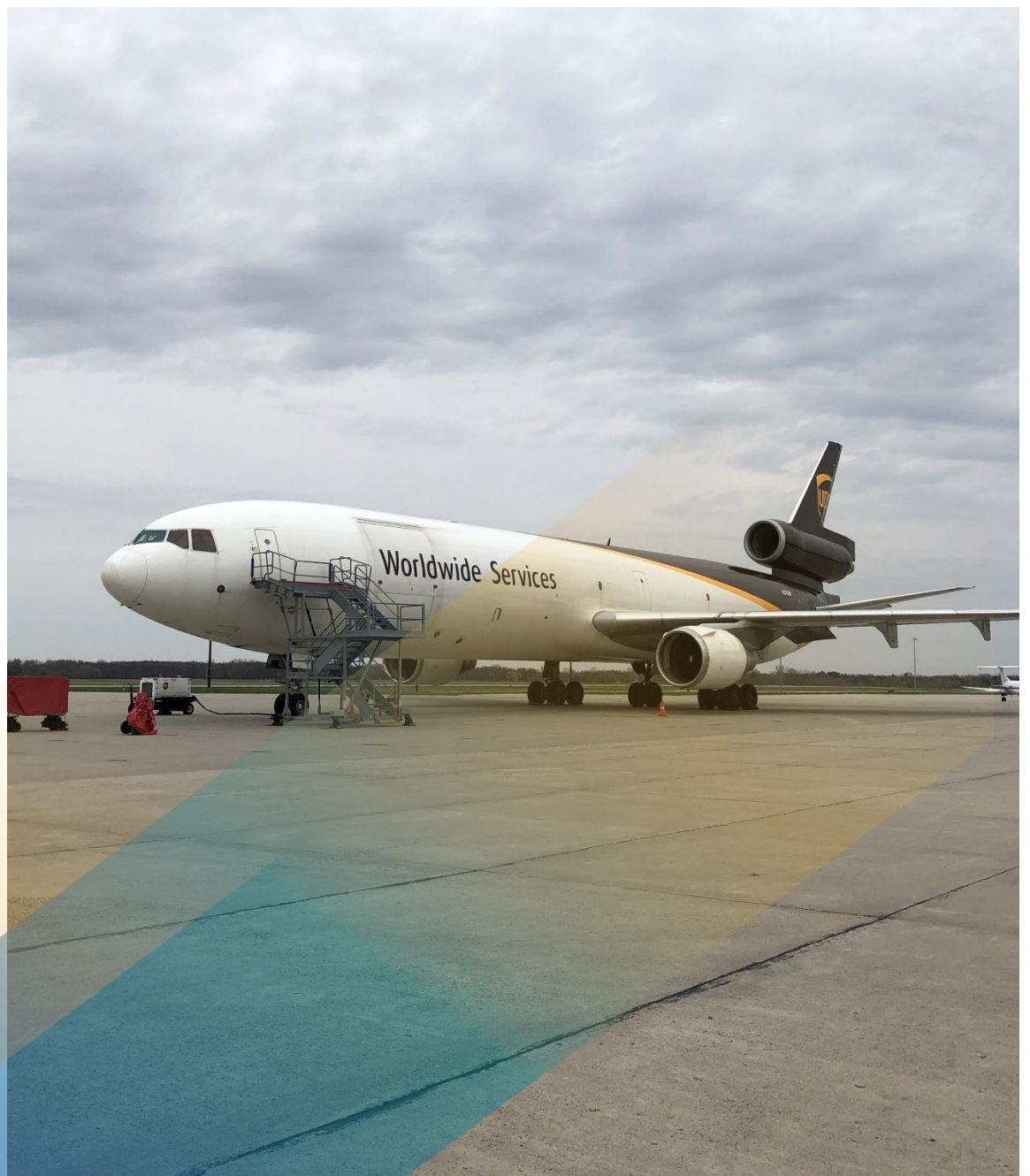


LAN Master Plan Goals and Objectives





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1 Introduction

The Capital Region International Airport (LAN) Master Plan serves as a blueprint for the Capital Region Airport Authority (CRAA) to guide its long-term development strategy. Prior to this update, the most recent comprehensive update to the master plan occurred in 2006.

