FLYING CLOUD AIRPORT

LONG-TERM PLAN 2040

APPENDIX C

STAKEHOLDER ENGAGEMENT

SEPTEMBER 2025

Stakeholder Advisory Panel

2040 Long-Term Comprehensive Plan (LTP) Update
Flying Cloud Airport (FCM)

April 20, 2022

1

Agenda

- Introductions ★
- Stakeholder Advisory Panel (SAP) Role ★
- LTP Process
  - Long Term Plan (LTP) Goals & Objectives
- LTP Project Updates
  - Existing Conditions ★
  - Aviation Forecast Methodology ★
- Feedback / Survey ★

★ Stakeholder Input Opportunity

2

Introductions

- Metropolitan Airports Commission (MAC)
- Consultant Team (HNTB)
- Stakeholder Advisory Panel (SAP) Members

3

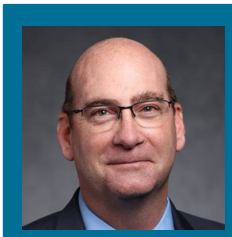
Metropolitan Airports Commission

Eric Gilles

- MAC Airport Planner
- Project Manager

Joe Harris

- Director, Reliever Airports



Blaine Peterson

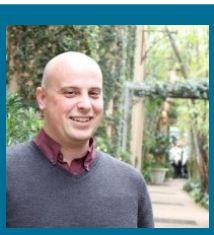
- FCM Airport Manager

Brad Juffer

- Manager, Community Relations

4

HNTB Team



Andrew Blaisdell

- Senior Project Manager
- **Consultant Project Manager**

Greg Albjerg

- Vice President, Senior Aviation Consultant
- **Technical Advisor**
- Frequent Flyer at FCM

Alex Normandin

- Senior Aviation Planner
- **Airfield Planning Lead**

Brian Gaul

- Planner II
- **Aviation Planner**

5

Stakeholder Advisory Panel (SAP)

- Airport Tenants
- Local Communities
- Regional Businesses
- Tourism Associations

6

Poll Question #1

In five words or less, what would you like to get from your participation on the SAP?

7

Stakeholder Advisory Panel (SAP) Role

- Represent a broad range of stakeholder groups, including airport tenants, public partners, local community leaders and city planners, regional businesses and tourism associations
- Review information about the planning process
- Share feedback and aspirations as the voice of key stakeholders
- Meet four (4) times during the LTP process:
  - Kickoff – April 20, 2022
  - Facility Requirements – Late Summer 2022
  - Concept Development and Review – Late Fall 2022
  - Final Recommended Plan – Spring 2023

8

Poll Question #1

In five words or less, what would you like to get from your participation on the SAP?

9

What is a Long-Term Plan (LTP)

- A planning document that documents current and future needs of an airport
- Focuses on a 20-year horizon, with intermediate steps at 5- and 10-years
- FAA typically requires updates every 7-10 years (for all airports nationwide)
- The last LTP update for FCM was completed in 2010
- Used to plan for the future and guide capital investments and improvements
- Does not authorize actual construction

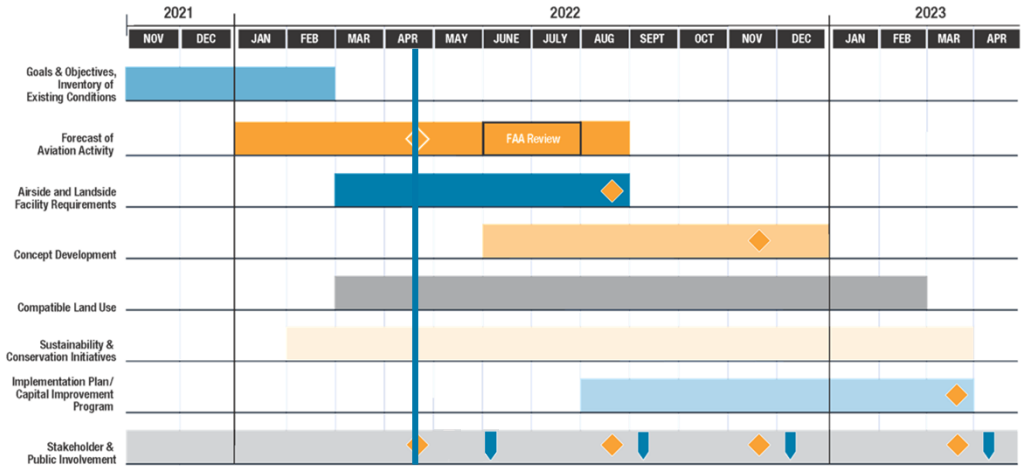
10

Goals and Objectives

1. Enhance airport safety
2. Preserve and, if possible, improve operational capabilities for the current family of aircraft using the airport
3. Promote financial stability of the MAC Reliever Airport system by exploring revenue opportunities for aeronautical and non-aeronautical development

11

Schedule



12

General Aviation Overview

13

RELIEVER AIRPORTS BY THE NUMBERS

28 full time employees

5,007 acres

$756 M economic output annually

6 reliever airports

4 aircraft control towers

14 runways
1 turf
13 paved

6,248,484 gallons of fuel flowage

296 pieces of maintenance equipment

$7.6 M annual operating revenue

828 leases including:
765 aircraft storage leases
35 commercial leases
28 non-aeronautical leases

1,307 based aircraft

352,195 annual flight operations

2,840 runway/taxiway lights • **5** precision approaches • **19** non-precision approaches • **1.8** miles of flood wall (STP) • **10** Full-service Fuel Based Operators • **1** restaurant

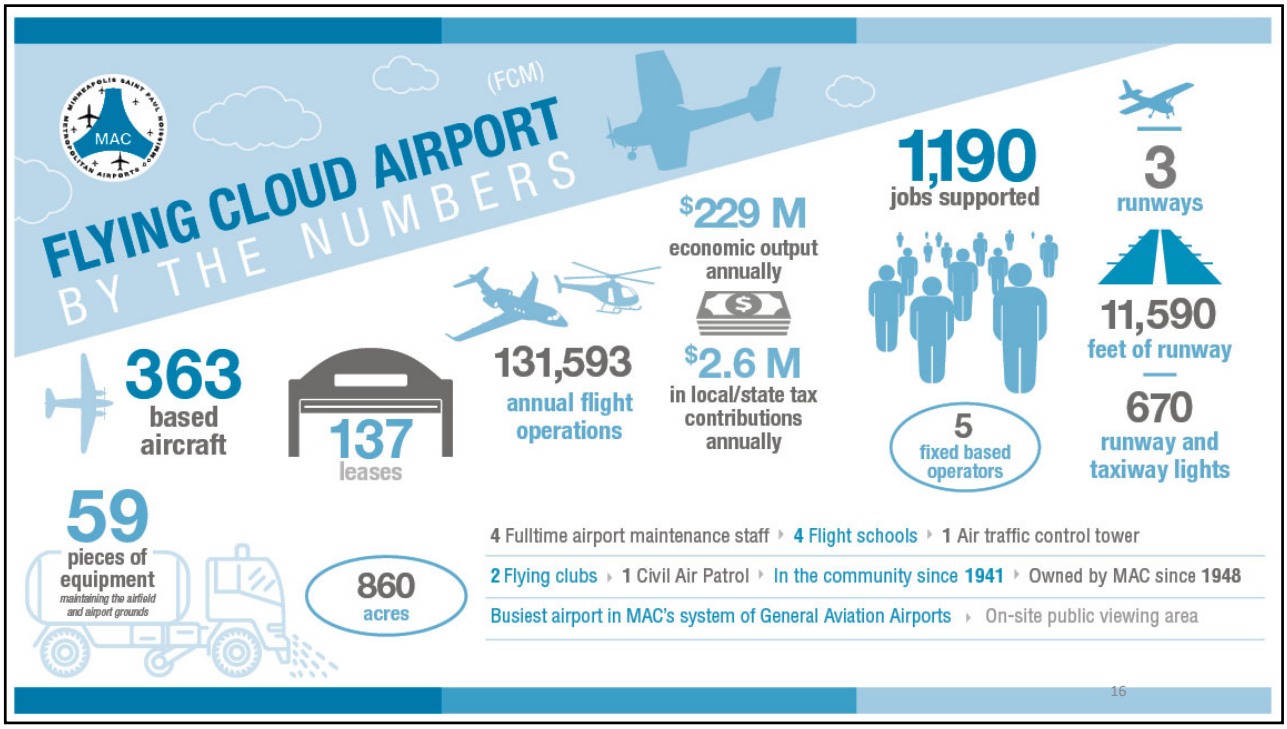
1,030 jobs supported by reliever airport operations • **1** Airport with Customs services • **9** flight schools • **13** flying clubs • **3** Civil Air Patrol • **3** Experimental Aircraft Associations

Updated May 2021

14

LTP Project Updates: Existing Conditions

15

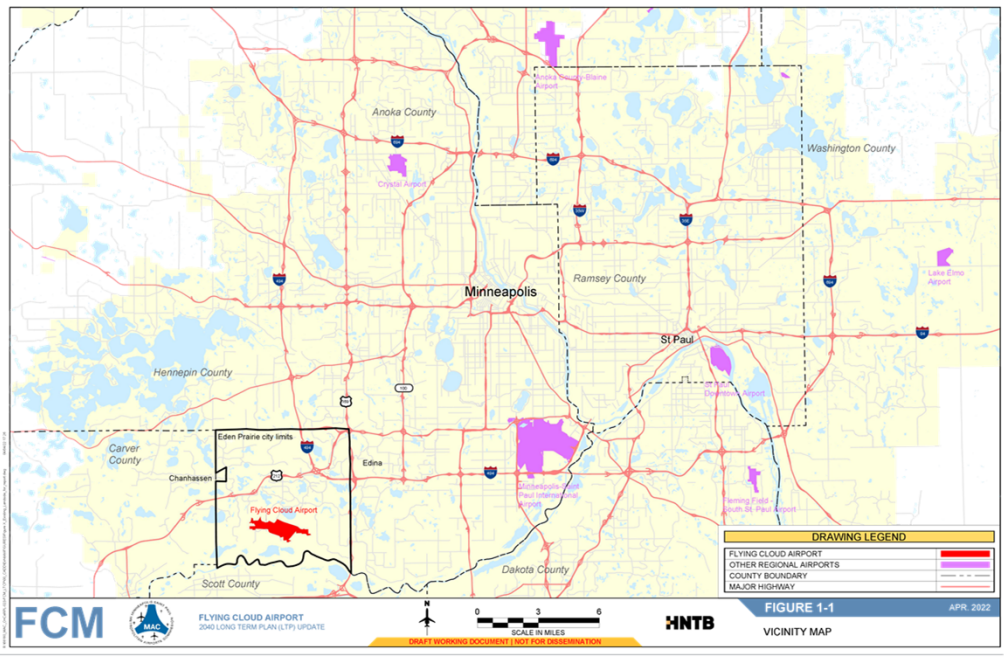


16

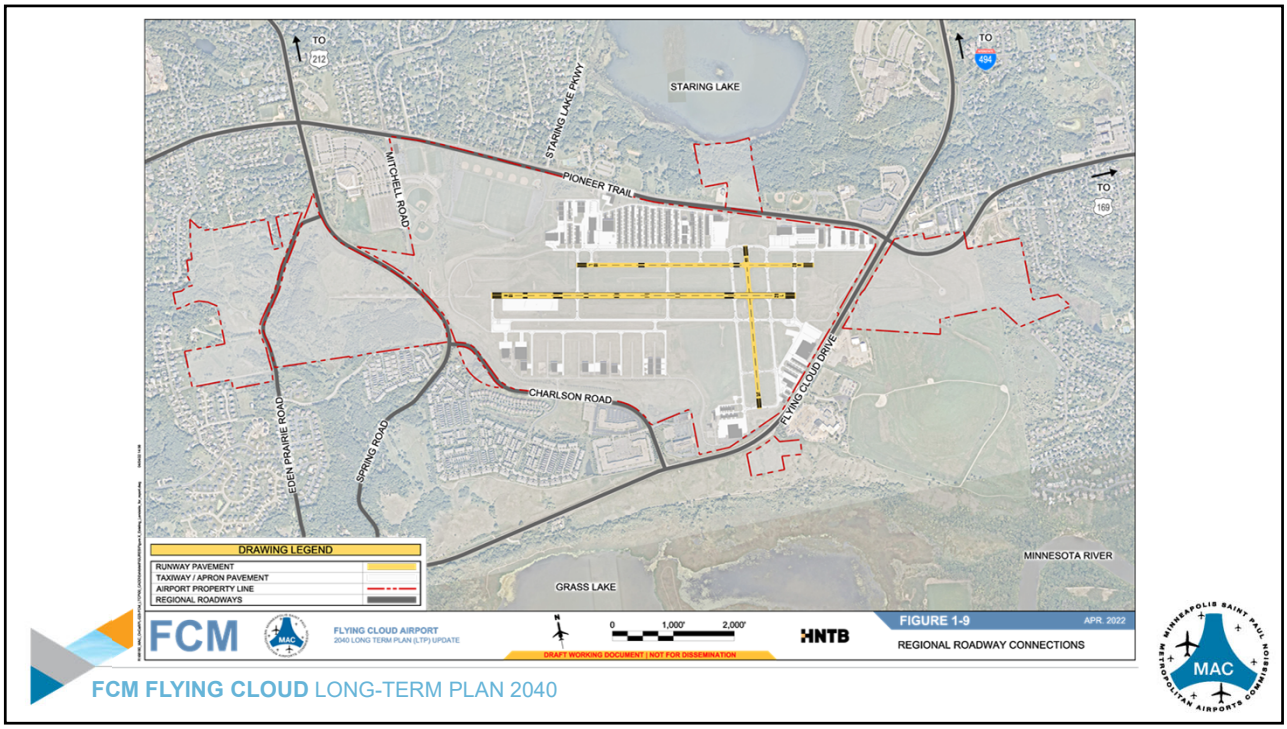
Poll Question #2

What makes Flying Cloud Airport unique compared to other airports in the region?

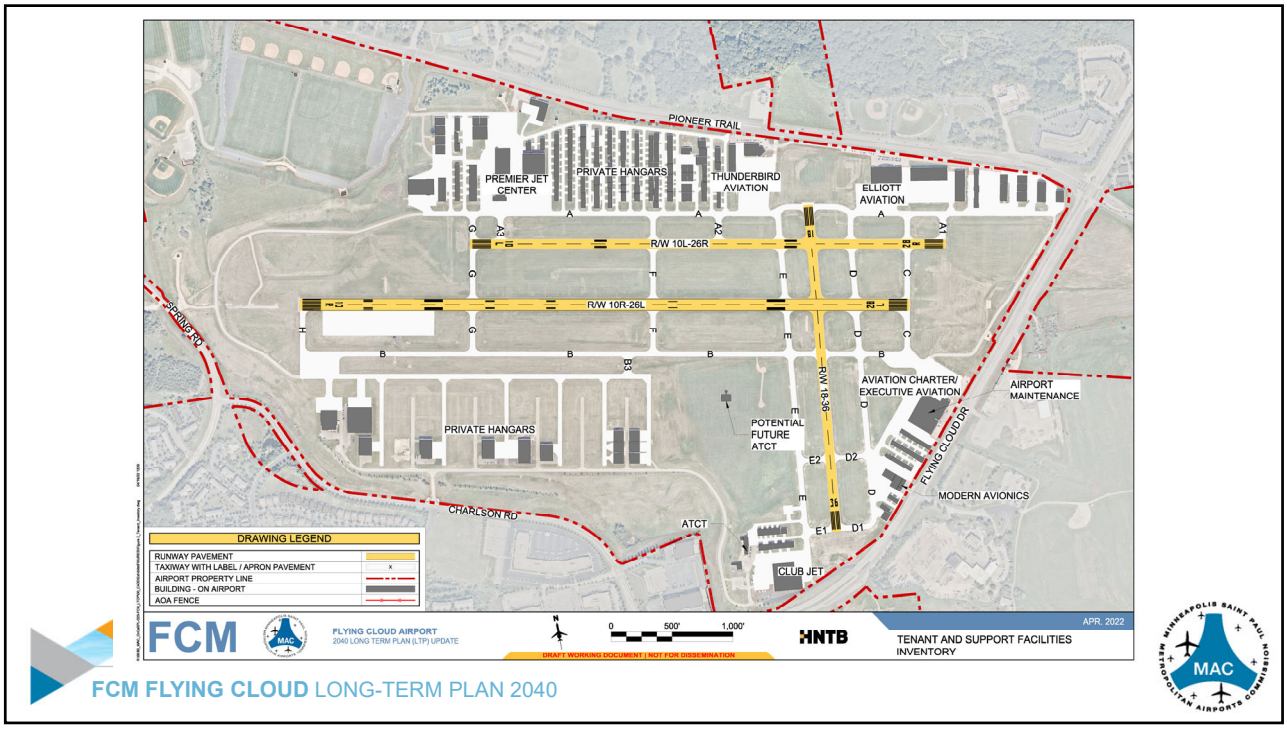
17



18


TO 212
TO 494
TO 169
STARING LAKE
STARING LAKE PKWY
MITCHELL ROAD
PIONEER TRAIL
CHARLSON ROAD
EDEN PRAIRIE ROAD
SPRING ROAD
FLYING CLOUD DRIVE
MINNESOTA RIVER
GRASS LAKE
DRAWING LEGEND
RUNWAY PAVEMENT
TAXIWAY / APRON PAVEMENT
AIRPORT PROPERTY LINE
REGIONAL ROADWAYS
FCM
FLYING CLOUD AIRPORT
2040 LONG TERM PLAN (LTP) UPDATE
0 1,000' 2,000'
DRAFT WORKING DOCUMENT | NOT FOR DISSEMINATION
HNTB
FIGURE 1-9
APR. 2022
REGIONAL ROADWAY CONNECTIONS
FCM FLYING CLOUD LONG-TERM PLAN 2040
MAC

19


PIONEER TRAIL
PREMIER JET CENTER
PRIVATE HANGARS
THUNDERBIRD AVIATION
ELLIOTT AVIATION
R/W 10L-26R
R/W 10R-26L
R/W 18-36
SPRING RD
PRIVATE HANGARS
POTENTIAL FUTURE ATCT
AVIATION CHARTER/ EXECUTIVE AVIATION
AIRPORT MAINTENANCE
FLYING CLOUD DR
MODERN AVIONICS
CHARLSON RD
ATCT
CLUB JET
DRAWING LEGEND
RUNWAY PAVEMENT
TAXIWAY WITH LABEL / APRON PAVEMENT
AIRPORT PROPERTY LINE
BUILDING - ON AIRPORT
AOA FENCE
FCM
FLYING CLOUD AIRPORT
2040 LONG TERM PLAN (LTP) UPDATE
0 500' 1,000'
DRAFT WORKING DOCUMENT | NOT FOR DISSEMINATION
HNTB
APR. 2022
TENANT AND SUPPORT FACILITIES INVENTORY
FCM FLYING CLOUD LONG-TERM PLAN 2040
MAC

20

Poll Question #2

What makes Flying Cloud Airport unique compared to other airports in the region?

21

LTP Project Updates: Forecast Methodology

22

MAC Primary Reliever Airports Vision Study

- Completed in November 2019
- Intent was to gain a better understanding of how MAC's primary reliever airports work together as a system
  - Anoka County – Blaine (ANE)
  - St. Paul Downtown Holman Field (STP)
  - Flying Cloud (FCM)
- Compared MAC reliever system to Boston, Denver, and Phoenix

23

Forecast – Recap from Vision Study

- FCM has the smallest catchment area (population, households, employment)
- FCM accounts for highest number of itinerant GA and business/corporate traffic per capita
- 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
- Economically dynamic catchment area in terms of per capita income, wage/salary, low unemployment

24

Forecast Overview and Purpose

- The purpose of a forecast is to establish a framework to discuss future demand, in the context of capacity, efficiency, and safety
- Forecast Components
  - Annual Aircraft Operations
  - Fleet Mix
  - Based Aircraft

25

Forecast

- Comparison to FAA's Terminal Area Forecast (TAF) required to achieve FAA concurrence
  - 10% within 5-year period
  - 15% within 10-year period
- Forecast used as basis for future requirements, alternatives, and preferred development plan
- FAA subsequently approves Airport Layout Plan (ALP) which depicts the preferred development plan

26

Forecast Methodology

- Forecast parameters
  - 2021 base year with future planning activity levels: 2025, 2030, 2040
  - Consider observed growth during COVID pandemic
  - Significant change from TAF may require FAA HQ review (not anticipated)
- Key inputs
  - Historical aviation activity at FCM (operations, fleet mix, based aircraft)
  - Industry factors (national GA forecast, fuel prices, aircraft production, etc.)
  - Activity and constraints at other regional Airports (MSP, STP, ANE)
  - Business jet behavior, recent activity, and anticipated fleet
  - Regional economic and population demographic data
  - Tenant needs collected during the Vision Plan, to be verified for LTP

27

Poll Question #3

What is your perception of how aviation activity will change at Flying Cloud in the years ahead?

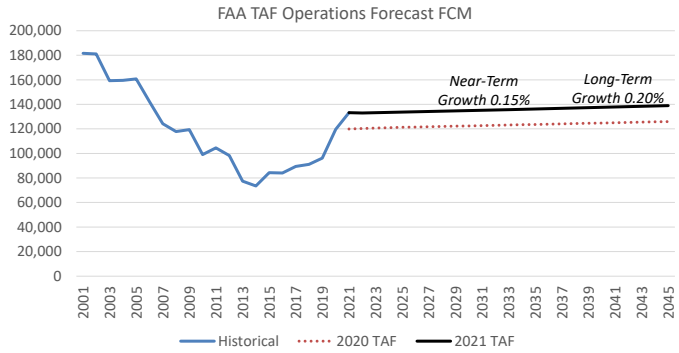
A.) Increase Significantly
B.) Increase Slightly
C.) No Change
D.) Decrease Slightly
E.) Decrease Significantly

And Why?

28

Forecast Terminal Area Forecast (TAF)

- FAA published the 2021 TAF in March 2022 to serve as preliminary guidance for annual operations and based aircraft at all airports in the national system
- The LTP team will review, validate, or propose modifications to the FAA TAF
- High-growth and low-growth scenarios will also be prepared



Source: FAA 2021 Terminal Area Forecast

29

Poll Question #3

What is your perception of how aviation activity will change at Flying Cloud in the years ahead?

A.) Increase Significantly
B.) Increase Slightly
C.) No Change
D.) Decrease Slightly
E.) Decrease Significantly

And Why?

30

Poll Question #4

For the forecast, what major business plans or nearby community plans should be considered?

31

Next Steps

- First public meeting in June 2022
- Complete aviation activity forecast with input from SAP and public
- Coordinate forecast with the FAA
- Additional SAP meetings

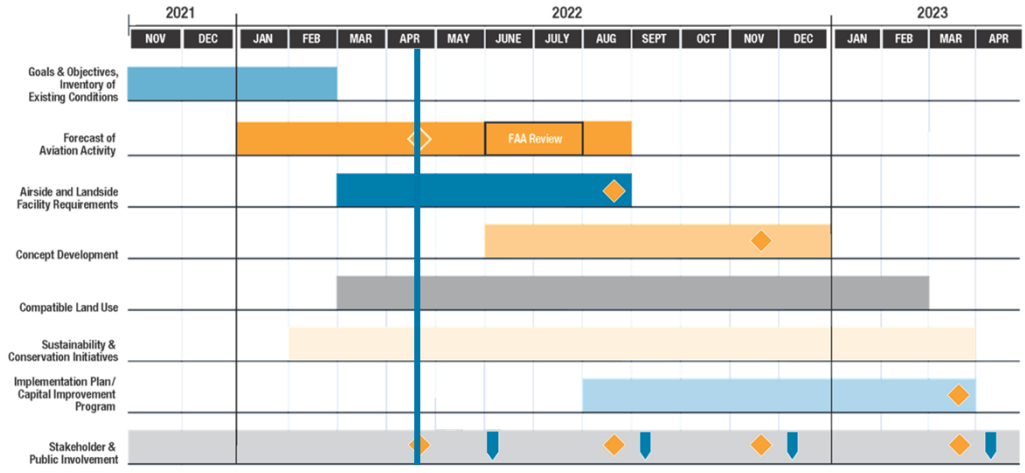
32

Poll Question #4

For the forecast, what major business plans or nearby community plans should be considered?

33

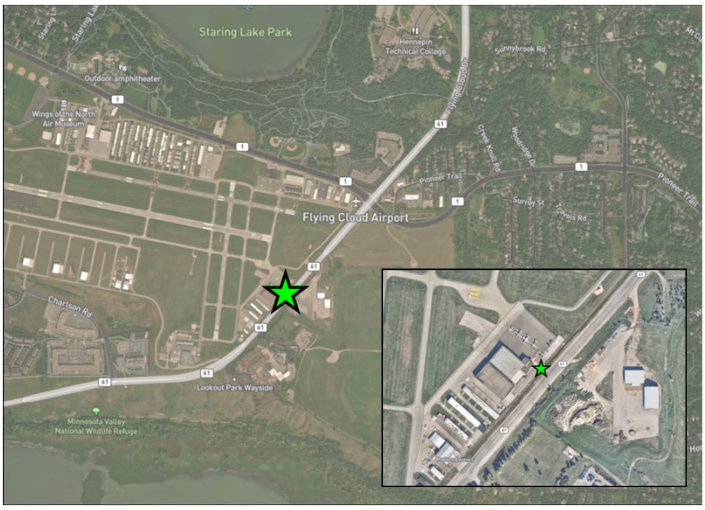
Schedule



34

Public Event

- June 8th
- 4:30 – 6:30 PM
- MAC Maintenance Facility
- 9960 Flying Cloud Drive, Eden Prairie



Poll Question #5

Do you have ideas on where/how we notify people about the public event?

Thank you for participating!

2040 Long-Term Plan (LTP) Update
Flying Cloud Airport (FCM)

Please complete the post-event survey

April 20, 2022

37

1

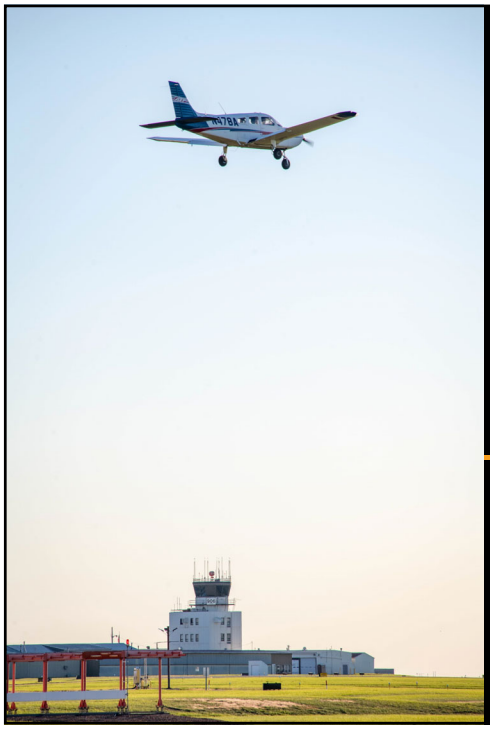
Agenda

- Welcoming Remarks
- Introductions
- Stakeholder Engagement Program
- LTP Process
  - Long Term Plan (LTP) Goals & Objectives
- LTP Project Updates
  - Existing Conditions
  - Aviation Forecast Methodology
- Next Steps
- Feedback / Survey

Use code to view presentation

2

2



DISCOVER
Flying Cloud Airport

Introductions

3

Metropolitan Airports Commission

Eric Gilles	Joe Harris	Blaine Peterson	Brad Juffer
			
• MAC Airport Planner • Project Manager	Director, Reliever Airports	Flying Cloud Airport Manager	Manager, Community Relations

4

4

HNTB

Andrew Blaisdell

- Senior Project Manager,
- Project Manager

Greg Albjerg

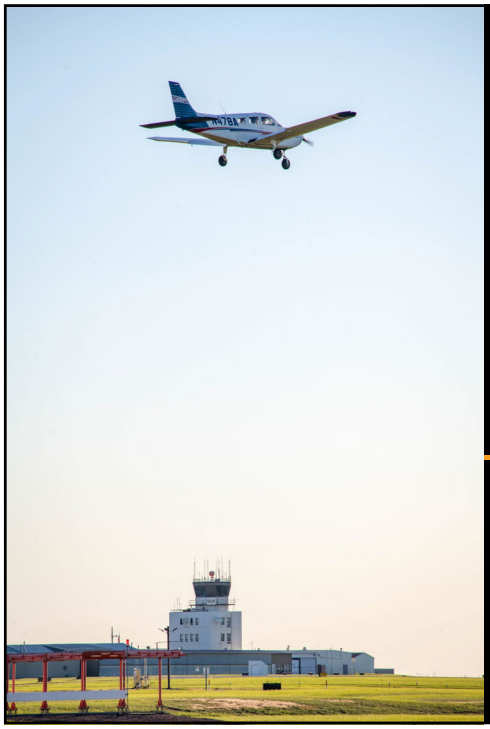
Vice President, Senior Aviation Consultant

Alex Normandin

Senior Aviation Planner

5

5



DISCOVER

Flying Cloud Airport

Stakeholder Engagement Program

6

Stakeholder Engagement Program

- Fulfill the MAC's legislative purpose:
  - Promote air navigation in and through the State
  - Promote the efficient, safe and economical handling of air commerce.
  - Assure minimum environmental impact from air navigation.
- Conduct responsible and transparent planning
- Support a thorough public involvement process

7

7

Stakeholder Engagement Program

- Stakeholder Advisory Panel
- Discover Flying Cloud Events
- Project Website
  - metroairports.org/fcm-long-term-plan
- E-News Project Updates
- Updates to MAC's PD&E Committee
- Email Contact
  - fcm.ltp@mspmac.org

8

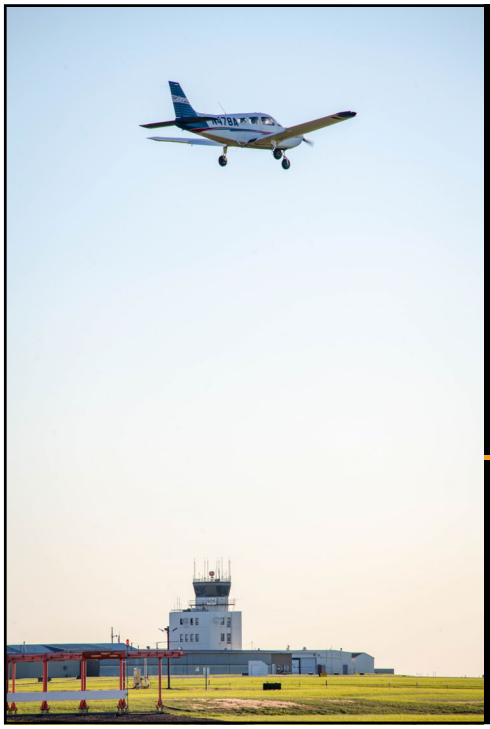
8

Stakeholder Advisory Panel (SAP)

