

Executive Summary

ES.1 Introduction

This Long-Term Plan (LTP) is a planning document that evaluates the current and future needs of Flying Cloud Airport (FCM or the Airport) over a 20-year planning cycle. The LTP includes an inventory of existing conditions, forecast of aviation activity, airport facility requirements and plans to accommodate the projected aviation demand over the 20-year planning cycle through 2040. The recommendations resulting from this LTP were used to update an Airport Layout Plan (ALP), which the Federal Aviation Administration (FAA) conditionally approves. An ALP is a graphical representation of the existing and future needs of the airport identified in the LTP process. The FAA recommends airport sponsors update their LTP every 5 to 10 years.

The following goals and objectives were established as part of the FCM LTP

- Enhance airport safety;
- Preserve and, if possible, improve operational capabilities for the current family of aircraft using the Airport; and
- Promote financial sustainability of the Metropolitan Airports Commission (MAC) Reliever Airport system by exploring revenue opportunities for aeronautical and non-aeronautical development.

This planning document supports the regional Transportation Policy Plan (TPP) prepared by the Metropolitan Council. The Aviation Plan of the TPP reports on many similar metrics as this report on a regional level for the Twin Cities metro area.

Extensive stakeholder coordination was conducted throughout the development of this plan, including listening to Airport tenants, meeting with the FAA, holding discussions with the City of Eden Prairie, and engaging the public through a series of public workshops. The LTP incorporates the input from each of these stakeholder groups and represents collective best thinking for the future of FCM.

ES.2 Forecast Summary

An aviation activity forecast was developed to serve as the basis of aeronautical demand used to guide the LTP. The forecast informed the facility requirements, development alternatives, and financial feasibility of the LTP. The LTP forecast projects activity through calendar year 2040. To facilitate comparison with the FAA's Terminal Area Forecast (TAF), the forecasts were developed in alignment with the Federal fiscal year (October through September). Accordingly, the LTP forecast projects activity through fiscal year 2041 (October 1, 2040, through September 30, 2041) to ensure that the forecast covers the entirety of calendar year 2040.

Forecasts were developed for three forecast scenarios (Base, High, and Low). For each scenario, projections were developed for annual aircraft operations, fleet mix, and based aircraft. As part of the forecast, the critical aircraft type for use in the LTP was also identified. The LTP forecast identified the Bombardier Challenger 350 (CL35) as the critical aircraft for runway design purposes, and the Beechcraft King Air 200 (BE20) for taxiway design purposes. Based on FAA Advisory Circular 150/5300-13B, The CL35 is a C-II aircraft, which is in Aircraft Approach Category C and Airplane Design Group (ADG) II. The BE20 is classified as Taxiway Design Group (TDG) 2A.



The forecast and the ALP are the two components of an LTP that the FAA approves. The FAA approved the forecast used to develop the remainder of the LTP on January 24, 2023.

The Base Scenario forecast was used as the basis for requirements and alternatives in the LTP and was ultimately compared to the FAA TAF. **Table ES-1** presents the key activity levels in the Base Scenario forecast.

Table ES-1: Forecast Summary

| FORECAST YEAR | FY 2021 | FY 2026 | FY 2031 | FY 2041 |
|---|---------|---------|---------|---------|
| Annual Operations | 133,217 | 134,929 | 137,147 | 143,298 |
| Compound Annual Growth Rate (CAGR) from 2021 | - | 0.26% | 0.29% | 0.37% |
| Based Aircraft | 333 | 336 | 341 | 354 |

Source: HNTB Base Scenario Forecast

ES.3 Facility Requirements

Based on the forecasted aviation demand, an assessment of airfield design standards gaps, and stakeholder input, a series of facility requirements were developed to address various functional areas of the FCM campus. Facility requirements were developed based on analysis or assessment of the following functional airport areas:

- Runway Geometric Standards and Gap Standard Analysis
- Taxiway Geometric Standards and Gap Standard Analysis
- NAVAID Critical Areas
- Airfield Capacity
- Pavement Strength Analysis
- Hot Spots, Incidents and Incursions, and Geometric Contributors
- Air Traffic Control Tower Line-of-Sight
- Hangar Requirements
- Fuel Facilities
- Maintenance Runup Location
- Holding Bays

Key aspects of the facility requirements analysis are discussed below:

Critical Aircraft / Airport Reference Code

FCM was originally designed to what is currently considered as B-II standards. Within the past 7-10 years, and particularly after the extension of Runway 10R-28L to 5,000 feet, FCM experienced increased numbers of aircraft operations in the C-II category. Based on recent activity and the aviation activity forecasts, the existing and future critical aircraft at FCM is the Bombardier Challenger 300/350 (CL30/CL35), which is a C-II aircraft. As part of the LTP, coordination occurred with FAA, MAC, MNDOT,



and other agencies to acknowledge that the airfield effectively operates as a C-II airport, which served as the existing condition for consideration of airfield dimensional standard requirements in this analysis.

