DEPARTMENT OF TRANSPORTATION

Objectives and Strategies White Paper

2020 State Aviation System Plan (SASP) Phase I

April 10, 2019

Contents

Objectives and Strategies White Paper

The 2012 SASP developed a vision for aviation in Minnesota to describe the desired outcome and highlight what the State is trying to achieve with its air transportation system. The 2020 SASP provides guidance as to how the State can achieve this vision.

<div align="center">

Minnesota's Vision for Aviation

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Minnesota's aviation system will enable safe, fast, and reliable air transportation for the citizens and businesses of Minnesota through partnership and innovation.

Objectives and Strategies

Objectives and strategies to achieve the objective directly support the implementation of the vision. Metrics are used to track progress towards the objectives outlined in this plan. Metrics are discussed separately in individual System Metrics and Airport Metrics white papers. The relationship of the vision, objectives, strategies and metrics is shown in **Figure 1**.
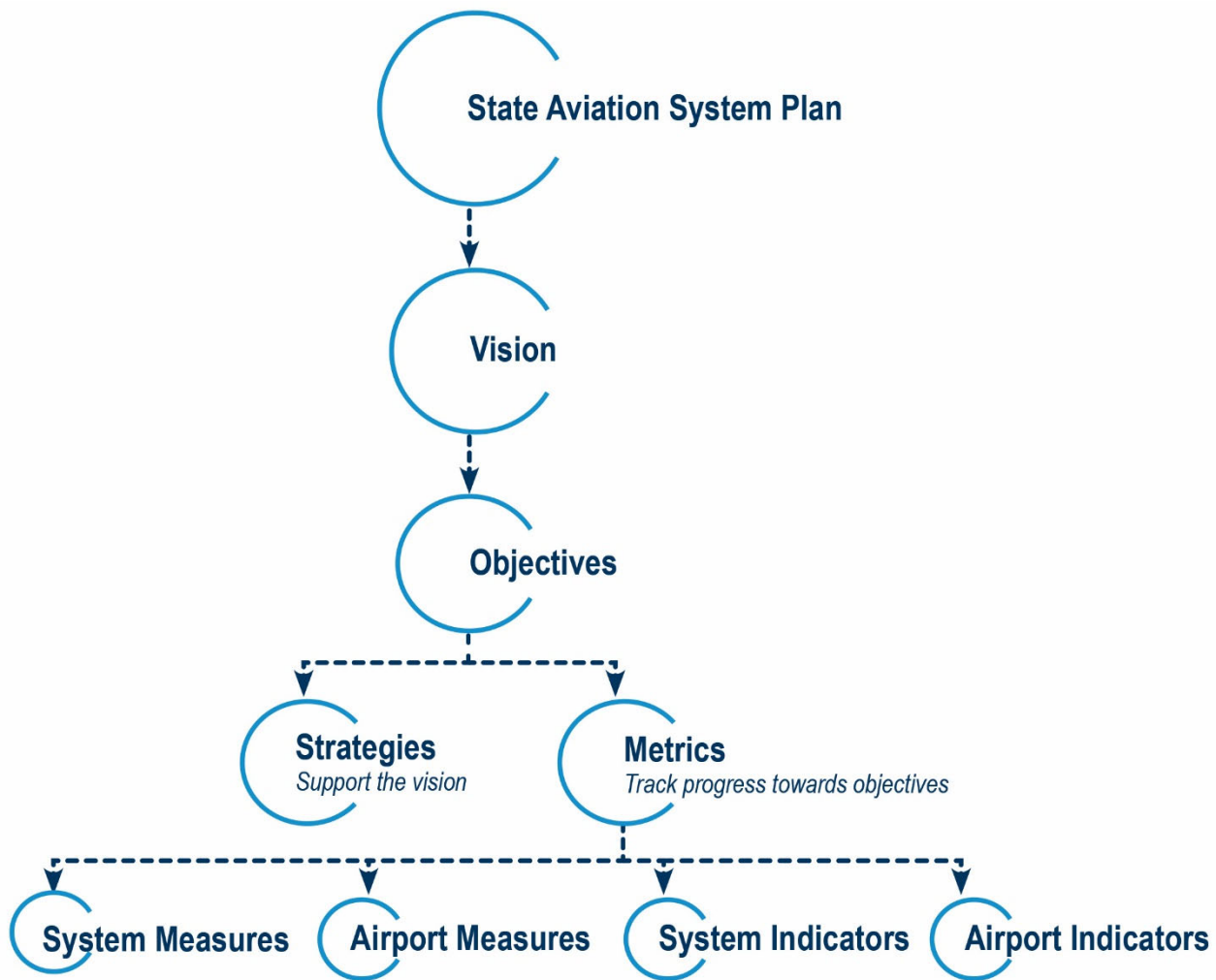
Figure 1 – System Vision, Objectives, Strategies and Metrics
Source: MnDOT Office of Aeronautics, SEH