Since the inception of airport master planning, the process has evolved with the most recent advisory circular update AC 150/5070-6B, *Airport Master Plans*, issued in January 2015. During the early stages of commercial aviation, the master planning process centered around enhancing airport infrastructure efficiency to accommodate the growing demands of airplanes, passengers, and cargo. Today, the process is multi-dimensional, placing emphasis on advanced safety risk management, fiscal sustainability, environmental consciousness, and efficient land management. Engaging the public and key stakeholders to address community requirements has become integral to the process. This update to the LAN Master Plan aligns with contemporary airport master planning principles and introduces the following goals to guide the process.

The objective of this chapter is to outline the essential elements that guide the analysis and considerations made within the Master Plan.

1.1 Airport Master Plan Goals

Airport Master Plan goals are fundamental to development of the LAN Master Plan, providing an overarching set of guiding principles to be followed and considered throughout the planning process. They inform a range of master planning activities, including analyses, evaluations, discussions, and decisions undertaken during the project. The following goals were identified at the inception of the Master Plan through discussions with CRAA and LAN staff:

- **Safety/Security:** Enhance or maintain the safety and security of the airport operating environment.
- **Customer Experience and Level of Service:** Provide a quality experience and level of service consistently for all aspects of LAN services and facilities.
- **Operational Efficiency:** Strive to enhance or maintain airport operational efficiency.
- **Environmental Awareness:** Mitigate or minimize associated impacts of airport operations and development through environmental awareness in decision making. Ensure compliance with all local, state, and federal regulations.
- **Fiscal Sustainability:** Make informed, responsible decisions to support the long-term fiscal sustainability of the airport and associated services.
- **Land Management:** Facilitate long-term airport development through strategic land management planning.

- **Communication:** Engage and communicate with stakeholders in a timely and transparent manner.
- **Community Partnerships:** Foster, grow, and strengthen community partnerships to the benefit of all Lansing area stakeholders.
- **Future Thinking:** Solve the challenges of today while preparing for tomorrow's opportunities.

1.1.1 Safety/Security

Safety and security are fundamental goals within all government agencies supporting the US air transportation system, and the CRAA is no exception. CRAA bears a significant responsibility in ensuring a secure and safe environment for aircraft operations and the movement of people and commerce. Safety considerations within the master plan focus predominantly on the airfield and terminal/landside area, through development that includes measures to enhance safety, strengthen security, and mitigate risks and known threats. Master plan concepts will be analyzed and evaluated for alignment with policies set forth by the Federal Aviation Administration (FAA), the Department of Homeland Security (DHS), the Transportation Security Administration (TSA), and US Customs and Border Protection (CBP), aiming to mitigate or minimize potential hazards.

As part of the Master Plan, airfield facilities that do not comply with current FAA design standards will be identified with strategies outlined to implement airfield improvements adhering to the most current established FAA design standards. Evaluation of terminal facilities will incorporate programming and planning for modern TSA policies, practices, and equipment. Additionally, the Master Plan will incorporate FAA guidelines pertaining to the evaluation and potential mitigation of risks within the airfield planning components. To ensure thoroughness and quality, a Safety Risk Management (SRM) panel will be engaged to review the final recommendations of the Master Plan.

1.1.2 Customer Experience and Level of Service

Providing a quality customer experience at airport facilities through properly programmed level of service standards is a vital goal when formulating airport facility requirements. In the eyes of the customers, the level of service provided becomes synonymous with the airport and influences their decisions about where they invest their time and money. The design and functionality of planned airport facilities has a significant impact on the overall customer experience by facilitating intuitive, seamless, and convenient transitions from regional access points to on-airport landside facilities, to the terminal (or other airside facility), to the aircraft, to the enroute phase of flight, and vice versa.

1.1.3 Operational Efficiency

An efficient airport makes optimal use of existing facility capacity while maintaining a balanced cost structure. Achieving efficiency in airport operations is a fundamental goal of the master plan process and a core tenet of the LAN Master Plan. It is essential that the Master Plan provide strategies for accommodating and managing future demand on airport infrastructure and leveraging all available funding resources. At its core, the Master Plan serves as an investment blueprint to support efficient functioning of all airport facilities.

