MINNEAPOLIS / ST. PAUL INTERNATIONAL AIRPORT

ASSESSMENT OF ENVIRONMENTAL EFFECTS OF THE METROPOLITAN AIRPORTS COMMISSION'S SEVEN YEAR CAPITAL IMPROVEMENT PLAN

FOR THE
METROPOLITAN AIRPORTS COMMISSION

BY
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ASSESSMENT OF ENVIRONMENTAL EFFECTS

Minneapolis/St. Paul International Airport
Metropolitan Airports Commission Seven Year Capital
Improvement Plan

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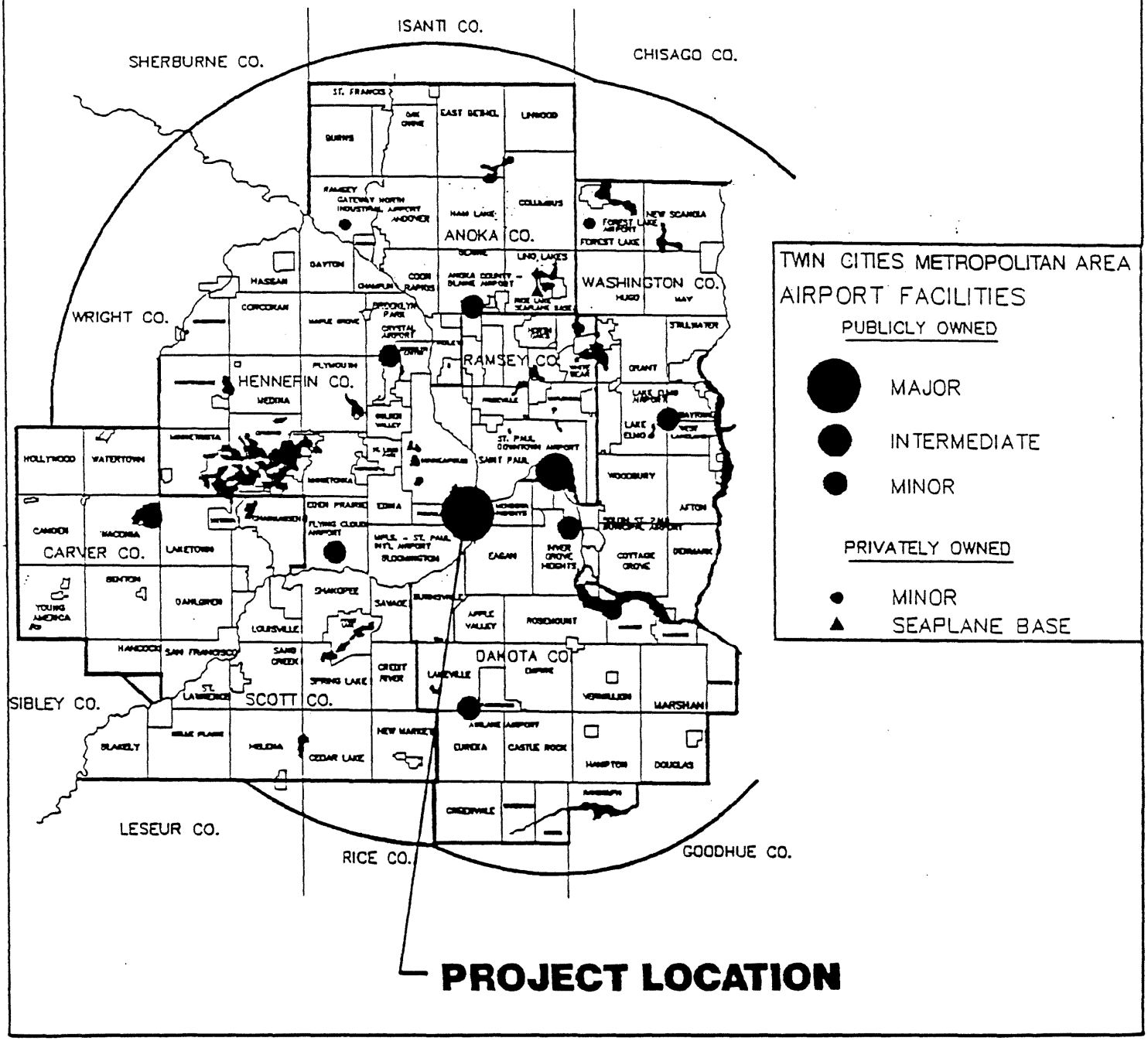

ASSESSMENT OF ENVIRONMENTAL EFFECTS **MINNEAPOLIS/ST. PAUL INTERNATIONAL AIRPORT**	FIGURE 1

ASSESSMENT OF ENVIRONMENTAL EFFECTS

Minneapolis/St. Paul International Airport
Metropolitan Airports Commission Seven Year Capital
Improvement Plan

A. 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 in the Metropolitan Airports Commission's Seven-Year Capital Improvement Plan (1992-1998) for Minneapolis-St. Paul International Airport.

This assessment examines the cumulative environmental effects of all the listed capital improvement projects at the airport from 1992 to 1998. 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 anticipated measurable effects during construction are discussed in general terms under Paragraph C. The projects included in the cumulative evaluation are those that have the potential of altering, creating, or in some manner affecting the environmental impact categories listed below.

IMPACT CATEGORIES USED TO ASSESS ENVIRONMENTAL EFFECTS

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, additional aircraft gates or facilities that may increase operations, and noise insulation and other noise mitigation measures.

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.

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.

Water Quality

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

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.

Sewage

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

Wetland Impact

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

Residential Relocation Impacts

Residential relocation impacts are associated with land acquisition projects that will displace occupied residential units.

B. PROJECTS WITH POTENTIAL ENVIRONMENTAL EFFECTS

Table 1 is a listing of all the projects included in the MAC's Capital Improvement Plan for the years 1992 through 1998. Those projects determined to not contribute to the cumulative environmental effects at the airport are so noted on Table 1 with a numerical code. The notations are coded by number in order to better explain the type of work the project entails and why this type of project will not contribute to the cumulative environmental effects. As further discussed in the next section, environmental effects of construction activities will also be controlled.

TABLE 1
MINNEAPOLIS / ST. PAUL INTERNATIONAL AIRPORT

See Note	Project Description	1992	1993	1994	1995	1996	1997	1998
	FIELD & RUNWAYS							
(1)	Airfield Signage	$500,000						
^*	Airside Bituminous Construction	$750,000	$500,000	$500,000	$500,000	$500,000	$500,000	$500,000
^**	Apron Paving-SW Hangar/Cargo Area	$6,000,000						
(1)	Electrical Modifications	$150,000	$150,000	$150,000	$150,000	$150,000	$150,000	$150,000
*	HHH Terminal-Remote Apron Lighting	$100,000						
(3)	HHH Terminal Blast Fence	$300,000						
(1)	Miscellaneous Construction	$275,000	$275,000	$275,000	$275,000	$275,000	$275,000	$275,000
(1)	Pvmt Rehab-Aprons, Taxiways, etc.	$2,000,000	$2,500,000	$2,500,000	$2,500,000	$2,500,000	$2,500,000	$2,500,000
(1)	Pvmt Rehab-Navy Ramp	$500,000						
(1)	Pvmt Rehab-Runway 11L/29R			$5,000,000				$25,000,000
(1)	Pvmt Rehab-Runway 11R/29L	$2,500,000						
(1)	Pvmt Rehab-Runway 4/22		$5,500,000					
*	Retention Basin Improvements	$300,000						
*	Runway 11L/29R Holding Aprons			$3,200,000				
*	Runway 29L Safety Area	$600,000						
^**	Runway 4/22 Extension	$11,000,000						
^*	Site Preparation	$100,000	$100,000		$100,000		$100,000	
^*	Taxiway B Construction			$5,700,000		$8,000,000		
^*	Taxiway C Construction		$3,000,000					
^*	Taxiway C Reconstruction	$3,000,000						
^*	Taxiway C/D Complex		$4,500,000	$5,300,000				
(1)	Utility Rehabilitation	$250,000		$250,000		$250,000		
	FIELD & RUNWAYS SUBTOTALS	$28,325,000	$16,525,000	$22,875,000	$3,525,000	$11,675,000	$3,525,000	$28,425,000
	ENVIRONMENTAL							
^*	Land Use Modifications	$4,000,000	$4,000,000	$4,000,000	$4,000,000	$4,000,000	$4,000,000	$4,000,000
^*	Noise Suppressor	$6,000,000						
	ENVIRONMENTAL SUBTOTALS	$10,000,000	$4,000,000	$4,000,000	$4,000,000	$4,000,000	$4,000,000	$4,000,000

NOTES:
- ^ Items discussed in previous Assessment of Environmental Effects.
- * The items marked with an asterisk have potential effects that are discussed in the text.
- ** Projects which are covered in the text and also in other environmental documents (EA/EIS/EAW).
- (1) A rehabilitation project which does not physically alter the original size.
- (2) An electrical or mechanical device that monitors or indicates existing conditions.
- (3) A structural, mechanical or electrical modification that does not increase size or passenger capacity.
- (4) Years and costs to be determined based upon NWA's location determination.

TABLE 1
MINNEAPOLIS / ST. PAUL INTERNATIONAL AIRPORT

See Note	Project Description	1992	1993	1994	1995	1996	1997	1998
	SELF-LIQUIDATING							
(3)	Green Concourse Moving Walks				$6,600,000			
(3)	NWA Concourse Modifications	$1,650,000						
(4)	NWA Heavy Maintenance Facility							
^**	NWA Main Base Modifications	$38,000,000	$14,000,000					
*	NWA Ramp Equipment Wash Facility	$250,000						
(3)	NWA World Club	$2,000,000						
**	Sun Country Hangar	$9,000,000						
	SELF-LIQUIDATING SUBTOTALS	$50,900,000	$14,000,000	$0	$6,600,000	$0	$0	$0
	LANDSIDE							
(3)	Asbestos Abatement	$200,000	$200,000	$200,000	$250,000	$250,000	$250,000	$250,000
^**	Auto People Move Sys (Rent Car Pkg)	$16,800,000	$2,400,000					
(1)	Bag Conveyor/Carrousel System Rehab	$1,000,000						
(3)	Basement Concrete Restoration	$300,000						
(3)	Boiler Plant Expansion			$1,000,000				
(3)	Boiler Plant Modifications	$200,000						
(1)	Comm Ops Center Modification		$400,000					
*	Concession Area Development	$500,000	$4,000,000					
(3)	Econolot Bus Shelter Reconstruction	$150,000						
(1)	Employee Lots Reconstruction	$100,000						
*	GTC East Construction	$3,700,000						
**	GTC Middle, West and Valet Construction	$8,650,000	$3,850,000					
*	GTC Utilities Construction	$450,000						
(3)	Green Concourse Interior Rehab	$500,000						
*	Green Concourse Mech Sys Conv	$3,350,000						
^*	Ground Trans Control System	$500,000	$100,000					
*	HHH Terminal Expansion		$15,000,000		$4,500,000			

NOTES:
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- ** Projects which are covered in the text and also in other environmental documents (EA/EIS/EAW).
- (1) A rehabilitation project which does not physically alter the original size.
- (2) An electrical or mechanical device that monitors or indicates existing conditions.
- (3) A structural, mechanical or electrical modification that does not increase size or passenger capacity.
- (4) Years and costs to be determined based upon NWA's location determination.

TABLE 1
MINNEAPOLIS / ST. PAUL INTERNATIONAL AIRPORT

See Note	Project Description	1992	1993	1994	1995	1996	1997	1998
	LANDSIDE (CONTINUED)							
(1)	Info/Directional Signing Adjmts	$400,000		$50,000		$50,000		$50,000
(3)	Landside Electrical	$200,000						
(3)	Limousine Counter Relocation		$100,000					
(3)	Lindbergh Temperature Control Upgrade	$400,000						
(3)	Lindbergh Concourse Door Replacement	$50,000						
(3)	Lindbergh Curtainwall Repairs	$150,000						
(3)	Lindbergh Electrical Modification	$200,000	$200,000	$200,000	$100,000	$100,000	$100,000	$100,000
(3)	Lindbergh Entrance Door Replacement	$500,000						
(3)	Lindbergh Interior Rehabilitation	$1,000,000						
(3)	Lindbergh Misc Modifications	$250,000	$250,000	$250,000	$250,000	$250,000	$250,000	$250,000
*	Lower Level Roadways Construction	$2,350,000	$550,000	$770,000				
(3)	Parking Structure Rehabilitation	$500,000	$500,000	$500,000	$500,000	$500,000		
(3)	Police Department Remodeling- Mezz.	$500,000						
(3)	Primary Distribution Sys Upgrade		$750,000					
^*	Public Safety Building	$150,000						
(1)	Regional Terminal Roof Reconstruction	$60,000						
*	Revenue Control Building Expansion	$85,000						
*	Snow Removal Equip. Bldg. Modifications	$1,200,000						
(3)	Taxicab & Limo Shelter Replacement			$250,000				
(3)	Terminal Sprinkler System Addition	$100,000	$100,000	$100,000	$100,000	$100,000	$100,000	$100,000
*	Trades Shop Building		$2,000,000					
^**	Upper Level Roadways Construction	$18,600,000						
(3)	West Terminal Area Rehabilitation	$200,000		$100,000		$100,000		$100,000
	LANDSIDE SUBTOTALS	$63,295,000	$30,400,000	$3,420,000	$5,700,000	$1,350,000	$700,000	$850,000
	YEARLY TOTALS	**$152,520,000**	**$64,925,000**	**$30,295,000**	**$19,825,000**	**$17,025,000**	**$8,225,000**	**$33,275,000**

NOTES:
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- * The items marked with an asterisk have potential effects that are discussed in the text.
- ** Projects which are covered in the text and also in other environmental documents (EA/EIS/EAW).
- (1) A rehabilitation project which does not physically alter the original size.
- (2) An electrical or mechanical device that monitors or indicates existing conditions.
- (3) A structural, mechanical or electrical modification that does not increase size or passenger capacity.
- (4) Years and costs to be determined based upon NWA's location determination.

C. IMPACTS DURING CONSTRUCTION

As noted, it is assumed in this assessment that normally practiced mitigation measures will be used during construction to minimize adverse environmental effects caused by noise, dust, erosion, etc. Since the environmental effects during construction will be of a temporary nature, they have not been included in the cumulative, long-term effects of the CIP.

Nonetheless, it is recognized that the planned repair/rehabilitation of Runway 11L/29R and 11R/29L plus, the lengthening of Runway 4/22 during the seven year program will require rerouting of air traffic for temporary periods. This rerouting will cause temporary changes in overflight noise levels. The greater noise levels from more flights concentrated on two of the three runways will be partially offset by reduced levels under the approaches of the runway temporarily out-of-service for repair/rehabilitation. The project having the greatest impacts will be the rehabilitation of Runways 11L/29R and 11R/29L. They will be completed during the closed window season, as much as possible, as was done during the Spring of 1989 with Runway 4/22, or at least phased to coincide with multiple closed window seasons. In addition, MAC, working with the Metropolitan Aircraft Sound Abatement Council (MASAC), will utilize whatever noise control/reduction measures are feasible during construction of the runway repair/rehabilitation projects, including:

1) Scheduling the work during the closed window season to the extent feasible.

