

TL  
726.4  
.T9  
D834  
1993

**DUAL TRACK AIRPORT  
PLANNING PROCESS**

**NEW AIRPORT  
SITE SELECTION STUDY**

**Metropolitan Airports Commission**

*May 1993*







## TABLE OF CONTENTS AND OVERVIEW

|   |         |
|---|---------|
| Dakota Search Area and Conceptual Design Layout ..... | Page 2  |
| Schedule for 1989 – 1996 .....                        | Page 3  |
| Site Selection Study Approach .....                   | Page 4  |
| Site Identification .....                             | Page 4  |
| Site Identification Criteria .....                    | Page 5  |
| Three Eastern Sites in Search Area .....              | Page 6  |
| Four Western Sites in Search Area .....               | Page 7  |
| Site Screening .....                                  | Page 8  |
| Summary of Site Screening Analysis .....              | Page 9  |
| Site Selection and Criteria .....                     | Page 10 |
| Site Descriptions .....                               | Page 11 |
| Site 2 .....  | Page 12 |
| Site 3 .....  | Page 13 |
| Site 6 .....  | Page 14 |
| Agency and Public Involvement .....                   | Page 15 |
| Appendix .....  | Page 16 |

### Overview

A Dual Track Airport Planning Process – designed to study the region's long-term aviation needs – was established by the Minnesota Legislature's "1989 Metropolitan Airport Planning Act." The process is being conducted by the Metropolitan Airports Commission (MAC) and the Metropolitan Council.

One track addresses ways to provide the needed capacity and facilities at Minneapolis–St. Paul International Airport (MSP). The other track provides the needed capacity and facilities at a new (replacement) airport in the Dakota Search Area. A third "no build" option is also being examined, along with other feasible alternatives as they are developed.

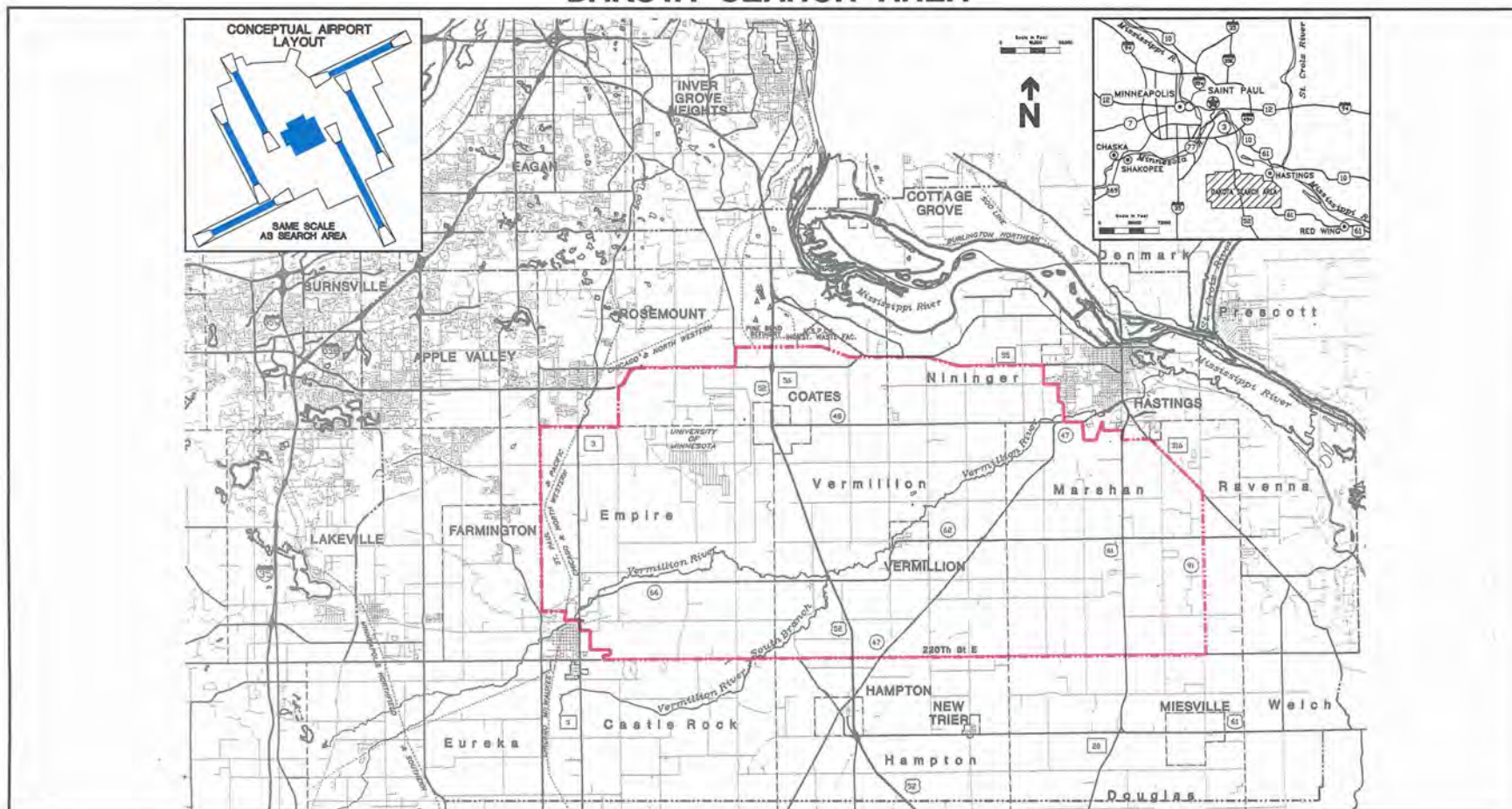
MAC is responsible for site selection in the Search Area, preparing a comprehensive plan for an airport on the selected site, developing the MSP Long Term Comprehensive Plan, and preparing the federal and state environmental documentation.

The Airport Planning Act also requires the MAC and Metropolitan Council to make a recommendation to the Legislature in 1996 on which approach should be taken for future airport development.



