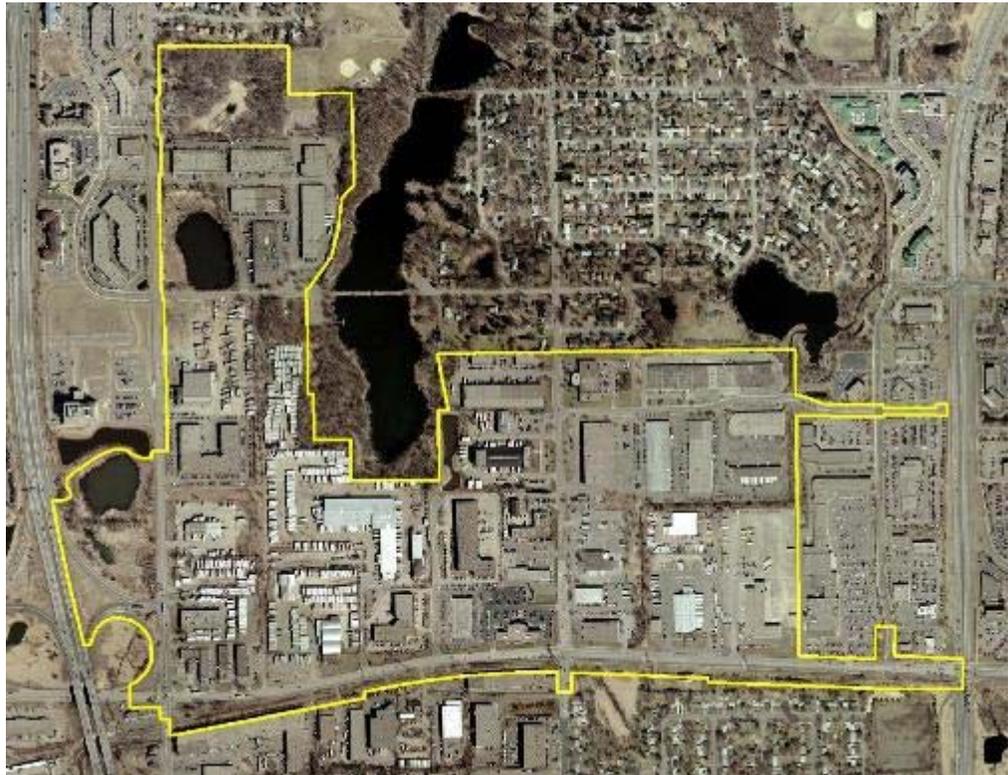


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# Twin Lakes Business Park Final AUAR Update



Prepared by the City of Roseville

Final AUAR Update Adopted October 15, 2007  
(Update of Final AUAR Adopted August 13, 2001)



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# Twin Lakes

## Alternative Urban Areawide Review (AUAR) Update

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The EQB requirements and guidance on this form pertinent to the AUAR process are in *italics* and preceded by the phrase “*AUAR Guidelines*”. This AUAR guidance comes from the EQB document titled “Recommended Content and Format – Alternative Urban Areawide Review Documents” (April 2005). The *AUAR Guidelines* pertaining to each EAW item follows the **bold face** text from the EQB’s standard EAW form. Updates to the 2001 AUAR are tracked throughout the document. Deletions are shown in ~~strikethrough~~ font and additions are underlined.

*AUAR Guidelines: This guidance has been prepared by the EQB staff to assist in the preparation of AUAR documents. It is based on the directive of 4410.3610, subpart 4, that “the content and format [of an AUAR document] must be similar to that of an Environmental Assessment Worksheet EAW, but must provide for a level of analysis comparable to that of an Environmental Impact Statement (EIS) EIS for impacts typical of urban residential, commercial, warehousing, and light industrial development and associated infrastructure.”*

### **GENERAL GUIDANCE**

*This guidance is based on the items of the standard EAW form (February 1999 version); the numbers listed below refer to the item numbers of that form. Except where stated otherwise, the information requested here is intended to augment (or clarify) the requested information on the EAW form; therefore, the EAW form and the guidance booklet EAW Guidelines must be read along with this guidance.*

*The information requested must be supplied for each of the major development scenarios being analyzed, and it is important to clearly explain the differences in impacts between the various scenarios.*

*If this guidance indicates that an EAW item is not applicable to the AUAR, the item number and its title (the text in bold print on the EAW form) should be included with a notation that the EQB guidance indicates that no response is necessary in an AUAR (as opposed to just skipping reference to that item at all).*

*One general rule that should be kept in mind throughout the preparation of the AUAR document is that whenever a certain impact may or may not occur, depending on the exact design of future developments, the AUAR should cover the possible impacts through a “worst case scenario” analysis or else prevent the impacts through the provisions of the mitigation plan. Failure to cover possible impacts by one of these means risks the invalidation of the environmental review exemption for specific development projects.*

**1. Project Title:** Twin Lakes Business Park

*AUAR Guidelines: An appropriate descriptive title for the geographic area of the AUAR should be chosen*

**2. Proposer:** Not Applicable

*AUAR Guidelines: It is not necessary for AUAR proposers to identify property owners within the AUAR area (although it may be useful to use such names as identifiers of various land parcels).*

**3. RGU:** City of Roseville  
Contact: Jamie Radel, Economic Development Coordinator  
Address: 2660 Civic Center Drive  
  
Roseville, Minnesota 55113  
Phone: 651-792-7072  
Fax: 651-792-7070  
E-Mail: jamie.radel@ci.roseville.mn.us

**4. Reason for EAW Preparation**

*AUAR Guidelines: Not applicable to AUAR*

**5. Project Location** Parts of Section 4, 5, 8 and 9, Township 29 N, Range 23 W

**County:** Ramsey      **City:** Roseville

**Attach each of the following maps to the EAW: county map, USGS map, and a site plan.**

*AUAR Guidelines: The county map is not needed for an AUAR. The USGS map should be included. 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 maps as required in conjunction with items 9 and 27; and (3) a cover type map as required for item 10. Additional maps may be included throughout the document wherever maps are useful for displaying relevant information*

All required maps and additional maps displaying relevant information are found in Appendix A.

**6. Description****a. Provide a project summary of 50 words or less to be published in the *EQB Monitor*.**

The City of Roseville, Minnesota proposes to update the 2001 AUAR for the Twin Lakes Business Park renewal strategy, a plan to redevelop 46 parcels dispersed within a 275-acre area over the next 20 years. Redevelopment would replace existing trucking, outdoor storage and industrial uses with new multi-level office, medical, high tech, showroom, multi-family and supporting commercial uses.

**b. Give a complete description of the proposed project and related new construction. Attach additional sheets as necessary. Emphasize construction, operation methods and features that will cause physical manipulation of the environment or will produce wastes. Include modifications to existing equipment or industrial processes and significant demolition, removal or remodeling of existing structures. Indicate the timing and duration of construction activities.****c. Explain the project purpose; if the project will be carried out by a governmental unit, explain the need for the project and identify its beneficiaries.****d. Are future stages of this development including development on any outlots planned or likely to happen?  Yes  No**

If yes, briefly describe future stages, relationship to present project, timeline and plans for environmental review.

**e. Is this project a subsequent stage of an earlier project?  Yes  No**

If yes, briefly describe the past development, timeline and any past environmental review.

**AUAR Guidelines:** *Instead of the information called for on the form, the description section of an AUAR should include the following elements for each major development scenario:*

- *Anticipated types and intensity (density) of residential land and commercial/warehouse/light industrial development throughout the AUAR area*
- *Infrastructure planned to serve the development (roads, sewers, water, stormwater system, etc.). Roadways are intended primarily to serve as adjoining land uses within an AUAR area are normally expected to be reviewed as part of an AUAR. More arterial types of roadways that would cross an AUAR area are an optional inclusion in the AUAR analysis; if they are to be included, a more intensive level of review, generally including an analysis of alternative routes, is necessary*
- *Information about the anticipated staging of various developments, to the extent known, and of the infrastructure, and how the infrastructure staging will influence the development schedule.*

***Important Note:** Every AUAR document MUST review one or more development scenarios based on and consistent with the RGU's Comprehensive Plan in effect when the AUAR is officially ordered. (This is equivalent to reviewing the "No-build" alternative in an EIS.) If an RGU expects to amend its existing Comprehensive Plan, it has the options of deferring the start of the AUAR until after adopting the amended plan or reviewing developments based on both the existing and amended comprehensive plans; however, it cannot review only a development based on an expected amendment to the existing plan. Also, the rules require that one or more development scenarios analyzed must be consistent with known development plans of property owners within the AUAR area.*

### **Background**

In June 2001, the City of Roseville adopted an amended Master Plan for the Twin Lakes redevelopment area. The 2001 Master Plan updated the 1986 plan for the business park that called for the redevelopment of 30 parcels within a 126-acre area with up to 2.1 million square feet of renovated or new building area. The current master plan describes the redevelopment of 46 parcels on 170 acres dispersed within a 275-acre area over 20-years and could include up to three million square feet of new and/or renovated building area in multi-story offices, high-tech flex space, showroom/warehouse space, multi-family housing and a service mix of supporting uses. The increase in square footage since the previous plan was due to the addition of parcels in the Business Park and an increased number of multiple story developments.

In 1997, the City prepared an EAW for the Twin Lakes Business Park and the construction of the new Twin Lakes Parkway. The City declared no negative impact from the redevelopment or the construction of the parkway. As described above, the City had amended its future plans for the AUAR area in 2001, and completed a State mandated environmental review in order to issue necessary permits in 2001. The City chose to order a substitute form of environmental review for the Business Park redevelopment plan - an Alternative Urban Areawide Review (AUAR).

The current Master Plan focuses on the redevelopment of 170 acres, which is anticipated to be implemented in phases over the next 20 years. Several parcels within the AUAR boundary have already been redeveloped ( combined with the 170 acres add up to the total 275-acre area). All governmental decisions have been made for those projects.

In accordance with the 2001 Renewal Strategy, the City of Roseville will work with private developers to demolish 40- to 50- year old truck terminal and industrial buildings, to clean the sites and to replace them with newly constructed one to seven story mixed-use buildings. The truck terminals came to the area in the 1950s due to the availability of large sites and direct access to I-35W. By the late 1980s, federal deregulations prompted many businesses to move, consolidate or go out of business, and the process of redeveloping this area began.

A new road, Twin Lakes Parkway, will be constructed in stages. The road would be transit and pedestrian friendly, and include walking and biking trails, safety, lighting, ponding and landscaping enhancements. The City has also proposed a wide-range of housing opportunities for its present and future residents with some housing complementary to the Twin Lakes Area. Opportunities for multiple housing were a key component of the Master Plan and are planned as a land use transition from the commercial and industrial uses to single-family neighborhoods and as a buffer to the Langton Lake amenity.

Several events associated with the 2001 AUAR document occurred and are summarized below. It is noted that many of the post-2001 documents associated with the Twin Lakes area are posted on the City's website (<http://www.ci.roseville.mn.us>) and that the following information is only summary documentation of certain events.

- The City completed an AUAR for the Twin Lakes Business Park in 2001 and the City adopted the Twin Lakes Business Park Final AUAR on August 13, 2001. Since the adoption of the Final AUAR in 2001 no redevelopment has occurred within the AUAR area.
- In December 2003, the Roseville City Council entered into a Contract for Exclusive Negotiations with Roseville Twin Lakes, LLC, the selected master developer for Twin Lakes, which is a consortium of three development firms – The Rottlund Company, Welsh Companies, and Roseville Properties..
- The Twin Lakes Stakeholder process was conducted from January through July 2004 with the purpose to assist Roseville Twin Lakes, LLC with refinement of new concepts for Twin Lakes.
- After completing the six-month Twin Lakes Stakeholder Planning Process, Roseville Twin Lakes, LLC refined its site plans for submission to the City. In September 2004, Roseville Twin Lakes, LLC submitted an application for approval of a General Concept PUD for Phase 1 of the Twin Lakes redevelopment.

In October 2004, the Friends of Twin Lakes filed a Citizen Petition requesting that an EAW be prepared for the Roseville Twin Lakes, LLC project. It is noted that the Roseville Twin Lakes, LLC project is completely within the Twin Lakes Business Park AUAR boundary. The Petitioners stated that the 2001 AUAR addressed a fundamentally different project and that the Roseville Twin Lakes, LLC project was significantly different than the development assumptions reviewed in the 2001 AUAR. The Petitioners stated that the 2001 AUAR was not a valid environmental review for the Roseville Twin Lakes, LLC project.

- In December 2004, the Roseville City Council, the Responsible Governmental Unit (RGU), denied the EAW petition. The City determined that the 2001 AUAR was a valid environmental review for the Roseville Twin Lakes, LLC project.
- In January 2005, the Roseville City Council acted on Roseville Twin Lakes, LLC's application, including:
  - Amending the Twin Lakes Master Plan to incorporate the Roseville Twin Lakes, LLC project
  - Approving the preliminary plat and subdivision application
  - Rezoning the project site to PUD with a B-6, Office Park, underlying district
  - Approving the General Concept PUD
- In January 2005, Friends of Twin Lakes sued the City. The complaint alleged that the 2001 AUAR was not a valid environmental review for the Roseville Twin Lakes, LLC project and requested that the City revise the AUAR or prepare an EAW and/or EIS for the Roseville Twin Lakes, LLC project.
- In August 2005, the District Court issued an order that concluded that the Roseville Twin Lakes, LLC project fit within the 2001 AUAR assumptions, but that the City could consider impacts of the changes on need for revised AUAR or EAW.

- Friends of Twin Lakes appealed the District Court's decision.
- On August 10, 2006 the Court of Appeals issued its decision, which included the following items related to environmental review:
  - The City incorporated the 2001 Twin Lakes Master Plan into its Comprehensive Plan. This plan amendment was submitted to and reviewed by the Metropolitan Council in 2001. The Court ruled that the amendment to the Twin Lakes Master Plan, approved by the City Council in January 2005, was an amendment to the Comprehensive Plan. The 2005 Twin Lakes Master Plan amendment was approved by a simple majority vote (3/5); however, a Comprehensive Plan amendment requires a super majority vote (4/5). Therefore, the inclusion of this project into the 2005 Twin Lakes Master Plan Amendment, and therefore into the Comprehensive Plan, is ineffective.
  - There are eight circumstances that can trigger an update to an AUAR document (see MN Rules 4410.3610 subp. 7). The Court determined that MN Rules 4410.3610 subp. 7B applied, which requires an AUAR to be updated if a comprehensive plan amendment is proposed that would allow an increase in development over the levels assumed in the AUAR. The Court determined that the project did not exceed the development levels for entire Twin Lakes AUAR area; however, they determined that the project exceeded levels for Subareas 1-5, and 8.
  - In conclusion, the Court ordered the City to update the AUAR or complete an EAW to determine if an EIS was needed for the Roseville Twin Lakes, LLC project.
- AUARs must be updated every five years unless all development within the AUAR area has been given final approval by the City (MN Rules 4410.3610 Subp. 7A). No development has occurred within the AUAR area since 2001. The Final AUAR was adopted on August 13, 2001; therefore, a mandatory AUAR update is required for the Twin Lakes Business Park AUAR to remain valid since five years have passed since its adoption.
- The City hosted an AUAR Update scoping meeting with agencies on October 26, 2006 to discuss and confirm the scope of the AUAR update.
- The City hosted an AUAR Update Public Open House on November 2, 2006 to provide a forum for the public to ask questions and comment on the AUAR Update scope.

For the purpose of this AUAR, the Twin Lakes Business Park has been separated into three Subareas as allowed per MN Rules 4410-3610 subp. 3 (Figure 5.3). The 2001 Twin Lakes Master Plan and the 2001 AUAR included twelve "redevelopment blocks" (see Figure 5.3 from the 2001 AUAR in Appendix B). Each redevelopment block includes one to five different land use alternatives that represent different mixes of uses and development intensities. The land use alternatives are derived from the future land use options contained in the 2001 Twin Lakes Business Park Master Plan. This AUAR will explore a "worst case" development intensity for each block in the Master Plan (e.g., Scenario A).

Documentation regarding the "worst case" development alternatives for Scenario A are included in Appendix B. It is noted that a "worst case" development intensity was selected for each block and that the "worst case" development intensity varies, as appropriate, to answer the questions in the AUAR document. For example, the traffic analysis is based on

the land use alternatives, by block, that generate the greatest PM peak trips. Likewise, the predicted wastewater generation table is based on the land use alternative that generates the most wastewater.

### **Existing Land Use**

The current uses within the Twin Lakes Business Park focus on heavy and light industrial uses that require significant outdoor storage areas. Specific uses include truck terminals, auto repair, manufacturing uses, business uses, and retail uses (Figure 6.1). There is a small amount (approximately 8 acres) of single-family detached residential uses currently within the redevelopment area (Table 6.1).

A total of 328,500 sq. ft. of redevelopment occurred in the AUAR area prior to 2001 and includes the construction of a 48,000-sq. ft. office-flex building, a 74,500-sq. ft. office-flex building, a 66,000-sq. ft. medical office building, a 35,000-sq. ft. office-flex building and a 105,000-sq. ft. office-flex building.

The Twin Lakes Redevelopment Area is framed on the north by its namesake lakes and parks (Langton Lake Park and Oasis Park) and single-family residential neighborhoods; on the east by Snelling Avenue and associated commercial development; on the south by County Road C, a railroad, commercial/industrial development and single-family residential neighborhoods; and on the west by open space, wetlands, the Centre Pointe Business Park area and I-35W. As such, there is a wide representation of land uses adjacent to the study area (refer to Figure 6.1).

**Table 6.1: Existing Land Use Summary**

<b>Land Use Type</b>	<b>Existing Land Use (Acres)</b>
Business/Retail	6.92
Heavy Industrial	60.48
Light Industrial	104.36
Office	7.03
Parks and Open Space	8.54
R-O-W/Utility/Road	59.51
Single-Family Detached	8.29
Vacant	8.32
Vacant-Developable	11.51
<b>TOTAL</b>	<b>275.05</b>

Minnesota Rules state, “the Responsible Governmental Unit (RGU) may specify more than one scenario of anticipated development provided that at least one scenario is consistent with the adopted comprehensive plan. At least one scenario must be consistent with any known development plans of property owners with the area (MN Rules Chapter 4410.3610, Subp. 3).” The AUAR Update reviews three development scenarios that are consistent with the adopted comprehensive plan (Figure 6.2). There are two known development plans proposed within the area and all scenarios are consistent with the known plans. The proposed projects

include a 93-unit Senior Co-op located in the northernmost portion of Subarea III and a 120-unit hotel and freestanding restaurant located within Subarea I.

