DISCOVER

Flying Cloud Airport

2040 Long-Term Plan Update

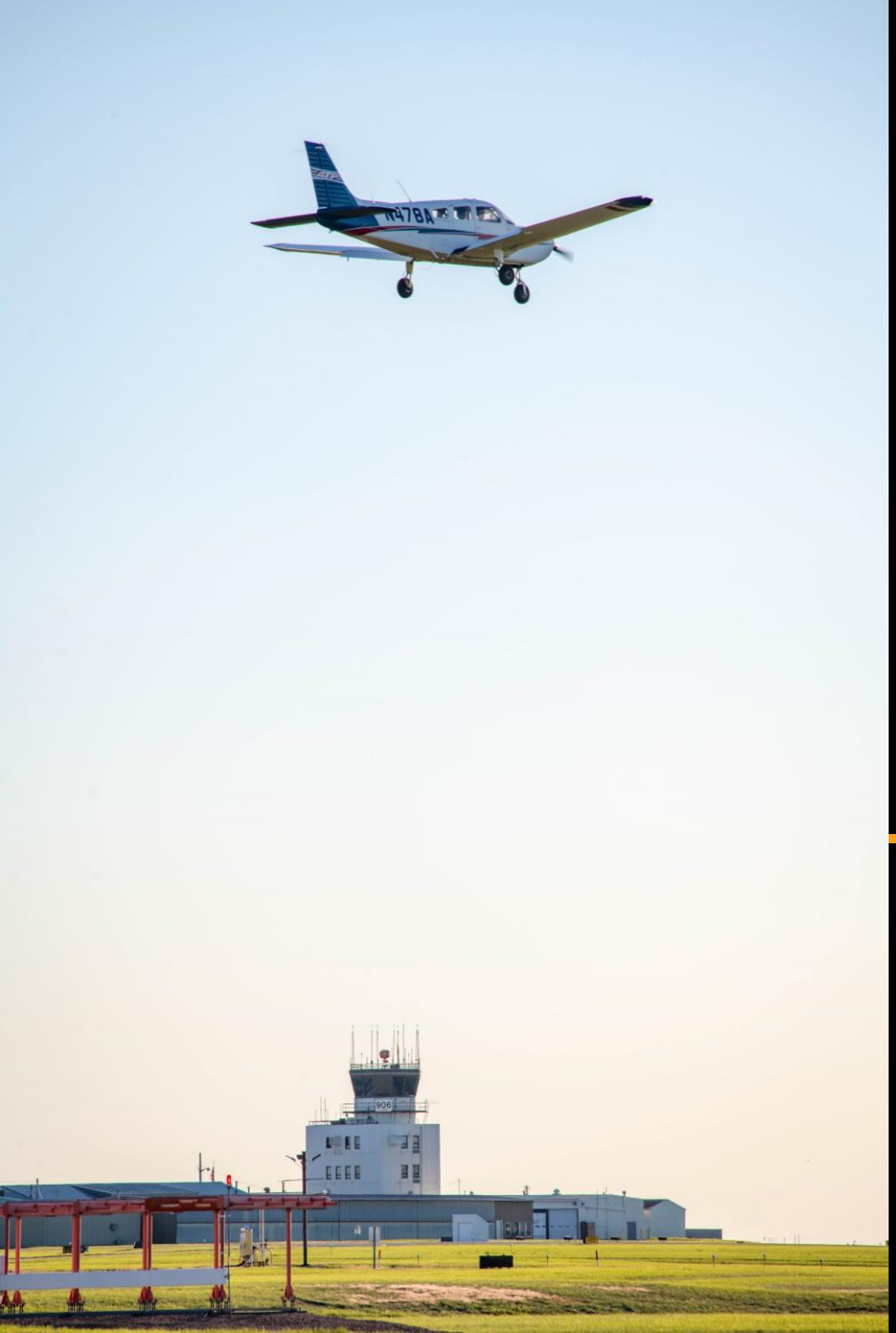
October 25, 2022

MINNEAPOLIS SAINT PAUL METROPOLITAN AIRPORTS COMMISSION

MAC

Agenda

- Welcoming Remarks
- Introductions
- Long Term Plan (LTP) Goals & Objectives
- Recap Previous Engagement Activity
- Aircraft Noise Primer
- LTP Project Updates
  - Aviation Activity Forecast Review
  - Facility Requirements
- Next Steps
- Feedback / Survey



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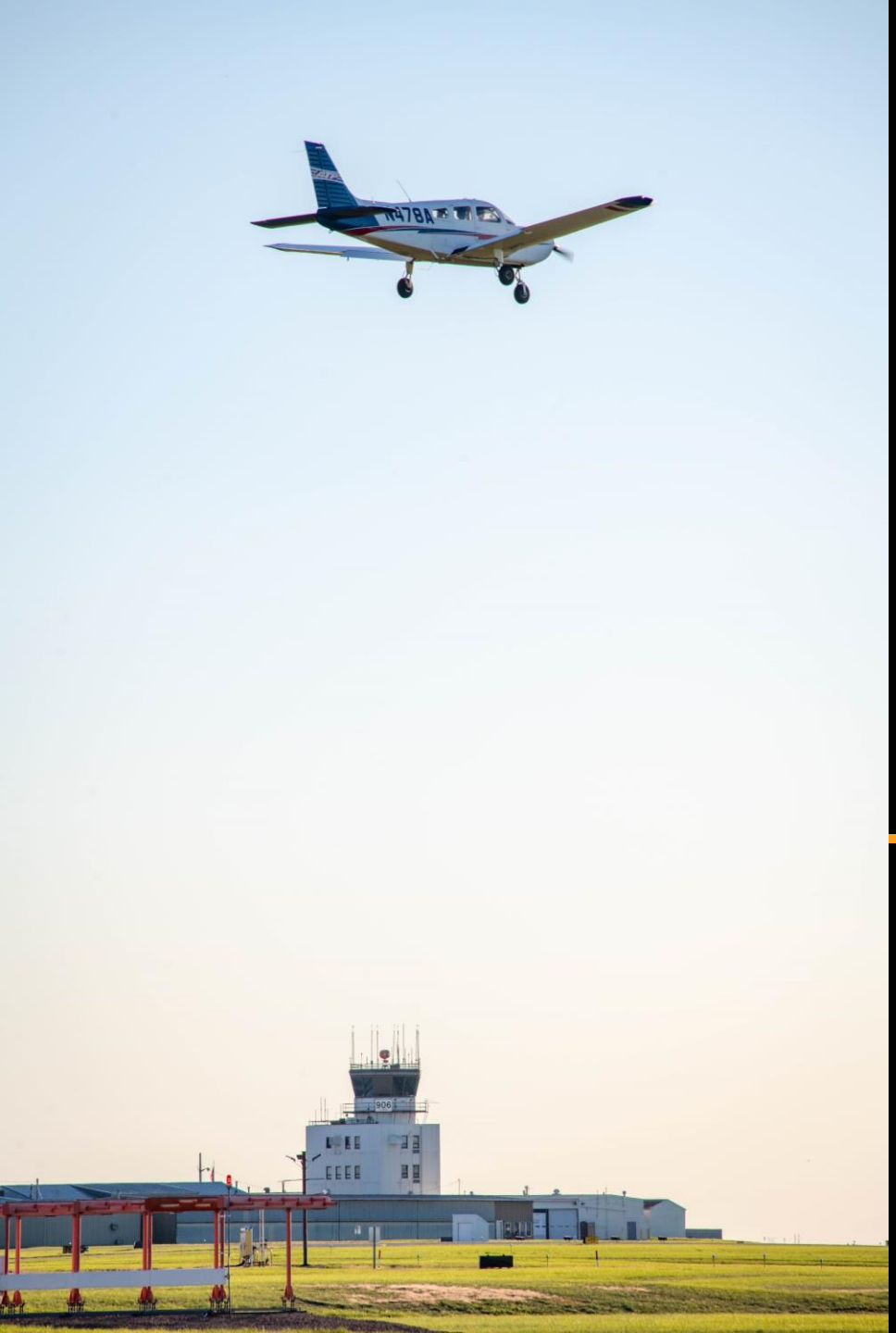
Welcome Remarks



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Introductions

Planning Team

Eric Gilles

MAC Airport Planner

Project Manager

Dana Nelson

MAC Director, Stakeholder Engagement

Blaine Peterson

MAC Airport Manager, FCM and LVN

Joe Harris

MAC Director, Reliever Airports

Andrew Blaisdell

Senior Project Manager, HNTB

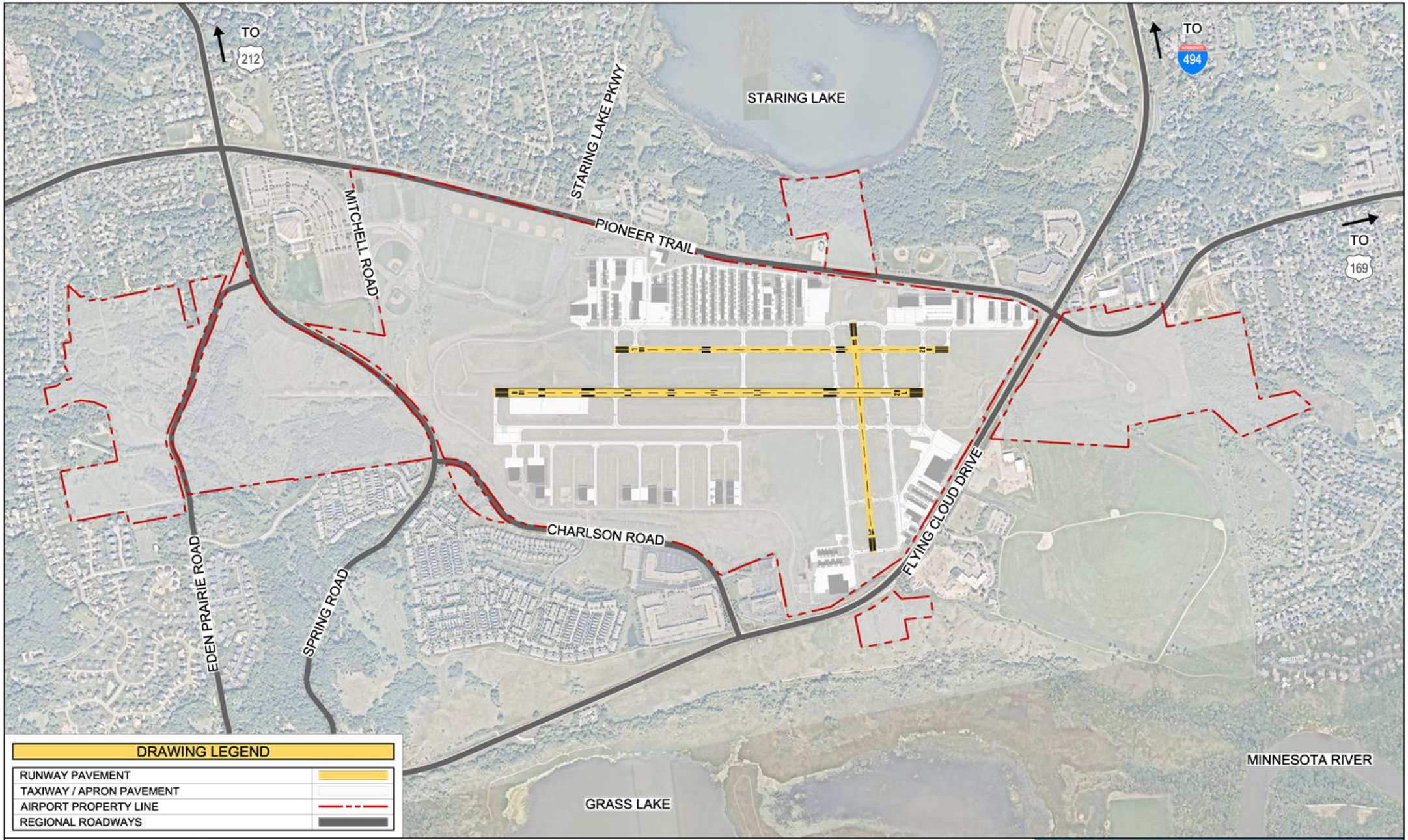
Consultant Project Manager

Greg Albjerg

Vice President, Senior Aviation Consultant, HNTB

Technical Advisor

Frequent Flyer at FCM



FCM

FLYING CLOUD AIRPORT
2040 LONG TERM PLAN (LTP) UPDATE

N

0 1,000' 2,000'