## DAKOTA SEARCH AREA AND CONCEPTUAL DESIGN LAYOUT

### DAKOTA SEARCH AREA

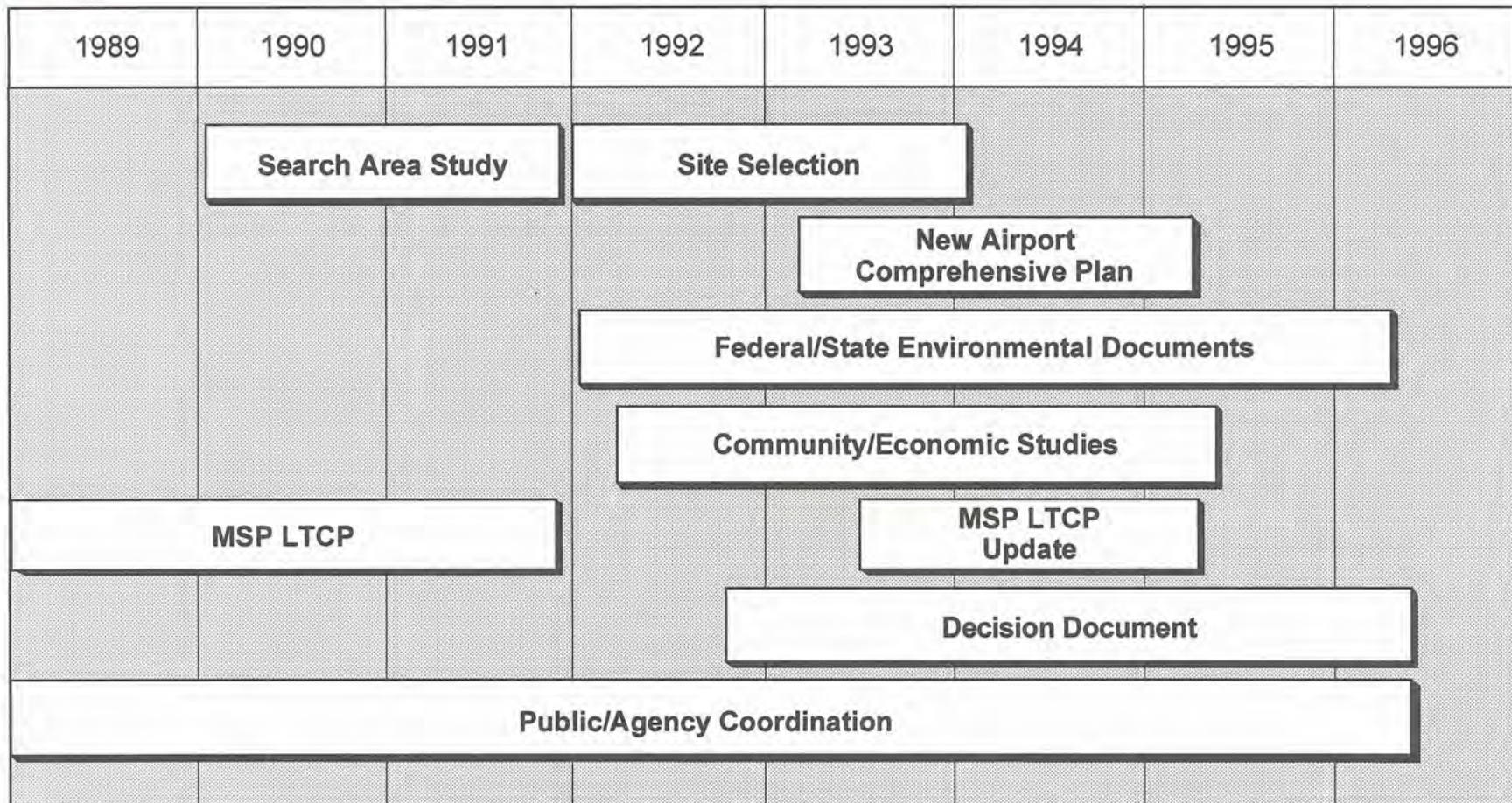


In December 1991, the Metropolitan Council designated the Dakota Search Area in Dakota County for the planning and development of a new major airport. The Dakota Search Area measures 17 miles east to west and eight miles north to south and encompasses about 115 square miles or 74,600 acres. The new airport conceptual design layout, developed by MAC, is being used in the site selection process in the Dakota Search Area.





## SCHEDULE FOR 1989 – 1996



### Dual Track Planning Process

MAC has developed this schedule, consisting of eight major elements, in order to meet the requirements set forth by the "1989 Metropolitan Airport Planning Act." The Act requires the MAC and Metropolitan Council to make a recommendation to the Minnesota Legislature in 1996 on which approach should be taken for future airport development.





## SITE SELECTION STUDY APPROACH

The Metropolitan Airports Commission (MAC) began the new airport site selection study in January 1992. This work was initiated after the Metropolitan Council designated the Dakota Search Area as the general area within which a potential new airport would be located.

The Dakota Search Area is 115 square miles in size. It includes the cities of Coates and Vermillion, and Empire and Vermillion Townships, as well as parts of the city of Rosemount, Nininger and Marshan Townships.



## SITE IDENTIFICATION

The first phase of the process included identification of all possible locations for the new airport within the Dakota Search Area. This phase began in January 1992. The MAC, working with its Site Selection Technical Advisory Committee and Site Selection Task Force, developed six site identification criteria to identify potential sites, as follows:

- Airport runways, taxiways and other facilities must be contained within the Search Area. It was also assumed that Federal Aviation Administration (FAA) Runway Protection Zones and land within the FAA Building Restriction Lines should also be contained within the Search Area, because the FAA requires these areas to be airport property. State Safety Zones may extend

To select a site in the Search Area, a three-step approach was developed by the MAC, as follows:

- 1) Site Identification – to identify all possible locations for a new airport based on a limited number of general criteria.

