

## INTRODUCTION

The purpose of Airport South District Alternative Urban Areawide Review (AUAR) is to provide a detailed study of potential environmental effects or impacts resulting from anticipated future development within the Airport South District of the City of Bloomington.

The Airport South District AUAR study area is approximately 2,350 acres in size, extending from Interstate 494 (I-494) on the north and Trunk Highway 77/Cedar Avenue (TH 77) on the west to the Minnesota River on the east and south. The area is directly adjacent to the Minneapolis-St. Paul International Airport and includes the Mall of America and the Long Meadow Lake Unit of the Minnesota Valley National Wildlife Refuge.

The Airport South District AUAR focus is not on one particular project, as in an Environmental Impact Statement (EIS), but on a number of projects or cumulative development expected to occur within the area through year 2006. As provided for in Minnesota Rules Chapter 4410.3610, Subpart 1, an AUAR substitutes for the preparation of an Environmental Assessment Worksheet (EAW) or EIS for future development projects within an area, provided the projects when proposed are consistent with the AUAR development assumptions.

The Airport South AUAR consists of (1) an analysis section that addresses questions based the on topic areas provided in an EAW and (2) a mitigation section containing a mitigation plan to alleviate or lessen environmental impacts. A development scenario used as the basis for the study includes the proposed expansion phase of the Mall of America on the former Met Sports Center site (studied in an Environmental Impact Statement process in 2000-2001) and five other redevelopment areas. The land uses described in the scenario are consistent with those designated by the City's existing land use plan and with information on anticipated or planned development provided by property-owners/developers.

1. **PROJECT TITLE:** Airport South District AUAR
  
2. **PROPOSER:** City of Bloomington  
**CONTACT PERSON** Mr. Clark Arneson  
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plans where possible. City staff agreed to consider feasibility of incorporating infiltration/LID measures basins when reviewing proposed development plans in Airport South; however, feasibility would need to be considered on a case-by-case basis.

## **29. CUMULATIVE IMPACTS**

**EAW:** MINNESOTA RULE PART 4410.1700, SUBPART 7, ITEM B REQUIRES THAT THE RGU CONSIDER THE “CUMULATIVE POTENTIAL EFFECTS OF RELATED OR ANTICIPATED FUTURE PROJECTS” WHEN DETERMINING THE NEED FOR AN ENVIRONMENTAL IMPACT STATEMENT. IDENTIFY ANY PAST, PRESENT OR REASONABLY FORESEEABLE FUTURE PROJECTS THAT MAY INTERACT WITH THE PROJECT DESCRIBED IN THIS EAW IN SUCH A WAY AS TO CAUSE CUMULATIVE IMPACTS. DESCRIBE THE NATURE OF THE CUMULATIVE IMPACTS AND SUMMARIZE ANY OTHER AVAILABLE INFORMATION RELEVANT TO DETERMINING WHETHER THERE IS POTENTIAL FOR SIGNIFICANT ENVIRONMENTAL EFFECTS DUE TO CUMULATIVE IMPACTS *(OR DISCUSS EACH CUMULATIVE IMPACT UNDER APPROPRIATE ITEM(S) ELSEWHERE ON THIS FORM)*.

**AUAR:** *This item does not require a response for an AUAR since the entire AUAR process deals with cumulative impacts from related developments within the AUAR area.*

## **30. OTHER POTENTIAL ENVIRONMENTAL IMPACTS**

**EAW:** IF THE PROJECT MAY CAUSE ANY ADVERSE ENVIRONMENTAL IMPACTS WHICH WERE NOT ADDRESSED BY ITEMS 1 TO 28, IDENTIFY AND DISCUSS THEM HERE, ALONG WITH ANY PROPOSED MITIGATION.

**AUAR:** *If applicable, this item should be answered as requested by the EAW form.*

No additional potential environmental impacts would result from the proposed AUAR development.

## **31. SUMMARY OF ISSUES:**

**EAW:** LIST ANY IMPACTS AND ISSUES IDENTIFIED ABOVE THAT MAY REQUIRE FURTHER INVESTIGATION BEFORE THE PROJECT IS BRGUN. DISCUSS ANY ALTERNATIVES OR MITIGATIVE MEASURES THAT HAVE BEEN OR MAY BE CONSIDERED FOR THESE IMPACTS AND ISSUES, INCLUDING THOSE THAT HAVE BEEN OR MAY BE ORDERED AS PERMIT CONDITIONS.

Airport Zoning Board completes its work in recommending land use controls for the MSP Runway 17/35, the City has utilized existing land use and airport noise regulations in assessing the noise impacts and allowable development within the Airport South study area.

## 25. SENSITIVE RESOURCES

**EAW:** ARE ANY OF THE FOLLOWING RESOURCES ON OR IN PROXIMITY TO THE SITE? IF ANY ITEMS ARE ANSWERED YES, DESCRIBE THE RESOURCE AND IDENTIFY ANY IMPACTS ON THE RESOURCE. DESCRIBE ANY MEASURES TO BE TAKEN TO MINIMIZE OR AVOID ADVERSE IMPACTS.

A. ARCHAEOLOGICAL, HISTORICAL, OR ARCHITECTURAL RESOURCES?

NO  YES

**AUAR:** *For an AUAR, contact with the State Historic Preservation Office is required to determine whether there are areas of potential impacts to these resources. If any exist, an appropriate site survey of high probability areas is needed to address the issue in more detail. The mitigation plan must include mitigation for any impacts identified.*

A cultural resource assessment was completed for the AUAR study area in 1998. The Airport South District contains one architectural property that has been determined eligible for the National Register of Historic Places by the Minnesota State Historic Preservation Office (SHPO), Spruce Shadows Farm (HE-BLC-071 and HE-BLC-079), 2901 Old Shakopee Road, located near the bluff overlooking the Minnesota River in the SW-SE ¼ of Section 1, T27N, R24W. Spruce Shadows Farm includes a 2 ½ story stone residence constructed in 1932 and attributed to St. Paul architect Magnus Jemne. The farm also includes a complex of farms and outbuildings that may be architecturally significant.

Spruce Shadows Farm was built by James E. Kelley, a prominent St. Paul lawyer, and his wife, Margaret (Hamm) Kelley, heir to the Hamm brewing family. The farmstead is eligible for the National Register of Historic Places. Spruce Shadows Farm would appear to meet criterion A and C, representing the trend of country estate development in the early twentieth century, and as a good example of Magnus Jemne's work.

SHPO records also contained documentation of seven recorded archaeological sites in the Airport South District. Five of the recorded sites document American Indian earthworks, four of which (21HE7, 21HE8, 21HE10 and 21HE11) were reported destroyed by subsequent land disturbances. The fifth earthworks site (21HE9) is reported as no longer apparent. The remaining two sites (21HE158 and 21HE190) are historic-period isolated finds and of limited historical significance and do not appear eligible for the National Register of Historic Places.

Only one of these seven sites, the Van Ness Mounds (21HE8), located within the Kelley property, proposed for development under the AUAR. While this site may have been

destroyed by agricultural activity, identification of below ground remains of the nearby Lincoln Mound group (21HE7) during recent development of the Ceridian campus on the bluff suggests the possibility that remnants of the other reportedly destroyed earthworks may survive. Records of this mound group date from the late nineteenth century and indicate a collection of mounds ranging in height from one to five feet.

In addition to the seven recorded archaeological sites discussed above, some relatively undisturbed portions of the Airport South District, particularly near the bluff edge, within intermediate terraces of the bluff, and in the floodplain at the base of the bluff, have high potential for containing previously unreported sites. The SHPO has recommended that prior to development or other construction in these areas an archaeological profile and preliminary archaeological testing (e.g. field walks and shovel tests) be conducted to determine the probability of additional archaeological sites in the area. Any evidence indicating the presence of an archaeological site will be discussed with the Office of the State Archaeologist per the Minnesota Private Cemeteries Act (Minn. Statutes 307.08), the Minnesota Indian Affairs Council, and appropriate Native American tribes.

### POTENTIAL IMPACTS TO CULTURAL RESOURCES

Preliminary plans for the development of the Kelley property require the demolition of the house and outbuildings associated with Spruce Shadows Farm. Development is also proposed for the surrounding acreage. Demolition of the buildings would adversely affect these resources.

Through the Planned Development process, the City of Bloomington will explore opportunities to preserve and reuse these properties as part of the development. If preservation of the properties cannot occur as a component of the development, the City of Bloomington will consult on appropriate mitigation with the SHPO and the property owner/developer. In addition, a study of an appropriate historic acreage associated with Spruce Shadows Farm and an appropriate boundary for Spruce Shadows Farm will be investigated prior to the consideration of the effects of any proposed development.

The Kelley property development plans may have an impact on the Van Ness Mounds group. Prior to initiating development on this site, extensive investigation of the site will need to be conducted based on consultation or direction from the Office of the State Archaeologist to authenticate the site, identify any additional unrecorded resources on the site, and determine their association with burial activities. Consultation with the Minnesota Indian Affairs Council (MIAC) will assist in determining appropriate methods for assessing the site. Following this investigation, a

mound management plan prepared in conjunction with the Office of the State Archeologist, the appropriate Native American tribes and the Minnesota Indian Affairs Council will be a City condition of an approved project.

B. PRIME OR UNIQUE FARMLANDS OR LAND WITHIN AN AGRICULTURAL PRESERVE?  X  NO   YES

**AUAR:** *The extent of conversion of existing farmlands anticipated in the AUAR should be described. If any farmland will be preserved by special protection programs, this should be discussed.*

The Kelley property is the only land within the Airport South District that is currently in agricultural use, primarily as pastureland. However, the property is not part of any special agricultural land protection program, consistent with its inclusion within the Metropolitan Council's Metropolitan Urban Service Area (MUSA).

C. DESIGNATED PARKS, RECREATION AREAS, OR TRAILS?   NO  X  YES

**AUAR:** *If development of the AUAR area will interfere with or change the use of any existing such resource, this should be described in the AUAR. The RGU may also want to discuss under this item any proposed parks, recreation areas, or trails to be developed in conjunction with development of the AUAR area.*

There are no public parks in the immediate project vicinity. The closest park is Fort Snelling State Park, located northeast of the Airport South District, across I-494 and next to the Minneapolis-St. Paul International Airport. The Minnesota Valley National Wildlife Refuge, administered by the US Fish and Wildlife Service (USFWS), lies at the bottom of the river bluffs in the east and south portion of the AUAR study area. Refuge offices/visitors' centers are located at the top of the bluff in the northeast corner of the AUAR study area. Hiking trails are also located in parts of the refuge.

The proposed AUAR development will not have any direct effects on the refuge. However, the potential for indirect surface water impacts has been raised by several agencies and the potential effect of bluff development on wildlife habitat was raised by one agency in comments received on the Draft AUAR. Potential surface water impacts and mitigation are addressed in the storm water analysis in Section 17 of this AUAR. In addition, the City is working with USFWS staff to develop appropriate mitigation strategies to address long-term storm water/water quality issues. As described in Section 11, development in the vicinity of the river bluff (i.e. Kelley farm property) would not adversely affect wildlife in the vicinity.

Temporary noise impacts to the refuge may occur during construction of the planned development on the Kelley property, due to its proximity to the river bluff overlooking the refuge. However, no long-term noise impacts to the refuge would result from the proposed AUAR development.

D. SCENIC VIEWS AND VISTAS?  NO  YES

**AUAR:** *Any impacts on such resources present in the AUAR should be addressed. This would include both direct physical impacts and impacts on visual quality or integrity. "EAW Guidelines" contains a list of possible scenic resources (page 20).*

The Minnesota River bluff within Bloomington is an important community and environmental resource. Spruce Shadows Farm (Kelley farm and homestead) is the only property of the six Airport South redevelopment sites identified in the Land Use Scenario that contains land within the Minnesota River bluff area.

All development proposals along the Minnesota River bluff, regardless of size, are subject to extensive plan review in relationship to Bloomington's bluff overlay districts (BP-1 and BP-2) land use regulations and the Bluff Report District Plan. Land use regulations and design guidelines were formulated to result in development that blends into the bluff and is complementary to the landscape character of the bluff including the protection of scenic views and vistas.

E. OTHER UNIQUE RESOURCES?  NO  YES

## 26. VISUAL IMPACTS

**EAW:** WILL THE PROJECT CREATE ADVERSE VISUAL IMPACTS DURING CONSTRUCTION OR OPERATION? (SUCH AS GLARE FROM INTENSE LIGHTS; LIGHTS VISIBLE IN WILDERNESS AREAS; AND LARGE VISIBLE PLUMES FROM COOLING TOWERS OR EXHAUST STACKS.) IF YES, EXPLAIN.

NO  YES

**AUAR:** *If any nonroutine visual impacts would occur from the anticipated development covered by the AUAR review, this should be discussed here along with appropriate mitigation.*

## 27. COMPATIBILITY WITH PLANS

**EAW:** IS THE PROJECT SUBJECT TO AN ADOPTED LOCAL COMPREHENSIVE LAND USE PLAN OR REGULATION OR OTHER APPLICABLE LAND USE, WATER, OR RESOURCE MANAGEMENT PLAN OF A LOCAL, REGIONAL, STATE, OR FEDERAL AGENCY?

NO  YES

IF YES, DESCRIBE THE PLAN(S), DISCUSS ITS COMPATIBILITY WITH THE PROJECT AND EXPLAIN HOW ANY CONFLICTS WILL BE RESOLVED. IF NO, EXPLAIN.

**AUAR:** The AUAR must include a statement of certification from the RGU that its comprehensive plan complies with the requirements set out at 4410.3610, Subpart 1.

*The AUAR document should discuss the proposed AUAR area development in the context of the comprehensive plan. If this has not been done as part of the responses to Items 6, 9, 19, 22, and others, it must be addressed here; a brief synopsis should be presented here if the material has been presented in detail under other items. Necessary amendments to comprehensive plan elements to allow for any of the development scenarios should be noted. If there are any management plans of any other local, state, or federal agencies applicable to the AUAR area, the document must discuss the compatibility of the plan with the various development scenario studies, with emphasis on any incompatible elements.*

The City of Bloomington certifies that its comprehensive plan is consistent with the requirement set out in 4410.3610, Subpart 1, including a land use plan; a public facilities plan (including transportation, sewer and water supply systems); and an implementation program.

Sections 6 and 9 of this AUAR describe the proposed AUAR scenario land uses and their conformity to the existing City land use.

The AUAR development scenario presents a comprehensive view of the anticipated major commercial and mixed-use development within the Airport South area throughout year 2006. Identified are six primary development/redevelopment sites that will further define the character of the area. The proposed intensity of development is based on the existing land use designations and zoning controls and is consistent with the requirements for AUAR land uses as defined in Minnesota Rules 4410.3610, Subpart 3.

The current land use designations and zoning controls date back to the 1980s and 1990s prior to the City's *Comprehensive Plan 2000* update that was adopted on April 16, 2001 (Resolution 2001-30). A district land use analysis and formulation of a revised Airport South District 2000 land use plan would have to be based on land use and intensity restrictions for the Federal Runway Protection Zone (RPZ) and State transition safety zones for the new Minneapolis-St. Paul International Airport north-south runway (Runway 17/35). The information on these restrictions was not available to the City to meet the City's *Comprehensive Plan* submittal deadline. The Metropolitan Council was made aware of this situation and it was determined that the *Comprehensive Plan 2000* would carry forward land use guide plan designations from the previous comprehensive plan.

As of April of 2002, Bloomington has not received information on State runway safety zone related land use and intensity restrictions. The MAC reconvened the Wold-Chamberlain Field Joint Airport Zoning Board (the "Joint Zoning Board") in the fall of 2001 to address specific airspace and land use tasks for the new runway 17/35. A listing of Joint Zoning Board major tasks is provided in a Memorandum to the Board from MAC staff entitled 'Updated Summary of Major Tasks Facing The Reconvened Wold-Chamberlain Field Joint Airport Zoning Board,' dated September 13, 2001. The Joint Zoning Board is anticipated to make its recommendation in Spring 2002.

When the Joint Zoning Board determines and adopts airspace obstruction regulations and land use safety zoning, these will be incorporated in a new City of Bloomington Airport South District land use plan and zoning controls, as necessary. Any amendments to the Airport South District Plan will be sent to the Metropolitan Council for review as required under state law. City staff will re-evaluate the development assumptions made in the AUAR as they relate to any amendments made to the land use plan, and the conclusions of the re-evaluation will be distributed to all recipients of the Final AUAR. If no objections to the re-evaluation are received within 10 days (similar to the comment period for the Final AUAR), the re-evaluation conclusions will be adopted by the City Council.

## **28. IMPACT ON INFRASTRUCTURE AND PUBLIC SERVICES**

**EAW:** WILL NEW OR EXPANDED UTILITIES, ROADS, OTHER INFRASTRUCTURE, OR PUBLIC SERVICES BE REQUIRED TO SERVE THE PROJECT?

\_\_\_ NO  X  YES

IF YES, DESCRIBE THE NEW OR ADDITIONAL INFRASTRUCTURE/SERVICES NEEDED. (ANY INFRASTRUCTURE THAT IS A “CONNECTED ACTION” WITH RESPECT TO THE PROJECT MUST BE ASSESSED IN THE EAW; SEE “EAW GUIDELINES” FOR DETAILS.)

**AUAR:** *This item should first of all summarize information on physical infrastructure presented under other items (such as 6, 19, and 22). Other major infrastructure of public services not covered under other items should be discussed as well – this includes major social services such as schools, police, fire, etc.*

*As noted above and in the “EAW Guidelines,” the RGU must be careful to include project-associated infrastructure as an explicit part of the AUAR review if it is to be exempt from project-specific review in the future.*

### **Transportation**

Section 6 describes roadway improvements previously planned for implementation by state and local governments. In addition to these roadway improvements, the AUAR traffic analysis (Section 21) identified other local roadway improvements to be implemented in conjunction with the AUAR development. These include:

- 28th Avenue and East 80th Street – Protected/permissive left-turn phasing on the south approach of 28th Avenue.

- 34th Avenue and East 80th Street – Adequate storage is needed for the dual left-turn lanes on the west approach of 80th Street for stacking vehicles. Based on the analysis, approximately 400 feet of storage is needed without the traffic generated by the new parking facility at the Hubert H. Humphrey terminal. With the additional traffic, 500 feet of storage is needed.
- 20th Avenue and Killebrew Drive – The addition of a left-turn lane on the west approach of Killebrew Drive to provide dual left-turn lanes.
- 28th Avenue/86th Street Connection – Construction in conjunction with the Kelley property development.

### **Sanitary Sewer**

The City of Bloomington 1998 *Sanitary Sewer Policy Plan* includes plans to install a new 18-inch sewer main parallel to Cedar Avenue to connect directly into the sanitary sewer trunk line in Killebrew Drive. This north-south line will relieve demands on the 24th Avenue sewer main juncture at Killebrew Drive and east old Shakopee Road resulting from increased sanitary flows from the Mall of America Expansion project. This new line is included in the City's Capital Improvement Program for the Airport South area. Installation of the 18-inch line along Cedar Avenue would be adequate to serve the additional volume of wastewater projected for the northwest portion of Airport South. The sanitary sewer system will also need to be extended south into the Kelley property to serve the proposed development of this parcel.

The AUAR analysis also indicates that the sewer line located along Killebrew Drive may need minor capacity improvements (e.g. improvements to decrease line friction, to improve flow rates). This line will need to be evaluated when specific development proposals are submitted to determine if improvements to the line are needed. The modeling indicates that the remainder of the City's sewer system is adequate to serve the increased flows from the proposed AUAR developments.

### **Water Supply**

The City water supply plan was updated in 1998 to reflect planned future land uses in the City, including planned redevelopment in Airport South District. The plan did not identify any significant water utility problems in the District. Minor improvements to the system in the Airport South area were included in the plan. These improvements include a new 16-inch water main along 79th Street west of 21st Avenue to 24th Avenue. A new 16-inch water main is also planned for 82nd Street from approximately South 12th Avenue to Cedar Avenue.

The system improvements identified in the water plan are programmed in the City of Bloomington's Capital Improvement Program. Extension of the water system into the Kelley property will be required to support the proposed development. No additional improvements to the City's water system are required to support AUAR development.

## **Storm Water Conveyance/Treatment**

The City's *Comprehensive Surface Water Management Plan* requires all new development/redevelopment to maintain surface water discharges at or below existing levels. The AUAR development scenario will not result in an increase in the rate of discharge, compared to existing conditions. Therefore, the existing storm sewer system would not require capacity modifications to support AUAR development.

The water quality modeling for the AUAR analysis assumed that onsite rate control and water quality treatment at all redevelopment sites will meet Nationwide Urban Runoff Program (NURP) requirements at a minimum, in conformance with City and Lower Minnesota River Watershed District requirements. Also, because the storm water inflows from west of TH 77 affect Pond C removal efficiencies, the area west of TH 77 was included in the water quality modeling for the post-AUAR conditions.

The results of the water quality modeling, comparing TSS removal for existing and post-AUAR development conditions, indicated no significant difference (i.e. approximately two percent) in total TSS loadings between existing and post-AUAR conditions, since there are relatively small overall changes in land use type and/or impervious surface between the two conditions. The post-AUAR development scenario that included onsite detention/treatment increases pollutant removal, resulting in a six percent overall decrease in post-AUAR TSS outflow loading compared to existing conditions.

