEMF	4	0.6	0.2	-	-	-
48	**PSS1/EMC**	**3/6**	**5.00**	**2.0**	**-**	**-**	**-**
49	**PEMF/L1UBH**	**3/4**	**>25**	**>10**	**-**	**-**	**-**
50	PUBG	5	2.0	0.8	-	-	
51	*PUBG*	*5*	*0.5*	*0.2*	-	-	-
52	**L2UB**	**5**	**>50**	**>20**	**-**	**-**	**-**
53	**R2UB**	**4**	**>10**	**>4**	**-**	**-**	**-**
54	**PEMC/SS1C**	**3/6**	**5.0**	**2.0**			**--**
54	***PEMC/SSIC***	***3/6***	***5.0***	***2.0***	***0.7***	***0.3***	***14***
60	PEMC	3	0.7	0.3	-	-	-
60A	PEMC	3	0.4	0.2	-	-	-
61	PEM/SS1C	6	6.8	2.8	0.01	<0.01	<1
62	**PEM/SS1C**	**6**	**>10**	**>4**	**-**	**-**	**-**
63	**R2UBGx/ PUBG**	**5**	**5.0**	**2.0**	**0.01**	**<0.01**	**<1**
64	**PEMF/R2UBG**	**3**	**2.0**	**0.8**	**0.2**	**0.1**	**10**
65	PUBGx	5	0.4	0.2	-	-	-
66	PUBGx	5	0.6	0.2	-	-	-
67	PSS/EMC	6/3	0.1	0.04	-	-	-
68	PUBG	5	1.4	0.6	1.4	0.6	100
69	**PEMC/PUBGx**	**3/4**	**>10**	**>4**	**2.0**	**0.8**	**<20**
70	**PEMC**	**3**	**>10**	**>4**	**3.4**	**1.4**	**<34**
70	***PEMC***	***3***	***>10***	***>4***	***1.0***	***0.4***	***<10***
71	PUBGx	5	0.2	0.1	-	-	-
72	PUBGx	5	0.4	0.27	0.4[2]	0.2[2]	100
73	**PUBGx**	**5**	**3.0**	**1.2**	**0.4**	**0.2**	**13**

TABLE 6.15 continued
ESTIMATED WETLAND IMPACT SUMMARY

Basin	Verified Type (Cowardin) [1]	Type[1] (Circ. 39)	Total Wetland Area Acres	Total Wetland Area Hectares	Estimated Impact Area Acres	Estimated Impact Area Hectares	Percent of Wetland Impacted
74A	**PUBGx**	**5**	**>15**	**>6**	**-**	**-**	**-**
74A	***PUBGx***	***5***	***>15***	***>6***	***4.3***	***1.7***	***28***
75	**R2UBGx**	**3**	**0.8**	**0.3**	**0.8**	**0.3**	**100**
76	PUBGx	5	0.5	0.2	0.5[2]	0.2[2]	100
77	PUBGx	5	0.4	0.2	0.5[2]	0.2[2]	100
78	PEMC	2	0.5	0.2	0.5[2]	0.2[2]	100
79	PUBGx	5	0.4	0.2	0.3	0.1	60
80	PEMC	2	0.1	0.04	-	-	-
81	**PUBGx**	**5**	**3.1**	**1.3**	**-**	**-**	**-**
	TOTALS		**392**	**159**	**22.5**	**9.1**	

Table includes stream and water body modifications identified in Section 6.12 of this FEIS. Table does not include potential wetland impacts from the east storm water drainage system discussed in Section 1.7.
ì-î Indicates no fill or zero percent impact.
MnDNR wetland basins are shown in **bold type.**
Impacts from storm water pond construction are presented separately from roadway fill impacts, and are shown in *italicized underlined type.*
[1] Wetland types presented reflect the deepest-water habitat or type.
[2] Because 50 percent or less of the wetland would remain, 100 percent impact is assumed.
[3] The boundaries of these wetlands extended beyond the contour maps used to measure wetland acreage. Actual basin size is larger than the number represented here.

TABLE 6.16
ESTIMATED TOTAL WETLAND IMPACTS BY WETLAND TYPE (CIRCULAR 39)

Type[1] (Circ. 39)	Wetland Fill Impacts from Roadway		Wetland Impacts from Storm Water Ponds		Total Wetland Impacts	
	Acres	Hectares	Acres	Hectares	Acres	Hectares
1	0.1	<0.1	-	-	0.1	<0.1
2	0.9	0.4	-	-	0.9	0.4
3	9.9	4.0	3.1	1.3	13.0	5.3
4	-	-	-	-	-	-
5	4.0	1.6	4.3	1.7	8.3	3.4
6	0.2	0.1	-	-	0.2	0.1
7	-	-	-	-	-	-
TOTALS	**15.1**	**6.1**	**7.4**	**3.0**	**22.5**	**9.1**

Table includes stream and waterbody impacts. Table does not include impacts resulting from the east storm water drainage system (discussed in Section 6.7.5).

Interstate-494/TH 62 - Basins 31 through 36: One basin (31) nearest the interchange would be fully impacted, and two further to the east (Basins 32 and 33) would be partially affected by fill necessary for the new interchange configuration. Basins 34 through 36 would not be impacted by the new interchange. Other interchange configurations considered at this location (a widened full diamond or addition of bridged ramps) would have resulted in greater wetland impacts.

TH 62 to Valley View Road - Basins 37 through 41A: Impacts on these wetlands would be minimized by utilizing the median for the roadway construction. Two of the five wetlands (Basin 37 ñ a MnDNR wetland - and Basin 41A) would be affected by roadway fill. The remaining three wetlands that would be avoided (Basins 38, 39 and 40) are MnDNR wetlands.

TH 5/TH 12/Flying Cloud Drive/Prairie Center Drive Area - Basins 42 through 48: Improvements to the I-494/TH 5 interchange area were completed as part of a previous separate project. Wetland impacts were addressed in the project memorandum for that project, as discussed Section 1.2.2. No additional impacts on these wetlands would occur as a result of the I-494 Preferred Alternative.

Viking Drive, TH 169 and Bush Lake Road West - Basins 49 through 62: (Note number sequencing gap from 55 through 59 due to the previously completed project in this area.) The I-494/TH 169 interchange has recently been reconstructed. No additional impacts on the remaining wetlands in this area would occur as a result of the I-494 Preferred Alternative, with the exception of impacts on Basin 54 that would result from the expansion of existing Molar Pond (discussed in Section 6.3 ìSurface Water Drainageî and shown on Figure 6.9), and on Basin 61 where the Bush Lake Road West bridge over I-494 will be widened.

A developer that has acquired property in this area has contacted Mn/DOT regarding planned development that could impact Basin 54. The developer will continue to plan their activities in cooperation with Mn/DOT but will obtain separate permits and reviews for their project and any resultant wetland impacts.

Seventy-eighth Street and East Bush Lake Road - Basins 63 through 73: I-494 from TH 169 eastward will be widened with two additional lanes in each direction to a total of four lanes, which would require utilization of property adjacent to the outside lanes in addition to the use of some of the median for the widening. Wetlands would also be impacted by the reconstruction of East Bush Lake Road and its bridge over I-494, addition of a loop ramp to provide access between eastbound I-494 and East Bush Lake Road, and the relocation of the south frontage road (Green Valley Drive) at East Bush Lake Road. Impacts on wetlands would be minimized by locating the access ramps where Green Valley Drive currently exists, and placing the new Green Valley Drive alignment on a route that uses upland areas. Basin 63, 64, 68, 69, 70, 72, 73, 75 and 76 would be impacted by road-related fill, while Basins 62, 65, 66, 67 and 71 would not be impacted. Basin 70 would be impacted by fill from the construction of Porkchop Pond and Ballpark Pond (discussed in Sections 6.3.3.2 and 6.3.4.2 and shown on Figure 6.10).

TH 100 to France ñ Basins 74A through 78: In this stretch of road there is little or no available median, so impacts were minimized by widening the road immediately adjacent to the existing road, thus limiting impacts to only those wetlands that are already adjacent to the existing highway. Basin 74A would be impacted by the creation of Goldman Pond (shown on Figure 6.10 and discussed in Section 6.3) while Basins 75, 76, 77 and 78 would sustain impacts from I-494 project fill.

Interstate-35W and Airport ñ Basins 79 through 81: In this stretch of road there is little or no available median, so impacts were minimized by widening the road immediately adjacent to the existing road, thus limiting impacts to only those wetlands that are already adjacent to the existing highway. The reconfiguration of the I-494/I-35W interchange would impact Basin 79. Basins 80 and 81 would not be impacted because of their distance from the proposed construction.

6.7.3.2 Wetland Function

In addition to the general wetland type classification, a functions assessment was performed for the wetlands that would be impacted by the project. The Minnesota Routine Assessment Method (MnRAM) was used as a guide for the functions assessment, but was modified to fit the circumstances of the project area (i.e., a project area where most wetlands have been impacted by their proximity to metropolitan development, and for which detailed assessments would be performed closer to the time of construction and permitting). The method was modified in two ways: 1) Instead of conducting a detailed field assessment for each basin, the wetlands were assessed using aerial photographs and information found in municipal storm water plans and a brief visit to each basin to assess its vegetation; and 2) A specific reference wetland was not identified for comparison with the assessed wetlands; rather, the wetlands were compared to a hypothetical relatively undisturbed suburban metropolitan area wetland, the characteristics of which were developed based on the analystís familiarity with wetlands in this setting. The following discussion details the methodology of this functions assessment for the wetlands that would be impacted by the project, and describes the impacts of the project.

The MnRAM rating scale for each function includes five levels, from lowest (function not performed by a wetland) to highest (for functions performed exceptionally by a wetland). The scale includes NA (for Not Applicable); Low; Medium; High; Exceptional.

Wetland functions include groundwater recharge and discharge, flood storage, sediment trapping, nutrient retention and removal, and habitat for a wide variety of vegetation and wildlife species. Wetlands can also provide aesthetic value to communities and landscapes. As stated before, the wetlands in the I-494 project corridor are generally surrounded by developed, suburban landscapes. While these wetlands do provide habitat for some wetland plant species that are adapted to life in a developed environment, population densities and diversity have been reduced by disturbance and degradation of habitat. Extensive monocultures of reed canary grass and cattails are common in these wetlands. Hydrologic regimes have been altered by surrounding development, construction of outlets and, in some cases, discharge of storm water into the wetlands.

Due to these conditions and a lack of adjacent undeveloped upland areas, it generally can be said that the wildlife functions of these wetlands are low or medium when compared with the hypothetical wetland, unless otherwise noted. The vegetative diversity and maintenance of characteristic hydrologic regime functions are assumed to be low as well, due to the heavy impacts of urbanization on the native vegetation and natural hydrology. Unless otherwise noted, the fishery habitat function of these wetlands is also assumed to be low because of their small size and relative isolation. Only wetlands associated with lakes or watercourses would have a shoreland protection function; this function is assumed to be not applicable unless otherwise noted.

Basins 3 through 30 ñ City of Minnetonka:

The City of Minnetonka conducted a wetland evaluation and inventory for their 1999 *Water Resources Management Plan*. Information such as the amount of available water storage, outlet elevation, and phosphorous removal capability for these wetlands was taken from this report.

Wildlife Habitat: These wetlands are all rated medium for wildlife habitat because while they do provide some habitat, they are surrounded by developed land, have altered hydrology and contain monocultures.

Flood and storm water storage/attenuation: Basins 3, 5, 13, 14 and 30 are rated low for this function due to their low water storage potential (less than 1,233.5 cubic meter [one acre-foot)] and/or the presence of open constructed channels. Basins 9, 12, 18, 18A, 28, 28A are rated medium for this function due to their intermediate capacity for storm water storage. Wetlands with high water storage potential (greater than 6,167.4 cubic meters [5 acre-feet]), that are managed for storm water and have a high ranking for this function include wetlands 6, 7, 8, 19, 25.

Water quality protection: Basins 3, 5, 9, 14 and 18 are rated low for water quality protection based on their small size, ditched flow-through characteristics and documented low phosphorus removal. Basins 12, 13, 18A, 28, 28A and 30 are small and would have short detention times but would still contribute to protection of the water quality in the watershed. These wetlands are rated medium. Basins 6, 7, 8, 19 and 25 are large vegetated wetlands that would provide sufficient residence time for settling of particulates and therefore would provide greater contribution to water quality improvement in the watershed and are rated high.

Aesthetics/Recreation: All the studied wetlands are visible from the road or from adjacent developed areas and therefore provide visual diversity, particularly in contrast with developed lands. The wetlands are rated medium to high depending on the level of disturbance and whether they are associated with a frequently viewed natural setting such as a park.

Basins 31 through 37 - City of Eden Prairie

These wetlands are part of the Nine Mile Creek Watershed District. Wetlands impacted by the proposed project include Basins 31, 32, 33 and 37.

Wildlife Habitat: Basins 31, 32 and 33 wetlands are all rated medium for wildlife habitat because, while they do provide some habitat, they are all surrounded by developed land, have altered hydrology and contain monocultures. Basin 37 (Bryant Lake) is rated high for wildlife habitat due to its diversity, size and connectedness to undeveloped parkland. Basin 37 is also rated high for fishery habitat based on DNR characterizations of fish populations in Bryant Lake, and Nine Mile Creek Watershed District classification of the lake as a pristine water body.

Flood and storm water storage/attenuation: Basins 32 and 33 have an overall low rating for storm water attenuation/storage due to their small size and topographic position. Basin 31 is rated medium because it is managed to intercept storm water runoff but its small size limits its effectiveness. Basin 37 has a high rating for flood and storm water attenuation/storage because of its size.

Water quality protection: Basins 31 and 37 have high ratings for water quality protection, and Basins 32 and 33 have medium ratings. Basin 31 is managed to intercept storm water and there is the potential for sediments to settle out. Basin 37 has a high rating because of its large size and long retention time. While Basins 32 and 33 are small, they have a high amount of vegetative cover that would aid in slowing the flow of water and removing excess nutrients from the water before it moved farther down the watershed.

Aesthetics/Recreation: All the studied wetlands are visible from the road or from adjacent developed areas and therefore provide visual diversity particularly in contrast with developed lands. The wetlands are rated medium to high depending on the level of disturbance and whether they are associated with a frequently viewed natural setting such as a park.

Wetland areas associated with Basin 37 are also rated high for shoreland protection because emergent shoreland vegetation reduces wave shore erosion.

Basins 54 to 79 - Cities of Bloomington and Richfield

Wildlife Habitat: All of these wetlands except Basins 69 and 74A are rated medium for wildlife habitat because while they do provide some habitat, they are surrounded by developed land, have altered hydrology and contain monocultures. Basins 69 and 74A are rated high for wildlife habitat because of their size, hydrologic diversity and connectedness to undeveloped land. The DNR Fisheries office has identified Nine Mile Creek as supporting northern pike and other species of fish, but there are no confirmed reports of this species in the I-494 corridor creeks.

Flood and storm water storage/attenuation: Basin 75 is rated low for storm water attenuation/storage because it is a steep-sided ditch, and Basin 72 is rated low because it is isolated and small. Basins 61, 68, 73, 76, 77, 78 and 79 are rated medium for flood and storm water attenuation/storage. These basins are isolated but are medium-sized. Basins 54, 63, 64, 69, 70 and 74A are rated high for flood and storm water attenuation/storage because of their large areas, high percentage of vegetative cover and association with Nine Mile Creek.

Water quality protection: Basin 75 is rated low for water quality protection because it is a ditched section of Nine Mile Creek, and Basin 72 is rated low because it is isolated and small. Basins 63, 64, 68, 72, 73, 76, 77, 78, and 79 are rated medium because they would provide indirect water quality benefits to downstream receiving waters. Basins 54, 61, 69, 70 and 74A are rated high for water quality functions because they are large, heavily vegetated and are directly associated with Nine Mile Creek.

Aesthetics/Recreation: All the studied wetlands are visible from the road or from adjacent developed areas and therefore provide visual diversity particularly in contrast with developed lands. The wetlands are rated medium to high depending on the level of disturbance and whether they are associated with a frequently viewed natural setting.

Basins through which Nine Mile Creek flows (Basins 54, 63, 64, 69, 70 and 73) are rated high for shoreland protection because the vegetation and wide floodplains associated with these wetlands slow down runoff and reduce erosion.

Table 6.17 summarizes the results of the wetland function assessment. The effect of the project on function is shown by arrows (↓), each denoting a reduction in one level of function rating (i.e. *High* ↓ indicates a pre-project function of High and a post project function of Medium, and *High* ↓↓ indicates a post project function of Low, and Medium ↓↓ indicates that the function would cease and become NA, usually because of 100 percent fill).

6.7.3.3 Summary of Impacts

Based on the impacts assessment for the Preferred Alternative described in the previous sections, it is expected that a total of 35 wetland basins would be affected. After implementation of avoidance and minimization techniques as described in Section 6.7.3.1 of this FEIS, approximately 9.1 hectares (22.5 acres) of impact would result from the proposed project. Of the impact areas, approximately 6.1 hectares (15.1 acres) would be due to construction-related fill, and 3.0 hectares (7.4 acres) of impact would be due to construction of storm water ponds in existing wetlands. This impact area is greater than the wetland impact area estimated in the DEIS. The increased estimate in this FEIS is the result plan revisions that include: additional design concept development that identified unavoidable impacts that were not considered in the DEIS (e.g., East Bush Lake Road interchange) and inclusion of approximately 3 ha (7.4 acres) of wetland impacts related to storm water treatment pond construction.

The proposed project would fill ten wetlands completely. These wetlands range in size from less than 0.1 to 0.6 hectares (0.2 to 1.4 acres). The total area of these wetlands is 2.5 hectares (6.2 acres). Their functions are generally rated Medium for all categories. All of the functions of these wetlands would be lost if the project is built. The remainder of the wetlands would be partially impacted. Partial filling of wetlands would have varying effects on functions. The portion of the wetlands remaining intact is not necessarily rated lower than the original wetland even though there is a net loss of wetland functions. However some wetlands are rated lower if a substantial portion of the wetland is filled.

TABLE 6.17
FUNCTIONS ASSESSMENT FOR IMPACTED WETLANDS

Basin	Wildlife Habitat	Fishery Habitat	Flood/ Storm Water/ Attenuation	Water Quality Protection	Shoreline Protection	Aesthetics/ Recreation	Proposed Impact Area
3	Medium	NA	Low	Low	NA	Medium	33%
5	Medium	NA	Low	Low	NA	High	6%
6	Medium	NA	High	High	NA	Medium	23%
7	Medium	NA	High	High	NA	High	<1%
8	Medium	NA	High	High	NA	Medium	<1%
9	Medium	NA	Medium↑	Low↑	NA	Medium	100%
12	Medium	NA	Medium	Medium	NA	High	2%
13	Medium	NA	Low	Medium	NA	Medium	2%
14	Medium	NA	Low	Low	NA	Medium	4%
18	Medium↓	NA	Medium↑	Low↑↑	NA	Medium	100%
18A	Medium↓↓	NA	Medium↓↓	Medium↓↓	NA	Medium↓↓	100%
19	Medium	NA	High↓	High↓	NA	Medium	44%
25	Medium	NA	High	High	NA	High	25%
28	Medium	NA	Medium	Medium	NA	Medium	17%
28A	Medium	NA	Medium	Medium	NA	Medium	40%
30	Medium↓↓	NA	Low↓	Medium↓↓	NA	Medium↓↓	100%
31	Medium↓↓	NA	Medium↓↓	Medium↓↓	NA	Medium↓↓	100%
32	Medium	NA	Low	Medium	NA	Medium	3%
33	Medium	NA	Low	Medium	NA	Medium	1%
37	High	High	High	High	High	High	<2%
54	Medium	Low	High	High	High	Medium	13%
61	Medium	NA	Medium	High	NA	Medium	<1%
63	Medium	Low	High	Medium	High	Medium	<1%
64	Medium	Low	High	Medium	High	Medium	10%
68	Medium↓↓	NA	Medium↓↓	Medium↓↓	NA	Medium↓	100%
69	High	Low	High	High	High	High	<20%
70	Medium	Low	High	High	High	Medium	<34%
72	Medium	NA	Low↓	Low↓	NA	Medium↓↓	100%
73	Medium↓	Low	Medium	Medium	High	Medium	13%
74A	High	NA	High	High	High	High	28%
75	Medium↓↓	NA	Low↓	Low↓	NA	Medium↓↓	100%
76	Medium↓↓	NA	Medium↓↓	Medium↓↓	NA	Medium↓↓	100%
77	Medium↓↓	NA	Medium↓↓	Medium↓↓	NA	Medium↓↓	100%
78	Medium↓↓	NA	Medium↓↓	Medium↓↓	NA	Medium↓↓	100%
79	Medium	NA	Medium↓	Medium↓	NA	Medium	60%

6.7.4 MITIGATION MEASURES

Federal and state wetland regulations require the use of a sequenced approach when projects have potential impacts on wetlands. Sequencing requires avoiding impacts on wetlands first, and if impacts are not avoidable, they must be minimized to the greatest extent practicable. After all options for avoidance and minimization of impacts have been considered and implemented, mitigation that will replace lost wetland functions is required for those impacts that are not avoidable. Mitigation of wetland impacts is most commonly accomplished by restoring previously-altered wetlands (wetland restoration or enhancement credits) or by creating new wetlands where upland currently exists ("new" wetland credits). State wetland mitigation regulations allow the use of constructed storm water treatment ponds and/or related preservation of upland buffer areas as "public value credit" (PVC) towards a portion of wetland mitigation required for project impacts.

6.7.4.1 Avoidance of Wetland Impacts

Complete avoidance of wetland impacts was not possible due to several factors, including the presence of wetlands on both sides of the existing roadway alignment in many areas, the need to widen the roadway to meet capacity requirements and current roadway design standards and the need to construct storm water detention/treatment ponds to meet federal, state and local surface water regulations. Efforts made to avoid/minimize wetland impacts in the project area during development of the Preferred Alternative design concept were described in Section 6.7.3.

For the Preferred Alternative, avoidance measures that could be incorporated into designs while meeting design standards resulted in decreased areas of impact for several wetlands. Frontage road realignment using land already in use as roadways, and alignments that keep loops, ramps and frontage roads as close to the main road as is safely possible avoided wetland impacts in the area of TH 100, TH 169, Bush Lake Road West and East Bush Lake Road. Other design criteria required the frontage road connections to be located away from the mainline to provide adequate spacing. Where possible, these road connections were designed to avoid wetland impacts.

The Preferred Alternative requires the widening of the road (addition of one lane in each direction) for the entire project corridor. The use of the current roadway alignment (rather than shifting the road off the centerline) allows impacts on wetlands adjacent to I-494 to be avoided or minimized. Use of the available median between the eastbound and westbound lanes from I-394 to approximately TH 169 avoids or minimizes wetland impacts in this portion of the corridor.

The wetland impacts related to storm water construction were minimized to the extent possible, but could not be avoided and still meet storm water detention/treatment requirements effectively. Wetlands that are proposed to be impacted by storm water pond construction are either: 1) located adjacent to existing ponds that need to be expended (e.g., Molar Pond, which is proposed to be expanded to include a two-cell design) or, 2) located where a regional treatment pond is proposed by a local government as part of its storm water management plan (e.g., McGinty Pond) or, 3) located where topography dictates system drainage to the lower (wetland) area.

6.7.4.2 Minimization of Wetland Impacts

Minimization of wetland impacts was considered during the conceptual design phase of the project. As described above, roads, bridges and other facilities related to the project were aligned and designed to avoid wetland impacts. Additional design modifications will be considered in the final design of the project to further minimize wetland impacts. Designing road profiles as low as possible and designing inslopes (beyond the required clear zone) as steeply as practicable may further minimize impacts.

Best management practices would be implemented to control impacts on wetland functions. Erosion prevention and sediment control measures would include provision of silt fences and traps, hay bales, and temporary ponding areas. Permanent ponding areas would be constructed as early in the project as practicable. Excess fill material would not be deposited in wetlands or other environmentally-sensitive areas.

Temporary disturbance of wetland areas during construction would be avoided where possible; however, some disturbance of wetlands may occur. Any temporary wetland disturbance would be restored as soon as possible following grading or excavating activities. No construction debris or fill would be permanently placed in temporary wetland impact areas. Therefore, impacts listed in Tables 6.15 and 6.16 do not include temporary impacts. Any temporary construction impacts would be rectified by use of regrading to original contours, vegetation replacement and landscaping.

The existing hydrologic characteristics of basins experiencing partial impacts as a result of the project would be maintained through minimization techniques such as ensuring that drainage patterns between and through wetlands are maintained and preventing wide fluctuations from existing water levels.

6.7.4.3 Wetland Replacement

Current state and federal regulations require mitigation of wetland impacts. Current state (WCA) regulations require a wetland mitigation ratio of 2:1 if replacement is within the same watershed or county as the impact; replacement that is not in the same watershed or county is required at a 2.5 to 1 ratio, and replacement from an established wetland bank is required at a 2.25 to 1 ratio. Created or new wetlands must be used for the first 1:1 ratio, and Public Value Credit (PVC) areas (such as permanent upland buffer and water quality treatment ponds) may be used for replacement credit in excess of the initial 1:1 ratio. Similarly, under current state regulations, wetland impacts from storm water ponds can sometimes be counted at a reduced ratio toward the total impact area.

At a 2:1 mitigation ratio, the 9.1 hectares (22.5 acres) of impact for the I-494 reconstruction project would result in the need to provide approximately 18.2 hectares (45 acres) of wetland mitigation (half of which must be created or new replacement wetlands). (This area is

representative of a worst-case scenario as it includes wetland impacts from storm water ponds which can be counted at a reduced ratio toward the total impact area.) If wetland regulations change during the course of project implementation, the required mitigation may change. Applicable regulations will be reviewed as each phase of construction is implemented, to determine appropriate replacement requirements.

Wetland mitigation would occur ñ consistent with availability of mitigation sites - at locations following this priority order:

1) On-site or in the same minor watershed as the affected wetland
2) In the same watershed as the affected wetland
3) In the same county as the affected wetland
4) In an adjacent watershed or county
5) Statewide.

Section 404 of the Clean Water Act (administered by the COE) also regulates wetlands at the federal level. The COE regulations regarding wetland mitigation requirements are generally consistent with WCA requirements. Therefore, fulfillment of WCA requirements would satisfy Section 404 regulations.

In Minnesota, impacts on public waters (MnDNR Protected Waters and their wetlands) are subject to additional regulation. Basins 8, 25, 37, 54, 63, 64, 69, 70 73, 74A and 75 are MnDNR Protected Waters that may be impacted by the Preferred Alternative. Impacts on Mn/DNR Protected Waters are estimated as 5.6 hectares (13.9 acres). Additional replacement wetlands or compensation may be necessary for impacts on these basins. Closer to the time of construction of each project phase, regulations will be reviewed to determine replacement requirements and ratios. The impacts on streams are discussed further in Section 6.12, Stream and Waterbody Modifications.

During final design for each phase of construction, a wetland compensation plan for replacement of the affected wetland areas would be developed. That plan would reassess the areas of wetland impacts (and mitigation needed) based on final design plans, wetland delineations, and the current and applicable wetland mitigation guidelines and regulations in effect at that time. The intent of the wetland mitigation plans would be to replace lost wetland functions in the project area where possible and create an off-site wetland mitigation area to accomplish the remainder of the required mitigation. Current WCA regulations require a five-year monitoring plan to be developed for all wetland replacement lands. This plan would be included in the wetland compensation plan if required at the time of permitting. Other requirements include the need for an MPCA 401 water quality certification for all COE Section 404 permits. This certification would be obtained if necessary.

<u>On-Site Mitigation</u>

As described in Sections 6.3 and 6.4, storm water ponds will be constructed as part of the I-494 reconstruction project. The purpose of these storm water ponds is to provide attenuation (discharge rate control) and treatment for storm water that presently runs off the road

surfaces without the benefit of treatment or rate control (except in the sections of I-494 that have recently been rebuilt, i.e. the interchanges of I-494 with TH 169, TH 5 and Minnetonka Boulevard/CSAH 5 as described in Section 1.2.2, where treatment exits). Construction of the storm water treatment ponds will, compared with current conditions, improve runoff water quality in the project corridor, as well as provide discharge rate control to receiving waters.

In addition to the storm water ponds, new wetlands will be created in the project corridor where possible, as partial mitigation for construction fill impacts on existing wetlands. Based on the availability of undeveloped land and preliminary feasibility assessments, seven potential on-site mitigation locations have been identified in the project corridor. These potential wetland mitigation sites are shown on Figure 6.20.

The on-site mitigation sites being considered are areas adjacent to or within the right-of-way that have potential for wetland creation for mitigation and compensation. The seven sites that have been identified could potentially yield a total of 2.3 hectares (5.7 acres). Most of the areas lie adjacent to existing wetlands and all are currently undeveloped open space. Figure 6.20 shows the potential wetland mitigation areas, and Table 6.18 presents the potential size, ownership, general location and potential limitations of these potential wetland restoration/creation sites.

TABLE 6.18
POTENTIAL ON-SITE MITIGATION LOCATIONS

Area	Potential Mitigation Area Location	Ownership	Potential Wetland Area to be Created hectares (acres)	Limitations
A	Around Basin 6	Private/ Mn/DOT	0.3 (0.8)	Topography; R/W Acquisition
B	Around Basin 12	Private/Minnetonka	0.1 (0.3)	Topography; R/W Acquisition
C	NE Quadrant of I-494/ Minnetonka Boulevard	Mn/DOT	0.4 (0.9)	Topography
D	Between Minnetonka Blvd. and Minnetonka Drive	Minnetonka	0.2 (0.5)	R/W Acquisition; Agency Coordination
E	North of/Around Basin 19	Minnetonka/Mn/DOT	0.6 (1.4)	R/W Acquisition
F	West of Basin 23	Private/Mn/DOT	0.3 (0.8)	R/W Acquisition
G	Between Basins 39 and 37	Eden Prairie	0.4 (1.0)	R/W Acquisition; DNR Coordination
TOTAL 2.3 hectares (5.7 acres)				

Off-Site Mitigation

The vast majority of the land in the project corridor is either developed or is already wetland. Because of the limited amount of undeveloped upland, off-site wetland mitigation will likely be necessary for wetland replacement. Mn/DOT has a Memorandum of Understanding with Hennepin Conservation District to cooperate on locating and designing off-site wetland mitigation sites for this and other Mn/DOT projects. Mn/DOT has begun coordinating with the Hennepin Conservation District to identify an off-site location or locations to utilize for replacement areas that cannot be met within the I-494 corridor or adjacent to it. This process will continue and adequate mitigation area will be provided consistent with regulatory requirements, for each phase of project construction.

6.7.5 OTHER POTENTIAL WETLAND IMPACTS ñ EAST STORM WATER DRAINAGE SYSTEM

As described in Sections 1.7, 6.3.3 and 6.3.4 of this FEIS, the storm water conveyance system for the segment of I-494 from I-35W to the Minnesota River is undersized for existing conditions. With the additional flows associated with the Preferred Alternative the undersizing would become more pronounced, and additional storm sewer capacity would need to be provided. A separate study is currently being conducted to identify various alternatives and recommend a conveyance method and location. Initial study analyses indicate that either a supplemental ìhigh flowî line or an enlarged replacement trunk line would likely be required.

The supplemental/and or expanded drainage line is anticipated to be located within Mn/DOT right-of-way from its western origin in the general vicinity of the I-494/I-35W interchange to approximately 34th Avenue. East of 34th Avenue, the line route to Almaz Pond with a high flow bypass to the Minnesota River (to be constructed by the Metropolitan Airports Commission [MAC] in 2001/02 as discussed in Section 6.3.4) would need to be supplemented with a new overflow (greater than 16.8 cms [600 cfs]) storm water conveyance system line. The route of this new line to the Minnesota River would be defined by the outfall location selected. While the drainage study referenced above has not been completed, work performed to date has narrowed down discharge and associated alignment options for an overflow line east of 34th Avenue to the following (see Figure 6.16):

A) Outlet to Military Reservation Pond (see Figure 6.16)ó under this option, the conveyance alignment would stay within Mn/DOT right-of-way or Mn/DOT-owned land. It is anticipated that a forebay pond for treatment upstream of Military Reservation Pond would be utilized. Military Reservation Pond discharges to the Minnesota River.

B) Outlet to MAC treatment pond ì040î north of the I-494 Bridge (see Figure 6.16)ó under this option, the conveyance alignment could stay within Mn/DOT right-of-way except possibly for a portion south and east of TH 5 where easement would have to be obtained from the United States Air Force and/or the MAC. The Minnesota Department of Transportation would work with the MAC to enhance treatment pond ì040î as required to maintain treatment efficiency. Water from this pond is discharged to the Minnesota River.

Two basic construction options are being considered for the east I-494 storm water drainage system improvement alternatives described above: microtunneling and open cut excavation. Microtunneling is a method of boring a tunnel with a Tunnel Boring Machine (TBM) with little surface disturbance. If open cut excavation were utilized, surface features and elevations would be returned to pre-construction conditions following installation of the line. A preferred method of construction has not yet been identified.

The drainage study currently underway will recommend a method and outfall location based on the various environmental and design factors, including impacts on wetlands. Further refinement will take place during the final design of this conveyance system. Because the location and design of the new drainage system east of 34th Avenue are not known at this time, the analysis of potential wetland impacts is limited to a discussion of all existing wetlands that could conceivably be impacted by the conveyance and outfall location ultimately chosen (within ìReview Areaî of Figure 6.16).

The wetlands south of I-495/TH 5 and west of the river (including wetlands associated with Military Reservation Pond) are all Circular 39 system Type 2, 3, 4, 5 or 7 wetlands (or Cowardin system PEMC, PEMF, PFO1C or PEM/UBF wetlands). The deeper water areas (areas below the ordinary high water mark) of Military Reservation Pond are MnDNR wetlands. These wetlands would potentially be impacted by Option A. It may be possible to avoid impacts on the MnDNR wetlands by routing the conveyance system through shallow water areas, but wetland impacts would be unavoidable assuming this outfall location and associated conveyance line.

North and west of I-494/TH 5, the only existing wetland is Wetland Basin 81, which is also MnDNR wetland 1081W. It is not anticipated that this wetland would be impacted under Option A or Option B.

East of TH 5 and north of I-494 are several wetland areas. Riverine shoreline wetlands (classified as R2USC, riverine, lower perennial, unconsolidated shoreline, seasonally flooded), and fringe wetlands (classified as PFO1C, Circular 39 Type 6/7) of varying widths (0 to 4.6 meters [0 to 15 feet]) are present along the Mississippi River in this general location. MAC Pond 040, a 0.9ñhectare (2.1-acre) storm water pond classified as PUBGx, Circular 39 Type 5, is located just north of I-494. Option B would impact MAC Pond 040 and possibly riverine shoreline wetlands if the outfall from MAC Pond 040 to the river had to be reconstructed. Tunneling or ditching would be used to place necessary conveyance lines.

The Minnesota River channel is a MnDNR protected water; while WCA may not be applicable to riverine impacts, the MnDNR and the COE regulate impacts on the river and avoidance measures must be employed. Based on the conveyance systems alternatives outlined above, no direct river impacts are anticipated.

The eastern portion of the I-494 reconstruction project, including the expanded storm water conveyance system, is not scheduled for construction until some time after 2010. During final design for this project, wetland avoidance and minimization will be incorporated into design efforts and a wetland compensation plan will be developed for replacement of unavoidable wetland impacts. That plan will assess the exact areas of wetland impacts (and mitigation) based

on final design plans, wetland delineations, and applicable wetland mitigation guidelines and regulations in effect at that time. The intent of the wetland mitigation plan would be to replace lost wetland functions in the project area where possible and create an off-site wetland mitigation area to accomplish the remainder of the required mitigation.

On-site mitigation opportunities will be examined in final design. Preliminary identification of potential mitigation areas indicates that the area south of I-494 extending from the east edge of Military Reservation Pond to the west edge of Long Meadow Lake could be used for mitigation. Limitations on the use of this land include the need to coordinate with Mn/DNR for right-of-way acquisition and steep slopes. Other opportunities for replacement wetland creation may exist north of I-494 in the area of MAC Pond 040, or northwest of TH 5 in the areas of MAC Ponds 1 and 2 (see pond locations on Figure 6.16).

6.7.6 ONLY PRACTICABLE ALTERNATIVE FINDING

Based upon the above considerations, it is determined that there is no practicable alternative to the proposed construction in wetlands and that the proposed action includes all practicable measures to minimize harm to wetlands which may result from such use.

6.8 POTENTIAL SOIL AND GROUNDWATER CONTAMINATION

The Affected Environment for potential soil and groundwater contamination sites for the I-494 corridor reconstruction was described in Section 4.2.7 of the DEIS. Impacts and mitigation measures were addressed in Section 5.3.10 of the DEIS.

6.8.1 INFORMATION FROM THE DEIS THAT REMAINS UNCHANGED

As discussed in the DEIS, since much of the I-494 corridor is highly developed, there is corresponding potential to encounter contaminated sites during construction activities.

6.8.2 CHANGES IN THE SETTING OR TECHNICAL ANALYSES SINCE THE DEIS

For the DEIS, the Minnesota Pollution Control Agency (MPCA) Property Transfer File Evaluation Program was used to get information on potential contamination sites in the project corridor. This information was supplemented by field surveys and communications with staff of the cities within the project corridor.

Because the information compiled for the DEIS was dated (greater than five years old) by the time that the FEIS process was reinstated in 2000, the determination was made to conduct a completely new analysis of potential contaminated sites following current standards and practices for a Phase I Environmental Site Assessment (Phase I ESA). A discussion of the analysis and findings is presented in Section 6.8.3, below.

6.8.3 IMPACTS ASSOCIATED WITH THE PREFERRED ALTERNATIVE

The presence of potentially contaminated properties (defined as properties where soil and/or groundwater is impacted with pollutants, contaminants or hazardous wastes) is a concern in the development of highway projects because of potential liabilities associated with ownership of such properties, potential cleanup costs, and safety concerns associated with construction personnel encountering unexpected wastes, contaminated soil or groundwater. Contaminated materials encountered during highway construction projects must be properly handled and treated in accordance with state and federal regulations. Improper handling of contaminated materials can worsen their impact on the environment. Contaminated materials also cause adverse impacts to highway projects by increasing construction costs and causing construction delays, which also can increase project costs.

A Phase I ESA provides information on potentially contaminated properties. These properties are identified through review of historic land use records and air photos, federal (Environmental Protection Agency [EPA]), state (MPCA) and county/city records, as well as current property condition. Sites of potential concern identified by the Phase I ESA can be categorized into three risk areas: high, medium, and low environmental risk. In general, high environmental risk sites are properties that have a documented release of chemicals or other strong evidence of contamination such as soil staining or storage of large volumes of petroleum or other chemicals, and sites enrolled in the MPCA Voluntary Investigation and Cleanup (VIC) program. These sites have the greatest potential for high cleanup costs and/or environmental liability. Medium environmental risk sites are properties where relatively small volumes of petroleum, chemicals, or hazardous materials are stored, but no evidence of spills or releases is noted or documented, and properties with documented releases that have been ìclosedî or are ìinactiveî (signifying no further cleanup actions deemed necessary) by the MPCA. Closed or inactive sites are considered medium risks because residual soil or groundwater contamination may exist. Low environmental risk sites include properties where small volumes of chemicals or hazardous materials are/have been used or stored.

A Phase I ESA in general conformance with the American Society of Testing and Materials standard was completed for the project area in November 2000 (*Phase I Environmental Site Assessment ñ I-494 Reconstruction Project, SP 2785-261,* STS Consultants, Ltd.). A copy of the Phase I ESA report has been placed on file and is available for review at the Mn/DOT Metro Division office.

The Phase I ESA identified 270 known or potentially contaminated properties in the total study area: 109 high environmental risk sites, 57 medium risk sites, and 104 low risk sites. Of these sites, review of the Phase I ESA information indicates that 87 have a potential to be impacted by the project, based upon two criteria: a) they are either high or medium environmental risk sites, and b) they are in close proximity to the proposed project limits. These 87 sites are identified in Table 6.19, and their locations are depicted on Figure 6.21. Table 6.19 presents the reason for concern at each site. Please note that the site identification numbers are consistent between Table 6.19 and Figure 6.21. The numbering scheme is taken directly from the Phase I ESA referenced above.

TABLE 6.19
KNOWN OR POTENTIALLY CONTAMINATED PROPERTIES THAT MAY BE AFFECTED BY THE PROJECT

Site ID[(1)]	Site Address	Reason for Concern
136	13305 Excelsior Boulevard	Active gas station. Petroleum underground tanks registered at site. No release reported at site.
134	5801 Baker Road	Petroleum underground storage tank release (closed) reported at site.
41A	7901 Flying Cloud Drive	Petroleum underground storage tank release (closed) reported at site.
117*	Northeast quadrant intersection of TH 169 & West 78th Street	Record of solid waste landfill at this location containing street sweepings.
37	8025 Edwood Place	Petroleum underground storage tank release (closed) reported at site.
107B	7800 Picture Drive	Petroleum underground storage tank release (closed) reported at site.
22A	8331 Normandale Boulevard	Active gas station. Petroleum underground storage tank release reported at site.
34C	5311 Green Valley Drive	Petroleum underground storage tank release (closed) reported at site.
30	8111 Normandale Boulevard	Active gas station. Petroleum underground storage tank release (closed) reported at site.
24A*	8151 Normandale Boulevard	Reported release site (inactive) in MPCA VIC program.
102	7851 Normandale Boulevard	Petroleum underground storage tank release reported at site.
110	5101 Industrial Boulevard	Active gas station.
100	4930 West 77th Street	Petroleum underground storage tank release (closed) reported at site.
14C	4801 West 80th Street	Petroleum underground tanks registered at site. No release reported at site.
21*	4700, 4900, 4950 West 78th Street	Reported release site (inactive) in MPCA VIC program.
16H	4470 West 78th Street	CERCLIS

TABLE 6.19 continued
KNOWN OR POTENTIALLY CONTAMINATED PROPERTIES THAT MAY BE AFFECTED BY THE PROJECT

Site ID[(1)]	Site Address	Reason for Concern
16C*	4470 West 78th Street	Reported release site (inactive) in MPCA VIC program.
16E	4444 West 78th Street	Petroleum underground storage tank release (closed) reported at site.
20A*, 20B*	4300 West 78th Street	Reported release site (active) in MPCA VIC program.
15A*	4200 West 78th Street	Reported release site (active) in MPCA VIC program. Records also indicate this was the location of a former dump.
13B	3905 West 80th Street	Petroleum underground storage tank release (closed) reported at site.
98A, 98C	7920 France Avenue	Active gas station. Petroleum underground storage tank release (closed) reported at site.
95 B	7900 Xerxes Avenue South	Petroleum underground storage tank release (closed) reported at site.
93B	7900 Penn Avenue South	Former gas station site.
88E	7744 Penn Avenue South	Petroleum underground storage tank release reported at site.
88D	7720 Penn Avenue South	Petroleum underground storage tank release (closed) reported at site.
93A	7901 Penn Avenue South	Petroleum underground storage tank release reported at site.
92B*	7925 Southtown Center	Dry cleaner
88B	7745 Penn Avenue South	Petroleum underground tanks registered at site. No release reported at site.
86A	2115 West 78th Street	Vehicle repair on site. Petroleum underground tanks registered at site. No release reported at site.
90A	2100 West 78th Street	Petroleum underground storage tank release (closed) reported at site.
86B	2000 West 78th Street	Petroleum underground tanks registered at site. No release reported at site.
94 B	1900 West 78th Street	Petroleum underground storage tank release reported at site.

TABLE 6.19 continued
KNOWN OR POTENTIALLY CONTAMINATED PROPERTIES THAT MAY BE AFFECTED BY THE PROJECT

Site ID[(1)]	Site Address	Reason for Concern
8B	8200 Humboldt Avenue South	Petroleum underground storage tank release (closed) reported at site.
9B	8053 East Bloomington Freeway	Petroleum underground storage tank release (closed) reported at site.
91B	1601 Southtown Drive	Petroleum underground storage tank release reported at site.
80D	1217 Clover Drive South	Petroleum underground storage tank release (closed) reported at site.
80E, 80C*	1201 Clover Drive South	Petroleum underground storage tank release (closed) reported at site. Reported release site (inactive) in MPCA VIC program.
89B	1700 West 78th Street	Petroleum underground storage tank release (closed) reported at site.
57*	1205 West 78th Street	Reported release site (inactive) in MPCA VIC program.
85B*	7800 Dupont Avenue South	Reported release site (inactive) in MPCA VIC program.
83A	1001 Clover Drive	Petroleum underground storage tank release (closed) reported at site.
84*	77th Street West & Colfax Avenue South	Reported release site (inactive) in MPCA VIC program.
70B	7856 Lyndale Avenue	Active gas station. Petroleum underground storage tank release reported at site.
70C	7840 Lyndale Avenue South	Petroleum underground tanks registered at site. No release reported at site.
70A	7801 Lyndale Avenue South	Petroleum underground tanks registered at site. No release reported at site.
81A, 83C*	920 West 78th Street	Reported release site (inactive) in MPCA VIC program. Petroleum underground storage tank release (closed) reported at site.
72A	7700 Lyndale Avenue South	Active gas station. Petroleum underground storage tank release (closed) reported at site.

TABLE 6.19 continued
KNOWN OR POTENTIALLY CONTAMINATED PROPERTIES THAT MAY BE AFFECTED BY THE PROJECT

Site ID[(1)]	Site Address	Reason for Concern
78A	805 77-1/2 Street	Petroleum underground tanks registered at site. No release reported at site.
72C	718 77-1/2 Street	Petroleum underground tanks registered at site. No release reported at site.
77	7645 Lyndale Avenue South	Active gas station. Petroleum underground storage tank release (closed) reported at site.
7B*	78th Street and Lyndale	Record of open dump at this location.
59B, 74C	333 West 78th Street	Petroleum underground storage tank release (closed) reported at site.
67C, 67B*	303 West 78th Street	Reported release site (inactive) in MPCA VIC program. Petroleum underground storage tank release (closed) reported at site.
71A	400 West 78th Street	Petroleum underground tanks registered at site. No release reported at site.
71B	300 West 78th Street	Petroleum underground tanks registered at site. No release reported at site.
73A	203 West 78th Street	Petroleum underground tanks registered at site. No release reported at site.
69E	7700 Pillsbury Avenue South	Petroleum underground storage tank release reported at site.
69B*, 69C	7721 Pillsbury Avenue South	Reported release site (inactive) in MPCA VIC program. Petroleum underground storage tank release (closed) reported at site.
6A	7900 Nicollet Avenue South	Petroleum underground storage tank release reported at site.
65C	7720 Nicollet Avenue South	Active gas stations. Petroleum underground storage tank release reported at site.
66C	210 East 78th Street	Petroleum underground storage tank release (closed) reported at site.
59I	335 East 78th Street	Petroleum underground tanks registered at site. No release reported at site.
59A	431 East 78th Street	Petroleum underground tanks registered at site. No release reported at site.

TABLE 6.19 continued
KNOWN OR POTENTIALLY CONTAMINATED PROPERTIES THAT MAY BE AFFECTED BY THE PROJECT

Site ID[(1)]	Site Address	Reason for Concern
64A	405 East 78th Street	Petroleum underground storage tank release (closed) reported at site.
59G*	7801 Portland Avenue South	Reported release site (active) in MPCA VIC program. Petroleum underground storage tank release reported at site.
60C	7730 Portland Avenue South	Vehicle repair on site. Petroleum underground storage tank release (closed) reported at site.
59F	7801 Portland Avenue South	Active gas station. Petroleum underground storage tank release reported at site.
60D	7733 Portland Avenue South	Petroleum underground storage tank release (closed) reported at site.
63	620 East 78th Street	Petroleum underground storage tank release (closed) reported at site.
58	1501 East 78th Street	Petroleum underground storage tank release (closed) reported at site.
54C	7744 12th Avenue South	Active gas station. Petroleum underground tanks registered at site. No release reported at site.
53A	1400 East 78th Street	Petroleum underground tanks registered at site. No release reported at site.
52A	1501 East 78th Street	Petroleum underground storage tank release (closed) reported at site.
3A	7900 East 79th Street	Petroleum underground storage tank release (closed) reported at site.
51A	2100 MTC Road	Petroleum underground tanks registered at site. No release reported at site.
47D	7800 24th Avenue South	Petroleum underground storage tank release (closed) reported at site.

TABLE 6.19 continued
KNOWN OR POTENTIALLY CONTAMINATED PROPERTIES THAT MAY BE AFFECTED BY THE PROJECT

Site ID[(1)]	Site Address	Reason for Concern
47I	7841 24th Avenue South	Petroleum underground storage tank release (closed) reported at site.
2E	8027 East 79th Avenue	Active gas station. Petroleum underground tanks registered at site. No release reported at site.
46*	2731 East 78th Street	Reported release site (inactive) in MPCA VIC program.

[(1)] Note: The site identification numbers are not sequential and have gaps because the numbering system used is taken directly from *Phase I Environmental Site Assessment ñ I-494 Reconstruction Project*, (STS Consultants, Ltd.). Not all of the sites in the search area for this document were close enough to anticipated construction limits to be potentially impacted by construction of the Preferred Alternative.

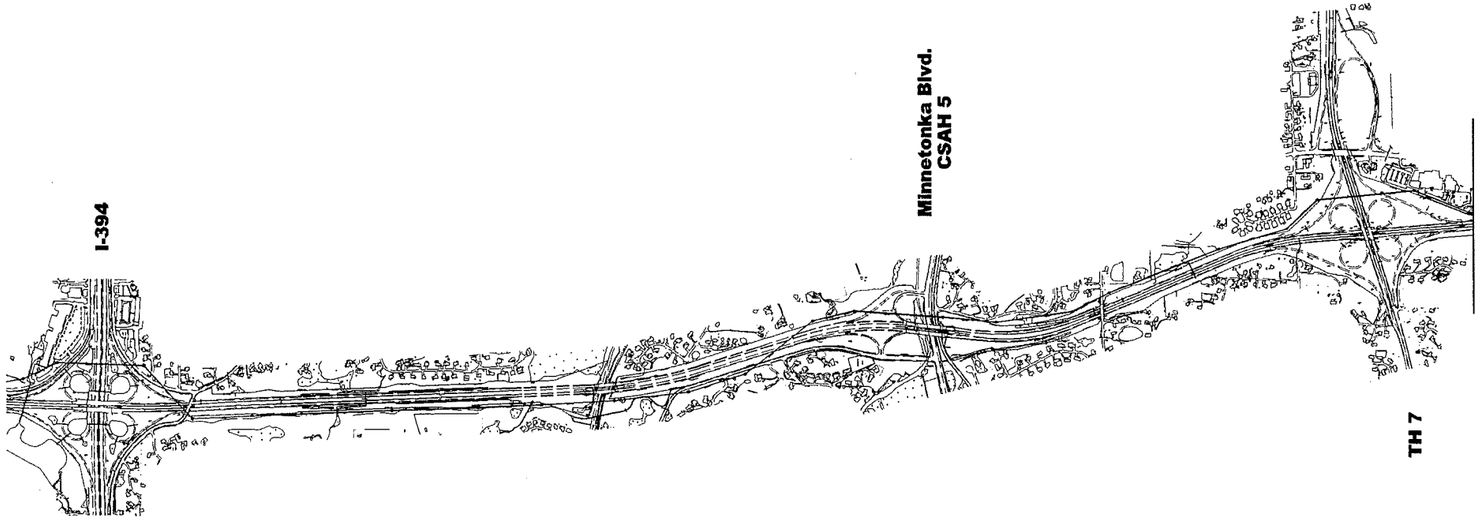
* ì Site of Concernî (refer to Section 6.8.3 text).

Based on available information obtained through the referenced Phase I ESA, 18 of the sites identified in Table 6.19 and Figure 6.21 have a potential for high cleanup costs and/or environmental liability. These eighteen "Sites of Concern" (as highlighted in Table 6.19 and depicted on Figure 6.21) were selected using Phase I ESA information regarding type and magnitude of the potential impact for individual sites. The Sites of Concern are: an active solid waste landfill (site 117), two former solid waste landfills (sites 15A and 7B), 11 VIC sites that are currently inactive (sites 24A, 21, 16C, 20A, 80C, 57, 85B, 84, 83C, 67B, 69B, and 46), 3 active VIC sites (sites 20B, 15A, and 59G) and a dry cleaner site (site 92B). With the proposed project design, all of these sites will be affected by the project.

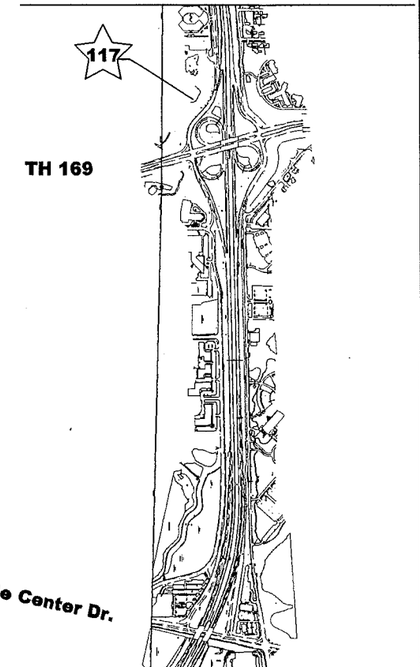
Based upon available information on potentially contaminated sites obtained through the Phase I ESA, it does not appear that any of the sites identified would be serious enough to require that any basic project elements be substantially altered or abandoned. However, if further investigation of potentially contaminated sites (see discussion in Section 6.8.4) reveals contaminated areas that could be impacted by the project, modifications will be evaluated and implemented, if possible, to minimize or avoid impacts to any contaminated portions of the sites.

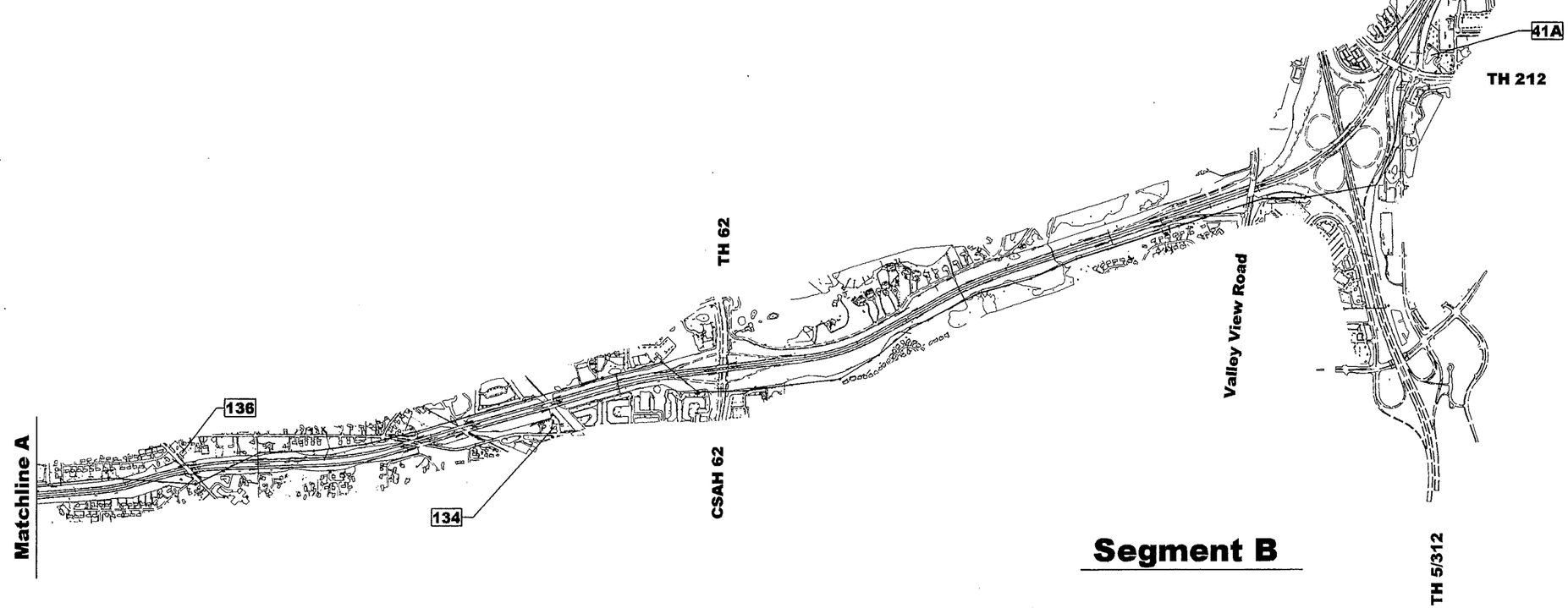
6.8.4 MITIGATION OF IMPACTS

Prior to construction activities, properties identified on Table 6.19 and Figure 6.21 will be evaluated for their potential to be impacted by construction and/or acquired as right of way. Any properties with a potential to be impacted by the project will be investigated (through detailed review of MPCA project files, and collection and laboratory analysis of soil and groundwater



Segment A





Segment B

Figure 6.21
Sheet 1 of 2

Potential Soil And Groundwater Contamination Sites

Legend

Contaminated or Potentially Contaminated Sites That May be Affected by Build Alternative 505

Contaminated or Potentially Contaminated Sites of Concern 141

Key

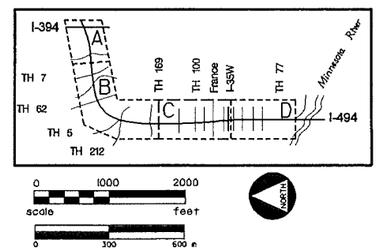


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Figure 6.21
Sheet 2 of 2

Potential Soil And Groundwater Contamination Sites

Segment C

Segment D

Matchline B (See Previous Sheet)

Matchline C

Matchline C

W. Bush Lake Road

E. Bush Lake Road

Lyndale Ave.

Nicollet Ave.

Portland Ave.

12th Ave.

TH 77

24th Ave. S.

34th Ave. S.

Normandale Blvd.

France Ave.

TH 100

TH 169

I-35W

Penn Ave.

66th St.

70th St.

77th St./Industrial Blvd.

76th St.

82nd St. W.

86th St. W.

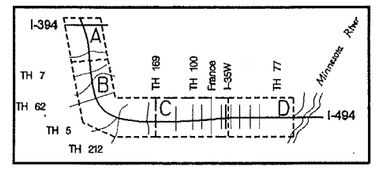
90th St. W.

Legend

Contaminated or Potentially Contaminated Sites That May be Affected by Build Alternative — 505

Contaminated or Potentially Contaminated Sites of Concern — 141

Key



0 1000 2000 scale feet

0 300 600 m

NORTH

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samples, if necessary) to determine the extent and magnitude of contaminated soil or groundwater in the areas of concern. The results of the investigation will be used to determine if the contaminated materials can be avoided, or the projectís impacts to the properties minimized. If necessary, a plan will be developed for properly handling and treating contaminated soil and/or groundwater during construction.

In addition, coordination and consultation with the MPCA Voluntary Investigation and Cleanup (VIC) Unit, the Voluntary Petroleum Investigation and Cleanup (VPIC) Unit, Tanks and Emergency Response Section (TERS), and the Minnesota Department of Agriculture Agricultural Voluntary Investigation and Cleanup Program (AGVIC) will take place as appropriate, to obtain assurances that contaminated site cleanup work, and/or contaminated site acquisition will not result in long-term environmental liability for the contamination, and to obtain contaminated soil and/or groundwater handling and cleanup plan approvals.

6.8.5 OTHER POTENTIAL CONTAMINATED SITES ñ EAST STORM WATER DRAINAGE SYSTEM

As discussed in Section 3.3.4 of this FEIS, it is anticipated that a new storm water overflow conveyance line for I-494 drainage and associated outfall will have to be constructed east of 34th Avenue. It is anticipated that this line would discharge ultimately to the Minnesota River, potentially through Military Reservation Pond or through MAC Pond 040. Prior to the completion of a study currently being performed by Mn/DOT to assess alignment, construction, and outfall options for this overall system (trunk line from approximately the I-494/I-35W interchange area east to the Minnesota River) it is not known where specifically this line and outfall will be located.

For the purposes of this FEIS, an overall area of review within which this overflow system might be located is identified on Figure 6.16. This area was not included in the study area for the I-494 reconstruction Phase I ESA referenced in Section 6.8.3. This portion of the I-494 reconstruction project does not currently have a letting date and is not anticipated to be constructed until after 2010. Prior to the construction of this eastern portion of the I-494 reconstruction project, a Phase I ESA to cover the east drainage review area identified on Figure 6.16 will be performed. Sites of concern which might be impacted by the construction of that project phase will be further investigated for potential environmental impacts, and potential options to avoid affecting contaminated areas through project design will be assessed.

6.9 VEGETATION AND WILDLIFE

The Affected Environment for vegetation and wildlife for the I-494 corridor reconstruction was described in Section 4.2.9 of the DEIS. Impacts and mitigation measures were addressed in Section 5.3.11.

6.9.1 INFORMATION FROM THE DEIS THAT REMAINS UNCHANGED

As was identified in the DEIS, the largest cover type within the study area is suburban residential and commercial. The vegetation associated with these areas is typically landscaping, consisting of lawns with trees and shrubs from nursery stock. Trees and shrubs have also been planted near some of the interchanges and along noise walls. As was identified in the DEIS, there are also several natural wooded areas adjacent to existing right-of-way in the project area.

In coordination with the wetland inventory initially done for the DEIS, other vegetation along the existing and proposed right-of-way was identified with the use of aerial photography and field surveys. The study area was searched for native prairie plants by using Bluestem, Indiangrass, and Little Bluestem as indicator species for other possible native plant species. As reported in the DEIS, none of these indicator species or any associated prairie plant species were identified in or adjacent to the right-of-way. It is assumed that if native/prairie plants were not within the corridor at the time of the DEIS, they would not have developed or been introduced since that time.

As is pointed out in the DEIS, I-494 is a high-speed, high volume, multi-laned roadway in an urban/suburban setting that has been operating for decades. The likelihood that the highway right-of-way or adjacent land areas are supporting any notable populations of wildlife is very low.

6.9.2 CHANGES IN THE SETTING OR TECHNICAL ANALYSIS SINCE THE DEIS

Information pertaining to existing wetlands and wetland impacts resulting from the Preferred Alternative has been updated relative to the DEIS (refer to Section 6.7 of this FEIS).

Three potential new interchange locations at which woodland impacts would occur were identified in the DEIS as alternatives being considered in the I-494 reconstruction project. These three interchanges are no longer part of the Preferred Alternative:

- I-494/Oakland Road
- I-494/Baker Road
- Highwood Drive/TH 169 (old TH 18)

Two of the other interchanges identified in the DEIS as part of the I-494 reconstruction and at which woodland impacts would occur have already been reconstructed. Impacts from these projects were addressed in project memorandum (PM) documentation:

- CSAH 5 (Minnetonka Boulevard)ó SP No. 2785-307; PM signed February 1998
- TH 169ó SP No. 2785-290; PM signed March 1997

In some instances, the impacts to woodlands associated with the Preferred Alternative will be somewhat greater than impacts identified in the DEIS. This is due to two factors:

- The overall mainline alignment is being shifted approximately 15 meters (50 feet) to the south in the area between West Bush Lake Road and East Bush Lake Road to minimize impacts to Nine Mile Creek. This will result in a somewhat larger area of impact to woods to the south of I-494 in this area than was assumed in the DEIS.

- Increased number of ponding locations compared to the DEIS assumptions.

6.9.3 IMPACTS ASSOCIATED WITH THE PREFERRED ALTERNATIVE

The impacts to wetlands associated with the Preferred Alternative are addressed in detail in Section 6.7.3 of this FEIS. The locations and approximate acreages of impacts to wooded areas associated with the Preferred Alternative are summarized below.

- TH 7 interchange area: 1.2 hectares (3.0 acres)

- TH 62 interchange area: 0.9 hectares (2.1 acres)

- West Bush Lake Road to East Bush Lake Road interchange area: 6.2 hectares (15.4 acres)

- Ponding areas (inclusive for whole corridor): 1.4 hectares (3.4 acres)

Since the highway right-of-way and adjacent land areas are not likely supporting any substantial wildlife populations, no adverse wildlife population impacts from the Preferred Alternative are anticipated. It is possible that bridge work will be disruptive to bird nesting.

6.9.4 MITIGATION MEASURES

Mitigation measures regarding wetlands impacted by the Preferred Alternative are addressed in Section 6.7.4 of this FEIS. Some impacts to wooded areas cannot realistically be avoided in a project of this magnitude. Some of the Preferred Alternative impacts to wooded areas would result from construction of storm water ponds that are being implemented to protect water quality and from roadway realignment to limit impacts to Nine Mile Creek.

Mature trees (those greater than six meters [20 feet] in height) cannot be moved successfully. Therefore, mitigation for the loss of wooded areas would be provided by planting new trees near the area of impact, where possible. Because large trees within freeway right-of-way can represent a safety hazard if they are too close to the roadway or obstruct sight lines, the placement would have to conform with applicable safety standards.

Any wildlife impacts resulting from filling of wetlands would be addressed through the wetland mitigation measures described in Section 6.7.4. No substantial wildlife population impacts are anticipated, so no other mitigation measures are proposed.

Prior to construction, project areas will be reviewed for evidence of bird nesting. If nesting is found, appropriate steps will be taken to comply with Federal Migratory Bird Treaty Act requirements.

6.9.5 OTHER POTENTIAL IMPACTS ñ EAST STORM WATER DRAINAGE SYSTEM

As discussed in Section 6.3.4, it is anticipated that an overflow drainage line will have to be built east of 34th Avenue for I-494 drainage. The specific location of this line and its outfall cannot be identified until the completion of a study that Mn/DOT is preparing to address the need for added capacity for the trunk drainage line from approximately the I-35W/I-494 interchange area east to the Minnesota River. However, for the purposes of this FEIS, the review area where this line and its outfall might be located is presented on Figure 6.16. This area does not include the U.S. Fish and Wildlife Service Minnesota Valley National Wildlife Refuge.