- 2) Site Screening – to reduce the number of potential sites to the three or four best sites using a set of detailed criteria to assess physical characteristics, operational efficiency, community/social

impacts, environmental impacts, and development costs.

- 3) Site Selection – to analyze the final candidate sites and recommend a “preferred” site. Analysis during this final phase will include the factors addressed during site screening at a more comprehensive level, and additional factors that will be required to distinguish among the sites and to meet Alternative Environmental Document (AED) requirements.

beyond the Search Area boundary.

- State Safety Zones A and B and the LDN 65 noise contour may not impact urbanized areas of population centers outside the Search Area.

- The runway layout must maintain the full operational capability of the Conceptual Layout design.

- No site would be considered which places airport facilities in areas of extensive wetlands.

- No site may be considered which would result in major ground facilities located in floodways.

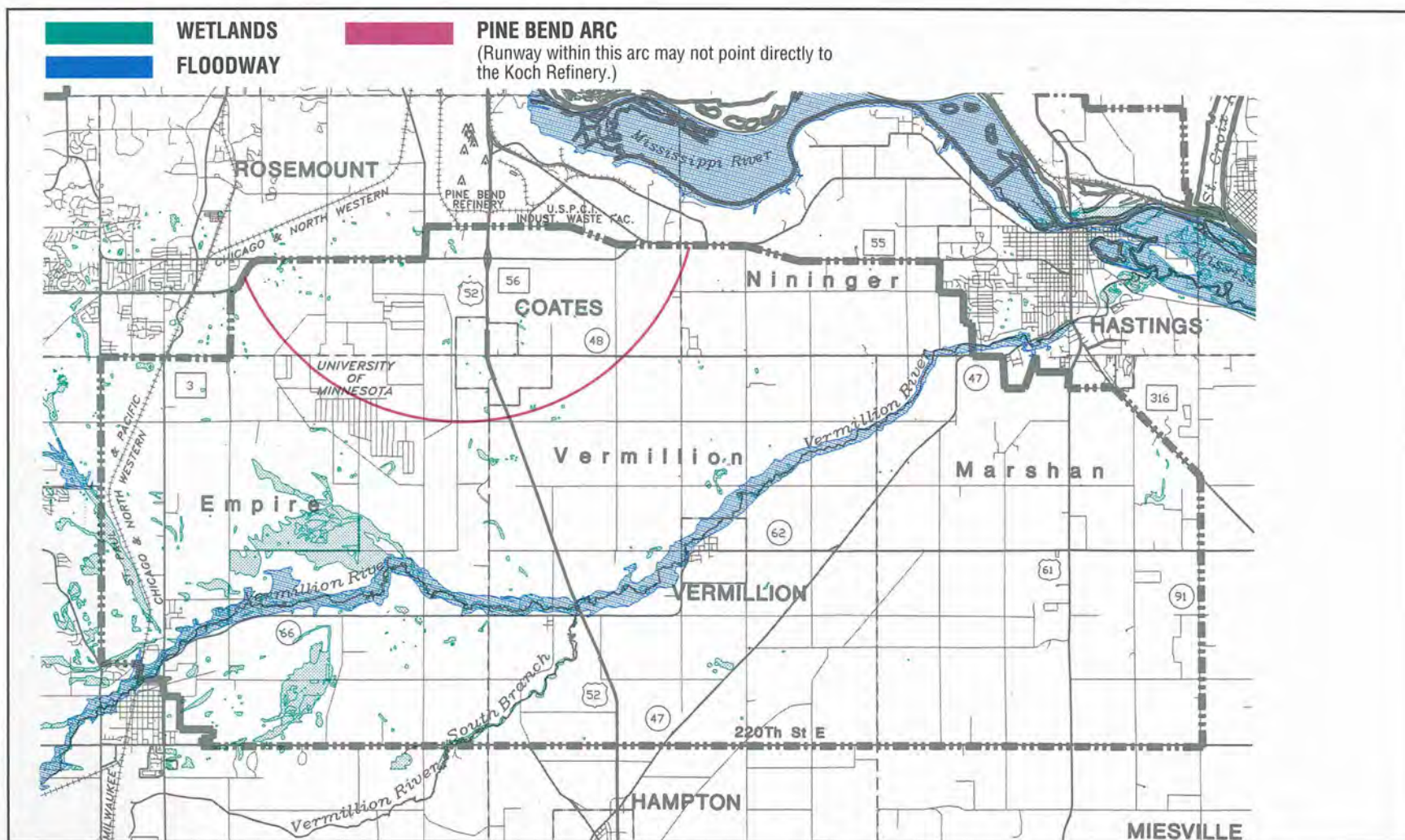
- Physical features not compatible with low altitude aircraft overflight must be avoided (specifically avoiding overflights of the Pine Bend Refinery).

During the site identification phase, a potential site included a specific land area within a site boundary and a specific runway configuration. A conceptual airport layout, which was developed by the MAC in the New Airport Conceptual Design Study in 1991, was used in the identification process.

In June 1992, a number of potential sites were identified by the Site Selection Technical Advisory Committee during a series of workshops. After eliminating duplicate and/or overlapping sites, seven potential sites were identified. Three sites were east of the Vermillion River, southwest of Hastings. Four sites were west of the Vermillion River, near the center of the Search Area.