The water quality model was also run for post-AUAR conditions without onsite ponding at the redevelopment sites (i.e., relying only on regional treatment ponds—Pond C and Hogback Pond), in order to better understand the contribution made by onsite treatment ponds in pollutant removal. This analysis was also used to assess the impact of a request by the Metropolitan Airports Commission (MAC) that storm water ponding not be provided above the river bluff, due to concerns about attracting birds to the ponds and increasing the potential for bird/aircraft conflicts. The results of this model run indicated that post-AUAR development without onsite ponds would result in removal of approximately the same amount of TSS as occurs under existing conditions, despite higher hydraulic and TSS loadings in the system for the 2007 conditions without onsite treatment. However, the post-AUAR conditions without onsite ponding would result in a six percent increase in TSS outflow loading (due to higher total TSS loadings for post-AUAR conditions). Therefore, use of onsite ponding (or alternative onsite treatment methods) and/or an increase in regional ponding capacity will be required in City review of development proposals, to bring post-AUAR outflow loadings to levels that are equal to or lower than existing outflow loadings.

As part of the AUAR study discussions with agency staff regarding surface water issues, a number of agencies requested that the City consider incorporating onsite infiltration basins or other low impact development (LID) practices into redevelopment

plans where possible. City staff agreed to consider feasibility of incorporating infiltration/LID measures basins when reviewing proposed development plans in Airport South; however, feasibility would need to be considered on a case-by-case basis.

## **29. CUMULATIVE IMPACTS**

**EAW:** MINNESOTA RULE PART 4410.1700, SUBPART 7, ITEM B REQUIRES THAT THE RGU CONSIDER THE “CUMULATIVE POTENTIAL EFFECTS OF RELATED OR ANTICIPATED FUTURE PROJECTS” WHEN DETERMINING THE NEED FOR AN ENVIRONMENTAL IMPACT STATEMENT. IDENTIFY ANY PAST, PRESENT OR REASONABLY FORESEEABLE FUTURE PROJECTS THAT MAY INTERACT WITH THE PROJECT DESCRIBED IN THIS EAW IN SUCH A WAY AS TO CAUSE CUMULATIVE IMPACTS. DESCRIBE THE NATURE OF THE CUMULATIVE IMPACTS AND SUMMARIZE ANY OTHER AVAILABLE INFORMATION RELEVANT TO DETERMINING WHETHER THERE IS POTENTIAL FOR SIGNIFICANT ENVIRONMENTAL EFFECTS DUE TO CUMULATIVE IMPACTS *(OR DISCUSS EACH CUMULATIVE IMPACT UNDER APPROPRIATE ITEM(S) ELSEWHERE ON THIS FORM)*.

**AUAR:** *This item does not require a response for an AUAR since the entire AUAR process deals with cumulative impacts from related developments within the AUAR area.*

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**EAW:** IF THE PROJECT MAY CAUSE ANY ADVERSE ENVIRONMENTAL IMPACTS WHICH WERE NOT ADDRESSED BY ITEMS 1 TO 28, IDENTIFY AND DISCUSS THEM HERE, ALONG WITH ANY PROPOSED MITIGATION.

**AUAR:** *If applicable, this item should be answered as requested by the EAW form.*

No additional potential environmental impacts would result from the proposed AUAR development.

## **31. SUMMARY OF ISSUES:**

**EAW:** LIST ANY IMPACTS AND ISSUES IDENTIFIED ABOVE THAT MAY REQUIRE FURTHER INVESTIGATION BEFORE THE PROJECT IS BRGUN. DISCUSS ANY ALTERNATIVES OR MITIGATIVE MEASURES THAT HAVE BEEN OR MAY BE CONSIDERED FOR THESE IMPACTS AND ISSUES, INCLUDING THOSE THAT HAVE BEEN OR MAY BE ORDERED AS PERMIT CONDITIONS.

## **Mitigation**

There are no specific air quality mitigation measures proposed for the proposed AUAR development, since it would not result in exceedance of State air quality standards. The analysis of air quality impacts was predicated, in part, on assumptions for local roadway system improvements. These improvements are described in the Traffic section.

### **23. STATIONARY SOURCE AIR EMISSIONS**

**EAW:** DESCRIBE THE TYPE, SOURCES, QUANTITIES AND COMPOSITIONS OF ANY EMISSIONS FROM STATIONARY SOURCES OF AIR EMISSIONS SUCH AS BOILERS, EXHAUST STACKS OR FUGITIVE DUST SOURCES. INCLUDE ANY HAZARDOUS AIR POLLUTANTS (CONSULT *EAW GUIDELINES* FOR A LISTING) AND ANY GREENHOUSE GASES (SUCH AS CARBON DIOXIDE, METHANE, NITROUS OXIDE) AND OZONE-DEPLETING CHEMICALS (CHLORO-FLUOROCARBONS, HYDROFLUOROCARBONS, PERFLUOROCARBONS OR SULFUR HEXAFLUORIDE). ALSO DESCRIBE ANY PROPOSED POLLUTION PREVENTION TECHNIQUES AND PROPOSED AIR POLLUTION CONTROL DEVICES. DESCRIBE THE IMPACTS ON AIR QUALITY.

*AUAR:* This item is not applicable to an AUAR. Any stationary air emission source large enough to merit environmental review requires individual review.

### **24. ODORS, NOISE AND DUST**

**EAW:** WILL THE PROJECT GENERATE ODORS, NOISE OR DUST DURING CONSTRUCTION AND/OR OPERATION?      \_\_\_ NO  X  YES

IF YES, DESCRIBE THE SOURCE, CHARACTERISTICS, DURATION, AND QUANTITIES OR INTENSITY, AND ANY PROPOSED MEASURES TO MITIGATE ADVERSE IMPACTS. ALSO, IDENTIFY THE LOCATIONS OF SENSITIVE RECEPTORS AND ESTIMATE THE IMPACTS ON THEM. DISCUSS POTENTIAL IMPACTS ON HUMAN HEALTH OR QUALITY OF LIFE.

*AUAR:* Dust, odors, and construction noise need not be addressed in an AUAR, unless there is some unusual reason to do so. The RGU might want to discuss as part of the mitigation plan, however, and dust control or construction noise ordinances in effect.

*If the area will include or adjoin major noise sources a noise analysis is needed to determine if any noise levels in excess of standards would occur, and if so, to identify appropriate mitigation measures. With respect to traffic-generated noise, the noise analysis should be based on the traffic analysis of item 21.*

## CONSTRUCTION-RELATED DUST AND NOISE

Dust and noise normal to construction would occur as a result of the proposed AUAR development. Dust generated during construction would be minimized through standard dust control measures such as watering. After construction is complete, dust levels are anticipated to be minimal because all soil surfaces would be in permanent cover (i.e., pavement or lawn areas).

Construction noise would be limited to daytime hours in accordance with City ordinances. Construction equipment would be fitted with mufflers that would be properly maintained during the construction process.

## TRAFFIC-RELATED NOISE

A detailed traffic noise analysis was performed for sensitive receptors in the Airport South area as part of the Mall of America Expansion EIS. This analysis was updated to reflect changes in predicted traffic volumes on local streets related to changes in anticipated development – especially in the vicinity of the Kelley property. The analysis process and results are summarized in the following discussion.

The proposed AUAR development will increase traffic volumes in the study area. Increases in traffic can result in increased noise levels, which can be perceived as an annoyance by adjacent residents. Traffic noise impacts related to the AUAR development scenario were modeled at residences and hotels in the Airport South area that are likely to be most affected by increases in traffic resulting from construction of the anticipated AUAR development.

It is noted that the noise analysis was conducted only for existing and AUAR development scenario (2007) traffic conditions. Therefore, the year 2007 analysis includes not only the impact of the AUAR development traffic, but also the increased background traffic on local and regional roadways over the seven-year period.

Major existing noise sources located within and near the AUAR area include the aircraft noise originating at the Minneapolis-St. Paul International Airport and traffic noise generated on TH 77 and I-494. The information presented in this section is based on analysis of both existing and anticipated traffic-generated noise only. Aircraft noise is not analyzed because proposed development projects would have no impact on noise originating from aircraft traffic. A discussion of aircraft noise impacts on the proposed development is presented in a separate section.

## **Noise Analysis**

Noise levels are measured in a non-linear scale in units of decibels. The decibel scale is adjusted to emphasize those sound frequencies that humans hear best. This adjusted scale is referred to as A-weighted decibels or dBA. All references to decibels in the discussion of traffic noise impacts are referring to A-weighted decibels.

Noise from roadway traffic increases as the amount of traffic on the roadway increases. However, noise does not increase proportionately with traffic volumes. For example, a doubling of traffic volume (doubling sound energy) results in a noise level increase of approximately three decibels, which is barely perceptible to the average person. 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 three decibels in an outdoor setting are barely perceptible, and changes of less than three decibels are imperceptible to most people.

Along with the volume of traffic and other factors that contribute to the loudness of traffic noise (i.e., topography of the area and vehicle speed), the distance of a receptor from a noise source is also an important factor. Noise levels decrease as distance from a source increases. A rule of thumb commonly used is that beyond approximately 50 feet, each time the distance between a line source (such as a road) and a receptor is doubled, noise levels decrease by three decibels over hard ground (i.e., pavement or water) or by 4.5 decibels over vegetated areas.

Because traffic-generated noise can vary considerably over relatively short time periods, noise level measurements of traffic-generated noise are expressed as the percent of time a noise level is at or greater than a benchmark level. Traffic noise monitoring and analysis results are typically reported as  $L_{10}$  or  $L_{50}$  levels where the L indicates the noise level and the subscript number indicates the percent of time that level was reached or exceeded during a measurement period. For example, an  $L_{10}$  value of 70 decibels means that the noise level was at or greater than 70 decibels during 10 percent of the measurement period (i.e. more than six minutes per one hour).

## **Noise Regulation**

The MPCA is the governmental regulatory agency responsible for implementing regulations controlling traffic noise in Minnesota. Under Minnesota Statute 116.07, Subdivisions 2 and 4, the MPCA has developed Noise Pollution Control Rules (Minnesota Rules Chapter 7010.001-7010.008). These rules set noise standards for all noise sources using three Noise Area Classifications (NAC) corresponding to type of land use. The NAC with the most stringent noise standards (Classification 1) includes residential, medical, religious and entertainment uses.

A 1997 amendment to the statute exempts all non-state-owned (town, city or county) roadways from noise standards except in Minneapolis and St. Paul. In addition, this exemption applies to all existing or newly constructed highway segments, provided that

all reasonably available noise mitigation measures, as approved by the commissioners of Mn/DOT and the MPCA, are employed to abate noise. The statutes require employment of all reasonably available noise mitigation measures, not necessarily attainment of the noise standards.

Different Minnesota State noise standards have been established for daytime and nighttime periods. The MPCA defines daytime as 7:00 a.m. to 10:00 p.m. and nighttime as 10:00 p.m. to 7:00 a.m. Daytime peak traffic volumes coincide with morning and evening rush hours (typically 7:00 to 8:00 a.m. and 4:00 to 5:00 p.m.). “Nighttime” peak traffic volumes almost always occur during the 6:00 to 7:00 a.m. hour that is the beginning of the morning rush hour.

For residential land uses (NAC-1), the Minnesota State standards for  $L_{10}$  are 65 decibels for the daytime and 55 decibels for nighttime; the standards for  $L_{50}$  are 60 decibels for daytime and 50 decibels for nighttime. The single-family residences located at the southwest corner of the Airport South District would be classified as NAC-1 receptors. Noise Area Classification 2 standards (65 and 70 decibels for  $L_{10}$  and  $L_{50}$ , respectively, for both daytime and nighttime) are applied if a residential or hotel building has adequate acoustic insulation, year-round climate control, and has no accommodations that are intended for outdoor use.

For purposes of this analysis it was assumed that the existing and proposed hotel units and the residential units proposed as part of the Mall of America Expansion meet these criteria, allowing them to be compared using NAC-2 standards. Nighttime standards do not apply to commercial or industrial land uses. Daytime standards for commercial land uses are 70 decibels for  $L_{10}$  and 65 decibels for  $L_{50}$ . Industrial land use daytime standards are 80 decibels for  $L_{10}$  and 75 decibels for  $L_{50}$ .

### **Noise Level Monitoring**

Noise-level monitoring is commonly performed during noise studies to measure existing noise levels at selected receptor locations. These can be used as a “baseline” against which future scenarios are compared. In addition, when studying future noise levels predicted with computer models, noise levels established by actual monitoring of existing conditions are often compared to computer-modeled results to validate techniques and results.

Noise monitoring is typically performed for peak traffic hours. However, due to the presence of heavy aircraft noise in the project area during peak hours, noise levels were measured during an off-peak period for aircraft noise (from approximately 11:30 a.m. to 1:00 p.m.). During this off-peak period, traffic noise was observed to be the dominant noise source in the area and this period is therefore a more accurate indicator by which to compare measured noise levels to predicted noise levels.

The selection of both noise monitoring and noise modeling sites was made with input from MPCA staff. Three sites were chosen for monitoring of existing noise levels (Receptors 1, 2 and 3 are shown in Figure 16). Monitoring site locations 1 and 2 were chosen to represent areas of current outdoor human activity (i.e., residential yards)

Figure

which are also assumed to be present in year 2007. Receptor 3 represents a proposed location for residential land use in conjunction with Mall of America Expansion at the Met Center site; however, no outside activity would likely be associated with this location, since the units would be climate controlled with no outside grounds.

Noise monitoring equipment consisted of a Larson-Davis Model 700 dosimeter, a tripod and wind screen. No noise monitoring was conducted when wind speeds exceeded 17 kph (10 mph) or when wet roadway conditions were present. A trained noise-monitoring technician was present at each monitoring session for the entire session to ensure correct operation of the instrumentation, to gather data on the physical environment near the monitoring location, and to perform vehicle traffic counts.

The results of daytime off-peak noise monitoring are shown in Column 2 Table 23. These results are compared to the results of computer-modeled predictions of off-peak existing noise levels (also included in Table 23) to provide validation for computer-modeled results. The computer-modeled results are within two decibels of the monitored levels; therefore, the computer model can be considered to be a valid predictor of future noise levels. The remainder of this section discusses traffic noise impacts anticipated to occur based on computer-modeled noise analysis.

**TABLE 23  
DAYTIME OFF-PEAK NOISE ANALYSIS RESULTS – EXISTING**

Receptor	Monitored		Modeled	
	L <sub>10</sub>	L <sub>50</sub>	L <sub>10</sub>	L <sub>50</sub>
1	64	54	63	56
2	65	59	65	58
3	66	61	64	60

**Noise Modeling Methodology**

Noise modeling receptors were selected to represent those sites most sensitive to potential traffic noise impacts resulting from construction of the proposed project, namely existing and proposed residential areas (see Figure 16). Receptors 1 and 2 represent existing residential neighborhoods to the south of the Mall of America that could be affected by increases in area traffic volumes resulting from the proposed project. Receptor 3 represents the location of proposed residential use under the AUAR development scenario (Receptor 3, corresponding to the proposed residential component of the Mall of America Expansion). Receptor 4 represents the locations of a hotel that may be proposed on the Health Partners Campus.

All receptor sites are classified within the definition of State of Minnesota Noise Area Classification One (NAC-1) for residential and transient lodging areas. However,

because Receptors 3 and 4 are assumed to be provided with mitigating improvements such as year-round climate control and no areas meant for outdoor activity, standards for NAC-2 have been applied for comparing predicted noise levels to state standards.

Projected noise levels were produced by the Federal Highway Administration (FHWA) noise prediction model STAMINA 2.0, with Mn/DOT modifications. Forecast traffic volumes for peak daytime and nighttime periods one year after completion of the proposed project (i.e., year 2007) were used to predict noise levels. Forecast traffic volumes for the AUAR development scenario were used in this analysis. Existing speed limits were assumed for vehicle speeds, and the vehicle mix was assumed to be 97 percent automobiles and light trucks, two-percent medium trucks and one-percent heavy trucks.

### **Noise Modeling Results**

Traffic noise modeling results for 2007 (one year after completion of the proposed project) are presented in Tables 24 and 25. Both daytime and nighttime L<sub>10</sub> and L<sub>50</sub> are shown.

**TABLE 24  
DAYTIME PEAK HOUR NOISE ANALYSIS RESULTS (MODELED)**

Receptor	Daytime Standard		Existing		2007 AUAR Scenario	
	L <sub>10</sub>	L <sub>50</sub>	L <sub>10</sub>	L <sub>50</sub>	L <sub>10</sub>	L <sub>50</sub>
1	65	60	<b>66</b>	60	<b>68</b>	<b>62</b>
2	65	60	<b>68</b>	<b>62</b>	<b>71</b>	<b>66</b>
3	70*	65*	66	64	68	65
4	70*	65*	64	61	65	62

**Bold** noise levels exceed State noise standards

\* Noise Area Classification 2 standards are referenced for these proposed receptors because they are expected to be climate controlled year-round and without outdoor activity areas.

**TABLE 25  
NIGHTTIME PEAK HOUR NOISE ANALYSIS RESULTS (MODELED)**

Receptor	Nighttime Standard		Existing		2007 AUAR Scenario	
	L <sub>10</sub>	L <sub>50</sub>	L <sub>10</sub>	L <sub>50</sub>	L <sub>10</sub>	L <sub>50</sub>
1	55	50	<b>63</b>	<b>56</b>	<b>66</b>	<b>59</b>
2	55	50	<b>65</b>	<b>58</b>	<b>68</b>	<b>62</b>
3	70*	65*	63	60	66	63
4	70*	65*	61	57	64	60

**Bold** noise levels exceed State noise standards

\* Noise Area Classification 2 standards are referenced for these proposed receptors because they are expected to be climate controlled year-round and without outdoor activity areas.

## **Summary of Traffic Noise Results**

Increases in traffic noise between existing and 2007 AUAR scenario conditions range from one to four decibels, with the four-decibel increase occurring for L<sub>50</sub> results at Receptor 2. A three-decibel increase in noise is generally accepted as the human threshold of perceptible changes in sound.

Proposed and existing residential and hotel land uses in the Airport South District would not experience traffic noise levels above state standards established for NAC-2 receptors following the proposed AUAR development. Existing residential areas (Receptors 1 and 2) currently exceed state standards for NAC-1 receptors and would continue to do so following the AUAR development. Except for the L<sub>50</sub> levels at Receptor 2, increases in exterior noise at Receptors 1 and 2 would barely be perceptible to residents. The greater increases in noise levels at Receptor 2 are due to increased traffic from development of the Kelley property. These roadways are exempt from state noise standards, so mitigation is not required by state law. Noise wall mitigation would not be practical in this area, since the numerous street intersections and driveways would result in “breaks” in the walls, defeating their effectiveness. Therefore, no noise mitigation is being considered in conjunction with the development scenario.

## **AIRPORT NOISE**

When the new Runway 17/35 at Minneapolis-St. Paul International Airport opens, the change in flight patterns will result in significant air traffic at lower altitudes over the Airport South District. Federal and State regulations are in place to ensure the compatibility of land uses with anticipated noise exposure in these areas. Federal Aviation Administration (FAA) requirements to ensure land use compatibility are detailed in regulations known as Part 150 (FAA Part 150, Section A150.101) in which compatible land uses are defined based on yearly day-night average sound levels measured in decibels.

According to Part 150 regulations cited above, parcels experiencing noise levels in the 65-70 decibel day-night noise level (DNL) range (including the west half of the former Met Center site), are suitable for transient lodging and residential uses if the community determines they may be allowed and outside to inside noise level reductions of at least 25 decibels are achieved. Office and retail uses are considered to be compatible with this noise level zone.

Residential and transient lodging land uses are acceptable in the 70–75 decibel DNL range (the Kelley property, the Adjoining Lands, and the east portion of the Met Center property) if outside to inside noise level reductions of 30 decibels are achieved. Office and retail uses in this zone would need to provide a 25-decibel outside to inside noise reduction level to be considered compatible.

The Metropolitan Council delineates “noise exposure zones” in their *Aviation Policy Plan, December 1996* based on predicted noise levels from FAA Part 150 noise analysis. (Note: The *Aviation Policy Plan* is being revised by the Metropolitan Council, and consideration is being given to prohibiting residential uses in areas with noise levels at 70 decibel DNL and above. However, since a new policy plan has not been adopted, the 1996 guidelines are referenced in the following discussion.) Land-Use Compatibility Guidelines in the *Aviation Policy Plan* list uses compatible with the various noise exposure zones. The proposed residential (condominium) areas in the Met Center site fall within noise zone 3, with a yearly day-night noise level (DNL) of 65–70 decibels. The Metropolitan Council finds residential land uses provisionally acceptable within this noise zone if interior noise attenuation performance standards are met i.e., the buildings must be insulated to provide a maximum interior noise level of 45 decibels (dBA). Office, commercial, retail and services (including transient lodging) proposed as part of the AUAR development scenario are also provisional uses in zone 3, provided a structural performance standard of 50dBA interior sound level is achieved.

The residential development proposed for the Kelley property is in the Metropolitan Council’s noise zone 2, with predicted DNL of 70 75 decibels. The Metropolitan Council has the same provisional guidelines for multiplex and apartment residential uses with shared entrances in this noise zone as those established for noise zone 3: i.e., noise attenuation as required to achieve a performance standard of a maximum indoor noise level of 45 decibels (dBA). (Note: Table 7 of the 1996 *Aviation Policy Plan* shows all residential uses in zones 2-4 as inconsistent land uses, defined as unacceptable even with acoustical treatment and limited outdoor use. However, after consultation with Metropolitan Council staff, it was determined that this is a typographical error, and that multiplex residences in noise exposure zones 2–4 are provisionally acceptable as explained above.) Office, commercial, retail and services (including transient lodging) proposed as part of the AUAR development scenario are also provisional uses in zone 2, provided a structural performance standard of 50dBA maximum interior sound level is achieved.