- Airport Tenants
- Local Communities
- Regional Businesses
- Tourism Associations

9

9



DISCOVER
Flying Cloud Airport

Long-Term Plan Process

10

What is a Long-Term Plan (LTP)

- A planning document that records current and future needs of an airport
- Focuses on a 20-year horizon, with intermediate steps at 5- and 10-years
- FAA typically requires updates every 7-10 years (for all airports nationwide)
- The last LTP update for FCM was completed in 2010
- As the airport and surrounding region see growth, this process allows us to plan for the future and make smart capital investments and improvements.
- Does not authorize actual construction

11

11

Goals & Objectives

Enhance airport safety

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

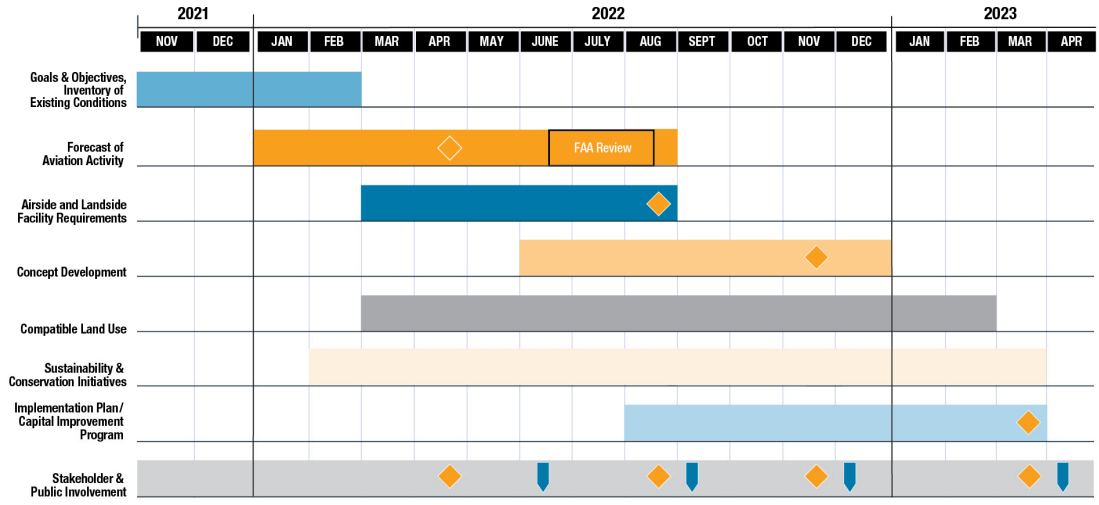
Promote financial sustainability of the MAC Reliever Airport system by exploring revenue opportunities for aeronautical and non-aeronautical development

12

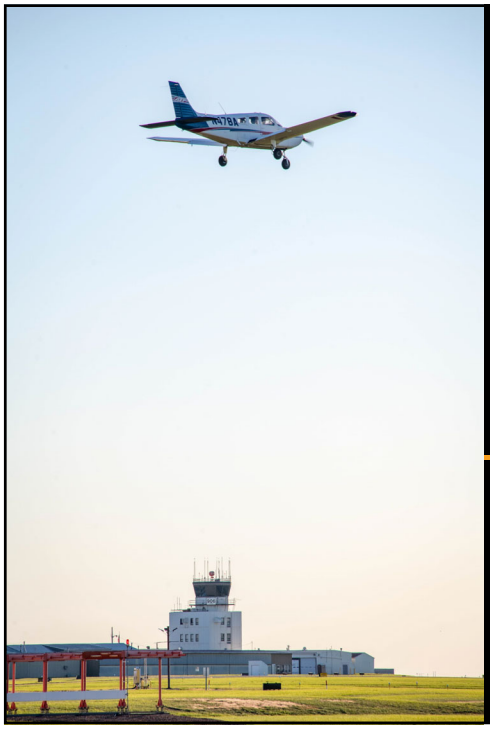
12

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

2040 Long-Term Plan (LTP) Schedule



13

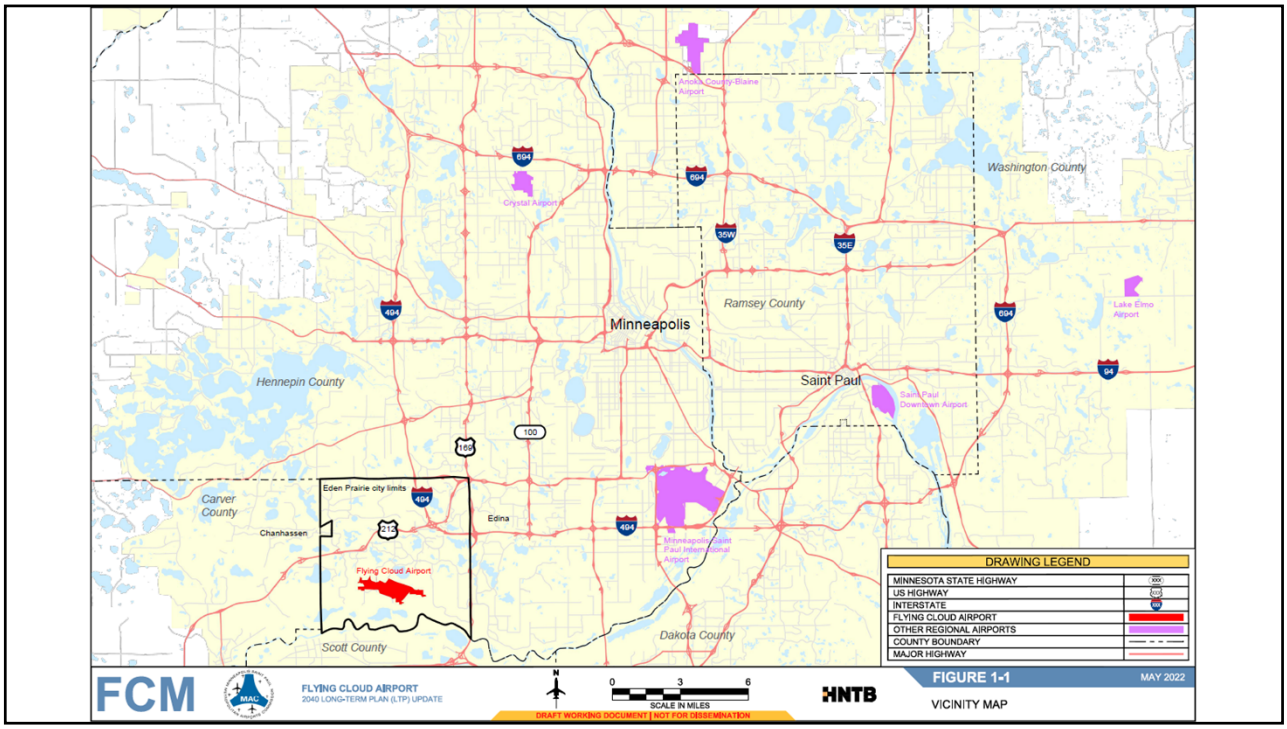


DISCOVER
Flying Cloud Airport

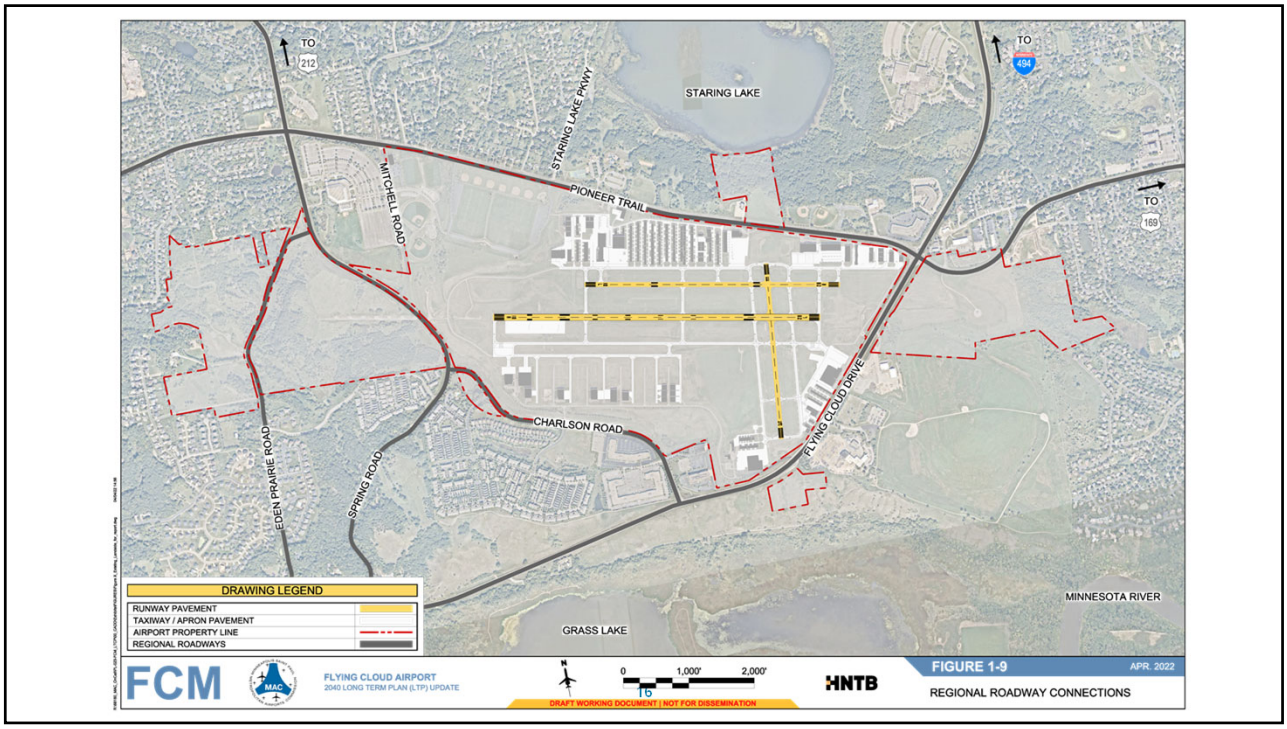
Long-Term Plan Updates

Existing Conditions

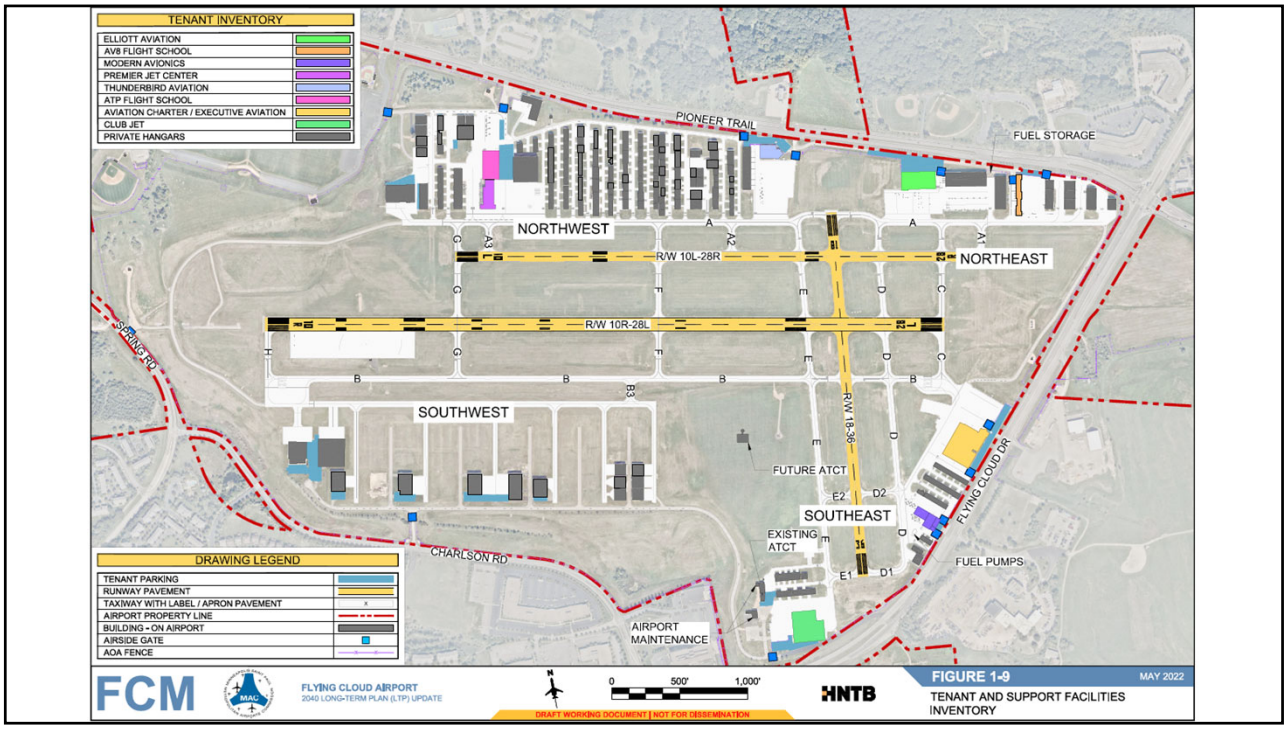
14


Anoka County-Blaine Airport
Crystal Airport
Washington County
Ramsey County
Minneapolis
Saint Paul
Lake Elmo Airport
Saint Paul Downtown Airport
Hennepin County
Eden Prairie city limits
Carver County
Chanhassen
Edina
Flying Cloud Airport
Minneapolis-Saint Paul International Airport
Scott County
Dakota County
DRAWING LEGEND
MINNESOTA STATE HIGHWAY
US HIGHWAY
INTERSTATE
FLYING CLOUD AIRPORT
OTHER REGIONAL AIRPORTS
COUNTY BOUNDARY
MAJOR HIGHWAY
FCM
FLYING CLOUD AIRPORT
2040 LONG-TERM PLAN (LTP) UPDATE
SCALE IN MILES
DRAFT WORKING DOCUMENT | NOT FOR DISSEMINATION
HNTB
FIGURE 1-1
MAY 2022
VICINITY MAP

15


TO 212
STARING LAKE PKWY
STARING LAKE
TO 494
MITCHELL ROAD
PIONEER TRAIL
TO 169
CHARLSON ROAD
FLYING CLOUD DRIVE
EDEN PRAIRIE ROAD
SPRING ROAD
MINNESOTA RIVER
GRASS LAKE
DRAWING LEGEND
RUNWAY PAVEMENT
TAXIWAY / APRON PAVEMENT
AIRPORT PROPERTY LINE
REGIONAL ROADWAYS
FCM
FLYING CLOUD AIRPORT
2040 LONG TERM PLAN (LTP) UPDATE
DRAFT WORKING DOCUMENT | NOT FOR DISSEMINATION
HNTB
FIGURE 1-9
APR. 2022
REGIONAL ROADWAY CONNECTIONS

16


TENANT INVENTORY
ELLIOTT AVIATION
AV8 FLIGHT SCHOOL
MODERN AVIONICS
PREMIER JET CENTER
THUNDERBIRD AVIATION
ATP FLIGHT SCHOOL
AVIATION CHARTER / EXECUTIVE AVIATION
CLUB JET
PRIVATE HANGARS
PIONEER TRAIL
FUEL STORAGE
NORTHWEST
NORTHEAST
R/W 10L-28R
R/W 10R-28L
R/W 18-36
SPRING RD
SOUTHWEST
FUTURE ATCT
SOUTHEAST
EXISTING ATCT
FLYING CLOUD DR
FUEL PUMPS
CHARLSON RD
AIRPORT MAINTENANCE
DRAWING LEGEND
TENANT PARKING
RUNWAY PAVEMENT
TAXIWAY WITH LABEL / APRON PAVEMENT
AIRPORT PROPERTY LINE
BUILDING - ON AIRPORT
AIRSIDE GATE
AOA FENCE
FCM
FLYING CLOUD AIRPORT
2040 LONG-TERM PLAN (LTP) UPDATE
0 500' 1,000'
HNTB
DRAFT WORKING DOCUMENT | NOT FOR DISSEMINATION
FIGURE 1-9
MAY 2022
TENANT AND SUPPORT FACILITIES INVENTORY

17


DISCOVER
Flying Cloud Airport
Long-Term Plan Updates
Forecast Methodology
MAC

18

Forecast Overview and Purpose

- The purpose of a forecast is to establish a framework to discuss future demand
  - Airport capacity
  - Airport efficiency
  - Airport safety
- Forecast Components
  - Annual aircraft operations
  - Fleet mix
  - Based aircraft

19

19

Forecast

- Comparison to FAA's Terminal Area Forecast is required
- Forecast used as basis for future Plan requirements, alternatives and preferred development plan
- FAA approves subsequent Airport Layout Plan (ALP)
  - ALP depicts preferred development plan

20

20

Forecast Framework

- 2021 base year with future planning activity levels
  - 2025, 2030, 2040
- Consider activity growth during COVID pandemic
- Flying Cloud Airport has the smallest catchment area of MAC's primary reliever airports
  - Population, households, employment
- Flying Cloud Airport accounts for the highest number of itinerant general aviation and business traffic per capita of the MAC's primary reliever airports

21

21

Forecast Inputs and Airport Characteristics

Key Inputs

- Historical aviation activity at FCM (operations, fleet mix, based aircraft)
- Industry factors (national GA 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

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

22

22

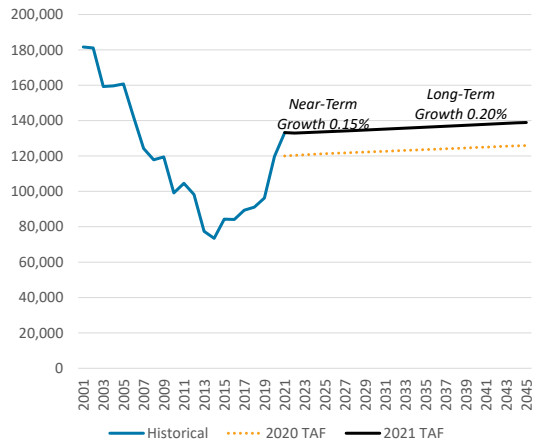
Leveraging Past Studies

- Last Long-Term Plan for Flying Cloud finished in 2010
- MAC regularly updates long-term plans for MSP and other reliever airports
  - Anoka County-Blaine (ANE)
  - St. Paul Downtown (STP)
  - Crystal (MIC)
  - Lake Elmo (21D)
  - Air Lake (LVN)

23

23

Forecast Terminal Area Forecast (TAF)

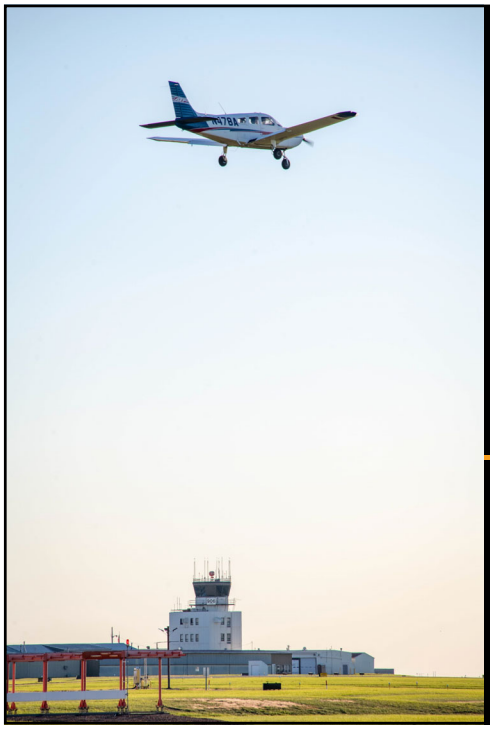


- FAA published the 2021 TAF in March 2022 to serve as guidance for annual operations and based aircraft at all airports in the national system
- The LTP team will review, validate, or propose modifications to the FAA TAF
- High-growth and low-growth scenarios will also be prepared

The level of operations expected through 2040 is less than early 2000s

24

24



DISCOVER
Flying Cloud Airport

Next Steps

25

Next Steps

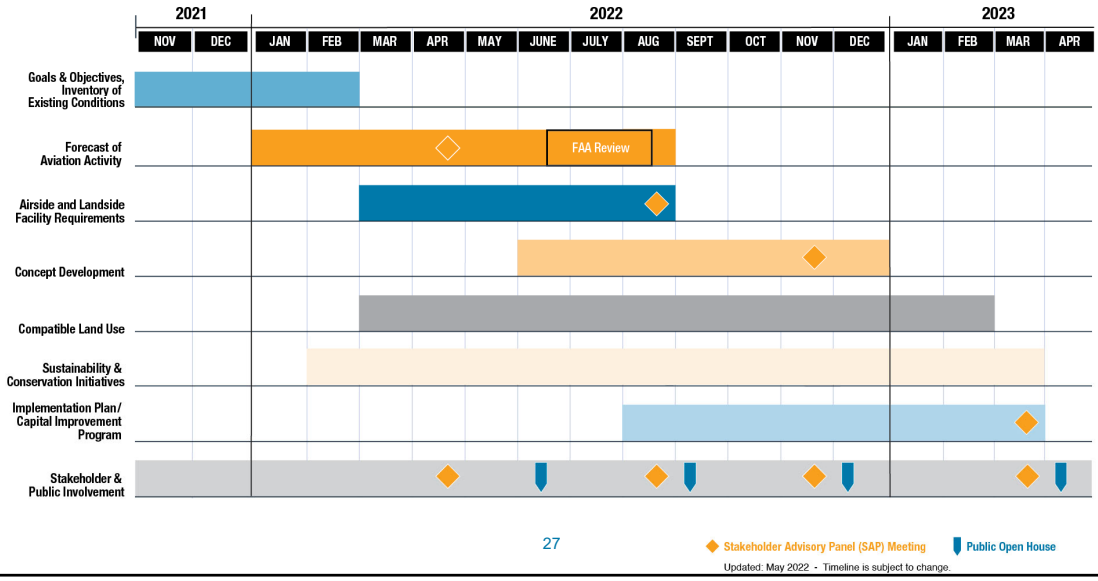
- Complete aviation activity forecast with input from stakeholders
- Coordinate forecast with FAA
- Next Discover Flying Cloud event in early Fall 2022

26

26

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

2040 Long-Term Plan (LTP) Schedule



27

DISCOVER
Flying Cloud Airport

Questions?

Please complete our survey

28

DISCOVER
Flying Cloud Airport

Thank you for attending

Please complete our survey

29

Stakeholder Advisory Panel

2040 Long-Term Comprehensive Plan (LTP) Update
Flying Cloud Airport (FCM)

October 6, 2022

1

Welcome Remarks

Chad Leqve

Metropolitan Airports Commission (MAC)
Vice President of Management and Operations

2

Agenda

- Introductions
- Airport Manager Update
- Goals, Objectives, and Project Schedule
- Recap Previous LTP Engagements
- Aircraft Noise Primer
- Aviation Activity Forecast Review
- Facility Requirements
- Next Steps / Schedule

Meeting Agenda and Presentation are available at:
metroairports.org/fcm-long-term-plan-documents-and-links

3

Introductions

4

Introductions

Name, who you represent on the Panel, and what was one notable takeaway from today's tour?

If you did not attend the tour, what is something you find notable about Flying Cloud Airport?

Airport Tenants	Local Communities
Regional Businesses	Tourism Associations

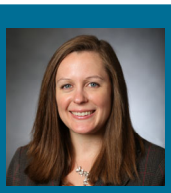
5

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

6

Stakeholder Advisory Panel (SAP) Role

- Represent a broad range of stakeholder groups, including airport tenants, public partners, local community leaders and city planners, regional businesses and tourism associations
- Review information about the planning process
- Share feedback and aspirations as the voice of key stakeholders

- Meet four (4) times during the LTP process:
  - Kickoff – April 20, 2022 ✓
  - Facility Requirements – October 2022
  - Concept Development and Review – Early 2023
  - Final Recommended Plan – End of 2023

7

Airport Manager Update

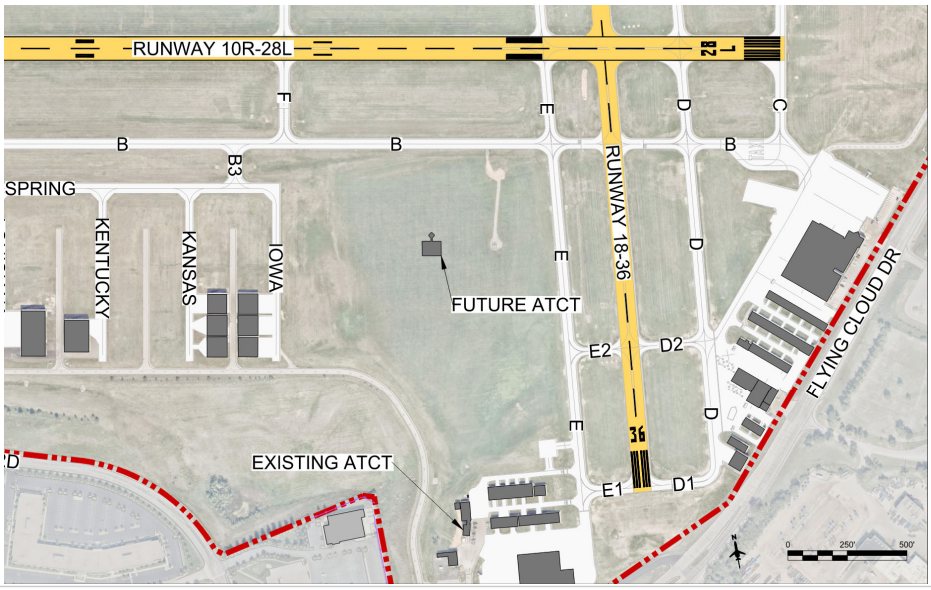
8

Airport Manager Update

- Air Traffic Control Tower (ATCT) Relocation
  - FAA has completed a study in March 2022 to determine a preferred site for the relocated ATCT
  - Additional studies, permitting, and design required before relocation
  - Relocation increases airfield safety
    - Better sight lines for aircraft on approach to parallel runways allows controllers to identify if an aircraft is lined up on the wrong runway
    - Full visibility of all taxiways
  - Relocation allows for continued development on the south side of the airfield
    - Additional development currently capped as additional hangar construction would block controllers sight lines to the west end of the airfield

9

ATCT Relocation

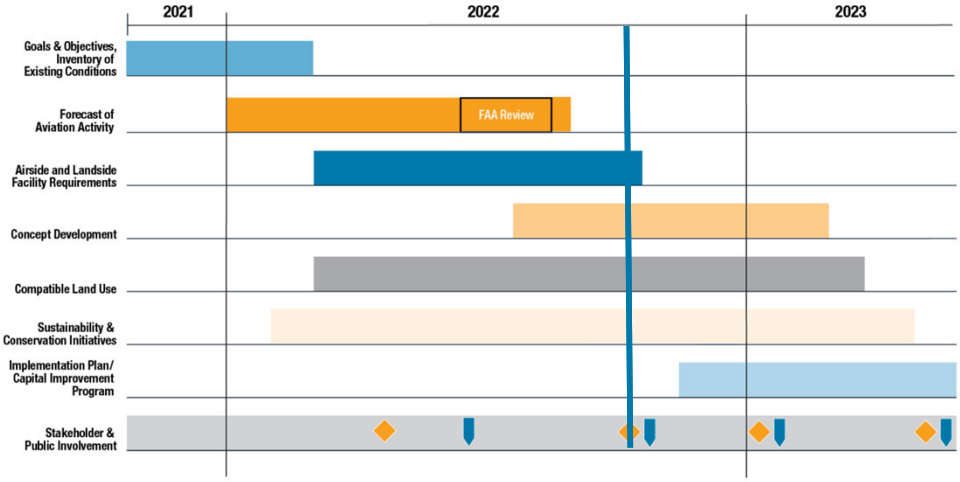


10

Goals, Objectives, and Project Schedule

11

Schedule



Stakeholder Advisory Panel (SAP) Meeting Public Open House

Updated: July 2022 - Timeline is subject to change.

12

Goals and Objectives

1. Enhance airport safety
2. Preserve and, if possible, improve operational capabilities for the current aircraft using the airport
3. Promote financial stability of the MAC Reliever Airport system by exploring revenue opportunities for aeronautical and non-aeronautical development

13

Recap Previous LTP Engagements

14

Stakeholder Advisory Panel (SAP) #1 Recap

SAP Meeting #1 held virtually April 20, 2022

- Introductions
- SAP Role
- LTP Process
- General Aviation Overview
- LTP Project Updates
  - Existing Conditions and
  - Aviation Forecast Methodology
- Feedback / Survey

15

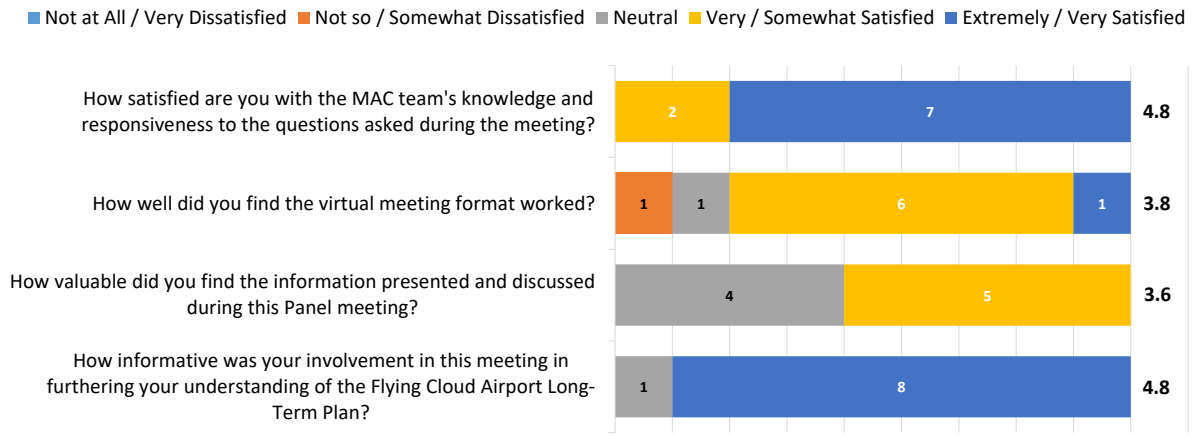
Poll Results

In five words or less, what would you like to get from your participation on the SAP?

