

ASSESSMENT OF ENVIRONMENTAL EFFECTS

of the
Metropolitan Airports Commission's
Seven Year Capital Improvement Plan

1995 to 2001

LAKE ELMO AIRPORT

for the
METROPOLITAN AIRPORTS COMMISSION



prepared by
THE AIRPORT TECHNOLOGY AND PLANNING GROUP, INC.

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Consultant's Report

ASSESSMENT OF ENVIRONMENTAL EFFECTS

LAKE ELMO AIRPORT
METROPOLITAN AIRPORTS COMMISSION
SEVEN-YEAR CAPITAL IMPROVEMENT PLAN

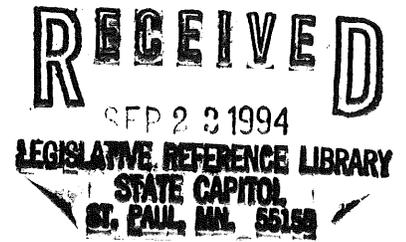


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ASSESSMENT OF ENVIRONMENTAL EFFECTS

LAKE ELMO AIRPORT METROPOLITAN AIRPORTS COMMISSION SEVEN-YEAR CAPITAL IMPROVEMENT PLAN

1. INTRODUCTION

This report, prepared in response to the requirements of Minnesota Statutes 1986, Chapter 473, amended by Minnesota Statutes 1988, Chapter 664, presents an assessment of the environmental effects of projects identified in the Commission's seven-year capital improvement plan (1995-2001) for Lake Elmo Airport. The Airport's location in the Metropolitan area is depicted in Exhibit 1.

This assessment examines the cumulative environmental effects of all the listed Capital Improvement Projects proposed for implementation at the Airport between 1995 and 2001. Many of the projects listed entail only repair or rehabilitation of existing facilities. Such work would not affect the before/after usage of the facilities and, as such, would not add to or subtract from the cumulative environmental effects. The projects included in this evaluation are those that have the potential to alter, create, or in some manner affect the environmental impact categories listed below.

2. IMPACT CATEGORIES USED TO ASSESS ENVIRONMENTAL EFFECTS

Eight impact categories were used to assess the environmental effects of the proposed Capital Improvement Projects for Lake Elmo Airport. These eight categories and the types of projects that would have an effect on each category are discussed below.