As noted in comments received on the Draft AUAR document from Metropolitan Council and Metropolitan Airports Commission (MAC) staff (see Appendix E), future development of residential uses on the Kelley property would not likely be consistent with the noise mitigation program developed for the Minneapolis-St. Paul International Airport (MSP) 2010 Plan. As part of its current revision of the MSP Part 150 Noise Compatibility Program, the MAC expects to propose that new residential construction be prohibited inside the 70 DNL noise contour. The City of Bloomington has requested that the MAC remove existing residential development immediately adjacent to the Kelley property for noise compatibility reasons. Figure 16 shows the location of a parcel currently being acquired by MAC at the City’s request. The City agrees with MAC and the Metropolitan Council staff that residential land use is not desirable in the 70-75 DNL contour area; however, until the reconvened Wold-Chamberlain Field Joint

Airport Zoning Board completes its work in recommending land use controls for the MSP Runway 17/35, the City has utilized existing land use and airport noise regulations in assessing the noise impacts and allowable development within the Airport South study area.

## 25. SENSITIVE RESOURCES

**EAW:** ARE ANY OF THE FOLLOWING RESOURCES ON OR IN PROXIMITY TO THE SITE? IF ANY ITEMS ARE ANSWERED YES, DESCRIBE THE RESOURCE AND IDENTIFY ANY IMPACTS ON THE RESOURCE. DESCRIBE ANY MEASURES TO BE TAKEN TO MINIMIZE OR AVOID ADVERSE IMPACTS.

A. ARCHAEOLOGICAL, HISTORICAL, OR ARCHITECTURAL RESOURCES?

NO  YES

**AUAR:** *For an AUAR, contact with the State Historic Preservation Office is required to determine whether there are areas of potential impacts to these resources. If any exist, an appropriate site survey of high probability areas is needed to address the issue in more detail. The mitigation plan must include mitigation for any impacts identified.*

A cultural resource assessment was completed for the AUAR study area in 1998. The Airport South District contains one architectural property that has been determined eligible for the National Register of Historic Places by the Minnesota State Historic Preservation Office (SHPO), Spruce Shadows Farm (HE-BLC-071 and HE-BLC-079), 2901 Old Shakopee Road, located near the bluff overlooking the Minnesota River in the SW-SE ¼ of Section 1, T27N, R24W. Spruce Shadows Farm includes a 2 ½ story stone residence constructed in 1932 and attributed to St. Paul architect Magnus Jemne. The farm also includes a complex of farms and outbuildings that may be architecturally significant.

Spruce Shadows Farm was built by James E. Kelley, a prominent St. Paul lawyer, and his wife, Margaret (Hamm) Kelley, heir to the Hamm brewing family. The farmstead is eligible for the National Register of Historic Places. Spruce Shadows Farm would appear to meet criterion A and C, representing the trend of country estate development in the early twentieth century, and as a good example of Magnus Jemne's work.

SHPO records also contained documentation of seven recorded archaeological sites in the Airport South District. Five of the recorded sites document American Indian earthworks, four of which (21HE7, 21HE8, 21HE10 and 21HE11) were reported destroyed by subsequent land disturbances. The fifth earthworks site (21HE9) is reported as no longer apparent. The remaining two sites (21HE158 and 21HE190) are historic-period isolated finds and of limited historical significance and do not appear eligible for the National Register of Historic Places.

Only one of these seven sites, the Van Ness Mounds (21HE8), located within the Kelley property, proposed for development under the AUAR. While this site may have been

## **Local System Impacts and Mitigation**

Based on the analysis of potential local transportation system impacts described in the “Local Roadway System Analysis and Impacts” section above, the proposed Airport South AUAR development can be supported by the existing roadway system with minor modifications (described below). The suggested modifications listed below would be in addition to the local roadway improvements already planned for implementation by the City of Bloomington (listed in Table 2).

34th Avenue and East 80th Street – Additional storage is needed for the dual left-turn lane on the west approach of 80th Street for stacking vehicles. Based on the analysis approximately 400 feet of storage is needed without the traffic generated by the new parking facility at the HHH terminal. With the additional traffic, 500 feet of storage is needed. This improvement is needed even if the Mall of America Expansion is not constructed.

28th Avenue and East 80th Street – The installation of protective/permissive phasing on the south approach of 28th Avenue.

20th Avenue and Killebrew Drive – The addition of a left-turn lane on the west approach of Killebrew Drive to provide dual left-turn lanes due to queuing.

28th Avenue/86th Street Connection – Construction in conjunction with the Kelley property development.

## **22. VEHICLE-RELATED AIR EMISSIONS**

**EAW:** ESTIMATE THE EFFECT OF THE PROJECT'S TRAFFIC GENERATION ON AIR QUALITY, INCLUDING CARBON MONOXIDE LEVELS. DISCUSS THE EFFECT OF TRAFFIC IMPROVEMENTS OR OTHER MITIGATION MEASURES ON AIR QUALITY IMPACTS. *(IF THE PROJECT INVOLVES 500 OR MORE PARKING SPACES, CONSULT “EAW GUIDELINES” ABOUT WHETHER A DETAILED AIR QUALITY ANALYSIS IS NEEDED.)*

**AUAR:** *The guidance provided in “EAW Guidelines” should also be followed for an AUAR. Mitigation proposed to eliminate any potential problems may be presented under Item 21 and merely referenced here.*

## **VEHICLE-RELATED AIR EMISSIONS**

### **Background**

A detailed air quality analysis was performed as part of the Mall of America Expansion EIS studies. The Build assumptions for the EIS included additional background development in Airport South that – with minor exceptions described in detail in the Traffic section (Section 21) of this AUAR – is consistent with the AUAR assumptions.

The AUAR analysis of local intersection operations (see Table 20) indicates only two intersections would experience substantial changes in level of service compared to the EIS analysis results:

- 24th Avenue/I-494 ramp intersection changed from level of service C to D with the AUAR development assumptions.
- 34th Avenue/I-494 ramp intersections changed from level of service F to C in the AUAR analyses, based on revised trip generation information for the Hubert H. Humphrey parking ramp facility.

Because these changes in traffic operations at the affected intersections are relatively minor and the EIS analyses for these intersections indicated that they are not approaching State standard thresholds for carbon monoxide, the air quality analysis for the EIS were utilized for the AUAR air quality analysis described below.

### **Air Quality Analysis**

Carbon monoxide (CO) is the traffic-related pollutant of most concern in the Twin Cities Metropolitan Area. The MPCA has established Minnesota Ambient Air Quality Standards. The State standards (or maximum permissible concentrations) for CO is 30 parts per million (ppm) for a 1-hour period (average concentration), and 9 ppm for an 8-hour period (average concentration).

Concentrations of CO are generally highest at intersections with poor levels of service and, consequently, more idling vehicles. As described in the traffic analysis section, all of the major intersections within the project area were analyzed to determine both present and forecasted (year 2007) levels of service. Peak hour traffic volumes used for this analysis assumed that the proposed Airport South District development and the new parking ramp for the Hubert H. Humphrey terminal at the Minneapolis-St. Paul International airport are constructed and operational by 2006.

Based on consultation with the MPCA for the Mall of America EIS, it was agreed that carbon monoxide analysis would be performed at all intersections in Airport South that were projected to operate at level of service D or worse for year 2007 (one year after the anticipated Mall of America and AUAR development completion). The three intersections analyzed for the EIS included: the intersection of 80th Street at 34th Avenue and the ramp intersections at the I-494/34th Avenue and I-494/24th Avenue interchanges.

Modeling for air quality analyses included the assumption that local roadway improvements identified in the Traffic section (Section 21 of this AUAR) were completed. Carbon monoxide concentrations were projected using the Environmental Protection Agency (EPA) Mobile 5A emission model and the CAL3QHC dispersion model.

The modeling assumptions used in this analysis were as follows:

Cold Start Percentage:	20.6 percent for intersection traffic
Cruise Speed:	30 mph
Analysis Year:	2007
Traffic Mix:	National default values
Wind Speed:	1 meter/second
Temperature:	20 degrees F
Surface Roughness:	151 centimeters
Stability Class:	D
Inspection Maintenance:	No
Oxygenated Fuel:	Yes
Eight Hour Persistence Factor:	0.7
Wind Direction:	36 directions at 10 degree intervals

### **Background CO Levels/Modeling Assumptions**

The background CO concentrations used in the AUAR air quality analyses were obtained from recent monitoring data (February 22, 2000 through March 7, 2000) from the Met Center site. These existing background levels include the combined effect of vehicular traffic, aircraft from the Minneapolis-St. Paul International airport (located just north of the study area) and other mobile and stationary CO sources in the vicinity. The background concentrations were adjusted from existing (year 2000) conditions by standard factors developed to represent vehicular traffic CO changes through year 2007.

The adjustment in background concentrations includes an increase in future regional traffic levels by a factor of 1.34 and a decrease in emissions per vehicle by a factor of 0.84 (to adjust for anticipated decreases in CO emissions resulting from vehicle emission controls). The resultant combined adjustment factor is 1.13 (or 1.8 percent per year). Because monitoring was conducted in the spring, background concentrations were also increased by a factor of 1.43 (Holzworth correction factor) to simulate cold weather conditions (see Table 21).

The potential impact of increased aircraft operations on background CO levels due to the proximity of the airport was considered in developing the background CO adjustment factors. The correction factors described above were found to provide a conservative or worst case estimate of future background CO levels from all sources (vehicles, aircraft, etc.).

Based on data presented in the Dual Track FEIS for the Minneapolis-St. Paul International Airport (May 1998, page V-17), on-airport CO emissions are projected to increase from 4,502 tons per year in year 2005 to 5,060 tons per year in year 2020, an increase of 1.12, or 0.8 percent per year. This data shows that the rate of increase in the

portion of background CO produced by on-airport sources is lower than the 1.13 (1.8 percent per year) rate of increase in background CO produced by vehicle traffic. Therefore, applying the vehicle traffic adjustments to the background CO levels that include all CO sources provides a conservative estimate of future background CO levels from all sources.

**TABLE 21  
CALCULATION OF CO BACKGROUND CONCENTRATIONS**

Factor	2007	
	1-Hour	8-Hour
Maximum (year 2000) Monitored Concentration (ppm)	2.7	1.6
Background Traffic Volume Adjustment Factor	1.34	1.34
Emission Adjustment Factor	0.84	0.84
Holzworth (temperature) Correction	1.43	1.43
Worst Case Background Concentration (ppm)	4.4	2.6

### **Modeling Results**

The carbon monoxide concentration analyses were based on forecast traffic volumes and optimized signal timing at the three analyzed intersections. Receptor locations were sited within a 1,000-foot radius of the analyzed intersections and are depicted in Figure 15.

The precise siting of carbon monoxide receptors was based on the likelihood of human outdoor activity occurring in excess of one hour, thus accounting for the MPCA's method of quantifying adverse air quality impacts based on hours of exposure. Locations chosen include entrances to hotels and office parks, as well as areas where the likelihood of human outdoor activity is low but where receptors were sited in order to remain within the 1,000-foot radius of the analyzed intersection.

The air quality analyses from Alternative 1 conditions in the Mall of America Expansion EIS for year 2007 are assumed to be equivalent to AUAR 2007 post-development conditions and are presented in Table 22. The concentration for each receptor is included (for 1-hour and 8-hour averages at each location) in the "Modeled" column of Table 22. The "Total" columns reflect carbon monoxide concentrations occurring after factoring in background concentrations occurring in the project area. The wind direction column in each table indicates the worst case conditions for carbon monoxide concentrations occurring at that location, with wind direction being the operative variable.

While the AUAR development scenario results in increased trip generation compared to existing conditions, predicted increases would not result in exceedance of state air quality standards. The concentration closest to the State Standard occurs at Receptor 3 showing a predicted 8-hour concentration of 7.5 ppm. The State Standard for 8-hour average carbon monoxide concentration is 9.0 ppm.

**TABLE 22**  
**MODELED CARBON MONOXIDE CONCENTRATIONS<sup>(1)</sup>**  
**(2007 Build Conditions, AUAR Development Scenario/Mall of America Expansion**  
**EIS Alternative 1)**

<b>Receptor Description</b>	<b>1-Hour Modeled</b>	<b>8-Hour Modeled</b>	<b>1-Hour Total<sup>(2)</sup></b>	<b>8-Hour Total<sup>(2)</sup></b>	<b>Wind Direction</b>
<b>I-494 at 34th Avenue</b>					
Receptor 1	2.0	1.4	6.4	4.0	110
Receptor 2	2.5	1.8	6.9	4.4	210
Receptor 8	2.4	1.7	6.8	4.3	70
Receptor 9	2.9	2.0	7.3	4.6	300
<b>80th Street at 34th Avenue</b>					
Receptor 3	4.8	3.4	9.2	6.0	290
Receptor 4	1.6	1.1	6.0	3.7	30
Receptor 5	4.2	2.9	8.6	5.5	340
Receptor 6	1.5	1.1	5.9	3.7	340
Receptor 7	0.8	0.6	5.2	3.2	60
Receptor 10	2.2	1.5	6.6	4.1	110
<b>I-494 at 24th Avenue</b>					
Receptor 11	1.6	1.1	6.0	3.7	150
Receptor 12	1.8	1.3	6.2	3.9	200
Receptor 13	1.2	0.8	5.6	3.4	290
Receptor 14	1.2	0.8	5.6	3.4	70
<b>State Standards</b>			<b>30</b>	<b>9</b>	

Notes: <sup>(1)</sup> CO concentrations are in parts per million (ppm).

<sup>(2)</sup> Includes modeled CO concentration plus the CO background for 1- and 8-hour averages of 4.4 ppm and 2.6 ppm, respectively.

### **Permitting**

The Airport South District is covered by an existing MPCA Indirect Source Permit (ISP). However, recent legislative changes have eliminated the ISP requirements. However, proposed rule changes have indicated that existing ISPs would remain in effect. City staff will work with MPCA staff following completion of the AUAR process and as MPCA ISP rules are finalized, to determine the status of the existing ISP for Airport South, and whether an update to the ISP to reflect AUAR development would be required.

Figure

## **Mitigation**

There are no specific air quality mitigation measures proposed for the proposed AUAR development, since it would not result in exceedance of State air quality standards. The analysis of air quality impacts was predicated, in part, on assumptions for local roadway system improvements. These improvements are described in the Traffic section.

### **23. STATIONARY SOURCE AIR EMISSIONS**

**EAW:** DESCRIBE THE TYPE, SOURCES, QUANTITIES AND COMPOSITIONS OF ANY EMISSIONS FROM STATIONARY SOURCES OF AIR EMISSIONS SUCH AS BOILERS, EXHAUST STACKS OR FUGITIVE DUST SOURCES. INCLUDE ANY HAZARDOUS AIR POLLUTANTS (CONSULT *EAW GUIDELINES* FOR A LISTING) AND ANY GREENHOUSE GASES (SUCH AS CARBON DIOXIDE, METHANE, NITROUS OXIDE) AND OZONE-DEPLETING CHEMICALS (CHLORO-FLUOROCARBONS, HYDROFLUOROCARBONS, PERFLUOROCARBONS OR SULFUR HEXAFLUORIDE). ALSO DESCRIBE ANY PROPOSED POLLUTION PREVENTION TECHNIQUES AND PROPOSED AIR POLLUTION CONTROL DEVICES. DESCRIBE THE IMPACTS ON AIR QUALITY.

*AUAR:* This item is not applicable to an AUAR. Any stationary air emission source large enough to merit environmental review requires individual review.

### **24. ODORS, NOISE AND DUST**

**EAW:** WILL THE PROJECT GENERATE ODORS, NOISE OR DUST DURING CONSTRUCTION AND/OR OPERATION?      \_\_\_ NO   X   YES

IF YES, DESCRIBE THE SOURCE, CHARACTERISTICS, DURATION, AND QUANTITIES OR INTENSITY, AND ANY PROPOSED MEASURES TO MITIGATE ADVERSE IMPACTS. ALSO, IDENTIFY THE LOCATIONS OF SENSITIVE RECEPTORS AND ESTIMATE THE IMPACTS ON THEM. DISCUSS POTENTIAL IMPACTS ON HUMAN HEALTH OR QUALITY OF LIFE.

*AUAR:* Dust, odors, and construction noise need not be addressed in an AUAR, unless there is some unusual reason to do so. The RGU might want to discuss as part of the mitigation plan, however, and dust control or construction noise ordinances in effect.

*If the area will include or adjoin major noise sources a noise analysis is needed to determine if any noise levels in excess of standards would occur, and if so, to identify appropriate mitigation measures. With respect to traffic-generated noise, the noise analysis should be based on the traffic analysis of item 21.*

**TABLE 16**  
**2007 CONGESTED REGIONAL ROADWAY SEGMENTS**

<b>Congested Roadway Segments</b>	<b>Existing</b>	<b>EIS/AUAR Development Scenario</b>
I-35W & TH 62 Common Segment	x	
TH 55 north of TH 52 (Hiawatha Avenue)	x	
I-494 west of TH 77	x	x
TH 77 River Bridge	x	x
I-494 west of Portland Avenue	x	x
I-494 west of Penn Avenue	x	x
I-35W north of 60th Street	x	x
TH 62 east of Portland		x
I-494 west of 24th Avenue South		x

**Impacts to Freeway-to-Freeway Interchanges**

Table 17 shows the existing and projected 2007 Build traffic volumes at principal arterial interchanges near the study area. Ramps that would experience congestion (i.e. volume exceeds estimated capacity) are highlighted in the table. It was assumed that a freeway ramp has a capacity at 1,900 vehicles per lane and an inside loop ramp has a capacity of 1,200 vehicles per hour. Using the criteria defined above, five ramps would be above capacity for year 2007 p.m. peak hour post-Build conditions. However, all of these ramps are also above capacity for existing p.m. peak hour conditions.

**LOCAL ROADWAY SYSTEM ANALYSIS AND IMPACTS**

This section summarizes the findings of an update to the traffic study prepared for the Mall of America Expansion EIS. This update reflects the AUAR development assumption revisions (at the Kelley property and Metro Office Park) as well as the updated Hubert H. Humphrey parking facility traffic. The complete AUAR traffic study Technical Memorandum dated August 8, 2001, is included in Appendix D.

**Existing Conditions**

Traffic operations were analyzed for existing conditions at the following key intersections in the Airport South:

- 24th Avenue and I-494 Ramps
- 34th Avenue and I-494 North Ramps
- 34th Avenue and I-494 South Ramps
- Thunderbird Drive and East 79th Street
- 24th Avenue and East 79th Street
- 24th Avenue and East 80th Street
- 28th Avenue and East 80th Street
- 34th Avenue and East 80th Street
- 20th Avenue and Lindau Lane
- 22nd Avenue and Lindau Lane
- 24th Avenue and Lindau Lane
- 24th Avenue and East 82nd Street
- 20th Avenue and Killebrew Drive
- 22nd Avenue and Killebrew Drive
- 24th Avenue and Killebrew Drive
- 28th Avenue and Old Shakopee Road

**TABLE 17**  
**2007 FORECAST VOLUMES ON SELECTED AREA FREEWAY RAMPS**  
**System Interchanges Near Airport South**

From:		To:		Existing PM Peak Volume (1)	EIS/AUAR Development Scenario PM Peak Volume	
<b>SB</b>	<b>I-35W</b>	<b>EB</b>	<b>TH 62</b>	<b>1896</b>	<b>2425</b>	(2)
<b>WB</b>	<b>TH 62</b>	<b>NB</b>	<b>I-35W</b>	<b>1884</b>	<b>2375</b>	(2)
NB	I-35W	WB	TH 62	552	625	
EB	TH 62	SB	I-35W	468	650	
SB	Cedar Avenue	EB	TH 62	120	150	
SB	Cedar Avenue	WB	TH 62	192	225	
WB	TH 62	SB	TH 77	528	675	
WB	TH 62	NB	Cedar Avenue	120	150	
<b>NB</b>	<b>TH 77</b>	<b>WB</b>	<b>TH 62</b>	<b>1461</b>	<b>1800</b>	(2)
NB	TH 77	EB	TH 62	636	700	
EB	TH 62	NB	Cedar Avenue	180	200	
<b>EB</b>	<b>TH 62</b>	<b>SB</b>	<b>TH 77</b>	<b>1572</b>	<b>1975</b>	(2)
SB	TH 5	EB	TH 55	520	575	
SB	TH 5	WB	TH 55	559	625	
WB	TH 55	SB	TH 5	127	175	
WB	TH 55	NB	TH 5	415	475	
NB	TH 5	WB	TH 55	787	1075	
NB	TH 5	EB	TH 55	273	450	
EB	TH 55	NB	TH 5	677	775	
EB	TH 55	SB	TH 5	867	1125	
SB	TH 77	EB	TH 13	576	650	
SB	TH 77	WB	TH 13	768	1000	
WB	TH 13	SB	TH 77	276	325	
WB	TH 13	NB	TH 77	492	675	
NB	TH 77	WB	TH 13	24	50	
NB	TH 77	EB	TH 13	156	225	
EB	TH 13	NB	TH 77	324	375	
EB	TH 13	SB	TH 77	36	50	
SB	TH 77	EB	I-494	216	350	
SB	TH 77	WB	I-494	184	225	
WB	I-494	SB	TH 77	1080	1200	
WB	I-494	NB	TH 77	888	1000	
NB	TH 77	WB	I-494	888	1025	
NB	TH 77	EB	I-494	353	500	
EB	I-494	NB	TH 77	372	450	
EB	I-494	SB	TH 77	790	950	
SB	I-35W	EB	I-494	432	575	
SB	I-35W	WB	I-494	624	700	
WB	I-494	SB	I-35W	672	800	
WB	I-494	NB	I-35W	552	650	
<b>NB</b>	<b>I-35W</b>	<b>WB</b>	<b>I-494</b>	<b>1032</b>	<b>1250</b>	(2)
NB	I-35W	EB	I-494	936	1025	
EB	I-494	NB	I-35W	588	675	
EB	I-494	SB	I-35W	1212	1525	

Notes: Ramps in **bold** have volumes that exceed capacity (see text for description).

(1) Mn/DOT Traffic Management Center *All Detector Report* (April 2001 data, published 8/2001).