## SITE IDENTIFICATION CRITERIA

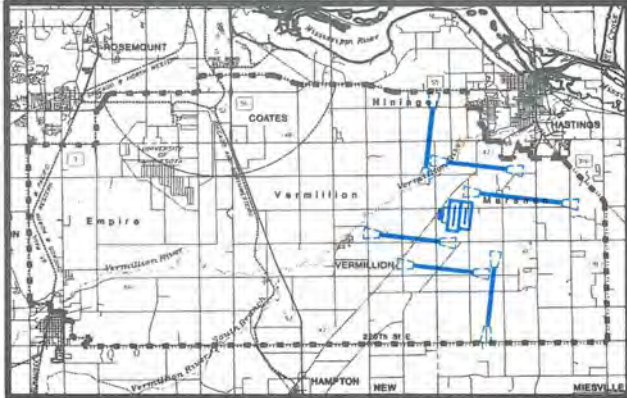






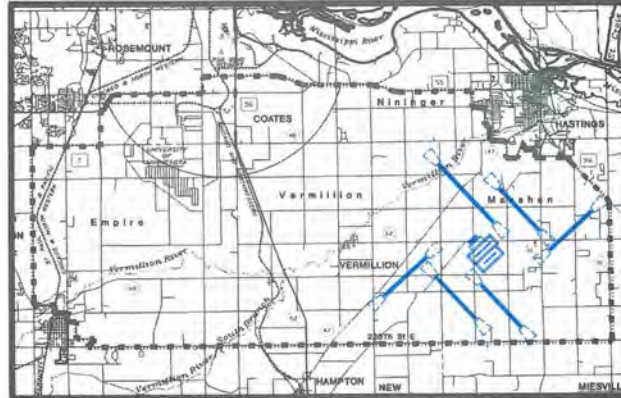
## SITE LOCATIONS AND DESCRIPTIONS — *EASTERN SITES*

### SITE 1



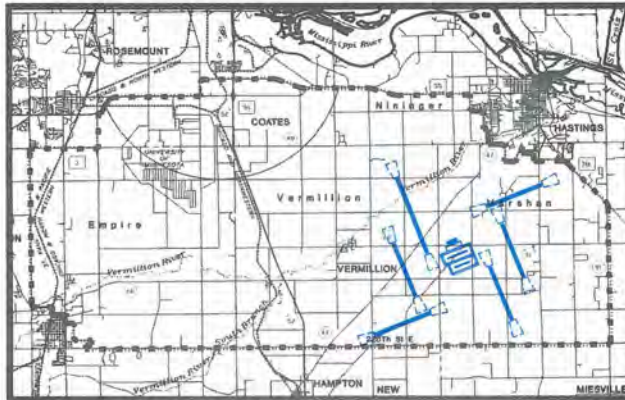
- East of the Vermillion River, south of Hastings.
- East-west primary runway orientation.

### SITE 2



- East of the Vermillion River, south of Hastings.
- Northwest-southeast primary runway orientation.

### SITE 3

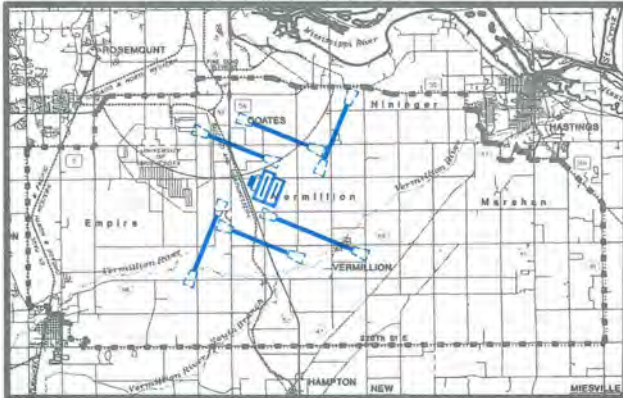


- East of the Vermillion River, along Search Area southern edge.
- Northwest-southeast primary runway orientation.



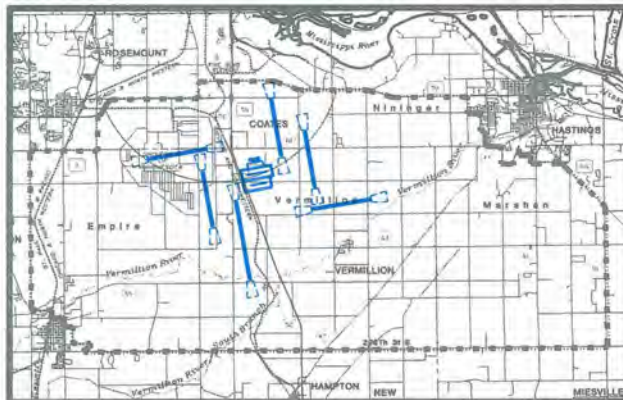
## SITE LOCATIONS AND DESCRIPTIONS — *WESTERN SITES*

### SITE 4



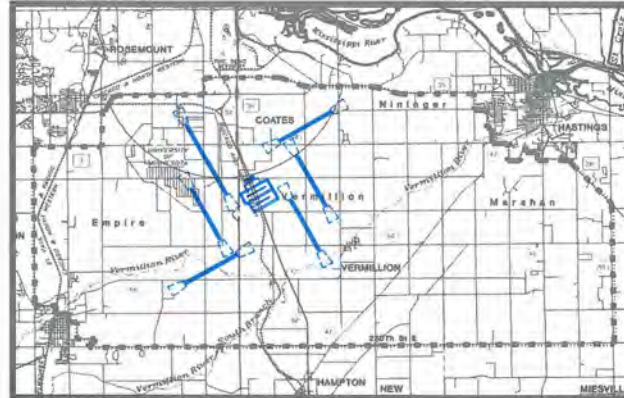
- West of the Vermillion River, near center of Search Area.
- Northwest–southeast primary runway orientation

### SITE 6



- West of the Vermillion River, south of Pine Bend.
- North–south primary runway orientation.

### SITE 5



- West of the Vermillion River, south of Pine Bend.
- Northwest–southeast primary runway orientation.

### SITE 7



- West of the Vermillion River, south of Pine Bend.
- Northwest–southeast primary runway orientation.





## SITE SCREENING

The site screening process began in the fall of 1992. Each of the seven potential sites for a new airport was examined using 56 criteria within the following broad categories:

- *Airport characteristics* – including operational efficiency, airport expandability and ground access times.
- *Community/social impacts* – including displaced communities and people, effects on local land use plans, community infrastructure, noise impacts, state safety zones, historic/archaeological resources, farms, business, and public parks/recreation land.
- *Other environmental impacts* – including wetlands, waste disposal sites, water quality, bird strike issues, biotic communities, and floodplains.