This line would involve the construction of a buried pipe for conveyance and an associated outfall. After completion of construction of this system, the setting would be returned to existing conditions, with regrading and re-vegetation as needed. Any impacts to wetlands would be mitigated in compliance with applicable regulations as discussed in Section 6.7.2.2.

It is not anticipated that the east storm water overflow system will result in adverse impacts to vegetation or wildlife resources.

6.10 RARE AND ENDANGERED SPECIES

The affected environment for rare and endangered species for I-494 reconstruction is described in Section 4.2.9 of the DEIS.

6.10.1 INFORMATION FROM THE DEIS THAT REMAINS UNCHANGED

The DEIS discussed that the proposed project will occur in an urbanized area that has previously been disturbed by human activities. Given the existing high volumes of roadway traffic and disturbed nature of the study area, it is unlikely that existing or Build right-of-way would support any state or federally listed rare/endangered species. This information is still valid.

The DEIS identified that a search of the Minnesota Natural Heritage Program database was performed as part of the scoping phase of the DEIS preparation process. This search did not identify any plant or animal species that were listed or of special concern within or near the study area.

6.10.2 CHANGES IN THE SETTING OR TECHNICAL ANALYSIS SINCE THE DEIS

Because of the passage of time since the initial search of the Minnesota Natural Heritage Program database referenced above, a new search for federally and state listed rare/endangered species was conducted as part of this FEIS preparation.

In October 2000, Mn/DOT conducted a review of the potential for federally-listed threatened or endangered species to be impacted by the proposed reconstruction of I-494. The Mn/DOT Wildlife Biologist determined that the Preferred Alternative would have no impact on federal endangered species known to occur in Minnesota.

The Minnesota Department of Transportation requested that the Minnesota Department of Natural Resources (DNR) complete a *Natural and Recreational Resources Questionnaire* for the Preferred Alternative. Part of the questionnaire response (completed in January 2001) included a review of the Minnesota Natural Heritage Program database. Relative to rare and endangered species, the DNR included the following information:

- There are 14 known occurrences of rare species or natural communities within an approximate 1.6-kilomerter (1.0-mile) radius of the project area.

- Blandings turtles, a state threatened species, have been observed in the I-494 corridor vicinity (i.e. within 1.6 kilometer [1.0 mile]) near I-35W and TH 100. Since the I-494 corridor and the adjacent areas in the vicinity of I-35W and TH 100 are already developed, it is unlikely that the project would impact the local Blandings turtle population.

- The eastern portion of the project (near the Minnesota River) falls within an area identified by the county biological survey as having biodiversity significance.

The DNR response also included recommendations regarding general construction techniques to be followed to limit the potential for impacts to rare communities.

6.10.3 IMPACTS ASSOCIATED WITH THE PREFERED ALTERNATIVE

No impacts would result from the No-Build Alternative since it does not involve construction impacts. Based upon the information provided above, it is not anticipated that the Preferred Alternative would have adverse impacts to federal or state protected species.

6.10.4 MITIGATION

Since the proposed project would not result in adverse impacts on state or federally listed rare/endangered species, no mitigation is required, over and above appropriate construction methods to limit the potential for impacts to sensitive species or communities.

6.10.5 OTHER POTENTIAL IMPACT ñ EAST STORM WATER DRAINAGE SYSTEM

Relevant information is provided in Section 6.9.5 of this FEIS. It is not anticipated that the east storm water drainage system will result in adverse impacts to rare and endangered species.

6.11 WILD AND SCENIC RIVERS

Section 5.3.12 of the DEIS described Wild and Scenic River and Canoe/Boating River issues in the I-494 corridor.

6.11.1 INFORMATION FROM THE DEIS THAT REMAINS UNCHANGED

The information on river designations as they relate to the project has not changed since the DEIS.

6.11.2 CHANGES IN THE SETTING, REGULATORY FRAMEWORK OR TECHNICAL ANALYSIS THAT HAVE OCCURRED SINCE THE DEIS

As is discussed in Section 6.3.4 of this FEIS, it is anticipated that additional capacity will be required for the trunk storm sewer serving I-494 between approximately the I-494/I-35W interchange and the Minnesota River. West of 34th Avenue, it is anticipated that this additional capacity will be provided within existing Mn/DOT right-of-way. East of 34th Avenue, additional conveyance capacity outside of Mn/DOT right-of-way may be required. Options for the design and alignment to be used for this additional capacity and outfall are currently being assessed in a study being performed by Mn/DOT. The general area in which the work east of 34th Avenue may take place is depicted on Figure 6.16.

6.11.3 IMPACTS ASSOCIATED WITH THE PREFERRED ALTERNATIVE

Wild and Scenic Rivers

The I-494 corridor does not cross nor will it adversely affect any state or federally-designated Wild and Scenic River or state-designated Canoe/Boating River. Minnehaha Creek is on the Nationwide River Inventory and is a potential candidate for federal Wild and Scenic River designation. The Preferred Alternative will not have adverse effect on natural, cultural, or recreational values of Minnehaha Creek.

Mississippi River Critical Area/Mississippi National River and Recreation Area

Under the authority of the Critical Areas Act of 1973, the Mississippi River Critical Area (MRCA) includes the Minnesota River upstream to the I-494 bridge. On the west bank of the Minnesota River, the MRCA in the Preferred Alternative project area extends west to the centerline of TH 5. As communicated to Mn/DOT by the Minnesota Department of Natural Resources (correspondence dated August 3, 1999):

ì The purposes of designating the Mississippi River as a Critical Area include:

- Protecting and preserving a unique and valuable state and regional resource for the benefit of the health, safety and welfare of the citizens for the state, region and nation;
- Preventing and mitigating irreversible damage to this resource;
- Preserving and enhancing its natural, aesthetic, cultural, and historical value for public use;
- Protecting and preserving the river as an essential element in the national and regional transportation, sewer and water and recreational systems; and
- Protecting and preserving the biological and ecological functions of the corridor.î

The area defined above as part of the MRCA is also defined as part of the Mississippi National River Recreation Area (MNRRA), which in November of 1988 was incorporated as a unit of the National Park Service under Public Law 100-696.

Figure 6.16 shows that the study area for possible location of capacity improvements to the I-494 trunk storm sewer line includes areas that would be within the MRCA/MNRRA boundaries. Further information regarding the potential location and design of this storm sewer system is provided in Section 6.3.4 and Section 6.7.5 of this FEIS. With the exception of the possible construction impacts from sewer line, no other impacts to the MRCA/MNRRA would result from the I-494 reconstruction project.

6.11.4 MITIGATION MEASURES

Wild and Scenic Rivers

Since the Preferred Alternative will not cause adverse impacts as addressed in Section 6.11.3, no mitigation is required.

Mississippi River Critical Area/Mississippi National River and Recreation Area

Currently, the Mn/DNR, Metropolitan Council, and National Park Service work in partnership in various roles on the Mississippi River Critical Area and Mississippi National River and Recreation Area (MNRRA) programs to protect and preserve the corridor. The Minnesota Department of Natural Resources administers *Critical Area Standards and Guidelines from Executive Order 79-19*. The guidelines potentially applicable to the Preferred Alternative include minimization of impacts to wetlands, bluff areas, water quality, and existing vegetation, as well as limiting beach and riverbank erosion.

Under federal law, the National Park Service (NPS) administers *MNRRA Policies and Guidelines* (*NPS Comprehensive Management Plan*). The policies potentially applicable to the Preferred Alternative are similar to the guidelines for the MnDNR Critical Area Guidelines: minimization of impacts to shorelines and shoreline vegetation, wetlands, bluff areas, water and air quality, and limiting storm water flow/rate increases and noise impacts.

If it is necessary to construct a storm water drainage line and/or its associated outfall within the MRCA/MNRRA area referenced in Section 6.11.3, it would be conducted in conformance with the MRCA and MNRRA policies listed above, and Mn/DOT would coordinate with the staff from the Minnesota Department of Natural Resources and the National Park Service. Relevant information regarding possible construction impacts in this area is provided in other portions of this FEIS including the following:

- Section 6.3 (surface water drainage)
- Section 6.4 (water quality)
- Section 6.7 (wetlands)
- Section 7.3 (construction impacts)

6.12 STREAM OR WATER BODY MODIFICATIONS

The DEIS did not include a separate section to discuss stream and water body modifications. ìModificationsî are actions that change or diminish the course, current or cross-section of public waters by filling, excavating or placing of materials in or on the beds of public waters. The purpose of considering stream and water body modifications is to identify the potential for problems such as erosion, bank instability (which may lead to erosion), aesthetic intrusion, fish and wildlife impacts flooding and impediments to navigation that may arise due to these modifications. Project-related floodplain impacts are discussed in Section 6.5 of this FEIS, and wetland impacts are discussed in Section 6.7.

6.12.1 INFORMATION FROM THE DEIS THAT REMAINS UNCHANGED

The DEIS did not include a separate section to discuss stream and water body modifications. However, Section 5.37 (Floodplains) disclosed stream impacts in the project area in the specific context of floodplains impacts/mitigation. Section 5.3.9 of the DEIS discussed impacts on water bodies through the discussion of impacts on the MnDNR wetlands (public waters).

In this FEIS, Figure 6.3 (Watershed District Boundaries) shows the streams and MnDNR water bodies in the project area. Section 6.5.2 provides a description of the streams and Section 6.7.2 discusses the MnDNR water bodies in the project area.

To identify information that has not changed since the DEIS regarding stream impacts, the Preferred Alternative impacts in the area of the four public water streams (Minnehaha Creek at Minnetonka Boulevard, County Ditch 34 south of the TH 62/I-494 interchange, Nine Mile Creek between West Bush Lake Road and TH 100 [both the South and North Forks], and Minnesota River at the eastern project terminus) were reviewed. Based upon this assessment, the following information remains unchanged from the DEIS:

- Impacts on County Ditch 34 along the east and west sides of I-494 have not changed.

- As discussed in Sections 6.7.1 and 6.7.2 of this FEIS, much of the information presented in the DEIS regarding wetland water bodies remains unchanged.

6.12.2 CHANGES IN THE SETTING, REGULATORY FRAMEWORK AND TECHNICAL ANALYSIS SINCE THE DEIS

Changes in the project setting since the DEIS are primarily the result of Mn/DOT projects that occurred at the interchanges of I-494 with Minnetonka Boulevard/CSAH 5, TH 5 and TH 169. These projects are described in greater detail in Sections 1.2.2, 6.3 and 6.7 of this FEIS. In the areas where these activities occurred, wetlands were filled, storm water ponds were created and surface water drainage patterns were altered.

The regulatory framework for protection of streams and water bodies was not discussed in the DEIS, and so is summarized here. At the federal level, the Fish and Wildlife Coordination Act (16 USC 661-666c), the Federal Water Pollution Control Act of 1972 (as amended by the Clean Water Act of 1977 & 1987 [33 USC 1251-1376]), the Rivers and Harbors Act of 1899 and other laws protect streams, aquatic habitat and waterways. Applicable federal regulations are primarily administered through the U.S. Army Corps or Engineers (COE). At the state level, protection is afforded through the Minnesota Wetland Conservation Act, Minnesota Statue 103G.24 and the rules that implement these acts and define the state waters that are protected under the jurisdiction of the Mn/DNR.

The technical analysis of impacts on streams and water bodies in the DEIS was presented as a general discussion of the floodplain and wetland impacts. The technical analysis of impacts on wetland water bodies for this FEIS is presented in Section 6.7. The technical analysis of impacts on streams, that follows, focuses more specifically on impacts to the course, current or cross section of the four streams in the project area.

6.12.3 IMPACTS ASSOCIATED WITH THE PREFERRED ALTERNATIVE

The following sections describe the impacts on the course, current or cross section of the streams in the project area. The impacts are summarized in Table 6.20 and shown on Figures 6.17, 6.18 and 6.19.

TABLE 6.20
STREAM MODIFICATIONS

Stream	Stream Use (Recreation, Water Supply, etc.)	Description of Impact	Type of Impact (Course, Current or Cross Section)	Length of Impact		Area of Impact	
				Meters	Feet	Hectare	Acres
Minnehaha Creek	Recreation, Aesthetic value	None	None	None			
County Ditch 34	Drainage	Culvert Lengthening	Cross Section	92	300	0.04	0.1
South Fork ñ Nine Mile Creek	Aesthetic value Drainage	Realignment, Culvert Lengthening	Course, Cross Section	331	1,085	0.2	0.4
North Fork ñ Nine Mile Creek	Drainage	Culvert Removal, Realignment, Culvert Placement, Culvert Replacement	Course, Cross Section	456[1]	1,496[1]	0.3	0.7
Minnesota River	Recreation, Water Supply, Aesthetic Value	None	None	None			
			TOTALS:	879	2,881	0.5	1.2

[1] Includes some replacement of culvert with open stream channel

6.12.3.1 Minnehaha Creek

The Minnetonka Boulevard/CSAH 5 interchange was rebuilt since the DEIS. Stream impacts were considered and mitigated at that time. No further stream impacts would occur with the I-494 Preferred Alternative.

6.12.3.2 County Ditch 34

As shown on Figure 6.17, the widening of lanes and shoulders with the Preferred Alternative would result in encroachment to County Ditch 34 on both sides of I-494 where extensions will be added to the I-494 underpass culvert for the ditch. On either side of I-494, approximately 46 meters (150 feet) of channel (92 meters [300 feet] total) would be filled where the existing culvert would be lengthened to accommodate the road widening. A total of 0.04 hectares (0.1 acres) of fill would be placed in the ditch channel. The course and current of the ditch would not be impacted, but the cross section would be modified slightly.

6.12.3.3 South Fork of Nine Mile Creek

At TH 169

The TH 169/I-494 interchange was reconstructed as a separate project since the DEIS. Impacts on the South Fork of Nine Mile Creek in this area were considered and mitigated at that time. No further stream impacts would occur with the I-494 Preferred Alternative.

West of East Bush Lake Road

As shown on Figure 6.18, within the Highwood Corridor of the Hyland-Bush-Anderson Lakes Regional Park Reserve, where the primary Nine Mile Creek channel lies south of and parallel to I-494 on the south, a 128-meter (420-foot) length of the channel would be filled (approximately 0.1 hectare [0.2 acres] of fill) to accommodate widening of I-494. Two possible alternatives are being considered for rerouting the channel: 1) shifting the channel to a new 82-meter (270-foot) long channel located approximately 6 meters (20 feet) south of the fill (the North Channel Alignment Option); or 2) directing the flow to an existing secondary channel south of the fill area by creating a new 122-meter (400-foot) long connection through the secondary channel area to connect with the main channel southeast of the fill area (South Channel Realignment Option). Either of these options (shown on Figure 6.18) would reconnect the new channel to the existing channel just west of East Bush Lake Road. Mn/DOT will work with state and local water regulatory agencies to identify the preferred realignment concept in this area. In addition, since the Highwood Corridor is owned and managed by the City of Bloomington parks system, this change in stream flow would need to be approved by the City (see Section 8.31 of this FEIS).

East Bush Lake Road Crossing

The existing channel flows east beneath a trestle on the Canadian Pacific (CP) Rail line just west of East Bush Lake Road (see Figure 6.18). The creek then flows beneath East Bush Lake Road

through a culvert. A 3- by 2-meter (10- by 6-foot) culvert would be added at the CP Rail crossing to replace the existing trestle during construction of the Preferred Alternative. The existing culvert beneath East Bush Lake Road would be lengthened on the east end by approximately 27 meters (90 feet). The widening of East Bush Lake Road would result in the fill of a 134-meter (440-foot) segment of channel downstream of the culvert extension where the creek bends to the south. A new channel would be required to accommodate the flow. This new meandering channel would be located approximately 26 meters (85 feet) east of the existing channel.

Green Valley Drive

The realignment of Green Valley Drive would result in the culverting of approximately 38 meters (125 feet) of stream channel just north of the confluence of the South and North Forks of Nine Mile Creek. The existing stream channel in this area is relatively straight and conveying it through a culvert would not alter its course substantially. The culvert will be sized to avoid impeding channel flow.

6.12.3.4 North Fork Nine Mile Creek

Industrial Boulevard/77th Street and West of TH 100

The North Fork of Nine Mile Creek in this are was channelized and modified during the original construction of TH 100 and the I-494 interchange. Mn/DOT staff have met with Nine Mile Creek Watershed District staff to discuss options for design elements that would accommodate the needed roadway improvements while maintaining stream channel flow and minimizing physical impacts to the channel. Based on these discussions, the proposed channel modifications in this area (from north to south, in the direction of stream flow) include:

- The 72-meter (236-foot) culvert used to convey North Fork flow underneath the TH 100/77th Street intersection would be removed, the 77th Street overpass lengthened, and the creek would be provided with a meandering channel flowing under the overpass structure.

- South of the TH 100/77th Street interchange, a 116-meter (380-foot) segment of the creek channel would be relocated west (due to widening of TH 100) into a new meandering open creek channel.

- A culvert would then carry the creek for a length of 177 meters (580 feet) parallel to the highway, to accommodate proposed TH 100 widening.

- The culvert would discharge directly into the existing open channel that will flow beneath the raised interchange ramps/loop at the northwest quadrant of the I-494/TH 100 interchange.

- The existing channel would discharge into a 92-meter (300-foot) replacement culvert beneath I-494 (to be installed at the location of the existing culvert). This culvert would discharge into the existing channel of the North Fork of Nine Mile Creek, in the southwest quadrant of the I-494/TH 100 interchange.

6.12.3.5 Minnesota River

The Minnesota River channel would not be impacted by the proposed roadway improvements.

6.12.3.6 Summary of Impacts

A total of 0.5 hectares (1.2 acres) of fill would result from the realignment and placement of structures, and total length of 879 meters (2,881 feet) of stream channel would be impacted. Aquatic habitat loss would occur in all fill areas. Other potential negative effects include erosion during and after construction, visual impacts, and vegetation removal.

6.12.4 MITIGATION MEASURES

Federal and state regulations require the use of a sequenced approach (avoid, minimize and replace/mitigate) when projects have potential impacts on water bodies and streams. Complete avoidance of stream and water body impacts was not possible due to several factors, including the presence of streams and water bodies on both sides of the existing roadway alignment as well as the need to widen the roadway to meet capacity requirements and current roadway design standards. Road locations considered for the Preferred Alternative to avoid streams and water bodies are described in Sections 6.5.3 and 6.7.3.

Although all stream and water body impacts could not be avoided, they will be minimized to the extent practicable by utilizing steep fill slopes or structures (e.g. ramps on structure at TH 100 south of 77th/Industrial Boulevard and extension of the 77th Avenue/Industrial Boulevard bridge structure) where feasible.

Mitigation of potential impacts during and after construction such as erosion, flooding, and adverse impacts on appearance, vegetation, and fish and wildlife habitat is discussed in other sections of this FEIS. Floodplain mitigation is discussed in Section 6.5.4. As discussed in Section 6.7.4, lost aquatic habitat will be replaced in accordance with applicable wetland mitigation regulations. With the erosion control measures referenced in the previous paragraph and in Section 7.3.4, and general design requirements associated with applicable water districts and regulatory bodies, adverse impacts on any fish populations in the project area are not anticipated.

Permanent erosion, bank protection and stabilization methods will be utilized where applicable. Native grasses and plant species found in the area will be given preference for use in re-vegetation and bank stabilization. Vegetative mats and other bio-engineering techniques will be used when possible in higher-erosion areas, although riprap may be required in some areas. To offset stream channel impacts, and to provide better stream habitat, the new stream channels would have a meandering course (where space allows) to approximate the existing aesthetic and functional conditions. Channel design will also maintain existing flow rates, to avoid floodplain impacts upstream.

A Mn/DNR Protected Waters permit and COE Section 404 permit will be required for the impacts on streams and water bodies. An NPDES permit for sedimentation and erosion control will also be obtained from the MPCA. Detailed mitigation plans for impacts on streams and water bodies would be coordinated with the appropriate regulatory agencies, in conjunction with project final design. The permit and mitigation plans would reassess the exact areas of impacts (and mitigation) based on final design plans, field examinations and consultation with the appropriate regulatory agencies, and the current and applicable guidelines and regulations in effect at that time.

6.13 CUMULATIVE IMPACTS

6.13.1 INFORMATION FROM THE DEIS THAT REMAINS UNCHANGED

This topic was not addressed in the DEIS.

6.13.2 CHANGES IN THE SETTING, REGULATORY FRAMEWORK OR TECHNICAL ANALYSIS THAT HAVE OCCURRED SINCE THE DEIS

The Council on Environmental Quality (CEQ) has provided guidance (issued in 1997) on addressing the issue of cumulative impacts since the publication of the I-494 Reconstruction DEIS in 1992. Based on that guidance, discussion of this issue was added to the FEIS.

6.13.3 CUMULATIVE IMPACTS

This section describes the potential for cumulative impacts, both direct and indirect, from the Preferred Alternative and the No-Build Alternative in combination with other past, present and future actions. Cumulative impacts analysis takes into account an array of potential actions and their impacts that are unrelated to the proposed action (Preferred Alternative) except to the extent that their impacts may, in combination with the potential impacts from the proposed action, result in adverse impacts. Cumulative impacts are defined as follows in the CEQís regulations (40CFR 1500-1508) implementing the procedural provisions of the National Environmental Policy Act (NEPA) of 1969, as amended:

> The impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions. (40 CFR 1508.7)

Direct and indirect impacts of the Preferred and No-Build Alternatives have been discussed in the previous sections of this FEIS and the DEIS. Cumulative impacts are not causally linked to the Preferred Alternative, but are the total effects of actions with similar impacts in a broader geographic area. The purpose of the cumulative impacts analysis is to look for potential impacts

which may be minimal and therefore neither significant nor adverse when examined within the context of the proposed action, but which may accumulate and become both significant and adverse over a large number of actions.

6.13.3.1 Methodology

This discussion of the cumulative effects will assess the effects of the Preferred Alternative and the No-Build Alternative as described in the previous sections for their potential to combine with the effects of other foreseeable activities in the past, present and future which, when combined, have the potential to create further adverse impacts. To that end, this analysis will attempt to define other non-related actions in the foreseeable future, taking into account both political and natural resource boundaries, that have the potential to result in cumulative impacts in conjunction with the I-494 Preferred and No-Build Alternatives.

Since the I-494 corridor proposed for reconstruction is an urban beltway that serves and is located in the first and second tier southwest suburbs of the Minneapolis-St. Paul Metropolitan Area, the ìstudy areaî considered for this assessment includes the cities (Minnetonka, Edina, Eden Prairie, Richfield and Bloomington), the Minneapolis-St. Paul International Airport and local watersheds along the I-494 reconstruction corridor. Development trends and transportation system improvements (other than the I-494 reconstruction) were the actions considered in assessing cumulative impacts in this area. The time period considered is through year 2020 (the current regional long-range planning period).

6.13.3.2 Existing Conditions and Future Development Trends

The study area includes the fully developed cities of Edina, Bloomington and Richfield and the developing cities of Minnetonka and Eden Prairie, as well as the intensely developed Minneapolis-St. Paul International Airport. Most of the areas in these cities adjacent to the I-494 corridor have been developed to urban/suburban uses, including residential, commercial/retail, light industrial and transportation uses. Some land in the area has been dedicated to park use and remains in open space. Wetlands also constitute a portion of the remaining open space in this area.

Due to the proximity of these cities to the I-494 beltway and the more urbanized portions of the Minneapolis-St. Paul Metropolitan Area, many future intensive development or re-development projects are planned in the area, consistent with ìSmart Growthî philosophy. Promoting infill development would help maintain intensive development within the urban service area, where transportation and other services can accommodate the development most effectively. This trend is already apparent in the redevelopment projects implemented (e.g. Lyndale shops), in planning/approval (e.g. Best Buy campus, Mall of America Expansion and Norman Pointe) or envisioned in the cities of Bloomington and Richfield, and in intensive new developments in Eden Prairieís ìcity centerî located just southwest of the I-494 corridor.

To serve this planned development (as well as to meet increasing background demands), a number of local and trunk highway roadway improvement projects are also planned in the area, including capacity/operational improvements to TH 62, TH 100, TH 169 and numerous local

collector streets. Improvement of transit service is also planned, including service based at the Mall of America and Eden Prairie transit hubs as well as rail corridors being implemented (the Hiawatha corridor) or considered (e.g. the Dan Patch corridor).

6.13.3.3 Assessment of Cumulative Impacts

The planned increases in intensive land development for community development and transportation would result in additive impacts to the I-494 Build and No-Build Alternative impacts, especially in the areas of storm water quality and quantity, wetlands, traffic noise and air quality, and social/property acquisition impacts.

Storm Water Quality and Quantity

Intensive development would add impervious surface and, potentially, add to the pollutant load in surface water runoff, adding to the impacts of the increased impervious surface area for the I-494 reconstruction Preferred Alternative. However, federal, state and local watershed regulations require implementation of mitigation, including detention and treatment ponds and other Best Management Practices, in conjunction with development project implementation. In some cases, joint storm water detention and treatment projects are being implemented by Mn/DOT and adjacent governmental units (e.g. with the Metropolitan Airports Commission at the Minneapolis-St. Paul International Airport). These requirements minimize impacts and, in some cases (e.g. redevelopment projects and the I-494 Build Alternative) may actually result in an improvement over existing conditions if less than state-of-the-art or no runoff water treatment is currently being provided. Therefore, the cumulative impacts would not be substantial.

Wetlands

Increasing land values within the study area also increase the potential for wetland impacts, as pressure to develop land ìto the fullestî increases. This would result in cumulative impacts to existing wetlands in the area. However, state and federal regulations require mitigation for wetland impacts, including provision of replacement wetlands, preferably within the same project area or within the same watershed. This mitigation requirement minimizes the cumulative impacts, although it should be acknowledged that the lack of undeveloped land and the high value of land in the area makes local replacement more difficult to achieve.

Traffic Noise

Increasing traffic volumes on I-494 resulting from planned intensive development were considered in the Build and No-Build noise modeling for the I-494 reconstruction project (see Section 6.2). However, increased traffic on local roads from intensive development could result in increasing noise levels in those roadway corridors, as well, increasing the pervasiveness of traffic noise. (However, it should be noted that traffic levels on any given roadway would have to double before a noticeable (i.e. 3-decibel or greater) increase would result.) Similar cumulative noise impacts would result with either the Build or No-Build Alternative

on I-494 (although the I-494 corridor localized impacts would vary between the two I-494 alternatives, as discussed in Section 6.2). Consideration of the need for or effectiveness of noise mitigation varies with type of road and funding source for roadway improvements.

Air Quality

The impact of the proposed I-494 Preferred Alternative improvements on local air quality were assessed in Section 6.1 of this FEIS. The I-494 Preferred Alternative conditions, as well as the Build condition for other local and trunk highway improvements, would cumulatively improve local air quality, by reducing congestion. In addition, the planned intensive development may result in an increased use of transit by people who live and work in the area, which could result in an overall improvement in air quality by decreasing the number of single car trips.

Social/Acquisition of Property

The redevelopment of property to more intensive use called for in local comprehensive plans may result in cumulative changes in the social make-up of the population or a change in the services and/or employment opportunities available to residents in redevelopment areas. The potential for and intensity and timing of these changes is difficult to estimate. However, the cumulative impacts would likely be similar for both the Build and No-Build Alternatives since the proposed Build right-of-way acquisition would likely be a small part of the total impacts that would result from the redevelopment that is planned in the study area communities.

6.13.3.4 Mitigation Measures

The assessment of potential impacts above included some discussion of mitigation. A summary of mitigation for each potential cumulative impact is summarized below.

Storm Water Quality and Quantity

Federal, state and local watershed regulations require implementation of mitigation, including detention and treatment ponds and other Best Management Practices, in conjunction with development project implementation. In some cases, joint storm water detention and treatment projects are being implemented by Mn/DOT and adjacent governmental units (e.g. the Metropolitan Airports Commission). These requirements minimize impacts and, in some cases (e.g. redevelopment projects and the I-494 Build Alternative) may actually result in an improvement over existing conditions if less than state-of-the-art or no runoff water treatment is currently being provided.

Wetlands

State and federal regulations require mitigation for wetland impacts, including provision of replacement wetlands, preferably within the same project area or within the same watershed. This mitigation requirement minimizes the cumulative impacts, although it should be acknowledged that the lack of undeveloped land and the high value of land in the area makes local replacement more difficult to achieve.

Traffic Noise

Consideration of the need for or effectiveness of noise mitigation varies with type of road and funding source for roadway improvements. Mitigation for impacts would be provided consistent with federal and state requirements.

Air Quality

Air quality should improve as a result of planned local and regional roadway improvements. No mitigation would be required.

Social/Acquisition of Property

Local planning agencies should review the potential impacts of planned redevelopment on local neighborhoods, and identify redevelopment plans that allow for maintaining social cohesion either in the existing or a new location.

6.13.5 CONCLUSION

Potential for cumulative impacts exists in issue areas related to storm water quantity and quality, wetlands, traffic noise, and social/acquisition of property. The first three impacts are generally addressed through mitigation requirements in state, federal, or local regulations. The issue of social impacts and relocation is typically considered through local and regional comprehensive planning efforts.

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7.0 CONSTRUCTION IMPACTS

Construction impacts and associated mitigation measures associated with the I-494 reconstruction were addressed in Section 5.4 of the DEIS.

7.1 INFORMATION FROM THE DEIS THAT REMAINS UNCHANGED

The DEIS discussed anticipated impacts and mitigation measures that would occur during construction of any of the Build alternatives addressed in that document. The overall Build impacts have not changed substantially since the DEIS.

7.2 CHANGES IN THE IMPACTS OR TECHNICAL ANALYSIS THAT HAVE OCCURRED SINCE THE DEIS

Although the general assessment of project impacts, as described in the DEIS, has not changed, this FEIS discussion provides some additional information specific to the impacts of the Preferred Alternative.

7.3 PREFERRED ALTERNATIVE IMPACTS AND MITIGATION

7.3.1 TRAFFIC AND ACCESS IMPACTS

Impact Assessment

Disruption of traffic will be one of the most evident impacts of the proposed I-494 reconstruction. Construction activities will result in reduced capacity on the roadway, causing traffic delays and frequent lane shifts and access changes. To avoid delays and inconveniences, drivers will seek alternate routes of travel, may shift their times of travel when possible, and may seek alternate travel modes. Traffic volumes will likely increase on parallel local streets during reconstruction. Drivers may experience increases in travel time due to detours and construction delays.

Temporary access changes will be necessary during reconstruction. This may disrupt travel patterns to and from businesses and community facilities. These changes may cause driver confusion, particularly for those who do not regularly travel through the area. These impacts will be of limited duration, only occurring during the reconstruction of given phases of adjacent freeway areas. While points of access may have to be modified, access to all properties will be provided during all periods of construction.

Mitigation

The reconstruction of I-494 will require extensive planning efforts to minimize the disruption associated with construction activities. A construction management plan will be developed during preliminary and final design which will be used to minimize disruptions and detours and to ensure access to affected properties. A Mn/DOT Corridor Coordinator will oversee construction phasing and activities to limit impacts to the degree practicable.

The maintenance of traffic during reconstruction activities will be a high priority. At least two traffic lanes in each direction will be maintained during peak periods to the extent practicable. This requires the staging of reconstruction into logical and usable sections that can be constructed in two- to three-year time periods. This approach lengthens the total duration of reconstruction of the corridor, but reduces the magnitude of short-term impacts. Frontage roads and proposed collector-distributor roads may be used to carry traffic during construction. Temporary routes and bypasses will also be constructed where needed.

Disruption of freeway-to-freeway movements at interchanges will be minimized. Local street interchanges may be closed for limited periods of time; however, simultaneous closure of adjacent interchanges will be avoided when possible.

An evaluation will be made to determine which access points and cross routes are critical for emergency vehicles. Disruption of access for emergency vehicles and to public facilities will be minimized to the extent possible and will be coordinated with appropriate agencies. Emergency access throughout the corridor will be maintained at all times during the reconstruction project.

Travelers will be informed of on-going construction activities and traffic conditions. Informational signage including changeable message signs will be used to advise drivers of access changes and other shifts in alignment as the reconstruction progresses. Whenever possible, motorists will be advised of upcoming reconstruction activities that may impact their travel plans. Traffic control measures, in accordance with the *Minnesota Manual on Uniform Traffic Control Devices*, will be used to protect both motorists and construction workers. Freeway lighting will be maintained wherever possible, particularly in critical areas.

Other public information activities may include distribution of newsletters and brochures, press releases, and promotional activities coordinated with neighborhoods, cities, retailers, employers, and other groups. Mn/DOTís Traffic Management Center will coordinate the dissemination of incident and construction information to the public. Mn/DOT will work with the I-494 Corridor Commission to provide construction-related information to users of the roadway and affected businesses. The I-494 Corridor Commission is also working with cities and businesses adjacent to the I-494 corridor on plans for improving transit, carpool and other shared ride services as well as other travel demand management (TDM) measures to help alleviate congestion during the I-494 reconstruction process.

7.3.2 AIR QUALITY

Impact Assessment

Construction activities will have the following air quality impacts:

- Congestion from traffic and access disruptions increasing concentrations of air emissions from vehicles, most notably carbon monoxide.
- Emissions from construction-related equipment and vehicles.
- Construction/grading activities disrupting ground cover, resulting in fugitive dust emissions.

These impacts will be temporary, limited by the staging of construction activities. Emissions from construction equipment will be dispersed over relatively large construction areas, and any single piece of equipment will not result in adverse impacts to the project area. Truck traffic to and from the construction sites will be a small percentage of overall traffic volumes in the project area.

Mitigation

Congestion associated with traffic and access disruption will be controlled and minimized through the measures identified in Section 7.3.1 above. Construction contractors will be required to control dust and other airborne particulates in accordance with Mn/DOT specifications. This will include measures such as applying water to exposed soils, and limiting the extent and duration of exposed soil conditions. Contractors will be required to conform with all applicable federal, state, and local regulatory requirements.

7.3.3 NOISE

Impact Assessment

The construction activities associated with implementation of the Preferred Alternative will result in increased noise levels relative to existing conditions. These impacts will primarily be associated with construction equipment. These conditions will be of relatively limited duration due to the anticipated phasing of construction activities.

Table 7.1 shows peak noise levels monitored at 15 meters (50 feet) from various types of construction equipment. This equipment is primarily associated with site grading/site preparation, generally the roadway construction phase associated with greatest noise levels. Pile driving equipment may be another source of construction noise for the I-494 reconstruction project.

TABLE 7.1
TYPICAL CONSTRUCTION EQUIPMENT NOISE LEVELS AT 15 METERS (50 FEET)

Equipment Type	Manufacturers Sampled	Total Number of Models in Sample	Peak Noise Level (dBA)	
			Range	Average
Backhoes	5	6	74-92	83
Front Loaders	5	30	75-96	85
Dozers	8	41	65-95	85
Graders	3	15	72-92	84
Scrapers	2	27	76-98	87
Pile Drivers	NA	NA	95-105	101

Source: Reagan, Jerry A. and Charles A. Grant, *Highway Construction Noise: Measurement, Prediction and Mitigation*, Special Report HEV-21, U.S. Department of Transportation, FHWA, Office of Environmental Policy, Washington, DC, 1977. *Noise From Construction Equipment and Operations, Building Equipment and Home Appliances*. U.S. EPA, Washington, DC, 1971.

Mitigation

Elevated noise levels are to a degree unavoidable for this type of project. Mn/DOT will require that construction equipment be properly muffled and that the contractor(s) comply with applicable state and local noise restrictions. Advance notice will be provided to affected communities for any necessary blasting and/or abnormal loud construction activities. While night construction would sometimes be required to minimize traffic impacts, construction will be limited to the daytime hours (7:00 a.m. to 10:00 p.m.) as much as possible. Permanent noise walls (see Section 6.2.5) will be built as early as practicable during construction.

7.3.4 WATER RESOURCES AND WETLANDS

Impact Assessment

During construction activities, sediment from erosion of exposed soils can potentially enter surface water runoff and impact wetlands and surface waters in the vicinity of the project area. Dewatering activities may be required for some construction phases associated with the Preferred Alternative. As addressed in Section 6.7.3, some wetland areas will be filled during construction of the Preferred Alternative.

Mitigation

Mitigation measures for erosion and sedimentation impacts associated with construction activities are addressed in *Mn/DOTís Standard Plans and Plates for Erosion Control Measures*, and *Standard Specifications for Construction*. These specifications will be used for Preferred Alternative construction activities. In addition, an erosion control plan and associated best management practices (BMPs) in compliance with National Pollutant Discharge Elimination System (NPDES) requirements will be prepared and implemented. Appropriate NPDES construction permits will be obtained by Mn/DOT prior to each phase of construction.

Any dewatering activities associated with construction of the proposed improvements will comply with applicable state and local permitting and regulatory requirements.

As discussed in detail in Section 6.7.4, any wetland impacts required for construction of the Preferred Alternative will be mitigated in accordance with applicable Wetland Conservation Act, Minnesota Department of Natural Resources, and Corps of Engineers requirements.

7.3.5 VISUAL IMPACTS

Impact Assessment

Visual impacts associated with the project will include the introduction of construction equipment and disruption of the landscape in association with construction operations into the project area. These impacts will be most noticeable to drivers traveling through the corridor, but may also be evident to residents living adjacent to the corridor.

Mitigation

Some visual impacts are unavoidable for this type of project. However, the impacts will be temporary and of relatively short duration.

7.3.6 BORROW/DISPOSAL OF MATERIALS

Impact Assessment

The reconstruction of I-494 will utilize some mineral resources, primarily for pavement and sub-base. Use of borrow material for fill will be minimized, as project design can balance cut and fill volumes.

Most excess construction materials represent limited environmental concern, other than the sheer volume of the materials involved. Many of these materials can be reused or recycled, thereby minimizing these ì volumeî impacts. Treated wood used in noise wall construction does contain preservatives, and will be disposed of in compliance with applicable environmental regulations.

Mitigation

Recycled materials from I-494 and other roadway construction projects can be utilized in the roadway reconstruction to minimize the need for use of new mineral resources. This also decreases the amount of excess material produced by the roadway reconstruction.

Excess materials (including vegetative and plant materials) will be salvaged for reuse whenever viable. If the materials have economic or engineering value, but will not be used on the I-494 project, Mn/DOT will locate a storage site in a suitable area. Materials which could be salvaged include signs, light fixtures, and treated wood from noise walls.

During construction, in-place materials will be salvaged for re-use on the project, or will be disposed of in an environmentally responsible manner and in accordance with applicable federal, state, and local regulations. Concrete and bituminous pavement can be recycled into pavement or sub-base materials. Vegetation that cannot be saved by relocation may be chipped and used as mulch. Disposal of excess materials will not occur in wetlands, floodplains, or other sensitive areas.

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8.0 FINAL SECTION 4(f)/6(f) EVALUATION

The Section 4(f) legislation, as established under the U.S. Department of Transportation Act of 1966 (49 USC 303, 23 USC 138), provides protection for publicly owned parks, recreation areas, historic sites, wildlife and/or waterfowl refuges from conversion to other use. The Federal Highway Administration (FHWA) may not approve the use of land from a significant publicly owned park, recreation area, or wildlife and waterfowl refuge, or any significant historic site unless a determination is made that:

- There is no feasible and prudent alternative to the use of the land from the property; and
- The action includes all possible planning to minimize harm to the property resulting from such use (23 CFR 771.135).

Additional protection is provided for outdoor recreation lands under the Section 6(f) legislation (16 USC 4602-8(f) (3)) where Land and Water Conservation (LAWCON) funds were used for the planning, acquisition, or development of the property. These properties may be converted to a transportation use only if the land is replaced with property which is reasonably equivalent in usefulness and is of at least the same fair market value.

The Draft Section 4(f)/6(f) Evaluation, included with the DEIS, was presented in two parts: parklands and historic sites. This Final Section 4(f)/6(f) Evaluation covers only parkland issues, because use of historic properties, specifically the Carpenter residence, has been avoided with the Preferred Alternative as documented in Chapter 9.0 of the FEIS (Section 106 Documentation).

The Final Section 4(f)/6(f) Evaluation represents the culmination of analysis initiated during preparation of the DEIS. This section presents: an overview of the Draft Section 4(f)/6(f) Evaluation; a description of work completed since issuance of the Draft Evaluation to minimize impacts to parklands; and a detailed description of remaining parkland impacted along with measures proposed to minimize potential harm.

8.1 DRAFT SECTION 4(F)/6(F) EVALUATION

The Draft Evaluation identified Section 4(f) and Section 6(f) properties within the corridor study area and analyzed potential impacts to those properties resulting from the project alternatives. The alternatives included a No-Build, Transportation System Management (TSM), and four mainline Build alternatives (see DEIS Chapter 3.3 – Alternatives). A total of 12 parks were considered in the evaluation. Figure 8.1 illustrates these 12 parks along with other parkland in the I-494 corridor.

Based on the analysis presented in the DEIS and comments received on the DEIS, a Preferred Alternative for reconstruction of I-494 was identified in January 1993. In the years between 1993 and 2000, it was necessary for Mn/DOT to reduce the scale of the Preferred

Alternative for fiscal reasons (see Sections 1.2 and 3.3 of this FEIS). In addition, Mn/DOT was involved in ongoing coordination efforts during this timeframe with cooperating agencies, concerned individuals and community groups. These efforts resulted in certain design changes to the Preferred Alternative to limits impacts, while still fulfilling the purpose and need for the project as discussed in Chapter 2.0. Chapter 3.4 of the FEIS presents a detailed description of the current Preferred Alternative and the rationale for design decisions which have now been incorporated into this alternative.

8.2 INTERIM ANALYSIS/PARK IMPACT REDUCTION

Since completion of the Draft Section 4(f)/6(f) Evaluation and selection of a Preferred Alternative design, modifications have occurred, including modifications developed to avoid or minimize, to the extent possible, impacts to parklands in the corridor. As a result of these efforts, reductions in impacts to parks have been achieved.

The following sections describe parks identified as being impacted in the Draft Section 4(f)/6(f) Evaluation that are no longer impacted by the proposed project and can be removed from further Section 4(f)/6(f) consideration.

8.2.1 UNNAMED PARK - MINNETONKA

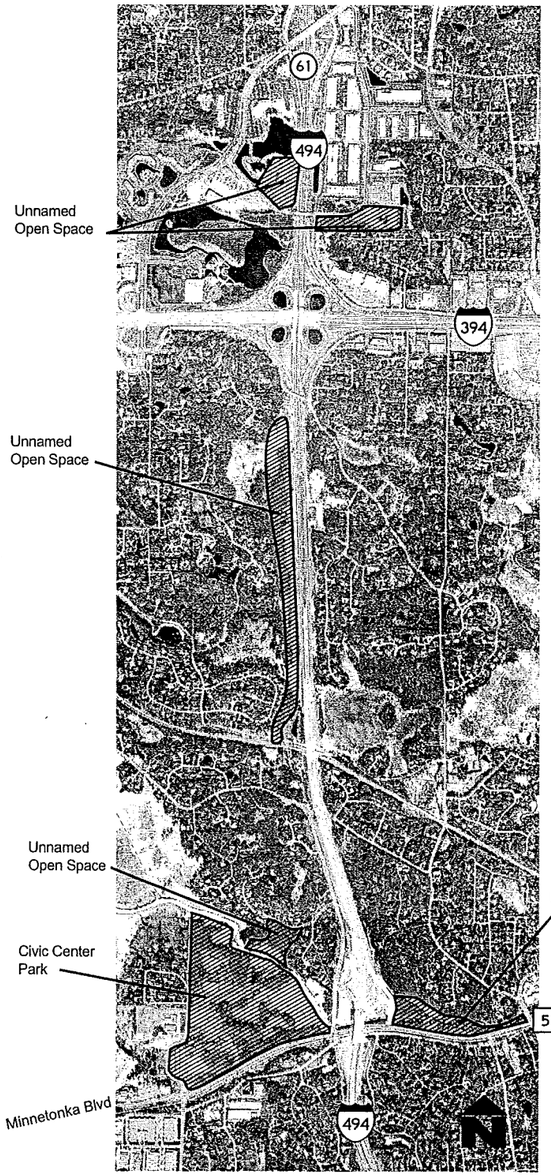
This park is an unnamed linear parcel of land 31 to 275 meters (100 to 900) feet in width which abuts the west side of I-494 south of I-394 and north of the Burlington Northern Railroad tracks (Figure 8.1). The site, approximately 13 hectares (31 acres) in size, was acquired for the purpose of a public recreational trail through dedication when an adjacent plat was approved.

In the I-494 DEIS, the design included 8 meters (26 feet) of reserved space in the median, shoulders, three through-lanes and auxiliary lanes. The cross-section required highway right-of-way, therefore requiring acquisition of some of the parkland.

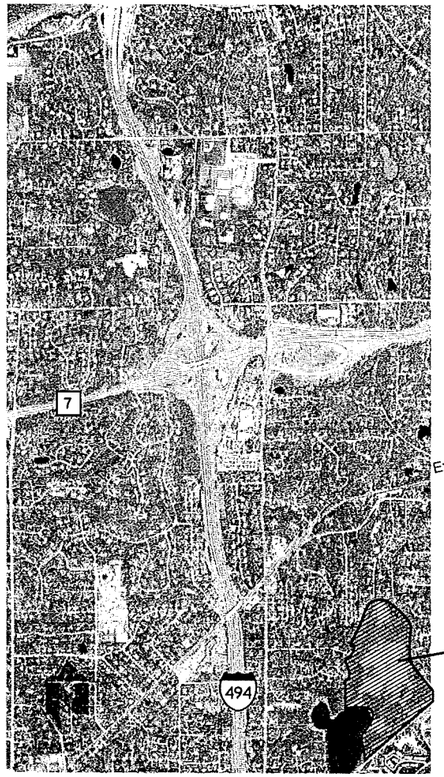
The current Preferred Alternative includes only the shoulders and three through-lanes. The narrower cross section is accommodated within the existing right-of-way, resulting in no acquisition of parkland at this location.

8.2.2 CARDINAL HILLS PARK

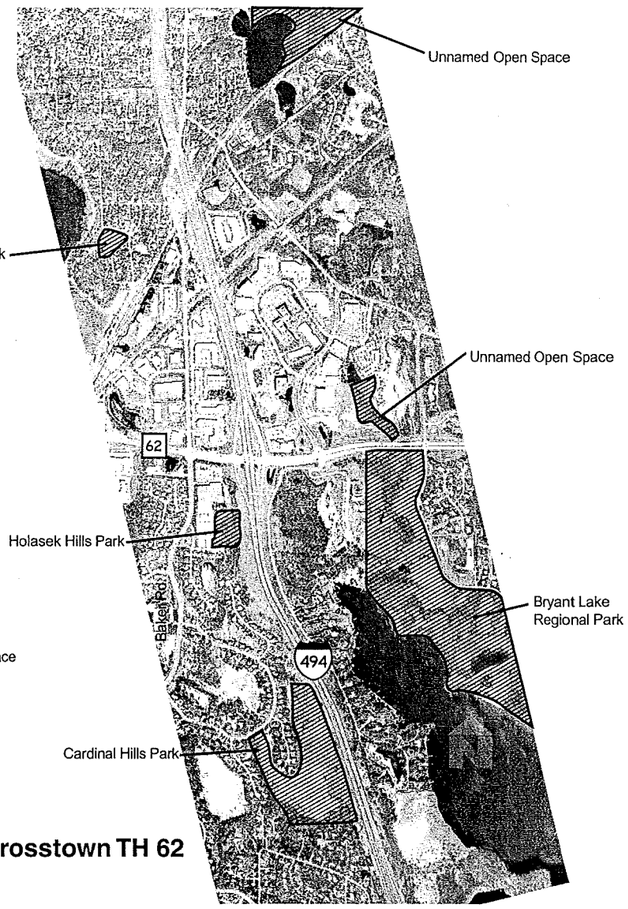
Cardinal Hills Park lies on the west side of I-494 between TH 62 and TH 5 (Figure 8.1). The analysis conducted for the DEIS assumed a rural cross-section centered on the existing alignment. With this alignment, the widening of I-494 would have resulted in slopes that extended into the park. In order to avoid encroachment in the park, the Preferred Alternative alignment has been moved to the east about 12 meters (40 feet) for the length of the park.



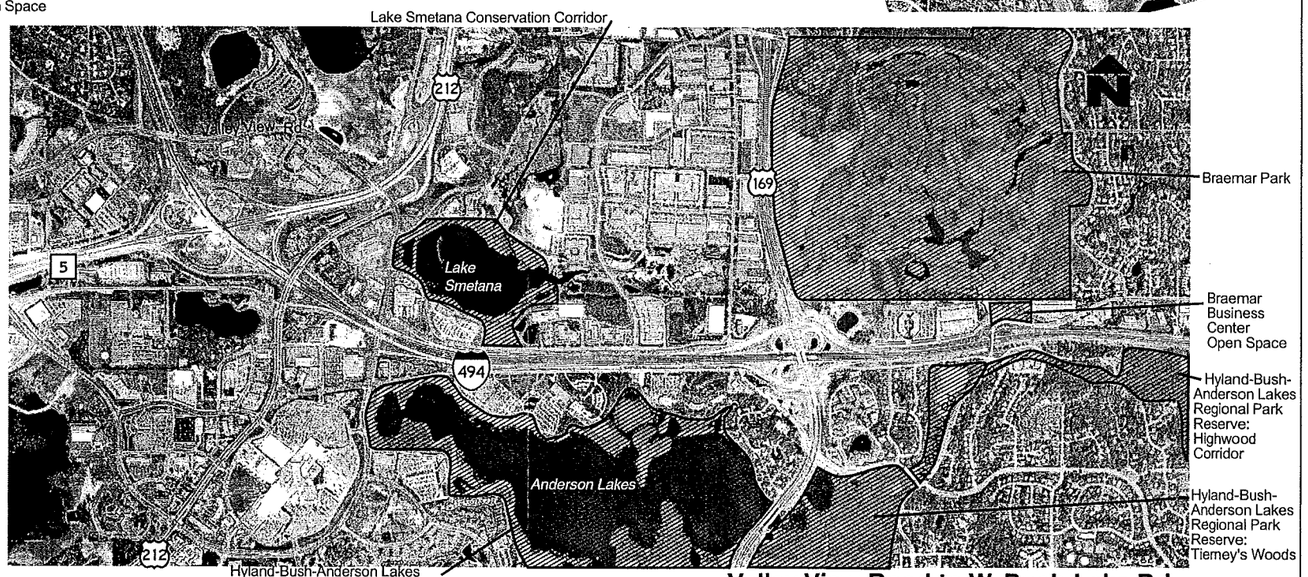
I-394 to CSAH 5



CSAH 5 to Excelsior Blvd.



Crosstown TH 62



Valley View Road to W. Bush Lake Rd.

Figure 8.1
Sheet 1 of 2

Parks

Legend

Park or Open Space

N

0 1/2 1 kilometer

0 1/4 1/2 1 mile

Scale

Final Environmental Impact Statement

I-494 Reconstruction

I-394 to the Minnesota River

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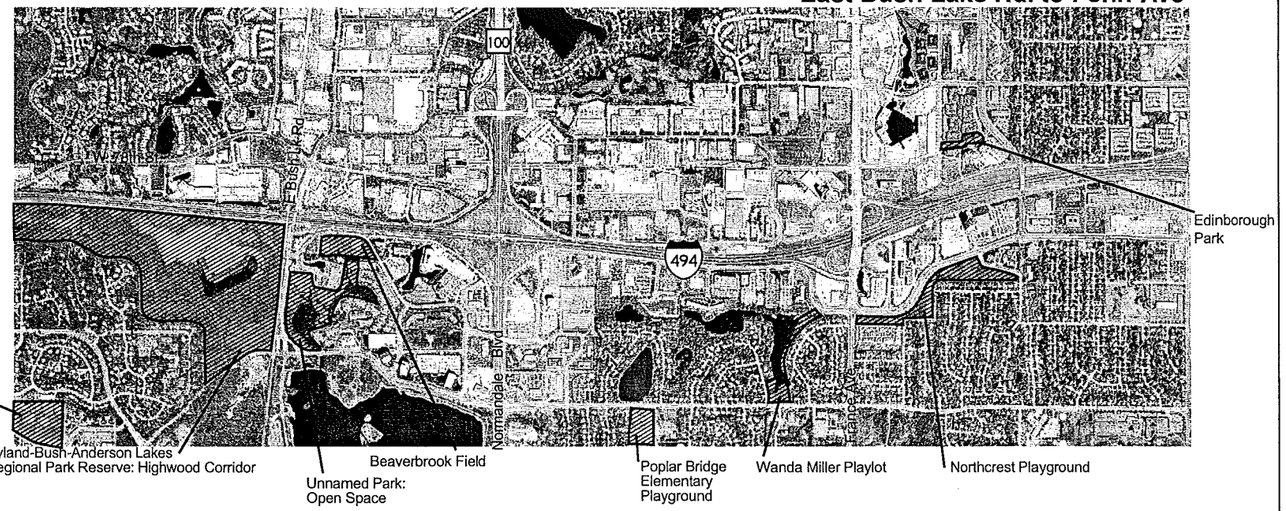
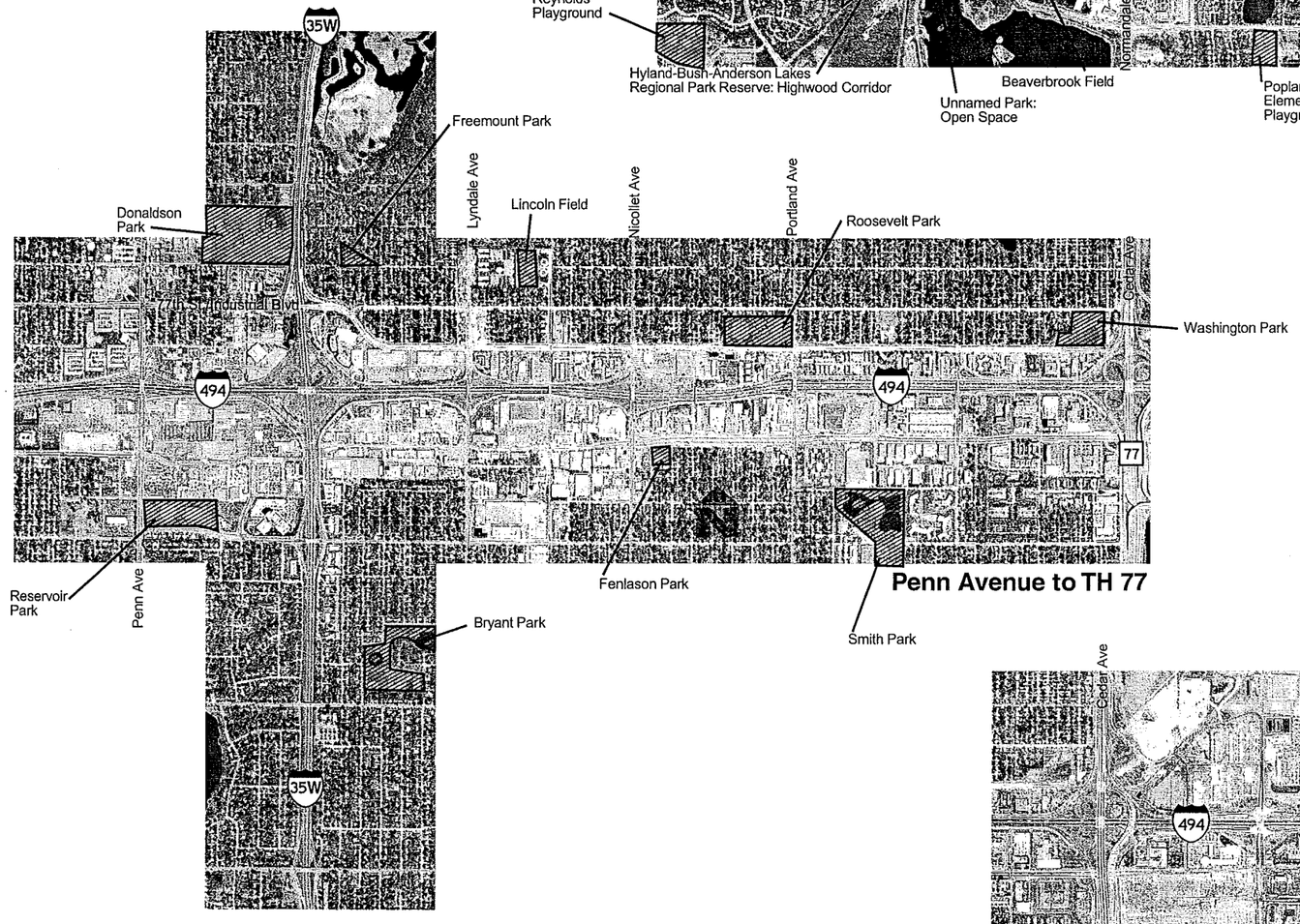
Figure 8.1
Sheet 2 of 2

Parks

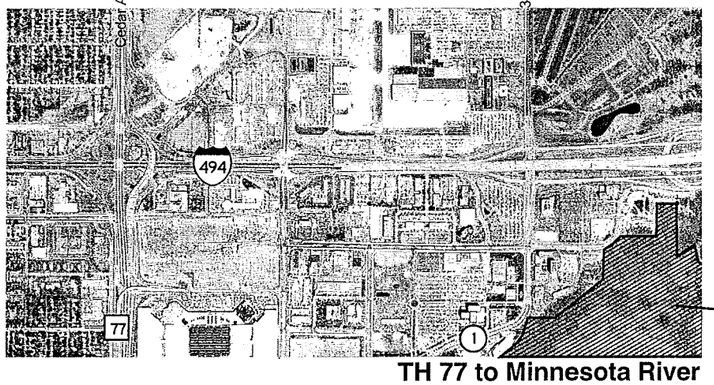
East Bush Lake Rd. to Penn Ave



Penn Avenue to TH 77



TH 77 to Minnesota River



Legend

Park or Open Space

N

0 1/2 1 kilometer

0 1/4 1/2 1 mile

Scale

Final Environmental Impact Statement

I-494 Reconstruction

I-394 to the Minnesota River

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8.2.3 TOPVIEW PARK

Topview Park is a small neighborhood park adjacent to I-494 near Cardinal Hills Park (Figure 8.1). The DEIS indicated that 0.1 hectare (0.3 acre) of this park would be acquired for the highway widening. Shifting the alignment east to avoid Cardinal Hills Park also resulted in the avoidance of Topview Park.

8.2.4 BRYANT LAKE PARK

Bryant Lake Park, located east of I-494 and south of TH 62 (Figure 8.1), is part of the Hennepin County Regional Park system. The park was not originally included in the Draft Section 4(f)/6(f) since it is not adjacent to I-494 and therefore would not be affected by acquisition of right-of-way for I-494 reconstruction; however, the U.S. Department of Interior (DOI) recommended in its DEIS comment letter that the site be reviewed because of potential adverse noise impacts.

Bryant Lake Park currently has no common boundary with the existing I-494 alignment and will continue to share no common boundary under the Preferred Alternative. The closest portion of the park is approximately 150 to 185 meters (500 to 600 feet) from the existing and proposed I-494 right-of-way limits. At this distance, noise modeling does not provide useful results for analysis. Modeled 2022 daytime noise levels during peak travel periods at area residential receptors much closer to I-494 show levels associated with the Preferred Alternative as one decibel higher than those resulting from the No-Build and one to two decibels higher than modeled as existing. These one- to two-decibel increases would not be perceptible to the human ear.

Change in noise levels at Bryant Lake Park should not be of a scale to substantially impair its use both in comparison to existing conditions and to conditions under the No-Build Alternative. Therefore, there would be no impact–direct or indirect–to Bryant Lake Park resulting from the Preferred Alternative.

8.2.5 ROOSEVELT AND WASHINGTON PARKS

Roosevelt Park is located north of 77th Street and just west of Portland Avenue. Washington Park is also adjacent to the north side of 77th Street, just west of TH 77 (Figure 8.1). Both parks are part of the City of Richfield park system.

During preparation of the I-494 DEIS, improvements to 77th Street in Richfield were considered part of the I-494 project. After publication of the DEIS, the 77th Street project was separated from the I-494 study and undertaken by the City of Richfield. An Environmental Assessment for the 77th Street project, including these two parks, was completed and the road was constructed. As a result, the parks are no longer being analyzed in the I-494 Section 4(f)/6(f) Evaluation.

8.2.6 HYLAND-BUSH-ANDERSON LAKES REGIONAL PARK RESERVE-TIERNEY'S WOODS AREA

The Draft Section 4(f)/6(f) Evaluation presented in the DEIS addressed Tierney's Woods, as well as Highwood Corridor as separate park entities from the Hyland-Bush-Anderson Lakes Regional Park Reserve. Based on comments from the City of Bloomington, the Hyland-Bush-Anderson Lakes Regional Park Reserve is considered a single park containing Tierney's Woods, Highwood Corridor, and many other areas. Therefore, the discussion for the Final Section 4(f)/6(f) Evaluation has been modified to reflect the fact that these parks are managed as one system by Hennepin Parks. Impacts to the Highwood Corridor area of Hyland-Bush-Anderson Lakes Regional Park Reserve are described in Section 8.3.

Although Tierney's Woods is considered part of the Hyland-Bush-Anderson Lakes Park Reserve, there are no anticipated impacts to this area associated with the Preferred Alternative. The DEIS had indicated that 0.3 hectare (0.7 acre) of this property would need to be acquired to accommodate proposed access ramps to Highwood Drive. The TH 169 interchange has since been reconstructed as a three-loop diamond interchange. The Preferred Alternative proposes no changes to this interchange. Therefore, there is no impact to Tierney's Woods for the reconstruction of I-494.

8.3 PARKLANDS IMPACTED BY THE PREFERRED ALTERNATIVE

8.3.1 HYLAND-BUSH-ANDERSON PARK RESERVE

As noted above, the Draft Section 4(f)/6(f) Evaluation presented in the DEIS addressed the Highwood Corridor, as well as Tierney's Woods, as separate park entities from the Hyland-Bush-Anderson Lakes Regional Park Reserve. Based on comments from the City of Bloomington, the Hyland-Bush-Anderson Lakes Regional Park Reserve is considered a single park containing Tierney's Woods, Highwood Corridor, and many other areas. Therefore, the discussion for the Final Section 4(f)/6(f) Evaluation has been modified to reflect the fact that these parks are jointly managed as one system by Hennepin Parks and the City of Bloomington. A detailed description of the Highwood Corridor follows the broader description of the Hyland-Bush-Anderson Lakes Park Reserve in its entirety. As discussed in Section 8.2.6, Tierney's Woods will no longer be impacted by the Preferred Alternative.

8.3.1.1 Description of the Section 4(f) Resource

Site Description: Hyland-Bush-Anderson Lakes Regional Park Reserve abuts the south side of I-494 in several locations in the area between Prairie Center Drive and East Bush Lake Road in the cities of Eden Prairie and Bloomington. It includes seven park units, comprising six major bodies of water, wetlands, woodlands, and a variety of recreational facilities. In total, the park covers 1,039 hectares (2,565 acres). The park unit affected by the Preferred Alternative is the Highwood Corridor. The Highwood Corridor is a 44-hectare (108-acre) sub-area of the park reserve. It abuts the south side of I-494 west of East Bush Lake Road for a distance

of 1,798 meters (4,440 feet) (Figure 8.1) and contains mature woods, wetlands, and steep hills. Nine Mile Creek flows through the northern portion of the park. The joint master plan for the Hyland-Bush-Anderson Lakes Regional Park Reserve characterizes the current and future use of the Highwood Corridor portion of the reserve as conservation open space, and bike/hike trail.

Activities and Use: Facilities include a nature interpretative center; numerous picnic areas; pedestrian, bicyclist and cross-country skiing trails; a creative play structure; lake access; downhill skiing; a ski jump; a community building-warming house; and natural areas. The Highwood Corridor includes a trail north of Marth Road. There are no new facilities or improvements planned in this area of the park.

Access: Access to Hyland-Bush-Anderson Lakes Park is via TH 169, West Bush Lake Road, East Bush Lake Road, 84th Street, and Highwood Drive. Access to Highwood Corridor is via East Bush Lake Road and Marth Road.

Ownership: The Hyland-Bush-Anderson Lakes Regional Park Reserve is jointly owned and managed by the City of Bloomington and Hennepin Parks. The Highwood Corridor is owned by the City of Bloomington.

Clauses: LAWCON funding and Regional Park and Open Space funds were both used to acquire property within the Highwood Corridor sub-area of the Hyland-Bush-Anderson Lakes Regional Park Reserve. This is discussed in more detail in Section 8.3.1.5.

Relationship to other Similar Resources: As noted, this corridor is one of seven units of the 1,038-hectare (2,565-acre) Hyland-Bush-Anderson Lakes Regional Park Reserve. The nearest other units of this Reserve are the 430-hectare (1,060-acre) Hyland Lake unit and the 75-hectare (185-acre) Normandale Lake unit. The Hyland Lake unit is directly south of the Highwood Corridor. The Normandale Lake unit is across East Bush Lake Road and to the southeast of the Highwood Corridor. Recreational uses at these two units include hiking, biking, downhill and cross-country skiing, picnicking, and group camping. Linking these two units is a natural open space area detailed in Section 8.3.3.

Unusual Characteristics: The Hyland-Bush-Anderson Lakes Regional Park Reserve is unusual in that it is a very large resource providing a wide array of passive and active recreational opportunities within a developed suburban area of the metropolitan area. The Highwood Corridor unit is unusual as a wooded corridor adjacent to an urban freeway in a fully developed suburb.