### **Scenario A – Twin Lakes Master Plan “Worst Case” Intensity**

This scenario continues the revitalization and redevelopment of the Twin Lakes Business Park consistent with the adopted Comprehensive Plan (Figure 6.2). When the redevelopment of the Twin Lakes Business Park is complete, the trucking and outdoor storage gradually will be replaced by a more contemporary mix of high quality offices, medical facilities, showrooms and warehouse space, multiple family housing and a supporting service mix with uses such as day care and health club facilities, lodging, restaurants and complementary commercial businesses. Parking will be provided in a mix of parking ramps and surface parking. Future redevelopment will be responsive to the natural environmental amenities adjacent to the area.

The Comprehensive Plan currently designates the AUAR area as “BP-Business Park” (see Figure 6.2). The uses envisioned within the Comprehensive Plan designation of “BP-Business Park” include: office, office-laboratory, office-showroom-warehousing, bio-technical, biomedical, and high-tech software and hardware production uses with support services, such as limited retail, health, fitness, lodging and multifamily housing. The Comprehensive Plan reflects the 2001 Twin Lakes Business Park Master Plan. The Master Plan specifically states: “[this] new master plan amendment of 2001 will designate the areas as BP – Business Park.” The 2001 Master Plan also includes four future land use maps (“Options 2, 3 and 4” and the “Twin Lakes AUAR Future Land Use Scenario”) and several pages of text describing land use scenarios and goals. The intent of the 2001 Master Plan was to provide for a flexible mix of Business Park uses. For reference, the 2001 Master Plan is posted on the City’s website: [www.ci.roseville.mn.us](http://www.ci.roseville.mn.us).

A detailed breakdown of all of the proposed land uses alternatives in Scenario A is provided in Appendix B. The “worst case” land use intensities are described in AUAR Item 7, Project Magnitude Data. A general description follows below.

### **Hospital Campus**

The future land use includes the potential for a hospital within Subarea I. The potential hospital could be six to seven stories in height and include approximately 600,000 sq. ft. of building area. This area breaks down into approximately 200,000 sq. ft. to accommodate 300 beds; 200,000 sq. ft. for outpatient care support (such as radiology/surgery); and 200,000 sq. ft. for non-patient care, such as a power plant, laundry and grounds-keeping.

The hospital could provide emergency services, but not a trauma center. There could be approximately five to seven ambulances per day. There could also be a helipad on the facility. It would have approximately 20 helicopter visits per month. The primary use of helicopters is for transport offsite. (The hospital would meet with Federal Aviation Administration (FAA) to survey the site to determine the primary and secondary route helicopters could take. Both routes are likely to be away from residential areas.)

Additionally, the hospital campus could include a primary medical office of an additional 150,000 sq. ft. The medical office would be filled with a suite of offices for primary caregivers, such as physicians with their own practices and diagnostic facilities that would have shared access with the hospital.

The hospital campus could include three buildings overall. One building would be for the hospital itself. One building would be for the associated medical office, connected to the hospital by tunnels or skyways. The third building would be the power plant for the hospital. The hospital campus would generate a need for parking for approximately 2,000 cars.

**Office Uses**

Scenario A proposes a variety of office uses, including medical, neighborhood and general offices. It also proposes High-Tech, High Flex offices and associated uses. The medical office uses could generally include four to seven stories with a 50,000 to 75,000 sq. ft. footprint. The neighborhood office would generally include one story buildings with 1,500 sq. ft. per office unit. The general office would generally include four to seven stories with a 40,000 to 60,000 sq. ft. footprint.

**Service Mix<sup>1</sup>**

Scenario A proposes service mix that could include services, such as retail, a hotel, a day care facility, a health club facility and restaurant uses that would be complementary to the other uses in the Twin Lakes Business Park.

**High-Tech, High Flex Buildings**

Scenario A proposes high-tech, high-flex buildings, which would be designed to be flexible to accommodate a wide range of office, technical, research, and light assembly activities. These buildings could be adapted to short- or long-term leases with the ability to expand or contract tenant space as needed.

**Multi-Family Residential Uses**

Scenario A includes a variety of multi-family alternatives within the AUAR area. These alternatives include townhomes (10 units/acre), work/live housing (18 units/acre), and apartments and condominiums (24 units/acre). The City encourages a mix of office and high-tech uses with multiple residential uses where they can take advantage of the amenities offered by the parks west and south of Oasis Park, and in a mixed office/residential area on the west and southeast sides of Langton Lake. In effect the multiple residence areas become the “new edge” to the existing adjoining residential areas.

**Scenario B – Residential Emphasis**

Scenario B includes land uses similar to those described for Scenario A, except that a hospital campus is not included in Scenario B. In comparison to Scenario A, Scenario B includes more residential uses (40% increase) and contains a reduced amount of office and service mix (38% and 18% decrease, respectively). The amount of office and service mix is reduced to better balance proposed land use with reasonable/feasible transportation system improvements. The proposed land uses per Subarea are described in AUAR Item 7, Project Magnitude Data.

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<sup>1</sup> Please note that Service Mix has been analyzed from a retail perspective as retail generates greater impacts than the other potential uses described within service mix, thus providing the “worst case” development scenario.

### **Scenario C – Non-Residential Emphasis**

Like Scenario B, Scenario C includes land uses similar to those described for Scenario A, except that a hospital campus is not included in Scenario C. In comparison to Scenario A, Scenario C includes a reduced amount of residential, office, and service mix (20%, 32% and 37% decrease, respectively). In comparison to Scenario B, Scenario C includes less residential and service mix (43% and 23% decrease, respectively) and more office (10% increase). Like Scenario B, the proposed land uses are balanced with reasonable/feasible transportation system improvements. The proposed land uses per Subarea are described in AUAR Item 7, Project Magnitude Data.

#### **Infrastructure**

The majority of required infrastructure for the Twin Lakes Business Park is currently in place with the exception of Twin Lakes Parkway (reviewed as part of the 1997 EAW) and interior sanitary sewer, water main, and storm sewer extensions west of Fairview Avenue. Major infrastructure improvements are not necessary to redevelop parcels located east of Fairview Avenue, however minor utility relocations and curb cuts in Terrace Drive may be required in some areas.

#### **Roads**

The AUAR area is generally bounded on the west by Cleveland Avenue and the east by Snelling Avenue. Fairview Avenue bisects the AUAR area into an east and west section. County Road C forms the southern boundary of the AUAR area. County Road C2 cuts through the northern portion of the area. Numerous improvements to the transportation system are recommended to accommodate the redevelopment of the AUAR area. These recommendations are detailed in AUAR Item 21, the Mitigation Plan, and Appendix E.

The AUAR area also includes the officially mapped future Twin Lakes Parkway (which was included in the 1997 Twin Lakes Business Park EAW). The full redevelopment of interior parcels located west of Fairview Avenue necessitates construction of the parkway. Twin Lakes Parkway is planned to begin at the intersection of Cleveland Avenue and the northbound I-35W entrance/exit ramps and run east to the intersection of Fairview Avenue and Terrace Drive.

The parkway is planned to include two 16-foot wide through lanes with left turn lanes and a center median throughout. A bituminous pedestrian trail is also proposed along the parkway. Twin Lakes Parkway will dead end prior to Snelling Avenue as currently planned.

#### **Stormwater Management**

The Twin Lakes area lies entirely within the jurisdiction of the Rice Creek Watershed District (RCWD). Development within the AUAR area will be required to meet the regulatory standards in place at the time of the building permit application. These include the requirements of the most current Comprehensive Storm-Water Management Plan and the Rice Creek Watershed rules. Runoff from development will be routed through storm water treatment ponds prior to discharging into natural water bodies. Areas draining to Langton Lake will incorporate infiltration and water quality standards required by RCWD. Additional trunk sewer facilities will be constructed to provide connections between proposed parcels and existing storm water treatment ponds. AUAR Item 17 includes the full surface water runoff analysis.

**Sanitary Sewer**

Sewage waste produced by Twin Lakes redevelopment will be discharged into the Roseville sanitary sewer collection system. The redevelopment area includes an extensive sanitary sewer network with trunk mains along Cleveland Avenue, County Road C and Fairview Avenue and several shorter lateral sewers throughout the interior and perimeter of the site. Sanitary sewer facilities are proposed to be constructed along the Mount Ridge easement to serve interior parcels in the development. AUAR Item 18 describes the sanitary sewer facilities in greater detail. Refer to Table 18.1 for estimated sewer flows.

**Water Main**

Water main facilities may be constructed along the easement at the Mount Ridge right of way and Twin Lakes Parkway to serve interior parcels in the development and provide additional loops within the City's water main grid. AUAR Item 13 includes additional information regarding water use.

**Construction and Phasing**

The expected year of completion for the Twin Lakes Master Plan is 2020 or beyond. Unfavorable market conditions or other circumstances may contribute to delays in the commencement or completion of construction.

The factors that may influence the timing and methods of construction include:

- 1) The extent of hazardous substances and the level of effort required for cleanup prior to site development work in order to receive approval by the Minnesota Pollution Control Agency (MPCA);
- 2) The national and local market conditions for the proposed type and total square footage for each property, competition with other regional business parks offering similar amenities, and marketability of individual site locations within the Twin Lakes Redevelopment Area;
- 3) The timing of the construction of Twin Lakes Parkway;
- 4) Degree of local controversy and challenges introduced by current and future landowners and area neighborhoods relative to relocations, condemnations for infrastructure and other purposes and site-specific impacts such as traffic or noise;
- 5) Business plans of existing property owners;
- 6) Dates on which the City expects that public funds needed for redevelopment will become available; and
- 7) Availability of tax increment funds subject to legislative changes.

Building, parking lot and outdoor storage area demolition and associated utility relocations will occur, and soil correction, surcharging, mass grading and pile driving will need to be completed to prepare the individual sites for building development. Erosion control practices will be implemented to protect erosion/sedimentation impacts to Langton Lake and Oasis Pond, and existing trees will be protected to the extent possible.

- c. Explain the project purpose; if the project will be carried out by a governmental unit, explain the need for the project and identify its beneficiaries.**

It is noted that the AUAR guidelines state that a response is not required for Item 6.c.

- d. Are future stages of this development including development on any outlots planned or likely to happen? If yes, briefly describe future stages, relationship to present project, timeline and plans for environmental review.**

Yes  No

It is noted that the AUAR guidelines state that a response is not required for Item 6.d.

- e. Is this project a subsequent stage of an earlier project? If yes, briefly describe the past development, timeline and any past environmental review.**

Yes  No

It is noted that the AUAR guidelines state that a response is not required for Item 6.e.

7. **Project Magnitude Data** (see Tables 7-1, 7-2, 7-3, and 7-4):  
 Total Project Acreage: 275 acres  
 Number of residential units: \_\_\_\_\_ unattached \_\_\_\_\_ attached  
 Commercial, industrial or institutional building area (gross floor space): total square feet \_\_\_\_\_  
 Indicate areas of specific uses (in gross square feet):  
 Office: \_\_\_\_\_ Manufacturing: \_\_\_\_\_  
 Retail: \_\_\_\_\_ Other Industrial: \_\_\_\_\_  
 Warehouse: \_\_\_\_\_ Institutional: \_\_\_\_\_  
 Light Industrial: \_\_\_\_\_ Agricultural: \_\_\_\_\_  
 Other Commercial (specify): \_\_\_\_\_  
 Building Height \_\_\_\_\_. If over two stories, compare to heights of nearby buildings.

*AUAR Guidelines: No changes from the EAW form, except that the information should be given for each major development scenario.*

This AUAR reviews the potential impacts associated with the redevelopment of 170 acres that would be implemented in phases over the next 20 years. Several parcels that lie within the AUAR boundary had already been redeveloped prior to the completion of the 2001 AUAR (which, combined with the 170 acres add up to the total Business Park area of 275 acres), with all governmental decisions made for those projects. The implementation of the projects described in this AUAR are expected to be market-driven with development beginning as early as 2007 until full development is reached over the next 20 years. Assumptions were made to measure the level of impact at full-build out. The maximum new development that each parcel will support is based upon a range of 30 to 75% coverage ratios with multi-level buildings and the potential for ramped and shared parking.

As previously stated in Item 6, the 2001 Twin Lakes Business Park Master Plan and the 2001 AUAR were separated into twelve “redevelopment blocks” (Refer to Figure 5.3 in Appendix B). The Court of Appeals ruling defined the “redevelopment blocks” as “Subareas” (see MN Rules 4410-.3610 subp. 3). This AUAR update consolidates the twelve “redevelopment blocks” into three “Subareas” (see Figure 5.3).

Each redevelopment block includes one to five land use alternatives that represent different mixes of uses and development intensities. The land use alternatives are derived from the future land use options contained in the 2001 Twin Lakes Business Park Master Plan, which is incorporated into the Comprehensive Plan. Table 7.1 represents the “worst case” land use density/intensity alternative for each Subarea. This is intended to provide the AUAR framework necessary to achieve the Master Plan’s guiding principle to “Provide a flexible land use plan”.

**Table 7.1 Scenario A – Twin Lakes Master Plan “Worst Case” Intensity**

Use	Subarea I	Subarea II	Subarea III	Total
Office (ft <sup>2</sup> )	992,592	922,547	415,366	2,330,505
Multifamily Residential (attached units)	358	293	268	919
Hospital (ft <sup>2</sup> )	446,583	0	0	466,583
Service Mix (ft <sup>2</sup> ) <sup>2</sup>	240,000	378,319	0	618,319

Additional documentation regarding the “worst case” development alternative from the 2001 Twin Lakes Business Park Master Plan is included in Appendix B. It is noted that a “worst case” development intensity was selected for each block and that the “worst case” development intensity varies, as appropriate, to answer the questions in the AUAR document. For example, the traffic analysis is based on the land use alternatives that generated the greatest PM peak trips. Likewise, the predicted wastewater generation table is based on the land use alternative that generates the most wastewater. This documentation is provided to assist the RGU in determining if future development proposals are consistent with the development levels assumed in this AUAR.

<sup>2</sup> Please note that Service Mix has been analyzed from a retail perspective as retail generates greater impacts than the other potential uses described within service mix, thus providing the “worst case” development scenario.

The proposed land uses per Subarea for Scenarios B and C are shown in Tables 7.2 and 7.3, respectively.

**Table 7.2 Scenario B – Residential Emphasis**

Use	Subarea I	Subarea II	Subarea III	Total
Office (ft <sup>2</sup> )	645,154	415,000	380,000	1,440,154
Multifamily Residential (attached units)	732	295	255	1,282
Service Mix (ft <sup>2</sup> ) <sup>3</sup>	158,000	350,000	0	508,000

**Table 7.3 Scenario C – Non-Residential Emphasis**

Use	Subarea I	Subarea II	Subarea III	Total
Office (ft <sup>2</sup> )	790,000	515,000	285,000	1,590,000
Multifamily Residential (attached units)	185	295	255	735
Service Mix (ft <sup>2</sup> ) <sup>4</sup>	255,000	135,000	0	390,000

Building heights will vary throughout the AUAR area and could range from one to seven stories (Table 7.3). Building height within the 300-foot shoreland area will be limited to 30 feet. Nearby existing buildings range from one to seven stories.

**Table 7.4 Building Height**

Use	Stories*
Office	1 to 7
Multifamily Residential	1 to 5
Hospital	6 to 7
Service Mix	1 to 2

\*Building height in the shoreland area is limited to 30 feet.

<sup>3</sup> Please note that Service Mix has been analyzed from a retail perspective as retail generates greater impacts than the other potential uses described within service mix, thus providing the “worst case” development scenario.

<sup>4</sup> See footnote 3.

8. **Permits and Approvals Required:** List all known local, state, and federal permits, approvals, and financial assistance for the project. Include modifications of any existing permits, governmental review of plans and all direct and indirect forms of public financial assistance, including bond guarantees, Tax Increment Financing and infrastructure.

*AUAR Guidelines: A listing of major approvals (including any comprehensive plan amendments and zoning amendments) and public financial assistance and infrastructure likely to be required by the anticipated types of development projects should be given for each development scenario. This list will help orient reviewers to 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 8.1 List of Permits and Approvals\*

UNIT OF GOVERNMENT	TYPE OF APPLICATION	STATUS
<b>Federal Government</b>		
FAA	Determination of Helipad Routes	Future
Army Corps of Engineers	Section 404 Permit	Future
	Letter of No Wetland Jurisdiction	Future
<b>State</b>		
MPCA	NPDES/SDS General Permit	Future
	Sanitary Sewer Extensions and/or Changes Permit	Future
	Voluntary Investigation Clean-Up Program (VIC)	Future
	Petroleum Brownfields Program	Future
	Section 401 Water Quality Certificate or Waiver	Future
MN Department of Health	Water Main Extensions and/or Changes Permit	Future
	Sanitary Sewer Extension Permit Approval	Future
	Well Location and Construction Approval	Future
MN Environmental Quality Board	Environmental Review	Pending
MN Department of Natural Resources	Public Waters Work Permit	Future
	General Permit 97-005 for Temporary Water Appropriations (need if more than 10,000 gpd of water is appropriated)	Future
	Storm Sewer Discharge Permit	Future
MN Department of Transportation	Drainage Permit	Future
	Use of or work within MnDOT right-of-way	Future
<b>Regional</b>		
Rice Creek Watershed District	Erosion and Sediment Control Permit	Future
	Stormwater Management Plan Approval	Future
	Wetland Delineation Boundary Confirmation	Future
	Certificate of Wetland Exemption	Future
	Drainage Authority Review and Approval	Future
Metropolitan Council	Sanitary Sewer Service Connection Approval	Future
Ramsey County	Final Plat Approval	Future
	County Road Access Permits	Future
<b>Local</b>		
City of Roseville	AUAR Update	Completed
	Rezoning	Future

UNIT OF GOVERNMENT	TYPE OF APPLICATION	STATUS
City of Roseville	Stormwater Management Plan Approval	Future
	Erosion Control Permit	Future
	Traffic Impact Analysis	Future
	Preliminary & Final Plat	Pending
	Grading Permit	Future
	Building Permits	Future

\* All required permits and approvals will be obtained. Any necessary permits or approvals that are not listed in the table above were unintentionally omitted, and some listed may not be necessary.