HNTB

DRAFT WORKING DOCUMENT | NOT FOR DISSEMINATION

FIGURE 1-9 APR. 2022

REGIONAL ROADWAY CONNECTIONS

FLYING CLOUD AIRPORT (FCM)
BY THE NUMBERS

363
based aircraft

137
leases

131,593
annual flight operations

$229 M
economic output annually

$2.6 M
in local/state tax contributions annually

1,190
jobs supported

5
fixed based operators

3
runways

11,590
feet of runway

670
runway and taxiway lights

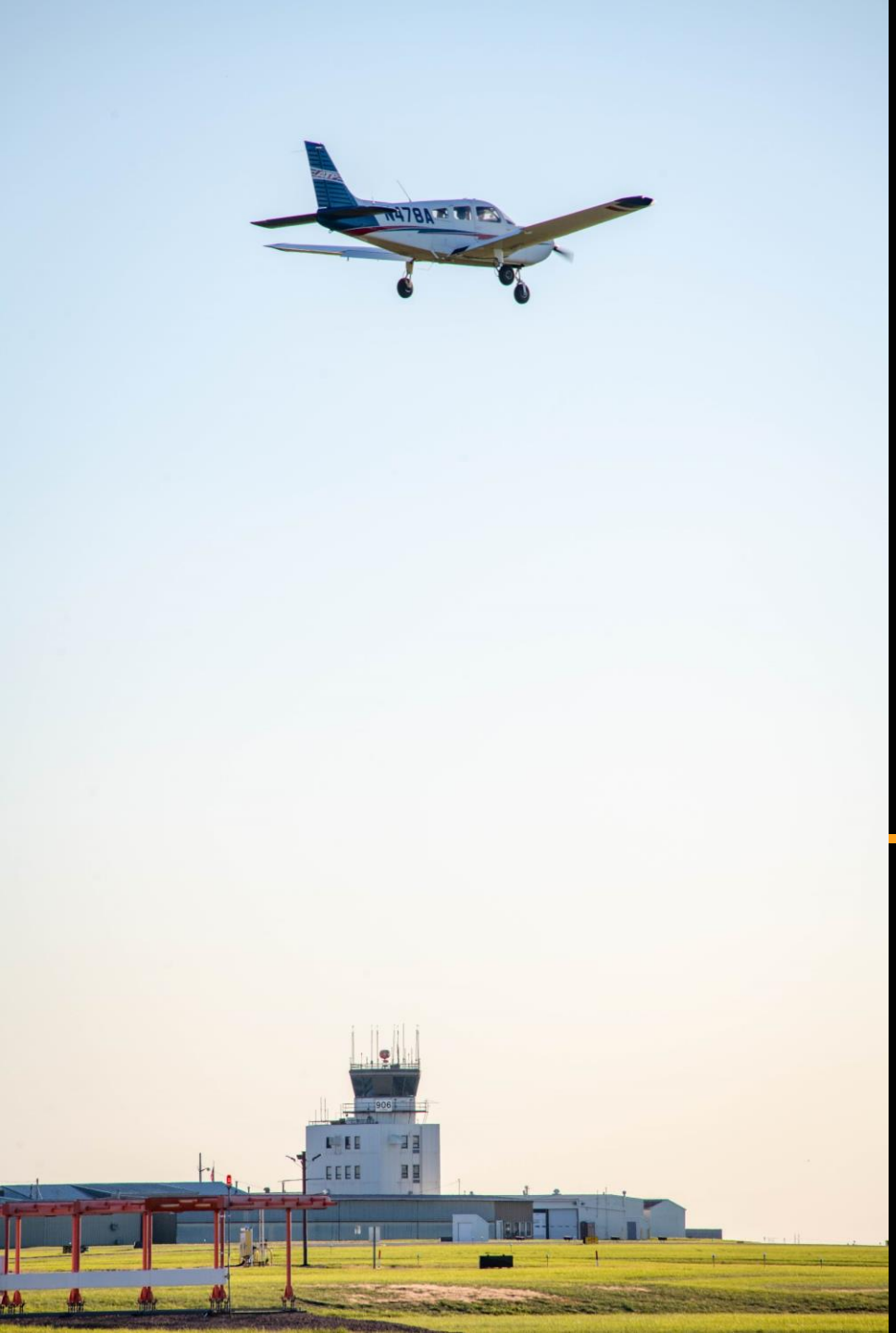
59
pieces of equipment
maintaining the airfield and airport grounds

860
acres

4 Fulltime airport maintenance staff • **4** Flight schools • **1** Air traffic control tower

2 Flying clubs • **1** Civil Air Patrol • In the community since **1941** • Owned by MAC since **1948**

Busiest airport in MAC's system of General Aviation Airports • On-site public viewing area



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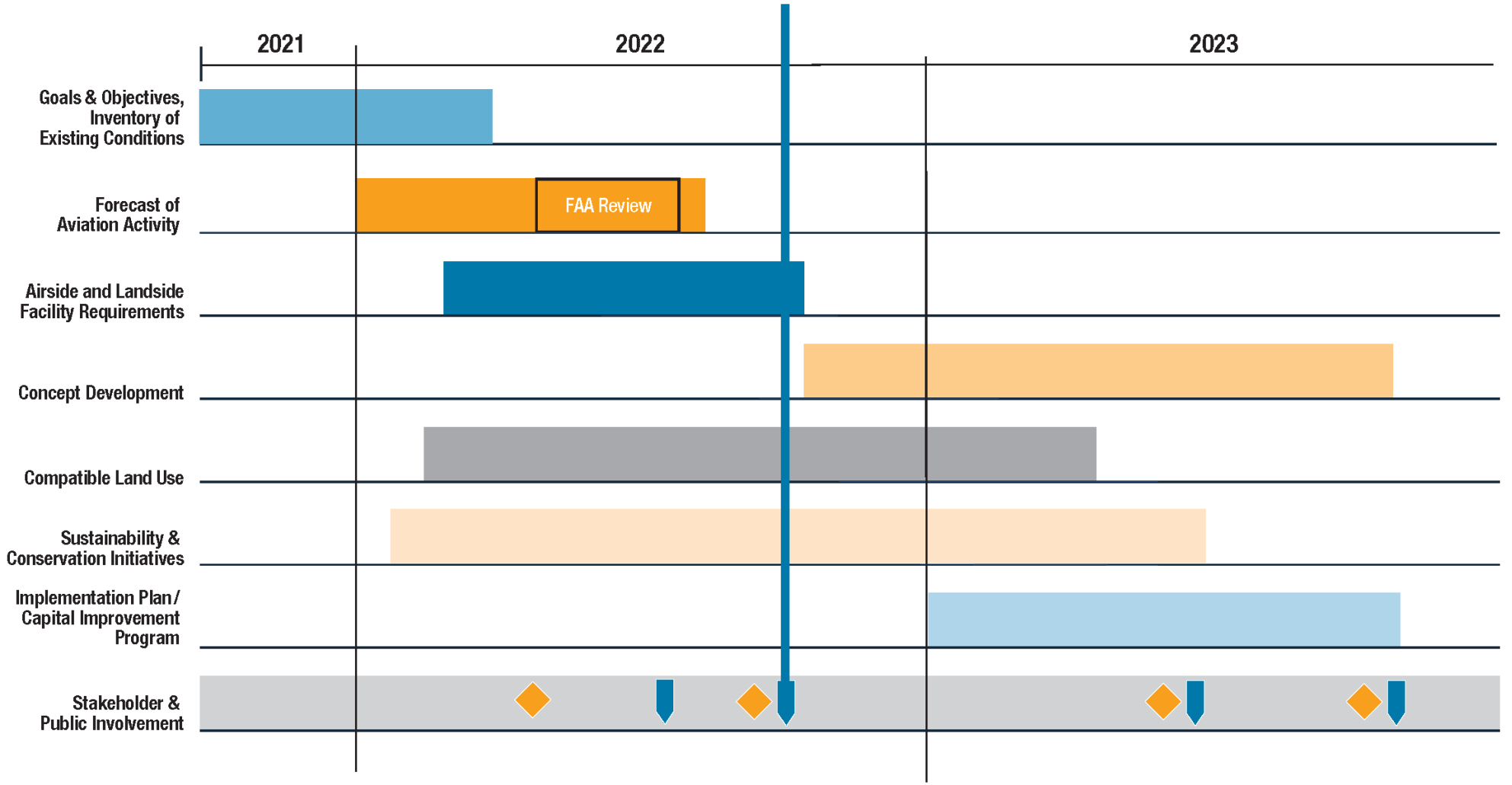
Long-Term Plan Goals & Objectives

What is a Long-Term Plan (LTP)?

- A document that records current and future needs of an airport
- Focuses on a 20-year horizon, with intermediate steps at 5- and 10-years
- The last LTP update for Flying Cloud Airport (FCM) was completed in 2010
- Does not authorize actual construction

Metropolitan Airports Commission (MAC) Flying Cloud Airport (FCM)

2040 Long-Term Plan (LTP) Schedule



Stakeholder Advisory Panel (SAP) Meeting Public Open House

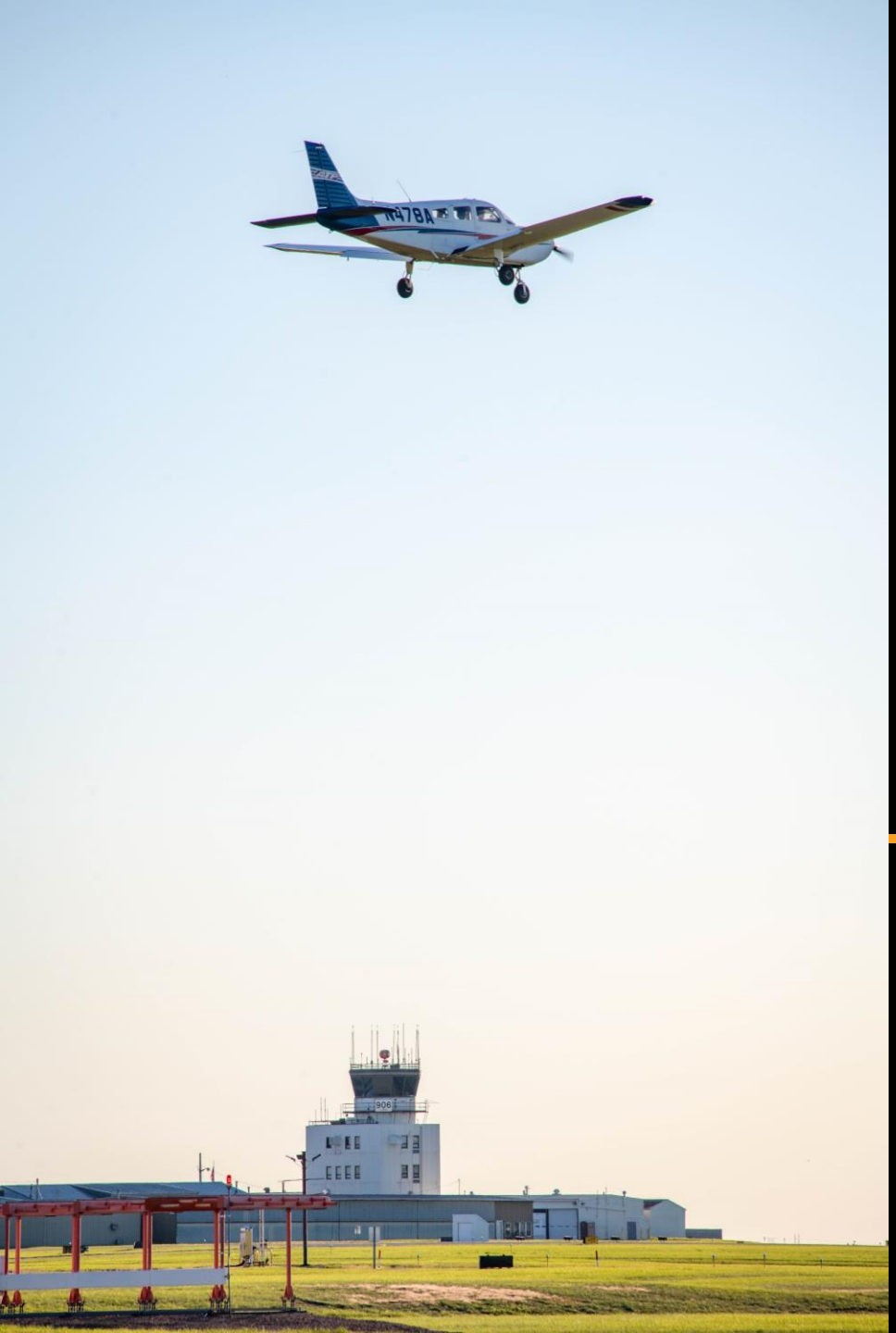
Updated: October 2022 - Timeline is subject to change.