1.1.4 Environmental Awareness

The National Environmental Policy Act (NEPA) of 1969, per the Environmental Protection Agency (EPA) “requires... federal agencies to evaluate the environmental and related social and economic effects of their proposed actions... prior to making decisions.” NEPA mandates that any airport project receiving federal funding must undergo an evaluation of its environmental impacts. Therefore, after the completion of the Master Plan, each proposed project will undergo a thorough environmental review, in compliance with local, state, and federal regulations, prior to construction. To ensure the master plan can be effective, potential environmental impacts must be considered at the master planning stage. An environmental overview and comprehensive assessment of all NEPA environmental impact categories will be conducted to seamlessly integrate environmental considerations into the planning process, facilitating subsequent required environmental initiatives.

1.1.5 Fiscal Sustainability

The turbulence experienced in national and global economies in recent decades, paired with the unprecedented impacts on commercial aviation felt during the COVID-19 global pandemic, have significantly influenced airport leadership perspectives on infrastructure planning and management. One goal of this Master Plan is to concentrate on analyzing business efficiency, ensuring fiscal sustainability, and outlining a financially feasible phased development plan.

1.1.6 Land Management

LAN is a vital economic engine within the Lansing metropolitan area and within the central lower peninsula region of Michigan. Continued population and economic growth in the area allows the opportunity for LAN to provide air transportation for the public, the government, and area businesses. This Master Plan serves as a valuable tool for the CRAA in effectively managing airport land as a highly valuable asset by defining its purpose within the larger context of the airport. Strategic management of airport land for utility, revenue, and protection of airspace ensures the airport can thrive in a place which prioritizes economic development by supporting it, rather than falling victim to other economic forces. One key element of the planning process will be the creation of a well-defined vision for long-term development of both aeronautical and non-aeronautical land use, providing guidance for informed future land management decisions.

1.1.7 Communication

The master planning process places high importance on effective stakeholder communication. To achieve this, a comprehensive Public Involvement Program will be implemented to support fostering collaboration with a wide range of airport stakeholders and the public. Effective communication with stakeholders through transparent engagement can facilitate better informed plans, broader community support, and swifter implementation of needed improvements. Formation of the Master Plan Advisory Committee (MPAC) allows programmed milestones for sharing of information and a conduit for formal feedback. The inclusion of informative public meetings throughout the master plan process offers opportunities for the entire public to learn more about master planning process, analysis, and outcomes, while also offering avenues to provide formal feedback and have any questions answered.

1.1.8 Community Partnerships

Fostering, strengthening, and leveraging existing community partnerships is key to the success of LAN as a public facility and the development of the greater Lansing area. This requires sound CRAA understanding of how the Lansing community and the region's organizations work to seamlessly integrate LAN plans with other local/regional plans. Regional agencies to coordinate with include the Tri-County Regional Planning Commission (Clinton-Eaton-Ingham), the Lansing Economic Area Partnership (LEAP), the Lansing Regional Chamber of Commerce (LRCC), and the Lansing Economic Development Corporation (LEDC), among many others such as prominent educational and industry organizations.

Working with LEDC and the Lansing Gateway (formerly North Grand River) Corridor Improvement Authority (LGCI) to coordinate planned improvements both improves airport regional access and encourages compatible surrounding development along North Grand River Avenue (Gateway Corridor¹). Partnering and coordinating airport plans with LEAP, the LEDC, and their network of investors and developers (including local and national financial institutions, law firms, real estate development firms, community development organizations, municipalities, and others) can set the stage for establishment of a shared vision and its realization.

1.1.9 Future Thinking

Planning activities and facility development should resolve existing/forecast issues but remain flexible to allow CRAA to take advantage of potential opportunities to accommodate developing technologies and changes in transportation methods. Some examples of future industry changes currently in development with the potential to disrupt the aviation environment include aircraft/vehicle electrification, vertical take-off/landing aircraft (VTOL), autonomous

¹ The Lansing Gateway Corridor Improvement Authority uses Tax Increment Financing to fund economic development initiatives along the corridor. These initiatives generally fall into one of four categories: 1) economic vitality (i.e., incentives and grant matching funds), design (i.e., streetscaping and façade improvement projects), promotion (marketing), and organization (community engagement).

aircraft/vehicles, supersonic aircraft travel, sustainable aviation fuels (SAF), and air carrier/busing connections.

1.2 Stakeholder Participation

Guidance for stakeholder participation in the planning process is provided under AC 150/5070-6B, *Airport Master Plans*, and involves collecting/addressing input on Master Plan analysis and outcomes from community stakeholders. The LAN Master Plan public involvement process is guided by an established Public Involvement Plan, which includes a series of meetings with the Master Plan Advisory Committee (MPAC) made up of airport stakeholders and community representatives such as CRAA staff, airport tenants, airport users, community officials, local business leaders, and area residents.