2) Requiring longer working days and weeks by the contractors to expedite the work.

3) Balancing the effects of night construction noise with aircraft operating noise.

4) Enforcing stringent penalties on contractors for delays in work.

D. CUMULATIVE ENVIRONMENTAL EFFECTS

Following is a summary of the cumulative environmental effects by impact category. Appendix A contains an analysis of environmental effects on a project-by-project basis.

D.1 Aircraft Noise

Analysis of MAC's Capital Improvement Plan on a project-by-project basis found several projects that may impact the noise environment at/near the airport. These projects can be grouped into three general categories. The first group is projects that may produce a minor increase in aircraft noise; however, if each project is assessed alone, the increase is insignificant. This group includes Taxiway B Construction, HHH Terminal Expansion and Apron Paving at Southwest Hangar/Cargo Area.

The second group consists of projects that should produce a reduction in aircraft noise reception. This group includes Land Use Modifications beginning 1992 and the Noise Suppressor.

The third grouping consists of projects that will produce a definite change in noise. The only project in this grouping is the Runway 4/22 Extension.

In order to determine the cumulative environmental effects of the CIP on noise, the cumulative effects for each group were first determined, and the effects of each group were then combined for an overall effect.

As discussed in Appendix A, the three projects in the first group when evaluated by themselves are expected to have only insignificant noise impacts. It is estimated that a maximum of 26 additional operations per day could occur due to construction of the HHH Terminal Expansion and Apron Paving at the Southwest Hangar/Cargo Area. The Taxiway B construction should not increase operations. This represents an increase in airport operations of approximately 2.5%. The noise impact created by this very small increase will be insignificant in most cases. The only exception to this is if most of the increased operations occurred in the middle of the night. This situation would result in a noticeable increase in aircraft noise. The MAC has a policy of encouraging aircraft users to voluntarily avoid operations during the nighttime hours. Assuming most of the new users follow this policy, the increased noise will be negligible. The Stage III working group has proposed a ban on Stage II operations between 11:00 p.m. and 6:00 a.m. which should help ensure that significant nighttime increases do not occur.

The cumulative overall impact on noise from the first group of projects is, therefore, judged to be an insignificant to very minor increase.

For the second group, the cumulative effects of the Land Use Modifications are summarized in Section I.D of Appendix A. This indicates that there would be a significant positive impact to the environment concerning aircraft noise, primarily because of land use changes and corrective measures. An analysis of the Noise Suppressor (Section I.E of Appendix A) found that if constructed, it would have a limited positive impact on airport noise. However, with a cost of $6,000,000, it has a low benefit to cost ratio in comparison with other possible beneficial projects. The cumulative impact from the second group of projects would, therefore, have a significant positive impact to the environment.

The Runway 4/22 Extension, which is the only project in the third group, is covered in Section I.J of Appendix A. Section I.J contains a summary of the Draft Environmental Impact Statement prepared for this project. In brief, the Draft EIS prepared for the project concludes that if the preferred alternative is chosen, initially slightly more people will be placed in the Ldn 65 contour than for the no-build option (39,731 vs. 36,938). However, by the year 2000, the project would slightly

decrease the number of people in the Ldn 65 contour (23,791 vs. 24,108). In general, the proposed project will not result in the creation of any additional noise at MSP when compared with the no-build option.

The highest noise levels would remain in south Minneapolis, but the increased use of Runway 4-22 made possible by the project would produce a more even distribution of noise in the area surrounding MSP than the "No-Build" alternative.

In summary, the insignificant to very minor increase in noise impact from group one, added to the potential for a significant decrease in noise impact from group two, added to no increase in overall noise from group three, indicates that the overall cumulative impact upon the environment from noise will be positive (i.e. less noise) for the whole of the MAC's Capital Improvement Plan. It should be noted, however, that principally because of the Runway 4/22 extension, some areas would experience an increase in noise levels while other, larger geographical areas, would experience a decrease.

D.2 Cumulative Effects of Vehicular Traffic

Analysis of MAC's seven year CIP on a project-by-project basis reveals that several projects have an affect on airport traffic and the overall flow entering and leaving the airport.

The NWA main base modification project will have a definite impact to traffic on 34th Avenue and Glumack Drive. Modifications and expansions to Complex B will generate additional vehicular traffic due to an increase in the number of employees as well as additional truck traffic due to increased capacity and efficiency of the stores and maintenance facilities. This portion of the project will increase traffic on Glumack Drive by 550 vehicles per day (vpd). The estimated total traffic for Glumack Drive will then be 20,550 vpd or an increase of 2.75 percent. The roadway will be adequate on a daily basis to meet the increased demand.

The modifications and expansion to Complex C will not increase the number of employees, but it will increase truck generated vehicular traffic. It is estimated that there will be an increase of 80 vpd to traffic on 34th Avenue South. The existing Average Daily Traffic (ADT) of 34th Avenue including the additional traffic generated by the NWA B-747-400 facility is 12,460. Combining the increase due to the main base modifications will increase the 34th Avenue ADT by 0.6 percent to 12,540 vpd. The capacity of 34th Avenue South is 15,000 vpd which will be adequate to handle the increased demand.

Construction of a new air cargo apron and associated hangar, freight storage and equipment buildings in the southwest corner of the airport will increase employment, and therefore traffic, along 26th Avenue South. The existing ADT of 26th Avenue is about 3,200 vpd. By the time the new cargo area is fully built up, the ADT is

anticipated to have increased 100 percent to 6,400 vpd. The capacity of 26th Avenue is large enough to handle this increase in traffic.

The intersections of 26th Avenue South and East 78th Street, and 24th Avenue South and East 78th Street will feel the greatest effect of the increased traffic volumes. Both should be able to handle the higher volumes. Geometric modifications or signalization can improve the functioning of the latter intersection if delays become unacceptable.

The automated people mover, underground parking garage improvements, and the new upper and lower level roadways, when completed, along with the vertical circulation improvements will increase circulation/movement efficiency of the internal roadway traffic and pedestrian flow. No additional inbound or outbound trips will be generated by these facilities.

D.3 Air Quality

Analysis of MAC's Capital Improvement Plan on a project-by-project basis found three projects with the possibility of impacting the environment's air quality. These are the Ground Transportation Control System (Section II.D), the Upper Level Roadway (Section I.O), and the Lower Level Roadway (Section I.P).

The Ground Transportation Control System is expected to have a slightly positive impact on air quality. The system will control the flow of taxicabs, limousines and the courtesy vehicles into the vicinity of the Lindbergh Terminal. The reduction in number of idling vehicles is expected to improve air quality slightly.

The Upper and Lower Level Roadway Construction projects associated with the Ground Transportation Center should provide a slight improvement in air quality on the new roadway. The added lanes will provide more efficient vehicle movements and less traffic congestion resulting in a corresponding decrease in auto emissions. The Upper Level Roadway Rehabilitation could, by itself, possibly create air quality problems on the lower level roadways. However, the ventilation system which is a mitigative measure for the new seven level parking ramp and which will be installed in the same area is expected to assure continued compliance with the State Carbon Monoxide air quality levels.

In summary, the new roadway system is expected to maintain air quality in the roadway in front of the Lindbergh Terminal.

D.4 Water Quality

The airport is divided into four (4) drainage areas with four (4) discharge points. They are the Mother Lake Drainage Area, Snelling Lake Drainage Area, Minnesota River-South Drainage Area, and Minnesota River-North Drainage Area.

The estimated cumulative additional runoff has been calculated for each basin. The total runoff was calculated by adding together the total runoff calculated for each individual project. These totals are under each project in Appendix A. The estimated cumulative additional discharge based on a five year storm, of 12.6 cubic feet per second (cfs) and 7.4 cfs can apparently be handled by the Snelling Lake and Mother Lake Drainage Areas. The estimated additional discharge of approximately 46.4 cfs to the Minnesota River-South Drainage Area and discharge point is an increase of 12.7%. The estimated additional runoff of 29.1 cfs to Minnesota River-North Drainage Area is an increase of 6.8%. The Minnesota River Drainage Basin storm detention is at or near capacity. Further development in the basin may require modifications to the detention ponds or piping.

In summary, the drainage basins of Mother Lake and Lake Snelling can apparently handle the additional runoff from the proposed projects in those basins. The Minnesota River-North and South Drainage Basins may need modifications in order to handle the additional runoff of the proposed projects such that a minimum 3 hour detention time can be accomplished. This will insure that the quality of the runoff will not have an adverse impact. The present treatment basins are designed to adequately protect the quality of the discharged water.

Another impact to water quality involves using ground water for the mechanical air conditioning upgrades. The addition of the Green Concourse conversion is estimated to add 40 million gallons per year (MG/Y). The airport presently uses an average of 400 MG/Y.

The Blue and Red Concourse conversions which are already initiated are anticipated to add 122 MG/Y. The addition of the Green Concourse could bring the total to 560 MG/Y. MAC currently has a permit which allows for 650 MG/Y of ground water to used.

The final project to impact water quality is the Stormwater Containment Basin. This project will provide a positive impact to water quality since it will further reduce the chance of fuel spills reaching the environment.

D.5 Light Emissions

Analysis of MAC's Capital Improvement Plan found that none of the projects evaluated will have any significant impact from a light emissions standpoint. All of the projects which will create light emissions are in general scattered across the airport. Therefore, the cumulative effects from light emissions are not expected to have any significant impact upon the environment.

D.6 Sewage and Industrial Waste

There are two projects in the MAC's Capital Improvement Plan that will increase sewage flows. The Northwest Airlines Main Base Modifications project will generate approximately 3000 gallons/day of domestic sewage. In addition there will be an increase in the volatile wastes generated within the maintenance shops. At this time there is not sufficient information available to estimate how much, however, such materials are currently being disposed of by approved methods. Inflammable waste traps will be installed to separate out harmful wastes from this activity. The existing collection/treatment system is adequate to handle these additional flows.

D.7 Wetland Impact

The projects in the MAC's Capital Improvement Plan that will have an impact upon wetlands are the Runway 4-22 Extension and Apron Paving at the Southwest Cargo Hangar Area. Less than 0.5 acre of marsh will need to be filled as part of both projects. Tentative mitigation plans are being explored by U.S. Fish and Wildlife Service, the DNR, and the MAC. A mitigation site has been identified through on-going coordination between these agencies.

D.8 Residential Relocation Impacts

Analysis of MAC's Capital Improvement Plan found that none of the projects evaluated will have any residential relocation impacts.

APPENDIX A

ENVIRONMENTAL ANALYSIS OF INDIVIDUAL PROJECTS

IMPACTS

I. PROJECTS BEGINNING IN 1992

I.A Airside Bituminous Construction
I.B Apron Paving
I.C Automated People Mover System
I.D Land Use Modifications
I.E Noise Suppressor
I.F NWA Main Base Modifications
I.G Public Safety Building
I.H HHH Terminal - Remote Apron Lighting
I.I Site Preparation
I.J Runway 4/22 Extension
I.K Taxiway C Reconstruction
I.L Green Concourse Mechanical Systems Conversion
I.M Retention Basin Improvements
I.N Runway 29L Safety Area
I.O Upper Level Roadways Construction
I.P Lower Level Roadways Construction
I.Q Ground Transportation Control System
I.R Trades Shop Building
I.S GTC East Construction
I.T GTC Middle, West, and Valet Construction
I.U Snow Removal Equipment Building Modifications
I.V Sun Country Hangar

II. PROJECTS BEGINNING IN 1993

II.A Taxiway C Construction
II.B HHH Terminal Expansion
II.C Taxiway C/D Complex

III. PROJECTS BEGINNING IN 1994

III.A Pavement Rehabilitation - Runway 11L/29R
III.B Runway 11L/29R Holding Aprons
III.C Taxiway B Construction

IV. PROJECTS BEGINNING IN 1995

(No Projects with Impacts)

V. PROJECTS BEGINNING IN 1996

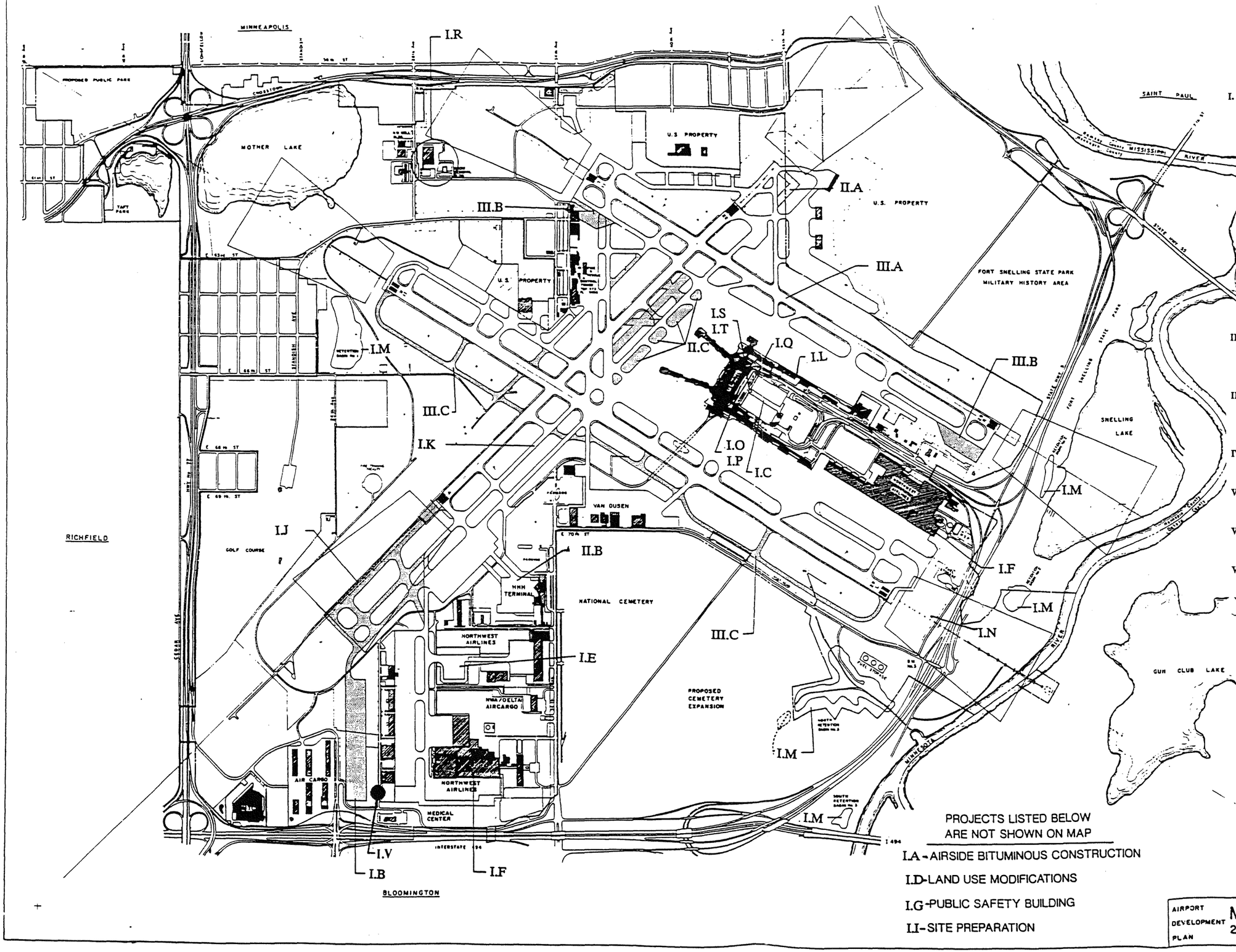
(No Projects with Impacts)