Goals & Objectives

Enhance airport safety

Preserve and, if possible, improve operational capabilities for the current family of aircraft using the airport

Promote financial sustainability of the MAC Reliever Airport system by exploring revenue opportunities for aeronautical and non-aeronautical development



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Recap Previous Engagement Activities

Stakeholder Engagement Program

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Flying Cloud Airport

Public Events

Stakeholder Advisory Panel

Project Website: metroairports.org/fcm-long-term-plan

E-News Project Updates

Email: fcm.ltp@mspmac.org

Discover Flying Cloud #1 Recap

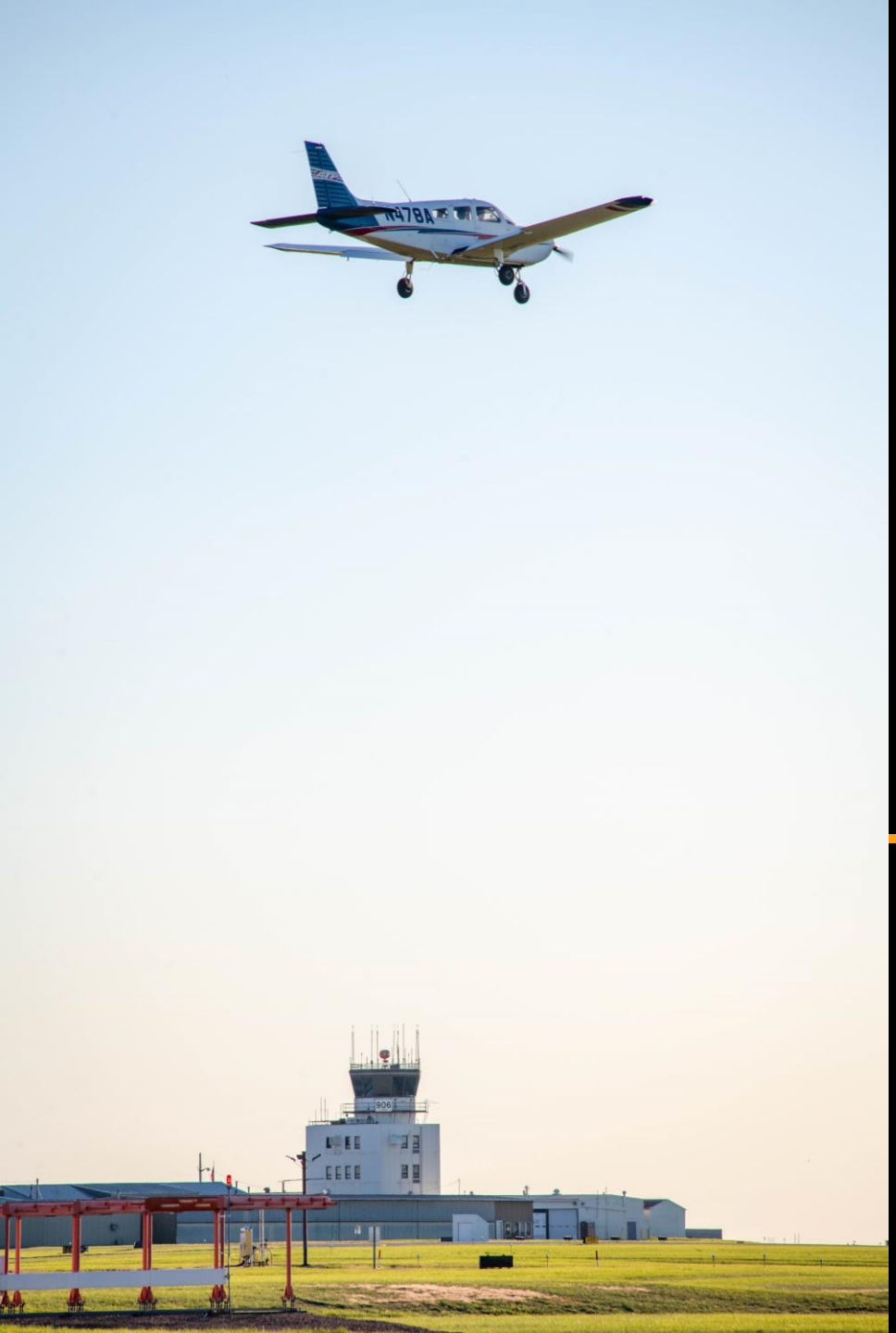
Held at Flying Cloud Airport June 8, 2022

- Welcome Remarks by MAC Commission Chair, Rick King
- Introductions
- Stakeholder Engagement Program
- LTP Process
- LTP Project Updates
  - Existing Conditions and
  - Aviation Forecast Methodology
- Next Steps
- Feedback / Survey

Discover Flying Cloud #1 Recap

What we heard

- Potential development at the ball fields needs to be carefully considered to identify solutions acceptable for all parties
- Additional amenities at FCM are desired: restaurant, trails, museum
- Noise remains a community concern



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Aircraft Noise Primer

Aircraft Noise Roles & Responsibilities

U.S. Congress

- Creates laws that govern aviation in the U.S.

Federal Aviation Administration

- Regulates airports and aviation activities, including pilots and aircraft manufacturers
- Operates Air Traffic Control, directing aircraft on the ground and in the air

FCM Airport Operators

- Transport people, goods and services
- Contribute to the local economy (i.e. providing jobs, spending at local businesses, providing a gateway to the city)
- Serve the community (i.e. transport passengers with medical or humanitarian needs, pet rescue flights, organ transplant flights, support during emergencies, community outreach events)

Metropolitan Airports Commission

- Owns and operates 7 airports, including Flying Cloud Airport
- Provides safe facilities for businesses and individuals to operate aircraft
- Maintains Noise Abatement Plans
- Conducts pilot outreach

Noise 101 Video: Who Makes the Decisions? https://youtu.be/HCOtNwJr45M

Examples of Federal Acts Impacting Airports

Aviation Safety and Noise Abatement Act, 1979

- FAA establishes system to measure noise and mitigation criteria
- Airports required to use metric (DNL) and threshold (65 dB) in determining land uses compatible to aircraft noise

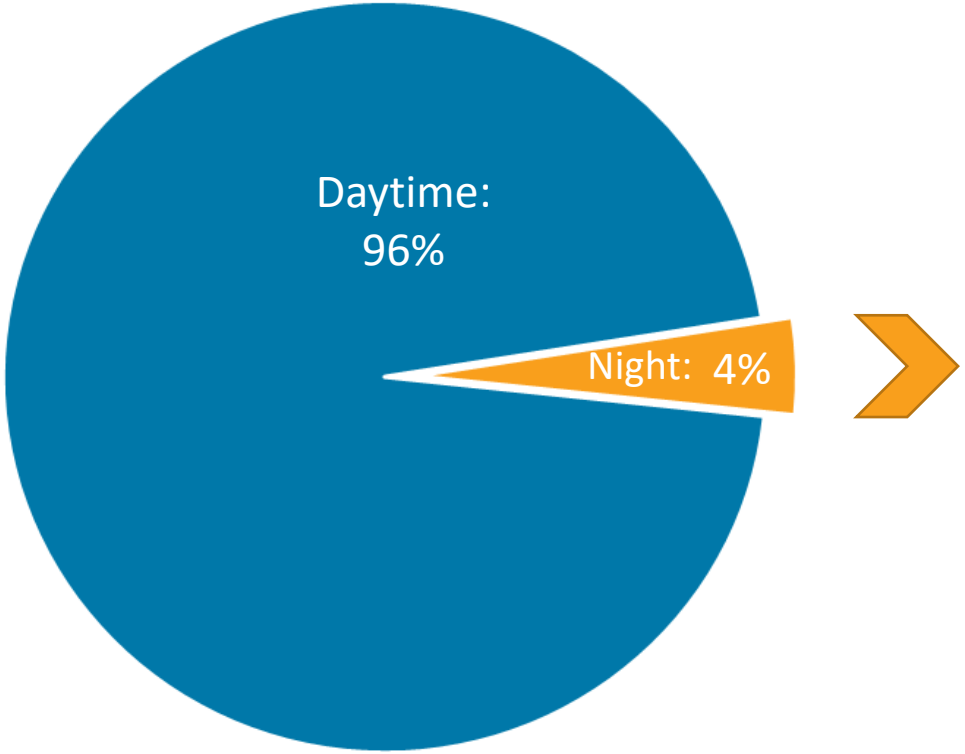
Airport Noise and Capacity Act, 1990

- Mandates phase-out of loud ("Stage 2") jet operations over 75,000 pounds
- Establishes requirements regarding airport noise and access restrictions
- Prevents airports from instituting noise curfews without going through a rigorous FAA approval process

Noise 101 Video: Who Makes the Decisions? https://youtu.be/HCOtNwJr45M

Flying Cloud Airport Nighttime Flights

All Flights (YTD 2022)



Life-Saving Flight Services

- Minneapolis-based non-profit
- 25% of flights by Aviation Charter are donation-related
- Time is of the essence; many transplants need to occur within 6 hours of organ acquisition
- OR schedules and organ acquisition lead to nighttime flights at Flying Cloud

LifeSource
ORGAN, EYE AND TISSUE DONATION

DONATE LIFE

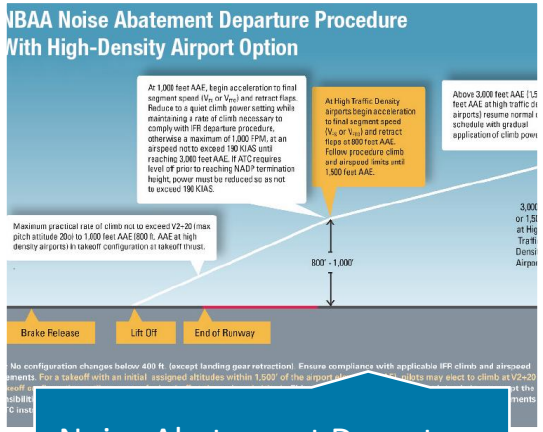
MAC Noise Abatement Efforts

Voluntary Nighttime Restrictions

Preferred Runway

Departure Turns to the South

Flight Training Activity



Noise Abatement Departure and Arrival Procedures

Maintenance Runups

Aircraft Noise Analysis in the LTP

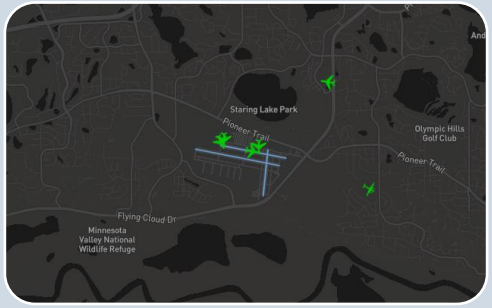
What ***will*** the Long-Term Plan do

- Document Existing noise exposure using annual average noise metrics
- Document future noise exposure based on the best forecast available

What ***won't*** the Long-Term Plan do

- Thoroughly review environmental impacts
- Change aircraft flight procedures
- Establish a residential noise mitigation program