(2) 2007 PM Peak Volume exceeds ramp capacity.

The SYNCHRO traffic operations model was used for all signalized intersection analyses for existing and AUAR development conditions. The one unsignalized intersection was analyzed using Highway Capacity Software. Results of the existing conditions analysis (depicted in Table 18) indicate that all key intersections operate at LOS C or better during the p.m. peak hour under existing traffic controls and geometric layout.

**TABLE 18  
EXISTING PM PEAK HOUR CAPACITY ANALYSIS**

<b>Intersection</b>	<b>Level of Service</b>
24th Avenue and I-494 Ramps	C or better
34th Avenue and I-494 North Ramps	C or better
34th Avenue and I-494 South Ramps	C or better
Thunderbird Drive and East 79th Street	C or better
24th Avenue and East 79th Street	C or better
24th Avenue and East 80th Street	C or better
28th Avenue and East 80th Street	C or better
34th Avenue and East 80th Street	C or better
20th Avenue and Lindau Lane	C or better
22nd Avenue and Lindau Lane	C or better
24th Avenue and Lindau Lane	C or better
24th Avenue and East 82nd Street	C or better
20th Avenue and Killebrew Drive	C or better
22nd Avenue and Killebrew Drive	C or better
24th Avenue and Killebrew Drive	C or better
28th Avenue and Old Shakopee Road*	C or better

\* Indicates an unsignalized intersection.

### **Future Conditions**

#### **Property Access Changes**

The proposed development traffic operations analyses included assumptions regarding changes to access to three parcels slated for development: 1) Met Center site, 2) Adjoining Lands and 3) Kelley property. The Met Center site currently has access provided at the following locations:

- Two driveways on Lindau Lane at 20th Avenue and 22nd Avenue, directly across from the current Mall of America driveways
- Two locations along East 79th Street, east and west of Thunderbird Drive
- One access provided on 24th Avenue at East 80th Street

As described in the Mall of America Expansion Final EIS, access to the Met Center site from Lindau Lane will include the existing driveways across from the existing Mall of America development, plus a grade-separated left turn for eastbound Lindau Lane traffic coming from southbound TH 77. The access to the Met Center site on 24th Avenue at East 80th Street will be eliminated with the roadway realignment planned for 79th/80th Street and 24th Avenue. An additional access to the former Met Center site is also proposed on East 79th Street, which will provide three access driveways to the site along 79th/80th Street.

The Adjoining Lands site access was assumed to be at one location on East 82nd Street and one location on Old Shakopee Road, both of which would be centrally located between East 24th Avenue and East 28th Avenue. Additionally, two access points to the site are assumed on 28th Avenue.

Access to the Kelley property is assumed to occur via the planned extension of 28th Avenue south of Old Shakopee Road, continuing southwest through the site to connect to 86th Street at Old Shakopee Road.

To reflect these access changes, intersection operations analysis was completed for the following key site access intersections (in addition to the existing intersections listed in Table 18) for year 2007.

- 79th Street East Driveway and 79th /80th Street
- 82nd Street and Adjoining Lands North Driveway
- Old Shakopee Road and Adjoining Lands South Driveway
- 28th Avenue and Old Shakopee Road (assuming the extension of 28th Avenue south through the Kelley property)

### Local Street System Improvements

Improvements to the local transportation system currently planned for implementation prior to 2007 are summarized below in Table 19. These improvements were included in the analysis of future local traffic operations.

**TABLE 19  
LOCAL SYSTEM IMPROVEMENTS**

Roadway	Scheduled to be Completed by	Lead Agency
Local System Improvements		
• 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, right/through shared lane, right-turn lane)	2006	Mn/DOT/Bloomington
• East 79th Street (TH 77 to 24th Avenue) – Reconstruct/realignment/ geometric improvements	2003	Bloomington
• East Old Shakopee Road/28th Avenue – Signalize intersection, improve geometrics	2006	Bloomington
• 24th Avenue/Lindau Lane – Modify Lindau Lane/TH 77 to 24th Avenue	2006	Bloomington
• 24th Avenue Operational Upgrade – I-494 to Lindau Lane (geometrics)	2006	Hennepin County/ Bloomington/Mn/DOT
• 24th Avenue ITS Information Signs – I-494 to 86th Street	2006	Hennepin County/ Bloomington/Mn/DOT
• 80th Street Upgrade – Upgrade of 80th Street between 24th and 34th Avenues to provide five approach and three departing lanes at critical intersections	2006	Bloomington

**Future Traffic Operations – Year 2007**

In order to determine how well existing local roadways would accommodate the proposed development with planned roadway improvements, a traffic operations analysis was conducted for the year 2007 (one year after development completion) using SYNCHRO for the aforementioned key signalized intersections. The level of service analysis was completed for the p.m. peak hour, since this was considered the worst case scenario. Future level of service results for the year 2007 are shown in Table 20.

All key intersections are expected to operate at an acceptable level of service (LOS D or better) in the year 2007 for post-AUAR development conditions. All of the intersections analyzed operated at LOS C or better, with the exception of the 24th Avenue and I-494 Ramps intersection, which functioned at an acceptable LOS D. In addition to the local roadway modifications previously mentioned, the following improvements were also assumed for the analysis:

- 28th Avenue and East 80th Street – Protected/permissive left-turn phasing on the south approach of 28th Avenue.
- 34th Avenue and East 80th Street – Adequate storage is needed for the dual left-turn lanes on the west approach of 80th Street for stacking vehicles. Based on the analysis approximately 400 feet of storage is needed without the traffic generated by the new parking facility at Hubert H. Humphrey terminal. With the additional traffic, 500 feet of storage is needed.

- 20th Avenue and Killebrew Drive – The addition of a left-turn lane on the west approach of Killebrew Drive to provide dual left-turn lanes.
- 28th Avenue/86th Street Connection – Construction in conjunction with the Kelley property development.

**TABLE 20**  
**YEAR 2007 PM PEAK HOUR CAPACITY ANALYSIS <sup>(3)</sup>**

<b>Intersection</b>	<b>Level of Service</b>
24th Avenue and I-494 Ramps	D
34th Avenue and I-494 North Ramps <sup>(4)</sup>	C or better
34th Avenue and I-494 South Ramps <sup>(4)</sup>	C or better
Thunderbird Drive and East 79th Street	C or better
79th Street East Driveway and East 79th/80th Street <sup>(1)</sup>	C or better
24th Avenue and East 79th Street	--
24th Avenue and East 80th Street	C or better
28th Avenue and East 80th Street	C or better <sup>(6)</sup>
34th Avenue and East 80th Street <sup>(7)</sup>	C or better
20th Avenue and Lindau Lane	C or better
22nd Avenue and Lindau Lane	C or better
24th Avenue and Lindau Lane	C or better
24th Avenue and East 82nd Street	C or better
82nd Street and Adjoining Lands North Driveway <sup>(1)</sup>	C or better
20th Avenue and Killebrew Drive	C or better <sup>(8)</sup>
22nd Avenue and Killebrew Drive	C or better
24th Avenue and Killebrew Drive	C or better
Old Shakopee Road and Adjoining Lands South Driveway <sup>(1)</sup>	C or better
28th Avenue and Old Shakopee Road <sup>(2)</sup>	C or better <sup>(5)</sup>

<sup>(1)</sup> These intersections do not currently exist.

<sup>(2)</sup> This intersection currently exists as an unsignalized intersection but was analyzed as a signalized intersection for year 2007 conditions. The analysis of this intersection also considers that 28th Street will be extended to the southwest from its present terminus to connect with 86th Avenue. This new roadway will help accommodate the addition of the Kelley property development and relieve Old Shakopee Road.

<sup>(3)</sup> Traffic operations analysis includes additional traffic resulting from the Kelley development and removal of traffic contributed by the Metro Office Park that is no longer projected to be built.

<sup>(4)</sup> Analysis includes updated forecasted traffic volumes for a new parking ramp terminal facility at HHH terminal.

<sup>(5)</sup> Analysis assumes a signalization at this intersection with one left turn lane, one through lane, and one right turn lane on the south leg of the intersection. Analysis also assumes the re-routing of some forecasted traffic volumes due to the proposed 28th Avenue/86th Street connector road.

<sup>(6)</sup> Analysis assumes protected/permissive left-turn phasing on the south approach of 28th Avenue.

<sup>(7)</sup> Adequate storage is needed for the dual left-turn lanes on the west approach of 80th Street for stacking vehicles. Based on the analysis approximately 400 feet of storage is needed without the traffic generated by the new parking facility at HHH. With the additional traffic, 500 feet of storage is needed.

<sup>(8)</sup> Dual left-turn lanes are recommended on the west approach of Killebrew Drive due to queuing.

## TRAFFIC IMPACTS SUMMARY AND CONCLUSIONS

### Regional System Impacts and Mitigation

Increased intensity of development within the urbanized areas of the region is one of the objectives of the Metropolitan Council's regional growth policies. Intense development within the Airport South District is consistent with these policies. This additional development can result in additional vehicle trips that can increase pressure on the regional transportation system. However, the density and type of development at the existing Mall of America and the proposed AUAR development also increase the potential utilization of "multiple purpose" trips and transit service for trips to/from the area, thereby reducing the total number of site trips generated (compared to the same land uses at "typical" development densities and suburban locations).

A reduction in site trips (compared to standard ITE trip generation estimates) has already been documented at the existing Mall of America, due to a combination of shared trips at this multi-use facility and due to the proximity of transit service. The Airport South District is currently served by 17 transit routes and a transit hub at the existing Mall of America, with transit ridership accounting for approximately 4.5 percent of all person trips in the Airport South area – nearly double the typical suburban mode share for transit. Additional development in the area would further promote increased transit ridership in the area, including providing an additional source of riders for the Hiawatha Avenue Corridor LRT line now under construction, thereby reducing local and regional traffic impacts related to the proposed development.

The Adjoining Lands and Health Partners Campus properties are located along the future LRT line, and the Muir property is located only a half a block from the LRT station on 34th Avenue. Trip generation estimates for the traffic analyses for the AUAR utilized standard ITE trip estimates for all non-Mall of America developments, therefore it is likely that the type and intensity of land uses proposed for new developments in Airport South would promote additional multiple purpose and transit trips, decreasing the traffic demand below the estimates included in the traffic analyses.

Developers and employers in the developing/redeveloping areas of Airport South can assist in promoting use of transit and other travel demand management (TDM) measures. The City of Bloomington requires preparation of a TDM plan for developments 300,000 square feet in size or larger. City staff will work together with developers and employers to identify TDM measures appropriate for the developments, including, but not limited to:

- Maximizing transit accessibility to the site
- Promoting use of transit by employees and/or customers by providing transit information and/or incentives through Metro Commuter Services
- Promoting carpooling by employees through Metro Commuter Services
- Flexible work hours and/or telecommuting, to minimize peak period demand
- Promote pedestrian-friendly site development and connections to transit services, to encourage walking trips between land uses and the use of transit



## **Local System Impacts and Mitigation**

Based on the analysis of potential local transportation system impacts described in the “Local Roadway System Analysis and Impacts” section above, the proposed Airport South AUAR development can be supported by the existing roadway system with minor modifications (described below). The suggested modifications listed below would be in addition to the local roadway improvements already planned for implementation by the City of Bloomington (listed in Table 2).

34th Avenue and East 80th Street – Additional storage is needed for the dual left-turn lane on the west approach of 80th Street for stacking vehicles. Based on the analysis approximately 400 feet of storage is needed without the traffic generated by the new parking facility at the HHH terminal. With the additional traffic, 500 feet of storage is needed. This improvement is needed even if the Mall of America Expansion is not constructed.

28th Avenue and East 80th Street – The installation of protective/permissive phasing on the south approach of 28th Avenue.

20th Avenue and Killebrew Drive – The addition of a left-turn lane on the west approach of Killebrew Drive to provide dual left-turn lanes due to queuing.

28th Avenue/86th Street Connection – Construction in conjunction with the Kelley property development.

## **22. VEHICLE-RELATED AIR EMISSIONS**

**EAW:** ESTIMATE THE EFFECT OF THE PROJECT'S TRAFFIC GENERATION ON AIR QUALITY, INCLUDING CARBON MONOXIDE LEVELS. DISCUSS THE EFFECT OF TRAFFIC IMPROVEMENTS OR OTHER MITIGATION MEASURES ON AIR QUALITY IMPACTS. *(IF THE PROJECT INVOLVES 500 OR MORE PARKING SPACES, CONSULT “EAW GUIDELINES” ABOUT WHETHER A DETAILED AIR QUALITY ANALYSIS IS NEEDED.)*

**AUAR:** *The guidance provided in “EAW Guidelines” should also be followed for an AUAR. Mitigation proposed to eliminate any potential problems may be presented under Item 21 and merely referenced here.*

## **VEHICLE-RELATED AIR EMISSIONS**

### **Background**

A detailed air quality analysis was performed as part of the Mall of America Expansion EIS studies. The Build assumptions for the EIS included additional background development in Airport South that – with minor exceptions described in detail in the Traffic section (Section 21) of this AUAR – is consistent with the AUAR assumptions.

## **Trip Distribution**

The effects of the proposed developments on the regional transportation system are linked to the amount of traffic produced and by the destination (or origin) of that traffic. Figure 13 shows the direction of approach for trips to the Airport South area. Approximately 67 percent of the trips generated by the Airport South area are longer than five miles, compared to 60 percent of the region's trips as a whole (based on the 1990 regional Travel Behavior Inventory). A significant effect of longer trips is the need or desire of those trips to use regional highway facilities such as TH 77 and I-494. Conversely, the longer trips have a lesser desire or ability to use the local roadway system.

The overall directions of approach are generally consistent with the population distribution patterns in the region as a whole, and also reflect the sub-regional market that could be served by new commercial development. The dominant direction of approach is from the west/northwest along I-494 and TH 62 at 19 percent. Approximately 16 percent of the traffic approaches from the south in the TH 77/I-35W travelshed.

The internal-external-through trip pattern for the Airport South District development assumptions (based on Mall of America Expansion EIS analysis) is summarized in Table 11. The distribution of current trips generated within the Airport South District was determined by calibrating the trip distribution against available cordon counts. Traffic data was collected at the approach roads of the Airport South District in August and September 1999.

Out of the 172,000 trips currently generated within the district, 26,750 stay within the area. Because both ends of these trips are within the district, they represent 15.5 percent of the total trips generated by the study area. This is reasonably consistent with data from the 1990 Travel Behavior Inventory, which found approximately 13 percent of trips are less than one mile in length. Furthermore, the relationship between the hotels located in the Airport South area and the retail/dining opportunities at the Mall of America validates the reasonableness of 15 percent of trips staying within the study area. Similarly, land use assumption modeling results projected that 15.8 to 16.5 percent of the trips stayed within the area.

The cordon total includes an estimated 12,200 through trips, with both trip ends outside the district. These trips, 7.7 percent of the total cordon crossings, can be attributable to the presence of the minor arterials through the study area: Old Shakopee Road/24th Avenue South and the 79th/80th arterial ring road. These roadways, depending on the time of day and trip origin-destination, can provide a more convenient travel option to using the freeway system.

Figure

For the EIS/AUAR development scenario, the number of through trips was estimated to be 13,350. In general, as the number of trips generated by the study area increases, the number of through-trips decreases. This is attributable to the increasing congestion on study area roadways, which lessens the attractiveness of those roadways for the through trips.

**TABLE 11  
SUMMARY OF AIRPORT SOUTH INTERNAL-EXTERNAL VEHICLE TRIP  
DISTRIBUTION**

Alternative	Total Trips Generated by Study Area <sup>(1)</sup>	Trips That Stay Within Study Area <sup>(2)</sup>		Through Trips <sup>(3)</sup>	Total Study Area Trips <sup>(4)</sup>
		Number	Percent		
Existing (1998)	172,000	26,750	15.5%	12,200	157,450
EIS/AUAR Development <sup>(5)</sup>	269,825	43,700	16.2%	13,350	239,475

Notes:

- <sup>(1)</sup> Measured in trip ends (trip origin or trip destination)
- <sup>(2)</sup> Internal trips have both trip origin and trip destination and are counted twice: once for the trip origin and once for the trip destination
- <sup>(3)</sup> Through trips have neither trip origin nor trip destination in the study area – these trips pass through and are counted twice: once as they enter the study area and once as they leave the study area
- <sup>(4)</sup> Sum of study area trips plus through trips minus trips that stay within study area
- <sup>(5)</sup> Based on EIS land use assumptions. AUAR land use assumptions would not substantially change these numbers.

### **Roadway System**

The planned road improvements are classified into regional system improvements and local improvements. The most important regional roadway improvements in the vicinity of the Airport South District are the proposed I-494 reliever arterial (ring road) plan and the reconstruction of I-494 in Bloomington and Richfield. The ring-road system is assumed to be complete by the time the AUAR land development is in place (2006). The I-494 reconstruction in the Bloomington-Richfield segment is currently programmed to be completed sometime after 2010 and, therefore, was not included in the year 2007 regional analysis assumptions for this study. If I-494 improvements were implemented prior to 2007, operations would improve compared to the results shown in this study.

The most important local road network development potentially affecting regional system travel to/from Airport South is the proposed connection of East 79th Street and East 80th Street west of 24th Avenue. This improvement is an element of the ring road system. The 79th/80th Street connection includes realigning 79th Street to the south (just west of 24th Avenue) to align with the existing 80th Street/24th Avenue

intersection, creating a continuous east-west roadway: 79th/80th Street. The existing intersection of 79th Street (east of 24th) and 24th Avenue will be eliminated. The complete list of planned road improvements assumed in the forecast modeling, completion dates and lead agencies can be found in Table 2 of Section 6.

**Transit**

Information compiled as of March 2002 indicates the Airport South area is served by 17 transit routes, including several different providers: Metro Transit, Minnesota Valley Transit Authority, and Southwest Metro. Table 12 shows existing transit service in the Airport South area from the Mall of America. Approximately 400 public transit buses depart the Mall of America between the hours of 6:00 a.m. and 8:00 p.m., for an average of about 28 buses per hour.

**TABLE 12  
EXISTING TRANSIT SERVICE IN AIRPORT SOUTH AREA  
(Buses Departing Mall of America: 6 a.m. to 8 p.m.)**

Route	Number of Buses	Route	Number of Buses
15	26	440	12
19	51	442	19
445	16	444	20
5	52	540	6
52A	3	538	17
7	52	539	17
449	5	84	34
180	54	415	6
		54	39
		Total	429

Source: Metropolitan Council December 12, 2001 letter re: Draft AUAR

The 2007 forecasts assume completion of the Hiawatha Corridor Light Rail Transit (LRT) line from downtown Minneapolis to the Mall of America. LRT service is assumed at 7-1/2 minutes frequency during peak periods and 10 minutes frequency during off-peak times. Three LRT stations are planned in the Airport South area: 1) a station in the southeast quadrant of the intersection of 82nd Street South

and 24th Avenue South serving the Mall of America area; 2) a station along 34th Avenue South near 80th Street serving the eastern end of the study area; and 3) a station within the proposed Health Partners Campus development.

Transit ridership is estimated to currently account for 4.5 percent of all person trips in the Airport South District, or 9,800 trips per day. Approximately 65 percent of those trips are on the 54 and 180 routes, the limited stop services between the Mall of America and the downtown areas of St. Paul and Minneapolis respectively.

Table 13 shows the estimated transit ridership for existing and proposed conditions, based on analyses from the Mall of America Expansion EIS. AUAR development scenario assumptions would yield similar results. Under the EIS/AUAR development scenarios, transit ridership would increase by 9,900 riders per day over current levels, increasing the transit market share in Airport South to 5.9 percent overall (compared to the existing 4.5 percent transit use). This increase in transit use can be attributed to the intensive developments proposed in the vicinity of the Mall of America transit hub and the three LRT stations to be constructed in the Airport South District

Forecasts of LRT ridership for the Hiawatha Avenue Corridor (August 1999) show a total of 9,500 daily trips generated by the LRT line at the stations in the Airport South area. That analysis assumed a 50 percent increase in development in the Airport South area, which is comparable to the AUAR development assumptions.

**TABLE 13  
ESTIMATED TRANSIT RIDERSHIP IN THE AIRPORT SOUTH AREA**

Alternative	Estimated Total Transit Trips (includes LRT)	Estimated LRT Riders <sup>(1)</sup>	Estimated Transit Percent
Existing	9,800	N/A	4.5%
EIS/AUAR development	19,700	9,500	5.9%

<sup>(1)</sup> Also included in total transit trips.  
Source: SRF Consulting, Group, Inc.

**Regional System Forecast Daily Traffic Volumes**

The trip generation, trip distribution, transit use and roadway system improvements slated for completion by 2006, as summarized above, were input into the Metropolitan

Council's regional forecast model. Based on this information, estimates of year 2007 (one year after completion of development) traffic volumes on the area roadways were prepared to determine the effects of the proposed AUAR land uses.

Existing and estimated future (2007) ADTs for the AUAR development scenario (equivalent to Build Alternative 1 in the Mall of America EIS document) are included in Figures 5 through 11 in the July 31, 2000 travel forecasting Technical Memorandum (see Appendix D).

## **REGIONAL ROADWAY SYSTEM ANALYSIS AND IMPACTS**

*Note: The information included in this section is based on the Mall of America EIS analyses, and was not updated to reflect the minor changes in AUAR development assumptions (see clarification in the Introduction to this section).*

The regional forecast model described in the previous section was utilized to assess potential regional roadway system impacts related to the proposed development, based on link-based speed adjustments to account for congestion on the roadway system.