### **Public Financial Assistance**

For the last 20 years, the City of Roseville has and continues to support the redevelopment of the Twin Lakes AUAR area through the use of governmental financial assistance. The City has relied on tax incremental financing and federal, state, and regional grants and loans to spur reinvestment and development of infrastructure improvements in the area.

### **Tax Increment Financing**

Most of the parcels in AUAR Subarea I that have not already undergone redevelopment are within Redevelopment Tax Increment Financing (TIF) District 17, which was certified in 2005. The City has also created a Hazardous Substance Subdistrict within District 17 to generate additional funds to assist with cleanup of environmentally contaminated properties. Both the Redevelopment TIF District and Hazardous Substance Subdistrict are expected to be in place until 2031. Currently Subareas II and III are not within a TIF District; however, in the future, the City may consider creating a district to address redevelopment needs in those areas.

Prior to the implementation of TIF District 17, the City created TIF District 11. As part of that now decertified district, the City committed over \$10 million of tax increment funds to facilitate the cleanup of contaminated sites and the development of new buildings within the area.

Approximately \$3.3 million was used for contamination cleanup while the remaining \$6.7 million was used for redevelopment incentives, such as land acquisition assistance, building demolition, soil correction, and other site improvements as allowable under tax increment financing statutes.

### **Grants and Loans**

The City has aggressively sought federal, state, and regional grants and loans to assist with environmental cleanup and redevelopment in the AUAR area; however many of the grants and loans were returned due to a lack of progress implementing redevelopment plans for the area. Table 8.2 includes the grants that were received and used to date. The City will continue to look to outside funding sources to help provide financial resources to future projects in the AUAR area.

**Table 8.2: Federal Grants**

Grants and Loans	Agency	Date Received	Amount
Brownfields Assessment Demonstration Pilot Grant	U.S. EPA	Jun. 1999	\$200,000
Brownfields Assessment Demonstration Supplemental Grant	U.S. EPA	Apr. 2001	\$150,000
<b>TOTAL Funding</b>			<b>\$350,000</b>

9. **Land Use.** Describe the 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.

*AUAR Guidelines: No changes from the EAW form*

### **Compatibility with Existing Land Use**

The proposed development scenarios are not in conflict with the City of Roseville's redevelopment and reinvestment planning for the area and represents an effort to revitalize an underutilized industrial area and improve the access, circulation, and aesthetic quality of development within the district. Any proposed development must also consider the natural resources of the area as part of the plan by preserving their place as an attractive quality and focal point of the overall design of the Business Park.

The current uses within the Twin Lakes Business Park focus on heavy and light industrial uses that require significant outdoor storage areas. Specific uses include truck terminals, auto repair, manufacturing, business and retail. There is a small amount (approximately eight acres) of single-family attached residential uses currently within the redevelopment area (Refer to Figures 6.1 and).

A total of 328,500 sq. ft. of redevelopment occurred in the AUAR area prior to 2001 and includes the construction of a 48,000 sq. ft. office-flex building, a 74,500 sq. ft. office-flex building, a 66,000 sq. ft. medical office building, a 35,000 sq. ft. office-flex building and a 105,000 sq. ft. office-flex building.

Twin Lakes Redevelopment Area is framed on the north by its namesake lakes and parks (Langton Lake Park and Oasis Park) and single-family residential neighborhoods; on the east by Snelling Avenue and associated commercial development; on the south by County Road C, a railroad, commercial/industrial development and single family residential neighborhoods; and on the west by open space, wetlands, the Centre Pointe development area and I-35W. As such, there is a wide representation of land uses adjacent to the study area (Refer to Figure 6.1).

Neighborhoods south of County Road C and along Centennial Drive/Wheeler Street are the closest residential properties to the proposed redevelopment sites. There is no proposed redevelopment directly adjacent to these neighborhoods. Neighborhoods north and west of the AUAR area are largely buffered from the AUAR area by Langton Lake Park. The development also includes a recreational trail component, which will enhance the City's existing trail system from Twin Lakes Parkway to Langton and Oasis Lakes.

The 2001 Twin Lakes Business Park Master Plan (pgs 2-8) contains goals, policies, and strategies to mitigate potential land use compatibility issues. The broad planning principles include:

- 1) Create a buffer to protect and enhance the public enjoyment of Langton Lake
- 2) Protect the residential neighborhoods with less intrusive land uses
- 3) Create a livable environment with a mix of uses

- 4) Create compatibility between uses and building designs
- 5) Minimize the impact of commercial traffic onto residential streets; reduce congestion at main intersections
- 6) Clean up soil and groundwater pollution
- 7) Provide a range of quality jobs
- 8) Diversify the tax base
- 9) Provide a flexible land use plan
- 10) Located use in areas where they can best take advantage of necessary market forces

Future redevelopment projects will be subject to the 2001 Master Plan. The City will continue to implement its existing ordinances through its development review process to minimize land use conflicts and address site planning issues.

Refer to AUAR Items 19 and 20 for discussion of potential environmental hazards.

**10. Cover Types. Estimate the acreage of the site with each of the following cover types before and after development**

	Before	After
Types 1-8 wetlands		
Wooded/forest		
Brush/Grassland	Not Required for an	
Cropland	AUAR	
Lawn/landscaping		
Impervious Surface		
Other (describe)		
Total		

If Before and After totals are not equal, explain why:

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

- 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 water status and shoreland management classification*
  - *woodlands - identify native and old field*
  - *grassland - identify native and old field*
  - *cropland*
  - *current development*
- b. *An Overlay Map showing anticipated development in relation to the cover types; this 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.*

The City of Roseville conducted a City-wide natural resource inventory (NRI) in 2002. The Existing Landcover Map (Figure 10.1) depicts the location and extent of existing cover types within the AUAR area. A discussion of these cover types and the associated habitat they provide is found in AUAR Item 11.

Figure 10.2 depicts the potential land cover conversion for native cover types under a “worst case” analysis. Under a worst case scenario, all of the native cover types located outside of Langton Lake Park would be converted. This figure also shows non-native/altered cover types that could be restored as part of a future redevelopment project. A discussion of mitigation strategies is found in AUAR Item 11.

It is noted that City-owned parks and open space areas will not be impacted, except for the construction of a small portion of the officially mapped Twin Lakes Parkway (see Figure 10.2 for location of the “conversion” area in the southeastern portion of Langton Lake Park and the adjacent stormwater ponds). Twin Lakes Parkway impacts were reviewed in the 1997 EAW.

## 11. Fish, Wildlife, and Ecologically Sensitive Resources

- a. Identify fish and wildlife resources and habitats on or near the site and describe how they would be affected by the project. Describe any measures to be taken to minimize or avoid impacts.

*AUAR Guidelines: The description of wildlife and fish resources should be related to the habitat types depicted on the cover type maps (item 10). Any differences in impacts between development scenarios should be highlighted in the discussion.*

### **Fishery Resources**

The AUAR area encompasses portions of the Langton Lake watershed. Langton Lake is a shallow lake that supports a fisheries population. The proposed redevelopment will not adversely impact the fishery within this lake. Because this area is considered as a whole rather than a series of smaller projects, it provides the opportunity to improve water quality in Langton Lake by meeting or exceeding water quality and quantity control requirements of governing agencies. This approach will improve the quality and appropriately manage the quantity of water reaching Langton Lake. The water quality study is discussed in more detail in AUAR Item 17 – Water Quality: Surface Water Runoff.

### **Wildlife Resources**

The diversity and population of wildlife species in an area is directly related to the composition, quality, size, and connectivity of the natural communities including woodlands, grasslands, and wetlands. The study area is in a part of Roseville that has been fully developed for more than 30 years.

**Impervious Surfaces (219 acres - 80%).** The majority of the AUAR area is comprised of buildings, parking areas, and other mixes of impervious surfaces and provides little value to wildlife. Throughout the AUAR area, redevelopment will decrease the impervious/parking lot areas. Areas converted from impervious surface to lawn/landscaped areas will nominally increase wildlife value by creating more areas of perennial vegetation.

**Non-Native/Altered (28 acres - 10%).** The nonnative plant dominated areas within the AUAR area generally support habitat for urban-adapted wildlife such as passerine birds, crows, gray squirrels, rabbits, and raccoons. Conversion of portions of the low quality non-native/altered habitat areas found in Subareas I and III are anticipated to cause wildlife to disperse to nearby habitat. Because these wildlife species have the ability to readily adapt to changing land cover conditions, it is anticipated that they will move to and compete for surrounding habitats.

An additional wildlife habitat area is found in Subarea I, extending from Cleveland Avenue on the west, to the northwest, eventually reaching Langton Lake Park. This habitat consists of an approximately 50 to 100-foot wide strip dominated by nonnative grassland and scattered trees. Although the habitat is generally low quality in this area, it does have the potential to serve as a corridor between Langton Lake and the wetlands in the southwest portion of the AUAR area, associated with MN/DOT right-of-way.

**Native Uplands (9 acres - 3%).** Forest areas comprise the vast majority of native upland vegetations within the AUAR area and are found within Subareas I and III (Figures 5.3 and 10.1). The quality of these native cover vary and have the potential to support a variety of wildlife species including deer, squirrel, raccoon, beaver, cottontail rabbit and a variety of passerine birds by providing seasonal food and shelter.

The low quality oak forest area that is located in the northernmost portion of Subarea III (Figure 5.3) has a moderate wildlife value. The northern portion of this forest (located north of Langton Lake Park and single family homes along Cleveland Avenue) is anticipated for development, with the resulting loss of a segment of low quality oak forest and altered/nonnative deciduous forest, lowering the wildlife value for the northwest corner of the AUAR area. The Senior Co-op project is proposing to maintain some of his low quality oak forest area.

There are four oak forest segments that occur in the AUAR area, on the west side of Langton Lake Park. These are moderate quality oak forest areas with the highest wildlife value of the terrestrial wildlife habitats within and immediately adjacent to the AUAR area. Three oak forest areas occur in Subarea I, while one occurs in Subarea III. These four oak forest areas are anticipated for conversion to more developed land cover under a “worst case” scenario (see Figure 10.2).

The impact to existing forest cover types shall be mitigated through future dedication of open space within these oak forest areas, increasing the overall buffer and wildlife habitat value for Langton Lake Park.

In light of these theoretical impacts under a “worst case” scenario, mitigative restoration efforts should be made to improve the quality of remaining woodland areas within and immediately adjacent to the AUAR area. Restoring the remaining woodland and maintaining connectivity between woodland areas, particularly those surrounding Langton Lake will help to minimize impacts to wildlife. Restoration efforts should include cutting and treating of nonnative species, such as European buckthorn and Siberian elm, planting native species, and conducting management activities.

Mitigation for lost wildlife habitat within the AUAR area could include restoration of important oak forest areas within Langton Lake Park through implementation of the 2002 Roseville Parks Natural Resource Management Plan. Activities outlined in the management plan include cutting and treating European buckthorn and other invasive, nonnative vegetation, planting of native herbaceous species, and maintenance activities, such as prescribed burning. Such a restoration effort would increase the overall wildlife value for the AUAR area and its immediate surroundings.

**Aquatic Resources (20 acres - 7%).** The wetland/open water areas located throughout the AUAR area are known to be used by wildlife species adapted to human activity and/or human-modified landscapes, including species of waterfowl, such as mallard ducks and Canada geese, and shorebirds, such as great blue heron and common egret. Some of the smaller wetlands may also be utilized on a seasonal basis by species, such as American toad and migrating groups of warblers. The potential impact to wetlands is further addressed in AUAR Item 12 – Physical Impacts to Water Resources.

One non-jurisdictional wetland used as a stormwater treatment feature is anticipated to be partially impacted by construction of Twin Lakes Parkway through Subarea I (Figure 10.2). This area currently provides modest habitat value for common species of wildlife in the area, including mallard ducks and common shorebirds, such as great blue herons.

Likewise, the open waterway known as Ramsey County Ditch #4 in Subarea II may be impacted during the redevelopment process. Should these water resource features be impacted, similar water resource features/habitats should be constructed and/or restored within or near the AUAR area by restoring existing habitats or creating of new natural features.

**Mitigation.** Measures that can be taken to minimize impacts to wildlife in these areas include leaving corridors of existing habitats that connect adjacent higher quality habitat areas, including oak forest areas and reducing the amount of non-native vegetation. This will provide opportunities for existing species of wildlife to recolonize the area.

During the redevelopment process, native habitats should be created within the AUAR area that enable connectivity between habitats, and facilitating movement of wildlife between them. For instance, a natural or semi-natural area corridor can be created between the wetlands near Interstate 35-W and Langton Lake Park in Subarea I. The best opportunity to restore wildlife habitat corridor in the AUAR area occurs along the current alignment of Ramsey County Ditch #4 in Subarea II. This narrow ditch could be restored to a more natural cross-section, similar to the shallow gradient swale with interconnected shallow wetlands that likely existed prior to large-scale development of the area. An accompanying, unmanicured buffer of native vegetation could also be created along this restored waterway.

Other mitigative/restoration opportunities include using native plants as the major component of landscaped settings, including native trees, shrubs, grasses, and flowers. Although not a direct replacement for wildlife habitat that may be lost during the redevelopment process, this approach can mimic some aspects of natural habitats, provide important food and shelter, and maintain greater connectivity for wildlife between otherwise isolated native habitat patches.

b. Are any state-listed (endangered, threatened or special concern) species, rare plant communities or other sensitive ecological resources such as native prairie habitat, colonial waterbird nesting colonies or regionally rare plant communities on or near the site?

Yes  No 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: ERDB 20010827-004

***AUAR Guidelines:** 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 on-site habitat survey for rare species in the appropriate portions of the AUAR area is required. Areas of on-site surveys should be depicted on a map, as should any protection zones established as well.*

A Natural Heritage Database search request was submitted to the Minnesota Department of Natural Resources. According to a letter received from the Minnesota DNR Natural Heritage and Non-Game Research Program dated November 1, 2006 (Refer to Appendix C), MN DNR determined that there are no records for State-listed species, regionally rare plant communities, or other similar unique features within or immediately adjacent to the AUAR area. Within their study area, but outside of the actual AUAR area, the DNR review did identify one known occurrence of a rare species in the area searched, being a species of jumping spider. The species was identified in a marshy area at County Road B and Fairview Avenue in Roseville in 1967. Based on the nature and location of the Twin Lakes AUAR area, the DNR letter states that it was believed that the redevelopment of the Twin Lakes AUAR area would not affect the rare feature.

12. Physical Impacts on Water Resources. Will the project involve the physical or hydrologic alteration (dredging, filling, stream diversion, outfall structure, diking, impoundment) of any surface water such as a lake, pond, wetland, stream, drainage ditch? Yes No  
If yes, identify water resource affected 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 Guidelines:** 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 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 provision of the mitigation plan.*

There are a four large water resources within or adjacent to the AUAR area: Langton Lake (DNR PWI #49P) located near the northern portion of the AUAR area adjacent to Subarea I, Oasis Pond (DNR PWI #206W) adjacent to the northeast corner of the AUAR area adjacent to Subarea II, Wilson Pond (DNR PWI #203W) north of County Road C2 and east of Cleveland Avenue in Subarea III, and an unnamed pond (DNR PWI #50W) between Cleveland Avenue and I-35W in Subarea I, which are all identified on the DNR Public Waters Inventory Map for Ramsey County. Work below the Ordinary High Water (OHW) of Public Waters requires permits from the DNR. No direct impacts to any DNR Public Waters are anticipated. According to the DNR's comments on the 2001 AUAR, the DNR recommends that any applicable future work be done under the original DNR permit for DNR PWI #50W (DNR Permit #97-6067) and DNR PWI #49P (DNR Permit #94-6151).

There are several wetlands located within the AUAR area. One wetland is located in Subarea III, just west of the parking lot in Langton Lake Park. This is a degraded Type 2 wetland, dominated by invasive vegetation, mainly the nonnative species reed canary grass. The wetland does provide

some stormwater storage for the parking lot to the south and has the potential for providing wildlife habitat within the park. This wetland is mostly located within Langton Lake Park. Impacts to this wetland would have to be replaced per the Wetland Conservation Act (WCA) at a 2:1 ratio. Rice Creek Watershed District (RCWD) is the Local Governmental Unit responsible for administering the WCA. Two other wetlands, adjacent to the southeast corner of Langton Lake within Subarea I, are proposed to be impacted for the construction of Twin Lakes Parkway and a storm pond.

Two other water features exist within the AUAR area. Ramsey County Ditch #4 starts east of Fairview Avenue near County Road C in Subarea II and flows north through the AUAR area to Oasis Pond. This ditch is highly urbanized with eroded and steep sides. One option for the ditch would be to restore it to a more natural cross-section, similar to the one that occurred prior to development of the area. This would serve the added benefit of providing a wildlife corridor. Alterations to this ditch would be subject to state ditch law as administered by RCWD. In Subarea I, Ramsey County Ditch #5 starts at Wilson Pond and flows north along Cleveland Avenue and out of the AUAR area. Most of the ditch is out of the AUAR area, therefore, no or minimal disturbance is anticipated.

13. Water Use. Will the project involve installation or abandonment of any water wells, connection to or changes in any public water supply or appropriation of any ground or surface water (including dewatering)?  Yes  No

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 Guidelines: If the area requires new water supply wells, specific information about the 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.*

City records indicate that three parcels within the AUAR area have had wells installed in the past. Further investigation will be required at the time of redevelopment to determine the status of these wells. Any open wells will require abandonment and sealing at the time of redevelopment in accordance with applicable rules and regulations. The following is a brief summary of the City's well records for the three parcels:

Parcel #13: 1947 County Road C, 6-inch diameter well, 400 feet deep.

Parcel #17: 2785 Fairview Avenue, 6-inch diameter well, 530 feet deep.

Parcel #19: 2711 Fairview Avenue, 4-inch diameter well, 139 feet deep.