8.3.1.2 Impact to the Section 4(f) Resource

The proposed alignment would require acquisition of a linear segment approximately 1.8 hectares (4.4 acres) in size in the northernmost portion of the Highwood Corridor, adjacent to existing I-494 (see shaded area on Figure 8.2). This is a worst-case impact and includes 0.6 hectare (1.6 acres) which may be only temporarily impacted under a construction easement rather than acquired as right-of-way.

An additional linear segment of land along the secondary channel of the North Fork of Nine Mile Creek (see creek extension location on Figure 8.2) may be temporarily impacted by one of the alternatives being considered for floodplain and stream channel impact mitigation (see discussion in Section 6.5.4 and 6.12.3). If this alternative were implemented, it would include excavation of a more defined stream channel for a distance of approximately 152 to 244 meters (500 to 800 feet). This would involve a temporary construction easement for occupancy of approximately 0.7 hectare (1.8 acres) of parkland (assuming a worst-case impact area of 30 meters (100 feet) wide by 244 meters (800 feet) long. If required by construction, this area would be graded and replanted with plant species similar to existing species. The construction easement options are discussed further in Section 8.3.1.5. In addition to the property impact, the pedestrian/bicyclist trail along the northern edge of the park, parallel to Marth Road, would be relocated immediately to the south. The primary uses of open space and trail would be maintained.

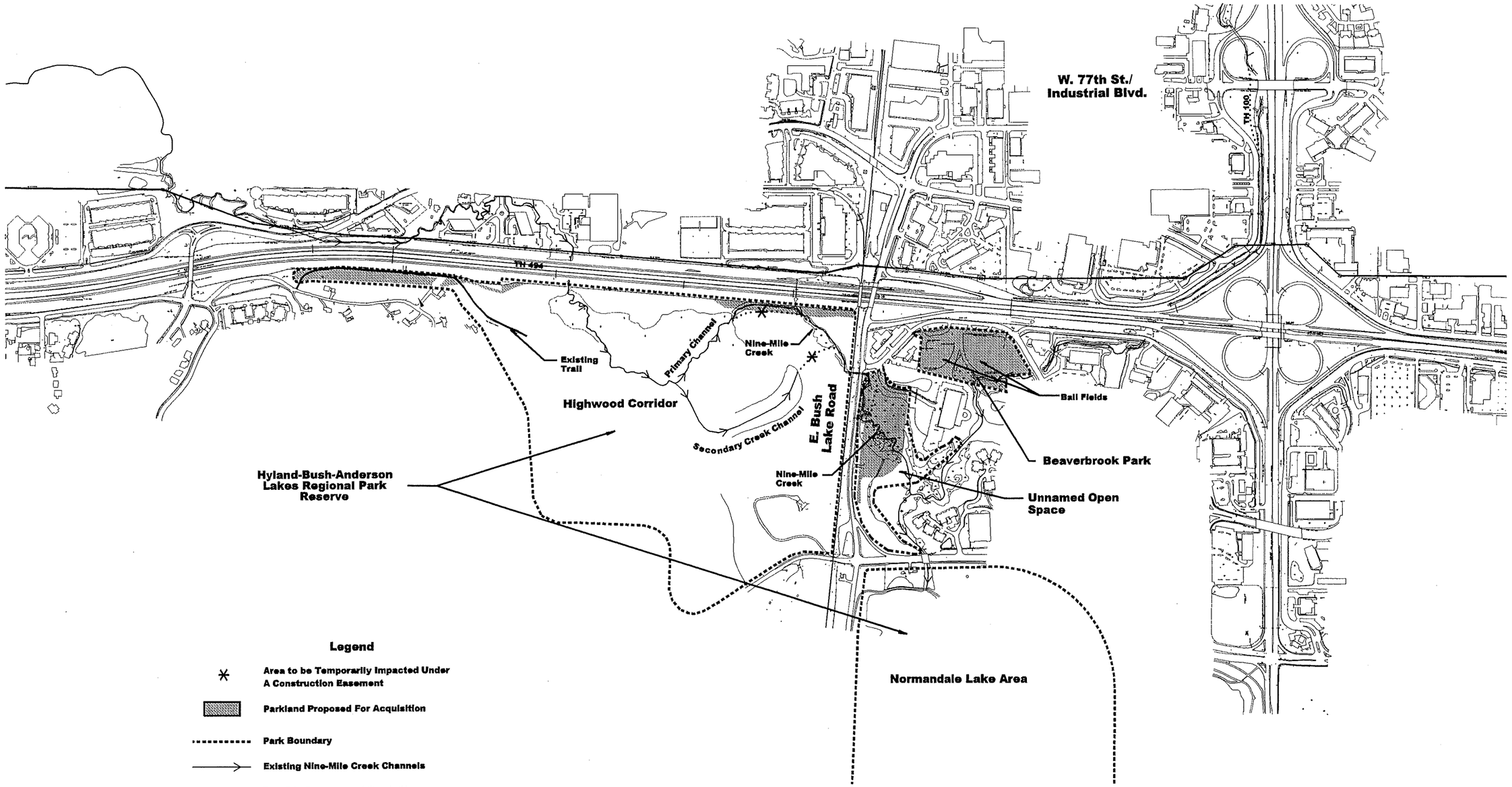
The total 1.8-hectare (4.4-acre) "worst case" acquisition represents 0.2 percent of the entire park reserve and 4 percent of the Highwood Corridor sub-area. The additional 0.7 hectare (1.8 acre) possible temporary occupancy area is less than 0.1 percent of the park reserve and approximately 2 percent of the Highwood Corridor area.

8.3.1.3 Alternatives to the Use of Section 4(f) Property

As noted in Section 8.1, the Draft Section 4(f)/6(f) Evaluation analyzed a No-Build, TSM, as well as the four Build alternatives. Both the No-Build and the TSM alternatives would avoid the Highwood Corridor sub-area of the Hyland-Bush-Anderson Lakes Regional Park Reserve. However, the DEIS found that these alternatives would not adequately address the project needs, since they would not adequately increase corridor capacity to meet growing demands and would not allow the highway design to be upgraded to current standards.

The Preferred Alternative in this section of the project includes one additional general traffic lane in each direction with 7.9 meters (26 feet) reserved in the median for future undetermined use. The Preferred Alternative interchange design at East Bush Lake Road is a modified folded diamond, with the folded diamond located at the southeast quadrant and standard diamond ramps in the northwest and northeast quadrants of the interchange. As described in Section 3.4.3 of this FEIS, three alternate designs have been developed for this interchange. The Preferred Alternative design and the three alternate designs for the interchange all have the same impacts to Section 4(f) properties. The impacts at this interchange are within the range of the four Build alternatives identified in the DEIS.

The assumption in the DEIS was that the proposed roadway improvements would be centered on the existing alignment. An alignment shift to the north would avoid encroachment on the Highwood Corridor sub-area of the Hyland-Bush-Anderson Lakes Park Reserve. The impact of this alternative is shown in Figure 8.3. This northern realignment would also miss Beaverbrook Field (see Section 8.3.2). In order to avoid the two parks, a large number of developed parcels on the north side of the highway would have to be acquired. Most of the properties are either commercial or industrial properties. The estimated market value of the properties that would have to be acquired is $68 million. The annual tax revenue from these properties is $3.4 million. City of Bloomington staff have stated that this would not be an acceptable alternative.



4(f)/6(f) Park Impacts

0 400 800
scale feet
0 150 300 m

NORTH

Key

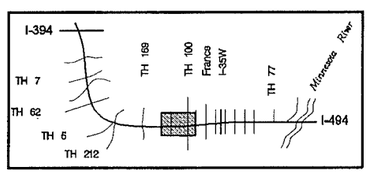


Figure 8.2

Final Environmental Impact Statement

I-494 Reconstruction

I-394 to the Minnesota River

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Legend

Avoidance Alternative Property Acquisition

W. 77th St./ Industrial Blvd.

TH 494

TH 100

E. Bush Lake Road

Hyland - Bush - Anderson Lakes Regional Park Reserve: Highwood Corridor, Beaverbrook And Unnamed Park Avoidance Alternative Impacts

0 400 800
scale feet
0 150 300 m

NORTH

Key

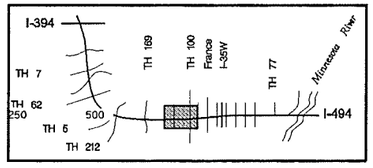

Figure 8.3

Final Environmental Impact Statement

I-494 Reconstruction

I-394 to the Minnesota River

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In addition to the right-of-way and fiscal costs of moving the I-494 alignment to the north, there are a number of other associated impacts and costs. There are high voltage transmission lines on the north side of the highway which would have to be relocated if the highway was shifted to the north. The businesses in the area would have to be relocated and the noise levels could increase for residents who live on the north side of 78th Street. Finally, a shift in the alignment to the north would require relocation of Nine Mile Creek or would require routing the creek through a box culvert.

The alternative of not providing access at East Bush Lake Road was also considered. However, an evaluation of the access and circulation in this area concluded that the access to I-494 at East Bush Lake Road is crucial to the proposed upgrading of I-494. Without the interchange at East Bush Lake Road, traffic destined to this area would either have to exit TH 169 about 3.5 kilometers (2.2 miles) to the west, or at TH 100 (Normandale Boulevard), about one kilometer (0.6 mile) to the east. Elimination of this access was unacceptable to adjacent residents, businesses and representatives from the cities of Edina and Bloomington.

Based on the above avoidance alternative considerations and discussions with the City of Bloomington, it was concluded that the relocation costs, lost tax base, and increased noise levels which would result from this alternative were not acceptable, compared to the park impacts (which do not impair the use of the Highwood Corridor area of the park).

8.3.1.4 Measures to Minimize Harm

The following measures will be taken to mitigate the impacts to the Highwood Corridor of the Hyland-Bush-Anderson Lakes Park Reserve associated with the Preferred Alternative:

- Retaining walls and steeper slopes have been incorporated into the design of the new roadway to minimize the amount of parkland that will be acquired.

- Safe pedestrian and vehicular access to the park will be maintained during and after the construction period.

- Approximately 400 meters (1,300 feet) of existing recreational trail between Marth Road and I-494 will be replaced as close as possible to its original location.

- Appropriate landscaping and site restoration plans will be developed in coordination with the City of Bloomington.

- Land acquired for the project will be replaced with appropriate and eligible land, in accordance with Section 6(f) requirements (see Section 8.3.1.5). The City of Bloomington has recommended a list of future parkland acquisitions from which replacement property could be acquired as mitigation for the impact on the Highwood Corridor. These properties are identified in a letter from the City of Bloomington dated March 29, 2001 and provided at the end of this chapter.

8.3.1.5 Clauses/Section 6(f)-LAWCON Considerations

Reviews of both Minnesota Department of Natural Resources (DNR) and City of Bloomington records were conducted to determine whether LAWCON funds were dispersed for acquisition of or development in any portion of the Highwood Corridor sub-area of the Hyland-Bush-Anderson Lakes Regional Park Reserve. These reviews concluded that several parcels have been acquired through LAWCON funding as shown in Figure 8.1. As stipulated in Section 6(f) guidelines, property reasonably equivalent in usefulness and of at least the same fair market value must be identified as replacement land for these parcels.

Regional Park and Open Space funds were also used in acquiring some property within the Highwood Corridor sub-area. The Metropolitan Council of the Twin Cities, which allocates these funds, requires filing a restrictive deed covenant on any parcel purchased with regional funding. These covenants ensure that the land is used only for recreation open space purposes and cannot be broken or amended unless approved by the Metropolitan Council. The Minnesota Department of Transportation will be required to request a release of the covenant. Based on Metropolitan Council Policy 15 (*Recreation Open Space Development Guide/Policy Plan*, 1991, amended 1996), "(l)ands in a Regional Park, Park Reserve, Trail or Special Recreation Feature will only be converted to other uses if approved by the Metropolitan Council through an equally valuable land exchange."

Policy 15 also states that "(t)he only restrictive covenant amendments approved by the Council in which no land was exchanged were for small strips of land needed for public highway improvements" and that "(i)n addition, the improved highways improved access to the adjacent Regional Recreation Open Space unit." In the case of the Highwood Corridor, because the effected land is also subject to Section 6(f) provisions, the requirement for replacement land will be met.

As described in Section 8.3.1.2, it is likely that portions of the affected Highwood Corridor parkland near East Bush Lake Road would only be impacted temporarily under a construction easement, the surface area restored to its preconstruction condition within a reasonable period of time, and the present and future recreational use of the property will not be impaired. Department of Natural Resources (DNR) staff have indicated that if no permanent easement is required and the above conditions met, this temporary use of the parkland would be excluded from Section 6(f) requirements. The areas that may be temporarily impacted under a construction easement include 0.6 hectare (1.6 acres) immediately south of I-494 that would involve placement of fill and stream channel relocation, plus a possible 0.7 hectares (1.8 acres) of land that my be impacted by stream channel improvements.

8.3.1.6 Coordination

The City of Bloomington was consulted throughout this evaluation. Initial consultation provided details on property ownership and potential LAWCON parcels. Additional discussions focused on efforts to minimize impacts on the park area. The DNR was also consulted to confirm the use of LAWCON funds within the Highwood Corridor sub-area of the Hyland-Bush-Anderson Lakes Regional Park Reserve.

The City of Bloomington has provided a list of potential Section 4(f)/6(f) replacement properties that could be acquired as mitigation for this impact. These are identified in a letter dated March 29, 2001, included at the end of this chapter. Mn/DOT will continue to work with City staff to identify acceptable replacement properties and arrangements for acquisition.

The conversion, including the replacement land proposed and appraisals, is subject to review and approval by the DNR. The DNR would, in turn, submit the conversion to the National Park Service for approval.

8.3.1.7 Conclusion

Based upon the above considerations, there is no feasible and prudent alternative to the use of land from the Highwood Corridor portion of the Hyland-Bush-Anderson Reserve and the proposed action includes all possible planning to minimize harm to the property resulting from such use.

8.3.2 BEAVERBROOK FIELD

8.3.2.1 Description of the Section 4(f) Resource

Site Description: Beaverbrook Field is located in the City of Bloomington just east of East Bush Lake Road immediately south of Green Valley Drive (Figure 8.1).

Activities and Use: This 3.0-hectare (7.4-acre) park has two softball fields with backstops, outfield fences, bleachers, and two parking areas. It is used by organized teams and informal groups throughout the summer. There are no planned additional facilities.

Access: Access to the Beaverbrook Field is provided from Green Valley Drive (south I-494 frontage road) which connects East Bush Lake Road to the west and Normandale to the east.

Ownership: The park is owned and operated by the City of Bloomington.

Clauses: There are no applicable clauses affecting the property to be acquired. Section 8.3.2.5 details this finding.

Relationship to Other Similar Resources: The closest ball fields would be at Reynolds Playground, approximately 1.6 kilometers (one mile) to the southeast.

Unusual Characteristics: There are no unusual characteristics to the property.

8.3.2.2 Impact to the Section 4(f) Resource

The land which would be required to accommodate reconstruction of the East Bush Lake Road interchange, Green Valley Drive, and storm water ponding, essentially eliminates the athletic playfields and their respective parking lots. Therefore, the entire 3.0-hectare (7.4-acre) parcel would be acquired for the proposed project.

8.3.2.3 Alternatives to the Use of Section 4(f) Property

As noted in Section 8.1, the Draft Section 4(f)/6(f) Evaluation analyzed a No-Build, TSM, as well as the four Build alternatives. Both the No-Build and the TSM alternatives would avoid the Beaverbrook Field. However, the DEIS found that these alternatives would not adequately address the project needs, since they would not adequately increase corridor capacity to meet growing demands and would not allow the highway design to be upgraded to current standards.

The assumption in the DEIS was that improvements to I-494 would be centered on the existing alignment. Any of the alternatives evaluated in the DEIS would severely impact the use of this park and essentially eliminate the athletic playfields and parking lots. The Beaverbrook playfields are already relatively small for their intended use. The land adjacent to the park is generally wetland and expansion of the park in this area is not feasible since it would require filling of the wetlands. The only alternative to avoid the impact to Beaverbrook Field is an alignment shift to the north as discussed for the Highwood Corridor Area (Figure 8.3). As noted in Section 8.3.1.3, this alternative requires acquisition of properties that have an estimated market value of approximately $68 million and annual tax revenue of approximately $3.4 million. City of Bloomington staff have stated that this level of impact would not be acceptable.

In addition to the right-of-way and tax revenue impacts of this alternative, there are a number of other impacts and costs. High voltage transmission lines on the north side of the highway which would have to be relocated if the highway was shifted north. The businesses in the area act as a buffer and if they were relocated, the noise levels could increase for residents who live on the north side of 78th Street. Finally, a shift in the alignment to the north would require relocation of Nine Mile Creek or would require routing the creek through a box culvert.

An alternative eliminating access at East Bush Lake Road was also considered. However, an evaluation of access and traffic circulation in this area concluded that the access to I-494 at East Bush Lake Road is crucial for local access. Without the interchange at East Bush Lake Road, traffic destined to this area would either have to exit at TH 169, approximately 3.5 kilometers (2.2 miles) west, or at TH 100 (Normandale Boulevard), about one kilometer (0.6 mile) to the east. Elimination of this access was unacceptable to adjacent residents, businesses, and representatives from the City of Edina and the City of Bloomington.

Several interchange alternatives were considered at East Bush Lake Road in the DEIS. A single-point diamond interchange was determined to be the most desirable design among the alternatives because it maximizes traffic operations and minimizes right-of-way impacts. After completion of the DEIS, it was concluded that the railroad immediately west of East Bush Lake Road would remain. Since the single point diamond interchange is not compatible with the close proximity of this railroad, a different interchange concept has been selected. Section 3.4.3 describes the FEIS concepts developed for the I-494/East Bush Lake Road interchange. As noted in Section 8.3.1.3, all four concepts would result in the same impacts to Section 4(f) property. The Preferred Alternative proposes folded diamond ramps in the southeast quadrant, and standard diamond ramps in the northwest and northeast quadrants similar to

sub-alternate 2 of the DEIS. This alternative does not avoid acquisition of Beaverbrook Field, due to the impact of the interchange ramp and the need to relocate Green Valley Drive to the south and to provide storm water ponding for this portion of the project area.

Based on the above avoidance alternative considerations and discussions with the City of Bloomington, it was concluded that the relocation costs, lost tax base along with increased noise levels and potential loss of access for area businesses and residents that would result from this alternative were not acceptable, compared to the potential park impacts.

8.3.2.4 Measures to Minimize Harm

The impact acquires the entire Beaverbrook Field site, including athletic playfields and their respective parking lots. The impact will be mitigated via monetary compensation, with monies used to make improvements to existing parks in the City of Bloomington. Support for this mitigation is documented in a letter from the City of Bloomington dated March 29, 2001, and provided at the end of this chapter.

8.3.2.5 Clauses/Section 6(f)-LAWCON Considerations

There was a condition on the platting of the Beaverbrook property that if it were sold, the dedicated parkland would revert back to the original owner. The Bloomington City Attorney has interpreted this condition as not applying to acquisition of the property by condemnation. Therefore, this clause will not apply to the conversion of this land to right-of-way and pond use.

No LAWCON funds have been dispersed for development in, or improvements to Beaverbrook Field. Therefore, Section 6(f) requirements do not apply to this resource.

8.3.2.6 Coordination

The City of Bloomington was consulted throughout the evaluation of Beaverbrook Field and provided recommendations regarding mitigation for impacts.

8.3.2.7 Conclusion

Based upon the above considerations, there is no feasible and prudent alternative to the use of land from Beaverbrook Field and the proposed action includes all possible planning to minimize harm to the property resulting from such use.

8.3.3 UNNAMED OPEN SPACE CORRIDOR-BLOOMINGTON

This park/open space was not discussed in the Draft Section 4(f)/6(f) Evaluation because no reconstruction-related impacts were anticipated based on the level of design development in the DEIS. More recent design concept development of the Preferred Alternative identified the potential for impacts to this resource. These impacts were presented in a Supplemental Draft Section 4(f) Evaluation dated December 29, 2000.

8.3.3.1 Description of the 4(f) Resource

Site Description: This corridor of open space follows Nine Mile Creek between Normandale Lake and East Bush Lake Road in Bloomington. (See Figure 8.2 for location.) It is approximately 3.8 hectares (9.3 acres) in size.

Activities and Use: The corridor is primarily wetland maintained as natural open space. There are no facilities, trails or parking on the property, and no improvements are planned.

Access: Access to the site is from East Bush Lake Road.

Ownership: The open space is owned by the City of Bloomington.

Clauses: There are no applicable clauses affecting the ownership of the property to be acquired. It was not planned, developed or improved with LAWCON or Metropolitan Council funds.

Relationship to Other Similar Resources: The corridor provides a natural open space connection between two units of the 1,039-hectare (2,565-acre) Hyland-Bush-Anderson Lakes Regional Park Reserve. It links the 44-hectare (108-acre) Highwood Corridor to the northwest with the 75-hectare (185-acre) Normandale Lake area to the southeast.

Unusual Characteristics: There are no unusual natural or cultural characteristics to this property. It provides a visual and natural open space break in an area developed with office and residential uses.

8.3.3.2 Impact to the 4(f) Resource

Additional design concept development of the Preferred Alternative, specifically the East Bush Lake Road interchange and frontage road reconstruction, identified the potential for impacts to this resource. The design of the interchange includes a realignment of Green Valley Drive east of East Bush Lake Road. The realignment of Green Valley Drive east of East Bush Lake Road requires acquisition of approximately 2.4 hectares (6.0 acres) of right-of-way at the location of the Unnamed Open Space.

8.3.3.3 Alternatives to the Use of Section 4(f) Property

As noted in Section 8.1, the Draft Section 4(f)/6(f) Evaluation analyzed a No-Build, TSM, as well as the four Build alternatives. Both the No-Build and the TSM alternatives would avoid the Unnamed Open Space Corridor. However, the DEIS found that these alternatives would not adequately address the project needs, since they would not adequately increase corridor capacity to meet growing demands and would not allow the highway design to be upgraded to today's standards.

Avoidance of impacts to the Unnamed Open Space could be achieved by a major alignment shift to the north of any of the mainline Build Alternatives or by selection of an interchange sub-alternative which does not require acquisition of the resource. These options are described in turn below.

The assumption in the DEIS was that improvements to I-494 would be centered on the existing alignment. An alignment shift to the north would avoid encroachment on the Unnamed Open Space, as well as on the Highwood Corridor sub-area of the Hyland-Bush-Anderson Lakes Regional Park Reserve and the Beaverbrook Field as described in Section 8.3.1.3 and 8.3.2.3. As noted in Sections 8.3.1.3 and 8.3.2.3, this alternative requires acquisition of properties that have an estimated market value of approximately $68 million and annual tax revenue of approximately $3.4 million. City of Bloomington staff have stated that this would not be an acceptable alternative. The shifted alignment would also require acquisition of the Braemar Business Center including approximately 1.0 hectare (2.6 acres) of privately owned open space.

In addition to the right-of-way and fiscal costs of moving the I-494 alignment to the north, there are a number of other associated impacts and costs. There are high voltage transmission lines on the north side of the highway that would have to be relocated if the highway was shifted north. The businesses in the area would have to be relocated and the noise levels could increase for residents who live on the north side of 78th Street. Finally, a shift in the alignment to the north would require relocation of Nine Mile Creek or would require routing the creek through a box culvert.

The alternative of not providing access at East Bush Lake Road was also considered. However, an evaluation of the access and circulation in this area concluded that the access to I-494 at East Bush Lake Road is crucial to the proposed upgrading of I-494. Without the interchange at East Bush Lake Road, traffic destined to this area would either have to exit at TH 169 about 3.5 kilometers (2.2 miles) to the west, or at TH 100 (Normandale Boulevard), about one kilometer (.6 miles) to the east. Elimination of this access was unacceptable to adjacent residents, businesses and representatives from the cities of Edina and Bloomington.

The DEIS analyzed three alternatives for the East Bush Lake Road interchange, including a single-point diamond interchange; folded diamond interchange in the southeast quadrant with regular diamond ramps in the northeast and northwest quadrants; and folded diamond interchange to the East. The single-point diamond interchange would avoid impacts to the property. At the time the DEIS was prepared, the single-point diamond interchange was determined the most desirable design because it maximizes traffic operations and minimizes right-of-way impacts in comparison with the other two alternatives.

After completion of the DEIS, it was concluded that the railroad immediately west of East Bush Lake Road would remain. Since the single-point diamond interchange design would not be compatible with the close proximity of this railroad, a different interchange concept has been selected. Section 3.4.3 describes the FEIS concepts developed for the I-494/East Bush Lake Road interchange. As noted in Section 8.3.1.3, all four concepts would result in the same impacts to Section 4(f) property. The current Preferred Alternative proposes folded diamond ramps in the southeast quadrant, and standard diamond ramps in the northwest and northeast quadrants similar to sub-alternate 2 of the DEIS. This interchange configuration requires relocation of the existing frontage road, Green Valley Drive, to the south. The proposed intersection of relocated Green Valley Drive with East Bush Lake Road impacts the Unnamed Open Space Section 4(f) resource. This intersection can not be moved further north to avoid the Section 4(f) resource because it would be too close to the interchange, resulting in safety and

operational problems on East Bush Lake Road. (Note: The single-point interchange design alternative also considered in the DEIS would likely have resulted in a similar need to relocate Green Valley Drive and a similar impact on the Unnamed Open Space.)

The other folded diamond interchange option identified in the DEIS and in Section 3.4.3 of this FEIS would have similar impacts on the Unnamed Open Space and constraints on avoidance as described above for the preferred interchange configuration.

Consideration was also given to terminating Green Valley Drive at a point just east of the Unnamed Open Space, thereby eliminating the intersection of Green Valley Drive with East Bush Lake Road. In this scenario, traffic to/from the businesses and residences along Green Valley Road would have to come and go via Norman Center Drive, West 84th Street and Normandale Boulevard. This would increase circuity for travelers to/from the west on I-494 and for those traveling north or south on East Bush Lake Road. In addition, terminating Green Valley Road in a cul-de-sac would not be consistent with the City of Bloomington's concept of this roadway as part of the parallel arterial route adjacent to I-494. The transportation component of the City of Bloomington's year 2000 comprehensive plan includes Green Valley Drive as a four-lane arterial road connecting Normandale Boulevard (and the remainder of the City's east-west parallel arterial route to the east) to East Bush Lake Road. The projected (2010) average daily traffic volume for Green Valley Drive is approximately 15,000 vehicles. If this traffic could not travel on Green Valley Drive as a through street, it would likely utilize Norman Center Drive and 84th Street. Recent traffic analysis of 84th Street intersections for the new Norman Pointe office development that was recently approved for construction by year 2004 at 84th Street and Normandale Boulevard indicate that the intersections at 84th Street/East Bush Lake Road and 84th Street/Normandale Boulevard will be at or near capacity by year 2005 (operating at level of service F and D, respectively, during the afternoon peak hour) assuming current design for those intersections. If the Green Valley Drive traffic were diverted to these intersections, capacity problems would be even greater than currently projected. Based on the above considerations related to traffic operations and the City's parallel arterial route concept, the City finds the alternative of terminating Green Valley Drive prior to East Bush Lake Road (as a means of avoiding impacts to the Unnamed Open Space) an unacceptable alternative.

Based on the above alignment alternative considerations, it was concluded that there are unique problems involved with alternatives to avoid impacts to this open space.

8.3.3.4 Measures to Minimize Harm

- Impacts will be minimized to the extent possible by increasing side slopes in the design of the new roadway.

- Appropriate landscaping plans will be developed in coordination with the City of Bloomington.

- The impact will be mitigated via monetary compensation with monies used to make improvements to existing parks in the City of Bloomington. Support for this mitigation is documented in a letter from the City of Bloomington dated March 29, 2001 and provided at the end of this chapter.

8.3.3.5 Clauses/Section 6(f)-LAWCON Considerations

There are no applicable clauses affecting the ownership of the property to be acquired. It was not planned, developed or improved with LAWCON or Metropolitan Council funds.

8.3.3.6 Coordination

The City of Bloomington was consulted throughout the evaluation process, including review of alternatives for realigning Green Valley Drive to minimize impacts to the open space property.

8.3.3.7 Conclusion

Based upon the above considerations, there is no feasible and prudent alternative to the use of land from this portion of the city-owned open space at the Unnamed Open Space Corridor-Bloomington, and the proposed action includes all possible planning to minimize harm to the property resulting from such use.

BLOOMINGTON
SECTION 4(f)/6(f) MITIGATION LETTER

city of
bloomington, minnesota

2215 W. Old Shakopee Rd. • Bloomington MN 55431-3096 • 952-563-8877 •FAX: 563-8715 • TDD: 563-8740

BLOOMINGTON PARKS AND RECREATION

March 29, 2001

Chris Roy
Project Manager
MnDOT Metropolitan Division
Waters Edge 1500 West County Road B-2
Roseville, MN 55113

Dear Mr. Roy:

It is the position of the City of Bloomington, per March 26, 2001 City Council action, that:

1. 4(f) property located in the Beaverbrook Park area, including the Beaverbrook ballfields and the unnamed open space along East Bush Lake Road, is mitigated via monetary compensation, amount to be negotiated with MnDOT. These monies are to be used to make improvements to City parks. Wetland mitigation (if required) resulting from wetlands impacts in the Beaverbrook Park area is recommended to occur on the Goldman property (southeast quadrant of W. 84th St. and Normandale Blvd.)

2. The 6(f) mitigation resulting from property impacts in the Highwood Corridor will be replacement land, with the City having identified potential replacement properties in the attached list of Future Park Land Acquisitions. Properties acquired would be added to the City's existing parkland and dedicated as parkland henceforth.

The City would like to commend MnDOT and SRF Consulting for their work to date on this matter. There has been significant collaboration and cooperation as the City, MnDOT and SRF Consulting worked together to determine the impacts on City Park lands and to identify the appropriate mitigation measures. Please feel free to contact me at 952-563-8876 if you have any questions or require additional information.

Sincerely,
CITY OF BLOOMINGTON

Randy Quale, Manager
Parks and Recreation Division

RQ/rq
Attachment
PARKS/BEAVERDNRLTR

City of Bloomington
Future Park Land Acquisitions
(Page 2)

Address	2000 Assessor's Value	Estimated Purchase Price	Estimated Other Acquisition Costs	Estimated Total Acquisition Costs	Funding Source
5) 10420 Humboldt Ave. So.	**128,700**	**154,440**	**41,500**	**195,940**	**Unidentified**

* PIN #21-027-24-24-0001, 0.444 acre, zoning residential R-1. Property to be acquired for Moir Park. Estimated purchase price based on 120% of assessed value.

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6) 10301 and 10309 Morgan Ave. So.	**178,700**	**214,440**	**41,500**	**255,940**	**Unidentified**

*10301 Morgan Ave So. PIN #21-027-24-22-0003, 0.915 acre, zoning residential R-1. 10309 Morgan Ave. So. PIN #21-027-24-22-0004, .915 acre, zoning residential R-1. Properties to be acquired for Moir Park. Estimated purchase price based on 120% of assessed value.

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7) 7001 Marth Rd.	**100,600**	**120,720**	**41,500**	**162,220**	**Unidentified**

*PIN #17-116-21-22-0021, 0.403 acre, zoning residential SC. Property to be acquired for North Corridor Park trail. Hold on acquisition until determination is made if property will be acquired for I-494 expansion. Estimated purchase price based on 120% of assessed value.

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8) 7321 Izaak Walton Road	**243,100**	**291,720**	**41,500**	**323,220**	**Unidentified**

*PIN #19-116-21-41-0005, 0.836 acre, zoning residential R-1 Multiple. Property to be acquired Bush Lake trail. Estimated purchase price based on 120% of assessed value.

City of Bloomington
Future Park Land Acquisitions
(Updated – December 27, 2000)

Address	2000 Assessor's Value	Estimated Purchase Price	Estimated Other Acquisition Costs	Estimated Total Acquisition Costs	Funding Source
1) 11100 Humboldt Ave. So.	**32,600**	**100,000**	**6,000**	**106,000**	**Unidentified**

*PIN #28-027-24-21-0001, 7.959 acres, zoning R-1 Multiple. Property to be acquired for MN River Valley Park. Portion of Nine Mile Creek crosses the property. Estimated purchase price based on Owner's asking price.

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2) 8200 E. Bush Lake Road	**214,100**	**256,920**	**22,500**	**279,420**	**Unidentified**

*PIN #17-116-21-13-0008, 1.0 acre, zoning residential SC. Property to be acquired for North Corridor Park trail and possible usage of residence as a conference center. Estimated purchase price based on 120% of assessed value.

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3) 7300 Marth Rd.	**123,500**	**176,000**	**41,500**	**217,500**	**Unidentified**

*PIN #18-116-21-11-0003, 0.493 acre, zoning residential SC. Property to be acquired for North Corridor Park trail. Hold on acquisition until determination is made if property will be acquired for I-494 expansion. Estimated purchase price based on Owner's 1998 asking price plus 10%.

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4) 9625 E. Bush Lake Road	**177,800**	**213,360**	**41,500**	**254,860**	**Unidentified**

*PIN #29-116-21-23-0007, 0.563 acre, zoning residential R-1. Property to be acquired for Bush Lake trail, proposed park on southeast corner of Bush Lake and allow future relocation of East Bush Lake Rd. on to Oregon Ave. Estimated purchase price based on 120% of assessed value.

City of Bloomington
Future Park Land Acquisitions
(Page 3)

Address	2000 Assessor's Value	Estimated Purchase Price	Estimated Other Acquisition Costs	Estimated Total Acquisition Costs	Funding Source
9) 7401 Izaak Walton Road	**221,000**	**265,200**	**41,500**	**306,700**	**Unidentified**
*PIN #19-116-21-41-0004, 1.164 aces, zoning residential R-1 Multiple. Property to be acquired for Bush Lake trail. Estimated purchase price based on 120% of assessed value.					
10) 7501 Izaak Walton Road	**225,700**	**270,840**	**41,500**	**312,340**	**Unidentified**
*PIN #19-116-21-41-0001, 0.384 acre, zoning residential R-1 Multiple. Property to be acquired for Bush Lake trail. Estimated purchase price based on 120% of assessed value.					
11) 7515 Izaak Walton Rd.	**592,200**	**710,640**	**27,000**	**737,640**	**Unidentified**
*PIN #19-116-21-14-0004, 6.282 acres, zoning residential R-1 Multiple. Property to be acquired for Bush Lake trail. Estimated purchase price based on 120% of assessed value.					
12) 9125 W. Bush Lake Road	**205,100**	**246,120**	**41,500**	**287,620**	**Unidentified**
*PIN #19-116-21-42-0001, 0.493 acre, zoning residential R-1 Multiple. Property to be acquired for Bush Lake trail. Estimated purchase price based on 120% of assessed value.					

City of Bloomington
Future Park Land Acquisitions
(Page 4)

Address	2000 Assessor's Value	Estimated Purchase Price	Estimated Other Acquisition Costs	Estimated Total Acquisition Costs	Funding Source
13) 7811 Pickfair Drive	**182,800**	**219,360**	**41,500**	**260,860**	**Unidentified**

*PIN #19-116-21-12-0013, 0.686 acre, zoning residential R-1 Multiple. Property to be acquired for Bush Lake trail. Estimated purchase price based on 120% of assessed value.

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14) 7901 Pickfair Drive	**368,300**	**441,960**	**49,000**	**490,960**	**Unidentified**

*PIN #19-116-21-12-0040, 0.953 acre, zoning residential R-1 Multiple. Property to be acquired for Bush Lake trail. Estimated purchase price based on 120% of assessed value.

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15) 9609 E. Bush Lake Road	**62,900**	**88,000**	**22,500**	**110,500**	**Unidentified**

*PIN #29-116-21-23-0005, 0.605 acre, zoning residential R-1. Property to be acquired for Bush Lake trail, proposed park on southeast corner of Bush Lake and allow future relocation of East Bush Lake Rd. on to Oregon Ave. Estimated purchase price based on 120% of assessed value.

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16) 9633 E. Bush Lake Road	**201,100**	**241,320**	**41,500**	**282,820**	**Unidentified**

*PIN #29-116-21-23-0008, 0.568 acre, zoning residential R-1. Property to be acquired for Bush Lake trail, proposed park on southeast corner of Bush Lake and allow future relocation of East Bush Lake Rd. on to Oregon Ave. Estimated purchase price based on 120% of assessed value.

City of Bloomington
Future Park Land Acquisitions
(Page 5)

Address	2000 Assessor's Value	Estimated Purchase Price	Estimated Other Acquisition Costs	Estimated Total Acquisition Costs	Funding Source
17) 9616 Oregon Ave. So.	**193,500**	**232,200**	**41,500**	**273,700**	**Unidentified**

*PIN #29-116-21-23-0006, 0.598 acre, zoning residential R-1. Property to be acquired for Bush Lake trail, proposed park on southeast corner of Bush Lake and allow future relocation of East Bush Lake Rd. on to Oregon Ave. Estimated purchase price based on 120% of assessed value.

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18) 345 E. 104th St.	**157,400**	**188,880**	**41,500**	**230,380**	**Unidentified**

*PIN #22-027-24-14-0002, 0.689 acre, zoning residential R-1 Multiple. Property to be acquired for Pond-Dakota Park. Estimated purchase price based on 120% of assessed value.

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19) 7900 & 7940 Chicago Ave. S.	**4,400,400**	**5,280,480**	**1,346,000**	**5,530,480**	**Unidentified**

*7900 Chicago Ave. S. PIN #02-027-24-22-22-0013, 4.594 acres, zoning FD-2. 7940 Chicago Ave. So. PIN #02-027-24-23-0043, 3.225 acres, FD-2. Property to be acquired for Smith Park. Estimated purchase price based on 120% of assessed value. Estimated other acquisition costs based on $825,000 for demolition costs; $500,000 for relocation costs; and $21,000 for appraisal, taxes and closing costs.

City of Bloomington
Future Park Land Acquisitions
(Page 6)

Address	2000 Assessor's Value	Estimated Purchase Price	Estimated Other Acquisition Costs	Estimated Total Acquisition Costs	Funding Source
20) 3100 W. 98th St.	**125,200**	**150,240**	**41,500**	**191,740**	**Unidentified**

*PIN #17-027-24-24-0002, 0.822 acre, zoning residential R-1. Property to be acquired for National Guard Armory. Estimated purchase price based on 120% of assessed value.

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21) 3309 W. 90th St.	**173,900**	**208,680**	**41,500**	**250,180**	**Unidentified**

*PIN #08-027-24-31-0010, 0.365 acre, zoning residential R-1. Property to be acquired for Tretbaugh & Marsh Lake Parks. Estimated purchase price based on 120% of assessed value.

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22) 8400 Old Cedar Ave.	**80,200**	**96,240**	**41,500**	**137,740**	**Unidentified**

*PIN #02-027-24-44-0015, 0.286 acre, zoning residential R-1. Property to be acquired for Wright's Lake Park. Estimated purchase price based on 120% of assessed value.

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23) 8406 Old Cedar Ave.	**121,400**	**145,680**	**41,500**	**187,180**	**Unidentified**

*PIN #02-027-24-44-0016, 0.286 acre, zoning residential R-1. Property to be acquired for Wright's Lake Park. Estimated purchase price based on 120% of assessed value.

City of Bloomington
Future Park Land Acquisitions
(Page 7)

Address	2000 Assessor's Value	Estimated Purchase Price	Estimated Other Acquisition Costs	Estimated Total Acquisition Costs	Funding Source
24) 8412 Old Cedar Ave.	**121,000**	**145,200**	**41,500**	**186,700**	**Unidentified**

*PIN #02-027-24-44-0017, 0.286 acre, zoning residential R-1. Property to be acquired for Wright's Lake Park. Estimated purchase price based on 120% of assessed value.

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25) 3501 Overlook Dr.	**395,000**	**474,000**	**22,500**	**496,500**	**Unidentified**

*PIN #29-027-24-32-0002, 5.625 acres, zoning residential R-1 Multiple. Property to be acquired for Dwan Golf Course expansion. Estimated purchase price based on 120% of assessed value.

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26) 3401 Overlook Dr.	**552,200**	**662,640**	**49,000**	**711,640**	**Unidentified**

*PIN #29-027-24-31-0006, 10.606 acres, zoning residential R-1 Multiple. Property to be acquired for Dwan Golf Course expansion. Estimated purchase price based on 120% of assessed value.

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27) 3325 Overlook Dr.	**102,500**	**123,000**	**22,500**	**145,500**	**Unidentified**

*PIN #29-027-24-31-0005, 2.869 acres, zoning residential R-1 Multiple. Property to be acquired for Dwan Golf Course expansion. Estimated purchase price based on 120% of assessed value.

City of Bloomington
Future Park Land Acquisitions
(Page 8)

Address	2000 Assessor's Value	Estimated Purchase Price	Estimated Other Acquisition Costs	Estimated Total Acquisition Costs	Funding Source
28) 7416 Izaak Walton Rd.	**242,300**	**290,760**	**41,500**	**332,260**	**Unidentified**

*PIN #19-116-21-14-0002, 1.794 acres, zoning residential R-1 Multiple. Property to be acquired for Bush Lake Park. Estimated purchase price based on 120% of assessed value.

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29) 7420 Izaak Walton Rd.	**262,400**	**314,880**	**49,000**	**363,880**	**Unidentified**

*PIN #19-116-21-14-0003, 0.897 acre, zoning residential R-1 Multiple. Property to be acquired for Bush Lake Park. Estimated purchase price based on 120% of assessed value.

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30) 2001 W. 86th St.	**198,200**	**237,840**	**41,500**	**279,340**	**Unidentified**

*PIN #04-027-24-33-0007, 0.425 acre, zoning residential R-1. Property to be acquired for Lower Penn Lake Park. Estimated purchase price based on 120% of assessed value.

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31) 2105 W. 86th St.	**170,900**	**205,080**	**41,500**	**246,580**	**Unidentified**

*PIN #04-027-24-33-0006, 0.725 acre, zoning residential R-1. Property to be acquired for Lower Penn Lake Park. Estimated purchase price based on 120% of assessed value.

City of Bloomington
Future Park Land Acquisitions
(Page 9)

Address	2000 Assessor's Value	Estimated Purchase Price	Estimated Other Acquisition Costs	Estimated Total Acquisition Costs	Funding Source
32) 11245 Bloomington Ferry Rd.	**152,200**	**395,000**	**27,000**	**422,000**	**Unidentified**

*PIN #06-115-21-13-0009, 1.793 acres, zoning residential R-1 BP1. Property to be acquired for MN River Valley Park. Potential to renovate historic Chambers House into trailhead facility for Bloomington Ferry Bridge trail. Estimated purchase price based on Owner's asking price.

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33) 7001 W. Old Shakopee Rd. & 10801 Bush Lk. Rd.	**1,117,700**	**2,500,000**	**54,000**	**2,554,000**	**Unidentified**

*7001 W. Old Shakopee Rd. PIN #32-116-21-33-0002, 3.861 acres, zoning IP. 10801 Bush Lake Rd. PIN #32-116-21-33-0007, 5.143 acres, zoning IP. Katun properties to be acquired for youth athletic fields. Estimated purchase price based on Owner's asking price.

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34) 1701 W 94th St.	**602,900**	**1,159,349**	**27,000**	**1,186,349**	**Unidentified**

*PIN #16-027-24-21-0008, 5.323 acres, zoning I-2. John Deere property to be acquired for youth athletic fields. Purchase price estimated at $5/sq. ft.

City of Bloomington
Future Park Land Acquisitions
(Page 10)

Address	2000 Assessor's Value	Estimated Purchase Price	Estimated Other Acquisition Costs	Estimated Total Acquisition Costs	Funding Source
35) 2101 W 94th St.	**235,700**	**453,242**	**54,000**	**507,242**	**Unidentified**

*PIN #16-027-24-22-0006, 2.081 acres, zoning I-2. John Deere property to be acquired for youth athletic fields. Purchase price based estimated at $5/sq. ft.

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36) 2201 W. 94th St.	**320,200**	**615,721**	**54,000**	**669,721**	**Unidentified**

*PIN #16-027-24-22-0005, 2.827 acres, zoning I-2. John Deere property to be acquired for youth athletic fields. Purchase price based estimated at $5/ sq. ft.

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37) 9545 Penn Ave. So.	**570,100**	**1,099,405**	**54,000**	**1,153,405**	**Unidentified**

*PIN #16-027-24-22-0007, 5.034 acres, zoning I-2. John Deere property to be acquired for youth athletic fields. Purchase price based estimated at $5/ sq. ft.

City of Bloomington
Future Park Land Acquisitions
(Page 11)

Address	2000 Assessor's Value	Estimated Purchase Price	Estimated Other Acquisition Costs	Estimated Total Acquisition Costs	Funding Source
38) 1515 W. 98th St.	**447,700**	**537,240**	**49,000**	**586,240**	**Unidentified**

*PIN #14-027-24-41-0006, 12.229 acres, zoning I-2. Property to be acquired for youth athletic fields. Estimated purchase price based on 120% of assessed value.

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39) 8600 Bloomington Ave. So.	**61,200**	**240,000**	**22,500**	**262,500**	**Unidentified**

*PIN #11-027-24-12-0093, Northern most 4 acres of parcel, zoning residential R-1. Bloomington Assemblies of God property to be acquired for Cedarcrest Park. Purchase price based on an estimated $60,000 per acre.

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40) 7320 Highwood Dr.	**0**	**112,500**	**22,500**	**135,000**	**Unidentified**

*PIN #18-116-21-14-0063, 1.875 acres, zoning residential R-1 PD. Townhome property to be acquired for new park. Purchase price based on $60,000 per acre.

City of Bloomington
Future Park Land Acquisitions
(Page 12)

Address	2000 Assessor's Value	Estimated Purchase Price	Estimated Other Acquisition Costs	Estimated Total Acquisition Costs	Funding Source
41) 8735 Portland Ave. So.	**992,300**	**1,190,760**	**1,967,000**	**3,157,760**	**Unidentified**

*PIN #11-027-24-22-0016, 5.902 acres, zoning R-4. Portland Mobile Home Park property to be acquired for youth athletic fields. Estimated purchase price based on 120% of assessed value. Estimated other acquisition costs based on $500,000 for demolition costs including formaldehyde & asbestos abatement; $1,440,000 for relocation costs (72 units @ $20,000); and $27,000 for appraisal, taxes and closing costs.

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42) 2600 W. 82nd St.	**933,500**	**1,120,200**	**217,000**	**1,337,200**	**Unidentified**

*PIN #05-027-24-14-0023, 8.955 acres, zoning R-1. Southtown Baptist Church property to be acquired for youth athletic fields. Estimated purchase price based on 120% of assessed value. Estimated other acquisition costs based on $90,000 for demolition costs; $100,000 for relocation costs; and $27,000 for appraisal, taxes and closing costs.

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43) 9931 Harriet Ave. So.	**99,000**	**118,800**	**41,500**	**160,300**	**Unidentified**

*PIN #15-027-24-32-0022, 0.82 acres, zoning R-1. Property to be acquired for a playlot. Estimated purchase price based on 120% of assessed value.

City of Bloomington
Future Park Land Acquisitions
(Page 13)

Address	2000 Assessor's Value	Estimated Purchase Price	Estimated Other Acquisition Costs	Estimated Total Acquisition Costs	Funding Source
44) 9935 Harriet Ave. So.	**108,600**	**130,320**	**41,500**	**171,820**	**Unidentified**

*PIN #15-027-24-32-0022, 0.82 acres, zoning R-1. Property to be acquired for a playlot. Estimated purchase price based on 120% of assessed value.

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45) 9943 Harriet Ave. So.	**117,700**	**141,240**	**41,500**	**182,740**	**Unidentified**

*PIN #15-027-24-32-0024, 0.82 acres, zoning R-1. Property to be acquired for a playlot. Estimated purchase price based on 120% of assessed value.

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46) 11000 Nesbitt Ave. So.	**3,057,000**	**7,473,957**	**22,500**	**7,496,457**	**Unidentified**

*PIN #05-115-21-11-0003, 35.089 acres, zoning IP. Future water treatment plant property to be acquired for youth athletic fields. Estimated purchased price based on $5/sq. ft.

47A) 6820 Auto Club Rd.	**148,475**	**1,620,000**	**49,000**	**1,669,000**	**Unidentified**

*PIN #15-115-21-24-0007, northern most 27 acres, zoning R-1. Property to be acquired for youth athletic fields. Estimated purchase price based on $60,000 per acre.

City of Bloomington
Future Park Land Acquisitions
(Page 14)

Address	2000 Assessor's Value	Estimated Purchase Price	Estimated Other Acquisition Costs	Estimated Total Acquisition Costs	Funding Source
47B) 6820 Auto Club Rd.	**50,591**	**552,000**	**27,000**	**579,000**	**Unidentified**

*PIN #15-115-21-24-0007, eastern most 9.2 acres (existing ballfields), zoning R-1. Property to be acquired for youth athletic fields. Estimated purchase price based on $60,000 per acre.

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48) 2001 W. 94th St.	**522,715**	**871,200**	**27,000**	**898,200**	**Unidentified**

*PIN #16-027-24-22-0008, eastern most 4.0 acres, zoning I-2. John Deere property to be acquired for youth athletic fields. Estimated purchase price based on $5/sq. ft.

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9.0 SECTION 106 EVALUATION: CULTURAL RESOURCES

The Affected Environment of cultural resources in the I-494 corridor reconstruction was described in Section 4.2.5 of the DEIS. Impacts and Mitigation Measures for cultural resources were addressed in Section 5.5 of the DEIS.

Federal government protection of cultural resources is defined and set forth by the Antiquities Act of 1906, The Historic Sites Act of 1935, the National Historic Preservation Act of 1966 (as amended), the Archaeological and Historic Preservation Act of 1974, and the National Environmental Policy Act of 1970. The cultural resources study and reports conducted for the I-494 reconstruction project follow guidelines set forth in Sections 1(3) and 2(b) of the Executive Order 11593, the National Environmental Policy Act of 1969, the guidelines of the Advisory Council on Historic Preservation (36 CFR 66), and all policies regarding cultural resources established under the Minnesota Field Archaeology Act of 1992.

In compliance with Section 106 of the National Historic Preservation Act (36 CFR 800) and Section 4(f) of the Department of Transportation Act of 1966 (49 USC 303, 23 USC 138) a cultural resources investigation of the I-494 reconstruction project from I-394 to the Minnesota River was conducted between 1990 and 1994. The study was conducted to assess and minimize the potential impact of the proposed reconstruction of I-494 on historically, architecturally, and archaeologically significant properties as required by Section 106 for all federally funded construction projects and by Section 4(f) for federally assisted highway construction projects. Sites were evaluated in terms of National Register Criteria described in the National Register Bulletin #15 published by the U.S. Department of the Interior in 1990 (revised in 1991). This study resulted in a determination of adverse effect. The process was concluded with a Memorandum of Agreement signed in 1995. Reconstruction of I-494 was then placed on hold due to funding considerations.

As discussed in Section 1.2 of this FEIS, the current design has been revised from the design under consideration at the time of the 1995 Memorandum of Agreement. However, as discussed below, the revised project design does not result in the inclusion of additional cultural resources within the project Area of Potential Effect (APE) nor does it result in any further impacts to cultural resources within the APE. Therefore, the project will proceed under the 1995 Memorandum of Agreement. Correspondingly, the Section 106 evaluation for this project was conducted under the version of 36 CFR 800 in effect prior to May 18, 1999.

9.1 INVESTIGATIONS CONDUCTED PRIOR TO THE DEIS

Standing structures and archaeological properties along the I-494 corridor were identified and evaluated during two survey phases. The DEIS describes the methods used to initially identify potential National Register-eligible structures and archaeological sites within the project area,

culminating with a Phase I survey. The following technical reports described in the *I-494 Reconstruction DEIS* are available for review at the Minnesota Department of Transportation and at the State Historic Preservation Office in St. Paul, Minnesota.

Scoping Decision Document ..... September 1990

Cultural Resources Investigation Phase I Technical Report ..... January 1992

Draft Environmental Impact Statement ..... April 1992

A preliminary survey of the corridor documented in the *Scoping Decision Document*, Historical and Archaeological Impacts section (page 41), identified several areas of high potential for archaeological resources, and several structures potentially eligible for the National Register of Historic Places (NHRP).

The Phase I investigation, documented in the *Cultural Resources Investigation Phase I Technical Report***,** identified and located potential archaeological (prehistoric and historic) and architectural resources within and immediately adjacent to the proposed construction areas. The investigation of archaeological resources was limited to the direct impact areas delineated in the *I-494 Reconstruction Scoping Decision Document*. With respect to structures, consideration was given to properties adjacent to the project corridor that may be affected indirectly (visually, for example) as well. Several methods were used to identify archaeological sites and potential National Register-eligible standing structures in the survey area including a literature search, archival research, survey fieldwork and the solicitation of input from historic preservation agencies and neighborhood groups.

Five (5) structures were recommended for Phase II study to be evaluated for eligibility for the National Register of Historic Places. These five (5) were 1810 Oakland Road (HE-MKC-015), the Assumption Church Rectory (HE-RFC-018), the Elizabeth and Frederick H. Carpenter summer residence (HE-MKC-018), the Swan J. Swanson residence (HE-MKC-022), and the Anna and Joseph Lorence residence (HE-BLC-044).

The Phase I archaeological survey identified one site previously determined eligible for the National Register as a standing structure (Bush Lake School, demolished prior to 1991) and five (5) additional sites for further evaluation for eligibility: one (1) historic structure foundation, a historic Native American trail and three (3) historic period sites.

The State Historic Preservation Office (SHPO) agreed with the archaeological sites recommended for Phase II investigation (March 31, 1992, letter to Mn/DOT) but determined that two (2) of the five (5) standing structures, 1810 Oakland Road (HE-MKC-015) and the Assumption Church Rectory (HE-RFC-108) did not warrant further research. SHPO also requested that the Phase II investigation also research the significance of I-494 in shaping the suburban landscape in recent history.

9.2 INVESTIGATIONS COMPLETED FOR THE 1993 PREFERRED ALTERNATIVE

As discussed in Section 1.2, DEIS Alternate 2A (referred to in this FEIS as the 1993 Preferred Alternative) was selected in 1993 as the Preferred Alternative for study in a Final EIS. The Phase II studies and SHPO coordination between 1993 and 1995 were based on the 1993 Preferred Alternative. The I-494 reconstruction project was put on hold in 1995 due to lack of construction funds for the project. The Phase II investigation, determination of effect, and resulting Memorandum of Agreement (discussed below) were completed just prior to the closure of the project at that time.

The Phase II investigation completed in February 1994 examined each site, developed property-specific historic contexts, and evaluated the archaeological and historic sites recommended by the State Historic Preservation Office for National Register eligibility.

The investigators concluded that none of the archeological sites were eligible for the National Register or merited further investigation.

Of the three residential structures evaluated, two were recommended for inclusion on the National Register of Historic Places (Figure 9.1).

- The Anna and Joseph Lorence residence, 7335 Marth Road, Bloomington, was recommended based on National Register Criterion A (properties significant for their association with one or more events important in the defined historic context).

- The Elizabeth and Frederick H. Carpenter summer residence, 13405 McGinty Road East, Minnetonka, based on Criterion C (properties significant for their architectural style, engineering technique, and/or method of construction).

The investigation of the Highway 5/Interstate 494 corridor completed at the request of the SHPO determined that the corridor was not eligible for listing on the NRHP. While the original construction of I-494 was found to clearly affect suburban development, the investigators determined that it was difficult to determine a direct causal connection between construction of the roadway and specific elements of the suburban environment. Further, while I-494 itself is approaching the minimum age criterion of 50 years, it suffers from substantial integrity issues due to numerous changes in roadway design and adjacent developments.

At the request of the State Historic Preservation Office (February 16, 1994 letter to Mn/DOT), supplemental information about the Carpenter outbuildings, as well as information regarding the historic boundary of the property was supplied in a *Phase II Cultural Resources Investigation of the Proposed I-494 Reconstruction Addendum #1*.

The affected historic properties' significance, and the 1993 Preferred Alternative's effects on the preservation of these properties was summarized in *Finding of Adverse Effect: Section 106 Review of Two Properties Along I-494* prepared in April of 1994. A Memorandum of Agreement (see Appendix C) regarding the 1993 Preferred Alternative and its adverse effects to the Lorence and Carpenter properties was signed in 1995.

The following Phase II technical reports for this project are available for review at the Minnesota Department of Transportation and at the State Historic Preservation Office in St. Paul, Minnesota.

Cultural Resources Investigation Phase II Technical Report ..... February 1994

Phase II Cultural Resources Investigation Addendum #1 ..... April 1994

Finding of Adverse Effect: Section 106 Review of Two Properties Along I-494 ... April 1994

Memorandum of Agreement 1995

9.3 CONSTRUCTION WITHIN THE I-494 CORRIDOR BETWEEN 1995 AND 1999

Bridge replacement and other minor, maintenance-related reconstruction activities occurred in the I-494 study corridor between 1995 and 1999 where needed to address deficient infrastructure and severe functional inadequacies. Environmental effects resulting from these projects, including impacts to cultural resources, were addressed in separate environmental documents listed in Section 1.2.2. Each of these projects were examined for their effects to cultural resources; the projects were either found to be exempt from review or resulted in a "no historic properties" finding.

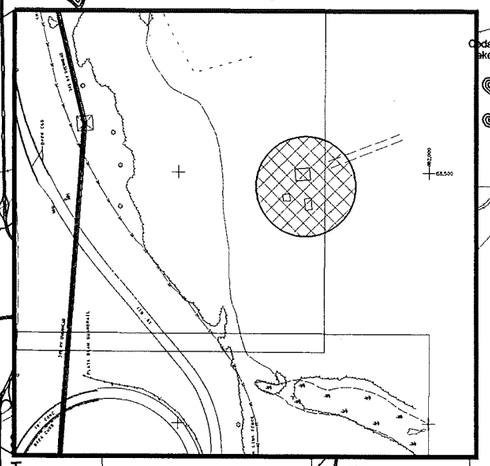
One of these projects, however, merits some discussion as it relates to the Carpenter House, identified during the Phase II evaluation as eligible for the National Register of Historic Places and determined to face adverse effects under the 1993 Preferred Alternative. The I-494 bridges over CSAH 5 (Minnetonka Boulevard) and Stone Road were replaced in 1998 (S.P. 2785-307) due to their poor condition. The Elizabeth and Frederick H. Carpenter summer residence lay immediately northeast of the project area. The CSAH 5 interchange concepts studied in the 1992 DEIS Alternative 2A included a much larger reconstruction of this interchange and would have taken a portion of the Carpenter property for right of way. The 1998 bridge replacement did not include reconfiguration of the interchange as had been proposed in the DEIS. Rather, the interchange configuration was left intact although the bridges were built to accommodate additional lanes if approved under the future I-494 reconstruction project. Also, the 1998 bridge replacement project included retaining walls so that acquisition of the Carpenter property was no longer required as part of the improvements. As the project would be constructed within existing right of way, did not introduce new structural or visual elements, and did not require substantial ground disturbance, the project memorandum prepared for the bridge replacement/interchange reconstruction concluded that the project was exempt from review under 36 CFR 800 under the Programmatic Agreement between the Federal Highway Administration, the Minnesota Department of Transportation, the Advisory Council on Historic Preservation, and the Minnesota State Historic Preservation Office.

The current Preferred Alternative for the I-494 FEIS reconstruction as described in Section 3.4 of this FEIS does not include any further work to bridges or the Minnetonka Boulevard interchange in this area.

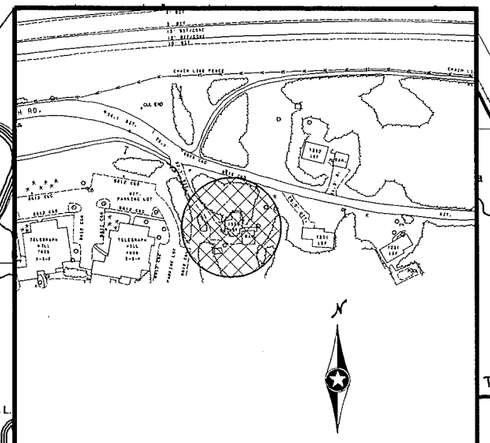
Figure 9.1

Locations of Historic Structures In The I-494 Corridor Study Area

Elizabeth And Frederick Carpenter Summer Residence
13405 McGinty Road East



Anna And Joseph Lorence Residence
7335 Marth Road



Legend

Historic Property

0 3000 6000
scale feet
0 300 600 m

NORTH

Final Environmental Impact Statement

I-494 Reconstruction

I-394 to the Minnesota River

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9.4 ASSESSMENT OF THE CURRENT PREFERRED ALTERNATIVE

Changes in the project design between the 1993 Preferred Alternative and the current Preferred Alternative were examined to determine if further cultural resources investigation was warranted. In general, the current area of impact of the design is less extensive than the impact area studied for the 1993 Preferred Alternative and the DEIS. However, the current project construction limits have expanded to a small degree beyond the 1993 Preferred Alternative construction limits in a few locations due to design changes.

Current project construction limits were compared against the geographic limits of the Phase I and Phase II evaluations. The previous evaluations of standing structures had included properties adjacent to, as well as properties within, the project limits. Recent design changes have resulted in minor expansions of the project limits, however the limits still remain outside, or only slightly within, the parcel boundaries of the first tier of adjacent properties. Therefore, it was determined that the area of potential effect for standing structures evaluated during the Phase I and Phase II investigations remained valid for the current design.

The archaeological area of potential effect, however, relied upon the 1993 Preferred Alternative construction limits as the bounds for investigation. Areas where the current Preferred Alternative construction limits extend beyond those of the 1993 Preferred Alternative had not been examined for archeological potential as part of the Phase I or Phase II studies. These areas were reviewed by staff archaeologists at Mn/DOT's Cultural Resources Unit as part of the FEIS studies and were found to have low potential for unknown archeological sites.

Additional assessment for archaeological potential occurred in the area east of 34th Avenue, where the horizontal and vertical alignment of a high flow storm water conveyance line is yet undetermined. Possible horizontal alignments could occur anywhere in the area outlined in Figure 6.16 as discussed in Section 6.3.4.4. The portion of the area to the south of I-494 was assessed by Mn/DOT archaeologists and determined to possess low archaeological potential due to steep slopes, wetlands, and limited flat areas at the bluff top. The portion of the area north of I-494 was previously examined for archaeological potential during the Section 106 evaluation for the Metropolitan Airports Commission Trunk Storm Sewer Project that will be constructed in spring 2001 (SHPO Number 2000-4560). This evaluation is documented in *Phase I and Phase II Cultural Resource Investigations Metropolitan Airports Commission Drainage Improvement Project in Hennepin County,* Minnesota, by Bradley E. Perkl, et. al., BRW Report No. 01-02. Two archaeological sites were identified during this evaluation (21HE-316 and 21HE-317) although only one was determined eligible for the National Register of Historic Places (21HE-316). Both sites are located at the top of a ravine, north of I-494 and west of the TH 5 crossing. Neither site would be affected by the storm sewer line which, if in proximity to these sites, would be drilled 3 to 15 meters (10 to 50 feet) below the soil surface. If any surface construction activities were to occur in proximity to either of these sites, fencing would be provided to protect the sites from construction activities.

9.5. IMPACTS ASSOCIATED WITH THE CURRENT PREFERRED ALTERNATIVE

Two National Register-eligible properties lie within the Area of Potential Effect for the current Preferred Alternative: the Anna and Joseph Lorence residence and the Elizabeth and Frederick H. Carpenter summer residence (see Figure 9.1).

9.5.1 THE ANNA AND JOSEPH LORENCE RESIDENCE

The Lorence house, 7335 Marth Road, Bloomington, was built ca. 1901 by Anna and Joseph Lorence. Joseph Lorence was a carpenter and bricklayer born in Czechoslovakia. The Chaska brick vernacular farmhouse is constructed in the "Gabled Ell" form and exhibits stylistic elements and characteristics possibly rooted in vernacular European forms familiar to its original owner. The house was the base of the Lorence's raspberry farm operation and housed workers as well as the Lorence family.

The Lorence house was determined eligible for the National Register of Historic Places under Criterion A, representing historic agricultural trends among the settlers and immigrants of the western portion of Hennepin County from the late 1800s to the 1930s. The Lorences represent the activities of many Czech families in producing goods for the Minneapolis urban market, and their house is one of the few farmhouses from that era left standing, particularly notable due to its brick construction.

The current Preferred Alternative will not directly affect the Lorence house. However, the current Preferred Alternative shifts I-494 somewhat to the south in the vicinity of the property. The proposed roadway edge has not changed substantively from the 1993 Preferred Alternative design discussed in the *Finding of Adverse Effect: Section 106 Review of Two Properties Along I-494* prepared in April of 1994. The SHPO concurred with the "adverse effect" finding for this property presented in this report (see letter dated August 16, 1994) due to noise and visual impacts. However, the current Preferred Alternative proposes a retaining wall along the southern roadway edge in this area that results in slightly different noise modeling outcomes and reduces visibility of the roadway from the property.

Noise modeling for the 2000 Preferred Alternative indicates limited increases in noise levels would result to the property under this alternative. As summarized in Table 6.7 Noise Monitoring and Modeling Results, existing daytime L_{10} noise levels were modeled at 67 dB in this location (Receptor 58) and would rise 1 dB under both the No-Build and 2000 Preferred Alternative. Nighttime L10 noise levels exhibit a similar pattern, rising 1 db between existing (66 dB) and 2020 (67 dB) noise levels for the No-Build and current Preferred Alternative. This increase is less than the 3 dB increase required to be discernable to the human ear.

Visual impacts would also be very limited. While the roadway edge would move closer to the property under the current Preferred Alternative, the property would remain 76.25 meters (250 feet) from the roadway edge which will be depressed below a retaining wall. A substantial amount of vegetation in the form of trees and bushes is present both in the front yard of the Lorence property and in the open area between Marth Road and I-494 opposite the Marth residence. Additional landscaping is being considered for the area above the retaining wall.

