

State Aviation System Plan



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Minnesota State Aviation System Plan

Minnesota Airports Conference – April 26, 2023



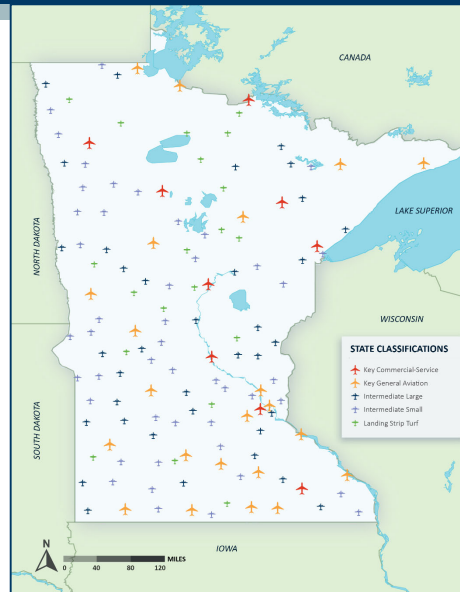
Agenda

- MnSASP Overview
- State Funding Prioritization Model

Airport Shown: Sauk Centre Municipal Airport (D39)

Minnesota Airport System

- 133 airports in Minnesota state airport system
 - Publicly owned
 - Public-use
- 96 included in the National Plan of Integrated Airport Systems (NPIAS)



2022 MnSASP Components

- MnSASP Introduction
- Phase I Validation and Study Framework
- Operations Counting and Forecasting
- System Performance and Cost Estimates
- State Focus Areas
- Continuous Planning



All components will be available for public comment at mnsasp.org

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State Focus Areas



State Focus Areas

 <p>Through-the-Fence Operations</p>	 <p>Hangar Availability and Funding</p>	 <p>Airport Closure and New Airport Entrants</p>
 <p>Crosswind Runways</p>	 <p>Clear Zones</p>	 <p>Last-Mile Connectivity</p>

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Guidance and Recommendations



*Review Chapter 5
and all Attachments
on mnsasp.org
for guidance and
recommendations
proposed across all
State Focus Areas.*

Phase II Deliverables – Now Available

All draft MnSASP deliverables are available in the links below. Visit the MnSASP Hub at <https://mnsasp-mndot.hub.arcgis.com/> to learn more about the 2022 MnSASP and view detailed information about the state aviation system.

[2022 MnSASP Executive Summary](#)

[2022 MnSASP Overview Primer](#)

[2022 MnSASP Key Focus Areas Primer](#)

[2022 MnSASP Technical Report \(Completed\)](#)

[Chapter 1. Introduction and Design](#)

[Chapter 2. Phase I Validation and Framework](#)

[Chapter 3. Operations Counting and Forecasting](#)

[Chapter 4. Systemwide Costs and Implementation Plan](#)

[Chapter 5. Key State Focus Areas](#)

- Attachment 1. Through-the-Fence Operations Introduction and MnDOT Guidance
- Attachment 2. Hangar Availability and Funding Recommendations
- Attachment 3. State Aviation System Exit and Airport Closure Guidance Statement
- Attachment 4. State Aviation System Airport Entry Guidance Statement
- Attachment 5. Crosswind Runway Guidance Statement
- Attachment 6. Clear Zone Guidance Statement
- Attachment 7. Last-mile Connectivity and Courtesy Car Recommendations

Continuous Planning

- The 2022 MnSASP collected a wide variety of aviation data points pertaining to the Minnesota state aviation system
- All data points are maintained in the MnSASP Hub, an ArcGIS web application now live at the following link:
- <https://mnsasp-mndot.hub.arcgis.com/>

MnSASP Hub Data


Table Data

- Background Information
- Airport Operations and Based Aircraft
- Aircraft Storage Capacity
- Available Facilities and Services
- Runway Data
- Planning and Special Studies

Spatial Data

- Clear Zones
- Part 77 Surfaces
- Runway Protection Zones (RPZ)
- Airport Zoning
- Pavement Condition (PCI)
- NAVAIDs
- Weather Stations (AWOS/ASOS)
- FAA-filed Flight Plan Routes

! The MnSASP Hub is only as valuable as accuracy of the data. As such, it is imperative that the data is kept current to remain useful for all users. Alongside MnDOT Aeronautics, airports should also take ownership of this data to keep the MnSASP Hub useful moving forward.