- Input and education to/from stakeholders
- Airport long term needs and plans
- Learning perspectives from a broad range of FCM stakeholders both inside and outside the airport boundary
- Learn more of the initiatives and opportunities for FCM.
- Understand impact on our Community.
- The future plan for FCM.
- Provide information of daily activity
- Represent interests of GA private pilots

16

SAP Meeting #1 Survey Results



17

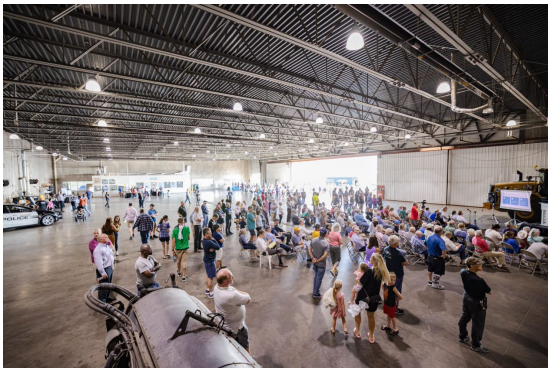
Discover Flying Cloud #1 Recap

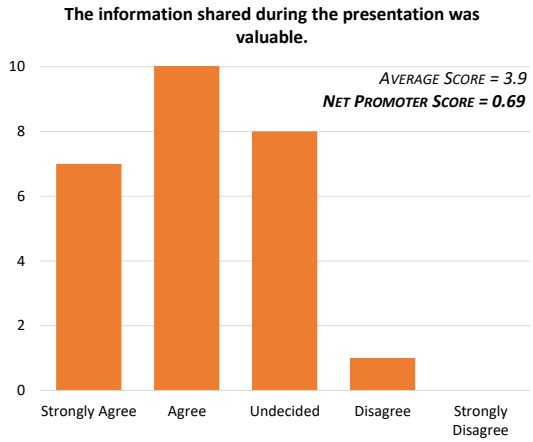
Held at Flying Cloud Airport June 8, 2022

- 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

18

Discover Flying Cloud #1 Recap





19

Discover Flying Cloud #1 Recap

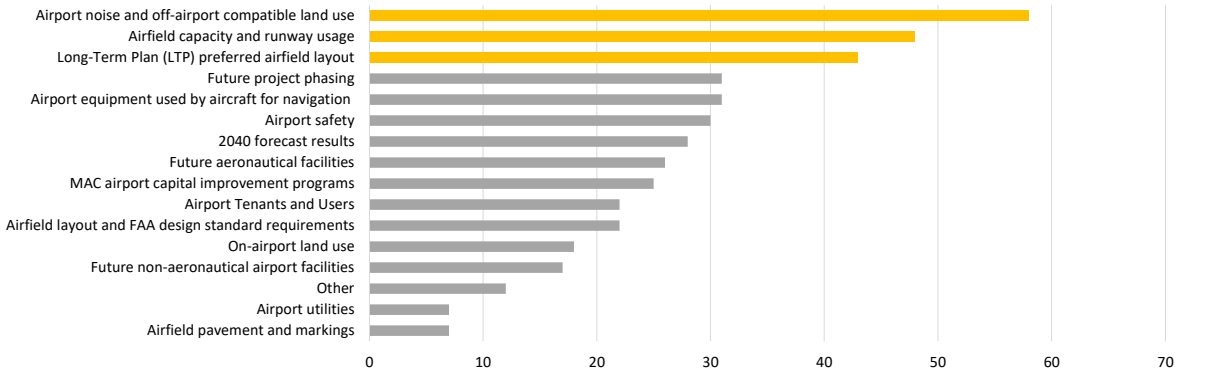
What we heard

- 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

20

Discover Flying Cloud #1 Recap

What are you most interested in hearing about at future Discover Flying Cloud Airport Open House and Presentation events?



21

Aircraft Noise Primer

22

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 MSP, FCM and 5 other reliever airports
- Provides safe facilities for businesses and individuals to operate aircraft
- Maintains Noise Abatement Plans
- Conducts pilot outreach

23

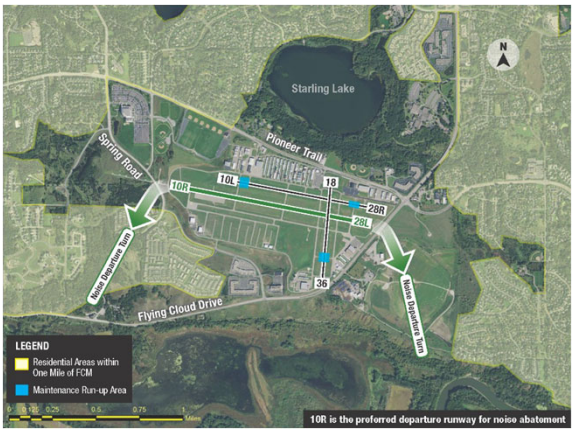
Metropolitan Airports Commission

- Public corporation created in 1943
- Legislated purpose:
  - Promote efficient, safe, economical air commerce
  - Develop the full potentialities of the metropolitan area as an aviation center
  - Minimize the environmental impact from air transportation and the public's exposure to noise and safety hazards around airports
- Can own airports within 35 miles of downtown Minneapolis and St. Paul
- Funded by rents and fees paid by airport users, not by general tax dollars

24

MAC Noise Abatement Efforts

- MAC maintains a Noise Abatement Plan for FCM
  - Preferential Runway Use
  - Southbound turns after departure
  - Noise Abatement departure and approach procedures



25

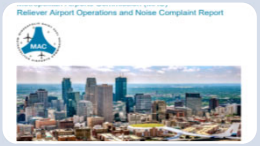
MAC Noise Abatement Efforts

- MAC maintains a Noise Abatement Plan for FCM
  - Maintenance Runups
  - Helicopter training
  - Voluntary nighttime restrictions

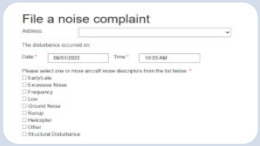
26

MAC Noise Abatement Efforts

Flight Tracker



Quarterly Reports



Complaint Reporting

Collaboration

27

MAC Noise Abatement Efforts

Complaint Investigation	• Monthly Letters to Operators • Runup Investigation
Flying Cloud Airport Advisory Commission	• Quarterly briefings
Pilot Outreach	• FAA Pilot Briefings • Aircraft Operator Discussions
Continued input on proposed land development	• Joint Airport Zoning Board • Private land development

28

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

29

SAP Question #1:

What thoughts or ideas do you have about how we can communicate aircraft noise to the public?

30

Aviation Activity Forecast Review

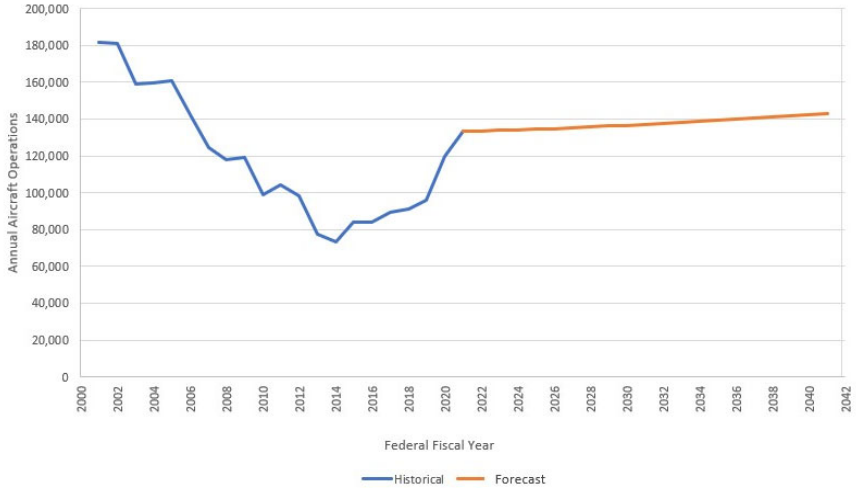
31

Forecast Overview

- The purpose of a forecast is to 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

32

Aviation Forecast Review



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

33

Facility Requirements

34

Runway Design Standards

- The FAA defines a Runway Design Code for every runway that is in the National Airspace System
- Runway Design Code is made up of three components
  - Airplane Design Group (ADG): Grouping based on wingspan and tail height
  - Aircraft Approach Category (AAC): Grouping based on approach speed while landing
  - Approach visibility minimums for a specific runway's critical aircraft

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'

AAC	VREF / 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

35

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, such as separation between runways and taxiways and the size of certain areas protecting the safety of aircraft operations and passengers
- Accurate critical aircraft determination helps ensure proper development of airport facilities

36

Critical Aircraft

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

37

Critical Aircraft

Citation III

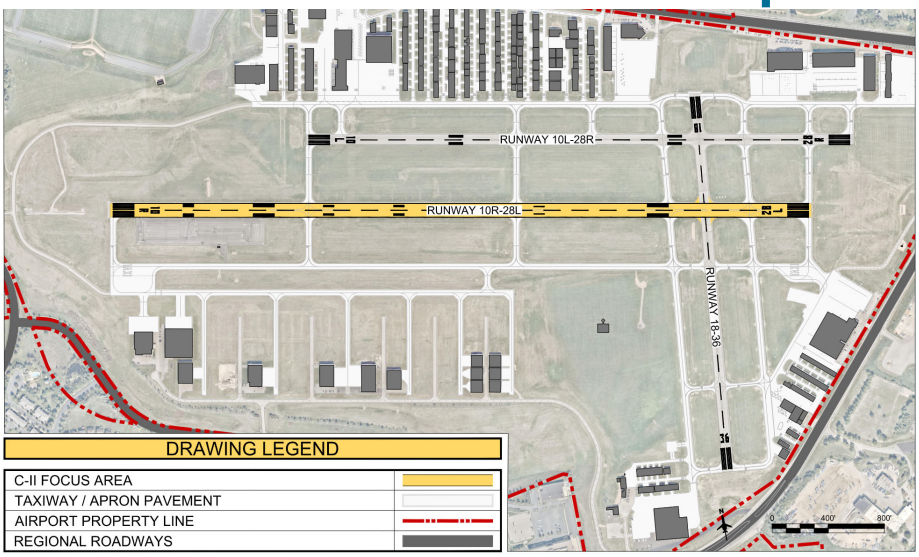
Category: B-II
Wingspan: 53.5'
Tail Height: 17.25'
Max. Takeoff Weight: 22,000 lbs

Challenger 350

Category: C-II
Wingspan: 69'
Tail Height: 20'
Max. Takeoff Weight: 40,600 lbs

38

Critical Aircraft Area of Impact



39

Facility Requirements

- Facility Requirements evaluate existing and future needs of an airport, and monitors airport compliance of standards set forth by federal (FAA) and local (MnDOT) guidance
- Benchmark facility requirements against LTP Goals and Objectives
  - **LTP Goal #1:** Enhance Airport Safety
    - Aims to address airfield safety by **adopting current federal and local airport safety regulations**
  - **LTP Goal #2:** Preserving, and if possible, improving the operational capabilities for the current aircraft using the airport
    - Aims to address preserving or improving operational capability by **accounting for existing and future based aircraft and operations**
  - **LTP Goal #3:** Promote financial stability of the MAC Reliever Airport system by exploring revenue opportunities for aeronautical and non-aeronautical development
    - Aims to address promoting financial stability of the MAC reliever airport system by **implementing realistic project strategies to address existing needs and conform to existing financial structure**

40

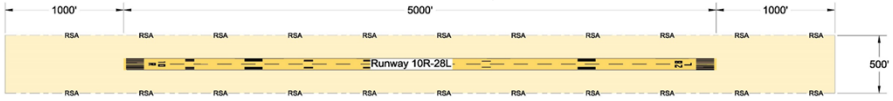
Facility Requirement Considerations

- Facility Requirements (Today)
  - Critical Aircraft Impacts (Existing AAC B to AAC C)
- Other Facility Requirements Evaluated in the LTP (Covered During SAP #3)
  - Airfield Capacity
  - Navigational Aid (NAVAID) Critical Areas
  - Runway-to-Taxiway Separation
  - Taxiway Dimensional Criteria
  - Airfield Markings
  - Aircraft Parking Areas/Aprons
  - Potential Hangar Development Areas

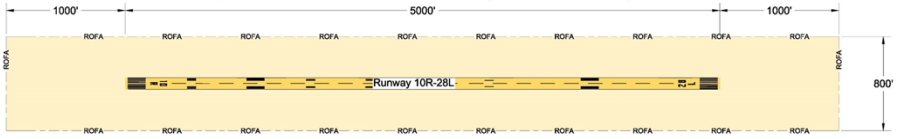
41

Facility Requirements

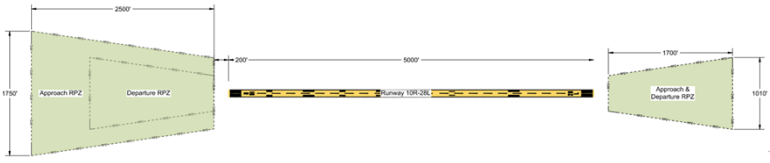
- **Runway Safety Area (RSA):** The area surrounding the runway consisting of a prepared surface suitable for reducing the risk of damage to an aircraft in the event of an undershoot, overshoot, or excursion from the runway.



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

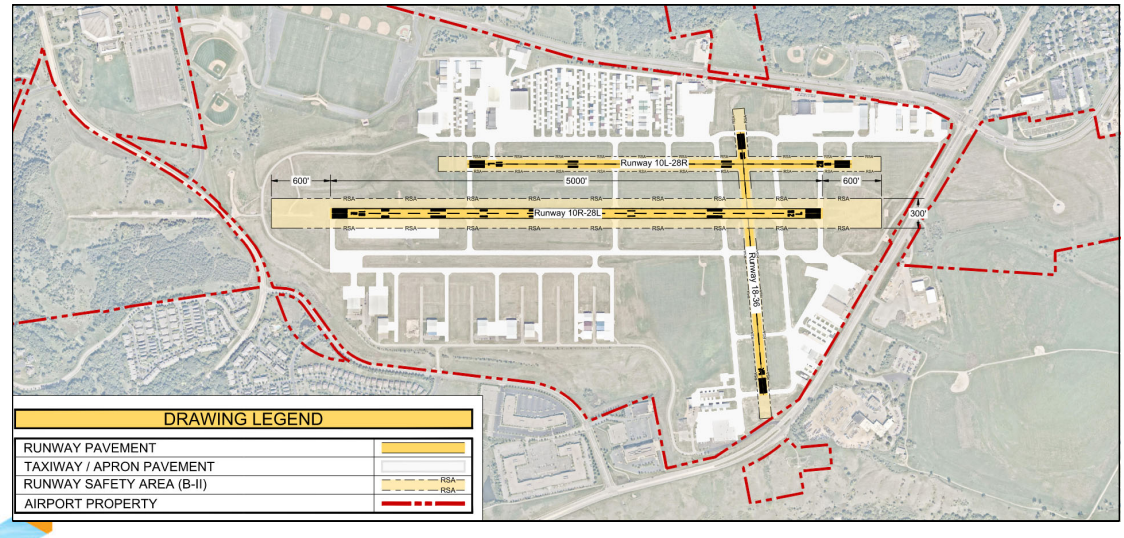


- **Runway Protection Zone (RPZ):** The 2-dimensional trapezoidal area which is intended for land-use compatibility control. The function of the RPZ is to protect people and property on the ground due to undershoots and overshoots of aircraft arriving and departing the runway.



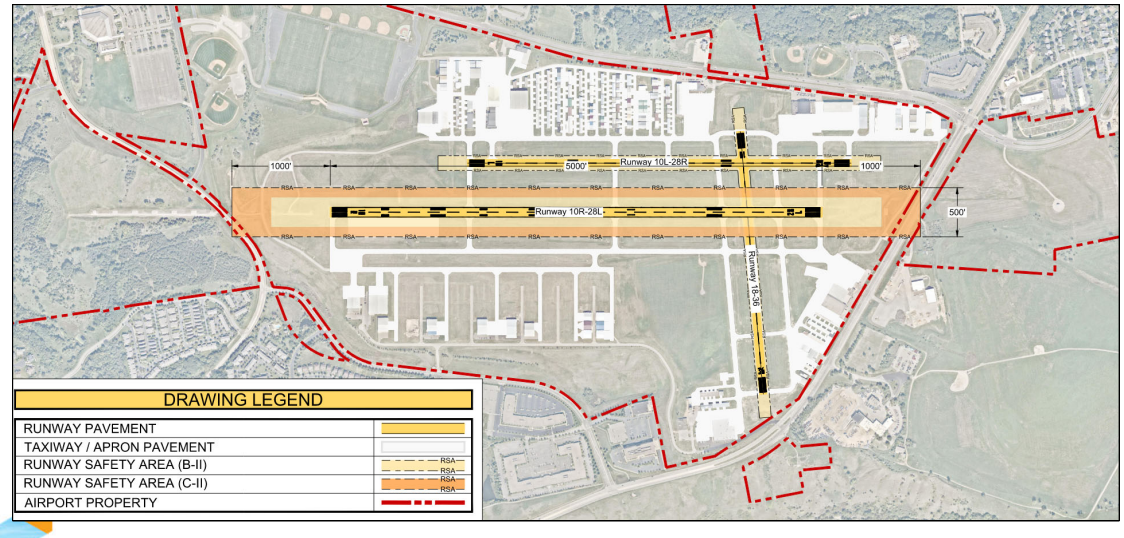
42

Facility Requirements – Runway Safety Area: B-II



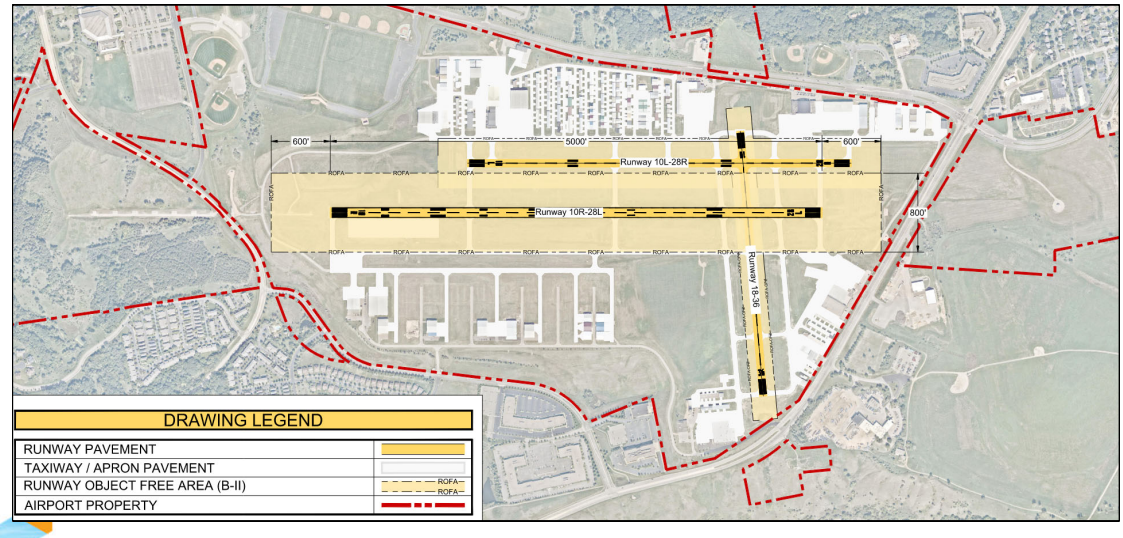
43

Facility Requirements – Runway Safety Area: C-II



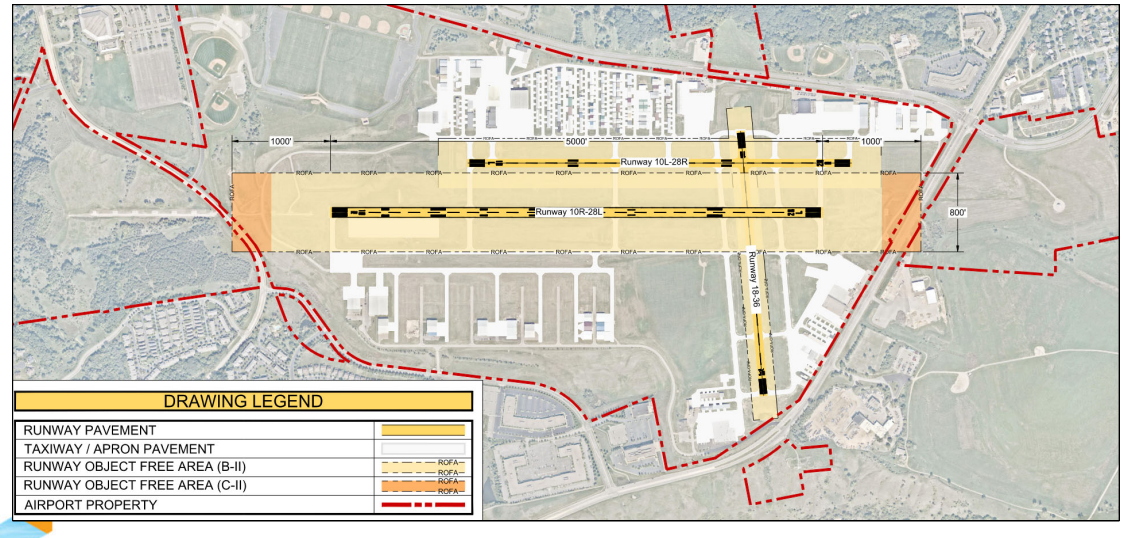
44

Facility Requirements – Runway Object Free Area: B-II



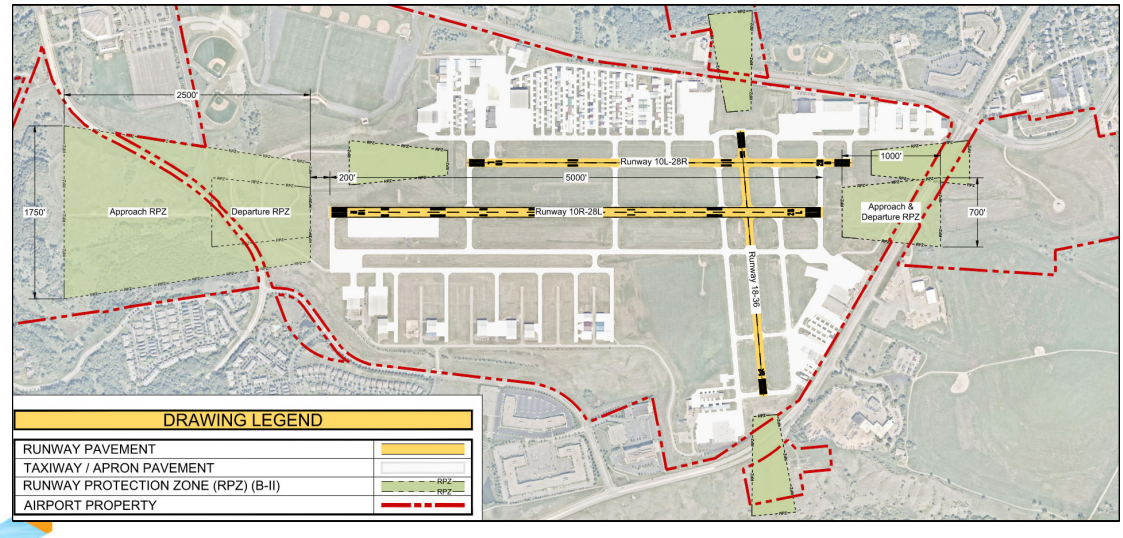
45

Facility Requirements – Runway Object Free Area: C-II



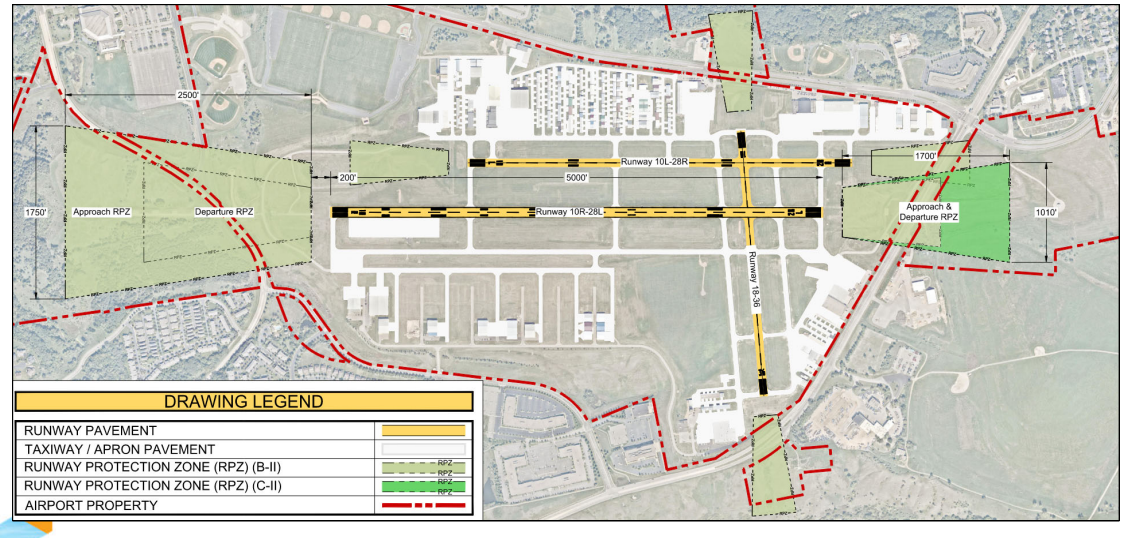
46

Facility Requirements – Runway Protection Zone: B-II



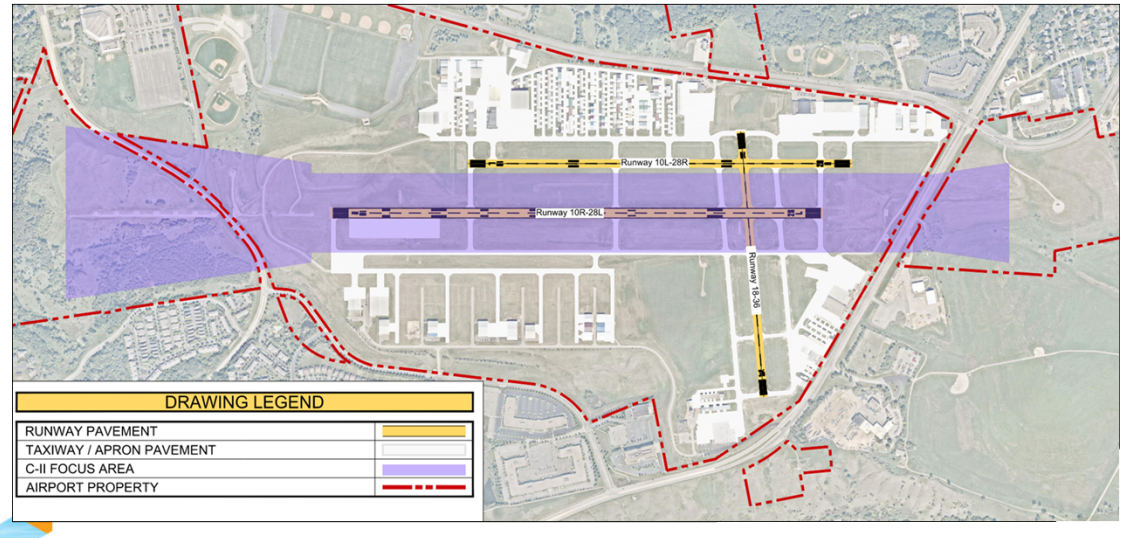
47

Facility Requirements – Runway Protection Zone: C-II



48

Critical Aircraft Focus Area



49

Other Facility Requirement Considerations

- Other requirements that will be covered during the next SAP meeting:
  - Airfield Capacity
  - Navigational Aid (NAVAID) Critical Areas
  - Runway-to-Taxiway Separation
  - Taxiway Dimensional Criteria
  - Airfield Markings
  - Aircraft Parking Areas/Aprons
  - Potential Hangar Development Areas

50

SAP Question #2:

Anything surprising or something you were expecting to hear today, but didn't?

51

Next Steps/Schedule

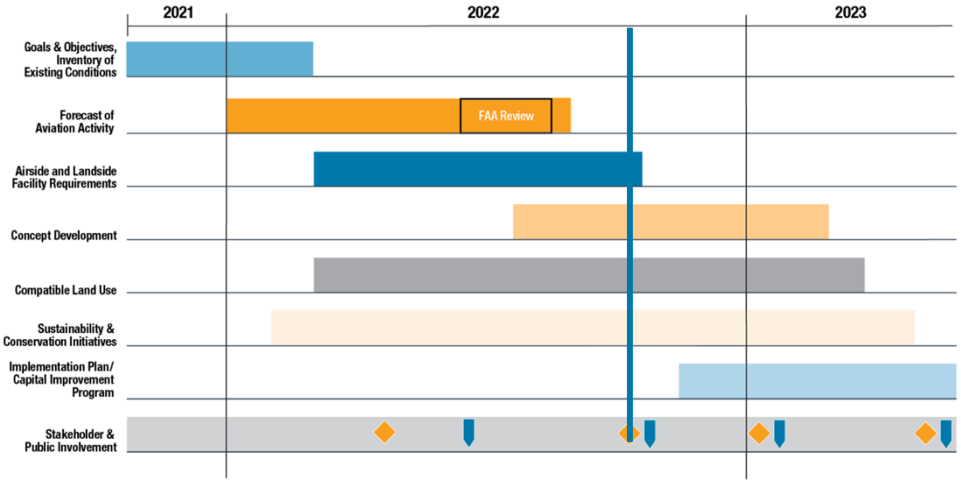
52

Next Steps

- Discover Flying Cloud Meeting # 2 (October 25th, 2022)
- Begin Draft Alternative Concept Development
- Consider Areas for Potential Hangar Development
- Additional SAP meetings
  - Alternatives review
  - Preferred alternative

53

Schedule



54

Thank you for participating!