As the CL30/35 operates only on Runway 10R-28L, this runway was assessed for design standards gaps and mitigations to be brought into compliance with C-II standards, which specifically includes a requirement for longer or enhanced runway safety areas. The remaining runways and taxiways retained their current design standards.

Airfield Capacity

An assessment of airfield capacity based upon the projected operations growth, with consideration of the unique operating runway and operating configurations at FCM, concluded that the annual service volume is 209,400 annual operations compared to a demand of 144,764 annual operations. As a result, the LTP does not propose any modifications to the number of runways at FCM. Runway 18-36 is required to accommodate small aircraft in crosswind conditions and the parallel runways allow air traffic control to separate small piston aircraft from turboprop and jet aircraft operations.

Hot Spots, Incidents and Incursions, and Geometric Contributors

A key aspect of the facility requirements analysis and subsequent development of alternatives was a focus on reducing the likelihood and severity of runway incursions and surface incidents. As part of the analysis, a thorough review of past incident and incursion history and airfield geometric contributing factors was conducted to inform the development of potential alternatives to mitigate runway incursions.

ATCT Relocation

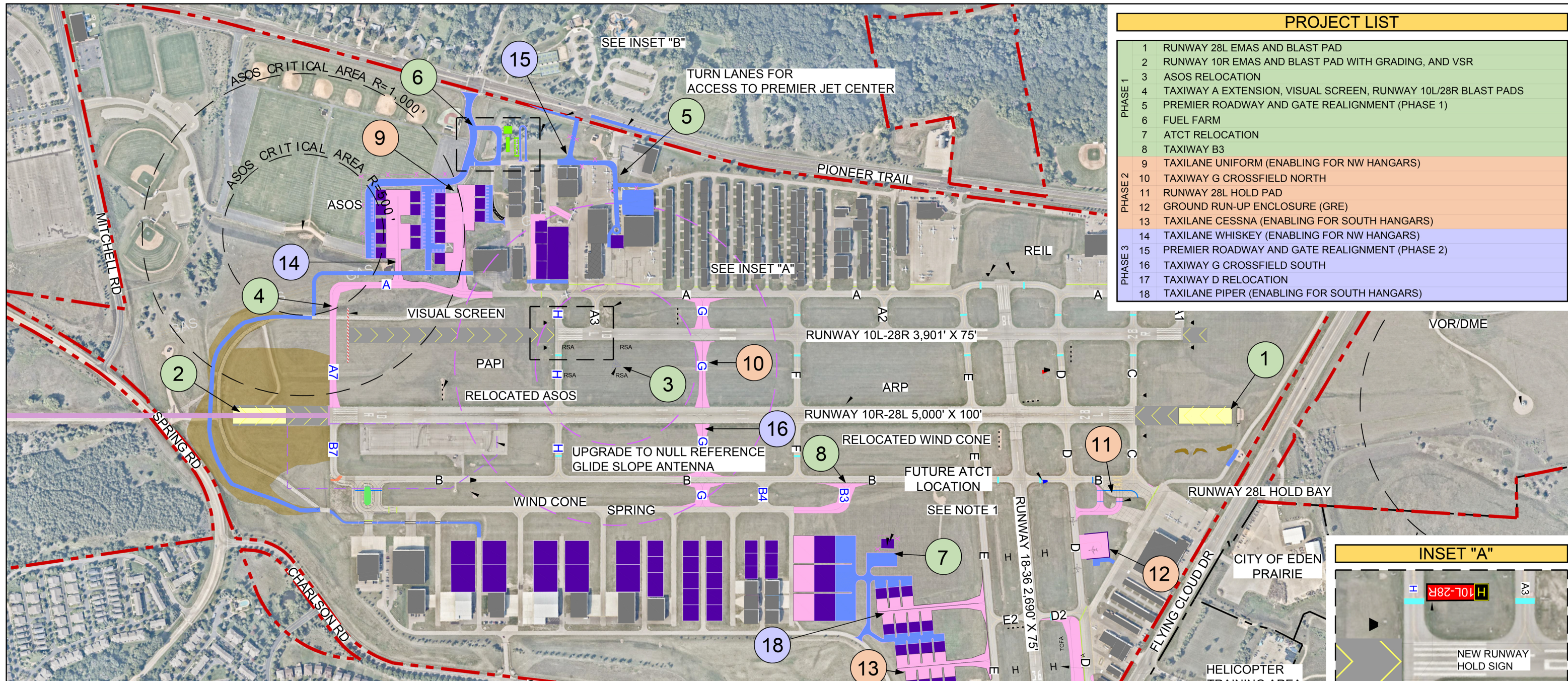
Identified as a need prior to the commencement of the LTP process, relocation of the current airport traffic control tower (ATCT) is recommended in the preferred development plan of the FCM LTP. The proposed new location of the ATCT is more centrally located on the airfield, south of Taxiway B and west of Taxiway E. This new location provides controllers a much improved view of the airfield and improved views of aircraft on final approach to the parallel runways.