VI. PROJECTS BEGINNING IN 1997

(No Projects With Impacts)

VII. PROJECTS BEGINNING IN 1998

(No Projects With Impacts)



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SCALE IN FEET

I. PROJECTS BEGINNING IN 1992

- I.A Airside Bituminous Construction
- I.B Apron Paving
- I.C Automated People Mover System
- I.D Land Use Modifications
- I.E Noise Suppressor
- I.F NWA Main Base Modifications
- I.G Public Safety Building
- I.H HHH Terminal - Remote Apron Lighting
- I.I Site Preparation
- I.J Runway 4/22 Extension
- I.K Taxiway C Reconstruction
- I.L Green Concourse Mechanical Systems Conversion
- I.M Retention Basin Improvements
- I.N Runway 29L Safety Area
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- I.R Trades Shop Building
- I.S GTC East Construction
- I.T GTC Middle, West, and Valet Construction
- I.U Snow Removal Equipment Building Modifications
- I.V Sun Country Hangar

II. PROJECTS BEGINNING IN 1993

- II.A Taxiway C Construction
- II.B HHH Terminal Expansion
- II.C Taxiway C/D Complex

III. PROJECTS BEGINNING IN 1994

- III.A Pavement Rehabilitation - Runway 11L/29R
- III.B Runway 11L/29R Holding Aprons
- III.C Taxiway B Construction

IV. PROJECTS BEGINNING IN 1995

(No Projects with Impacts)

V. PROJECTS BEGINNING IN 1996

(No Projects with Impacts)

VI. PROJECTS BEGINNING IN 1997

(No Projects With Impacts)

VII. PROJECTS BEGINNING IN 1998

(No Projects With Impacts)

PROJECTS LISTED BELOW ARE NOT SHOWN ON MAP

I.A - AIRSIDE BITUMINOUS CONSTRUCTION

I.D - LAND USE MODIFICATIONS

I.G - PUBLIC SAFETY BUILDING

I.I - SITE PREPARATION

EXISTING AIRPORT LAYOUT PLAN

AIRPORT DEVELOPMENT PLAN — MSP 2000+

METROPOLITAN AIRPORTS COMMISSION
AIRPORT DEVELOPMENT PLAN
MINNEAPOLIS - ST. PAUL INTERNATIONAL AIRPORT

FIGURE 2

I. PROJECTS BEGINNING IN 1992

The following projects are included in the MAC's Capital Improvement Plan for 1992 and have the potential to effect the environment.

- Airside Bituminous Construction
- Apron Paving - Southwest Hangar/Cargo Area
- Automated People Mover System
- Land Use Modifications
- Noise Suppressor
- NWA Main Base Modifications
- Public Safety Building
- HHH Terminal - Remote Apron Lighting
- Site Preparation
- Runway 4/22 Extension
- Taxiway C Reconstruction
- Green Concourse Mechanical Systems Conversion
- Retention Basin Improvements
- Runway 29L Safety Area
- Upper Level Roadways Construction
- Lower Level Roadways Construction
- Ground Transportation Control System
- Trades Shop Building
- GTC East Construction
- GTC Middle, West, and Valet
- Snow Removal Equipment Building Modifications
- Sun Country Hangar

I.A AIRSIDE BITUMINOUS CONSTRUCTION

This project involves construction or reconstruction of bituminous pavements in various areas within the Air Operations Area. The 1992 work includes construction of bituminous shoulders adjacent to taxiways to enhance operational safety by reducing jet blast erosion typical of unsurfaced shoulders.

At this time the amount and locations of bituminous pavement construction and reconstruction is not known. However, assuming that the 1992 airside bituminous construction amount of impervious surface area per dollar of construction is consistent with the 1991 airside bituminous construction, and the relative locations as they relate to drainage areas are the same, an assumption could be made that the impervious surface area will not change. (The 1992 program calls for $750,000 of construction compared to the 1991 program of $750,000.)

Based upon these assumptions, the project would add approximately 63,000 square feet of impervious surface area to the Minnesota River-South Drainage Area and approximately 21,000 square feet of impervious surface area to the Minnesota River-North Drainage Area.

- Water Quality

  The additional stormwater runoff caused by the bituminous paving for a predicted five year storm event is calculated to be approximately 1.52 cubic feet per second

(CFS) for the drainage area tributary to the Minnesota River-South Drainage Area and approximately 0.48 cubic feet per second for the drainage area tributary to the Minnesota River-North. This additional incremental stormwater flow will cause no apparent problems for the associated stormwater collection, conveyance and treatment systems.

I.B APRON PAVING AT SOUTHWEST HANGAR/CARGO AREA

Proposed for construction in 1992 is the expansion of the existing air cargo center in the southwest corner of the field. The project is for an additional apron west of and parallel to the existing cargo apron. The project will be the construction of an approximate 15 acre apron and an approximately 75 by 600 foot (1.033 acres) access taxiway. This is a total surface area of 16.03 acres.

In addition, two planned hangars and some freight storage and equipment buildings may be constructed as well as ground vehicle access and parking, but the extent of the additional buildings and ground vehicle facilities is not known at this time. There was an increase in building and apron space for all cargo and small package handlers in 1987 when about 87,500 square feet of building space was added.

These existing cargo facilities are projected to be less than 2/3 to 3/4 of their capacity by the year 1998 cargo demand. Therefore, the assumption is that the facilities that are associated with the new cargo apron will be small in scale and the building area will not be fully developed until the late 1990's and beyond.

The following environmental effects are also examined in an EAW which was prepared in August, 1990.

- Aircraft Noise

  It is estimated that a maximum of 20 additional operations per day could occur by cargo operators using the new facility. This represents an increase in airport operations of 1.9%. The noise impact created by this very small increase will be insignificant in most cases. The only exception to this is if all the increased operations occurred in the middle of the night. This situation would result in a noticeable increase in aircraft noise.

  The MAC has a policy of encouraging aircraft users to voluntarily avoid operations during the nighttime hours. Assuming most of the new users follow this policy, the increased noise will be negligible. The Stage III working group has proposed a ban on Stage II aircraft operations between 11:00 p.m. and 6:00 a.m. Assuming this ban is enacted the expectation that the noise impacts will be insignificant is further reinforced.

- Vehicular Traffic

  One road, 26th Avenue South, provides for circulation needs in the new cargo apron area. Its estimated ADT after full buildout along the new cargo apron, is 6,400 vehicles per day. This volume can be handled by the existing two lane road.

At the intersection of 26th Avenue South and East 78th Street, peak hour turning and through movements are anticipated to be level of service (LOS) A and B, meaning predominantly little or no traffic delay in the peak hour. Thus, the intersection can easily handle the increased traffic volumes in its present form.

The intersection of 24th Avenue South and East 78th Street will experience level of service D for only one turning movement in the peak period. Geometric adjustments or signalization can improve the functioning of this intersection.

- Air Quality

  The small increase in cargo operations will, by itself, have an insignificant affect on the overall air quality of the airport.

- Water Quality

  The new aircraft apron portion of the project will increase the affected area's estimated runoff by 18.29 cfs for a five year storm. The quality of the storm water will be similar to runoff from other aprons. It will be routed through the existing storm sewers. The retention basins are designed so that settlable pollutants will collect at the bottom and floatable pollutants will stay in the basin. Pollutant removal, if needed, can then be accomplished. The existing facilities are sized to accept this additional flow.

  All of the runoff from this project eventually ends up in the Minnesota River South Drainage Area. The increase should be easily handled by the existing storm water system.

- Light Emissions

  Light emissions from the unloading of cargo or the cargo aircraft themselves will not create an annoyance in the vicinity of the new apron. There is not any housing on that side of the field adjacent to the facility and the area will be screened from the highway by other buildings.

- Sewage

  The project will possibly generate an insignificant amount of sewage demand if some buildings are constructed. The existing buildings are expected to meet demand through the seven year CIP program.

- Wetland Impact

  There is one minor wetland that will be impacted. Proposed mitigation of the wetland is discussed in the EAW.

I.C AUTOMATED PEOPLE MOVER SYSTEM

An Environmental Assessment Worksheet (EAW) was prepared for this project in August 1990. Summary findings of the EAW are presented here in order to incorporate the effects from this project into the cumulative effects from all projects.

The proposed project consists of a two-year acquisition and installation schedule for an automated people mover system between the main terminal building and the rental car facility at MSP. The automated people mover is comprised of a series of compartments and will operate like a horizontal elevator electronically in a tunnel under access roads and parking facilities. The project will replace a gasoline-powered bus which currently uses local access roadways to provide shuttle service to/from the rental car facility and main terminal. The system will increase efficiency and facilitate transit movement in a heavily-congested surface transportation corridor at MSP.

The project is related to a number of other improvements in the immediate vicinity including the Ground Transportation Center, construction of new upper and lower level roadways, and the expansion of the valet parking area.

Based upon information obtained from the EAW, it appears this item will not have any significant impact upon the environment.

I.D LAND USE MODIFICATION

The Land Use Modification projects are expected to be those identified as part of the FAR Part 150 Program (Noise Control and Compatibility Planning for Airports) which have been approved by the FAA.

The following is a listing of the Land Use Projects currently identified in the FAR Part 150 submittal.

Preventive Land Use Measures

LU1. Amend Local Land Use Plans to Bring into Conformance with the Metropolitan Council's Noise Compatibility Guidelines.

In coordination with the Metropolitan Council, local jurisdictions would review their comprehensive plans to determine if amendments are required to conform with the Guidelines for Land Use Compatibility with Aircraft Noise contained in the Metropolitan Development Guide, Aviation Chapter. Implementation assistance may be available for jurisdictions within the Ldn 65 noise contour.

In terms of overall program effectiveness, this proposed NCP action is considered to be of moderate importance. It will not, in itself, eliminate non-compatible uses, but is a necessary action to apply regulatory actions which will inhibit non-compatible development.

LU2. Zone for Compatible Development.

Local jurisdictions review existing zoning in Airport Noise Zones to determine consistency with the Guidelines for Land Use Compatibility with Aircraft Noise and rezone for compatible development if consistent with other community development factors. Implementation assistance may be available for jurisdictions within the Ldn 65 contour.

The proposed action in the noise compatibility program is an important factor in terms of overall program effectiveness, providing the principal regulatory mechanism for prevention of non-compatible uses in the noise zones.

LU3. Application of Zoning Performance Standards.

In coordination with the Metropolitan Council, local jurisdictions may adopt the Model Ordinance for Aircraft Noise Attenuation developed by the Metropolitan Council. Implementation assistance may be available for jurisdictions within the Ldn 65 noise contour.

The proposed action is of moderate importance in terms of overall program effectiveness.

LU4. Public Information Program.

Develop and distribute informational materials concerning aircraft noise and Noise Compatibility Program elements. Materials would be distributed to land developers, planning agencies, housing authorities, local offices of FHA/VA, lending institutions, and realtors.

The proposed action is of relatively minor importance in terms of overall program effectiveness.

LU5. Building Code Revision.

The action is an important factor in the effectiveness of the NCP. The MAC "Noise Abatement Program" endorses a Metropolitan Council policy of encouraging jurisdictions within the MC Policy Contour to enact plans and land use controls which are consistent with the Guidelines. The policies would have less direct effect on the more fully developed areas of Minneapolis, St. Paul, Richfield, and Bloomington, but would have more effect on communities south and east of the Minnesota River, which are less developed. Any redevelopment within the area would be subject to the provisions of the Guidelines.

Corrective Land Measures

LU6. Acquire Property Developed in Incompatible Uses Then Clear or Sell for Compatible Uses.

The measure would be applied only at the initiative of the jurisdiction in which it lies, and presumably only in neighborhoods where the jurisdictions have established that there is a reasonable consensus among residents that they prefer to vacate the area. Redevelopment in a specific compatible use will be subject to jurisdictional approval.

The contribution of this measure in terms of overall program effectiveness is judged to be relatively small since only 22 dwellings are located in the Ldn 75 noise zone, and most residential areas affected by noise levels of Ldn 65 or more are very stable and probably not candidates for large-scale acquisition and "change of use."

The measure is a proposed action in the NCP to accommodate any areas which may elect for this form of corrective treatment.

LU7. Purchase Guarantee of Homes and Soundproofing of Homes.

The combination of these two measures would be the primary action applied in the Ldn 65-75 zones, with homeowners being offered the option of:

- purchase assurance,
- soundproofing in exchange for an aviation easement, or
- no action.

Purchase assurance will be selected by those who find the aircraft noise levels to which they are subjected intolerable, even with additional soundproofing. Individual owners who are bothered by aircraft noise, but not to the extent that they feel the need to leave the neighborhood, will be offered additional soundproofing at public expense in exchange for an aviation easement.

The strategy is a key item in program effectiveness, being the primary corrective measure, applicable to about 1,700 units (estimated) purchase assurance, and about 4,100 units (estimated) soundproofing, with a potential total cost of about $60 million.

LU9. Soundproofing of Other Public Buildings.

Other public buildings recommended for soundproofing are those where a quiet indoor environment is important to their functioning. Libraries, nursing homes, convalescent homes and community centers within Ldn 65 contours are candidates for noise insulation.

The Capital Improvement Plan has $28 million programmed for the above possible projects from 1992 to 1998. Item LU7 by itself has an estimated cost of $60 million. Therefore, all of the above items would obviously not be included in the present Capital Improvement Plan and it is not possible at this time to make an accurate assessment of the environmental effects of this item.

According to the FAR Part 150 Study, the preventive land use measures are expected to reduce the amount of additional non-compatible land use in the future. It is anticipated that the measures could prevent development of 450 new dwelling units in noise zones where this would be non-compatible. The effectiveness of the measures will depend upon the degree to which these preventive planning measures are implemented by the local jurisdictions. The corrective land use measures would improve compatibility for approximately 5,800 dwelling units.