Resources

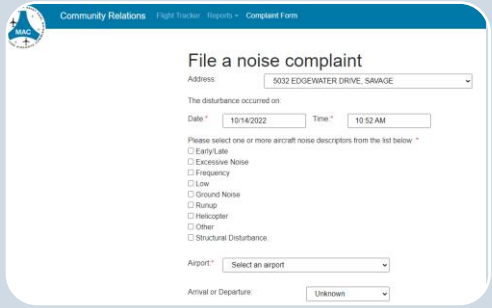


Flight Tracker

macnoms.com

Quarterly Reports

customers.macnoms.com/reports

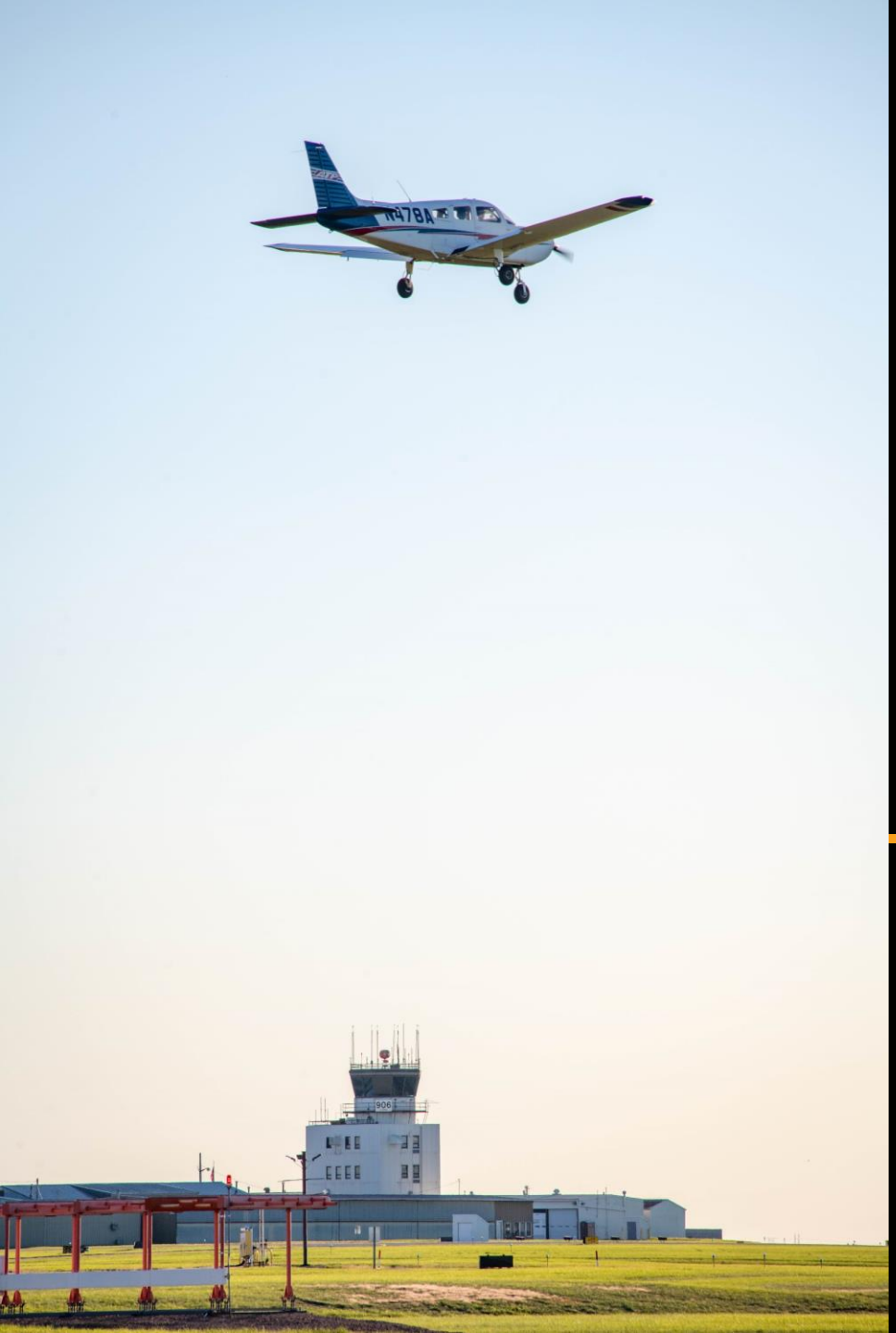


Complaint Reporting

customers.macnoms.com/customers

Community Relations Team

24-hour hotline:
612-726-9411



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Aviation Activity Forecast Review

Forecast Overview

Purpose: establish a framework to discuss future demand, in the context of capacity, efficiency, and safety

Forecast Components

- Annual Aircraft Operations
- Fleet Mix
- Based Aircraft

A revised forecast was submitted to FAA on September 15th and approval is expected soon

Forecast Framework

Base Year: 2021

Future Planning Activity Levels: 2025, 2030, 2040

- Consider activity growth during COVID-19 pandemic
- Flying Cloud has the smallest catchment area of MAC's primary reliever airports
  - Population, households, employment
- Flying Cloud accounts for the highest number of itinerant general aviation and business traffic per capita of the MAC's primary reliever airports

Forecast Inputs and Airport Characteristics

Key Forecast Inputs

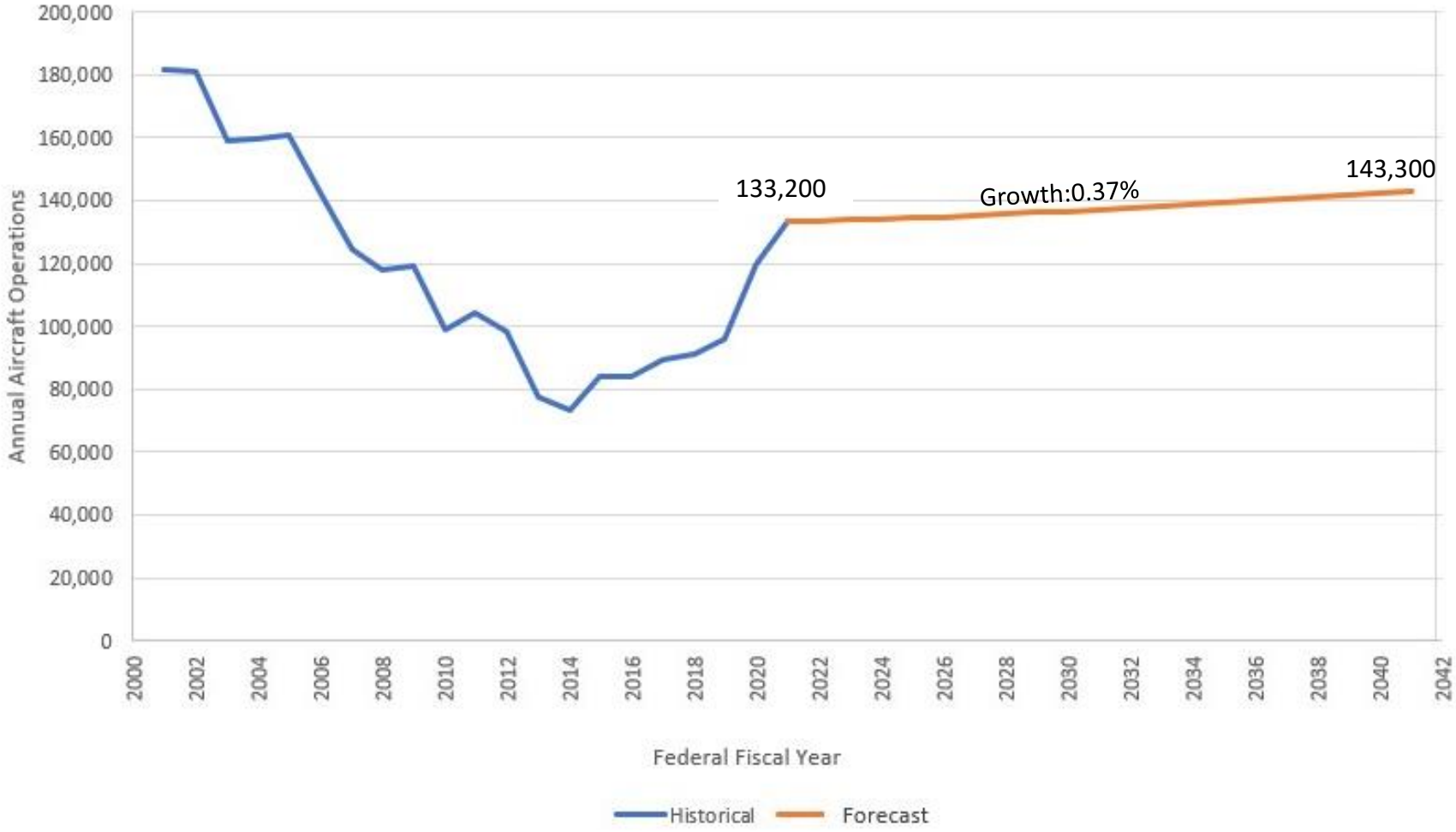
- Historical aviation activity at FCM (operations, fleet mix, based aircraft)
- Industry factors (national General Aviation forecast, fuel prices, aircraft production, etc.)
- Activity and constraints at other airports in region
- Business jet behavior, recent activity, and anticipated fleet
- Regional economic and population demographic data

Airport Characteristics

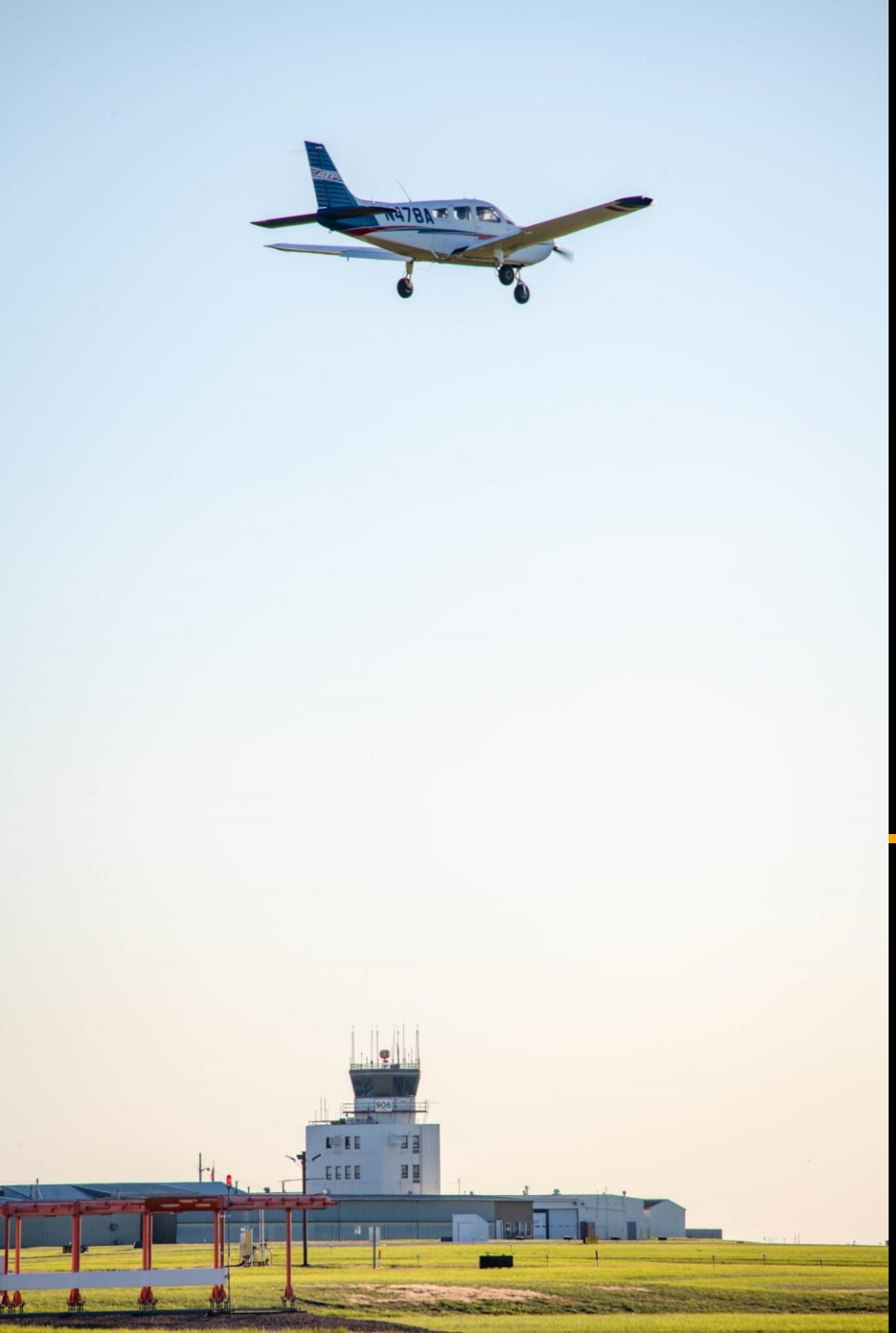
Factors that significantly impact an airport's ability to attract business jet operations:

- Adequate runway length
- Available airfield capacity/limited congestion
- Proximity to the central business district

Aviation Forecast Review



Source: HNTB (forecast); 2021 FAA Terminal Area Forecast, published in 2022 (historical)



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Facility Requirements

Runway Design Standards

- The FAA defines a Runway Design Code for every runway in the National Airspace System

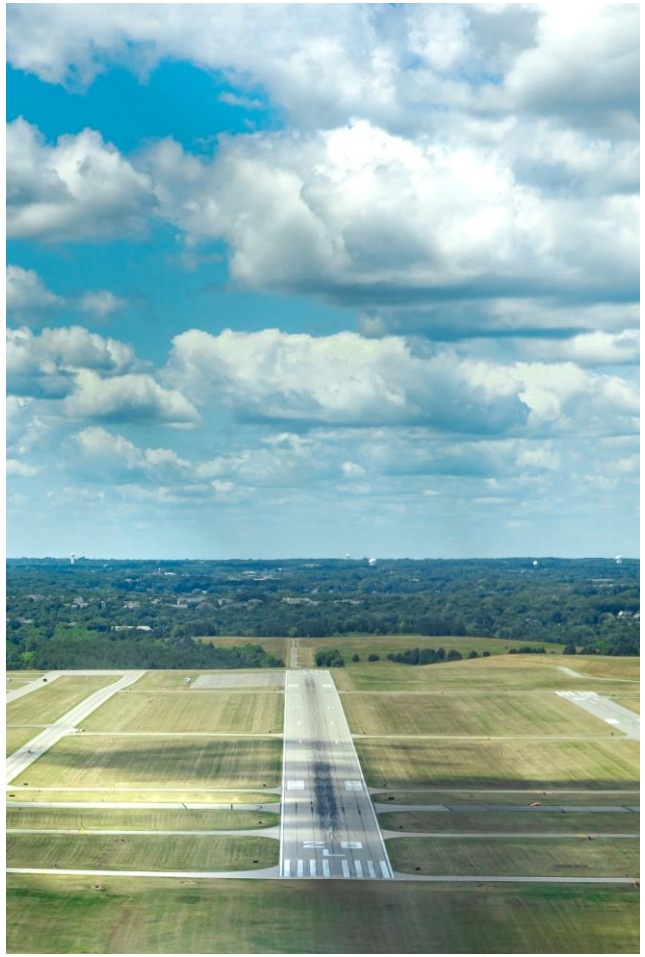
- Runway Design Code is made up of three components
  - Aircraft Approach Category (AAC): Based on approach speed while landing
  - Airplane Design Group (ADG): Based on wingspan and tail height
  - Approach visibility minimums for a specific runway's critical aircraft

AAC	APPROACH SPEED
A	Approach speed less than 91 knots
B	Approach speed 91 knots or more, but less than 121 knots
C	Approach speed 121 knots or more, but less than 141 knots
D	Approach speed 141 knots or more, but less than 166 knots
E	Approach speed of more than 166 knots

CATEGORY	WINGSPAN	TAIL HEIGHT
ADG I	Less than 49'	Less than 20'
ADG II	49' but less than 79'	20' but less than 30'
ADG III	79' but less than 118'	30' but less than 45'
ADG IV	118' but less than 171'	45' but less than 60'
ADG V	171' but less than 214'	60' but less than 66'
ADG VI	214' but less than 262'	66' but less than 80'

Critical Aircraft

- FAA defines “Critical Aircraft” as the most demanding aircraft with greater than 500 annual operations at an airport
- The critical aircraft sets dimensional requirements of the airport
- Accurate critical aircraft determination helps ensure proper development of airport facilities



Critical Aircraft

- FCM was designed to B-II standards but has seen an increase in operations by C-II aircraft

- The most demanding C-II aircraft with greater than 500 annual operations at FCM is the Challenger 350

- The previous critical aircraft was identified as the Citation III

		Federal Fiscal Year				
AAC	ADG	2017	2018	2019	2020	2021
B	II	10,138	10,729	11,462	8,564	10,305
C	II	1,035	1,407	1,643	1,171	1,753

Operations by C-II aircraft accounted for approximately 2% of total operations at FCM in 2021

Critical Aircraft

Citation 3

Approach Speed: B

Airplane Design Group: II

Max. Takeoff Weight: 22,000 lbs

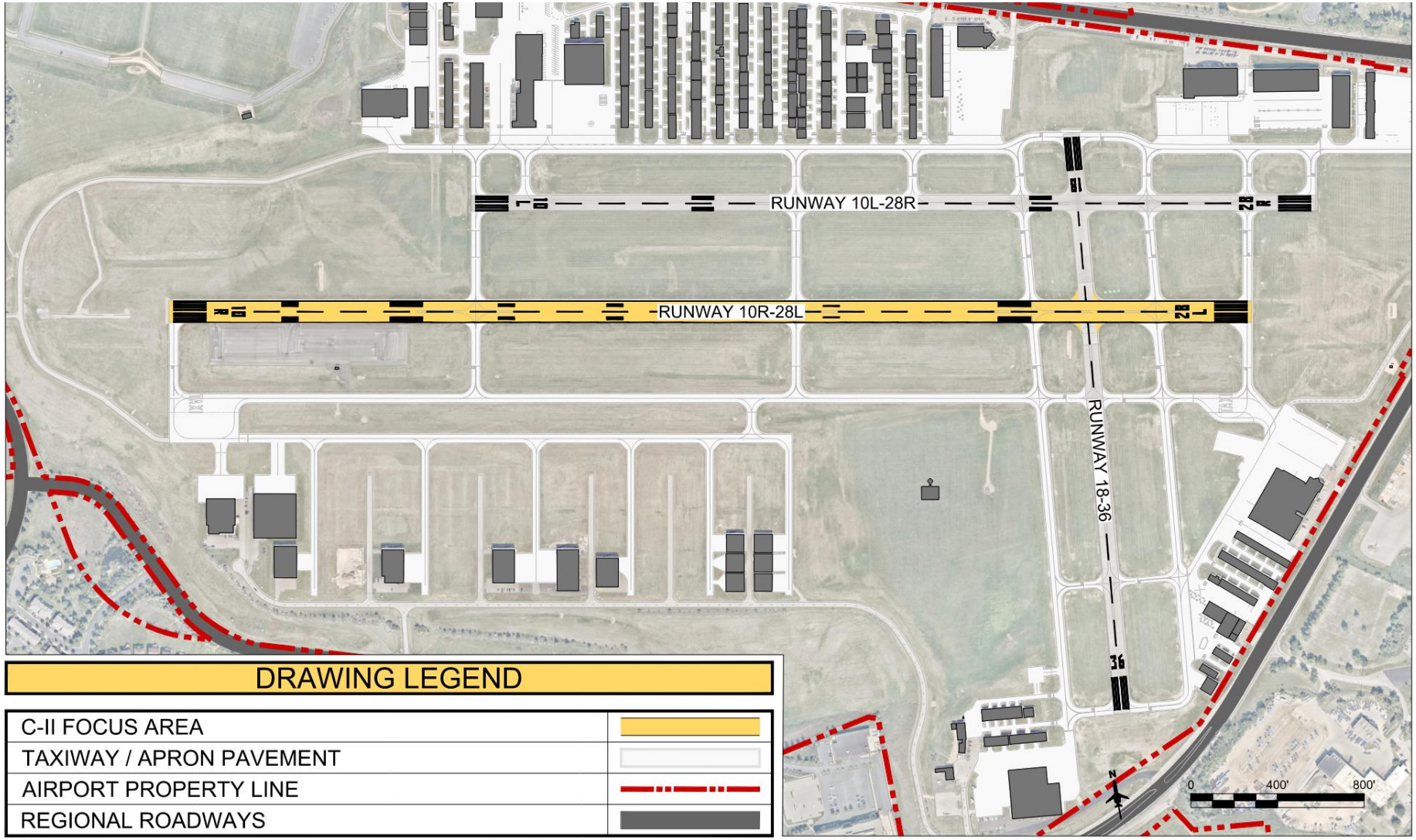
Challenger 350

Approach Speed: C

Airplane Design Group: II

Max. Takeoff Weight: 40,600 lbs

Critical Aircraft Area of Impact



Facility Requirements

Facility Requirements evaluate existing and future needs of an airport, and monitors airport compliance of standards based on federal (FAA) and local (MnDOT) requirements

Benchmark facility requirements against LTP Goals and Objectives

Enhance airport safety	Preserve and, if possible, improve operational capabilities for the current family of aircraft using the airport	Promote financial sustainability of the MAC Reliever Airport system by exploring revenue opportunities for aeronautical and non-aeronautical development
By adopting current federal and local airport safety regulations	By accounting for existing and future based aircraft and operations	By implementing realistic project strategies to address existing needs and conform to existing financial structure

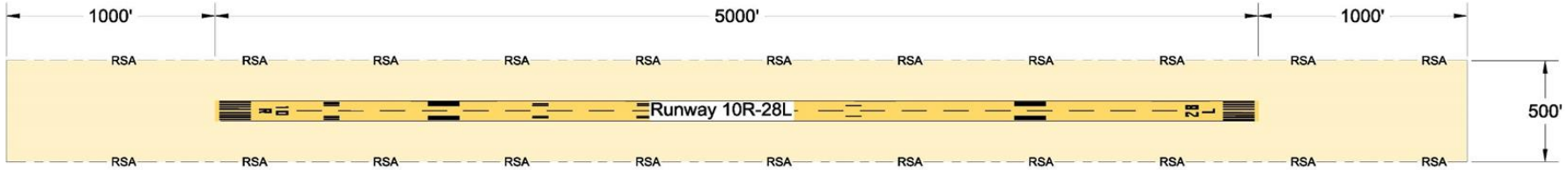
Facility Requirement Considerations

- Facility Requirements (Today)
  - Critical Aircraft Impacts (Existing B-II to C-II)

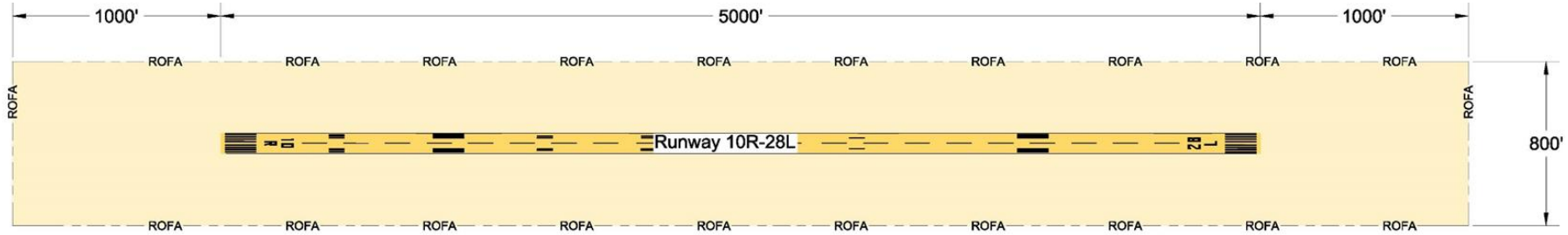
- Other Facility Requirements Evaluated in the LTP (Covered in Event #3)
  - Airfield Capacity
  - Navigational Aid (NAVAID) Critical Areas
  - Dimensional Criteria
  - Airfield Markings
  - Aircraft Parking Areas/Aprons

Facility Requirements - Definitions

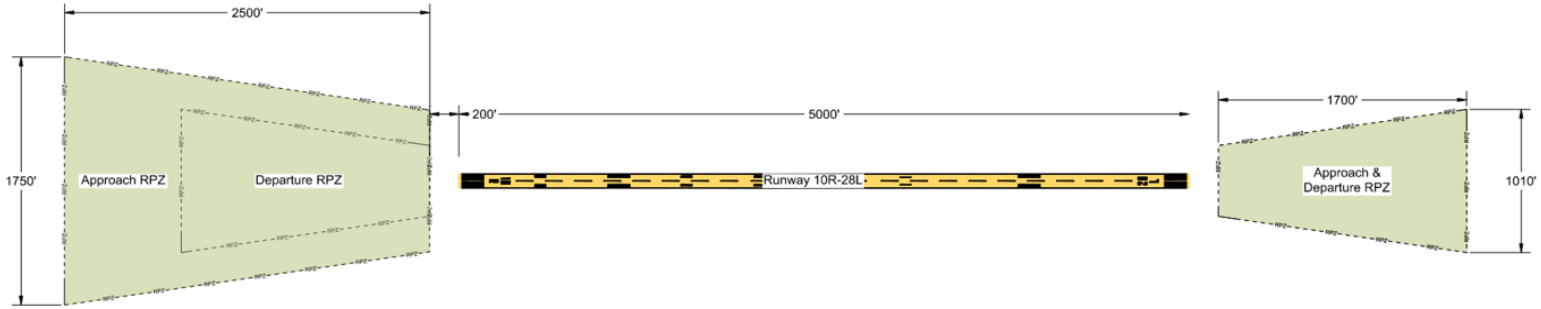
- **Runway Safety Area (RSA):** The area surrounding the runway consisting of a prepared surface suitable for reducing the risk of damage to an aircraft in the event of an undershoot, overshoot, or excursion from the runway.