2012 SASP Goals

The 2012 SASP identified system values through the use of Stakeholder Advisory and Technical Advisory Committees. These values were consolidated into five goals. Thirty-one (31) strategies were developed to achieve the goals.

The goals and strategies from the 2012 SASP are summarized below. Stakeholder feedback gathered as part of Phase I of the 2020 SASP provided these overarching comments on the previous strategies.

- There were too many strategies included in the 2012 SASP. Stakeholders felt that too many strategies made it difficult for MnDOT and transportation partners to focus on accomplishing anything.

- Some strategies were too specific. Stakeholders felt that higher level strategy statements would provide flexibility for MnDOT and transportation partners to implement action items. A more specific work plan to complete each strategy can be developed later in a more flexible and efficient way.

The activities conducted by MnDOT or other transportation partners to implement strategies since the development of the 2012 SASP are also included.

2012 Goal: Safety

Enable development of Minnesota's aviation system to minimize and/or reduce aviation fatalities and injuries and also enhance the overall safety of airport operations.

2012 Safety Strategies	How was the 2012 strategy implemented?
Provide technical assistance to airport sponsors so that their airport zoning ordinances are acceptable under Minnesota's standards. All airports in the state should be zoned to protect existing, future, and ultimate infrastructure configurations.	• Provided technical assistance to airport sponsors, others • Reviewed and approved 3 updated ordinances; and some in process • Developed Zoning Information Management System (ZIMS) to inventory and track ordinances. Used Needs Meetings to create awareness and identify needs
Evaluate the State's zoning standards, and consider revisions to appropriately balance public safety and provide airport compatible development opportunities near and around airports.	• Conducted statewide stakeholder outreach • Developed draft zoning Statute revisions legislative package for Governor's consideration
Approach airspace should continue to be kept clear of obstructions. Obstructions identified during airport safety inspections should be removed as soon as possible.	• Airport sponsors continued clearing obstructions • MnDOT analyzed obstructions through 5010 Inspections
Airport sponsors should continue to acquire land to control and maintain the State Clear Zones (an area similar to the FAA Runway Protection Zone or RPZ) and achieve compliance with MnDOT Office of Aeronautics' Clear Zone Policy.	• Airport sponsors continued acquiring land • MnDOT analyzed obstructions, developed clear zones policy and memo • MnDOT funded clear zone land acquisition projects
Assist and collaborate with the entities and agencies that use the aviation system to protect and enhance local, regional and state safety including but not limited to firefighting, search and rescue, border protection, homeland security and air medical transport.	• Collaborated with Air Medical Training group • Promoted Emergency Management Plans at Needs Meetings
Enhance delivery of medical resources to the trauma centers, and life-saving facilities throughout the state that play a role in preventing death following traumatic injury.	• No specific actions
Support air medical providers' ability to save lives and increase chances of survival in the minutes and hours following traumatic injury – a period commonly referred to as the "Golden Hour".	• No specific actions
Support MnDOT's continued efforts in the Toward Zero Deaths (TZD) initiative and work collaboratively with proponents to incorporate all modes, including aviation, into the initiative.	• No specific actions