The development will be served by the existing municipal water system and will not involve the installation of any wells. Roseville is a wholesale consumer of treated water from the City of St. Paul, and the City does not own any water treatment facilities. The City pumps directly from St. Paul's 30 MG Dale Street reservoir. The storage capacity within Roseville's distribution system is a 1.5 million gallon elevated storage tower on Fairview Avenue near Rosedale Shopping Center. Roseville's contract with the St. Paul Water Utility allows for on-demand pumping from its reservoir up to 28 million gallons per day (MGD). According to the City's Water Utility,

Water Conservation, and Emergency Response Plan, it is the City's understanding that the City of St. Paul has significant unused capacity within its source water and treatment facilities and would have the capacity to adequately supply water to Roseville well into the foreseeable future.

Water main facilities may be constructed along the easement at the Mount Ridge right of way and Twin Lakes Parkway to serve interior parcels in the development and provide additional loops within the City water main grid.

The quantity of water used is expected to be proportional to the amount of sanitary wastewater produced. Table 13.1 provides information on the estimated average daily water demand for each scenario. Water demand estimates for the scenarios were based on the assumption that consumption is approximately 110% of wastewater generation (see Item 18, Tables 18.1 – 18.4). Water demand will differ for each scenario according to development density and land use type. The maximum "worst case" daily water demand for Scenario A is 0.694 MGD, Scenario B is 0.618 MGD, and Scenario C is 0.460 MGD. No adverse impacts to the water supply system are anticipated.

**Table 13.1 Estimated Daily Water Demand**

Scenario	Subarea I (gpd)	Subarea II (gpd)	Subarea III (gpd)	Total (gpd)	Total Mgd
Scenario A	360,747.65	204,166.65	128,591.37	693,505.66	0.694
Scenario B	317,519.12	176,193.42	124,578.67	618,291.21	0.618
Scenario C	180,588.83	167,151.42	112,648.25	460,388.50	0.460

14. Water-related Land Use Management Districts. Does any part of the project involve a shoreland zoning district, a delineated 100-year flood plain, or a state or federally designated wild or scenic river land use district? If yes, identify the district and discuss project compatibility with district land use restrictions.

Yes    No

*AUAR Guidelines: 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 Roseville has a Shoreland, Wetland, and Stormwater Management Ordinance (adopted in 1974 and amended in 1994) that applies to City water bodies specifically listed in the ordinance and shown on the Water Management Overlay Districts map (Figure 14.1). Langton Lake, Minnesota DNR Protected Water #49P, is classified as a "general development" lake. It is protected by the City's shoreland ordinance that includes lands within 300 feet of the ordinary high water mark of Langton Lake. Future redevelopment projects will comply with requirements of the shoreland management ordinance, including, but not limited to, regulations regarding height, erosion control, impervious surface, setbacks, and vegetation alterations.

The DNR's comments on the 2001 AUAR suggested processing future redevelopment projects that exceed the development density/intensities allowed within the Shoreland District through the PUD provisions of the Shoreland Ordinance in order to transfer the density (along with the development rights) of undeveloped City property within the Shoreland Districts to the proposed

development area that is within both the Shoreland District and the AUAR area (e.g., within Subarea I). This approach will be used to review future projects within the Shoreland overlay district.

The Wetland Protection District includes all upland within 100 feet of the wetland boundary of wetlands and those public waters not specifically listed as shoreland.

The Storm Water District includes all land either within 100 feet of the normal water level of constructed stormwater ponds or wetlands managed for stormwater quantity and quality management purposes, or all land below the 100-year flood elevation of such ponds or wetlands, whichever is most restrictive.

15. Water Surface Use. Will the project change the number or type of watercraft on any water body?  Yes  No  
If yes, indicate the current and projected watercraft usage and discuss any potential overcrowding or conflicts with other uses.

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

16. Erosion and sedimentation. 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 Guidelines: The number of acres to be graded and number of cubic yards of soil 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.*

The native soils in the AUAR area are moderately to well drained loams, sandy loams and sand/gravel. Native soils are apparent only in small isolated pockets within the AUAR area. The majority of the AUAR area is classified as "Urban Land" which includes 90% coverage by buildings and pavement. Native soils identified as "Urban Land" have been greatly altered through excavation and filling undertaken during the original development of the area. Soil borings will be conducted prior to the design of buildings, roadway, utility, and other site improvements in order to more accurately classify the existing conditions.

The Twin Lakes AUAR area includes generally flat to mildly sloped developed sites. It is anticipated that grading required to redevelop the area will be minor and minimal changes to existing surface slopes will occur. Each future project will need to submit erosion and sediment control plans to the City and Rice Creek Watershed District for review and approval.

Sedimentation is a concern that is related primarily to the construction process. The use of best management practices (BMPs) for appropriate erosion control and turf establishment can greatly

reduce the amount of construction-related sedimentation into the receiving waters. These measures will be specified in the contract documents and on the design plans, as required. BMPs typically consist of silt fences, hay bales, wood fiber blankets, riprap, sodding, seeding and mulching. UngROUTED riprap with filter blankets will be placed at storm sewer outlets. All disturbed areas will also be seeded with native vegetation or sodded. Based on City standard site grading requirements, the maximum finished slope ratio is proposed to be 3 (horizontal): 1(vertical).

Erosion and sedimentation control measures will be implemented prior to grading and maintained in a functional condition during construction. The control measures will remain in place until the project area has been resurfaced and revegetated. Installing and maintaining temporary erosion protection and sedimentation control will be the responsibility of contractors working in the project area in strict conformance with approved erosion control plans.

**17. Water Quality - Surface Water Runoff.**

- a. Compare the quantity and quality of site runoff before and after the project. Describe permanent controls to manage or treat runoff. Describe any stormwater pollution prevention plans.
- b. Identify routes and receiving water bodies for runoff from the site; include major downstream water bodies as well as the immediate receiving waters. Estimate impact runoff on the quality of receiving waters.

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

- *it is expected that an AUAR will have a detailed analysis of stormwater issues;*
- *a map of the proposed stormwater management system and of the water bodies that will receive stormwater should be provided;*
- *the description of the stormwater system should identify on-site and regional detention ponding and also indicate whether the various ponds will be new water bodies or converted existing ponds or wetlands. Where on-site 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. Outside of the metro area, lakes needing a nutrient budget analysis must be determined by consultation with the MPCA and DNR staffs;*
  - *trout streams: if stormwater 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.*

### **Drainage Patterns**

The stormwater drainage subwatersheds within the AUAR area are shown in Figure 17.1. Each subwatershed is described briefly below.

**Northwest.** The northwest subwatershed is approximately 54 acres in area. The existing impervious coverage in this subwatershed is approximately 58%, which reflects the fact that the northwestern portion of this parcel is still undeveloped. Runoff from the developed portions of the subwatershed is discharged untreated to a wetland (designated as Pond 35W-5 in the City's 2003 Stormwater Management Plan (SWMP)) in the southwestern corner of the subwatershed, which in turn discharges under Cleveland Avenue at the western boundary of the AUAR area.

**Southwest.** The southwest subwatershed is approximately 30 acres. Existing impervious coverage in this subwatershed is about 70%. Stormwater drainage from the developed area of this subwatershed currently discharges untreated to a wetland west of the proposed redevelopment area between Cleveland Avenue and Interstate 35W.

**Langton Direct.** The Langton Direct subwatershed is one of two subwatersheds within the AUAR area that discharge to Langton Lake. 32 acres of this subwatershed discharge untreated stormwater directly to the lake. These areas are located along the western and southwestern edge of the lake. Existing impervious coverage in the subwatershed is about 77%.

**Langton Poned.** This 44-acre subwatershed includes the area southeast of Langton Lake and generates runoff that is treated in an existing detention basin prior to discharge to Langton Lake. The detention basin was constructed to help protect water quality in Langton Lake. The current impervious area of this subwatershed is about 80%.

**East.** The remainder of the AUAR area, approximately 74 acres, generates runoff that discharges untreated into Oasis Pond (Pond OP-2 in the May 2003 City's Stormwater Management Plan). Oasis Pond in turn discharges to City storm sewer that eventually carries this and other runoff to Lake Johanna, approximately one mile northeast of the AUAR area. Existing impervious area of this subwatershed is estimated at 80%.

### **Water Quality Analysis Approach**

An analysis was conducted using the urban water quality model P-8 to estimate the existing and post-redevelopment average annual loads of total phosphorus (TP) and total suspended solids (TSS), as well as runoff volumes for the subwatersheds within the AUAR area. Three different scenarios were modeled for each subwatershed. They are as follows:

- a. **Existing conditions.** The modeling reflects subwatershed areas and impervious conditions as outlined above.
- b. **Redeveloped conditions without stormwater treatment.** Modeling for this scenario assumes an impervious area of 80% for all subwatersheds, which is a "worst case" upper limit of likely impervious coverage for the redeveloped condition. In addition, it calculates the load assuming no additional stormwater mitigation measures are applied. This scenario is for comparison purposes only and represents a hypothetical situation designed to illustrate the impact of stormwater treatment on post-redevelopment pollutant loads, as presented in "c" below.
- c. **Redeveloped conditions with stormwater treatment.** This scenario is the same as "b" except that the loads reflect the effect of applying the minimum stormwater treatment standard proposed by the City of Roseville. Because the entire AUAR area is being

considered as a whole rather than a series of smaller projects, it significantly exceeds the area threshold that the City has adopted in its SWMP to require a high level of stormwater treatment. The minimum treatment standard that the City would apply is a 60% reduction in TP and a 90% reduction in TSS from the future redevelopment condition. This performance standard could be met through construction of detention basins to meet NURP criteria. Compliance with these criteria requires that detention basins be constructed with a dead storage of at least the runoff volume from a 2.5-inch rainfall over the tributary drainage area. Other accepted pond design standards, as outlined in the City's SWMP, would be applied as well to assure proper functioning of the detention basins.

It should be noted that the City and/or Rice Creek Watershed District may require other treatment approaches to replace or complement detention basins, such as infiltration. Specifically, RCWD will require infiltration of the 0.34-inch rainfall event. If it is demonstrated that the soils are not suitable for infiltration (i.e., due to contamination), stormwater management for the 0.34-inch event will still need to be proved in the form of filtration or biofiltration features. Application of other BMPs will likely depend on site-specific factors, such as soil conditions, that are not known at the time of preparation of this AUAR. However, the performance standard outlined above for TP and TSS reductions will be met, regardless of the combination of stormwater treatment approaches used. If infiltration BMPs are applied, decreases in stormwater runoff volume for the post-redevelopment condition can be expected, with the magnitude of these decreases dependent on the sizing of the BMP. Those impacts are not accounted for in this analysis.

#### **Water Quality Analysis Results**

Estimated average annual pollutant loads and runoff volumes are calculated at the points represented by the arrows on Figure 17.1. Modeling results for the three scenarios described above for each subwatershed are presented in Table 17.1. The loading analysis results for each subwatershed are summarized below.

**Northwest.** The modeling analysis indicates that with detention basins to treat post-redevelopment runoff, TP and TSS loadings to Pond 35W-5 will decrease by 47% and 86% respectively, from the existing condition. In the absence of infiltration practices, average annual runoff volumes are expected to increase by over 35%, due mainly to the conversion of the open undeveloped area in the northeast portion of this subwatershed (now 0% impervious) to housing and office uses with a maximum assumed impervious coverage of 80%.

**Southwest.** This drainage has somewhat less impervious coverage in the existing condition than the maximum impervious coverage it could have in the post-redevelopment condition (70% vs. 80%). In addition, there is currently no treatment of stormwater discharged from this subwatershed. TP and TSS loads exported to the wetland complex west of Cleveland Avenue from the Southwest subwatershed are expected to decrease by 55% and 88%, respectively, under the post-redevelopment condition because of the impact of the post-redevelopment stormwater treatment. Average annual runoff volume could increase slightly (about 14%) because of a possible moderate increase in impervious coverage.

**Langton Direct.** This subwatershed has slightly less impervious coverage under existing conditions compared to the potential maximum impervious coverage under future redevelopment (77% vs. 80%). With the stormwater treatment described above, TP and TSS loads to Langton Lake from this subwatershed are expected to decrease by about 60% and 90%, respectively, from the existing condition. Average annual runoff volume is expected to remain similar to what it is under existing conditions.

**Table 17.1 Stormwater Quality Modeling Results**

Sub-watershed	Area (acre)		Existing Conditions				Ultimate Conditions w/o Treatment				Ultimate Conditions w/ Treatment			
	Existing	Proposed	TSS Load (lbs/yr)	TP Load (lbs/yr)	Runoff Vol. (AF/yr)	TSS Load (lbs/yr)	TP Load (lbs/yr)	Runoff Vol. (AF/yr)	TSS Load (lbs/yr)	TP Load (lbs/yr)	Runoff Vol. (AF/yr)	TSS Load (lbs/yr)	TP Load (lbs/yr)	Runoff Vol. (AF/yr)
Northwest	54	54	15390	53	54	21210	69	74	2120	28	74	2120	28	74
Southwest	30	30	12380	40	43	14140	46	49	1410	18	49	1410	18	49
Langton Direct	33	33	14650	48	51	15220	49	53	1520	20	53	1520	20	53
Langton Ponded	44	44	2890	30	72	2890	30	72	2070	27	72	2070	27	72
East	74	74	36170	117	126	36170	117	126	3620	47	126	3620	47	126
<b>Total</b>	<b>235</b>	<b>235</b>	<b>81480</b>	<b>288</b>	<b>346</b>	<b>89630</b>	<b>312</b>	<b>374</b>	<b>10740</b>	<b>140</b>	<b>374</b>	<b>10740</b>	<b>140</b>	<b>374</b>

**Langton Poned.** Impervious coverage in this subwatershed is the same under existing conditions as the potential maximum under redeveloped condition. The existing detention basin that now treats runoff from this subwatershed prior to discharge to Langton Lake is slightly smaller than the pond that would be required to meet NURP requirements under future re-development conditions. It is assumed that the existing detention basin would be expanded or replaced as part of redevelopment activities to meet this standard. Average annual runoff volume is expected to remain the same under future conditions as it is under existing conditions. Post-redevelopment TP and TSS loads from this subwatershed are expected to decrease by 10% and 28%, respectively, from the existing condition as a result of expansion or replacement of the existing detention basin.

**East.** Again, impervious coverage in this subwatershed under the post-redevelopment condition is not anticipated to change significantly compared to the existing condition. Thus, runoff volume exported from the subwatershed to Oasis Pond is not expected to increase. Treatment of stormwater to NURP standards is expected to decrease TP and TSS loadings from this subwatershed to Oasis Pond by up to 60% and 90%, respectively, compared to the existing condition.

#### **Langton Lake**

One of the primary stormwater-related issues is the protection of Langton Lake (MnDNR ID No. 62-0049). Langton Lake has a total watershed area of approximately 212 acres, about 75 acres of which are included in the AUAR area. As presented above, the stormwater treatment that will be required as part of future redevelopment projects is expected to decrease phosphorus loading to Langton Lake from within the AUAR area by almost 40%. Water quality data and anecdotal evidence for Langton Lake suggests that water quality in the lake has improved since the 1970's and 1980's (Roseville Parks Natural Resources Management Plan, 2002). Although no lake response modeling was required for Langton Lake as part of this AUAR analysis, it is likely that a 40% reduction in phosphorus loading from the AUAR area will at least preserve the existing in-lake water quality and may improve existing water quality.

The Langton Lake is neither on Metropolitan Council's "priority lakes" list nor the State's impaired waters ("303d") list. Further, based on recent water quality data collected through the Citizen Assisted Monitoring Program coordinated by the Metropolitan Council, it appears that current water quality is likely high enough that it would not be listed for impairment due to nutrient enrichment.

**18. Water Quality - Wastewater**

- 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 on-site 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 Guidelines:** *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;*
- *wastewater flows should be estimated by land use subareas of the AUAR area; the basis of flow estimates should be explained;*
- *the major sewer system features should be shown on a map and the expected flows should be identified;*
- *if not explained under item 6, the expected staging of the sewer system construction should be described;*
- *the relationship of the sewer system extension to the RGU's comprehensive sewer plan and (for metro area AUARs) to Metropolitan Council regional systems plans, including MUSA expansions, should be discussed. For non-metro area AUARs, the AUAR must discuss the capacity of the RGU's wastewater treatment system compared to the flows from the AUAR area; any necessary improvements should be described;*
- *if on-site systems will serve part of the AUAR the guidance in EAW Guidelines (pages 16-17) should be followed.*

Sewage waste produced by Twin Lakes redevelopment will be discharged into the Roseville sanitary sewer collection system. The redevelopment area includes an extensive existing sanitary sewer network with trunk mains along Cleveland Avenue, County Road C and Fairview Avenue and several shorter lateral sewers throughout the interior and perimeter of the site.

All of the sanitary sewer facilities flow into an existing Metropolitan Council Environmental Services (MCES) interceptor sewer, which bisects the AUAR area from west to east along the Iona Lane right-of-way and dedicated easements. The interceptor sewer ultimately discharges at the Metro Sewage Treatment Plant in St. Paul. The interceptor sewer increases in size from 36 inches in diameter near Cleveland Avenue to 42 inches in diameter near Fairview Avenue. The

proposed improvements include the extension of an 8-inch diameter sanitary sewer along the Mount Ridge easement from Iona Lane north to County Road C-2. No capacity improvements will be required at either the Metro Plant or with interceptor sewer facilities as a result of the proposed redevelopment of the AUAR area. No staging is necessary for the sewer extension.

Proposed uses in Twin Lakes include office, office-laboratory, office-showroom-warehousing, biotechnical, biomedical, and high-tech software and hardware production uses with support services, such as limited retail, health, fitness, lodging and multifamily housing. Generally these types of uses do not produce, handle or dispose of significant amounts of hazardous materials. It is possible that some occupants may use or handle hazardous materials as a part of their business. Any occupant who utilizes hazardous materials would be required to conform to all existing environmental laws and regulations in place at the time of development.

The estimated Sanitary Sewer Flows for the 2001 Twin Lakes Business Park Master Plan are shown below in Table 18.1, based on each Subarea. The estimated sewer flows anticipate the most intensive development scenario for each redevelopment block alternative (see Appendix B for further documentation).