### **Congested Roadway Segments Analysis**

Table 14 shows the estimated current levels of service in the p.m. peak hour for the regional roadway system. The analysis reflects a comparison of the projected traffic volume demand to the carrying capacity of each roadway facility. For example, a mixed-use lane can carry 2,300 vehicles per hour, but an auxiliary lane carries traffic only exiting and entering nearby interchanges and therefore has a lower capacity (assumed at 50 percent of a full lane, or 1,150 vehicles per hour). Roadway segments operating at or near capacity, resulting in unacceptable level of service (LOS) E or F ("slow-and-go" or "stop-and-go") are highlighted in Tables 14 and 15.

The currently congested (i.e. LOS E or F) roadway segments are listed in Table 14. As shown in Table 15, regional roadway improvements planned for construction by year 2007 will alleviate existing congestion problems on I-35W and TH 62 (Common Section), and TH 55 north of TH 62. However, TH 62 east of Portland and I-494 west of 24th Avenue South will become congested by year 2007 under Airport South Build conditions. Table 16 summarizes the 2007 congested roadway segments for the existing conditions and the AUAR development scenario.

**TABLE 14  
EXISTING PM PEAK HOUR LEVEL OF SERVICE**

Location	Lanes (1)	Average Annual Daily Traffic (2)	PM Peak Hour % (3)	Peak Direction %	One-Way Peak Hour Volume	Hourly Volume per Lane	Capacity per Lane (4)	Level of Service
TH 62 East of Penn Ave	6	95,000	6.7%	55.4%	3,525	1,175	1,900	C
<b>I-35W and TH 62 Commons</b>	<b>6</b>	<b>152,000</b>	<b>6.8%</b>	<b>52.2%</b>	<b>5,400</b>	<b>1,800</b>	<b>1,900</b>	<b>E</b>
<b>I-35W North of 60th Street</b>	<b>6</b>	<b>170,000</b>	<b>7.5%</b>	<b>50.7%</b>	<b>6,475</b>	<b>2,150</b>	<b>2,300</b>	<b>E</b>
TH 62 East of Portland Ave	4	97,000	7.7%	51.4%	3,850	1,925	2,300	D
TH 62 East of TH 77	4	61,000	8.5%	55.6%	2,875	1,450	2,300	C
TH 62 West of TH 55	4	49,500	8.5%	54.8%	2,300	1,150	2,300	C
<b>TH 55 North of TH 62</b>	<b>4</b>	<b>27,500</b>	<b>8.5%</b>	<b>52.5%</b>	<b>1,225</b>	<b>625</b>	<b>650</b>	<b>E</b>
TH 55 South of TH 62	4	54,000	9.0%	52.5%	2,550	1,275	2,300	C
TH 5 River Bridge	4	59,000	7.9%	51.7%	2,425	1,225	2,300	C
TH 55 River Bridge	4	36,500	9.5%	66.0%	2,275	1,150	2,300	C
TH 5 South of TH 55	6	67,000	8.8%	52.5%	3,100	1,025	1,900	C
TH 5 South of Post Rd	6	73,000	8.8%	52.5%	3,375	1,125	1,900	C
I-494 River Bridge	6	94,000	9.5%	55.9%	4,975	1,650	2,300	C
I-494 West of 34th Ave	10	152,000	8.7%	55.7%	7,325	1,475	2,050	C
I-494 West of 24th Ave	6	137,000	7.9%	51.2%	5,575	1,850	2,300	D
TH 77 North of Old Shakopee Rd.	8	88,000	9.2%	72.0%	5,825	1,450	2,000	C
TH 77 North of I-494	6	70,000	8.7%	55.2%	3,375	1,125	1,900	C
<b>I-494 West of TH 77</b>	<b>8</b>	<b>161,000</b>	<b>8.0%</b>	<b>56.0%</b>	<b>7,225</b>	<b>1,800</b>	<b>2,000</b>	<b>E</b>
<b>TH 77 River Bridge</b>	<b>6</b>	<b>96,000</b>	<b>10.0%</b>	<b>66.0%</b>	<b>6,325</b>	<b>2,100</b>	<b>2,300</b>	<b>E</b>
I-35W South of 94th Street	6	109,000	7.3%	60.5%	4,825	1,600	2,000	D
I-35W South of 82nd Street	6	119,000	7.1%	53.0%	4,475	1,500	2,000	D
<b>I-494 West of Penn Ave</b>	<b>6</b>	<b>174,000</b>	<b>7.5%</b>	<b>52.9%</b>	<b>6,925</b>	<b>2,300</b>	<b>2,300</b>	<b>F</b>
<b>I-494 West of Portland</b>	<b>6</b>	<b>156,000</b>	<b>8.0%</b>	<b>56.0%</b>	<b>7,000</b>	<b>2,325</b>	<b>2,300</b>	<b>F</b>
I-35W North of 76th Street	4	102,000	6.9%	50.7%	3,550	1,775	2,300	D
I-35W South of TH 62	6	106,000	7.5%	50.0%	4,000	1,325	2,000	C

Notes:

(1) Total of through, HOV and auxiliary lanes

(2) Annual Average Daily Traffic (Mn/DOT 1998)

(3) Peak factors from Mn/DOT Traffic Management Center *All Detector Report (4/99)*, adjusted to reflect average weekday peak conditions

(4) Weighted at 2,300 vehicles per lane for through lanes, 1,400 vehicles per hour HOV lanes and 1,150 vehicles per lane auxiliary (less than one mile long)

**TABLE 15  
2007 EIS/AUAR DEVELOPMENT SCENARIO PM PEAK HOUR LEVEL OF SERVICE**

Location	Lanes <sup>(1)</sup>	Average Annual Daily Traffic <sup>(2)</sup>	PM Peak Hour % <sup>(3)</sup>	Peak Direction %	One-Way			Level of Service
					Peak Hour Volume	Hourly Volume per Lane	Capacity per Lane <sup>(4)</sup>	
TH 62 East of Penn Ave	6	108,000	6.0%	52.9%	3430	1,143	1,900	C
I-35W and TH 62 Commons	8	172,000	6.7%	53.8%	6230	1,558	2,100	C
<b>I-35W North of 60th Street</b>	<b>8</b>	<b>194,000</b>	<b>7.5%</b>	<b>52.2%</b>	<b>7563</b>	<b>1,891</b>	<b>2,100</b>	<b>E</b>
<b>TH 62 East of Portland Ave</b>	<b>4</b>	<b>112,000</b>	<b>7.5%</b>	<b>51.4%</b>	<b>4291</b>	<b>2,145</b>	<b>2,300</b>	<b>E</b>
TH 62 East of TH 77	4	73,000	8.2%	53.1%	3180	1,590	2,300	C
TH 62 West of TH 55	4	58,000	8.2%	54.8%	2609	1,305	2,300	C
TH 55 North of TH 62	4	31,000	8.3%	52.5%	1343	671	1,100	C
TH 55 South of TH 62	4	62,000	8.8%	52.5%	2859	1,430	2,300	C
TH 5 River Bridge	4	72,000	7.7%	51.7%	2864	1,432	2,300	C
TH 55 River Bridge	4	44,000	9.2%	61.0%	2472	1,236	2,300	C
TH 5 South of TH 55	6	89,000	8.6%	52.5%	4012	1,337	1,900	C
TH 5 South of Post Rd	6	90,000	8.6%	52.5%	4057	1,352	1,900	C
I-494 River Bridge	6	113,000	9.2%	53.4%	5560	1,853	2,300	D
I-494 West of 34th Ave	10	190,000	8.4%	53.2%	8497	1,699	2,050	D
<b>I-494 West of 24th Ave</b>	<b>6</b>	<b>164,000</b>	<b>7.7%</b>	<b>51.2%</b>	<b>6456</b>	<b>2,152</b>	<b>2,300</b>	<b>E</b>
TH 77 North of Old Shakopee Rd.	8	104,000	8.9%	66.8%	6220	1,555	2,000	D
TH 77 North of I-494	6	87,000	8.5%	52.6%	3874	1,291	1,900	C
<b>I-494 West of TH 77</b>	<b>8</b>	<b>192,000</b>	<b>7.8%</b>	<b>53.4%</b>	<b>7954</b>	<b>1,988</b>	<b>2,000</b>	<b>E</b>
<b>TH 77 River Bridge</b>	<b>6</b>	<b>109,000</b>	<b>9.7%</b>	<b>61.0%</b>	<b>6460</b>	<b>2,153</b>	<b>2,300</b>	<b>E</b>
I-35W South of 94th Street	6	127,000	7.1%	55.4%	4976	1,659	2,000	D
I-35W South of 82nd Street	6	140,000	6.9%	53.0%	5087	1,696	2,000	D
<b>I-494 West of Penn Ave</b>	<b>6</b>	<b>205,000</b>	<b>7.3%</b>	<b>52.9%</b>	<b>7890</b>	<b>2,630</b>	<b>2,300</b>	<b>F</b>
<b>I-494 West of Portland</b>	<b>6</b>	<b>182,000</b>	<b>7.8%</b>	<b>53.4%</b>	<b>7539</b>	<b>2,513</b>	<b>2,300</b>	<b>F</b>
I-35W North of 76th Street	6	117,000	6.9%	52.8%	4252	1,417	2,000	C
I-35W South of TH 62	8	120,000	7.5%	51.5%	4629	1,157	2,100	C

Notes:

<sup>(1)</sup> Total of through, HOV and auxiliary lanes

<sup>(2)</sup> Annual Average Daily Traffic (Mn/DOT 1998)

<sup>(3)</sup> Peak factors from Mn/DOT Traffic Management Center *All Detector Report* (4/99), adjusted to reflect average weekday peak conditions

<sup>(4)</sup> Weighted at 2,300 vehicles per lane for through lanes, 1,400 vehicles per hour HOV lanes and 1,150 vehicles per lane auxiliary (less than one mile long)

- C. INDICATE THE NUMBER, LOCATION, SIZE AND USE OF ANY ABOVE OR BELOW GROUND TANKS TO STORE PETROLEUM PRODUCTS OR OTHER MATERIALS, EXCEPT WATER. DESCRIBE ANY EMERGENCY RESPONSE CONTAINMENT PLANS.

It is unknown at this time if permanent above or underground storage tanks (e.g. for emergency generator fuel storage) would be installed in conjunction with any of the proposed developments. If storage tanks are utilized, they would be required to be installed, maintained, and monitored in accordance with applicable MPCA regulations.

*AUAR:* For A, generally only the estimated total quantity of municipal solid waste generated and information about any recycling or source separation programs of the RGU need be included. No response is necessary for B. For C, potential locations of storage tanks associated with commercial uses in the AUAR should be identified (e.g., gasoline tanks at service stations).

## 21. TRAFFIC

**EAW:** PARKING SPACES ADDED \_\_\_\_\_  
EXISTING SPACES (IF PROJECT INVOLVES EXPANSION) \_\_\_\_\_  
ESTIMATED TOTAL AVERAGE DAILY TRAFFIC (ADT)  
GENERATED \_\_\_\_\_  
ESTIMATED MAXIMUM PEAK HOUR TRAFFIC GENERATED (IF KNOWN)  
AND ITS TIMING \_\_\_\_\_

AN ESTIMATE OF THE IMPACT ON TRAFFIC CONGESTION ON THE AFFECTED ROADS AND DESCRIBE ANY TRAFFIC IMPROVEMENTS NECESSARY. IF THE PROJECT IS WITHIN THE TWIN CITIES METROPOLITAN AREA, DISCUSS ITS IMPACT ON THE REGIONAL TRANSPORTATION SYSTEM.

*AUAR:* For most AUAR reviews a relatively detailed traffic analysis will be needed, especially if there is to be much commercial development in the AUAR area or if there are major congested roadways in the vicinity. The results of the traffic analysis must be used in the response to Item 22 and to the noise aspect of Item 24.

*Instead of responding to the information called for in Item 21, the following information should be provided:*

- *A description and map of the existing and proposed roadway system, including state, regional, and local roads to be affected by the development of the AUAR area. This information should include existing and proposed roadway capacities and existing and projected background (i.e., without the AUAR development) traffic volumes.*

- *Trip generation data – trip generation rates and trip totals – for each major development scenario broken down by land use zones and/or other relevant subdivisions of the area. The projected distributions onto the roadway system must be included.*
- *Analysis of impacts of the traffic generated by the AUAR area on the roadway system, including: comparison of peak period total flows to capacities analysis of Levels of Service and delay times at critical points (if any).*
- *A discussion of structural and non-structural improvements and traffic management measures that are proposed to mitigate problems.*

*NOTE: In the above analyses the geographical scope must extend outward as far as the traffic to be generated would have a significant effect on the roadway system and traffic measurements and projections should include peak days and peak hours, or other appropriate measures related to identifying congestion problems, as well as ADTs.*

## INTRODUCTION

As noted in the “Study Approach” discussion in Section 6 of this AUAR, the Mall of America Expansion EIS studies included a number of planned redevelopment parcels within Airport South as “background” conditions for the EIS analyses, including traffic forecasting and operations analyses. A few minor changes in development (and resulting trip generation) assumptions have occurred since the EIS analyses. These changes—incorporated as part of the AUAR analysis—include:

- Development of the Kelley property (office and residential) by year 2006, resulting in a trip generation increase of approximately 12,700 vehicles per day compared to the EIS analysis.
- The intensive redevelopment of the Metro Office Park parcel assumed in the EIS is no longer anticipated, therefore the AUAR assumes that the existing uses at Metro Office Park (outside the RPZ) will remain, resulting in a decrease of approximately 8,175 trips per day compared to the EIS analysis.
- Trip generation estimates and trip distribution for the Hubert H. Humphrey terminal parking ramp (north of Airport South District on 34th Avenue) have been revised to reflect the latest MAC trip generation information for the facility, resulting in a decrease in the number of peak hour trips.

The AUAR development assumptions noted above result in a net increase of only 4,530 trips to/from Airport South (see the ‘Trip Generation’ discussion later in this section). This represents an approximate 2 percent increase in the total number of Airport South trips and 2 percent increase in peak hour trips, compared to the EIS analysis. Since the increase in AUAR trips over the EIS trips is not substantial, the anticipated traffic impacts to/from Airport South and the regional transportation system

would not change substantially from those identified in the EIS analyses. Therefore, the EIS analysis findings are utilized to identify AUAR impacts to the regional system. (Appendix D of this AUAR includes the July 31, 2000 Travel Forecasting Methods and Results memorandum from the EIS.)

The trip generation estimates for local traffic operations analyses have been updated to reflect the AUAR assumptions. This updated information is summarized in the “Local Roadway System Analysis/Impacts” section below and is included in the August 8, 2001 ‘Traffic Study for the Airport South District AUAR’ traffic operations technical memorandum in Appendix D.

The AUAR analysis of traffic impacts includes comparison of traffic volumes and projected regional and local roadway operations for existing (year 1998) and 2007 (“one year after full build-out”) conditions.

The discussion of traffic impacts analysis consists of these sections:

1. Regional Travel Forecasting Assumptions/Process (based on the Mall of America Expansion EIS analyses, as noted above)
2. Regional Roadway Systems Analysis/Impacts (based on the Mall of America Expansion EIS analyses)
3. Local Roadway System Analysis/Impacts (based on updated trip generation estimates and local distribution updates to the Mall of America Expansion EIS analyses to reflect AUAR land use assumptions)

## **REGIONAL TRAVEL FORECASTING ASSUMPTIONS/PROCESS**

The July 31, 2000 technical memorandum from the Mall of America Expansion EIS (included in Appendix D) describes the travel forecasting process in detail. The process uses the Twin Cities regional travel model as the basis for traffic forecasting. Specific assumptions related to: 1) roadway system improvements planned for implementation prior to year 2007 and 2) estimated trips (including transit trips) by development planned in the Airport South area were entered into the model and are included in the following subsections.

### **Development Assumptions**

Table 8 summarizes the land use assumptions used in the regional forecasts, based on the Mall of America Expansion EIS development assumptions. As noted in the Introduction above, minor changes in land use assumptions were made between the EIS and AUAR analyses. The AUAR assumptions are also included in Table 8, for comparison. The AUAR assumptions were used for assessing local, not regional, traffic impacts (see discussion in the Introduction above and the Trip Generation section below).

**TABLE 8  
SUMMARY OF LAND USE DEVELOPMENT ASSUMPTIONS**

Site	Land Use	Existing (1998)	Mall of America Expansion EIS Preferred Alternative	AUAR Development Scenario <sup>(2)</sup>	Units
Met Center	General Office	-	600	600	ksf <sup>(1)</sup>
	Hotel	-	1,650	1,650	room
	Residential	-	353	353	ksf
	Retail	-	3,425	3,425	ksf
	Parking	7,500	13,154	13,154	stall
Adjoining Lands	Shopping Center	-	1,000	1,000	ksf
	Parking	1,775	7,500	7,500	stall
Mall of America	Shopping Center	4,200	4,200	4,200	ksf
Health Partners Campus	General Office	865	2,237	2,250.5	ksf
Metro Office Park	Office Park	466	1,250	466	ksf
RPZ Block	General Office	790	0	0	ksf
	1 Hotel	28	0	0	room
Robert Muir	General Office	-	750	750	ksf
	Airport Park-N-Fly	2,000	-	-	stall
Kelley Property	Agriculture	60	60	-	acres
	Office	-	-	650	ksf
	Residential	1	1	931	unit
Remainder of Airport South District	Mixed	3,440 <sup>(1)</sup>	3,911 <sup>(2)</sup>	3,911 <sup>(2)</sup>	ksf
	Hotel	2,563	2,563	2,563	room

<sup>(1)</sup> ksf: 1000s square feet gross leasable area

<sup>(2)</sup> The difference in development for the “Remainder of Airport South District” between existing (1998) and the EIS and AUAR analysis is due to development that had been approved—but not yet built—in 1998 when the Airport South EIS/AUAR traffic analyses were started. The EIS and AUAR analyses include 471,000 square feet of developments (Ceridian Bluff site and VTC) approved in 1998, some of which have not yet been built, as “worst case” assumptions.

## **Trip Generation**

ITE trip generation rates (sixth edition) and other external sources were used to develop traffic estimates for most of the new developments in the Airport South District. These rates include both weekday and peak-hour trips. Where necessary, trip rates were modified to match the existing volumes produced in Airport South. In general, the ITE rates produced a better replication of existing traffic than rates based on the Twin Cities regional forecast model.

As described in the Mall of America Expansion EIS, the trips generated by the Mall of America, including the existing facility and the proposed expansion, were not based on standard ITE trip generations rates. Rather, they were based on information prepared by the Mall of America (*Mall of America Phase 2 Expansion Traffic Study*, prepared by BRW, a consultant to Mall of America Corporation, June 1999). For the purposes of this analysis, peak hour traffic was determined using a “design hour” based on historic mall use.

The design week for the existing mall is in August, which yields the second-highest traffic (after the Christmas shopping season) with 2.2 percent of the annual trips. The August design week is 16 percent higher than the annual average of 1.9 percent. The design day approximates weekday (not weekend) traffic conditions, including the combination of shopping and work trips. The peak hour was considered to be between 5:00 p.m. and 6:00 p.m., representing 8 percent of the daily traffic and coincides with the peaking on the adjacent local and regional roadway system.

A comparison of trip generation for both EIS and AUAR land use scenarios was made to determine if the post-development traffic volumes would increase substantially for the AUAR land uses vs. the EIS land use assumptions. The Mall of America Expansion EIS estimated the total number of trips generated within the Airport South District for year 2007 development assumptions to be approximately 270,000 trips. This increases by approximately 2 percent, (274,400 vehicles per day) with the AUAR assumption revisions (Table 9).

Table 10 shows the estimated EIS and AUAR p.m. peak hour traffic generation estimates. AUAR peak hour trips are also approximately 2 percent higher than the EIS assumption trip generation estimates. Not shown in the tables are the estimated 125 outbound peak hour trips assumed from the LRT parking facility.

Since the overall increase in AUAR trips to the regional system is not substantial, the anticipated traffic impacts to/from Airport South and the regional transportation system would not change substantially from those identified in the EIS analyses. Therefore, the EIS analysis findings are utilized to identify AUAR impacts to the regional system.

A trip generation comparison for existing vs. AUAR land uses was also made. The current number of trips generated within the Airport South District is 172,000 per day. Therefore, the 274,400 vehicles per day generated by the AUAR scenario results in an approximately 60 percent increase in trip generation results under the AUAR development scenario, compared to existing conditions.

**TABLE 9  
DAILY TRIP GENERATION BY DEVELOPMENT**

SITE	LAND USE	DAILY TRIPS		
		Existing (1998)	EIS Assumptions	AUAR Development for 2007
Met Center	General Office	-	5,950	5,950
	Hotel	-	14,400	14,400
	Residential	-	1,225	1,225
	Retail	-	<u>38,250</u>	<u>38,250</u>
	Total	-	59,825	59,825
Adjoining Lands	Shopping Center	-	20,975	20,975
Mall of America	Shopping Center	82,000	82,000	82,000
Health Partners Campus	General Office	6,950	14,425	14,425
Metro Office Park	Office Park	8,125	16,300	8,125
Kelley property	Office	--	--	6,560
	Residential	25	25	6,170
RPZ Block	Office	5,950	-	-
	<u>Hotel</u>	<u>500</u>	<u>-</u>	<u>-</u>
	Total	6,450	-	-
Robert Muir	General Office	-	6,225	6,225
	Parking	800	-	-
Remainder of Airport South District		67,650 <sup>(1)</sup>	70,050 <sup>(1)</sup>	70,050 <sup>(1)</sup>
Total Airport South District		172,000	269,825	274,355

<sup>(1)</sup> See note in Table 8 regarding development approved in 1998 (existing), but not yet constructed. This development accounts for the 2,400 trip difference between existing and EIS and AUAR "Remainder of Airport South" trips.