9.5.2 THE ELIZABETH AND FREDERICK H. CARPENTER SUMMER RESIDENCE

The Carpenter summer residence was built in 1915 by Elizabeth D. and Frederick H. Carpenter. The Carpenter summer residence currently occupies 1.3 hectares (3.1 acres) and is located at 13405 McGinty Road East, Minnetonka, Minnesota, in the northeast quadrant of the I-494/Minnetonka Boulevard interchange. The structure is a single-story Craftsman style bungalow and is in good condition. Outbuildings on the site include a well house, garage, guest cottage and screened shelter. All of these outbuildings relate to the design of the original structure. The site also contains a stone retaining wall and stairs.

This property was determined to be eligible for the National Register of Historic Places under Criterion C for its innovative construction methods and under Criterion B for its association with the Carpenters who influenced the continued development of the City of Minneapolis.

As discussed above, the current Preferred Alternative no longer includes the full reconstruction of the interchange and acquisition of property envisioned in the 1993 Preferred Alternative discussed in the *Finding of Adverse Effect: Section 106 Review of Two Properties Along I-494* prepared in April of 1994.

Noise modeling for the current Preferred Alternative indicates limited increases in noise levels would result to the property under this alternative. As summarized in Table 6.7 Noise Monitoring and Modeling Results, existing daytime L_{10} noise levels were modeled at 63 dB in this location (Receptor 12A) and would rise 1 dB under both the No-Build and current Preferred Alternative. Nighttime L10 noise levels exhibit a similar pattern, rising 1 dB between existing (62 dB) and 2020 (63 dB) noise levels for the No-Build and current Preferred Alternative. This increase is less than the 3 dB increase required to be discernable to the human ear.

9.6 MITIGATION MEASURES

A Memorandum of Agreement regarding adverse effects to the Lorence and Carpenter properties (resulting from the 1993 Preferred Alternative) was signed in 1995. As the current Preferred Alternative results in no additional National Register-eligible properties affected by the project and lesser impacts to the identified properties, Mn/DOT and MnSHPO have agreed that this Memorandum of Agreement will be executed as agreed to in 1995. (See Appendix C for a copy of the Memorandum of Agreement).

While noise and visual impacts are less than what was anticipated in 1995, plans for the current Preferred Alternative in the vicinity of the Carpenter and Lorence properties were submitted to SHPO for review and concurrence as stipulated in the Memorandum of Agreement. Appendix C includes a letter from SHPO to Mn/DOT concurring with Mn/DOT's determination that no additional effects to historic properties are apparent in the newly added project elements, and concurring with the proposed plans for the segments of the project in the vicinity of the Carpenter House and the Lorence House.

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10.0 UNAVOIDABLE ADVERSE IMPACTS

This chapter documents the adverse environmental impacts of the Preferred Alternative that cannot be avoided; the relationship between short-term use of the environment and the maintenance and enhancement of long-term productivity; and irreversible and irretrievable commitment of resources which would be involved with the Preferred Alternative. This chapter is not intended to repeat the environmental impacts discussed in the previous chapters, but rather to summarize the impacts that cannot be avoided as required under 40 CFR, Part 1502.16.

10.1 ADVERSE IMPACTS THAT CANNOT BE AVOIDED

10.1.1 RIGHT-OF-WAY ACQUISITION AND RELOCATION

Sixty-one residential dwelling units and 35 businesses will be relocated due to right-of-way acquisition needed for the Preferred Alternative. (Additional impacts could occur if a design approach other than that associated with the Preferred Alternative is implemented at the East Bush Lake Road interchange, as described in Section 5.2.3.2.) Each property owner will be compensated for acquisition and/or relocation costs according to the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (as amended) (49 CFR Part 24). However, property owners and occupants would experience unavoidable inconvenience as a result of relocation.

Actual net property tax losses within each municipality will depend on the extent to which residents and commercial businesses relocate within the same city. The initial loss in property taxes may be partially or fully offset by potential increases in commercial property value within the corridor with redevelopment and improved access.

10.1.2 NOISE

As is the case under current conditions, there would be exceedences of federal noise abatement criteria and/or state noise standards at numerous locations along the project corridor with implementation of the Preferred Alternative. As discussed in Section 6.2.4 of this FEIS, noise mitigation has been determined to meet Mn/DOT's cost-effectiveness criteria at five locations along the project corridor: east of TH 100, north of 77th Street; north of I-494 between Xerxes and Penn Avenue; an apartment complex north of I-494 and west of Portland Avenue; north of I-494 between Portland Avenue and 12th Avenue; and an apartment complex north of I-494 and east of 12th Avenue. All other studied noise wall segments did not meet Mn/DOT's cost-effectiveness criteria. For the areas identified above that are designated by the City of Richfield's *Comprehensive Plan* (1997) for commercial land use in the future, noise walls will be proposed if residential land use is still in effect at the time of project construction; if the area has converted to commercial land use, noise barriers will not be proposed. Cost-effectiveness analyses will be re-evaluated during final design as each phase of the project is implemented, as described in Section 6.2.5.

10.1.3 WETLANDS

The Preferred Alternative would affect approximately 9.1 hectares (22.5 acres) of total wetland area. Complete avoidance of wetland impacts is not possible due to several factors, including the presence of wetlands on both sides of the existing roadway alignment in many areas, the need to widen the roadway to meet capacity requirements and current roadway design standards, and the need to provide storm water detention/treatment facilities in conjunction with project construction. Impacts on wetland areas would be mitigated by creating new wetlands or creating other types of replacement land. Applicable state and federal regulations require a replacement ratio of 2:1 if replacement is within the same watershed or county as the impact; replacement that is not in the same watershed or county would be required at a 2.5 to 1 ratio; and replacement from an established wetland bank would be required at a 2.25 to 1 ratio. Created or new wetlands would be used for the first 1:1 ratio, and Public Value Credit areas may be used in excess of the initial 1:1 ratio.

10.1.4 VEGETATION

The Preferred Alternative would result in impacts to wooded areas along the project corridor. While it is not possible to replace the acquired trees with mature trees, mitigation for the loss of the wooded areas would be provided by planting new trees near the areas of impact, where possible.

10.1.5 CONSTRUCTION

The Preferred Alternative would result in unavoidable temporary environmental impacts due to the necessary construction activities. Impacts associated with construction include:

- **Disruption of Traffic Flow:** The Preferred Alternative would result in traffic impacts during construction. Travelers would experience congestion, traffic delays, access changes, frequent lane shifts, rerouting and, potentially, temporary street closures. The Preferred Alternative would include several measures to mitigate these impacts including timely notice of upcoming construction activities, informational signing to advise drivers of access changes, and traffic control measures to protect both motorists and construction workers. A construction management plan will be prepared to minimize disruptions and detours, and to ensure access to all affected properties. A Mn/DOT Corridor Coordinator will oversee construction phasing and activities to minimize traffic and access impacts to the degree practicable.

- **Air Quality:** Construction activities associated with the Preferred Alternative will result in increases in dust, air-borne particulates and air emissions from construction vehicles. There will also be increased congestion and resulting air quality impacts associated with construction activities. These impacts will be temporary and will occur at varying times and locations along the project corridor. Construction contractors will be required to control dust

and other airborne particulates in accordance with Mn/DOT specifications. Mitigation of air impacts will include such measures as applying water to exposed soils, and limiting the extent and duration of exposed soils. Congestion levels will be limited to the degree feasible with the disruption of traffic flow mitigation measures identified above.

- **Noise:** Construction activities will result in temporary noise impacts. To mitigate for these impacts, Mn/DOT will require construction equipment to be properly muffled. In addition, the contractor(s) will need to comply with applicable local and state noise restrictions.

- **Water Resources and Wetlands:** During construction activities, sediment from erosion of exposed soils has the potential for entering surface water run-off and impact wetlands and surface waters in the vicinity of the project area. Appropriate mitigation measures for erosion and sedimentation impacts will be implemented during construction, including Best Management Practices (BMPs).

10.1.6 PARKLAND/RECREATIONAL AREAS

The Preferred Alternative will require the acquisition of approximately 7.2 hectares (17.8 acres) of parkland/recreation area. The Preferred Alternative will impact three park/recreation areas along the project corridor, including: Hyland-Bush-Anderson Lakes Regional Park Reserve, Beaverbrook Field and an unnamed open space corridor in Bloomington. The proposed improvements will require the full acquisition of one of these park/recreation areas – Beaverbrook Field. Mn/DOT will mitigate these park impacts as discussed in Chapter 8.

10.1.7 CULTURAL RESOURCES

The Preferred Alternative will impact two properties determined to be eligible for listing on the National Register of Historic Places – the Anna and Joseph Lorence Residence and the Elizabeth and Frederick H. Carpenter Summer Residence. Although the Preferred Alternative will not directly affect either of these properties, the proposed improvements will result in limited increases in noise levels at both properties. Design of the roadway in proximity to both of these properties will be coordinated with the State Historic Preservation Office to minimize noise and visual impacts as discussed in Chapter 9.

10.2 SHORT-TERM USE OF RESOURCES VERSUS LONG-TERM PRODUCTIVITY

Short-term adverse impacts and use of resources associated with the Preferred Alternative would include:

- The consumption of energy and use of natural and material resources required for construction activities.

- Temporary increases in dust and noise levels during construction.

- Temporary impacts on water resources due to construction activities.
- Temporary inconveniences for drivers, including traffic delays and detours during construction.
- Temporary interruption in social and business relationships due to relocation.
- Short-term economic impacts related to construction delays, customer diversions, and goods movement costs.
- Short-term reduction in tax base.
- Large capital investment.

Primary long-term gains in productivity associated with the Preferred Alternative include:

- Improved accessibility for goods movements, transits riders, automobile drivers and passengers, and bicyclists and pedestrians.
- An increase in people-carrying capacity and goods movement capacity through the HOV components of the project.
- A reduction in travel time and therefore a reduction in the cost of travel.
- A reduction in the number and severity of accidents throughout the I-494 corridor including parallel regional and local roadways.
- Enhanced structural condition and geometrics of roadways and bridges in the project corridor.
- Improvements in surface water drainage.
- Reduction in regional and corridor-wide carbon monoxide emissions due to decreased traffic congestion levels.
- Area-wide commerce improvements.

The proposed transportation improvements are based on state, regional and local comprehensive planning, which consider existing and future traffic needs within the context of present and future land use development. The short-term impacts and use of resources by the Preferred Alternative are justified, given the resulting maintenance and enhancement of long-term productivity for the state, region and local communities. The No-Build Alternative would not result in any short-term adverse impacts to the environment; however, it would also not create the transportation, economic, or other benefits identified above.

10.3 IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES

The Preferred Alternative would result in the commitment of a range of natural, physical, human and fiscal resources that would be permanently dedicated to public use, and could not be reversed or retrieved. The No-Build Alternative would not change the present (and assumed future) commitments of these resources for public use.

In general, the commitment of resources which are considered irreversible and irretrievable directly relate to the trade-offs inherent to the short-term use of the environment versus the maintenance of long-term productivity. Applicable mitigation measures which will be used to address commitment and loss of resources have been discussed in previous chapters. Commitments of resources which are considered either wholly or in part as irreversible and irretrievable fall into the following categories:

Land Resources

The Preferred Alternative would require the acquisition of developed and undeveloped land, including wetland areas, for purposes of roadway construction. Within the foreseeable future, this commitment of property to roadway use is considered irreversible and irretrievable as long as the facility continues to serve the public good and thus are in use.

Social Resources

The proposed improvements will result in the demolition of residential homes, businesses and community facilities. Parklands will also have to be acquired. These actions are considered to be irreversible and irretrievable commitments. Applicable mitigation measures are addressed in other sections of this FEIS.

Construction Materials

The construction of the Preferred Alternative will result in the commitment of such materials as steel, concrete, sand, aggregate and bituminous products which are largely irreversible and irretrievable. However, none of these materials is in short supply and their use would not have an adverse affect upon continued availability of these resources. In addition, some of these materials may have salvage value and may be recycled at the end of the facility's design life.

Energy Resources

Several energy resources will be committed to the project including petroleum, natural gas, electrical and manpower expenditures for construction, operation and maintenance. These resources are generally irretrievable.

Financial Resources

The proposed reconstruction of I-494 will require considerable federal and state financial commitment. Preliminary estimates for the cost of right-of-way and construction for the Preferred Alternative are approximately $613 million. Funds used for the design, construction and maintenance of the facility will be totally committed to this project and unavailable for other uses. While these public funds are not directly retrievable, the investment will enhance the safety of the users of I-494 and the economic vitality of the metropolitan center, the cities of Minnetonka, Eden Prairie, Edina, Bloomington, Richfield and the entire region.

The commitment of these resources is based on the concept that residents in the immediate area, region and State will benefit by the improved quality of the transportation system. These benefits, relative to the No-Build Alternative, include increased capacity (resulting in reduced congestion, delays, and air quality impacts), improved HOV capabilities, and an improved structural condition of the overall facility. They are anticipated to outweigh the commitment of resources discussed above.

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11.0 COORDINATION

Agency and local government coordination started with the 1986 *I-494 Corridor Study* and has been an integral part of the EIS process for the proposed I-494 reconstruction. The sections that follow describe the coordination that has taken place during the environmental review process, including involvement of federal cooperating agencies, regional planning and local government staff, regulatory agencies, coalitions of parties with an interest in the I-494 corridor, and participation at public meetings.

11.1 LEAD AGENCIES/COOPERATING AGENCIES

The Minnesota Department of Transportation (Mn/DOT) is the state of Minnesota Responsible Government Unit (RGU) for this project, and is taking the lead in preparing environmental documentation for the state and federal environmental review process. The Federal Highway Administration (FHWA) is responsible for environmental decision-making for the project at the federal level. The Metropolitan Council assisted Mn/DOT in early studies, in light of the regional influence of the I-494 corridor. The Metropolitan Council participated in the early EIS studies as Joint Lead Agency. However, once the regional decisions were made, the Metropolitan Council chose to participate in an advisory role as part of the I-494 Project Management Team (see Section 11.2).

Various federal agencies were invited to be cooperating agencies. These include:

- U.S. Environmental Protection Agency (EPA)
- U.S. Army Corps of Engineers (COE)
- U.S. Fish and Wildlife Service (USFWS)
- Federal Transit Administration (FTA)

Cooperating agencies were sent copies of the draft FEIS for review and comment. The final FEIS document reflects input received from these agencies. The Corps of Engineers stated in their comments that, because they will be evaluating future permit applications for parts of the project, they cannot be either an opponent or proponent of the proposed project and cannot have a preferred alternative.

11.2 PROJECT MANAGEMENT TEAM

A Project Management Team (PMT), composed of representatives of agencies, cities, counties and organizations interested in the I-494 project, was initiated during the DEIS scoping process to discuss and resolve issues associated with project design and environmental documentation. Members of the Project Management Team are listed below:

- Federal Highway Administration
- Minnesota Department of Transportation
- Metropolitan Council

- Regional Transit Board (now incorporated into the Metropolitan Council)
- Metropolitan Airports Commission
- Hennepin County
- City of Minnetonka
- City of Eden Prairie
- City of Bloomington
- City of Edina
- City of Richfield
- Improve I-494 Transportation Management Organization

The PMT did not formally meet during the time when the environmental review process had been suspended due to funding issues as discussed in Section 1.2 of this FEIS. However, Mn/DOT staff continued discussions and updates with the PMT members on an informal basis to address corridor issues. The PMT meetings resumed in September of 2000, including the agencies identified above, with two exceptions: 1) Improve I-494 (which had been disbanded) was not represented, although Mn/DOT continued its liaison with the I-494 Corridor Commission (see Section 11.5), and 2) Southwest Metro Transit was added to the PMT. The Regional Transit Board was not in existence when the PMT meetings resumed, but its functions have been incorporated into the Metropolitan Council (still represented on the PMT).

11.3 SCOPING PROCESS

In December 1989, the *I-494 Scoping Document/Draft Scoping Decision Document* was circulated to all parties on the Minnesota Environmental Quality Board (EQB) EAW Distribution List. This document was prepared following the requirements of Mn/DOTís Alternative State Environmental Review Process and the Federal Highway Administrationís environmental review regulation 23CFR 771. A public meeting was held on January 17, 1990, to receive comments on the document. The availability notice for the scoping document and the time and place of the public meeting were announced in the *EQB Monitor*, the *Federal Register*, and local newspapers.

Written comments were accepted on the *Scoping Document/Draft Scoping Decision Document* from December 22, 1989 to January 24, 1990. Those comments were included in the *Final Scoping Decision Document*. The agencies listed below submitted written comments which are available for public inspection at the office of the Mn/DOT Assistant District Engineer.

- Minnesota Department of Natural Resources
- Minnesota Pollution Control Agency
- Metropolitan Council
- City of Bloomington
- City of Eden Prairie
- City of Richfield
- Earth Protector, Inc.
- U.S. Environmental Protection Agency

The *Final Scoping Decision Document*, which was completed in September 1990, was also circulated to all parties submitting comments on the draft scoping document and to those agencies on the EQB distribution list.

11.4 DRAFT ENVIRONMENTAL IMPACT STATEMENT (DEIS)

In June 1992, the *I-494 Reconstruction ñ I-394 to Minnesota River Draft Environmental Impact Statement (DEIS)* was circulated to all parties on the EQB distribution list, required federal agencies, and those who provided comments or requested a copy during the scoping phase. The DEIS was prepared following the requirements of Mn/DOTís Alternative State Environmental Review Process and the FHWAís environmental review regulation 23 CFR 771.

A location/design public hearing was held on June 10, 1992 to receive written and oral comment on the major design features of the project and the content of the DEIS. The availability of the DEIS and the time and place of the public hearing were announced in the *EQB Monitor*, the *Federal Register*, and local newspapers. Written comments were accepted on the DEIS from May 11, 1992 to June 26, 1992. All substantive comments received during the DEIS comment period are included in Chapter 12 of this FEIS.

11.5 COORDINATION ñ GENERAL

Coordination has been maintained with the I-494 Corridor Commission, a joint powers entity formed initially by the cities of Richfield, Bloomington, Edina, Eden Prairie, and Minnetonka to coordinate land use and transportation and to facilitate travel demand management. More recently, the cities of Plymouth and Maple Grove have joined this organization. The Metropolitan Council is an ex-officio member of this organization, and Southwest Metro Transit and Metro Commuter Services are represented on its transit subcommittee. Minnesota Department of Transportation staff have held several meetings with the Metropolitan Councilís Technical Advisory Committee and Transportation Advisory Board to discuss issues associated with the I-494 reconstruction project.

There are ongoing efforts to inform and involve the public regarding I-494 issues in addition to the public meetings described in Sections 11.3 and 11.4. A newsletter was printed and mailed periodically to people on mailing lists provided by the cities. The City of Bloomington has a Traffic and Transportation Advisory Commission that meets twice a month and has regularly been updated on proposed I-494 improvement projects over the years. Meetings were also held with groups such as the I-35W Solutions Alliance, the Bloomington and Eden Prairie Chambers of Commerce, the suburban chapter of BOMA (Building Owners and Managers Association), and city neighborhood associations, especially in Minnetonka.

A series of meetings were held by Mn/DOT early in 2001 to provide information to cities in the project corridor regarding the reinitiated FEIS process and the current Preferred Alternative. The following meetings were held:

- Eden Prairie Open House: February 12, 2001
- Edina Open House: February 6, 2001
- Edina City Council: February 6, 2001
- Bloomington East Open House (two locations) March 1 and 22, 2001
- Bloomington City Council: January 29, 2001
- Richfield Open House: February 20, 2001

11.6 COORDINATION ñ SPECIFIC ISSUE AREAS

This section summarizes the coordination activities that have occurred throughout the EIS process. The following information is organized according to environmental issue area.

Land Use, Social and Community Issues

All of the cities within the project corridor were contacted, along with the Metropolitan Council, to identify issues and obtain the information used in the EIS analyses.

Transportation

All of the cities in the project corridor were contacted to obtain existing and projected future land use and population information. This information was an integral part of the travel demand forecast process. Metropolitan Council staff was also contacted to obtain regional land use information and to coordinate regarding forecasting methodology.

In addition, public works/engineering staff from each of the cities along the corridor were contacted to identify local roadway and access issues adjacent to the I-494 corridor. Proposed design concepts affecting these cities were reviewed with staff representatives of affected cities and, if necessary, were revised to address local concerns to the greatest extent possible.

Transit

Metropolitan Council staff was contacted to provide regional transit information. Information was also provided by the Regional Transit Board (RTB), Metropolitan Council Transit Operations (MCTO), Southwest Metro Transit, and Minnesota Valley Transit Authority. Early in the EIS process, several meetings were conducted with the agencies identified above to outline future transit facilities and how they relate and can be incorporated with proposed I-494 improvements.

Air Quality

Minnesota Department of Transportation representatives coordinated with MPCA staff to determine appropriate air quality monitoring and analytical methods.

Water Resources

Completion of the surface water drainage, water quality, and floodplains sections included coordination with the agencies listed below:

- City of Minnetonka
- City of Eden Prairie
- City of Bloomington
- City of Edina
- City of Richfield
- Minnesota Department of Natural Resources
- Metropolitan Airports Commission
- Minnehaha Creek Watershed District
- Nine Mile Creek Watershed District
- Lower Minnesota Watershed District
- Metropolitan Council

During the EIS process, corridor field walks were held with many of these agencies.

Wetlands

Meetings were held with Minnesota Department of Natural Resources (MnDNR), Mn/DOT, COE, EPA, USFWS, and the Soil Conservation Service staff (now the Natural Resources Conservation Service) in order to accurately document existing wetland areas, potential impacts to these areas, and potential mitigation measures. Agency coordination was reestablished during the FEIS process, including coordination with Hennepin Conservation District staff regarding mitigation sites, and will continue through the permitting/construction process.

Potential Soil and Groundwater Contamination

The MPCA provided information on sites in the corridor with recorded contamination concerns. In addition, each city in the study area was contacted and asked to provide any documentation on potentially contaminated sites within the corridor. A set of historic aerial photographs was analyzed to assess pre-I-494 conditions, and land uses that have been replaced since completion of the freeway in the 1960s and 1970s. A Phase I Environmental Site Assessment investigation obtained relevant information from all available governmental databases.

Noise

Minnesota Department of Transportation representatives coordinated with MPCA staff to determine appropriate noise monitoring/analytical locations and methods.

Vegetation and Wildlife

At the request of Mn/DOT, MnDNR performed a review of this project for potential impacts on rare, threatened, or endangered species, sensitive vegetation/flora, or life-sustaining habitat. The Mn/DOT Wildlife Biologist performed a review of the potential for project impacts to federal threatened and endangered species.

11.7 OTHER MAJOR ACTIONS

Planning and design activities for the reconstruction of I-494 have been and continue to be coordinated with other major actions in the Minneapolis-St. Paul Metropolitan Area including those addressed below.

Light Rail Transit (LRT)

The Hiawatha Corridor LRT line will link downtown Minneapolis to the Minneapolis-St. Paul International Airport (MSP) and the Mall of America. The full length of the Hiawatha line is scheduled to be operational by 2004. The Hiawatha LRT corridor crosses I-494 at 34th Avenue South. The closest LRT stations to I-494 are MSP Main Terminal, MSP Hubert H. Humphrey

Terminal, ìBloomington Southî Station (Ceridian Drive and 28th Avenue South), 34th Avenue and 80th Street Station, and Mall of America. This project is being developed jointly by Mn/DOT and the Metropolitan Council.

Reconstruction of I-35W/TH 62 (Crosstown) Interchange

Mn/DOT is initiating a major reconstruction of this interchange (the ìcommons areaî) to improve its safety and operation. It is scheduled to begin construction in 2001. According to current plans, portions of the interchange and associated ramps will have to be closed for up to four years to allow the necessary construction activities to be performed. Interstate 494 will be used as a detour route to accommodate closure and/or restricted use of the I-35/ TH 62 interchange. The interchange reconstruction would not coincide with the scheduled reconstruction of I-494 in the I-35W Bloomington/Richfield area.

Parallel Arterial System

The parallel arterial concept focuses on enhancing the existing parallel street system immediately north and south of the I-494 alignment within the cities of Bloomington, Richfield and Edina. This system is being developed to provide access to the commercial/office uses along the corridor and to help keep local trips off of the I-494 mainline. The implementation status of this system is described below.

Seventy-seventh Street in Richfield, between I-35W and TH 77 has been partially completed. The portion near TH 77 is currently under construction. This project, which is being led by the City of Richfield, connects with 76th Street east of I-35W. Seventy-sixth Street continues into Edina to west of Xerxes Avenue where it becomes 77th Street and Edina Industrial Boulevard. Future City of Richfield plans call for extending 77th Street on the east end under TH 77 and connecting it with 24th Avenue adjacent to the airport.

Complementing the 77th Street corridor on the south side of I-494 is the 79th/80th Street corridor being developed by the City of Bloomington. The first phase of this project upgrades existing 79th and 80th Streets between 34th Avenue and TH 100, including a bridge across I-35W. Portions of this phase have already been completed. The second phase calls for an extension west from TH 100 to East Bush Lake Road via Bridge Road and Green Valley Drive. Segments of this section have also been completed, including the bridge over TH 100/Normandale Boulevard.

Penn Avenue Bridge Replacement at I-494

This project is being undertaken by the City of Richfield to support a major commercial development project (Best Buy Campus) north of I-494 at Penn Avenue. Construction for this project is scheduled to begin in 2001, with substantial completion by 2002.

11.8 AGENCIES AND ORGANIZATIONS RECEIVING COPIES OF THE FEIS

The following agencies and organizations will receive copies of the FEIS. In accordance with the procedures outlined in the National Environmental Policy Act (NEPA), a thirty- (30) day review period will begin after official notice in the *Federal Register*. Also, in compliance with Minnesota environmental regulatory requirements, a FEIS availability notice will be published in the Minnesota Environment Quality Board (EQB) *Monitor* and local newspapers, and a public review/comment period will be provided in conjunction with the federal review period.

Federal Agencies

U.S. Department of Agriculture
  Natural Resources Conservation Service
U.S. Department of the Army, Corps of Engineers
  St. Paul District
U.S. Department of Commerce
  - Ecology and Conservation Office
U.S. Department of Health and Human Services
U.S. Department of Housing and Urban Development
U.S. Department of the Interior
  - Fish and Wildlife Service (including Minnesota Valley Wildlife Refuge)
  - National Park Service
  - Office of Environmental Policy and Compliance
  - Regional Environmental Review Officer
U.S. Department of Transportation
  - Federal Aviation Administration
  - Second Coast Guard District
  - Federal Transit Administration
  - Safety and Consumer Affairs
Federal Energy Regulatory Commission
U.S. Department of Energy
Advisory Council on Historic Preservation
Defense Civil Preparedness Agency
U.S. Environmental Protection Agency
Council on Environmental Quality
Federal Railroad Administration
Federal Emergency Management Agency

State Agencies

Minnesota Department of Agriculture
Minnesota Department of Trade and Economic Development
Minnesota Department of Health

Minnesota Department of Natural Resources
Minnesota Environmental Quality Board
Minnesota Historical Society
Minnesota Pollution Control Agency
Minnesota State Planning Agency
Minnesota Department of Commerce
Minnesota Board of Water and Soil Resources

Regional Agencies

Metropolitan Council of the Twin Cities
Metropolitan Airports Commission

Counties

Hennepin County Department of Transportation
Hennepin County Regional Railroad Authority

Cities

Minnetonka
Eden Prairie
Edina
Bloomington
Richfield

Local Water Organizations

Minnehaha Creek Watershed District
Nine Mile Creek Watershed District
Lower Minnesota River Watershed District
Riley Purgatory Bluff Creek Watershed District

Libraries

Environmental Conservation Library, Minneapolis
Legislative Reference Library, St. Paul
Hennepin County Library, Edina, Minnetonka, Eden Prairie, Bloomington and Richfield Branches

11.9 RELATED GOVERNMENTAL ACTIONS

Review and approval by the agencies listed in Table 11.1 will be required as part of the I-494 project approval process.

TABLE 11.1
PERMITS AND APPROVALS

GOVERNMENT AGENCY	ACTION
FEDERAL:	
U.S. Army, Corps of Engineers	• Section 404 Permit
Federal Highway Administration	• Access change approvals • Location approvals • Approval of design exceptions • EIS approval • Section 106 Memorandum of Agreement • Record of Decision • Section 4(f) Approval
Federal Aviation Administration	• Part 77 of FAA Regulations Clearance
Advisory Council on Historic Preservation	• Section 106 Memorandum of Agreement
STATE:	
Minnesota Department of Transportation	• EIS Approval and Adequacy Determination • Wetlands Conservation Act Permit (as LGU) • Section 106 Memorandum of Agreement • Layout Approval
Minnesota Department of Natural Resources	• Public Waters Permit • Groundwater Appropriation Permit
Minnesota Pollution Control Agency	• Air Quality Indirect Source Permit • 401 Water Quality Certification • National Pollutant Discharge Elimination System Permit for construction activities • Noise Exemption Process

GOVERNMENT AGENCY	ACTION
State Historic Preservation Officer	• Section 106 Memorandum of Agreement
REGIONAL:	
Metropolitan Council	• Controlled access highway approval • Release park restrictive covenants
LOCAL:	
Cities of Bloomington, Richfield, Edina, Eden Prairie, and Minnetonka; Hennepin County	• Layout approvals and continued review of construction plans
WATERSHED DISTRICTS:	
Minnehaha Creek Watershed District, Nine Mile Creek Watershed District, Riley Purgatory Creek Watershed District, Lower Minnesota River Watershed District	• Surface Water Management Permits

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12.0 RESPONSE TO COMMENTS ON THE DEIS

INTRODUCTION

In April 1992, the Draft Environmental Impact Statement (DEIS) for the I-494 reconstruction Project was distributed to agencies and organizations on the official distribution list as well as additional agencies/organizations that had either requested a copy of the document, and/or that could be affected by the proposed project. Written comments received from these agencies and organizations along with responses are referenced in Section 12.1, and included at the end of this chapter.

A public hearing to receive comments on the DEIS was held as follows:

June 10, 1992
Edina Community Center
5701 Normandale Road
Edina, Minnesota

At the public hearing, a brief presentation describing the proposed project, and a summary of the key issues and impacts was made. Attendees at the hearing were invited to provide comments on the proposed project through one of the three forms: oral testimony at the hearing; private oral statements to a court reporter during the open house held prior to the hearing; and written statements. Responses to comments received as part of the hearing are summarized in Section 12.2.

The comment period for agencies and organizations that received copies of the DEIS as well as individuals and parties responding as part of the public hearing process officially closed on June 26, 1992.

12.1 RESPONSES TO COMMENTS FROM RECIPIENTS ON THE I-494 DEIS DISTRIBUTION LIST

The methodology for responding to comments received on the DEIS is based upon the general guidelines developed as part of the National Environmental Policy Act (NEPA).

Written responses have been provided for comments pertaining to analysis conducted for and documented in the DEIS. **Specifically, responses have been prepared for statements noting: incorrect or unclear information; permit requirements; or content requirements. Comments agreeing with DEIS information or statements, general opinions, statements of fact, or statements of preference were not formally responded to, but are included in this section.**

Comments focusing on design issues were not responded to at this stage, however, design concerns will be addressed in coordination with agencies and cities during final design. Responses were not drafted for statements of preference, however, they were considered in the selection of the Preferred Alternative.

The following list provides a reference from which to locate individual comment letters:

12.2 RESPONSE TO COMMENTS FROM THE I-494 DEIS PUBLIC HEARING

As noted previously, the Public Hearing for the I-494 DEIS was held on June 10, 1992. Comments were received in three forms at the hearing:

- **Oral Testimony:** This testimony was documented by a court reporter during the Public Hearing and is included in the official I-494 Public Hearing Record which is on file at the Minnesota Department of Transportation (Mn/DOT) Metropolitan Division office.

- **Oral Statements:** Statements were recorded by a court reporter prior to and immediately following the public hearing during the open house. These statements are documented in the Statements Record which is on file at Mn/DOT.

- **Written Statements:** Interested individuals and parties were invited to submit written testimony on cards provided at the public open house or in letter form. These statements needed to be received at Mn/DOT by the end of the public review period on June 26, 1992.

A total of 20 private citizens, business representatives, associations, and governmental units submitted oral testimony and statements at the Public Hearing and Open House on June 26. An additional 71 citizens, associations, and representatives submitted written statements prior to the end of the public review period.

Some of the respondents presented more than one issue or concern. As a result, more than 100 comments are included below:

- **Noise (47 Comments):** Many of the respondents stated the need for additional noise walls beyond what was presented in the DEIS. Several noted that noise problems are increasing along the highway and expansion of I-494 will further increase the problem. Some respondents indicated a concern over declining property values because of noise conditions.

  Response: Noise impact and mitigation analysis has been prepared for the Preferred Alternative conditions and has been included in Sections 6.2.4 and 6.2.5 of the FEIS. The currently proposed abatement locations identified in Section 6.2.4 were based on assessments using MPCA-approved methodologies consistent with Minnesota Noise Policy for assessing the cost effectiveness of the implementation of noise walls. Noise mitigation design and locations will be determined during final design with review and approval by Mn/DOT, the MPCA and the relevant local agency. If, following identification of all feasible and cost-effective mitigation locations, there are still areas along the corridor that would exceed state noise standards, a ì Noise Reasonableness and Exemption Requestî will be prepared and would be reviewed and subject to final approval by the commissioners of Mn/DOT and MPCA.

- **Interchanges (24 Comments):** Many of the responses indicated a need for providing access at East Bush Lake Road to and from the west on I-494. Other comments on interchanges included: provide access to and from the north between Highwood Drive and

TH 169 (formerly CSAH 18); do not provide access between Highwood Drive and TH 169 (formerly CSAH 18); and provide high occupancy vehicle (HOV) bypass ramps at the I-494/I-35W interchange.

Response: As illustrated in Section 3.4 of the FEIS, the Preferred Alternative design at East Bush Lake Road provides full access to I-494. The East Bush Lake Road design is different from recommendations of some respondents who preferred the single-point design presented in the DEIS. As noted in the FEIS, the railroad crossing of I-494 immediately west of East Bush Lake Road will be maintained, and since a single-point interchange is not compatible with the railroad, this design approach is no longer under consideration. Since Mn/DOT recently reconstructed the TH 169 interchange, no additional revisions are proposed at this interchange and, therefore, the Highwood intersection with TH 169 will remain at-grade. Because of high anticipated traffic volumes, ramp meters and associated HOV bypass lanes are not included at ramps for the I-494/I-35W interchange.

- **Maintain Ramps and Frontage Roads (19 Comments):** These comments focused on the importance of maintaining access to businesses during and after construction. Several business owners indicated concerns about reduced access between I-494 and their properties as a result of the reconstruction project.

  Response: All properties will have access during construction. The Minnesota Department of Transportation will work with businesses and communities to coordinate construction access plans. Details of the access plans will be determined during final design.

- **Right-of-Way Acquisition (12 Comments):** Comments regarding property acquisition included residential property owners requesting to be acquired in advance of the project, property owners supporting acquisition, and a request to acquire additional right-of-way for future transit loading facilities.

  Response: The Minnesota Department of Transportation will begin acquiring properties for the first phase of construction (TH 5 [Eden Prairie] to TH 100) as soon as a Record of Decision (ROD) is issued by FHWA and an Adequacy Determination is made by Mn/DOT. Right-of-way for transit facilities, including park-and-ride lots, is not included in the proposed project because consultation with regional transit agencies determined there was an adequate supply of existing and planned facilities in the corridor area. It should be noted that 8.0 meters (26 feet) of space in the median is reserved for future transportation needs between TH 169 and 24th Avenue.

- **Design (4 Comments):** These comments included concerns about excessive costs and new crossing needs. Respondents stated the 1,500-foot bridge across Nine Mile Creek proposed in the DEIS is cost excessive in comparison to its benefits. A request to include the Nord Avenue bridge was also submitted.

Response: An I-494 bridge over Nine Mile Creek is not included in the Preferred Alternative. The Minnesota Department of Transportation will work with the appropriate regulatory agencies to limit impacts to Nine Mile Creek to the degree feasible in this area. A bridge at Nord Avenue is not included in the Preferred Alternative. The design of I-494 will not preclude construction of a bridge over the freeway at Nord Avenue in the future by others. The Minnesota Department of Transportation will work with the City of Bloomington to accommodate construction of the bridge if the City moves forward with their plan for this bridge.

- **Accommodate Pedestrians and Bicyclists (4 Comments):** These comments focused on improving existing crossings and adding new crossings to facilitate pedestrian and bicyclist movement in the corridor.

  Response: All crossings of the I-494 mainline will be replaced at or near existing locations. All bridges replaced by Mn/DOT as part of the I-494 Reconstruction Project will meet current Mn/DOT standards for pedestrian/bicycle provisions. All improvements will also be in compliance with the Americans with Disabilities Act. Mn/DOT will work with communities and agencies in the corridor to coordinate the implementation of committed local and regional pedestrian/bicyclist trails with I-494 improvements.

- **Inaccurate Assumptions (4 Comments):** Two respondents indicated the need to extend the projectís planning horizon from 20 years to 50 and 100 years. The longer planning horizon might justify alternative measures such as rapid transit. The accuracy of economic development forecasts presented in the DEIS was also brought into question. Based on commercial development trends, the respondent indicated the forecasts in the DEIS overstate future development in the corridor.

  Response: The project is based on a traditional 20-year planning horizon because of limitations in the accuracy of population projections and travel forecasting beyond a 20-year time frame. This is a key issue because travel forecasting provides a basis for much of the technical analysis conducted in the DEIS (and FEIS). The development forecasts presented in the DEIS (and FEIS) are based on population and employment projections completed by the Metropolitan Council and the corridor cities.

- **Alternatives to Expansion (3 Comments):** These comments noted the need to implement alternatives to accommodating single-occupant vehicles and to consider alternative vehicle technologies.

  Response: Light rail transit (LRT) was considered as an alternative transportation technology for the I-494 corridor. However, estimated high capital costs and low ridership projections resulted in a determination by Mn/DOT and the Metropolitan Council that LRT would not be feasible along I-494. Also, as discussed in Section 3.4 of the FEIS, the reconstructed I-494 corridor will include ì managed corridorî features that can promote transit and/or HOV use (i.e. HOV bypass ramps where feasible) and bus use of shoulders during peak travel periods.

- **Wildlife Impacts (2 Comments):** Two individuals indicated that expansion of the freeway will substantially impact wildlife in the corridor.

  Response: The DEIS considered impacts to area wildlife and concluded that any impacts would be minor because the freeway corridor currently exists and construction beyond the existing right-of-way is relatively limited. Potential impacts of vegetation and wildlife are addressed in Section 6.9 of the FEIS.

- **Aesthetic Impacts (1 Comment):** This response stated the need to consider the adverse visual impacts of constructing noise walls along both I-494 and 77th Street in Richfield.

  Response: This issue is addressed in Section 5.7 of the FEIS. There were relatively few areas along I-494 that were found to be cost-effective for noise wall construction. In areas where walls were cost-effective, Mn/DOT plans to coordinate with City staff and local residents regarding visual impacts and other considerations prior to installing any noise walls in the given areas. Improvements to 77th Street in Richfield are not part of the proposed I-494 reconstruction Preferred Alternative. Noise wall/visual issues for 77th Street would be addressed in environmental documentation for that project (City of Richfield).

AGENCY COMMENTS ON I-494 DRAFT ENVIRONMENTAL IMPACT STATEMENT AND RESPONSES TO THOSE COMMENTS

US Department of Transportation
Federal Aviation Administration

AIRPORTS DISTRICT OFFICE - MINNEAPOLIS
6020 28th Avenue South, Room 102
Minneapolis, Minnesota 55450

July 23, 1992

Mr. Craig Robinson, I-494 Corridor Manager
Minnesota Department of Transportation
Metro District West
2055 North Lilac Drive
Golden Valley, Minnesota 55422

RE: Draft Environmental Impact Statement and
Section 4(f)/6(f) Evaluation

Dear Mr. Robinson:

We have reviewed the the subject document for the proposed I-494 expansion.

Since the exact location of the additional traffic lanes and the height of any related structures is not known at this time, we are informing you that any structure heights or clearance heights exceeding a slope of 100:1 from the ultimate end of Runway 4 at Minneapolis-St. Paul International Airport, would need to be reviewed by the FAA for adequate Part 77 clearances. An airspace finding of no objection by the FAA would be necessary proir to the start of construction. If the 100:1 slope would not be exceeded, a review by the FAA is not required.

Also, if any fee or easement acquisition is needed from the airport, a release of land action is required from the FAA.

The above items should be addressed in the Final EIS.

Sincerely,

Glen Orcutt
Airport Planner
Minneapolis Airports District Office

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Federal Aviation Administration

1. It is anticipated there will be structure heights encroaching on the 100:1 slope. As plans are developed further they will be submitted to FAA for their review for adequate Part 77 clearance.

2. Acquisition of Metropolitan Airports Commission (MAC) property is anticipated. A release of land action will be sought from the FAA as part of the right-of-way acquisition activities.

U.S.Department of Transportation

United States Coast Guard

Commander
Second Coast Guard District

1222 Spruce St.
St. Louis MO 63103-2832
Staff Symbol: (obl)
Phone:(314) 539-3724

16591.1/3.9 MIN
July 30, 1992

Mr. Craig Robinson, P.E.
I-494 Corridor Manager
Minnesota Department of Transportation
2055 North Lilac Drive
Golden Valley, Minnesota 55422

Subj: I-494 RECONSTRUCTION PROJECT, HENNEPIN COUNTY, MINNESOTA,
S.P. 2785-261

Dear Mr. Robinson:

This is in response to your letter of May 12, 1992, asking us to review and comment on the Draft Environmental Impact Statement (DEIS) for the subject project. We have determined that the project does not involve any bridges over navigable waters of the United States. Therefore, the Coast Guard has no jurisdiction in the matter. If you have any questions please contact Mr. Bruce McLaren at the above telephone number.

Sincerely,

ROGER K. WIEBUSCH
Bridge Administrator
By direction of the District Commander

United States Coast Guard

No response required.

United States Department of Commerce

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
Office of the Chief Scientist
Washington, DC 20230

July 9, 1992

Mr. Craig Robinson, P.E.
Minnesota Department of Transportation
Metro District West
2055 North Lilac Drive
Golden Valley, Minnesota 55422

Dear Mr. Robinson:

Enclosed are comments on the Draft Environmental Impact Statement for the Interstate-494 Reconstruction, from Interstate 394 to the Minnesota River. We hope our comments will assist you. Thank you for giving us an opportunity to review the document.

Sincerely,

David Cottingham
Director
Ecology and Conservation Office

Enclosures

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SERVICE
Coast and Geodetic Survey
Rockville, Maryland 20852

JUN 24 1992

MEMORANDUM FOR: David Cottingham
Ecology and Environmental Conservation Office
Office of the Chief Scientist

FROM: Rear Admiral J. Austin Yeager, NOAA
Director, Coast and Geodetic Survey

SUBJECT: DEIS 9205.03 - I494 Reconstruction from Interstate 394 to the Minnesota River - Hennepin County, Minnesota

The subject statement has been reviewed within the areas of Coast and Geodetic Survey's (C&GS) responsibility and expertise and in terms of the impact of the proposed actions on C&GS activities and projects.

All available information about geodetic control points in the vicinity of the project is provided on the computer diskette(s) accompanying this memorandum.

1 This information should be reviewed for identifying the location and designation of any geodetic control monuments that may be affected by the proposed project. If there are any planned activities which will disturb or destroy these monuments, C&GS requires not less than 90 days' notification in advance of such activities in order to plan for their relocation.

C&GS recommends that funding for this project include the cost of any relocation required for C&GS monuments. For further information about these monuments, please contact the National Geodetic Information Branch, N/CG174, Rockwall Building, Room 24, National Geodetic Survey Division, NOAA, Rockville, Maryland 20852, telephone 301-443-8631.

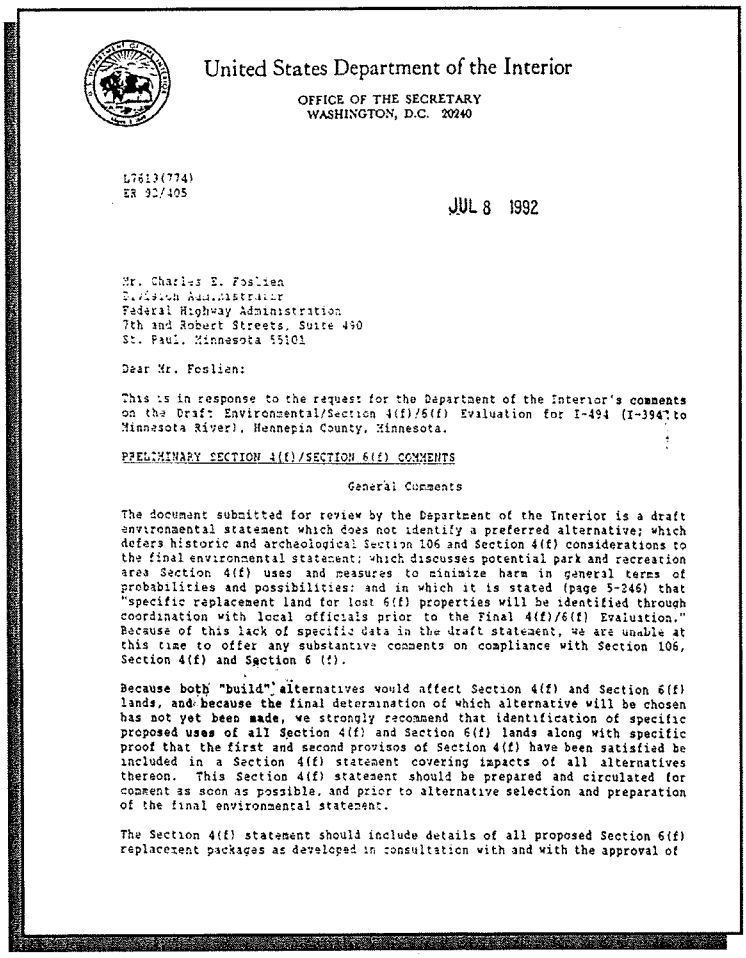
Attachment

cc: N/CG1x26 - D. Hoyle
N/CG17 - J. Spencer

JUL 2 '92

EC

1. This issue will be addressed in final plan preparation for each segment of the project. If geodetic control points are found to be located within final project construction limits, the National Geodetic Survey Office would be notified and arrangements for moving the survey points will be made.



United States Department of the Interior

OFFICE OF THE SECRETARY
WASHINGTON, D.C. 20240

L7613(774)
ER 92/405

JUL 8 1992

Mr. Charles E. Foslien
Division Administrator
Federal Highway Administration
7th and Robert Streets, Suite 490
St. Paul, Minnesota 55101

Dear Mr. Foslien:

This is in response to the request for the Department of the Interior's comments on the Draft Environmental/Section 4(f)/6(f) Evaluation for I-494 (I-394 to Minnesota River), Hennepin County, Minnesota.

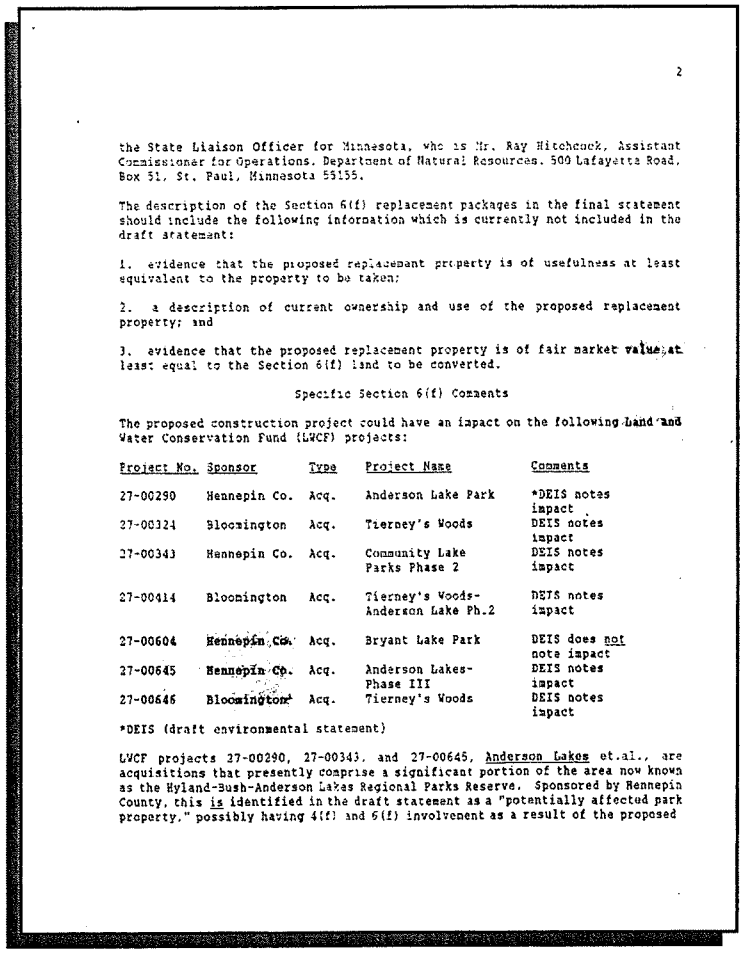
PRELIMINARY SECTION 4(f)/SECTION 6(f) COMMENTS

General Comments

The document submitted for review by the Department of the Interior is a draft environmental statement which does not identify a preferred alternative; which defers historic and archeological Section 106 and Section 4(f) considerations to the final environmental statement; which discusses potential park and recreation area Section 4(f) uses and measures to minimize harm in general terms of probabilities and possibilities; and in which it is stated (page 5-246) that "specific replacement land for lost 6(f) properties will be identified through coordination with local officials prior to the Final 4(f)/6(f) Evaluation." Because of this lack of specific data in the draft statement, we are unable at this time to offer any substantive comments on compliance with Section 106, Section 4(f) and Section 6 (f).

Because both "build" alternatives would affect Section 4(f) and Section 6(f) lands, and because the final determination of which alternative will be chosen has not yet been made, we strongly recommend that identification of specific proposed uses of all Section 4(f) and Section 6(f) lands along with specific proof that the first and second provisos of Section 4(f) have been satisfied be included in a Section 4(f) statement covering impacts of all alternatives thereon. This Section 4(f) statement should be prepared and circulated for comment as soon as possible, and prior to alternative selection and preparation of the final environmental statement.

The Section 4(f) statement should include details of all proposed Section 6(f) replacement packages as developed in consultation with and with the approval of



2

the State Liaison Officer for Minnesota, who is Mr. Ray Hitchcock, Assistant Commissioner for Operations, Department of Natural Resources, 500 Lafayette Road, Box 51, St. Paul, Minnesota 55155.

The description of the Section 6(f) replacement packages in the final statement should include the following information which is currently not included in the draft statement:

1. evidence that the proposed replacement property is of usefulness at least equivalent to the property to be taken;

2. a description of current ownership and use of the proposed replacement property; and

3. evidence that the proposed replacement property is of fair market value at least equal to the Section 6(f) land to be converted.

Specific Section 6(f) Comments

The proposed construction project could have an impact on the following Land and Water Conservation Fund (LWCF) projects:

Project No.	Sponsor	Type	Project Name	Comments
27-00290	Hennepin Co.	Acq.	Anderson Lake Park	*DEIS notes impact
27-00324	Bloomington	Acq.	Tierney's Woods	DEIS notes impact
27-00343	Hennepin Co.	Acq.	Community Lake Parks Phase 2	DEIS notes impact
27-00414	Bloomington	Acq.	Tierney's Woods-Anderson Lake Ph.2	DEIS notes impact
27-00604	Hennepin Co.	Acq.	Bryant Lake Park	DEIS does not note impact
27-00645	Hennepin Co.	Acq.	Anderson Lakes-Phase III	DEIS notes impact
27-00646	Bloomington	Acq.	Tierney's Woods	DEIS notes impact

*DEIS (draft environmental statement)

LWCF projects 27-00290, 27-00343, and 27-00645, Anderson Lakes et.al., are acquisitions that presently comprise a significant portion of the area now known as the Hyland-Bush-Anderson Lakes Regional Parks Reserve. Sponsored by Hennepin County, this is identified in the draft statement as a "potentially affected park property," possibly having 4(f) and 6(f) involvement as a result of the proposed

United States Department of the Interior

1. A Final Section 4(f)/6(f) Evaluation has been prepared and is presented in Chapter 8.0 of the FEIS. This evaluation identifies all 4(f) and 6(f) land impacted by the Preferred Alternative. The evaluation includes consideration of the first and second provisos of Section 4(f) (avoidance alternatives and alternatives to minimize harm). The information in the Draft Section 4(f) Evaluation presented with the DEIS also included avoidance alternatives and all efforts to minimize harm. The Final Section 4(f) Evaluation discusses the avoidance alternatives in more detail and identifies the specific measures that will be taken to minimize and mitigate impacts. Although the Draft Section 4(f) Evaluation included a description of potential use of historic properties for the Build alternatives, the Preferred Alternative avoids use of historic property. Therefore, the Final Section 4(f) Evaluation does not include discussion of impacts to historic properties. Chapter 9.0 of the FEIS includes Section 106 documentation for cultural resources.

2. Mn/DOT has committed that Section 6(f) property impacted by the I-494 Reconstruction project will be replaced with appropriate and eligible land. The City of Bloomington has identified a number of sites that could be used as replacement property for the Section 6(f) properties that could be acquired for the project and these are identified in Section 8.0. Prior to the acquisition of such property, an agreement will need to be reached between the LAWCON Liaison Officer (with MnDNR) and Mn/DOT on the adequacy and eligibility of the proposed replacement property, including the items of information identified in the Department of Interior's letter. This review/approval process for mitigation will be completed prior to construction of Phase I of the I-494 reconstruction project (where the Section 6(f) impacts occur).

3. The State Liaison Officer, and the City of Bloomington were consulted to confirm the location of all Section 6(f) land. The Section 6(f) evaluation presented in Section 8.0 of the FEIS notes that the Tierney's Woods and Highwood Corridor areas are part of Hyland-Bush-Anderson Lakes Regional Park Reserve in the City of Bloomington. The City's records indicate use of LWCF monies in the Highwood Corridor area.

4. Bryant Lake Park is included in the final Section 4(f)/6(f) Evaluation document even though the park has no common boundary with existing I-494 and will continue to be separated from I-494 following construction of the proposed improvements. The potential for indirect noise impacts to the park was examined in the Final Section 4(f)/6(f) Evaluation. The closest portion of Bryant Lake Park is approximately 150 to 185 meters (500 to 600 feet)

road project. The complex serves as a metropolitan regional park and abuts several other parks also impacted by this project (see below discussion of Highwood Corridor and Tierney's Woods). The entire Hyland area is currently approximately 1,660 acres and projected to eventually total 1,705 acres. Development now includes a nature interpretive center; numerous picnic areas; a creative play structure; pedestrian, bicycle and cross-county ski trails; lake access; downhill ski hills; a ski jump; a community building-warming house and natural areas. According to the draft, this project could result in the taking of approximately 2.3 acres (maximum) from the Hyland-Bush-Anderson Lakes Regional Parks Reserve (see chart page 227).

In the draft statement, the Hyland-Bush-Anderson Lakes Regional Parks Preserve has been joined with Highwood Corridor Park in calculating parkland which will possible be used in road construction. It is stated that Highwood Corridor Park has LWCF monies involved in its acquisition, however we have been unable to locate any record of such involvement. Please consult with the State Liaison Officer referenced above to determine Section 6(f) involvement, if any.

LWCF projects 27-00324, 27-00414, and 27-00646, Tierney's Woods et.al., are all acquisitions comprising a significant portion of that area now known as Tierney's Woods Park. Consisting of approximately 146 acres of land and 90 acres of water, the park remains largely undeveloped as a natural area with trails and nature observation sites scattered throughout. The park was also identified in the draft statement as a property which might be affected by this proposed project. Approximately 0.8 acre of land in this park could be affected. It is stated in the draft that "most of the parkland takings from Tierney's Woods Park would be associated with the CSAH improvement which was reviewed under a separate EIS. The only way to avoid additional parkland takings associated with the I-494 project (this project) would be not to build the interchange . . . This would make access . . . more difficult for residents . . ." (see pages 5-243, 244).

LWCF project 27-00604, Bryant Lake Park, is an acquisition of approximately 126.24 acres along the east side of Bryant Lake for outdoor recreation purposes including boat access, swimming, picnicking, trails, field games, and winter sports. Originally sponsored by Eden Prairie, the park is now sponsored by the Hennepin County Park Reserve District. This park was not identified in the draft statement as a potentially affected property and may not be, due to the fact that the highway runs along the western boundary of the lake and the park is located on the east. But because of the proximity of the road to the lake, it is worthy of consideration as a potentially affected area, since the entire area is included in the park's 6(f)(3) boundaries and because Highway I-494 presently forms a significant portion of the lake's western boundary.

ENVIRONMENTAL STATEMENT COMMENTS

Natural Resources

Staff of this Department's U.S. Fish and Wildlife Service's (FWS) Twin Cities Field Office participated in a preliminary site visit and project review with the

Minnesota Department of Transportation as part of the scoping process in the summer of 1991. The entire length of the project alignment was covered by vehicle, with stops made at each of the sites where significant natural resources might be impacted. The site visit was a constructive effort in which the project team from the Department of Transportation displayed sensitivity to resource issues and offered constructive suggestions on avoidance techniques and alternatives that may serve to recover some resource values that would be lost under the existing proposal.

Specifically, the use of an elevated road for some length west of East Bush Lake Road would recover floodplain and wetland values at the crossing of the South Fork Nine Mile Creek. Also, the review team discussed the possibility of separating the crossing of Minnehaha Creek and Minnetonka Boulevard. Additional methods to minimize impacts on natural resource values have been identified in the draft statement.

However, the draft statement does not describe a comprehensive mitigation plan that includes any of the elements noted above. Accordingly, a comprehensive mitigation plan that addresses unavoidable impacts to wetlands and other fish and wildlife resources should be developed in consultation with the FWS and documented in the final statement.

Mineral Resources

An examination of library and file data has revealed that mineral resources in the project vicinity include sand and gravel, limestone-dolomite, clay, and sandstone. The draft statement does not address the presence of these resources. Because of the nature of the proposed project and existing land use conditions, we anticipate no significant additional impacts to mineral resources. The final environmental statement, however, should discuss local availability of mineral resources needed for construction. If no adverse impacts are identified, a statement to that effect should be included so reviewers will know mineral resources were considered in the environmental review process.

FISH AND WILDLIFE COORDINATION ACT COMMENTS

The discharge of dredged and/or fill material into wetlands associated with implementation of the proposed action will require permits from the U.S. Army Corps of Engineers pursuant to Section 404 of the Clean Water Act. Comments on this draft statement do not preclude separate evaluation and comments by the FWS when reviewing any forthcoming permit applications. The FWS may concur, with or without stipulations, or recommend denial depending on impacts to fish and wildlife resources. The FWS advises that its tentative position would probably be to not oppose issuance of the necessary permits provided an appropriate mitigation plan, developed in consultation with the office noted below, is developed and incorporated into project plans.

3

from the existing and proposed I-494 right-of-way limits. At this distance, noise modeling does not provide useful results for analysis. Noise modeling performed for receptors much closer to the right-of-way than the park property showed daytime noise levels associated with the Preferred Alternative as one decibel higher than those resulting from No-Build, and one to two decibels higher than existing conditions. These 1- to 2-decibel increases would not be perceptible to the human ear. Most park use occurs during the non-peak traffic periods, so noise impacts during park use periods may be even less. The Final Section 4(f)/6(f) Evaluation concludes that any potential change in noise levels should not be of a scale to substantially impair park use. Therefore, there is no Section 4(f)/6(f) use of Bryant Lake Park.

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5. In the FEIS, mitigation measures for potential impacts to individual natural resource categories, (e.g. wetlands, stream and waterbody modification, vegetation and wildlife, and rare and endangered species), are addressed in the chapters or sections addressing those respective categories. Regarding wetlands, final design for each phase of the I-494 reconstruction project will avoid and limit impacts to wetlands to the extent practicable. A wetland replacement plan for replacement of unavoidably impacted wetland areas will be prepared for each reconstruction phase. These plans will be prepared with input from and coordination with USFWS and other Section 404 (Clean Water Act) and Minnesota Wetland Conservation Act reviewing agencies. They will refine information presented in Section 6.7.4 of the FEIS and reassess the exact areas of impacts and mitigation using final design information, wetland delineations, and the applicable wetland mitigation guidelines and regulations in affect at the time. The intent of the wetland replacement plans would be to replace lost wetland functions within the project area where possible, and to create an off-site replacement area (or areas) to accomplish the remainder of the required mitigation.

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6. The land to be acquired for the project is either already developed with residential or business land uses or is public property such as parks, wetlands or lakes. Therefore, direct impacts to land with mineral resource excavation potential is not anticipated. There are no known major mineral deposits in the study area. The region does contain various aggregates that would be suitable for construction materials. It is likely some of these resources will be used for roadway construction.

6

7. The need for a Section 404 Permit from the Corps of Engineers is noted in FEIS Section 11.9. An appropriate mitigation plan will be developed for each construction phase of the overall project.

7

ENDANGERED SPECIES ACT COMMENTS

We concur with the Department of Transportation's finding that the proposed action will not affect Federally listed threatened or endangered species. This precludes further action as required under section 7 of the Endangered Species Act of 1973, as amended. Should new information indicate the listed species may be affected, consultation with the FWS should be reinitiated.

SUMMARY COMMENTS

The Section 4(F) statement comments in this letter are provided to give you an early indication of our thoughts about the Section 4(f) information and involvements. They do not represent the results of formal consultation by the Department of Transportation with the Department of the Interior, pursuant to the consultative requirements of Section 4(f). Such requirements would be fulfilled only when the Office of the Secretary of this Department comments separately on any Section 4(f) statement which may be prepared and approved by you for circulation.

As this Department has a continuing interest in the project, we will be pleased to cooperate and coordinate with you on a technical assistance basis in further project evaluation and assessment.

For technical assistance concerning park and recreation resources, please contact the Regional Director, Midwest Region, National Park Service, 1709 Jackson Street, Omaha, Nebraska 68102 (telephone: 402-221-3431). For technical assistance concerning fish and wildlife resources and further coordination under the Fish and Wildlife Coordination Act, please contact the Field Supervisor, U.S. Fish and Wildlife Service (ES-TCFO), 4101 East 80th Street, Bloomington, Minnesota 55420 (telephone: 612-725-3548). For technical assistance concerning mineral resources, please contact the Chief, Intermountain Field Operations Center, Bureau of Mines, P.O. Box 25086, Building 20, Denver Service Center, Denver, Colorado 80225 (telephone: 303-236-0451).

Thank you for the opportunity to provide these comments.

Sincerely,

William R. Taylor

for Jonathan P. Deason
Director
Office of Environmental Affairs

cc:
Mr. Craig Robinson
Project Engineer
Minnesota Department of Transportation
Metro District West
2055 North Lilac Drive
Golden Valley, Minnesota 55422

Mr. Ray Hitchcock
Assistant Commissioner for Operations
Department of Natural Resources
500 Lafayette Road, Box 51
St. Paul, Minnesota 55155

Dr. Nina M. Archabal
State Historic Preservation Officer
Minnesota Historical Society
345 Kellogg Boulevard West
St. Paul, Minnesota 55102

DEPARTMENT OF HEALTH & HUMAN SERVICES — Public Health Service

Centers for Disease Control
Atlanta GA 30333

June 26, 1992

Craig Robinson, PE
Minnesota Department of Transportation
Metro District West
2055 North Lilac Drive
Golden Valley, Minnesota 55422

Dear Mr. Robinson:

We have completed our review of the Draft Environmental Impact Statement (DEIS) for the I-494 Reconstruction from I-394 to the Minnesota River, Hennepin County. We are responding on behalf of the U.S. Public Health Service.

There is a significant number of right-of-way requisitions associated with this project. However, we concur that the Mn/DOT relocation program and the stated availability of suitable alternative property should help mitigate the impacts of these acquisitions. Because construction will take approximately 10 years and will be phased, we encourage continued communication with potentially affected residents and business persons to ensure that planned mitigation of adverse impacts are adequately implemented.

We have reviewed the DEIS for potential adverse impacts on human health, and we believe related issues have been adequately addressed. Thank you for the opportunity to review and comment on this draft document.

Please ensure that we are included on your mailing list to receive a copy of the Final EIS, and future DEIS's which may indicate potential public health impacts and are developed under the National Environmental Policy Act (NEPA).

Sincerely yours,

Kenneth W. Holt

Kenneth W. Holt, M.S.E.H.
Special Programs Group (F29)
National Center for Environmental
Health and Injury Control

Department of Health and Human Services

No response required.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

REPLY TO THE ATTENTION OF:

5ME-19J

Mr. Craig Robinson
Minnesota Department of Transportation
Metro District - West
2055 North Lilac Drive
Golden Valley, Minnesota 55422

Dear Mr. Robinson:

In accordance with the National Environmental Policy Act and Section 309 of the Clean Air Act, we have reviewed the Draft Environmental Impact Statement for the I-494 Reconstruction from I-394 to the Minnesota River in Hennepin County, Minnesota. The Draft Environmental Impact Statement addressed the impacts associated with the future capacity needs of I-494 and the need to expand the highway to meet existing and future travel demand within the project corridor.

We previously commented on the Scoping Decision Document for the proposal on November 6, 1990. In our comments we stressed the need to retain light rail transit as an alternative, develop a plan of mitigation for air quality and wetland impacts, and address erosion and sedimentation impacts.