Additionally, a group of representative tenant stakeholders were interviewed/surveyed regarding any concerns they may have about regional access to airport facilities. A targeted survey about airport access was also provided to airport staff and all MPAC members. These results informed the regional access and landside analysis in **Appendix X**. Including additional stakeholders offers a variety of new perspectives and needs throughout the project while fostering support for future airport improvements.

1.3 Master Plan Focus Areas and Objectives

The Master Plan will consider development that incorporates all necessary airport facilities. At LAN, certain specific issues and Master Plan objectives were identified during project scoping and stakeholder engagement process. The following sections define Master Plan focus areas and specific analysis objectives.

1.3.1 Focus Area 1 - Commercial Passenger Facilities

1.3.1.1 Objective 1 - Commercial Terminal Building

The LAN terminal building is a large, aging facility originally designed and retrofitted to meet modern needs such as TSA passenger screening and the post-Covid air carrier environment. While the building has been well maintained and adapted to provide a quality customer experience, maintenance costs to keep up older buildings systems are increasing, the latest Americans with Disabilities Act (ADA) requirements are not fully met, and passenger flow is suboptimal relative to modern terminals. An assessment of terminal facilities and total cost of ownership lifecycle costing analysis are needed to set a sustainable and financially advantageous new trajectory for airport development which includes the commercial passenger experience at LAN. Quantifying the benefits of energy-efficient design and mechanical-electrical-plumbing (MEP) buildings systems into terminal area planning analysis sets the course for better-informed decision making about terminal facilities and vigilance in remaining financially responsible over the entire useful life of proposed terminal facilities.

1.3.1.2 Objective 2 - Terminal Landside Area

There are currently many ways to access the airport terminal area, all which conflict with the various general aviation, cargo, and supporting activities taking place at LAN. Accessing the terminal via an efficient, well-defined, and intuitive regional access point would improve the overall passenger experience and support growth of both aeronautical and non-aeronautical business at the airport. Critical areas of concern to address within the Master Plan include terminal area and general aviation roadway access and circulation, terminal development alternative impacts and integration of supporting landside facilities such as rental car services, employee parking, and potential integration of an intermodal transportation node.

1.3.1.3 Objective 3 - Airport Regional Access

Analysis of existing airport regional access challenges requires thorough assessment of the movement of people and goods both on and off airport property. Access to I-69 could be improved and the traffic impacts to Dewitt and Airport Roads from Port Lansing development will need to be evaluated. Addressing the regional access challenge would require strict coordination among the CAAA, state and federal governmental agencies including FAA and MDOT, and surrounding community organizations. Defining organized regional access to the varying airport areas is an important element of this Master Plan.

1.3.2 Focus Area 2 - LAN Airfield Facilities

1.3.2.1 Objective 4 - Runway Analysis

FAA has determined Runway 6-24 is not eligible and justified for AIP funding based on previous studies conducted to justify the runway's purpose and need. With changes in commercial and cargo demand, these justifications should be regularly reviewed and plans for the future of both Runway 6-24 and 10L-28R should be determined as part of the comprehensive preferred development solution.

1.3.2.2 Objective 5 - Airfield Geometry and Design Standards

FAA design standards change over time as new data is gathered and studies are performed in the interest of aviation safety. For this reason, the LAN taxiway system has areas that do not currently meet the most current AC 150/5300-13B, *Airport Design*², guidance geometry and design standards. All airfield taxiways need to be evaluated against the most current FAA design standards.

1.3.2.3 Objective 6 - Airfield Safety and Operational Efficiency

Examining the performance requirements of the airport fleet mix, typical airfield movements, and operational flows can identify areas with the potential to improve operational efficiency,

² FAA Advisory Circular 150/5300-13B was released on March 31, 2022.

maximize capacity, and benefit the overall safety of the airfield. It is recognized that the LAN airfield has areas of excess pavement that can reduce safety by deteriorating pilot situational awareness, add unnecessary cost for maintenance programs, and impact snow removal operations during winter weather. These airfield safety-related conditions should be reviewed and addressed as part of the planning process.