> ### 2012 Goal: Mobility
>
> *Ensure the people and businesses of Minnesota have convenient access to the air transportation network.*

2012 Mobility Strategies	How was the 2012 strategy implemented?
Maintain and enhance the critical air connections for the people, products, and businesses of Minnesota to markets and resources outside the state and country.	• Planning and development projects throughout the state maintained and enhanced critical connections • NAVAIDs maintenance and development also enhanced critical connections
Develop a comprehensive strategy to identify and address Americans with Disabilities Act (ADA) concerns within the airport system.	• MnDOT completed ADA assessments at select system airports • Relationship and ADA resource established
Provide viable connections to outstate by maintaining or improving airline services in Greater Minnesota, where appropriate. In doing so, collaborate with and support efforts of the Local Air Service Action Committee (LASAC).	• MnDOT provided air service marketing grants • MnDOT coordinated with LASAC • MnDOT supported a multimodal bus study
Consider feasibility of increasing airline connections for Greater Minnesota airports with surface transportation options.	• MnDOT supported a multimodal bus study
MnDOT Aeronautics will host periodic Air Service Summits to bring together aviation stakeholders in an effort to share critical air service information and develop specific strategies concerning air service in the state.	• MnDOT hosted a Summit in 2011
Monitor changes to the federal Essential Air Service (EAS) program (subsidies for commercial airline service to Minnesota airports) and work with stakeholders to develop recommendations for an EAS program that is both effective and can withstand scrutiny.	• MnDOT Increased advocacy with Congressional delegation, hearings, etc. • MnDOT and other transportation stakeholders monitored changes, worked with stakeholders • MnDOT prepared an EAS report • MnDOT prepared a reauthorization white paper
Identify the availability of access to airports by alternate modes of transportation (e.g. transit and bicycles). Consider strategic enhancements of access where appropriate and justified.	• MnDOT assessed ground transport/bus service and access

> **2012 Goal: Financial Opportunity and Responsibility**
>
> *Improve system airports' ability to become more financially sustainable, attract appropriately planned economic development opportunities, and fit into the context of the community from which it receives*

2012 Financial Opportunity and Responsibility Strategies	How was the 2012 strategy implemented?
Develop, in cooperation with system airports, new and innovative ways to generate revenues that ultimately bring them closer to self-sufficiency.	• No specific actions
Collaborate with the state's aviation stakeholders to continue to provide predictable funding for the State Airports Fund.	• MnDOT collaborated with stakeholders regarding the State Airports Fund • MnDOT developed a State Airports Fund Balance Policy and Aviation Tax Report
Consider support of modified construction standards to reduce project cost (e.g., warm mix paving applications).	• No specific actions
Inventory comprehensive plans of communities surrounding airports to advise on airport compatible development. A community and its airport should have compatible plans so that they foster growth for each other.	• MnDOT imitated a process to initiate this as part of Needs Meetings
Consider the role of airports in supporting and furthering Context Sensitive Solutions for sponsor communities.	• No specific actions
Support local and community efforts to create jobs with a particular focus on enhancing the state's aviation sector.	• Tax exemption for aircraft parts and services • Partnerships/support with DEED and local community initiatives • MnDOT supported the Minnesota Aviation Maintenance Technician Conference and aviation education activities and resources
Support and promote system airport's efforts to pursue special or unique funding opportunities such as the joint MnDOT and Department of Employment and Economic Development (DEED) and Transportation Economic Development (TED) program designed to address both the state's transportation system needs and economic development objectives.	• MnDOT supported DEED projects on a case by case basis • MnDOT tracked and assessed bonding opportunities • MnDOT focused on maximizing federal funding • MnDOT supported sharing information on the federal surplus equipment program