Alternatives in the Draft EIS include making minor improvements to the existing corridor to improve traffic flow and carrying capacity, adding one additional lane in each direction, and adding two additional lanes in each direction. The alternatives that call for additional traffic lanes include optional modifications that designate one new lane in each direction for high occupancy vehicles. Light rail transit was not retained for assessment in the Draft EIS, based on low ridership projections.

Based on our review and in accordance to our policy, we have rated the Draft EIS as EC-2. The "EC" means that we have concerns with the proposed action, and the "2" means that more information is needed in the EIS. Our concerns will be satisfied when additional information is provided to more clearly demonstrate that light rail transit is not viable for consideration as a project alternative, when it is demonstrated that the Intermodal Surface Transportation Efficiency Act of 1991 will be coordinated into the alternative selection process, when impacts to wetlands are minimized through the alternative selection process, when more information is

provided regarding wetland mitigation sites and acreage, and when information is provided regarding maintenance of detention ponds. Detailed comments are enclosed for your consideration.

Thank you for the opportunity to review the Draft Environmental Impact Statement for improvements to Interstate I-494. If you have any questions regarding our comments, please contact Milo Anderson of my staff at (312) 886-2967.

Sincerely yours,

William D. Franz

William D. Franz, Acting Chief
Planning and Assessment Branch

Enclosure

U.S. Environmental Protection Agency
Region 5 Comments
Draft Environmental Impact Statement (EIS)
Interstate 494 Improvements from I-394 to the Minnesota River

Summary

Based on purpose and need criteria provided in the Draft EIS, we agree that improvements to I-494 between I-394 and the Minnesota River are necessary. According to the Draft EIS, the entire project corridor would be at or above capacity under the No Build Alternative for the design year 2010. The build alternatives would result in at or below capacity for the project corridor. I-494 is a major traffic artery serving the south and west suburbs of the Minneapolis, and we support the need for improvements.

We have environmental concerns with the proposed project. Our concerns are based on information provided in the Draft EIS and new information we received regarding the Intermodal Surface Transportation Efficiency Act. These concerns, discussed below, should be addressed in the Final EIS.

Alternatives

Alternatives in the Draft EIS include the No Build, Transportation System Management, one additional lane in each direction, and two additional lanes in each direction. The Transportation System Management Alternative includes implementing travel demand strategies, ramp metering and preferential access for high occupancy vehicles, increased transit services, and other minor improvements. Two modifications of the Add One Lane in Each Direction Alternative are included in the Draft EIS, denoted as Alternatives 1 and 1A. Alternatives 1 and 1A both include the addition of a lane in each direction except for the section between TH 212 and TH 100, where two lanes in each direction would be added. Alternative 1A differs from Alternative 1 by designating the additional lane as a high occupancy vehicle lane. The Add Two Lanes in Each Direction Alternative is similarly modified into Alternatives 2 and 2A, in which one of the new lanes in each direction is designated as a high occupancy vehicle lane for Alternative 2A. None of the alternatives have been identified as preferred in the Draft EIS.

Light rail transit was dismissed as an alternative due to low ridership forecasts. However, according to the Draft EIS, the Hennepin County Regional Railroad Authority that is coordinating plans for light rail transit in the region believes that light rail transit is viable for the I-494 corridor, and they support it. The apparent discrepancy over the viability of light rail

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transit within the corridor should be resolved and presented in the Final EIS. If viable, then light rail transit should be included as an alternative for proposed improvements to the interstate freeway. The potential for light rail transit being successful if new lanes are not constructed, should be evaluated and presented in the Final EIS. The impacts upon air quality should also be evaluated as part of this analysis. The Final EIS should discuss what minimum daily ridership would be necessary to ensure viability of a light rail transit system, and provide more detailed information how the predicted 6000 daily riders would not make the system cost effective.

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The Final EIS should also demonstrate compliance with the Intermodel Surface Transportation Efficiency Act (ISTEA) for the alternative analysis and selection process. The Federal funding source within Federal Highway Administration should be identified, and the availability of funds for the study of light rail transit should be discussed. The combination of the aforementioned discrepancy concerning viability of light rail transit in the I-494 corridor and Federal stipulations regarding funding requirements under the ISTEA for the consideration of light rail transit as a project alternative may necessitate further study of this alternative. If found necessary, a Supplement to the Draft EIS or a Revised Draft EIS that addresses light rail transit as an alternative should be published in the Federal Register and circulated for public and agency review. Otherwise, information should be provided in the Final EIS that adequately addresses our concerns.

If light rail transit is found to be a viable alternative for the I-494 corridor, then we support this alternative for improvements to the corridor. Otherwise, our top preference of alternatives is Alternative 1A, the Add One Lane in Each Direction Alternative. This alternative provides incentive for ride sharing through the use of high occupancy vehicle lanes, and minimizes the amount of right-of-way that would be necessary to make improvements, thereby minimizing impacts to natural resources and encroachment and noise to human resources. If the Add Two Lanes in Each Direction is selected, we recommend Alternative 2A because of the ride sharing incentives.

Noise

Based on Table 5.19 of the Draft EIS, there does not appear to be a significant increase in experienced noise levels within the overall project corridor with any of the build alternatives. In fact, some of the receiver sites would experience a noise decrease of up to 3 decibels. However, some areas within the corridor would experience up to an 8 decibel increase in noise levels. Noise abatement measures considered in the Draft EIS include traffic management measures, speed reductions, change in vertical highway alignment, and construction of noise barriers.

1. The Hennepin County Regional Railroad Authority (HCRRA) had volunteered to fund 50 percent of an LRT study and additional funding would have been available through ISTEA. However, Light Rail Transit (LRT) was dismissed as an alternative in the I-494 Corridor Study and, subsequently during the EIS process, based on the findings of the Long-Range Transit Analysis, completed by the Metropolitan Council in 1986 and a ridership forecast developed during the Corridor Study. The Metropolitan Council study established 23,000 daily riders as the minimum threshold for viability of LRT in the freeway median. The low ridership projections (6,000 riders per day forecast for the I-494 corridor) and the high capital cost of LRT on a freeway right-of-way lead to a very low cost-benefit ratio and very high cost per rider index for LRT in the I-494 corridor. The Metropolitan Council's Regional Transit Facilities Plan (1992) and Transportation Policy Plan (1989, revised 1993), and the Regional Transit Board's (RTB's) Vision for Transit (February 1992) confirmed that I-494 is not a likely LRT corridor due to low ridership potential.

   The 1986 I-494 Corridor Study process was initiated prior to the adoption of ISTEA in 1993. However, the corridor study process utilized was found by FHWA to be consistent with the later ISTEA requirements (and with current federal TEA-21 requirements) and an acceptable substitution for a Major Investment Study (MIS) for alternatives analysis and selection.

The Draft EIS states that other noise abatement measures may be proposed in situations where the aforementioned traffic noise abatement measures are physically or economically unfeasible. We support the discussed noise abatement measures, and suggest consideration of sound insulation for any impacted noise sensitive receptors where the aforementioned measures prove impractical or unfeasible.

Air Quality

None of the alternatives proposed in the Draft EIS would result in a violation of applicable State or Federal air quality standards, and therefore a plan of mitigation for air quality impacts is not necessary. However, as part of our recommendation for further information concerning light rail transit, we request that the Final EIS assess air quality impacts if light rail transit proves feasible. This assessment should be compared to alternatives in the Draft EIS to show whether light rail transit in the corridor would have beneficial or detrimental effects to air quality within the area.

Water Quality

The Draft EIS proposes to convert the existing highway runoff drainage system from direct, untreated discharge into creeks and rivers to one of discharge after treatment through the use of detention ponds. The Draft EIS thoroughly discloses the proposed design and location of such ponds. Nine detention ponds are proposed for the project corridor. Although we support the use of the ponds for treating runoff, we have several concerns regarding maintenance of the ponds. The Final EIS should disclose whether the ponds would be regularly dredged, whether the sediment would be sampled, and where the sediment would be disposed. A discussion of pond management during high water events to prevent significant untreated discharges from entering creeks and streams should also be provided. We will have additional comments regarding the detention ponds, and these comments will be provided in a separate letter in about two weeks from the date on this letter.

Wetlands

Delineation and identification of wetlands by acreage, type, function, and value is well detailed in the Draft EIS. A comparison of acreage of wetland impacts is also provided for the minimum interchange impact versus the maximum interchange impact. However, for the entire corridor build alternatives, only the worst case scenario is provided. The Final EIS should include a comparison of wetland impacts for the Transportation System Management Alternative versus the Add One Lane in Each Direction Alternative versus the Add Two Lanes in Each Direction Alternative. Our support of the Add One Lane in Each Direction

Alternative was partially based on the assumption that fewer natural resources would be impacted than for the Add Two Lanes in Each Direction Alternative. Based on interchange wetland impact information, we support the minimum interchange alternative.

Regarding wetland information, the Draft EIS states that adequate information is not yet available to define specific mitigation requirements. However, methods to avoid and minimize are included in the Draft EIS. These methods include increasing the steepness of the side slope of the roadbed and using retaining walls to minimize necessary right-of-way requirements and thereby minimizing fill of adjacent wetlands, spanning wetlands, and expanding the roadway through developed urbanized areas. We support these measures. The specific wetland mitigation requirements should include within the Final EIS or made available for review upon completion of a wetland mitigation plan. It is the policy of our Agency that wetland mitigation be based on a ratio of at least 1.5:1 acres of wetlands created or restored to those impacted, and that the mitigation be provided on-site and in-kind if possible.

Erosion and Sedimentation

The Draft EIS discusses mitigation for erosion and sedimentation that may occur during construction. Mitigation measures includes erosion control fences and sedimentation basins. These measures satisfy our concerns for erosion and sedimentation impacts.

Terrestrial Resources

We support mitigation described in the Draft EIS for woodland impacts. Such mitigation will include planting of new trees. No rare, threatened or endangered species were found to be present in the project corridor. We recommend the planting of native species along the highway right-of-way to enhance the visual quality of the corridor and as an erosion control measure since native species more effectively holds the soil in place.

2. An analysis of noise impacts and potential mitigation measures was prepared for the FEIS and is summarized in Section 6.2.5. This analysis includes a discussion of the methodology used for assessing noise impacts and potential implementation of noise mitigation (noise walls). Because applicable noise regulations use outdoor standards, sound insulation measures were not evaluated as part of the FEIS. As discussed in Section 6.2.4 of the FEIS, other potential mitigation measures typically evaluated for roadway projects, such as restrictions in vehicle types and speeds, are not compatible with the required functions of I-494.

3. As discussed in Section 3.2 of the FEIS, light rail transit was found to be not feasible for the project corridor due to high construction costs and low projected ridership.

4. Consistent with standard Mn/DOT procedures, the ponds associated with the I-494 reconstruction project will be constructed with a 25-year design life, accounting for sedimentation. After 25 years, the ponds will be dredged per standard Mn/DOT management practices. Skimmer structures and trash racks will be cleared every one or two years.

   High water events as referenced in this comment will be addressed through providing adequate freeboard storage in pond design. Through the permitting process, Mn/DOT will work with the applicable watershed districts to prepare appropriate pond design in the final design phase.

5. The Transportation System Management Alternative would have no impacts to wetlands. However, due to factors discussed in Section 3.3 of the FEIS, this approach alone would not meet the project needs as defined in Chapter 2.0 of the FEIS. Wetland impacts and mitigation measures for the Preferred Alternative are discussed in Section 6.7 of the FEIS.

6. During final design, a wetland replacement plan for mitigation of affected wetlands will be developed for each phase of the overall I-494 reconstruction project. These plans and associated mitigation measures will be in accordance with applicable requirements associated with the Minnesota Wetland Conservation Act (WCA), and the Clean Water Act (Section 404) and appropriate executive orders. They will refine information presented in Section 6.7.4 of the FEIS and reassess the exact areas of impact and mitigation using final design information, wetland delineation, and applicable mitigation guidelines and requirements in affect at the time. A 2:1 replacement ratio is planned for Phase I I-494 reconstruction, consistent with current WCA requirements.

STATE OF
MINNESOTA
DEPARTMENT OF NATURAL RESOURCES

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DNR INFORMATION
(612) 296-6157

June 16, 1992

Mr. Craig Robinson, I-494 Corridor Manager
Minnesota Department of Transportation
Metro District
2055 N. Lilac Drive
Golden Valley, Minnesota 55422

Re: Reconstruction of Interstate 494
Draft Environmental Impact Statement

Dear Mr. Robinson:

The Minnesota Department of Natural Resources (DNR) has completed a review of the proposed reconstruction of Interstate 494 from Interstate 394 to the Minnesota River. The following comments are provided for your consideration.

Page 1-19. The EIS has correctly noted that Protected Waters Permits will be required for construction of the proposed project. As Mn/DOT is aware, permits will be needed to place fill in and bridges across all state protected public waters and wetlands.

Page 4-39, Wetlands. The correct citation for rules concerning protected waters is MN Rules 6115.0150 - 6115.1512, Chapter 103G.

Page 4-39. The filling and alteration of non-DNR protected wetlands must meet any applicable provisions of Executive Order 91-3 and the Wetlands Conservation Act of 1991.

Page 4-69. Minnesota Pollution Control Agency water quality classifications are reviewed every three years. The DNR has proposed upgrading the Minnesota River classification from 2C to 2B.

Page 4-70. The following bodies of water have shoreland classifications in addition to those listed: 27-72P-NE, 27-74P-RD, and 27-62P-RD. We recommend that the EIS discuss the shoreland standard goal of reducing the visual impact of structures as seen from designated public waters.

Page 4-74. The regulations of the Minnehaha Creek Watershed District must be followed concerning alterations in the floodplain.

Figures 5.5 and 5.6. A portion of the proposed sedimentation pond at Prairie Center Drive appears to be below the ordinary high water (OHW) elevation of Smetana Lake. Any work below the OHW will require a Protected Waters Permit from the DNR.

Page 5-125. The DNR commends Mn/DOT for the stormwater treatment proposed at the various drainage areas along the route.

Page 5-168. The DNR supports the construction of bridges for portions of the roadway that will encroach upon Nine Mile Creek at various locations between TH 100 and TH 169/18. In eary meetings with Mn/DOT concerning the proposed project, there was considerable discussion about the use of a long tressle-type bridge to span the wetlands in the project area. The DNR encourages Mn/DOT to continue exploration of this alternative to avoid and minimize impacts to wetlands.

Page 5-196, Fish Habitat. Prior to 1985, Bryant Lake was stocked with Northern Pike. The current lake management plan has eliminated the stocking of these fish. The lake is now actively managed for and stocked with hybrid (Tiger) muskellunge. The management plan also recommends the establishment of a fish barrier on the South Fork of Nine Mile Creek to protect fish habitat in Bryant Lake.

Thank you for the opportunity to review and comment on the I-494 Draft EIS. If you have questions concerning the DNR's comments, or if you require additional information from the DNR in regard to the proposed project, please contact Cheryl Heide from my staff at 296-9228.

Sincerely,

Thomas W. Balcom

Thomas W. Balcom, Supervisor
Natural Resources Planning and Review Services

c. Dave Leuthe
Steve Colvin
Tom Lutgen
Brian McCann
Bonita Eliason
Lynn Lewis--U.S. Fish and Wildlife Service
Gregg Downing--Minnesota Environmental Quality Board
Ike McCrary--Mn/DOT

900115-3

Minnesota Department of Natural Resources

1 **2**

1. The correct citation for rules concerning protected waters is noted and has been corrected in Section 6.7.2.2 of the FEIS.

2. Mn/DOT will work with Federal, State and local authorities to comply with applicable regulatory requirements. Relevant information has been provided in Sections 6.5 and 6.7 of the FEIS.

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3. No substantial change in visual impacts from I-494 on designed waters are anticipated since there will be no major change in the highway's horizontal or vertical alignment near any designated public waters.

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4. The pond referenced in this comment has already been constructed by the City of Eden Prairie (Schooner Pond).

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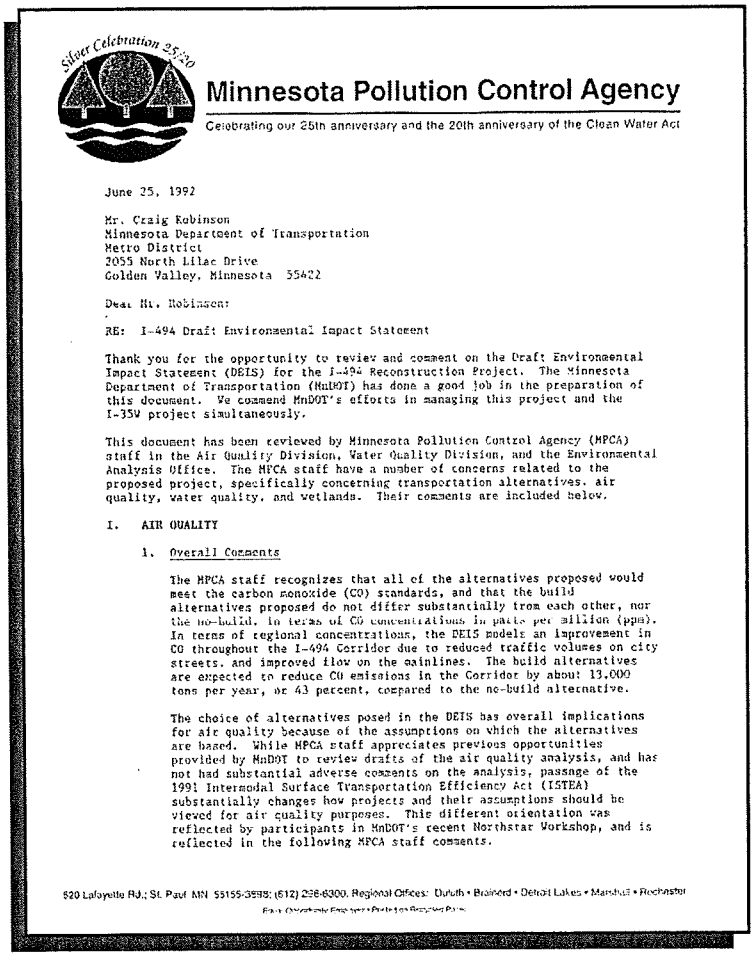
5. The last paragraph of page 5-196 in the DEIS should read:

"Bryant Lake was identified by the DNR Division of Fisheries as having the only known records for Pike and other species of fish within the project area. Bryant Lake is actively managed for and stocked with hybrid (Tiger) muskellunge. Because Wetland 38 is connected to Bryant Lake, it also has moderate potential for being used by these fish."

Minnesota Pollution Control Agency



Silver Celebration 25-20

Minnesota Pollution Control Agency

Celebrating our 25th anniversary and the 20th anniversary of the Clean Water Act

June 25, 1992

Mr. Craig Robinson
Minnesota Department of Transportation
Metro District
2055 North Lilac Drive
Golden Valley, Minnesota 55422

Dear Mr. Robinson:

RE: I-494 Draft Environmental Impact Statement

Thank you for the opportunity to review and comment on the Draft Environmental Impact Statement (DEIS) for the I-494 Reconstruction Project. The Minnesota Department of Transportation (MnDOT) has done a good job in the preparation of this document. We commend MnDOT's efforts in managing this project and the I-35W project simultaneously.

This document has been reviewed by Minnesota Pollution Control Agency (MPCA) staff in the Air Quality Division, Water Quality Division, and the Environmental Analysis Office. The MPCA staff have a number of concerns related to the proposed project, specifically concerning transportation alternatives, air quality, water quality, and wetlands. Their comments are included below.

I. AIR QUALITY

1. Overall Comments

The MPCA staff recognizes that all of the alternatives proposed would meet the carbon monoxide (CO) standards, and that the build alternatives proposed do not differ substantially from each other, nor the no-build. In terms of CO concentrations in parts per million (ppm). In terms of regional concentrations, the DEIS models an improvement in CO throughout the I-494 Corridor due to reduced traffic volumes on city streets, and improved flow on the mainlines. The build alternatives are expected to reduce CO emissions in the Corridor by about 13,000 tons per year, or 43 percent, compared to the no-build alternative.

The choice of alternatives posed in the DEIS has overall implications for air quality because of the assumptions on which the alternatives are based. While MPCA staff appreciates previous opportunities provided by MnDOT to review drafts of the air quality analysis, and has not had substantial adverse comments on the analysis, passage of the 1991 Intermodal Surface Transportation Efficiency Act (ISTEA) substantially changes how projects and their assumptions should be viewed for air quality purposes. This different orientation was reflected by participants in MnDOT's recent Northstar Workshop, and is reflected in the following MPCA staff comments.

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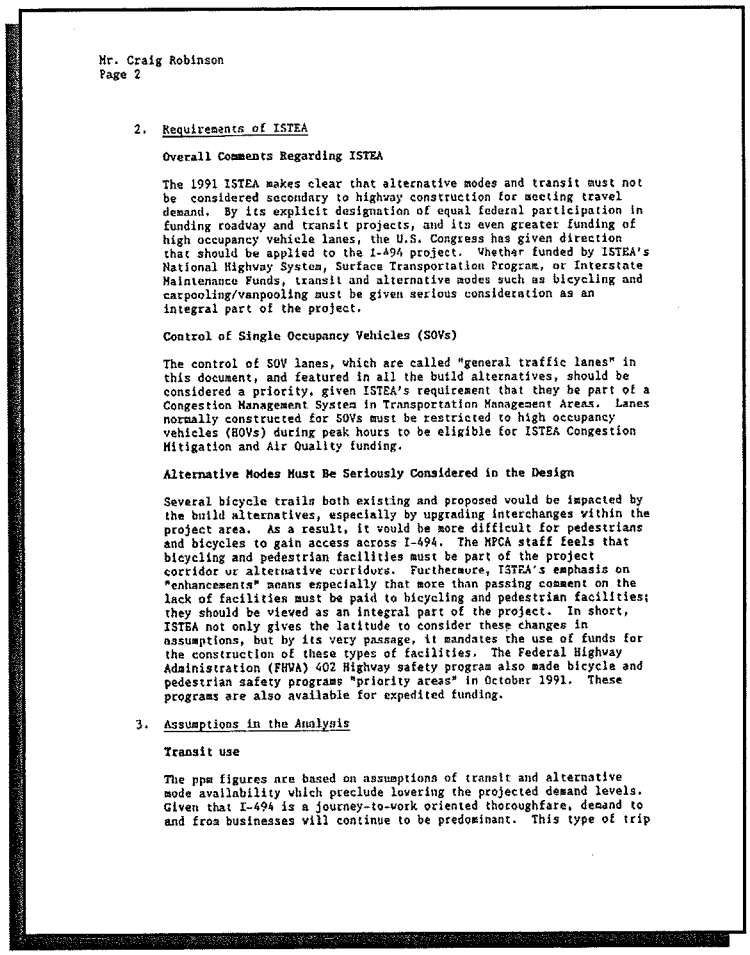

Mr. Craig Robinson
Page 2

2. Requirements of ISTEA

Overall Comments Regarding ISTEA

The 1991 ISTEA makes clear that alternative modes and transit must not be considered secondary to highway construction for meeting travel demand. By its explicit designation of equal federal participation in funding roadway and transit projects, and its even greater funding of high occupancy vehicle lanes, the U.S. Congress has given direction that should be applied to the I-494 project. Whether funded by ISTEA's National Highway System, Surface Transportation Program, or Interstate Maintenance Funds, transit and alternative modes such as bicycling and carpooling/vanpooling must be given serious consideration as an integral part of the project.

Control of Single Occupancy Vehicles (SOVs)

The control of SOV lanes, which are called "general traffic lanes" in this document, and featured in all the build alternatives, should be considered a priority, given ISTEA's requirement that they be part of a Congestion Management System in Transportation Management Areas. Lanes normally constructed for SOVs must be restricted to high occupancy vehicles (HOVs) during peak hours to be eligible for ISTEA Congestion Mitigation and Air Quality funding.

Alternative Modes Must Be Seriously Considered in the Design

Several bicycle trails both existing and proposed would be impacted by the build alternatives, especially by upgrading interchanges within the project area. As a result, it would be more difficult for pedestrians and bicycles to gain access across I-494. The MPCA staff feels that bicycling and pedestrian facilities must be part of the project corridor or alternative corridors. Furthermore, ISTEA's emphasis on "enhancements" means especially that more than passing comment on the lack of facilities must be paid to bicycling and pedestrian facilities; they should be viewed as an integral part of the project. In short, ISTEA not only gives the latitude to consider these changes in assumptions, but by its very passage, it mandates the use of funds for the construction of these types of facilities. The Federal Highway Administration (FHWA) 402 Highway safety program also made bicycle and pedestrian safety programs "priority areas" in October 1991. These programs are also available for expedited funding.

3. Assumptions in the Analysis

Transit use

The ppm figures are based on assumptions of transit and alternative mode availability which preclude lowering the projected demand levels. Given that I-494 is a journey-to-work oriented thoroughfare, demand to and from businesses will continue to be predominant. This type of trip

1. The proposed corridor improvements include provisions for HOV bypass lanes at ramps—promoting transit and carpool use of the corridor—and provisions for bus use of shoulders during peak travel periods. Bicycling is not considered an "alternative mode" for an interstate highway corridor. Sections 3.4.8 and 4.5 of the FEIS summarize pedestrian/bicycle accommodations at bridges being reconstructed in conjunction with the proposed project. These accommodations will facilitate pedestrian/bicycle transportation across the I-494 corridor at city trail and other locations.

2. As addressed in Section 3.4.8 of the FEIS, existing crossings (bridges) of the I-494 corridor will be replaced at or near their present locations. Such crossings provided by Mn/DOT will be rebuilt consistent with current pedestrian/bicycle accommodation standards (as discussed in Response 4).

does not preclude transit as a partner in meeting demand. Given ISTEA's emphasis on transit, the staff recommends that the Final Environmental Impact Statement (FEIS) examine methods for developing legislative support to include transit as a full partner in efforts to meet demand, rather than an alternative after roadway construction.

Inadequate bicycle facilities/ordinances

Cities in the I-494 Corridor have not provided continuous bicycle facilities with a "good rating," and ordinances with no provision for bicycle commuters or shoppers also forces people into cars. Given the extremely high percentage of bicycle ownership in Minnesota and Minnesotans' known emphasis on fitness, the staff believes that there would be the potential for some diversion into the bicycle mode were these facilities/equipment to be provided. Given the requirements of ISTEA to link planning for transportation, land use, the 1990 Clean Air Act Amendments (CAAA), and statewide planning together, the FEIS should discuss how this project will implement the recommendations of the Minnesota Comprehensive State Bicycle Plan, Plan B.

No limits for demand

Finally, none of the alternatives address the question as to how much travel demand should be accommodated by construction. Build Alternative 2 is designed to handle more demand and provide sufficient capacity throughout the corridor to serve the forecast 2010 peak hour demand than any of the other alternatives. However, if an additional lane is designated as an HOV lane, the general purpose lane on I-494, north of Trunk Highway 62, will not have sufficient capacity to serve the forecast peak hour demand in these lanes.

The MPCA staff recommends that any of the roadway construction alternatives should first require construction of HOV lanes, or persons will continue to use SOVs. Secondly, the FEIS should discuss what initiatives can be pursued at the legislative level, or through initiatives of the private sector to limit travel demand. The staff believes this position is reasonable, given that the difference in accident rates on I-494 compared to other metropolitan freeways shows the need for upgrading to be mostly that of congestion, with safety secondary. Finally, the FEIS should discuss binding commitments on the part of cities participating in the Corridor Study and MnDOT concerning Transportation Demand Management, including incorporation of the commitments and their enforcement mechanism into legal documents for roadway construction.

4. Comments about Modeling

The DEIS predicted CO concentrations using MOBILE4.1 to determine future emission rates for the project estimated based on facility type and the traffic volume to capacity. The U.S. Environmental Protection Agency expects to release the MOBILE5.0, the latest version of the

computer model for estimating highway emissions factors, this summer. MOBILE5.0 will provide the capability for modeling the impacts of the new Tier I exhaust standards for light-duty vehicles and light-duty trucks, the effects of California low-emitting vehicles requirements, including appropriate I/M credits, the effects of the new evaporative/running loss emissions, emission benefits of reformulated gasolines, and the revision of the speed correction factors to exhaust emissions applied for speeds greater than 19.6 mph. If MnDOT releases the FEIS within three months after the issuance of MOBILE5.0, the FEIS must incorporate this new model in its analysis.

5. Conformity Requirements

Based on a meeting held May 16, 1992, at the Metropolitan Council among staff of the FHWA's Region V, FHWA's Minnesota Division Office, MPCA, MnDOT, and the Metropolitan Council, the worst-case scenario of the I-494 project will have to be analyzed for its impact on regional emissions, in whole or in part, as part of the submittal of the next Transportation Improvement Program for the Twin Cities area. This assumes the FEIS will be acted upon this year. Further clarification from FHWA is being sought as to the exact method for doing this.

According to a notice appearing in the April 16, 1992, Federal Register, final guidance will not be available before November 15, 1992. The MPCA staff strongly suggests that MnDOT work with the Minnesota Interagency Air Quality/Transportation Planning Task Force (formerly the Minnesota Interagency Task Force on Conformity) to develop appropriate conformity analysis for the FEIS.

6. Specific Pollutants

There are no discussions of lead, toxic pollutants, or carbon dioxide impacts in the DEIS. MnDOT should include these in the FEIS.

7. Mitigation of Construction Impacts

The DEIS did not address most of the temporary environmental impacts expected to occur as a result of the I-494 reconstruction activities, particularly related to traffic delays, alignment shifts, access changes, and air quality. One of the evident impacts of the I-494 reconstruction will be the disruption of traffic. The staging of the project will require the reduction of the traffic carrying capacity of the corridor causing traffic delays and relatively frequent shifts and access changes. To avoid these delays and inconveniences, drivers will seek alternate routes and shift their travel times when possible. However, because of these changes, traffic volumes will increase on parallel local streets during construction. Access changes may also occur during construction which might affect accesses into businesses and facilities along the corridor and provide more confusion to drivers, particularly those who do not regularly travel through the area.

3. Section 4.4 of the FEIS describes how transit use is incorporated into the I-494 corridor concept and how coordination of metro area transit facilities and services with the planned I-494 transit provisions is consistent with the Metropolitan Council's Transit 2020 Master Plan.

4. Plan B – the Comprehensive State Bicycle Plan is a framework to support and guide the development of bicycling in Minnesota. It does not address specific project standards. For bridges which Mn/DOT will be replacing as part of the I-494 reconstruction project, design guidelines in the Minnesota Bicycle Transportation Planning and Design Guidelines (Mn/DOT, June 1996), Chapter Four (On-Road Standards) will be followed.

5. Several initiatives to limit travel demand have already been pursued and will continue along I-494. Mn/DOT is enhancing high occupancy vehicle (HOV) travel as part of the Preferred Alternative through the "managed corridor approach" which includes ramp metering and HOV bypass lanes at all feasible locations as discussed in Section 1.4 of the FEIS, as well as outside shoulders wide enough to accommodate bus-only use during peak travel times.

6. Mn/DOT and the Metropolitan Council encourage the use of travel demand management (TDM) as a means of reducing vehicular demand in the corridor. However, neither agency has authority to require individuals or communities to follow or implement TDM strategies. Within the public sector, the I-494 Corridor Commission, comprised of Richfield, Bloomington, Edina, Eden Prairie, Minnetonka, Plymouth, and Maple Grove, coordinates land use and transportation decisions and facilitates TDM activities. See Section 3.4 of the FEIS for additional discussion of TDM initiatives.

   The I-494 Corridor Commission and the Metropolitan Council are currently jointly conducting review of TDM ordinances used elsewhere in the country. The goal of this effort is to help define such an ordinance which would be viable and effective within the I-494 corridor.

7. The FEIS Air Quality analysis presented in Section 6.1.3 incorporates the latest modeling software (Mobile 5a for the emissions analyses and CAL3QHC for dispersion analyses).

8. The appropriate Air Quality Conformity Analysis is presented in Section 6.1.3 of the FEIS.

9. Section 6.1.3 of the FEIS addresses pollutants potentially associated with motor vehicle use other than carbon monoxide, (ozone, lead, particulate matter), as well as providing a detailed analysis for carbon monoxide in accordance with MPCA directives and procedures.

10. There may temporarily be air quality impacts related

Other effective mitigation measures through improved public communication, including publication of brochures containing maps of the construction areas, and advance work with affected businesses to let them know exactly what to expect must be implemented, as MnDOT has very effectively done for other recent projects. There should also be consistent, thoughtful, and effective provision of advance public information to parties affected by the construction activities, through cooperative efforts with radio and television traffic-watch reporters and daily newspapers. The design of the preferred alternative must include detailed construction staging plans which outline the sequence of construction activities, including plans explaining how traffic will be maintained during construction.

Changes in traffic patterns that will occur during the reconstruction of the project will affect air quality in some street intersections paralleling the I-494 corridor. MnDOT must show an accurate assessment of these impacts in the Indirect Source Permit (ISP) application when the final designs are developed. MnDOT must identify critical local intersections it expects to be impacted through analysis of the project's traffic forecast. MnDOT should conduct detailed microscale analyses at intersections expected to experience significant increases in traffic during construction relative to the no-build alternative, or where the forecast traffic volumes approach the intersection capacity. The ISP application should include a description of construction phasing and the traffic control plan for each phase, and also assess how local streets would be affected by diversions caused by the reconstruction project. MnDOT should also state mitigation measures expected to be implemented to improve air quality at some of the congested intersections with high CO concentrations, such as France Avenue and Minnesota Drive.

II. NOISE

1. Per the provisions of Minn. Stat. 116.07, subd. 2.a, the MPCA stresses the need for the proposer to employ "all reasonably available noise mitigation measures" to protect the quietude of the affected communities. To this end, a detailed noise mitigation plan should be prepared once a preferred alternative is selected. This plan should be presented in the FEIS, or provided as an attachment available for review prior to final approval of the project. The plan should include detailed information on the mitigation proposals being considered for each of the impacted areas. At a minimum, the plan should include the following information:

   a. Type of noise mitigation proposed for each impacted area.

   b. Location, size and type of noise abatement structure(s) (if applicable).

   c. Predicted future noise levels with and without mitigation (to quantify effectiveness).

   d. In the event that noise mitigation is considered to be unfeasible in a specific area, provide sufficient rationale for this decision.

The MPCA recommends the use of the applicable state noise standards as the design criteria for the noise mitigation plan.

2. To minimize in-construction impacts, work hours should be restricted to the daytime hours of 7:00 a.m. to 10:00 p.m. In addition, advance notice should be provided to the communities in the event that any blasting and/or other abnormally loud construction activities will be required. Where feasible, the construction and/or re-construction of noise walls should precede roadway work to offset potential noise impacts during the construction phasing.

III. WATER QUALITY AND QUANTITY

The DEIS indicates that issues such as erosion control related to peak flows, maintenance of critical low flows, and details of storm water pond design will be addressed at a future time or in other documents. Although we can understand the reasons for this response, it is difficult to comment on these issues when specific design concepts have not been provided. The MnDOT manuals of practice and design specifications are excellent documents that address almost all expected contingencies. The application of these documents at specific sites, however, can be highly variable, calling for a significant amount of professional judgment. The following are the areas that may need special attention.

1. The manual "Design Calculations for Storm Water Detention Ponds," (William Walker, October 1987) was used to discuss detention ponds for this project. The DEIS also indicates that the final design of the ponding areas would have to meet the requirements of the affected watershed districts. Some of the watershed districts, however, have not adopted the Walker pond design method. MnDOT should strongly consider a policy that adopts the Walker pond design method for this project and for the entire metropolitan area.

2. The DEIS indicates that erosion control measures, as suggested by a MPCA's Best Management Practices (BMP) document and measures required by the watershed districts and municipalities, will be installed to mitigate impacts from the construction activities. We assume that the BMP document referenced here is the MPCA report titled "Protecting Water Quality in Urban Areas." While this report outlines important BMPs for urban areas, a more appropriate document for designing erosion protection measures related to road projects is MnDOT's manuals of practice and standard specifications.

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to traffic delays or diversions that could occur during construction activities which would be greater than post construction air quality impacts. This is essentially unavoidable, because of the need to divert traffic during construction causing additional congestion. Staging plans and specific traffic control measures will be developed as part of the final design for any given segment. In addition, the I-494 Corridor Commission and Mn/DOT staff will work together to implement travel demand management measures and public notification of upcoming construction activities, as suggested by the comment. Combined together, these efforts would minimize traffic disruption and congestion and, therefore air quality impacts to the greatest degree feasible during construction activities. Air quality impacts directly associated with construction activities for given portions of the overall project will be limited in duration.

The basic goal in reconstructing the I-494 corridor is to serve the long-term forecast traffic volumes with a minimum of congestion, minimizing air quality impacts. The proposed I-494 measures as discussed in Section 7.3 of the FEIS will serve to mitigate potential short-term air quality problems during construction.

11. ISP analytical procedures will be reviewed with MPCA staff prior to performance of ISP analyses and documentation for each project phase.

12. Analysis of noise impacts and mitigation measures associated with the current Preferred Alternative is presented in Sections 6.2.3 and 6.2.4 of the FEIS. This analysis utilized the Mn/DOT/MPCA methodology for assessing noise impacts and the potential implementation of mitigation measures for transportation projects. Noise mitigation measures currently proposed as a result of the referenced analysis are addressed in Sections 6.2.4 and 6.2.5 of the FEIS.

13. Applicable language and information has been added to Section 7.3 (mitigation of construction impacts) of the FEIS.

14. The design of the storm water detention ponds will use MPCA Best Management Practice Guidelines, which are consistent with EPA NURP guidelines or local watershed district design requirements, whichever is more stringent.

15. The design of erosion protection measures for the project will follow Mn/DOT's manuals of practice and standard specifications, in accordance with all required state and local permits.

The I-494 project will also be required to comply with local erosion control requirements. Of the three methods mentioned (MPCA BMPs, MnDOT requirements, and local requirements), the most stringent or appropriate controls should be used.

3. On page 1-20, the DEIS does not mention that an MPCA storm water permit is required for construction activities that clear, grade, or fill an area of over five acres. This permit is also apparently not mentioned under the section related to surface water drainage. For more information concerning this permit, please contact Lou Flynn in the Water Quality Division at 612/296-9268.

4. The FEIS should discuss the issues of increased total flow and, therefore, extension of the peak flow duration and its effect on erosion control problems. The DEIS does not provide an indication of how these issues will be resolved.

5. The FEIS should discuss the maintenance of critical low flows in surface waters. Wetland mitigation and ground water recharge should be addressed with low flows in the study efforts. This study should also address the cumulative impacts of the numerous hydrologic changes that could occur as a result of this project.

6. For those facilities discharging to streams or creating increased flows in streams, the most critical flows, from an erosion standpoint, are the "bank full" flows. Bank full flows usually occur from one to three-year return periods, and should be considered a significant design criteria. Other states are adopting criteria that require designs which release from ponds at one-half the bank full flow. This criteria would help to maintain lower flows and could result in less frequent destructive flows. The most destructive flows appear to occur when streams flow at their maximum capacity before overflowing. Therefore, low flow outlet devices which release at the one-half of the bank full flow, should be required. The MPCA has already raised this issue as a concern in the Nine Mile Creek watershed.

The MPCA staff also believes that any additional loading of phosphorus to lakes will be significant. In general, the staff feels that water quality, as well as water quantity, still remains an issue requiring further evaluation. Since the surface water drainage pond design will not be addressed until the final design of the project, we request that the MPCA be involved in the discussions on the final water quality and quantity issues.

IV. WETLANDS

1. Item 4.2.4 on page 4-39 identifies the agencies responsible for wetland review. The narrative should indicate that the MPCA must issue a 401 certification on any U.S. Army Corps of Engineers (COE) 404 permit.

2. The top paragraph on page 4-41 indicates the Minnesota Department of Natural Resources (DNR) jurisdictional wetlands and states that the COE has jurisdiction outside the DNR controlled wetlands. This is not quite accurate. The COE has jurisdiction over all wetlands that are waters of the United States that include DNR wetlands. The COE does have a general permit with the state, however, that allows the DNR permit, in some cases, to satisfy the COE requirements. The COE still has jurisdiction over wetlands that may be DNR protected wetlands.

3. The discussion of mitigation on page 5-198 indicates that there is not enough information to propose wetland mitigation at this time. Since mitigation is best developed onsite and inkind, and since mitigation efforts may also have individual impacts that require evaluation, it is important that the potential site proposals be discussed in the FEIS. The initial proposal of potential sites in table 5.39 should be reviewed with the appropriate permitting agencies in order to established their acceptability for mitigation.

4. The document should indicate the specification or the specific requirements for erosion control that will be required both during and after construction.

5. The review associated with the avoidance and minimization of wetlands impacts will be accomplished through the permitting process by the COE, the DNR, the local units of government and the MPCA 401 certification.

6. When the proposed mitigation plan is developed, ecological goals should be included that can be monitored for a specific period of time to substantiate the functioning of the new wetlands.

V. EVALUATION OF ALTERNATIVES CRITERIA

On page 2-35, a list of project goals is provided. We assume that these goals will be used as criteria to select the preferred reconstruction alternative for I-494. Are these goals listed in order of priority? If not, will these goals be weighted equally for the selection process, or does one goal have higher priority than another. MnDOT should explicitly state in the FEIS the specific criteria that were used to select the preferred alternative.

The preferred alternative chosen for the I-494 project, along with the preferred alternative chosen for the I-35W project, could significantly influence the direction of Minnesota transportation policy for at least the next decade. We must ensure that the final decision accounts for recent developments in federal transportation policy and the desired direction of state and regional transportation policy. The MPCA staff supports improvements to I-494; we believe that the preferred alternative should emphasize HOV lanes rather than SOV lanes. This emphasis is primarily based on environmental factors.

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16. Requirements for an MPCA Storm Water Permit for construction activities has been included in Section 11.9 of the FEIS.

17. Because the highway drainage area represents a relatively small percentage of the total drainage area, changes in the flow rates from the highway will not create a noticeable change in the flow conditions of either Minnehaha Creek or Nine Mile Creek. Therefore, the impact on the duration of the peak flow, low flows, bank full flows and erosion control problems are anticipated to be negligible.

18. The MPCA will be included in discussions on the final water quality and quantity issues during final design.

19. The MPCA requirement for a 401 certification on any Corp of Engineers 404 permit is noted in Section 11.9 of the FEIS.

20. Revised language pertaining to current wetland regulations can be found in Section 6.7.2.2.

21. The potential mitigation areas discussed in the DEIS have been further reviewed and refined. Areas with substantial limitations have been dropped and additional areas have been added. As discussed in Section 6.7.4.3 of the FEIS, on-site and in-kind replacement is the replacement type preferred. However, an adequate amount of replacement land may not be available within or directly adjacent to the project corridor. As further discussed in Section 6.7.4.3, Mn/DOT has begun coordinating with the Hennepin Conservation District to locate and design an off-site replacement area or areas. This process will continue.

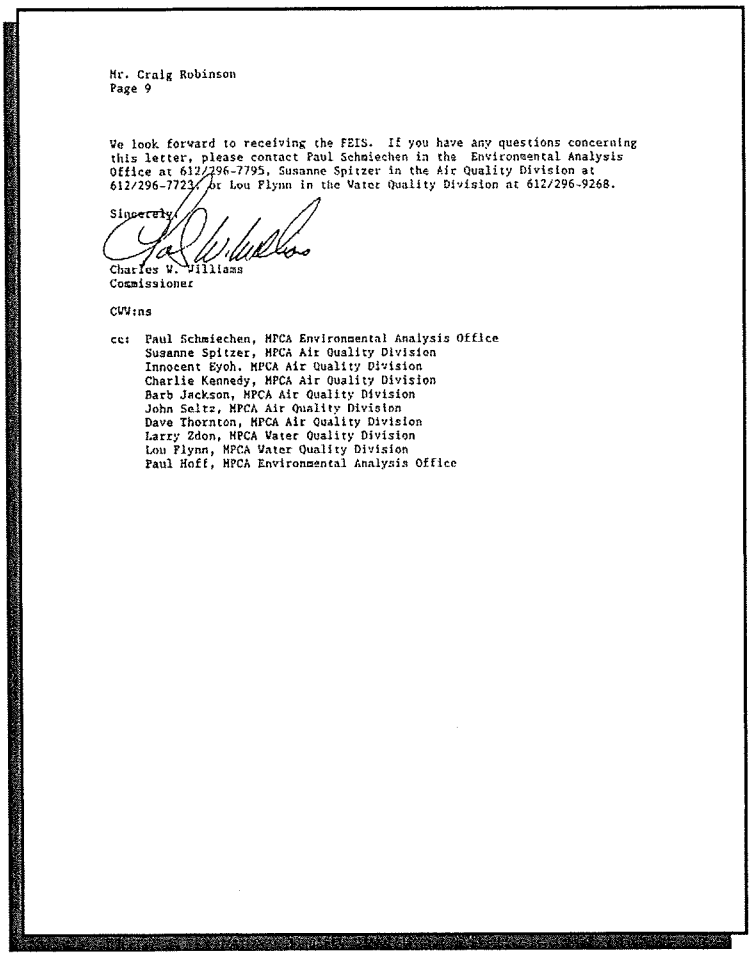
    Final replacement plans will be developed and reviewed with the appropriate permitting agencies at the time a permit application is prepared and submitted for each phase of construction. A specific monitoring plan will also be developed for each replacement area proposed.

22. The design of erosion protection measures for the project will follow Mn/DOT's manuals of practice and standard specifications.

23. A five-year monitoring plan will be developed for all wetland replacement lands as required by the Wetland Conservation Act of 1991.

24. The goals listed in the DEIS were not necessarily listed in order of priority. Identification of the Preferred Alternative concept and design features was based on consideration of a number of interrelated factors including, but not limited to (and no particular order of importance):

    - Ability to address the identified transportation problems/needs (including those listed in the 1992 DEIS project goals (Section 2.4.1 of the DEIS);
    - Minimizing social, economic and environmental



Mr. Craig Robinson
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We look forward to receiving the FEIS. If you have any questions concerning this letter, please contact Paul Schmiechen in the Environmental Analysis Office at 612/296-7795, Susanne Spitzer in the Air Quality Division at 612/296-7723, or Lou Flynn in the Water Quality Division at 612/296-9268.

Sincerely,

Charles W. Williams
Commissioner

CWW:ns

cc: Paul Schmiechen, MPCA Environmental Analysis Office
Susanne Spitzer, MPCA Air Quality Division
Innocent Eyoh, MPCA Air Quality Division
Charlie Kennedy, MPCA Air Quality Division
Barb Jackson, MPCA Air Quality Division
John Seltz, MPCA Air Quality Division
Dave Thornton, MPCA Air Quality Division
Larry Zdon, MPCA Water Quality Division
Lou Flynn, MPCA Water Quality Division
Paul Hoff, MPCA Environmental Analysis Office

impacts (similar to the DEIS) goals, e.g. minimize access and right-of-way impacts, address storm water issues, minimize impacts to wetlands and other natural areas, etc.); and

- Developing an alternative that is fiscally feasible (a goal not included in the DEIS but necessary to implement the project). Because development of the Preferred Alternative resulted from an iterative process that tried to balance these goals, a "specific list of criteria that were used to select the Preferred Alternative" (as requested in the comment letter) is not included in the FEIS.

REGIONAL TRANSIT BOARD

MICHAEL J. EHRLICHMANN
Chair

July 8, 1992

Commissioner James M. Denn
Minnesota Department of Transportation
Transportation Building
John Ireland Boulevard
St. Paul, MN 55155

Re: I-494 Reconstruction Project
Draft Environmental Impact Statement

Dear Commissioner Denn:

Thank you for the opportunity to review and comment on the Draft Environmental Impact Statement for the I-494 project. The Regional Transit Board (RTB) believes that the region has a great opportunity to make transit a priority in the I-494 corridor with strategic use of High Occupancy Vehicle (HOV) lanes.

At its July 6, 1992, meeting, the RTB unanimously passed the following motion:

"That the Regional Transit Board support Alternative 2A, as outlined in the I-494 Draft Environmental Impact Statement, for submittal to the Minnesota Department of Transportation."

If there are any questions pertaining to the RTB's recommendation, please feel free to call me.

Sincerely,

Michael J. Ehrlichmann
Chair

cc: Mary Anderson, Chair
Metropolitan Council

Craig Robinson, I-494 Project Manager
Mn/DOT Metro District West

Mears Park Centre • 230 5th Street • St. Paul, Minnesota 55101
Office 612/229-2701 • FAX: 612/229-2739
An Equal Opportunity Employer

Regional Transit Board

No response required.

METROPOLITAN COUNCIL
Mears Park Centre 230 East Fifth Street St. Paul MN 55101-1634 612 291-6359 FAX 612 291-6550 TTY 612 291-0904

June 26, 1992

W.M. Crawford, P.E.
District Engineer
Minnesota Department of Transportation
Metropolitan District
Transportation Building
St. Paul, MN 55155

RE: Draft Environmental Impact Statement for
I-494 In Hennepin County
State Project 2785-261
Metropolitan Council Referral File No. 15031-2

Dear Mr. Crawford:

At its meeting on June 25, 1992, the Metropolitan Council considered the I-494 Draft Environmental Impact Statement. This consideration was based on a report of the Metropolitan Systems Committee, Referral Report No. 92-37. A copy of this report is attached.

The Council approved the recommendation that this memorandum and findings be submitted to Mn/DOT as the Metropolitan Council's comments on the I-494 draft EIS.

Sincerely,

Mary E. Anderson

Mary E. Anderson
Chair

MEA:dv
Attachment

cc: Gregg Downing, EQB
Fred Tanzer, Mn/DOT
Craig Robinson, Mn/DOT
Stephen Babler, FHA
Connie Kozlak, Metropolitan Council Staff

Metropolitan Council Meeting of June 25, 1992 Business Item: C-2

METROPOLITAN COUNCIL
Mears Park Centre, 230 East Fifth St., St. Paul, Minnesota 55101

REPORT OF THE METROPOLITAN SYSTEMS COMMITTEE
REFERRAL REPORT NO. 92-37

DATE: June 19, 1992

TO: Metropolitan Council

SUBJECT: Review of I-494 Draft Environmental Impact Statement, Referral No. 15031-2

C SYSTEMS

BACKGROUND

At its meeting on June 16, 1992, the Metropolitan Systems Committee reviewed the I-494 Draft Environmental Impact Statement. On April 30, 1992 the Minnesota Department of Transportation submitted for Council review and comment a draft federal/state Environmental Impact Statement for reconstruction of I-494 from the Minnesota River to I-394 in Minnetonka, a distance of approximately 19.5 miles. (Figure 1.1) The project will directly affect the cities of Minnetonka, Eden Prairie, Bloomington, Edina, and Richfield. At this time, Council comments should be focused primarily on the adequacy of the EIS. Alternatives under consideration are no build, transportation system management (TSM), Build Alternative 1, add one lane in each direction (except 2 lanes between TH 100 and TH 169), Build Alternative 1A, where the additional lane would operate as an HOV lane, Build Alternative 2, add 2 lanes in each direction (except 3 lanes between TH 100 and TH 169) and Build 2A, where one of the 2 lanes would operate as an HOV. The cost of the build alternatives ranges from $541.5 to $612 million for Build Alternative 1 to $582.5 to $650 million for Build 2. Right-of-way costs are estimated at an additional $140 to $165 million. Mn/DOT has programmed work to start in 1997.

ISSUES AND CONCERNS

None

RECOMMENDATIONS

That this memorandum and findings be submitted to Mn/DOT as the Metropolitan Council's comments on the I-494 draft EIS.

Respectfully submitted,

Dirk deVries, Chair

METROPOLITAN COUNCIL
Mears Park Centre, 230 E. Fifth St., St. Paul, Minnesota 55101

DATE: June 4, 1992

TO: Metropolitan Systems Committee

FROM: Nacho Díaz

SUBJECT: Referral 15031-2, Review of I-494 Draft Environmental Impact Statement

INTRODUCTION AND AUTHORITY TO REVIEW

On April 30, 1992 the Minnesota Department of Transportation submitted for Council review and comment a draft federal/state Environmental Impact Statement for reconstruction of I-494 from the Minnesota River to I-394 in Minnetonka, a distance of approximately 19.5 miles. (Figure 1.1) The project will directly affect the cities of Minnetonka, Eden Prairie, Bloomington, Edina, and Richfield.

The passage of the National Environmental Protection Act in 1970 established the requirement that an Environmental Impact Statement (EIS) be written for all major federally-funded projects, including highways. The state of Minnesota subsequently adopted a similar law and the Minnesota Environmental Quality Board (MEQB) adopted an Alternate Review Process which allows Mn/DOT to prepare one document to satisfy the requirements of both laws. The draft EIS must be circulated to federal, state and local agencies with jurisdiction by law or special expertise with respect to any environmental impact involved, and these agencies must be given at least 45 days to return their comments. All comments submitted on the draft EIS must then be taken into account in the preparation of the final EIS. For I-494 a public hearing will be held at the Edina Community Center on June 10, 1992 and written comments may be submitted until June 26, 1992. After considering all comments received on this draft EIS, the Mn/DOT Commissioner will selected a preferred alternative and a final EIS will be prepared.

At this time Council comments should be focused primarily on the adequacy of the EIS. The Council will have future opportunities to comment on the project prior to construction. Under Minnesota Statute 473.167, Subdivision 1, the Metropolitan Council must approve plans for any controlled access highway before construction commences. This approval is usually requested after the final EIS is prepared. In addition, if any municipality abutting an interstate freeway does not approve construction plans as submitted by Mn/DOT, the Mn/DOT commissioner may refer the plans to the Council for approval under Chapter 161 of state law.

Although Mn/DOT is the responsible governmental unit (RGU) for this project, the Metropolitan Council is a joint lead agency on the project. Staff and Council members participate on the Project Management Team, along with representatives of several municipalities, Hennepin County, MAC, and the Improve 494 transportation management organization, all of whom have contributed financially to the study. This EIS study itself is a result of the I-494 Corridor Study, which the Council conducted jointly with the same participants in 1986-87. Council staff members from various divisions have worked closely with Mn/DOT over the last several years to ensure that regional policies

were considered and incorporated throughout the process.

PROJECT DESCRIPTION

Alternatives under consideration are no build, transportation system management (TSM), Build Alternative 1, add one lane in each direction (except 2 lanes between TH 100 and TH 169), Build Alternative 1A, where the additional lane would operate as an HOV lane, Build Alternative 2, add 2 lanes in each direction (except 3 lanes between TH 100 and TH 169) and Build 2A, where one of the 2 lanes would operate as an HOV. Under these last 2 alternatives one lane could be added initially and space reserved for addition of the second lane in the future. These alternatives are the same as those outlined in the I-494 Corridor Study.

The cost of the build alternatives ranges from $541.5 to $612 million for Build Alternative 1 to $582.5 to $650 million for Build 2. These estimates are for construction only and do not include right-of-way or mitigation costs. Right of way costs are estimated at $140 to $165 million. The variation in costs is due primarily to design differences for various interchanges rather than the incremental cost of adding a second lane.

In each section of the corridor there are various intersection alternatives. These range from rebuilding the existing access points to bridging one ramp over another where there are unsafe weaving distances to actually closing the access ramps at Nicollet and 12th.

Staging of construction of this project has not yet been determined. Mn/DOT has programmed work to start in 1997.

DISCUSSION

Metropolitan Development and Investment Framework (Steve Schwanke)

I-494 from I-394 to the airport is completely within the MUSA, and traverses two regional business concentrations. Forecasts used in the I-494 DEIS appear to be reasonable and are consistent with the Council's forecasts for the area. Socioeconomic forecasts used in the I-494 DEIS are essentially those prepared by the Council for the I-494 Corridor Study. The traffic forecasts in the I-494 DEIS are derived from the Council's socioeconomic forecasts.

Cities in the I-494 DEIS corridor should make sure their comprehensive plans reflect the freeway alignment and placement of all interchanges as documented in the FEIS. If the comprehensive plans do not reflect these highway plans, a comprehensive plan amendment must be prepared and submitted to the Council.

Transportation (Natalio Diaz)

I-494 is a key element of the metropolitan highway system. It is a principal arterial which serves as a circumferential route around the Twin Cities and serves as a collection/distribution facility for several other metropolitan highways, including TH 77, I-35W, TH 100, TH 169/CR18, TH 212, TH 62, TH 7, and I-394. I-494 has many areas of substandard design, deteriorated pavement, and volumes in excess of capacity.

1

1. Mn/DOT staff is coordinating with cities along the I-494 reconstruction corridor regarding construction and right-of-way acquisition limits for the proposed roadway improvements so they can be reflected in the cities' comprehensive plans.

Table 3 of the TPP, which shows recommended improvements to the highway system by 2010, recommends that meters, bypass ramps and one HOV lane be added to I-494 (2 lanes between TH 100 and TH 169). The Transportation Policy Plan also includes the recommendations of the I-494 Corridor Study in Appendix L, including the recommendation that one lane in each direction be added to the highway.

The TPP does not recommend LRT in this corridor since low ridership (estimated at 6000 riders per day) and the high capital cost of LRT on a freeway right-of-way do not allow this alternative to meet the cost-effectiveness criteria developed by the Council. Thus the elimination of LRT from further study in the EIS is consistent with Council policy.

The draft EIS adequately addresses transportation as it relates to the Council's Transportation Policy Plan.

Natural Resources (Judy Hartsoe)

Wetlands

Eighty-one wetlands, covering over 400 acres, were identified in the DEIS within close proximity of the I-494 right-of-way. The majority of the wetlands are DNR Types 3, 4, or 5. Nearly one-third of the wetlands have been significantly changed or disturbed from their original condition by previous activities. Of the 81 wetlands, 18 are excavated open water ponds. Several other wetlands have been altered to some extent through ditching activities.

Twenty-two of the wetlands are DNR protected wetlands. Most of the rest fall under the jurisdiction of the Army Corps of Engineers. Several wet ditches also line the construction area. These are primarily catch basins for roadway runoff and surface flow routed through culverts. Of the original 81 wetlands identified, a total of 41 wetlands have been further identified as having the potential to be impacted by the proposed project. Twenty-five of these wetlands are less than an acre in size.

Fourteen wetlands, covering approximately 2.3 acres would be impacted through filling by the addition of 2 lanes in each direction. The first interchange sub-alternative options could impact an additional 19 wetlands, covering 9 more acres. The interchange impacts may affect between 15 and 27 wetlands; approximately 7 to 10.6 acres. The overall range of wetland impacts would be 9.3 to 12.8 acres, affecting 29 to 41 wetlands.

At this point in the planning stage, adequate information is not available to define specific mitigation requirements. Different options that could be used to avoid and/or minimize the amount of wetland loss and areas that could potentially be used for wetland compensation is described briefly in the DEIS. Replacement ratios are not discussed in the mitigation section.

The DEIS does not discuss the replacement of wetlands which cannot be avoided. In developing the replacement plans, the proposer should be aware that Council Policy 3-6 of the *Water Resources Management and Development Guide/Policy Plan* requires a 1:1 mitigation for lost floodplain storage and wetlands. In addition, Council policy calls for mitigation to occur in the same subwatershed if possible.

2 2. Mn/DOT will comply with all applicable floodplain and wetland replacement requirements in the design and construction of the Preferred Alternative.

Minnesota River

The Metropolitan Council's *Water Resources Management Wastewater Treatment and Handling Policy Plan* documents the need to reduce nonpoint source pollution to the Minnesota River basin through regulating land development. The Metropolitan Council also has the authority to review and comment on environmental reviews to implement its policy on reducing nonpoint source pollution. These comments generally focus on the need to reduce nonpoint source pollution and the possible tools that may be used to accomplish this task. In 1990, MPCA and EPA agreed on a goal to reduce nonpoint source pollution in the Minnesota River by 40% from pre-1980 levels. This goal is to be accomplished by 1996. The Metropolitan Council is committed to reducing nonpoint pollution in the Minnesota River basin and will review this DEIS according to its policies on nonpoint source pollution.

The Minnesota River water quality would be impacted by the runoff from the 2 build alternatives. For the section of I-494 east of 35W to 34th Avenue, all of the runoff goes into the Minnesota River. Adding land to the highway will increase the impervious surface and the runoff which discharges to the Minnesota River. A sediment pond is being proposed as part of the mitigation to detain the runoff before it is directly released into the Minnesota River.

Impacts from the increased runoff into Nine Mile Creek may also have an effect on the Minnesota River. Mitigation has been proposed to correct for the impacts. Two of the mitigation alternatives proposed relate to ponding. National Urban Runoff Program (NURP) standards are discussed as possible standards for the treatment ponds but no specs are given for the proposed ponds to determine how this ponding will reduce the pollutant load in the Minnesota River. The other mitigation alternatives are: to construct new storm sewers to replace inplace storm sewers and accommodate increased runoff; and to reconstruct the Wood Lake outlet.

The DEIS proposes NURP standard treatment ponds be installed at the proposed outlets to reduce the impacts of the runoff to these receiving waters. This is consistent with the Council's interim strategy for the Minnesota River basin under which local governments must adopt design standards for new stormwater ponds that will reduce the contaminant loadings from stormwater runoff.

Other Surface Water Quality

Because of the increased impervious surface and increased traffic, there is a potential to degrade water quality in other water bodies receiving runoff from I-494. Highway runoff has a limited number of associated pollutants. A Federal Highway Administration study has identified 4 dominant pollutants in highway runoff; phosphorus, copper, lead, and zinc. Phosphorus is the pollutant of primary concern for lakes and metals for receiving waters; used here to mean lakes and streams.

Several waterbodies are impacted from runoff from the I-494 corridor. Surface water runoff goes through as series of depressions and ditches before it discharges into Bryant Lake. Runoff also goes through Nord Myr which is a shallow marsh Type 3 wetland, Lake Smetana which is a lake and a Type 5 wetland, Nine Mile Creek, and Minnehaha Creek. Runoff west of I-35W to TH 169 goes to Nine Mile Creek. Runoff between TH 62 and TH 212 discharges to proposed ponds, then to Bryant Lake. Runoff from TH 212 to around 78th Street discharges to Lake Smetana and runoff from 78th Street to TH 169 discharges to a proposed treatment pond.

3 3. Detailed design specifications for the proposed ponding will be developed during final highway design, consistent with applicable federal, state and local water quality treatment standards. Specifications will be available for review at that time.

Phosphorus is of primary concern in lakes because it is the limiting nutrient that promotes algal growth. All of the lakes that will receive runoff from the highway are currently eutrophic and the small net increase in phosphorus loading from the proposed highway will only slightly decrease the quality of these lakes. Phosphorus does not have the same effect on streams as it does on lakes. Streams do not allow the phosphorus the residence time it needs to stimulate algal growth. Phosphorus can be greatly reduced by installation of wet detention ponds at the outlet of storm sewer systems.

Water quality analysis for the proposed I-494 reconstruction revealed that the roadway contribution of copper into Nine Mile Creek would exceed the EPA acute criteria for rainfall events. The roadway contribution of all pollutants into Nine Mile Creek would exceed the EPA acute criteria for the mixed rain/snowmelt events. It was determined that acute water quality standards for the creeks may be exceeded even after treatment. The implementation of NURP treatment basins should effectively mitigate the water quality of the discharge since mixed events occur both infrequently and during favorable flow conditions in the creek.

The DEIS proposes NURP standard treatment ponds be installed at the proposed outlets to reduce the impacts of the runoff to these receiving waters. This is consistent with the Council's interim strategy for the Minnesota River basin under which local governments must adopt design standards for new stormwater ponds that will reduce the contaminant loadings from stormwater runoff. However, until a specific alternative is chosen, the details of the ponding requirements and mitigation by segment is not given. These ponds along with the other suggested mitigation measures should reduce the impacts of the increased runoff to the water quality of the receiving waters.

Groundwater

Municipal wells in the proposed construction area are generally located in the Prairie du Chien-Jordan aquifer. The bedrock in the area consists of the St. Peter on the surface to the Prairie du Chien-Jordan, the Franconian-Ironton-Galesville, to the Mount Simon-Hinckley. The water table profile ranges from an elevation of 920 to 790. The proposed reconstruction grades are at least 5' to 75' above the water table in the study area. The decrease in pervious area would reduce the amount of groundwater recharging in the area, but it is anticipated that the net impact will be negligible.

No municipal wells will be impacted by the construction. Private wells, abandoned wells, or unused commercial, industrial or irrigation wells encountered during sealing the reconstruction would require sealing by a licensed contractor.

Parks (Arne Stefferud)

If park land acquired with Regional Park and Open Space funds is needed for road construction (this may be the case in the vicinity of East Bush Lake Rd.), the DEIS should indicate that the Metropolitan Council would have to approve releasing a restrictive covenant on the land before it could be used for the highway. This notation should be made in the section on permits and approvals. In all other respects the DEIS appears to adequately address impacts on parks and trails.

Housing (Audrey Dougherty)

The primary housing concern is addressed in Housing Policy 27, which states in part:

> "Agencies doing housing redevelopment should make every effort to provide suitable and acceptable replacement housing to all people displaced from their residences by public action..."

As noted in the Draft EIS, both build alternatives indicate the possible displacement of between 270 and 290 households. The document addresses this issue by stating that the Department of Transportation will comply with state laws requiring relocation payments and services.

In order to adequately assess the impact on both the neighborhoods and the people, it would be important to have information on the prices of the homes being removed, the rent levels of affected multifamily units, as well as the residents' income levels. In addition, the Draft EIS should identify what, if any, coordination has taken place with regard to other major projects that may require removal of homes and relocation of Richfield residents, such as major airport expansion.

Conversations with city staff indicate that Richfield's present multifamily vacancy rate of 4.8 percent, or 237 units, would be adequate to absorb the 144 renter households that would be displaced by the expansion of I-494. However, that number of vacant units may not provide adequate opportunities for rental choices, particularly if there is further removal of homes and displacement of residents due to other projects.

