MINNEAPOLIS/ST. PAUL INTERNATIONAL AIRPORT

ASSESSMENT OF ENVIRONMENTAL EFFECTS METROPOLITAN AIRPORTS COMMISSION'S SEVEN YEAR CAPITAL IMPROVEMENT PLAN 1995 - 2001

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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(No projects with impacts begin this year)

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(No projects with impacts begin this year)

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 (1995-2001) for Minneapolis-St. Paul International Airport.

This assessment examines the cumulative environmental effects of all the listed capital improvement projects at the airport from 1995 to 2001. Many of the projects listed entail only repair or rehabilitation of existing facilities. Such work would not affect the before/after usage of the facilities, and as such would not add to or subtract from the cumulative environmental effects. The 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 1995 through 2001. Those projects determined not to 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 explain in more detail the type of work the project entails and why this type of project will not contribute to the cumulative environmental effects.

In addition, Section C is a discussion of the environmental effects of construction activities, which will be mitigated.

C. IMPACTS DURING CONSTRUCTION

It is assumed that typical mitigation measures will be used during construction to minimize adverse environmental effects caused by noise, dust, erosion, etc. Since the environmental impacts of construction will be temporary, they have not been included in the cumulative, long-term effects of projects in the CIP.

It is recognized that the planned lengthening of Runway 4/22 and the rehabilitation of Runway 11R/29L and Runway 4/22 during the seven year program will require rerouting of air traffic for temporary periods. The pavement rehabilitation for the Runway 4/22 and 11R/29L intersection will have the greatest impact, as it will temporarily eliminate the use of two runways. The rerouting of aircraft traffic for these projects will cause temporary changes in overflight noise levels. The greater noise levels from more flights concentrated on one or two of the three runways will be partially offset by reduced levels under the approaches of the runway(s) temporarily out-of-service for repair/rehabilitation. 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 work 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

An analysis of MAC's Capital Improvement Plan on a project-by-project basis found several projects that could create noise impacts at/near the airport. These projects can be grouped into three general categories. The first group consists of projects that may produce a minor increase in aircraft noise. This group includes the Taxiway B Construction, the Gold Concourse FIS Facility, the Sun Country Hangar and the Humphrey Terminal Improvements.

The second group includes projects that should reduce the level of aircraft noise received in surrounding areas. This group includes Runway 4/22 noise mitigation, home insulation and buyouts, New Ford Town/Rich Acres acquisition, school noise abatement projects and the Noise Suppressor.

The third grouping includes 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 then the effects of each group were combined for an overall effect.

The projects in the first group are expected to have only minor noise impacts. The Taxiway B construction should not increase operations because the number of taxiing aircraft along Runway 11R/29L will not change. Because the residents of New Ford Town and Rich Acres neighborhoods of Richfield are being relocated as part of a noise abatement project, *(See Section IV.A)*, slight noise impacts created by construction of Taxiway B on the closest residential areas will be temporary and will continue only until all residents have been relocated from these neighborhoods. It is estimated that construction of the Gold Concourse FIS Facility could generate 620 additional annual departures over the no-build condition by the year 2005, and 1500 annual departures by the year 2020 *(See Section I.S)*. This amounts to increases in total departures of approximately 0.25 and 0.58 percent respectively. This increase will produce an insignificant increase in noise. It is estimated that the Sun Country Hangar will produce no discernable increase in aircraft operations at the airport *(See Section I.M)*. It is estimated that construction of the Humphrey Terminal Improvements could generate 180 additional annual departures over the no-build condition *(See Section I.U)*. This amounts to an increase in total departures of 0.08 percent. This increase will produce an insignificant increase in noise.

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

Projects designed to mitigate noise impacts are included in the second group of projects. The cumulative effects of the home insulation and buyout program, as well as New Ford Town/Rich Acres acquisition, are summarized in Sections I.G and I.I of Appendix A. There school noise abatement projects are summarized in Sections I.K and III.B. The land use changes and corrective measures of the noise abatement projects would result in a significant positive impact on the environment. An analysis of the Noise Suppressor *(Section I.G of Appendix A)* found that, if constructed, it would have a limited positive impact on airport noise. However, at a cost of $6,000,000, it has a low benefit-to-cost ratio compared to other possible beneficial projects. The Runway 4/22 Noise Mitigation and Acquisition *(Sections I.D and III.A)* also would have a positive impact concerning aircraft noise. The cumulative impact from the second group of projects would, therefore, have a significant positive impact on the environment.

The Runway 4/22 Extension, the only project in the third group, is discussed in Section I.C, which contains a summary of the Draft Final Environmental Impact Statement prepared for the project. In brief, the Draft EIS prepared for the project identifies the impacts for the year 1996. This year was selected to be consistent with the MSP Part 150 Update and to reflect a likely completion date for the project. In south Richfield (south of 70th Street) and Bloomington, an additional 7,040 persons would be impacted

by Day-Night Noise Level (DNL) 65 or greater as compared to the No Action. In Minneapolis, north Richfield, Mendota Heights, and Eagan, 4,080 fewer persons would be impacted by the project. The proposed project will not cause an increase in the overall level of sound generated by aircraft at MSP, but changes in the numbers and patterns of aircraft flights on different runways made possible by the runway extension would cause differences in sound levels at various locations surrounding the airport. The proposed project would result in an overall increase of nearly 3,000 persons within the DNL 65 noise contour in 1996 compared to the No-Action. However, the proposed project would reduce population within the DNL 70 and above noise contour by more than 1,100 people.

As indicated above, some aircraft noise would be redistributed, with the residents in the DNL 65 noise contour shifted from south Minneapolis and north Richfield to Bloomington and south Richfield. While south Minneapolis would continue to be the area most impacted by MSP aircraft noise, the increased use of Runway 4/22 made possible by the proposed 0project would produce a more even distribution of noise in the area surrounding MSP than the No-Action alternative.

In summary, the insignificant and very minor increases in noise impacts from projects in the first group, combined with the potential for a significant decrease in noise impacts from projects in the second group, indicates that the cumulative impact on the environment will be less aircraft noise associated with MAC's Capital Improvement Plan. The Runway 4/22 extension, the only project in group three, will result in a net increase in the residential population within the DNL 65 contour. Therefore, MAC can decide for or against the Runway 4/22 project without affecting the cumulative noise impacts of the remaining projects (except the 4/22 mitigation projects) in MAC's Capital Improvement Plan. Conversely, the rest of MAC's projects can proceed without affecting the cumulative noise impact of the Runway 4/22 project.

D.2 Vehicular Traffic

An analysis of MAC's seven year CIP on a project-by-project basis indicates the following projects have the potential to affect vehicular traffic entering and leaving the airport.

-Automated People Mover System

-Elevated Roadway Construction

-Sun Country Hangar

-Auto Rental Parking Expansion

-Gold Concourse FIS Facility

-Humphrey Terminal Improvements

-Econolot Parking Deck

The automated people mover, as well as the elevated and ground level roadways, when completed, will increase the efficiency of the internal roadway system. No additional inbound or outbound trips will be generated by these facilities.

The Sun Country Hangar vehicular impacts are summarized in section I.M. While 800 vehicles/day will be added to the traffic network in the area (principally on 66th Street), this increase will be offset by the decrease in residential traffic as houses in New Ford Town and Rich Acres are acquired.

The Auto Rental Parking Expansion impacts are discussed in section I.N. The expanded public parking facilities are expected to generate approximately 5,000 vehicle trips per day. However, this increase will be more than offset by the elimination of trips by rental cars traveling between the "ready area" and the current "turnaround" facility located on the north frontage road.

Analysis of the Gold Concourse FIS Facility *(Section I.S)* found that traffic increases from the project will be negligible, since approximately 70 percent of the passengers using the facility will be connecting to other flights and will not be disembarking at MSP.

The Humphrey Terminal Improvements *(Section I.U)* will not significantly increase the total daily traffic volumes; however peak hour traffic (estimated at 500 vehicles each hour) may be more critical. The additional aircraft gates will permit more departures to be scheduled simultaneously (usually scheduled in the mornings), thus increasing the number of passengers at the terminal. The major impact will be on 34th Street, where 300 additional vehicles will be turning left. These conditions would need to be monitored once in operation to determine whether additional traffic controls will be necessary.

The Econolot Parking Deck *(Section I.Q)* will create a net increase of approximately 800 parking spaces after other parking is eliminated with construction of the Humphrey Terminal improvements. These 800 spaces are expected to be used for long term parking for both the Lindbergh and Humphrey terminals. Traffic in and out of the parking lot is expected to be distributed throughout the day. Consequently, it is not expected to add significant enough volumes to create an impact.

The cumulative traffic impacts from MAC's CIP, based upon the above, are generally negligible, since the impacts from most individual projects are minor and the projects are generally spread across the airport. The Humphrey Terminal expansion is the one project which may have a significant impact; specifically increased traffic during the peak hour. This situation will have to be monitored, and it may be necessary to add signalization or improved roadway geometrics to maintain acceptable traffic levels on 34th Avenue during peak periods.

D.3 Air Quality

An analysis of MAC's Capital Improvement Plan on a project-by-project basis found the following projects may impact air quality:

-Elevated Roadway Construction

-Automated People Mover System

-Auto Rental Parking Expansion

-Econolot Parking Deck

-Humphrey Terminal Improvements

-Sun Country Hangar

The Elevated and Ground Level Roadway Construction projects 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, with a corresponding decrease in auto emissions. As part of these projects, the mechanical ventilation system will be installed *(Section I.R)*. The Commission will continue to monitor the carbon monoxide levels on the lower level roadway in front of the terminal once the elevated roadway project is complete.

The Auto Rental Parking Expansion *(Section I.N)* will be a quick turnaround facility constructed adjacent to the point of rental and return. The project is expected to reduce trips to and from the existing car refueling and cleaning facilities located along the north frontage road by as much as 90 percent. However, the additional parking will create impacts to the air quality.

Construction of the Econolot Parking Deck *(Section I.Q)*, with a net increase of 800 parking spaces, could require either a new Indirect Source Permit (ISP) from the Minnesota Pollution Control Agency or modification of MAC's current ISP.

Because very few additional total daily vehicular trips will be generated by the Humphrey Terminal Improvements *(Section I.U)*, no significant deterioration of air quality or increase in carbon monoxide levels is expected.

Construction of the Sun Country Hangar Project *(Section I.M)* will not require an Indirect Source Permit. Vehicle traffic will increase by approximately 800 vehicles/day. Nevertheless, because residential traffic in New Ford Town and Rich Acres will diminish, air emissions are not expected to exceed state standards.

In summary, most projects in MAC's CIP will have minimal impact on air quality. The Auto Rental Parking Expansion and the Econolot Parking Deck are of the magnitude that an ISP modification from the PCA is necessary. The conditions of the permit should insure that air quality standards will be maintained.

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 runoff from each individual project. These totals are listed for each project in Appendix A. The estimated cumulative additional discharge based on a five year storm of 9.4 cubic feet per second (cfs), and a 10 year storm of 10.8 cfs can be handled by the Mother Lake Drainage Area. The estimated additional runoff to the Minnesota River-South Drainage Area of 44.5 cfs (5 year storm) and 51.2 cfs (10 year storm) is an increase of 5.09%. The estimated additional runoff to the Minnesota River-North Drainage Area of 97.3 cfs (5 year storm) and 112.9 cfs (10 year storm) is an increase of 9.54%. The Minnesota River Drainage Area, both north and south storm detension basins, is at or near capacity.

In summary, the Mother Lake drainage basin can handle the additional runoff from the proposed projects. The Minnesota River Drainage Area storm detension basins may need modifications to handle the additional runoff from the proposed projects so that a minimum three hour detention time can be achieved. The quality of the runoff will not creat an adverse impact. A Storm Water Collection and Treatment System project is being developed to meet the conditions of a new NPDES permit issued to MAC in September of 1993. The permit contains significant restrictions on the contaminants in stormwater runoff from the airport that would be permitted to enter the Minnesota River. A pilot project to reduce glycol concentrations in the runoff was constructed in 1993; extensive monitoring of the pilot project during the 1993/94 deicing season will aid in defining the scope of future improvements. Modifications, additions and refinements to the system may be required in 1995 to produce continued improvement in water quality discharge. Even so, an overall improvement in water quality is anticipated.

Another impact on water quality involves using groundwater for mechanical air conditioning upgrades. The Green Concourse mechanical systems conversion is estimated to add 40 million gallons per year of extracted groundwater (MG/Y). The airport presently uses an average of about 520 MG/Y.

MAC currently has a permit which allows for 650 MG/Y of groundwater to be used. MAC will phase out the use of groundwater for cooling by the year 2000. The Lindbergh Terminal Alternative Cooling System project is the first step in this process.

In summary, the cumulative impacts on water quality from all the projects in MAC's CIP are judged to be positive, primarily because of the Storm Water Collection Treatment System project and the Lindbergh Terminal Alternative Cooling System.

D.5 Light Emissions

Analysis of MAC's Capital Improvement Plan found that none of the projects evaluated

will have any significant light emissions impact. Projects which will create light emissions are scattered across the airport and, individually, do not increase light emissions.

D.6 Sewage and Industrial Waste

No projects in MAC's Capital Improvement Plan will significantly impact MSP's existing sanitary sewer capacity. The construction of the new Fuel Handling, Treatment and Storage Facility is intended to store and process safely and efficiently those materials used to clean up minor spills. There will not be a net increase in the amount of industrial waste generated and the fuel recovered from these materials will not enter the sanitary sewers. This change in the handling of the fuel recovery materials will not cause any difficulties to either the on-site collection systems and related MWCC Interceptor or waste water treatment facilities.

The continued discharge of glycol into the sanitary sewer system from the storm water collection and treatment system improvements will continue to be monitored by both the MAC and the MWCC to ensure that there is no adverse impact to the waste water treatment facilities.

D.7 Wetland Impact

The project in the MAC's Capital Improvement Plan which will impact wetlands is the construction of the Runway 4-22 Extension. Less than 0.5 acre of marsh will need to be filled as part of this project. Tentative mitigation plans are being explored by U.S. Fish and Wildlife Service, the Minnesota Department of Natural Resources and MAC.

D.8 Residential Relocation Impacts

An analysis of MAC's Capital Improvement Plan indicates two projects will have residential relocation impacts; specifically, the Home Insulation/Buyouts *(Section I.G)* and New Ford Town/Rich Acres Acquisition *(Section I.I)*.

An Environmental Assessment (EA) of the New Ford Town/Rich Acres Acquisition was prepared and a comprehensive residential relocation plan is being prepared for this noise abatement project.

The New Ford Town/Rich Acres relocation study (Appendix 2 of the EA) concluded there were comparable numbers of single unit housing in the general area within the same price range of those houses being acquired. Multiple family housing also was available. No special needs, such as elderly and/or physically handicapped people in these neighborhoods, were identified. The business in the neighborhood is not unique nor dependent upon its location to survive and could be relocated within one mile of its present location. The church draws from a regional population and not specifically from within these neighborhoods. No other community disruption is expected, according to the EA.

The neighborhoods involved represent approximately two percent of the City of Richfield's property valuation and one percent of the Richfield School District tax base. However, the loss of revenue from either entity cannot be absorbed through other revenue sources or by the cost savings associated with discontinued public services to the neighborhoods. The New Ford Town and Rich Acres Acquisition Feasibility Report [1] recommended the annual loss be compensated by an increase in the special state aid disbursement authorized by the Minnesota Legislature. Some localized economic impact to businesses could occur, but the EA concluded that the proposed acquisition "should not create undue hardships on existing services and facilities because of the incremental nature of the relocation implementation program..."