2040 Long-Term Plan (LTP) Update
Flying Cloud Airport (FCM)

Please complete the post-event survey

October 6, 2022

55

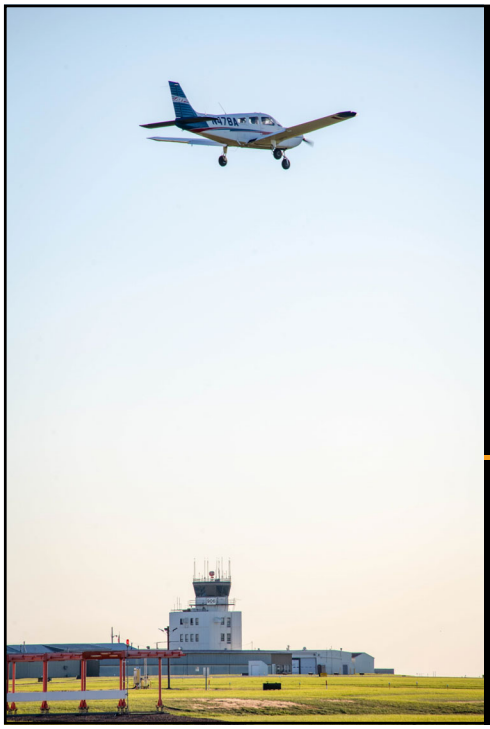
1

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

Use code to view presentation

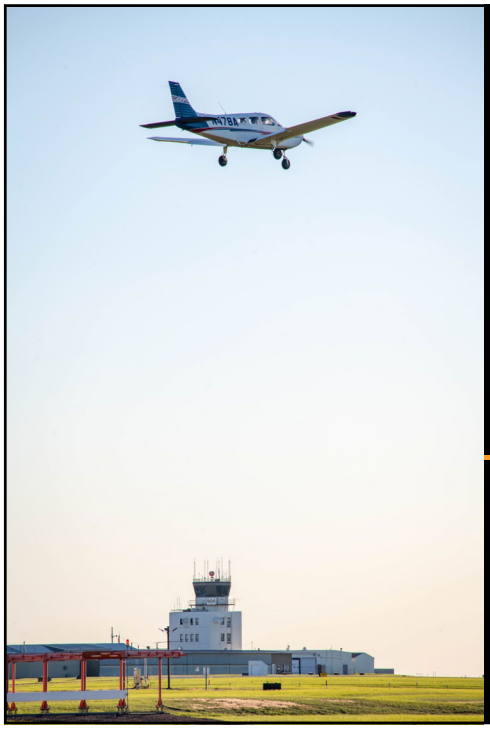
2



DISCOVER
Flying Cloud Airport

Welcome Remarks

3



DISCOVER
Flying Cloud Airport

Introductions

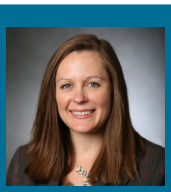
4

Planning Team

Eric Gilles

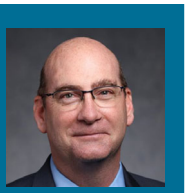
MAC Airport Planner

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

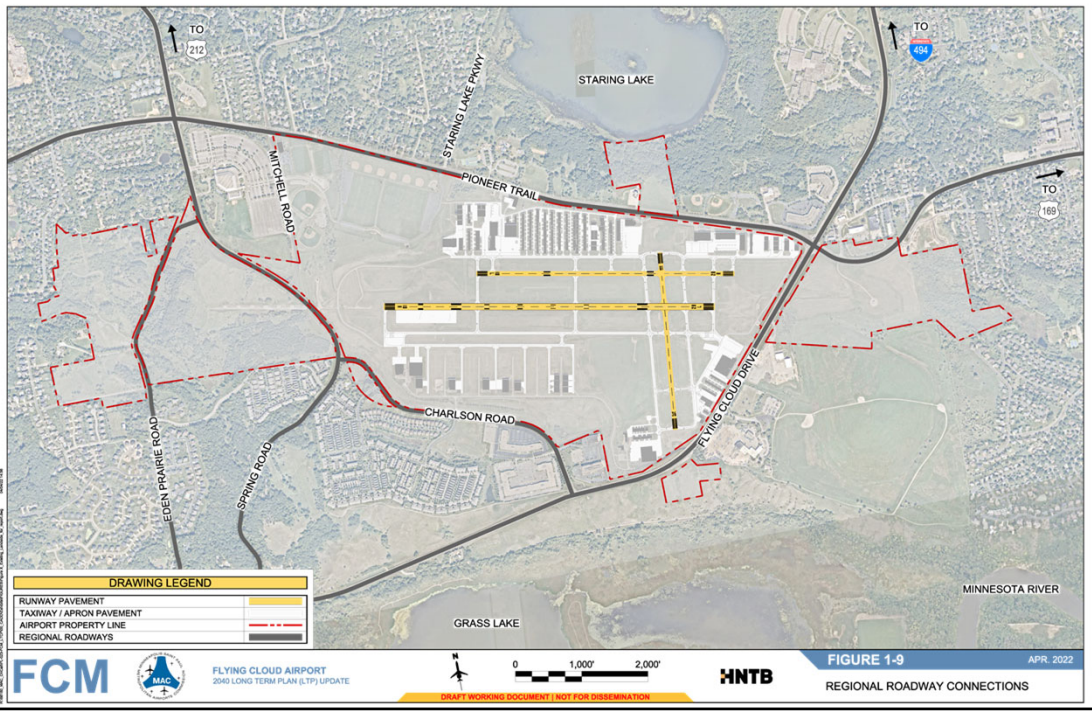
Greg Albjerg

Vice President, Senior Aviation Consultant, HNTB

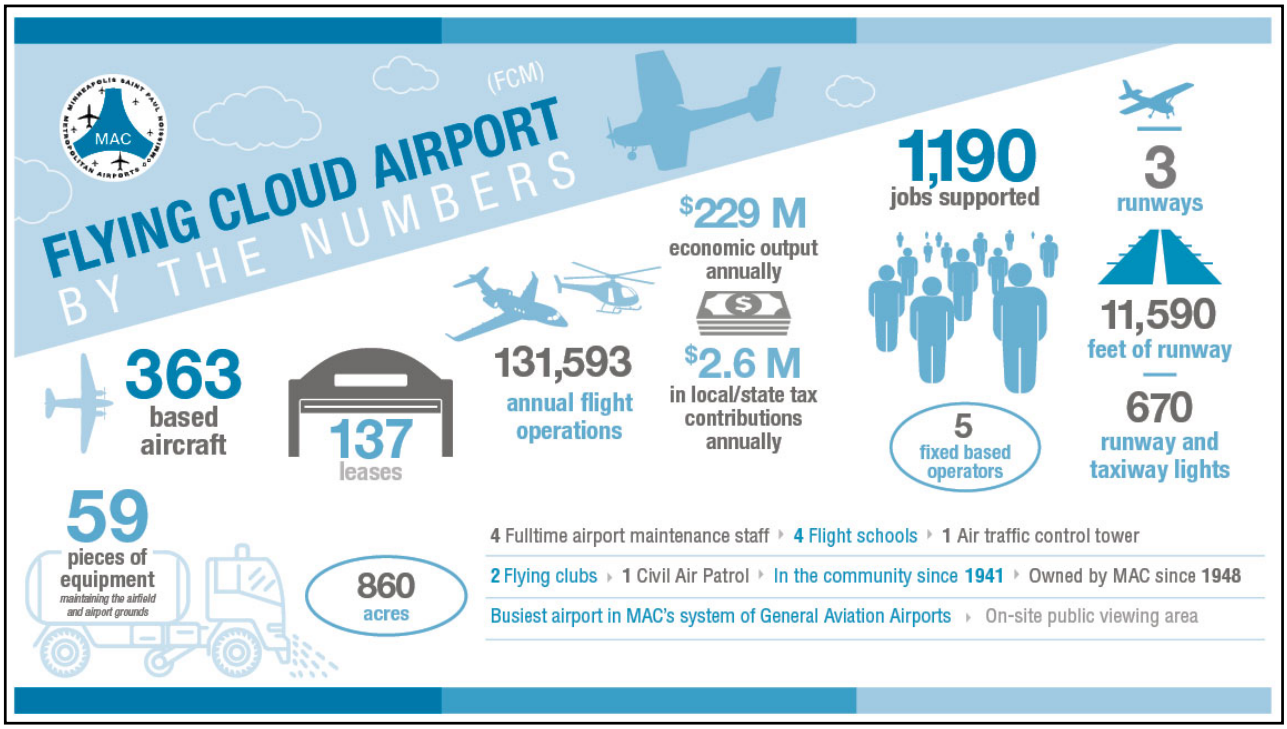
Technical Advisor

Frequent Flyer at FCM

5



6


FLYING CLOUD AIRPORT (FCM)
BY THE NUMBERS
MAC
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

7


DISCOVER
Flying Cloud Airport
Long-Term Plan
Goals & Objectives
MAC

8

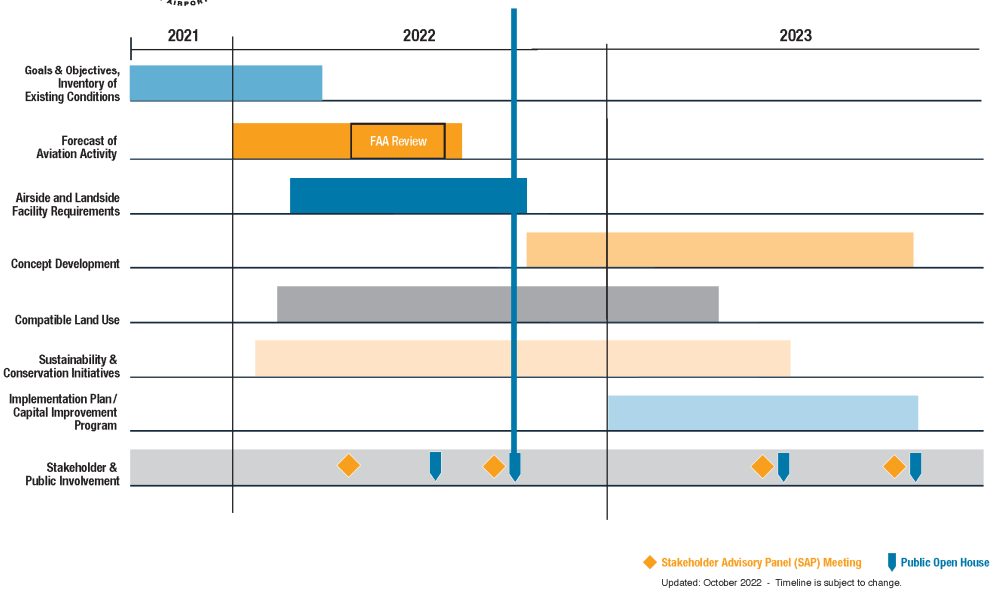
What is a Long-Term Plan (LTP)?

- 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

9

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

2040 Long-Term Plan (LTP) Schedule



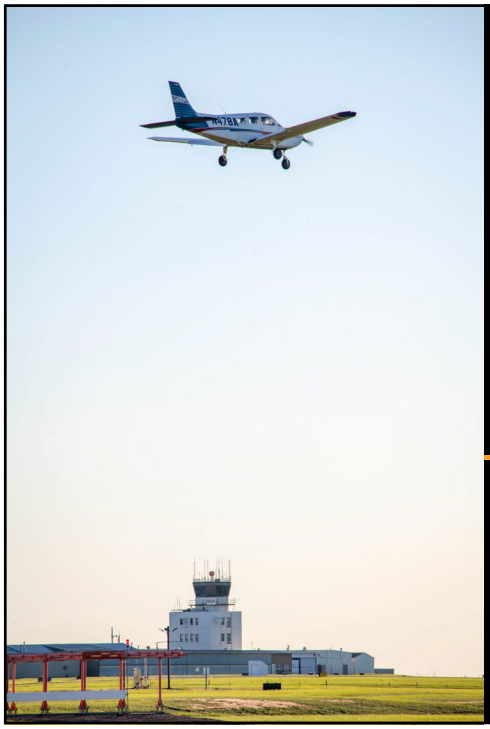
Updated: October 2022 - Timeline is subject to change.

10

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

11



DISCOVER
Flying Cloud Airport

Recap Previous Engagement Activities

12

Stakeholder Engagement Program

DISCOVER 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

13

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

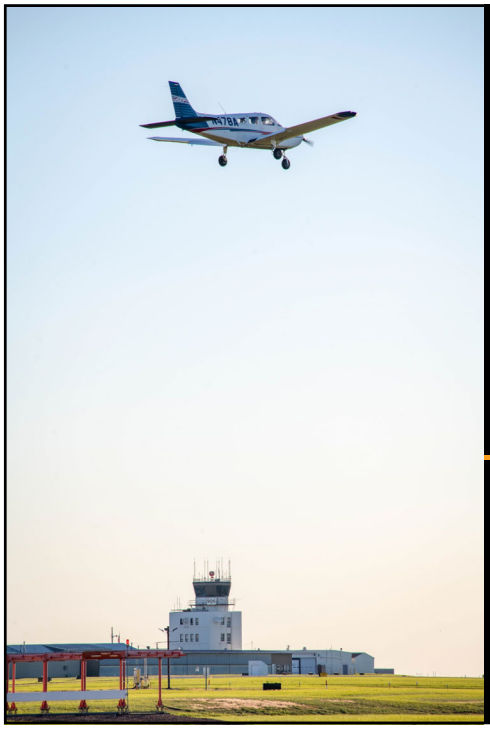
14

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

15



DISCOVER
Flying Cloud Airport

Aircraft Noise Primer

16

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

17

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

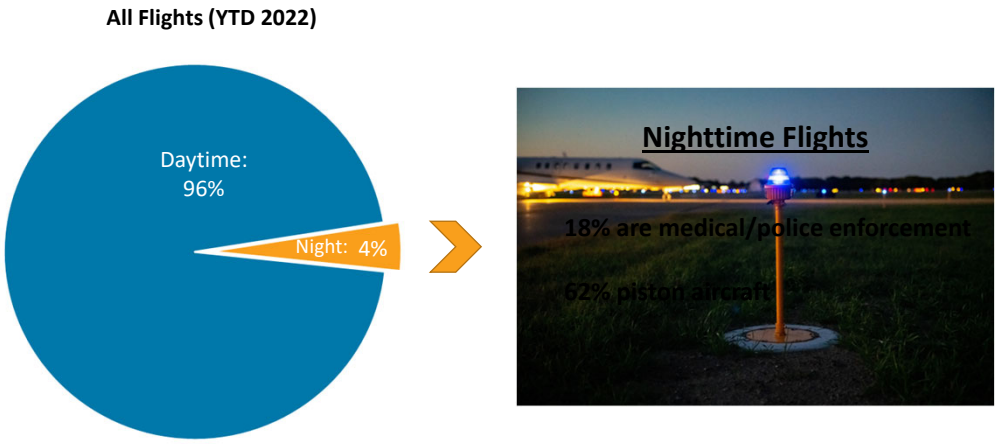
Airport Noise and Capacity Act, 1990

- 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

18

Flying Cloud Airport Nighttime Flights



19

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

20

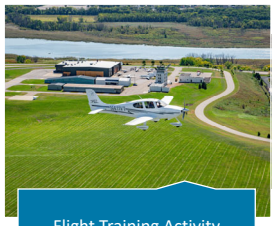
20

MAC Noise Abatement Efforts

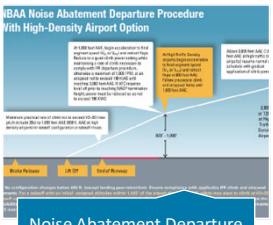
Voluntary Nighttime Restrictions

Preferred Runway

Departure Turns to the South



Flight Training Activity



Noise Abatement Departure and Arrival Procedures

Maintenance Runups

21

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

22

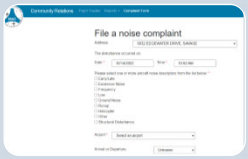
Resources

Flight Tracker

macnoms.com

Quarterly Reports

customers.macnoms.com/reports



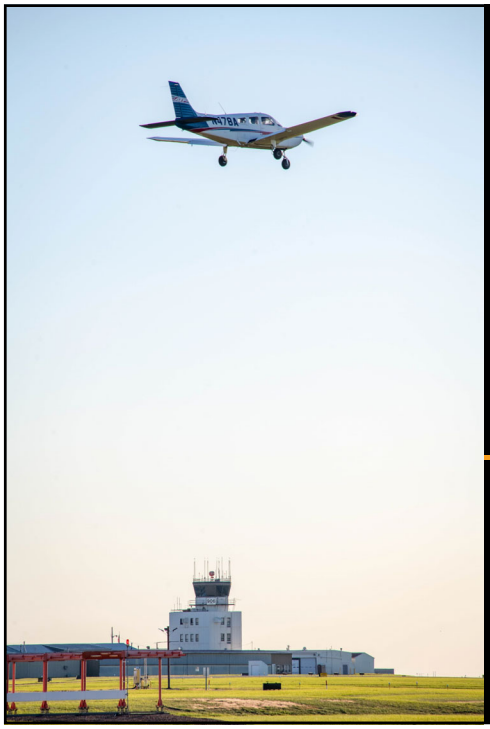
Complaint Reporting

customers.macnoms.com/customers

Community Relations Team

24-hour hotline: 612-726-9411

23



DISCOVER
Flying Cloud Airport

Aviation Activity Forecast Review

24

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

25

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

26

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

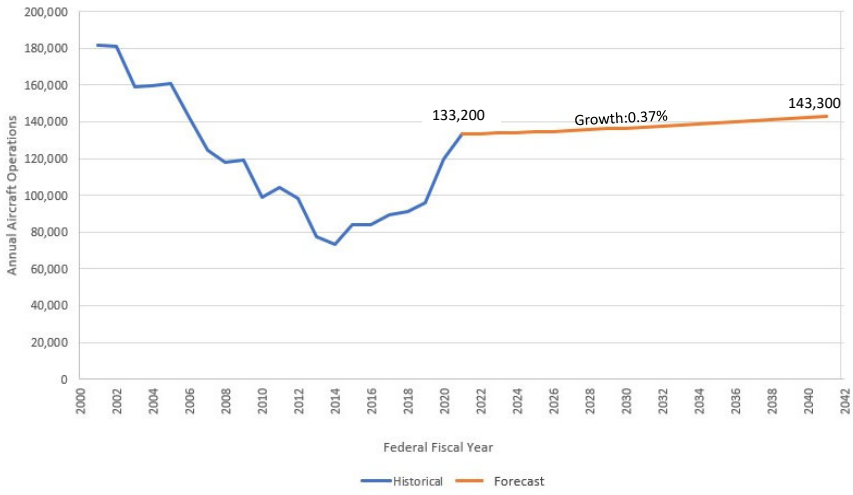
Airport Characteristics

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

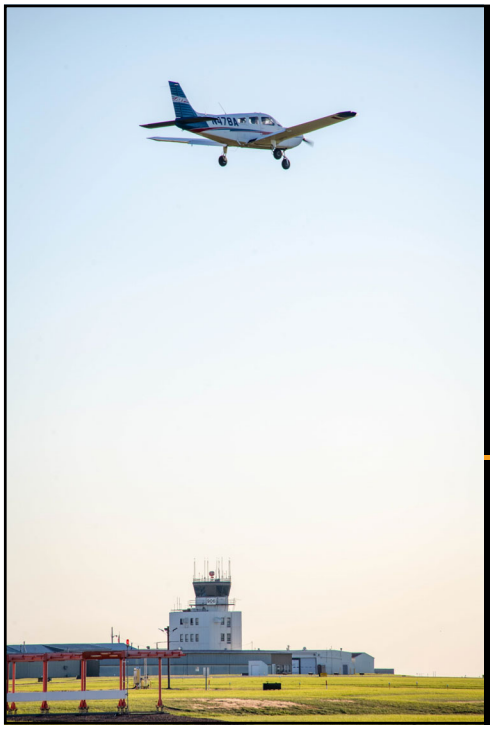
27

Aviation Forecast Review



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

28



DISCOVER
Flying Cloud Airport

Facility Requirements

29

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

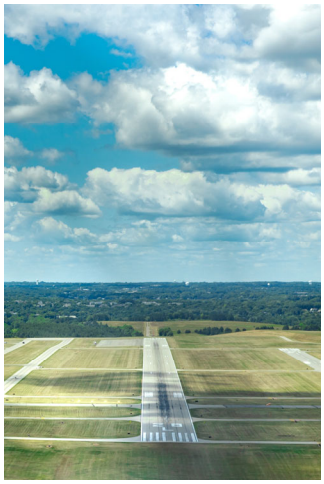
AAC	APPROACH SPEED
A	Approach speed less than 91 knots
B	Approach speed 91 knots or more, but less than 121 knots
C	Approach speed 121 knots or more, but less than 141 knots
D	Approach speed 141 knots or more, but less than 166 knots
E	Approach speed of more than 166 knots

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'

30

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



31

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

32

Critical Aircraft

Citation 3

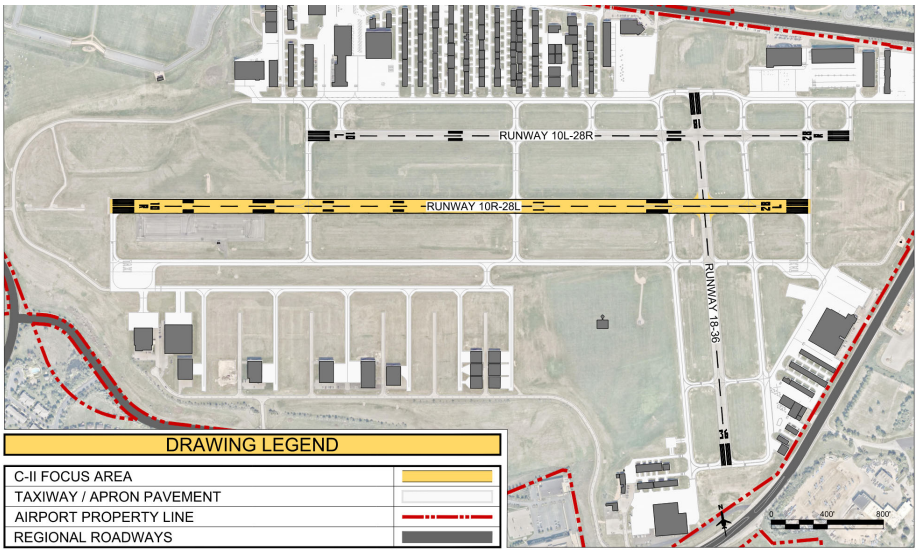
Approach Speed: B
Airplane Design Group: II
Max. Takeoff Weight: 22,000 lbs

Challenger 350

Approach Speed: C
Airplane Design Group: II
Max. Takeoff Weight: 40,600 lbs

33

Critical Aircraft Area of Impact



34

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

35

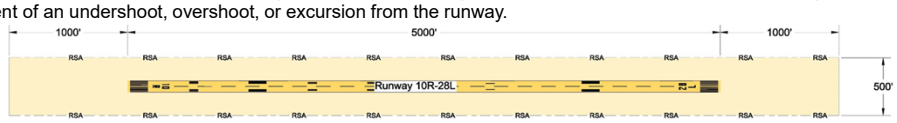
Facility Requirement Considerations

- 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

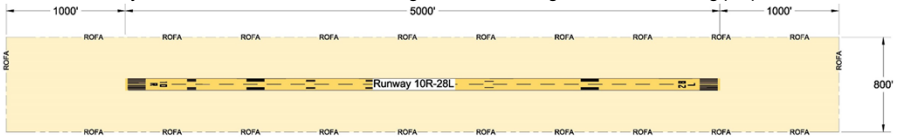
36

Facility Requirements - Definitions

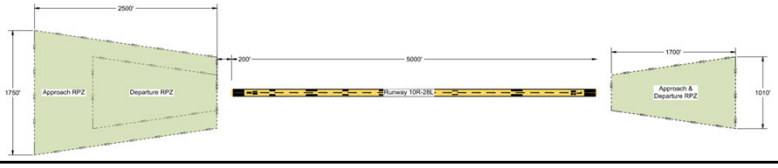
- **Runway Safety Area (RSA):** The area surrounding the runway consisting of a prepared surface suitable for reducing the risk of damage to an aircraft in the event of an undershoot, overshoot, or excursion from the runway.



- **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.

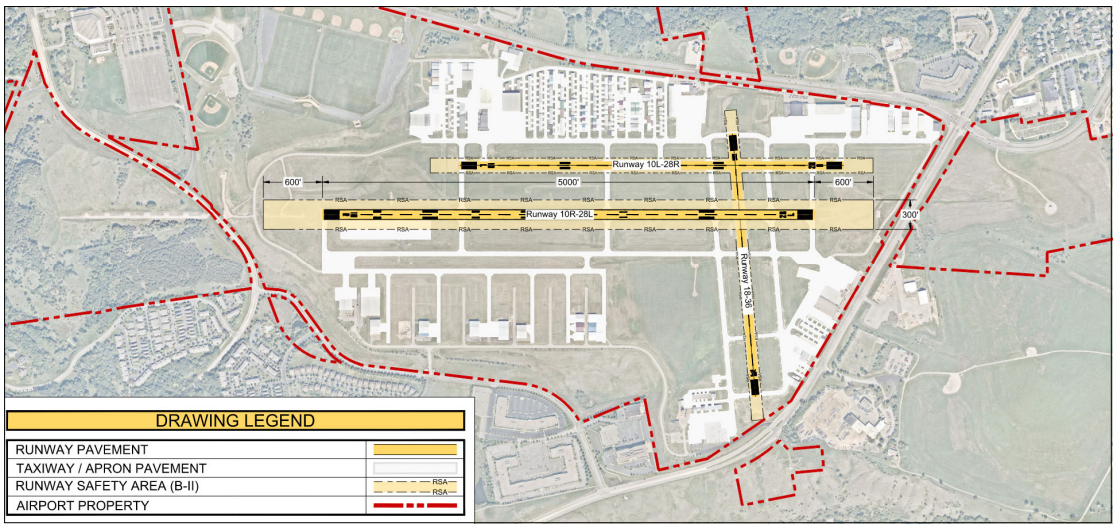


- **Runway Protection Zone (RPZ):** The 2-dimensional trapezoidal area which is intended for land-use compatibility control. The function of the RPZ is to protect people and property on the ground due to undershoots and overshoots of aircraft arriving and departing the runway.