A. Aircraft Noise

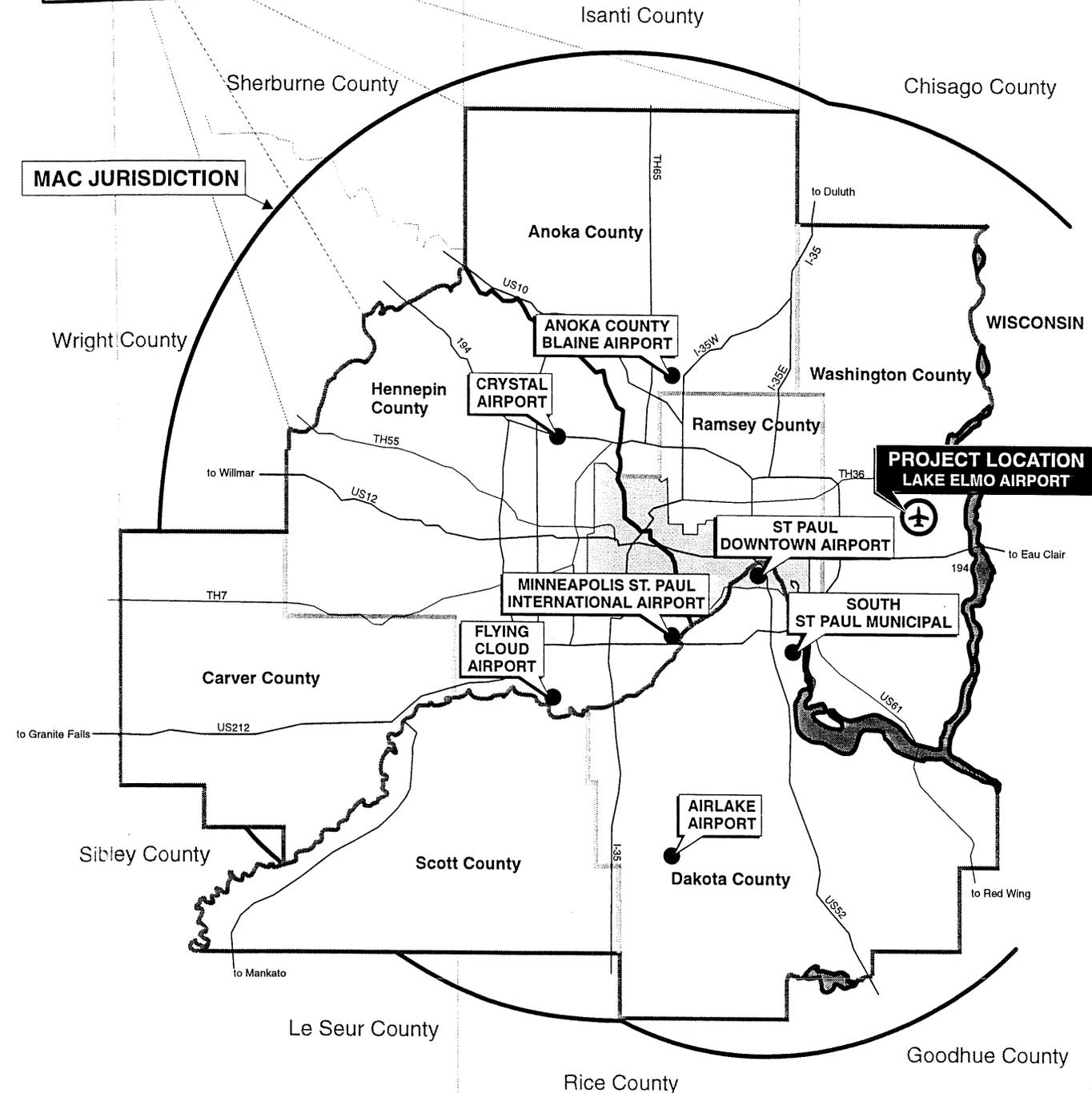
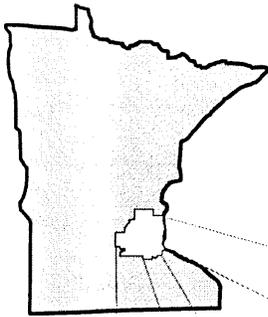
The types of projects which might impact the effects of noise on the environment are new or lengthened runways, new or lengthened taxiways, new maintenance hangars, facilities that may increase operations, and noise insulation and other noise mitigation measures.

B. Vehicular Traffic

The types of projects which might impact the effects of traffic at the Airport or to the surrounding community are new buildings or building additions, new parking spaces or structures, and new or modified roadways or roadway systems.

C. Air Quality

Air quality impacts at the Airport will be primarily caused by changes in vehicular or aircraft activity. Projects which might have an impact will generally be the same projects which affect aircraft noise or vehicular traffic.



MAC JURISDICTION

**PROJECT LOCATION
LAKE ELMO AIRPORT**



SOURCE: M.A.C.

LAKE ELMO AIRPORT
ASSESSMENT OF ENVIRONMENTAL EFFECTS

PROJECT LOCATION

EXHIBIT
1

D. Water Quality

Projects which might affect water quality are those which create additional runoff (new pavements or building), fire suppression systems, new retention basins, or projects which might affect the groundwater.

E. Light Emissions

Projects evaluated under this category are airport beacons, lights associated with new runways or taxiways, and lights associated with new roadways, parking lots, or ramps.

F. Sewage

Those projects which have the potential to increase sewage discharged into the sewage disposal system are new or expanded buildings or other changes that significantly alter the number of people using a facility.

G. Wetland Impact

All projects are evaluated to see if they would entail the full or partial filling of wetlands.

H. Relocation Impacts

Relocation impacts are associated with land acquisition projects that will displace owner-occupied residential units or businesses.