The other project impacted by residential relocations is the Runway 4/22 Noise Mitigation (Acquisition), *(Section III.A)*. This project involves the acquisition of some existing residential dwellings. The social impacts to the occupants from the loss of their house have been addressed in the Runway 4/22 EA.

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TABLE 1
MINNEAPOLIS / ST. PAUL INTERNATIONAL AIRPORT
METROPOLITAN AIRPORTS COMMISSION

See Notes	Project Description	1995	1996	1997	1998	1999	2000	2001
	FIELD & RUNWAYS							
^ *	Airfield Drainage Strip Reconstruction		$1,500,000	$1,500,000	$1,500,000	$1,500,000	$1,500,000	
^ *	Airside Bituminous Construction	$350,000	$350,000	$350,000	$350,000	$350,000	$350,000	$350,000
(1)	Electric Distribution System Replacement	$3,000,000						
*	Hangars 1 and 2 Demolition	$800,000						
(1)	Miscellaneous Construction	$250,000	$250,000	$250,000	$250,000	$250,000	$250,000	$250,000
(1)	Pavement Rehabilitation – Aprons, Taxiways, etc.		$3,100,000	$2,500,000	$2,500,000	$2,500,000	$2,500,000	$2,500,000
(1)	Pavement Rehabilitation – Runway 11L / 29R Seg. 2		$1,000,000					
(1)	Pavement Rehabilitation – Runway 11R / 29L					$11,500,000	$23,500,000	
(1)	Pavement Rehabilitation – Runway 4 / 22 Seg. 3						$10,200,000	
(1)	Pavement Rehab. – 4 / 22 & 11R / 29L Intersection	$800,000						
(3)	Run Up Pad Blast Fence Extension	$650,000						
(2)	Runway Surface Monitoring System Replacement	$120,000						
*	Runway 11L Holding / Deicing Pad		$12,000,000					
^ * *	Runway 4 / 22 Extension	$12,500,000						
^ * *	Runway 4 / 22 Noise Mitigation (Acquisition)			$3,400,000	$7,900,000			
^ * *	Runway 4 / 22 Noise Mitigation (Insulation)	$6,055,000	$6,055,000	$6,003,000				
^ *	Storm Water Collection and Treatment System	$5,000,000	$8,000,000	$25,000,000	$25,000,000	$25,000,000		
*	Taxiway Connector to New Building Area	$850,000						
^ *	Taxiway B Construction					$6,000,000	$10,000,000	
^ * *	Taxiway C / D Complex		$14,500,000					
	FIELD & RUNWAYS SUBTOTALS	**$30,375,000**	**$46,755,000**	**$39,003,000**	**$37,500,000**	**$47,100,000**	**$48,300,000**	**$3,100,000**
	ENVIRONMENTAL							
^ * *	Home Insulation / Home Buyouts	$10,400,000	$10,400,000	$10,400,000	$10,400,000	$10,400,000	$10,400,000	$10,400,000
*	Maintenance Facility Fuel Tank Replacement	$100,000						
^ * *	New Ford Town / Rich Acres Acquisition	$7,200,000	$7,200,000	$7,200,000	$7,200,000	$7,086,000		
^ *	Noise Suppressor	$6,000,000						
*	Other Property Acquisition				$11,400,000	$11,400,000	$11,400,000	$11,400,000
^ *	School Noise Abatement Projects (Inside 65 DNL)	$1,000,000	$4,000,000	$4,000,000	$4,000,000	$4,000,000	$3,000,000	
^ *	School Noise Abatement Projects (Outside 65 DNL)			$1,000,000	$1,500,000	$2,000,000	$3,250,000	$3,250,000
	ENVIRONMENTAL SUBTOTALS	**$24,700,000**	**$21,600,000**	**$22,600,000**	**$34,500,000**	**$34,886,000**	**$28,050,000**	**$25,050,000**
	SELF–LIQUIDATING							
(3)	NWA Concourse Modifications			$1,000,000				
*	NWA World Club / Concessions	$8,300,000						
* *	Sun Country Hangar	$10,000,000						
	SELF–LIQUIDATING SUBTOTALS	**$18,300,000**	**$0**	**$1,000,000**	**$0**	**$0**	**$0**	**$0**

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.

TABLE 1
MINNEAPOLIS / ST. PAUL INTERNATIONAL AIRPORT
METROPOLITAN AIRPORTS COMMISSION

See Notes	Project Description	1995	1996	1997	1998	1999	2000	2001
	LANDSIDE							
* *	Auto Rental Parking Expansion	$24,000,000						
^ * *	Automated People Movement System	$4,800,000	$7,000,000					
^ *	Commercial Vehicle Passenger Shelter		$2,000,000					
(1)	Concession Area Development	$4,000,000						
(3)	East Airport Water Main Loop	$1,100,000						
*	Econolot Cashier Booth Installation	$50,000						
*	Econolot Parking Deck	$3,000,000						
^ * *	Elevated Roadways Construction	$6,900,000						
(3)	Energy Management Center Boiler Addition	$1,200,000						
^ *	Fuel Handling, Treatment and Storage Facility		$150,000					
(3)	General Office Space Modifications	$300,000						
* *	Gold Concourse FIS Facility	$20,000,000						
^ * *	Ground Trans Center Finishes	$4,000,000						
(1)	Green Concourse Insulation Removal			$400,000				
(3)	Green Concourse Interior Rehabilitation	$500,000						
^ *	Green Concourse Mechanical Systems Conversion			$3,350,000				
^ *	Ground Level Roadways Construction		$1,800,000					
(3)	Humphrey Terminal HVAC Consolidation	$200,000						
* *	Humphrey Terminal Improvements	$30,000,000						
(1)	Incinerator Building Retrofit	$100,000						
(3)	Informational / Directional Signage Adjustments		$100,000		$50,000		$50,000	
(1)	Landside Bituminous Construction	$800,000	$200,000	$200,000	$200,000	$200,000	$200,000	$200,000
^ *	Lindbergh Terminal Alternative Cooling System	$5,600,000			$2,000,000			
(1)	Lindbergh Terminal Door Replacement	$800,000						
(3)	Lindbergh Terminal Elevator / Escalator Alarm Syst	$200,000						
(3)	Lindbergh Terminal Elevator Installations	$1,200,000						
(1)	Lindbergh Terminal Interior Rehabilitation	$500,000	$500,000	$500,000	$500,000	$500,000	$500,000	$500,000
(3)	Lindbergh Terminal Public Address System Replacemt	$2,500,000						
(1)	Lindbergh Terminal Roof Rehabilitation	$1,800,000						
*	New Building Area Site Preparation	$3,150,000						

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.

TABLE 1
MINNEAPOLIS / ST. PAUL INTERNATIONAL AIRPORT
METROPOLITAN AIRPORTS COMMISSION

See Notes	Project Description	1995	1996	1997	1998	1999	2000	2001
	LANDSIDE (Continued)							
(3)	Parking Structure Rehabilitation	$500,000	$500,000	$500,000	$500,000	$500,000	$500,000	$500,000
(2)	Post Road CCTV System Installation	$100,000						
(3)	Primary Distribution System Upgrade–Phase 3	$1,000,000						
^ *	Public Safety Storage Building		$270,000					
(1)	Regional Terminal Floor Covering Replacement	$100,000						
^ *	Revenue Control Building Addition	$300,000						
*	Snow Removal Equipment Storage Building	$500,000						
*	Snow Removal Equipment Storage Building Addition		$1,000,000					
^ *	Terminal Area Equipment Storage Building	$400,000						
(3)	Terminal Complex Sprinkler System Additions	$100,000	$100,000	$100,000	$100,000	$100,000	$100,000	$100,000
(3)	Terminal Electrical Modifications	$100,000	$100,000	$100,000	$100,000	$100,000	$100,000	$100,000
(3)	Terminal Mechanical Modifications	$150,000	$150,000	$150,000	$150,000	$150,000	$150,000	$150,000
(3)	Terminal Miscellaneous Modifications	$300,000	$250,000	$250,000	$250,000	$250,000	$250,000	$250,000
(1)	Terminal Restroom Rehabilitation	$1,000,000						
^ *	Trades Shop Building	$2,000,000						
(3)	Tug Drive Concrete Sealing		$250,000	$250,000				
^ *	Valet Car Wash		$600,000					
(3)	West Terminal Area Rehabilitation	$1,400,000		$100,000		$100,000		$100,000
	LANDSIDE SUBTOTALS	**$124,650,000**	**$14,970,000**	**$5,900,000**	**$3,850,000**	**$1,900,000**	**$1,850,000**	**$1,900,000**
	YEARLY TOTALS	**$198,025,000**	**$83,325,000**	**$68,503,000**	**$75,850,000**	**$83,886,000**	**$78,200,000**	**$30,050,000**

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).

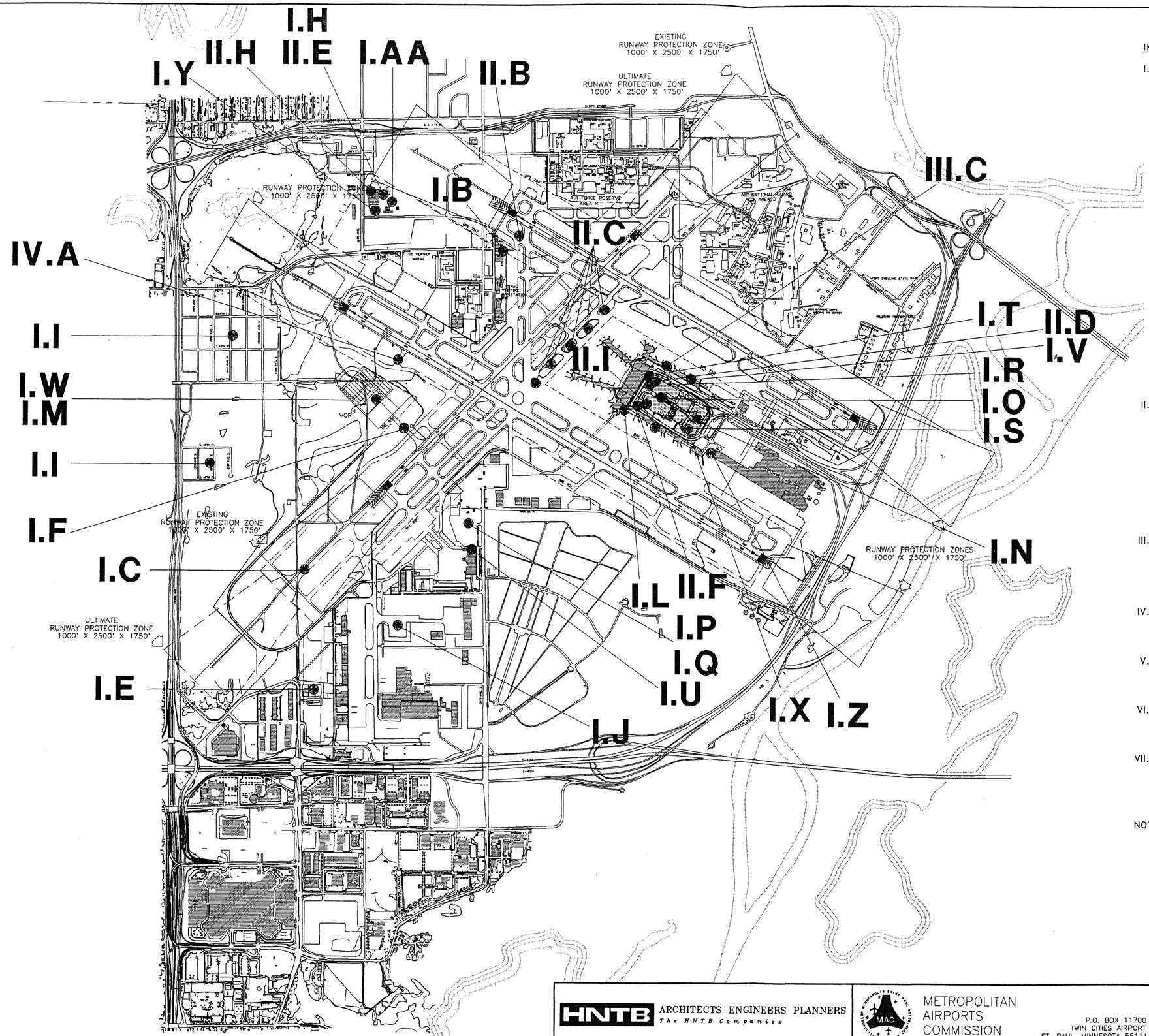
(1) A rehabilitation project which does not physically alter the original size.

(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.

APPENDIX A

ENVIRONMENTAL ANALYSIS OF INDIVIDUAL PROJECTS



IMPACT SUMMARY

I. 1995 CAPITAL IMPROVEMENT PROJECTS

I.A	AIRSIDE BITUMINOUS CONSTRUCTION
I.B	HANGARS 1 AND 2 DEMOLITION
I.C	RUNWAY 4/22 EXTENSION
I.D	RUNWAY 4/22 NOISE MITIGATION
I.E	STORMWATER COLLECTION AND TREATMENT SYSTEM
I.F	TAXIWAY CONNECTOR TO NEW BUILDING AREA
I.G	HOME INSULATION/HOME BUY-OUTS
I.H	MAINTENANCE FACILITY FUEL TANK REMOVAL
I.I	NEW FORD TOWN/RICH ACRES ACQUISITION
I.J	NOISE SUPPRESSOR
I.K	SCHOOL NOISE ABATEMENT PROJECT (INSIDE DNL 65)
I.L	NWA WORLD CLUB/CONCESSIONS
I.M	SUN COUNTRY HANGAR
I.N	AUTO RENTAL PARKING EXPANSION
I.O	AUTOMATED PEOPLE MOVER SYSTEM
I.P	ECONOLOT CASHIER BOOTH INSTALLATION
I.Q	ECONOLOT PARKING DECK
I.R	ELEVATED ROADWAY CONSTRUCTION
I.S	GOLD CONCOURSE FIS FACILITY
I.T	GROUND TRANSPORTATION CENTER FINISHES
I.U	HUMPHREY TERMINAL IMPROVEMENTS
I.V	LINDBURGH TERMINAL ALTERNATIVE COOLING
I.W	NEW BUILDING SITE PREPARATION
I.X	REVENUE CONTROL BUILDING
I.Y	SNOW REMOVAL EQUIPMENT STORAGE BUILDING
I.Z	TERMINAL AREA EQUIPMENT STORAGE BUILDING
I.AA	TRADES SHOP BUILDING

II. 1996 CAPITAL IMPROVEMENT PROGRAM

II.A	AIRFIELD DRAINAGE STRIP RECONSTRUCTION
II.B	RUNWAY 11L HOLDING/DEICING PAD
II.C	TAXIWAY C/D COMPLEX PAVEMENT RECONSTRUCTION
II.D	COMMERCIAL VEHICLE PASSENGER SHELTER
II.E	FUEL HANDLING, TREATMENT CENTER
II.F	GROUND LEVEL ROADWAYS CONSTRUCTION
II.G	PUBLIC SAFETY STORAGE BUILDING
II.H	SNOW REMOVAL EQUIPMENT STORAGE BUILDING ADDITION
II.I	VALET CAR WASH