1.3.3 Focus Area 3 - Land Use and Economic Development

1.3.3.1 Objective 7 - Aeronautical Land Use

LAN has a large general aviation community and an abundance of both general aviation and non-aeronautical facilities flanking the commercial terminal area. One industry best practice for commercial service airports is the segregation of air carrier and general aviation facilities to the degree it is practical. With large areas of open land available at LAN to accommodate general aviation growth, a renewed look at the ultimate land use vision under modern and forecast conditions would benefit the CRAA by helping guide organized land use decisions for future development. With Lansing Community College (LCC) facilities being demolished and existing general aviation hangars at, or approaching, their end of useful life, there could be opportunities to develop new general aviation facilities in locations that align with the current/future context of the airport.

1.3.3.2 Objective 8 - Nonaeronautical Land Use

CRAA has the distinct advantage of owning a large area of contiguous undeveloped land. While much of this land is prime for aeronautical development, some areas could provide revenues from non-aeronautical development for both the near- and long-term. One specific area of land worthy of a deeper look is north of W State Road. Compatible land use opportunities can be explored to help guide leadership decisions that strengthen the financial security of the CRAA.

1.3.3.3 Objective 9 - Planning for the Impacts of New/Emerging Technologies

CRAA must create flexible plans that account for the potential impacts of new and emerging technologies on all existing/future airport facilities. These impacts include advancements such as electrification of vehicles and aircraft, integration of sustainable aviation fuels, incorporation of advanced air mobility (AAM) and urban air mobility (UAM), autonomous vehicles and drone aircraft, as well as other facility-specific changes within the industry.

1.3.3.4 Objective 10 - Including Development Partners in the Public Engagement Process

Stakeholder engagement within a master plan setting can provide the opportunity for CRAA and airport leadership to engage specific community representatives such as local businesses and the Lansing Economic Area Partnership (LEAP), which can provide critical input and partnerships to support airport planning and development. Including representatives from these

organizations was programmed into the public engagement process former through MPAC membership.

1.3.4 Focus Area 4 - Airport Cargo and Support Facilities

1.3.4.1 Objective 11 - Airport Cargo Facilities

Cargo operations at LAN have grown steadily and development of support ramp space occurred in 2019 and again in 2023. Both projects also incorporated expansion of the airport deicing containment system. Continuing to plan for cargo activity at LAN will be a critical component of this master plan including any necessary land in the 38 acres south of the current air cargo facility.

1.3.4.2 Objective 12 - Airport Support Facilities

The current layout of the main LAN maintenance building presents challenges when integrating new multi-function snow removal equipment (SRE) into the fleet. The existing maintenance building format at LAN is a single drive aisle, adding time and complexity to moving large equipment in and out of the building. Additionally, new multi-function SRE – popular among northern-climate commercial service airports with significant snowfall because they improve runway clearing efficiency and reduce closures – is longer than older SRE and difficult to back into position within single-aisle structures. Airports using multi-function equipment typically prefer multiple pull-through style bays because they offer more flexibility for performing maintenance functions and safety when operators are maneuvering large equipment. This Master Plan study should consider industry trends for operations support and provide a plan to meet future maintenance and SRE servicing/storage needs.

1.3.5 Focus Area 5 - Environmental Considerations

1.3.5.1 Objective 13 - Deicing and Stormwater Management

The airfield layout and deicing facility infrastructure at LAN creates issues for the effective conveyance of stormwater and deicing effluent run-off. Deicing facilities are operating beyond design capacity, creating environmental concerns during winter operations. A significant amount of terminal apron and tenant area stormwater drainage lines tie into the overall system and eventually outfall into the deicing pond. Modifications to address existing concerns and improve deicing facility efficiency/performance over the long-term should be addressed within the updated LAN Master Plan.

1.3.5.2 Objective 14 - Environmental Planning and Accountability

Development of Capital Improvement Program (CIP) projects defined as the result of the preferred comprehensive development program need to be evaluated to ensure timely federal environmental review under the National Environmental Policy Act (NEPA). Including the

federally mandated environmental process within project development timelines ensures compliance with federal law, proper fiscal planning, and pragmatic mitigation/elimination of undesirable environmental impacts. Additionally, seamless coordination of airport development activities is necessary for strict adherence to regulations set forth by local, state, and federal environmental agencies. This includes compliance with laws/permits regulated and issued under the Environmental Protection Agency (EPA), Michigan Department of Environment, Great Lakes, and Energy (EGLE), National Pollutant Discharge Elimination System (NPDES), and Municipal Separate Storm Sewer System (MS4) permits.