Hangar Development

The LTP proposes general aviation hangar development for increased based aircraft capacity. Hangar development is proposed in several areas of the FCM airfield, including the northwest vicinity adjacent to Taxiway A, the southeast vicinity adjacent to Taxiway E, and the south vicinity along Taxiway B.

ES.4 Preferred Alternative and Implementation Phasing

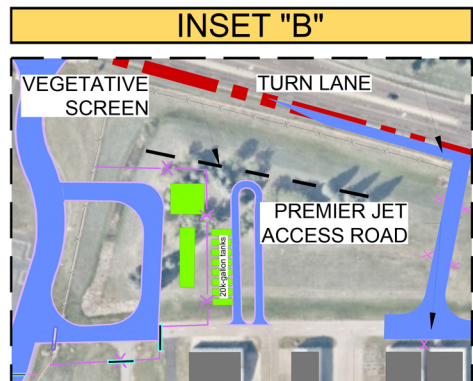
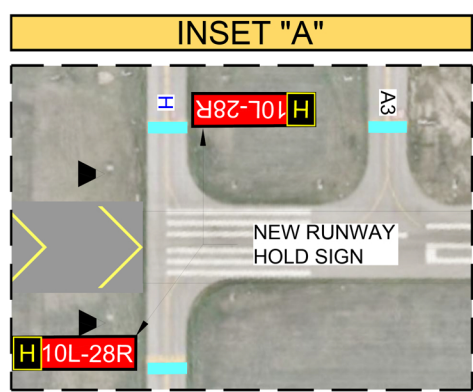
The LTP preferred alternative was the culmination of an iterative and robust alternatives development process involving stakeholder engagement and feedback. For each of the facility requirements that were identified, alternatives were developed to address and/or exceed a particular requirement for the LTP planning horizon. The preferred alternative combined the MAC and stakeholder selected options into an overall development plan from which initial implementation phasing was developed. The preferred alternative is shown in **Figure ES-1** and the projects that comprise the preferred alternative are listed in **Table ES- 2**. Additional details about the development of alternatives and about the preferred alternative projects, phasing, estimated costs, and level of environmental review anticipated are provided later in this LTP.



| PROJECT LIST | |
|---|---|
| PHASE 1 | 1 RUNWAY 28L EMAS AND BLAST PAD |
| | 2 RUNWAY 10R EMAS AND BLAST PAD WITH GRADING, AND VSR |
| | 3 ASOS RELOCATION |
| | 4 TAXIWAY A EXTENSION, VISUAL SCREEN, RUNWAY 10L/28R BLAST PADS |
| | 5 PREMIER ROADWAY AND GATE REALIGNMENT (PHASE 1) |
| PHASE 2 | 6 FUEL FARM |
| | 7 ATCT RELOCATION |
| | 8 TAXIWAY B3 |
| | 9 TAXILANE UNIFORM (ENABLING FOR NW HANGARS) |
| PHASE 3 | 10 TAXIWAY G CROSSFIELD NORTH |
| | 11 RUNWAY 28L HOLD PAD |
| | 12 GROUND RUN-UP ENCLOSURE (GRE) |
| | 13 TAXILANE CESSNA (ENABLING FOR SOUTH HANGARS) |
| | 14 TAXILANE WHISKEY (ENABLING FOR NW HANGARS) |
| 15 PREMIER ROADWAY AND GATE REALIGNMENT (PHASE 2) | |
| 16 TAXIWAY G CROSSFIELD SOUTH | |
| 17 TAXIWAY D RELOCATION | |
| 18 TAXILANE PIPER (ENABLING FOR SOUTH HANGARS) | |