3. PROJECTS WITH POTENTIAL ENVIRONMENTAL EFFECTS

Table 1 provides a listing of all the projects included in the MAC's Capital Improvement Plan for the years 1995 through 2001 for Lake Elmo Airport. Those projects determined to contribute or not contribute to the cumulative environmental effects at the Airport are so noted on Table 1. Seven projects are scheduled between 1995 and 2001. Five of these projects have been addressed in the 1992 AOEE and one project is a rehabilitation project. The findings of the previous AOEE assessments are still valid since there have been no significant changes to the scope of these projects. Where appropriate, additional data have been added to the information in the previous AOEE. One project (Building Area Expansion) that has not been previously discussed has the potential for environmental effect.

4. CUMULATIVE ENVIRONMENTAL EFFECTS

Following is a summary of the cumulative environmental effects by impact category for the Capital Improvement Plan projects for Lake Elmo Airport. Exhibit 2 depicts these projects. Appendix A contains an analysis of environmental effects on a project-by-project basis.

TABLE 1

LAKE ELMO AIRPORT

METROPOLITAN AIRPORTS COMMISSION

See Note	Project Description	1995	1996	1997	1998	1999	2000	2001
1	Pavement Rehabilitation	\$250,000	\$250,000	\$200,000	\$200,000			
*	Building Area Expansion		\$500,000					
^	Road Relocation		\$300,000					
^	Runway 13/31 Construction		\$900,000					
^	Runway 3/21 Extension			\$300,000				
^	Runway 3/21 Lighting			\$200,000				
^	TVOR		\$200,000					
Lake Elmo - Total		\$250,000	\$2,150,000	\$700,000	\$200,000	\$0	\$0	\$0

Notes:

- (*) This item has the potential for effects and is discussed in the AOEE text.
- (1) A rehabilitation project that does not physically alter the original size.
- (2) A structural, mechanical, or electrical modification or airport support function that does not increase size or passenger capacity.
- (^) Project addressed in previous Assessment of Environmental Effects (AOEE) and no change of workscope is expected.
- (**) Project has also been addressed in other environmental document (EA/EIS/EAW).

A. Noise Impacts

As part of the 1992 Comprehensive Development Plan Update prepared for the Airport, a brief noise analysis was done. The results of that analysis showed the increase in noise over the next 20 years to be minor and acceptable. The noise analysis contained in the 1992 Comprehensive Development Plan Update took all of the projects discussed in this AOEE into account. While this noise analysis indicated that the size of the noise contours would grow as the number of annual operations increased, no homes are located within the 65 DNL contour. By 2010, Zone D (55 DNL to 60 DNL) as defined by the Metropolitan Council, would expand to include four homes. Aircraft noise in Zone D is considered to have a minimal impact. Therefore, the cumulative effects of the projects are not expected to create significant noise impacts.

B. Traffic Impacts

The cumulative effects of the projects are not expected to create significant impacts to vehicular traffic. Blackwoods Lane, however, will require relocation to the south to accommodate the proposed extension of Runway 13/31. This may create a temporary inconvenience for traffic while construction is underway.

C. Air Quality Impacts

The cumulative effects of the projects are not expected to create significant impacts to air quality.

D. Water Quality Impacts

The cumulative effects of additional stormwater runoff caused by the increased impermeable surfaces for a predicted five-year storm event is expected to be approximately 13.5 cubic feet per second for all projects in the seven-year CIP. The additional runoff can be accommodated on-site by widening ditches and adding retention ponds as shown in the 1992 Comprehensive Development Plan Update. The increase in quantity is not expected to affect any off-site areas. Skimming devices have been added in some locations to protect against detrimental effects of stormwater runoff. Additional skimming devices may be added if necessary as the additional projects are constructed.

E. Light Emissions Impacts

The cumulative effects of the projects are not expected to create significant light emission impacts.

F. Sewage Impacts

The cumulative effects of the projects are not expected to create significant impacts to the existing sewage system.