III. 1997 CAPITAL IMPROVEMENT PLAN

III.A	RUNWAY 4/22 NOISE MITIGATION (ACQUISITION)
III.B	SCHOOL NOISE ABATEMENT PROJECTS (OUTSIDE DNL 65)
III.C	GREEN CONCOURSE MECHANICAL SYSTEMS CONVERSION

IV. 1998 CAPITAL IMPROVEMENT PLAN

IV.A	TAXIWAY B CONSTRUCTION

V. 1999 CAPITAL IMPROVEMENT PLAN

(NO PROJECTS WITH IMPACTS BEGIN THIS YEAR)

VI. 2000 CAPITAL IMPROVEMENT PLAN

(NO PROJECTS WITH IMPACTS BEGIN THIS YEAR)

VII. 2001 CAPITAL IMPROVEMENT PLAN

(NO PROJECTS WITH IMPACTS BEGIN THIS YEAR)

NOTE: THE FOLLOWING PROJECTS ARE NOT DEPICTED ON THIS GRAPHIC

I.A	AIRSIDE BITUMINOUS CONSTRUCTION
I.D	RUNWAY 4/22 NOISE MITIGATION
I.G	HOME INSULATION/BUY-OUTS
I.K	SCHOOL NOISE ABATEMENT PROJECTS (INSIDE DNL 65)
II.A	AIRFIELD DRAINAGE STRIP RECONSTRUCTION
II.G	PUBLIC SAFETY STORAGE BUILDING
III.A	RUNWAY 4/22 NOISE MITIGATION (ACQUISITION)
III.B	SCHOOL NOISE ABATEMENT PROJECTS (OUTSIDE DNL 65)

HNTB ARCHITECTS ENGINEERS PLANNERS
The HNTB Companies

METROPOLITAN AIRPORTS COMMISSION
P.O. BOX 11700
TWIN CITIES AIRPORT
ST. PAUL, MINNESOTA 55111

MINNEAPOLIS/ST. PAUL AIRPORT

AIRPORT LAYOUT PLAN

FIGURE 2

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I. PROJECTS BEGINNING IN 1995

The following projects are included in the MAC's Capital Improvement Plan for 1995 which have the potential to effect the environment:

I.A Airside Bituminous Construction
I.B Hangars 1 and 2 Demolition
I.C Runway 4/22 Extension
I.D Runway 4/22 Noise Mitigation (Insulation)
I.E Stormwater Collection and Treatment System
I.F Taxiway Connector to New Building Area
I.G Home Insulation/Home Buy-Outs
I.H Maintenance Facility Fuel Tank Removal
I.I New Ford Town/Rich Acres Acquisition
I.J Noise Suppressor
I.K School Noise Abatement Projects (Inside 65 DNL)
I.L NWA World Club / Concessions
I.M Sun Country Hangar
I.N Auto Rental Parking Expansion
I.O Automated People Mover System
I.P Econolot Cashier Booth Installation
I.Q Econolot Parking Deck
I.R Elevated Roadway Construction
I.S Gold Concourse FIS Facility
I.T Ground Transportation Center Finishes
I.U Humphrey Terminal Improvements
I.V Lindbergh Terminal Alternative Cooling
I.W New Building Site Preparation
I.X Revenue Control Building
I.Y Snow Removal Equipment Storage Building
I.Z Terminal Area Equipment Storage Building
I.AA Trades Shop Building

I.A. AIRSIDE BITUMINOUS CONSTRUCTION

A project to construct or reconstruct bituminous pavements on various areas within the Air Operations Area is completed each year. This year's work consists of constructing 35 foot bituminous shoulders on Romeo, Juliet, Bravo and Hotel Taxiways.

Typical work for 1996 to 2001 will include taxiway shoulders, blast pads, roadways, etc. Items to be included in this category will be reviewed in more detail the year before the project year.

It is difficult to speculate the amount and location of future 1996 to 2001 projects. Further analysis will need to be done at that time.

The only impact category affected by this project is water quality due to a slightly increased volume of stormwater runoff.

The airside bituminous construction would add approximately 550,000 square feet of impervious surface are to the Minnesota River North drainage area.

- **Water Quality**

  The additional stormwater runoff into the Minnesota River North Drainage Area caused by the increased impervious area for a predicted ten year storm event is calculated to be 23.5 cubic feet per second (CFS) for a 5-year storm and 27.3 CFS for a 10-year storm. This additional incremental stormwater flow will cause no apparent problems for the associated stormwater collection, conveyance and treatment systems.

I.B. HANGARS 1 AND 2 DEMOLITION

Hangars 1 and 2 are located just south of the approach end of Runway 11L and are used to house general aviation aircraft. Aircraft operations out of these hangars conflict with other aircraft and maintenance vehicles utilizing the ramp adjacent to these hangars. The area on which these hangars are located is also being planned for use as a holding/deicing pad. A new field service road for use by MAC maintenance vehicles will be constructed through the area.

- **Water Quality**

  There will be no increase in the impervious area at this site because the existing area on which these hangars are located will be used for a holding/deicing pad (see Section II.B. RUNWAY 11L HOLDING/DEICING PAD project beginning in 1996 for a discussion of those impacts). The field service road will not be paved and cause no apparent problems for the associated stormwater collection, conveyance and treatment systems.

I.C. RUNWAY 4/22 EXTENSION

An Environmental Assessment (EA) was completed for this project in September 1988. An Environmental Impact Statement (EIS) was completed by Mn/DOT in 1991 and a supplement to it was prepared in 1992. A revised Draft EIS was issued in November 1993 and a public hearing was held in December 1993. A final EIS was issued July 1, 1994. The extension will add 2,750 feet to the west end of Runway 4/22. This project has been previously approved by the MAC.

The following description and purpose of the project was taken from the draft final EIS:

Proposed Project

Alternative 1A is the preferred alternative of the MAC and FAA (See final EIS for details). The proposed project, to be built entirely on existing MSP property, consists of structural modifications, operational modifications, navigational aids, and noise mitigation. These are detailed below.

Structural Modifications

- Extend Runway 4/22, 2,750 feet on the southwest end (Runway 4 approach).
- Construct a queuing taxiway adjacent to Runway 22.
- Realign Taxiways C and D in the vicinity of the queuing taxiway.
- Extend and realign Taxiways C and D to the new approach end of Runway 4.
- Extend the High Intensity Runway Lighting System (HIRLS) for Runway 4/22 to the new runway end.

Operational Modifications

- Displace the Runway 4 threshold 1,550 feet northeast of the new end of pavement (1,200 feet southwest of the current location).
- Establish new flight headings for Runway 22 departures.

Navigational Aids

- Replace the existing Runway 4 end lighting system.
- Relocate glide slope and associated lights and navigational aids for Runway 4 approaches.

Noise Mitigation

- Federal and sponsor funding for a sound attenuation program for 1,122 homes in south Richfield and Bloomington considered adversely impacted by the proposed project.

Project Objectives

The two main objectives for the proposed project are:

Noise Redistribution

From 1972 to 1990, the FAA Air Traffic Control Tower at MSP operated a Preferential Runway System (PRS). The PRS used Runway 22 to shift departures, and therefore noise, away from the high impact areas. However, use of the PRS was dependent upon airport demand remaining within the capacity limits of a combined Runway 4/22 and parallel runway operation of fewer than 50-60 operations per hour. (The intersecting geometry of the three runways results in a significantly lower capacity than that of the parallel runways alone.) When this capacity was exceeded, the parallel runways (11L-29R and 11R-29L) had to be used because of their greater capacity (up to 108 operations per hour). As airport operations increased, the number of hours during which the PRS could be used continued to decrease.

This increasing disparity in the distribution of flights led to replacement of the PRS by the Runway Use System (RUS) in 1990. Like the PRS, the RUS is designed to maximize the use of Runway 22 to relieve the most heavily noise-impacted residential areas. It also calls for a more "balanced" use of Runway 4/22 to achieve greater quality in the number of flights on each end of that runway. Like the PRS, the RUS cannot be used in hours with high traffic volumes without excessive delay. Any increase in the number of hours per day that the RUS could be used would require an increase in the capacity of Runway 4/22 in combination with the parallel runways.

With current conditions, use of the RUS will go from a maximum of four hours per day in 1992 down to two hours per day in 1996. However, the extension of Runway 4/22 will allow use of the RUS for up to an estimated eight hours per day in 1996, depending upon wind conditions. Such an increase represents a step toward a more equitable distribution of aircraft flights as occurred in the past.

Operational Considerations

This extension would make Runway 4/22 the longest runway at MSP at 11,006 feet. Under some conditions, a greater runway length than is currently 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.

If Runway 11R-29L is closed for reconstruction, snow removal, or other reasons, the existing Runway 4/22, at 8,256 feet, would be the longest available runway. Although this reduction in available runway length would affect some aircraft, such as the DC-10, during most of the year, it creates the greatest impact during the summer months.

The final EIS summarizes 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. A review of the impact categories used to assess environmental effects in this document are discussed below. For a more complete description of the alternatives and documentation of the impacts related to the construction and operation of the runway extension, please refer to the final EIS (dated 7/1/94).

- **Aircraft Noise**

Aircraft noise has the potential to be the environmental impact of most concern. Extensive analysis of the day/night noise levels was conducted to assess potential noise in 1992 and 1996.

The following is the summary of the effects of aircraft noise on the affected population, as excerpted from the summary section of the final EIS (p. 5-4).

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 year 1996. This year was selected to be consistent with the MSP Part 150 Update and to reflect a likely completion date for the project. In south Richfield (south of 70th Street) and Bloomington, an additional 7,040 persons would be impacted by Day-Night Noise Level (DNL) 65 or greater as compared to the No Action. In Minneapolis, north Richfield, Mendota Heights, and Eagan, 4,080 fewer persons would be impacted with the project. The proposed project will not cause an increase in the overall level of sound generated by aircraft at MSP, but changes in the numbers and patterns of aircraft flights on different runways made possible by the project would cause differences in sound levels at various locations surrounding the airport. The proposed project would result in an overall increase of nearly 3,00 persons within the DNL 65 noise contour in 1996 compared to the No-Action. However, the proposed project would reduce population within the DNL 70 and above contour by over 1,100 people.

As indicated above, some aircraft noise would be redistributed and some numbers of residential population in the DNL 65 noise contour shifted from south Minneapolis and north Richfield to Bloomington and south Richfield. While south Minneapolis would continue to have the most affected population, 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-Action alternative.

Table A.1, attached, shows populations within the DNL 65-70, 70-75, and 75+ contours for 1992 and 1996 for all alternatives.

Table A.1
MSP RUNWAY 4/22 EXTENSION - EIS
DNL Contour Population Count - Summary

	1992 Existing				1996 No Action				1996 No Build with SID				1996 Alt. 1A			
Jurisdiction	DNL 75	DNL70	DNL 65	Total	DNL75	DNL70	DNL 65	Total	DNL75	DNL70	DNL 65	Total	DNL75	DNL 70	DNL 65	Total
Minneapolis	720	7,030	16,240	23,990	340	5,550	14,360	20,250	340	5,630	14,390	20,360	220	4,080	12,390	16,690
N. Richfield	260	1,080	2,300	3,640	160	890	1,680	2,730	170	930	1,670	2,770	70	690	1,560	2,320
S. Richfield	0	0	890	890	0	0	0	0	0	0	0	0	0	730	2,130	2,860
Ft. Snelling	0	0	30	30	0	0	0	0	0	0	0	0	0	0	0	0
Bloomington	0	0	260	260	0	0	0	0	0	0	0	0	0	40	4,140	4,180
Mendota Htrs.	0	140	1,120	1,260	0	140	750	890	0	140	750	890	0	140	660	800
Eagan	0	40	610	650	0	30	550	580	0	30	560	590	0	30	530	560
TOTAL	980	8,290	21,450	**30,720**	500	6,610	17,340	**24,450**	510	6,730	17,370	**24,610**	290	5,710	21,410	**27,410**

	1996 D;y/ 1A with SID				1996 Alt. 1B				1996 Alt. 2A				1996 Alt. 2B			
Jurisdiction	DNL 75	DNL 70	DNL 65	Total	DNL75	DNL 70	DNL 65	Total	DNL 75	DNL 70	DNL 65	Total	DNL 75	DNL 70	DNL65	Total
Minneapolis	160	4,230	12,310	16,700	230	4,030	12,500	16,760	210	4,090	12,440	16,740	190	4,100	12,380	16,670
N. Richfield	70	710	1,540	2,320	70	680	1,580	2,330	70	690	1,570	2,330	70	690	1,530	2,290
S. Richfield	0	620	1,960	2,580	0	720	1,920	2,640	0	730	2,160	2,890	0	700	1,900	2,600
Ft. Snelling	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bloomington	0	50	4,170	4,220	0	320	4,410	4,730	0	40	4,070	4,110	0	310	4,390	4,700
Mendota Hts.	0	140	650	790	0	140	660	800	0	140	650	790	0	140	640	780
Eagan	0	30	540	570	0	30	530	560	0	30	530	560	0	30	530	560
TOTAL	230	5,780	21,170	**27,180**	300	5,920	21,600	**27,820**	280	5,720	21,420	**27,420**	260	5,970	21,370	**27,600**

Source: Final Environmental Impact Statement for Proposed Extension of Runway 4/22, Table S.1, p. S-6, July 1994.

- **Vehicular Traffic**

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

- **Light Emissions**

  Light emissions from the proposed project will not cause a negative impact.

- **Wetland Impact**

  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.

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.D. RUNWAY 4/22 NOISE MITIGATION (INSULATION)

The extension of Runway 4/22 will impact approximately 1,300 homes in Bloomington and South Richfield. It is therefore proposed to include residential sound insulation as a mitigation measure to the existing Runway 4/22 extension project. The Runway 4/22 mitigation package would involve shifting the cost of sound insulating 1,300 homes (approximately $22,500,000) from the FAA Part 150 program (Noise Control and Compatibility Planning for Airports) project to the Runway 4/22 extension project as a means of addressing noise impacts associated with the project. The noise mitigation projects would be phased over a three year period starting in 1995.

This project primarily involves the rehabilitation of existing residential dwellings that will not physically alter the original size of the dwelling. However, the social impacts to the occupants from the noise reduction and the reduction in energy consumption for heating and cooling for the dwellings offer substantial positive impacts to the environment.

- **Aircraft Noise**

  This project would have a positive impact concerning airport noise due to the significantly lower sound levels which will be achieved within the approximately 1,295 homes which will receive sound insulation.

I.E. STORMWATER COLLECTION AND TREATMENT SYSTEM

A new NPDES permit issued to MAC in September of 1993 contains significant restrictions on the contaminants allowed to enter the Minnesota River in stormwater runoff from the airport. A pilot project to reduce glycol concentrations in the runoff was constructed in 1993, along with major monitoring efforts during the 1993/94 deicicing season to aid in defining the scope of future improvements. Modifications, additions and refinements to that system may be required in 1995 to produce continued improvement in water quality discharge.

- **Water Quality**

  This project will create a positive impact concerning water quality by reducing the amount of harmful effluent transmitted into the Minnesota River.

I.F TAXIWAY CONNECTOR TO NEW BUILDING AREA

As a part of the new building area development for the Sun Country hangar, a new connecting taxiway will be constructed from the Sun Country Apron to Runway 4/22.

The taxiway is approximately 855 feet long by 75 feet wide.