**TABLE 10  
PM PEAK HOUR TRIP GENERATION**

SITE	LAND USE	Trips to Airport South			Trips from Airport South		
		Existing	EIS Analysis	AUAR Development	Existing	EIS Analysis	AUAR Development
Met Center	General Office	-	136	136	-	664	664
	Hotel	-	479	479	-	347	347
	Residential	-	80	80	-	45	45
	<u>Retail</u>	<u>-</u>	<u>1,464</u>	<u>1,464</u>	<u>-</u>	<u>1,586</u>	<u>1,586</u>
	Total	-	2,159	2,159	-	2,642	2,642
Adjoining Lands	Shopping Center	-	960	960	-	1,040	1,040
Mall of America	Shopping Center	3,154	3,154	3,154	3,416	3,416	3,416
	<u>Hotel</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>
	Total	3,154	3,154	3,154	3,416	3,416	3,416
Health Partners Campus	General Office	170	357	357	830	1,743	1,743
Metro Office Park	Office Park	242	404	242	1,183	1,971	1,183
RPZ Block	Office	81	-	-	394	-	-
	<u>Hotel</u>	<u>43</u>	<u>-</u>	<u>-</u>	<u>32</u>	<u>-</u>	<u>-</u>
	Total	124	-	-	426	-	-
Robert Muir	General Office	-	149	149	-	726	726
	Parking	13	-	-	13	-	-
Kelley	Office	0	0	150	0	0	740
	Residential	0	0	390	0	0	190
Remainder of Airport South District	Mixed	4,335	4,422	4,422	5,090	5,478	5,478
Total Airport South District		8,038	11,605	11,983	10,958	17,016	17,158

The five AUAR development scenario parcels slated for redevelopment are not located in the Bluff Protection Overlay District or on the steep slopes. Consequently, unique and/or unusual earthwork requirements for the proposed redevelopment are not anticipated. The potential for erosion and sedimentation of soils exposed during redevelopment in the AUAR study area will be minimized by using the appropriate Best Management Practices (BMPs) during and after construction.

Erosion practices will be identified in the final site grading and construction plans as required by NPDES permitting for construction sites and in accordance with the City of Bloomington and the watershed regulators' erosion/sediment control standards. Erosion control measures will be in place and maintained throughout the entire construction period. Removal of erosion measures will not occur until all disturbed areas have been stabilized.

## **17. WATER QUALITY – SURFACE WATER RUNOFF**

### **EAW:**

- A.** COMPARE THE QUANTITY AND QUALITY OF SITE RUNOFF BEFORE AND AFTER THE PROJECT. DESCRIBE PERMANENT CONTROLS TO MANAGE AND/OR TREAT RUNOFF. DESCRIBE ANY STORM WATER POLLUTION PREVENTION PLANS.
- B.** IDENTIFY THE ROUTE(S) AND RECEIVING WATER BODIES FOR RUNOFF FROM THE SITE; INCLUDE MAJOR DOWNSTREAM WATER BODIES AS WELL AS THE IMMEDIATE RECEIVING WATERS. ESTIMATE THE IMPACT OF THE RUNOFF ON THE QUALITY OF THE RECEIVING WATERS.

**AUAR:** *For an AUAR, the following additional guidance should be followed in addition to that in the “EAW Guidelines.”*

- *It is expected that an AUAR will have a detailed analysis of storm water issues.*
- *A map of the proposed storm water management system and of the water bodies that will receive storm water should be provided.*
- *The description of the storm water management should identify onsite and “regional” detention ponding and also indicate whether the various ponds will be new water bodies or converted existing ponds or wetlands. Where onsite ponds will be used but have not yet been designed, the discussion should indicate the design standards that will be followed.*

- *If present in or adjoining the AUAR area, the following types of water bodies must be given special analyses:*
  - *Lakes: Within the Twin Cities metro area a nutrient budget analysis must be prepared for any “priority lake” identified by the Metropolitan Council (see Appendix E of “EAW Guidelines” (1990) or contact the Council staff). Outside of the metro area, lakes needing a nutrient budget analysis must be determined by consultation with MPCA and DNR staffs;*
  - *Trout streams: If storm water discharges will enter or affect a trout stream, an evaluation of the impacts on the chemical composition and temperature regime of the stream and the consequent impacts on the trout population (and other species of concern) must be included.*

## **WATER QUALITY/SURFACE WATER RUNOFF**

### **INTRODUCTION/BACKGROUND**

The analyses summarized in this section provide a comparison of surface water quantity and quality for existing and post-AUAR development conditions in the Airport South District drainage areas, in order to allow for assessment of potential cumulative surface water impacts from the proposed AUAR developments. The XP-SWMM model (a modified version of the EPA SWMM model) was utilized for the storm water quantity assessment and the P-8 Urban Catchment Model (W. Walker, Jr. 1998) model was utilized for the storm water quality assessment. Technical memoranda included in Appendix C provide a detailed description of the water quality modeling assumptions and results.

The *Mall of America Expansion – Met Center Site EIS* included extensive analysis of water quantity and quality impacts. The water quality technical memorandum from the EIS (dated May 18, 2000) is included in Appendix C, for reference. The assumptions of the EIS analysis included most of the same development assumptions for Airport South District as this AUAR, with the following exceptions:

- Metro Office Park was assumed to be redeveloped (with a decrease in impervious area) in the EIS analysis, but is no longer slated for redevelopment within the AUAR analysis period.
- Ballfields property (south of 80th Street and east of 28th Avenue) was assumed to have an existing use as ballfields for the EIS analysis, but a substantial portion of the area is now a gravel-surfaced parking area and electrical substation.
- Kelley property south of East Old Shakopee Road was not assumed to be developed for the EIS analysis, but is now assumed to be developed by year 2006.

The detailed water quality analyses performed for the EIS were not re-run for the new assumptions. The AUAR analyses included revising the impervious area assumptions, re-running the XP-SWMM model to update the discharge quantity impacts analysis and re-running the P-8 analysis for total suspended solids (TSS), as a primary indicator of water quality impacts for the existing conditions versus the AUAR development scenario. The assumptions and results of these analyses are summarized in the discussion that follows.

## ANALYSIS ASSUMPTIONS

Storm water analyses were conducted for the following conditions:

1. Existing Airport South land use and storm sewer configurations.
2. AUAR development scenario including existing and proposed development through the year 2007 (one year after the anticipated year 2006 completion of AUAR development). The analyses assume that, at a minimum, discharge rates from the proposed AUAR development sites will remain at existing levels and that water quality ponding (at approximately 70 percent TSS removal efficiency) will be provided at all redevelopment sites, since the City's comprehensive storm water plan and watershed district plans require water quality treatment for new developments.

Table 5 summarizes the assumed impervious areas and land use/development assumptions for the XP-SWMM (quantity) and P-8 (water quality) modeling for existing and proposed conditions.

Figures 10 and 11 show the relationship of the AUAR development/redevelopment sites (Met Center, RPZ, Adjoining Lands, Health Partners Campus, Muir, and Kelley) to the Airport South sub-drainage areas and the ultimate receiving water – Long Meadow Lake – in the Minnesota River bottomlands (in the Minnesota Valley National Wildlife Refuge). The Met Center, Adjoining Lands and RPZ parcels are part of sub-drainage areas that flow to two storm water treatment ponds – Pond C and Hogback Pond – located in the Minnesota River valley.

The Muir property is part of a subdrainage area (Area G on Figure 10) at the northeast corner of Airport South that drains to the '80th Street outfall' that flows to a backwater area of Long Meadow Lake prior to reaching the main body of Long Meadow Lake. Similarly, the Health Partners Campus (Area F on Figure 10) drains to a storm water system that discharges to the Long Meadow Lake-Ceridian outfall. No regional ponding is provided for these outfalls.

**TABLE 5**  
**SURFACE WATER MODELING ASSUMPTIONS**  
 Changes to Site Hydrology

Site Name	Baseline Condition (2001)			Proposed AUAR Development (2007)				Comments
	Total Area (acre)	Imperv. Area (ac.)	Percent Impervious	Tot. Area (ac.)	Imperv. Area (ac.)	Percent Impervious	Increase in Percent Imperv. Area <sup>(1)</sup>	
Met Center	53.3	50.3	94.4%	53.3	<i>50.9</i>	<i>95.5%</i>	1.1%	Assumed 5-ft. pervious strip at site perimeter for future condition (worst case).
Adjoining Lands	34.1	21.0	61.6%	34.1	<i>32.6</i>	<i>95.5%</i>	33.9%	Assumed the same proposed impervious condition as for the Met Center site as worst case condition. The existing impervious area includes 3.37 acres of pond area.
RPZ	29.7	24.5	82.4%	29.7	<i>0.0</i>	<i>0.0%</i>	-82.4%	Assumed proposed cover is 100% pervious.
Robert Muir Company	12.3	11.6	93.8%	12.3	<i>11.8</i>	<i>95.5%</i>	1.7%	Assumed the same proposed impervious condition as for the Met Center site.
Health Partners Campus	44.7	31.8	71.1%	44.7	31.0	69.3%	-1.8%	The impervious area includes 1.84 acres of pond area (4+ ponds). Based on plans dated 11/1/99.
Kelley Property	60.0	15.6	26.0%	<i>42.9</i>	<i>26.1</i>	<i>60.9%</i>	34.9%	Assumed that the remaining acreage is unbuildable and will be left in current state (wooded bluffs). The year 2007 impervious area includes ~ 2.1 acres of pond area.
				<i>17.1</i>				Remaining acreage assumed to be unbuildable.
<b>TOTAL AREA</b>	234.1	154.8		234.1	152.4			
<b>NET CHANGE IN IMPERVIOUS AREA</b>					<i>-2.4</i> <sup>(2)</sup>			

NOTES: <sup>(1)</sup> Positive numbers represent an increase in percent impervious as compared to the Baseline Condition. Italicized numbers above designate assumed future conditions since site plans have not yet been fully developed. <sup>(2)</sup> Compared to a 26.4-acre reduction in impervious surface assumed in the MOA Expansion EIS for Build conditions.

Figure

Figure

The Kelley property is currently in farm/pasture use, with no internal site storm water conveyance provisions. Runoff from the southerly and easterly portions of this property follows natural drainage patterns as it flows towards Long Meadow Lake. The northwesterly portion drains towards the Old Shakopee Road storm sewer (to Pond C). Post-development drainage is assumed to change from these existing patterns. The approximately 43 acres of buildable land on the Kelley property would be routed to City storm sewer and conveyed to Hogback Pond, eliminating flows to Pond C from the property.

The majority of surface water from the Airport South District is conveyed via storm sewer to Pond C and/or Hogback Pond. The amount of water flowing to Pond C and Hogback Pond varies, depending on flow volumes, due to the presence of a flow splitter in the storm sewer line. During low flows (slightly less than the two-year storm), storm water from the upper reaches of the watershed is routed through Pond C. During high flows, excess water flows from the northern portion of the watershed are routed through Hogback Pond, with the base flows continuing through to Pond C.

Pond C also receives storm water from watershed sub-areas located west of TH 77 (i.e. west of the Airport South District). Figure 11 shows the full drainage area for Pond C, as well as the Airport South drainage areas.

### **XP-SWMM Quantity Modeling Results**

Table 5 shows the impervious area assumptions used in the XP-SWMM modeling. The AUAR development scenario results in an approximately 2.4-acre net decrease in impervious surfaces in the Airport South area, compared to existing conditions.

In addition to the changes in impervious surface, the proposed development would include minor changes to storm water routing from the Kelley property, as described in the previous section. These changes result in a decrease in flow volume to Pond C and an increase in flow to Hogback Pond. The increased flow to Hogback is due to the combined effect of re-routing existing flows from Pond C to Hogback and conveying the south and east portions of the parcel (which currently do not drain to the City storm sewer) to Hogback Pond via a storm sewer system within the new Kelley property development.

The total runoff volumes to Airport South discharge points increase slightly, but not substantially (i.e., less than 5 percent), for AUAR post-development conditions, compared to existing conditions, as shown in Table 6. This slight increase is due to the additional drainage area conveyed from the south and east Kelley property to the storm sewer system. The effect of this increase is mitigated by the decrease in total impervious surface for post-development conditions and by City/watershed rate control requirements. The combined effect of these factors results in a minor increase in total discharge volume.

**TABLE 6  
COMPARISON OF RUNOFF VOLUMES**

Node Name	Location	TYPE II / 2.5-INCH EVENT		
		Baseline	AUAR Development	Change from Baseline
<b>Main Model</b>				
85U37	Outfall to Long Meadow Lake at 80th Street	12.6	12.6	0
Pond C	Outfall to Pond C	45.9	44.2	-1.7
23M42	Outfall to Hogback	34.3	39.8	+5.5
<b>Secondary Model</b>				
86N7	Outfall to Long Meadow Lake off Old Shakopee Road	9.4	9.9	+0.5
<b>TOTAL</b>		102.2	106.5	+4.3

Notes: <sup>(1)</sup> All runoff volumes are given in acre-feet.

Since the City’s *Comprehensive Surface Water Management Plan* requires all new development/redevelopment to maintain surface water discharge rates at or below existing levels, the AUAR projected development would not increase the rate of discharges, compared to existing conditions. Therefore, the existing storm sewer system would not require capacity modifications to support AUAR development. The XP-SWMM model was also used to verify that the capacity of the existing storm sewer system is adequate to convey post-AUAR development discharges.

**P-8 Water Quality Modeling Results**

The impervious area and planned development assumptions described previously (including the detention/treatment ponds indicated on development plans submitted for the Health Partners Campus) were utilized in the P-8 modeling. The modeling also assumes that onsite rate control and water quality treatment at all redevelopment sites will meet Nationwide Urban Runoff Program (NURP) requirements at a minimum, in conformance with City and Lower Minnesota River Watershed District requirements. Also, because the storm water inflows from west of TH 77 (see Figure 11) affect Pond C removal efficiencies, the area west of TH 77 was included in the water quality modeling for the post-AUAR conditions.

Table 7 summarizes the results of the P-8 modeling, comparing existing and post-AUAR development conditions. As described in the introduction to this section, TSS removal was used in this analysis as an indicator of pond effectiveness and overall outfall pollutant loadings.

There is no significant difference (i.e. approximately 2 percent) in total TSS loadings between existing and post-AUAR conditions, since there are relatively small overall

changes in land use type and/or impervious surface between the two conditions. The post-AUAR development scenario that includes onsite detention/treatment increases pollutant removal, resulting in a six percent overall decrease in post-AUAR TSS outflow loading compared to existing conditions.

The P-8 model was run for post-AUAR conditions without onsite ponding at the redevelopment sites (i.e., relying only on regional treatment ponds—Pond C and Hogback Pond), in order to better understand the contribution made by onsite treatment ponds in pollutant removal. This analysis was also used to assess the impact of a request by the Metropolitan Airports Commission (MAC) that storm water ponding not be provided above the river bluff, due to concerns about attracting birds to the ponds and increasing the potential for bird/aircraft conflicts, see MAC comment #1 in Appendix E. The results of this run are also included in Table 7. Post-AUAR development without onsite ponds would result in removal of approximately the same amount of TSS as occurs under existing conditions (approximately 21,920 pounds/year), despite higher hydraulic and TSS loadings in the system for the 2007 conditions without onsite treatment. However, the post-AUAR conditions without onsite ponding would result in a six percent increase in TSS outflow loading (due to higher total TSS loadings for post-AUAR conditions). Therefore, use of onsite ponding (or alternative onsite treatment methods) and/or an increase in regional ponding capacity is needed to bring post-AUAR outflow loadings to levels that are equal to or lower than existing outflow loadings.

**TABLE 7  
PREDICTED TOTAL SUSPENDED SOLIDS (TSS) LOADINGS**

	<b>Total TSS Loading (lbs/yr)</b>	<b>Total TSS Removal by Ponding Systems (lbs/yr)</b>	<b>Outflow Loading (lbs/yr)</b>
Existing Condition (2000)	35,495	21,920	13,575
Post-AUAR Development Conditions with onsite ponding (2007)	36,320	23,609	12,711
Post-AUAR Development Conditions without onsite ponding (2007)	36,320	21,926	14,394

**Regional Water Quality Ponding Issues**

Although proposed Airport South AUAR development will be required to include storm water management design features to meet City and Watershed District requirements for rate control and water quality treatment, Pond C and Hogback Pond will remain important Airport South regional treatment facilities, especially for existing properties without onsite treatment. The majority of surface water from the Airport South District currently flows to Pond C and/or Hogback Pond for treatment prior to discharge to Long Meadow Lake. An analysis of existing conditions (see the May 18, 2000 Technical Memorandum in Appendix C) indicates that Pond C is very

important in removing pollutants from storm water flowing to Long Meadow Lake. Hogback Pond has a higher removal efficiency than Pond C; however, Pond C serves a larger drainage area. The Pond C drainage area include properties within Airport South, but also an extensive area west of TH 77/Cedar Avenue, i.e., outside Airport South.

The AUAR analysis indicates that Pond C does not currently meet expected removal efficiencies for any of the parameters modeled. This inability to meet expected removal efficiencies is related to two Pond C characteristics: (1) the overall drainage area of Pond C is larger than the treatment capacity of the impoundment and, (2) Pond C was constructed prior to NURP or MPCA design guidelines or standards.

Since the analyses performed for the AUAR indicated that there are some existing treatment deficiencies in the Airport South watershed, the City has conducted a storm water treatment feasibility study for the Airport South District (in addition to the AUAR studies) that incorporates both onsite and regional treatment facilities for development anticipated through year 2020. This study is nearing completion, and will be forwarded to City Council for adoption as an amendment to the City's *Surface Water Management Plan*. The recommendations of the study include:

- Pursue design and permitting for expansion of Pond C (the City already has allocated Capital Improvement Program (CIP) funding for expansion of Pond C in its 2002-2003 CIP).
- Pursue ponding locations for the drainage area west of TH 77, and/or the expansion of Wrights Lake, if redevelopment occurs in this area in the future.
- If no regional ponding facilities are available for a subwatershed (i.e. 80<sup>th</sup> Street and Ceridian outfall areas), then onsite treatment ponds (or equivalent alternative onsite treatment facilities) should be incorporated into all new development/ redevelopment projects within the subwatershed.
- Incorporate rate control and primary treatment measures as a minimum treatment at all redevelopment areas within subwatersheds served by regional ponds.
- Encourage low impact development (LID) management practices to be incorporated for treatment in redevelopment areas where appropriate.
- To reduce the potential for pollutant overloading from accidental spills from commercial and industrial properties within Airport South District, City staff will continue to work with commercial/industrial property owners within Airport South District and the remainder of the City in developing site-specific spill prevention plans when required by NPDES and MPCA permitting, and in educating property owners about pollutant sources and impacts and about spill prevention, containment, and response procedures.

City staff have been, and will continue to be, working with USFWS staff in reviewing the findings of the *Feasibility Study* and developing storm water system management strategies for Airport South that are effective in minimizing impacts to the waters of the Minnesota Valley National Wildlife Refuge and are compatible with the nature and character of the area. Also, since Pond C is located within Mn/DOT right-of-way, City staff will also coordinate studies and strategies for Pond C with Mn/DOT water resources staff. Coordination with both agencies will continue as the City completes its *Feasibility Study* and begins implementation of its recommendations as part of the City *Comprehensive Surface Water Management Plan*.

## **18. WATER QUALITY – WASTEWATERS**

### **EAW:**

- A. DESCRIBE SOURCES, COMPOSITION AND QUANTITIES OF ALL SANITARY, MUNICIPAL AND INDUSTRIAL WASTEWATER PRODUCED OR TREATED AT THE SITE.
- B. DESCRIBE WASTE TREATMENT METHODS OR POLLUTION PREVENTION EFFORTS AND GIVE ESTIMATES OF COMPOSITION AFTER TREATMENT. IDENTIFY RECEIVING WATERS, INCLUDING MAJOR DOWNSTREAM WATER BODIES, AND ESTIMATE THE DISCHARGE IMPACT ON THE QUALITY OF RECEIVING WATERS. IF THE PROJECT INVOLVES ONSITE SEWAGE SYSTEMS, DISCUSS THE SUITABILITY OF SITE CONDITIONS FOR SUCH SYSTEMS.
- C. IF WASTES WILL BE DISCHARGED INTO A PUBLICLY OWNED TREATMENT FACILITY, IDENTIFY THE FACILITY, DESCRIBE ANY PRETREATMENT PROVISIONS AND DISCUSS THE FACILITY'S ABILITY TO HANDLE THE VOLUME AND COMPOSITION OF WASTES, IDENTIFYING ANY IMPROVEMENTS NECESSARY.
- D. IF THE PROJECT REQUIRES DISPOSAL OF LIQUID ANIMAL MANURE, DESCRIBE DISPOSAL TECHNIQUE AND LOCATION AND DISCUSS CAPACITY TO HANDLE THE VOLUME AND COMPOSITION OF MANURE. IDENTIFY ANY IMPROVEMENTS NECESSARY. DESCRIBE ANY REQUIRED SETBACKS FOR LAND DISPOSAL SYSTEMS.

**AUAR:** *Observe the following points of guidance in an AUAR:*

- *Only domestic wastewater should be considered in an AUAR – industrial wastewater would be coming from industrial uses that are excluded from review through an AUAR process.*

None of the proposed AUAR development, infrastructure or mitigation would result in physical or hydrologic alteration of surface waters. However, as noted in Section 17, a separate *Storm Water Treatment Feasibility Study for Airport South District* (prepared to identify future storm water treatment strategies) is in the process of being completed by the City. Upon completion, it will be forwarded to City Council for adoption as an amendment to the City's *Comprehensive Surface Water Management Plan*. The draft *Feasibility Study* includes a recommendation to expand Pond C. Since Pond C expansion is not required to mitigate for surface water impacts from proposed AUAR development, potential impacts to Pond C are not included in this AUAR.

### 13. WATER USE

**EAW:** WILL THE PROJECT INVOLVE THE INSTALLATION OR ABANDONMENT OF ANY WELLS, CONNECTION TO OR CHANGES IN ANY PUBLIC WATER SUPPLY OR APPROPRIATION OF GROUND OR SURFACE WATER (INCLUDING DEWATERING)?