**Table 18.1 Scenario A "Worst Case" Predicted Wastewater Flow**

Scenario	Subarea I (gpd)	Subarea II (gpd)	Subarea III (gpd)	Total (gpd)	Total Mgal/yr
<b>Scenario A</b>	327,952.40	185,606.04	116,901.25	630,459.69	230.12

Predicted wastewater flows for Scenarios B and C are shown in Tables 18.2 and 18.3, respectively.

**Table 18.2 Scenario B - Predicted Wastewater Flow**

Use	Quantity	SAC Rate	SAC Units	Total Wastewater (gallons/day)	Total Mgal/yr
Office	1,440,154 s.f.	1:2,400 s.f.	600.1	164,418	60.01
Multifamily Residential	1,282 units	1:1 unit	1282.0	351,268	128.21
Service Mix/Retail	508,000 s.f.	1:3,000 s.f.	169.3	46,397	16.94
<b>Totals</b>			2,051.4	562,083	205.16

**Table 18.3 Scenario C - Predicted Wastewater Flow**

Use	Quantity	SAC Rate	SAC Units	Total Wastewater (gallons/day)	Total Mgal/yr
Office	1,590,000 s.f.	1:2,400 s.f.	663	181,525	66.26
Multifamily Residential	735 units	1:1 unit	735	201,390	73.51
Service Mix/Retail	390,000 s.f.	1:3,000 s.f.	130	35,620	13.00
<b>Totals</b>			1,527.5	418,535	152.77

A comparison of the predicted wastewater flows for the Scenarios by Subarea is shown in Table 18.4.

**Table 18.4 Comparison of Predicted Wastewater Flow**

Scenario	Subarea I (gpd)	Subarea II (gpd)	Subarea III (gpd)	Total (gpd)	Total Mgal/yr
<b>Scenario A</b>	327,952.40	185,606.04	116,901.25	630,459.69	230.12
<b>Scenario B</b>	288,653.75	160,175.83	113,253.33	562,082.92	205.16
<b>Scenario C</b>	164,171.67	151,955.83	102,407.50	418,535.00	152.77

The City's Sanitary Sewer Plan estimates total flows for the entire City at 1,976 Mgal/yr in 2000, 2,201 Mgal/yr in 2010, and 2,284 Mgal/year by 2020. The development of Twin Lakes as outlined in the AUAR is assumed within these total City numbers. The entire Twin Lakes area has a current estimated sewer flow of 74 Mgal/yr. At full development under a "worst case" scenario – Scenario A, Twin Lakes will have an estimated total sewer flow of 230 Mgal/yr (see Table 18.1), or an increase of 156 Mgal/yr over the existing development pattern. The City does not anticipate that full development will occur by 2010 and therefore the worst case scenario increase is not expected to occur until 2020 or beyond depending upon market forces and public financing sources for brownfield redevelopment.

## 19. Geologic Hazards & Soil Conditions.

- a. **Approximate depth (in feet) to ground water:** 4 feet minimum, 10 feet average  
**to bedrock:** 50 feet minimum, 130 feet average

Describe any of the following geologic site hazards to ground water and also identify them on the site map: sinkholes, shallow limestone formations or karst conditions. Describe measures to avoid or minimize environmental problems due to any of these hazards.

*AUAR Guidelines:* A map should be included to show groundwater hazards identified. A standard soils map for the area should be included.

At this time, there are no known hazards to groundwater within the AUAR area. . Figure 19.1 depicts the soils within the AUAR area.

- b. Describe the soils on the site, giving NRCS (SCS) classifications, if known. Discuss soil granularity and potential for groundwater contamination from wastes or chemicals spread or spilled onto the soils. Discuss any mitigation measures to prevent such contamination.

*AUAR Guidelines:* A map should be included to show groundwater hazards identified. Include any relevant information on soil contamination due to past land uses within the area, as mentioned under item 9.

The native soils in the AUAR area are moderately to well drained loams, sandy loams and sand/gravel. Native soils are apparent only in small isolated pockets within the AUAR area. The majority of the AUAR area is classified as "Urban Land" which includes 90% coverage by buildings and pavement. Native soils under the "Urban Land" classification have been greatly altered through excavation and filling accomplished during the original development of the area. Soil borings will be conducted prior to the design of buildings, roadway, utility and other site improvements in order to more accurately classify the existing conditions.

As described in more detail in AUAR Item 20, the proposed uses in Twin Lakes redevelopment generally do not produce, handle or dispose of significant amounts of hazardous materials. Any occupant who utilizes hazardous materials would be required to conform to all existing environmental laws and regulations in place at the time of development.

Since the early 1990s, there have been Environmental Site Assessments (ESA) (Phase I and Phase II) conducted in the area of previous redeveloped sites. There have also been remediation work plans developed for these redeveloped sites (Twin Lakes Corporate Center, Arthur Street Extension, Ryan Twin Lakes IV property and the former Great Dane Site). In general, most of the to the investigations have revealed issues stemming from fuel spills and leaking underground storage tanks, hazardous waste or chemical generation on the property, potential PCB-containing materials, abandoned wells, inactive septic systems and building materials containing asbestos. Remediation activities on several of these properties have been completed. (Refer to Appendix D - Annotated Bibliography Regarding Hazardous Wastes/Contaminated Sites - for more detail)

In 1994, the City was dedicated road right of way for Arthur Street, only to find the presence of significant environmental contamination, which cost over \$3.8 million to clean up. Contaminates found in this area included benzene, creosote, and construction adhesive that had begun to contaminate the ground water. Fortunately, the groundwater contamination was only found in lenses or pockets of water above the clay layer. To pay for this cleanup, which had become the City's responsibility, the community had to create a tax increment subdistrict to the already created tax increment district set up for the redevelopment of the area.

There are known locations of leaking fuel storage tanks within the AUAR area. The majority of these properties are located in the western one-third of the study area. ESA activities and remediation work programs similar to what has been conducted to date, as noted above, will continue as redevelopment proposals are received for the remainder of the properties in the Twin Lakes Development Area.

In the late 1990's, the City initiated environmental investigations within the Twin Lakes area with financial assistance from the U.S. Environmental Protection Agency. The City commenced Phase I and II ESAs along the officially mapped Twin Lakes Parkway right of way. In addition, the City undertook an Area-Wide Groundwater Evaluation. The purpose of the study was to evaluate if there is groundwater contamination and, if so, how to address it a regionally. The scope of work for this study focused on identifying potential sources of contamination; determining the hydrogeological conditions; predicting groundwater flow patterns; assessing the quality of the groundwater; identifying data gaps; and recommending the need for any additional groundwater quality data.

Work occurred in two phases: the first phase examined potential causes of groundwater contamination from within and surrounding the Twin Lakes area, while the second phase analyzed groundwater exclusively the area. During the first phase, the environmental consultant hired to complete this work analyzed 282 soil samples and examined groundwater samples from 68 monitoring wells, 23 soil borings, and 13 soils probes. Contaminates found in the soil samples were compared to MPCA's soil leaching values (SLVs), which represent an assessment of the risk posed to groundwater and associated receptors from a source of soil contamination in the unsaturated zone. Contaminants detected above the SLVs for included

petroleum, volatile organic compounds (VOCs), metals, polychlorinated biphenyls (PCBs), and polyaromatic hydrocarbons (PAHs). Contaminates identified in the groundwater data review were compared to the Minnesota Department of Health's Health Risk Limits, which represent a concentration of a contaminant that is safe to drink daily over a lifetime. Contaminates detected above HRLs included petroleum, VOCs, metals, PCBs, and PAHs. (Groundwater samples and analytical dates range from April 1988 to March 2003.) (The full Groundwater Evaluation Report is available for review at the City.)

The second phase of the Area-Wide Groundwater Evaluation took samples and analyzed groundwater conditions from monitoring wells that were placed in the Twin Lakes area. This investigation indicated that VOCs and diesel range organic (DRO) compounds are present in the glacial aquifer at Twin Lakes. The concentration of trichloroethylene (TCE) in two glacial monitoring wells exceeded the MN Department of Health's Health Risk Limit. TCE was not prevalent throughout the site, but DRO is found throughout the area, most likely due to historic petroleum releases. The environmental consultants concluded that the groundwater contamination detected in the glacial aquifer poses a minimal environmental risk based on the lack of potential groundwater receptors (e.g. wells) in the glacial aquifer. They recommended additional environmental investigation of petroleum contamination due to the presence of DRO throughout the area in the glacial aquifer. They also advised that redevelopment within the Twin Lakes area should consider the presence of TCE in the glacial aquifer and site-specific investigations should be conducted in a manner that would help to identify the potential sources, magnitude, and extent of TCE across the redevelopment area. (The entire Supplemental Groundwater Evaluation Report is available for review at the City.) Since the completion of the Areawide Groundwater Study, additional environmental investigation and planning has taken place as part of private sector redevelopment efforts. Roseville Twin Lakes LLC, the development team attempting to redevelop approximately 55 acres of this area, worked with the Minnesota Pollution Control Agency's Voluntary Investigation and Cleanup Program (VIC) and the Petroleum Brownfields Program (PBP) to characterize soil and groundwater contamination and prepare clean up plans for this area under the guidelines established by these programs.

This work found that there is widespread petroleum contamination as well as areas of hazardous substances in the soil and groundwater. Contamination found within the soil included petroleum related contamination, including DRO/GRO (diesel range organic compounds/gasoline range organic compounds), BETX (benzene, ethylbenzene, toluene and xylenes), and VOCs (volatile organic compounds) throughout much of the Twin Lakes area. In addition, non-petroleum contamination included a limited number of chlorinated VOCs.

Issues associated with groundwater, petroleum contamination (DRO, GRO and petroleum compounds) and chlorinated VOCs were detected in both the upper perched and glacial aquifer samples. Chlorinated VOC's (trichloroethene and cis-1,2-dichloroethene) were identified in glacial aquifer samples collected at two local areas within proposed redevelopment area. One of the local areas covers the northwest portion of the Indianhead parcel and the adjoining southwest portion of the PIK parcel. The other local area is the southeast portion of the American Trailer parcel and the adjoining west-central portion of the PIK parcel. Additional investigation was planned to further characterize the level and extent of contamination within these areas.

A Response Action Plan and Redevelopment Response Action Plan were approved by the VIC and PBP, respectively, in late 2005. In order to mitigate the soil conditions within their project area, the development team planned to excavate and dispose of the petroleum-

contaminated and chlorinated VOC-impacted soils at offsite landfills. Confirmation sampling was planned to ensure sufficient cleanup had taken place. Groundwater cleanup was not fully detailed in these reports. (Full copies of the plans are available at the City of Roseville and the state program offices.)

In order to more fully characterize the soil and groundwater contamination within the Roseville Twin Lakes LLC redevelopment project area, the developers conducted Phase I and II ESAs for the Xtra Lease and Old Dominion Parcels within this area in summer 2006. (These parcels area generally located north of County Road C and east of Cleveland Avenue.) The Phase I ESA indicated that subsurface soil and groundwater testing should be conducted due to the historical past use of these sites as trucking terminals. Phase II results for the Xtra Lease indicated VOC, GRO and DRO concentrations below laboratory reporting limits in soil samples and limited concentrations of two chlorinated solvent VOCs in one sample and limited concentrations of DRO in three samples within the deeper groundwater aquifers (40-60 feet bgs). The presence of limited concentrations of VOCs and DRO in deeper groundwater aquifers and the lack of identified soil contamination indicated that this is a more regional groundwater issue, not stemming from this parcel. Phase II results for the Old Dominion parcel are similar to those for the Xtra Lease parcel. Cis-1,2-Dichloroethene and trichloroethene exceed their respective HRLs in a groundwater sample in the northeast corner of Old Dominion parcel. Soil results from the same location at a depth of 20 feet bgs indicated no concentrations of VOCs, GRO, or DRO above their respective limits. (Copies of these reports are available for review at Roseville's City Hall.)

In summary, no known hazards to groundwater have been identified within the AUAR area to date. As described above, the groundwater testing did reveal several locations within Subarea I where contamination was present at the deep groundwater level. All habitable structures will use the City's water system, which it obtains from the St. Paul Regional Water Services. Nevertheless, this contamination area will be more fully investigated prior to redevelopment in accordance with local, state, and federal regulations.

Refer to Appendix D for an annotated bibliography and brief summary regarding the Business Park area's known contaminated properties and hazardous waste sites.

20. **Solid Wastes; Hazardous Wastes; Storage Tanks**
- a. Describe types, amounts and compositions of solid or hazardous wastes, including solid animal manure, sludge and ash, produced during construction and operation. Identify method and location of disposal. For projects generating municipal solid waste, indicate if there is a source separation plan; describe how the project will be modified for recycling. If hazardous waste is generated, indicate if there is a hazardous waste minimization plan and routine hazardous waste reduction assessments.

*AUAR Guidelines: For an AUAR, only the estimated total quantity of municipal solid waste generated and information about any recycling or source separation programs of the RGU need to be included.*

As stated in Item 19, proposed uses of the AUAR area include office, hospital/medical, high tech, showroom, warehouse and multiple-family uses. There would also be a supportive mix of service and commercial uses, such as day care and health club facilities, lodging and

restaurants. Generally these types of uses do not produce or handle significant amounts of hazardous materials. It is possible that some occupants may use or handle hazardous materials as a part of their business such as medical research facilities and clinics. Any occupant that utilizes hazardous materials would be required to conform to all existing environmental laws and regulations in place at the time of development.

- b. Identify any toxic or hazardous materials to be used or present at the site and identify measures to be used to prevent them from contaminating groundwater. If the use of toxic or hazardous materials will lead to a regulated waste, discharge or emission, discuss any alternatives considered to minimize or eliminate the waste, discharge or emission.

*AUAR Guidelines: No response is necessary for b.*

It is noted that, while not required, the 2001 AUAR provided a response to Item 20b and that this information is more appropriately recorded in the response to Item 19 – Geologic and Soil Conditions. The 2001 AUAR response to 20b has been moved to Item 19.

- 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.

*AUAR Guidelines: For c, potential locations of storage tanks associated with commercial uses in the AUAR should be identified (e.g., gasoline tanks or service stations).*

Service Mix uses have the potential for requiring storage tanks. Any future Service Mix uses are likely to be located along Cleveland Avenue and County Road C.

21. Traffic. Parking spaces added \_\_. Existing spaces \_\_ (if project involves expansion). Estimated total average daily traffic generated \_\_. Estimated maximum peak hour traffic generated (if known) and time of occurrence \_\_. Provide an estimate of the impact on traffic congestion on 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. For each affected road indicate the ADT and the directional distribution of traffic with and without the project. Provide an estimate of the impact on traffic congestion on the affected roads and describe any traffic improvements which will be necessary.

*AUAR Guidelines: 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 responses 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 a description and map of the existing and proposed roadway system, including state, regional, and local roads to be affected by 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;
- B 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;
- C analysis of impacts of the traffic generated by the AUAR area on the roadway system, including: comparison of peak period total flows to capacities and analysis of Levels of Service and delay times at critical points (if any);
- D 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.*

**Note to AUAR Update Reviewers: The full traffic analysis is located in Appendix E.**

*AUAR Guidelines: 21.A. a description and map of the existing and proposed roadway system, including state, regional, and local roads to be affected by 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;*

**Existing Roadway System**

The study area is served by two existing principal arterial roadways:

1. I-35W, to the west of the study area, is a six-lane interstate freeway with and an auxiliary lane in each direction from TH 36 to County Road C. Access to the study area is via County Road C and County Road D.
2. TH 36, approximately one-half mile to the south of the study area, is a four-lane freeway with access to the study area via Snelling Avenue (TH 51) and Fairview Avenue.

The study area is served by five minor arterials:

1. Cleveland Avenue (County State Aid Highway 48), a four-lane, undivided north-south arterial at the western end of the study area.
2. Snelling Avenue (Trunk Highway 51), a four-lane, divided north-south “expressway” to the east of the study area.
3. County Road C, a four-lane, east-west roadway approximately ¼ mile to the north of the study area.
4. County Road D, a two-lane, east-west roadway at the north edge of the study area.

5. Fairview Avenue (County State Aid Highway), a two-lane, north-south roadway through the study area. South of County Road C, it is a four-lane arterial with turning lanes.

Figure 2 in Appendix E depicts the primary roadway system, traffic controls, and PM peak traffic volumes.

*AUAR Guidelines: 21.B. 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;*

Traffic forecasts for the Twin Lakes AUAR area were developed for year 2030 build conditions. The Twin Lakes AUAR area is generally bounded by Snelling Avenue, Cleveland Avenue, County Road D and County Road C. The proposed land use components for the AUAR redevelopment area have been aggregated into three distinct redevelopment scenarios. The first represents the intent of the comprehensive plan and is inclusive of all major land use redevelopment options, based on a worst-case redevelopment scenario for traffic generation.

Each of the other two redevelopment alternatives was developed with a conscience effort to balance land use size and trip generation. Developing the proper balance between land use size and amount of trips generated ensures that feasible redevelopment alternatives are reviewed in relation to their potential traffic impacts. The second redevelopment scenario is focused on residential development, combined with other complimentary land uses (i.e., office and retail). The third redevelopment scenario represents a non-residential focus. See AUAR Item 6 – Development Description, AUAR Item 7 – Project Magnitude Data, and Appendix B of the overall Twin Lakes AUAR Update documentation for additional details regarding all scenarios reviewed.

Trip generation estimates for the p.m. peak hour and on a daily basis were calculated for the AUAR redevelopment scenarios based on trip generation rates from the 2003 ITE Trip Generation Reports. Tables 3, 4, and 5 in Appendix E, display a summary of the trip generation calculations for each redevelopment scenario per individual block and AUAR Subarea.

The Metropolitan Council regional model was used to develop average daily traffic (ADT) volumes for the greater adjacent roadway network, directional distribution for the p.m. peak hour trip generation estimates and determine a background growth rate for the immediate adjacent roadway network. The Metropolitan Council regional model currently used is a year 2030 base network model. The “base network” statement refers to the programmed or planned roadway network improvements that are included in the model. This is important from a regional perspective because previous Metropolitan Council regional model (year 2020) base networks used in the 2001 Twin Lakes Business Park AUAR included capacity improvements to regional facilities adjacent to the Twin Lakes AUAR area (i.e., I-35W and TH 36 having one additional through-lane in each direction). This is no longer valid for the year 2030 Metropolitan Council regional model base network.