- **Water Quality**

  The additional stormwater runoff caused by the increased impervious area will flow into the Minnesota River South drainage basin. For a predicted 5-year storm event, the increase in flow is calculated to be 2.83 cubic feet per second (CFS) and 3.27 CFS for a 10-year storm. This additional incremental stormwater flow will cause no apparent problems for the associated stormwater collection, conveyance and treatment systems on the airport.

I.G. HOME INSULATION/HOME BUY-OUTS

This items is intended to cover projects identified as part of the FAA Federal Aviation Regulation (FAR) Part 150 program (Noise Control and Compatibility Planning for Airports) program which has been approved, in part, by the FAA. The project would include items such as property acquisition and the sound proofing of homes. The extent of the work will depend on the amount of federal aid available for each type of project. Land acquisition would include selected residences around the airport.

The insulation of houses would be a continuation of the program which was initiated in 1992 in the cities of Minneapolis, Richfield, Bloomington, Eagan and Mendota Heights and is similar in scope to the Runway 4/22 Noise Mitigation mentioned in Section I.D. It also will primarily involve the rehabilitation of existing residential dwellings and will not physically alter the original size of the dwelling. However, the social impacts to the occupants from the noise reduction and the reduction in energy consumption for heating and cooling for the dwellings offer substantial positive impacts to the environment.

- **Aircraft Noise**

  This project will have a positive impact concerning airport noise due to the significantly lower sound levels which will be achieved within the homes receiving sound insulation. The acquisition of homes would also lessen noise impacts by relocating occupants to a less sound-impacted environment.

- **Residential Relocation Impacts**

  Acquisition and relocation is only expected to occur in high noise impacted areas where the affected community supports the acquisition. The environmental impact is therefore positive.

I.H. MAINTENANCE FACILITY FUEL TANK REPLACEMENT

Several underground fuel storage tanks which serve the fleet of MAC maintenance vehicles must be replaced to comply with state and federal requirements for buried fuel tanks. These tanks are located at the MAC Maintenance Facility on 28th Avenue. A new expanded fuel dispensing island will also be constructed with the new tank installation.

- **Water Quality**

  This project will create a positive impact concerning water quality by replacing existing tanks that do not meet the new regulations, reducing the possibility of harmful volitiles entering the soil and ground water. There has been no know leakage of the existing tanks that are being removed.

I.I. NEW FORD TOWN AND RICH ACRES ACQUISITION

This is a continuation of the land acquisition and relocation project in the New Ford Town/Rich Acres subdivision begun in 1994, pending the availability of federal aid.

An Environmental Assessment (EA) was completed for this project in May 1993 and signed by the responsible FAA official on May 27, 1993. No mitigating measures, other than relocation assistance, are planned since there were no significant environmental impacts identified. The FAA has authorized the proposed action to take place.

The following description of the project is excerpted from the approved EA:

> The New Ford Town and Rich Acres neighborhoods have long been subject to airborne and ground noise associated with aircraft operations at the Minneapolis-St. Paul (MSP) International Airport. The updated Part 150 Noise Study, currently under consideration by the FAA, denotes an increase in noise exposure to these neighborhoods in the future. The need for noise

abatement in these neighborhoods is clearly documented and is consistent with the purpose, goals and implementation measure of the Part 150 Study.

Five alternatives to evaluate noise abatement were considered. The proposed action by the MAC is Alternative 2, the acquisition of 422 residential units, one business, and one church. The proposed action involves relocating approximately 1,092 residents to comparable replacement housing. Existing structures would be removed or relocated and the remaining basements pushed in and filled. Turf would be established over disturbed and filled areas. Utilities and roads would be abandoned or removed. Trees and shrubs would remain until a permanent reuse of the property is determined.

Potential significant impacts of the proposed action are the social impacts caused by the neighborhood relocation; the economic impacts caused by the loss of taxable property to the City of Richfield and Richfield School District; and possible hazardous materials being introduced to the waste stream from the removal of buildings (i.e. asbestos); and the acquisition of two city parks.

The relocation would be in accordance with the provisions of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 and a relocation program sponsored by the MAC with assistance from the Richfield Housing and Redevelopment Authority.

- **Aircraft Noise**

  The relocation of more than 1,000 residents from high noise areas will create a positive effect on the environment. The social impacts to the occupants from the noise reduction will provide additional positive impacts.

- **Water Quality Impacts**

  A reduction of impervious surfaces from the removal of structures would decrease the total surface water runoff by an estimated 75% during a five-year storm. Fewer motor vehicles in the neighborhood would reduce the amount of inadvertent oil and gasoline spills. Nutrient build-up from homeowner lawn fertilizers and herbicides would be reduced and replaced with the MAC's approved turf management methods.

- **Parks and other DOT Section 4(f) Impacts**

  The two parks that would be acquired are neighborhood based and would have no regional impacts. The City of Richfield has deemed the two parks as "insignificant" for the noise abatement alternative of property acquisition and recognizes that if left to remain

may be incompatible with future development planning.[1]

- **Energy Supply and Natural Resources**

  There would be negligible changes in energy consumption from a regional perspective. Short-term fossil fuel consumption to remove structures, fill basements, remove utilities and roads, and restore disturbed areas are small from a regional perspective. Fill materials and topsoil are available within short truck haul distances.

- **Solid Waste Impacts**

  Prior to demolition, an inventory would determine the presence of any hazardous material (such as asbestos) in structures or volatile substances in the soil that would need special handling. An estimated 100,000 cubic yards of debris (primarily wood, metal, pavement, and other non salvageable materials) would be generated by the building and facilities removal. All debris would be disposed of in accordance with solid waste methods approved by the MAC and regional waste regulators.

- **Residential Relocation Impacts**

  - **Social Impacts**

    A relocation study (Appendix 2 of the EA) concluded that there were sufficient numbers of single unit housing in the general area within the same price range of those being displaced. Multiple family housing was available (approximately 5 to 20 percent). There were no special needs identified for elderly and/or physically disabled people in the neighborhoods. The business identified in the neighborhood is not unique nor dependent upon its location to survive and could be relocated within one mile of its present location. The church draws from a regional population and not specifically from within the impacted neighborhoods. No other community disruption is expected, according to the EA.

    The neighborhoods involved represent approximately two percent of the City of Richfield's property valuation and one percent of the Richfield School District tax base. However, the loss of revenue from either entity cannot be absorbed through other revenue sources or by the cost savings associated with discontinued public services to the neighborhoods. The New Ford Town and Rich Acres Acquisition

[1] Letter from the City of Richfield to MAC; Mr. James D. Prosser, City Manager; November 19, 1992.

Feasibility Report[2] recommended that the annual loss be compensated by an increase in the special state aid disbursement as authorized by the Minnesota Legislature. Some localized economic impact to businesses such as gas stations could occur, but the EA concluded that the proposed action "should not create undue hardships on existing services and facilities because of the incremental nature of the relocation implementation program..."

I.J. NOISE SUPPRESSOR

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. 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.K. SCHOOL NOISE ABATEMENT PROJECTS (INSIDE 65 DNL)

The FAA Federal Aviation Regulation (FAR) Part 150 program (Noise Control and Compatibility Planning for Airports) referenced in the 1994 projects for Home Insulation and Home Buy-Outs also includes providing noise abatement for schools within the DNL 65 contour which are experiencing interruptions of classroom instruction by aircraft overflights.

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[2] New Ford Town and Rich Acres acquisition Feasibility Report; City of Richfield & Metropolitan Airports Commission; February 12, 1992.

MAC has therefore included noise abatement projects within the Capital Improvement Program (CIP) with the goal of achieving an aggregate noise reduction of 15-20 decibels (DBA) in the instruction areas of schools compared to noise levels prior to the project improvements. In past years, six schools have been soundproofed by MAC with financial assistance from the FAA and MnDOT - Office of Aeronautics. It is proposed to continue this program with five additional schools starting in 1994.

Typically, each project requires a minimum of two years to complete, depending on the size of the school, as a result of the short (normally 3 month) summer construction period. The first year is devoted to gathering noise measurement data during the school year which is used to design specific noise attenuation measures. Construction commences in the second year and can take two years, depending on the size of the school. The first school to receive noise abatement measures will be Mt. Calvary Lutheran School located in Richfield.

- **Aircraft Noise**

  These projects will provide positive impacts concerning airport noise. Achieving an aggregate noise reduction of 15-20 decibels (DBA) in the instruction areas of schools compared to noise levels prior to improvements is possible and has been shown to be an effective abatement strategy. Reductions of this magnitude will provide a better environment in which to teach children.

I.L. NWA WORLD CLUB/CONCESSIONS

Northwest Airlines has requested that MAC add a Federal Inspection Service (FIS) facility to the Gold Concourse at the Lindbergh Terminal. This project would displace the existing Northwest World Club on the Gold Concourse. Northwest is therefore proposing to construct a new World Club which would replace the existing club on the Red as well as the Gold Concourse. This would require an expansion of approximately 20,500 square feet outside of the existing terminal above the baggage make-up area adjacent to the walkway to the Gold Concourse. In addition, approximately 3,700 square feet of new and 2,400 square feet of remodeled concession area would have to be developed within the existing concourse.

- **Sewage and Industrial Waste**

  The new club will be replacing two existing facilities. It will be connected to existing sewer and water systems. All new construction will be located above an existing paved impervious surface. The project will not adversely affect existing sewer or water systems, nor will stormwater runoff be adversely affected. Existing heating and ventilation mechanical systems will be replaced with newer more efficient equipment.

I.M. SUN COUNTY HANGAR

The Sun Country Hangar is owned by Northwest Airlines and leased back to Sun Country Airline. Sun Country Airline has been trying to buy the hangar for several years as their operations have expanded to the point where expansion of the existing hangar is required to meet the future maintenance needs of additional aircraft. Northwest has indicated their unwillingness to sell the hangar to Sun Country Airlines, but have offered a long term lease. The conditions of the lease were evaluated by Sun Country Airline and determined to not be in the best interests of the future plans of the airline. Sun Country Airline has requested that MAC proceed with the planning and development process which would lead to the construction of a new hangar.

The environmental issues of this project are limited to short-term construction impacts, increased runoff from new impervious surfaces and building area and a change of marginally increased industrial wastewater generation.

- **Water Quality**

  The additional stormwater runoff caused by the increased impervious area for a predicted five year storm event is calculated to be 64 cubic feet per second. This additional incremental stormwater flow will cause no apparent problems for the associated stormwater collection, conveyance and treatment systems. A stormwater detention pond will be constructed as part of this project.

- **Sewage and Industrial Waste**

  Since the construction of a new Sun Country Airlines hangar is to replace an existing facility, 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 waste water treatment facilities.

- **Vehicular Traffic**

  While 800 vehicles/day will be added to the traffic network in the area, these increases will be offset by the decrease in residential-based traffic which will diminish through the buy-out of New Ford Town and Rich Acres.

I.N. AUTO RENTAL PARKING EXPANSION

The auto rental companies are in need of additional ready and return car spaces to meet their current and future demands. It is also projected that there will be a need for additional space for public parking within the next two years. It is therefore proposed to add three additional parking levels over the existing two level structure located east of the Green and Gold Concourse parking structures. An EAW was prepared for this project in September 1994.

The new third level will be used for rental car returns and will house a "quick turn-around" service facility with gas pumps and a car wash. The fourth and fifth parking levels will be used for long term public parking. Four new elevators will provide access to the public parking levels. The existing rental car building will be modified to connect to the new third level rental car deck.

- **Air Quality**

  With the introduction of 1,800 parking stalls, as well as the introduction of five fuel islands with double pumps at each island, there will be an decrease in relative air pollution in the parking ramp area of the terminal. However, the parking expansion will allow an overall increase in the vehicle-borne air quality at the airport, due to the on-site "quick turnaround" facility. This facility will preclude the need for ninety percent of rental returns to be driven out of the lot to maintenance facilities along the north frontage road, thus saving fuel and emissions. If the project is approved MAC will, if required by the state regulating agency, amend the ISP.

- **Water Quality**

While increases in sanitary wastewater will be minimal with the construction and implementation of this facility, there will be increases in site generated wastewater from the six to fifteen car wash bays which are introduced. This wastewater represents a relocation of the car washes from the existing auto rental facilities along the frontage road. As such, these industrial wastewater discharges will be handled by MSP's existing collection system.

- **Sewage and Industrial Wastes**

  As part of this parking expansion and auto rental "quick turnaround" facility, six auto fuel tanks, each holding between 10,000 and 15,000 gallons of fuel, will be constructed southeast of the parking ramp expansion. Each tank will be approximately 13 feet in diameter and 21 feet in length. Fuel tanks will meet all applicable state and federal requirements for tanks of this type. Proper measures will be taken to ensure compliance with the regulations during construction and operation of the facility.

I.O. 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 in to the cumulative effects from all projects.

Replacing the existing shuttle bus system which transports rental car customers from the Lindbergh Terminal to the Auto Rental Building with an "automated people mover" system has been under consideration for several years. 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 existing system operates at-grade and has conflicts with vehicles utilizing the parking ramps at four crossing points and requires users to walk outside approximately 300 feet between the terminal building and bus pick-up point. Users experience delays due to slow loading and unloading of passengers and luggage. It also does not meet accessibility requirements mandated by the current Americans with Disability Act (ADA) and requires users to walk outside to the pick-up point. The project will replace an articulated personnel transporter which suffers from a poor public image.

The proposed people mover system would address the above problems. The system would be completely grade-separated and operated from Ground the Transportation Center (GTC) which is one level below grade. It would be a completely climatized system and be more accessible by being located with the GTC. It would meet all current ADA requirements by loading and unloading at one level with no step. It would increase efficiency and facilitate movement in a heavily-congested surface transportation corridor at MSP because it is faster than the current system both in travel time and loading and unloading time. It would project an image of being a modern, safe and easy-to-use service.

The project is related to a number of other improvements in the immediate vicinity including the construction of new upper and lower level roadways and the expansion of the valet parking area. This would be the first of two phases in the construction of the people mover system and would include the purchase of the system components.

Based upon information obtained from the EAW, it appears this project will not have any significant impact upon the environment from its construction. Air quality within the area around the GTC would likely improve with the replacement of existing vehicles and the reduction in combustion engine idling during slow load/unload of passengers and luggage.

I.P. ECONOLOT CASHIER BOOTH INSTALLATION

During the charter season, a majority of the customers utilize the Econolot only for a short period of time. The current four booth exit plaza cannot keep up with exiting patrons and long queues develop. This project would provide an additional cashier booth at the exit to the Econolot along with the required canopy extension.

- **Vehicular Traffic**

  Vehicular traffic flow will be improved as a result of this project.

- **Air Quality**

  There would be a very minor decrease in CO emissions from the reduction in time that idling vehicles remain in the area. CO is not a problem in this part of the airport and this decrease would not impact total CO emissions.

I.Q. ECONOLOT PARKING DECK

During the last charter season, the Econolot was over-capacity on several occasions resulting in traffic grid lock. In order to continue to market the Econolot as an alternative to the parking ramps at the Lindbergh Terminal and to better serve patrons utilizing the HHH Charter Terminal, additional capacity is needed. As there is no available ground level space for expansion of the existing lot, it is proposed to construct a one level ramp over the existing Econolot and west side Employee lot.

- **Vehicular Traffic**

  The existing Humphrey and Econolot surface parking lots, located at the north end of the Humphrey Terminal on 34th Avenue South, include 2,406 parking spaces (2,394 regular spaces and 12 handicap spaces). The proposed project will be constructed on the southwesterly portion of the surface parking lots, eliminating 696 parking spaces.