The present Capital Improvement Plan, while not achieving all of the above results, will obviously still produce a significant positive impact to the environment concerning aircraft noise.

No alternatives or noise mitigation measures are considered necessary.

I.E NOISE SUPPRESSOR

Minnesota Statutes require the construction of a noise suppressor to reduce run-up noise. The only impact category affected by the installation of this facility would be aircraft noise, specifically relating to run-ups.

The type of facility likely to be chosen would be the "hush house" technique. A hush house consists of an acoustically treated hangar. Typical reductions are 25-30 DBA. The environmental effect of the noise suppressor would be major reduction in noise from run-ups, but a limited reduction in overall noise impacts.

The value of the hush house is highly questionable. Community complaints about run-up noise events account for less than one percent of all noise complaints. This is considered a matter of minor community concern compared with noise resulting from aircraft overflight. The newer aircraft in the fleet are less noisy and require less frequent maintenance, thus reducing required maintenance run-ups both in intensity and frequency over the next 10 years.

There are alternatives for expenditures of this level of funding which would yield greater benefits in terms of compatibility with <u>all</u> aircraft events, not only run-ups. (For example, the estimated $6,000,000 cost could be applied towards the soundproofing/ guarantee purchase programs, as included in the Part 150 Study.)

The noise suppressor, if constructed, would have a limited positive impact on airport noise and has a very low benefit-to-cost ratio in comparison to other possible beneficial projects.

I.F NWA MAIN BASE MODIFICATIONS

An Environmental Assessment Worksheet (EAW) was prepared for this project in August 1989. Summary findings of the EAW are presented here in order to incorporate the effects from this project into the cumulative effects from all projects.

Northwest Airlines is planning two years of expansion and modification to their existing aircraft maintenance and plant maintenance shops and stores facility at MSP International Airport. The modifications and expansions will occur at Complex B (original NWA main base) and Complex C (former Republic Airlines main base).

The expansion/modifications to Complex B include four building expansions, three of which were to occur during 1991 and the remaining in 1992. This schedule has been slipped to the 1992-1993 time period. The building additions and modifications will make possible the reorganization of the maintenance shops and the installation of Automatic Storage/Retrieval Systems (AS/RS) for small parts and palletized material handling.

Complex C expansion/modifications include a 27,000 square foot building addition, installation of mini-load and unit-load AS/RS for small parts and palletized material handling, relocation of seven truck docks and a new volatile stores area.

The main base modifications are being done to support the new NWA B-747-400 maintenance hangar facility which was constructed as part of the 1989 CIP. An Environmental Assessment Worksheet (EAW) was prepared for that project in April 1988.

- Aircraft Noise

  Since the main base modifications are being done to support the B-747 hangar project, any increase in aircraft traffic and noise are a result of that project. Therefore, the main base modification project will not create any additional aircraft noise.

- Vehicular Traffic

  An additional 200 persons will be employed in the maintenance shops and stores as a result of the main base modifications. No increase is anticipated in the office personnel. The increased personnel will be employed at Complex B and the Average Daily Traffic (ADT) increase will occur on Glumack Drive. The automation of the maintenance stores will increase their capacity and efficiency and therefore increase truck traffic to the stores. Since this occurs at both Complex B and Complex C, traffic increases will occur on 34th Avenue South and Glumack Drive.

  The current (1988) ADT for 34th Avenue South, north of I-494 and Glumack Drive is 16,300 and 43,000 respectively. The estimated increases in ADT contributed by the project is 80 vehicles for 34th Avenue and 550 vehicles for Glumack Drive.

- Water Quality

  The majority of the project involves internal modifications to existing buildings. There are planned additions to Complex "B" which could increase the runoff except building additions occur in areas that are currently paved parking lots. Therefore, there is no expected increase in runoff due to the project.

- Sewage and Industrial Waste

  The total estimated increase to personnel due to the main base modifications is 200. Using an estimate of 15 gallons/employee/day (Minnesota Plumbing Code 4715.3600 Subp. 2), 3,000 additional gallons of wastewater may be generated per day. All of the 200 employees will be working during the second shift and therefore the increase should not affect the peak flow to the sewer. The additional 3000 gallons/day will not cause any difficulties to either the on-site collection systems and related MWCC Interceptor or wastewater treatment facilities.

  The increase to the maintenance shop areas will generate additional amounts of volatile chemicals used for parts cleaning operations. Space has been provided for additional safe storage of these hazardous materials as part of this project. These hazardous materials will be disposed of by approved environmentally safe methods.

I.G PUBLIC SAFETY BUILDING

This facility is being constructed to centralize the airport's safety/security/drug enforcement units. The building will house civil protection equipment and will be connected to existing sewer, water, and drainage systems. It will be located on a pervious surface, but the effects of additional land coverage are not significant enough to adversely affect stormwater runoff increments, nor will the Minnesota River-North Drainage Basin collection, conveyance, and treatment systems be adversely affected.

I.H HHH TERMINAL - REMOTE APRON LIGHTING

The apron lighting will be focused onto the apron and is in an area which already has high concentrations of light. There are not any residential areas located near the site. Consequently, no impacts are anticipated.

I.I MISCELLANEOUS SITE PREPARATION

This item is programmed in the event incidental site preparation is necessary for existing or new tenants at the airport. No specific information is available on where these site improvements would be. The most likely areas would be along the existing apron or proposed new apron in the Southwest Hangar/Cargo Area. Any development along the existing apron would be small scale as there is very little remaining space for development.

Therefore, based upon information available at this time it appears this item will not have any significant impact upon the environment.

I.J RUNWAY 4/22 EXTENSION

A formal Environmental Assessment (EA) was completed for this project in September 1988. A full Environmental Impact Statement (EIS) is being prepared by Mn/DOT. That analysis is

not yet complete; however, a draft of the draft EIS is being finalized and the related findings are included herein. The following description of the project is taken from this draft EIS:

> "Until June, 1990, the FAA air traffic control tower operated a preferential runway system (PRS) at MSP for noise exposure abatement. The PRS, first implemented in 1972, was designed to divert as much air traffic as possible away from noise sensitive areas and route it over more noise compatible areas, such as open space, transportation corridors and commercial/industrial areas. The PRS assigned use priorities to each runway for take-off and landing and utilized the northeast-southwest runway, Runway 4-22, to divert traffic away from the predominant northwest-southeast traffic flow of the parallel runways.
>
> Use of the PRS was limited to hours with fewer than 60 operations. Above 60 operations, the parallel runways (Runways 11L/11R and 29L/29R were used because of their greater hourly capacity (up to 108 operations). Therefore, as total operations increased at MSP, use of the PRS decreased. This change resulted in an overall shift in community noise exposure. Thus, the current runway use system (RUS) was developed, tested and recently implemented in an attempt to return to a more traditional distribution of noise by maximizing the overall use of Runway 4-22.
>
> A primary purpose of this project is to permit increased use of Runway 4-22 by providing additional length on Runway 22, allowing aircraft departing on Runway 22 to start their takeoff roll southwest of the intersection with Runway 11L/29R. This would permit Runway 11L/29R to be operated independently of departures on Runway 22 and would enable use of Runway 4-22 and 11L/29R to accommodate up to 90 operations per hour."

The draft EIS has documented all impacts related to construction and operation of the runway extension. It begins with a summary of the proposed action, describes the purpose and need for action, defines alternatives, analyzes the affected environment in a wide variety of areas (though focuses on noise) examines the positive and negative environmental consequences of the extension, and discusses the project's citizen involvement and agency coordination.

PROJECT OBJECTIVES

According to the Draft EIS, the two main objectives for the proposed project are:

1. To increase use of the crosswind runway (Runway 4-22) to provide for a shift in some aircraft noise away from the most heavily impacted residential areas northwest of the airport.

   Hourly capacity of aircraft operations at the airport is determined by the capacity of the two parallel runway (Runways 11R-29L and 11L-29R), since these runways can be used almost simultaneously. Presently, Runway 4-22, the "crosswind runway" cannot be used simultaneously with either of the parallel runways.

With the runway extension, Runway 4-22 could be used independently of 11L-29R, and thus the capacity using Runway 4-22 would increase from less than 60 to 70-90 operations per hour.

This would enable the crosswind runway to be used eight-nine hours per day.

Aircraft distribution -

The proposed project will allow for redistribution of some flights from South Minneapolis and North Richfield to Bloomington and South Richfield in the following ways:

2. To provide an 11,000 foot runway at MSP for use by long-haul intercontinental flights.

   An extension of 2,750 feet would make Runway 4-22 the longest runway at MSP at 11,000 feet. Currently, under some conditions, a greater runway length than is available at MSP is required for certain intercontinental flights. An extended Runway 4-22 would be sufficient under most conditions for takeoff for most intercontinental flights.

OVERVIEW AND PURPOSE OF THE PROPOSED IMPROVEMENTS

The extension of Runway 4/22, as generally proposed in the 1977 Minneapolis-St. Paul International Airport Master Plan Study (AMP) is described below:

Extension of Runway 4/22

- Extension of Runway 4/22 on the southwest (Runway 4) end by 2,750 feet.
- Extension of Taxiway C and Taxiway D with two stub taxiways to serve the proposed extension to Runway 4/22.
- Provision of a queuing taxiway adjacent to the threshold for Runway 22 for aircraft departing the runway south of its intersection with Runway 11L/29R.
- Extension of the High Intensity Runway Lighting System (HIRLS) for Runway 4-22 to the new runway end.

Changing Runway 4 Approach Lights

- Replacement of the existing Runway 4 end Simplified Short Approach Lighting System with Sequenced Flashers (SSALR) with Medium Intensity Approach Light System with Runway Alignment Indicator Lights (MALSR).

Displaced and/or Relocated Thresholds on Runway 4/22

- Displacing Runway 22 landing threshold and associated lights and glide slope equipment 1,750 feet to the southwest (2,750 from the runway end).

- Displacing the Runway 4 threshold 2,750 feet northeast with displaced threshold markings from the new end of pavement.

Mitigation Flight Tracks

- The Runway Use System (RUS) has replaced the Preferential Runway System (PRS) and is a pattern of runway operation that incorporates Runway 4/22 operations with those of the parallel runways. The addition of runway length on the southwest end of Runway 4/22 will allow increased use of the RUS procedures as more air carrier operations at MSP will be able to depart Runway 22 south of Runway 11L/29R and remain independent of operations on that runway. This runway use configuration is an integral part of the RUS and would allow the RUS to be used during periods of higher traffic activity and, consequently, for a greater amount of the day than is possible at present.

  Increased use of the RUS through extension of Runway 4/22 is part of the Noise Abatement Program for Minneapolis-St. Paul International Airport submitted by MAC on April 30, 1986 to the Governor of Minnesota and incorporated into the FAR Part 150 Noise Study for MSP. The development background of the MAC Noise Abatement Program is described in Section 1.5.1, below.

  A secondary benefit of the project is to provide 11,000 ft. of runway for occasional takeoffs by aircraft for which the 10,000 foot length of Runway 11R/29L is inadequate. Such operations are typically those of long range, international operations by B747 and DC-10 aircraft.

ALTERNATIVES

The alternatives studied in the Draft EIS are the no-build alternative and the build alternative, which includes four different runway operation alternatives (differences in location of landing thresholds), and four different aircraft operation alternatives (differences in departure headings which direct flights over different areas).

Mixing these operational alternatives results in seventeen possible alternatives. The alternatives were combined in some instances in the study to reduce the complexity of noise analyses, where conditions were similar.

- Aircraft Noise

  "As with many airport projects, aircraft noise is the potential environmental impact of most concern. Extensive analysis of noise impacts was conducted to assess potential noise impacts in the construction year (1992) and future year (2000) and is included in the Draft EIS.

The following is the summary of the effects of aircraft noise on the environment, as excerpted from the Draft EIS.

"The total population within the overall 65 DNL contour falls to 24,108 for the no-build condition by the year 2000. The various alternatives range from affected populations of 21,891 for Alternatives 1 and 2C, to a high of 25,623 for Alternatives 3 and 4D. Alternative 1A, the proposer's preferred alternative, has an affected population of 23,791, which is less than the no-build alternative. The large reductions from the 1992 figures represent the impact of aircraft fleet composition incorporating new technology Stage 3 Aircraft.

The number of persons within the 65 DNL contour varies significantly within the various jurisdictions for the different alternatives. The number of persons affected in Minneapolis range from a high of 19,101 for the no-build condition, to a low of 13,290 under the proposer's preferred alternative. The number of persons in Bloomington increases from a low of 0 under the no-build alterative, to a high of 5,915 under Alternatives 1,2,3 and 4D. North Richfield ranges from a high of 3,580 under the no-build alternative, to a low of 1,875 under Alternatives 1,2,3 and 4D. South Richfield, conversely, ranges from a low of 233 under the no-build alternative, to a high of 2,976 under Alternatives 1,2,3 and 4D. None of the remaining communities of Fort Snelling, Mendota Heights, Eagan, or St. Paul are significantly affected with a maximum change of 65 persons between the various alternatives."

The following summary table shows populations within the Ldn 65 contour for 1992 and 2000 for the no-build alternative, the project proposer's preferred alternative (1A) along with alternative 2A, and alternatives 1 and 2 C, and 3 and 4 D, which show a representative range of numbers of people affected among alternatives.

MSP RUNWAY 4-22 EXTENSION - EIS
POPULATION WITHIN LDN 65 NOISE CONTOURS, 1992 AND 2000
BY JURISDICTION AND ALTERNATIVE

	1992				2000			
Jurisdiction	No Build	1&2A	1&2C	3&4D	No Build	1&2A	1&2C	3&4D
Minneapolis	24,742	18,560	20,713	19,074	19,101	13,290	13,656	13,693
North Richfield	6,692	3,216	3,014	3,318	3,580	1,909	1,936	1,875
South Richfield	1,937	4,330	2,172	4,935	233	2,284	1,155	2,976
Bloomington	1,430	11,632	7,120	13,080	0	5,106	3,981	5,915
Fort Snelling	91	80	67	54	20	27	26	28
Mendota Heights	972	932	962	886	386	322	368	352
Eagan	1,074	981	1,257	1,027	789	799	772	785
St. Paul	0	0	0	0	0	0	0	0
Total	36,938	39,731	35,305	42,374	24,108	23,791	21,891	25,624

Source: Howard Needles Tammen & Bergendoff

"By 1992, the alternatives (except for the D alternatives) will result in a small reduction in the number of facilities within the contours, especially schools which are probably the most sensitive category of receptor. By the year 2000, this trend is expected to continue with even fewer noise sensitive facilities within the contours and the A,B, and C alternatives providing benefits in reducing the number of affected facilities as compared with the no-build condition.