- *Differential site preparation costs.*

The site screening work included extensive input from the Site Selection Technical Advisory Committee and the Site Selection Task Force.

As a result of the screening process, two eastern sites (Sites 2 and 3) and one western site (Site 6) were recommended to the MAC by the Technical Advisory Committee and the Task Force. The MAC adopted Sites 2, 3 and 6 for public review and comment in February 1993.

Sites 2 and 3 were recommended for further study because they do not require displacement of either Coates or Vermillion, they have relatively low noise impacts, good operational and expandability features, few conditions conducive to bird strikes, and less than five acres of wetlands contained within their site boundaries.

Site 6 was recommended because it impacts

the fewest people in terms of noise, and has the lowest ground access time. Also, Site 6 was the best among the four western sites in most screening criteria, and the study groups felt it was important to carry forward at least one site from both the eastern and western clusters so that all environmental factors could be properly documented.

A summary of the site screening analysis is shown on the next page.



## SUMMARY OF SITE SCREENING ANALYSIS

### SITE 1

- Good site expandability
- Few businesses relocated
- Virtually no wetland impacts
- Relatively low site preparation costs
- Greatest potential impact on Hastings
- Likely displacement of Vermillion
- Less than optimal runway orientation

### SITE 2

- Good operational characteristics
- Does not displace Vermillion or Coates
- Minimal natural environmental impacts
- Few siting constraints
- Longer access time than for western sites

### SITE 3

- Good operational characteristics
- Does not displace Vermillion or Coates
- Minimal natural environmental impacts
- Longer access time than for western sites
- Potential impacts on Hastings

### SITE 4

- Displaces Vermillion and Coates
- Highest site preparation costs
- Proximity to encroaching urban development
- Only fair runway expandability
- Highest potential bird strike hazard

### SITE 5

- Shorter access time than for eastern sites
- No impact on “very highly sensitive” Aquifer areas
- Displaces Coates and likely Vermillion
- Significant potential off-site noise impact
- Constrained by Pine Bend Refinery and Vermillion River
- Highest population in State Safety Zones
- High potential bird strike hazard

### SITE 6

- Lowest travel time from metro area
- Fewest off-site noise impacts
- Lowest population in State Safety Zones
- Displaces Coates
- Higher wetland impacts than eastern sites
- Two landfills and three contaminated waste sites within site boundary
- Site constrained by Pine Bend Refinery

### SITE 7

- Lower travel time from metro area than eastern sites
- No impact on “very highly sensitive” Aquifer areas
- Displaces Coates and likely Vermillion
- Greatest potential off-site noise impacts
- Second highest population in State Safety Zones
- Most significant noise impacts on public parks
- High potential bird strike hazard
- Highest wetland impacts
- Site expandability complicated by Vermillion River floodway





## SITE SELECTION

The final phase of the site selection process involves a detailed evaluation of the three candidates – Site 2, Site 3 and Site 6.

This evaluation has the most extensive criteria in the overall site selection process, including specific factors to measure the operational, envi-

ronmental, geographic, economic and cost aspects of the alternatives.

Some refinements were made to each site at the beginning of the site selection phase to minimize impacts. Other minor adjustments may occur during the site selection analysis.

Detailed analysis of alternative layouts for each site will be conducted during the development of the comprehensive plan for the new airport.

Identification of a potential new airport is slated for early 1994.



## SITE SELECTION CRITERIA

The purpose of the site selection criteria is to help choose the “best” site from among the three candidate sites, and to meet environmental analysis requirements. These criteria were developed during the site screening process, and were supplemented by additional criteria and detail to meet the documentation requirements of the site selection phase.

### **Airport Characteristics**

- Operational Efficiency
- Airspace Interaction
- Site Expandability
- Site Accessibility

### **Community/Social Impacts**

- Displaced Communities/People
- Land Use Plans
- Community Services/Infrastructure
- Noise Impacts
- State Safety Zones A and B
- Total Population Impacts Summary
- Historic/Archaeological Resources
- Farm and Non-Farm Businesses
- Farmland
- Public Parks/Recreation Land

### **Other Environmental Impacts**

- Wild and Scenic Rivers
- Wetlands
- Waste Disposal Sites
- Water Quality
- Air Quality
- Bird Strike Issues
- Endangered/Threatened and Special Concern Species
- Energy Supply and Natural Resources
- Floodplains

### **Differential Development Costs**

- Land Acquisition Costs
- Site Preparation Costs
- Community Relocation Costs



## SITE DESCRIPTIONS

Two eastern sites (Sites 2 and 3) and one western site (Site 6) have been selected for detailed analysis in order to identify a preferred site for a potential new airport. Descriptions of the three candidate sites appear on this page, followed by illustrations of the areas on the next three pages.

### Candidate Site 2

Site 2 is located east of the Vermillion River in the eastern third of the Search Area. The four main parallel runways are oriented in a northwest-southeast direction. The crosswind runways are perpendicular to the main runways.

Two refinements to the site were made during the early phase of the site selection process. First, the site was rotated 10 degrees clockwise to reduce noise impacts in Hastings and Prescott, Wisconsin. Also, the northern inboard parallel runway was shifted to the southeast to move it off the Vermillion River floodway.

### Candidate Site 3

Site 3 is also located east of the Vermillion River within the eastern third of the Search Area. The four main parallel runways are oriented in a north northwesterly-south southeasterly direction. The two crosswind runways are in opposite corners of the site relative to Site 2.

Three refinements were made to Site 3 at the outset of the site selection process. The entire site was shifted approximately 1,000 feet southeast, the crosswind runways were canted 10 degrees, and the longest runway was moved to the west outboard position. These refinements result in reduced noise impacts in Hastings and Prescott, Wisconsin, and no runway crosses the Vermillion River floodway.

### Candidate Site 6

Site 6 is located northwest of the Vermillion River in the central third of the Search Area. It is about 6 miles west of Sites 2 and 3. The four main parallel runways are oriented in a north-south direction. The two crosswind runways are perpendicular to the main runways.