  Approximately 1,710 existing parking spaces would remain for use by Humphrey terminal and Econolot patrons. Loss of these parking spaces will be offset by construction of the Econolot parking deck with 1500 parking spaces (a net increase of 800 spaces).

  Peak parking demand for the Econolot will be more seasonal than daily. Naturally, peak usage will occur during holiday travel periods. The Humphrey Terminal Improvements are expected to generate very limited demand for additional parking. According to estimates from the Institute of Transportation Engineers' report, *Parking Generation, 2nd*

Edition, 158 additional stalls will be required to fulfill the demand of the additional flights at the Humphrey Terminal. The balance of the stalls provided by this parking deck will serve passengers utilizing the Econolot for flights at the Lindbergh Terminal.

- **Air Quality**

  Due to the very few additional total daily vehicular trips generated by the Humphrey Terminal Improvements, no significant deterioration of air quality or increase in carbon monoxide levels is expected.

I.R. ELEVATED ROADWAYS CONSTRUCTION

An EAW was prepared for this project in August, 1989. This is a continuation of the roadway project began in 1993 and included the rehabilitation and expansion of the existing elevated roadway at the Lindbergh terminal. This year's project will include construction of the roadway canopy and lighting systems as well as other final finishes and amenities. With the completion of the new elevated roadway, traffic operations in front of the terminal will improve and the present congestion related problems will be diminished.

- **Traffic Impacts**

  Traffic impacts will be positive. No external roads will be affected by this project. The new elevated roadway canopy and lighting will increase the safety and efficiency of departure traffic movements on the roadway. 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. A portion of the permit covers the elevated roadways and a ventilation system of adequate capacity to provide fresh air to the area below the elevated roadways. The design for the ventilation system will be submitted to the MPCA for review as required by the ISP. The impact on air quality on and above the elevated roadway will be positive by improved traffic flow.

I.S. GOLD CONCOURSE FIS FACILITY

An EAW has been prepared for this project in September of 1994. Northwest Airlines has requested that MAC add a Federal Inspection Service (FIS) facility to the Gold Concourse. Currently, all international flights utilize the Hubert H. Humphrey (HHH) Terminal for FIS services. Passengers must then use a shuttle bus to the Lindbergh Terminal to link up with connecting domestic flights. This project will provide a second FIS facility on the Gold Concourse which would result in a more efficient and convenient passenger connecting route.

Summary findings of the EAW are presented here in order to incorporate the effects from this project in to the cumulative effects from all projects.

The HHH Terminal is not able to provide adequate levels of service for international passengers. Those connecting to domestic flights are required to use a shuttle bus from the HHH Terminal to the Lindbergh Terminal. This project is designed to relieve existing overcrowding at the HHH Terminal and streamline passenger transfer by allowing some international flights to use the Gold Concourse.

International and charter flights and passengers are forecast to roughly double from 1992 to 2020. If no improvements are made to either facility (HHH Terminal or Gold Concourse) international passengers will have to endure increasingly significant processing delays. Additional flights could not be added during the most desirable arrival and departure times; and the airlines would be forced to schedule flights are off-peak periods, making them less attractive to passengers. Ultimately, even with these adjustments, MSP would not be able to accommodate the anticipated future increase in international service.

Table A.2 shows the projected international scheduled aircraft departure and passenger levels with and without the proposed MAC projects. The difference in the two projections represents the projects' estimated impact on activity levels. It should be noted that this table does not show the improvement in service and amenities that would be experienced by international travelers by going through the FIS facility at the Gold Concourse instead of at HHH Terminal, nor does it show potential international traffic over and above the base case forecast levels that could result from additional international service attracted to the improved and expanded facilities.

With the proposed MAC projects, little increase in airport noise would be likely in the immediate future because the Gold Concourse FIS facility is designed to relieve existing terminal building deficiencies at the HHH Terminal. However, the Gold Concourse project is designed to make MSP more attractive to airlines by providing an FIS facility in the same terminal as scheduled domestic flights would encourage more international service.

There would be an increase in the numbers of passengers in the Gold Concourse resulting from the additional flights. By the year 2005, the average daily international passengers on scheduled flights would increase from approximately 663 to 918 (an increase of 255 passengers) of which 70%, or 179 passengers, would stay within the Lindbergh Terminal for connecting flights. Approximately 76 passengers would have MSP as their destination. In the year 2020, the average daily international passengers on scheduled flights would increase from approximately 989 to 1,841 (an increase of 852 passengers) of which 70%, or 596 passengers, would stay within the Lindbergh Terminal for connecting flights. Approximately 256 passengers would have MSP as their destination. The total average daily passengers (both domestic and international) is projected to be about 38,000 in 2005 and 45,700 in 2020. The percent increase in passengers in the Lindbergh Terminal area due to the FIS project is expected to be 0.7% in 2005 and 1.9% in 2020.

The gate amenity area on the Gold Concourse will be increased to handle the additional passengers. Increased passenger traffic in the Lindbergh terminal coming from the FIS facility on the Gold Concourse will be partially offset by reduced passenger traffic coming off of the bus shuttles that would have transported international passengers making domestic connections from the HHH Terminal. The overall effect will be to streamline passenger transfer by allowing international to domestic connections within the same terminal.

The proposed FIS project would consist of approximately 23,300 square feet of existing space to be remodeled and approximately 70,400 square feet of new expanded space. The FIS space will be at the north end of the existing Gold Concourse between gates 5 and 6 where the Northwest Airlines (NWA) World Club is located. Replacing existing facilities, remodeling concession, gate and amenity areas would require an expansion of approximately 42,100 square feet of new space outside of the existing terminal, about half of which is above the baggage make-up area adjacent to the walkway to the Gold Concourse.

The FIS Gold Concourse project, remodeled concession areas, general amenity, gate and mechanical systems, would total approximately 112,500 square feet of new space and 31,000 square feet of remodeled space. Construction is expected begin sometime in 1995 and to continue for about 18 months.

- **Sewage and Industrial Wastes**

  The FIS Facility will be connected to existing sewer and water systems. All new construction will be located on or above existing impervious surfaces, either pavement or roofs. The project will not adversely affect existing sewer or water systems, nor will stormwater runoff be adversely affected. Existing heating and ventilation mechanical systems will be replaced with newer more efficient equipment and the overall impact to utility systems will be minimal.

- **Water Quality**

  The existing surface of the project site is impervious. After construction, the site will also be impervious. Consequently, the quantity, rate or direction of runoff will not change after development of the proposed project. The site runoff would drain to the Minnesota River North retention basin, which is operating under a NPDES permit granted to the Metropolitan Airports Commission. Overall impact of the runoff on the quality of receiving waters will be negligible.

TABLE A.2

MSP INTERNATIONAL SCHEDULED OPERATIONS AND PASSENGERS

Average Daily Scheduled International Departures*

	1992	2000	2005	2010	2015	2020
With MAC Projects	1.7	3.0	4.4	5.5	6.8	8.5
Without MAC Projects	1.7	3.0	3.0	3.0	3.8	4.7
Difference	0.0	0.0	1.4	2.5	3.0	3.8
Total Average Daily Departures*	573.3	649.1	664.2	684.7	696.4	712.9
Percent Increase Due to Projects	0.00%	0.00%	0.21%	0.36%	0.43%	0.54%

* For the EAW Analysis, departures were assumed to equal arrivals.

Average Daily Scheduled International Passengers

	1992	2000	2005	2010	2015	2020
With MAC Projects	395	652	918	1,184	1,512	1,841
Without MAC Projects	395	652	663	671	841	989
Difference	0	0	255	512	671	852
Percent Connecting	70.0%	70.0%	70.0%	70.0%	70.0%	70.0%
Number Connecting	0	0	179	358	470	596
Number Terminating at MSP	0	0	76	154	201	256
Total Average Daily Passengers	29,262	34,805	38,068	41,178	43,433	45,701
Percent Increase Due to Projects	0.00%	0.00%	0.67%	1.26%	1.57%	1.90%

Source: MSP Long Term Comprehensive Plan (LTCP) Volume 6, Revised Activity Forecast, Technical Appendix, for MAC, March 1994; HNTB Analysis September 1994.

TABLE A.3
GOLD CONCOURSE FIS FACILITY

	New Space (Square Feet)	Remodeled Space (SF)	Total Space (SF)
FIS Core and Related Areas	70,370	23,265	93,635
World Club, Concession, General and Amenity Areas	42,080	7,734	49,814
Total SF	112,450	30,999	143,449

- **Traffic Impacts**

  Reducing number of shuttle trips from the HHH Terminal to the Lindbergh Terminal would reduce traffic in the tunnel between the two terminals. Of the increased number of average daily international passengers resulting from the additional flights, approximately 76 would have MSP as their destination in 2005. In the year 2020, approximately 256 passengers would have MSP as their destination. The total average daily passengers (both domestic and international) is projected to be about 38,000 in 2005 and 45,700 in 2020. The majority (70%) of the international passengers arriving at the Gold Concourse FIS facility will be walking to connecting domestic flights within the terminal. Only a small percent of the international passengers will leave vehicles in long term parking. A negligible percent increase in traffic and parking due to increase in international passengers will be felt in the Lindbergh Terminal area. Forecasted additional international passengers in the Lindbergh Terminal will require less than 125 additional parking spaces in the Lindbergh Terminal parking ramps by the year 2020.

- **Air Quality**

  There will be no noticeable affect to air quality in the Lindbergh Terminal from the small increase in international passengers.

- **Aircraft Noise**

  The proposed project is expected to have an insignificant noise impact in the near future since the addition of the FIS facility in the Gold Concourse of the Lindbergh Terminal is intended to relieve overcrowding at the existing Humphrey Terminal and to streamline international passenger connections at the Lindbergh Terminal. Long term, MAC has expressed a desire to solicit additional international activity. The improvements will make it easier for airlines to add international flights in the future. This would likely result in an increase of 1.4 additional average daily departures by the year 2005 (an increase in total operations of approximately 0.21 percent) and 3.8 additional average daily departures by the year 2020 (an increase in total operations of approximately 0.54 percent). The small increase in flights would have virtually no effect on overall airport noise.

I.T. GROUND TRANSPORTATION CENTER FINISHES

This project is a continuation of the construction of the Ground Transportation Center (GTC) studied in previous Assessments of Environmental Effects of the MAC's Seven Year Capital Improvement Plan and in an EAW. This task includes the remaining finish construction within the lobby area of the GTC. None of the impact categories should be effected.

I.U. HHH TERMINAL IMPROVEMENTS

The existing Humphrey Terminal, on 34th Avenue South, between 70th and 72nd Streets, is presently used for departing and arriving charter and international flights at Minneapolis-St. Paul International Airport (MSP). There are three gates at the terminal, as well as facilities for the Federal Inspection Service (FIS). Stations for U. S. customs and agricultural inspectors are located adjacent to Gate 2. In addition, there are such ancillary facilities as check-in stations, baggage claim areas, waiting rooms, restaurant, gift shop, offices and restrooms. The existing building is 95,470 square feet.

Passenger activity at the HHH Terminal has been steadily increasing as charter operations continue to grow. MAC has expressed a desire to solicit additional international activity. The existing facility is inadequate to handel the existing level of activity. There is a need for additional gates, terminal area, parking, and FIS processing area. This project would provide an additional three gates as well as additional terminal area.

The proposed project would add 76,000 square feet to the north end of the existing building and a 38,000-square foot concourse extending northwesterly from the expanded building. The existing aircraft apron would be expanded by 300,000 square feet. The expansion would accommodate three additional gates and relocated facilities for the Federal Inspection Service, as well as such ancillary facilities as baggage claim and waiting areas. The existing building, particularly the space now occupied by the FIS, would be remodeled; remodeling will affect 30,000 square feet of the existing building.

The footprint of the proposed project would eliminate approximately 696 parking spaces from the existing Humphrey Terminal/Econolot surface parking area. Approximately 1,710 existing parking spaces would remain for use by Humphrey terminal and Econolot patrons. An EAW was prepared for this project in September 1994.

- **Aircraft Noise**

  The proposed project is expected to have an insignificant noise impact, since, together with the addition of an FIS facility in the Gold Concourse of the Lindbergh Terminal, it is intended to relieve overcrowding at the existing Humphrey Terminal and to streamline international passenger connections at the Lindbergh Terminal.

  The improvements, however, will make it easier for airlines to add international flights in the future. This would likely result in an increase of less than two additional average daily international departures (both charter and scheduled) by the year 2005 (an increase in total operations of approximately 0.3 percent) and five additional average international departures (both charter and scheduled) by the year 2020 (an increase in total operations of approximately 0.7 percent). The small increase in flights would have virtually no effect on overall airport noise.

- **Vehicular Traffic**

  There would be an increase in the numbers of passengers resulting from the additional flights. By the year 2005, the average daily departing passengers would increase from approximately 2,200 to 2,560 (an increase of 360 passengers). In the year 2020, average daily departing passengers would increase from 2,530 to 3,720 (an increase of 1,190 passengers). See Tables A.4 and A.5 for Non-Scheduled (Charter) operations and passenger forecasts. Table A.6 is a summary of both the Scheduled and Non-Scheduled operations and passengers at both the HHH Terminal and the Gold Concourse.

  With regard to peak-hour passenger activity, total scheduled international passenger movements would increase from 590 to 700 by 2005, and from 590 to 1,310 by 2020. Non-scheduled international peak-hour passenger movements are anticipated to increase from 450 to 600 by 2005, and from 450 to 690 by 2020. Non-scheduled domestic peak-hour passenger movements would increase from 860 to 1,170 by 2005 and from 860 to 1,350 by 2020.

  While total daily traffic will not increase significantly by the completion of this project, peak hour traffic (estimated at 500 veh/hr) may be more critical. The additional gates will allow more departures to be scheduled simultaneously (usually scheduled in the morning), thus increasing the number of passengers at the terminal. The major impact will be on 34th Street, where 300 additional vehicles will be turning left. These conditions would need to be monitored once in operation to determine whether additional traffic control will be warranted.

Table A.4

Average Daily Non-Scheduled International Departures

	1992	2000	2005	2010	2015	2020
With MAC Projects	1.3	1.9	1.9	1.9	1.9	1.9
Without MAC Projects	1.3	1.6	1.6	1.6	1.6	1.6
Difference	0.0	0.3	0.3	0.3	0.3	0.3
Total Average Daily Departures	573.3	649.1	664.2	684.7	696.4	712.9
Percent Increase Due to Projects	0.00%	0.04%	0.04%	0.04%	0.04%	0.04%

Average Daily Non-Scheduled International Passengers

	1992	2000	2005	2010	2015	2020
With MAC Projects	206	304	334	362	373	381
Without MAC Projects	206	244	244	244	244	244
Difference	0	60	90	118	129	137
Percent Connecting	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Total Average Daily Passengers	29,262	34,805	38,068	41,178	43,433	45,701
Percent Increase Due to Projects	0.00%	0.17%	0.24%	0.29%	0.30%	0.30%

Source: MSP Long Term Comprehensive Plan (LTCP) Volume 6, Revised Activity Forecast, Technical Appendix, for MAC, March 1994; HNTB Analysis September 1994.