MnSASP Hub



Airport Shown: Saint Paul Downtown Airport (STP)

Phase III (Future Tasks)



External Stakeholder Meetings on Policy Implementation



MnDOT Aeronautics CIP/Grant Management System



NAVAIDs Modernization Program



Update MnSASP Hub



Next Steps



Open all Phase II deliverables for public comment on mnsasp.org



Finalize and publish Phase II deliverables



Start Phase III tasks



Airport Shown: Duluth International Airport (DLH)



Airport Shown: Hawley Municipal Airport (04Y)



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State Funding Prioritization Model



Project Selection Policy

- MnDOT recently adopted a policy requiring objective and transparent processes to “evaluate, prioritize, and select all capital projects”
- Policy dictates that project selection should be based on criteria assigning numeric scores for submitted projects
- Policy leaves room for discretion with scoring, **but reasoning must be provided for these project selection decisions**



Project Selection Policy

Policy #OE016
Revised: November 1, 2022

Policy Owner: Assistant Commissioner – Sustainability, Planning, and Program Management
Policy Contact: Project Selection Policy Coordinator, Office of Transportation System Management

Policy Statement

The Minnesota Department of Transportation will use objective and transparent processes to:

- evaluate, prioritize, and select all capital projects, except those exempted by this policy in the applicability section below;
- evaluate, prioritize, and select construction projects on the state highway system to be included in the Capital Highway Investment Plan (CHIP) and State Transportation Improvement Program (STIP);
- award grants for capital projects; and
- allocate funding or resources for capital projects, including trunk highway and general obligation bonds.

MnDOT will document and make publicly available for each selection process or program:

- criteria and process for assigning a numeric score and selecting projects
- list of candidate projects considered
- scores assigned to projects and reasoning behind selection decisions not included in the score

MnDOT has published the [Guide to MnDOT Highway Construction Project Selection](#) and the [Guide to MnDOT Capital Project Selection](#). The two guides include an overview of MnDOT’s project selection processes, including documentation on the scoring processes and criteria for each program. The guides are incorporated into this policy by reference. Additionally, programs that award grants for capital projects have additional requirements under the Grants Management Policy and Agency Grants Management Manual.

Use of Numeric Scores

MnDOT will use pre-determined, defined criteria to assign numeric scores in all selection processes subject to this policy. The numeric scores will inform project selection decisions, but MnDOT may consider other factors in addition to the numeric score. When MnDOT does not select a high scoring project or selects a lower scoring project, MnDOT will provide a short explanation for the reasoning behind the selection.

Reason for Policy

- Advance the Minnesota GO Vision and Statewide Multimodal Transportation Plan objective of Open Decision-Making
- Increase the transparency and public understanding of MnDOT’s project selection processes

Existing Process

Green Line list is based on the **National Priority Rating System (NPS)** with “Grant Manager Adjustment” adding discretionary points to certain projects with little/no documentation on reasoning

$$\text{Priority Score} = 0.25P(S+1.4P+C+1.2T)$$

P Purpose of Project (0 to 10 points)	S Airport Classification (2 to 5 points)	C Component of Airport (0 to 10 points)	T Type of Airport Project (0 to 10 points)
10 – Safety/Security Programs 9 – Statutory Emphasis Programs 8 – Planning/Environment/Reconstruction 7 – Capacity 6 – Standards 4 – Other	4 – NPIAS Key Airport 3 – NPIAS Intermediate Airport 2 – NPIAS Landing Strip 5 – Non-NPIAS Intermediate Airport 4 – Non-NPIAS Landing Strip	10 – Runway 9 – Taxiway, Helipad 8 – Taxiway 7 – Hangar, Land, Other, Public Building, Planning 5 – Apron 4 – General Transportation, New Airport 3 – Building 1 – Terminal 0 – Financing	10 – Construction (CO), Obstruction Removal (OB), ADFV Vehicle (RV) 9 – Master Plan (MA), RWTW Signs (SG) 8 – Improvements (IM), Lighting (L), Safety Zone - RPZ (SZ), Visual Approach Aids (VA), Weather Reporting (WR) 7 – Instrument Approach Aid (IA) 6 – Development Land (DL), Extension/Expansion (EX), Security Improvement (SE) 5 – Miscellaneous (MS) 2 – Fuel Farm Development 1 – Parking (PA)