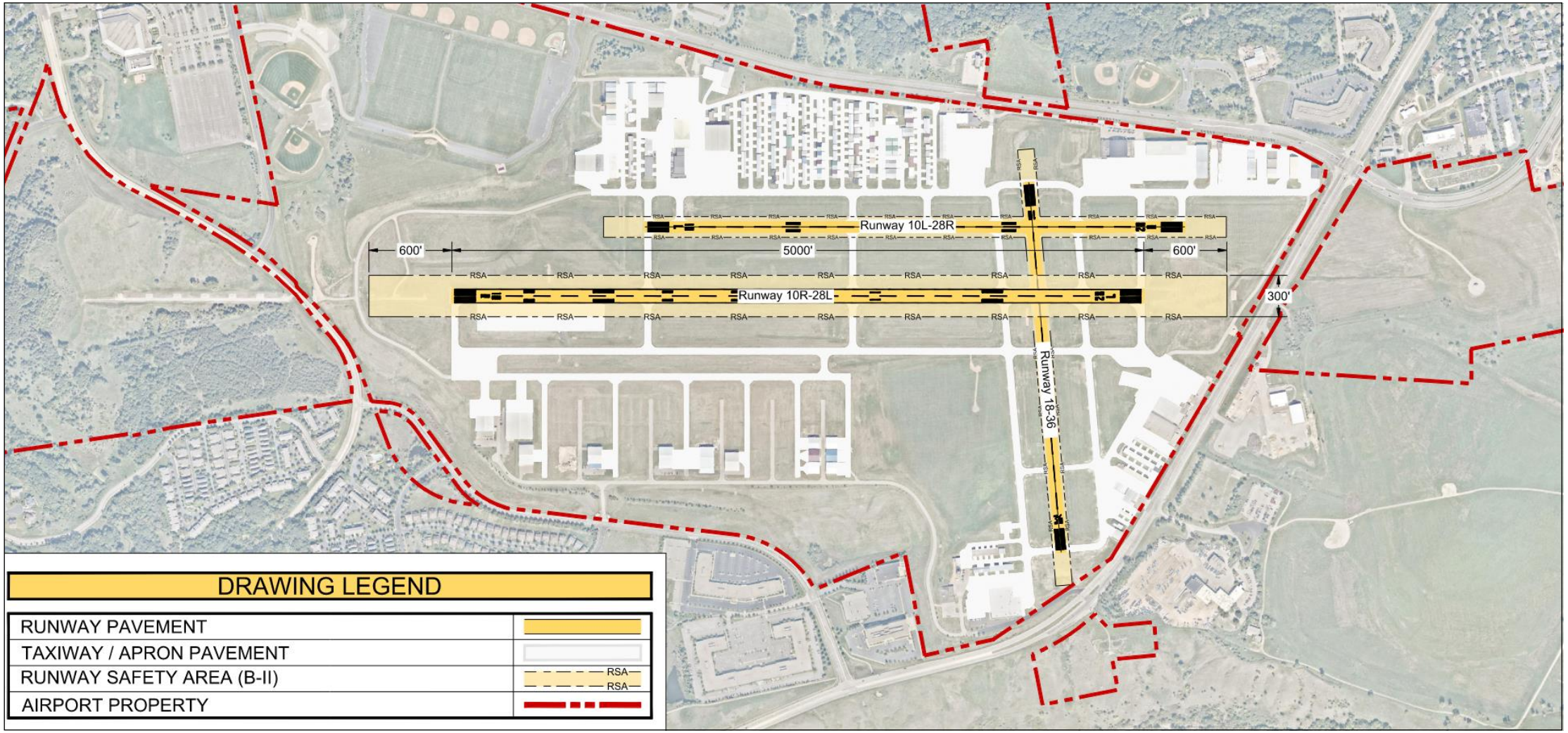
- **Runway Object Free Area (ROFA):** The area surrounding the runway provided to enhance the safety of aircraft by remaining clear of objects, except for objects that are fixed-by-function in the ROFA for air navigation or aircraft ground maneuvering purposes.



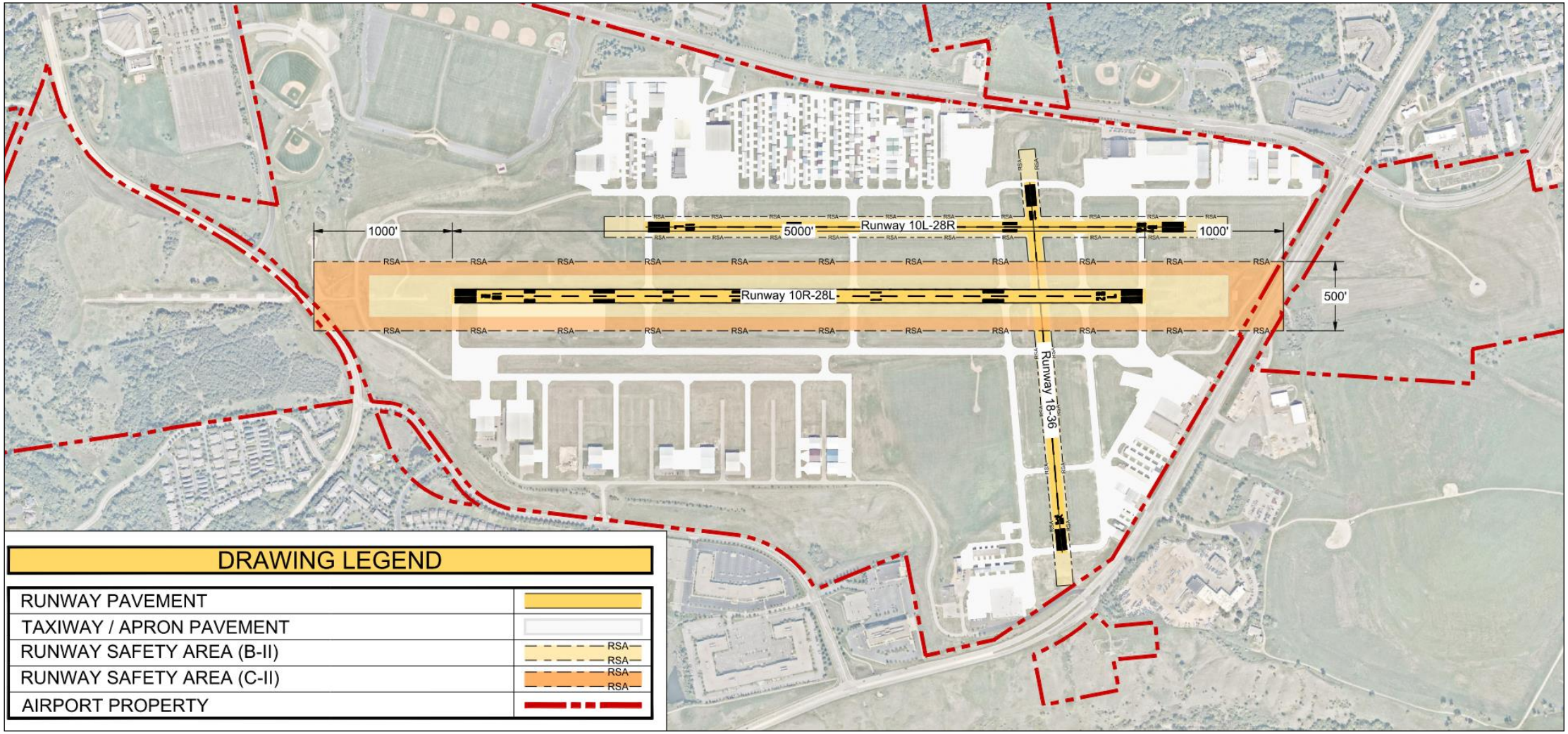
- **Runway Protection Zone (RPZ):** The 2-dimensional trapezoidal area which is intended for land-use compatibility control. The function of the RPZ is to protect people and property on the ground due to undershoots and overshoots of aircraft arriving and departing the runway.