The DNL noise analysis shows that the most significant changes occur to the northwest and southwest of the airport. When compared to the No-Build alternative, each of the build alternatives trades a reduction in aircraft noise in mostly residential areas northwest of the airport for increases in aircraft noise southwest of the airport in residential and some commercial areas.

To the southwest of the airport, there is little difference among the build alternatives in impacts upon land use. The changes in contours among the alternatives occur mostly over vacant land or highway corridors.

Compared to the No-Build alternative, the build alternatives all result in a reduction of residential land within the DNL 65 contour northwest of the airport. This reduction in community noise affects parts of South Minneapolis and the northeast part of Richfield.

To the southwest of the airport, the DNL 65 noise contour expands with the Build alternative. The area of increase consists of residential areas, but also commercial or mixed uses, especially in the I-494 and Cedar Avenue corridors. The comparable reduction in South Minneapolis consists almost entirely of residential areas."

The proposed project will not cause an increase in the overall level of sound generated by aircraft at MSP, but the changes in the numbers and patterns of aircraft flights on different runways caused by the project would cause differences in sound levels at various locations surrounding the airport.

Homes which would be within the 65 LDN noise contour due to the proposed project would be within the threshold criteria to be considered for noise mitigation measures as specified in the FAA's FAR Part 150 noise study.

- Vehicular Traffic

Vehicular traffic will not be impacted as a result of this project. The project will not have an effect upon the airport capacity, therefore, no impact on enplanements and therefore no impact upon traffic.

- Air Quality

The Draft EIS found that the project is "exempt from State of Minnesota Pollution Control Agency indirect source review. Therefore no further air quality analysis was required. Such a finding is consistent with national EPA findings that aircraft are very minor sources of air pollution and do not represent a concern in this area."

- Water Quality

The following, which is an excerpt from the Draft EIS, shows that there are minor impacts on water quality.

> "The proposed extension of Runway 4-22 and associated taxiways would add 21 acres of impervious surface to the Minnesota South Drainage Area (MnSDA), which is a 6% increase over current conditions. Airport wide, the runway extension represents a 9.6% increase in a runway surface area. The extension of the Queuing Taxiway would add 6.6 acres of impervious surface to the Minnesota North Drainage Area (MnNDA), a 1% increase over current conditions. Airport wide, the taxiway extension would not represent a significant increase in taxiway surface area.
>
> The increase in surface area in the MnSDA and MnNDA will increase the stormwater discharge to North Retention Basin #3 and South Retention Basin #3. The current basins' capacity will not be affected by the increased discharge, although their function may be diminished. A hydraulic analysis failed to show any change in

basin function. Any incremental change in treatment efficiencies does not appear to be a major concern.

In a qualitative sense, the project would likely increase the maximum rate of runoff, the total volume of runoff, decrease the existing treatment system efficiencies and cause an incremental increase in pollutant loading to the Minnesota River.

Possible mitigation for the increased stormwater discharge to the Minnesota River include:

1. Initiate continuous flow monitoring on outfalls discharging to the Minnesota river so that the true pollutant loading to the river may be determined.

2. Determine the quantities of ethylene and propylene glycols used in deicing aircraft by the individual carriers.

3. Increase the treatment capacity of the stormwater discharge systems."

- Light Emissions

The Draft EIS found that light emissions from the proposed project will not cause a negative impact and will decrease in off-airport areas, especially residential areas west of Cedar Avenue.

- Wetland Impact

The Draft EIS found that there is a less than 0.5 acre marsh located in the project area which will need to be filled by a taxiway to be built at the same time the runway is extended. According to the Draft EIS, of all the wetlands in the area, this wetland also has the least value for wildlife, flood water storage and water quality because it is the smallest and most isolated.

As the wetland is less than 2.5 acres, it is not a protected wetland under Department of Natural Resources (DNR) jurisdiction. Since Federal funds will be used, however, Executive Order 11990 requires the avoidance of adverse impacts, as well as compensation for unavoidable impacts.

The MAC has committed to mitigation of unavoidable wetlands impacts caused by the extension of Runway 4-22 and associated taxiways. On-site mitigation is not desirable because of the increased potential for bird strikes. The concept of an off-site mitigation area is being explored by the MAC in coordination with the USFWS and the DNR. A mitigation site will be identified through ongoing coordination between these agencies.

I.K TAXIWAY C RECONSTRUCTION

This project provides for the total reconstruction of approximately 2,800 feet of Taxiway C. The project will provide new wider bituminous shoulders adding approximately 56,000 square feet of impervious surface area. Drainage for this area is provided by the Minnesota River-North and South.

- Water Quality

  The additional stormwater runoff caused by the increase in shoulder width for a predicted five year storm event is calculated to be 0.42 cubic feet per second (CFS) for the drainage area tributary to the Minnesota River-North Drainage Area and 0.91 CFS for the Minnesota River-South. This additional incremental stormwater flow will cause no apparent problems for the associated stormwater collection, conveyance and treatment systems.

I.L GREEN CONCOURSE MECHANICAL SYSTEM CONVERSION

The Green Concourse was constructed in a number of segments (original section, two additions and the "pod"). The original section and first addition are presently served by numerous individual packaged air conditioning units. Most of these units are far beyond their normal life expectancy. In addition, as the concourse interior configuration has evolved over the years, the existing units have not offered the flexibility to provide temperature control zones necessary for total comfort. This project involves the removal of the existing units and replacement with centralized HVAC units utilizing chilled water for cooling.

- Water Quality

  The additional requirement for chilled water by the operation of the new air conditioning system is estimated at 40 million gallons per year. The current systems require approximately 522 MG/year.

The Green Concourse will bring the estimated total to 562 MG/year. MAC's existing permit allows for an amount of 650 MG/year to be pumped from their wells and discharged into the Minnesota River-North Drainage Area.

I.M RETENTION BASIN IMPROVEMENTS

There are four retention basins utilized to control stormwater runoff from the airport. Periodic rehabilitation is required to maintain the integrity of the basins to ensure compliance with the National Discharge Permits.

- Water Quality

  Operation of the Retention Basins will continue without interference during the proposed modifications. Temporary silt fences or other sedimentation control devices will be installed, as necessary during construction, to eliminate adverse impacts to water quality. After construction and site restoration, there will be no need for special erosion or sedimentation control structures. No adverse water

quality impacts are foreseen from the implementation of this project.

I.N RUNWAY 29L SAFETY AREA

This project will increase the length of the current Runway Safety Area (RSA) on 29L to meet minimum FAA dimensional standards. To accomplish this, safety fencing will need to be relocated and a perimeter service road (Northwest Drive) may need to be either relocated or tunneled, such that no unpermitted obstruction enters the RSA. Temporary construction impacts will include internal road detours and runoff sedimentation control devices with the construction of a cut-and-cover, 500 ft. tunnel, if it is required.

I.O UPPER LEVEL ROADWAYS CONSTRUCTION

An EAW was prepared for this project in August, 1989. The proposed project includes the rehabilitation of the existing elevated roadway at the Lindbergh terminal, as part of a series of projects associated with the Ground Transportation Center. In order to accommodate traffic during the period it is necessary to construct a new upper level roadway adjacent to (east of) the existing upper level roadway. Following opening of the new roadway the existing upper level roadway will be reconstructed. Upon completion of the rehabilitation project both the rehabilitated and new roadway will remain to handle the traffic in front of the Lindbergh terminal. The new structure will be approximately 140' wide (seven-12' roadway lanes plus sidewalks on both sides). Once both the new and rehabilitated roadway sections are open, the amount of curb space for departing passengers will be doubled. Presently during peak periods traffic congestion occurs on the existing upper level roadway and the queues extend back onto the access roadway, impeding traffic flow on this facility as well. With the new upper level roadway traffic operations in front of the terminal will improve and the present congestion related problems will be alleviated. This should also improve air quality.

- Traffic Impacts

  No external roads will be affected. The new elevated roadway will increase the capacity for and efficiency of departure traffic movements. No additional inbound or outbound trips will be generated by the completion of this facility.

I.P LOWER LEVEL ROADWAYS CONSTRUCTION

As the work on the Upper Level Roadways is completed, the Lower Level Roadway Construction will begin in phases. In addition to improving vehicle circulation, a mechanical ventilation system will be installed which will supply fresh air over the lower level roadway/ sidewalk area in front of the terminal building. The fans of the ventilation system will not operate continuously, but will be activated as needed to supply fresh air and reduce carbon monoxide concentrations to assure attainment of standards. The existing Indirect Source Permit (ISP) from the Minnesota Pollution Control Agency (MPCA) for the new 7 level parking facility just east of the new roadways requires that the MPCA review the ventilation system.

- Traffic Impacts

  No external roads will be affected. The new elevated roadway will increase the capacity for and efficiency of departure traffic movements. No additional inbound or outbound trips will be generated by the completion of this facility.

- Air Quality

  In April 1988, the Metropolitan Airports Commission received Indirect Source Permit ISP 78-8(88) for construction of the Phase II parking ramp. This permit included a description of the mechanical ventilation system proposed to ensure that air quality standards were not violated in the future. The proposed ventilation system has a design capacity of 350,000 cubic feet per minute (CFM) of ventilated air. This capacity is proposed to be achieved using twenty-two 16,000 CFM fans mounted individually in beams supporting a reconstructed upper level canopy. This system will not be activated continuously, but when needed for maintaining air quality standards it would vent air over the lower level walkway and roadway. This system was not expressly designed with consideration of the new elevated roadway. During final design for the new lower level roadway the proposed ventilation system will be reanalyzed to verify if it has adequate capacity with the additional area covered by the new lower level roadway. If the proposed system is found to be inadequate it will be re-sized to ensure adequate fresh air capacity. The design for the ventilation system will be submitted to the MPCA for review as required by the ISP.

I.Q GROUND TRANSPORTATION CONTROL SYSTEM

Presently, passengers requiring taxicab service at the airport are served by a taxicab starter/dispatcher service located directly across from the center of the baggage claim area in the plaza adjacent to the outer roadway. Taxi parking in this area is limited to those taxis required for immediate passenger loading and departure. Additional taxis are staged at two remote locations on the airport and called up as needed.

The present system is becoming overloaded and its users are experiencing delays, terminal congestion, and general inconvenience. It is proposed that a computerized vehicle access control system be installed to improve system operation, reduce personnel costs, and increase revenues derived from registration fees.

It is intended that the first phase of the Ground Transportation Control System will control taxicabs only. Subsequent phases will control all forms of transportation such as limousines, courtesy vehicles, etc.

- Air Quality

  The one expected impact from this project would be a slight improvement in air quality due to improved traffic flow of taxicabs, limousines, courtesy vehicles, etc. in the area of the Lindbergh Terminal.

I.R TRADES SHOP BUILDING

Currently, the Metropolitan Airports Commission's carpentry, electrical and painting crews occupy individual buildings in the west terminal area. As the work crews, associated equipment, and material inventories have grown to meet the various maintenance demands, their existing facilities are not adequate for their functions. It is proposed a centralized facility capable of housing the three maintenance functions be evaluated. Each trade area would include a work shop, material storage area and foreman's office. Common vehicle garage, toilet facilities and lunch/break room would also be provided. About 20-25 people will utilize this facility.

The building will be approximately 15,000 square feet.

- Water Quality

  The additional stormwater runoff into the Minnesota River North caused by the increased impervious area for a predicted five year storm event is calculated to be 0.34 cubic feet per second. This additional incremental stormwater flow will cause no apparent problems for the associated stormwater collection, conveyance and treatment systems.

- Sewage and Industrial Waste

  Since the construction of the new Trades Shop Building is to necessitate consolidation of existing facilities, there will not be a net increase to the number of employees using the new facility. The sewage and industrial waste generated by the maintenance shop areas will remain the same, however, the associated sewage will be carried in a different trunk line sewer. This change will not cause any difficulties to either the on-site collection systems and related MWCC Interceptor or wastewater treatment facilities.

I.S GTC EAST CONSTRUCTION

As part of the Ground Transportation Center, the existing terminal basement will be expanded to the vertical circulation adjacent to the parking ramps. This project involves the east phase of this expansion and includes the construction of the east basement infill; the relocation of the valet parking entrances and exit; and the construction of the first phase of the new ground level roadway system adjacent to the parking ramps. An EAW is currently being prepared for this and other GTC projects (June, 1991). The EAW does not suggest there will be any permanent environmental effects associated with this project -- that impacts would be limited to short-term, construction activities.

I.T GTC MIDDLE, WEST, AND VALET CONSTRUCTION

This project is a continuation of the construction of the Ground Transportation Center and includes the construction of the middle and west phases of the GTC and the expansion of the valet parking area to the south and east of the existing terminal basement. An EAW is currently being prepared for this and other GTC projects. The EAW does not suggest there will be any permanent environmental effects associated with this project -- that impacts would be limited to short-term, construction activities.

I.U SNOW REMOVAL EQUIPMENT BUILDING MODIFICATIONS

The snow removal equipment storage building includes maintenance bays that were part of the original building constructed in 1965. The Commission's fleet of motorized equipment now exceeds 200 units which can no longer be maintained in the existing space in an efficient, safe manner. An 18,000 sq.ft. addition on the south side of the existing building is proposed (on existing impervious surface) to provide the additional maintenance areas required. Reconfiguration of the office and crew areas including providing facilities for female maintenance workers would also be accomplished.

- The proposed project will add new bathroom areas and will therefore increase sewage discharged into the sanitary sewer system. The expansion will add some 12 employees and increase the passenger handling capability of the HHH Terminal. Using an estimate of 15 gallons/employee/day (Minnesota Plumbing Code 4715.3600 Subp. 2), 180 additional gallons of wastewater may be generated per day. However, this increase should not affect peak flow to the sewer, nor will it cause any difficulties to either the on-site collection systems and related MWCC interceptor or wastewater treatment facilities.

I.V SUN COUNTRY HANGAR

The proposed new hangar facility of 109,100 square feet will include a hangar area; maintenance shops, storage, and office areas; a commissary and commissary storage and loading area; and support offices, training rooms, and dispatch areas.

An EAW is currently being prepared for this project. The findings in the EAW are that the environmental issues of this project are limited to short-term construction impacts (minimal amounts of air pollution, dust, and noise), a change of marginally-increased industrial wastewater generation, increased runoff from new impervious surfaces and proposed building areas, and a slight increase in aircraft noise. There will also be some additional traffic on 26th Avenue South, Airport Lane and 24th Avenue, north of I-494. Geometric modifications or signalization may ultimately become necessary at 24th Avenue and Airport Lane.

II. PROJECTS BEGINNING IN 1993

The following projects are included in the MAC's Capital Improvement Program for 1993 and have the potential to effect the environment.

- Taxiway C Construction
- HHH Terminal Expansion
- Taxiway C/D Complex

II.A TAXIWAY C CONSTRUCTION

This project will extend Taxiway C northeast from Runway 11L/29R parallel to Runway 4/22, and provide a more efficient operating condition for takeoffs to the southwest. An additional 80,000 square feet of impervious surface will be added to the Minnesota River-North Drainage Area.