A subset of the key year 2030 base network infrastructure assumptions is as follows:

- I-35W, to the west of the study area, is a six-lane interstate, freeway facility with an auxiliary lane in each direction from TH 36 to County Road C with access to the study area via County Road D and County Road C.
- TH 36 is a four-lane, freeway facility with access to the study area via Snelling Avenue and Fairview Avenue.
- Cleveland Avenue is a four-lane, undivided arterial.
- Snelling Avenue is a four-lane, divided expressway with turn lanes.
- County Road C is a four-lane, divided arterial with turn lanes.
- County Road D is a two-lane, undivided arterial.
- Fairview Avenue is a two-lane, undivided arterial north of Terrace Drive and a four-lane undivided arterial south of Terrace Drive with turn lanes.

The year 2030 Metropolitan Council regional model includes forecast development (based on socio-economic data) and infrastructure improvements in the Twin Cities metro area over the next 24 years. Two adjacent redevelopment projects were taken into account when developing these ADT forecasts, the proposed Northwestern College expansion and the Rosedale Center expansion. In addition, the proposed Twin Lakes Parkway connection was added to the model in order to determine its role in the transportation system. The proposed redevelopment land use scenarios were also entered into the model to generate outputs relevant to this AUAR project. The updated model was then run to determine the adjacent roadway network ADT volumes and determine the directional distribution percentages for trips originating from or destined for the Twin Lakes AUAR area. Based on forecast year 2030 ADTs, existing ADTs and trip generation estimates for the redevelopment scenarios, an annual growth rate of one-half percent was applied to the existing peak hour turning movement volumes to develop year 2030 background traffic forecasts. Figure 3 in Appendix E displays existing and year 2030 forecast ADT volumes. Figure 4 in Appendix E displays the directional distribution percentages for the redevelopment scenarios.

*AUAR Guidelines: 21.C. analysis of impacts of the traffic generated by the AUAR area on the roadway system, including: comparison of peak period total flows to capacities and analysis of Levels of Service and delay times at critical points (if any);*

To determine how well the existing and future roadway system will accommodate redevelopment of the Twin Lakes AUAR area, an operations analysis was completed for year 2030 build conditions during the p.m. peak hour at each of the key intersections. All signalized intersections were analyzed using the Synchro/SimTraffic software (version 6.14) and unsignalized intersections were analyzed using the Highway Capacity Software (and compared with Synchro/SimTraffic). The intersection improvements identified at County Road C/Snelling Avenue under existing conditions are included in the year 2030 build analysis. Results of the analysis indicate that all key intersections are expected to operate poorly (LOS F) under year 2030 Scenario A build conditions. Twelve out of 14 key intersections are expected to operate poorly (LOS F) under year 2030 Scenario B and C build conditions. As stated each scenario will operate poorly without additional mitigation.

The analysis results shown in Table 21.1 represent the level of service operations at each of the key intersections with reasonable/feasible recommended improvements. It is evident that under year 2030 Scenario A build conditions, four intersections continue to operate at undesirable LOS E or worse. This is due to the limitations placed on the recommended

improvements (reasonable/feasible versus unconstrained improvements). It should be noted that previous analysis conducted for the 2001 Twin Lakes AUAR documentation did not identify the same reasonable/feasible improvement constraints.

Ramsey County staff has indicated that no additional improvements will be made to County Road C and its intersection nodes. However, geometric improvements are needed at a number of its intersections in order to improve operations under Scenario A. Without the recommended improvements, these intersections are expected to operate worse than the undesirable conditions stated under this scenario. The intersection of County Road C/Snelling Avenue will continue to operate at an undesirable LOS F with the recommended improvements. The amount of conflicting volume forecast at this intersection is too heavy to manage under year 2030 build conditions. Operational improvements are limited without a total reconstruction and grade-separation at this intersection. The combination of background traffic and trips generated by the redevelopment scenarios, level of service operation results, and recommended improvements for year 2030 build conditions are shown in Figures 5, 6 and 7 (Scenarios A, B, and C respectively), which are located in Appendix E.

**Table 21.1 P.M. Peak Hour Capacity Analysis Summary Level of Service Results**

Intersection	Level of Service			
	Existing Conditions	Year 2030 Scenario A Build Conditions	Year 2030 Scenario B Build Conditions	Year 2030 Scenario C Build Conditions
Long Lake Road at I-35W SB Ramps	B	C	C	C
Long Lake Road at County Road C	B	C	C	C
County Road C at Cleveland Avenue	D	E (60 sec.) <sup>(1)</sup>	D	D
County Road C at Fairview Avenue	D	E (70 sec.) <sup>(1)</sup>	D	D
County Road C at Snelling Avenue	F (160) <sup>(1)(2)</sup>	F (160 sec.) <sup>(1)</sup>	F (115 sec.) <sup>(1)</sup>	F (115 sec.) <sup>(1)</sup>
Snelling Avenue at County Road C2	D	E (70 sec.) <sup>(1)</sup>	D	D
Snelling Avenue at Lydia Avenue	D	D	C	C
Cleveland Avenue at I-35W NB Ramps	D	D	D <sup>(3)</sup>	D <sup>(3)</sup>
Cleveland Avenue at County Road C2	A/C <sup>(4)</sup>	B	B	B
County Road D at Cleveland Avenue	C	D	D	D
County Road D at I-35W NB Ramps	C	C	C	C
County Road D at Fairview Avenue	D <sup>(5)</sup>	C	C	C
Fairview Avenue at Lydia Avenue	C <sup>(5)</sup>	D	C	C
Fairview Avenue at Terrace Drive	A/B <sup>(4)</sup>	D	D <sup>(3)</sup>	C

<sup>(1)</sup>Value shown in parenthesis represents the average delay per vehicle.

<sup>(2)</sup>Level of service improves to LOS D with the recommended at-grade intersection improvements.

<sup>(3)</sup>LOS result is near the C/D threshold.

<sup>(4)</sup>Indicates an intersection with side-street stop control. Overall LOS is shown followed by worst approach LOS.

<sup>(5)</sup>Indicates an intersection with all-way stop control.

*AUAR Guidelines: 21.D. a discussion of structural and non-structural improvements and traffic management measures that are proposed to mitigate problems;*

### **Traffic Operations Analysis**

- Under existing p.m. peak hour conditions, all key intersections operate at an acceptable overall LOS D or better with existing traffic controls and geometric layout, except for the intersection of County Road C/Snelling Avenue. This intersection currently operates at an undesirable LOS F.
- In order to improve County Road C/Snelling Avenue intersection operations to LOS D, the following geometric improvements are recommended:

#### **County Road C at Snelling Avenue**

- Construct an additional north and southbound through lane along Snelling Avenue
- Construct an additional eastbound and westbound left-turn lane (dual left-turn lanes)
- The intersection improvements identified at County Road C/Snelling Avenue under existing conditions are included in the year 2030 build analysis. Results of the analysis indicate that all key intersections are expected to operate poorly (LOS F) under year 2030 Scenario A build conditions. Twelve out of 14 key intersections are expected to operate poorly (LOS F) under year 2030 Scenario B and C build conditions. As stated each scenario will operate poorly without additional mitigation.
- The analysis results shown in Table 21.1 represent the level of service operations at each of the key intersections with reasonable/feasible recommended improvements. It is evident that under year 2030 Scenario A build conditions, four intersections continue to operate at undesirable LOS E or worse. This is due to the limitations placed on the recommended improvements (reasonable/feasible versus unconstrained improvements).
- Please note that the recommended improvements listed below, unless noted specifically for Scenario A, should be applied to all scenarios (refer to Figures 5-7 in Appendix E for graphical representation).

#### **County Road C at Cleveland Avenue**

- Construct a dedicated westbound right-turn lane (with turn lane storage)
- Construct an additional southbound left-turn lane (dual left-turn lanes)  
**(Scenario A only)**
- Construct a southbound right-turn lane **(Scenario A only)**
- Construct a northbound right-turn lane **(Scenario A only)**
- Extend the existing eastbound left-turn lane **(Scenario A only)**

#### **County Road C at Fairview Avenue**

- Construct right-turn lanes for the eastbound, westbound and southbound approaches  
**(Scenario A only)**

#### **County Road C at Snelling Avenue**

- Construct an additional north and southbound through lane along Snelling Avenue (6-lane facility) **(assumed for existing conditions)**

- Construct an additional eastbound and westbound left-turn lane (dual left-turn lanes) **(assumed for existing conditions)**
- Construct a westbound right-turn lane **(Scenario A only)**

#### **Snelling Avenue at County Road C2**

- Construct an additional north and southbound through lane along Snelling Avenue (6-lane facility) **(assumed for existing conditions)**
- Construct an additional eastbound left-turn lane (dual left-turn lanes)
- Extend the existing westbound left-turn lane
- Construct a westbound right-turn lane

#### **Snelling Avenue at Lydia Avenue**

- Construct an additional north and southbound through lane along Snelling Avenue (6-lane facility) **(assumed for existing conditions)**
- Construct an additional eastbound left-turn lane (dual left-turn lanes)

#### **Cleveland Avenue at I-35W Northbound Ramps**

- Construct an additional northbound left-turn lane (dual left-turn lanes)
- Construct a northbound right-turn lane
- Extend existing southbound left-turn lane
- Construct an additional eastbound left-turn lane (dual left-turn lanes) **(Scenario A only)**
- Construct two eastbound through lanes
- Construct a westbound left-turn lane
- Construct two westbound through lanes
- Construct a westbound right-turn lane **(Scenario A only)**

#### **Cleveland Avenue at County Road C2**

- Install traffic signal
- Construct a westbound right-turn lane
- Construct a northbound right-turn lane

#### **Cleveland Avenue at County Road D**

- Construct two northbound left-turn lanes (dual left-turn lanes) **(Scenario A only)**
- Construct an eastbound left-turn lane
- Construct an eastbound right-turn lane **(Scenario A only)**

#### **County Road D at I-35W Northbound Ramps**

- Construct a westbound right-turn lane
- Extend the existing northbound right-turn lane

#### **County Road D at Fairview Avenue**

- Eliminate the northwest approach (New Brighton Road) to create a 4-legged intersection
- Convert County Road D to a three-lane section between Cleveland Avenue and Fairview Avenue with a continuous center left-turn lane
- Install traffic signal

- Construct a northbound left-turn lane
- Construct a southbound right-turn lane

#### **Fairview Avenue at Lydia Avenue**

- Install traffic signal
- Construct a northbound right-turn lane
- Construct a southbound left-turn lane
- Construct a westbound right-turn lane

#### **Fairview Avenue at Terrace Drive**

- Install traffic signal
- Construct an eastbound and westbound left-turn lane
- Construct two eastbound and westbound through lanes (**Scenario A only**)
- Construct an eastbound and westbound right-turn lane
- Construct a northbound and southbound left-turn lane (**Scenario A only**)
- Construct northbound and southbound right-turn lanes

- **Travel Demand Management (TDM)** In addition to adjacent roadway geometric improvements, other strategies are available to reduce the amount of traffic that a development/redevelopment generates, thus affecting the way the adjacent roadway operates. The following proposed actions are provided as a guide toward TDM strategy implementation:
  - Support and Promote Bicycling and Walking as Alternatives
  - Support Transit as an Alternative
  - Support and Promote Car and Vanpooling
  - Provision of Information on Transportation Alternatives
  - Vehicular Traffic Movement & Access Restriction
  - Participate with Regional TDM Organizations
  - Monitor Action Implementation and Goal Achievement

22. Vehicle-Related Air Emissions. 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. Note: If the project involves 500 or more parking spaces, consult *EAW Guidelines* about whether a detailed air quality analysis is needed.

*AUAR Guidelines:* 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.

**Note to AUAR Update Reviewers: The full Vehicle-Related Air Emissions analysis is located in Appendix E.**

Future CO concentrations are analyzed based on forecast peak hour traffic volumes, optimized signal timing, and existing intersection geometrics. Analyses were performed for the year 2030.

Table 22.1 presents the worst case CO concentrations at the modeled intersections. The wind direction column indicates the wind direction that resulted in the worst-case conditions for that

analysis location and time. The 1-hour and 8-hour average modeling results are below the State standards for all conditions modeled; therefore, no mitigation is recommended.

**Table 22.1 Future Modeled Carbon Monoxide Concentrations (in parts per million or ppm)**

	1-Hour Average	8-Hour Average	Wind Direction
County Road C at Fairview Avenue			
Modeled CO Concentration	1.7	1.2	
Background CO Concentration	5.4	3.6	
<b>Total Predicted CO Concentration</b>	<b>7.1</b>	<b>4.8</b>	<b>80</b>
County Road C at Snelling Avenue			
Modeled CO Concentration	2.1	1.5	
Background CO Concentration	5.4	3.6	
<b>Total Predicted CO Concentration</b>	<b>7.5</b>	<b>5.1</b>	<b>190</b>
<b>State Standards</b>	<b>30.0</b>	<b>9.0</b>	

Predicted CO concentrations at the analyzed intersections will be below state standards after. Because these intersections are the two worst case intersections in terms of level of service and total delay, CO concentrations at other intersections in the study area would likely be lower than those predicted at the analyzed intersections.

23. **Stationary Source Air Emissions.** 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 Guidelines: This item is not applicable to an AUAR. Any stationary source air emissions source large enough to merit environmental review requires individual review.*

New buildings proposed for Twin Lakes will likely be heated by natural gas mechanical systems. Projected emissions from such systems will include small amounts of carbon dioxide, nitrous oxides, and very small amounts of other byproducts. All emissions are expected to be far below thresholds for new source permitting. Effects on air quality from the development of the AUAR area are expected to be negligible. All tenants will be required to obtain any required air emission permits.

24. Dust, Air and Noise Impacts. Will the project generate odors, noise or dust during construction or during operation?

Yes  No

If yes, describe sources, characteristics, duration, quantities or intensity and any proposed measures to mitigate adverse impacts. Also identify locations of nearby sensitive receptors and estimate impacts on them. Discuss potential impacts on human health or quality of life. (Note: fugitive dust generated by operations may be discussed at item 23 instead of here.)

*AUAR Guidelines: 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, any 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.*

**Note to AUAR Update Reviewers: The full Vehicle-Related Noise Impact analysis is located in Appendix E.**

A noise analysis was conducted at three locations where existing residential land uses would experience the most significant increases in traffic. Receptor locations, where traffic was monitored and analyzed were as follows:

Receptor 1: Fairview North of County Road C2

Receptor 2: Fairview South of County Road C

Receptor 3: Cleveland North of County Road C2

Existing (year 2006) and year 2030 build condition daytime and nighttime traffic noise levels are shown in Tables 24.1 and 24.2, respectively. Noise levels currently exceed State daytime and nighttime noise standards at all three modeled receptor locations (existing year 2006). Traffic noise levels will increase by one to three dBA from existing (year 2006) to year 2030 Scenario A build conditions. The observed increases are the result of higher traffic volumes under this future development scenario.

The largest increase in traffic noise was observed at Receptor 1 under year 2030 Scenario A build conditions. Receptor 1 was estimated to have a 3 dBA (nighttime  $L_{10}$ ) and 4 dBA (nighttime  $L_{50}$ ) increase from existing to build conditions. A 3 dBA change is barely perceptible to the human ear; a 5 dBA change is noticeable.<sup>5</sup> Please recall that the nighttime peak hour traffic is generally from 6:00 a.m. to 7:00 a.m., just prior to the morning rush hour.

Year 2030 build conditions analyses assume a similar heavy truck percentage as the existing models. However, under the future redevelopment scenario, land uses in the Twin Lakes AUAR area include more residential and office/business uses than exist today. These types of land uses typically generate less heavy truck traffic, and as a result, the heavy truck percentage on the adjacent roadways will likely be lower than what was modeled. Therefore, it is likely that future

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<sup>5</sup> Minnesota Pollution Control. 1999. *A Guide to Noise Control in Minnesota*.

traffic noise levels will be unchanged from existing conditions and thus the analysis results present the worst-case potential noise scenario.

**Table 24.1 Year 2006 Traffic Noise Analysis – Daytime**

Receptor	Existing (Year 2006)		Year 2030 Build Scenario A		Difference between Year 2030 Build Scenario A and Year 2006 Existing	
	L <sub>10</sub>	L <sub>50</sub>	L <sub>10</sub>	L <sub>50</sub>	L <sub>10</sub>	L <sub>50</sub>
R1	68	60	69	61	1	1
R2	70	63	71	64	1	1
R3	71	64	73	67	2	3
State Standards	65	60	65	60	-	-

**Table 24.2 Year 2006 Traffic Noise Analysis – Nighttime**

Receptor	Existing (Year 2006)		Year 2030 Build Scenario A		Difference between Year 2030 Build Scenario A and Year 2006 Existing	
	L <sub>10</sub>	L <sub>50</sub>	L <sub>10</sub>	L <sub>50</sub>	L <sub>10</sub>	L <sub>50</sub>
R1	63	53	66	57	3	4
R2	65	57	65	57	0	0
R3	67	58	69	61	2	3
State Standards	55	50	55	50	-	-

Minnesota Statute 116.07, Subd. 2a. states that municipal and county roads are exempt from state noise standards, except for those roadways where full control of access has been acquired and for roads in the cities of Minneapolis and St. Paul. The Twin Lakes AUAR adjacent roadways (e.g., Fairview Avenue, Cleveland Avenue) are City or County roads without full control of access (e.g., direct driveway connections) and are exempt from State noise standards per Minnesota Statute. Therefore, no traffic noise mitigation is proposed.

25. Sensitive Resources. Are any of the following resources on or in proximity to the site:  
a. archeological, historical, or architectural resources?  Yes  No

*AUAR Guidelines: 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.*

The Minnesota Historical Society's State Historic Preservation Office (SHPO) reviewed the AUAR area for archeological, historical and architectural resources. According to a letter received from SHPO, dated April 6, 2001 (SHPO #2001-1624), they do not believe that an archaeological survey of the Twin Lakes area is necessary (Refer to Appendix F). However, they noted the presence of a number of buildings within the AUAR area and recommended that photographs and construction dates be submitted for any buildings over 50 years old for an initial assessment. According to SHPO, the submittal of such information was not required as part of the AUAR process, but would be required prior to any new construction

activities.