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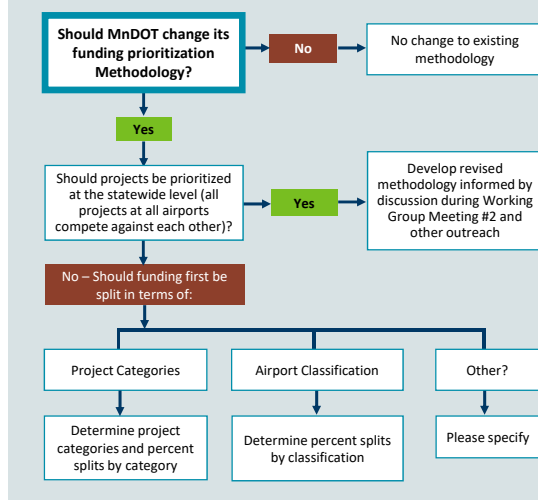
State Funding Prioritization

- MnDOT Aeronautics updated the project prioritization methodology to comply with the Project Selection Policy
- Methodology provides an initial ranking for submitted capital improvement requests based on MnSASP priorities
- Based on available funds and latest Funding Rates Letter, MnDOT Aeronautics will select projects for state funding **and provide explanation for any unique cases**

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2022 MnSASP Involvement

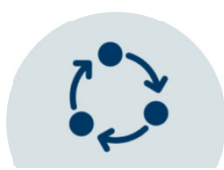
- The 2022 MnSASP convened the Airport Funding Focus Area Working Group to provide feedback and guidance on improving MnDOT Aeronautics' current funding practices
- The group discussed each of the major inflection points for the award and distribution of Airport Development Grants *(as illustrated on the right)*