NO  YES

IF YES, AS APPLICABLE, GIVE LOCATION AND PURPOSE OF ANY NEW WELLS; PUBLIC SUPPLY AFFECTED, CHANGES TO BE MADE, AND WATER QUANTITIES TO BE USED; THE SOURCE, DURATION, QUANTITY AND PURPOSE OF ANY APPROPRIATIONS; AND UNIQUE WELL NUMBERS AND DNR APPROPRIATION PERMIT NUMBERS, IF KNOWN. IDENTIFY ANY EXISTING AND NEW WELLS ON THE SITE MAP. IF THERE ARE NO WELLS KNOWN ON SITE, EXPLAIN METHODOLOGY USED TO DETERMINE.

**AUAR:** *If the area requires new water supply wells, specific information about that appropriation and its potential impacts on groundwater levels should be given; if groundwater levels would be affected, any impacts resulting on other resources should be addressed.*

No new water supply wells would be required to serve the proposed AUAR developments. However, existing wells may be located on some of the development parcels (e.g. the Kelley property). These wells would be abandoned in accordance with Minnesota Department of Health (MDH) procedures and requirements.

Planned development within most properties in Airport South would not likely include construction below the groundwater table (estimated to be at 10 to 25 feet), with the possible exception of building foundations in some locations. If foundations are at depths below the groundwater table, temporary dewatering would be required. If utilized, temporary dewatering would require permits from the Minnesota Department of Natural Resources (DNR) (water appropriation) and MPCA (National Pollutant Discharge Elimination System (NPDES) Permit for water discharge). As noted in the

Mall of America Expansion EIS, if dewatering were required at the Met Center site, testing of groundwater for contamination may be required prior to the MPCA issuing the NPDES permit for the site.

#### **14. WATER-RELATED LAND USE MANAGEMENT DISTRICTS**

**EAW:** DOES ANY PART OF THE PROJECT SITE INVOLVE A SHORELAND ZONING DISTRICT, A DELINEATED 100-YEAR FLOOD PLAIN, OR A STATE OR FEDERALLY DESIGNATED WILD OR SCENIC RIVER LAND USE DISTRICT?

X NO \_\_\_ YES

IF YES, IDENTIFY THE DISTRICT AND DISCUSS THE COMPATIBILITY OF THE PROJECT WITH THE LAND USE RESTRICTIONS OF THE DISTRICT.

***AUAR:** Such districts should be delineated on appropriate maps and the land use restrictions applicable in those districts should be described. If any variances or deviations from these restrictions within the AUAR area are envisioned, this should be discussed.*

The City of Bloomington has both floodplain zoning (a Flood Hazard (FH) Overlay District, shown in Figure 6) and shore area management regulations that are in effect in the Airport South area. These regulatory measures are applied to the Minnesota River and Long Meadow Lake areas within the designated floodway and adjoining floodway fringe portions of the area. The areas are below the 722-foot elevation (the 100-year flood plain delineation) and are designated as conservation open space on the City Land Use Plan map and zoned SC FH), Conservation District (Flood Hazard Overlay District). The AUAR development scenario does not contain building projects located within either the Flood Hazard (FH) Overlay District or the shore area management area within the Airport South District.

#### **15. WATER SURFACE USE**

**EAW:** WILL THE PROJECT CHANGE THE NUMBER OR TYPE OF WATERCRAFT ON ANY WATER BODY?

X NO \_\_\_ YES

IF YES, INDICATE THE CURRENT AND PROJECTED WATERCRAFT USAGE AND DISCUSS ANY POTENTIAL OVERCROWDING OR CONFLICTS WITH OTHER USERS.

***AUAR:** This item need only be addressed if the AUAR area would include or adjoin recreational water bodies.*

## 16. EROSION AND SEDIMENTATION

**EAW:** GIVE THE ACREAGE TO BE GRADED OR EXCAVATED AND THE CUBIC YARDS OF SOIL TO BE MOVED: ACRES \_\_\_\_\_; CUBIC YARDS \_\_\_\_\_. DESCRIBE ANY STEEP SLOPES OR HIGHLY ERODIBLE SOILS AND IDENTIFY THEM ON THE SITE MAP. DESCRIBE ANY EROSION AND SEDIMENTATION CONTROL MEASURES TO BE USED DURING AND AFTER PROJECT CONSTRUCTION.

**AUAR:** *The number of acres to be graded and the number of cubic yards of soils to be moved need not be given; instead, a general discussion of the likely earthmoving needs for development of the area should be given, with an emphasis on unusual or problem areas. In discussing mitigation measures, both the standard requirements of the local ordinances and any special measures that would be added for AUAR purposes should be included.*

An area of steep slopes (defined as 12 percent slope or greater) extends through the AUAR study area from the southwest to the northeast corners (see Figure 9 [soils] and descriptions in Section 19) and defines the division between the upland area (developable) and the Minnesota River bluff and bottomlands (conservation land). Slopes in this river bluff area range up to 35 percent and are composed of erodible soils.

The City of Bloomington's Land Development and Zoning Regulations regulate development on the bluff through the Bluff Protection (BP) Overlay Districts that apply to land along the Minnesota River bluff between the 722-foot and 800-foot elevations. Stipulations of this zoning include erosion control measures such as restrictions on tree cutting, set-back requirements, maximum impervious surface coverages, maintaining storm water discharge rates at or below pre-development over-the-bluff discharge rates, and requirements for City permitting (including requirements for erosion control and stabilization measures) prior to excavation, filling or grading in the area. The Kelley property is partially located within the BP-2 zoning district. Development of this parcel will occur in compliance with the City's BP-2 zoning regulations.

Development of the Kelley parcel will result in the implementation of the 28th Avenue/86th Street roadway connection. This planned roadway improvement was identified in the 1980 *Comprehensive Plan* and is shown in the *Comprehensive Plan 2000*. The roadway is a means of relieving congestion in the vicinity of the Killebrew Drive/Old Shakopee Road intersection. Construction of the roadway would include crossing a steep-sloped ravine area. The effects of roadway construction would be studied through a separate environmental review process, including identification of potential impacts and mitigative measures to control or alleviate impacts. Construction methods would conform to City and Lower Minnesota River Watershed District requirements for erosion and sedimentation control.



The five AUAR development scenario parcels slated for redevelopment are not located in the Bluff Protection Overlay District or on the steep slopes. Consequently, unique and/or unusual earthwork requirements for the proposed redevelopment are not anticipated. The potential for erosion and sedimentation of soils exposed during redevelopment in the AUAR study area will be minimized by using the appropriate Best Management Practices (BMPs) during and after construction.

Erosion practices will be identified in the final site grading and construction plans as required by NPDES permitting for construction sites and in accordance with the City of Bloomington and the watershed regulators' erosion/sediment control standards. Erosion control measures will be in place and maintained throughout the entire construction period. Removal of erosion measures will not occur until all disturbed areas have been stabilized.

## **17. WATER QUALITY – SURFACE WATER RUNOFF**

### **EAW:**

- A.** COMPARE THE QUANTITY AND QUALITY OF SITE RUNOFF BEFORE AND AFTER THE PROJECT. DESCRIBE PERMANENT CONTROLS TO MANAGE AND/OR TREAT RUNOFF. DESCRIBE ANY STORM WATER POLLUTION PREVENTION PLANS.
- B.** IDENTIFY THE ROUTE(S) AND RECEIVING WATER BODIES FOR RUNOFF FROM THE SITE; INCLUDE MAJOR DOWNSTREAM WATER BODIES AS WELL AS THE IMMEDIATE RECEIVING WATERS. ESTIMATE THE IMPACT OF THE RUNOFF ON THE QUALITY OF THE RECEIVING WATERS.

**AUAR:** *For an AUAR, the following additional guidance should be followed in addition to that in the "EAW Guidelines."*

- *It is expected that an AUAR will have a detailed analysis of storm water issues.*
- *A map of the proposed storm water management system and of the water bodies that will receive storm water should be provided.*
- *The description of the storm water management should identify onsite and "regional" detention ponding and also indicate whether the various ponds will be new water bodies or converted existing ponds or wetlands. Where onsite ponds will be used but have not yet been designed, the discussion should indicate the design standards that will be followed.*

## 7. PROJECT MAGNITUDE DATA

Table 3 summarizes the existing and proposed totals for each land use type in the Airport South District AUAR study area. Table 1 summarizes the existing and proposed land use changes for the six parcels slated for development/redevelopment within the AUAR study period.

TOTAL PROJECT AREA (ACRES): 2,350 OR LENGTH (MILES) NA

**TABLE 3  
EXISTING AND PROPOSED LAND USES IN AIRPORT SOUTH DISTRICT**

Land Use	Existing	Proposed
<u>Residential</u>		
Unattached	254 units	254 units
Attached	775 units	2006 units
<u>Commercial/Industrial</u>		
Gross Floor Space (total)	10,660,063 square feet	19,252,469 square feet
• Office	3,009,533 square feet	5,604,939 square feet
• Retail/Service	4,241,573 square feet	8,666,573 square feet
• Light Industrial, Manufacturing, Warehouse	1,106,508 square feet	1,106,508 square feet
• Hotel	2,214,617 square feet	3,786,617 square feet
• Other commercial (institutional)	87,832 square feet	87,832 square feet
<u>Agriculture</u>	60 acres	0 acres
<u>Conservation/Bluff Protection</u>	1,457 acres	1,457 acres

## 8. PERMITS AND APPROVALS REQUIRED

**EAW:** LIST ALL KNOWN LOCAL, STATE AND FEDERAL PERMITS, APPROVALS AND FUNDING REQUIRED.

**AUAR** *A listing of major approvals likely to be required by the anticipated types of development projects should be given. This list will help orient reviewers to the idea that the AUAR process is only one piece of the regulatory framework that will protect environmental resources. The list can also serve as a starting point for the development of the implementation aspects of the mitigation plan to be developed as part of the AUAR.*

Table 4 lists permits and approvals likely to be required.

**TABLE 4  
REQUIRED PERMITS AND APPROVALS FOR  
DEVELOPMENT SCENARIO PROJECTS**

Unit of Government	Permit or Approval
City of Bloomington	AUAR decision and adopt Mitigation Plan; Preliminary and Final Plan Approvals; Grading Permits; Water Connection Permits; Sewer Extension Permits; Building Permits
Hennepin County	Contiguous plat review/plan review (for parcels adjacent to County roads)
Lower MN River Watershed District	Grading and drainage and storm water plan review and approval
Bloomington-Richfield Watershed Management Organization	Grading and drainage and storm water plan review and approval
Metropolitan Council Environmental Services	Sanitary sewer extension permit
Minnesota Department of Transportation	Contiguous Plat review (for parcels adjacent to Mn/DOT trunk highways)
Minnesota Pollution Control Agency	NPDES Construction Permit, Sanitary Sewer Extension Permit, Airport South District Indirect Source Permit Revision (if required)
Minnesota State Historic Preservation Office	Historic and Archaeological Clearance
Minnesota Office of the State Archaeologist	Identification and authentication of burial/mound sites pursuant to State law (Kelley property only)
Minnesota Indian Affairs Council	Consultation on mound management planning activities (Kelley property only)
Federal Aviation Administration	Air space review (Form 7460) No hazard to navigation determination
Minnesota Department of Health	Plan review; approval of water/sewer plans Approval of well and boring sealing records (if required)
Minnesota Department of Natural Resources	Temporary groundwater appropriation permit (if temporary dewatering is required)
Metropolitan Council	Approval of City of Bloomington Comprehensive Land Use Plan revisions for Airport South District (including Land Use, Transportation and Utilities Elements)

## 9. LAND USE

**EAW:** DESCRIBE CURRENT AND RECENT PAST LAND USE AND DEVELOPMENT ON THE SITE AND ON ADJACENT LANDS. DISCUSS THE COMPATIBILITY OF THE PROJECT WITH ADJACENT AND NEARBY LAND USES. INDICATE WHETHER ANY POTENTIAL CONFLICTS INVOLVE ENVIRONMENTAL MATTERS. IDENTIFY ANY POTENTIAL ENVIRONMENTAL HAZARD DUE TO PAST LAND USES, SUCH AS SOIL CONTAMINATION OR ABANDONED STORAGE TANKS, OR PROXIMITY TO NEARBY HAZARDOUS LIQUID OR GAS PIPELINES.

**AUAR:** *No changes from the EAW form.*

The Airport South District (the AUAR study area) is an approximately 2,350-acre area bounded by I-494 on the north, the Minnesota River on the south and east, and TH 77 /Cedar Avenue on the west (see Figure 2). Located in the northeast corner of the City, just south of the Minneapolis-St. Paul International Airport, this area includes mixed commercial, office and residential land uses and a portion of the Minnesota Valley National Wildlife Refuge.

Only about 38 percent (893 acres) of the 2,350-acre AUAR study area is identified as developable, while 62 percent (1,457 acres) is designated as conservation/open space. The developable area includes the land generally above the river bluff and some of the upper bluff (above 760 feet in elevation). The conservation area includes the remainder of the bluff and the land and water areas below, most of which is contained within the Minnesota Valley National Wildlife Refuge (proposed and existing boundaries).

The majority of the developable area is already developed (see Section 10, Cover Types). With the exception of the Kelley property, the parcels proposed for development within the AUAR study time frame are located within developed areas and set back away from the Minnesota River bluff. The Kelley property is currently in farm/residential use and is surrounded by roadways and other development on three sides, with the fourth side located along the bluff.

Table 1 summarizes the changes in land use proposed for the parcels slated for development during the AUAR study period (i.e. through year 2006). All other parcels would remain in their existing uses. All proposed land use changes are consistent with the City's current land use plan and zoning for this area (see Figures 5 and 6).

The current land use designations and zoning controls date back to the 1980s and 1990s prior to the City's *Comprehensive Plan 2000* update that was adopted on April 16, 2001 (Resolution 2001-30). A district land use analysis and formulation of a revised Airport South District 2000 land use plan would have to be based on land use and intensity restrictions for the Federal Runway Protection Zone (RPZ) and State transition safety zones for the new Minneapolis-St. Paul International Airport

north-south runway (Runway 17/35). The information on these restrictions was not available to the City to meet the City's Comprehensive Plan submittal deadline. The Metropolitan Council was made aware of this situation and it was determined that the *Comprehensive Plan 2000* would carry forward land use guide plan designations from the previous comprehensive plan.

As of April of 2002, Bloomington has not received information on State runway safety zone-related land use and intensity restrictions. The MAC reconvened the Wold-Chamberlain Field Joint Airport Zoning Board (Joint Zoning Board) in the fall of 2001 to address specific airspace and land use tasks for the new runway 17/35. A listing of Joint Zoning Board major tasks is provided in a Memorandum to the Board from MAC staff entitled 'Updated Summary of Major Tasks Facing The Reconvened Wold-Chamberlain Field Joint Airport Zoning Board,' dated September 13, 2001. The Joint Zoning Board is anticipated to make its recommendation in Spring 2002.

When the Joint Airport Zoning Board determines and adopts airspace obstruction regulations and land use safety zoning, these will be incorporated into a new City of Bloomington Airport South District land use plan and zoning controls, as necessary. Any amendments to the Airport South District Plan will be sent to the Metropolitan Council for review as required under state law. City staff will re-evaluate the development assumptions made in the AUAR as they relate to any amendments made to the land use plan, and the conclusions of the re-evaluation will be distributed to all recipients of the Final AUAR. If no objections to the re-evaluation are received within 10 days (similar to the comment period for the Final AUAR), the re-evaluation conclusions will be adopted by the City Council.

Section 19 describes potential contamination issues based on past land uses.

## 10. COVER TYPES

**EAW:** ESTIMATE THE ACREAGE OF THE SITE WITH EACH OF THE FOLLOWING COVER TYPES BEFORE AND AFTER DEVELOPMENT (BEFORE AND AFTER TOTALS SHOULD BE EQUAL).

**AUAR:** *The following information should be provided instead:*

A. *A cover type map, at least at the scale of a USGS topographic map, depicting:*

- *wetlands - identified by type (Circular 39)*
- *watercourses - rivers, streams, creeks, ditches*
- *lakes - identify protected waters status and shoreland management classification*
- *woodlands - breakdown by classes where possible*
- *grassland - identify native and old field*
- *cropland*
- *current development*





- B. *An “overlay” map showing anticipated development in relation to the cover types; this map should also depict any “protection areas,” existing or proposed, that will preserve sensitive cover types. Separate maps for each major development scenario should generally be provided.*

Figure 6 (Zoning Map) shows the locations of bluff, conservation and flood hazard protection areas.

See Figure 7, Existing Cover Types and Figure 8, Future Cover Types. These figures show a large wetland complex located in the southeast portion of the AUAR study area. The wetland complex, which includes Long Meadow Lake and other water bodies, is located in the floodplain of the Minnesota River and is a Type 5 (USFWS Circular 39 classification system) wetland complex that consists mainly of open water and emergent vegetation. Areas of seasonally flooded meadow and forest wetlands also exist around the fringes of this complex.

## **11. FISH, WILDLIFE, AND ECOLOGICALLY SENSITIVE RESOURCES**

### **EAW:**

- A:** DESCRIBE FISH AND WILDLIFE RESOURCES ON OR NEAR THE SITE AND DISCUSS HOW THEY WOULD BE AFFECTED BY THE PROJECT. DESCRIBE ANY MEASURES TO BE TAKEN TO MINIMIZE OR AVOID ADVERSE IMPACTS.

### **AUAR:**

- A:** *The description of wildlife and fish should be related to the habitat types depicted on the cover types maps of Item 10. Any differences in impacts between development scenarios should be highlighted in the discussion.*

The Airport South area is recognized in the Environmental Protection Element of the City of Bloomington *Comprehensive Plan 2000* as outwash plain (upland) and river valley. The outwash plain is predominately classified as urban without vegetation with areas of urban with vegetation. The river valley area includes the Minnesota River bluff, bottomland woods or floodplain forest, marsh and open water wetlands.

The overwhelming majority of proposed development in the AUAR study area will be occurring in outwash plain. This area accounts for approximately 38 percent of the Airport South area and provides limited natural habitat or habitat corridor qualities. Wildlife in the area generally would include small mammals (squirrels, rabbits, voles, field mice), reptiles (turtles, snakes), and permanent and migratory songbirds. Site landscaping as part of AUAR development should result in some isolated habitat opportunities that would benefit the overall habitat quality of the Airport South area.





The developable area is not shown in the Environmental Protection Element of the *Comprehensive Plan 2000* as a designated wildlife habitat area or a part of any wildlife habitat corridor. This area does not provide habit characteristics for species requiring special consideration as noted in the Environmental Protection Element. It is not designated as a habitat conservation area.

The Kelley property south of Old Shakopee Road is the only development parcel that contains Minnesota River bluff land and riverbottoms area. A portion of the development shown in the preliminary development plans for this property would occur adjacent to the bluff. However, there would be limited encroachment within the portions of the bluff area that have not been previously disturbed as part of the historical agricultural development of the property. The river bluff area is included in the City's BP-2 zoning district. Regulations for this district include grading and erosion control measures, protection of large diameter trees, and provisions for slope stabilization and re-vegetation.

The Minnesota River Bluff serves as a transition zone for wildlife. The Bluff Report District Plan of the *Comprehensive Plan 2000* notes that the bluff woodland, the bottomland of the Minnesota River and the adjoining urban development on the upland provide expanded habitat opportunities for wildlife and increases the number of different species which utilize the bluff. It is further stated in the Bluff Report District Plan that the bluff area adds variety to the habitat of the bottomland area of the Minnesota River and is a refuge for species during periods of flooding.

The river bluff area is included in the City's BP-2 zoning district, and the bottomlands are protected by the City's Conservation (SC) zoning district and (for the most part) inclusion in the Minnesota Valley National Wildlife Refuge. Development of the Kelley property would be required to conform to the BP-2 zoning district requirements, including maximum allowable impervious surface areas, protection of large diameter trees, re-vegetation requirements including tree planting, and bluff setback requirements.

Land below the river bluff includes the wetland and bottomlands that make up the Minnesota Valley National Wildlife Refuge as well as the Minnesota River, which together are home to a number of fish and wildlife species. At the base of the bluff are lowland woods and the floodplain wetland complex habitats that make up the Long Meadow Lake management unit of the Refuge, within the Minnesota River floodplain.

The quantity and quality of runoff discharged to the Long Meadow Lake wetland complex can influence the quality of floodplain habitat. As described in Section 17 of this AUAR, the proposed development within Airport South will not result in substantial changes in water quantity or quality of discharges to the Long Meadow Lake complex. In fact, planned onsite and regional storm water treatment ponds will likely result in an overall improvement in the quality of storm water discharges to Long Meadow Lake. Therefore, no negative impacts to fish and wildlife resources in the river valley would result from the AUAR development.

**EAW:**

- B.** ARE THERE ANY STATE-LISTED (ENDANGERED, THREATENED, OR SPECIAL-CONCERN) SPECIES; RARE PLANT COMMUNITIES OR OTHER SENSITIVE ECOLOGICAL RESOURCES SUCH AS COLONIAL WATERBIRD NESTING COLONIES; NATIVE PRAIRIE OR OTHER RARE HABITAT ON OR NEAR THE SITE?

   NO   X   YES

IF YES, DESCRIBE THE RESOURCE AND HOW IT WOULD BE AFFECTED BY THE PROJECT. INDICATE IF A SITE SURVEY OF THE RESOURCES HAS BEEN CONDUCTED AND DESCRIBE THE RESULTS. IF THE DNR NATURAL HERITAGE AND NONGAME RESEARCH PROGRAM HAS BEEN CONTACTED, GIVE THE CORRESPONDENCE REFERENCE NUMBER: **ES #990014** (1998).