| DRAWING LEGEND | | |
|-------------------------------------|--|---|
| FUTURE TAXIWAY / APRON PAVEMENT | | ILS HOLDING POSITION (PATTERN B) |
| PAINTED ISLAND | | INTERMEDIATE HOLDING POSITION (PATTERN C) |
| FUTURE ROADWAY PAVEMENT | | NON-MOVEMENT AREA BOUNDARY |
| FUTURE HANGAR | | BLAST PAD |
| PAVEMENT DEMOLITION | | ENGINEERED MATERIAL ARRESTING SYSTEM (EMAS) |
| AIRPORT PROPERTY LINE | | MEDIUM INTENSITY APPROACH LIGHTING SYSTEM WITH RAIL (MALSR) |
| EXISTING BUILDING - ON AIRPORT | | ADJACENT PARCELS |
| NAVAID CRITICAL AREA | | EXISTING NAVAID / ASOS |
| RELOCATED NAVAID CRITICAL AREA | | NAVAID/ASOS REMOVAL / NAVAID/ASOS RELOCATION |
| RE-GRADING LIMITS | | FUTURE TAXIWAY NAMING |
| RUNWAY SAFETY AREA (RSA) | | |
| RUNWAY HOLDING POSITION (PATTERN A) | | |

- NOTES**
- PREFERRED FUTURE ATCT CAB SITE LOCATION AS NOTED FROM FAA SITING STUDY COMPLETED IN 2022.
 - AERIAL IMAGERY: NEARMAP (APRIL 2023)



FLYING CLOUD AIRPORT
2040 LONG-TERM PLAN (LTP) UPDATE



FINAL DOCUMENT



FIGURE ES-1 FEBRUARY 2025
PREFERRED ALTERNATIVE OVERVIEW

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**Table ES - 2: Preferred Alternative Projects**

| Project No. | Description | Key Driver |
|----------------------------------|--|--------------------------|
| Phase 1 Projects (0 – 5 years) | | |
| CIP #1 | 28L EMAS and Blast Pad | FAA Compliance |
| CIP #2 | 10R EMAS and Blast Pad; West Grading: VSR Relocation | FAA Compliance |
| CIP #3 | ASOS Relocation | FAA Compliance |
| CIP #4 | Taxiway Alpha Extension | Airfield Safety |
| CIP #7 | Premier Roadway and Gate Alignment (Phase 1) | Aeronautical Development |
| CIP #9 | Fuel Farm (Alternative 1) | Airfield Safety |
| CIP #10 | ATCT Relocation | Airfield Safety |
| CIP #13 | Taxiway B2 | Aeronautical Development |
| Phase 2 Projects (6 – 10 years) | | |
| CIP #5 | Taxilane Uniform (enabling for NW hangars) | Aeronautical Development |
| CIP #11 | Taxiway G North (Crossfield) | Airfield Safety |
| CIP #14 | Runway End 10R Hold Pad | Airfield Safety |
| CIP #15 | Ground Run-Up Enclosure | Noise Attenuation |
| CIP #18 | Taxilane Cessna (enabling for South hangars) | Aeronautical Development |
| Phase 3 Projects (11 – 20 years) | | |
| CIP #6 | Taxilane Whiskey (enabling for NW hangars) | Aeronautical Development |
| CIP #8 | Premier Roadway and Gate Alignment (Phase 2) | Aeronautical Development |
| CIP #12 | Taxiway G South (Crossfield) | Airfield Safety |
| CIP #16 | Taxiway D Relocation | FAA Compliance |
| CIP #17 | Taxilane Piper (enabling for South hangars) | Aeronautical Development |

It is important to note that the LTP is a high-level planning document and does not authorize any construction. Adoption of the LTP is only the first step in the project implementation process. Implementation of proposed projects within the preferred alternative will need to be conditionally approved on the Airport Layout Plan (ALP) and will require environmental approvals/actions prior to design and construction. For those projects that may require a Modification of Standard (MOS), such as the proposed Taxiway A extension, additional coordination and approvals will be required ahead of environmental approvals or actions as well.

Once approved, the project(s) will compete for funding through FAA and/or State grant programs. To compete effectively for funding, the project(s) must have solidly documented justification. Once funding is secured, final project engineering and design will take approximately one year to complete.