2022 MnSASP Recommendations



Revise Prioritization Methodology



Implement a Three-year Revolving CIP Process



Staff Training

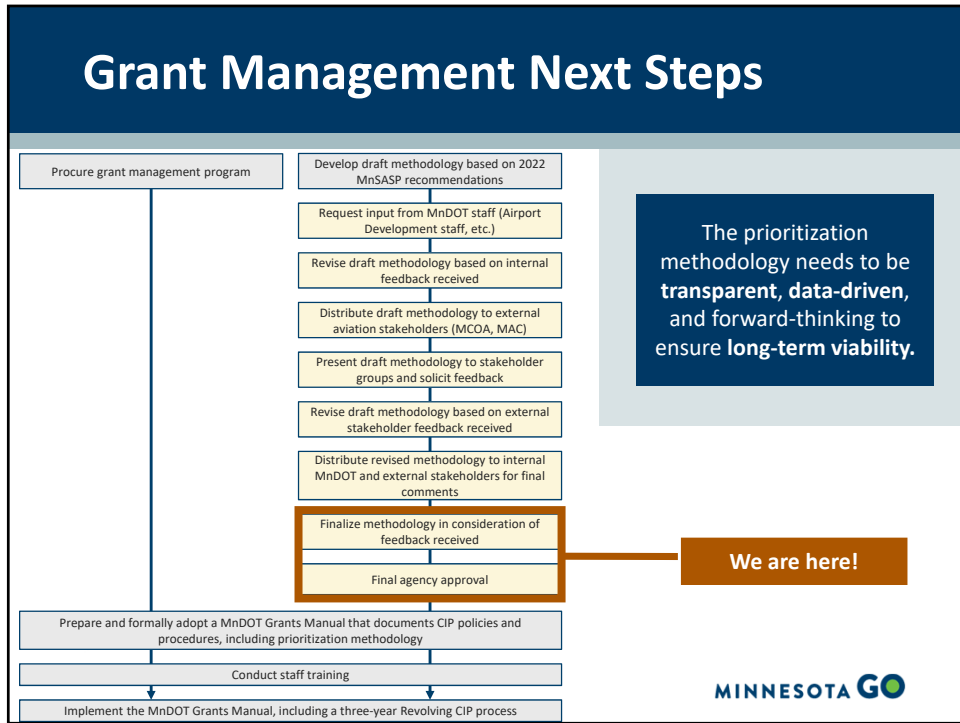


Develop and Adopt a Grants Manual



Procure a MnDOT Grant Management Program






State Funding Prioritization Model

- 2022 MnSASP developed a dynamic and customizable tool to allow for scenario-based analyses and customization based on future MnDOT Aeronautics needs
- Excel-based prioritization model for state/local funded airport capital improvement projects

! This model doesn't finalize any decisions for MnDOT Aeronautics. Additional review will be necessary to incorporate any specific funding considerations that cannot be configured into the model.



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Model Development

- Coordination meetings with MnDOT Development to finalize considerations
 - Removed Based Aircraft, Minimum Standards, Airport Classification, and Local Funding Share
 - Added MnSASP performance metrics as criteria (clear zones, pavement, master plan/ALP)
- Presented draft methodology to the Minnesota Council of Airports (MCOA) and Metropolitan Airports Commission (MAC)



Scoring Criteria

System Plan Alignment

- Master Plan/ALP
- Airspace Obstructions
- Clear Zones
- Work Type
- Zoning

MnDOT Priorities

- Airport Component
- Licensing Compliance



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Model Scenario: Case Study



Model Scenarios: Airport A

Existing Deficiencies	2024 CIP
<ul style="list-style-type: none">• Airspace obstructions present• Last ALP updated in 2000• Deficient pavement conditions per MnSASP system metric	<ul style="list-style-type: none">• Obstruction Removal - Brush in ROFA• Corporate Hangar Construction• Fuel System Chip Card Reader• Runway Lighting Improvements

Existing Conditions
State Classification: Intermediate Large Single-runway facility



Model Scenarios: Airport B


Existing Deficiencies

- Airspace obstructions present
- Deficient airfield pavement per MnSASP system metric
- 95% clear zone ownership, no CZAP on-file
- Outdated airport zoning
- No public restrooms available

2024 CIP

- Pavement Maintenance - Commercial Apron**
- Crack Seal Airfield Pavements**
- Airport Zoning Update**
- Replace Two Large Hangar Doors**


Existing Conditions
 State Classification: Intermediate Large Single-runway facility



Master Plan/ALP

Evaluates if the airport has an updated Master Plan/ALP following the MnSASP targets (by state classification) AND the project is included in the updated plan.

Category	Score
Updated ALP/Master Plan on-file and project request is included in plan.	10
Airport has programmed ALP/Master Plan update or in process of updating ALP/Master Plan	5
Inadequate ALP/Master Plan with no updates programmed.	-5



Master Plan/ALP Scoring Scenario

Airport A

- Last ALP update in 2000, with no update programmed
- MnSASP metric requires intermediate large airports to update their ALP at least every 15 years
- All projects receive -5 points from this criteria**

Airport B

- ALP updated and all 2024 CIP projects included in latest ALP
- All projects receive 10 points**

10

Updated ALP/Master Plan on-file and project request is included in plan.

5

Airport has programmed ALP/Master Plan update or in process of updating ALP/Master Plan

-5

Inadequate ALP/Master Plan with no updates programmed.

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Airspace Obstructions

Evaluates if the airport's Part 77 surfaces are clear of obstructions per MnDOT's airport licensing requirements OR the airport has an obstruction clearing project request.