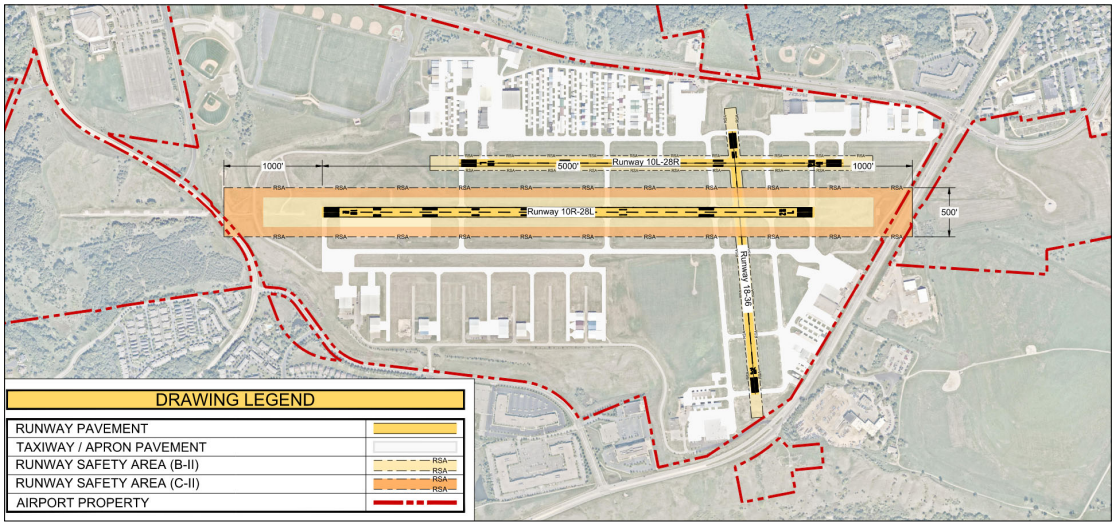
37

Existing Runway Safety Area: B-II



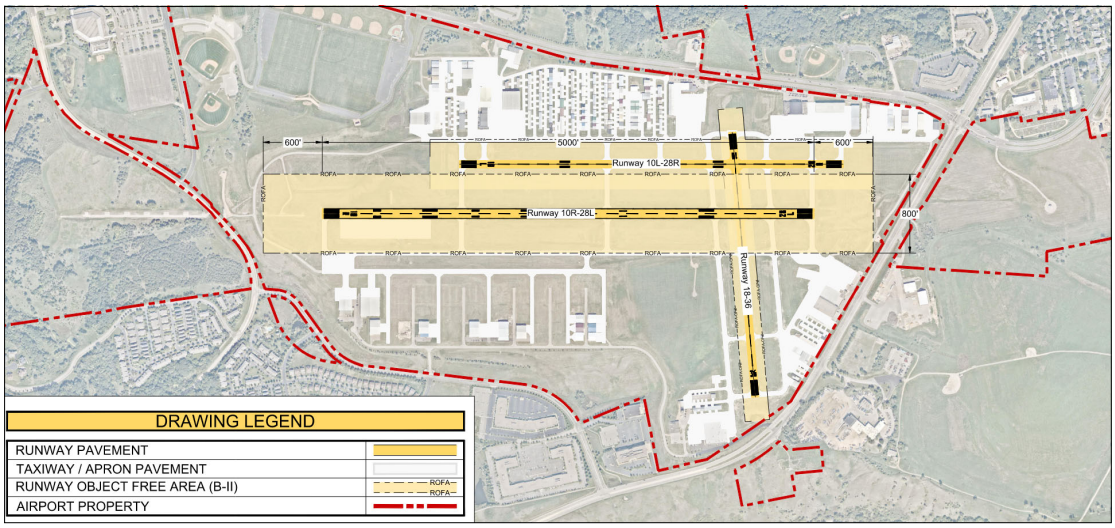
38

Future Runway Safety Area: C-II



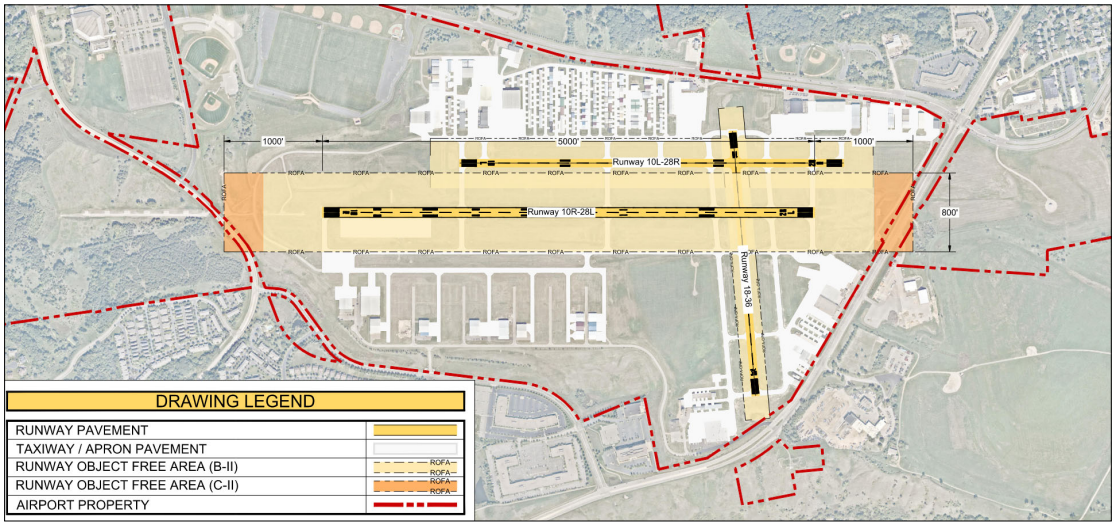
39

Existing Runway Object Free Area: B-II



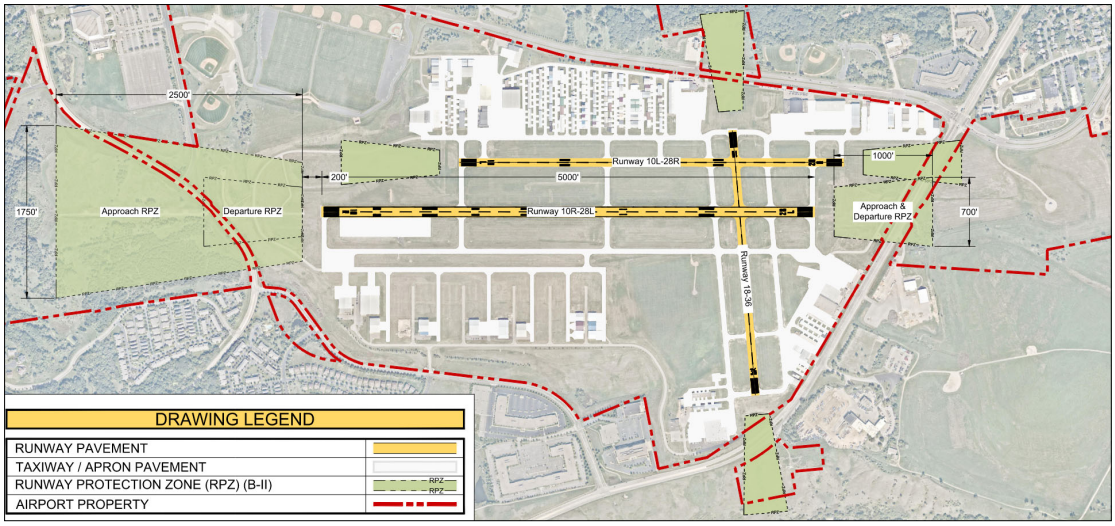
40

Future Runway Object Free Area: C-II



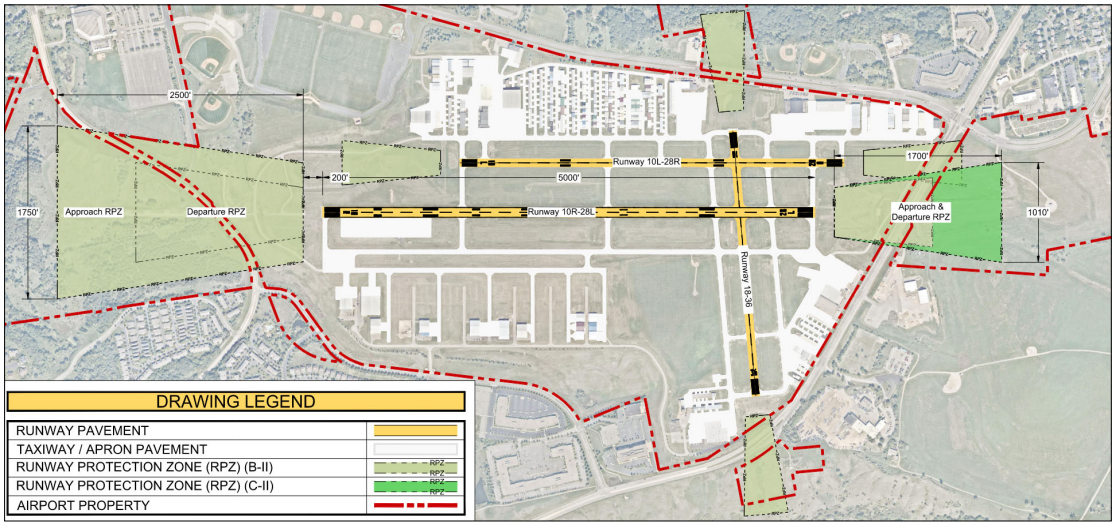
41

Existing Runway Protection Zone: B-II



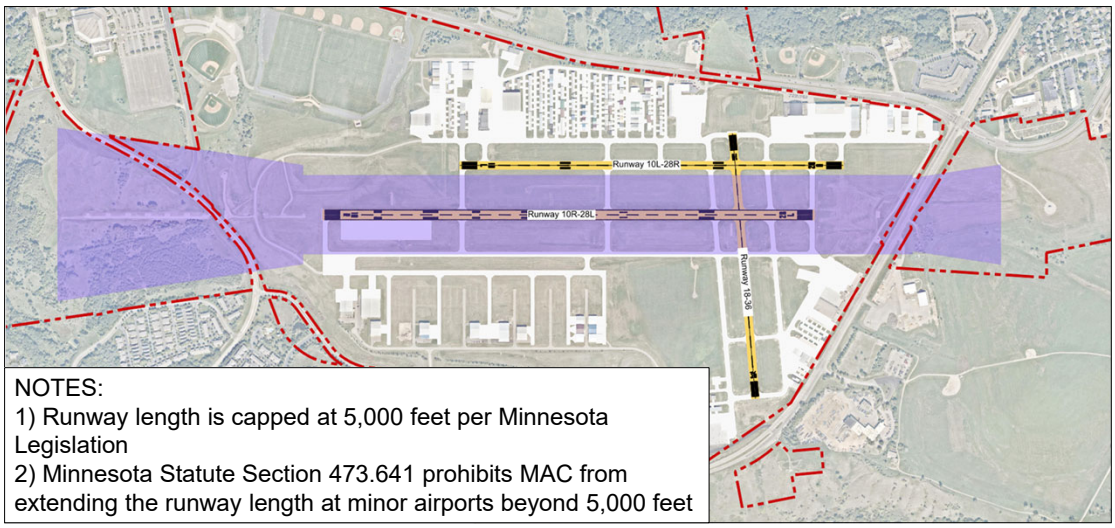
42

Future Runway Protection Zone: C-II



43

Critical Aircraft Focus Area



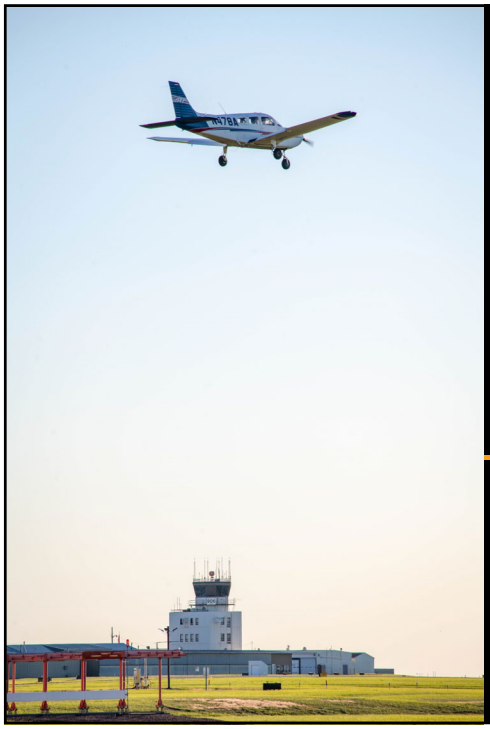
NOTES:
1) Runway length is capped at 5,000 feet per Minnesota Legislation
2) Minnesota Statute Section 473.641 prohibits MAC from extending the runway length at minor airports beyond 5,000 feet

44

Facility Requirement Considerations

- 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

45



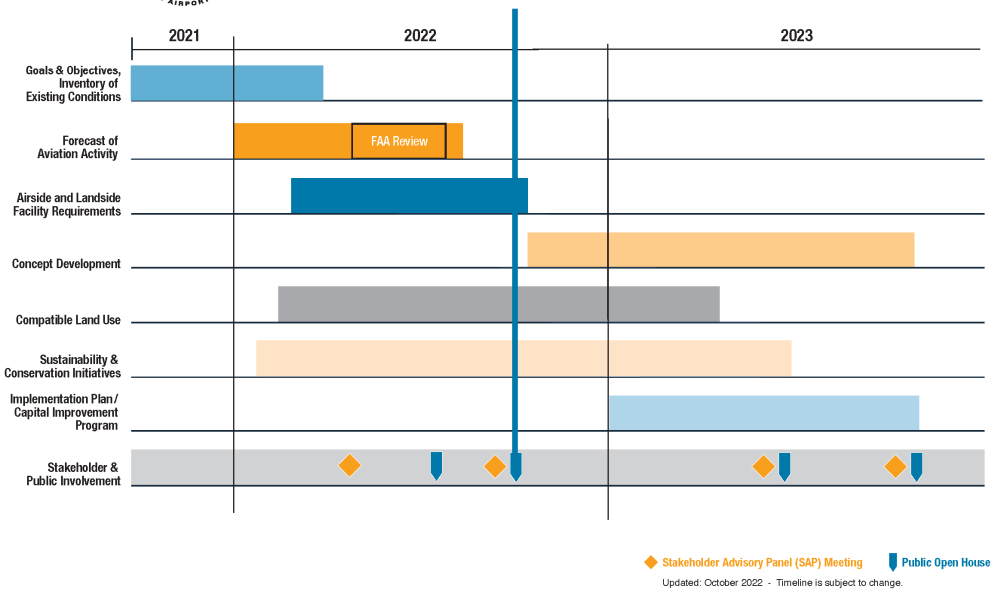
DISCOVER
Flying Cloud Airport

Next Steps/Schedule

46

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

2040 Long-Term Plan (LTP) Schedule



47

DISCOVER
Flying Cloud Airport

Questions?

Please complete our survey

48

DISCOVER
Flying Cloud Airport

Thank you for attending

Please complete our survey

49

Stakeholder Advisory Panel

2040 Long-Term Comprehensive Plan (LTP) Update
Flying Cloud Airport (FCM)

May 2, 2023

1

Welcome Remarks

Bridget Rief
Metropolitan Airports Commission (MAC)
Vice President, Planning and Development

2

Agenda

- Goals, Objectives, and Project Schedule
- Facility Requirements
- Preliminary Airfield Alternatives
- Next Steps / Schedule

Meeting Agenda and Presentation are available at:
metroairports.org/fcm-long-term-plan-documents-and-links

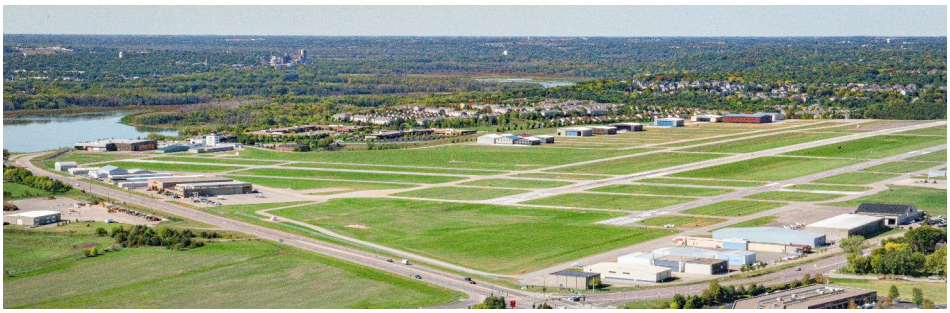
3

Goals, Objectives, and Project Schedule

4

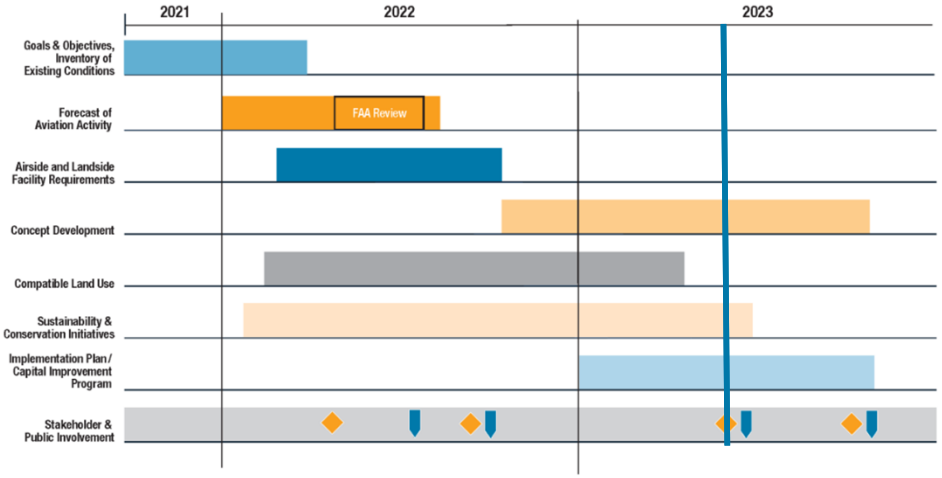
Goals and Objectives

1. Enhance airport safety
2. Preserve and, if possible, improve operational capabilities for the current aircraft using the airport
3. Promote financial stability of the MAC Reliever Airport system by exploring revenue opportunities for aeronautical and non-aeronautical development



5

Schedule



6

Facility Requirements

7

Critical Design Aircraft – Aircraft Approach Category (AAC) B to C

- The existing and future critical design aircraft is the Challenger 350 (AAC C)
- The previous critical design aircraft was identified as the Citation 3 (AAC B)

Citation 3

Wingspan: 53.5’
Tail Height: 17.25’
Max. Takeoff Weight: 22,000 lbs

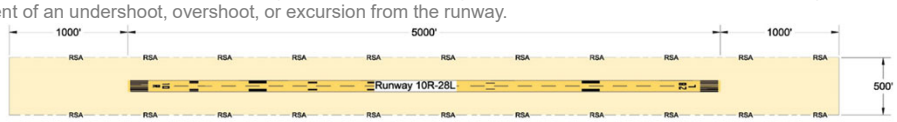
Challenger 350

Wingspan: 69’
Tail Height: 20’
Max. Takeoff Weight: 40,600 lbs

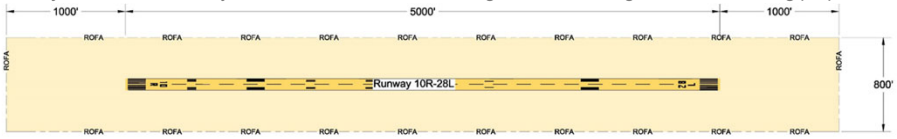
8

Facility Requirements

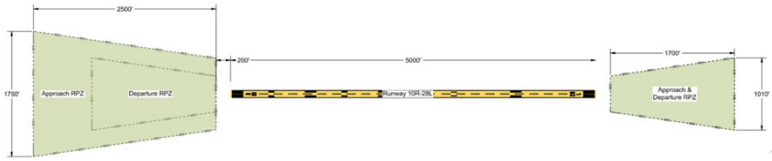
- **Runway Safety Area (RSA):** The area surrounding the runway consisting of a prepared surface suitable for reducing the risk of damage to an aircraft in the event of an undershoot, overshoot, or excursion from the runway.



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

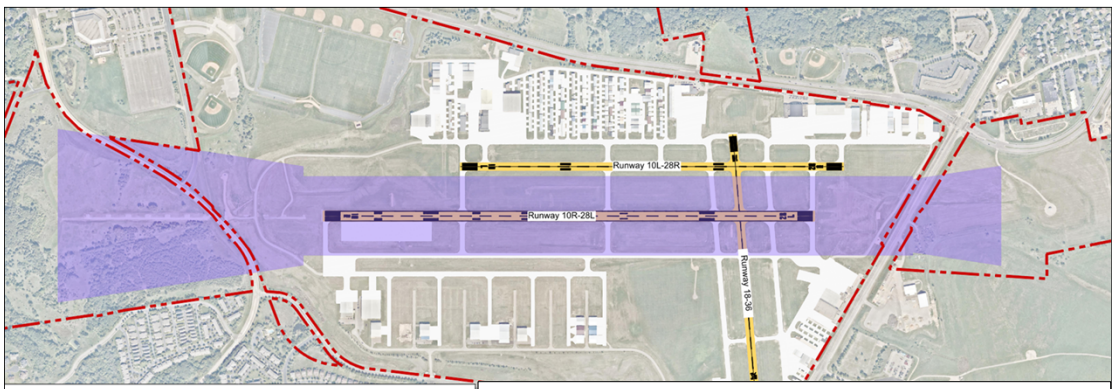


- **Runway Protection Zone (RPZ):** The 2-dimensional trapezoidal area which is intended for land-use compatibility control. The function of the RPZ is to protect people and property on the ground due to undershoots and overshoots of aircraft arriving and departing the runway.



9

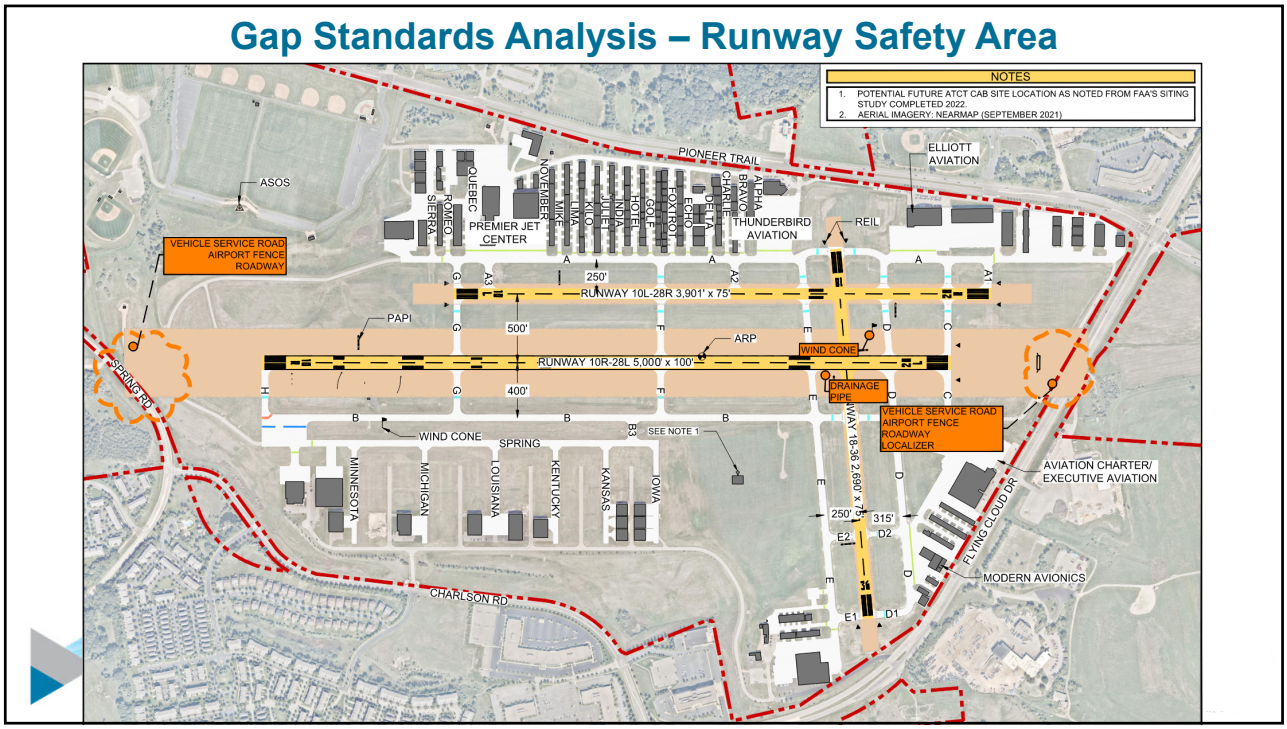
Critical Aircraft Focus Area



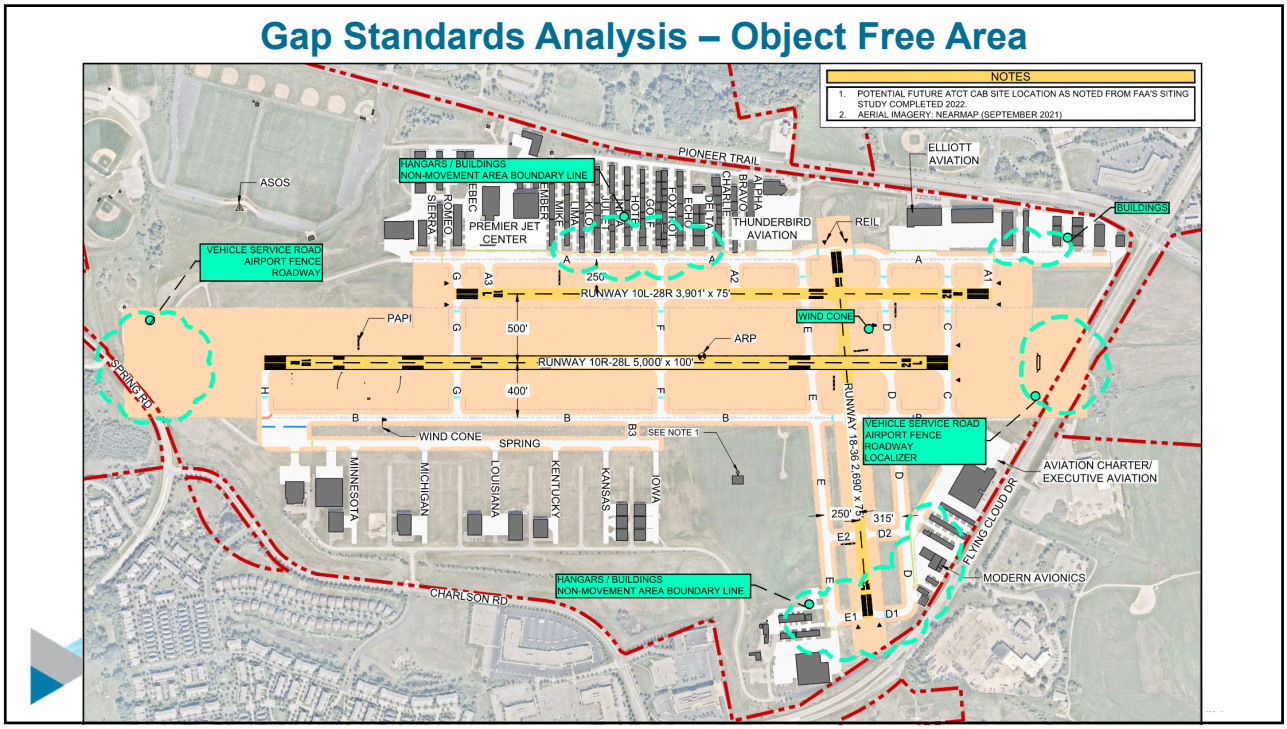
DRAWING LEGEND	
RUNWAY PAVEMENT	
TAXIWAY / APRON PAVEMENT	
C-II FOCUS AREA	
AIRPORT PROPERTY	

- Runway length is capped at 5,000 feet per Minnesota Legislation
- Minnesota Statute Section 473.641 prohibits MAC from extending the runway length at minor airports beyond 5,000 feet.

10

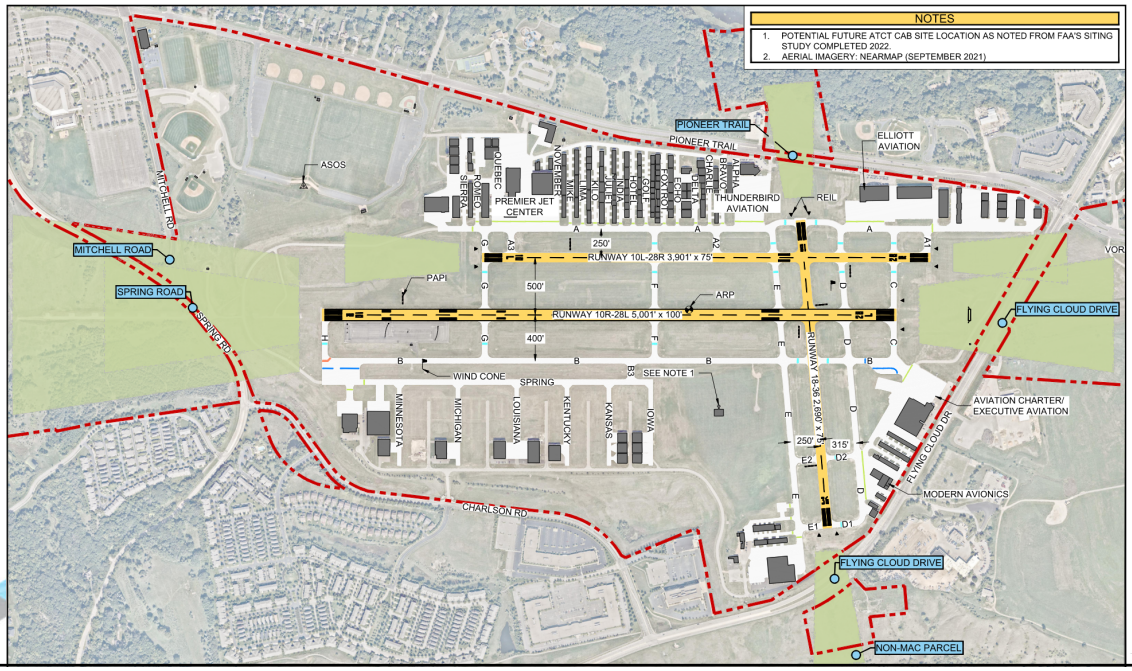

Gap Standards Analysis – Runway Safety Area
NOTES
1. POTENTIAL FUTURE ATCT CAB SITE LOCATION AS NOTED FROM FAA'S SITING STUDY COMPLETED 2022.
2. AERIAL IMAGERY: NEARMAP (SEPTEMBER 2021)
PIONEER TRAIL
ELLIOTT AVIATION
ASOS
VEHICLE SERVICE ROAD AIRPORT FENCE ROADWAY
PREMIER JET CENTER
THUNDERBIRD AVIATION
REIL
RUNWAY 10L-28R 3,901' x 75'
PAPI
ARP
WIND CONE
RUNWAY 10R-28L 5,000' x 100'
DRAINAGE PIPE
SPRING RD
WIND CONE
SPRING
SEE NOTE 1
RUNWAY 18-36 2,690' x 75'
VEHICLE SERVICE ROAD AIRPORT FENCE ROADWAY LOCALIZER
AVIATION CHARTER/ EXECUTIVE AVIATION
FLYING CLOUD DR
MODERN AVIONICS
CHARLSON RD

11


Gap Standards Analysis – Object Free Area
NOTES
1. POTENTIAL FUTURE ATCT CAB SITE LOCATION AS NOTED FROM FAA'S SITING STUDY COMPLETED 2022.
2. AERIAL IMAGERY: NEARMAP (SEPTEMBER 2021)
HANGARS / BUILDINGS NON-MOVEMENT AREA BOUNDARY LINE
PIONEER TRAIL
ELLIOTT AVIATION
ASOS
PREMIER JET CENTER
THUNDERBIRD AVIATION
REIL
BUILDINGS
VEHICLE SERVICE ROAD AIRPORT FENCE ROADWAY
RUNWAY 10L-28R 3,901' x 75'
PAPI
WIND CONE
ARP
RUNWAY 10R-28L 5,000' x 100'
SPRING RD
WIND CONE
SPRING
SEE NOTE 1
RUNWAY 18-36 2,690' x 75'
VEHICLE SERVICE ROAD AIRPORT FENCE ROADWAY LOCALIZER
AVIATION CHARTER/ EXECUTIVE AVIATION
FLYING CLOUD DR
MODERN AVIONICS
HANGARS / BUILDINGS NON-MOVEMENT AREA BOUNDARY LINE
CHARLSON RD

12

Gap Standards Analysis – Runway Protection Zone

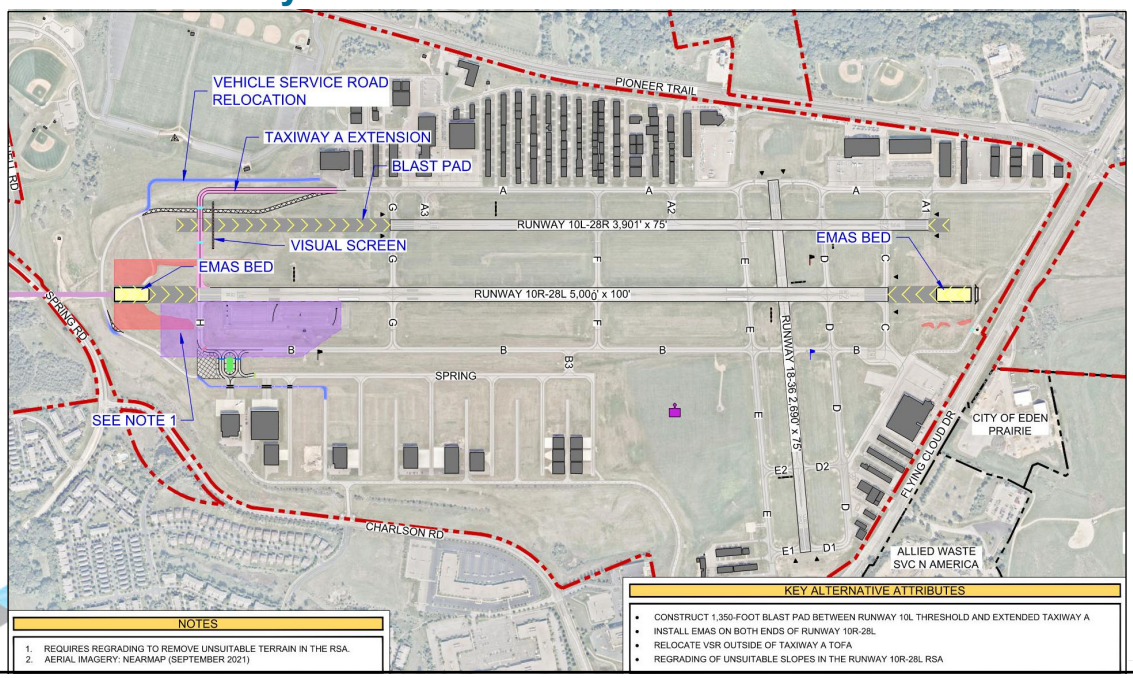


13

Preliminary Airfield Alternatives (Runways)