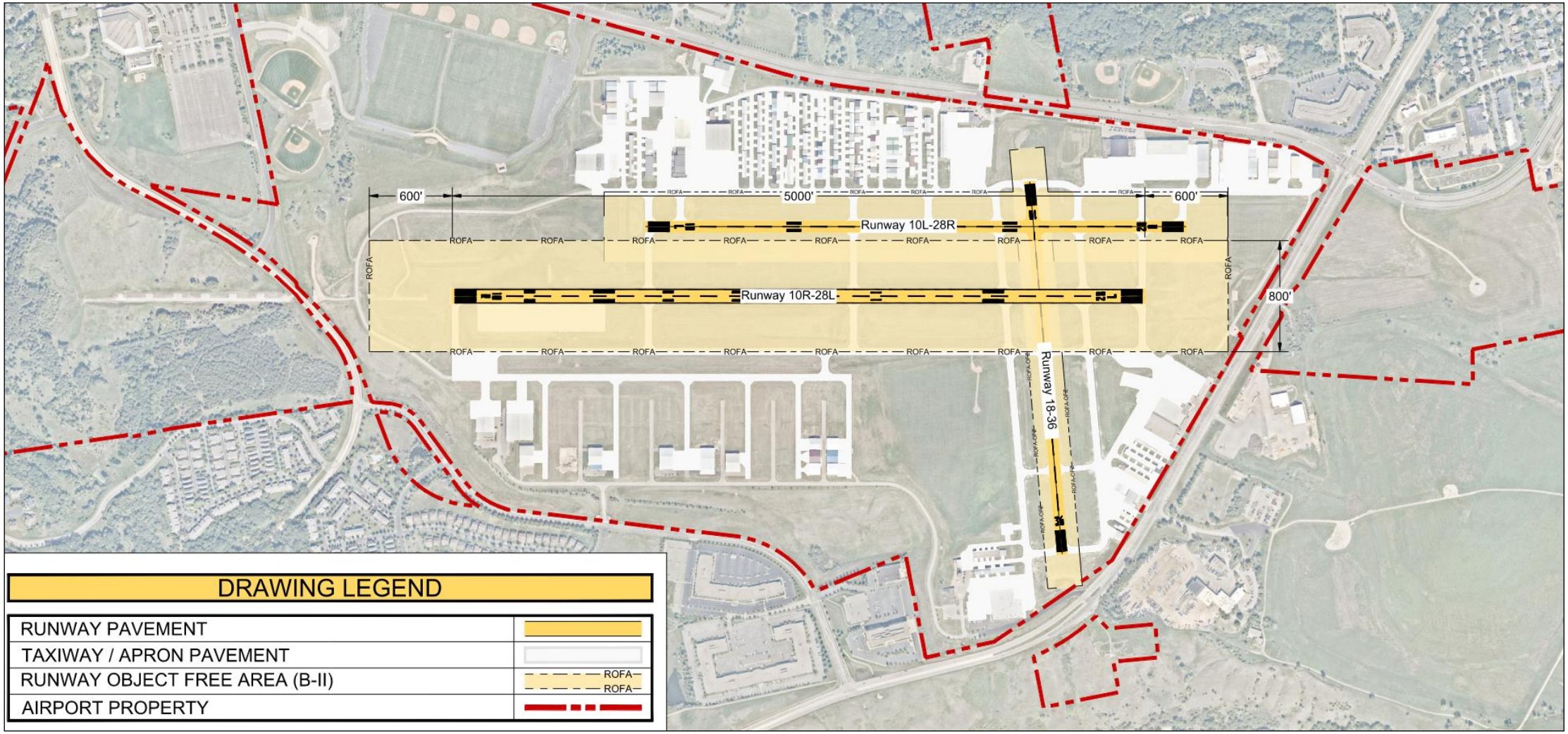
Existing Runway Safety Area: B-II



Future Runway Safety Area: C-II



Existing Runway Object Free Area: B-II



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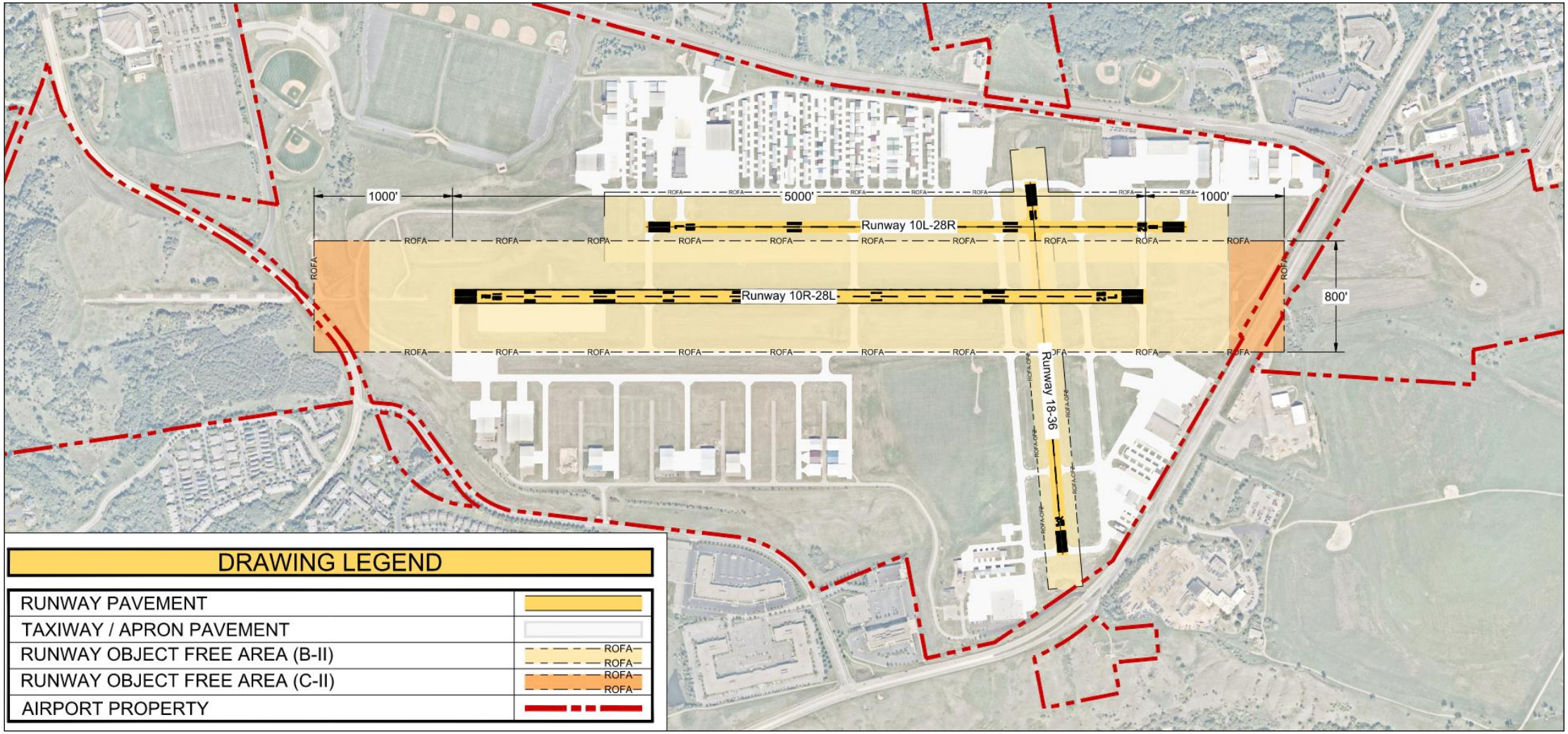
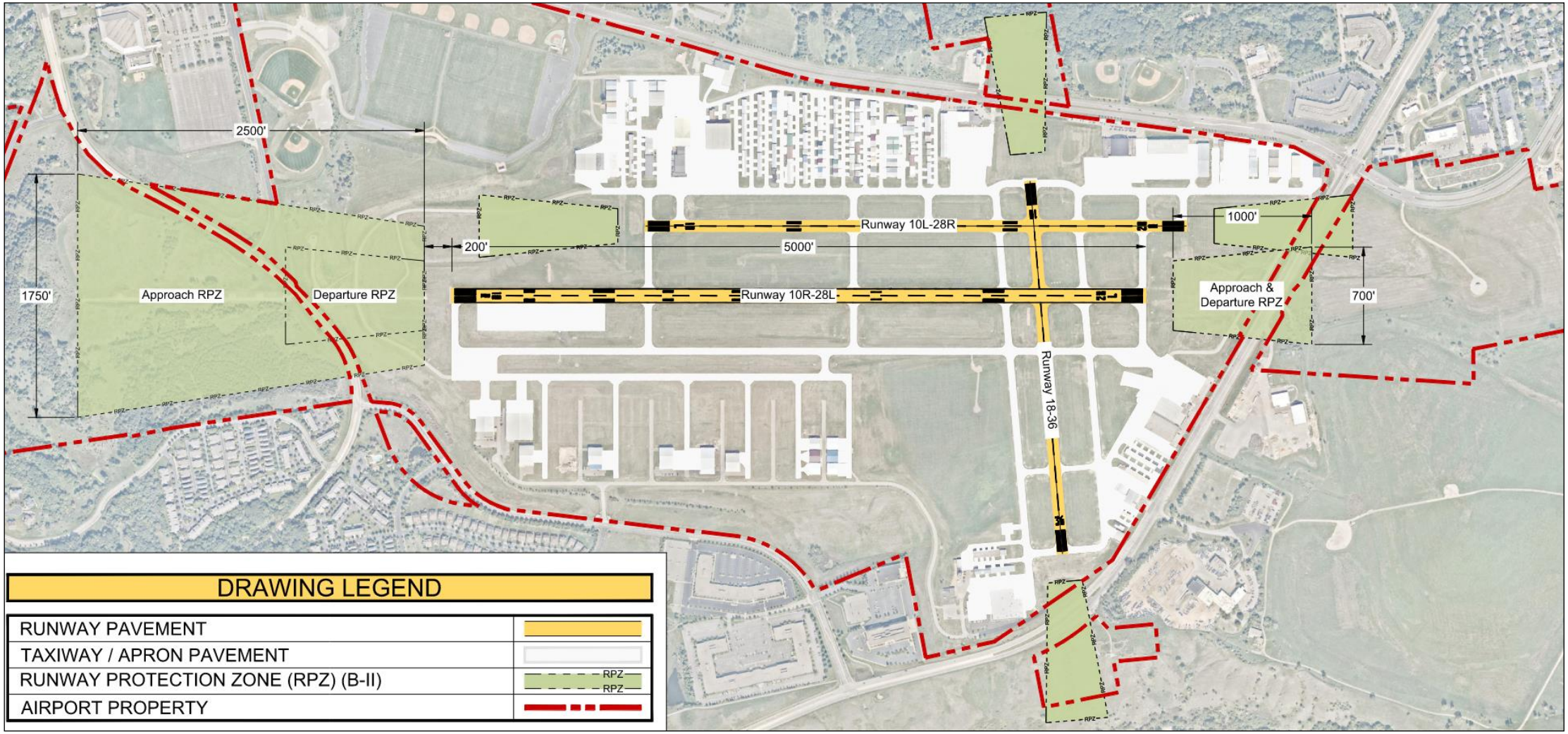