Category	Score
Submitted project will clear obstructions in Part 77 surfaces	10
Airport has no obstructions in Part 77 surfaces	5
Airport has at least one submitted obstruction clearing project to alleviate Part 77 deficiencies	5
Obstructions identified in Part 77 surfaces with no programmed fixes	-10

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Airspace Obstructions Scoring Scenario

Airport A

- Obstruction removal project receives 10 points
- With at least one obstruction clearing project programmed, **all other projects received 5 points**

Airport B

- Obstructions exist, but the airport has no programmed fixes
- All projects are deducted 10 points**

10

Submitted project will clear obstructions in Part 77 surfaces

5

Airport has no obstructions in Part 77 surfaces OR Airport has at least one submitted obstruction clearing project to alleviate Part 77 deficiencies

-10

Obstructions identified in Part 77 surfaces with no programmed fixes

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Clear Zones

Evaluates if MnDOT-defined clear zone are owned in 100 percent fee-simple or a MnDOT approved Clear Zone Acquisition Plan (CZAP) is on-file. This is per MnDOT's update to the Clear Zone Policy recommended by the 2022 MnSASP.

Category	Score
Submitted project will acquire land designated as MnDOT clear zones per Clear Zone Policy	10
Airport has 100% clear zone ownership or approved CZAP on-file	5
Airport has at least one submitted land acquisition project for MnDOT clear zones OR the airport is actively coordinating with MnDOT to file a CZAP	5
Partial/no clear zone ownership without a CZAP on file and no programmed land acquisition or CZAP in progress	-10

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Clear Zones Scoring Scenario

Airport A

- No clear zone deficiencies, so **all projects receive 5 points**

Airport B

- Airport has incomplete ownership of clear zones and no CZAP on-file
- All projects are deducted 10 points**

10

Submitted project will acquire land designated as MnDOT clear zones per Clear Zone Policy

5

Airport has 100% clear zone ownership or approved CZAP on-file Airport has at least one submitted land acquisition project for MnDOT clear zones OR the airport is actively coordinating with MnDOT to file a CZAP

-10

Obstructions identified in Part 77 surfaces with no programmed fixes

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Work Type

Evaluates if the project is remediating a pavement condition deficiency per MnSASP-defined system metric, preserving other existing airport assets, or constructing new/expanded infrastructure. Ultimately, MnDOT Aeronautics is prioritizing the preservation of existing assets rather than expansion.

Category	Score
Airport has an identified pavement condition deficiency (per MnSASP-defined system metric), and the project request will remediate the issue	20
Airport has adequate pavement per MnSASP metric, and the project request is addressing other pavement issues	15
Airport has adequate pavement, but the project request is maintaining other airport assets (ex: lighting)	10
Project request is constructing new facilities or expanding existing infrastructure	0
Airport has an identified pavement condition deficiency (per MnSASP-defined system metric) with no programmed fix	-10

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Work Type Scoring Scenario

Airport A

- Deficient pavement conditions with no fix programmed
- All projects are deducted 10 points**

20 Airport has an identified pavement condition deficiency (per MnSASP-defined system metric), and the project request will remediate the issue

15 Airport has adequate pavement per MnSASP metric, and the project request is addressing other pavement issues

10 Airport has adequate pavement, but the project request is maintaining other airport assets (ex: lighting)

Airport B

- Crack Seal Airfield Pavements receive 20 points for fixing deficient airfield pavement
- Pavement Maintenance – Commercial Apron receives 15 points for addressing other pavement issues
- Replace Two Large Hangar Doors is maintaining other airport assets, so this project receives 10 points

0 Project request is constructing new facilities or expanding existing infrastructure

-10 Airport has an identified pavement condition deficiency (per MnSASP-defined system metric) with no programmed fix

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Zoning

Evaluates if the airport has proper zoning established and on-file with MnDOT Aeronautics or is in the process of establishing/updating zoning. This is evaluated as a MnSASP performance metric in the MnSASP Hub.

Category	Score
Airport has adequate zoning established and on-file per MnDOT requirements.	10
Airport is establishing or updating zoning to comply with MnDOT requirements	5
Airport does not have adequate zoning and hasn't programmed a project to mitigate.	-10

Zoning Scoring Scenario

Airport A

- Airport zoning established, adequate per MnDOT requirements, and on-file with MnDOT Aeronautics
- **All projects receive 10 points**

Airport B

- Airport zoning update programmed
- **All projects receive 5 points**

10 Airport has adequate zoning established and on-file per MnDOT requirements.

5 Airport is establishing or actively updating zoning to comply with MnDOT requirements

-10 Airport does not have adequate zoning and hasn't programmed a project to mitigate.