G. Wetland Impacts

The 1992 Comprehensive Development Plan Update indicates that the construction of the taxiway to serve Runway 13L/31R would require the filling of approximately three acres of wetlands. Relocating Blackwoods Lane may impact another 2.75 acres of wetlands. The area of wetlands impacted by relocating Blackwoods Lane does not appear on the National Wetlands Inventory (NWI) map for the area, however, wetlands were identified from analysis of aerial photography in the Comprehensive Development Plan Update. The total impact to wetlands appears to be approximately 5.75 acres. U.S. Army Corps of Engineers permitting would be required before construction can begin. It is possible a nationwide permit could be obtained since less than 10 acres will be impacted. Appropriate mitigation for wetlands impacts resulting from the proposed development will be required.

H. Relocation Impacts

The cumulative effects of the projects are not expected to create residential relocation impacts.

APPENDIX A
ENVIRONMENTAL ANALYSIS OF INDIVIDUAL PROJECTS

1. PROJECTS BEGINNING IN 1995

A pavement rehabilitation project, which will not physically alter the original size of the Airport, is the only Capital Improvement Project scheduled for 1995. This project will have no environmental impact.

2. PROJECTS BEGINNING IN 1996

The following projects are included in MAC's Capital Improvement Program for 1996 for Lake Elmo Airport that have the potential to effect the environment:

- Building Area Expansion
- Road Relocation
- Runway 13/31 Construction
- Terminal VOR

A. Building Area Expansion

Currently, hangar space at Lake Elmo Airport is extremely limited, and additional building area is needed to meet the demand for new hangars. An area in the southeast section of the Airport was identified for building area construction on the Airport Layout Plan (ALP). Possible impacts that could result from the expansion of the building area are discussed below.

- Aircraft Noise Impacts

Expanding the size of the building area will increase the number of based aircraft, and subsequently, the number of operations at the Airport. The noise contours were developed assuming that all proposed improvements recommended in the plan were in place, including the building area expansion, and that the Airport has the number and type of operations forecast for the year 2010. While this noise analysis indicated that the size of the noise contours would grow as the number of annual operations increased, no homes are located within the 65 DNL contour. By 2010, Zone D (55 DNL to 60 DNL) as defined by the Metropolitan Council, would expand to include four homes. Aircraft noise in Zone D is considered to have a minimal impact.

An increase in noise levels will likely occur whether or not the proposed improvements are made. While the existing land uses around the Airport generally remain compatible according to Federal and regional guidelines, there will be some area residents who will be bothered by the increase in noise. This is especially true based upon the rural nature of the Lake Elmo area. The effects of this project will have no significant effect on airport noise.

- Vehicular Traffic Impacts

The building area development will not alter any established transportation patterns or disrupt access to a community facility. The surrounding roads have adequate capacity to handle the slight increase in vehicle trips expected as a result of the expansion. There will be no significant effects on traffic.

- Water Quality Impacts

The estimated runoff generated by construction for the new building area will be similar to the quantity generated by the existing building area. The 1992 Comprehensive Development Plan Update indicated that additional runoff from planned projects, including building area construction, can be accommodated on-site by widening ditches and adding retention ponds. During the project's final design, the watershed district will be consulted to assure that the drainage system is correctly sized to handle the flow and that impacts (if any) are minimized.

- Light Emissions Impacts

Lighting required for the purpose of security will be the most visible impact but is not expected to affect adjacent land owners. Aircraft lighting is of such low intensity that there should be no impacts.

- Sewage Impacts

It is not anticipated that sewer and water lines will be extended to the building site. Therefore, there should be no impacts with regard to sewage.

B. Road Relocation

A portion of Blackwoods Lane needs to be relocated to conform to FAA safety area requirements as recommended in the 1992 Comprehensive Development Plan Update for the Airport. The only impact categories that may be affected by this project are vehicular traffic and water quality.

- Vehicular Traffic

Relocating the road would cause a slight increase in travel distance for vehicles. The increase in linear distance is about 600 feet, which is considered to be insignificant

- Water Quality

The proposed runway would cause an increase in stormwater runoff for a predicted five-year storm event by 1.7 cubic feet per second. The additional runoff can be accommodated on-site by widening ditches and adding retention ponds as shown in the 1992 Comprehensive Development Plan Update. The increase in quantity is not expected to affect any off-site areas. Skimming devices can be added to protect against detrimental effects of stormwater runoff.