Table A.5

Average Daily Non-Scheduled Domestic Departures

	1992	2000	2005	2010	2015	2020
With MAC Projects	6.6	7.7	7.9	8.5	8.5	8.5
Without MAC Projects	6.6	7.7	7.9	7.9	7.9	7.9
Difference	0.0	0.0	0.0	0.5	0.5	0.5
Total Average Daily Departures	573.3	649.1	664.2	684.7	696.4	712.9
Percent Increase Due to Projects	0.00%	0.00%	0.00%	0.08%	0.08%	0.08%

Average Daily Non-Scheduled Domestic Passengers

	1992	2000	2005	2010	2015	2020
With MAC Projects	942	1,192	1,307	1,419	1,458	1,496
Without MAC Projects	942	1,192	1,301	1,301	1,301	1,301
Difference	0	0	5	118	156	195
Percent Connecting	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Total Average Daily Passengers	29,262	34,805	38,068	41,178	43,433	45,701
Percent Increase Due to Projects	0.00%	0.00%	0.01%	0.29%	0.36%	0.43%

Source: MSP Long Term Comprehensive Plan (LTCP) Volume 6, Revised Activity Forecast, Technical Appendix, for MAC, March 1994; HNTB Analysis September 1994.

Table A.6

Total of all Scheduled and Non-Scheduled

Average Daily International and Charter Departures

	1992	2000	2005	2010	2015	2020
With MAC Projects	9.7	12.6	14.2	15.9	17.3	18.9
Without MAC Projects	9.7	12.3	12.6	12.6	13.4	14.2
Difference	0.0	0.3	1.6	3.3	3.8	4.7
Total Average Daily Departures	573.3	649.1	664.2	684.7	696.4	712.9
Percent Increase Due to Projects	0.00%	0.04%	0.25%	0.48%	0.55%	0.66%

Average Daily International and Charter Passengers

	1992	2000	2005	2010	2015	2020
With MAC Projects	1,543	2,148	2,559	2,964	3,342	3,718
Without MAC Projects	1,543	2,088	2,208	2,216	2,386	2,534
Difference	0	60	351	748	956	1,184
Total Average Daily Passengers	29,262	34,805	38,068	41,178	43,433	45,701
Percent Increase Due to Projects	0.00%	0.17%	0.93%	1.85%	2.25%	2.66%

Source: MSP Long Term Comprehensive Plan (LTCP) Volume 6, Revised Activity Forecast, Technical Appendix, for MAC, March 1994; HNTB Analysis September 1994.

- **Air Quality**

  Short-term construction air pollution, and the impact of fugitive dust are the major concerns. Air pollution and dust generated during construction will generally be controlled by periodic site watering. Vehicle emissions will be mitigated by parking gasoline or diesel-powered equipment while not being used. There are no nearby residential areas that will be affected by construction noise. Mitigation of fugitive dust at the construction site will address the impacts on the National Cemetery, which is located across 34th Avenue South from the proposed project.

- **Water Quality**

  The existing surface of the project site is impervious; after construction, the site will also be impervious. Consequently, the quantity, rate or direction of runoff will not change after development of the proposed project. While the additional fueling of aircraft could alter the quality of the runoff, the discharge from vehicles once parked on the site would be eliminated; overall impact on the quality of the runoff would be negligible. The site runoff would drain to the Minnesota River South retention basin, outfall Number 040, which is operating under a NPDES permit granted to the Metropolitan Airports Commission. As the project site is now, and will be, impervious surface and as any change in the quality of runoff will be negligible, the impact of the runoff on the quality of receiving waters will be negligible as well.

- **Parking**

  The existing Humphrey and Econolot surface parking lots, located at the north end of the Humphrey Terminal on 34th Avenue South, include 2,406 parking spaces (2,394 regular spaces and 12 handicap spaces). The proposed project will be constructed on the southwesterly portion of the surface parking lots, eliminating 696 parking spaces.

  Approximately 1,710 existing parking spaces would remain for use by Humphrey terminal and Econolot patrons. Loss of these parking spaces will be offset by construction of an Econolot parking deck. With the new deck, the Econolot parking will total approximately 1,500 spaces. Completion of the parking deck is expected to offset the loss of parking caused by the expansion of the Humphrey Terminal. Construction is expected begin sometime in 1995 and to continue for approximately 15 months. Impacts of the parking lot expansion have been addressed in section I.P. ECONOLOT CASHIER BOOTH INSTALLATION and in section I.Q. ECONOLOT PARKING DECK.

I.V. LINDBERGH TERMINAL ALTERNATIVE COOLING SYSTEM

The Lindbergh Terminal is cooled by chillers in the Energy Management Center which utilize groundwater pumped by a series of four wells located on the airport. The cool temperatures of the groundwater aids in reducing the amount of additional cooling required prior to pumping into the chilled water system. Once the warm water is returned to the Energy Management Center, it is discharged to the storm sewer system. The State of Minnesota DNR has mandated that this use of groundwater for "once through" cooling systems must be eliminated on a schedule dependent on the age of the existing cooling components. The Commission has until the year 2000 to install an alternate system for cooling the terminal which does not use groundwater.

A report has been prepared which recommends replacement of the existing chillers and the use of cooling towers which would cool the warm water returned from cooling units and then recycle this water back through the chillers. Because this water is warmer than the cool groundwater previously used, larger chillers are required.

It is proposed to phase the conversion of the cooling system by installing new chillers in 1995 and the cooling towers in 1998. The chillers are being replaced at an earlier date because the refrigerants which are currently being used will no longer be available after 1995. The new refrigerants are not as efficient as those used today which will require larger chillers to provide the same cooling output. Water quality should be improved because ground water will be recycled through the system and not discharged into the drainage area.

I.W. NEW BUILDING AREA SITE PREPARATION

The building area for the proposed Sun Country Airlines Hangar is currently undeveloped. This project will provide for site grading, utility construction, and road access for the new building area.

The access road will be paved and approximately 35,000 square feet will be in the Minnesota River South Drainage Basin and 36,000 square feet in the Mother Lake Drainage Basin.

- **Water Quality**

  Water quality will not be affected by the construction of the road or the grading of the site.

I.X. REVENUE CONTROL BUILDING ADDITION

The Revenue Control Building located near the long term exit from the parking ramp, functions as the money storage, counting and bookkeeping facility for both short-term and long-term parking. This building also houses the parking equipment repair facilities and serves as the

headquarters for APCOA, the Commissions public parking operation manager. The Commission's management agreement with APCOA requires that they maintain a file of all collected parking lot tickets for audit and control purposes for at least one year. Previous storage space for these tickets has been lost to other needs. This project would construct additional storage space on the second level along with one finished office to allow for a unified, organized storage area which would be readily accessible to APCOA's bookkeeping department.

This is a second level addition; therefore, it does not affect any impact categories.

I.Y. SNOW REMOVAL EQUIPMENT STORAGE BUILDING

MAC has a fleet of motorized equipment that now exceeds 200 units. In order to respond to snow emergencies in a timely manner, these units must be stored in a heated building. Currently some equipment is stored in a structure adjacent to the FAA Air Traffic Control Tower (ATCT). The FAA will be constructing a new tower adjacent to the existing ATCT and will be removing a section of the equipment storage building. This project is to construct a new storage facility of sufficient size to store approximately 30 pieces of equipment adjacent to the existing maintenance/storage building on 28th Avenue.

The building will be approximately 15,300 square feet. There is no additional exterior paved parking for equipment.

- **Water Quality**

  The additional stormwater runoff caused by the increased impervious area for a predicted 5-year storm event is calculated to be 0.65 cubic feet per second (CFS) and 0.76 CFS for a 10-year storm. This additional incremental stormwater flow will cause no apparent problems for the associated stormwater collection, conveyance and treatment systems on the airport.

- **Sewage and Industrial Waste**

  Since the construction of the new Equipment Storage Building is to necessitate consolidation of existing facilities and no new employees will be hired, there will not be an increase in facilities in the new building from the old building that the FAA will be removing for ATCT expansion. The sewage and industrial waste will remain the same and not cause any difficulties to either the on-site collection systems or related MWCC Interceptor or waste water treatment facilities.

- **Traffic Impacts**

  Some traffic will be shifted from 34th Avenue to 28th Avenue, but the overall effect will be minimal. No additional inbound or outbound trips will be generated by the completion of this facility nor will any roads external to the airport be affected by this project.

I.Z. TERMINAL AREA EQUIPMENT STORAGE BUILDING

This project is proposed as a result of limited equipment storage in the terminal area and need to centralize some of the maintenance equipment in one area to improve the operational efficiency. The project involves the construction of a small structure on existing impervious surface area at the exit of the Lindbergh Terminal near outbound Glumack Drive. The building will have sanitary facilities for employees that will work on the premises.

- **Sewage**

  The proposed project's bathroom areas will increase sewage discharge into the sanitary sewer system. Using an estimate of 15 gallons/employee/day (Minnesota Plumbing Code 4715.3600 Subp. 2), it is estimated that 150 additional gallons of waste water may be generated per day by the employees of the building. However, since the building will not be staffed 24 hours per day, this increase is slight and 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 waste water treatment facilities.

I.AA. 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 and the building will be approximately 15,000 square feet.

- **Water Quality**

  The additional stormwater runoff into Mother Lake caused by the increased impervious area for a predicted 5-year storm event is calculated to be 0.64 cubic feet per second (CFS) and 0.74 CFS for a 10-year storm. 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 will remain the same. 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 or waste water treatment facilities.

II. PROJECTS BEGINNING IN 1996

The following projects are included in the MAC's Capital Improvement Program for 1996 which have the potential to effect the environment. Several projects such as Runway 4/22 Noise Mitigation and Home Insulation/Home Buy-Outs, continue for several years and are discussed in the year that they start.

II.A Airfield Drainage Strip Reconstruction
II.B Runway 11L Holding/Deicing Pad
II.C Taxiway C/D Complex Pavement Reconstruction
II.D Commercial Vehicle Passenger Shelter
II.E Fuel Handling, Treatment and Storage Facility
II.F Ground Level Roadways Construction
II.G Public Safety Storage Building
II.H Snow Removal Equipment Storage Building Addition
II.I Valet Car Wash

II.A. AIRFIELD DRAINAGE STRIP CONSTRUCTION

The MAC has been operating under a National Pollutant Discharge Elimination System (NPDES) permit for stormwater since 1974. The current permit requires that each of the five stormwater outfalls to be monitored at least monthly for total suspended solids (TSS), oil and grease, five-day biochemical oxygen demand (BOD_5) and hydrogen ion activity (Ph). Over the years, there have been times when the stormwater exceeded the limits of the permit. TSS is affected by the sand which is applied on the pavement areas in the winter to provide traction for aircraft.

To reduce the TSS, the MAC has been eliminating the bituminous drainage strips which are located adjacent to each runway as the runways are being reconstructed. The drainage strips are being replaced with bituminous shoulders which drain overland through turfed areas and into drainage swales. The swales which lead to stormwater inlets slow the runoff from the paved areas and allow for greater trapping of sediment thus reducing the TSS. In addition, grassy swales have the added benefit of reducing the stormwater runoff rates into the treatment basins.

This project will be implemented in 1995 to accelerate the elimination of the drainage strips where possible.

- **Water Quality Impacts**

  A reduction in the rate of runoff from impervious surfaces from the removal of drainage strips will reduce the speed at which runoff reaches the retention basins. The reduction of TSS in the runoff will reduce downstream pollution in the Minnesota River basin.

II.B. RUNWAY 11L HOLDING/DEICING PAD

There is a need for a large apron area near the end of each runway to provide space for aircraft waiting for departure and also function as a deicing pad with a glycol recovery and containment system. Airlines experience delays at departure for a number of reasons with the result that other aircraft cleared for departure may be delayed. The holding apron would provide storage for delayed aircraft while allowing other aircraft to taxi by and depart without delay. End of runway deicing is also being evaluated as an option to meet FAA deicing time requirements and state environmental requirements.

This project uses the paved floors of Hangars 1 and 2 (See Section I.B. HANGARS 1 AND 2 DEMOLITION for a descriptions of the impacts. There would be approximately 119,000 square feet of impervious area added to the Minnesota River-North Drainage area. All runoff will be captured in a recycling system for recovery of the deicing fluids, hence a small decrease in the quantity of runoff in this area will result.

- **Water Quality**

  The water quality of the airport would be improved by the recycling of the deicing fluid. The additional storm water runoff caused be the increased impervious surface for a predicted five year storm event is calculated to be 5.08 cubic feet per second, and 5.90 cfs for a ten year storm.

II.C. TAXIWAY C/D COMPLEX CONSTRUCTION

The Delta Taxiway adjacent to the Red and Blue Concourses is currently restricted to Boeing 727 or smaller sized aircraft and the pavement of both the Delta and Charley taxiways is in need of replacement. The proposal is to allow unrestricted two-way taxiing of aircraft on both taxiways. The project will not increase the overall capacity of the airport.

This project will involve the construction of additional taxiway maneuvering area adjacent to the Red and Blue Concourse of approximately 336,750 square feet of impervious pavement surface. Runoff from this 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 5-year storm event is calculated to be 13.14 cubic feet per second CFS and 15.26 for a 10-year storm into the Minnesota River North Drainage basin. This additional incremental stormwater flow will cause no apparent problems for the associated stormwater collection, conveyance and treatment systems.

No external roads will be affected. The new ground level roadways 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. The design for the ventilation system will be submitted to the MPCA for review as required by the ISP.

- **Water Quality**

  The area is already paved and finishes will not affect runoff quantity or quality.

II.G. PUBLIC SAFETY STORAGE BUILDING

This project is proposed as a result of need to construct a multi purpose centrally located building in the terminal area capable of storing equipment such as the bomb trailer, bomb x-ray equipment, emergency response medical trailer, and the air boat in one area in order to improve the overall operational efficiency of the public safety division. The project also involves the construction of a small secured area to a store a vehicle or evidence used in a suspected felony.

The building will be connected to existing sewer, water, and drainage systems and it will be located on a pervious surface. The effects of additional impervious surface 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.

The building will have sanitary facilities for employees that will work on the premises.

- **Sewage and Industrial Wastes**

  Sanitary facilities in the building will increase sewage discharge into the sanitary sewer system. Using an estimate of 15 gallons/employee/day (Minnesota Plumbing Code 4715.3600 Subp. 2), it is estimated that 150 additional gallons of waste water may be generated per day. However, since the building will not be staffed 24 hours per day, this increase is slight and 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 waste water treatment facilities.

II.H. SNOW REMOVAL EQUIPMENT STORAGE BUILDING ADDITION

This is a continuation of the series of projects to provide a heated space for MAC's fleet of motorized snow equipment. In order to respond to snow emergencies in a timely manner, these units must be stored in a heated building. This project would construct a third storage bay to the existing snow removal equipment building located on 28th Street. In addition, modifications will be made to the existing maintenance/storage building on 28th Avenue including the removal of redundant tool/part storage rooms and the installation of new wider doors to increase storage area with the existing building.

The building addition will be approximately 18,500 square feet.

- **Water Quality**

  The additional stormwater runoff caused by the increased impervious area for a predicted 5-year storm event is calculated to be 0.79 cubic feet per second (CFS) and 0.92 for a 10-year storm. 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 Equipment Storage 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 waste water treatment facilities.

II.I. VALET CAR WASH

In order to better serve the airport customers utilizing the valet parking within the garage area of the Lindbergh Terminal, it is proposed to install a wash facility within the garage area of the Lindbergh Terminal.