Initial Comparison

Project	Airport	Master Plan/ALP	Airspace Obstructions	Clear Zones	Work Type	Zoning	SUBTOTAL
Crack Seal Airfield Pavements	B	10	-10	-10	20	5	15
Pavement Maintenance - Commercial Apron	B	10	-10	-10	15	5	10
Obstruction Removal - Brush in ROFA	A	-5	10	5	-10	10	10
Replace Two Large Hangar Doors	B	10	-10	-10	10	5	5
Corporate Hangar Construction	A	-5	5	5	-10	10	5
Fuel System Chip Card Reader	A	-5	5	5	-10	10	5
Runway Lighting Improvements	A	-5	5	5	-10	10	5



Airport Component

This is indicating where the project is being directed to at the airport, ranging from primary runway to unknown.

Category	Score
Primary Runway	20
Taxiway Serving Primary Runway	18
Secondary Runway	16
Apron, Taxiway Serving Secondary Runway	14
Other Airfield Location	12
Taxilane	10
Terminal Building or Fuel Facilities	8
Hangar or Other Buildings	6
Landside	4
Unknown	0



Airport Component Scoring Scenario

Airport A

- Obstruction Removal – Brush in ROFA receives 20 points for being associated with the primary runway
- Runway Lighting Improvements receives 20 points
- Fuel System Chip Card Reader receives 8 points
- Corporate Hangar Construction receives 6 points

Airport B

- Crack Seal Airfield Pavements receive 20 points for being applied to runway*
- Pavement Maintenance – Commercial Apron receives 14 points
- Replace Two Large Hangar Doors receives 6 points

*MnDOT CIP system has "runway" indicated with project



Licensing Compliance

This is evaluating whether the airport requesting state funds complies with all state licensing standards dictated in Rules (Minnesota Rules 8800.1600 Public Airport Licensing) OR has a project request to remediate a licensing deficiency.

Category	Score
Project alleviates a state licensing deficiency	20
Airport compliant with all state licensing standards	10
State licensing deficiency identified, and another project alleviates deficiency	10
N/A (Part 139 Airports)	10
Airport has state licensing deficiency and no programmed fix	-10



State Licensing Standards

Minnesota Rules 8800.1600 Public Airport Licensing

1 REVISOR 8800.1600

8800.1600 PUBLIC AIRPORT LICENSING.

Subpart 1. **Application.** The requirements of this part do not apply to licensing public special-purpose airports, public seaplane bases, or public heliports. Specific requirements for the licensing of a public special-purpose airport are found in part 8800.1650. Specific requirements for licensing a public seaplane base are found in part 8800.1700. Specific requirements for licensing a public heliport are found in part 8800.1800.

Subp. 2. **Minimum requirements.** A public airport must be granted a license when it has shown that it has met the general provisions of parts 8800.1400 and 8800.1500 and the minimum requirements of this part.

Subp. 3. **Size.** A public airport must have at least one runway with a minimum usable length of 2,000 feet. The minimum width of a turf runway must be 75 feet. The minimum width of a hard-surfaced runway must be 60 feet. Other than utility runways must be at least 75 feet wide.

Subp. 4. **Surface.** The landing surface shall be smooth and free from hazards or obstructions. The longitudinal gradient on any part of the landing area shall not exceed two percent. The transverse gradient shall not exceed three percent.

In addition, runway grade changes shall be such that any two points five feet above the runway centerline will be mutually visible for the entire runway length.

Subp. 5. **Obstructions.** The minimum obstruction clearance requires that a structure, tree, or mobile object that creates a hazard, other than those necessary and incidental to airport operation, must not penetrate the imaginary airspace surfaces described in part 8800.1200, subpart 5, items A, D, and E. The standards of this part also apply to traverse ways only after their heights have been increased as described in part 8800.1200, subpart 2.