2012 Operations Strategies	How was the 2012 strategy implemented?
Identify the areas of the State suitable, from an aeronautical perspective, for tall structure siting and consider similar analysis for other potential airport incompatible land uses.	• MnDOT conducted solar energy compatibility analysis (solar glare analysis)
Upgrade the state's critical navigation facilities while allowing for reduction and/or phase out of unused or outdated components.	• MnDOT and FAA upgraded and phased out NAVAIDs throughout the system
Develop a method for more precise life-cycle tracking of the navigation system.	• No specific actions
Work with MnDOT's Office of Transportation and Data Analysis to research available technologies to more precisely analyze activity at airports. These technologies may be auditory or visual, able to recognize differing aircraft types, and should be tested on a limited scale to help determine accuracy.	• MnDOT deployed General Audio Recording Devices (GARD) at select system airports and tested the system on a limited basis
Work to ensure FAA efforts to incorporate Unmanned Aircraft Systems (Unmanned Aerial Vehicles) into the Minnesota's airspace are pursued in a safe and transparent manner.	• MnDOT hosted a UAV conference • MnDOT developed draft legislation • MnDOT has begun registering UAVs • MnDOT has supported education and outreach related to UAVs

> **2012 Goal: Asset Management**
>
> *Ensure the structural integrity of existing airport infrastructure to meeting current needs of the system without compromising future needs.*

2012 Asset Management Strategies	How was the 2012 strategy implemented?
Work collaboratively with airport sponsors to align maintenance and preservation needs with the state's funding priorities.	- MnDOT increased the funding available for Maintenance and Operations (M&O) - MnDOT utilized Needs Meetings to better understand the need for maintenance and preservation funding
Periodically review the State's project prioritization formula and consider recommendations for adjustments that are developed in a collaborative manner.	MnDOT reviewed the funding rates. State share of various project types was adjusted through the Funding Rates Letter
Explore a risk based approach to making future investment decisions.	No specific actions
Ensure that construction projects are justified and appropriately sized.	MnDOT reviews project and grant applications

2020 SASP OBJECTIVES

Beginning with the 2020 SASP, objectives will replace the goals from the 2012 SASP. The 2020 SASP will focus on five objectives, adopted from the Statewide Multimodal Transportation Plan. The five objectives align with stakeholder feedback and are listed below in no particular order:

- Open decision-making
- Transportation safety
- Critical connections
- System stewardship
- Healthy communities

Strategies were developed for each objective to help implement the SASP and Minnesota GO visions. These strategies can be implemented by MnDOT or other transportation partners and are key areas of focus for each objective based on stakeholder feedback.

Each objective listed in this white paper has three parts:

- Objective statement – A few key phrases that describe the goal
- What this is about – Additional description about the goal of the objective
- Strategies – A list of actions to help MnDOT and transportation partners achieve the objective

Measures that help in tracking the progress towards the objectives are included in the separate System Metrics white paper.

Open Decision-Making

Make transportation system decisions through processes that are inclusive, engaging, and supported by data and analysis. Provide for and support coordination, collaboration, and innovation. Ensure efficient and effective use of resources.

WHAT THIS IS ABOUT

Essential to open decision-making are the elements of accountability, transparency, and communication. Transportation decision-makers are stewards of the aviation system and have the responsibility to make informed choices and be open about how and why decisions are made. Decision-makers need to rely on many different types of information and inputs to make responsible decisions and balance priorities. Integrated into all these elements are the important considerations of socio-economic equity and individual ability.

Engagement with aviation users and those otherwise affected by the system is a critical input to the transportation decision-making process. Decision-makers cannot just communicate decisions but must also create opportunities for the public to influence decisions. Transportation partners should use different tools and techniques to facilitate good engagement. Good engagement uses inclusive, accessible, and varied tools to reach different communities. Specific focus should be given to reaching individuals who are traditionally underrepresented in transportation decision-making. This will result in decisions that better reflect the priorities of all Minnesotans.

Communication and education are also critical to open decision-making. Effective communication is not just about making information available. It is also about making it easy to find and understand. This includes using plain language and meeting the Americans with Disabilities Act document accessibility standards. Additionally, education is the foundation for understanding. This includes telling the big-picture story about the transportation system, the importance of investing in it and the trade-offs that need to be made. It also includes communicating project scopes, timelines and impacts.