- Water Quality

  The additional stormwater runoff caused by the increased paving for a predicted five year storm event is calculated to be 1.82 cubic feet per second. This additional incremental stormwater flow will, by itself, cause no apparent problems for the associated stormwater collection, conveyance, and treatment systems.

II.B HHH TERMINAL EXPANSION

This project will add approximately 40,800 sq. ft. to the north of the existing HHH Terminal. Also included will be the addition of three new passenger gates connected to a 650 ft. concourse extension. The expansion will occur over a hard surfaced, parking area.

- Aircraft Noise

  It is difficult to estimate the amount of increased air traffic and resulting noise that may result from the added gates and terminal space at the HHH facility. The expansion is principally being built to accommodate additional international arrivals. International flights to Europe all generally arrive at roughly the same time of day. The same is true of flights to the Pacific. This is necessary if the flight is to be attractive to international travelers. International flights also use wide-body aircraft almost exclusively. Therefore the additional gates will probably only generate three or four additional International arrivals per day.

  The HHH terminal also serves charter operators. The charter operators have more flexible schedules. In the past they have tended to schedule their flights according to gate availability. The addition of the new gates will therefore both increase the flexibility of the charter operators and also allow them to conduct more operations. In 1990 the current three gates at the HHH terminal handled 4,500 operations. Charter operations are forecast to increase 15 percent in the next five years. This would be equivalent to an average of two additional operations per day.

The total anticipated increase from international and charter flights of six operations per day will only produce a minimal noise impact as it represents only a 0.6 percent increase above current operations.

- Vehicular Traffic

  Local roads providing access to the HHH terminal that will be affected by its expansion are 34th Avenue South and Post Road. The anticipated increase from international and charter flights of six operations per day is projected to add 1,460 daily vehicle trips to these roads: 1,040 on 34th Avenue to the south of the terminal and 420 on Post Road. The 1988 AADT volume on 34th Avenue north of I-494 was 16,300. This volume is forecasted to increase to 19,800 by the year 2020. Applying the average annual rate of increase in traffic volume to the 1988 volume yields a forecasted AADT of 16,800 vehicles in 1993, the anticipated terminal expansion year. Adding the trips generated by the terminal expansion gives a 1993 AADT volume of 17,840 on 34th Avenue north of I-494. Similar analysis suggests that the 1993 AADT volume on Post Road will increase from 6,790 to 7,210 vehicles after terminal expansion. These volume increases will not have a significant effect on the operation of 34th Avenue South and Post Road.

  Assuming that four of the six additional daily operations occur in one peak hour, 980 vehicle trips will be generated in that hour, 700 on 34th Avenue and 280 on Post Road. If the peak hour of HHH terminal activity coincides with the peak hour of adjacent street traffic, peak hour volumes will increase from 1,680 to 2,380 on 34th Avenue and 680 to 960 on Post Road. Changes such as geometrics or traffic signal timing and phasing might be necessary to accommodate the greater peak period demand on 34th Avenue. This will not be necessary if the peak operations at the HHH terminal do not coincide with the peak period vehicular traffic which occurs during the hours 2:00 to 4:00 PM.

- Sewage

  The proposed project will add new kitchen and bathroom areas and will therefore increase sewage discharged into the sanitary sewer system. The expansion will add employees and increase the passenger handling capability of the HHH Terminal. Additional gallons of wastewater will be generated per day; however, the number of new employees is not known at this time. It is estimated that this increase should not affect peak flow to the sewer, nor will it cause any difficulties to either the on-site collection systems and related MWCC interceptor or wastewater treatment facilities, given the size of the project.

II.C TAXIWAY C/D COMPLEX CONSTRUCTION

This project will provide for additional taxiway maneuvering area adjacent to the Red and Blue Concourse. An additional 336,750 square feet of impervious surface will be added to the Minnesota River-North Drainage Area.

- Water Quality

  The additional stormwater runoff caused by the increased paving for a predicted five year storm event is calculated to be 7.65 cubic feet per second. This additional incremental stormwater flow will cause no apparent problems for the associated stormwater collection, conveyance and treatment systems.

III. PROJECTS BEGINNING IN 1994

The following projects are included in the MAC's Capital Improvement Plan for 1994 and have the potential to effect the environment.

- Pavement Rehabilitation - Runway 11L/29R
- Runway 11L/29R Holding Aprons
- Taxiway B Construction

III.A PAVEMENT REHABILITATION RUNWAY 11L/29R

This project provides for the complete reconstruction of approximately 4,200 feet in the middle of Runway 11L/29R, which is experiencing continued deterioration from over 20 years of use and exposure to the elements. This project will replace the entire concrete pavement, provide new wider bituminous shoulders and regrade portions of the runway safety area to improve drainage. A new runway edge lighting system will be installed.

During construction of this project Runway 11L/29R will be closed, diverting air traffic to other runways. The project will add approximately 80,000 square feet of impervious surface to the Minnesota River-North Drainage Area. Therefore, the only categories to be impacted by the pavement rehabilitation project are aircraft noise (from aircraft using other airport runways) and water quality (due to increased runoff).

- Aircraft Noise

  Since Runway 11L/29R will be closed during construction, air traffic will be directed to the south parallel runway or the crosswind runway. The total number of flights and therefore the total volume of noise will not change. However, the distribution of the aircraft noise will change during construction. Once construction of the project is completed, the runway will be reopened and the noise level will return to the original distribution.

- Water Quality

  The additional stormwater runoff caused by the increase in shoulder width for a predicted five year storm event is calculated to be 1.21 cubic feet per second (CFS) for the drainage area tributary to the Minnesota River-North Drainage Area and 0.96 CFS for the drainage area tributary to the Snelling Lake Drainage Area.

This additional incremental stormwater flow will cause no apparent problem for the associated stormwater collection, conveyance and treatment systems.

The project is not expected to effect any other impact categories.

III.B RUNWAY 11L/29R HOLDING APRONS

This project adds holding aprons along the taxiway at both ends of Runway 11L/29R. The main purpose of the holding aprons is to enable an aircraft to clear the taxiway if a delay is issued by Air Traffic Control and not cause undue delay to other aircraft on the taxiway.

The holding aprons will not increase capacity or noise at the airport. The only foreseeable impact is to water quality created by additional runoff. The project will add approximately 103,300 square feet of impervious surface to the Minnesota River - North Drainage Area and 224,000 square feet to the Snelling Lake Drainage Area.

- Water Quality

  The additional stormwater runoff caused by the increase in impervious area for a predicted five year storm event is calculated to be 2.35 cubic feet per second (CFS) for the drainage area tributary to the Minnesota River-North Drainage Area and 8.06 CFS for the Snelling Lake Drainage Area. This additional incremental stormwater flow will cause no apparent problems for the associated stormwater collection, conveyance and treatment systems.

III.C TAXIWAY B CONSTRUCTION

This project involves the construction of a new parallel taxiway south of Runway 11R/29L. With no parallel taxiway, aircraft originating in the Page (formerly Van Dusen) area, HHH Terminal, cargo area, and airline maintenance facilities must first cross Runway 11R/29L before taxiing to either end of the runway for takeoff. FAA policy is to minimize active runway crossings. It is understood that the majority of "ATC Operational Errors" are attributable to this situation.

The purpose for construction of Taxiway B is to reduce the number of aircraft crossing Runway 11R/29L. The taxiway will not increase the basic capacity of the airport. Therefore, the only categories to be impacted by construction of Taxiway B are aircraft noise (from aircraft taxiing on Taxiway B) and water quality (due to increased runoff).

- Aircraft Noise

  As Taxiway B does not increase the capacity of the airport, the number of aircraft taxiing along Runway 11R/29L will not change. The only potential change in noise impact occurs due to taxiing aircraft being closer to residential areas on proposed Taxiway B than they presently are on Taxiway A. The only residential area so affected is the area between East 63rd Street and East 66th Street east of Cedar Avenue. The taxiway will bring aircraft to a minimum distance of 1,040 feet from the residential area as opposed to the present minimum distance of 1,280 feet. This would result in an increase in sound from taxiing aircraft of approximately 1.8 DBA. This is considered a negligible effect since the noise associated with taxiing aircraft is very minimal compared to the noise generated by takeoffs in the same area. It should also be noted that an increase of 1.8 DBA is almost undiscernible.

- Water Quality

  The additional stormwater runoff caused by the increased paved area for a predicted five year storm event is calculated to be 13.14 CFS for the Minnesota River-North Drainage Area, 3.31 CFS for the Minnesota River-South Drainage

Area, and 7.02 CFS for the Mother Lake Drainage Area. This additional incremental stormwater flow will, by itself, cause no apparent problems for the associated stormwater collection, conveyance, and treatment systems.

IV. PROJECTS BEGINNING IN 1995

There are no projects included in the MAC's Capital Improvements Plan for 1995 that may have the potential to effect the environment.

V. PROJECTS BEGINNING IN 1996

There are no projects included in the MAC's Capital Improvement Plan for 1996 that may potentially effect the environment.

VI. PROJECTS BEGINNING IN 1997

There are no projects included in the MAC's Capital Improvement Plan for 1997 that may potentially effect the environment.

VII. PROJECTS BEGINNING IN 1998

There are no projects included in the MAC's Capital Improvement Plan for 1998 that may potentially effect the environment.

APPENDIX B

1992 CAPITAL IMPROVEMENT PROJECTS
1993 CAPITAL IMPROVEMENT PROGRAM

1992 CAPITAL IMPROVEMENT PROJECTS
MINNEAPOLIS-ST. PAUL INTERNATIONAL AIRPORT

FIELD AND RUNWAYS

AIRFIELD SIGNAGE - $500,000

Recent runway incursions in Detroit and Los Angeles have prompted the FAA to make major revisions to the Advisory Circular on Standards for Airport Sign Systems. This will result in an expensive program to install airfield signage and to change the conventional meaning of certain existing signs. Currently, MSP has a system with approximately 190 signs. The proposed changes in the Advisory Circular will add approximately 127 additional signs to the system and require electrical upgrades including conductors, connections and larger regulators.

AIRSIDE BITUMINOUS CONSTRUCTION - $750,000

A project to construct or reconstruct bituminous pavements on various areas within the Air Operations Area. This year's work will consist of construction of bituminous shoulders adjacent to miscellaneous taxiways to enhance operational safety by reducing jet blast erosion typical of unsurfaced shoulders.

APRON PAVING - SOUTHWEST HANGAR/CARGO AREA - $6,000,000

This project will provide approximately 2,500 lineal feet of apron and associated building sites west of 24th Avenue to accommodate airline and freight handler growth. A connecting taxiway to existing Taxiway D will also be required. Previously approved by the Commission.

ELECTRICAL MODIFICATIONS - $150,000

The conditions of portions of existing underground field lighting circuits has deteriorated to the extent that normal maintenance operations cannot provide adequate resistance to ground required for continued uninterrupted use. This deterioration is caused by such factors as age and rodent damage. This project would be a continuation of the program initiated in 1988 to replace various circuits based on a condition survey and circuit priority and will be coordinated with other construction projects to ensure minimal disruption to airport operations. Other improvements to the airfield lighting system will also be considered, such as, replacement of regulators, switches, etc. Previously approved by the Commission.

HHH TERMINAL - REMOTE APRON LIGHTING - $100,000

The remote apron west of the HHH Terminal provides an area where unattended aircraft waiting for scheduled/charter flights departing from the HHH Terminal are parked. This area has grown from strictly a parking area to an area where charter carriers perform maintenance functions and where the aircraft are re-fueled. To provide a level of safety during these operations, it is proposed to install apron lighting in the area where these activities are conducted.

RETENTION BASIN IMPROVEMENTS - $300,000

There are four (4) retention basins utilized to control storm water run-off from the airport. Periodic rehabilitation is required to maintain the integrity of the basins to ensure compliance with the National Discharge Permit. A new discharge permit will be issued in 1991 which will most likely require additional modifications to each basin.

RUNWAY 29L SAFETY AREA - $600,000

The FAA has indicated to the Commission that the safety area for Runway 29L does not conform to current dimensional standards. These standards indicate that a 500 foot wide runway safety area (RSA) be maintained 1,000 feet beyond the runway end. The existing RSA for 29L is 500 feet wide by 865 feet long, the length being limited by an existing security fence adjacent to Northwest Drive, an airport service road. FAA has requested that the RSA be brought into conformance in 1991, however Commission staff has proposed to study alternatives in 1991 and implement the alternative which is acceptable to both the Commission and the FAA in 1992.

RUNWAY 4/22 EXTENSION $11,000,000

The Environmental Assessment process for the extension is scheduled for completion in 1991 which will allow the construction of the extension of Runway 4/22 to proceed in 1992. The extension will add 2750 feet to Runway 4/22.

SITE PREPARATION - $100,000

This item is programmed in the event incidental site preparation is necessary for existing or new tenants at the airport.

TAXIWAY C RECONSTRUCTION - $3,000,000

Taxiway C, southwest of Runway 11R, consists of forty-year old 12 inch concrete with a 6-inch bituminous overlay which was applied in 1980. It is anticipated that with additional development in the southwest hangar cargo area, the taxiway will receive increased use by wide bodied aircraft. Total reconstruction with 16 inch concrete is proposed to bring the taxiway up to current standards.

UTILITY REHABILITATION - $250,000

Many of the sanitary sewer, storm sewer and water main utilities on the airport are reaching the age where major maintenance or replacement is required. It is proposed to conduct condition surveys on these utilities to locate segments which require maintenance/replacement and to investigate the potential of coordinating this work with other projects.

RETENTION BASIN IMPROVEMENTS - $300,000

There are four (4) retention basins utilized to control storm water run-off from the airport. Periodic rehabilitation is required to maintain the integrity of the basins to ensure compliance with the National Discharge Permit. A new discharge permit will be issued in 1991 which will most likely require additional modifications to each basin.

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SITE PREPARATION - $100,000

This item is programmed in the event incidental site preparation is necessary for existing or new tenants at the airport.

TAXIWAY C RECONSTRUCTION - $3,000,000

Taxiway C, southwest of Runway 11R, consists of forty-year old 12 inch concrete with a 6-inch bituminous overlay which was applied in 1980. It is anticipated that with additional development in the southwest hangar cargo area, the taxiway will receive increased use by wide bodied aircraft. Total reconstruction with 16 inch concrete is proposed to bring the taxiway up to current standards.

UTILITY REHABILITATION - $250,000

Many of the sanitary sewer, storm sewer and water main utilities on the airport are reaching the age where major maintenance or replacement is required. It is proposed to conduct condition surveys on these utilities to locate segments which require maintenance/replacement and to investigate the potential of coordinating this work with other projects.