Subp. 6. **Edge markers.** Turf runways shall be outlined with reflective edge markers and end markers which shall be constructed of a durable material and installed in such a manner so as to be clearly visible from traffic pattern altitude.

Subp. 7. **Buildings.** Buildings and structures on a public airport shall not be closer than 250 feet to the centerline of the runway. For height limitations see part 8800.1200, subpart 5.

Subp. 8. **Wind sock.** All public airports must be equipped with a wind sock, 3 feet by 12 feet, blue on top or color, which must be operable and clearly visible from the pattern altitude when within one mile of the airport during daylight hours. If the airport is lighted for night operations, the wind sock must also be lighted.

Subp. 9. **Fencing.** Such adequate fencing or barriers shall be constructed as will prevent all persons not engaged in flight activities from having access to a position of danger with relation to aircraft in the vicinity of building areas and on the flight line.

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2 REVISOR 8800.1600

Subp. 10. **Lighting.** If the airport is lighted for night operations and is advertised as lighted for night operations, the lights shall be kept on from dusk to dawn. Any object in the approach zone of a lighted visual only runway that extends above a slope of 30:1 shall be marked and lighted in accordance with the standards for obstruction marking and lighting where requested by the commissioner in the interest of safety.

Subp. 11. **Towers.** Facilities must be furnished for at least three more aircraft than regularly use the facilities. The towers are to be marked and maintained so as to be readily located.

Subp. 12. **Toilets.** A sanitary public toilet facility shall be provided at all public airports, except where it can be demonstrated that it is impracticable to install such a facility. An enclosed portable chemical toilet, properly maintained and serviced, shall be acceptable.

Subp. 13. **Fuel.** All fuel dispensed on the airport for aircraft use must be filtered to be free of solid matter in excess of five microns particle size and to have a free water content less than 30 parts per million parts of fuel.

Subp. 14. **Fire extinguishers.** At least one properly maintained fire extinguisher shall be available in the vicinity of the fuel pump or on the flight line if fuel is dispensed. It must be a minimum of 20 B, ring or equivalent.

Subp. 15. **Telephone.** When feasible, a telephone shall be made available for public use. Telephone numbers for the appropriate flight service station, for emergency assistance, and for aircraft servicing shall be prominently posted.

Subp. 16. **Bulletin board.** A weather-protected bulletin board shall be prominently located on the airport. Posted thereon shall be the airport license, safety and traffic rules, and an area map showing danger or restricted areas.

Statutory Authority: MS 14 530; 560 015; 560 018; 560 051; 560 90

History: 30 SR 215; 31 SR 350

Published Electronically: October 2, 2007

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Licensing Compliance Scoring Scenario

Airport A

- Obstruction removal project receives 20 points
- With at least one obstruction clearing project programmed, all other projects received 10 points

Airport B

- No public restrooms available and no CIP-programmed or local fix planned
- All projects receive -10 points**

20 Project alleviates a state licensing deficiency

10 Airport compliant with all state licensing standards. State licensing deficiency identified, and another project alleviates deficiency.
N/A (Part 139 Airports)

-10 Airport has state licensing deficiency and no programmed fix

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Final Comparison

Project	Airport	Master Plan/ALP	Airspace Obstructions	Clear Zones	Work Type	Zoning	Airport Component	Licensing Compliance	TOTAL
Obstruction Removal – Brush in ROFA	A	-5	10	5	-10	10	20	20	50
Runway Lighting Improvements	A	-5	5	5	-10	10	20	10	35
Crack Seal Airfield Pavements	B	10	-10	-10	20	5	20	-10	25
Fuel System Chip Card Reader	A	-5	5	5	-10	10	8	10	23
Corporate Hangar Construction	A	-5	5	5	-10	10	6	10	21
Pavement Maintenance - Commercial Apron	B	10	-10	-10	15	5	14	-10	14
Replace Two Large Hangar Doors	B	10	-10	-10	10	5	6	-10	1

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Next Steps



**Finalize State Funding
Prioritization Model**



**Integrate model
into new CIP/grant
management system**



Airport Shown: Southwest Minnesota Regional Airport (MML)



Airport Shown: Detroit Lakes Airport (DTL)



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Thank You!