The Council's December 1989 review of the Scoping Document noted the concern of safety in pedestrian and bicycle movement. The Draft EIS discussed that issue by noting that while it is possible these movements may be negatively impacted by the upgrading of interchanges within the project area, the impacts could be mitigated by constructing additional grade-separated crossings of I-494. These crossings would increase pedestrian and bicycle accessibility, mobility and safety. The Department states that the design of interchanges and highway crossings will take these matters into account.

FINDINGS

1. I-494 is within the MUSA and traverses two regional business concentrations.

2. I-494 is a principal arterial which needs reconstruction due to high traffic volumes, poor pavement conditions and areas of unsafe design. The Transportation Policy Plan recommends improvements to the road, specifically meters, bypass ramps and addition of an HOV lane (2 lanes between TH 100 and TH 169).

3. Since details of ponding requirements and wetland mitigation will not be determined until a specific alternative is chosen, Council staff should stay involved during the design of the project. The following issues will be further refined during the design phase:

   a. A number of wetlands will be impacted by the construction of this facility. The overall range of wetland impacts would be 9.3 to 12.8 acres, affecting 29 to 41 wetlands. There is a need for careful mitigation of wetland loss once the alternative

4. Detailed design specifications for the proposed ponding will be developed during final highway design. Specifications will be available for review at that time.

   As noted in Response 3, above, water quality treatment measures will be provided consistent with applicable federal, state and local standards. These standards are more stringent than those which were in place when I-494 was originally constructed. Therefore, post-construction conditions (with mitigation measures as discussed in Section 6.3.4 of the FEIS) would result in improved water quality relative to existing conditions.

5. The Final Section 4(f)/6(f) Park Evaluation is presented in Section 8.0 of the FEIS. This section includes a discussion of the requirements for impacted parklands funded through the Metropolitan Council's Regional Park and Open Space program. This requirement has been noted in Section 11.9 of the FEIS.

6. Information regarding the economic characterization of the households required to be relocated with implementation of the Preferred Alternative is presented in Section 5.2.3.2 of the FEIS.

   The level of right-of-way impacts for the I-494 project has been reduced in comparison to the analysis presented in the DEIS. For example, in the DEIS it was estimated between 277 and 291 dwelling units would be displaced. This compares with 57 dwelling units identified in the FEIS. In general, this is due to the reduced scale of the Preferred Alternative relative to the "worst case" right-of-way impacts addressed in the DEIS. Under the Preferred Alternative, no attached (multi-family) residences would be acquired.

   It is believed that most of the right-of-way properties associated with the expansion of the Minneapolis-St. Paul International Airport (MSP) have been acquired since this comment was written in 1992. The airport expansion is currently under way. The I-494 reconstruction phase in the general vicinity of MSP is not anticipated to begin for at least ten years.

   The residential relocation analysis presented in Section 5.3 of the FEIS concludes that there is a reasonably good chance of finding suitable replacement housing in the same price ranges as the parcels that would be acquired. Although an adequate supply of comparable replacement housing sites can generally be found, an administrative process called Last Resort Housing is available to address situations where the supply of replacement sites is inadequate. Under the provisions of Relocation: Know Your Rights and Benefits (Mn/DOT), Last Resort Housing guarantees that comparable housing will be provided before the owner is required to move.

is selected and the potential wetland and water quality impacts have been refined.

b. The Minnesota River will be impacted directly and indirectly from the proposed construction. Mitigation has been proposed to correct for the impacts. NURP standards are discussed as possible standards for the treatment ponds but no specs are given for the proposed ponds to determine how this ponding will reduce the pollutant load in the Minnesota River.

c. A number of detention ponds are being proposed to treat the storm water before it is discharged to the area creeks or lakes. The proper siting of these detention ponds can help to maintain the quality of stormwater runoff into the receiving waters.

4. Impact on groundwater is minimal. Private wells, abandoned wells, or unused commercial, industrial or irrigation wells that may be encountered during the reconstruction would require sealing by a licensed contractor.

5. The Department of Transportation will comply with state laws requiring relocation payments and services.

6. The draft EIS appears to be complete and adequate with respect to Council policy with the following exceptions:

a. The DEIS does not acknowledge that if park land acquired with Regional Park and Open Space funds is needed for road construction, the Metropolitan Council would have to release a restrictive covenant on the land.

b. The DEIS does not identify prices of homes being removed, rent levels of affected multi-family units , residents' income levels or whether any coordination has taken place with regard to other major projects, such as I-35W or major airport expansion, which may also require relocation of Richfield residents.

Recommendations

That this memorandum and findings be submitted to Mn/DOT as the Metropolitan Council's comments on the I-494 draft EIS.

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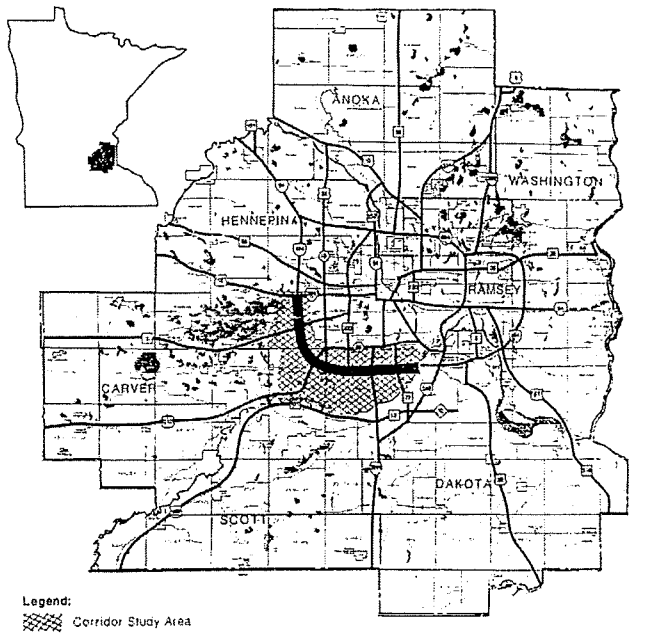

Source: Metropolitan Council Transportation Policy Plan

DRAFT ENVIRONMENTAL IMPACT STATEMENT

I-494 RECONSTRUCTION I-394 TO MINNESOTA RIVER

Figure 1.1

PROJECT LOCATION

0 5 10 Miles

HRW

The Minnesota Department of Transportation continues to coordinate the I-494 reconstruction project with all affected municipalities. Close coordination with the affected cities will be maintained upon initiation of right-of-way acquisition for the I-494 project.

7. As stated in Section 3.4.8 (Pedestrian and Bicyclist Movement) of the FEIS, existing crossings of I-494 will be replaced at or near existing locations. For bridges which will be replaced by Mn/DOT as part of the overall I-494 Reconstruction project, the design guidelines in Minnesota Bicycle Transportation Planning and Design Guidelines (Mn/DOT, June 1996) will be followed. All improvements will also be in compliance with the Americans with Disabilities Act. Mn/DOT will work with communities and agencies in the corridor to assure that any committed pedestrian/bicycle facility improvements are coordinated with I-494 reconstruction.

City of Bloomington

city of
bloomington, minnesota

Municipal Building • 2215 West Old Shakopee Road • Bloomington, Minnesota 55431-3096 • (612)881-5811 • FAX(612) 887-5844

Councilmembers
Jim Andrews
Carol S. Houle
Carol C. Johnson
Mark P. Mahon
Charles S. Schuler
Tom Spies

Neil W. Peterson
Mayor

May 11, 1992

Craig Robinson, P.E.
Minnesota Department of Transportation
Metro District West
2055 North Lilac Drive
Golden Valley, MN 55422

Re: **I-494 Draft Environmental Impact Statement**

Dear Mr. Robinson:

On May 11, 1992 the Bloomington City Council authorized transmittal of the following comments pertaining to the Interstate 494 Draft Environmental Impact Statement (DEIS).

1) A build alternative to expand I-494 is necessary due to existing and increasing traffic congestion; the impact of increased congestion upon Bloomington residents, business and workers and the large diversion of future trips from an unimproved I-494 onto local streets would be devastating.

2) The City supports Alternative 2A - Adding a High Occupancy Vehicle (HOV) lane in each direction, except for between TH212 and TH100 where both a general use lane and a HOV lane would be added in each direction. Alternative 2A also reserves space for a future additional lane in each direction and bridges over I-494 would be constructed to accomodate the fifth lane. Based on year 2010 traffic forecasts, and the increased cost and difficulty of future lane additions, the City recommends adding a fifth lane in each direction, where feasible, as part of the initial construction.

3) 79th and 80th Streets, Bridge Road, Norman Center Drive and Green Valley Drive (I-494 Ring Route between 34th Avenue and East Bush Lake Road) must be upgraded as part of the I-494 project prior to mainline reconstruction. It is vital that the 79th/80th Street bridge over I-35W and related improvements be the first construction project.

4) The single point design is the preferred alternative for the East Bush Lake Road interchange. This design has the least environmental impact, is the lowest cost, requires the smallest amount of right of way acquisition, and is the most efficient interchange design. The folded diamonds to the east alternative is not acceptable due to the extensive impact upon business properties and the high cost of right of way acquisition. The Soo Line Railroad right of way should be preserved for future transportation purposes. Full access at East Bush Lake Road is very important to mobility in the Northwest portion of Bloomington.

5) Wetland areas and City park lands within designated rights of way should be replaced prior to disturbance and replacement park facilities should be operable prior to closure of existing park facilities. Replacement land for Beaverbrook Park should be acquired as soon as possible.

6) No access should be provided between northbound C.S.A.H. 18 and eastbound Highwood Drive (access to and from the north on C.S.A.H. 18 at Highwood is not proposed in the DEIS). However, the interchange should be designed to accommodate the northbound to eastbound movement in the future, should the need and desire for access arise.

7) The 1500 foot long, $35-40 million main line bridge/viaduct at Nine Mile Creek, proposed as a mitigation measure for wetland and 6(f) park land impacts, does not appear to be justified given the limited scope of impact and the ability to provide replacement park land and to create replacement value wetlands at a much smaller public cost. The mainline bridge over Nine Mile Creek should be designed for drainage and flood control only.

8) The Final EIS should include a construction staging plan and schedule. The staging plan should designate the addition of a general purpose lane in each direction between TH100 and TH212 as an interim project (pre-1996) and should also include an analysis of traffic flow and by-pass routes during the entire construction period. All efforts should be made to retain mobility and access during the construction period.

9) A corridor-wide construction mitigation program should be developed and MnDOT should provide a Congestion Mitigation Coordinator to implement the mitigation and transportation demand management strategies.

10) HOV bypass ramps and approaches should be added to all entrance ramps by the end of 1994.

11) Park and Ride facilities, at appropriate locations near I-494 interchanges, (i.e. 84th Street and Normandale Boulevard) should be part of the reconstruction project.

12) Sidewalks and bike lanes should be included on all bridges over I-494. Additional grade separated bicycle and pedestrian crossings of I-494 should provided at or near the existing Soo Line railroad bridges.

13) The Nord Avenue bridge over I-494 must be constructed as part of the I-494 reconstruction project.

14) Right of way at key locations along I-494 should be preserved for transit loading and unloading and future public transportation facility needs.

15) The I-35W/I-494 directional interchange ramps should include HOV bypass lanes to allow HOV use to function as a system rather than isolated elements. Space for HOV bypass lanes should be reserved at other directional interchanges where HOV lanes or ramp metering is anticipated.

16) The City supports the policy of locating dual purpose ponds at the outlets of all I-494 storm sewer systems. The ponds should be designed to meet N.U.R.P. guidelines.

1

1. A detailed construction staging plan will be completed during final design for each phase of construction. A Mn/DOT Corridor Coordinator will oversee construction phasing and activities to limit traffic and access impacts associated with the I-494 reconstruction project to the degree practicable.

17) The City encourages MnDOT to continue to analyze energy consumption and supports efforts to develop alternative transportation technologies (such as electric and natural gas vehicles) to help reduce air quality problems.

18) MnDOT should develop a comprehensive relocation program, with City participation, to encourage business retention. The final design and right of way needs should be identified as soon as possible to facilitate business and land use planning decisions.

19) In addition to the noise walls proposed in the DEIS, a noise wall should be constructed south of I-494 between East Bush Lake Road and the west boundary of the City.

20) MnDOT is requested to extend a willing and responsive attitude of working with property owners for early acquisition of rights of way when hardship circumstances exist.

Thank you for the opportunity to review the I-494 DEIS. If you have any questions regarding this letter contact Greg Ingraham, Senior Planner at 887-9636.

Sincerely,

Mayor Neil Peterson

cc: Stephen Bahler, FHWA
Connie Kozlak, Met Council
Sondra Simonson, Met Council

2

2. The FEIS includes an analysis of noise impacts and potential mitigation measures for the Preferred Alternative. This analysis utilized the methodology developed by Mn/DOT, with MPCA concurrence, for predicting future traffic-related noise impacts and an assessment of cost effectiveness of implementing noise mitigation measures (noise walls). Based on this analysis, no noise wall construction is proposed as mitigation south of I-494 west of East Bush Lake Road in the FEIS. A summary of the analysis and the findings is presented in Section 6.2.5.

CITY OF RICHFIELD

6700 Portland Avenue · Richfield, Minnesota 55423-2599

City Manager: James D. Prosser
Mayor: Martin Kirsch
Council: William Bullock, Michael Sandahl, Ivan Luderman, Kristal Stokes

June 25, 1992

Mr. Craig Robinson
I-494 Corridor Manager
Minnesota Department of Transportation
Metro District - West
2055 North Lilac Drive
Golden Valley, MN 55422

Subject: State Project 2785-261
Draft Environmental Impact Statement for
I-494 in Hennepin and Dakota Counties
From: I-394 in Minnetonka
To: Minnesota River

Dear Mr. Robinson:

INTRODUCTION
The City of Richfield supports the Minnesota Department of Transportation's proposed action to improve I-494.

The project's goals, as summarized in the draft EIS, are: improve safety; increase person-carrying capacity of I-494; improve roadway condition; maintain or improve travel times and mainline traffic operations on I-494; maintain reasonably suitable and convenient access for existing development along I-494; minimize the amount of right of way needed for I-494; eliminate conditions that lead to ponding at low points on the I-494 mainline or ramps except for rare events; and, minimize impacts to natural environment.

The City of Richfield supports the above project goals and believes that all decisions regarding alternatives and design must be measured by the extent to which the project goals are met.

The City of Richfield recognized early on that expansion of I-494 was both necessary and potentially damaging to Richfield. We, therefore, engaged in a proactive planning process to view expansion of I-494 as an opportunity for Richfield.

The basic principals which served as our guide during this process included the following:

- The residential character of our community is extremely important and we must protect that environment.
- Retention of the commercial area along I-494 is very important to us.

- The construction of a parallel minor arterial was important to improve safety on I-494 and relieve I-494 from handling short and medium length trips.
- The improvements to I-494 should be designed so that the roadway will not be obsolete by the time it is completed. Rather, the design should have the flexibility to meet forecasted demand for the next generation.
- The final design selected for I-494 should have a strong and flexible transit component and incorporate travel demand management methods.

RICHFIELD'S POSITION ON I-494 EXPANSION
The City opposes the No Build alternative as inadequate to address the transportation needs in the I-494 Corridor for the next twenty years.

Richfield supports the Alternative 2A- Add Two Lanes in Each Direction With One of Those Lanes Designated as an HOV Lane for the reconstruction of the mainlines, and the sub-alternative- Base Interchange Design (Ring Road) for the reconstruction of the I-35W/I-494 interchange.

THE ADD TWO LANES IN EACH DIRECTION WITH ONE OF THOSE LANES DESIGNATED AS AN HOV LANE IS THE SUPERIOR ALTERNATIVE
Based on the recommendations of our Citizens' Traffic Advisory Committee, residents and institutions within our City, we strongly recommend that the Minnesota Department of Transportation choose Alternative 2A- Add Two Lanes in Each Direction With One of Those Lanes Designated as an HOV Lane. This option is shown to move the most people, cause the least amount of traffic to be diverted to local streets, is the safest, and will cause less pollution to our cities.

It is clear that an effort must be made to decrease the number of people riding one per car in peak traffic times. Building HOV (High Occupancy Vehicle) Lanes provides the incentive needed to encourage people to carpool. This approach to transit recognizes that the Twin Cities area has not embraced high density residential development nor does it maintain a single focus employment center.

The construction of HOV Lanes on I-494 coupled with those proposed for I-35W and those already in operation on I-394 will all work together to enhance buses, vanpools and carpools as attractive alternatives to the single occupant automobile.

Richfield favors the addition of two lanes in both directions in order to meet the forecasted travel demand in the draft EIS. We believe the need for an adequately sized facility far outweighs the extra cost of building two instead of only one lane in each direction. The draft EIS also shows that the amount of right of way needed for the second lane is only slightly more than the land needed to build one additional lane in each direction. It is our belief that it would be less disruptive to the community to acquire now all of the land needed for the construction of the Add 2 Lanes option.

We firmly believe that both the HOV lane and one additional general purpose lane in each direction should be built now to relieve the congestion that occurs at numerous locations along the entire length of I-494.

FAVOR BASE INTERCHANGE DESIGN (RING ROAD) AT I-35W/I-494
The proposed Ring Road appears to be superior to the Overlapping Diamonds sub-alternative for the I35W/I494 interchange. Plans for the Ring Road design offer certain advantages to the City of Richfield. They are:

- Provides good access to local streets;
- Provides local access across freeways between Richfield and Bloomington that currently isn't available;
- Limits right of way needed from Donaldson Park;
- Requires less right of way acquisition; and,
- Is less costly than the Overlapping Diamonds subalternative.

However, The City of Richfield is still concerned that ramp entrances provide adequate storage space so that metering of entrance ramps does not cause severe back ups of traffic that result in blocking of local streets. If ramp entrances can not provide adequate storage space, grade separated frontage roads should be provided so local streets are not obstructed by vehicles waiting to enter the freeways.

WATER RESOURCES
We are pleased that the draft EIS has identified a proposed gravity outlet from Wood Lake to the improved I-494 trunk storm sewer as part of the improvements proposed for I-494. This outlet has the potential for considerable cost savings to correct storm drainage problems resulting from the existing and proposed I-35W.

CLOSURE OF 12TH AVENUE AND NICOLLET AVENUE INTERCHANGES
Richfield recognizes the importance of closing the interchanges at 12th Avenue and Nicollet Avenue to improve safety on I-494 by eliminating the excessive weaving that occurs from entrances and exits located too close to each other. However, we want it to be clearly understood that all of the improvements on 77th Street including the connection to 24th Avenue and the new Portland Avenue interchange must be completed before Richfield will accept the closure of the two interchanges. This position is based on our concern that property owners along the north frontage road are provided adequate access to I-494 throughout construction of the proposed I-494 improvements.

RIGHT OF WAY NEEDS ON LOCAL STREETS
A review of Figures 5.1-5.12 of the draft EIS did not clearly show the additional right of way needed to widen local cross streets at interchanges to assure adequate traffic capacity on these local streets. In particular, we are concerned with the additional right of way needed at Portland, Lyndale and Penn Avenues. **1**

BIKE/PEDESTRIAN TRAILS
With regard to bikeways and pedestrian trails, Richfield has adopted a Master Park Plan that supports the use of surplus land for bike/pedestrian trails and the provision of pedestrian and bikeway crossings of freeways. In our review of the draft EIS, however, we found the discussion of mitigation for these facilities to be vague. We recommend **2**

that the improvements to I-494 include additional bikeways and pedestrian crossings over the freeway consistent with our Master Park Plan. We believe crossings are needed at the Soo Line to connect Richfield and Bloomington to the Regional Park System, at 12th Avenue, Nicollet Avenue, Knox Avenue and Xerxes Avenue. **2**

NOISE WALLS AND LANDSCAPING
The City supports the use of noise walls and landscaping to ensure compatibility of the freeway with Richfield's residential neighborhoods. The design of these special features should be done with the involvement of the affected neighborhoods.

CONCLUSION
In conclusion, the City of Richfield endorses the findings of the I-494 draft EIS. The analysis demonstrates that the Alternative 2A- Add Two Lanes in Each Direction With One of Those Lanes Designated as an HOV Lane for the reconstruction of the mainlines best meets the project's goals. Also, the sub-alternative- Base Interchange Design (Ring Road) for the reconstruction of the I-35W/I-494 Interchange provides greater benefits at lower cost than the other design option for this critical interchange.

Sincerely,

William Bullock
Mayor Pro Tempore

WB:ds

1. The right-of-way analysis (FEIS Section 5.2) and graphic depiction (Figures 3.1 – 3.12) account for widening Portland and Lyndale Avenues in the interchange areas. However, no improvements beyond what is required to transition from the immediate interchange area to the existing local roadway are included. Right-of-way impacts associated with improvements at the Penn Avenue interchange area are being addressed in an environmental document prepared by the City of Richfield for improvements to the Penn Avenue interchange. These improvements are needed in support of a large scale development project in the vicinity of the Penn Avenue interchange.

2. As discussed in Section 3.4.8 of the FEIS, all existing freeway pedestrian/bicycle crossings will be maintained under the Preferred Alternative. Bridges replaced by Mn/DOT will be rebuilt to current standards (see Minnesota Bridge Transportation Planning and Decision Guidelines, Mn/DOT, June 1996.) The new bridges will include improved sidewalks to meet Americans with Disabilities Act standards. Existing pedestrian crossings will also be maintained. Mn/DOT will coordinate with the City in implementing any future pedestrian/bicycle trail crossing that is part of an approved plan.

City of Edina

June 18, 1992

Craig Robinson, P.E.
Minnesota Department of Transportation
Metro District West
2055 North Lilac Drive
Golden Valley, MN 55422

RE: I-494 Draft Environmental Impact Statement

Dear Mr. Robinson:

On May 15, 1992, the Edina City Council authorized transmittal of the enclosed resolution pertaining to the Interstate 494 Draft Environmental Impact Statement (DEIS). This information is to be included in public record.

Should you have any questions about the resolution please contact me at 927-8861.

Sincerely,

Francis J. Hoffman, P.E.
Director of Public Works
and City Engineer

FJH/clf

City Hall
4801 WEST 50TH STREET
EDINA, MINNESOTA 55424-1394

(612) 927-8861
FAX (612) 927-7645
TDD (612) 927-5461

City of Edina

RESOLUTION
I-494 DRAFT ENVIRONMENTAL IMPACT STATEMENT

WHEREAS, a Draft Environmental Impact Statement (DEIS), dated April 1992, for I-494 Reconstruction from I-394 to the Minnesota River has been prepared jointly by the Minnesota Department of Transportation (Mn/DOT), the Federal Highway Administration and the Metropolitan Council, and

WHEREAS, on June 10, 1992, Mn/DOT conducted a public hearing on the DEIS to provide the opportunity for testimony by all individuals, businesses, agencies and municipalities that may be affected by the proposed reconstruction, and

WHEREAS, this Council has reviewed the DEIS as presented at the June 10, 1992, public hearing;

BE IT RESOLVED, that the City Council of the City of Edina, Minnesota, hereby submits the following comments on the I-494 DEIS:

1) A build alternative to expand I-494 is important due to existing and expected increasing traffic congestion. The City supports Build Alternatives 2 or 2A, to add two lanes in each direction throughout the entire length of the corridor, because right-of-way acquisition purchases for Build Alternative 1 (to add one lane in each direction) is almost the same as for Build Alternative 2 (to add two lanes).

2) The single point design alternative for the East Bush Lake Road interchange has the least environmental impact, is the lowest cost, requires the smallest amount of right-of-way acquisition, and is the most efficient interchange design. The folded diamonds to the east alternative is not acceptable due to the extensive impact upon business properties and the high cost of right-of-way acquisition. Full access at East Bush Lake Road is very important to mobility in southern Edina.

3) The 1500 foot long, $35-40 Million main line bridge/viaduct at Nine Mile Creek, proposed as a mitigation measure for wetland and 6(f) park land impacts, does not appear to be justified given the limited scope of impact and the ability to provide replacement parkland and to create replacement value wetlands at a much smaller public cost. The main line bridge over Nine Mile Creek should be designed for drainage and flood control only.

City Hall
4801 WEST 50TH STREET
EDINA, MINNESOTA 55424-1394

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Resolution
I-494 Draft EIS
Page 2

4) The Final EIS should include a construction staging plan and schedule. All efforts should be made to retain mobility and access during the construction period.

5) The 77th Street/T.H. 100 interchange alternative should be analyzed to provide the minimum disruption to adjacent properties as opposed to the maximum design which involves taking of homes and businesses.

6) A corridor-wide construction mitigation program should be developed and Mn/DOT should provide a congestion mitigation coordinator to implement the mitigation and transportation demand management strategies.

7) Sidewalks and consideration for bike lane crossings over I-494 connecting regional recreational facilities should be included in bridge designs over I-494. Examples: locations such as Normandale Lake from Edina and the recreational facilities west of Normandale Lake.

8) The City of Edina encourages Mn/DOT to continue to analyze energy consumption and supports efforts to develop alternative transportation technologies (such as electric and natural gas vehicles) to help reduce air quality problems.

9) Mn/DOT should develop a comprehensive relocation program to encourage business retention. The final design and right-of-way needs should be identified as soon as possible to facilitate business and land use planning decisions.

ADOPTED this 15th day of June, 1992.

STATE OF MINNESOTA)
COUNTY OF HENNEPIN) SS
CITY OF EDINA)

CERTIFICATE OF CITY CLERK

I, the undersigned duly appointed and acting City Clerk for the City of Edina do hereby certify that the attached and foregoing Resolution is a true and correct copy of the Resolution dauly adopted by the Edina City Council at its regular meeting of June 15, 1992, and as recorded in the Minutes of said regular meeting.

WITNESS my hand and seal of said City this 18th day of June, 1992.

Marcella M. Daehn
City Clerk

1
2
1

1. A detailed construction staging plan will be completed during final design for each phase of construction. A Mn/DOT Corridor Coordinator will oversee construction phasing and activities to limit traffic and access impacts associated with the I-494 reconstruction project to the degree practicable.

2. The Preferred Alternative design for this interchange does not necessitate the acquisition of any properties.

RESOLUTION NO. 92-119

STATE OF MINNESOTA)
) ss.
COUNTY OF HENNEPIN)

I, the undersigned being the duly qualified and acting Deputy City Clerk of the City of Eden Prairie, hereby certify that the attached and foregoing is a true and correct copy of a resolution duly adopted by the City Council of Eden Prairie at its meeting on June 2, 1992, as the same is recorded in the minutes of the meeting of such Council for said date, on file and of record in my office.

Dated this 10th day of June, 1992.

Sharon Sullivan-Alvord, Deputy City Clerk
CITY OF EDEN PRAIRIE

SEAL

CITY OF EDEN PRAIRIE
HENNEPIN COUNTY, MINNESOTA

RESOLUTION NO. 92-119

RESOLUTION COMMENTING ON
I-494 DRAFT ENVIRONMENTAL IMPACT STATEMENT

WHEREAS, the Commissioner of Transportation for the State of Minnesota has prepared a Draft Environmental Impact Statement (DEIS) for improvements to I-494 from I-394 to the Minnesota River near the Minneapolis-St. Paul International Airport;

NOW, THEREFORE, BE IT RESOLVED that the Eden Prairie City Council provide the following comments to MnDOT regarding the I-494 DEIS:

1. The City of Eden Prairie supports the "Add two-lane" alternative with serious consideration given to designating the inside lane as a High Occupancy Vehicle (HOV) lane.

2. The City of Eden Prairie supports the I-494 layout alternative, as proposed, from T.H.62 (CSAH 62) to T.H.169 (Old CSAH 18) contingent upon the inclusion of the Highwood Avenue/West 78th Street ramps to/from the south on any T.H. 169 (Old CSAH 18) interchange improvements.

ADOPTED by the Eden Prairie City Council on June 2, 1992.

Douglas B. Tenpas, Mayor

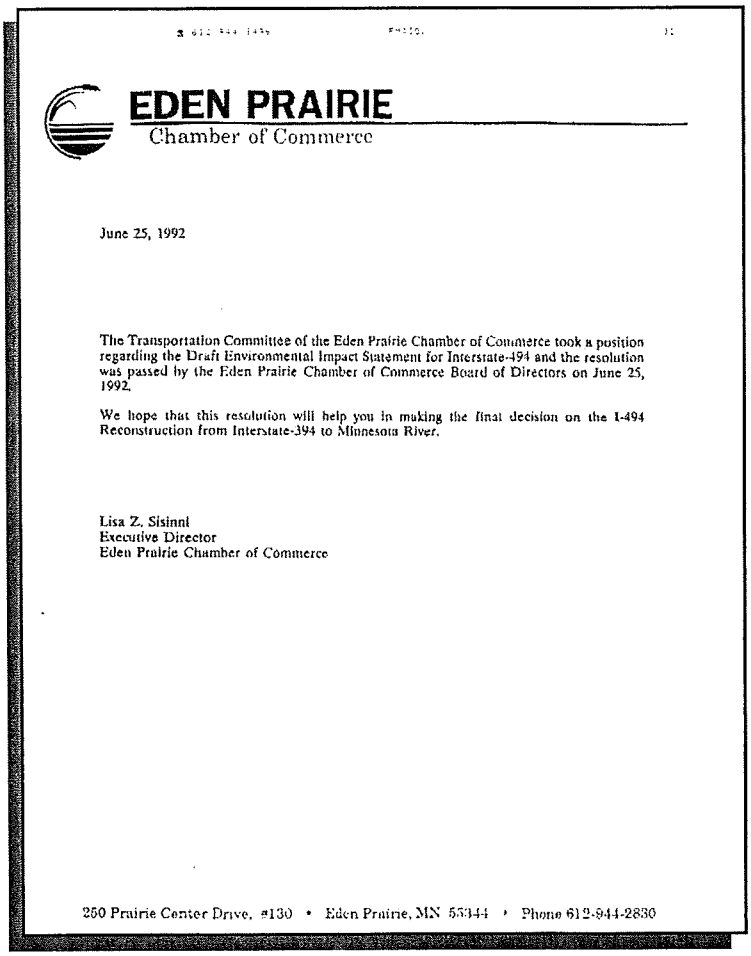
ATTEST

SEAL

John D. Frane, City Clerk

City of Eden Prairie

No response required.



EDEN PRAIRIE
Chamber of Commerce

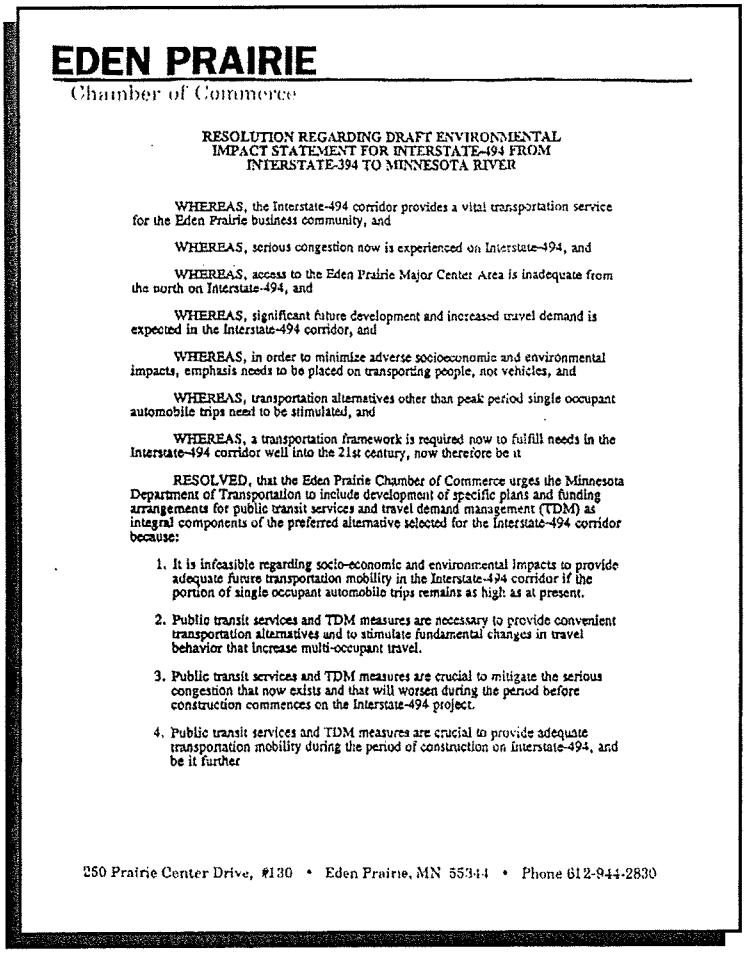
June 25, 1992

The Transportation Committee of the Eden Prairie Chamber of Commerce took a position regarding the Draft Environmental Impact Statement for Interstate-494 and the resolution was passed by the Eden Prairie Chamber of Commerce Board of Directors on June 25, 1992.

We hope that this resolution will help you in making the final decision on the I-494 Reconstruction from Interstate-394 to Minnesota River.

Lisa Z. Sisinni
Executive Director
Eden Prairie Chamber of Commerce

250 Prairie Center Drive, #130 • Eden Prairie, MN 55344 • Phone 612-944-2830



EDEN PRAIRIE
Chamber of Commerce

RESOLUTION REGARDING DRAFT ENVIRONMENTAL IMPACT STATEMENT FOR INTERSTATE-494 FROM INTERSTATE-394 TO MINNESOTA RIVER

WHEREAS, the Interstate-494 corridor provides a vital transportation service for the Eden Prairie business community, and

WHEREAS, serious congestion now is experienced on Interstate-494, and

WHEREAS, access to the Eden Prairie Major Center Area is inadequate from the north on Interstate-494, and

WHEREAS, significant future development and increased travel demand is expected in the Interstate-494 corridor, and

WHEREAS, in order to minimize adverse socioeconomic and environmental impacts, emphasis needs to be placed on transporting people, not vehicles, and

WHEREAS, transportation alternatives other than peak period single occupant automobile trips need to be stimulated, and

WHEREAS, a transportation framework is required now to fulfill needs in the Interstate-494 corridor well into the 21st century, now therefore be it

RESOLVED, that the Eden Prairie Chamber of Commerce urges the Minnesota Department of Transportation to include development of specific plans and funding arrangements for public transit services and travel demand management (TDM) as integral components of the preferred alternative selected for the Interstate-494 corridor because:

1. It is infeasible regarding socio-economic and environmental impacts to provide adequate future transportation mobility in the Interstate-494 corridor if the portion of single occupant automobile trips remains as high as at present.
2. Public transit services and TDM measures are necessary to provide convenient transportation alternatives and to stimulate fundamental changes in travel behavior that increase multi-occupant travel.
3. Public transit services and TDM measures are crucial to mitigate the serious congestion that now exists and that will worsen during the period before construction commences on the Interstate-494 project.
4. Public transit services and TDM measures are crucial to provide adequate transportation mobility during the period of construction on Interstate-494, and be it further

250 Prairie Center Drive, #130 • Eden Prairie, MN 55344 • Phone 612-944-2830

Eden Prairie Chamber of Commerce

No response required.

RESOLVED, that the Chamber of Commerce urges the Minnesota Department of Transportation to capitalize on evolving technologies and land use/transportation relationships by including the following three components in the preferred alternative for the Interstate 494 corridor:

a. Intelligent vehicle highway systems

b. Alternate fuel vehicles

c. Land use planning and controls, and be it further

RESOLVED, that the Chamber of Commerce supports Build Alternative 1a as the roadway upgrading component of the preferred alternative for the Interstate 494 corridor because:

1. With HOV lanes, this alternative stimulates use of public transportation services, car pooling, and other multi-occupant travel modes

2. This alternative includes limited additional capacity for single-occupant vehicles

3. This alternative provides sufficient overall transportation capacity to meet needs expected through year 2010, and be it further

RESOLVED, that the Chamber of Commerce supports acquisition of right-of-way and construction of bridges in the Interstate-494 corridor as would be needed for Build Alternative 2a because:

1. To respond to needs expected beyond 2010 for further improvements in person movement capacity

2. To maintain flexibility for providing that additional person movement capacity in whatever future manner would be most beneficial

This resolution was adopted by the Board of Directors of the Eden Prairie Chamber of Commerce on this 25th day of June 1992.

Board of Directors
Eden Prairie Chamber of Commerce

By _____
John Brand, President

Attest:

_____
Lisa Sisinni, Executive Vice-President

minnetonka

June 26, 1992

Mr. Craig Robinson, P.E.
I-494 Corridor Manager
Minnesota Department of Transportation
Metro District - West
2055 North Lilac Drive
Golden Valley, MN 55422

Dear Mr. Robinson:

The Minnetonka City Council adopted the attached resolution at their June 22 meeting which constitutes the official comments on the Draft Environmental Impact Statement for I-494. The City Council also asked that I send you minutes of the meeting approving the resolution which I have included.

One item that was not included in the resolution that MnDOT should also take into consideration is the timing of right-of-way acquisition. Until this project is approved, the owners of the properties that will be acquired will have difficulty in selling their property or making informed decisions about the future. It is requested that MnDOT make a decision regarding the need for the project within a reasonable period of time and that the timing of right-of-way acquisition meet the needs of those residents whose properties will be acquired.

Thank you for the opportunity to comment on the Draft Environmental Impact Statement.

Sincerely,

James F. Miller
City Manager

/kk

Enclosures: Resolution No. 92-9395
City Council Minutes 6/22/92

the city offices are located at 14600 minnetonka boulevard minnetonka, minnesota 55345-1597
office: (612)-939-8200 fax: (612)-939-8244

RESOLUTION NO. 92-9395

RESOLUTION APPROVING COMMENTS REGARDING THE DRAFT ENVIRONMENTAL IMPACT STATEMENT FOR THE RECONSTRUCTION OF I-494 PREPARED BY THE MINNESOTA DEPARTMENT OF TRANSPORTATION AND THE METROPOLITAN COUNCIL

BE IT RESOLVED by the City Council of the City of Minnetonka, Minnesota, as follows:

Section 1. Background

1.01 In 1986, work began on the I-494 Corridor Study in response to the anticipated need of capacity and safety problems on I-494 between the Minnesota River in Bloomington and I-394 in Minnetonka. This study was initiated by the cooperative efforts of the Metropolitan Council, MnDOT, the Regional Transit Board, the Metropolitan Airports Commission, Hennepin County and the Cities of Richfield, Bloomington, Edina, Eden Prairie and Minnetonka. The multi-agency cooperation was demonstrated by shared funding as well as representation throughout the study process.

1.02 On October 19, 1987, the Minnetonka City Council passed a resolution accepting the I-494 Corridor Study. The Corridor Study was the first step in identifying future transportation needs along I-494 and concluded with the recommendation that an Environmental Impact Study be completed and that steps be taken to examine the effectiveness of traffic reduction strategies.

1.03 The City of Minnetonka entered into contractual agreements in 1988 to participate in the funding of the I-494 EIS along with the other public agencies and "Improve I-494", a group of private developers, property owners and major businesses in the corridor; and to jointly establish the I-494 Joint Powers Organization, comprised of the five cities to participate in the preparation of the EIS and study travel demand management studies.

1.04 A series of six neighborhood meetings were held for Minnetonka residents along the I-494 Corridor to describe the proposed alternatives for I-494 and the environmental impacts of the proposed construction.

1.05 A public meeting was held on April 8 for Minnetonka residents to elicit comments regarding the draft I-494 EIS. Attached to this resolution are letters and petitions from Minnetonka residents regarding the proposed freeway reconstruction impacts.

Section 2. Findings

2.01 The City of Minnetonka finds that significant congestion will occur on the freeway and local transportation system unless capacity improvements are made to the mainline of I-494 and its interchanges.

RESOLUTION NO. 92-9395
PAGE 2

2.02 The EIS has adequately identified environmental impacts however, mitigation techniques with respect to noise are inadequate and will adversely impact the residential neighborhoods located along I-494 in Minnetonka.

Section 3. Council Action

3.01 Although physical capacity and interchange improvements are required along I-494; state, regional and local efforts should also be directed towards nonphysical means of improving the long term capacity of the reconstructed freeway. These non-physical means should include a commitment by the responsible agencies to implement significant improvements to the transit system for the corridor, effective travel demand management strategies that discourage single occupancy vehicles; and the development of a long term plan aimed at capacity management of the corridor.

3.02 The City of Minnetonka endorses the draft Environmental Impact Statement with the following comments:

A. Given the traffic forecasts for the year 2010, the City believes that an additional four lanes should be constructed on I-494 between I-394 and TH 212 (alternative 2A) based on the current level of state and regional commitment to transit and travel demand management techniques and the year 2010. Two lanes should be designated for High Occupancy Vehicle (HOV) use and physical improvements to encourage utilization of the HOV lanes should be part of the reconstruction project.

B. That the ramps located on the south side of the Oakland Road bridge be deleted from consideration because of inadequate design and capacity of the south service road of I-394.

C. That the flyover alternative for the I-494/Highway 7 interchange be deleted from further consideration due to the aesthetic impacts and the potential need for additional right-of-way; that the need for a frontage road along the south side of Highway 7 be restudied to minimize right-of-way impacts on the Royal Hills neighborhood located on the north side of Highway 7; and that a traffic analysis be prepared to examine alternatives for providing access to the Forest Hills neighborhoods on the south side of Highway 7. The traffic analysis and access options should be reviewed and approved by the City prior to the preparation of final plans for the Highway 7/I-494 interchange.

RESOLUTION NO. 92-9395
PAGE 3

D. That directional ramps be provided at the I-494/County Road 62 interchange to improve safety and provide for sufficient capacity; and that the alternative for the single point diamond interchange alternative be deleted from consideration.

E. That noise walls will be constructed along all portions of the freeway that are designated low density residential as early as possible along I-494 in Minnetonka and along the portion of Highway 7 that will be reconstructed. The noise walls should be constructed prior to freeway construction and shall be designed to meet State Pollution Control Agency noise level requirements.

F. That the existing bicycle/pedestrian trail located along the south side of Minnetonka Boulevard be maintained underneath I-494 during and after reconstruction of the Minnetonka Boulevard/I-494 interchange.

G. All right-of-way acquisition should be planned to minimize impacts upon properties or neighborhoods that remain on the edge of the project. Buffers such as landscaped berms, noise walls, open space or other appropriate items should be provided where right-of-way acquisition or significant grading impacts occur.

H. All reconstruction plans should include drainage provisions that meet the Minnetonka Stormwater Management Plan requirements.

I. The impacts to wetlands and floodplains areas should be mitigated in a manner that meets the standards in the Minnetonka Wetland and Floodplain Zoning Districts, and the State Wetland Conservation Act.

J. That Minnesota Department of Transportation staff continue to meet with City representatives and residents to ensure that the freeway expansion occurs in a manner that lessens or mitigates impacts to residents and the environment.

Adopted by the City Council of the City of Minnetonka, Minnesota, on this 22nd day of June, 1992.

TIMOTHY M. BERGSTEDT, MAYOR

1. An analysis of noise impacts and potential mitigation measures was prepared for the Preferred Alternative. This analysis utilized the methodology developed by Mn/DOT, with MPCA concurrence, for assessing noise impacts and an assessment of the cost-effectiveness of implementing noise mitigation measures (noise walls). A summary of the analysis and findings is presented in Section 6.2.5 of the FEIS. Noise mitigation design and locations will be determined during final design with review and approval by both Mn/DOT and the MPCA. If, following identification of all feasible and cost-effective mitigation locations, there are still areas along the corridor that would exceed state noise standards, a "Noise Reasonableness and Exemption Request" will be prepared and would be reviewed and subject to final approval by the commissioners of MPCA and Mn/DOT.

2. Mn/DOT has coordinated with the City of Minnetonka and other cities in the project corridor regarding preliminary design for surface water drainage measures discussed in Chapters 6.3 and 6.4 of the FEIS. These discussions will continue into final design, and applicable regulatory standards will be met in final design.

3. Information regarding floodplains and wetlands impacts and mitigation is presented in Section 6.5 and 6.6, respectively, of the FEIS. Mn/DOT will work with federal, state and local authorities to comply with applicable regulatory requirements.

RESOLUTION NO. 92-9395
PAGE 4

ATTEST:

Elizabeth L. Norton, City Clerk

Action on this resolution

Motion for adoption: Schneider
Seconded by: Anderson
Voted in favor of:
Hanus, Schneider, Wise, Allendorf, Burke, Anderson, Bergstedt
Voted against:
Abstained:
Absent:
Resolution adopted.

I hereby certify that the foregoing is a true and correct copy of a resolution adopted by the City Council of the City of Minnetonka, Minnesota, at a duly authorized meeting held on the 22nd day of June, 1992.

Elizabeth L. Norton, City Clerk

List of Preparers Divider Page

Front Side

List of Preparers Divider Page

Front Side

13.0 LIST OF PREPARERS

NAME TITLE EDUCATION	EXPERIENCE	FINAL EIS RESPONSIBILITY
FEDERAL HIGHWAY ADMINISTRATION		
Cheryl Martin Environmental Engineer	14 Years Planning and Environmental Review of Highway Projects	Review of FEIS and Coordination of FEIS Input
Stan Graczyk, P.E. Project Coordinator B.S.C.E.	28 Years in Highway Design and Review Projects	Review of FEIS
MN DEPT OF TRANSPORTATION		
Chris Roy, P.E. Area Engineer, Project Manager B.S.C.E.	9 Years Applicable Highway Design Experience	Project Engineer for Preliminary Design, Review of FEIS
Wayne Norris Area Engineer B.A. B.S.C.E.	15 Years Transportation Experience	Review of Layouts, Review of FEIS
Dennis Larson Water Resources Engineer B.S.C.E. M.S.	25 Years Professional Experience	Review of Water Resources Analysis and Information
Billy Thomas Senior Engineer B.S.C.E.	35 Years Professional Experience	Project Engineer for Water Resources, Review of Water Resources Analysis and Information
James Hansen Engineering Specialist B.S.	25 Years Experience in Noise and Air Quality Studies and Mitigation	Review of Noise and Air Quality Analyses and Information
Pete Wasko Transportation Specialist Associate Degree, Architectural Design/Civil Engineering	1 Year Experience in Noise and Air Quality Analysis	Review of Noise and Air Quality Analyses and Information
Rick Dalton B.S.C.E.	15 Years Transportation Engineering	Review of EIS
Gerald Larson Chief, Environmental Development Unit B.A. M.A.	20 Years Transportation Sociology	Review of EIS

NAME TITLE EDUCATION	EXPERIENCE	FINAL EIS RESPONSIBILITY
MN DEPT OF TRANSPORTATION continued		
Greg Busaker Aquatic Biologist B.S. M.A. Ph.D.	18 Years Aquatic Biology	Review of EIS Water Resources Section
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14.0 INDEX

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15.0 GLOSSARY

50-Year Storm – A design level to accommodate a rainfall pattern having a 50-year return period, or a 50-year recurrence interval. It is also a storm that has a two percent chance of occurrence, on the average, within any given year. The 50-year storm occurs over a specified time period, such as 24 hours or six hours.

100-Year Flood Elevation – The peak elevation the water will reach during a 100-year recurrence interval flood (one percent chance, on the average, flood event).

APE – Area of Potential Effect.

Bank Full Flow – The stream flow level that just fills the active channel of a stream without overflowing its banks. This level is generally in the range of from a two-year to a 10-year recurrence interval flow (i.e., a 50 percent to a 10 percent chance event).

Berm – A linear elevated earthen structure designed to control water runoff, reduce noise levels, or block the line of site between two land uses.

Braiding – Describes the situation where a freeway ramp crosses over another freeway ramp on a bridge.

Capacity – The maximum number of vehicles that can pass through a specific roadway location in a given period of time. Capacity is often stated in terms of a maximum associated with a specific Level of Service.

Clear Zone – The unobstructed, relatively flat area provided beyond the edge of the traveled way for the recovery of errant vehicles. The traveled way does not include the roadway shoulders.

CO – Carbon Monoxide.

Collector-Distributor (C-D) Road – A roadway that combines several entrance and/or exit ramps to remove weaving from the freeway through lanes.

Collector Street – Surface streets providing land access and traffic circulation service within residential, commercial, and industrial areas.

CSAH – County State Aid Highway.

Cut Section – A roadway segment constructed through or along an elevated portion of the surrounding landscape.

dB (decibel) – A unit for expressing the relative intensity of sound.

DEIS – Draft Environmental Impact Statement.

Directional Ramp – A freeway ramp that provides a direct connection between two highways.

ESA – Environmental Site Assessment.

Eutrophic – A body of water with high levels of dissolved nutrients (phosphorous), often shallow with a seasonal deficiency in dissolved nutrients.

FEIS – Final Environmental Impact Statement.

Grade Separation – Describes the situation where a bridge is used to separate the crossing of two roadways or a roadway and a railroad line.

High Occupancy Vehicle (HOV) – Any motor vehicle carrying at least two persons.

Hoop Ramp – A freeway ramp that connects to a street parallel to the freeway.

Horizontal Alignment – The series of curves and lines that define the centerline of a roadway.

Impervious – A surface not conducive to penetration by water or other substances.

Intelligent Transportation System (ITS) – Involvement of advanced technologies in managing transportation facilities and providing information to transportation system users. Formerly called Intelligent Vehicle Highway System (IVHS).

LAWCON – Land and Water Conservation Program (federal).

Level of Service – A method of describing the quality of traffic flow on a roadway. Level of service (LOS) is typically reported using the letter grades A through F which correspond to the following operating conditions:

- LOS A – Free-flow conditions, light traffic, essentially no restrictions on ability to maneuver, high operating needs.
- LOS B – Stable-flow conditions, moderate traffic, slight decline in maneuverability.
- LOS C – Stable flow, but speeds and maneuverability are clearly affected by other vehicles. Speeds are affected by the presence of other vehicles. The general level of driver comfort and convenience declines noticeably at this level.
- LOS D – High density, but stable flow. Speed and ability to maneuver are severely restricted. Traffic flow is likely to be affected by minor disruptions or small increases in volumes.
- LOS E – Unstable traffic flow with heavy traffic at or near the roadway capacity. Speeds are reduced to a low, but relatively uniform volume. Freedom to maneuver within the traffic stream is extremely difficult. Driver comfort and convenience are extremely poor. Operations are unstable, because small volume increases or incidents will result in a breakdown in flow.
- LOS F – Forced or breakdown flow. Traffic is queued with stop-and-go conditions.

LGU – Local Government Unit.

Local Street – Roadways used primarily for direct access to residential, commercial, and industrial land uses.

Mainline – The through traffic lanes on a freeway.

Minor Arterial – Roads that serve through traffic and also provide some access to abutting property.

MPCA – Minnesota Pollution Control Agency.

Nose – The point where a ramp intersects with a freeway.

Peak Hour – The hour of the day with the maximum traffic volume.

Permeability – The degree to which water or other substances transfer through soil or other surfaces.

PMT – Project Management Team (I-494).

Primary System – Includes the major transportation facilities in the metropolitan highway system (i.e., interstate freeways, state limited access highways, and expressways).

Principal Arterial – Roads primarily servicing through traffic flow.

RCP – Reinforced concrete pipe.

RGU – Responsible Governmental Unit.

Rural Section – A roadway alignment with a median and shoulder open ditch (overland) storm water drainage system.

SHPO – State Historic Preservation Office.

Side Slopes – The slopes outside of the roadway shoulder.

Sight Distance – The distance a driver can see the road or other object ahead.

Sight Triangle – An area defined in the vicinity of an intersection through which a driver must have a clear view in order to safely operate his vehicle.

Stage Increase – Rise in elevation of the water surface.

Storm Drain Laterals – Pipes in a storm drainage system running perpendicular to and underneath a roadway.

Superelevation – The banking of the roadway to counteract the centrifugal force experienced by a vehicle traveling through a curve.

TEA-21 – Transportation Equity Act for the 21st Century.

TH – Trunk Highway.

Transportation Management Organization (TMO) – Private or public-private partnerships focusing on travel reduction measures and maximizing the effectiveness of existing transportation facilities.

Transportation System Management (TSM) – Program measures to maximize the effectiveness of transportation systems (HOV bypass lanes, ramp meters, changeable message signs).

Travel Demand Management (TDM) – Measures and techniques designed to reduce single-occupant vehicles (e.g., car/van pooling incentives, mass transit programs and promote travel activity during off-peak traffic times rather than peak times.

Urban Section – A roadway alignment with a curb/gutter and pipe storm water drainage system.

Vertical Clearance – The distance between the roadway surface and an overhanging structure such as a bridge or sign.

Vertical Curves – A parabolic curve used to connect grades of different slope to avoid the sudden change in direction in passing from one grade to the other.

WCA – Wetland Conservation Act.

Weaving Section – Weaving occurs when traffic entering the freeway must cross traffic exiting the freeway. The area where this weaving occurs is called the weaving section.

Weir – A dam in a body of water designed to raise the water level or divert its flow.

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APPENDIX A

Mn/DOT Projects In I-494 Corridor Since DEIS – Summary Information

APPENDIX A

Mn/DOT Projects in I-494 Corridor Since DEIS – Summary Information

The following Mn/DOT projects have been completed in the I-494 corridor since the 1992 I-494 Reconstruction Draft Environmental Impact Statement:

1. Bridge Redeck – I-35W Interchange (Completed 1995)

This project involved: a) structural improvements to the I-494 bridges over I-35W, and b) lane/shoulder improvements to mitigate short distances (less than 500 feet) between loop ramps on I-494. Bridge 6850 carries westbound I-494 and Bridge 6851 carriers eastbound I-494 over I-35W. These bridges were constructed in 1956. They were widened in 1965 (filling the median between the bridges), and received overlays in the early 1970s. This project provided redecking and other structural improvements to Bridges 6850 and 6851.

This project provided escape lanes downstream from the loop exits along I-494. In addition, the shoulders between the westbound I-494 off-ramp and the northbound I-35W entrance loop, as well as the eastbound I-494 off-ramp and the southbound I-35W entrance loop, were widened to provide a better refuge area for errant or stalled vehicles. Finally, the loop entrances to I-494 were widened to correct the deficient ramp width at the merge areas onto I-494.

A Project Memorandum (Categorical Exclusion determination) for this project (SP 2785-284, and SP 2785-6850) was completed in November 1994.

2. MCTO Bus Access to HOV Ramp Meter Bypass at Southbound 24th Avenue to Westbound I-494 (completed 1996)

This project was a transit improvement sponsored by Team Transit, a joint effort of Mn/DOT and Metropolitan Council Transit Operations (now Metro Transit). It consisted of cutting an existing raised median adjacent to an existing HOV bypass ramp at the I-494/24th Avenue interchange. This project allowed busses exiting the MCTO garage northwest of the I-494/24th Avenue interchange to access the HOV bypass ramp which services southbound to westbound movements.

A Project Memorandum (Categorical Exclusion determination) for this project (SP 2785-296) was completed in July 1996.

3. Bridge Redeck – Bridge 9079 at Portland Avenue over I-494 (completed 1997)

This project involved the redecking of the bridge, along with repair of pier caps and abutments. This project was necessitated by the deteriorated condition of the bridge, which was constructed in 1959 and had not received maintenance other than two bituminous overlays in the 1970s.

A Project Memorandum (Categorical Exclusion determination) for this project (SP 2785-9079) was completed in April 1997.

4. Interchange Reconstruction – I-494/TH 169 Interchange (completed 1998)

This project served two primary functions: a) to replace bridge structures which were in unacceptably deteriorated condition; and b) to improve traffic operations at the interchange. The two bridge structures (9137 and 9138) were replaced. The four span structure design was replaced with a two span design, thus eliminating the outside lateral obstructions (piers) on I-494. In addition, the bridges were raised to provide design vertical clearance of 5.0 meters (16.4 feet) to the I-494 mainline (the previous clearance had been 4.6 meters [15.0 feet]).

The existing diamond design interchange had experienced severe congestion and delay during am and pm peaks and much of the time surrounding the peaks. The primary difficulty was that large traffic volumes southbound on TH 169 turning to eastbound on I-494, and northbound on TH 169 (formerly CSAH 18) to westbound on I-494 were causing queues which substantially exceeded storage capacity in the left turn lanes. This project reconfigured the interchange to improve its operational characteristics. Loops were added in the following quadrants: southwest (southbound to eastbound movements), northeast (northbound to westbound movements), and northwest (eastbound to southbound movements).

The project provided priority freeway access for High Occupancy Vehicles (HOV) via bypass lanes at ramp meter locations. The project included Single Occupancy Vehicle (SOV) meters with HOV bypass for all entrance ramps and loops to I-494.

A Project Memorandum (Categorical Exclusion determination) for this project (SP 2785-290) was completed in March of 1997.

5. Reconstruction of I-494 from CSAH 5 to Stone Road including Bridge Replacement (completed 1999)

This project included the reconstruction of I-494 bridges over CSAH 5 (Bridge Numbers 9755 and 9756) and Stone Road (Bridge Numbers 9759 and 9760). These reconstructions were required because the existing bridges were structurally deficient. The CSAH 5 bridges were redesigned from five-span to three-span structures. The Stone Road bridges were redesigned from four-span to two-span structures.

This project also included the reconstruction of the I-494 mainline pavement from CSAH 5 to 0.48 kilometers (0.3 miles) north of Stone Road. This mainline segment was widened to accommodate two 3.6-meter (12.0-foot) lanes, a 1.2-meter (4.0-foot) left shoulder, and a 3.6-meter (12.0-foot) right shoulder in each direction. The profile of the I-494 mainline was changed to accommodate a design speed of 110 kilometers per hour (68 miles per hour).

An HOV bypass lane was added to the entrance ramp from CSAH 5 to northbound I-494. Due to spatial constraints at the entrance ramp from CSAH 5 to southbound I-494, an HOV bypass lane was not constructed at this location. Other than the addition of the northbound HOV bypass lane referenced above, the configuration of the I-494 entrance and exit ramps at CSAH 5 remained unchanged with the project.

A Project Memorandum (Categorical Exclusion determination) for this project (SP 2785-307) was completed in February of 1998.

6. Addition of HOV Bypass at Valley View Road Northbound Ramp to I-494 (completed 1999)

The existing ramp was metered, and limited storage at this area caused the queue to frequently back up onto Valley View Road. This project was constructed consistent with Mn/DOT's policy to give access priority to multi-occupancy vehicles, and to accommodate potential additional bus operations using this ramp location.

A Project Memorandum (Categorical Exclusion determination) for this project (SP 2785-320) was completed in January 1999. An Addendum to this Project Memorandum was approved in April 1999.

7. Reconstruction of the TH 5/I-494 Interchange (completed 2000)

The I-494 bridges over TH 5 (Bridge Numbers 9741 and 9742) were structurally deficient and required replacement. The replacement bridges were redesigned from four span structures to two span structures. Because the depth of structure was increased with the new bridges, the bridge profile had to be raised 0.6 meters (2.0 feet) to maintain the minimum clearance over TH 5. This required the I-494 mainline profile to be raised approximately 0.6 meters (2.0 feet).

The I-494 profile was reconstructed from Flying Cl ‹oad (TH 212) to Valley View Road, a distance of approximately 1.0 kilometer (0.62 mi The roadway design was widened to accommodate two 3.6-meter (12.0-foot) lanes, ⁚-meter (4.0-foot) left shoulder, and a 3.6-meter (12.0-foot) right shoulder in each directi

Interchange ramps remained unchanged with the ct. All four interchange loops were reconstructed to address the changed I-494 profile (bed above and other factors. An HOV bypass lane was added to the southeast loop ıe interchange (eastbound TH 5 to northbound I-494 movements). Existing and ar .ted traffic levels at the interchange warranted the construction of a HOV bypass at this] ɔn.

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A Project Memorandum (Categorical Exclusion de nation) for this project (SP 2785-309) was completed in June 1998.

8. Reconstruction of Penn Avenue/I-494 Interchange (to be completed 2002)

The City of Richfield is reconstructing the Penn Avenue interchange using a single-point urban interchange design. This project was implemented by the City to improve traffic operations at this interchange in conjunction with the planned Best Buy office campus.

A Project Memorandum (Categorical Exclusion determination) for this project (SP 2785-328) has been prepared by the City of Richfield.

APPENDIX B

Technical Memorandum:

Traffic Forecasts Methodology and Results

SRF CONSULTING GROUP, INC.

Transportation ▪ Civil ▪ Structural ▪ Environmental ▪ Planning ▪ Traffic ▪ Landscape Architecture ▪ Parking

SRF No. 0003775

MEMORANDUM

TO: Chris Roy, MnDOT
Wayne Norris

FROM: Steve Wilson
Senior Associate

DATE: October 27, 2000

SUBJECT: I-494 RECONSTRUCTION FINAL EIS TRAFFIC FORECASTS METHODOLOGY AND RESULTS

This memorandum describes the travel forecasting process used for the Final Environmental Impact Statement (FEIS) for I-494 and the resulting forecast volumes. Level of service analyses for freeway operations and intersections for this project are included under separate memoranda.

This memorandum includes the following:

1. A description of the regional travel forecast modeling process
2. Corridor-specific assumptions and changes to the modeling process
3. Results of model validation for the I-494 corridor
4. Travel forecasting results to be used in the Final EIS

The boundaries of the I-494 Final EIS are from I-394 to the Minnesota River. However, model refinements were also made in the Plymouth and Maple Grove areas to provide a better model validation and forecast for I-494 in the I-94 to I-394 segment.

TRAVEL FORECASTING PROCESS

The travel forecasts were prepared using the Twin Cities regional travel forecasting model, modified to improve responsiveness to issues relating to the specific study. The model includes a series of computerized procedures for systematically predicting travel demand changes in response to development and transportation facility changes.

The model, used primarily for major project planning efforts, is calibrated and validated at a level of accuracy sufficient for planning regional facilities such as freeways and major arterials. This provides sufficient accuracy for most regional and corridor-level planning. The Metropolitan Council and Mn/DOT completed the current model in 1994 using data from an extensive regional Travel Behavior Inventory (TBI) conducted in 1990.

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The eight main components of the travel forecasting process are shown in Figure 1 and described below. Detailed discussion of assumptions specific to the I-494 EIS are described in a subsequent section.

Highway Network Representation

All of the freeways, expressways, and major arterial roadways in the Twin Cities area are compiled into a computer representation of the region's highway system. In addition, most minor arterials and many collector roads and other local streets are included. The attributes of the roadways are described in terms of area type, facility type, distance, free-flow speed, number of lanes and capacity.

Additional roadways in and near I-494 area were added to the regional model to better estimate the effects of different roadway design considerations. Specific future-year highway improvements assumed for forecasting purposes are discussed in a subsequent section of this report.

Transit Network Representation

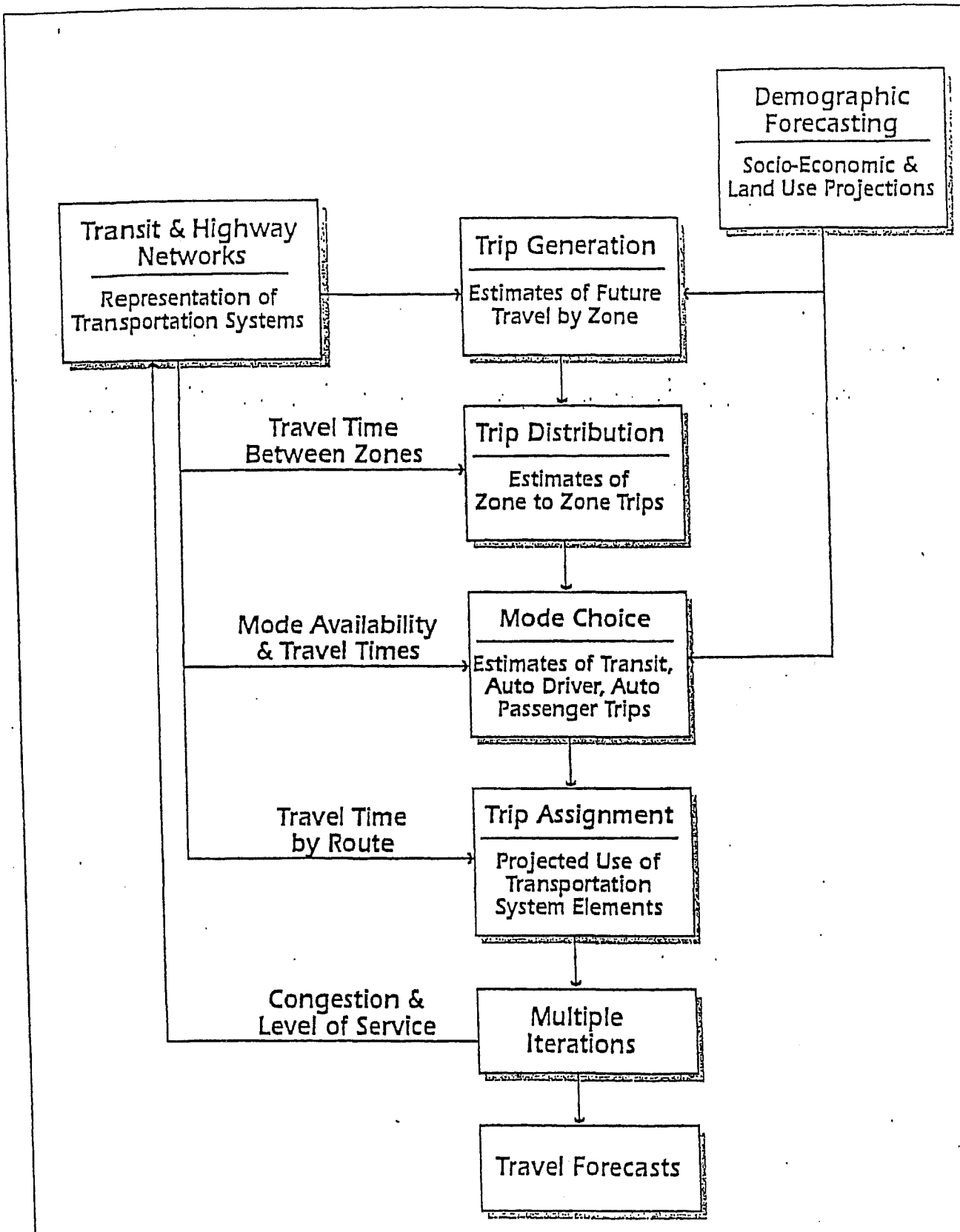
All regional transit routes are included in a computer representation of the transit system. The transit network looks at the transit system in terms of links (which represent the highway system) and lines (which define a transit route's frequency and path). Data in the transit network include link speed, link distance, route frequency and route type.