- Wetlands

The 1992 Comprehensive Development Plan Update indicated that approximately 2.75 acres of wetlands will require filling to accommodate the relocation of Blackwoods Lane. These wetlands do not appear on the NWI maps, however, they were identified by analysis of aerial photography. Coordination with the U.S. Army Corps of Engineers will be required to obtain a permit to fill these wetlands. Appropriate mitigation will have to be developed.

C. Runway 13/31 Construction

The 1992 Comprehensive Development Plan Update for Lake Elmo Airport recommended that a 3,300-foot long runway be constructed to better meet the needs of aircraft currently using the Airport. The runway may at some future date require expansion to 3,900 feet. This project only is for the construction of the 3,300-foot long runway. Several alternatives for accomplishing this extension were evaluated. Exhibit 2 illustrates the recommended alternative as contained in the 1992 Comprehensive Plan Update. This layout is similar to the recommendations of the previous Master Plan. An environmental review was completed as part of the 1992 Comprehensive Development Plan Update from which the following discussion is based. A Federal Environmental Assessment (EA) and State Environmental Impact Statement (EIS) will be prepared for the new runway prior to its construction.

- Aircraft Noise

Noise contours were developed for the 1992 Comprehensive Development Plan Update. The noise contours were developed assuming that all proposed improvements recommended in the plan were in place, including the new runway, and that the Airport has the number and type of operations forecast for the year 2010. While this noise analysis indicated that the size of the noise contours would grow as the number of annual operations increased, no homes are located within the 65 DNL contour. By 2010, Zone D (55 DNL to 60 DNL) as defined by the Metropolitan Council, would expand to include four homes. Aircraft noise in Zone D is considered to have a minimal impact.

An increase in noise levels will likely occur whether or not the proposed improvements are made. While the existing land uses around the Airport generally

remain compatible according to Federal and regional guidelines, there will be some area residents who will be bothered by the increase in noise. This is especially true based upon the rural nature of the Lake Elmo area.

- Vehicular Traffic

The impact of the new runway is not expected to negatively affect vehicular traffic. To implement this project, Blackwoods Lane will require relocation, however, impacts will be temporary.

- Air Quality

The 1992 Comprehensive Development Plan Update found that no adverse air quality impacts are expected as a result of future development proposed for the Airport.

- Water Quality

The runway development would cause an increase in stormwater runoff for a predicted five-year storm event by 12.1 cubic feet per second. The additional runoff can be accommodated on-site by widening ditches and adding retention ponds as shown in the 1992 Comprehensive Development Plan Update. The increase in quantity is not expected to affect any off-site areas. Skimming devices are being added to protect against detrimental effects of stormwater runoff. Additional skimming devices may be needed for the future.

- Light Emission Impacts

There will be runway edge lights on the proposed runway. The impact resulting from these lights are expected to be minimal to the surrounding community. These lights are very low to the ground and would not dispense much light beyond Airport property. Significant impacts are not anticipated.

- Sewage

This project is not expected to create an increase in sewage disposal.

- Wetlands

According to the 1992 Comprehensive Development Plan Update, approximately three acres of wetlands will require filling as a result of taxiway construction. Coordination with the U.S. Corps of Engineers will be required to obtain a permit. It may be possible to obtain a nationwide permit since less than 10 acres of wetlands will be impacted.

- Relocation Impacts

This project will not create residential relocation impacts.

D. Terminal VOR (TVOR)

Currently, there is not a VOR approach to either the Lake Elmo or St. Paul Downtown Airports. The possibility of a VOR/DME approach facility which could serve both airports will be evaluated in 1995, and possibly implemented in 1996. It is unknown at this time where the VOR would be located. The impacts from its location should be minimal.

The improved approach may increase operations slightly during poor weather conditions.

- Aircraft Noise

The increase in operations was assumed in the noise modeling already done as part of the 1992 Comprehensive Development Plan Update which shows no significant impacts.

An instrument approach will probably improve noise impacts in some respects. It is likely that a TVOR will establish a straight in approach to Runway 13/31 which affects less area than the "circle to land" approach that is currently used at the Airport.