Two refinements were made to Site 6 as the final phase of site selection began. The entire site was shifted approximately 1,500 feet south and rotated 1 degree to move the runways farther away from the Koch Refinery at Pine Bend, and the longest runway was moved to the west outboard location. These two refinements resulted in better clearance of the tall stacks at the refinery and also eliminated any runway crossings of the Vermillion River floodway.

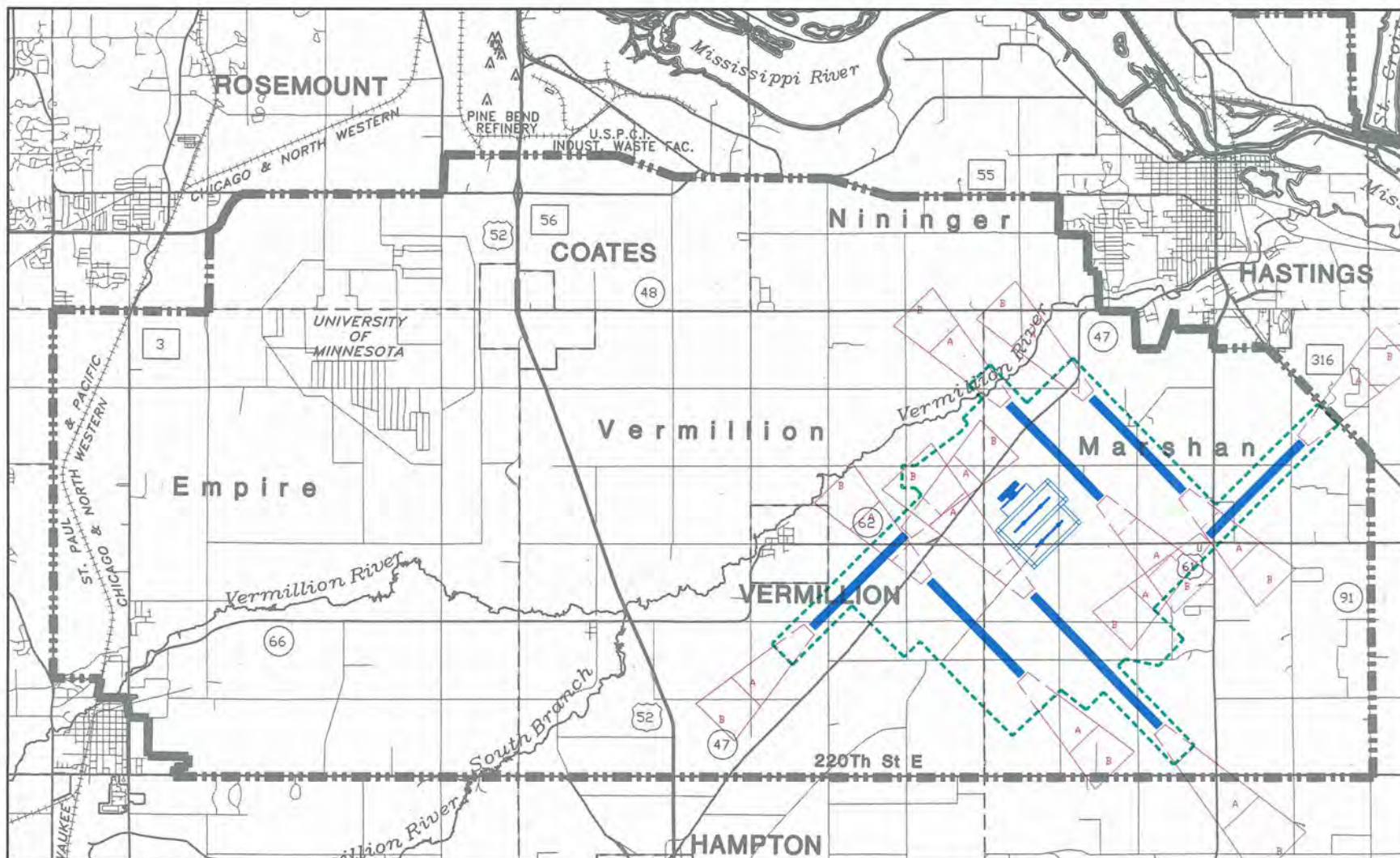




## SITE 2

State Safety Zones and  
Runway Protection Zones