Existing Runway Protection Zone: B-II



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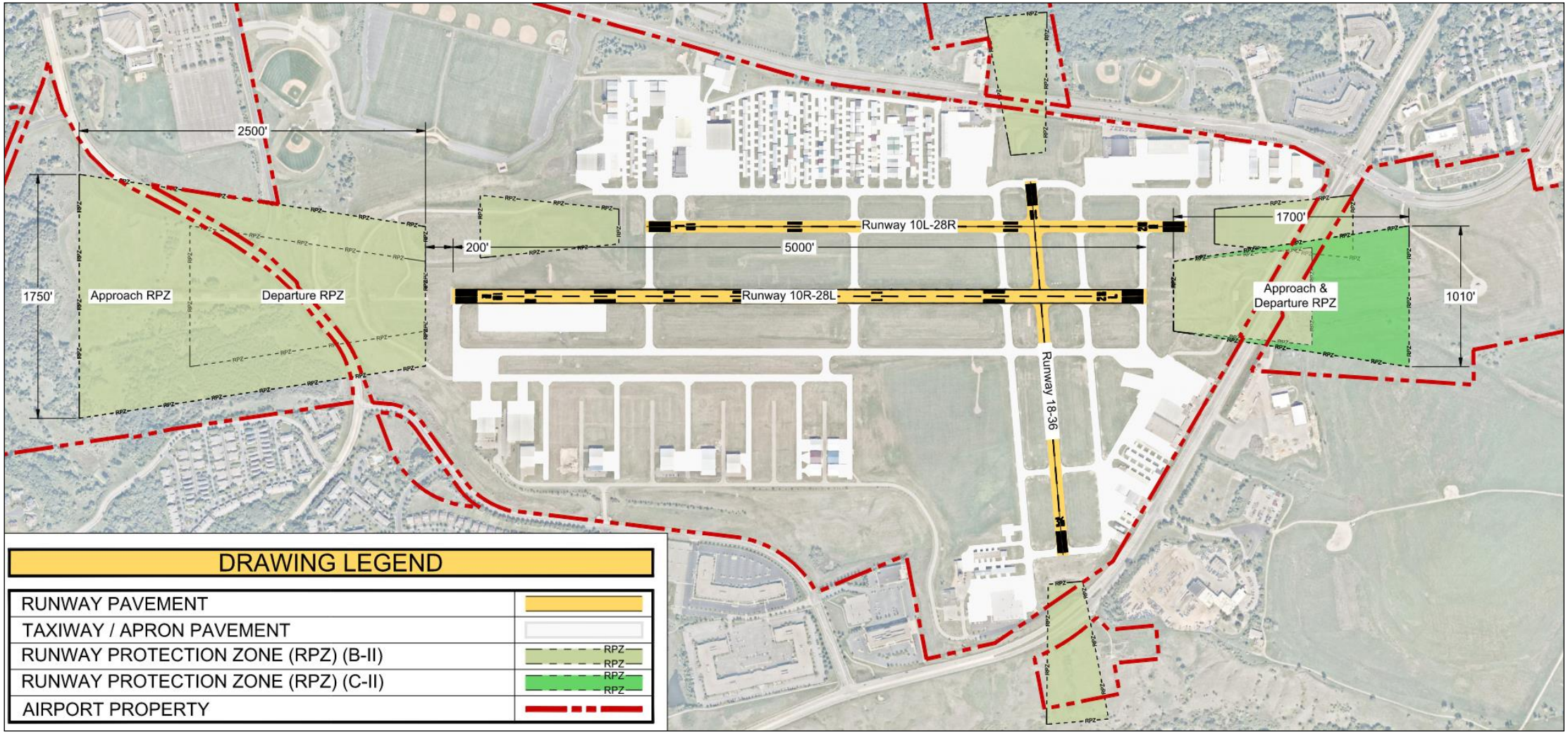
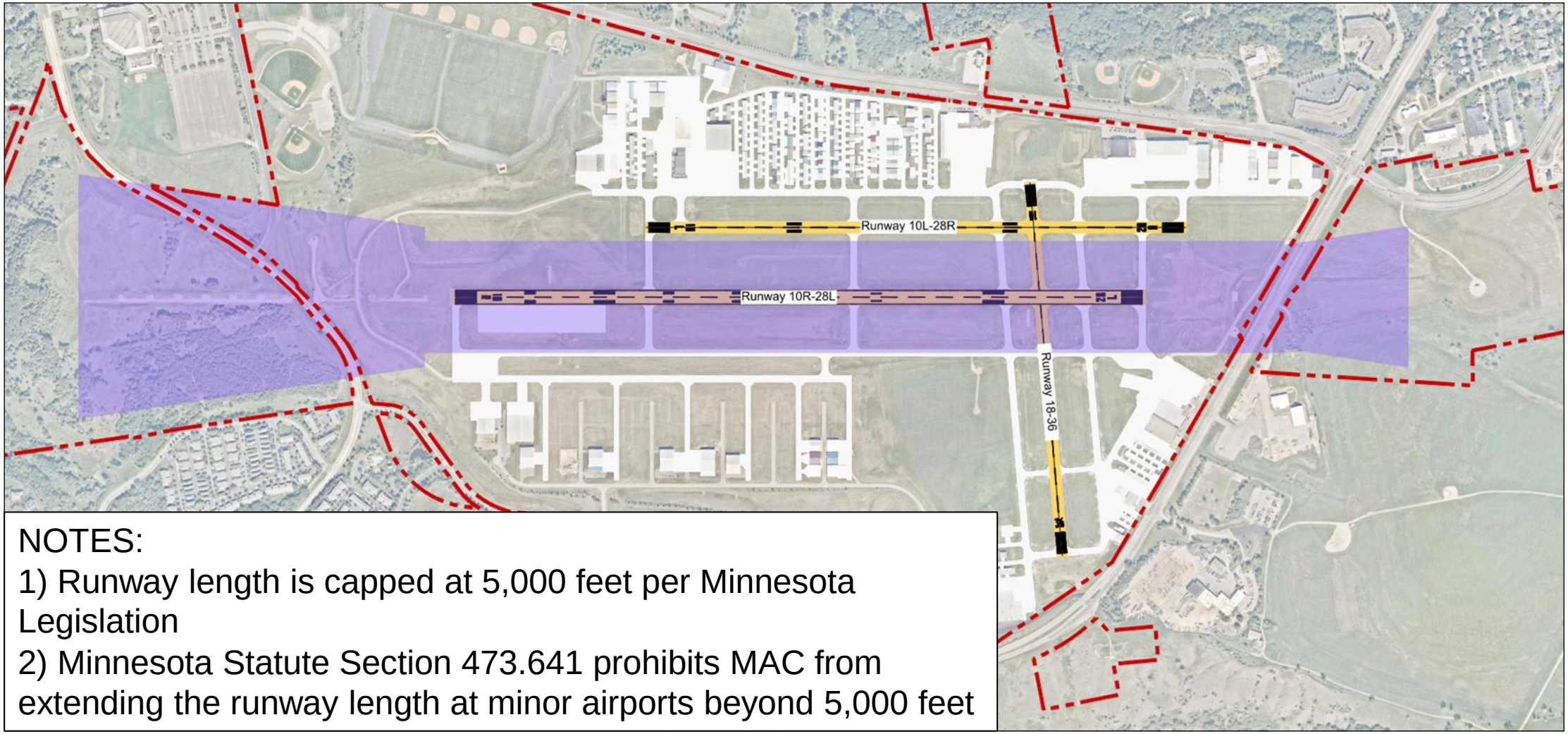


Critical Aircraft Focus Area



NOTES:
1) Runway length is capped at 5,000 feet per Minnesota Legislation
2) Minnesota Statute Section 473.641 prohibits MAC from extending the runway length at minor airports beyond 5,000 feet

Facility Requirement Considerations

- Other Facility Requirements Evaluated in the LTP (Covered in Event #3)
  - Airfield Capacity
  - Navigational Aid (NAVAID) Critical Areas
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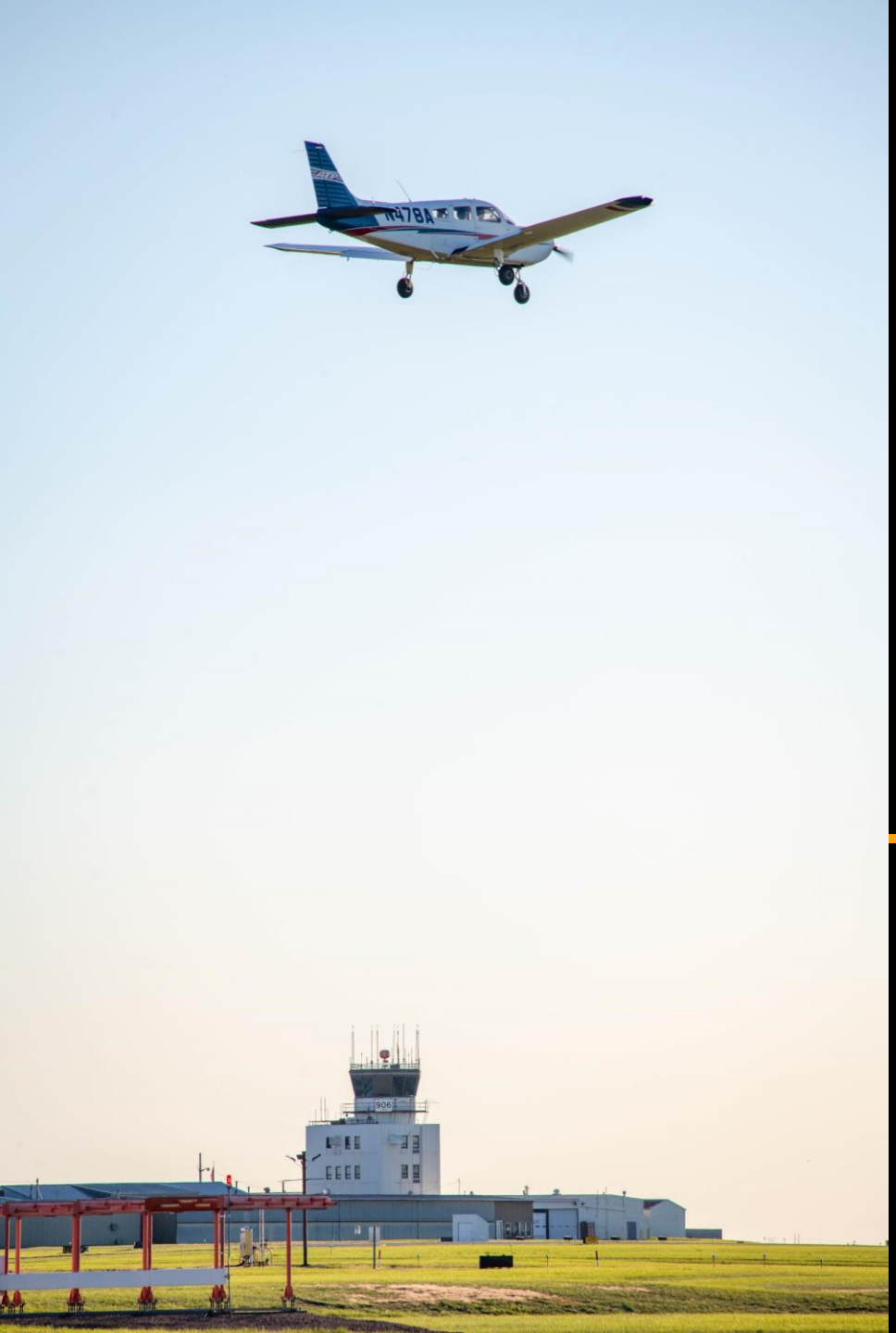

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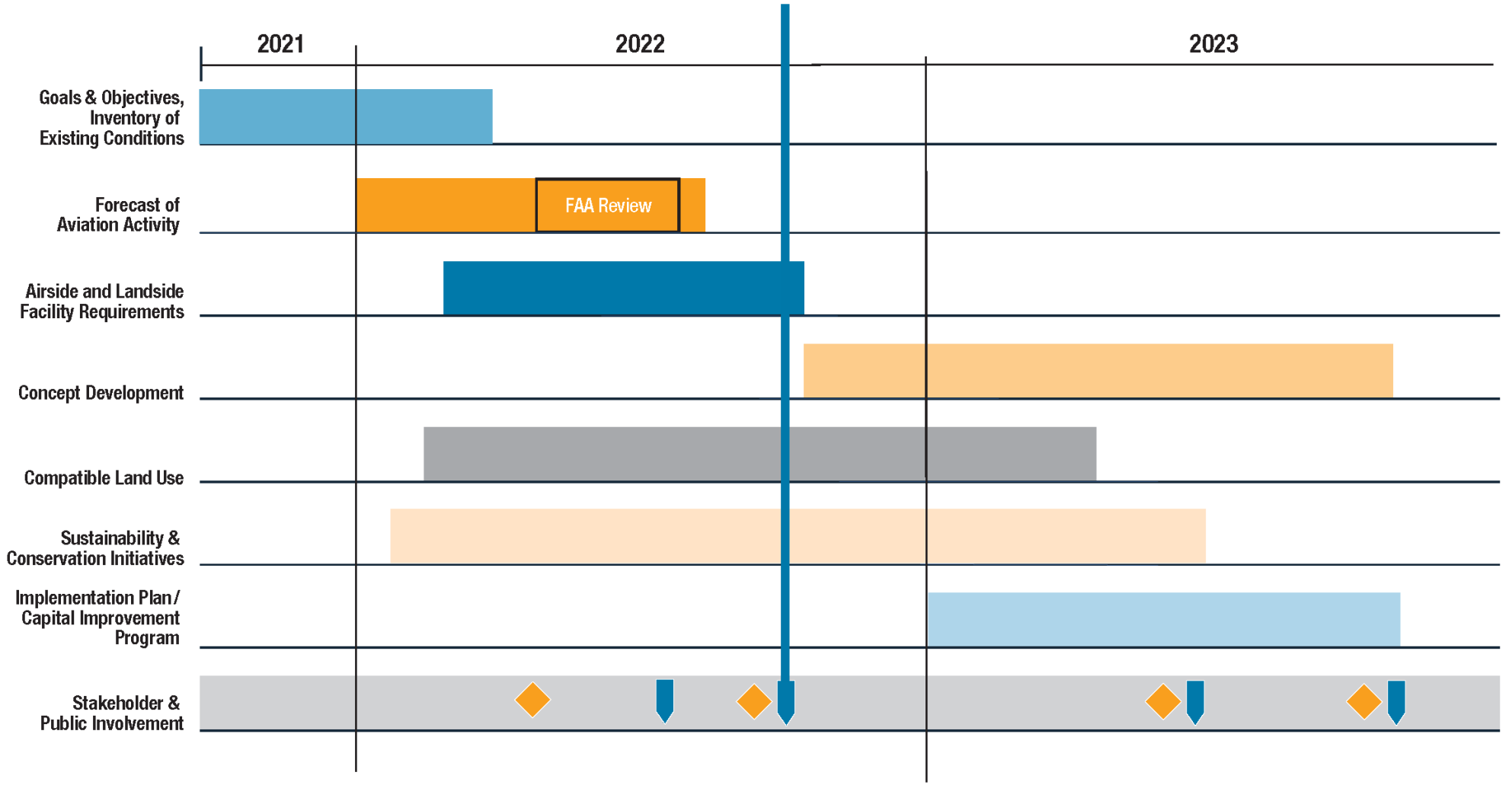
Next Steps/Schedule

Metropolitan Airports Commission (MAC) Flying Cloud Airport (FCM)

2040 Long-Term Plan (LTP) Schedule



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Questions?

Please complete our survey

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Thank you for attending

Please complete our survey

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MAC