Open decision-making is supported by data, analysis, performance measurement, research, and risk management. It is the responsibility of transportation partners to continually explore technology, innovation and the driving forces behind the system. These are important tools for improving aviation planning processes and increasing the efficiency of the aviation system.

The importance of open decision-making processes are recognized and supported in federal legislation and state regulations. However, truly open decision-making goes beyond just meeting requirements. It is about building public trust. Since the majority of transportation funding comes from the public through fees and taxes, transportation decision-makers need to be accountable for the decisions they make. They need to ensure public resources are used efficiently and effectively and that decisions are well documented and communicated.

STRATEGIES

- Continue to seek out new ways to assist and collaborate with users of the aviation system. MnDOT has traditionally collaborated with users of the aviation system in many ways including education, outreach and advocacy. Additional assistance and collaboration should continue to include airport sponsors, pilots, travelers, aircraft owners, aviation businesses, and other stakeholders. This outreach and collaboration ensures transparency and promotes understanding.
- Explore new ways to measure and communicate airport activity levels. Activity levels at non-towered airports are often difficult to estimate. MnDOT should continue to explore new and innovative ways to track and estimate airport activity levels. MnDOT and transportation partners should also explore ways to communicate airport activity levels. This will aid in decision making and increases transparency and promotes understanding of the system's usage and value.
- Periodically evaluate project prioritization formula, selection criteria, and rates to assess effectiveness and ensure public knowledge and understanding of this process. Continually evaluating funding formulas, project selection criteria, and funding rates allows MnDOT to maximize the efficient and effective use of resources, meet changing needs, and leverage public and private investments. Communicating and increasing stakeholder and public knowledge of the funding system further increases transparency and better allows stakeholders to make informed decisions.

Transportation Safety

Safeguard aviation users and the communities the system travels through. Apply proven strategies to reduce fatalities and serious injuries for aviation. Foster a culture of aviation safety in Minnesota.

WHAT THIS IS ABOUT

Transportation safety is a top priority for Minnesota. It includes the safety of individual users and the safety of the communities the aviation system travels through.

Transportation user safety applies to all users of the aviation system. Comprehensive traveler safety involves an integrated approach that includes the "4Es" of safety – education, enforcement, engineering, and emergency medical and trauma services – and more. Each of these areas is critical to improving overall safety and helping to enhance and grow an aviation safety culture in Minnesota.

Community safety can be improved through many decisions and activities implemented by transportation partners. Airport safety zoning is used to help avoid potential public safety issues involving airport operations. Transportation partners need to safeguard against these risks transportation systems may pose on the communities they travel through. There are also risks to the transportation system that can negatively impact community safety by inhibiting essential travel needs such as emergency response, emergency medical and trauma services, and business accessibility. These threats can include incompatible land uses and airspace obstructions.

STRATEGIES

- Approach airspace should continue to be kept clear of obstructions. Obstructions to protected airspace surfaces may pose a safety risk and raise the minimums of instrument approach procedures, when lower minimums are more desirable. Airports should maintain protected surfaces clear of obstructions.
- Airport sponsors should continue to achieve compliance with MnDOT Office of Aeronautics' Clear Zone Policy. The clear zones are a trapezoidal shape beyond the runway end that restrict land uses which may be hazardous to the operational safety of aircraft and protect life and property in runway approach areas. Airports should acquire and maintain their clear zones for ultimate development.
- Continue to support safety initiatives (like Toward Zero Deaths (TZD), Safety Seminars, Drone Integration Workshop). Educational initiatives inform transportation system users and operators of the rules and risks related to transportation. This helps to promote safety throughout Minnesota. MnDOT conducts pilot safety seminars at events throughout the state to help ensure Minnesota pilots remain current in safety training. As drone usage grows, education will help further build an aviation safety culture; MnDOT has hosted Drone Integration Workshops and other educational forums on safe drone usage.