ENVIRONMENTAL

LAND USE MODIFICATIONS - $4,000,000

This item is intended to cover projects identified as a part of the FAR Part 150 program (noise control and compatibility planning for airports) which has been approved, in part, by the FAA. The projects would include items such as property acquisition and sound proofing of homes, schools, and public buildings. The Commission has retained a consultant to evaluate the land use implementations around the airport. Based on their recommendations, projects will be initiated through the community in which the project is located. Previously approved by the Commission.

NOISE SUPPRESSOR - $6,000,000

Minnesota Statutes require the construction of a noise suppressor to reduce run-up noise. Noise monitoring data collected is being tabulated, analyzed and presented in a report to the Legislature for consideration and further direction on this item. Previously approved by the Commission.

SELF-LIQUIDATING

NWA CONCOURSE MODIFICATIONS - $1,650,000

Northwest Airlines has completed a master plan pertaining to consolidation of their work forces resulting from the acquisition of Republic Airlines. The plan calls for modifications to space on all concourses at the airport to provide an improved working environment for all employees. Previously approved by the Commission.

NWA HEAVY MAINTENANCE FACILITY

Northwest Airlines is currently evaluating sites for construction of a maintenance facility to accommodate their fleet of A320 aircraft. There have been tentative indications that this facility may be located in Duluth with an engine repair facility to be constructed in Hibbing. There is still, however, the option that Northwest may decide to locate both facilities at Minneapolis-St. Paul International Airport.

NWA MAINBASE MODIFICATIONS - $38,000,000

Northwest Airlines has developed a Master Plan for the utilization of existing assets and the identification of additional requirements for their Aircraft Maintenance and Plant Maintenance Shops and Stores at MSP. The study identified operational needs, physical arrangements, space requirements, facility alteration, etc. based upon current information regarding their fleet plans and flight hours through 1993.

The study recommends implementation of a play that includes modifications to Complex B (original NWA mainbase) and Complex C (former Republic mainbase). Northwest Airlines has requested that the Commission finance the work.

ENVIRONMENTAL

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The study recommends implementation of a play that includes modifications to Complex B (original NWA mainbase) and Complex C (former Republic mainbase). Northwest Airlines has requested that the Commission finance the work.

The Complex B modifications would include building additions for numerous shop maintenance activities, installation of an automatic storage/retrieval system for small parts, pneumatic tube system for parts delivery, a new automatic guided vehicle system for material handling, mechanical system improvements and replacement of electrical switch gear. The Complex C modifications primarily involve the construction of a building addition and installation of an automatic storage/retrieval system for both palletized materials and small parts, installation of an automatic guided vehicle system for material handling and installation of a pneumatic tube system for parts delivery.

The work will be phased/bid over a two year period beginning in 1992. Previously approved by the Commission.

NWA RAMP EQUIPMENT WASH FACILITY - $250,000

Northwest Airlines has requested a portion of the lower level Green Concourse be enclosed and provided with utilities such that they can install washing equipment for their ramp equipment. The Commission would provide the basic enclosure and Northwest Airlines would install all improvements. Previously approved by the Commission.

NWA WORLD CLUB - $2,000,000

Staff has received a request from Northwest Airlines for the construction of a new World Club to serve Northwest Airlines passengers. Northwest is currently experiencing difficulties meeting passenger demands with the World Clubs located on the Gold and Red Concourses and feels that a more appropriate, centralized location can be provided in order to enhance customer service and to eliminate the need for maintaining two independent facilities.

SUN COUNTRY HANGAR - $9,000,000

Sun Country Airlines currently operates from a hangar which is owned by Northwest Airlines. Northwest Airlines has a need for the hangar and Sun Country must either relocate on the airport or move their operation to Las Vegas. It is proposed to fund the hangar with Commission funds and have them reimbursed through lease payments. A similar procedure was used in construction of the Mesaba and Northwest Airlines 747-700 hangars.

LANDSIDE

ASBESTOS ABATEMENT - $200,000

An asbestos survey of MAC owned buildings at Minneapolis-St. Paul International Airport is underway which will identify all areas containing asbestos and recommend an appropriate asbestos abatement plan. This item is programmed in anticipation of implementing a phased abatement plan in 1992 and continuing the activities in succeeding years.

AUTOMATED PEOPLE MOVEMENT SYSTEM - $16,800,000

The concept of a Ground Transportation Center at Minneapolis-St. Paul International Airport was approved by the Commission in 1985. It was to be a facility between the Lindbergh Terminal and parking facilities which would provide an enclosed waiting area for passengers utilizing the various modes of public ground transportation and provide access to the parking facilities.

A considerable amount of study has been completed and numerous alternatives evaluated on the concept and its inter-relationship with the parking facilities. A number of related construction projects have evolved from the concept of a ground transportation center, including: the existing Lindbergh Terminal Vertical Circulation providing elevators/escalators within the terminal from the garage level to mezzanine level; skyways from the Lindbergh Terminal to the parking structures, with associated vertical circulation at the parking structures, which were bid in late 1990; an automated people movement system; relocation of the entrance and exit to the underground parking garage; the construction of an underground Ground Transportation Center between the Terminal Building and the Parking Ramp; and the construction of additional valet parking space.

The automated people movement system is comprised of a series of individual compartments that will operate like a horizontal elevator between the Lindbergh Terminal and the parking and rental car facilities. The people movement system will replace the existing shuttle bus service operating between the Lindbergh Terminal and the rental car facility. The system will operate through a tunnel under the existing access roads and transition to an at-grade level at the auto rental building. It is expected the selection/bid of a specific movement system will occur in 1992. Once a specific system is selected, design criteria for that particular system can be prepared and it is expected the installation of the system would start in 1993. Previously approved by the Commission.

BAGGAGE CONVEYOR/CAROUSEL SYSTEM REHABILITATION - $1,000,000

It is proposed a thorough inspection and review be completed for all baggage conveyors and carousels in the Lindbergh Terminal to determine the extent of rehabilitation required in an attempt to reduce reoccurring maintenance problems. The study is underway and will be followed by appropriate rehabilitation in 1992.

BASEMENT CONCRETE RESTORATION - $300,000

A project to address leakage problems and structural deterioration in the terminal basement under the inner roadway was completed in 1986. A similar problem that must be corrected exists under the tug drive area in the baggage make-up area as the tugs and baggage carts carry water and salt-laden snow into the areas which leaks into the basement and perpetuates the deterioration. Previously approved by the Commission.

BOILER PLANT MODIFICATIONS - $200,000

It is proposed the boiler plant, originally constructed in 1959-60 be reviewed for periodic maintenance/rehabilitation including items such as roof repair/replacement, asbestos removal and power washing/repainting of the interior equipment and piping.

CONCESSION AREA DEVELOPMENT - $500,000

A concessions study is expected to be completed for the Lindbergh Terminal in 1991 which will review the types and level of concessions currently offered and analyze/recommend the potential for additional services to be offered to the public. During 1992, there will be miscellaneous space modifications required.

ECONOLOT BUS SHELTER RECONSTRUCTION - $150,000

The existing bus shelters for patrons utilizing the Econolot are unheated structures which serve mainly as windbreaks and provide shelter when it rains. In order to better accommodate the Econolot patrons, it is proposed that these shelters be replaced by better lighted, climatized structures.

EMPLOYEE LOT RECONSTRUCTION - $100,000

As with runway and taxiway pavements, parking lot pavements also require periodic maintenance to keep them functional. The employee parking lots located on 34th street are in need of pavement rehabilitation which will consist of crack repair, selected pavement replacement and the construction of an overlay.

GTC EAST CONSTRUCTION - $3,700,000

As part of the Ground Transportation Center, the existing terminal basement will be expanded to the vertical circulation adjacent to the parking ramps. This project involves the east phase of this expansion and includes the construction of the east basement infill; the relocation of the valet parking entrance and exit; and the construction of the first phase of the new ground level roadway system adjacent to the parking ramps.

GTC MIDDLE, WEST AND VALET CONSTRUCTION - $8,650,000

This project is a continuation of the construction of the Ground Transportation Center and includes the construction of the middle and west phases of the GTC and the expansion of the valet parking area to the south and east of the existing terminal basement.

GTC UTILITIES CONSTRUCTION - $450,000

To accommodate the construction of the GTC Upper Level Roadway projects, various utilities must be relocated and/or reconstructed. This project will provide for the relocation of an existing storm sewer and the reconstruction of the existing watermain on D Street.

GREEN CONCOURSE INTERIOR REHABILITATION - $500,000

The recent Red Concourse Rehabilitation project established certain interior finish standards that will be carried through the remaining concourses. This project will address wall and floor finishes as ceiling and lighting items will be addressed in the mechanical systems conversion project. The public areas will receive new carpeting and the wall treatment will primarily consist of a ceramic tile wainscot with vinyl fabric wall covering. Previously approved by the Commission.

GREEN CONCOURSE MECHANICAL SYSTEM CONVERSION - $3,350,000

The Green Concourse was constructed in a number of segments (original section, two additions and the "pod"). The original section and first addition are presently served by numerous individual packaged air conditioning units. Most of these units are far beyond their normal life expectancy. In addition, as the concourse interior configuration has evolved over the years, the existing units have not offered the flexibility to provide temperature control zones necessary for total comfort. A study was conducted to identify conversion options, costs, space requirements, etc. The study recommends the existing units be removed and replaced with centralized HVAC units utilizing chilled water for cooling. Inasmuch as the concourse ceiling will be affected by this construction, certain components of the interior upgrade packages will also be addressed. In addition, in order to clear the work areas for the Mechanical System Conversion, asbestos containing pipe insulation will have to be removed. Previously approved by the Commission.

GROUND TRANSPORTATION CONTROL SYSTEM - $500,000

Presently, passengers requiring taxicab service at the airport are served by a taxicab starter/dispatcher service located directly across from the center of the baggage claim area in the plaza adjacent to the outer roadway. Taxi parking in this area is limited to those taxis required for immediate passenger loading and departure. Additional taxis are staged at two remote locations on the airport and called up as needed.

The present system is becoming overloaded and its users are experiencing delays, terminal congestion and general inconvenience. It is proposed a computerized vehicle access control system be installed to improve system operation, reduce personnel costs and increase revenues derived from registration fees.

It is intended that the first phase of the Ground Transportation Control System will control taxicabs only. Subsequent phases will control all other forms of transportation such as limousines, courtesy vehicles, etc.

INFORMATIONAL/DIRECTIONAL SIGNAGE ADJUSTMENTS - $400,000

Staff has received comments that signage in the Lindbergh Terminal Complex needs to be more comprehensive/informative. It is proposed the information kiosks be upgraded and the interior signage throughout the terminal be replaced with a more flexible, comprehensive system. Previously approved by the Commission.

LANDSIDE ELECTRICAL - $200,000

The Commission maintains several strings of street lights which are located on airport streets. Many of these street lights have been in existence for many years and are in need of upgrading. Specifically, the street light conductors on 34th Avenue and 26th Avenue need to be replaced and installed in conduit.

LINDBERGH TERMINAL CONCOURSE DOOR REPLACEMENT - $50,000

The doors to the entrances to the Red, Blue and Green Concourses in the Lindbergh Terminal have deteriorated to the point where routine maintenance is unable to keep the doors operational. It is proposed to replace these doors with coiling type doors which would require less maintenance and would provide an unrestricted opening into the concourse.

LINDBERGH TERMINAL CURTAINWALL REPAIRS - $150,000

Over the years, sections of curtainwall on the air operations side of the Concourse have become damaged as a result of being run into by tugs, trucks and aircraft servicing equipment. This project would repair all damaged curtainwall sections.

LINDBERGH TERMINAL ELECTRICAL MODIFICATIONS - $200,000

It is proposed the phased program be continued to address electrical issues requiring attention due to age and deterioration of the existing systems or modifications necessary for improved operations. The items might typically include: additional area lighting units and circuitry revisions for improved safety and security, replacement/relocation of fixtures to reduce maintenance costs, etc. The major emphasis for this year's project will be upgrades in the switchgear at the Regional Terminal and the Boiler Plant.

LINDBERGH TERMINAL ENTRANCE DOOR REPLACEMENT - $500,000

The sliding entrance doors at door nos. 2-5 on both the upper and lower levels are requiring a considerable amount of maintenance to ensure continued operation. It is proposed the door equipment be replaced and the entrances renovated. Previously approved by the Commission.

LINDBERGH TERMINAL INTERIOR REHABILITATION - $1,000,000

A Lindbergh Terminal Interior Design Standards and Guidelines study was completed with a major priority to incorporate a "Minnesota Image" into the Lindbergh Terminal building. The result was a document that established a framework for interior spaces and finishes that will improve the character and amenities of the physical facilities for the traveling public. A phased implementation schedule was proposed to accomplish the study recommendations.

This project will primarily provide for an upgrade of the bag claim area including wall treatments, carpeting and improved lighting. Previously approved by the Commission.

LINDBERGH TERMINAL MISCELLANEOUS MODIFICATIONS - $250,000

To keep abreast with the changing requirements in the terminal facilities, it is necessary to update and remodel areas periodically. This may be a series of individual projects to meet the requirements of various tenants, however, the items will be consolidated into a single project when possible.

LINDBERGH TERMINAL TEMPERATURE CONTROL - $400,000

The oldest areas of the Lindbergh Terminal including parts of the Gold and Green Concourses, the garage and baggage claim areas are served by a temperature control system which is antiquated and subject to frequent and expensive repairs. This project will provide a new system which is compatible to and can be connected to the existing temperature control computers.

LOWER LEVEL ROADWAYS CONSTRUCTION - $2,350,000

The last project associated with the Ground Transportation Center series of projects involves the construction of the lower level road system to its ultimate configuration. This will be accomplished in phases starting in 1992 as work on the upper level roadways is completed. As part of this project, a mechanical ventilation system will be installed which will supply fresh air over the lower level roadway/sidewalk area in front of the terminal building for those times when carbon monoxide levels approach the levels specified in the Commission's Indirect Source Permit.

PARKING STRUCTURE REHABILITATION -$500,000

In order to maintain the integrity of the multi-level parking structure, it is proposed an annual project be programmed to address normal "maintenance" issues, such as, concrete repairs, joint sealant replacement, expansion joint repairs, etc. It is also proposed to upgrade the lighting system on each level of the first structured parking ramp.

POLICE DEPARTMENT REMODELING - $500,000

A study to remodel the administrative and other support areas on the mezzanine level of the Lindbergh Terminal is currently underway. The recommended remodeling alternative will be implemented in 1992.

PUBLIC SAFETY BUILDING - $150,000

The increasing emphasis on safety/security/drug enforcement is resulting in a need to construct a multi-purpose centrally-located building capable of storing equipment such as the bomb trailer and associated x-ray equipment, the emergency response medical trailer and air-boat. Previously approved by the Commission.