14

Runway Alternative 1 – 10R & 28L EMAS Beds



15

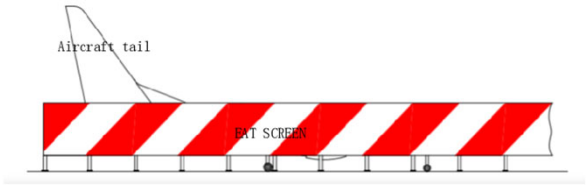
Engineered Material Arresting System

Image showing an example of EMAS at St. Paul Downtown Airport (STP)

- An Engineered Material Arresting System (EMAS) bed is comprised of lightweight, crushable material placed at the end of a runway to safely stop an aircraft that overruns the end of the runway
- EMAS beds are an FAA approved mitigation strategy when it is not practical to achieve the full standard runway safety area beyond the end of a runway
- The size of EMAS beds vary and is based on dimensions of the runway safety area and aircraft fleet using the airport

16

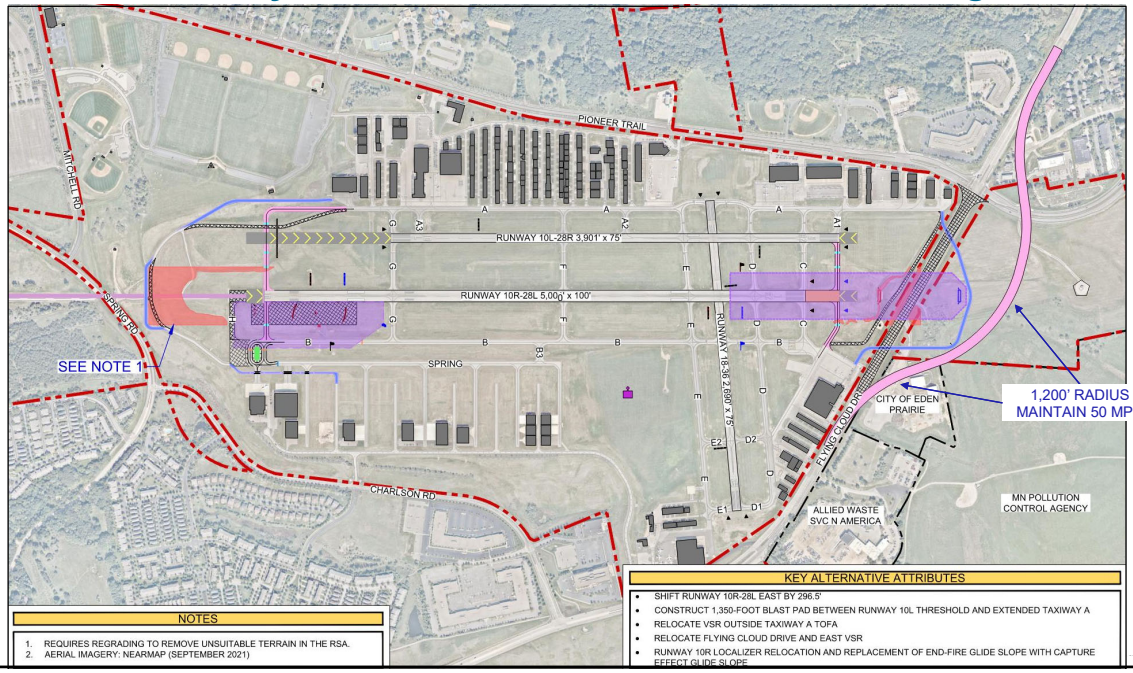
Visual Screen



- A visual screen obscures aircraft using an end around taxiway to prevent pilots of departing aircraft from thinking an aircraft is crossing the active runway

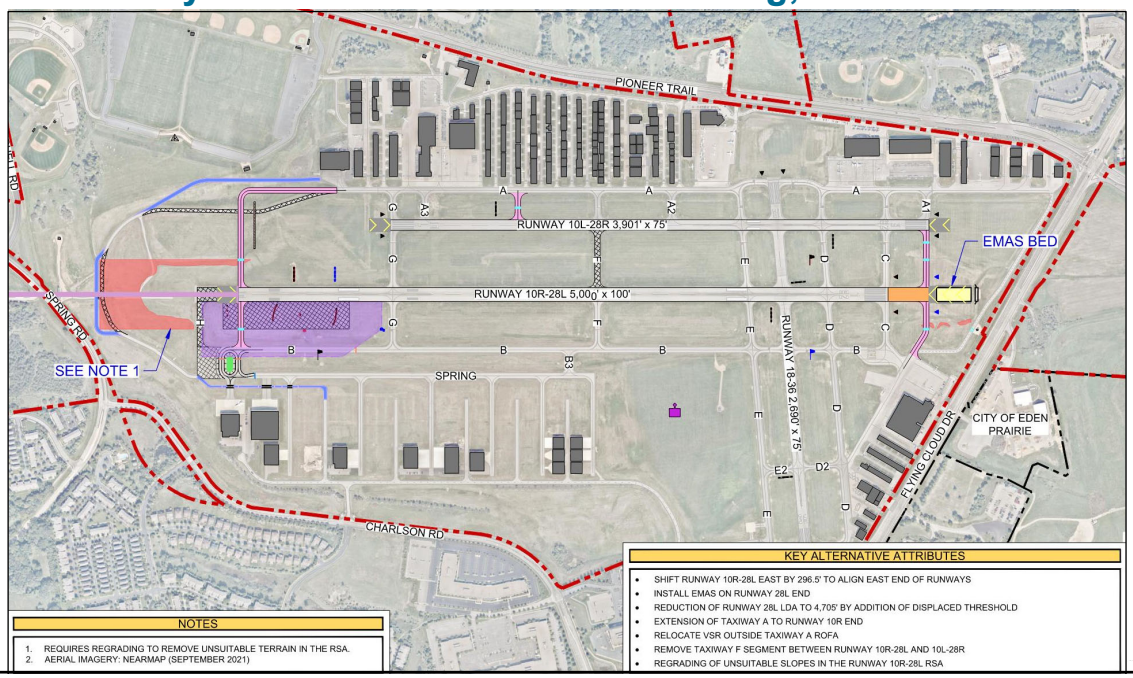
17

Runway Alternative 2 – 10R & 28L RSA Grading



18

Runway Alternative 3 – 10R RSA Grading; 28L EMAS Bed

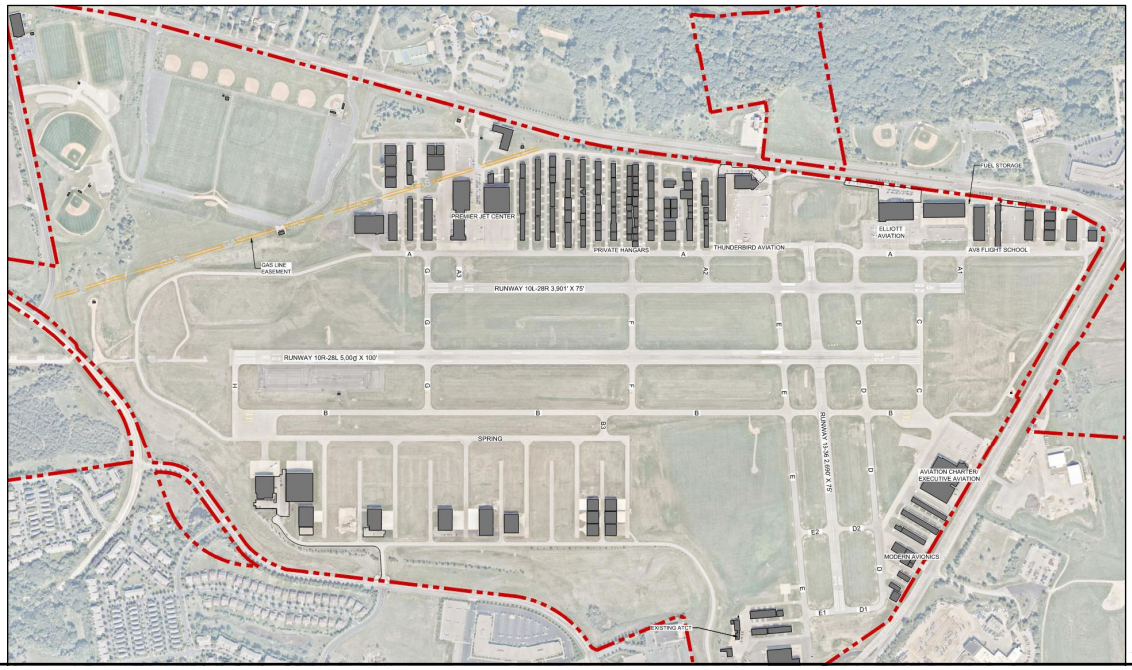


19

Hangar Development

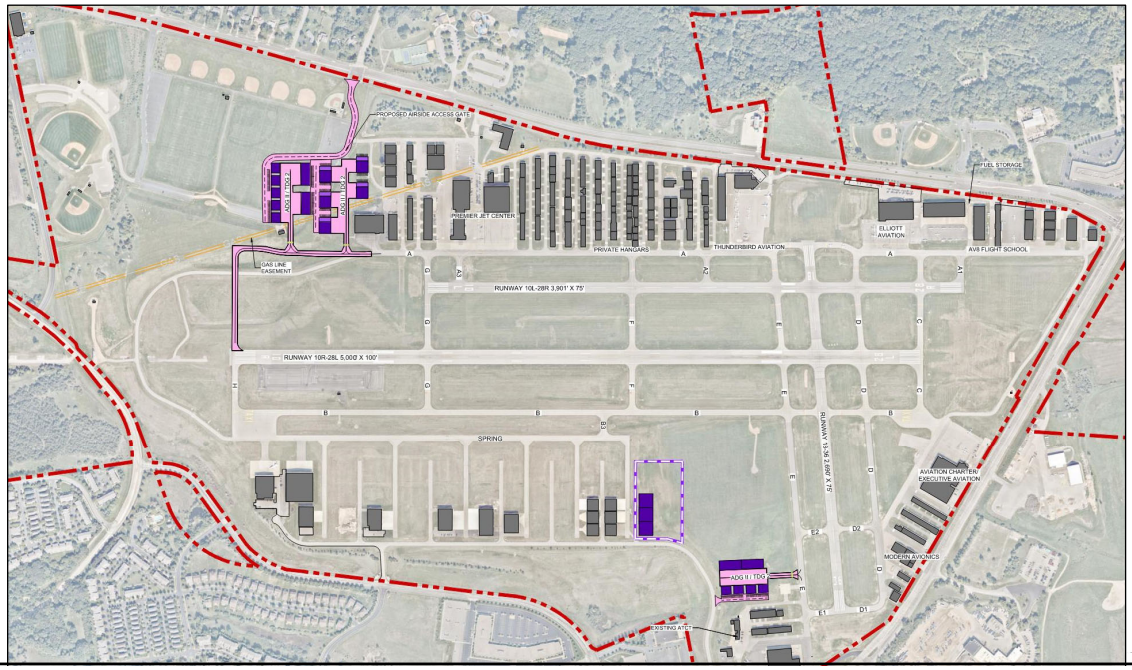
20

Existing Hangars



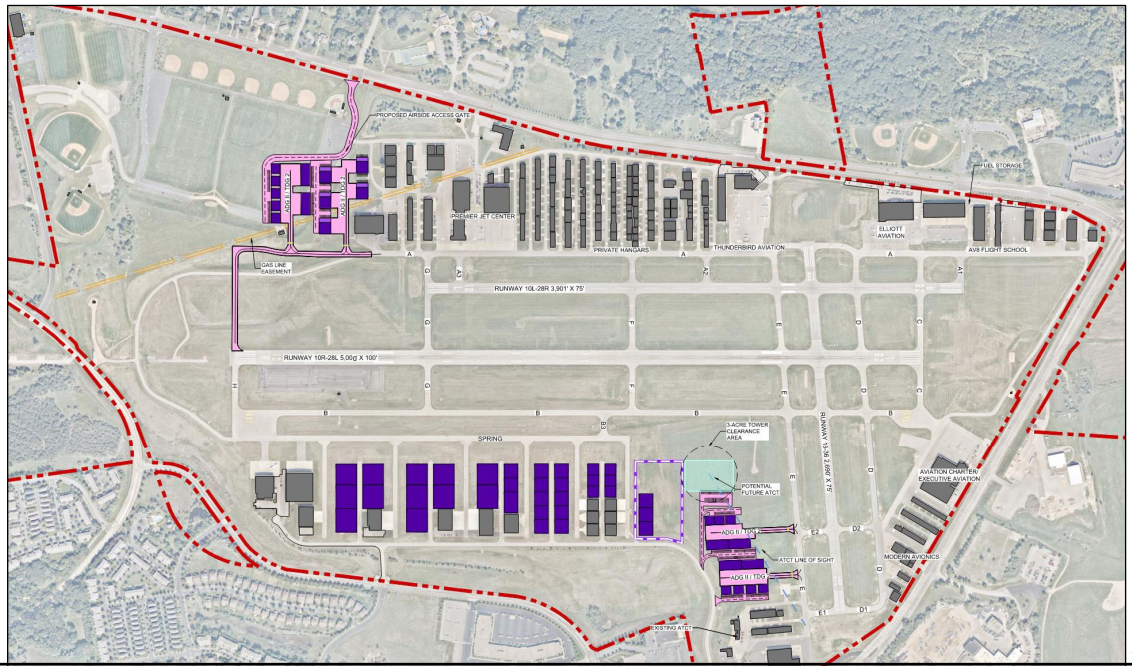
21

Hangar Development – Pre-Tower Relocation



22

Hangar Development – Post-Tower Relocation

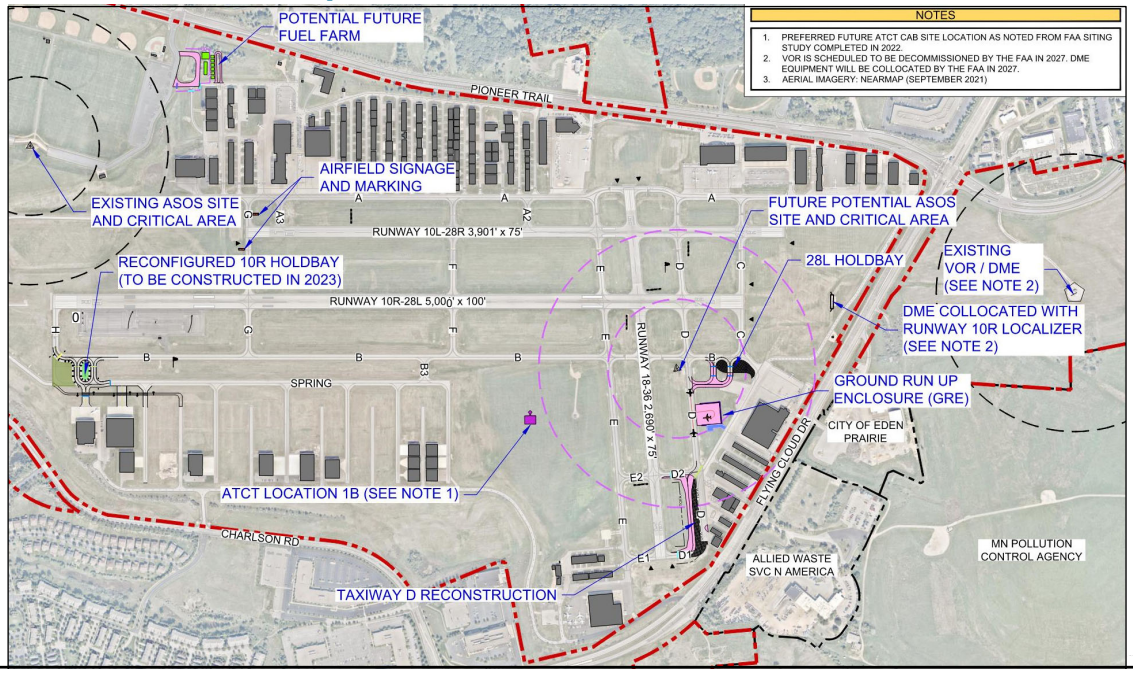


23

Preliminary Airfield Alternatives (Miscellaneous Facilities)

24

Proposed Miscellaneous Facilities



25

Next Steps/Schedule

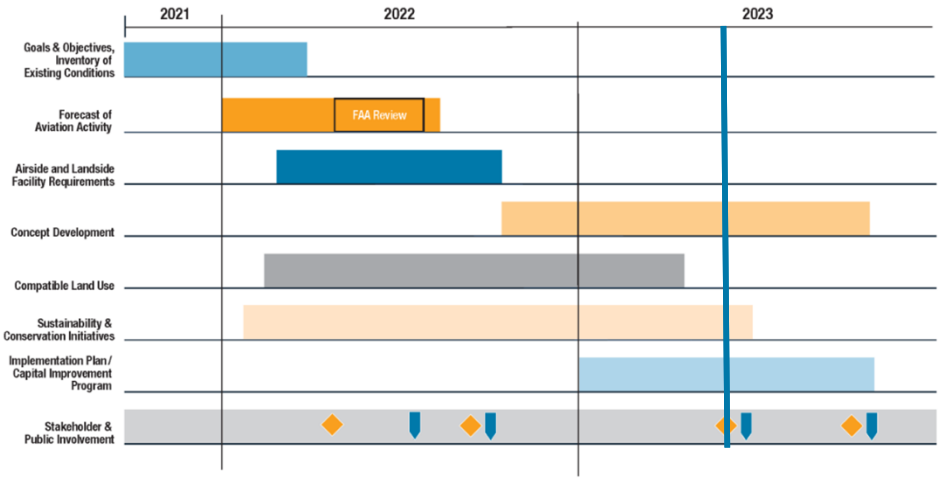
26

Next Steps - Tasks

- Discover Flying Cloud Meeting # 3 (May 24, 2023)
- Evaluate Alternatives
  - Cost Estimates (ACIP)
  - Potential Project Phasing
  - Environmental Considerations
- Preferred Alternative
  - Final SAP meeting (Preferred Alternative)
  - Discover Flying Cloud Meeting # 4

27

Next Steps - Schedule



28

Join us for an open house and presentation to learn more about Flying Cloud Airport and how the Metropolitan Airports Commission (MAC) is planning for its future.

Also enjoy displays from airport partners.

WHEN: Wednesday, May 24, 2023 - 4:30 - 7:00 p.m.
Presentation begins at 5:30 p.m.

WHERE: Hennepin Technical College - Eden Prairie Campus
13100 College View Dr, Eden Prairie, MN 55347

Free parking available onsite.

Scan this QR code to learn more about the planning process and future public events.

Discover Flying Cloud Airport is a series of four events for the public to learn about the Flying Cloud Airport long-term planning process and to provide input into the process. The MAC welcomes your interest and input throughout.

29

Questions/Discussion

Please complete the post-event survey

May 2, 2023

30

Thank you for participating!

2040 Long-Term Plan (LTP) Update
Flying Cloud Airport (FCM)

Please complete the post-event survey

May 2, 2023

31

DISCOVER
Flying Cloud Airport

2040 Long-Term Plan Update

May 24, 2023

1

Welcome Remarks

Rick King

Metropolitan Airports Commission Chair

Bridget Rief

Vice President, Planning and Development

2

2

Agenda

- Introduction to the Planning Team
- Long-Term Plan (LTP) Goals & Schedule
- LTP Project Updates
  - Facility Requirements
  - Preliminary Airfield Alternatives
    - Runway
    - Hangar Development
    - Miscellaneous Items
- Next Steps
- Feedback / Survey

Use code to view presentation

3

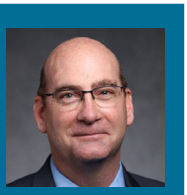
Planning Team

Eric Gilles

MAC Senior Airport Planner
Project Manager

Dana Nelson

MAC Director, Stakeholder Engagement



Blaine Peterson

MAC Airport Manager, FCM

Joe Harris

MAC Director, Reliever Airports

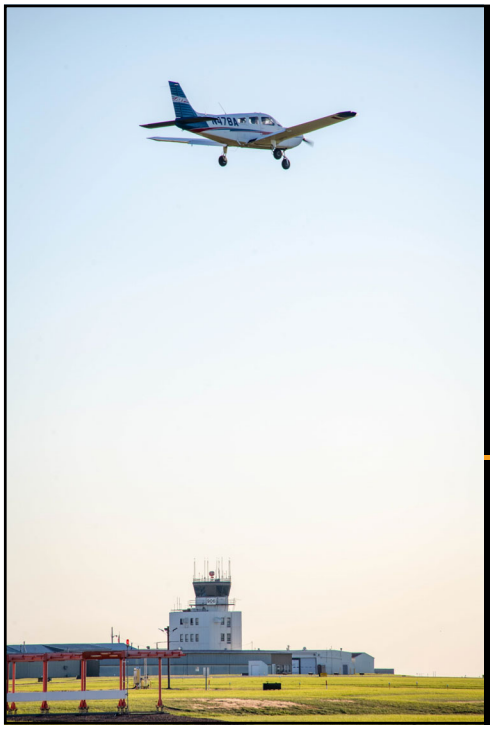
Andrew Blaisdell

Senior Project Manager, HNTB
Consultant Project Manager

Greg Albjerg

Vice President, Senior Aviation Consultant, HNTB
Technical Advisor
Frequent Flyer at FCM

4



DISCOVER
Flying Cloud Airport

Long-Term Plan Goals & Schedule

5

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

6

Flying Cloud LTP Goals

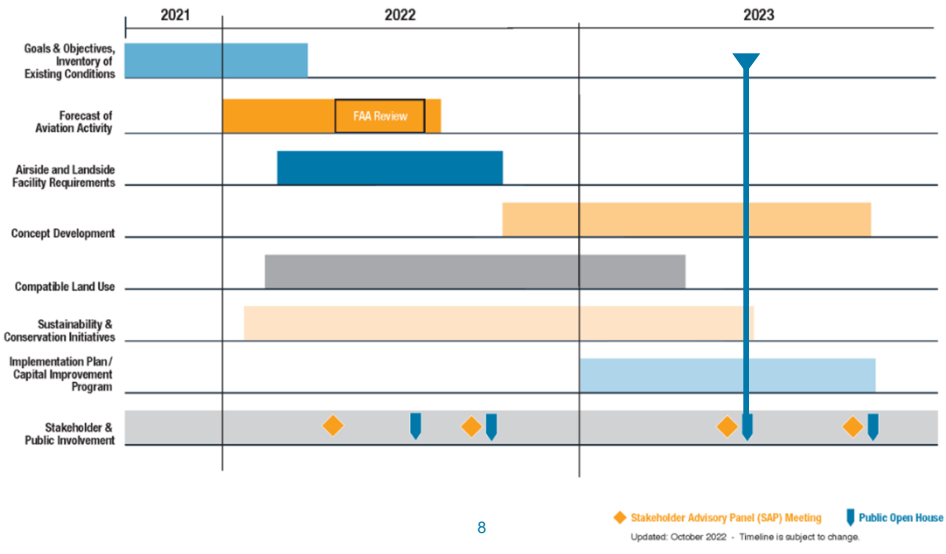
Enhance airport safety

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

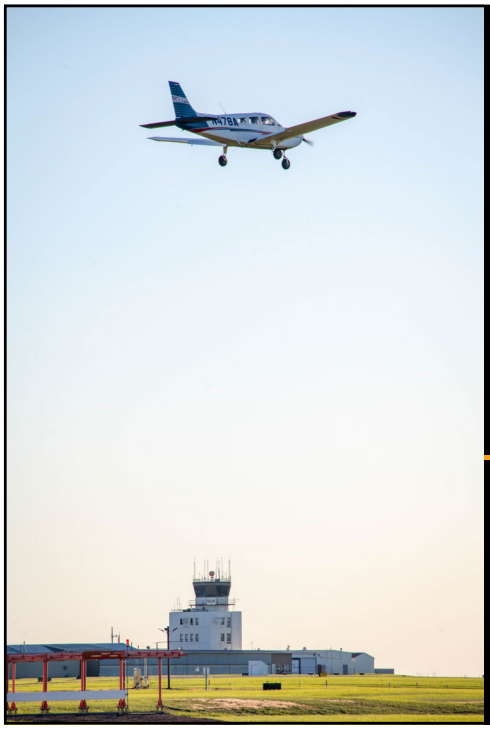
7

LTP Schedule



8

8



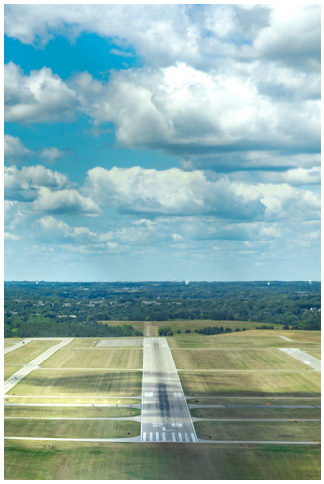
DISCOVER
Flying Cloud Airport

Facility Requirements

9

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



10

Critical Design Aircraft

Citation 3
(Previous)

Wingspan: 53.5’
Tail Height: 17.25’
Max. Takeoff Weight: 22,000 lbs

Challenger 350
(Existing and Future)

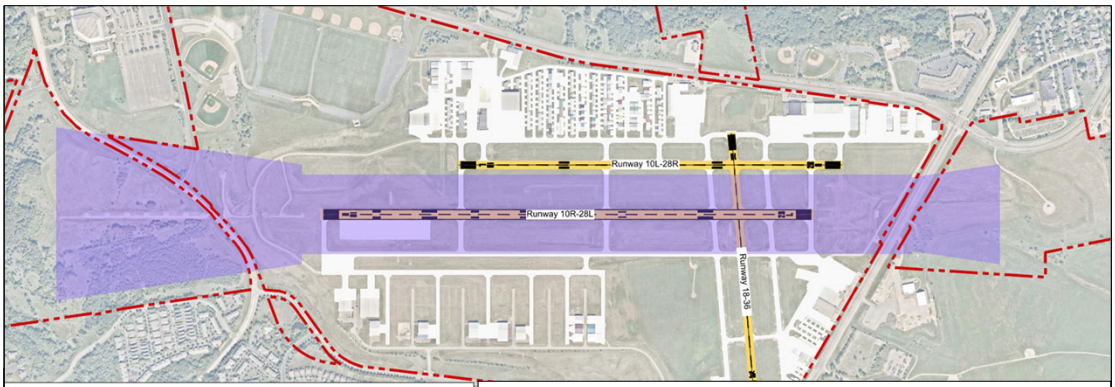
Wingspan: 69’
Tail Height: 20’
Max. Takeoff Weight: 40,600 lbs

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

11

11

Critical Aircraft Focus Area

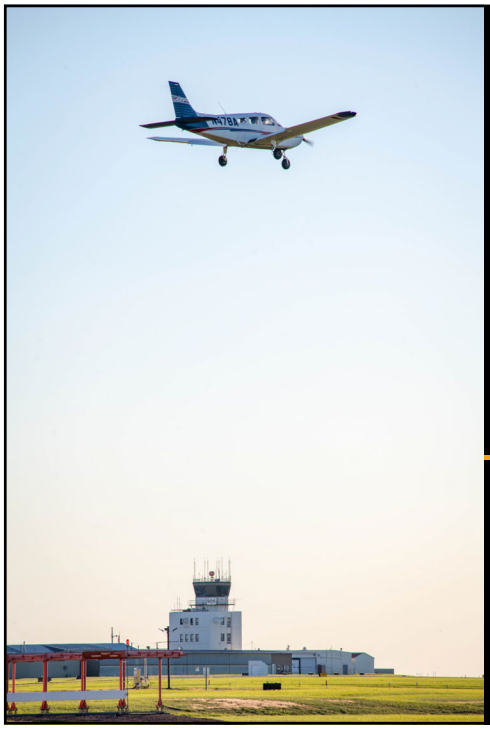


DRAWING LEGEND
RUNWAY PAVEMENT
TAXIWAY / APRON PAVEMENT
C-II FOCUS AREA
AIRPORT PROPERTY

- Runway length is capped at 5,000 feet per Minnesota Legislation
- Minnesota Statute Section 473.641 prohibits MAC from extending the runway length at minor airports beyond 5,000 feet.

12

12

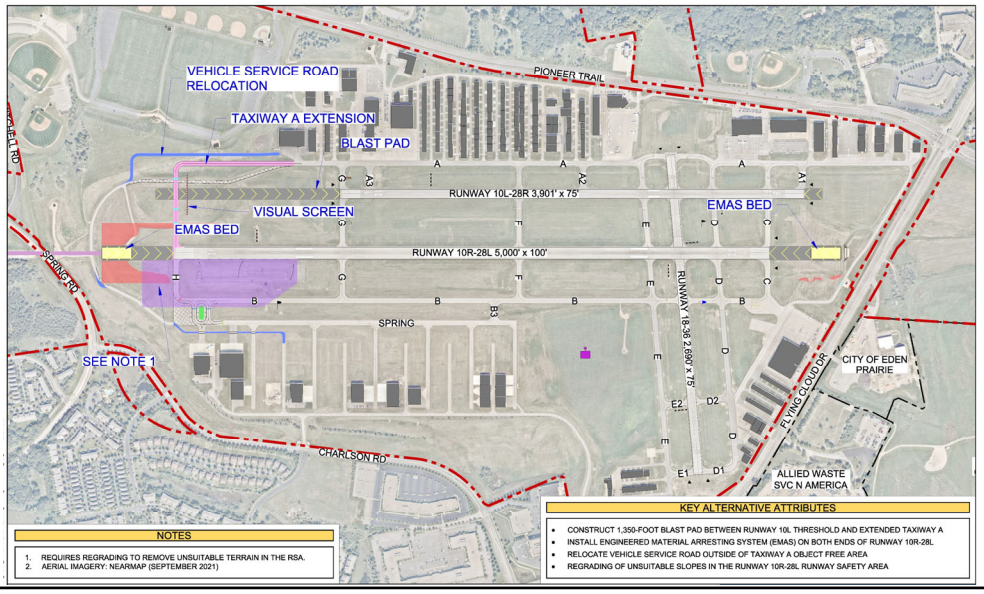


DISCOVER
Flying Cloud Airport

Preliminary Airfield Alternatives: Runways

13

Runway Alternative 1



14

What is an EMAS Bed?