Critical Connections

Maintain and improve multimodal transportation connections essential for Minnesotans' prosperity and quality of life. Strategically consider new connections that help meet Minnesota's vision and maximize social, economic and environmental benefits.

WHAT THIS IS ABOUT

The transportation system is a vital part of keeping Minnesotans connected to jobs, family, shopping, health care, schools, places of worship, recreation, and entertainment. Each user identifies different connections as critical based on location and their individual needs. In urban areas, critical connections may mean providing all weather capable runways. In rural areas, it may mean connections linking an airport with a traveler's final destination.

Critical connections also vary by type of user. For example, the key connections needed for general aviation users may be different than those for air cargo. All of these connections are important to the overall economic prosperity and quality of life in Minnesota.

While many types of connections are important, given finite resources, it is necessary to set priorities to provide complete, efficient, and affordable movement of people and goods. Although all connections are important to someone at some time, there are critical – or priority – connections that serve as the backbone for movement across and within Minnesota. Identifying, maintaining, and enhancing these priority connections are a shared responsibility. All connections, regardless of level, location, or transportation type, need to be developed in coordination with one another to ensure a truly connected Minnesota.

STRATEGIES

- Support 'last mile' solutions at airports allowing travelers to reach their final destination. Travelers must use non-aviation modes to reach their final destinations once they reach their final airport destination. In more urban areas, rental cars, courtesy transportation, transit, and other options may be available. In more rural areas, options to reach a final destination from an airport may be limited or not available. MnDOT should continue to explore options to support 'last mile' connections through education, outreach and innovation.
- Collaborate with state and local tourism entities to promote aviation as another means to explore Minnesota. Through partnering with state and local tourism entities, use of the aviation system to reach areas throughout the state can be promoted. Through increased awareness, the aviation system can provide additional critical connections to travelers in the state.
- Support new methods and relationships to better connect airports to their communities (i.e. bike trails, transit, autonomous vehicles, partnerships). MnDOT and transportation partners should support new methods of connecting airports to their communities through connecting new modes, such as buses and transportation network carriers, to airports. Additionally, bike trails can provide additional connections. Various public and private partnerships can be explored and supported to help improve these critical connections.

System Stewardship

Strategically build, manage, maintain, and operate all transportation assets. Rely on system data and analysis, performance measures and targets, agency and partners' needs, and public expectations to inform decisions. Use technology and innovation to get the most out of investments and maintain system performance. Increase the resiliency of the transportation system and adapt to changing needs.

WHAT THIS IS ABOUT

As the aviation system continues to age, MnDOT and transportation partners are increasingly shifting their focus to maintaining the existing aviation system. MnDOT and transportation partners should work to protect the investment in the existing aviation system.

System stewardship addresses three concepts: asset management, system management, and system resiliency.

Asset management is a systematic process of cost-effectively operating, maintaining, and upgrading assets once they are built or purchased. These assets include all aspects of the aviation system such as runways, taxiways, terminals, hangars, and other support facilities.

System management involves planning for the appropriate changes that will allow the system to adapt to future needs. In strategic system management, it is essential to set priorities and manage based on those priorities. This includes making trade-offs when necessary.

System resiliency refers to reducing vulnerability and ensuring redundancy and reliability to meet essential air travel needs. This includes preparation, mitigation, and adaptation to the many different types of threats that may impact the aviation system. These includes weather, acts of terrorism as well as changes in the economy which impact aviation and the way the system serves the state.