- **Sewage and Industrial Wastes**

  The addition of the car was will not affect the existing sewage system in the Lindbergh Terminal. Waste water collection, conveyance and treatment systems will therefore not be affected.

III. PROJECTS BEGINNING IN 1997

The following projects are proposed to start in 1996 which have the potential to effect the environment. Several projects continue for several years and are discussed in the year that they start.

III.A Runway 4/22 Noise Mitigation (Acquisition)
III.B School Noise Abatement Projects (Outside 65 DNL)
III.C Green Concourse Mechanical Systems Conversion

III.A. RUNWAY 4/22 NOISE MITIGATION (ACQUISITION)

The extension of Runway 4/22 will impact approximately 1,300 homes in Bloomington and South Richfield. It is therefore proposed to include residential home acquisition as a mitigation measure to the existing Runway 4/22 extension project. The Runway 4/22 mitigation package would involve shifting the cost of acquiring a few of the some of the 1,300 homes from the FAA Part 150 program (Noise Control and Compatibility Planning for Airports) project to the Runway 4/22 extension project as a means of addressing noise impacts associated with the project. At this time a definite number of homes to be acquired is not available, but all indications are that the majority of the homes will be insulated (see Section I.D RUNWAY 4/22 NOISE MITIGATION (INSULATION)) and that only a few will be purchased.

This project primarily involves the acquisition of some existing residential dwellings. The social impacts to the occupants from the loss of their house have been addressed in the Runway 4/22 EA.

- **Aircraft Noise**

  This project would have a positive impact concerning airport noise by reducing the number of people exposed to airport noise.

III.B. SCHOOL NOISE ABATEMENT PROJECTS (OUTSIDE 65 DNL)

The FAA Federal Aviation Regulation (FAR) Part 150 program (Noise Control and Compatibility Planning for Airports) referenced in the 1994 projects for Home Insulation and Home Buy-Outs also includes providing noise abatement for schools outside the DNL 65 contour which are experiencing interruptions of classroom instruction by aircraft overflights.

MAC has therefore included noise abatement projects within the Capital Improvement Program (CIP) with the goal of achieving an aggregate noise reduction of 15-20 decibels (DBA) in the instruction areas of schools compared to noise levels prior to the project improvements. In past years, six schools have been soundproofed by MAC with financial assistance from the FAA and MnDOT - Office of Aeronautics. It is proposed to continue this program with schools outside of the DNL 65 contour in 1997.

Typically, each project requires a minimum of two years to complete, depending on the size of the school, as a result of the short (normally 3 month) summer construction period. The first year is devoted to gathering noise measurement data during the school year which is used to design specific noise attenuation measures. Construction commences in the second year and can take two years, depending on the size of the school.

- **Aircraft Noise**

  These projects will provide positive impacts concerning airport noise. Achieving an aggregate noise reduction of 15-20 decibels (DBA) in the instruction areas of schools compared to noise levels prior to improvements is possible and has been shown to be an effective abatement strategy. Reductions of this magnitude will provide a better environment in which to teach children.

III.C. 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. The Lindbergh Terminal Alternative Cooling System project is the first step in phasing out the use of groundwater for cooling at the airport. Therefore the groundwater appropriation created by the Green Concourse Mechanical System conversion will be only temporary.

IV. PROJECTS BEGINNING IN 1998

The following project, Taxiway B Construction, is the only one proposed to begin in 1998 which has the potential to effect the environment. Several other projects which have already been started will continue for several years and are discussed in the year that they start.

IV.A. 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 Signature (formerly Page and 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. 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 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 is noted that an increase of 1.8 DBA is almost undiscernible. It is also noted that the affected neighborhood (New Ford Town) will be acquired and the residents affected by such noise will be relocated (see Section I.I NEW FORD TOWN/RICH ACRES ACQUISITION).

- **Water Quality**

  The additional stormwater runoff caused by the increased paved area for a predicted 5-year storm event is calculated to be 13.14 CFS for the Minnesota River-North Drainage Area and 15.26 for a 10-year storm. The increased runoff is for a predicted 5-year storm event is calculated to be to be 3.31 CFS and 3.84 CFS for a 10-year storm for the Minnesota River-South Drainage Area. The increased runoff predicted 5-year storm event is calculated to be 7.02 CFS and 8.15 CFS for a 10-year storm 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 in any of the drainage areas.

V. PROJECTS BEGINNING IN 1999

There are no new projects included in the MAC's Capital Improvement Plan beginning in 1999 that may potentially effect the environment.

VI. PROJECTS BEGINNING IN 2000

There are no new projects included in the MAC's Capital Improvement Plan beginning in 2000 that may potentially effect the environment.

VII. PROJECTS BEGINNING IN 2001

There are no new projects included in the MAC's Capital Improvement Plan beginning in 2001 that may potentially effect the environment.

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APPENDIX B

1994 CAPITAL IMPROVEMENT PROJECTS

1995 CAPITAL IMPROVEMENT PROGRAM

1995 CAPITAL IMPROVEMENT PROJECTS
MINNEAPOLIS-ST. PAUL INTERNATIONAL AIRPORT

FIELD AND RUNWAYS

TAXIWAY CONNECTOR FOR NEW BUILDING AREA - $850,000

As part of the new building area development for the Sun Country hangar, a new connecting taxiway will be constructed from the Sun Country Apron to Runway 4/22. Previously approved by the Commission.

RUN UP PAD BLAST FENCE EXTENSION - $650,000

Commission staff have received a written request from Northwest Airlines to modify the blast fence at the engine run-up pad near the Northwest Cargo Facility. The run-up pad is used by all airlines for run-up of their engines following engine maintenance. Northwest's specific request is to extend the height of a portion of the blast fence such that it will deflect the jet blast from the tail engine of a wide body aircraft such as a DC-10 or an L1011. The existing fence is 14 feet high and would have to be removed and replaced by a 35 foot high fence with larger concrete footings.

Northwest has been experiencing damage from jet blast to employee vehicles parked in a lot to the south of the run-up pads. There is the added concern of personnel injury from debris blown by the 55 to 85 mph winds that are not deflected by the existing blast fence. It is proposed to construct a new 35 foot high fence on the south and a portion of the east side of the run up pad.

ELECTRICAL DISTRIBUTION SYSTEM REPLACEMENT - AIRFIELD LIGHTING - $3,000,000

The existing electrical distribution system equipment which serves the airfield lighting system was last upgraded in the 1960's. The age, condition, ratings and arrangement of this equipment raises serious questions about reliability, short-circuit protection, safety and code compliance issues of access, clearances, egress and multiple services. The equipment room, located in the basement of the old Administration Building, is below grade and could be flooded. In addition, the FAA program to construct a new air traffic control tower will impact existing switchgear located in the basement of the existing ATCT. This switchgear is an integral part of the field lighting system.

It is therefore proposed to construct a new electrical distribution system consisting of two unit substations and two emergency generators. This proposal will meet the requirements for all existing as well as projected future electrical loads as well as ensure a high degree of reliability.

PAVEMENT REHABILITATION - 4/22 AND 11R/29L INTERSECTION - $800,000

The intersection of Runways 4/22 and 11R/29L was last reconstructed in 1970 and consists of 14 inch concrete pavement. This is in contrast with the 18 inch pavement currently being installed with all new runway construction/reconstruction. Maintenance on this intersection can no longer keep up with the deterioration of the pavement. A Pavement Management Task Force consisting of MAC staff, MAC consultants and the airlines have been formulating a plan to reconstruct this intersection with special high early strength concrete to reduce the time this intersection is out of service.

MISCELLANEOUS CONSTRUCTION - $250,000

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. One project being proposed for 1995 includes installing new doors on the sand barn.

ENVIRONMENTAL

HOME INSULATION/HOME BUYOUTS - $10,400,000

This item is intended to cover projects identified as part of the Federal Aviation Regulation (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. The extent of the work will depend on the amount of federal aid available for each type of project. Land acquisition would include selected residences around the airport. The insulation of houses would be a continuation of the program which was initiated in 1992 in the cities of Minneapolis, Richfield, Bloomington, Eagan and Mendota Heights. Previously approved by the Commission.

NEW FORD TOWN/RICH ACRES ACQUISITION - $7,200,000

This is a continuation of the land acquisition and relocation project in the New Ford Town/Rich Acres subdivision begun in 1994, pending the availability of federal aid. Previously approved by the Commission.

MAINTENANCE FACILITY FUEL TANK REPLACEMENT - $100,000

Several underground fuel storage tanks which serve the fleet of MAC maintenance vehicles must be replaced to comply with state and federal requirements. These tanks are located at the MAC Maintenance Facility on 28th Avenue. A new expanded fuel dispensing island would also be constructed with the new tank installation.

SCHOOL NOISE ABATEMENT PROJECTS - $1,000,000

The FAR Part 150 Study referenced above includes providing noise abatement for schools within the Ldn 65 contour which are experiencing interruptions of classroom instruction by aircraft overflights. The Commission has therefore included noise abatement projects within the CIP with the goal of achieving aggregate noise reduction of 15-20 decibels (DBA) in the instructional areas of schools compared to noise levels prior to the project improvements. In past years, six schools have been soundproofed by the Commission with financial assistance from the FAA and MnDOT - Office of Aeronautics. It is proposed to continue this program with five additional schools starting in 1994. Typically, each project requires a minimum of two years to complete, depending on the size of the school and, as a result of the short (normally 3 month) summer construction period. The first year is devoted to gathering noise measurements to be used in designing specific noise attenuation measures. Construction commences in the second year and can take 2 years, depending on the size of the school. The first school to receive noise abatement measures will be Mt. Calvary Lutheran School located in Richfield.

roadways and parking lots outside of the air operations area which require major repair. Projects to be completed in 1995 include reconstructing 24th Avenue from E. 75th Street to the Air Operations Area (AOA) and the seal coating of various MAC parking lots.

NEW BUILDING AREA SITE PREPARATION - $3,150,000

The building area for the proposed Sun Country Hangar is currently undeveloped. This project will provide site grading, utility construction, and road access for the new building area. Previously approved by the Commission.

PRIMARY DISTRIBUTION SYSTEM UPGRADE - PHASE 3 - $1,000,000

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 construction of permanent substations under the new up and down ramps of the elevated roadway and will also provide required electrical modifications within the terminal building. Previously approved by the Commission.

ENERGY MANAGEMENT CENTER BOILER ADDITION - $1,200,000

The addition of the skyways, elevator towers and the new Ground Transportation Center have added additional heat loads to the three boilers located in the Energy management Center. Any future terminal expansion/development will tax the heating system even more. In order to ensure that the current level of heating will be provided, it is proposed to add one additional boiler to the system. This will provide the additional heating capacity required under peak demands and will also provide some redundancy in the event any one boiler is out of service. The installation of a new boiler will require an addition to the Energy Management Center.

GENERAL OFFICE SPACE MODIFICATIONS - $250,000

The General Office provides office and meeting space for MAC staff. Staff increases and department reorganizations have resulted in a shortage of developed office space. It is proposed to convert the lower level west wing conference and training rooms into new offices. Existing storage area on the lower level of the south wing will be converted into new conference rooms. There will also be miscellaneous modifications to the library and the MASAC room. This project will also include furnishings for each new room.

LINDBERGH TERMINAL ENTRANCE DOOR REPLACEMENT - $500,000

The sliding entrance doors to the Lindbergh Terminal 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. This project will be coordinated with the construction of the new upper level roadway as the project will require the closure of entrances as the project progresses in phases.

SNOW REMOVAL EQUIPMENT STORAGE BUILDING - $500,000

The Commission's fleet of motorized equipment now exceeds 200 units. In order to respond to snow emergencies in a timely manner, these units must be stored in a heated building. Currently, some equipment is stored in a structure adjacent to the Air Traffic Control Tower (ATCT). The FAA will be constructing a new tower adjacent to the existing ATCT and will be removing a section of the equipment storage building. A new storage facility of sufficient size

replacement, expansion joint repairs, etc. Work under this project would include joint sealing of the auto rental deck, rehabilitation of the existing stair towers serving the Green and Gold Ramps and miscellaneous concrete repairs on all three structures.

TERMINAL ELECTRICAL MODIFICATIONS - $100,000

It is proposed that the program to address electrical issues in the Lindbergh Terminal requiring attention due to age and deterioration of the existing systems or modifications necessary for improved operations be continued. This project typically includes: additional area lighting units and circuitry revisions for improved safety and security, replacement/relocation of fixtures to reduce maintenance costs, etc. The major project proposed for 1995 is the replacement of the lights and ballasts on the Blue Concourse with more energy efficient units. Previously approved by the Commission.

TERMINAL MECHANICAL MODIFICATIONS - $150,000

It is proposed that a program initiated in 1992 be continued in subsequent years to address mechanical issues requiring attention due to age and deterioration of the existing systems or modifications necessary for improved operations. Projects proposed for 1995 will be formulated during 1994 and a recommendation will be available when the CIP is approved in November. Previously approved by the Commission.

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. Projects proposed for 1995 will be formulated during 1994 and a recommendation will be available when the CIP is approved in November. Previously approved by the Commission.

AUTO RENTAL PARKING EXPANSION - $24,000,000

The auto rental companies are in need of additional ready and return car space to meet their current and future demands. It is also projected that there will be a need for additional space for public parking within the next two years. It is therefore proposed to add three additional parking levels over the existing two level structure located east of the Green and Gold parking structures.

The new third level will be used for rental car returns and will house a "quick turnaround" service facility with gas pumps and a car wash. The fourth and fifth parking levels will be used for long term public parking. Four new elevators will provide access to the public parking levels. The existing rental car building will be modified to connect to the new third level rental car deck.

AUTOMATED PEOPLE MOVEMENT SYSTEM - $4,800,000

Replacing the existing shuttle bus system which transports rental car customers from the Lindbergh Terminal to the Auto Rental building with an "automated people mover" system has been under consideration for several years. The existing system operates at-grade and has conflicts with vehicles utilizing the parking ramps at four crossing points; requires users to walk in an unclimatized route (outside) approximately 300 feet between the terminal building and the bus pick-up point; does not meet accessibility requirements mandated by current ADA

GREEN CONCOURSE INTERIOR REHABILITATION - $500,000

The recent Red and Blue Concourse Rehabilitation projects established certain interior finish standards that will be carried through the remaining concourses. This project will address wall finishes, as ceiling and lighting items will be addressed in a future mechanical systems conversion project. The carpeting was replaced in 1994 under a separate project. The public areas will receive new wall treatment which will primarily consist of a ceramic tile wainscot with vinyl fabric wall covering. Previously approved by the Commission.

LINDBERGH TERMINAL ELEVATOR INSTALLATION - $1,000,000

The west mezzanine level of the Lindbergh Terminal is served by two elevators, both of which are over thirty years old. One of the elevators is leased to Host, but if an elevator is down for repairs, both the MAC and Host use one elevator. If one of these elevators is down for an extended period of time, service to the mezzanine is restricted. This project would construct a new elevator at the rear of the Terminal building to increase vertical circulation to the west mezzanine.

LINDBERGH TERMINAL INTERIOR REHABILITATION - $500,000

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. The major renovation of the terminal has been scaled back due to the economic climate surrounding the airline industry. Therefore, a project similar to that completed in the baggage claim area will be implemented in the ticketing area. Work would include carpet/flooring replacement and wall treatment revisions. Previously approved by the Commission.