Image showing an example of EMAS at St. Paul Downtown Airport (STP)

- EMAS - Engineered Material Arresting System
- Lightweight, crushable material placed at the end of a runway to safely stop an aircraft that overruns the end of the runway
- An FAA approved mitigation strategy when it is not practical to achieve the full standard Runway Safety Area
- The size varies and is based on dimensions of the runway safety area and aircraft using the airport

15

15

What is a Blast Pad?

Image showing an example of a Blast Pad at Crystal Airport (MIC)

16

16

What is a Visual Screen?

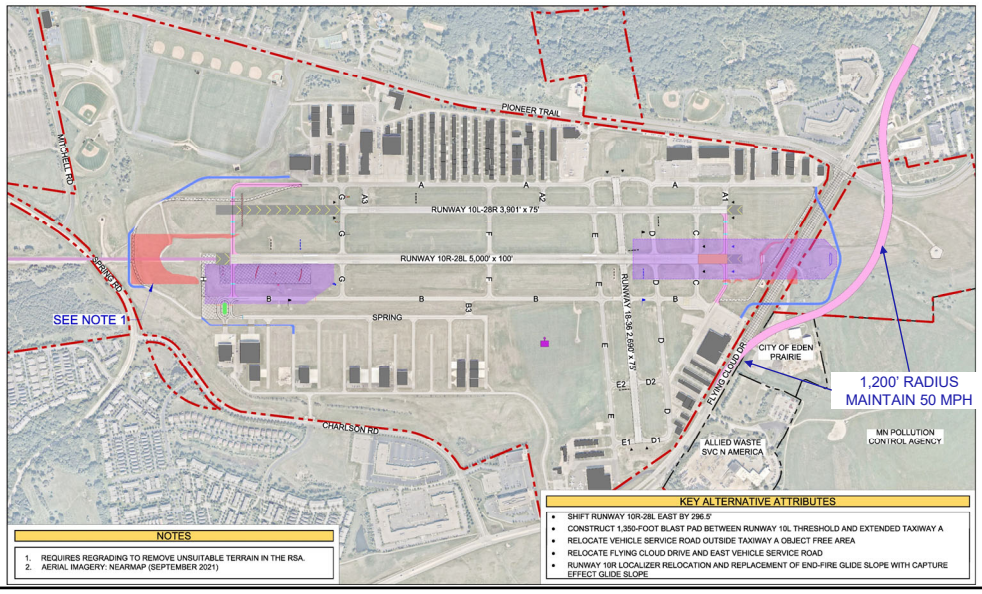
- Blocks the sight of aircraft using a taxiway
- Prevent pilots who are departing the runway from thinking an aircraft is crossing the active runway

17

17

ND0

Runway Alternative 2



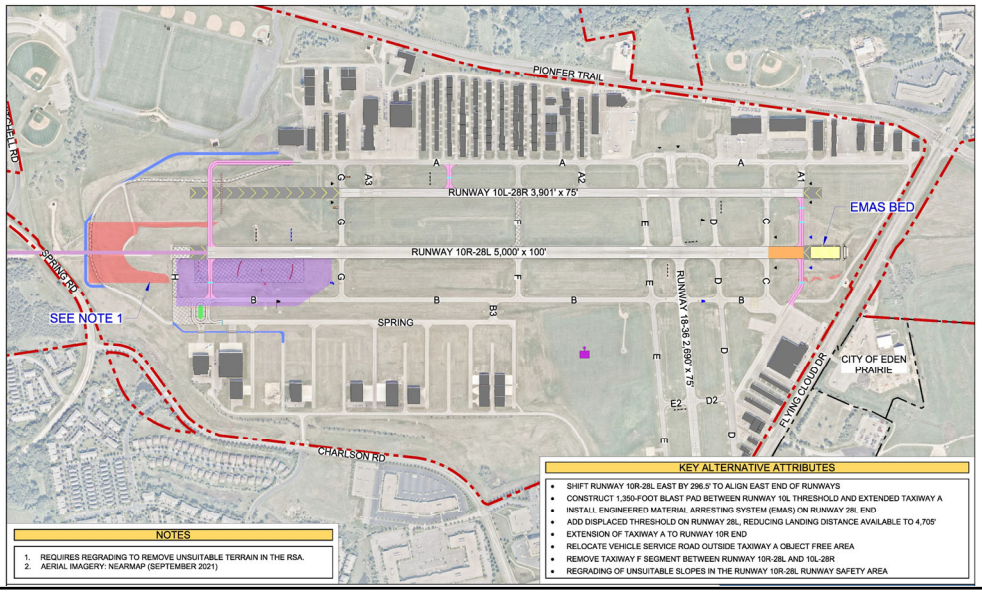
18

Slide 18

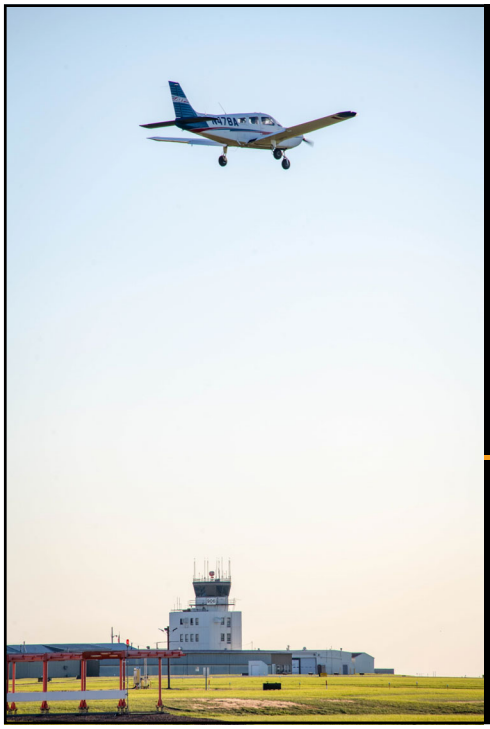
ND0 Spell out VSR and Taxiway A TOFA. Is the 10R localizer relocation… pertinent to the public? It seem superfluous
Nelson, Dana, 2023-05-10T19:39:48.462

GE0 0 It is pertinent - it is a significant contributor in the need to relocate the road
Gilles, Eric, 2023-05-11T13:25:14.217

Runway Alternative 3



19

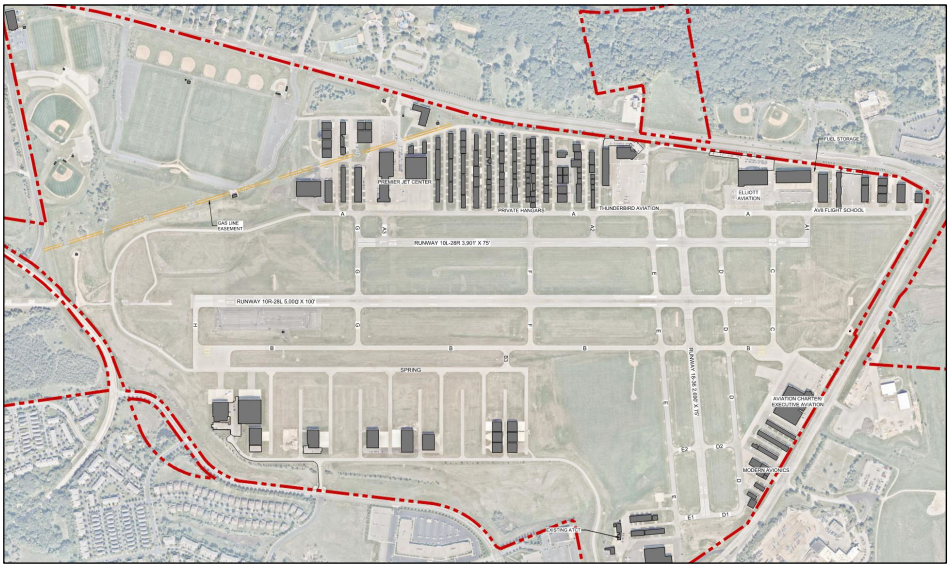


DISCOVER
Flying Cloud Airport

Preliminary Airfield Alternatives: Hangar Development

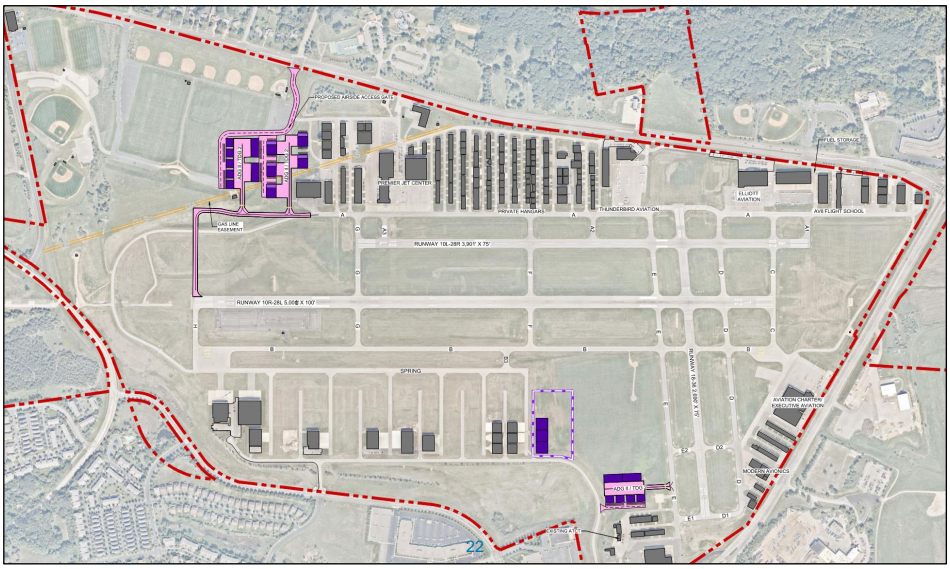
20

Existing Hangars



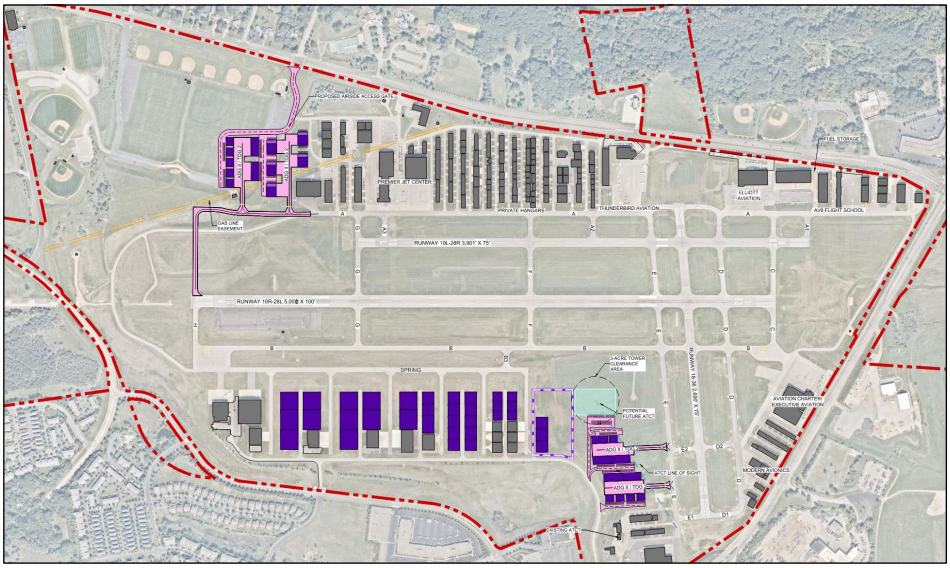
21

Hangar Development – Pre-Tower Relocation

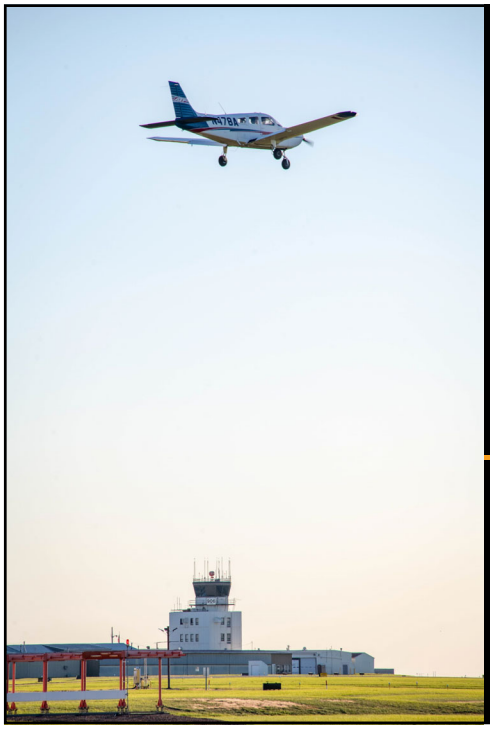


22

Hangar Development – Post-Tower Relocation



23



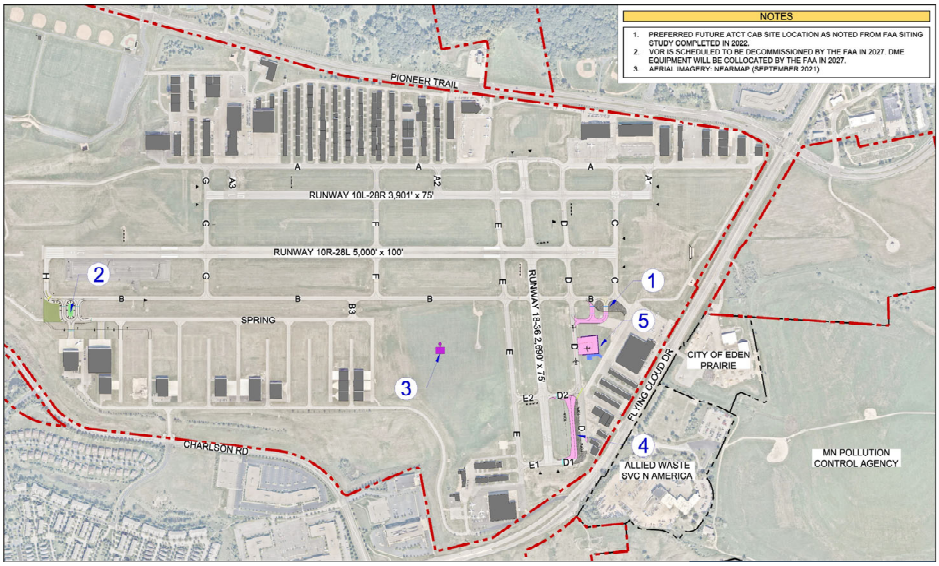
DISCOVER
Flying Cloud Airport

Preliminary Airfield Alternatives: Miscellaneous Items

24

ND0

Miscellaneous Items



Potential LTP Projects

1. Runway 28L holdbay
2. Reconfigured Runway 10R holdbay (approved 2023 project)
3. Air Traffic Control Tower Relocation (see Note 1)
4. Taxiway D reconstruction
5. Ground Run Up Enclosure

Potential projects not labeled on map include relocating the airport weather sensor and updating airfield signage

25

What is a Ground Run Up Enclosure?

- A 3-sided, open top structure which can accommodate aircraft performing high-powered engine maintenance run ups
- They are acoustically and aerodynamically designed to dampen noise impact from engine maintenance run ups

26

26

Slide 25

ND0 I suggest a new graphic with number labels that correspond to the list on the right. Modeled after the MSP Pref Alt.

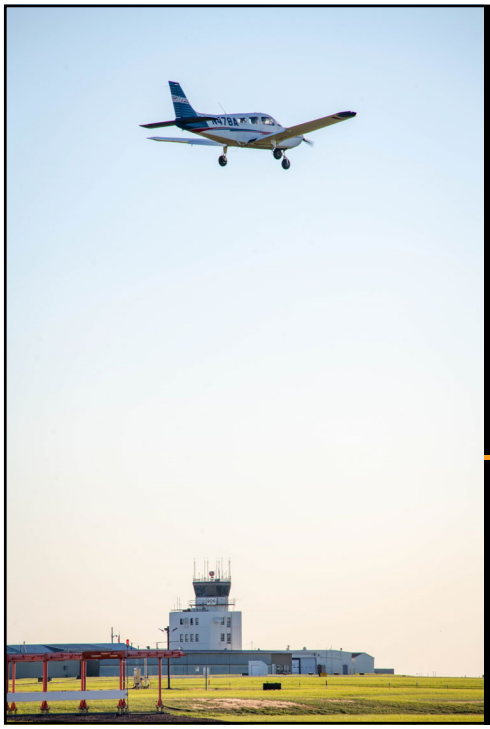
I would not include existing and relocated ASOS, airfield signage and marking or the existing VOR/DME and collocated DME items.
Nelson, Dana, 2023-05-10T20:51:19.039

GE0 0 I want to save this method for the preferred alternative. Listing them (in my opinion) looks more certain in terms of desire for preferred.

That said, I do want to remove the following callouts from the graphic to simplify things a bit:

Fuel farm
VOR/DME
DME collocation
Airfield signage and marking
Gilles, Eric, 2023-05-11T13:31:48.663

GE0 1 I am fine with the numbered approach after reviewing it again
Gilles, Eric, 2023-05-15T11:56:52.232



DISCOVER
Flying Cloud Airport

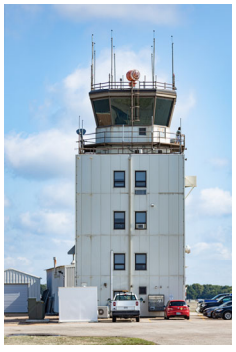
Next Steps/Schedule

27

Next Steps

Consider Feedback
- SAP #3 and today's public presentation
- Make alternative refinements

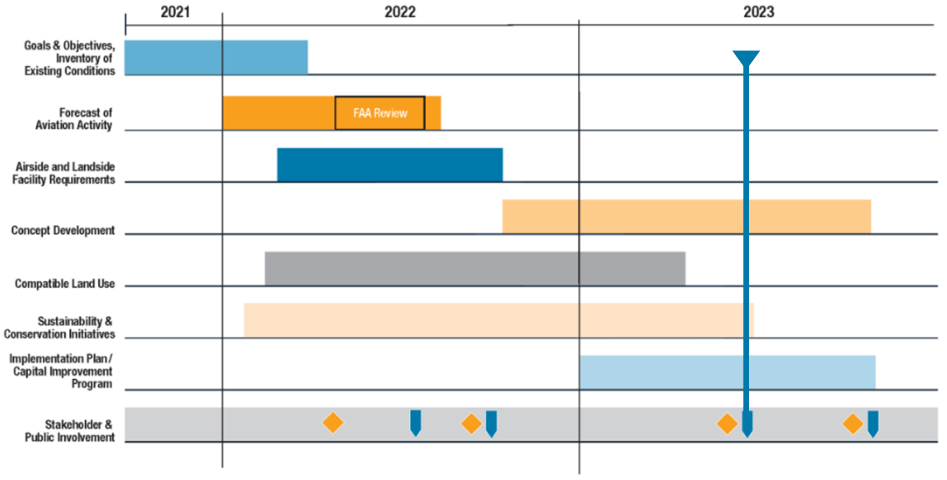
Evaluate Preliminary Airfield Alternatives
- Estimate costs
- Consider project phasing
- Conduct high-level evaluation of environmental considerations



Identify, Share and Take Public Comments on Preferred Alternative
- Engage SAP & Hold Discover Flying Cloud Public Event #4

28

LTP Schedule



29

29

DISCOVER
Flying Cloud Airport

Questions?

Please complete our survey

30

DISCOVER
Flying Cloud Airport

Thank you for attending

Please complete our survey

31

Stakeholder Advisory Panel

2040 Long-Term Comprehensive Plan (LTP) Update
Flying Cloud Airport (FCM)

November 1, 2023

1

Welcome Remarks

Joe Harris

Metropolitan Airports Commission (MAC)
Director of Reliever Airports

2

Agenda

- Goals, Objectives, and Project Schedule
- Long-Term Plan Review
- Preliminary Draft Preferred Alternative
- Tenant Listening Session / Open Discussion
- Next Steps / Schedule

Meeting Agenda and Presentation are available at:
metroairports.org/fcm-long-term-plan-documents-and-links

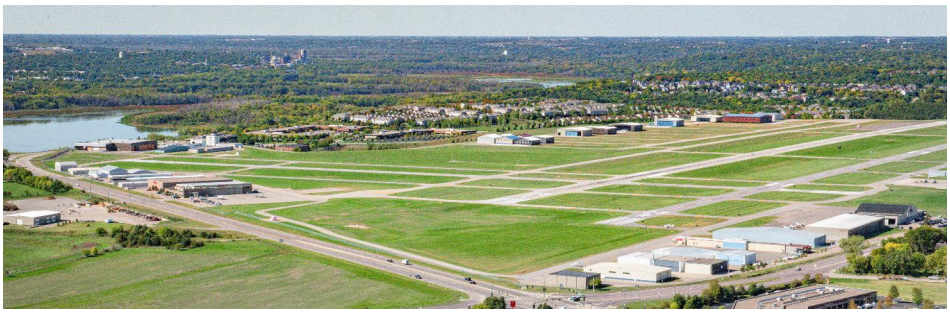
3

Goals, Objectives, and Project Schedule

4

Goals and Objectives

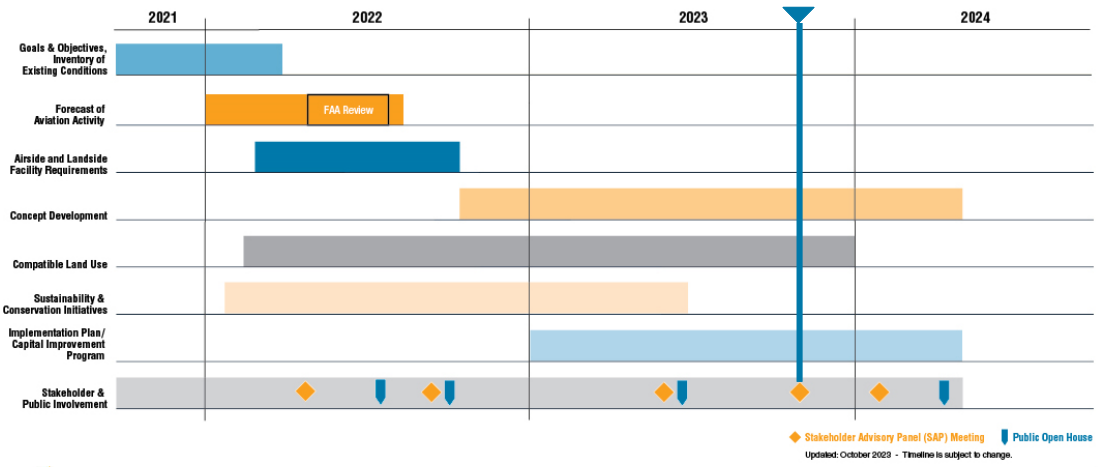
1. Enhance airport safety
2. Preserve and, if possible, improve operational capabilities for the current aircraft using the airport
3. Promote financial stability of the MAC Reliever Airport system by exploring revenue opportunities for aeronautical and non-aeronautical development



5

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

2040 Long-Term Plan (LTP) Schedule



6

Long-Term Plan Review

7

Review of SAP meetings

- SAP #1 – April 2022 – Existing Conditions + Forecast Preview
- SAP #2 – October 2022 – Noise Primer + Requirements
- SAP #3 – May 2023 – Airfield Alternatives
- SAP #4 – November 2023 – Preview of Preliminary Draft Preferred Plan (Seek Tenant Input)
- SAP #5 – Early 2024 – Preferred Plan + Implementation

8

Evolution of the Long-Term Plan

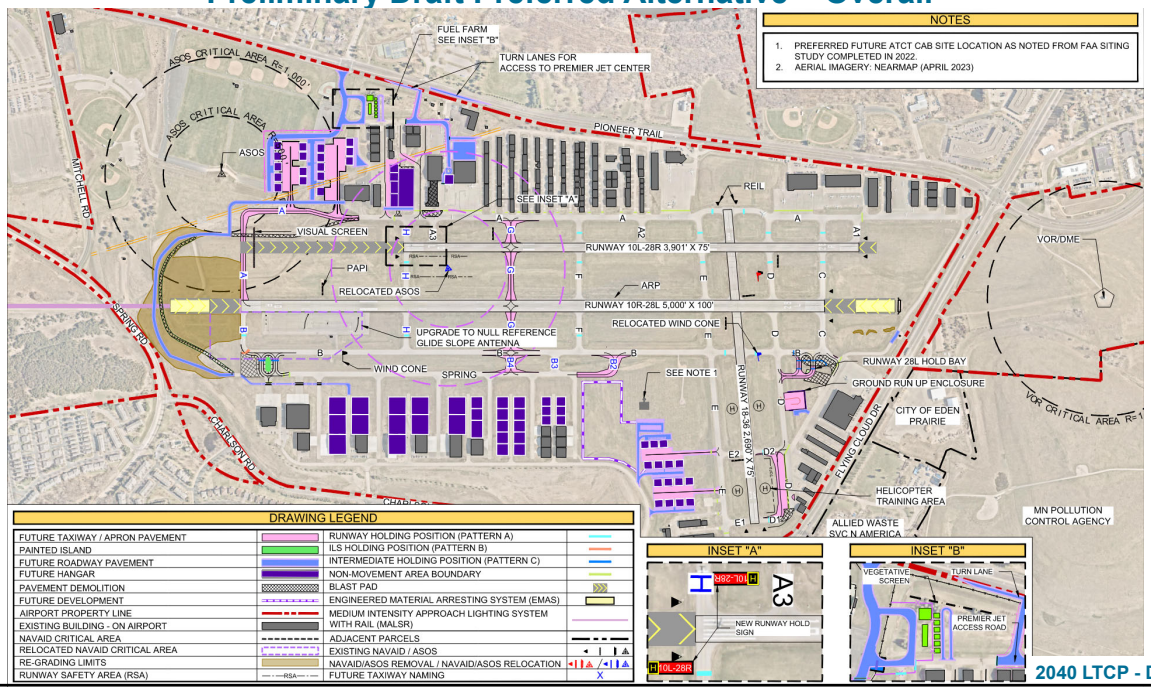
- Identified need to upgrade Runway 10R-28L to C-II safety standards
- Forecast approved by the FAA in January 2023
  - Slow growth in overall aircraft operations
  - Increase in small jet operations offset by decrease in single engine operations
- Tenants voiced need for hangar development areas
- Runway alternatives discussion resulted in EMAS both ends alternative
- Other airfield enhancements and support facilities identified
- Remaining areas to be optimized for tenant improvements