Terminal Building and Runways  
Airport Boundary



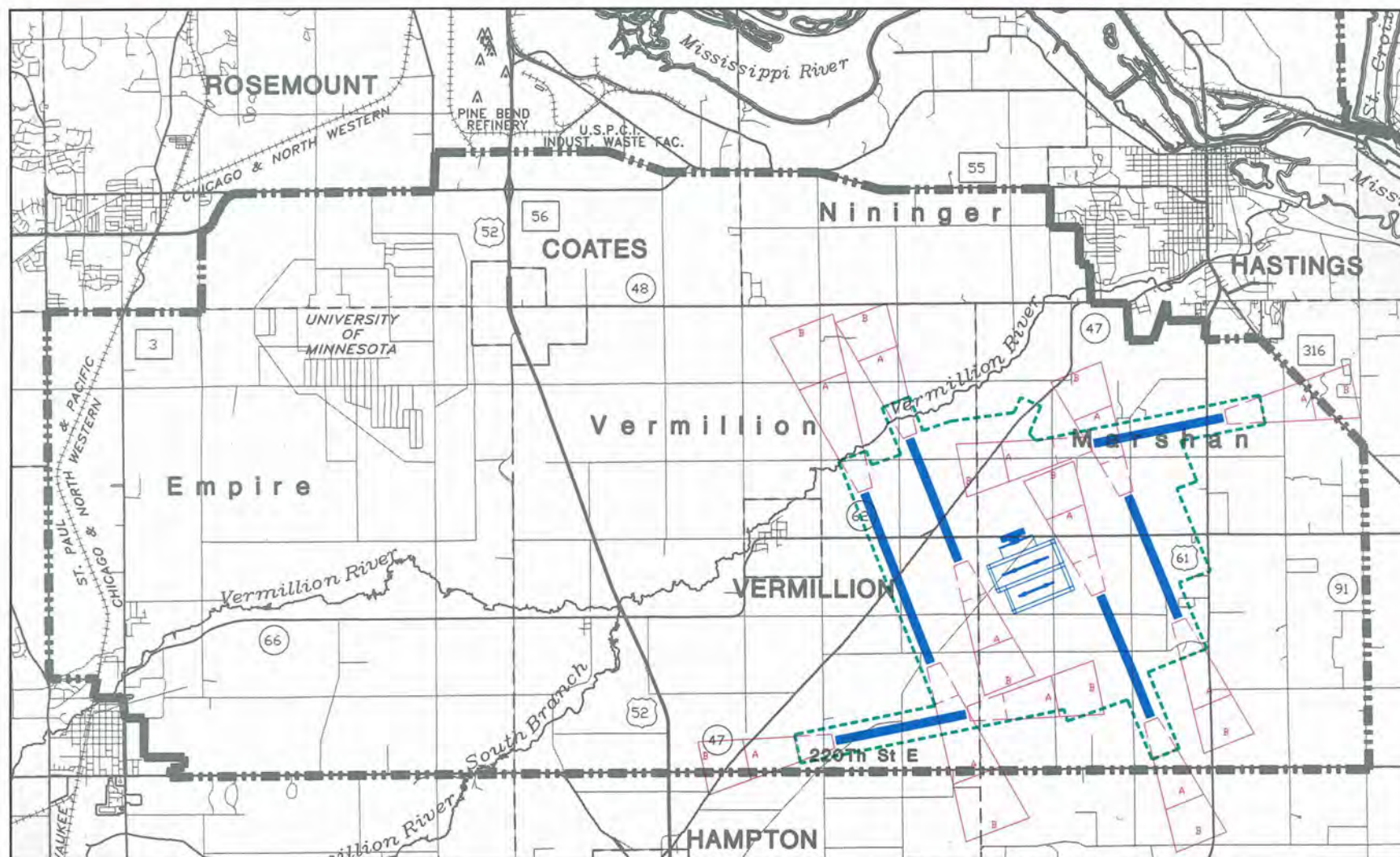




## SITE 3

State Safety Zones and  
Runway Protection Zones

Terminal Building and Runways  
Airport Boundary



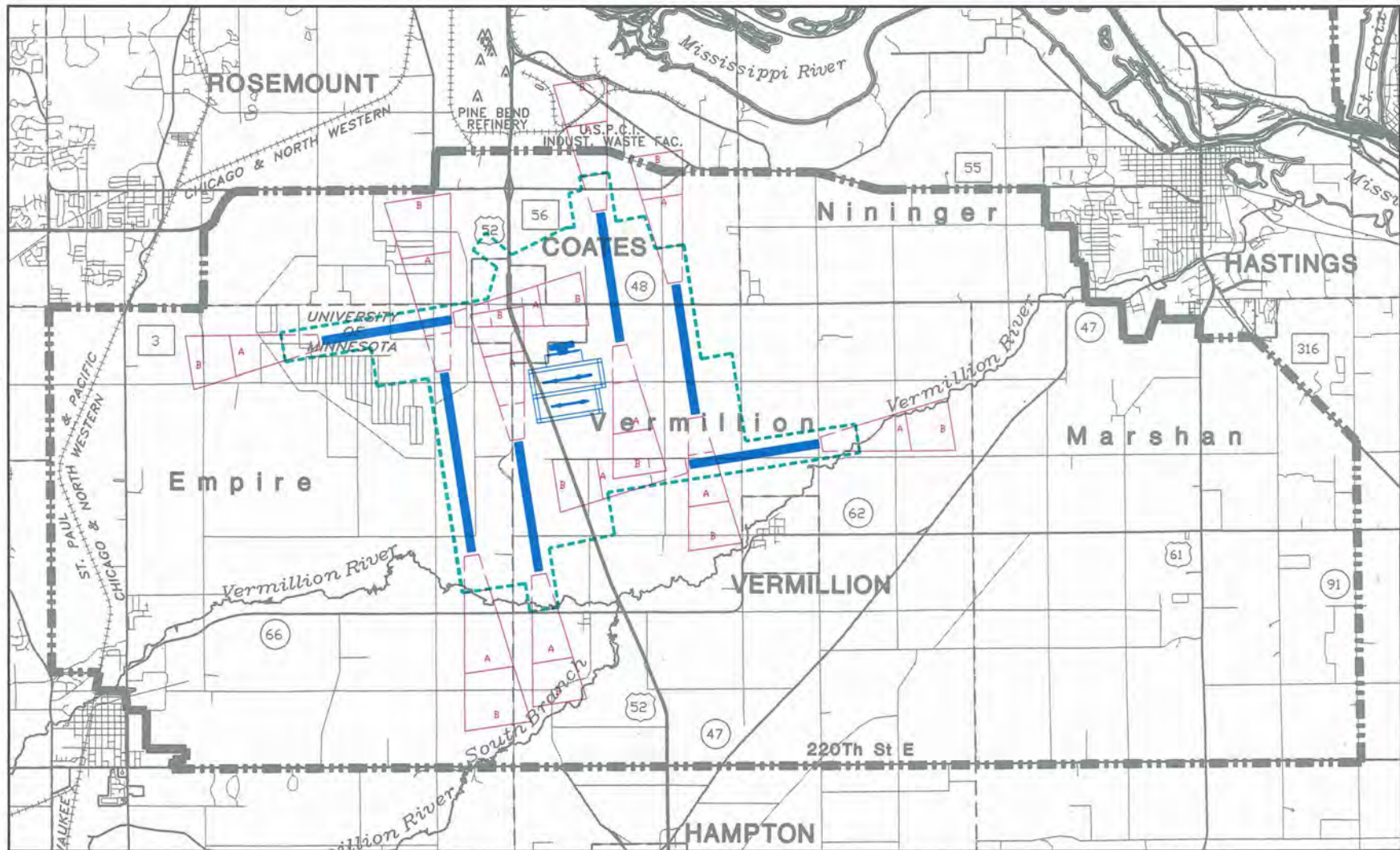




## SITE 6

State Safety Zones and  
Runway Protection Zones

Terminal Building and Runways  
Airport Boundary







## AGENCY AND PUBLIC INVOLVEMENT

Throughout the Dual Track Airport Planning Process, there has been a major emphasis on public and agency involvement before, during, and after the completion of key study components.