3. PROJECTS BEGINNING IN 1997

The following projects are included in MAC's Capital Improvement Program for 1997 and have the potential to effect the environment:

- Runway 3/21 Extension
- Runway 3/21 Lighting

A. Runway 3/21 Extension

The 1992 Comprehensive Development Plan also recommended that the crosswind runway may need to be lengthened to 3,100 feet to meet future demand. Exhibit 2 shows the runway extension. The only impact categories expected to be affected are aircraft noise and water quality. An environmental review was completed as part of the 1992 Comprehensive Development Plan Update which evaluated impacts within these categories.

- Aircraft Noise

Noise contours were developed for the Long-Term Comprehensive Plan. They assumed all proposed improvements recommended in the plan were in place, including the runway extension, and that the airport has the number and type of operations forecast for the year 2010. As previously indicated, this noise analysis indicated that the size of the noise contours would grow as the number of annual

operations increased, no homes are located within the 65 DNL contour. By 2010, Zone D (55 DNL to 60 DNL) as defined by the Metropolitan Council, would expand to include four homes. Aircraft noise in Zone D is considered to have a minimal impact.

The increase in noise levels will likely occur whether or not the proposed improvements are made. While the existing land uses around the Airport generally remain compatible according to Federal and regional guidelines, there will be some area residents who will be bothered by the increase in noise. This is especially true based upon the rural nature of the Lake Elmo area.

- Water Quality

The added runway surface does cause an increase in stormwater runoff for a predicted five-year storm event by 0.9 cubic feet per second. The additional runoff can be accommodated on-site by widening ditches and adding retention ponds as shown in the 1992 Comprehensive Development Plan Update. The increase in quantity is not expected to affect any off-site areas. Skimming devices are being added to protect against detrimental effects of stormwater runoff.

4. OTHER YEARS

There are currently no projects scheduled to begin in the 1998 through 2001 timeframe. Pavement rehabilitation is programmed to continue through 1998.

APPENDIX B

CAPITAL IMPROVEMENT PROGRAM (1995)
CAPITAL IMPROVEMENT PROJECTS (1996)

1. CAPITAL IMPROVEMENT PROGRAM - 1995

A. Pavement Rehabilitation - \$250,000

Periodically, it is necessary to rehabilitate aircraft operational areas (runways, taxiways, aprons) through bituminous overlays, sealcoats, or in some instances, reconstruction, to restore the surfaces to a smooth, even condition and improve overall operating conditions. This year's program will include reconstruction of alleyways in the north half of the West Side Building Area. This project will be the first phase of a four year program to rehabilitate landside pavements at Lake Elmo.

2. CAPITAL IMPROVEMENT PROJECTS - 1996

A. Pavement Rehabilitation - \$250,000

Periodically, it is necessary to rehabilitate aircraft operational areas (runways, taxiways, aprons) through bituminous overlays, sealcoats, or in some instances, reconstruction, to restore the surfaces to a smooth, even condition and improve overall operating conditions. Items to be addressed will be analyzed in 1995 and a recommendation will be available when the CIP is updated for the 1996 construction season.

B. Building Area Expansion - \$500,000

The Comprehensive Development Plan prepared for the Lake Elmo Airport in 1992 indicates that additional building area will be required as development demands meet or exceed the projected forecasts. Currently hangar space at Lake Elmo is extremely limited and additional building area construction will be required to meet the expected demand for new hangars.

C. Runway 13/31 Construction - \$900,000

Lake Elmo Airport is classified as a minor airport according to the Metropolitan Council classification. Airports under this classification have primary runways from 2,500 to 5,000 feet and may have precision or non-precision approach capability. The longest runway now at Lake Elmo is 2,850 feet. Based upon forecasts which anticipate an increase in the number of twin engine aircraft using the airport, a 3,900 foot runway is recommended. Several alternative runway configurations were investigated. The selected layout is a new runway parallel to and located 700 feet north from Runway 13/31.

D. Road Relocation - \$300,000

The construction of Runway 13/31 requires the relocation of Blackwoods Lane south of its present alignment.

E. TVOR - \$200,000

Currently, there is not VOR approach to either the Lake Elmo or St. Paul Downtown Airports. The feasibility of a VOR/DME approach facility which would serve both airports will be evaluated in 1995, and possibly implemented in 1996.