DESCRIBE MEASURES TO BE TAKEN TO MINIMIZE OR AVOID ADVERSE IMPACTS.

**AUAR:**

- B.** *For an AUAR, prior consultation with the DNR Natural Heritage program for information about reports of rare plant and animal species in the vicinity is required. If such consultation indicates the need, an onsite habitat survey for rare species in the appropriate portions of the AUAR area is required. Areas of onsite surveys should be depicted on a map, as should any "protection zones" established as a result.*

The Minnesota Department of Natural Resources' (DNR) Natural Heritage and Nongame Research Program was contacted and a review of their database of rare plant and animal species and other significant natural features was completed for records of known occurrences within and near the study area (See the 2001 database records in Appendix B). The database review indicated two occurrences of bald eagles (a threatened species) within the study area.

A pair of bald eagles reportedly nest outside of the property boundaries on the opposite side of the Minnesota Valley National Wildlife Refuge across Long Meadow Lake. Although a threatened species in the United States, the bald eagle is not threatened in Minnesota and is classified as a species of "special concern." Due to the long distance between the nesting site and the Airport South development area, and since few large trees (perching locations) are being removed from the bluff slope, no significant impact is anticipated to occur to the bald eagles.

In their December 24, 2001 comment letter on the Draft AUAR (see Appendix E), DNR staff also noted two other rare features that may be impacted by future development in the AUAR study areas: 1) wildlife and migratory birds that utilize bluff habitat

and 2) freshwater mussels in the Minnesota River. Bluff habitat impacts and protections are described in Section 11.A, and also in Appendix E, response to comment #2 in the DNR's comment letter.

The potential for migratory bird collisions with man-made structures was also noted in the DNR's comments. Building design and exterior building material for any development within the Bluff District are regulated by the design guidelines contained in the Bluff Report District Plan. Building heights (with an emphasis on low profile buildings rather than a high-rise towers adjacent to the bluff) and the type of glass should provide a low risk habitat for migrating and year round resident birds species. With regard to bird strike potential, the City has not experienced known bird strike problems. For example, the City has not received reports of bird strike problems with high-rise office towers adjacent to Normandale Lake and the Hyland-Bush-Anderson Regional Park Reserve or at office buildings adjacent to the Minnesota Valley National Wildlife Refuge.

Mussel populations in the Minnesota River would not be impacted by the development proposed in the AUAR, since all development will be required to prepare and follow erosion/sedimentation control plans and provide water quality treatment (onsite and/or regional treatment). None of the Airport South District storm water outfalls discharges directly to the Minnesota River, therefore, direct impacts to mussels in the river would not result.

## 12. PHYSICAL IMPACTS ON WATER RESOURCES

**EAW:** WILL THE PROJECT INVOLVE THE PHYSICAL OR HYDROLOGIC ALTERATION (DREDGING, FILLING, STREAM DIVERSION, OUTFALL STRUCTURE, DIKING, IMPOUNDMENT) OF ANY SURFACE WATER (LAKE, POND, WETLAND, STREAM, DRAINAGE DITCH?)   X   NO    YES

IF YES, IDENTIFY THE WATER RESOURCE AND GIVE THE DNR PROTECTED WATERS INVENTORY NUMBER(S) IF THE WATER RESOURCES AFFECTED ARE ON THE PWI: \_\_\_\_\_. DESCRIBE ALTERNATIVES CONSIDERED AND PROPOSED MITIGATION MEASURES TO MINIMIZE IMPACTS.

**AUAR:** *The information called for on the EAW form should be supplied for any of the infrastructure associated with the AUAR development scenarios, and for any residential or commercial development expected to physically impact any water resources. Where it is uncertain whether water resources will be impacted, depending on the exact design of future developments, the AUAR should cover the possible impacts through a "worst case scenario" or else prevent impacts through the provisions of the mitigation plan.*

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## 6. DESCRIPTION

### STUDY APPROACH

This AUAR process was initiated by the City of Bloomington to identify and document potential environmental impacts and infrastructure needs of anticipated development and redevelopment in the Airport South District through year 2006. The AUAR allows the City to conduct an environmental review of anticipated development in the Airport South District cumulatively, rather than preparing separate environmental reviews on individual development projects.

In 2000 a separate Environmental Impact Statement (EIS) for the Mall of America Expansion – located within the Airport South District – was completed to comply with State legislation to allow for a transfer of lands involving the former Met Center site and the Mall of America Adjoining Lands site east of 24th Avenue. (The land transfer has since been completed.) Impacts specific to the proposed Mall of America Expansion on the Met Sports Center site were evaluated in the EIS; however, the EIS also included anticipated development in the Airport South District as part of its background assumptions for No-Build and Build analyses. Most of these background assumptions are the same as the development assumptions for this AUAR study. The AUAR utilizes the EIS analyses for the Final EIS preferred alternative (i.e., Alternative 1 concept from the DEIS) as the basis for assessing impacts where appropriate. When EIS analyses were incorporated into AUAR analyses, the AUAR document text identifies where and how the EIS analyses were used.

### AUAR STUDY AREA

The AUAR study area is the 2,350-acre Airport South District of the City of Bloomington. The boundaries are those contained in the Airport South District Plan element of the City of Bloomington comprehensive plan. The area is bounded by I-494 and the Minneapolis-St. Paul International Airport on the north, TH 77 (Cedar Avenue) on the west and the Minnesota River and the Minnesota Valley National Wildlife Refuge on the south and east.

Airport South was identified in the District Plan as a major specialized development center within the Twin Cities metropolitan area. The primary development factor in the district is the high intensity mixed-use area that has become the Mall of America. Continued development in the Airport South area is consistent with Metropolitan Council Regional Growth policies outlined in the *Regional Blueprint*. Specifically, Airport South development is supportive of redevelopment inside the urban area and identification of the I-494/I-694 freeway beltway as a focus for regional investment, services and incentives for jobs and economic development activities (*Regional Blueprint* Action Step 5B(3)).

Airport South is a composite of residential, commercial, industrial, recreational and conservation land uses. The AUAR is directed at the higher intensity land uses that will develop generally north of East 86th Street. Geographically, Airport South is characterized by both urban and open space/conservation areas. The urban developed area is the upland area parallel to the Minnesota

River. The open space/conservation area includes the Minnesota River bluff, an important transition area, and the bottomlands of the Minnesota River. Approximately 38 percent of the Airport South District is within the urban developed area while 62 percent of Airport South is within the open space/conservation area.

An important factor influencing Airport South development is Minneapolis-St. Paul International Airport (MSP) located directly north of I-494. Proximity to MSP, an important transportation hub, is a positive locational factor for Airport South and Bloomington. MSP also is recognized as a land use that will have an effect on future development decisions in Airport South based on airport functions and operations including the designation of runway protection and safety zones, aircraft noise exposure, and traffic generation.

### AIRPORT SOUTH AUAR DEVELOPMENT SCENARIO

The AUAR development scenario presents a comprehensive view of the potential major commercial and mixed-use development (see Table 1) within the Airport South area through year 2006. Identified are six primary development/redevelopment sites that will define the general character of the area. The proposed intensity of development is based on the existing land use designations and zoning controls and is consistent with the requirements for AUAR land uses as defined in Minnesota Rules 4410.3610, Subpart 3.

This development scenario is utilized for analysis and evaluation purposes to determine the extent of any anticipated environmental impacts and as a basis for a mitigation plan. The City recognizes that there will be changes in land use and land use controls in Airport South based on the Wold-Chamberlain Field Joint Airport Zoning Board's (Joint Airport Zoning Board) jurisdiction to establish airspace obstruction regulations and land use safety zoning based on federal and state aviation regulations.

The Metropolitan Airports Commission (MAC) reconvened Joint Airport Zoning Board in the fall of 2001 to address specific airspace and land use tasks for the new runway 17/35. A listing of Board major tasks is provided in a Memorandum to the Board from MAC staff entitled 'Updated Summary of Major Tasks Facing The Reconvened Wold-Chamberlain Field Joint Airport Zoning Board,' dated September 13, 2001. When the Joint Airport Zoning Board determines and adopts airspace obstruction regulations and land use safety zoning, these will be incorporated into a new City of Bloomington Airport South District land use plan and zoning controls, as necessary.

Future changes in zoning and land use controls that may result from the decisions of the Joint Airport Zoning Board will not interfere with using the AUAR development scenario for analysis and evaluation of anticipated environmental impacts from development and as a basis for developing and adopting a mitigation plan for Airport South. Future redevelopment proposals for individual sites may reflect a lower development intensity than that considered in the AUAR land use scenario, because of the airspace obstruction regulations and land use safety zoning established by the Joint Airport Zoning Board. If that happens, the AUAR assessment of environmental impacts would remain valid as a "worst case" scenario.

City staff will re-evaluate of the AUAR following the Joint Airport Zoning Board’s decision and the conclusions will be distributed to all recipients of the Final AUAR. If no objections to the re-evaluation are received within 10 days (similar to the comment period for the Final AUAR), the re-evaluation conclusions will be adopted by the City Council.

The six parcels analyzed for redevelopment purposes in the AUAR development scenario (see Figure 3) include 234 of the 893 developable acres in the Airport South District. Approximately 43 acres of the 60-acre Kelley property is shown to be converted from farmstead to office and multi-family residential use based on plans submitted by the Kelley property trust. The Kelley property plans are consistent with the current land use and zoning controls and Comprehensive Plan land use designation. The 30-acre Federal Runway Protection Zone (RPZ) parcel would be converted from office/commercial use to open space. The remaining 144 acres would include existing developed properties.

**TABLE 1  
DEVELOPMENT SCENARIO/LAND USE CHANGES FOR THE  
AIRPORT SOUTH DISTRICT AUAR**

<b>Site</b>	<b>Existing Land Use</b>	<b>AUAR Development Scenario</b>
Met Center Site	7,500 surface parking spaces	5.6 msf mixed use <sup>(1)</sup> <ul style="list-style-type: none"> <li>• 1,600 hotel rooms</li> <li>• 3,425,000-square foot retail/entertainment</li> <li>• 600,000-square foot office</li> <li>• 300 residential units</li> </ul>
Adjoining Lands	1,775 surface parking spaces and a storm water pond	1.0 msf of retail and 7,500 parking spaces (including 200 spaces for LRT)
Federal RPZ Block (includes 11 parcels)	Hotel, a meeting hall, gas stations, car rental, offices	No parking, no development
Health Partners Campus	865,094 square feet of office space	2,250,500-square foot office/hotel or 2,189,500-square foot office <sup>(2)</sup>
Robert Muir/Park ‘N Fly 3700/3750 East 80th Street ramp	996-stall parking ramp, 1,220 surface parking spaces and a 430-square foot structure	750,000-square foot office; 3,000 parking spaces
Proposed LRT Corridor	Streets and parking areas	Rail corridor and station (see Figure 4)
Kelley Property	Agriculture/open space	650,000-square foot office 931 residential units
Remainder of Airport South District	Existing land uses	Existing land uses

<sup>(1)</sup> The proposed Mall of America Expansion on the Met Center site was also studied in an EIS process completed in early 2001.

<sup>(2)</sup> Two development concepts are being considered for redevelopment of this property. The “worst case” impacts will be considered in each impact analysis in the AUAR (e.g. office-only concept for traffic impacts, office/hotel concept for water and wastewater impacts.)

## STAGING AND SCHEDULE

The AUAR land use scenario timeframe for development extends through the year 2006, although the timing and sequence of construction of individual developments is unknown at this time. A number of preliminary development plans have been submitted to the City for review and approval, including the Health Partners Campus and the Mall of America Expansion. No final development plans have been approved for the Health Partners Campus. Final development plans for a hotel project and an office project have been approved for the Mall of America Expansion. An application for a rezoning and preliminary development for the Kelley property is also pending.

## INFRASTRUCTURE

Infrastructure improvements to facilitate development in the Airport South area include transportation, sanitary sewer and water utility, and storm water management projects. A number of projects have been previously planned by the City, Hennepin County, the City of Richfield, the Metropolitan Airports Commission (MAC), and the Minnesota Department of Transportation (Mn/DOT). The AUAR also identifies infrastructure projects necessary to support the level of development anticipated by the year 2006 development scenario.

### Transportation

The Airport South District is served by local and regional roadways and by metropolitan transit services (including a transit hub at the Mall of America). The majority of transportation improvements that will serve the Airport South District were planned for implementation prior to the AUAR studies. These include local and regional roadway improvements (summarized in Table 2) and construction of the Hiawatha Corridor Light Rail Transit (LRT) line that will terminate at a station located east of the Mall of America.

The transportation system improvements listed in Table 2 were used as the basis for the Mall of America Expansion EIS and Airport South District AUAR traffic analyses. These local and state transportation improvements are programmed for implementation prior to 2006. Figure 4 shows the locations of the regional and local transportation improvements listed in Table 2.

In addition to the roadway improvements already planned or programmed, the AUAR traffic analysis identified other local roadway improvements to be implemented in conjunction with the AUAR development. The locations of these improvements are shown on Figure 4 (and designated by letter). These include:

- A. 28th Avenue and East 80th Street – Protected/permissive left-turn phasing on the south approach of 28th Avenue.
- B. 34th Avenue and East 80th Street – Adequate storage is needed for the dual left-turn lanes on the west approach of 80th Street for stacking vehicles. Based on the analysis, approximately 400 feet of storage is needed without the traffic generated by the new parking facility at the Hubert H. Humphrey terminal at the airport. With the additional traffic, 500 feet of storage is needed.

**TABLE 2  
SUMMARY OF PLANNED/PROGRAMMED ROADWAY IMPROVEMENTS**

Location			Scheduled to be Completed by:	Lead Agency
<b>No. <sup>(1)</sup></b>	<b>Regional System Improvements <sup>(2)(4)</sup></b>			
1	Longfellow Avenue	Reconstruct	2002	MAC
2	66th Street	Reconstruct interchange	2003	MAC
3	24th Avenue	Modify westbound ramp to northbound free right	2002	MAC/ Mn/DOT
4	79th/80th Street	Construct bridge at I-35W	2003	Bloomington
5	Lyndale Avenue	Reconstruct interchange	2005	Richfield
6	34th Avenue to Adjoining Lands parcel	LRT	2004	Mn/DOT
7	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
8	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
9	East 79th Street (TH 77 to 24th Avenue)	Reconstruct/realignment/geometric improvements	2003	Bloomington
<b>No. <sup>(1)</sup></b>	<b>Local System Improvements <sup>(3)</sup></b>			
10	East Old Shakopee Road/ 28th Avenue	Signalize intersection, improve geometrics	2006	Bloomington
11	East Old Shakopee Road from 32nd to 24th Avenue	Reconstruct, realign, geometric improvements	2006	Bloomington
12	24th Avenue/ Lindau Lane	Modify Lindau Lane/TH 77 to 24th Avenue	2006	Bloomington
13	24th Avenue Operation Upgrade	I-494 to Lindau Lane (geometrics)	2006	Hennepin County/ Bloomington/ Mn/DOT
14	24th Avenue ITS Information Signs	I-494 to 86th Street	2006	Hennepin County/ Bloomington/ Mn/DOT
15	80th Street Upgrade	Upgrade of 80th Street between 24th and 34th Avenues to provide five approach and three departing lanes at critical intersections	2006	Bloomington

<sup>(1)</sup>Numbers correspond to locations shown on Figure 4.

<sup>(2)</sup>Summary provided by Mn/DOT (9/7/99).

<sup>(3)</sup>Summary provided by City of Bloomington Public Works (8/17/99).

<sup>(4)</sup>Updated information provided in Mn/DOT 12/12/01 comments on the Draft AUAR.

- C. 20th Avenue and Killebrew Drive – The addition of a left-turn lane on the west approach of Killebrew Drive to provide dual left-turn lanes.
- D. 28th Avenue/86th Street Connection – Construction in conjunction with the Kelley property development.

### **Sanitary Sewer**

The City of Bloomington 1998 *Sanitary Sewer Policy Plan* includes plans to install a new 18-inch sewer main parallel to Cedar Avenue to connect directly into the sanitary sewer trunk line in Killebrew Drive. This north-south line will relieve demands on the 24th Avenue sewer main juncture at Killebrew Drive and east old Shakopee Road resulting from increased sanitary flows from the Mall of America Expansion project. This new line is included in the City's Capital Improvement Program for the Airport South area. Installation of the 18-inch line along Cedar Avenue would be adequate to serve the additional volume of wastewater projected for the northwest portion of Airport South. The sanitary sewer system will also need to be extended south into the Kelley property to serve the proposed development of this parcel.

The AUAR analysis also indicates that the sewer line located along Killebrew Drive may need minor capacity improvements (e.g. improvements to decrease line friction, to improve flow rates). This line will need to be evaluated when specific development proposals are submitted to determine if improvements to the line are needed. The modeling indicates that the remainder of the City's sewer system is adequate to serve the increased flows from the proposed AUAR developments.

### **Water Supply**

The City water supply plan was updated in 1998 to reflect planned future land uses in the City, including planned redevelopment in Airport South District. The plan did not identify any significant water utility problems in the District. Minor improvements to the system in the Airport South area were included in the plan. These improvements include a new 16-inch water main along 79th Street west of 21st Avenue to 24th Avenue. A new 16-inch water main is also planned for 82nd Street from approximately South 12th Avenue to Cedar Avenue.

The system improvements identified in the water plan are programmed in the City of Bloomington's Capital Improvement Program. Extension of the water system into the Kelley property will be required to support the proposed development. No additional improvements to the City's water system are required to support AUAR development.

### **Storm Water Conveyance/Treatment**

The City's *Comprehensive Surface Water Management Plan* requires all new development/redevelopment to maintain surface water discharges at or below existing levels.

The AUAR development scenario will not result in an increase in the rate of discharge as compared to existing conditions. Therefore, the existing storm sewer system would not require capacity modifications to support AUAR development.

The water quality modeling for the AUAR analysis assumed that onsite rate control and water quality treatment at all redevelopment sites will meet Nationwide Urban Runoff Program (NURP) requirements at a minimum, in conformance with City and Lower Minnesota River Watershed District requirements. Also, because the storm water inflows from west of TH 77 affect Pond C removal efficiencies, the area west of TH 77 was included in the water quality modeling for the post-AUAR conditions.

The results of the water quality modeling, comparing TSS removal for existing and post-AUAR development conditions, indicated no significant difference (i.e. approximately 2 percent) in total TSS loadings between existing and post-AUAR conditions, since there are relatively small overall changes in land use type and/or impervious surface between the two conditions. The post-AUAR development scenario that included onsite detention/treatment increases pollutant removal, resulting in a six percent overall decrease in post-AUAR TSS outflow loading compared to existing conditions.

The water quality model was also run for post-AUAR conditions without onsite ponding at the redevelopment sites (i.e., relying only on regional treatment ponds—Pond C and Hogback Pond), in order to better understand the contribution made by onsite treatment ponds in pollutant removal. This analysis was also used to assess the impact of a request by the Metropolitan Airports Commission (MAC) that storm water ponding not be provided above the river bluff, due to concerns about attracting birds to the ponds and increasing the potential for bird/aircraft conflicts. The results of this model run indicated that post-AUAR development without onsite ponds would result in removal of approximately the same amount of TSS as occurs under existing conditions, despite higher hydraulic and TSS loadings in the system for the 2007 conditions without onsite treatment. However, the post-AUAR conditions without onsite ponding would result in a six percent increase in TSS outflow loading (due to higher total TSS loadings for post-AUAR conditions). Therefore, use of onsite ponding (or alternative onsite treatment methods) and/or an increase in regional ponding capacity will be required in City review of development proposals, to bring post-AUAR outflow loadings to levels that are equal to or lower than existing outflow loadings.

As part of AUAR study discussions with agency staff regarding surface water issues, a number of agencies requested that the City consider incorporating onsite infiltration basins or other low impact development (LID) practices into redevelopment plans where possible. City staff agreed to consider feasibility of incorporating infiltration/LID measures when reviewing proposed development plans in Airport South; however, feasibility would need to be considered on a case-by-case basis.

3. **RGU:** City of Bloomington  
 CONTACT PERSON Mr. Clark Arneson  
 AND TITLE: Planning Manager  
 ADDRESS: City of Bloomington  
 2215 West Old Shakopee Road  
 Bloomington, MN 55431  
 PHONE: (952) 563-8921  
 E-MAIL: carneson@ci.Bloomington.mn.us

4. **REASON FOR EAW PREPARATION:**

*Not applicable to AUAR.*

5. **PROJECT LOCATION**

SECTIONS 1,12,13 TOWNSHIP 27 N RANGE 24 W  
 SECTIONS 5-8, 18 TOWNSHIP 27 N RANGE 23 W  
 COUNTY Hennepin  
 CITY/TOWNSHIP City of Bloomington

A. A COUNTY MAP SHOWING THE GENERAL LOCATION OF THE PROJECT.

Figure 1 shows the location of the AUAR study area within the Twin Cities metropolitan area.

B. COPY(IES) OF USGS 7.5 MINUTE, 1:24,000 SCALE MAP (PHOTOCOPY IS OK) INDICATING THE PROJECT BOUNDARIES.

See Figure 2.

C. A SITE PLAN SHOWING ALL SIGNIFICANT PROJECT AND NATURAL FEATURES.

**AUAR:** *Instead of a site plan, include: (1) a map clearly depicting the boundaries of the AUAR and any subdistricts used in the AUAR analysis; (2) land use and planning and zoning maps as required in conjunction with Items 9 and 27; and (3) a cover type map as required by Item 10. Additional maps may be included throughout the document wherever maps are useful for displaying relevant information.*

Figure 3 shows the boundaries of the AUAR study area and the six properties assumed to redevelop during the AUAR study period.

Figure 3A shows the relationship of the proposed redevelopment properties to the regulatory limits established due to aircraft approaches and departures to/from the proposed Minneapolis-St. Paul International Airport (MSP) Runway 17/35.