These forecasts assume completion of the Hiawatha Corridor light rail transit line from downtown Minneapolis to the Mall of America.

Zonal Socio-Economic and Demographic Data

The regional travel forecast models divide the seven county Twin Cities Metropolitan area into 1,165 geographic transportation analysis zones (or TAZ). Various demographic and socio-economic data are allocated into these zones for the purposes of the forecast models. The zones also serve as the beginning and end locations of travel in the region. In addition to the 1,165 zones, the 35 most important points of entry into the region are identified and included as "external" zones. The zonal system was determined primarily on the basis of physical boundaries and major roadways.

For the purpose of this study, TAZs near I-494 were split into an additional 200 TAZs so that more refined trip estimation and traffic impact analysis could be conducted. Figure 2 shows the location of the TAZ boundaries in the study area. Refinements were based on the Hennepin County travel forecasting model with additional detail in the Mall of America and Minneapolis-St. Paul (MSP) International airport area.



SRF Consulting Group, Inc.

Figure 1

Travel Forecasting Process

The Metropolitan Council's demographic database dated May 2000 was used as the source of zonal-level information. This database includes socio-economic data provided by cities in the I-494 corridor, reflecting their planned development through year 2020. The base assumes implementation of the 1996 *Regional Blueprint* of the Metropolitan Council. Communities are in the process of refining their comprehensive plans based on the policy direction of the *Blueprint.*

The distribution of activity to the more refined zone level was accomplished mainly using the distributions assumed in the Hennepin County travel forecast model. Zone-level growth from 2020 to the design year of 2022 was done on a pro-rating of growth from current levels. Demographic assumptions are summarized in a subsequent section of this memorandum and detailed in the Appendix.

Trip Generation

Trip generation is the process by which the number of trips attributed to a zone are estimated based on the amount and type of activity in that zone. Trips are either "produced" by or "attracted" to a zone, depending on the type of trips. The end result of trip generation estimation is a total number of trips produced by and attracted to each zone. The trips at this point are called "person-trips," and do not have any association with a given mode of travel.

The determinants of household trip production are household size, the number of automobiles owned and location. Several factors contribute to trip attractions, depending on the trip purpose. The main variables are retail employment, non-retail employment, amount of activity within a given proximity and area type.

The trip generation phase of the forecasting process uses trip rates (i.e., number of trips per person, household or employee) based on the 1990 regional TBI applied to each zone to calculate the number of trips taken, by purpose. This study uses the regional trip generation model. The regional model was augmented with site-specific trip generation information from environmental studies currently underway including the Mall of America expansion EIS (5.6 million additional square feet at the Mall of America plus additional development in the Airport South area), the Norman Pointe EAW and the Best Buy campus EIS during the traffic operations analysis process.

Trip Distribution

The trip distribution process converts the person-trips estimated in the generation step to movements between pairs of zones based on the amount of travel activity in a zone and the generalized travel time proximity of the producing zone to other zones. The resulting trip tables provide the number of trips between zones.

Figure 4

Corridor Improvements

Legend

- Existing and Future Interchange
- Future Interchange
- Existing Interchange to bo removed
- Future (Existing) # of lanes 3(2)

34th Ave
12th Avenue
Portland Avenue
Nicollet Avenue
Lyndale Avenue
Penn Avenue
France Avenue
Bush Lk Rd

0 .5 1 2 kilometers
N
0 1/2 1 2 miles
Scale

Final Environmental Impact Statement

I-494 Reconstruction

I-394 to the Minnesota River

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Most standard models consider only highway time in the distribution function. The non-work models in the Twin Cities are based on this method. However, the work trip distribution models in the Twin Cities region employ a composite impedance function, which treats distribution based on overall time and cost, including that of alternate modes. Trips beginning or ending outside of the Twin Cities area are modeled using a growth-rate model based on TBI trip distribution patterns.

This analysis did not use any changes to the regional modeling process for trip distribution.

Mode Choice

The mode choice phase of forecasting uses mode choice models to identify the number of person-trips between each pair of zones and determine whether the trips are made by single-occupant vehicles, carpools, or transit riders. The models are further used to determine whether the trip is a candidate for a high occupancy vehicle (HOV) lane.

This study did not make any changes to the regional modeling process for mode choice. However, the HOV component of the mode choice model served as a basis for estimating the number of new HOV users.

Time of Day Estimation (Temporal Distribution)

Time-of-day, or "temporal distribution" models, take the estimated trips and distribute them across periods of time for the purposes of more accurately reflecting peaking conditions on roadway and transit systems. The basis for the temporal distribution is the 1990 regional TBI. The time periods considered are:

1. A.M. peak hour
2. A.M. peak shoulders
3. First P.M. peak hour
4. Second P.M. peak hour [generally used for operations analysis]
5. P.M. peak shoulders
6. Off peak time periods

Differentiation among peak hours enables better estimates of congested conditions on an hourly basis.

This analysis did not make any changes to the regional modeling process for mode choice. However, refinements were made to the forecast peak hour traffic volumes on specific roadway segments if warranted by traffic counts.

Highway and Transit Assignment

The trip assignment models choose the route between zones for any given trip. The highway assignment process chooses routes based on travel times that reflect the appropriate traffic volume, roadway capacity and speed relationship. It is an equilibrium model, which uses multiple iterations to balance demand with capacity. The regional model uses the TRANPLAN travel forecasting software. This study used the TP-PLUS software package, which is an updated version of TRANPLAN but uses the same mathematical model of assignment. Tests indicate that the models produce nearly identical results with an average difference of 0.2 per link (calculated using the root mean square error method) and a correlation coefficient of 0.985.

The assignment model will permit a demand in excess of the model-designated capacity. The regional model in the Twin Cities area is generally defined at Level of Service D, therefore assignment of additional demand indicates Level of Service E or F. The default congestion functions in the model are link-based, meaning the effect of intersection and ramp-meter queues are not fully accounted for in the base modeling process. In addition, these types of models cannot show the queuing effects of traffic bottlenecks on freeways.

The regional modeling process was modified in two areas: capacity estimates and ramp meter modeling. The differences are shown in Table 1. The basic regional model assumes a per-lane capacity of 1950 vehicles on a metered freeway, but allows traffic assignments in excess of capacity. MnDOT Traffic Management Center data indicates capacity varies widely depending on the number and type of lanes on a facility. For the purpose of this analysis, it was assumed that through lanes have average capacities of 2200 vehicles per through lane. In addition, auxiliary lanes are used primarily for merge-diverge movements to or from freeway interchanges and do not realistically support full-lane capacities. For the purposes of this analysis the capacity of auxiliary lanes less than one mile long was assumed at 1400 vehicles per hour. These values are comparable to the assumptions used in the freeway operations modeling (exact replication could not be accomplished without compromising the validation of the regional forecast model). The volume-delay functions used in the model were modified to reflect the additional capacity without significantly changing the amount of calculated delay by creating a new assignment class for the freeways coded with the alternate capacities.

Ramp metering is an important characteristic of the regional freeway system in the Twin Cities. Unfortunately, the capabilities do not exist within the current regional forecast model to fully reflect ramp metering. Monte Carlo simulations of varying ramp meter rates and traffic volumes were used to develop a simplified method of incorporating some ramp metering delay. A resulting linear relationship of $(T_i=max(0,0.497*(V_i/rate_j)-31.1)$ permits calculation of a ramp time (T_i) for a given model iteration ($_i$) based on a modeled volume (V_i) and metering rate (rate) for a given ramp ($_j$). While this simplifies the true nature of ramp metering, it provided a reasonable introduction of ramp metering into the modeling process, which is important for calculating the benefits of HOV bypasses and lanes as well as increased metering rates due to additional capacity. The analysis assumed that the ramp metering rate would be increased under the Build alternatives in proportion to the increase in capacity.

Transit assignment was not conducted for this study. However, HOV lane traffic assignment is performed as part of the highway assignment process for the purpose of comparing the general benefits and costs of general purpose versus HOV lane designation.

TABLE 1
MODIFICATIONS TO REGIONAL MODELING HIGHWAY ASSIGNMENT

	Hourly Capacity		Speed	
Facility Type	**Regional Model**	**I-494 Forecasts**	**Regional Model**	**I-494 Forecasts**
Metered Freeway Capacity	1950 vehicles per lane	2200 vehicles per lane (through) 1400 vehicles (auxiliary)	53-55 MPH	60 MPH
Metered Ramp Capacity	625 vehicles per hour	Based on metering rate (build alternative metering rates assumed to increase in proportion to new mainline capacity.	25 MPH, congestion based on BPR curve	2-10 minutes delay, based on linear function (T= max(0,0.497*(V/rate) -31.1)

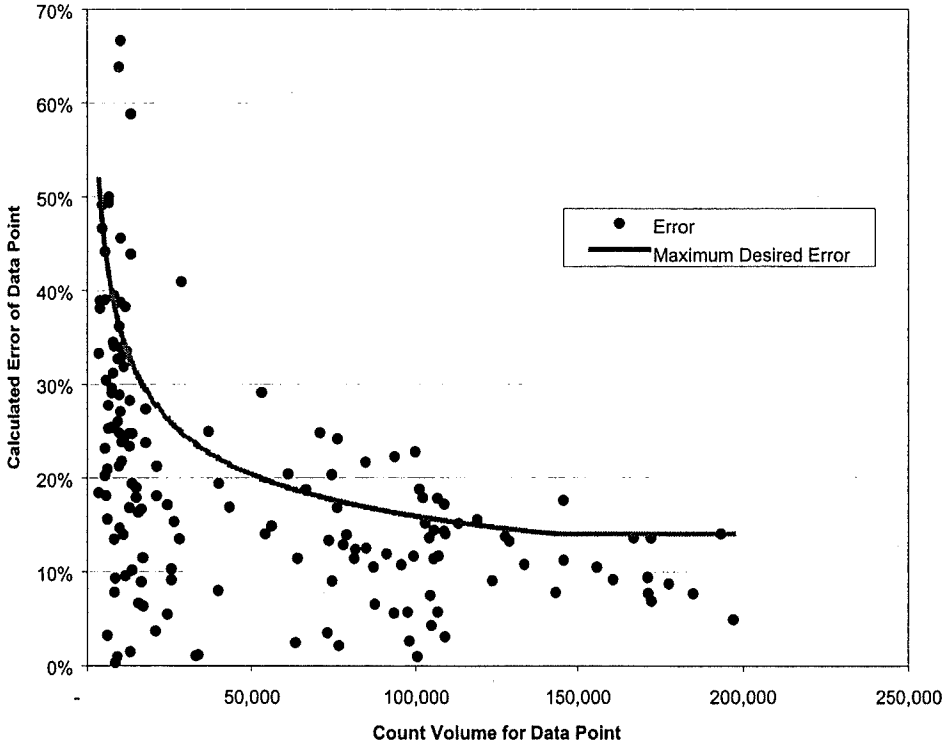
Model Validation

An important measure of the usefulness of the regional modeling process is how well it replicates existing conditions. Existing traffic counts in the I-494 study area were compared to model output. Daily traffic counts were from a variety of sources, including data from the 1998 Mn/DOT traffic flow maps (the most recent available), the April, 2000 MnDOT Loop Detector Report (October 1999 ramp and freeway volumes), the 1999 Hennepin County traffic flow map, and traffic counts collected for the purpose of this study.

Figure 3 shows the results of the calibration.. Eighty percent of the 160 data points (roadway segments) had an error less than the maximum desirable error for a given ADT volume. This exceeds the recommended 75 percent threshold (*Model Validation and Reasonableness Checking Manual*, Federal Highway Administration, 1997) and therefore shows reasonable validation. The average error for a freeway link was 13.4 percent and the average error for arterial and collector roadways was 27.7 percent, calculated using the RMSE (root mean square error) method.

The forecast model results, plus information regarding the fit of the model for any datapoint, was used to determine the link-specific forecast volumes.

Figure 3
I-494 Model Validation



ALTERNATIVES CONSIDERED

I-494 Design Alternatives

Forecasts were prepared for three I-494 alternatives:

- No Build
- Build – Managed HOV (Final EIS Preferred Alternative)
- Build – HOV

The number of lanes and interchange locations assumed along I-494 are shown in Figure 4. The **No Build** alternative represents the existing condition on I-494 in terms of the number of lanes and the location of freeway access. For the purposes of this study, this alternative assumes only two through lanes (existing) on I-494 from TH 100 to TH 212 even though additional lanes are included in the current State Transportation Improvement Program for the year 2002.

The **Managed HOV** can be generally described as an additional through lane from I-394 to 34th Avenue South, the addition of one or more auxiliary lanes in selected locations, and the addition of HOV ramp-meter bypasses where none currently exist. Transit enhancements would be included along the corridor including bus use of shoulders. Under this alternative interchange access would be changed in the following locations:

- 12th Avenue South: close interchange
- Portland Avenue South; add east ramps (EB, WB)
- Nicollet Avenue: close interchange
- Nicollet Avenue: west ramp movements moved to I-35W CD road system
- Penn Avenue: east ramp movements moved to CD road system
- East Bush Lake Road: add EB exit ramp and WB

Directional interchange movements would be added at I-35W (NB to WB and SB to EB), TH 77 (SB to EB) and TH 100 (NB to WB and SB to EB).

The **HOV** alternative is identical to the Managed HOV alternative except that one mixed-use lane (assumed as the inside lane) would be replaced by an HOV lane. The lane is assumed to be open to carpools of two or more persons, and would operate during both a.m. and p.m. peak periods in both directions.

Figure 4 shows the conceptual existing and future lane and interchange configuration on I-494.

Other Assumed Regional System Improvements

The forecasts for all alternatives assumes the improvements currently being considered for the draft MnDOT Metro Transportation Systems Plan and Metropolitan Council *Transportation Development Guide/Policy Plan*. These plans are expected to be adopted later in the year 2000. The assumptions most critical to the I-494 corridor are listed in Table 2.

TABLE 2
MAJOR REGIONAL ROADWAY IMPROVEMENTS ASSUMED IN I-494 FEIS

Roadway	Description
TH 610	Constructed from I-94 to TH 169 as a four-lane freeway (under construction from TH 169 to TH 252)
I-94	Additional through lane in each direction from Weaver Lake Road to CSAH 152 plus auxiliary lanes from TH 169 to Weaver Lake Road; includes modification of I-494/I-94 interchange.
I-35W	Extension of HOV from I-494 to 46th Avenue South and reconstruction of TH 62 interchange (under construction).
Various Freeways	Installation of ramp meters on all remaining freeways in the region
TH 212	Construction of new TH 212 from TH 5 to Chaska (under construction from I-494 to CSAH 4)
I-494	Construction of new Mississippi River crossing and TH 61 interchange area

The forecasts do not assume the upgrade of TH 169 to a freeway from the Minnesota River to I-494, since it is not currently included in the regional plans for implementation by the year 2025.

Assumed Local Roadway System Improvements

In general, the regional travel forecast model includes all principal and minor arterials, and many collector roadways, but only some local roadways. It was therefore necessary to review the regional forecast model network to ensure that existing and planned critical non-arterial roadway segments were included in the I-494 Corridor forecast model. The transportation elements of local comprehensive plans were reviewed for the communities of Plymouth, Minnetonka, Eden Prairie, Bloomington, Edina and Richfield. Changes were made in both the existing and future year networks (all alternatives) as necessary.

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Figure 2

I-494 Traffic Analysis Zones

Legend

Zone Boundary ——

0 .5 1 2 kilometers

0 1/2 1 2 miles

N

Scale

Final Environmental Impact Statement

I-494 Reconstruction

I-394 to the Minnesota River

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The major improvements assumed for the local roadway system are listed in Table 3.

TABLE 3
SUMMARY OF LOCAL ROADWAY IMPROVEMENTS TO BE INCLUDED IN TRAFFIC FORECASTING AND OPERATIONAL ANALYSIS

Roadway Improvement		Scheduled To Be Completed By:	Lead Agency
Longfellow Avenue	Reconstruct	2002	MAC
McCauley Trail/West 78th Street frontage road connection	TH 169/Valley View Road interchange to TH 169/I-494 interchange	2002	Edina
66th Street	Reconstruct Interchange	2003	MAC
77th Street	Complete to 24th	2003	Richfield
79th/80th Street	Reconstruct bridge at I-35W	2003	Bloomington
Lyndale Avenue	Reconstruct interchange	2003	Richfield
34th Avenue	Four-lane divided roadway plus LRT	2004	Mn/DOT
77th Street	Add north ramps on TH 77, close Diagonal Boulevard interchange on TH 77	2005	Richfield
24th Avenue ITS Information Signs	I-494 to 86th Street	2006	Hennepin County/ Bloomington/ Mn/DOT
24th Avenue Operational Upgrade	I-494 to Lindau Lane (geometrics)	2006	Hennepin County/ Bloomington/Mn/DOT
24th Avenue/Lindau Lane	Modify Lindau Lane/TH 77 to 24th Avenue	2006	Bloomington
East 79th Street (TH 77 to 24th Avenue)	Reconstruct/realignment/ geometric improvements	2006	Bloomington
East Old Shakopee Road/28th Avenue	Signalize intersection, improve geometrics	2006	Bloomington
I-494/34th Avenue north side off-ramps	Provide up to five lanes at ramp, as needed (dual left-turn, two through, one right-turn lane)	2006	MAC/Mn/DOT
I-494/34th Avenue south-side off-ramps	Provide up to minimum of four lanes at ramp, as needed (dual left-turn, left/through shared lane, right-turn lane)	2006	Mn/DOT/Bloomington
Penn Avenue	Reconstruct interchange	2002	Richfield

DEVELOPMENT ASSUMPTIONS

The Metropolitan Council's 2020 regional forecast model data base was used as the basis for the travel forecasts. This database is maintained by the Metropolitan Council and reflects growth expectations of the Metropolitan Council as reflected by local comprehensive plans. The Council's data were revised to reflect proposed developments for which environmental review is underway:

- *Airport South* (Bloomington, south of I-494 and east of TH 77) which includes the 5.6 million square feet expansion of the Mall of America plus additional new development in that area. The assumed development reflected "Alternative 1 of the environmental impact statement for the Mall of America expansion.

- *Norman Pointe* (Bloomington, south of I-494 and west of Normandale Boulevard). The proposed development of this site is assumed at 1.3 million square feet of office space and 95,000 square feet of hotel, with an estimated 4,000 employees.

- *Best Buy Campus* (Richfield, north of I-494 and east of Penn Avenue). This redevelopment site would include 1.9 million square feet of office space plus 9,500 employees.

- *MSP International Airport Expansion* Implementation of the MSP master plan is assumed, including relocation. Growth in airport-related traffic in the forecast model is a function of passenger originations, which are estimated to increase by 65 percent from 2000 to 2022 based on the Metropolitan Airports Commission's "high-end" commercial operations forecast. In addition, year 2022 vehicle traffic to/from the MSP airport campus was reallocated based on the planned improvements to gate and parking facilities at the Lindbergh and Humphrey terminals. It is estimated that the current distribution of passenger-related traffic (parking plus curbside) is 75 percent Lindbergh Terminal and 25 percent HHH Terminal. The expansion of the HHH plus additional parking facilities near the HHH terminal (assumed at 10,000 spaces) is expected to change that split to 65 percent/35 percent. It has also been assumed that 20 percent of the traffic from the air cargo area would relocate to new facilities on the west side of the airport (near 66th Street and TH 77).

Table 4 shows the assumed population, household and employment levels of the communities in the corridor. Most of the residential land in the communities is already developed. Overall, the number of households is expected to increase from approximately 152,000 to 184,000 – an increase of 21 percent over 22 years. Excluding Plymouth and Maple Grove, which are north of I-394, an 11 percent increase in households is expected.

Commercial development in the corridor is expected to increase at a higher rate. The expected number of jobs (retail and non-retail) is expected to increase from approximately 320,000 to 413,000 – an increase of 30 percent. Excluding Plymouth and Maple Grove the increase is expected to be 24 percent.

TABLE 4
DEMOGRAPHIC ASSUMPTIONS FOR COMMUNITIES ALONG THE I-494 CORRIDOR

	1999				2022			
	Population	**Household**	**Retail Emp**	**Non-Retail Employment**	**Population**	**Household**	**Retail Emp**	**Nonret Emp**
Maple Grove	47,974	16,103	3,041	12,134	74,850	29,700	5,054	26,347
Plymouth	61,339	22,986	5,769	42,141	64,942	29,227	9,465	54,019
Minnetonka	51,637	21,129	9,720	35,234	50,680	22,830	10,952	46,049
Eden Prairie	52,081	19,895	4,441	42,369	60,100	26,550	5,600	51,750
Edina	47,357	20,886	9,967	44,886	49,150	21,550	10,550	49,850
Richfield	35,566	15,505	4,616	6,189	37,704	17,370	4,818	7,963
Bloomington	88,464	35,759	20,411	78,910	91,670	37,110	25,719	105,271
Total	384,417	152,263	57,965	261,862	429,096	184,337	72,157	341,247

Source: Metropolitan Council, SRF Consulting Group, Inc./regional travel forecast model

ANALYSIS AND RESULTS

Trip Characteristics

The I-494 corridor study area (see Figure 5) lies within the urbanized portion of the Twin Cities area, and encompasses a substantial amount of both residential and commercial uses. Trips generated by land uses in the corridor are expected to increase from approximately 1.9 million trips per day in 1999 to 2.5 million trips by 2022, an increase of 28 percent. This is slightly higher than the expected regional growth as a whole of 26 percent. Approximately 43 percent of the trips (839,000 out of 1,941,000 trips) currently stay within the corridor, a percentage that is not expected to change by 2022. The corridor currently accounts for 1.9 million of the regional total of 7.4 million trips, or 26 percent; this percentage is expected to increase slightly by 2022.

TABLE 5
SUMMARY OF TRIP CHARACTERISTICS

	1999	2022	Growth
Trips generated within the corridor[1]	839,000	1,073,000	28%
Trips from/to the corridor	1,102,000	1,414,000	28%
Total corridor-related trips	1,941,000	2,487,000	28%
Trips outside the corridor	5,531,000	6,941,000	25%
Total Trips in Metro Area	7,472,000	9,428,000	26%

Source: SRF Consulting Group, Inc./regional travel forecast model
[1]see Figure 4.

Congestion on I-494

Interstate-494 is currently one of the most congested corridors in the Twin Cities region. The congestion is expected to increase over the next 20 years as local and regional development continues. One measure of a congested facility is the duration of congestion. The travel forecast model, which estimates daily traffic as the sum of six discrete time periods, was used to assess the number of time periods over which congestion occurs currently and is expected to occur. While this method provides a reasonable overview of congestion levels, it must be remembered that the forecast congestion does not reflect additional congestion due to mainline queues that develop as a result of traffic bottlenecks. Separate technical memoranda have been prepared detailing traffic and freeway operations.

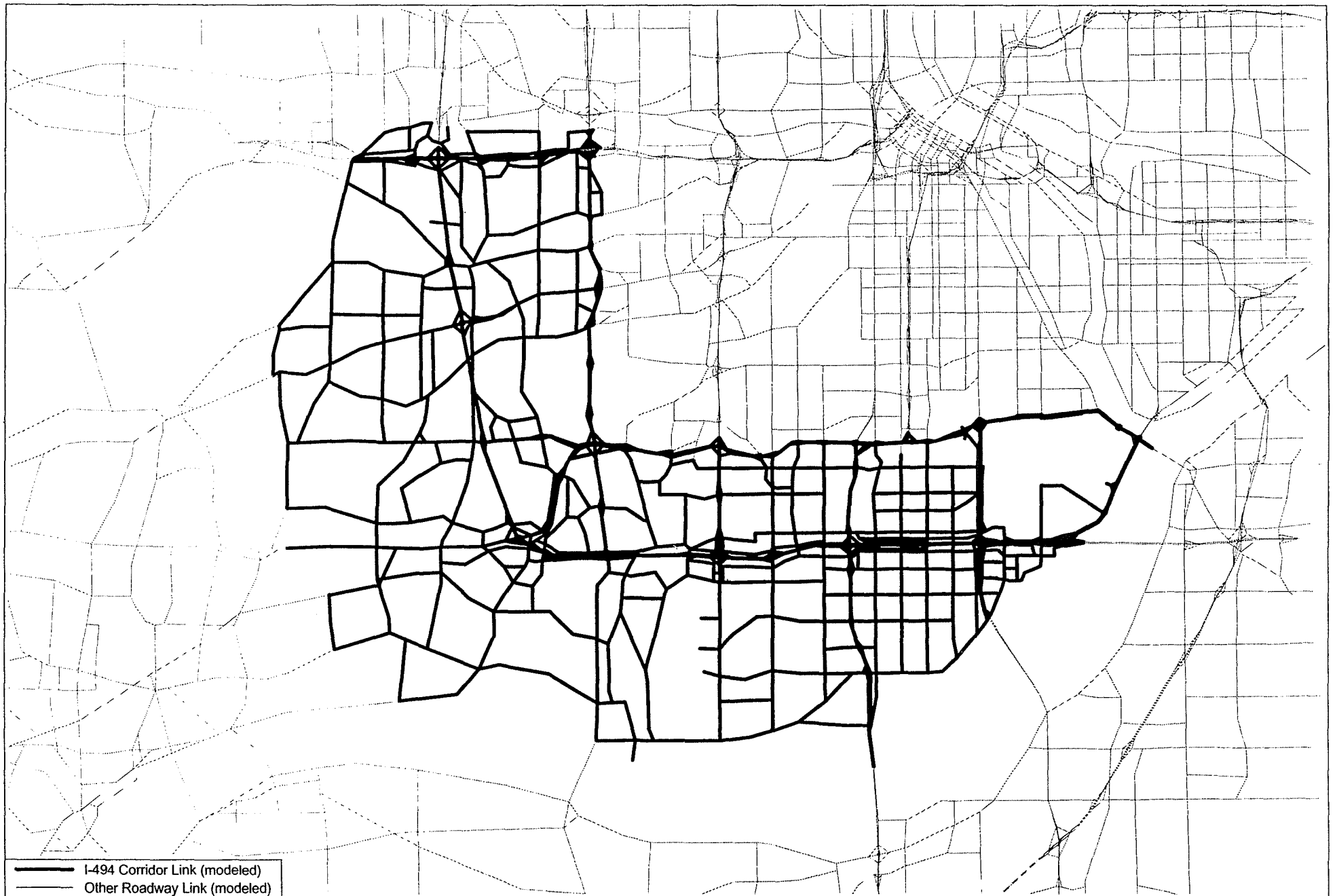

Figure 5

I-494 Corridor for Traffic Analysis Purposes

(Forecast Model Network)

Table 6 shows that 74 percent of I-494 currently operates under congested conditions (i.e. level of service D or worse) for at least one hour of the day, with 43 percent operating at level of service E or F (slow-and-go/stop-and-go). Currently, 24 percent is operating at level of service D or worse for four or more hours of the day. Under the No Build alternative, 83 percent of the freeway will operate at level of service D or worse for at least one hour, but the duration of congestion and magnitude of the congestion would increase substantially compared to current conditions—52 percent of the freeway would be congested four or more hours per day and 65 percent would experience at least one hour of level of service E/F conditions. Fourteen percent of the roadway would operate at level of service D or worse for at least six hours per day.

Under the Managed HOV alternative, most of I-494 would still experience some congestion, with 78 percent expected to operate at level of service D for at least one hour. However, it can be seen in Table 6 that the duration of congestion falls substantially under the Managed HOV alternative, with only four percent of the roadway experiencing level of service D or worse for four hours of the day. None of the facility would operate at level of service E/F outside of a single peak hour.

TABLE 6
PERCENT OF I-494 WITH CONGESTION[1]

	Existing	2022 No Build	2022 Managed HOV
Level of Service "D" or Worse			
At least one hour per day	74%	83%	78%
At least two hours per day	73%	80%	38%
At least three hours per day	52%	74%	6%
At least four hours per day	24%	52%	4%
At least five hour per day	14%	32%	0%
At least six hours per day	5%	14%	0%
Level of Service "E" or Worse			
At least one hour per day	43%	65%	33%
At least two hours per day	39%	59%	0%
At least three hours per day	15%	40%	0%
At least four hours per day	5%	19%	0%
At least five hour per day	4%	7%	0%
At least six hours per day	0%	4%	0%

Source: SRF Consulting Group, Inc./regional travel forecast model
[1] Based on 36 directional miles of roadway, I-394 to Minnesota River

The current model-estimated peak hour average speeds are 40-42 miles per hour in the a.m. peak hour, and 36-38 miles per hour (mph) in the p.m. peak hour (Table 7). By 2022 these speeds will drop to 31 to 35 mph in the a.m. and 26-30 mph (p.m.). The Managed HOV Alternative will improve these speeds to approximately current levels. However, as noted above, the duration of congestion will drop substantially, and the forecast model under-represents traffic queuing due to bottlenecks.

TABLE 7
SPEED AND TRAVEL TIME COMPARISONS

	1999[1]	2022 2022 No build	2022 Managed HOV	% Difference (Managed-No Build)
AM Peak average trip time along I-494 (minutes)				
Eastbound: I-394 - Minnesota River	29	35	28	-22.2%
Westbound: Minnesota River – I-394	27	31	25	-19.7%
AM Peak average trip speed along I-494 (mph)				
Eastbound: I-394 - Minnesota River	40	32	41	28.5%
Westbound: Minnesota River – I-394	42	36	45	24.5%
PM Peak average trip time along I-494 (minutes)				
Eastbound: I-394 - Minnesota River	30	38	28	-25.0%
Westbound: Minnesota River – I-394	32	43	31	-27.3%
PM Peak average trip speed along I-494 (mph)				
Eastbound: I-394 - Minnesota River	38	30	40	33.4%
Westbound: Minnesota River – I-394	36	26	36	37.6%

[1]Model-estimated trip time and trip speed
Source: SRF Consulting Group, Inc./regional travel forecast model

Figures 6 through 8 depict the relative level of congestion on freeways in the in the I-494 corridor area. In general, freeways in the area are currently operating at or above capacity, resulting in congestion. Performance levels will continue to worsen by the year 2022. Under the Managed HOV alternative congestion would still exist; however the number of hours where the facility would operate at level of service D or worse would decrease. Furthermore, some reduction of congestion on TH 62 would result from traffic diverting from TH 62 to the new capacity on I-494.

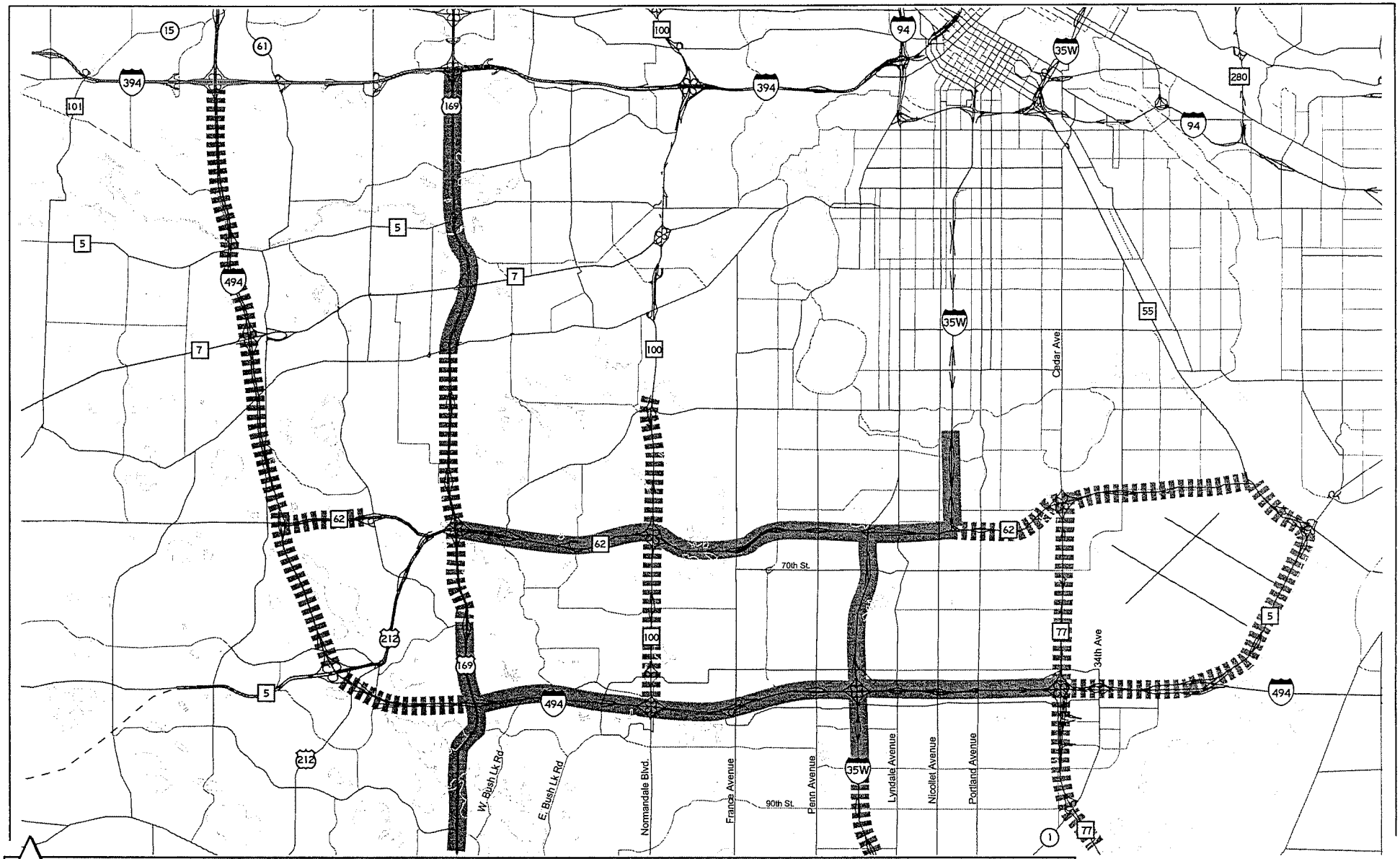

Figure 6

Generalized Peak Hour Level of Service on Regional Highway System (1999) Existing

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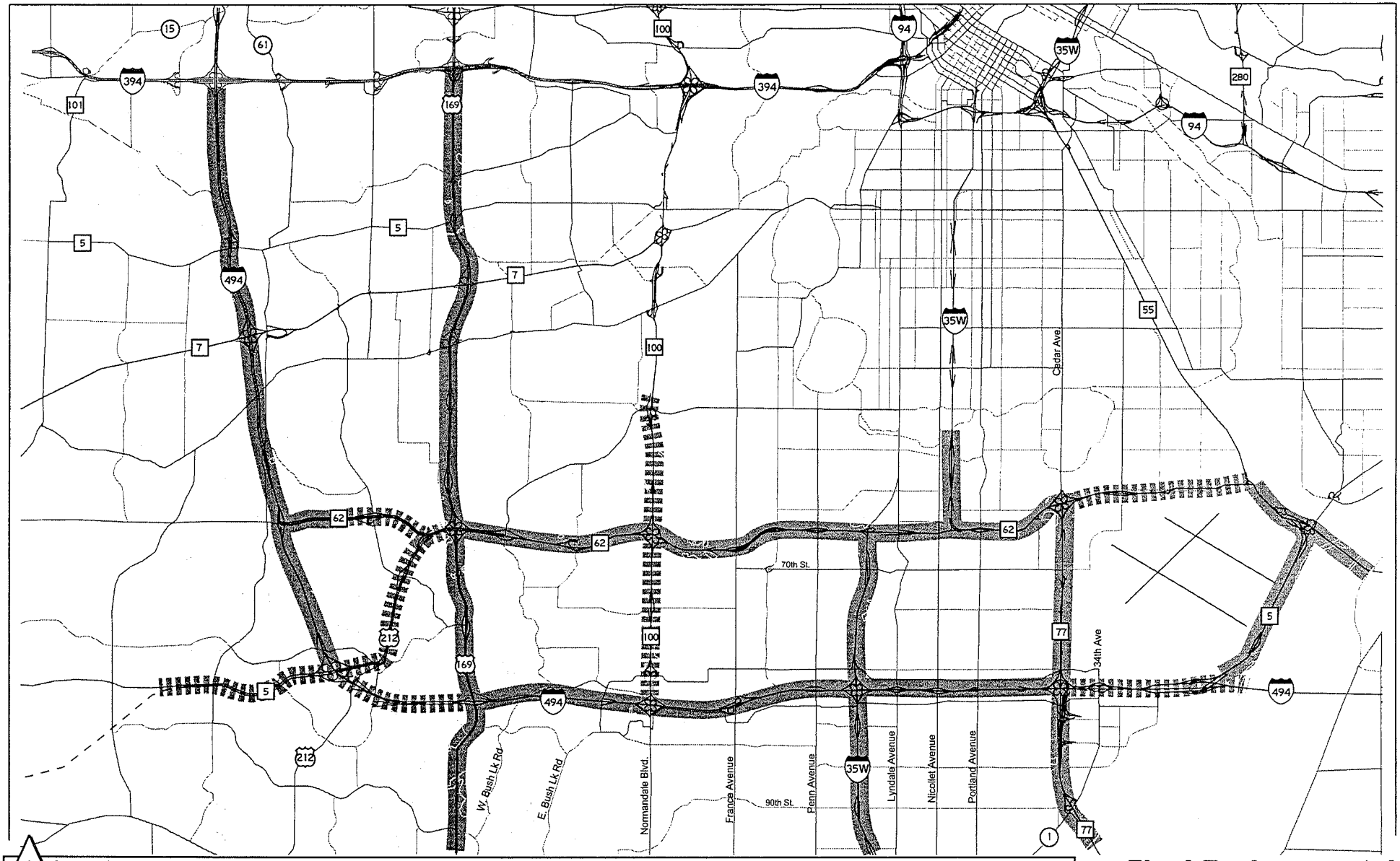
I-394 to the Minnesota River



Legend

Heavily Congested (Level of Service E/F)[1]

Congested (Level of Service D)[2]

[1]Volume greater than 1950 vehicles per hour per lane. [2]Volume greater than 0.63 percent of capacity(1250 vehicles per lane per hour).

Figure 7

Generalized Peak Hour Level of Service on Regional Highway System
2022 No Build

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I-394 to the Minnesota River

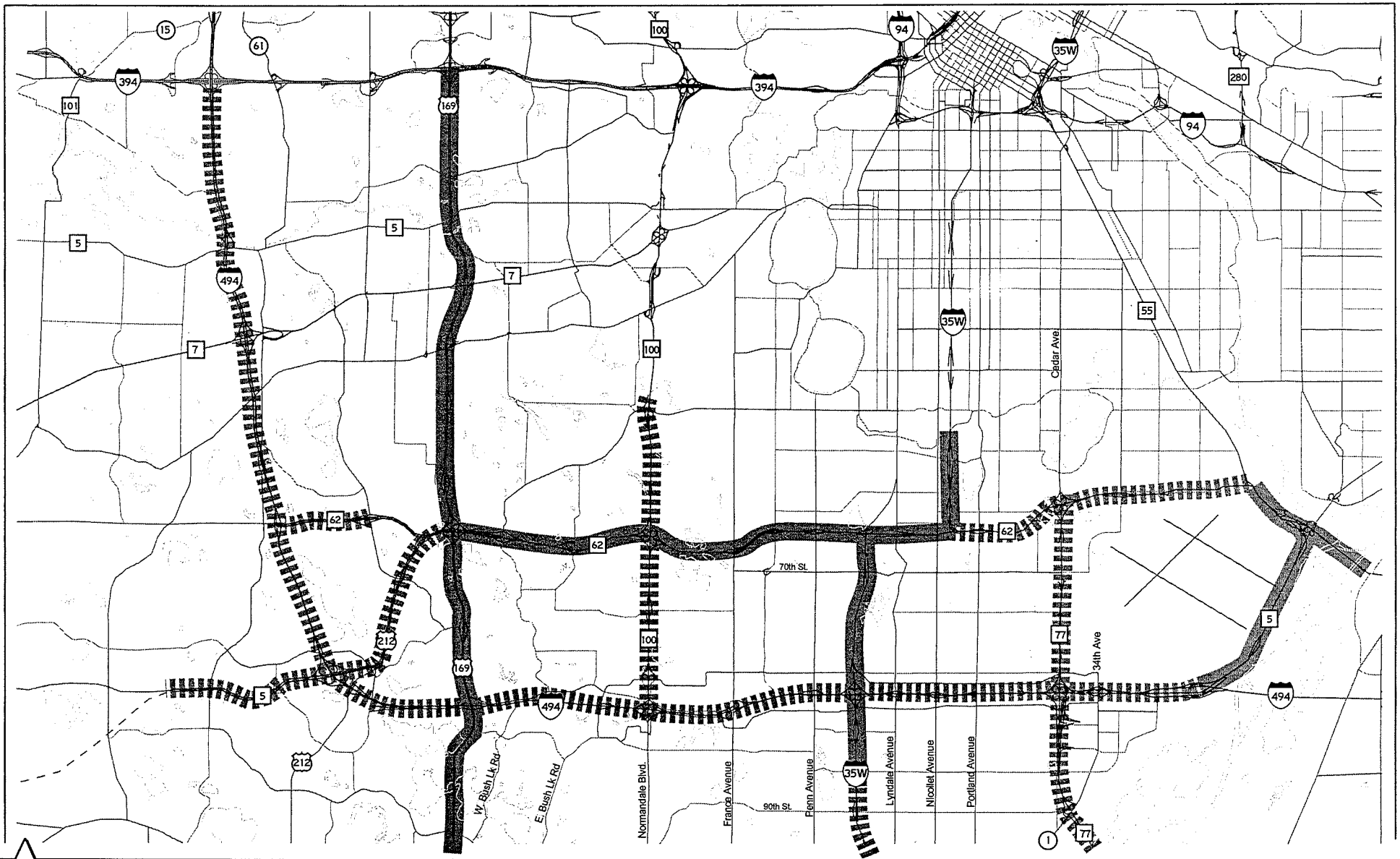

Figure 8

Generalized Peak Hour Level of Service on Regional Highway System
2022 Preferred Alternative

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I-394 to the Minnesota River

Comparison of No Build and Managed HOV Corridor

The Build alternatives and the No Build alternative in the I-494 need to be compared at three different levels:

(1) The differences between alternatives at a **regional** level
(2) The differences between alternatives on the I-494 **facility** itself
(3) The differences between alternatives in the I-494 **corridor**

The differences between alternatives can be considered in the context of changes in travel time (vehicle hours of travel) and travel distance (vehicle miles of travel). These two measures best reflect the time and cost benefits and disbenefits of alternatives.

The first level of analysis (regional), is included to ensure that all travel changes in the region are taken into account, including those diverting from other corridors into the I-494 corridor. Decreased congestion on I-494 provides sufficient benefit to long-distance trips that it affects travel patterns outside of the corridor. I-494 is part of the "beltway" of the Twin Cities area. The second level of analysis (corridor) is commonly used to assess the amount of traffic that would divert to or from a facility under different alternatives. For example, increases in freeway capacity may reduce the amount of medium-to-long distance traffic on parallel minor arterials or freeways. The final level of comparison (facility) is necessary for the purposes of facility design and localized impacts such as air quality and noise. On a currently congested roadway such as I-494 it can be expected that traffic levels will increase from a No-Build to a Build alternative as additional capacity is added.

Table 8 summarizes the changes in regional travel as measured by vehicle miles of travel (VMT) and vehicle hours of travel (VHT) between the Managed HOV and No Build alternatives. On a regional level, VMT does not change substantially between alternatives but VHT decreases by approximately 21,000 hours per day (a 1.1 percent reduction). This is an indicator that some travelers are replacing their trips with similar-length but less-congested alternatives (and/or that the traffic remaining on routes where traffic is diverted from experiences less congestion). Other travelers may take longer distance trips if it results in a travel time savings. Increased trip distances that result in time saved are reflected in higher VMT. On a facility level they appear to indicate induced traffic, since they give the appearance of more traffic; however, the only represent a change in the length of a trip, not the number of trips taken.

Under the Managed HOV alternative the I-494 corridor becomes more attractive due to its additional capacity and reduced congestion. Travel in the corridor *increases* by 200,000 VMT per day (1.9 percent) with 6,400 *fewer* hours of vehicle travel (a 2.2 percent reduction).

Traffic on I-494 itself is expected to increase by 14.1 percent (VMT) between the No Build and Managed HOV alternatives, with a 4.4 percent increase in vehicle hours of travel.

TABLE 8
SUMMARY OF REGIONAL, CORRIDOR AND FREEWAY TRAVEL CHARACTERISTICS: 2022 NO BUILD AND MANAGED HOV ALTERNATIVES

		2022		
	1999	No Build	Managed HOV	% Difference (Managed-No Build)
Regional Travel				
Daily Vehicle Hours Traveled (hours)	1,427,000	2,002,000	1,981,000	-1.1%
Daily Vehicle Miles Traveled (miles)	56,940,000	76,188,000	76,151,000	0.0%
Travel in the I-494 corridor				
Daily Vehicle Hours Traveled (hours)	215,400	276,400	270,200	-2.2%
Daily Vehicle Miles Traveled (miles)	8,736,800	10,706,300	10,906,200	1.9%
Travel on I-494				
Daily Vehicle Hours Traveled on I-494 (hours)	41,900	55,300	57,800	4.4%
Daily Vehicle Miles Traveled on I-494 (miles)	2,148,100	2,618,000	2,987,000	14.1%

Source: SRF Consulting Group, Inc./regional travel forecast model

Analysis of the users of I-494 reflect both the regional importance of I-494 as well as its role as a "beltway" in the regional highway system. As shown in Table 9, an estimated 608,000 vehicle trips per day would use a portion of I-494 in the year 2022 under the Managed HOV alternative, or 7 percent of all trips made in the region. Of those trips, 80 percent are trips that would be greater than three miles in length (total trip length). In the peak hour, 88 percent of trips on I-494 would be greater than three miles in length, a reflection of the ability of the ramp metering system to discourage local trips on the regional highway system.

A total of 2,987,000 VMT are forecast to occur on I-494 over the course of its 18 miles. This translates to an average trip of 4.9 miles on I-494 for each user. I-494 is a beltway roadway, and the 18-mile segment has interchanges with other principal arterials every three miles on average—it is therefore logical to expect that a substantial amount of trips would have a short duration on I-494. However, the average total trip length of I-494 users is 17.2 miles, which is over twice the forecast regional trip length of 8.1 miles. Approximately 28 percent of the trip of a vehicle that uses I-494 would occur on the I-494 facility itself.

TABLE 9
FORECAST TRIP CHARACTERISTICS OF I-494 USERS [1]

Total Regional Vehicle Trips	9,425,000
Vehicle Trips Using I-494	608,500
Percent of trips that use I-494	*7%*
I-494 trips greater than 3 miles in length	484,930
Percent	*80%*
Total Daily Regional VMT	76,042,000
Daily VMT on 494	2,987,000
Percent of VMT that is on I-494	14%
Average Trip Length on I-494 (miles)	*4.90*
Total-Trip VMT of I-494 Users	10,488,300
Average trip length (miles)	*17.2*
Percent of trip that is on I-494	*28%*

Source: SRF Consulting Group, Inc./regional travel forecast model
[1] Based on Year 2022 Managed HOV alternative

Comparison of Managed HOV Corridor and HOV Corridor

Forecasts of the impacts of an HOV lane alternative were generated by assuming the inside lane of the Managed HOV alternative would be replaced with an HOV-only lane during the peak periods. The assumption was made to provide the HOV lane in both directions during both peak periods.

Table 10 shows the effect of the HOV lane alternative on choice of modes: time savings provided by the HOV lane generates 325 additional carpools (relative to the No Build alternative) compared to 100 new carpools for the No Build alternative. This represents a small reduction relative to the estimated 160,000 work-trip vehicle-trips that use I-494. The primary reasons for the low level of carpool formation are:

- As noted above, the average trip on I-494 is for only 4.9 miles, which is not long enough to generate substantial travel time savings considering the need to weave to and from the HOV lane.

- The primary market for I-494 work trips is suburb-to-suburb travel, which does not have high levels of either the residential or employment density.
- The suburban work-trip market is not subject to parking costs that provide further incentives for carpool formation.

TABLE 10
I-494 USER HOME-BASED WORK TRIP CARPOOL FORMATION

Alternative	Single-Occupant Vehicles	Multi-Occupant Vehicles	Total Vehicles	Total Persons	Average Vehicle Occupancy	Percent Vehicles that are Multi-Occupant
No Build	146,925	13,075	160,000	175,925	1.099	8.17%
Managed HOV	146,725	13,175	159,900	175,950	1.100	8.24%
Difference from No Build	*-200*	*100*	*-100*	*25*	*0.001*	
Percent Difference	*-0.1%*	*0.8%*	*-0.1%*	*0.0%*	*0.1%*	
HOV Lane	146,275	13,400	159,675	175,975	1.102	8.39%
Difference from No Build	*-650*	*325*	*-325*	*50*	*0.003*	
Percent Difference	*-0.4%*	*2.5%*	*-0.2%*	*0.0%*	*0.2%*	

Source: SRF Consulting Group, Inc./regional travel forecast model

Table 11 summarizes the changes in regional travel as measured by VMT and VHT between the managed HOV and No Build alternatives. On a regional level the HOV alternative has slightly higher VHT than the Managed HOV alternative, an indicator of a slight loss of efficiency. Within the corridor itself, VHT increases by 0.7 percent while VMT is reduced; this reflects fewer trips diverting into the corridor, with a slight increase in congestion. Finally, on I-494 itself a 3.3 percent decrease in VMT is accompanied by a 2.3 percent reduction in VHT.

TABLE 11
SUMMARY OF REGIONAL, CORRIDOR AND FREEWAY TRAVEL CHARACTERISTICS: 2022 MANAGED HOV AND HOV LANE ALTERNATIVES

	2022		
	Exclusive HOV	Managed HOV	% Difference (Managed-Exclusive)
Regional Travel			
Daily Vehicle Hours Traveled (hours)	1,980,900	1,989,700	0.4%
Daily Vehicle Miles Traveled (miles)	76,150,800	76,169,400	0.0%
Travel in the I-494 Corridor			
Daily Vehicle Hours Traveled (hours)	270,200	272,100	0.7%
Daily Vehicle Miles Traveled (miles)	10,906,200	10,849,500	-0.5%
Travel on I-494			
Daily Vehicle Hours Traveled (hours)	246,900	241,300	-2.3%
Daily Vehicle Miles Traveled (miles)	10,578,300	10,228,200	-3.3%

Source: SRF Consulting Group, Inc./regional travel forecast model

The reductions in VMT and VHT are reflections of the lower overall carrying capacity of I-494 under the HOV alternative. The replacement of a mixed-use lane with an HOV-only lane increases the amount of congestion in the remaining mixed-use lane relative to the Managed HOV alternative. The additional congestion is not offset by benefits to HOV users or by the creation of new HOVs. Table 12 shows the forecast increase in the number of congested hours on I-494 with the HOV alternative—the number of miles of I-494 experiencing a second or third hour of peak congestion increases substantially under the HOV alternative.

TABLE 12
PERCENT OF I-494 WITH CONGESTION[1]

	2022	
	Managed HOV	HOV
Level of Service "D" or Worse		
Congested at least one hour per day	78%	82%
Congested at least two hours per day	38%	75%
Congested at least three hours per day	6%	31%
Congested at least four hours per day	4%	6%
Congested at least five hour per day	0%	1%
Congested at least six hours per day	0%	0%
Level of Service "E" or Worse		
Congested at least one hour per day	33%	31%
Congested at least two hours per day	0%	26%
Congested at least three hours per day	0%	1%
Congested at least four hours per day	0%	0%
Congested at least five hour per day	0%	0%
Congested at least six hours per day	0%	0%

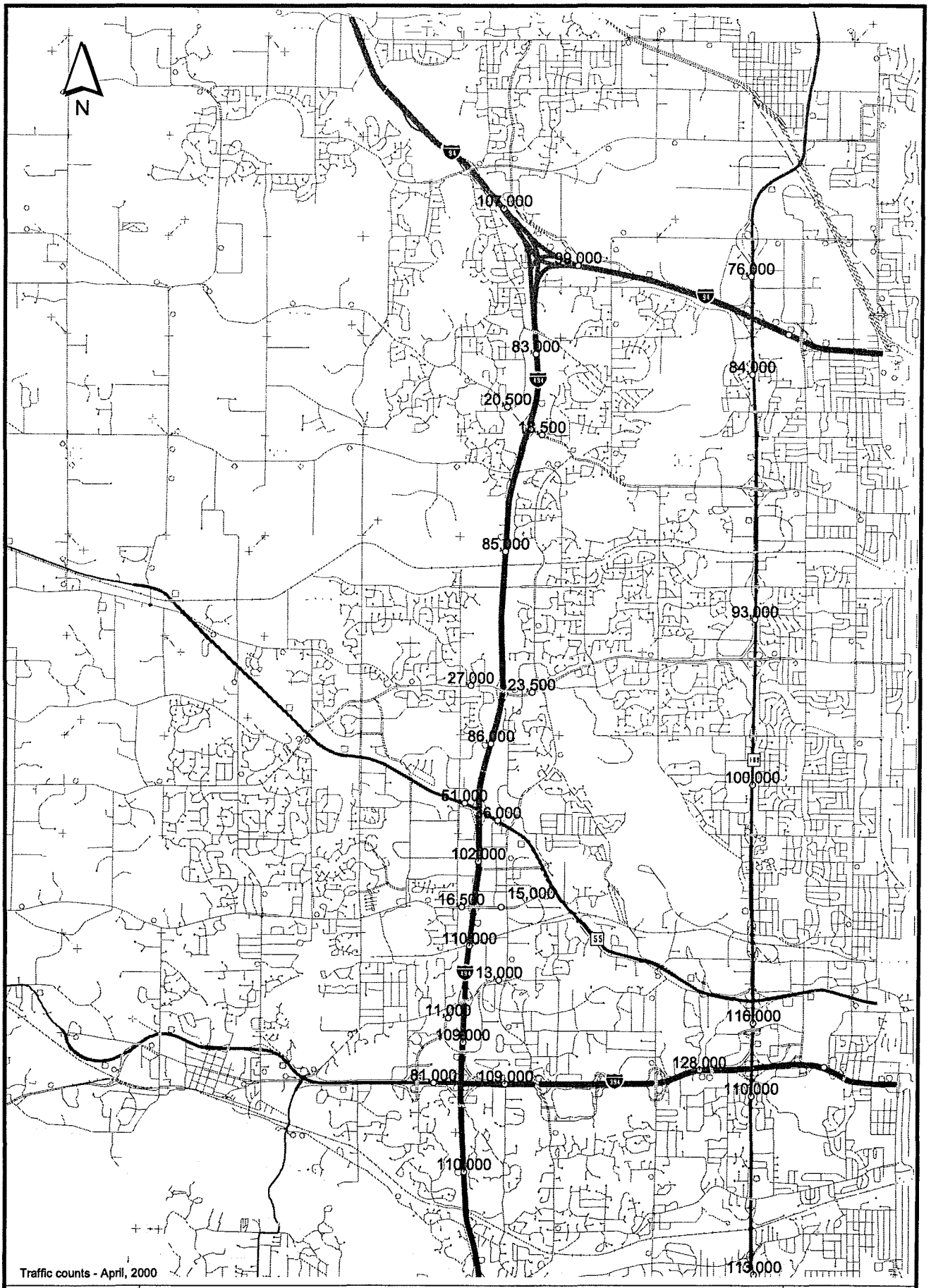
Source: SRF Consulting Group, Inc./regional travel forecast model

(1) Based on 36 directional miles of roadway, I-394 to Minnesota River

Traffic Volumes

The existing and forecast daily traffic volumes are shown in Figures 9 through 17. These volumes were used as input to the traffic operations analysis discussed under a separate memorandum. Although the forecast volumes represent a substantial increase over current levels, they will be constrained by the capacity available on I-494, even under the Managed HOV alternative.

Table 13 shows the existing and forecast daily traffic volumes on selected segments of I-494 under the various alternatives. Included in the table is an "unconstrained forecast" that represents the true demand for travel on I-494 by assuming no congestion-related delay. In general, the managed HOV alternative will accommodate all but approximately 10,000 to 20,000 of the possible demand, or 90 to 95 percent. The area where the biggest deficit is expected to exist is in the vicinity of TH 169 and Bush Lake Road where an additional 23,000 vehicle per day demand would exist.

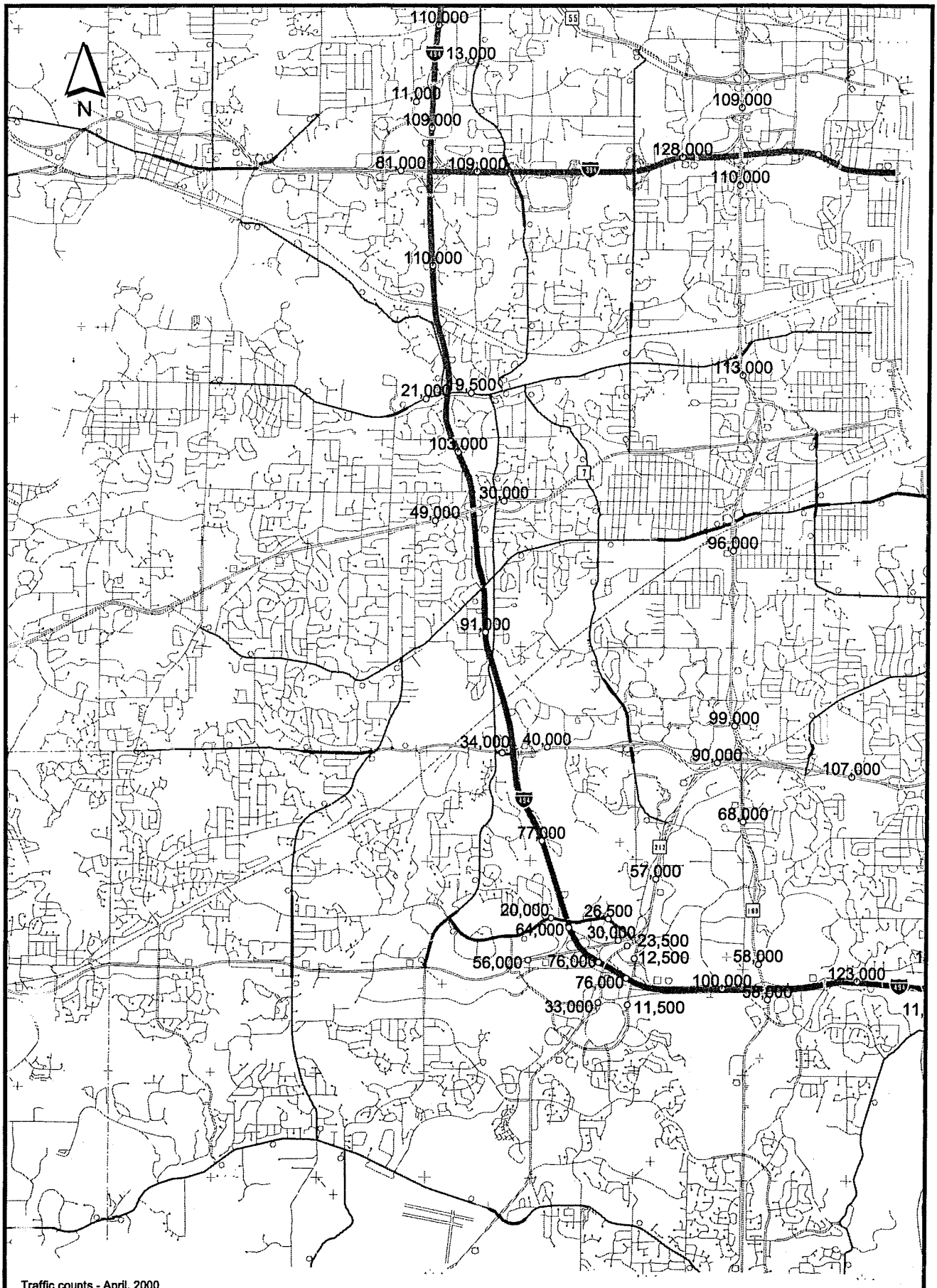


SRF Consulting Group, Inc.

I-494

Existing Daily Volumes

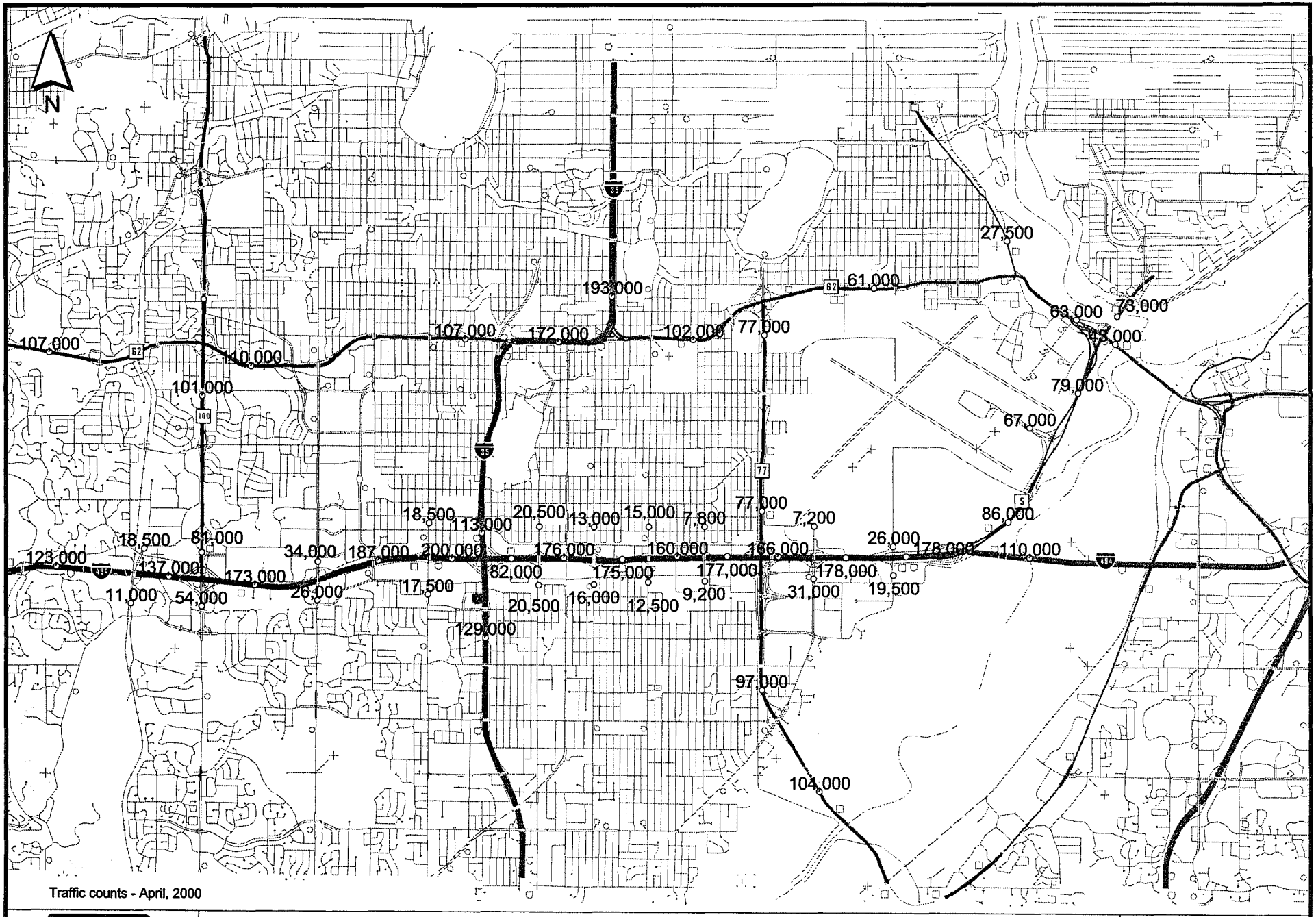
Figure 9



SRF Consulting Group, Inc.