**b. prime or unique farmlands?**

Yes     No

*AUAR Guidelines: 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.*

**c. designated parks, recreation areas, or trails?**

Yes     No

*AUAR Guidelines: If development of the AUAR will interfere 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.*

The City parks within and adjacent to the AUAR area, Langton Lake and Oasis Pond, provide an amenity for attracting redevelopment to the area. They provide both a visual amenity and recreational opportunities, which will greatly increase the viability of the area as an asset to the community. Another feature in the eastern half of the study area is Ramsey County Ditch #4, a drainage way that winds from south of County Road C, north to Oasis Park, and from Oasis Pond into Little Lake Johanna.

The park and trail system in the City has been enhanced by connecting the major uses with a bicycle and trail system around Langton Lake and along the County Road C trail corridor, through the parks, and (in the future) along the ditch and other interior areas, which will create a unified recreational system in the Twin Lakes area. The new Twin Lakes Parkway will also provide trail connections to Langton Lake from newly developed parcels. The character and standards governing the development of this park and trail system are outlined in a separate document: Roseville's Pathway Master Plan, Design and Guidelines.

A small portion of the officially mapped Twin Lakes Parkway will impact the southeastern corner of Langton Lake Park that contains a moderate quality lowland hardwood forest (see Figure 10.2). Mitigation for this portion of the park could include restoring an equivalent portion of the AUAR area to lowland hardwood forest or providing funding for implementing selected recommendations for Langton Lake Park in the Roseville Park Natural Resource Management Plan, prepared by the City in 2002. This plan contains specific lake management recommendations for Langton Lake and a natural resource management plan for uplands and wetlands in Langton Lake Park.

The Langton Lake Park Master Plan was officially adopted by the City Council in 1986. It is noted that the Master Plan is not included in Roseville's Comprehensive Plan. The Master Plan depicts planned/programmed improvements to the park, long range acquisition areas, and new/modified access points. According to the Master Plan, the proposed Senior Co-op project is located within a parcel that includes two new proposed new access roads to Langton Lake Park. The access point from Cleveland Avenue is noted as being the "main entry" into the park and is partially located within the Senior Co-op property and partially

located within the existing boundaries of Langton Lake Park. The other access point is an extension of Ridge Road south of Brenner Avenue. The Senior Co-op project will provide access to Langton Lake Park; however, the alignment and character of the access has not been determined.

**d. scenic views and vistas?**

Yes  No

***AUAR Guidelines** 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).*

**e. other unique resources?**

Yes  No

If yes, describe the resource and identify any project-related impacts on the resource. Describe any measures to minimize or avoid adverse impacts.

26. Visual Impacts. 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?

Yes  No

If yes, explain.

***AUAR Guidelines:** If any non-routine visual impacts would occur from the anticipated development covered, this should be discussed here along with appropriate mitigation.*

No non-routine visual impacts are anticipated.

27. Compatibility with Plans. Is the project subject to an adopted local comprehensive plan, land use plan or regulation, or other applicable land use, water, or resource management plan of a local, regional, state or federal agency?

Yes  No

If yes, describe the plan, discuss its compatibility with the project and explain how any conflicts will be resolved. If no, explain.

***AUAR Guidelines:** 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 scenarios*

*studied, with emphasis on any incompatible elements.*

The Roseville Comprehensive Plan complies with the requirements set out in MN Rules 4410.3610, subp. 1, which requires that the adopted comprehensive plan include a land use plan, public facilities plan, transportation plan, sanitary sewer plan, and an implementation program.

### **Current Comprehensive Plan**

All development scenarios do not conflict with the land use designations and policies of the City's current Comprehensive Plan. The Comprehensive Plan currently designates the AUAR area as "BP-Business Park" (see Figure 6.2). BP-Business Park is defined in the Comprehensive Plan as "a geographically identifiable area which contains a consistent architectural mix of office, office-laboratory, office-showroom-warehousing, bio-technical, biomedical, high-tech software and hardware production uses with support services such as limited retail, health, fitness, lodging and multifamily residential. Multimodal transportation is an important element for the transportation of goods, services, and employees. The corresponding zoning is B-6 Mixed Use Business Park and PUD – Mix of Uses Planned Unit Development."

The Comprehensive Plan reflects the 2001 Twin Lakes Business Park Master Plan. The Master Plan specifically states: "[this] new master plan amendment of 2001 will designate the areas as BP – Business Park." The 2001 Master Plan also includes four future land use maps ("Options 2, 3 and 4" and the "Twin Lakes AUAR Future Land Use Scenario") and several pages of text describing land use scenarios and goals. The intent of the 2001 Master Plan was to provide for a flexible mix of business park uses. For reference, the 2001 Master Plan is posted on the City's website: [www.ci.roseville.mn.us](http://www.ci.roseville.mn.us).

The proposed scenarios are also consistent with the City of Roseville's redevelopment and reinvestment planning for the area and represents an effort to revitalize the existing business area and improve the access, circulation, and aesthetic quality of development within the district. It is anticipated that any proposed development would also integrate the area's natural resources into a redevelopment plan and preserve them as an attractive quality and focal point for the overall design of the district.

Note that two parcels within Subarea III are designated "Business Park" in the Comprehensive Plan; however, these two parcels are included in Langton Lake Park and provide access to the park and parking facilities. Consideration should be given to designating these areas as "Park" consistent with the land use designation for the majority of Langton Lake Park in future comprehensive plan updates. No development is contemplated for these two park parcels.

### **Zoning**

Existing zoning for the AUAR area includes a variety of industrial, business, park, and residential districts, which reflect existing land use (Figure 28.1). The future zoning for the AUAR area will be Planned Unit Development with an underlying zoning of B-6, Mixed Use Business Park District. The B-6 Business Park District is designed to provide a high quality office, clinic, hotel, and research complex with multiple stories.

Section 1005.07A of the Zoning Code states: A "Mixed Use Business Park" is a redevelopment area, in which the environmental impacts of the business park have been analyzed through an environmental impact statement or similar. The impacts are then mitigated within the requirements a Planned Unit Development as defined in Section 1008 of the Roseville City Code. All parcels shall have well-planned roads, utilities, ponding and communication systems. Parcels within a "Mixed Use Business Park" shall have access to an internal parkway and/or external

County roads as well as convenient access to the Interstate Highway System. Emphasis shall be placed on creating a unique, safe and high quality work and play environment by installation of extraordinary, architecturally distinct buildings, parkways, transit and transportation services, site planning, landscaping, parks, pedestrian pathways, and lighting.

Permitted Uses, after city approval of a mixed use master plan and completion of a Planned Unit Development within a portion (or all) of the Mixed Use Business Park:

- Office, business and professional.
- Medical and dental clinics and laboratories.
- Hotel and motel.
- Hospital.
- Research, design and development.
- Bank and financial institutions.
- Health clubs
- Restaurants
- Retail sales
- Day care centers
- Parking to accommodate uses in a contiguous mixed use business district
- Multi-family housing.

The proposed uses within all Scenarios are consistent with the aforementioned permitted uses.

**28. Impact on Infrastructure and Public Services. Will new or expanded utilities, roads, other infrastructure or public services be required to serve the project?**

Yes  No

If yes, describe the new or additional infrastructure or services needed. (Note: any infrastructure that is a connected action with respect to the project must be assessed in the EAW; Refer to *EAW Guidelines* for details.)

*AUAR Guidance:* This item should first of all summarize information on physical infrastructure presented under other items (such as 6, 18, 19, and 22). Other major infrastructure or 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.

The majority of required infrastructure for the Twin Lakes Business Park is currently in place with the exception of the Twin Lakes Parkway and interior sanitary sewer, water main and storm sewer extensions west of Fairview Avenue. Several recommended transportation improvements are presented in AUAR Item 21 – Traffic. Major infrastructure improvements are not necessary to redevelop parcels located east of Fairview Avenue, however minor utility relocations and curb cuts in Terrace Drive may be required in some areas.

The full redevelopment of interior parcels located west of Fairview Avenue will require the construction of Twin Lakes Parkway. Twin Lakes Parkway is proposed to begin at the intersection of Cleveland Avenue and the northbound I-35W entrance/exit ramps and run east to the intersection of Fairview Avenue and Terrace Drive. The parkway is proposed to include two

16-foot wide through lanes with left turn lanes and a center median throughout. It is anticipated that pedestrian facilities (e.g., sidewalks or pathways) will be constructed as part of the parkway development.

Sanitary sewer facilities are proposed to be constructed along Mount Ridge Road to serve interior parcels in the development.

Water main facilities may be constructed along Mount Ridge Road easement and Twin Lakes Parkway to serve interior parcels in the development and provide additional loops within the City water main grid.

Storm sewer facilities include catch basins for the proposed roadway with trunk sewer running to existing storm water treatment ponds. Additional trunk sewer facilities will be constructed to provide connections between proposed parcels and existing storm water treatment ponds.

The City's police and fire department will track growth factors such as population growth, service calls, and community expectations to plan for the needs of the AUAR area.

No adverse impacts to schools are anticipated as area schools are not over capacity.

29. **Cumulative Impacts.** 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 Guidelines: This item does not require a response for an AUAR with respect to cumulative impacts of potential developments within the AUAR boundaries, since the entire AUAR process is intended to deal with cumulative impacts from related developments within the AUAR area; it is presumed that the responses to all items on the EAW form encompass the impacts from all anticipated developments within the AUAR area*

*However, the questions of this item should be answered with respect to the cumulative impacts of development within the AUAR boundaries compared with past, present, and reasonably foreseeable future projects outside of the AUAR area, where such cumulative impacts may be potentially significant. (As stated on the EAW form, these cumulative impact descriptions may be provided as part of the responses to other appropriate EAW items, or in response to this item).*

Past development of the AUAR area has resulted in significant impacts to soil and water resources. The pollution caused by past development occurred prior to the adoption and enforcement of many common environmental rules and regulations. For example, this has resulted in unmitigated storm water runoff impacting Langton Lake and the other water resources within and adjacent to the AUAR area. The cumulative impact of existing pollution on soil and water resources will persist until redevelopment activities occur that must adhere to adopted plans, rules and regulations, including remedial activities for existing pollution.

Like this AUAR, the 2001 Twin Lakes Master Plan contains strategies to address the cumulative impacts of redevelopment the within the AUAR area including, but not limited to environmental matters, land use compatibility, design guidelines, and requiring redevelopment in phases with a number of parcels at one time. This Master Plan is referenced in the AUAR mitigation. This Master Plan is also incorporated in the City's Comprehensive Plan, which provides plans, policies, and programs to address the cumulative impact of development within the City of Roseville.

30. **Other Potential Environmental Impacts.** If the project may cause any adverse environmental impacts which were not addressed by items 1 to 28, identify them here, along with any proposed mitigation.

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

No other adverse environmental impacts have been identified in the AUAR area.

31. **Summary Of Issues** (This section need not be completed if the EAW is being done for EIS scoping; instead, address relevant issues in the draft Scoping Decision document which must accompany the EAW.) List any impacts and issues identified above that may require further investigation before the project is commenced. 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.

*AUAR Guidelines: The RGU may answer this question as asked by the form, or instead may choose to provide an Executive Summary to the document that basically covers the same information. Either way, the major emphasis should be on potentially significant impacts, the differences in impacts between major development scenarios, and the proposed mitigation.*

In 1997 the City completed an EAW for the redevelopment of the business park and the construction of the new Twin Lakes Parkway. The City declared no negative impact from the redevelopment or the construction of the parkway. The City ordered a substitute form of environmental review for the Business Park redevelopment plan, the 2001 AUAR. In accordance to MN Rules, AUARs must be updated every five years unless all development within the AUAR area has been given final approval by the RGU. Before the City can issue the necessary permits for any projects within the AUAR area that require environmental review, the City must update the 2001 Twin Lakes Business Park AUAR. As a result, future projects in the AUAR study area may not require environmental review, if they are consistent with the AUAR update assumptions and mitigation measures are implemented, as required for an AUAR.

The Master Plan for the Twin Lakes Business Park includes the development or redevelopment of 46 parcels within a 275-acre area and may include new and/or renovated building area in multi-story offices, one- to two-level high-tech flex space, hospital/medical use, service industries and multi-family housing. The plan would be implemented in phases over the next 20 years.

The AUAR development scenarios are not in conflict with the land use designations and policies of the City's current Comprehensive Plan. The existing Comprehensive Plan Future Land Use Map for the City currently designates the area as BP-Business Park.

Under the current Comprehensive Plan, the entire AUAR Area is designated Business Park with mixed uses and states that Roseville will continue to diversify and increase the tax base, clean the land, and create high paying or head of household jobs. The Scenarios are also consistent with the Zoning Code for the City of Roseville, in which new redevelopments become part of a PUD with underlying business park zoning of the B-6 zone, and with the Business and Industrial Policy, which states that the City should "place a high priority and encourage the redevelopment of additional industrial property to provide an inventory of improved sites for expanding firms. The demand for industrial land in the City far exceeds what is available at any given time. The City will continue its current industrial land redevelopment and pollution clean-up efforts.

A quantitative comparison of the three scenarios is presented in Table 31.2. Scenario A represents the "worst case" alternative included in the 2001 Twin Lakes Business Park Master Plan. Compared to Scenarios B and C, Scenario A presents the greatest intensity/density of development, which is reflected in the estimated demands for water, predicted wastewater flows and in the number of trips generated by this scenario. The development type and intensity/density included in Scenarios B and C were determined as the result of a traffic sensitivity test that balanced land use with reasonable/feasible improvements to the transportation system. Scenario B and C are somewhat similar in the intensity/density of development, but differ in the type of development – Scenario B includes more residential and service mix use and Scenario C includes more office use. Overall, the estimated demands for water, predicted wastewater flows and the number of trips generated by Scenario B are greater than those in Scenario C.

**Table 31.1 Quantitative Comparison of Scenarios**

<b>Attribute</b>	<b>Scenario A</b>	<b>Scenario B</b>	<b>Scenario C</b>
Office (sq. f.t)	2,330,505	1,440,154	1,590,000
Residential (units)	919	1,282	735
Service Mix (sq. ft.) <sup>6</sup>	618,319	508,000	390,000
Hospital (sq. ft.)	446,583	-	-
Estimated Daily Water Demand (Mgd)	0.694	0.618	0.460
Predicted Wastewater Flow (Mgal/yr)	230	205	153
Average Daily Trips	73,276	47,001	43,888
Peak P.M. Trips In	2,491	1,841	1,515
Peak P.M. Trips Out	4,709	2,962	3,219

### **Cumulative Impacts**

Past development of the AUAR area has resulted in significant impacts to soil and water resources. The pollution caused by past development occurred prior to many common environmental rules and regulations being adopted and enforced. For example, this has resulted in unmitigated stormwater runoff impacting Langton Lake and the other water resources within

<sup>6</sup> Service mix was analyzed from a retail land use perspective.

and adjacent to the AUAR area. The cumulative impact of existing pollution on soil and water resources will persist until redevelopment activities occur that must adhere to adopted plans, rules and regulations, including but not limited to remedial activities for existing pollution and the installation of storm water management systems.

### **Traffic Impacts**

- Under existing p.m. peak hour conditions, all key intersections operate at an acceptable overall LOS D or better with existing traffic controls and geometric layout, except for the intersection of County Road C/Snelling Avenue. This intersection currently operates at an undesirable LOS F.
- In order to improve County Road C/Snelling Avenue intersection operations to LOS D, the following geometric improvements are recommended:
  - Construct an additional north and southbound through lane along Snelling Avenue
  - Construct an additional eastbound and westbound left-turn lane(dual left-turn lanes)
- The intersection improvements identified at County Road C/Snelling Avenue under existing conditions are included in the year 2030 build analysis. Results of the analysis indicate that all key intersections are expected to operate poorly (LOS F) under year 2030 Scenario A build conditions. Twelve out of 14 key intersections are expected to operate poorly (LOS F) under year 2030 Scenario B and C build conditions. As stated each scenario will operate poorly without additional mitigation.
- The analysis results shown in Table 21.1 represent the LOS operations at each of the key intersections with reasonable/feasible recommended improvements. It is evident that under year 2030 Scenario A build conditions, four intersections continue to operate at undesirable LOS E or worse. This is due to the limitations placed on the recommended improvements (reasonable/feasible versus unconstrained improvements).
- Specific recommended improvements to the transportation system are detailed in AUAR Item 21, the Mitigation Plan, and Appendix E.
- In addition to adjacent roadway geometric improvements, other strategies are available to reduce the amount of traffic that a development/redevelopment generates, such as Travel Demand Management (TDM), which could affect the way the adjacent roadway operates. The following proposed actions are provided as a guide toward TDM strategy implementation:
  - Support and promote bicycling and walking as alternatives
  - Support transit as an alternative
  - Support and promote car and vanpooling
  - Provision of information on transportation alternatives
  - Provision of advanced communication technologies
  - Vehicular traffic movement & access restriction
  - Participate with regional TDM organizations
  - Monitor action implementation and goal achievement

**Water Quality: Surface Water Runoff**

A water quality analysis was conducted to estimate the existing and post-redevelopment loads to total phosphorus (TP) and total suspended solids (TSS), as well as run off volume for the subwatersheds within the AUAR area. Because the entire AUAR area is being considered as a whole rather than a series of smaller projects, it significantly exceeds the area threshold that the City has adopted in its Comprehensive Stormwater Management Plan (SWMP) to require a high level of stormwater treatment. The minimum treatment standard that the City would apply is a 60% reduction in TP and a 90% reduction in TSS from the future redevelopment condition. This performance standard could be met through construction of detention basins to meet NURP criteria. It should be noted that the City and/or Rice Creek Watershed District may require other treatment approaches to replace or complement detention basins (e.g., infiltration). Application of other best management practices will likely depend on site-specific factors, such as soil conditions, that are not known at the time of preparation of this AUAR. However, the performance standard outlined above for TP and TSS reductions will be met, regardless of the combination of stormwater treatment approaches used. If infiltration Best Management Practice's (BMP's) are applied, decreases in stormwater runoff volume for the post-redevelopment condition can be expected, with the magnitude of these decreases dependent on the sizing of the BMP. Those impacts are not accounted for in this analysis.