REGIONAL TERMINAL FLOOR COVERING REPLACEMENT - $100,000

The tile flooring in the Regional Terminal is worn beyond repair and the loose pieces are creating a slipping and tripping hazard for passengers and employees. This project will install carpet in the gate and passenger waiting areas.

EAST AIRPORT WATER MAIN LOOP - $1,000,000

The airport's water main system is connected to the City of Minneapolis system at three locations. From these points the airport's watermain network branches out to provide water service to the airport. The central and western portions of the airport have completed watermain loops which insure that water pressure and service demands can be met. The eastern portion of the airport is served by long dead end lines which increases the chance of diminished water pressure and service interruption. This project would complete the watermain loop on the east end of the airport which would increase the water supply and reliability of water service to the tenants on "D" Street and will upgrade the supply of water available for fire fighting purposes at the fuel farm on Post Road.

HHH TERMINAL HVAC CONSOLIDATION - $200,000

The HHH Terminal is served by eight very old air handling units controlled by a costly pneumatic control system. These individual air handling units have a very high maintenance cost and are

REVENUE CONTROL BUILDING ADDITION - $300,000

The Revenue Control Building located near the long term exit from the parking ramp, functions as the money storage, counting and bookkeeping facility for both short term and long term parking. This building also houses the parking equipment repair facilities and serves as the headquarters for APCOA, the Commission's public parking operation manager. The Commission's management agreement with APCOA requires that they maintain a file of all collected parking lot tickets for audit and control purposes for a least one year. Previous storage space for these tickets has been lost to other uses. This project would construct additional storage space on the second level along with one finished office to allow for a unified, organized storage area which would be readily accessible to APCOA's bookkeeping department. Previously approved by the Commission.

TERMINAL AREA EQUIPMENT STORAGE BUILDING - $400,000

Requests have been received from MAC maintenance staff for an equipment storage and fueling facility in the vicinity of the Lindbergh Terminal. Currently, there is limited equipment storage in the terminal area and all equipment must be transported to and from the maintenance building located across from the General Office.

TRADES SHOP BUILDING - $2,000,000

Currently, the Commission's carpentry, electrical and painting crews occupy individual buildings in the West Terminal area. As the work crews and 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 material 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.

WEST TERMINAL AREA REHABILITATION - $1,400,000

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

Minnesota River, to allow water levels to be controlled at more constant levels and provide more waterfowl habitat. That project replaced 580 wildlife habitat units.

Pickerel Lake, purchased by the City of St. Paul for further development of the Harriet Island-Lilydale Regional Park, had been chosen as the mitigation site to fulfill the replacement of the remaining wildlife habitat units.

In 1991, however, the Environmental Protection Agency (EPA) determined that this project would not qualify as wetland mitigation and that only the creation of additional wetlands at Pickerel Lake would be compensation for the wetlands to be filled at the airport. Therefore, additional areas for wetland mitigation have been pursued to allow expansion of the existing building area to begin. MAC staff is currently working with the DNR on an interagency agreement regarding a mitigation site in Nobles County near Worthington. Under the agreement, the MAC would purchase the site and construct the necessary control structures to re-establish the wetland. The DNR would then take over control and operation of the facilities. Previously approved by the Commission.

ADMINISTRATION BUILDING PARKING LOT EXPANSION - $100,000

There has been a dramatic increase in the number of passengers utilizing the St. Paul Downtown Airport since scheduled service began earlier this year. Parking for MAC employees, building tenants and passengers has become extremely limited. This project provides for additional paved parking areas, reconfiguration of the existing parking areas and an improved entrance to the airport.

BUILDING AREA EXPANSION - TAXIWAY A-2 - $3,400,000

The 25-acre elevated building area created in conjunction with the Runway 14/32 development project is expected to be completely leased in the near future. The project will extend the building area 1,100 feet to the southeast along Taxiway B to Taxiway A-2 (approximately 15 acres), and includes all necessary embankment construction and required temporary drainage erosion control. In addition, the remaining area of wetland necessary to complete the building area expansion will be filled to a height of two feet. Previously approved by the Commission

HELIPAD INSTALLATION - $80,000

The Master Plan for the St. Paul Downtown Airport includes a helipad on the airport. Included is an apron or parking area and a helicopter takeoff and landing area. The landing and takeoff area is located on the east side of the airport in a triangular area bounded by Taxiways E, D and P. The location of the helipad on the east side of the airport is a result of meetings with the community in 1990 and noise tests conducted in 1991. This project would provide for the establishment of a helipad including construction of a helipad pavement and associated lighting.

MAC BUILDING MODIFICATIONS - $100,000

This category will provide for facility modifications/rehabilitations to ensure continued efficient operation of buildings or modifications necessary to meet the requirements of various tenants. Currently, a study of the entire building is underway to respond to the requests of the tenants for building modifications. Based on the recommendations of the study and concurrence by MAC staff, specific projects will be defined.

It is proposed to acquire approximately 245 acres of property immediately south and west of existing airport boundaries and an approximate 3.4 acre parcel north of the airport to provide approach and transitional surface zone protection.

The proposed acquisitions south and west of the airport would consist of those parcels identified to be within the FAA Participation Lines as determined from the location of the existing runway 9R/27L thresholds. The FAA participation lines encompass a rectangular area that extends 5,200 feet along runway centerline from each threshold and laterally 1,550 feet from the runway centerline.

The property acquisition north of the airport consists of a single parcel that abuts airport property. There are structures on the property that are within the Runway Protection Zone and penetrate the 20:1 approach surface.

The proposed acquisitions would be undertaken in accordance with the uniform relocation assistance and Real Property Acquisition Policies Act of 1970, DOT regulations and with FAA order 5100.37, Land Acquisition and Relocation Assistance for Airport Development.

Once the property has been acquired in fee simple title, any existing structures will be removed by relocation or demolition and remaining basements will be filled and topped with clean fill and top soil. Turf will be reestablished over disturbed and filled areas. Public/Private utilities will be vacated, capped or otherwise severed to the individual properties. Existing vegetative cover (trees and shrubs) will be preserved to the extent practical.

CRYSTAL AIRPORT

AIRFIELD SIGNAGE ADDITIONS - $100,000

The FAA has raised concerns over the years as to the lack of signage on the airfield to assist aircraft in taxiing to their destination. A temporary unlit sign was placed at one of the intersections to see if it would improve operations, and both pilots and controllers stated that this was a much needed improvement. Therefore, for safety reasons, it is proposed to install airfield signage at the intersections of runways and taxiways similar to the signage which will be constructed at Flying Cloud and Anoka County-Blaine airports.

SECURED ACCESS SYSTEM - $250,000

There has been a recurring problem at the Crystal Airport of runway incursions by pedestrians, bicyclists, and vehicles. The MAC has been cited by the FAA on several occasions as to this potential safety issue. Signage has been installed around the airport, however, this has not reduced the number of incursions. There is an existing security fence around the entire perimeter of the airport, however all entrances remain open. It is proposed to install gates that would remain closed at all times such that only airport patrons would have access to the airfield.

RUNWAY 13R/31L RECONSTRUCTION - $310,000

Periodically, it is necessary to rehabilitate aircraft operational areas (runways, taxiways, aprons) through bituminous overlays, sealcoats, or in some instances, reconstruction, to restore the surfaces to a smooth, even condition and improve overall operating conditions. This runway was overlayed approximately six years ago, however, pavement cracking has increased to the

BUILDING AREA DEVELOPMENT - $1,500,000

The existing north building area is full and demand for hangar space has increased. It is proposed to develop the south building area as shown on the ALP beginning in 1995.

ILS SITE GRADING - $150,000

The FAA has approached the MAC regarding removing the existing end-fire glide slope at Airlake and installing a conventional system. For proper operation of a conventional ILS, the site surrounding the antenna must be graded to within a prescribed tolerance. This project would provide for the site grading. Per staff discussions with the FAA, this project is proposed only in conjunction with FAA participation in and the operation and maintenance of an ILS system for Runway 14 at St. Paul Downtown Airport.

1996 CAPITAL IMPROVEMENT PROGRAM
MINNEAPOLIS-ST. PAUL INTERNATIONAL AIRPORT

FIELD AND RUNWAYS

AIRFIELD DRAINAGE STRIP RECONSTRUCTION - $1,500,000

The Commission has been operating under a National Pollutant Discharge Elimination System (NPDES) permit for storm water since 1974. The current permit requires each of the Commission's five storm water outfalls to be monitored at least monthly with samples for total suspended solids (TSS), oil and grease, five-day biochemical oxygen demand (BOD_5) and pH. Over the years, there have been exceedances of the storm water effluent limitations. TSS are generated by the tons of sand which are applied to the runway and taxiway system each winter to provide traction for aircraft. To help reduce the TSS, the Commission has begun to eliminate bituminous drainage strips which are located adjacent to each runway. These are typically eliminated when the runway is reconstructed, as extensive grading is required. The drainage strips are being replaced with bituminous shoulders which drain overland through turf areas into drainage swales and then to storm water inlets which slow the runoff from the concrete runways, allowing for greater trapping of sediment and reducing the TSS. In addition, grassy swales have the added benefit of reducing stormwater runoff rates to the Commission's retention basins. It is proposed to implement a program, starting in 1996, to accelerate the elimination of the drainage strips where possible.

STORMWATER COLLECTION & TREATMENT SYSTEM - $8,000,000

This is a continuation of the program to improve stormwater quality discharge into the Minnesota River. Specific project scopes will be developed from monitoring results from previously constructed systems.

RUNWAY 11L HOLDING/DEICING PAD - $12,000,000

There is a need for a large apron area near the end of each runway to perform possibly a dual function, that of a holding apron for aircraft waiting for departure and also to function as a deicing pad complete with a glycol recovery and containment system. Airlines experience delays at departure for a number of reasons with the result that other aircraft cleared for departure may be delayed. The holding apron would provide storage for delayed aircraft while allowing other aircraft to taxi and depart without delays. End of runway deicing is also being evaluated as an option to meet FAA deicing time requirements and state environmental requirements. This project would construct a concrete holding/deicing apron on the site where Hangars 1 and 2 are currently located.

RUNWAY 4/22 NOISE MITIGATION (INSULATION) - $6,055,000

This is the second phase in a continuous program to insulate homes in Bloomington and south Richfield which would be impacted by the extension of Runway 4/22.

TAXIWAY C/D COMPLEX - $14,500,000

Delta Taxiway adjacent to the Red and Blue Concourses is currently restricted to 727 or smaller aircraft and the pavement of both the Delta and Charley taxiways is in need of

SCHOOL NOISE ABATEMENT PROJECTS - $4,000,000

This is a continuation of a series of project to soundproof schools within the Ldn 65 contour which are experiencing interruptions of classroom instruction by aircraft overflights.

LANDSIDE

LANDSIDE BITUMINOUS CONSTRUCTION - $200,000

This is a continuation of the program which began in 1993 to reconstruct the airports bituminous roadways and parking lots. Projects will be evaluated in 1995 and will be presented for approval when the CIP is updated for the 1996 construction season.

GROUND LEVEL ROADWAYS CONSTRUCTION - $1,800,000

This project is the final phase in the reconstruction of the roadway system adjacent to the Lindbergh Terminal and includes the remaining reconstruction of the outbound roadway system.

SNOW REMOVAL EQUIPMENT STORAGE BUILDING - $1,000,000

This is a continuation of a series of projects to provide a heated space for the Commission's fleet of motorized snow removal equipment. In order to respond to snow emergencies in a timely manner, these units must be stored in a heated building. This project would construct a third storage bay to the existing snow removal equipment storage building located on 28th Avenue. In addition, modifications will be made to the existing maintenance/storage building including removal of redundant tool/part storage rooms and the installation of new wider doors to increase storage area within the existing structure.

TUG DRIVE CONCRETE SEALING - $250,000

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 and also damages cars parked in the garage area. A project to evaluate various manufacturers' products was completed in 1991 and evaluated in 1992. Completion of the entire tug drive area will be phased starting in 1996. Previously approved by the Commission.

TERMINAL COMPLEX SPRINKLER SYSTEM ADDITIONS - $100,000

This project is a continuation of a program initiated in 1988 to address areas within the terminal complexes which require the addition or upgrade of fire sprinkler systems.

PARKING STRUCTURE REHABILITATION - $500,000

In order to maintain the integrity of the multi-level parking structures, an annual project has been programmed to address normal maintenance issues such as concrete repairs, joint sealant replacement, expansion joint repairs, etc. Items to be included in this project will be

VALET CAR WASH - $600,000

In order to better serve the airport customers utilizing the valet parking within the garage area of the terminal building, it is proposed to install a car wash facility within the garage area of the terminal building.

FUEL HANDLING, TREATMENT AND STORAGE FACILITY - $150,000

The Commission's maintenance department collects fuel-soaked pads, booms and corn cobs from fuel spills. Increasing regulatory requirements are making it exceedingly more difficult to dispose of these products. It is proposed to construct a facility to store and process these items prior to shipping them off site for disposal. The facility would include a storage area for dumpsters, in which the materials could be stored, a press for processing the materials and storage capacity for the resulting petroleum products.

INFORMATIONAL/DIRECTIONAL SIGNAGE ADJUSTMENTS - $50,000

This project is a continuation of the program started in 1992 to upgrade the signage in the terminal building. The system will be more flexible and comprehensive while fitting with the new terminal building decor. The areas in which new signage will be installed will be evaluated during 1995 and will be presented for approval when the CIP is updated for the 1996 construction season.

PUBLIC SAFETY STORAGE BUILDING - $270,000

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. This facility would also include a "secured" storage area in the event a vehicle is used in a felony. Previously approved by the Commission.

The National Guard has requested that the Commission develop a project which would relocate Airport Road adjacent to the Burlington Northern railroad tracks on property which the Guard has purchased from the railroad. The parking lot would then be relocated to be adjacent to both the Guard and Flight Services building. This relocation of Airport is Consistent with a project the Commission completed in 1990 to extend Airport Road to the east side of the airport. The Guard is proposing to transfer their property to the Commission and to reimburse the Commission for the cost of the project through a lease agreement. Project is contingent upon the State of Minnesota to provide funding for the parking lot. Previously approved by the Commission.

FLYING CLOUD AIRPORT

SOUTH BUILDING AREA CONSTRUCTION - $6,100,000

The Long Term Comprehensive Plan for Flying Cloud Airport recommends that a new building area be constructed on the south side of the airport. As hangar space is at a premium, it is proposed to construct the new building area at this time. A federal and state environmental assessment will be prepared for this project.

RUNWAY 9R/27L EXTENSION - $4,000,000

The Long Term Comprehensive Development Plan for Flying Cloud Airport recommends that runway 9R/27L be lengthened from 3900 feet to 5000 feet to allow for safer operation of light to medium sized business jets and heavy twin engine aircraft. Included with the runway extension would be the extension of the existing north and south parallel taxiways. A federal and state environmental assessment will be prepared for this project. Previously approved by the Commission.

CRYSTAL AIRPORT

PAVEMENT REHABILITATION - $150,000

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

ANOKA COUNTY-BLAINE AIRPORT

DITCH CLEANING/OBSTRUCTION REMOVAL - $50,000

Drainage at the airport is a continual problem due to the high groundwater conditions and flat slopes on the drainage ditches serving the airport. Proposed areas where ditch cleaning is needed will be evaluated in 1995 and a recommendation will be available when the CIP is updated for the 1996 construction season.

AIRLAKE AIRPORT

PAVEMENT REHABILITATION - $200,000

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