Affected local, state and federal agencies have been contacted to determine the type and location of resources within their jurisdiction and in the new airport search area, and to identify potential issues and concerns.

In addition to these agencies, the following groups/committees have been involved in the site selection process:

- **State Advisory Council.** The Minnesota Legislature established the Council to provide a forum for education and discussion on metropolitan airport planning. The Council reviews and advises the legislature on the Dual Track planning activities of the Metropolitan Airports Commission and the Metropolitan Council. Council members include House and Senate legislators, federal, state and metropolitan agencies, representatives of the aviation industry and members of the public residing within and outside the metropolitan area.

- **Contingency Planning Group.** This group monitors trends in technology, travel habits and the economy and makes an annual assessment of any changes or modifications that may be necessary for the Dual Track Airport Planning Process. The group is comprised of

Metropolitan Council and MAC members, local officials and business representatives.

- **Site Selection Technical Advisory Committee.** This committee reviews technical studies and documents, and provides input into the studies. Membership includes representatives of affected state/federal transportation, planning and environmental agencies, local government staff and aviation industry representatives.

- **Site Selection Task Force.** The Task Force provides policy guidance and advises the MAC on policy issues during the new airport studies. The broad-based group includes community officials from the Dakota Search Area vicinity, along with representatives from the metropolitan area, the business community, current airport users, MAC, Metropolitan Council and Minnesota Department of Transportation.

A public involvement program provides early and continuing opportunities for the public to be informed and to review and comment on the technical and environmental studies prior to decisions and selection of preferred alternatives. This program includes public information meetings, public hearings, news conferences and news releases, informational brochures and newsletters.

The public has opportunities throughout the process to comment both informally and formally. In addition, meetings of the Technical Advisory

Committee and Task Force, as well as Commission meetings, are open to the public. Formal input is solicited at public hearings. Interested persons can receive copies of published reports and documents upon request.

## Environmental Review Process

An environmental review process has been initiated along with the Site Selection Study for a new airport in the Dakota Search Area. The process, which was approved by the Minnesota Environmental Quality Board, is being co-sponsored by the Federal Aviation Administration and MAC.

The environmental documentation associated with the Site Selection Study provides a record of analysis and of community and agency participation in the process. While the environmental documentation is separate from technical reports on the Site Selection study, the work and timing of tasks on the two processes are necessarily intertwined.

A document, entitled "Environmental Review Procedures" for the Dual Track Airport Planning Process, was published by MAC in March 1993. This booklet details the environmental procedures and is available to the public by calling the MAC.





## APPENDIX

### Metropolitan Airports Commission

Hugh Schilling, Chair  
Alton Gasper, Vice Chair  
Faye Petron, Treasurer  
Mark Brataas  
Jan Del Calzo  
Laurel Erickson  
Kenneth "Chip" Glaser  
John Himle  
Virginia Lanegran  
Tim Lovaasen  
Nick Mancini  
Thomas Merickel  
Jack Mogelson  
Patrick O'Neill  
Paul Rehkamp

*For further information on the Metropolitan Airports Commission or to request copies of brochures, reports or newsletters, please call Jenn Unrub at 726-8189.*

### Site Selection Task Force

Commissioner Tommy Merickel, Chair  
Commissioner Alton J. Gaspar,  
Vice-Chair  
Richard Beens  
John F. Bergford, Jr.  
Scott Bunin  
Colonel Larry Burda  
Joseph M. Finley  
Kathleen Gaylord  
Edward G. Gutzmann  
Joe Harris  
Lawrence McCabe  
E. Craig Morris  
Thomas Novak  
Gloria Pinke  
Tom Rheineck  
Ray Rought  
Stephen P. Tatum, Sr.  
Richard Theisen  
Ray Waldron  
John D. Williams  
Wendy Wiberg Wustenberg

### Site Selection Technical Advisory Committee

Metropolitan Airports Commission  
Metropolitan Council  
FAA Air Traffic Control Tower – MSP  
FAA En-Route Control Center –  
Farmington  
FAA Airports District Office  
Minnesota Dept. of Transportation –  
Office of Aeronautics  
Minnesota Dept. of Agriculture  
University of Minnesota  
Dakota County  
City of Eagan  
City of Burnsville  
City of Apple Valley  
City of Rosemount  
City of Farmington  
City of Hastings  
City of Inver Grove Heights  
City of Lakeville  
City of Vermillion  
City of Cottage Grove  
City of Coates  
Washington County  
Goodhue County  
Empire Township  
Vermillion Township  
Marshan Township  
Ravenna Township  
Hampton Township  
Eureka Township  
Douglas Township  
Castle Rock Township  
Northwest Airlines  
Air Transport Association  
Mesaba Airlines  
UPS  
Minnesota Air National Guard  
US Air Force Reserve  
Minnesota Business Aircraft Association  
Airline Pilots Association  
Aircraft Owners Pilots Association  
Minnesota Pollution Control Agency  
Minnesota Dept. of Natural Resources  
Minnesota State Historical Preservation  
Office  
Minnesota Environmental Quality Board  
US Fish & Wildlife Service  
US Environmental Protection Agency  
US Army Corps of Engineers  
Minnesota-Wisconsin Boundary Area  
Commission





Metropolitan Airports Commission

6040 28th Avenue South

Minneapolis, Minnesota 55450