STRATEGIES

- Explore uses of technology to improve asset management of the system. Increased use of technology to evaluate and manage assets within the system would help MnDOT and transportation partners to better maintain the system in an effective way.
- Increase the system user base and workforce through marketing, education, and outreach. Marketing, education, and outreach can help build resiliency in the workforce needed to support the aviation system when economic trends and regulations cause workforce shortages. Additionally, as the state's population ages, so too, does its workforce.
- Create pathways to reorient the system investment and infrastructure to right size the system. Right sizing the system by consolidating services or investment may help increase system resiliency in some areas of the system. MnDOT and transportation partners should continuously evaluate the needed infrastructure for the system and provide pathways to right-size where it is appropriate as the system changes. For example, some sponsors of some Landing Strip and Intermediate Airports have expressed an interest in closing their airport. Additionally, it is not feasible to maintain all facilities in current condition or better due to available resources and changing transportation behavior. It is important for MnDOT and transportation partners to invest in priority assets accordingly.
- Support airports' ability to be financially self-sufficient. Increasing airport self-sufficiency can help airports better meet the needs of their users and the aviation system. MnDOT as well as FAA currently support airports in funding revenue generating projects. Additionally, MnDOT and transportation partners participate in educational outreach to help airports improve their financial self-sufficiency.

Healthy Communities

Make fiscally responsible aviation system decisions that respect and complement the natural, cultural, social, and economic context. Integrate land use and transportation to leverage public and private investments.

WHAT THIS IS ABOUT

Transportation provides connections to education, employment, recreation, and other opportunities that build communities with healthy economies, environments, and people. Fostering healthy communities in Minnesota requires that Minnesota's transportation partners consider the impacts of the aviation system on users and the surrounding context. Context refers to the things people care about—the people, places, and circumstances of their lives. Transportation and context are closely linked. Together they shape the communities where life takes place. It is important that aviation system decisions consider community characteristics such as land use, energy consumption, the environment, economy, culture, public health, and the needs of traditionally underserved populations. Conversely, aviation system decisions impact the surrounding context and shape the ways in which

people live, work, play, and access services. Land use decisions that are complementary of the existing and planned transportation system limit the environmental impact of new transportation demand and make transportation in Minnesota more efficient and safe.

Not all places are the same and there is no one-size-fits-all solution for transportation decisions. Considering context when making transportation decisions leads to projects that are safer, sustainable in scale, and tailored to the specific places in which they exist—projects that respect and complement the economy, environment, and quality of life in a place. It also helps ensure that Minnesota is advancing equitable access to opportunities, preserving the natural and cultural heritage for future generations, and maintaining an environmentally and economically-sustainable transportation system for all to use in the future.

STRATEGIES

- Support airport sponsors so their airport zoning ordinances adequately protect existing, future, and ultimate infrastructure configurations. Communities in the airport influence area enact airport zoning. Airport zoning is intended to restrict land uses and obstacles that may be hazardous to the operational safety of aircraft using an airport, and to protect the safety and property of people on the ground in the area near the airport. MnDOT will continue to support sponsors, communities in the airport influence area, and joint airport zoning boards in enacting, understanding, and applying their airport zoning ordinances to adequately protect for the existing, future, and ultimate conditions. Additionally, MnDOT will support other transportation partners' understanding of airport zoning which may impact other transportation projects.
- Ensure compatible uses near airports through comprehensive planning and other planning and zoning efforts. Compatible land uses near airports can help ensure that transportation and the surrounding context improve safety and work together in promoting community, economic, and environmental health while limiting the long-term costs of potential discrepancies. Communities should consider airports and their required safety zones during the comprehensive planning process to ensure land uses are compatible with the airport. Communities with airport safety zones within their jurisdiction should also depict these boundaries on official zoning maps. These actions will increase a community's understanding of airport zoning and reduce future land use conflicts and the costs associated with addressing these conflicts.
- Support transition to unleaded aviation fuels. Aviation gasoline is the only transportation fuel that still contains lead and is used by many piston powered aircraft. The FAA, Environmental Protection Agency (EPA) and the aviation industry are collaborating to remove lead from aviation fuels. MnDOT will support this transition which will reduce the impact leaded fuel has on the environment.
- Support economic vitality and create and maintain jobs through transportation infrastructure investments. MnDOT will work with public partners, such as the Minnesota Department of Employment and Economic Development, and private partners to define economic development objectives and leverage local and private resources in an effort to support net-positive economic opportunities in Minnesota. All transportation partners should continue to be actively involved to ensure the projects selected for funding achieve net economic gains for the state while carefully considering the tradeoffs that accompany economic development opportunities.