**Langton Lake.** One of the primary stormwater-related issues is the protection of Langton Lake (MnDNR ID No. 62-0049). Langton Lake has a total watershed area of approximately 212 acres, about 75 acres of which are included in the AUAR area. As presented above, the stormwater treatment that will be required as part of future redevelopment projects is expected to decrease phosphorus loading to Langton Lake from within the AUAR area by almost 40%. Water quality data and anecdotal evidence for Langton Lake suggests that water quality in the lake has improved since the 1970's and 1980's (Roseville Parks Natural Resources Management Plan, 2002). Although no lake response modeling was required for Langton Lake as part of this AUAR analysis, it is likely that a 40% reduction in phosphorus loading from the AUAR area will at least preserve the existing in-lake water quality and may improve it.

The Langton Lake is not on Metropolitan Council's "priority lakes" list or the State's impaired waters ("303d") list. Further, based on recent water quality data collected through the Citizen Assisted Monitoring Program coordinated by the Metropolitan Council, it appears that current water quality is likely good enough that it would not be listed for impairment due to nutrient enrichment.

**Land Cover/Wildlife Impacts**

The diversity and population of wildlife species in an area is directly related to the composition, quality, size and connectivity of the natural communities, including woodlands, grasslands and wetlands. The AUAR area is in a part of Roseville that has been fully developed for more than 30 years.

**Non-Native/Altered.** The nonnative plant dominated areas within the AUAR area generally support habitat for urban-adapted wildlife, such as passerine birds, crows, gray squirrels, rabbits, and raccoons. Conversion of portions of the low quality nonnative/altered habitat areas found in Subareas I, and III are anticipated to cause wildlife to disperse to nearby habitat. Because these wildlife species have the ability to readily adapt to changing land cover conditions, it is anticipated that they will move to and compete for surrounding habitats.

**Native.** Forest areas comprise the native upland vegetation within the AUAR area and are found within Subareas I and III (Figures 5.3 and 10.1). The quality of this native cover varies and has the potential to support a variety of wildlife species, including deer, squirrel, raccoon, beaver, cottontail rabbit, and a variety of passerine birds by providing seasonal food and shelter.

The low quality oak forest area that is located in the northernmost portion of Subarea III (Figure 6.3) has a moderate wildlife value. The northern portion of this forest (located north of Langton Lake Park) is anticipated for development, with the resulting loss of a segment of low quality oak forest and altered/nonnative deciduous forest, lowering the wildlife value for the northwest corner of the AUAR area.

There are four oak forest segments that occur in the AUAR area, on the west side of Langton Lake Park. These are moderate quality oak forest areas with the highest wildlife value of the terrestrial wildlife habitats within the AUAR area. Three oak forest areas occur in Subarea I, while one occurs in Subarea III. These four oak forest areas are anticipated for conversion to more developed land cover under a “worst case” scenario.

**Aquatic Resources.** The wetland/open water areas located throughout the AUAR area are known to be used by wildlife species adapted to human activity and/or human-modified landscapes, including species of waterfowl, such as mallard ducks, and Canada geese, as well as shorebirds, such as great blue heron and common egret. Some of the smaller wetlands may also be utilized on a seasonal basis by species such as American toad and migrating groups of warblers. The potential impact to wetlands is further addressed in AUAR Item 12 – Physical Impacts to Water Resources.

One wetland used as a stormwater treatment feature is anticipated to be partially impacted by construction of Twin Lakes Parkway through Subarea I (Figure 10.2). This area currently provides modest habitat value for common species of wildlife in the area, including mallard ducks and common shorebirds, such as great blue herons.

The impact to existing forest cover types shall be mitigated through future dedication of open space within these oak forest areas or replacing these areas, increasing the overall buffer and wildlife habitat value for Langton Lake Park.

In light of these theoretical impacts under a “worst case” scenario, as shown on Figure 10.2, mitigative restoration efforts should be made to improve the quality of remaining woodland areas within and immediately adjacent to the AUAR area. Restoring the remaining woodland and maintaining connectivity between woodland areas, particularly those surrounding Langton Lake will help to minimize impacts to wildlife. Restoration efforts should include cutting and treating of nonnative species, such as European buckthorn and Siberian elm, planting native species, and conducting other management activities.

Mitigation for lost wildlife habitat within the AUAR area could include restoration of important oak forest areas within Langton Lake Park through implementation of the 2002 Roseville Parks Natural Resource Management Plan. Activities outlined in the Langton Lake Park Management Plan include cutting and treating European buckthorn and other invasive, nonnative vegetation, planting of native herbaceous species and maintenance activities such as prescribed burning. Such a restoration effort would increase the overall wildlife value for the AUAR area and its immediate surroundings.

Other mitigative/restoration opportunities include using native plants as the major component of landscaped settings, including native trees, shrubs, grasses, and flowers. Although not a direct replacement for wildlife habitat that may be lost during the redevelopment process, this approach can mimic some aspects of natural habitats, provide important food and shelter, and maintain greater connectivity for wildlife between otherwise isolated native habitat patches.

**Certification by RGU.** *In an AUAR document, no certifications as listed at the end of the EAW form are necessary. (The RGU is legally responsible for the accuracy and completeness of the document and for properly distributing it nonetheless.)*

**Mitigation Plan.** *AUAR Guidelines: The final AUAR document must include an explicit mitigation plan. At the RGU's option, a draft plan may be included in the draft AUAR document; of course, whether or not there is a separate item for a draft mitigation plan, the proposed mitigation must be addressed through the document.*

*It must be understood that the mitigation plan in the final document takes on the nature of a commitment by the RGU to prevent potentially significant impacts from occurring from specific projects. It is more than just a list of ways to reduce impacts -- it must include information about how the mitigation will be applied and assurance that it will. Otherwise, the AUAR may not be adequate and/or specific projects may lose their exemption from individual review. The RGU's final action on the AUAR must specifically adopt the mitigation plan; therefore, the plan has a "political" as well as a technical dimension.*

This Mitigation Plan provides reviewers, regulators and prospective tenants or purchasers of land with an understanding of the actions necessary to protect the environment and limit potential impacts by proposed development projects. The mitigation strategies included in the 2001 AUAR have been updated.

This Mitigation Plan is intended to satisfy the AUAR rules that require the preparation of a "mitigation plan" that specifies measures or procedures that will be used to avoid, minimize, or mitigate the potential impacts of development within the AUAR area. Although mitigation strategies are discussed throughout the AUAR document, this plan was formally adopted by the RGU on October 15, 2007 as its action plan to prevent potentially significant environmental impacts.

Any proposed specific project within the AUAR area remains subject to applicable local zoning, subdivision, or other official controls. Specific projects that are consistent with the assumptions of the adopted AUAR and that comply with the mitigation plan within the AUAR are exempt from further environmental review pursuant to Minnesota Rules Section 4410.3610 Subp. 5 E.

The primary mechanism for mitigation of environmental impacts is the effective use of ordinances, rules, and regulations. The plan neither modifies the regulatory agencies' responsibilities for implementing their respective regulatory programs nor creates additional regulatory requirements.

Based on the analysis in the AUAR update, the City proposes the following Mitigation Plan to address potential adverse environmental impacts due to development in the Twin Lakes Business Park AUAR area.

- 1) All necessary permits and approvals will be obtained from the appropriate agencies for any work or construction within the Twin Lakes Business Park. The following list of permits have been identified as potentially being required for future development projects:

UNIT OF GOVERNMENT	TYPE OF APPLICATION*	STATUS
<b>Federal Government</b>		
FAA	Determination of Helipad Routes	Future
Army Corps of Engineers	Section 404 Permit	Future
	Letter of No Wetland Jurisdiction	Future
<b>State</b>		
MPCA	NPDES/SDS General Permit	Future
	Sanitary Sewer Extensions and/or Changes Permit	Future
	Voluntary Investigation Clean-Up Program (VIC)	Future
	Petroleum Brownfields Program	Future
	Section 401 Water Quality Certificate or Waiver	Future
MN Department of Health	Water Main Extensions and/or Changes Permit	Future
	Sanitary Sewer Extension Permit Approval	Future
	Well Location and Construction Approval	Future
MN Environmental Quality Board	Environmental Review	Pending
MN Department of Natural Resources	Public Waters Work Permit	Future
	General Permit 97-005 for Temporary Water Appropriations (need if more than 10,000 gpd of water is appropriated)	Future
	Storm Sewer Discharge Permit	Future
MN Department of Transportation	Drainage Permit	Future
	Use of or work within MnDOT right-of-way	Future
<b>Regional</b>		
Rice Creek Watershed District	Erosion and Sediment Control Permit	Future
	Stormwater Management Plan Approval	Future
	Wetland Delineation Boundary Confirmation	Future
	Certificate of Wetland Exemption	Future
	Drainage Authority Review and Approval	Future
Metropolitan Council	Sanitary Sewer Service Connection Approval	Future
Ramsey County	Final Plat Approval	Future
	County Road Access Permits	Future
<b>Local</b>		
City of Roseville	AUAR Update	Pending
	Rezoning	Future
	Preliminary & Final Plat	Future
	Stormwater Management Plan Approval	Future
	Erosion Control Permit	Future
	Traffic Impact Analysis	Future
	Grading Permit	Future
	Building Permits	Future

\* All required permits and approvals will be obtained. Any necessary permits or approvals that are not listed in the table above were unintentionally omitted, and some listed may not be necessary

- 2) All City ordinances and policies will be followed in the review and approval of development projects within the Twin Lakes Business Park.
- 3) In particular, the City will follow its current Comprehensive Surface Water Management Plan, ordinances, policies, and best management practices related to stormwater runoff and ponding, which encourage more pervious surfaces, alternatives to mowed turf, introduction of native vegetation and other innovative techniques to reduce runoff.
- 4) The City will require a detailed Planned Unit Development (PUD) approval for each project developed within Twin Lakes, which is a separate zoning process that is adopted after hearings and passage of an ordinance.
- 5) The City will work with Metropolitan Council Transit Operations, local businesses, and area residents to encourage improved transit service, increased transit ridership, and travel demand management programs in the Twin Lakes area and vicinity to reduce the number of vehicles on area roadways.
- 6) The City will encourage the development of a network of sidewalks, trails, pedestrian amenities, parks and open space in the Twin Lakes area to provide greenway/wildlife corridors and to encourage more pedestrian trips and fewer vehicles trips in the area.
- 7) Any land dedication required as part of the City's park dedication requirements provide opportunities for conserving existing native land cover types, creating greenway/wildlife corridors through the AUAR area, and/or buffering Langton Lake Park. Cash in lieu of dedication should be used to purchase land located in the aforementioned areas and/or used to restore native, altered, or non-native cover types within the AUAR area or within Langton Lake Park to native cover types. It is noted that detailed natural resource management recommendations for Langton Lake Park are provided in the Roseville Parks Natural Resource Management Plan (2002).
- 8) The City will require that projects converting native cover types to an altered cover type to mitigate the conversion by restoring native cover types within the AUAR area or in Langton Lake Park. This mitigation strategy can be implemented in conjunction with the land dedication or cash in lieu of dedication strategies listed above in Mitigation Strategy 7.
- 9) The City will continue to follow the 2001 Twin Lakes Business Park Master Plan to mitigate the cumulative impacts of development within the AUAR area including, but not limited to, the ten broad planning principles listed below:
  - Create a buffer to protect and enhance the public enjoyment of Langton Lake
  - Protect the residential neighborhoods with less intrusive land uses
  - Create a livable environment with a mix of uses
  - Create compatibility between uses and building designs
  - Minimize the impact of commercial traffic onto residential streets; reduce congestion at main intersections
  - Clean up soil and groundwater pollution

- Provide a range of quality jobs
  - Diversify the tax base
  - Provide a flexible land use plan
  - Located use in areas where they can best take advantage of necessary market forces
- 10) Project proposers will need to address, as appropriate, findings from Phase I and II Environmental Site Assessments (ESAs), including the preparation and implementation of Response Action Plans (RAP) and/or Development Response Action Plans (DRAP) pursuant to local, state, and federal regulations.
- 11) The City will require project proposers to remediate, as appropriate, soil and groundwater contamination for the intended redevelopment use pursuant to Minnesota and federal law.
- 12) The City will work with MPCA to require that materials dumped within the AUAR area, hazardous materials, petroleum products, and/or asbestos be managed appropriately in accordance with MPCA guidelines.
- 13) The City will work with the MPCA, EPA, and project proposers to implement the recommendations from the Supplemental Groundwater Evaluation Report (August 2004), including but not limited to:
- Additional environmental investigation should be considered at the properties where the trichloroethylene (TCE) concentrations exceed the Health Risk Limit (HRL). If a source is found on one or more of these properties, additional subsurface investigation is recommended to define the lateral extent of the TCE contamination.
  - Future redevelopment should consider the presence of TCE in the glacial aquifer. Site specific investigations should be conducted in a way that will identify potential source(s), magnitude, and extent to TCE in the AUAR area
  - Based on the presence of diesel range organics (DRO) in the glacial aquifer and throughout the AUAR area, environmental investigation with regard to petroleum contamination should be preformed throughout the AUAR area.
  - Prior to undertaking environmental assessments and investigations on individual parcels within the AUAR area, the findings and conclusions of the Supplemental Groundwater Evaluation Report (August 2004) should be considered. By doing so, future investigations can be streamlined to facilitate and expedite redevelopment.
- 14) The City will require that project proposers submit photographs and note the construction dates for any buildings over 50 years old, and submit them to the State Historic Preservation Office for an initial assessment.
- 15) The City will require a traffic impact analysis for all development projects within the AUAR area. The traffic impact analysis will assist the City and other road authorizes in determining the appropriate mitigation measures that are required to reasonably mitigate impacts of a specific development proposal. If the City determines that a specific proposed project causes impacts that exceed the thresholds that the mitigation strategies where meant to address (see Mitigation Strategy 16), then the development intensity/density of such a project may need to be reduced.

- 16) The City, in cooperation with Ramsey County and the Minnesota Department of Transportation, will monitor traffic volumes and movements in the Twin Lakes area in order to reevaluate impacts of development. Specific recommended improvements to the transportation system include the following (Please note that the recommended improvements listed below, unless noted specifically for Scenario A, should be applied all scenarios at full development):

**16.A. County Road C at Cleveland Avenue**

- Construct a dedicated westbound right-turn lane (with turn lane storage)
- Construct an additional southbound left-turn lane (dual left-turn lanes) (**Scenario A only**)
- Construct a southbound right-turn lane (with turn lane storage) (**Scenario A only**)
- Construct a northbound right-turn lane (**Scenario A only**)
- Extend the existing eastbound left-turn lane (**Scenario A only**)

**16.B County Road C at Fairview Avenue**

- Construct right-turn lanes for the eastbound, westbound and southbound approaches (**Scenario A only**)

**16.C County Road C at Snelling Avenue**

- Construct an additional north and southbound through lane along Snelling Avenue (6-lane facility) (**assumed for existing conditions**)
- Construct an additional eastbound and westbound left-turn lane (dual left-turn lanes) (**assumed for existing conditions**)
- Construct a westbound right-turn lane (**Scenario A only**)

**16.D Snelling Avenue at County Road C2**

- Construct an additional north and southbound through lane along Snelling Avenue (6-lane facility) (**assumed for existing conditions**)
- Construct an additional eastbound left-turn lane (dual left-turn lanes)
- Extend the existing westbound left-turn lane
- Construct a westbound right-turn lane

**16.E Snelling Avenue at Lydia Avenue**

- Construct an additional north and southbound through lane along Snelling Avenue (6-lane facility) (**assumed for existing conditions**)
- Construct an additional eastbound left-turn lane (dual left-turn lanes)

**16.F Cleveland Avenue at I-35W Northbound Ramps**

- Construct an additional northbound left-turn lane (dual left-turn lanes)
- Construct a northbound right-turn lane
- Extend existing southbound left-turn lane
- Construct an additional eastbound left-turn lane (dual left-turn lanes) (**Scenario A only**)
- Construct two eastbound through lanes
- Construct a westbound left-turn lane
- Construct two westbound through lanes
- Construct a westbound right-turn lane (**Scenario A only**)

**16.G Cleveland Avenue at County Road C2**

- Install traffic signal
- Construct a westbound right-turn lane
- Construct a northbound right-turn lane

**16.H Cleveland Avenue at County Road D**

- Construct two northbound left-turn lanes (dual left-turn lanes) (**Scenario A only**)
- Construct an eastbound left-turn lane
- Construct an eastbound right-turn lane (**Scenario A only**)

**16.I County Road D at I-35W Northbound Ramps**

- Construct a westbound right-turn lane
- Extend the existing northbound right-turn lane

**16.J County Road D at Fairview Avenue**

- Eliminate the northwest approach (New Brighton Road) to create a 4-legged intersection
- Convert County Road D to a three-lane section between Cleveland Avenue and Fairview Avenue with a continuous center left-turn lane
- Install traffic signal
- Construct a northbound left-turn lane
- Construct a southbound right-turn lane

**16.K Fairview Avenue at Lydia Avenue**

- Install traffic signal
- Construct a northbound right-turn lane
- Construct a southbound left-turn lane
- Construct a westbound right-turn lane

**16.L Fairview Avenue at Terrace Avenue**

- Install traffic signal
- Construct an eastbound and westbound left-turn lanes
- Construct two eastbound and westbound through lanes (**Scenario A only**)
- Construct an eastbound and westbound right-turn lane
- Construct a northbound and southbound left-turn lane (**Scenario A only**)
- Construct a northbound and southbound right-turn lanes

**16.M** In addition to adjacent roadway geometric improvements, other strategies are available to reduce the amount of traffic that a development/redevelopment generates [Travel Demand Management (TDM)], thus affecting the way the adjacent roadway operates. The following proposed actions are provided as a guide toward TDM strategy implementation:

- Support and Promote Bicycling and Walking as Alternatives
- Support Transit as an Alternative
- Support and Promote Car and Vanpooling
- Provision of Information on Transportation Alternatives
- Vehicular Traffic Movement & Access Restriction
- Participate with Regional TDM Organizations

- Monitor Action Implementation and Goal Achievement

The City of Roseville looks forward to working with the various agencies and individuals to address any further comments on these responses or objections to the Mitigation Plan.