REGIONAL TERMINAL ROOF RECONSTRUCTION - $60,000

The Regional Terminal roof has been a maintenance problem for several years. Past patching projects have helped to some extent, but a recent survey of the roof indicates that the entire roof requires replacement. The old roof will be removed down to the concrete decking, new tapered insulation installed and a new roof system constructed.

REVENUE CONTROL BUILDING EXPANSION - $85,000

The Revenue Control building houses the facilities and offices required to operate and maintain the revenue control equipment utilized in the parking structures. The existing building contains a shop for the repair of all equipment which is currently at its limits for space. There is a need for additional space for the repair technicians as the number of pieces of equipment and the age of the equipment increases. It is therefore proposed to construct an addition to the existing building to provide additional work bench space to facilitate the equipment repairs.

SNOW REMOVAL EQUIPMENT BUILDING ADDITION - $1,200,000

The snow removal equipment storage building includes maintenance bays that were part of the original building constructed in 1965. The Commission's fleet of motorized equipment now exceeds 200 units which can no longer be maintained in the existing space in an efficient, safe manner. It is proposed to construct an addition on the south side of the existing building to provide the additional maintenance areas required. Reconfiguration of the office and crew areas including providing facilities for female maintenance workers would also be accomplished.

TERMINAL COMPLEX SPRINKLER SYSTEM ADDITIONS - $100,000

Staff and our architectural/engineering consultants have met with the fire insurance underwriters to identify areas within the terminal complex that, if covered by an automatic sprinkler system would result in fire insurance premium savings. A program was initiated in 1988 to address four key areas generally involving the restaurant/lounge, airline ticket offices and storage areas. This item is programmed to allow for further analysis of areas which, if sprinkled, would allow for further insurance premium reductions. It will also allow for extension of the sprinkled areas should space utilization changes occur. Previously approved by the Commission.

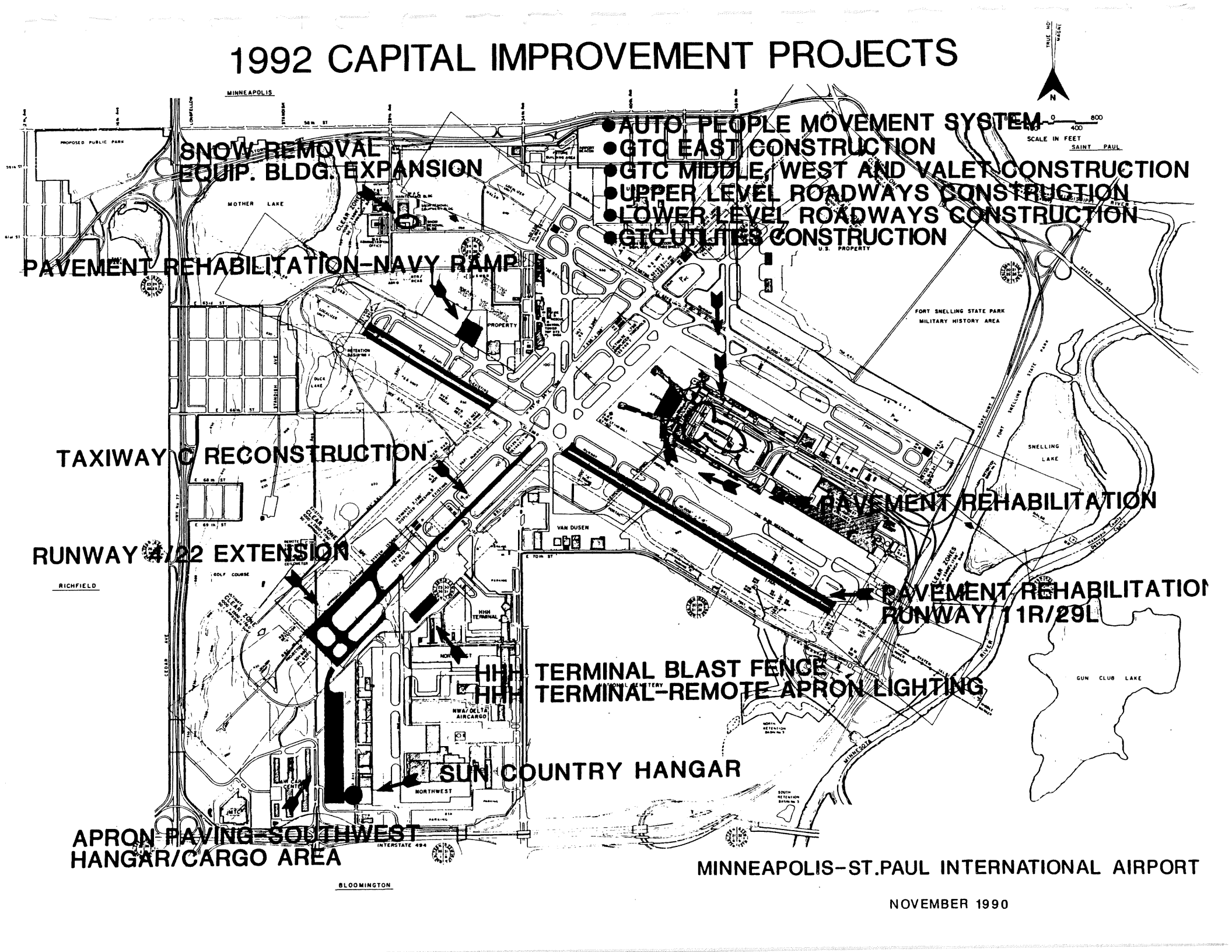
UPPER LEVEL ROADWAYS CONSTRUCTION - $18,600,000

Two alternatives for reconstruction of the upper level roadway were studied in 1991. The two alternatives included: constructing a new upper level roadway adjacent to the existing, re-routing traffic to this new structure and then reconstructing the existing structure; or temporarily displacing the traffic from the upper level roadway to other locations, demolishing the existing structure and reconstructing it as quickly as possible. The alternative to construct a second upper level roadway prior to reconstructing the existing was selected as the alternative which impacted airport users the least and will be implemented in phases during the 1992 to 1995 time period.

WEST TERMINAL AREA REHABILITATION - $200,000

A project or projects to modify or remodel areas to meet the needs of the various tenants and general public utilizing these facilities.

1992 CAPITAL IMPROVEMENT PROJECTS



MINNEAPOLIS-ST.PAUL INTERNATIONAL AIRPORT

NOVEMBER 1990

1993 CAPITAL IMPROVEMENT PROGRAM
MINNEAPOLIS-ST. PAUL INTERNATIONAL AIRPORT

FIELD AND RUNWAYS

AIRSIDE BITUMINOUS CONSTRUCTION - $500,000

A project to construct or reconstruct bituminous pavements on various areas within the Air Operations Area. Typical items of work include taxiway shoulders, blast pads, roadways, etc. Items to be included in this category will be reviewed in more detail during 1992 and will be presented for approval when the CIP is updated for the 1993 construction season.

ELECTRICAL MODIFICATIONS - $150,000

The condition of portions of existing underground field lighting circuits has deteriorated to the extent that normal maintenance operations cannot provide adequate resistance to ground required for continued uninterrupted use. This deterioration is caused by such factors as age and rodent damage. This project would be a continuation of the program initiated in 1988 to replace various circuits based on a condition survey in circuit priority and will be coordinated with other projects to insure minimal disruption to airport operations. Other improvements in the airfield lighting system will also be evaluated, such as regulators, switches, etc.

MISCELLANEOUS CONSTRUCTION - $275,000

It is proposed to continue the Commission's annual program of a miscellaneous construction project for the airport which consolidates various incidental items beyond the capabilities of our maintenance personnel, or projects too small to be accomplished independently. The items typically involve bituminous resurfacing, fencing and security gates, signage, etc.

PAVEMENT REHABILITATION - APRONS, TAXIWAYS, ETC. - $2,500,000

This is a continuation of a program to replace sections of concrete pavement in the aircraft operational areas that have deteriorated to a point where maintenance is no longer a viable option. This year's project will be a continuation of the area adjacent to the Red and Blue Concourses which was begun in 1992.

PAVEMENT REHABILITATION - RUNWAY 4/22 - $5,500,000

This project provides for the complete reconstruction of the northeast one third of Runway 4/22 which is experiencing continuing deterioration from almost 40 years of use and exposure to the elements. The southwest two thirds of the Runway was reconstructed in 1989. This project will replace the entire concrete pavement, provide new wider bituminous shoulders, and regrade portions of the runway safety area to improve drainage. A new runway edge lighting system will also be installed.

SITE PREPARATION - $100,000

This item is programmed in the event incidental site preparation is necessary for existing or new tenants at the airports.

TAXIWAY C CONSTRUCTION - $3,000,000

This project will reconstruct the existing section of Taxiway C northeast from Runway 11L/29R and extend and reconfigure the Taxiway to the end of Runway 22. This will provide a more efficient operating configuration for aircraft taking off on Runway 22.

TAXIWAY C/D COMPLEX - $4,500,000

This project will provide for additional taxiway capacity adjacent to the Red and Blue Concourses. Alternative layouts are now being evaluated and more detailed cost information will be available when the CIP is updated for the 1993 construction season. It is expected the project will be accomplished over a two year period. Previously approved by the Commission.

ENVIRONMENTAL

LAND USE MODIFICATIONS - $4,000,000

This item is intended to cover projects identified as part of the FAR Part 150 program (noise control and compatibility planning for airports) which has been approved, in part, by the FAA. Projects would include items such as property acquisition and soundproofing of homes, schools and public buildings. The Commission has retained a consultant to evaluate the land use implementations around the Minneapolis-St. Paul International Airport. Based on their recommendations, projects will be initiated through the community in which the project is located.

SELF LIQUIDATING

NWA MAIN BASE MODIFICATIONS - $14,000,000

This is a continuation of the implementation of Northwest Airline's Master Plan for the improvement of their Aircraft Maintenance and Plant Maintenance Shops and Stores facilities at MSP. See 1992 narrative for this item for a more complete description. Prevously approved by the Commission.

LANDSIDE

ASBESTOS ABATEMENT - $200,000

An asbestos survey of MAC owned buildings at Minneapolis-St. Paul International Airport was completed in 1991. This survey identified all areas containing asbestos and recommended an appropriate asbestos abatement plan. The first phase of this plan is programed for implementation in 1992 and this item is a continuation of that program.

AUTOMATED PEOPLE MOVEMENT SYSTEM - $2,400,000

This project is a continuation of the construction of an automated people movement system to serve the car rental customers. This project will involve modifications to the existing car rental building to accommodate rental car customer service activities within this facility as they relate to the people movement system

COMM/OPS CENTER MODIFICATIONS - $400,000

It is proposed the construction of an additional level to the Comm/Ops center be evaluated. The additional level would improve the line of sight for communication and operations personnel who coordinate the day-to-day airfield activities, including emergency response, snow removal and construction. An elevator would need to be included to provide accessibility to all personnel.

CONCESSION AREA DEVELOPMENT - $4,000,000,000

A concession study for the Lindbergh Terminal will be completed in 1991 which will review the types and level of concessions currently offered and recommend what new services could be offered to the public. Minor space modification will be completed in 1992 with the majority of the recommendations expected to be implemented in 1993.

GTC MIDDLE, WEST AND VALET CONSTRUCTION - $3,850,000

This project is a continuation of the construction of the Ground Transportation Center and includes the remaining finish construction within the lobby area of the GTC.

GROUND TRANSPORTATION CONTROL SYSTEM - $100,000

In 1992, the first phase of the Ground Transportation Control system will be implemented which will control taxicabs only. This system will be expanded in 1993 to control other ground transportation vehicles.

HHH TERMINAL EXPANSION - $15,000,000

At the present time, the HHH Terminal serves two distinct functions; as the sole international arrivals building for Minneapolis-St. Paul International Airport and as the operating facility for charter carriers and non signatory airlines. The facility has three terminal aircraft parking positions and an international arrivals processing area capable of accommodating one flight arrival at a time. With the recent addition of KLM Airlines, an international arrivals processing area capable of handling at least two simultaneous wide body international arrivals is needed. This is required if we hope to entice other foreign flight carriers to utilize this facility. In order to provide simultaneous wide body aircraft international arrival capability, it will be necessary to increase the size of the processing area and likewise add proportionately to the support space. Gate space is also at a premium as both charter and international arrival flights share the existing gate space. It is proposed that a facility with a minimum of six gates with the necessary amount of passenger processing, public and support space is needed in the 1993-1994 time period. This project would be the first phase in providing the expanded terminal area.

LIMOUSINE COUNTER RELOCATION - $100,000

With the increased needs for expanded ground transportation operations, there is a need to plan, develop and implement an expanded customer service counter area. This area would be located on the baggage claim area.

LINDBERGH TERMINAL ELECTRICAL MODIFICATION - $200,000

This project would be a continuation of the program to address electrical issues requiring attention due to the age and deterioration of the existing system or modifications necessary for improved operations. The items to be addressed will be analyzed during 1992 and a recommendation will be available when the CIP is updated for the 1993 construction season.

LINDBERGH TERMINAL MISCELLANEOUS MODIFICATIONS - $250,000

To keep abreast with the changing requirements in the terminal facilities, it is necessary to update and remodel areas periodically. This may be a series of individual projects to meet the requirement of various tenants, however, the items will be consolidated into a single project when possible.

LOWER LEVEL ROADWAYS CONSTRUCTION - $550,000

This project is a continuation of the construction of the lower level roadways begun in 1992 as part of the Ground Transportation Center series of projects. Construction of the western most lower level roadway will take place during 1993.

PARKING STRUCTURE REHABILITATION - $500,000

In order to maintain the integrity of a multilevel parking structure, it is proposed an annual project be programed to address normal (maintenance) issues such as concrete repair, joint sealant replacement, expansion joint repairs, etc. It is also proposed to upgrade the lighting system on each level of the first structured parking ramp. This was accomplished in 1991 and is programmed for completion in 1992 on the ground level and the first and second structured levels and it is proposed to do the third structured level in 1993.

PRIMARY DISTRIBUTION SYSTEM UPGRADE - $750,000

This project involves supplying the terminal building with alternate sources of power. Previous projects have fed electrical power to the north and south ends of the terminal via temporary substations. This project will provide for the permanent substation locations under the up and down ramps of the upper level roadway and will also provide required electrical modifications within the terminal building.

TRADES SHOP BUILDING - $2,000,000

Currently, the Commissions's carpentry, electrical and painting crews occupy individual buildings in the West Terminal area. As the work crews associated equipment and material inventories have grown to meet the various maintenance demands, their existing facilities are not adequate for their functions. In addition, new state and federal regulations require areas for the storage of hazardous materials such as are used by the painting crews. It is proposed a centralized facility capable of housing the three maintenance functions be evaluated. Each trade area would include a workshop, material storage area and foreman's office; common vehicle garage, toilet facilities and lunch/break room would also be provided.

1993 CAPITAL IMPROVEMENT PROGRAM