I-494
Existing Daily Volumes

Figure 10

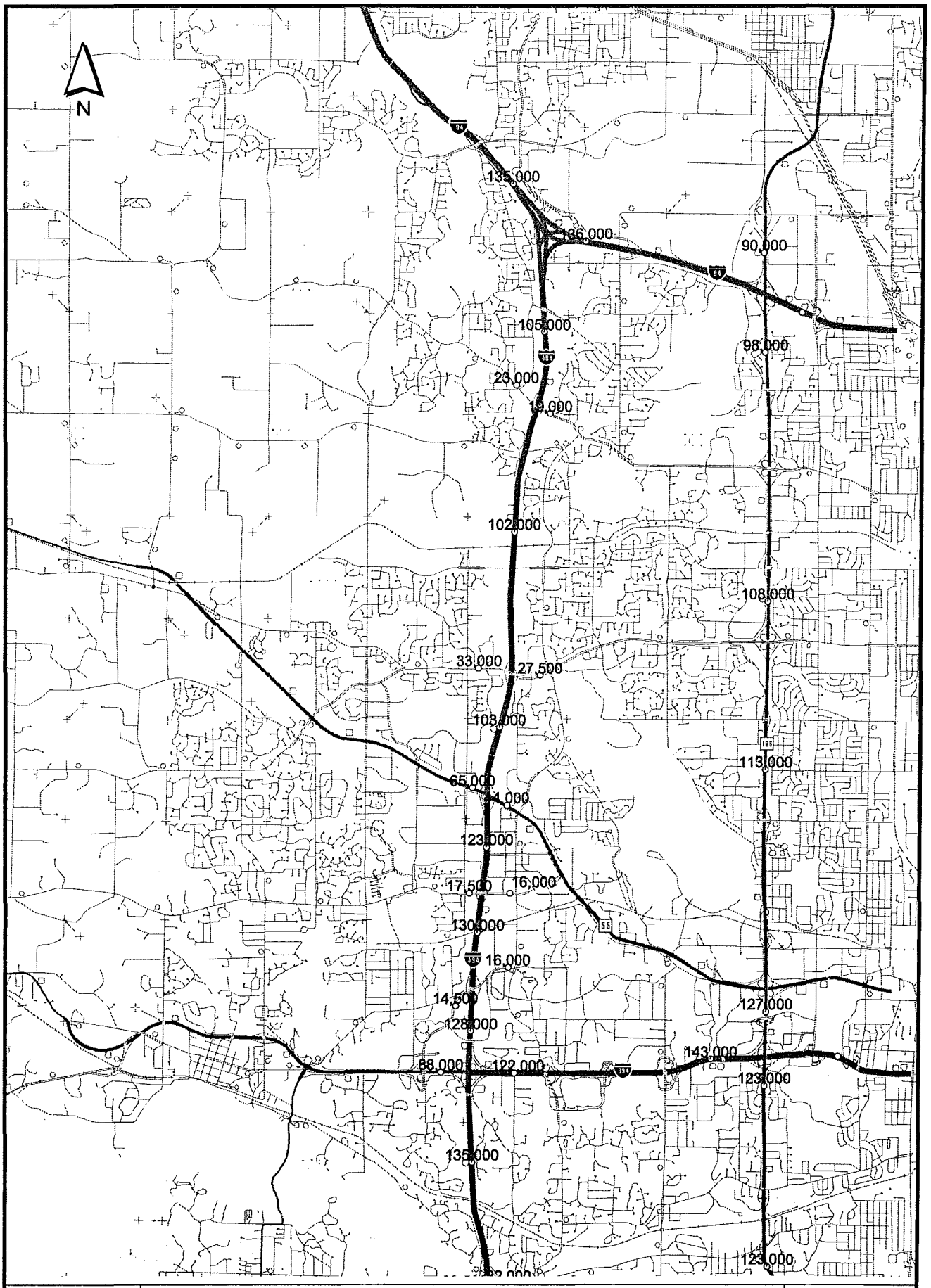


SRF Consulting Group, Inc.

I-494

Existing Daily Volumes

Figure 11

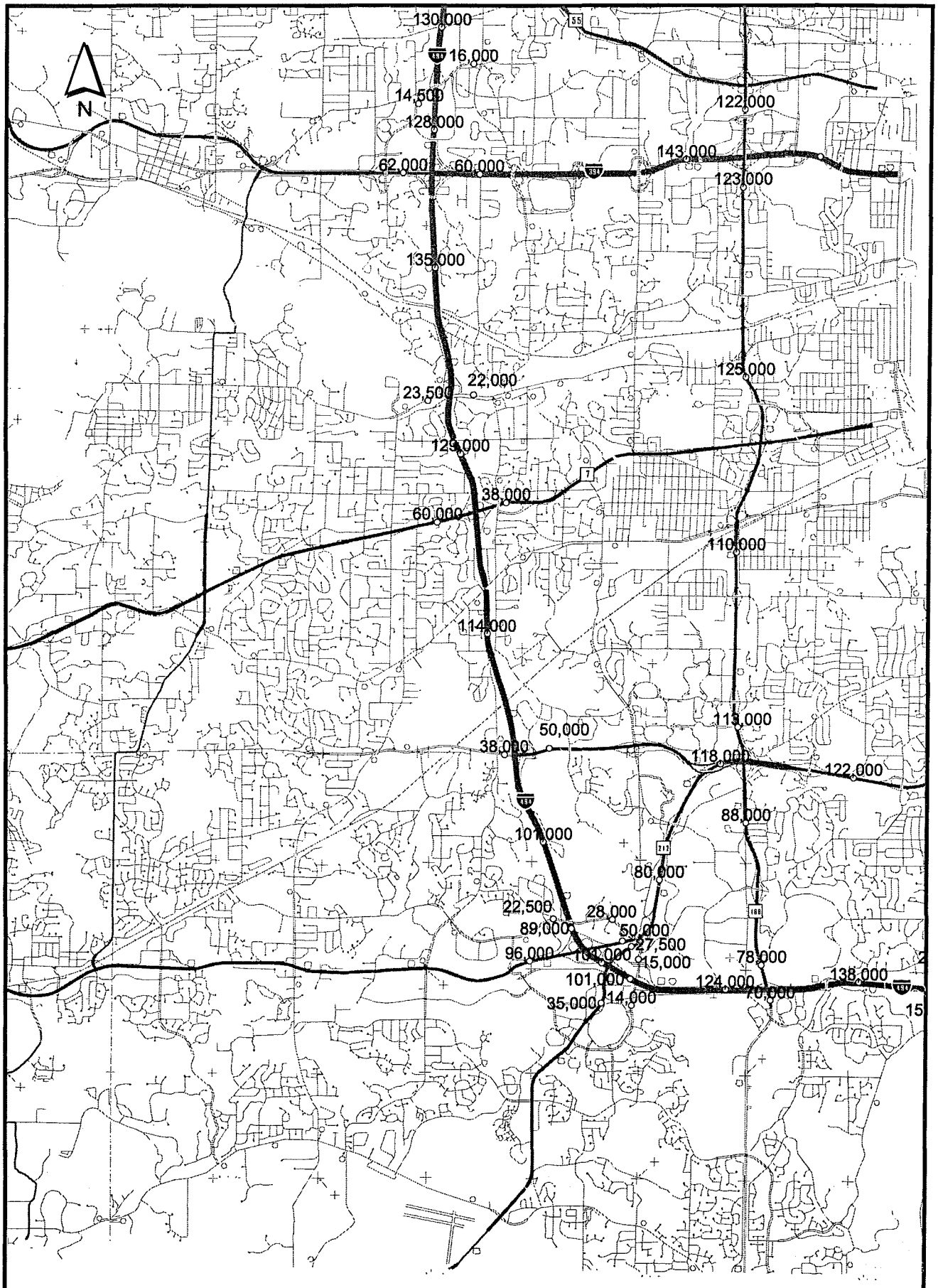


SRF Consulting Group, Inc.

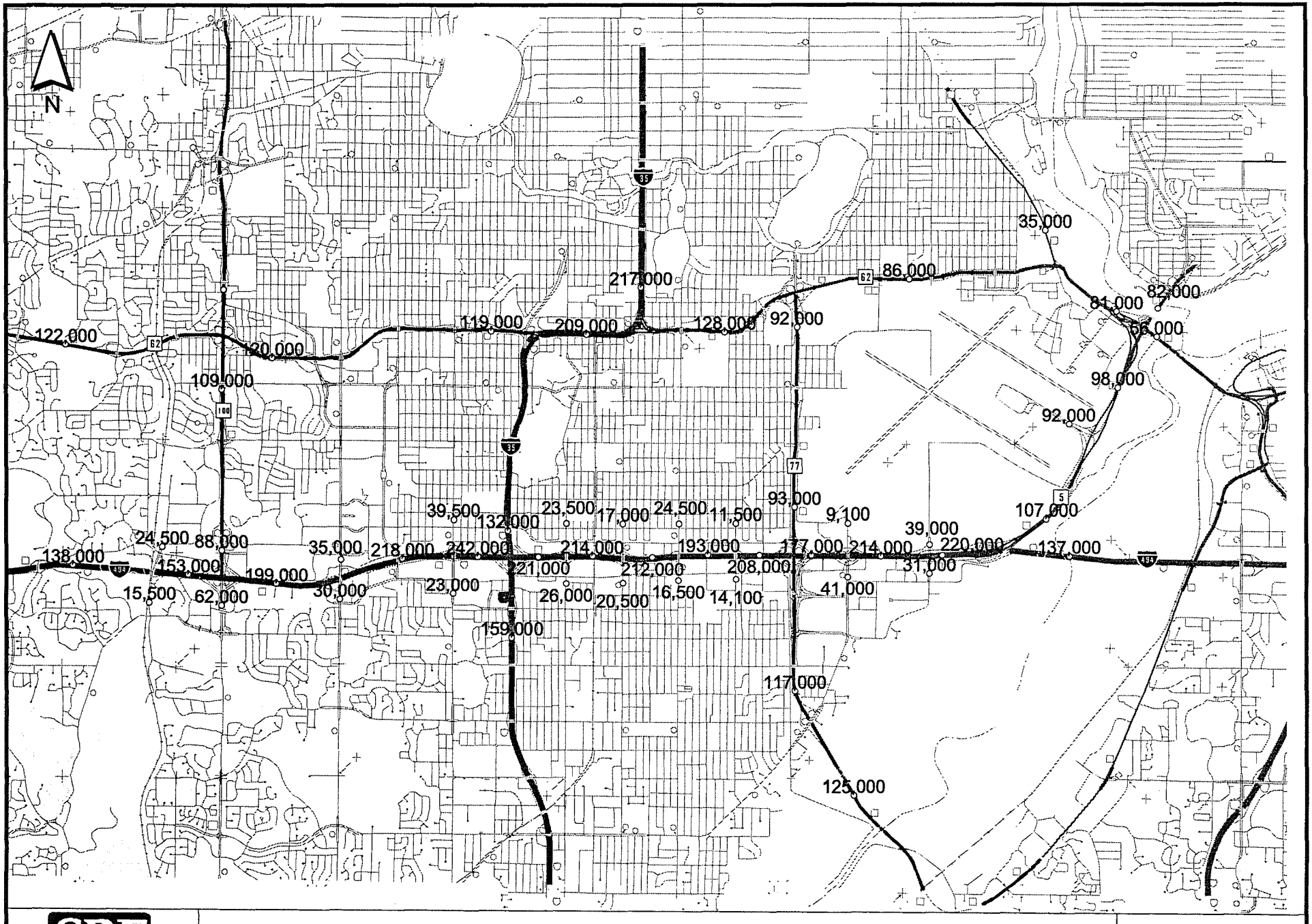
I-494

2022 No Build Daily Volumes

Figure 12



SRF Consulting Group, Inc.	**I-494** **2022 No Build Daily Volumes**	**Figure** **13**

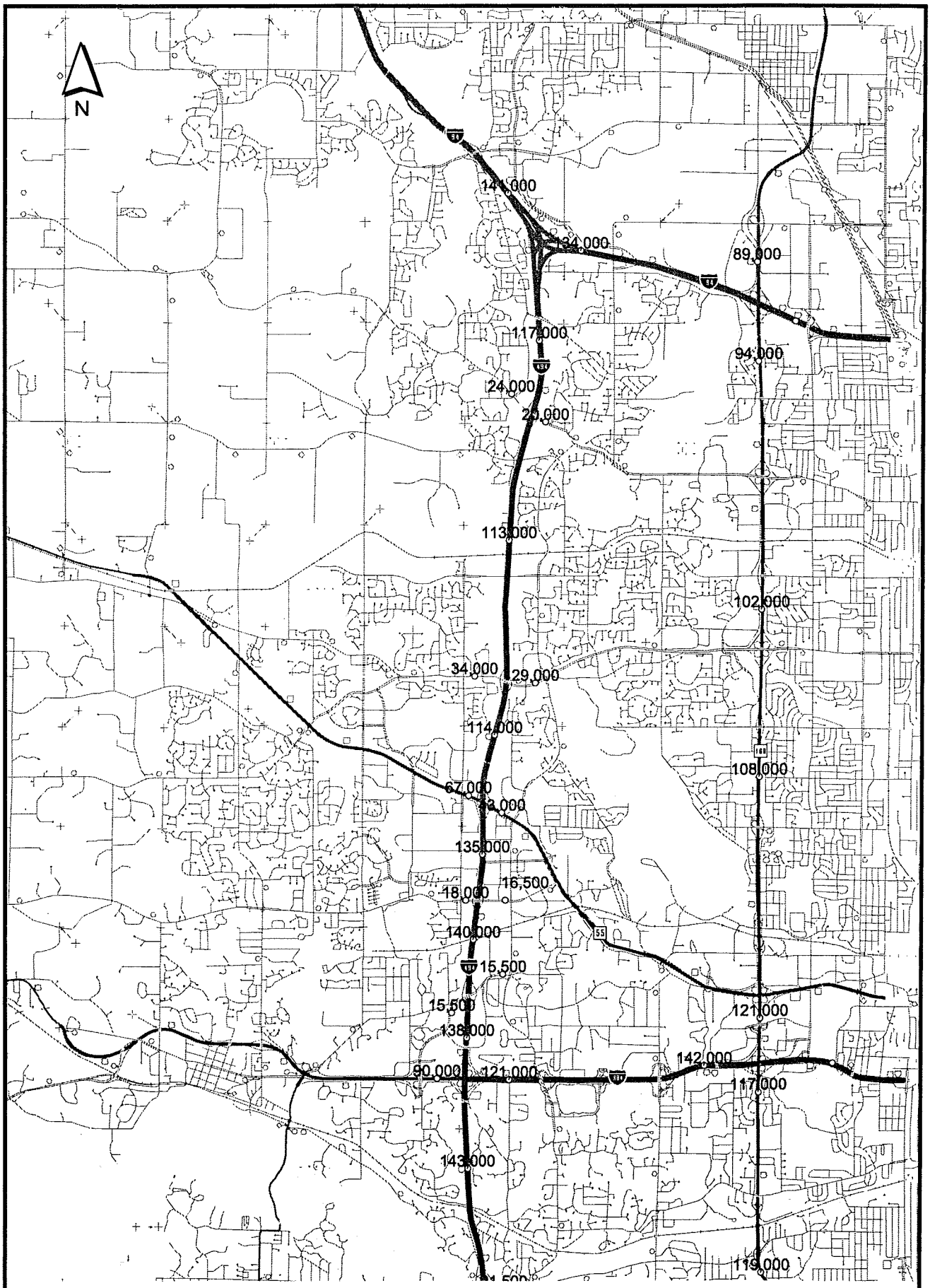


SRF Consulting Group, Inc.

I-494

2022 No Build Daily Volumes

Figure 14

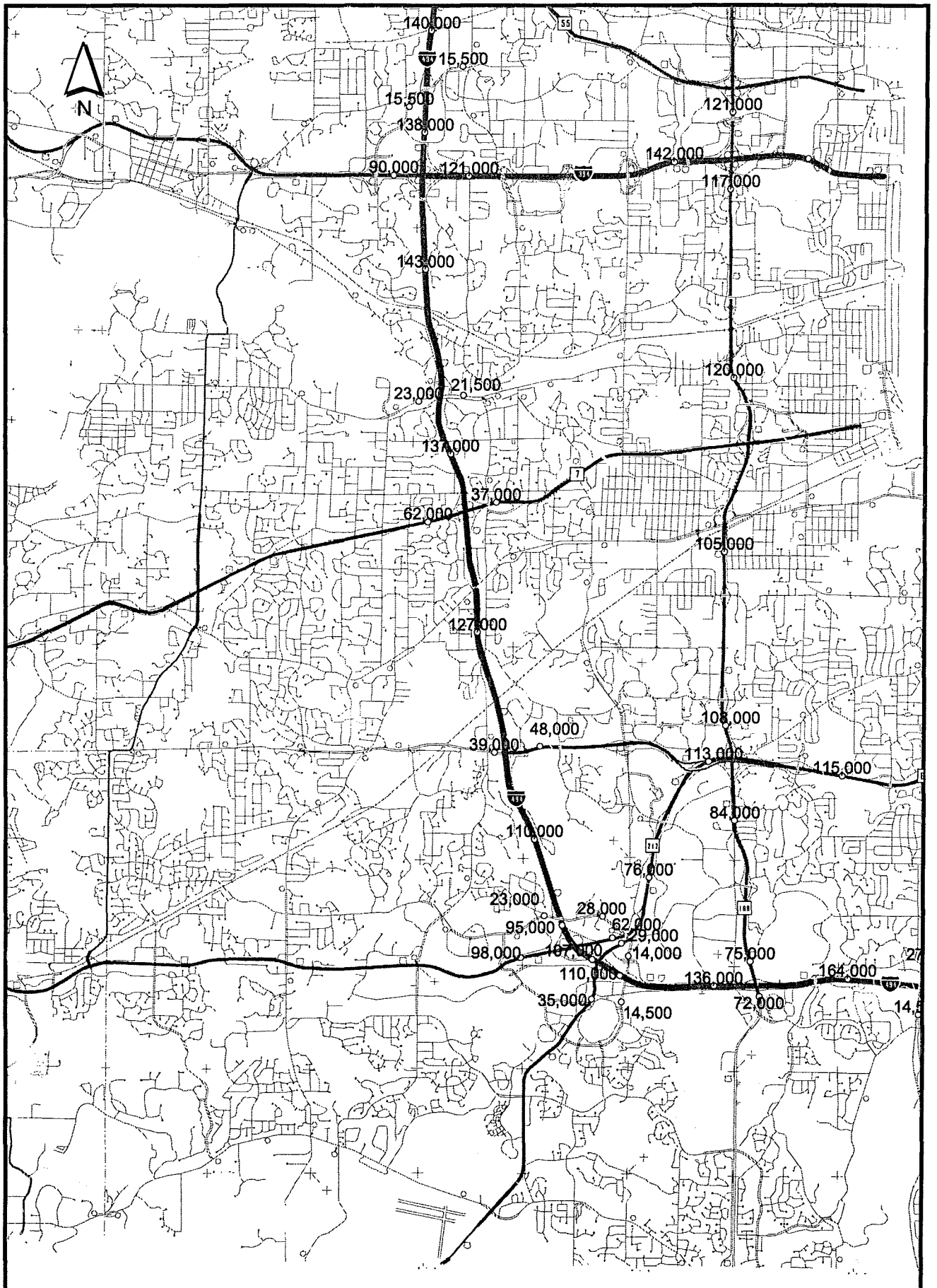


SRF Consulting Group, Inc.

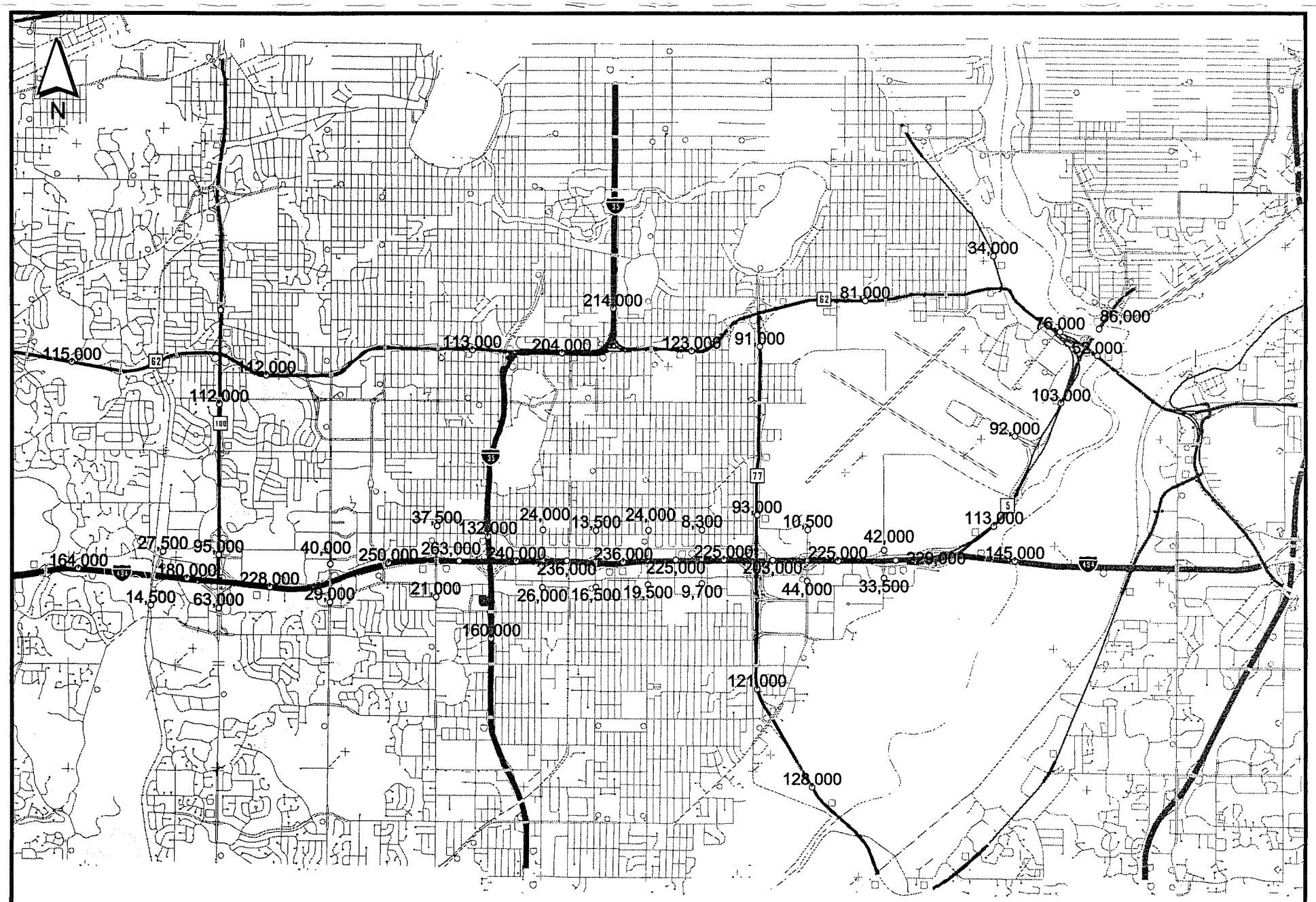
I-494

2022 Build Daily Volumes

Figure 15



SRF Consulting Group, Inc.	**I-494** **2022 Build Daily Volumes**	**Figure** **16**



SRF Consulting Group, Inc.

I-494

2022 Build Daily Volumes

Figure 17

TABLE 13
DAILY TRAFFIC FORECAST ON SELECTED TWO-WAY SEGEMENTS OF I-494

Segment	1999 Existing	2022 No Build	2022 HOV Lane Mixed Use	2022 HOV Lane HOV	2022 HOV Lane Total	2022 Managed HOV	2022 Unconstrained
CR 10 and I-94	83,000	105,000	104,100	6,100	110,000	117,000	128,000
Change over existing		*27%*			*33%*	*41%*	*54%*
Change over No Build					*5%*	*11%*	*22%*
CR 6 and TH 55	110,000	130,000	129,000	7,000	136,000	145,000	160,000
Change over existing		*18%*			*24%*	*32%*	*45%*
Change over No Build					*5%*	*12%*	*23%*
Minnetonka Blvd and I-394	110,000	135,000	133,000	7,200	140,000	148,000	166,000
Change over existing		*23%*			*27%*	*35%*	*51%*
Change over No Build					*4%*	*10%*	*23%*
Valley View Rd and TH 62	77,000	101,000	99,000	5,000	104,000	110,000	120,000
Change over existing		*31%*			*35%*	*43%*	*56%*
Change over No Build					*3%*	*9%*	*19%*
TH 169 and East Bush Lake Rd	123,000	132,000	150,000	6,000	156,000	164,000	187,000
Change over existing		*7%*			*27%*	*33%*	*52%*
Change over No Build					*18%*	*24%*	*42%*
Penn Ave and France Ave	187,000	218,000	238,000	7,900	246,000	255,000	272,000
Change over existing		*17%*			*32%*	*36%*	*45%*
Change over No Build					*13%*	*17%*	*25%*
Portland Ave and Nicollet Ave	175,000	212,000	224,000	7,400	231,000	236,000	244,000
Change over existing		*21%*			*32%*	*35%*	*39%*
Change over No Build					*9%*	*11%*	*15%*
34th Street and 24th Street	178,000	214,000	224,000	-	224,000	225,000	228,000
Change over existing		*20%*			*26%*	*26%*	*28%*
Change over No Build					*5%*	*5%*	*7%*
TH 212 and TH 169	100,000	125,000	130,000	6,000	136,000	146,000	157,000
Change over existing		*25%*				*46%*	*57%*
Change over No Build					*9%*	*15%*	*26%*

APPENDIX A

SOCIO-ECONOMIC DATA

I-494 FINAL EIS
EXISTING DEMOGRAPHIC DATA BY I-494 TAZ

Metropolitan Council TAZ	I-494 TAZ	Population	Households	Retail Employment	Non-retail Employment
309	309	-	-	135	9,437
309	2035	-	-	-	-
310	310	-	-	-	-
310	2036	109	42	-	1,734
454	454	1,677	699	13	225
454	2038	815	340	15	265
454	2039	1,062	443	6	99
454	2040	284	118	1	16
455	455	1,810	765	7	17
455	2041	2,398	1,014	108	427
455	2042	1,161	491	26	140
455	2043	493	209	29	157
456	456	1,157	459	3	20
456	2044	231	92	52	729
457	457	1,427	584	33	297
457	2045	1,391	569	2	19
460	460	1,446	588	33	786
460	2046	910	370	13	319
461	461	996	498	59	10
461	2047	351	176	171	114
462	462	299	123	-	-
462	2048	1,235	507	115	199
462	2049	167	68	125	507
465	465	1,639	653	49	200
465	2051	994	396	6	25
466	466	808	423	76	30
466	2052	555	291	238	95
467	467	1,682	675	-	165
470	470	1,331	852	25	15
471	471	458	188	49	993
471	2053	253	104	248	5,033
472	472	-	-	138	3,879
472	2054	-	-	167	4,706
473	473	-	-	1,202	962
473	2055	-	-	4,361	3,490
473	2056	1,400	579	518	414
473	2057	327	135	-	-
474	474	1,211	485	461	2,531
474	2058	1,090	436	-	-
475	475	1,368	555	64	295
475	2059	1,492	605	29	133
478	478	873	352	-	-
478	2065	1,771	713	-	98
480	480	1,062	428	-	-
480	2066	648	261	24	87
481	481	1,041	425	228	1,821
481	2067	1,053	430	-	-
482	482	669	268	250	875
483	483	192	77	398	2,084
484	484	453	182	347	1,091
485	485	1,227	497	10	12
485	2068	782	317	173	196
486	486	734	300	451	1,454
486	2069	745	304	510	1,644
494	494	261	105	0	1
494	2082	2,059	825	107	213
495	495	2	1	-	-
495	2083	1,445	578	-	457
498	498	835	334	91	71
498	2084	645	258	105	82
499	499	520	222	1,221	1,900
500	500	-	-	1,195	3,359
500	2005	-	-	427	1,201
501	501	2,134	858	30	597
501	2006	1,700	684	61	1,210
502	502	1,542	636	1,542	1,929
503	503	2,107	853	25	223
503	2007	243	98	-	-
504	504	273	110	291	5,887

I-494 FINAL EIS
EXISTING DEMOGRAPHIC DATA BY I-494 TAZ

Metropolitan Council TAZ	I-494 TAZ	Population	Households	Retail Employment	Non-retail Employment
505	505	961	388	11	29
505	2008	1,035	417	42	109
505	2009	173	70	-	-
505	2010	1,525	615	-	-
505	2011	661	266	6	16
506	506	1,305	526	-	-
506	2012	1,144	461	12	268
507	507	246	99	-	-
507	2013	777	313	-	-
507	2014	2,105	849	-	3
507	2015	1,048	422	-	71
508	508	10	4	-	-
508	2016	1,738	710	-	1,032
512	512	726	557	90	1,330
513	513	2,401	1,697	1,494	1,356
517	517	688	471	415	1,882
517	2023	-	-	812	3,684
518	518	3,483	1,616	174	5,385
529	529	1,856	647	21	63
533	533	104	57	1,382	11,602
534	534	-	-	183	3,625
535	535	12	5	29	3,406
536	536	3,302	1,418	-	174
537	537	90	36	12	926
540	1245	-	-	77	158
540	1247	521	220	-	-
540	1248	1,321	558	-	-
540	1249	197	83	140	287
540	1250	425	180	13	26
541	1246	1,431	623	227	482
542	1237	18	7	15	636
542	1238	7	3	61	2,574
542	1239	-	-	35	1,478
542	1240	-	-	15	626
543	1235	-	-	127	3,119
543	1236	8	4	120	2,944
544	1233	4	1	9	1,061
544	1234	1	0	26	3,144
545	1232	472	322	80	3,569
546	1228	92	30	1	55
546	1229	566	182	6	248
546	1230	-	-	20	1,806
546	1231	201	65	5	212
547	1224	484	154	57	346
547	1225	1,154	367	-	-
549	1219	620	296	42	1,518
550	1226	916	429	140	771
550	1227	458	214	114	629
551	1289	2,597	1,355	11	292
551	1290	297	155	-	-
551	1291	-	-	15	386
551	1292	279	146	31	796
552	1293	-	-	137	531
552	1294	2	1	147	571
552	1295	1	0	135	522
553	1241	-	-	455	607
553	1242	-	-	140	187
553	1243	-	-	1,061	1,415
553	1244	-	-	509	678
562	1220	811	322	-	231
562	1221	1,410	559	-	13
563	1216	2,323	843	-	-
563	1217	768	279	-	-
563	1218	432	157	-	-
595	595	221	111	-	-
595	1841	-	-	110	2,438
595	1842	-	-	33	737
595	1843	915	461	-	-
595	1846	406	205	24	523

I-494 FINAL EIS
EXISTING DEMOGRAPHIC DATA BY I-494 TAZ

Metropolitan Council TAZ	I-494 TAZ	Population	Households	Retail Employment	Non-retail Employment
596	596	557	144	14	333
596	1844	1,282	331	1	32
596	1845	16	4	48	1,147
597	597	1,071	367	16	28
598	598	786	308	286	467
598	1847	1,252	491	45	73
599	599	1,964	693	-	-
600	600	1,465	486	57	107
608	608	237	91	6	139
608	1754	735	283	17	405
608	1755	603	232	48	1,130
609	609	368	131	-	-
609	1756	1,097	390	-	-
610	610	1,574	571	126	964
611	611	306	116	-	-
611	1757	1,416	538	-	38
611	1758	211	80	-	166
612	612	1,321	524	575	625
613	613	1,703	673	7	34
613	1759	558	221	-	-
613	1760	65	26	65	338
615	615	-	-	3,177	398
615	1763	-	-	-	-
616	616	234	90	292	169
616	1764	118	46	-	-
616	1765	4	2	991	574
617	617	258	97	-	-
617	1766	1,272	483	-	-
617	1767	508	193	-	-
618	618	379	116	-	-
618	1768	-	-	-	-
618	1769	608	186	-	190
618	1770	1,047	320	-	-
618	1771	299	92	-	-
618	1772	174	53	-	180
619	619	54	20	-	-
619	1773	200	74	-	-
619	1774	38	14	5	3,115
619	1775	321	119	-	-
620	607	228	87	59	252
620	620	1,121	427	0	2
620	1776	202	77	103	441
653	653	28	11	-	-
653	1777	30	12	-	184
653	1778	614	320	30	108
653	1779	28	14	189	673
654	654	-	-	93	486
654	1780	-	-	21	2,346
655	655	-	-	58	599
655	1781	118	50	-	-
655	1782	-	-	-	373
655	1783	274	103	-	-
655	1784	145	54	349	435
656	656	114	44	-	67
656	1785	333	165	-	-
656	1786	409	157	-	90
656	1787	1,902	943	-	-
656	1788	238	118	-	-
656	1789	11	5	260	584
656	1790	154	76	38	85
660	660	864	307	-	575
660	1619	308	108	-	-
660	1620	784	281	31	398
660	1621	1,007	467	44	34
661	661	-	-	-	1,566
661	1622	381	134	-	1,017
661	1623	734	255	68	896
661	1624	294	103	-	-
662	662	-	-	-	1,967

I-494 FINAL EIS
EXISTING DEMOGRAPHIC DATA BY I-494 TAZ

Metropolitan Council TAZ	I-494 TAZ	Population	Households	Retail Employment	Non-retail Employment
662	1625	-	-	-	1,891
663	663	-	-	517	1,458
663	1626	3	1	-	3,094
664	664	-	-	74	805
664	1627	503	236	9	3,259
664	1628	-	-	-	1,571
665	665	424	148	-	-
665	1629	726	253	-	-
666	666	406	131	-	-
666	1630	347	-	-	147
666	1631	223	54	-	61
666	1632	529	129	-	46
667	667	-	-	-	1,201
667	1633	2,713	1,363	-	2,249
675	675	9	3	-	-
675	1645	528	216	-	-
675	1646	71	26	-	-
675	1647	3	1	-	-
675	1648	150	53	-	-
675	1649	-	-	-	284
676	1650	2,789	1,011	-	-
676	1651	591	266	80	406
677	676	815	432	-	-
677	677	-	-	476	132
677	1652	1,791	842	-	-
677	1653	1,716	868	218	918
678	678	449	163	346	1,475
679	679	77	41	136	-
679	1654	801	283	-	197
679	1655	532	280	1,201	1,564
680	680	3,429	1,377	44	1,170
681	681	334	119	-	2
681	1656	758	287	-	-
681	1657	1,984	690	-	-
681	1658	-	-	775	-
681	1659	523	181	-	-
682	682	1,030	452	-	-
682	1660	482	168	-	-
682	1661	295	103	-	-
682	1663	604	210	-	-
682	1664	-	-	-	-
682	1665	808	280	-	-
683	683	-	-	-	1,393
684	684	-	-	-	-
684	1666	480	178	-	1,374
684	1667	17	6	-	458
779	779	1,953	659	64	222
779	1580	859	290	-	-
779	1581	1,692	571	5	65
780	780	1,546	520	47	114
780	1582	1,301	437	207	516
781	781	1,571	532	-	-
781	1584	1,547	524	11	626
782	782	118	42	-	441
782	1585	173	62	-	-
782	1586	393	140	-	-
782	1587	1,929	687	-	-
782	1588	1,484	529	1,163	529
785	785	1,577	525	6	124
785	1583	1,562	519	22	10
786	786	-	-	1,581	378
Total		182,863	74,434	38,978	187,564

I-494 FINAL EIS
EXISTING DEMOGRAPHIC DATA BY REGIONAL TAZ

Metropolitan Council TAZ	Population	Households	Retail Employment	Non-retail Employment
309	-	-	135	9,437
310	109	42	-	1,734
454	3,838	1,600	35	604
455	5,862	2,479	170	741
456	1,388	550	55	749
457	2,818	1,153	35	316
460	2,357	959	46	1,105
461	1,347	674	230	125
462	1,701	698	239	707
465	2,633	1,049	55	225
466	1,363	714	315	125
467	1,682	675	-	165
470	1,331	852	25	15
471	711	292	297	6,027
472	-	-	305	8,585
473	1,728	714	6,081	4,866
474	2,301	921	461	2,531
475	2,860	1,161	92	428
478	2,644	1,065	-	98
480	1,710	689	24	87
481	2,094	854	228	1,821
482	669	268	250	875
483	192	77	398	2,084
484	453	182	347	1,091
485	2,009	814	184	208
486	1,479	604	961	3,099
494	2,321	930	107	214
495	1,448	579	-	457
498	1,480	592	196	153
499	520	222	1,221	1,900
500	-	-	1,622	4,560
501	3,834	1,542	90	1,807
502	1,542	636	1,542	1,929
503	2,350	952	25	223
504	273	110	291	5,887
505	4,356	1,756	59	154
506	2,449	987	12	268
507	4,176	1,684	-	74
508	1,748	714	-	1,032
512	726	557	90	1,330
513	2,401	1,697	1,494	1,356
517	688	471	1,227	5,566
518	3,483	1,616	174	5,385

I-494 FINAL EIS
EXISTING DEMOGRAPHIC DATA BY REGIONAL TAZ

Metropolitan Council TAZ	Population	Households	Retail Employment	Non-retail Employment
529	1,856	647	21	63
533	104	57	1,382	11,602
534	-	-	183	3,625
535	12	5	29	3,406
536	3,302	1,418	-	174
537	90	36	12	926
540	2,463	1,041	230	471
541	1,431	623	227	482
542	25	10	125	5,314
543	8	4	247	6,064
544	6	1	35	4,206
545	472	322	80	3,569
546	859	277	32	2,322
547	1,638	521	57	346
549	620	296	42	1,518
550	1,375	643	255	1,400
551	3,174	1,656	57	1,474
552	3	1	418	1,625
553	-	-	2,166	2,886
562	2,222	881	-	244
563	3,522	1,279	-	-
595	1,541	777	167	3,699
596	1,856	479	63	1,512
597	1,071	367	16	28
598	2,038	799	331	540
599	1,964	693	-	-
600	1,465	486	57	107
608	1,575	606	71	1,675
609	1,465	521	-	-
610	1,574	571	126	964
611	1,933	734	-	204
612	1,321	524	575	625
613	2,326	920	71	372
615	-	-	3,177	398
616	357	138	1,284	743
617	2,035	773	-	-
618	2,507	768	-	370
619	613	227	5	3,115
620	1,551	591	162	695
653	701	357	220	965
654	-	-	114	2,832
655	538	207	408	1,407
656	3,161	1,508	298	827

I-494 FINAL EIS
EXISTING DEMOGRAPHIC DATA BY REGIONAL TAZ

Metropolitan Council TAZ	Population	Households	Retail Employment	Non-retail Employment
660	2,962	1,163	75	1,007
661	1,409	492	68	3,479
662	-	-	-	3,858
663	3	1	517	4,552
664	503	236	83	5,635
665	1,150	400	-	-
666	1,506	314	-	253
667	2,713	1,363	-	3,450
675	761	300	-	284
676	3,380	1,277	80	406
677	4,322	2,141	694	1,050
678	449	163	346	1,475
679	1,411	604	1,337	1,761
680	3,429	1,377	44	1,170
681	3,599	1,278	775	2
682	3,220	1,212	-	-
683	-	-	-	1,393
684	498	184	-	1,832
779	4,504	1,519	70	286
780	2,847	957	254	630
781	3,118	1,056	11	626
782	4,097	1,460	1,163	970
785	3,139	1,044	28	135
786	-	-	1,581	378
Total	182,863	74,434	38,978	187,564

I-494 FINAL EIS
2022 DEMOGRAPHIC ASSUMPTIONS BY I-494 TAZ

Metropolitan Council TAZ	I-494 TAZ	Population	Households	Retail Employment	Non-retail Employment
309	309	-	-	146	10,124
309	2035	-	-	-	-
310	310	-	-	-	-
310	2036	-	-	-	1,880
454	454	1,845	752	13	221
454	2038	896	365	15	261
454	2039	1,168	476	6	97
454	2040	312	127	1	16
455	455	1,957	918	7	19
455	2041	2,593	1,216	108	478
455	2042	1,255	589	26	157
455	2043	533	250	29	175
456	456	1,185	509	3	21
456	2044	237	101	52	799
457	457	1,492	633	33	301
457	2045	1,455	617	2	19
460	460	1,550	612	36	818
460	2046	975	386	14	332
461	461	984	495	59	6
461	2047	347	175	171	64
462	462	308	137	-	-
462	2048	1,273	586	144	324
462	2049	172	77	156	826
465	465	1,707	725	49	200
465	2051	1,035	440	6	25
466	466	847	446	89	8
466	2052	582	306	286	917
467	467	1,763	-	-	165
470	470	1,380	900	30	10
471	471	235	95	-	1,234
471	2053	130	53	366	7,380
472	472	-	-	-	5,449
472	2054	-	-	376	9,843
473	473	-	-	2,225	9,536
473	2055	-	-	5,428	-
473	2056	1,448	586	47	2,069
473	2057	338	137	-	-
474	474	1,234	500	567	2,937
474	2058	1,110	449	-	-
475	475	1,425	577	79	307
475	2059	1,555	629	35	139
478	478	881	357	-	-
478	2065	1,786	723	-	100
480	480	1,071	433	-	-
480	2066	653	265	29	68
481	481	1,062	430	281	2,215
481	2067	1,074	435	-	-
482	482	676	274	307	1,143
483	483	158	64	490	2,448
484	484	459	186	427	1,449
485	485	1,257	509	13	11
485	2068	801	324	214	185
486	486	858	347	556	1,484
486	2069	871	353	628	1,678
494	494	265	107	1	1
494	2082	2,089	846	131	155
495	495	2	1	-	-
495	2083	1,459	590	-	489
498	498	842	340	112	41
498	2084	650	263	129	48
499	499	562	228	1,503	2,104
500	500	-	-	1,464	3,358
500	2005	-	-	523	1,201
501	501	2,172	879	37	579
501	2006	1,731	701	74	1,173
502	502	1,609	651	1,900	2,491
503	503	2,144	868	31	220
503	2007	247	100	-	-
504	504	308	125	358	8,168

I-494 FINAL EIS
2022 DEMOGRAPHIC ASSUMPTIONS BY I-494 TAZ

Metropolitan Council TAZ	I-494 TAZ	Population	Households	Retail Employment	Non-retail Employment
505	505	1,013	410	14	22
505	2008	1,091	442	52	83
505	2009	183	74	-	-
505	2010	1,607	651	-	-
505	2011	696	282	8	12
506	506	1,348	546	-	-
506	2012	1,183	479	15	209
507	507	257	104	-	-
507	2013	811	329	-	-
507	2014	2,197	890	-	3
507	2015	1,094	443	-	69
508	508	10	4	-	-
508	2016	1,818	736	-	1,231
512	512	751	574	102	1,369
513	513	2,485	1,746	1,574	1,526
517	517	713	484	499	2,700
517	2023	-	-	978	5,288
518	518	3,603	1,664	183	5,878
529	529	1,920	666	22	69
533	533	109	58	1,456	12,788
534	534	-	-	215	3,825
535	535	-	-	35	3,748
536	536	3,417	1,460	-	189
537	537	92	37	15	1,039
540	1245	-	-	95	189
540	1247	595	288	-	-
540	1248	1,509	729	-	-
540	1249	225	109	173	343
540	1250	485	234	15	31
541	1246	1,628	807	281	554
542	1237	19	11	17	749
542	1238	8	4	69	3,031
542	1239	-	-	39	1,740
542	1240	-	-	17	737
543	1235	-	-	157	3,760
543	1236	9	5	148	3,550
544	1233	5	2	11	1,281
544	1234	2	1	31	3,797
545	1232	540	421	98	4,302
546	1228	105	39	2	66
546	1229	646	239	7	300
546	1230	-	-	25	2,179
546	1231	229	85	6	256
547	1224	553	201	70	417
547	1225	1,319	479	-	-
549	1219	708	387	52	1,833
550	1226	1,048	560	173	926
550	1227	524	280	142	756
551	1289	2,967	1,770	14	352
551	1290	339	202	-	-
551	1291	-	-	18	465
551	1292	319	190	38	960
552	1293	-	-	169	637
552	1294	2	1	182	684
552	1295	1	1	167	626
553	1241	-	-	565	718
553	1242	-	-	174	221
553	1243	-	-	1,317	1,672
553	1244	-	-	631	801
562	1220	927	420	-	279
562	1221	1,611	731	-	16
563	1216	2,654	1,100	-	-
563	1217	878	364	-	-
563	1218	493	204	-	-
595	595	249	179	-	-
595	1841	-	-	112	3,685
595	1842	-	-	34	1,114
595	1843	1,033	742	-	-
595	1846	458	329	24	791

I-494 FINAL EIS
2022 DEMOGRAPHIC ASSUMPTIONS BY I-494 TAZ

Metropolitan Council TAZ	I-494 TAZ	Population	Households	Retail Employment	Non-retail Employment
596	596	662	236	16	373
596	1844	1,524	543	2	35
596	1845	19	7	56	1,287
597	597	1,005	360	24	51
598	598	719	293	290	492
598	1847	1,146	467	46	77
599	599	1,850	670	-	-
600	600	1,315	455	58	112
608	608	219	87	6	145
608	1754	679	271	18	423
608	1755	557	222	49	1,179
609	609	350	133	-	-
609	1756	1,045	397	-	-
610	610	1,445	540	141	1,064
611	611	288	114	-	-
611	1757	1,334	528	-	44
611	1758	198	78	-	191
612	612	1,295	560	631	569
613	613	1,673	718	13	47
613	1759	548	235	-	-
613	1760	64	27	128	462
615	615	-	-	3,288	432
615	1763	-	-	-	-
616	616	249	105	309	161
616	1764	126	53	-	-
616	1765	5	2	1,047	548
617	617	245	100	-	-
617	1766	1,215	497	-	-
617	1767	485	198	-	-
618	618	370	123	-	-
618	1768	-	-	-	-
618	1769	595	198	-	193
618	1770	1,023	340	-	-
618	1771	292	97	-	-
618	1772	170	56	-	182
619	619	55	22	-	-
619	1773	205	82	-	-
619	1774	39	16	5	3,520
619	1775	329	131	-	-
620	607	210	83	59	281
620	620	1,030	408	0	2
620	1776	186	74	104	493
653	653	25	14	-	-
653	1777	25	14	-	272
653	1778	559	389	40	159
653	1779	25	18	251	995
654	654	-	-	93	800
654	1780	-	-	21	3,860
655	655	-	-	72	630
655	1781	72	47	-	-
655	1782	-	-	-	489
655	1783	153	99	-	-
655	1784	86	52	427	457
656	656	113	61	-	84
656	1785	405	238	-	-
656	1786	415	228	-	112
656	1787	2,304	1,363	-	-
656	1788	290	171	-	-
656	1789	10	8	385	730
656	1790	153	110	56	106
660	660	787	300	-	575
660	1619	287	108	-	-
660	1620	737	285	75	398
660	1621	922	477	40	34
661	661	-	-	-	1,615
661	1622	367	129	-	1,806
661	1623	687	287	77	924
661	1624	298	103	-	-
662	662	-	-	22	2,375

I-494 FINAL EIS
2022 DEMOGRAPHIC ASSUMPTIONS BY I-494 TAZ

Metropolitan Council TAZ	I-494 TAZ	Population	Households	Retail Employment	Non-retail Employment
662	1625	-	-	-	1,979
663	663	-	-	525	1,600
663	1626	3	1	-	3,067
664	664	-	-	74	818
664	1627	440	229	9	3,731
664	1628	-	-	-	1,911
665	665	389	147	-	-
665	1629	663	248	-	-
666	666	356	127	-	147
666	1630	361	-	-	-
666	1631	216	55	-	61
666	1632	486	124	-	46
667	667	-	-	-	1,312
667	1633	2,364	1,332	-	2,600
675	675	448	206	-	-
675	1645	646	290	-	-
675	1646	1,441	603	-	-
675	1647	1,081	540	-	-
675	1648	581	231	-	-
675	1649	-	-	-	606
676	1650	2,575	1,005	-	-
676	1651	687	338	80	831
677	676	700	419	-	-
677	677	-	-	812	345
677	1652	1,567	818	-	-
677	1653	1,481	841	208	953
678	678	411	161	346	1,961
679	679	82	49	136	-
679	1654	727	276	-	195
679	1655	496	295	1,201	1,724
680	680	3,463	1,553	44	713
681	681	311	160	-	2
681	1656	723	290	-	-
681	1657	1,832	669	-	-
681	1658	-	-	775	-
681	1659	494	180	-	-
682	682	907	439	-	-
682	1660	441	165	-	-
682	1661	270	101	-	-
682	1663	549	205	-	-
682	1664	-	-	-	-
682	1665	733	274	-	-
683	683	-	-	1,400	1,393
684	684	-	67	-	426
684	1666	506	146	-	20
684	1667	-	-	-	2,317
779	779	1,615	646	99	245
779	1580	711	284	-	-
779	1581	1,399	560	11	96
780	780	1,706	701	53	173
780	1582	1,174	483	327	1,131
781	781	1,268	507	-	-
781	1584	1,407	563	42	849
782	782	4,132	1,677	831	835
782	1585	2,528	1,026	-	-
782	1586	2,472	1,003	-	-
782	1587	1,293	524	-	63
782	1588	983	398	24	7
785	785	1,390	556	9	90
785	1583	1,377	550	24	7
786	786	4,874	1,950	3,365	5,055
Total		199,743	86,469	48,298	237,927

I-494 FINAL EIS
2022 DEMOGRAPHIC ASSUMPTIONS BY REGIONAL TAZ

Metropolitan Council TAZ	Population	Households	Retail Employment	Non-retail Employment
309	-	-	146	10,124
310	-	-	-	1,880
454	4,222	1,720	35	595
455	6,339	2,972	170	830
456	1,422	610	55	820
457	2,947	1,250	35	320
460	2,525	998	50	1,150
461	1,331	670	230	70
462	1,753	780	300	1,150
465	2,742	1,165	55	225
466	1,429	752	375	925
467	1,763	-	-	165
470	1,380	900	30	10
471	365	148	366	8,614
472	-	-	376	15,292
473	1,786	723	7,700	11,605
474	2,344	949	567	2,937
475	2,980	1,206	114	446
478	2,667	1,080	-	100
480	1,724	698	29	68
481	2,136	865	281	2,215
482	676	274	307	1,143
483	158	64	490	2,448
484	459	186	427	1,449
485	2,058	833	227	196
486	1,729	700	1,184	3,162
494	2,354	953	132	156
495	1,461	591	-	489
498	1,492	603	241	89
499	562	228	1,503	2,104
500	-	-	1,987	4,559
501	3,903	1,580	111	1,752
502	1,609	651	1,900	2,491
503	2,391	968	31	220
504	308	125	358	8,168
505	4,589	1,858	73	117
506	2,531	1,025	15	209
507	4,359	1,765	-	72
508	1,828	740	-	1,231
512	751	574	102	1,369
513	2,485	1,746	1,574	1,526
517	713	484	1,477	7,988
518	3,603	1,664	183	5,878
529	1,920	666	22	69
533	109	58	1,456	12,788
534	-	-	215	3,825
535	-	-	35	3,748
536	3,417	1,460	-	189
537	92	37	15	1,039
540	2,814	1,360	284	563
541	1,628	807	281	554
542	27	15	142	6,257
543	9	5	305	7,310
544	6	2	42	5,078
545	540	421	98	4,302
546	980	362	39	2,801
547	1,872	680	70	417
549	708	387	52	1,833
550	1,572	840	315	1,682

I-494 FINAL EIS
2022 DEMOGRAPHIC ASSUMPTIONS BY REGIONAL TAZ

Metropolitan Council TAZ	Population	Households	Retail Employment	Non-retail Employment
551	3,625	2,163	70	1,777
552	3	2	518	1,947
553	-	-	2,688	3,412
562	2,538	1,151	-	295
563	4,025	1,668	-	-
595	1,740	1,250	170	5,590
596	2,205	785	74	1,696
597	1,005	360	24	51
598	1,865	760	336	569
599	1,850	670	-	-
600	1,315	455	58	112
608	1,455	580	73	1,747
609	1,395	530	-	-
610	1,445	540	141	1,064
611	1,820	720	-	235
612	1,295	560	631	569
613	2,285	980	141	509
615	-	-	3,288	432
616	380	160	1,356	709
617	1,945	795	-	-
618	2,450	814	-	375
619	628	250	5	3,520
620	1,425	565	164	776
653	634	435	291	1,426
654	-	-	114	4,660
655	312	198	499	1,576
656	3,690	2,179	441	1,033
660	2,733	1,170	115	1,007
661	1,353	519	77	4,345
662	-	-	22	4,354
663	3	1	525	4,667
664	440	229	83	6,459
665	1,052	395	-	-
666	1,419	306	-	253
667	2,364	1,332	-	3,912
675	4,196	1,870	-	606
676	3,262	1,343	80	831
677	3,748	2,078	1,020	1,298
678	411	161	346	1,961
679	1,305	620	1,337	1,919
680	3,463	1,553	44	713
681	3,361	1,299	775	2
682	2,900	1,184	-	-
683	-	-	1,400	1,393
684	506	213	-	2,764
779	3,725	1,490	110	341
780	2,880	1,184	380	1,304
781	2,675	1,070	42	849
782	11,408	4,628	855	905
785	2,767	1,106	33	97
786	4,874	1,950	3,365	5,055
Total	199,743	86,469	48,298	237,927

APPENDIX C

1995 Memorandum of Understanding – Historic Properties

MEMORANDUM OF AGREEMENT
SUBMITTED TO THE ADVISORY COUNCIL ON HISTORIC PRESERVATION
PURSUANT TO 36 CFR 800.6(a)

WHEREAS, the Federal Highway Administration (FHWA) has determined that the T.H. I-494 Project (S.P. 2785-261) will have an effect on the Lorence House and the Carpenter House, properties which are eligible for the National Register of Historic Places, and has consulted with the Minnesota State Historic Preservation Officer (MnSHPO) pursuant to 36 CFR 800, regulations implementing Section 106 of the National Historic Preservation Act (16 U.S.C. 470f); and

WHEREAS, the Minnesota Department of Transportation (MnDOT) participated in the consultation and has been invited to concur in this Memorandum of Agreement;

NOW, THEREFORE, FHWA and MnSHPO agree that the undertaking shall be implemented in accordance with the following stipulations in order to take into account the effect of the undertaking on historic properties.

STIPULATIONS

FHWA will ensure that the following measures are carried out:

1. Plans for the project in the vicinity of the Carpenter House and the Lorence House will be developed on consultation with MnSHPO and submitted to MnSHPO for review and concurrence. Particular attention will be paid to reducing the noise and visual impacts on these two properties.

2. Should the MnSHPO object within 45 days to any plans or specifications provided pursuant to this agreement, the FHWA shall consult with the MnSHPO shall consult with the objecting party to resolve the objection. If the FHWA determines that the objection cannot be resolved, the FHWA shall request the further comments of the Council pursuant to 36 CFR 800.6(b). Any Council comment provided in response to such a request will be taken into account by FHWA in accordance with 36 CFR 800.6(c)(2) with reference only to the subject of the dispute; the FHWA responsibility to carry out all actions under this agreement that are not the subjects of the dispute will remain unchanged.

Execution of this Memorandum of Agreement and implementation of its terms evidence the FHWA has afforded the Council an opportunity to comment on the I-494 Project and its effects on historic properties, and that FHWA has taken into account the effects of the undertaking on historic properties.

FEDERAL HIGHWAY ADMINISTRATION

By: _____ Date: 6/21/95
Name and Title of Signer:

MINNESOTA STATE HISTORIC PRESERVATION OFFICER

By: Nina M. Archabal Date: 3/17/95
Name and Title of Signer:

Concur:

MINNESOTA DEPARTMENT OF TRANSPORTATION

By: _____ Dep. Comm./Chief Engineer Date: 4/12/95
Name and Title of Signer:

ACCEPTED for the ADVISORY COUNCIL ON HISTORIC PRESERVATION

By: _____ Date: 7/10/95
Name and Title of Signer:

Minnesota Department of Transportation

Transportation Building
395 John Ireland Boulevard
Saint Paul, Minnesota 55155-1899

March 29, 2000

Mr. Dennis A. Gimmestad
Government Programs and Compliance Officer
State Historic Preservation Office
Minnesota Historical Society
345 Kellogg Boulevard West
St. Paul, Minnesota 55102-1906

Re: S.P. 2785-261 (I-494 Reconstruction), Hennepin County
Additional construction areas for drainage ponds and storm water conveyance system; noise wall mitigation to the Lorence and Carpenter Properties
SHPO #: 90-0496

Dear Mr. Gimmestad:

Please find enclosed information relating to the above referenced project. The APE for this project was previously examined by BRW and reviewed by MnDOT and SHPO resulting in a signed memorandum of agreement in 1995. Since that time, several activity areas have been added to the project area (see enclosed maps) in order to accommodate changes at interchanges between TH 212 and I-35 and a drainage system at the eastern end of the project. These additions have been reviewed by our office to ensure comprehensive cultural resource analysis for the FEIS.

The archaeology of a portion of this project was reviewed with Scott Anfinson on 3/20/01. The project consists of several parts. First, 14 ponds or groups of ponds will be constructed: 1) Capitol One Pond at site option 1 (options 2 and 3 have been eliminated); 2) Molar Pond; 3) Banana Pond; 4) Goldman Pond (north alternative has been eliminated); 5) Stone Pond; 6) McGinty Pond; 7) Guz Pond; 8) Catalina Pond; 9) three ponds at juncture of CSAH 62 and I-494; 10) Delray Pond; 11) Porkchop Pond; 12) Ballpark Pond; 13) pond at juncture of TH 100 and I-494; and 14) ponds at juncture of I-35 and I-494. A pond just west of Bush Lake Road has been eliminated. All pond areas are located in areas of low site potential and where no known sites exist. The second part of the project involves supplementing or replacing the existing storm water conveyance system at the east end of the project immediately west of the Minnesota River. This work will take place in the potential conveyance system area outlined on one of the enclosed maps. This system involves the use of existing or newly constructed ponds and drainage structures north and south of I-494. The three options involve the construction of storm sewers by tunneling (two options) or open cuts (one option). All construction will take place where there are no known sites or in areas of low site potential (previously surveyed areas by BRW for the Department of Veteran Affairs, areas of previous disturbance, steep slopes, and wetlands). Two archaeological sites recorded by BRW (field sites MAC 1 and MAC 2) are out of the APE of the project. If alternatives are chosen that are near these sites, fencing will be erected to protect them during construction.

In a related drainage issue, a bridge on 84th Street will be replaced to improve drainage in the vicinity of the intersection of I-494 and TH 100 (see enclosed map). This WPA bridge was rebuilt (plates and fieldstone removed) in 1973 and no longer meets National Register eligibility criteria. The bridge is not MnDOT owned and is not part of the MnDOT inventory.

The 1995 memorandum of agreement stipulates that plans for the construction of I-494 in the vicinity of the Carpenter House and Lorence House (both found eligible for listing in the National Register of

Historic Places by the BRW investigation), will be developed in consultation with the SHPO with particular attention to noise and visual impacts. To that end we have enclosed photographs illustrating the existing natural visual screening between these properties and the freeway as well as documentation of noise analysis. The photographs indicate that both houses are well screened from the existing roadway.

In addition, SRF Consultants have provided noise modeling (see enclosed tables) for the expanded I-494 corridor that indicates that noise levels at the Carpenter House will increase 1decibel by the year 2022. A noise wall would keep the noise level steady to 2022. A change of 3Db is the minimum considered to be the limit of human perception. A 350' extension to a proposed retaining wall, built in conjunction with the new roadway near the Lorence House, has had the result of decreasing the noise level at this location by 2 Db, bringing the difference between the No Build and the Build to within one decibel in the year 2022 (daytime levels from 67 to 68Db and nighttime levels from 66 to 67 Db). The predicted noise levels in 2022 with a noise wall is 66 decibels, an actual decrease of 1 Db from the present level and 2Db less than the predicted 2022 level. Previous to the retaining wall extension, the increase in existing noise levels at the Lorence house to those in 2022 was modeled at 3 decibels (from 67 to 70Db). At that time, a noise wall was being considered for the Lorence property. Standard MnDOT practice does not consider noise walls to be cost-effective unless the wall can effectively make a 5Db difference over time. Since noise levels at the Lorence and Carpenter House are not predicted to increase by more than 1 decibel, we feel that noise walls in these locations are not prudent. Based on the above information, we feel that noise walls and screening walls for audible and visual effects to the Carpenter and Lorence Houses are not needed to protect the National Register qualities of these properties or their long term viability and that the stipulations of the 1995 MOA have been thoroughly considered and fulfilled.

Therefore, it is the opinion of this office that the proposed project changes will have **no adverse effects** to properties eligible for or listed on the National Register of Historic Places. We are providing you with this determination pursuant to 36 CFR Part 800 and to the responsibilities given the State Historic Preservation Office (SHPO) by the National Historic Preservation Act of 1966, and the Procedures of the Advisory Council on Historic Preservation (36CFR800), and to the responsibilities given the Minnesota Historical Society by the Minnesota Historic Sites Act and the Minnesota Field Archaeology Act. By copy of this letter we are also giving notice to the Office of the State Archaeologist (OSA), the Federal Highway Administration (FHWA), SRF Consulting, and Mn/DOT personnel of our finding.

Sincerely,

Craig Johnson
Archaeologist

Enclosures

cc: Chuck Woods, Mn/DOT C.O.
Jackie Sluss, Mn/DOT historian
Mark Dudzik, OSA
Joe Hudak, Mn/DOT C.O.
Cheryl Martin, FHWA
Beth Bartz, SRF
Chris Roy, Mn/DOT W.E.

April 30, 2001

MINNESOTA HISTORICAL SOCIETY

Mr. Craig Johnson
Cultural Resource Unit
MN Dept. of Transportation
Transportation Building, MS 676
395 John Ireland Boulevard
St. Paul, MN 55155-1899

Post-it® Fax Note 7671	Date 5/3/01	# of pages ▸ 1
To BETH BARTZ	From CRAIG JOHNSON	
Co./Dept. SRF	Co. MN/DOT	
Phone #	Phone # 651-297-8729	
Fax # 763-475-2429	Fax # 651-282-9834	

Re: S.P. 2785-261 (I-494 Reconstruction), Hennepin County
Additional construction areas for drainage ponds and storm water conveyance System; noise wall mitigation to the Lorence and Carpenter Properties
Hennepin County
SHPO Number: 1994-3894MOA

Dear Mr. Johnson:

Thank you for your letter regarding the above referenced project.

As you indicate, a section 106 memorandum of agreement for this project was executed in 1995. After reviewing your letter, we have the following comments:

1. Your letter details several areas of the project with respect to potential archaeological concerns. Were these areas reviewed as part of the project scope that led to the memorandum? If not, why not? If there were aspects of the project for which plans were not developed at the time that the memorandum was completed, a provision should have been made in the memorandum for the subsequent review of project plans.

2. We appreciate your analysis with regard to noise levels in the vicinity of the Carpenter House and the Lorence House. In order to fully assess your conclusion that the current plans have no visual effects on the houses, we need a copy of the current project plans in these two project areas.

3. Your letter proposes a project effect finding. It would seem that this step in the review process is unnecessary since we already have a memorandum of agreement for the project. If you are proposing to cancel the memorandum of agreement and substitute a new review finding, we should consult further to ensure that appropriate termination notification has occurred. In our opinion, termination does not seem necessary.

Contact us at 651-296-5462 with questions or concerns.

Sincerely,

Dennis A. Gimmestad
Government Programs & Compliance Officer

cc: Minnetonka CRC
Bloomington NHRC

Minnesota Department of Transportation

Transportation Building
395 John Ireland Boulevard
Saint Paul, Minnesota 55155-1899

JUN 2001

June 12, 2001

Mr. Dennis A. Gimmestad
Government Programs & Compliance Officer
State Historic Preservation Office
Minnesota Historical Society
345 Kellogg Blvd. W.

Re: SP 2785-261 (I-494 Reconstruction), Hennepin County
Additional construction areas for drainage ponds and storm water conveyance system; noise wall mitigation to the Lorence and Carpenter properties
SHPO No. 1994-3894MOA

Dear Mr. Gimmestad:

Thank you for your letter of 4/30/01 responding to our 3/29/01 correspondence on the above-referenced project. In response 4/30/01 comments:

1. The areas of potential archaeological concern assessed in our 3/29/01 correspondence to you were not reviewed as part of the scope that led to the project memorandum. These areas were not included as part of the original system, and the need for developments here was unforeseen during original project design.

2. Enclosed please find project layouts detailing proposed construction in the vicinity of the Carpenter House and the Lorence House, and supporting our conclusion that there will be no visual effects to the National Register qualities of these properties as a result of the undertaking.

3. The "no adverse effect" finding in our 3/29/01 correspondence was intended to be consistent with the 1995 MOA and was not meant to be a new project finding. We agree that termination of the MOA is not necessary.

If you have any questions concerning this project, please call me at (651) 296-3065.

Sincerely,

Jackie Sluss

Jackie Sluss
Historian, Cultural Resources Unit

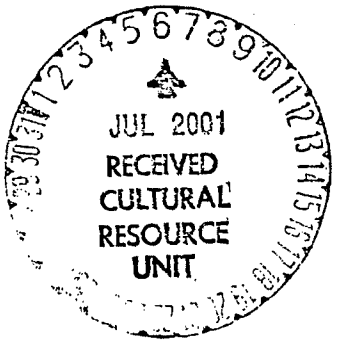
js/la

encs.

cc: Cheryl Martin, FHWA
Beth Bartz, SRF
Chris Roy, MnDOT W.E.
Chuck Woods, MnDOT CO File
Craig Johnson, MnDOT CRU
Joe Hudak, MnDOT CRU
CRU Project File

MINNESOTA HISTORICAL SOCIETY

STATE HISTORIC PRESERVATION OFFICE



July 5, 2001

Ms. Jackie Sluss
MnDOT
Transportation Building
395 John Ireland Boulevard
St. Paul, MN 55155-1899

RE: S.P. 2785-261 (I-494 Reconstruction), Hennepin County
Additional construction areas for drainage ponds and storm water conveyance system; noise wall mitigation to the Lorence and Carpenter properties
SHPO Number: 1994-3894MOA

Dear Ms. Sluss:

Thank you for your recent letter regarding the above referenced project. Based on our review of that letter, we conclude the following:

1. We concur with the determination that no additional effects to historic properties are apparent in the newly added project elements.

2. Pursuant to Stipulation #1 of the memorandum of agreement for the project, and based on our review of the project layouts you submitted and the narrative analysis of impacts included in Craig Johnson's letter of 29 March 2000, we concur with the proposed plans for the segments of the project in the vicinity of the Carpenter House and the Lorence House.

Contact us at 651-296-5462 with questions or concerns.

Sincerely,

Dennis A. Gimmestad
Government Programs and Compliance Officer