9

Preliminary Draft Preferred Alternative

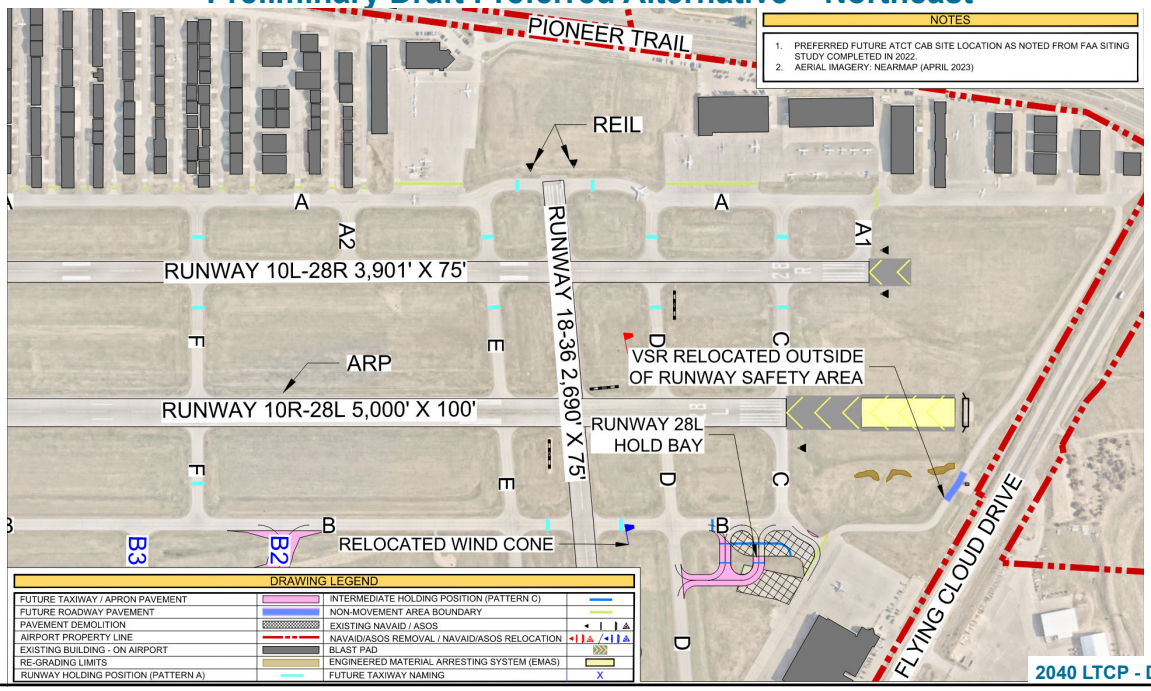
10

Preliminary Draft Preferred Alternative – Overall

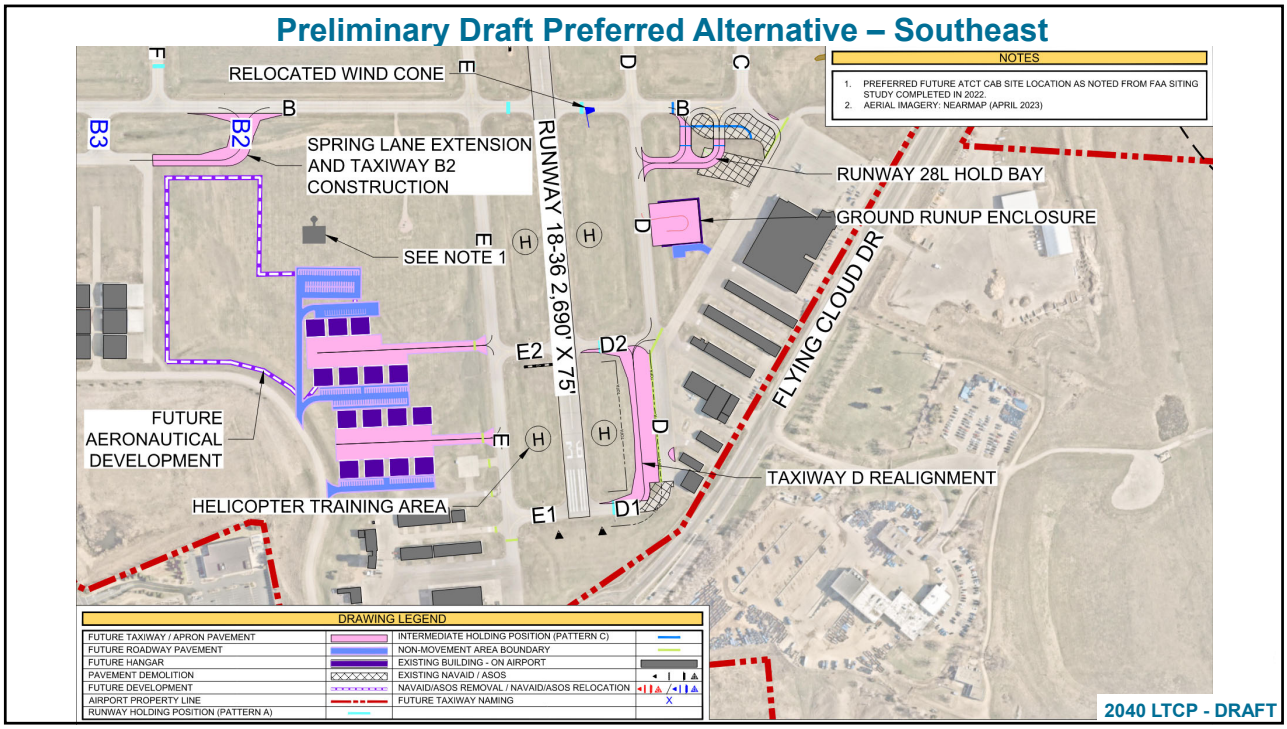


11

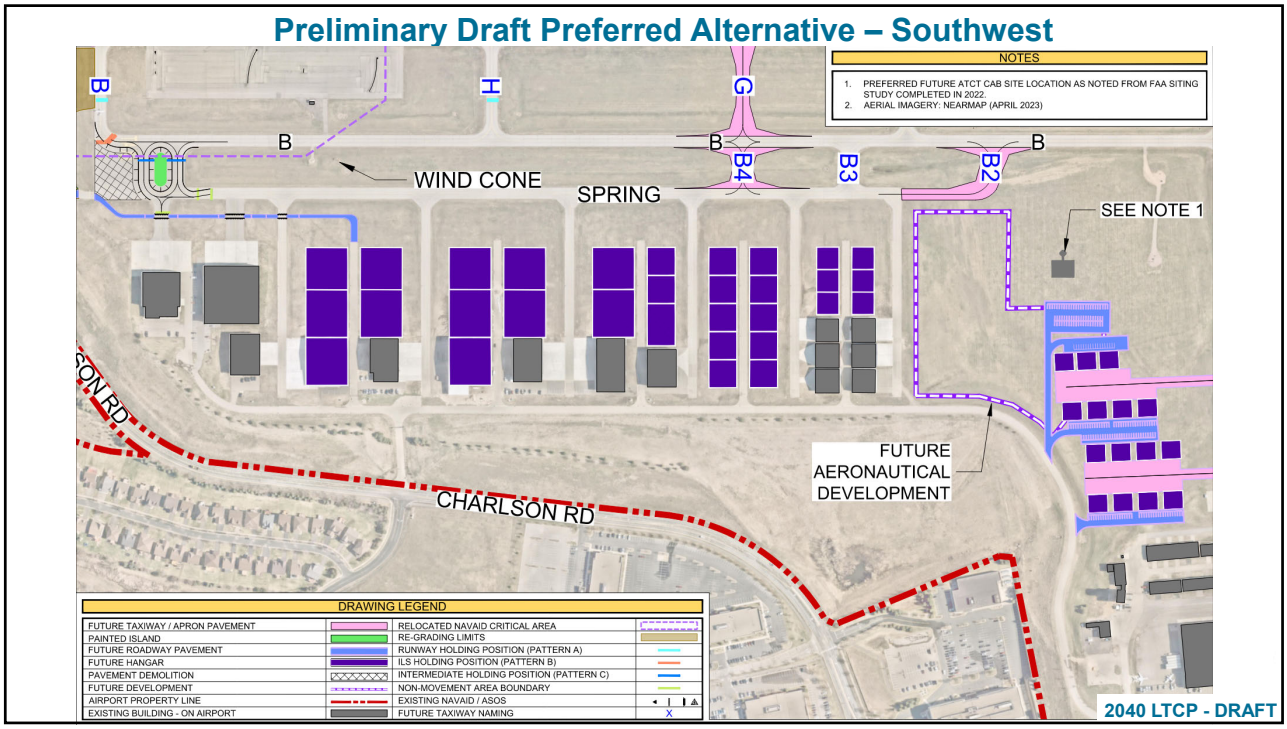
Preliminary Draft Preferred Alternative – Northeast



12

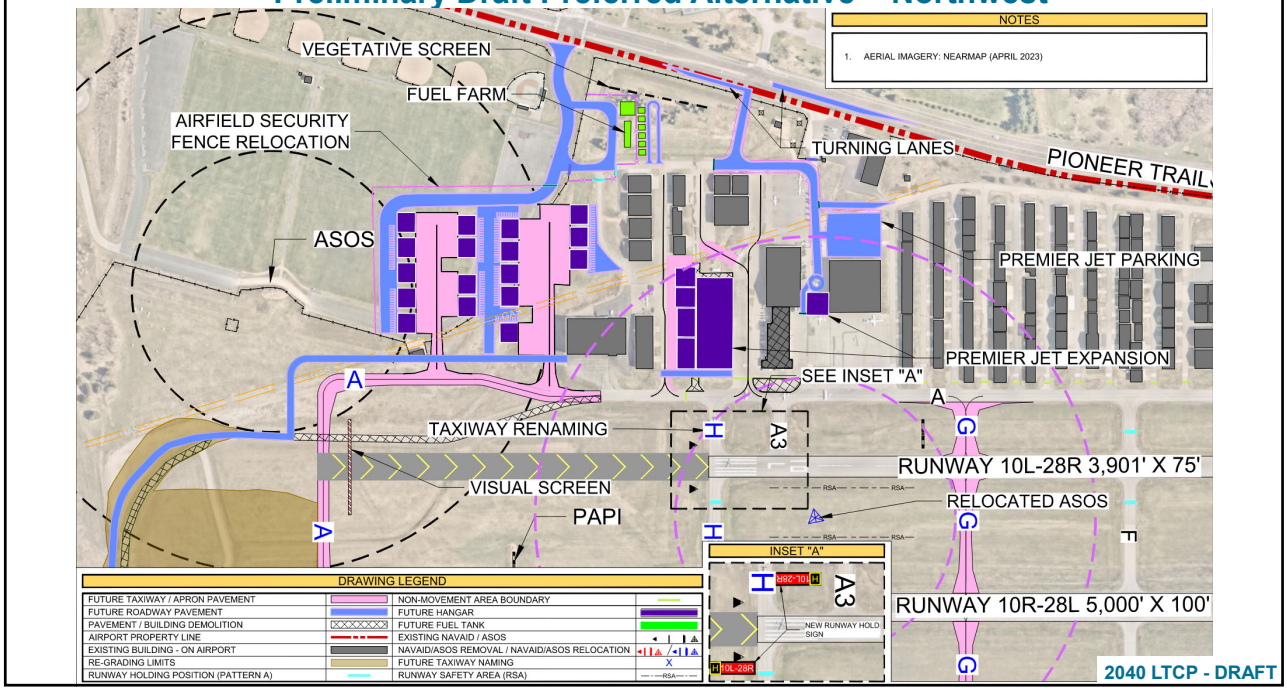

Preliminary Draft Preferred Alternative – Southeast
RELOCATED WIND CONE
SPRING LANE EXTENSION AND TAXIWAY B2 CONSTRUCTION
SEE NOTE 1
RUNWAY 18-36 2,690' X 75'
RUNWAY 28L HOLD BAY
GROUND RUNUP ENCLOSURE
FLYING CLOUD DR
FUTURE AERONAUTICAL DEVELOPMENT
HELICOPTER TRAINING AREA
TAXIWAY D REALIGNMENT
NOTES
1. PREFERRED FUTURE ATCT CAB SITE LOCATION AS NOTED FROM FAA SITING STUDY COMPLETED IN 2022.
2. AERIAL IMAGERY: NEARMAP (APRIL 2023)
DRAWING LEGEND
FUTURE TAXIWAY / APRON PAVEMENT
FUTURE ROADWAY PAVEMENT
FUTURE HANGAR
PAVEMENT DEMOLITION
FUTURE DEVELOPMENT
AIRPORT PROPERTY LINE
RUNWAY HOLDING POSITION (PATTERN A)
INTERMEDIATE HOLDING POSITION (PATTERN C)
NON-MOVEMENT AREA BOUNDARY
EXISTING BUILDING - ON AIRPORT
EXISTING NAVAID / ASOS
NAVAID/ASOS REMOVAL / NAVAID/ASOS RELOCATION
FUTURE TAXIWAY NAMING
2040 LTCP - DRAFT

13


Preliminary Draft Preferred Alternative – Southwest
WIND CONE
SPRING
SEE NOTE 1
CHARLSON RD
FUTURE AERONAUTICAL DEVELOPMENT
NOTES
1. PREFERRED FUTURE ATCT CAB SITE LOCATION AS NOTED FROM FAA SITING STUDY COMPLETED IN 2022.
2. AERIAL IMAGERY: NEARMAP (APRIL 2023)
DRAWING LEGEND
FUTURE TAXIWAY / APRON PAVEMENT
PAINTED ISLAND
FUTURE ROADWAY PAVEMENT
FUTURE HANGAR
PAVEMENT DEMOLITION
FUTURE DEVELOPMENT
AIRPORT PROPERTY LINE
EXISTING BUILDING - ON AIRPORT
RELOCATED NAVAID CRITICAL AREA
RE-GRADING LIMITS
RUNWAY HOLDING POSITION (PATTERN A)
ILS HOLDING POSITION (PATTERN B)
INTERMEDIATE HOLDING POSITION (PATTERN C)
NON-MOVEMENT AREA BOUNDARY
EXISTING NAVAID / ASOS
FUTURE TAXIWAY NAMING
2040 LTCP - DRAFT

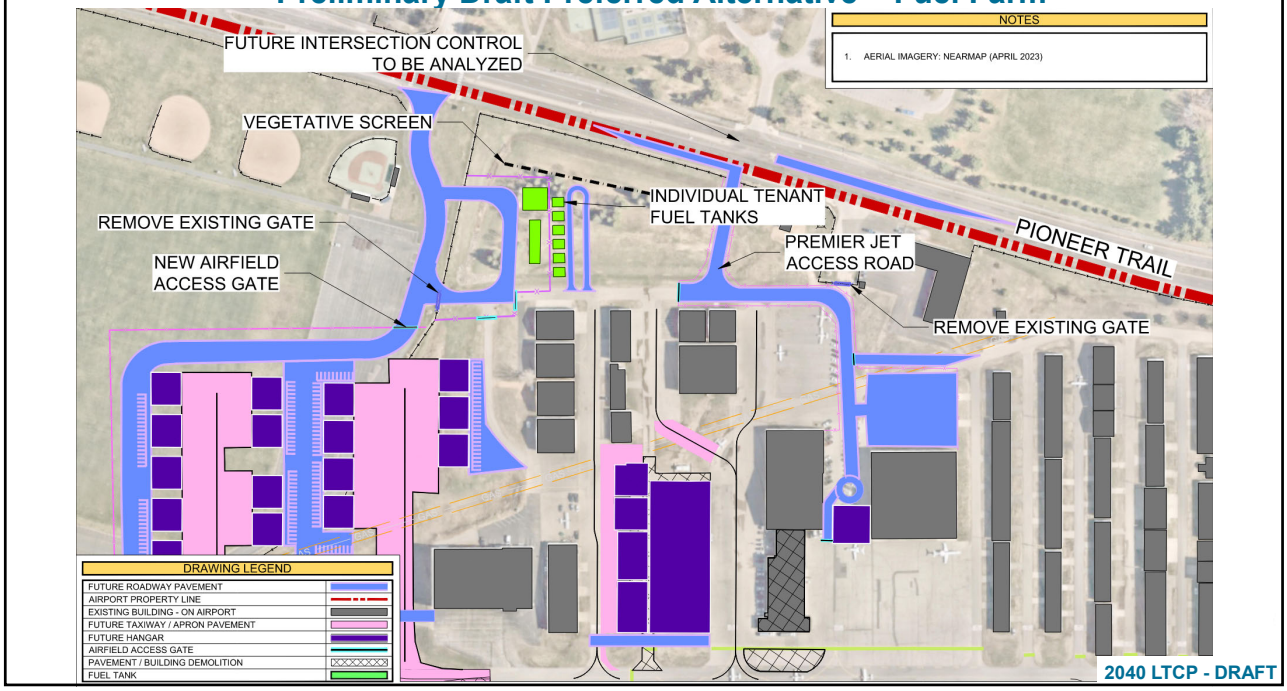
14

Preliminary Draft Preferred Alternative – Northwest



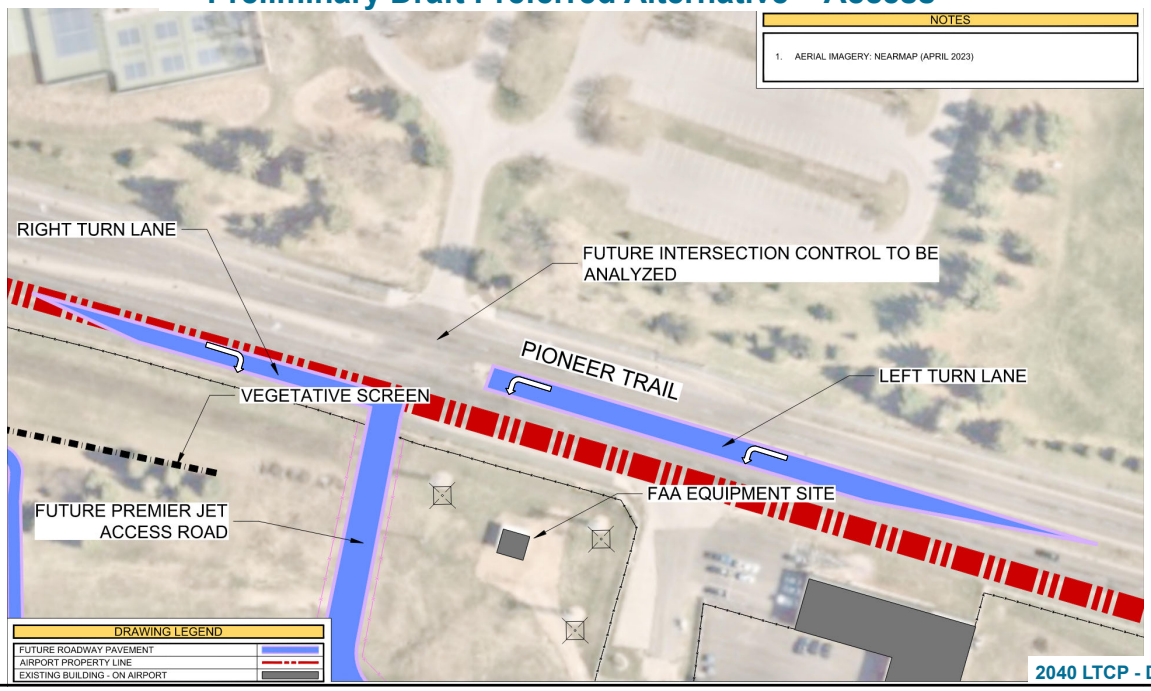
15

Preliminary Draft Preferred Alternative – Fuel Farm



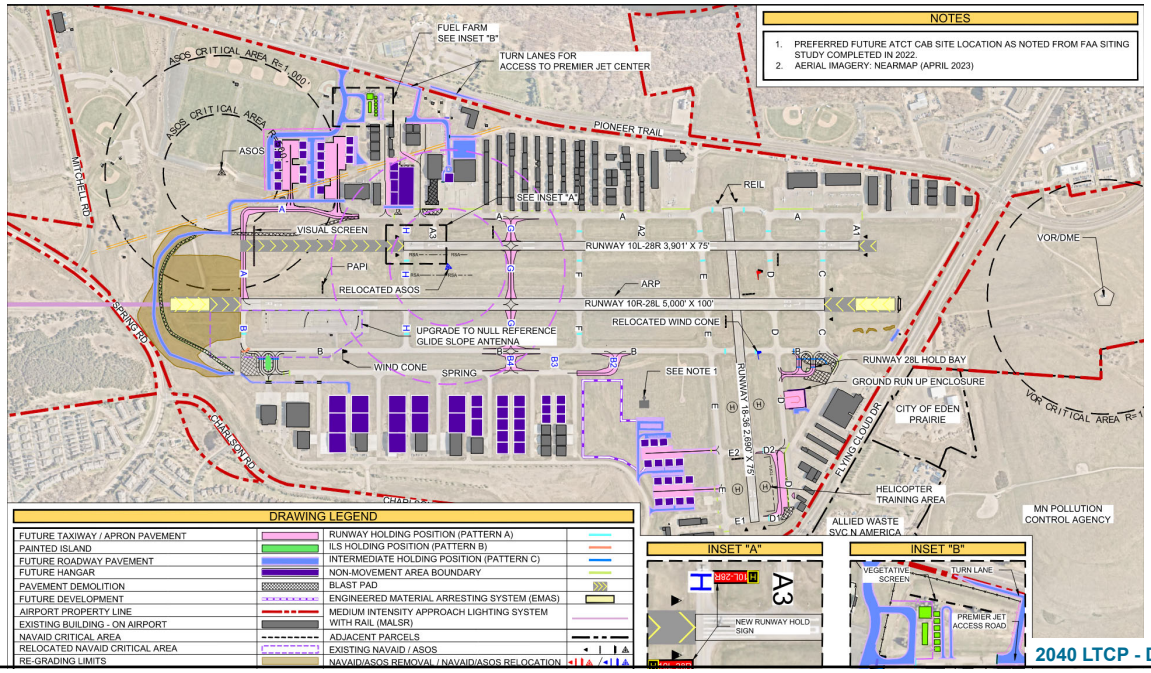
16

Preliminary Draft Preferred Alternative – Access



17

Preliminary Draft Preferred Alternative – Overall



18

Tenant Listening Session / Open Discussion

19

Next Steps/Schedule

20

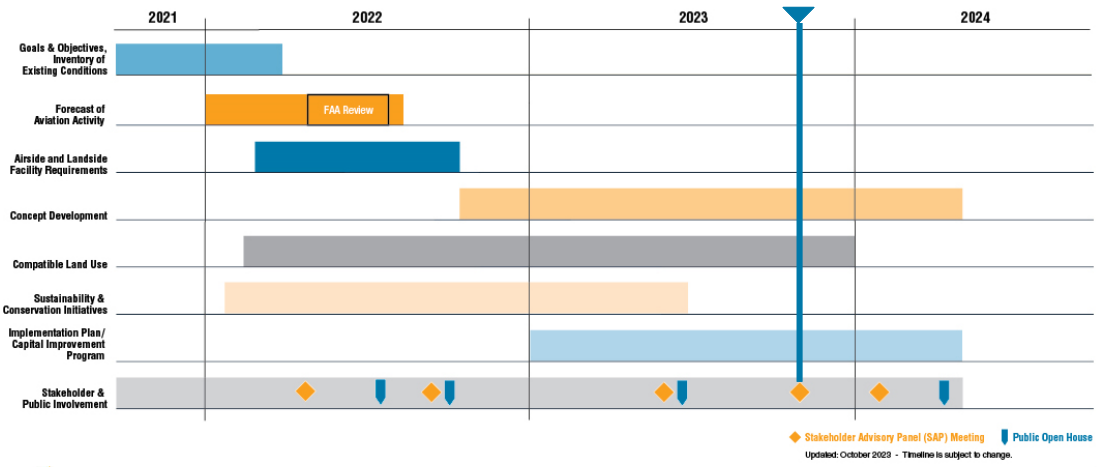
Next Steps

- Final SAP #5 (January)
- Final Discover Flying Cloud #4 (March)
- Finalize Preferred Alternative
  - Cost Estimates (ACIP)
  - Potential Project Phasing
  - Implementation Plan

21

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

2040 Long-Term Plan (LTP) Schedule



22

Stakeholder Advisory Panel

2040 Long-Term Comprehensive Plan (LTP) Update
Flying Cloud Airport (FCM)

January 28, 2025

1

Welcome Remarks

Joe Harris

Metropolitan Airports Commission (MAC)
Director, Reliever Airports

2

Agenda

- Goals, Objectives, and Project Schedule
- FAA Coordination
- Long-Term Plan Review
- Preferred Alternative
- Noise Analysis
- Project Implementation and Next Steps

Meeting Agenda and Presentation are available at:
metroairports.org/fcm-long-term-plan-documents-and-links

3

Goals, Objectives, and Project Schedule

4

Goals and Objectives

1. Enhance airport safety
2. Preserve and, if possible, improve operational capabilities for the current aircraft using the airport
3. Promote financial stability of the MAC Reliever Airport system by exploring revenue opportunities for aeronautical and non-aeronautical development

5

Review of SAP meetings

- SAP #1 – April 2022 – Existing Conditions + Forecast Preview
- SAP #2 – October 2022 – Noise Primer + Requirements
- SAP #3 – May 2023 – Airfield Alternatives
- SAP #4 – November 2023 – Preview of Preliminary Draft Preferred Plan
- SAP #5 – January 2025 – Preferred Plan + Implementation

6

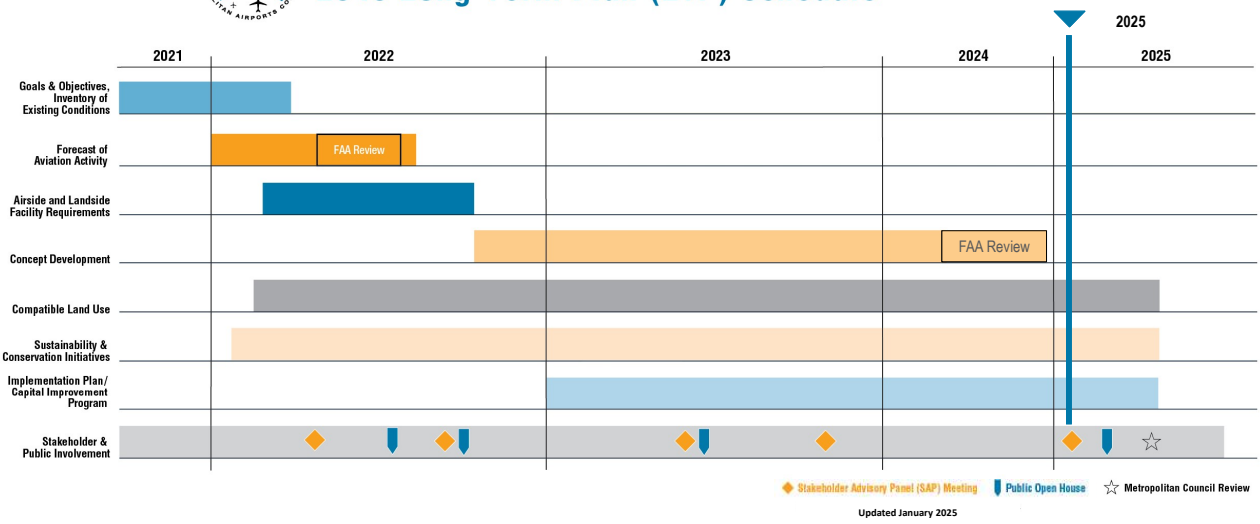
Evolution of the Long-Term Plan

- Identified need to upgrade Runway 10R-28L to C-II safety standards
- Forecast approved by the FAA in January 2023
  - Slow growth in overall aircraft operations
  - Increase in small jet operations offset by decrease in single engine operations
- Tenants voiced need for hangar development areas
- Runway alternatives discussion resulted in EMAS both ends alternative
- Other airfield enhancements and support facilities identified
- Extensive coordination with FAA regarding Taxiway A extension to 10R
- Individual projects and cost estimates developed from preferred alternative

7

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

2040 Long-Term Plan (LTP) Schedule



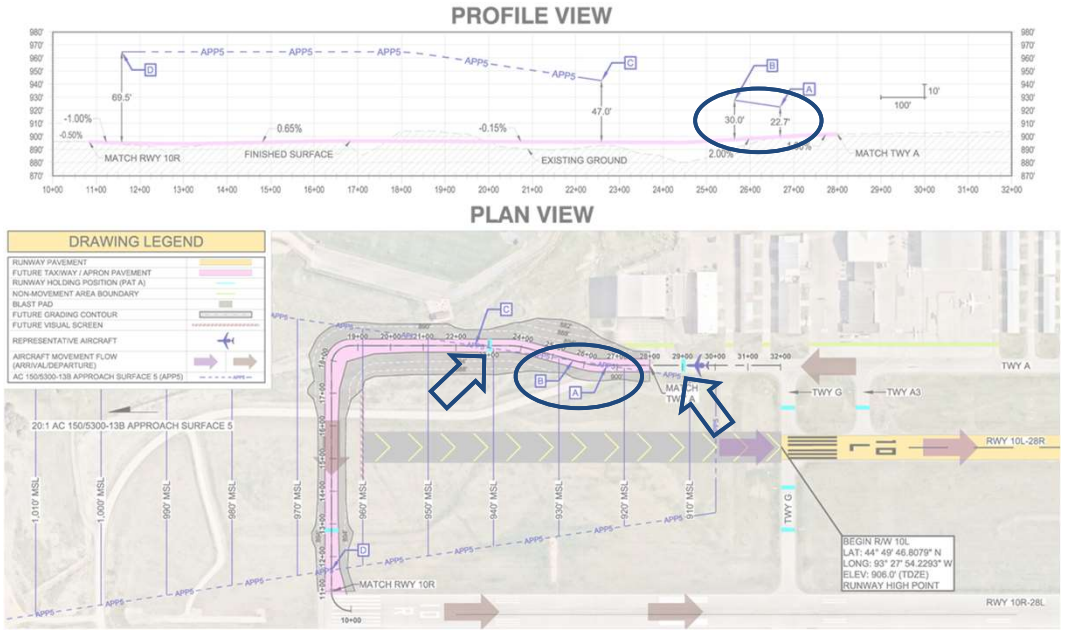
8

8

FAA Coordination

9

Taxiway A – Initially Preferred Alternative



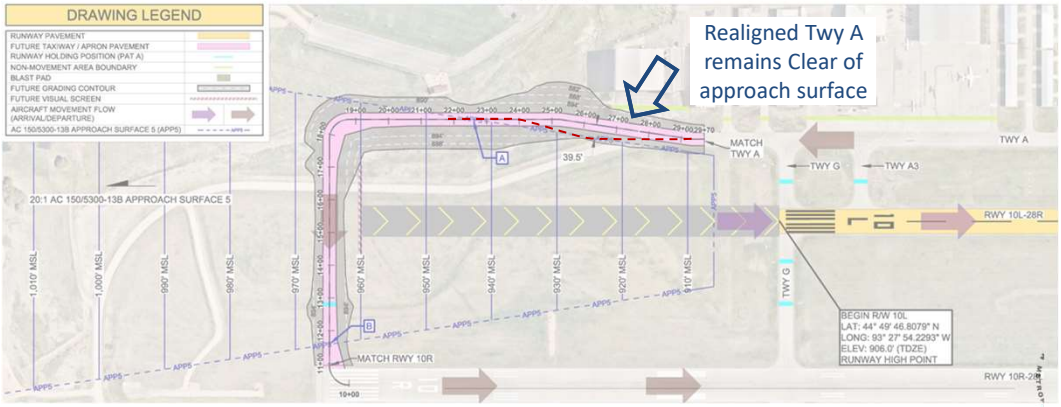
2040 LTCP - DRAFT

10

Taxiway A – Revised Preferred Alternative

PROFILE VIEW

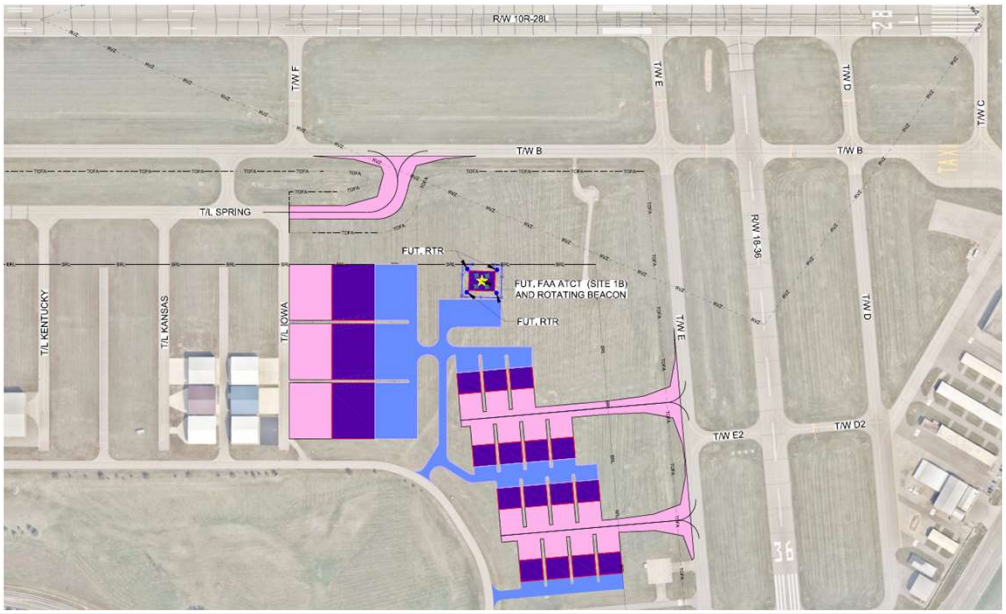
PLAN VIEW



2040 LTCP - DRAFT

11

ATCT Relocation – FAA Site Design Ongoing



FCM FLYING CLOUD LONG-TERM PLAN 2040

2040 LTCP - DRAFT

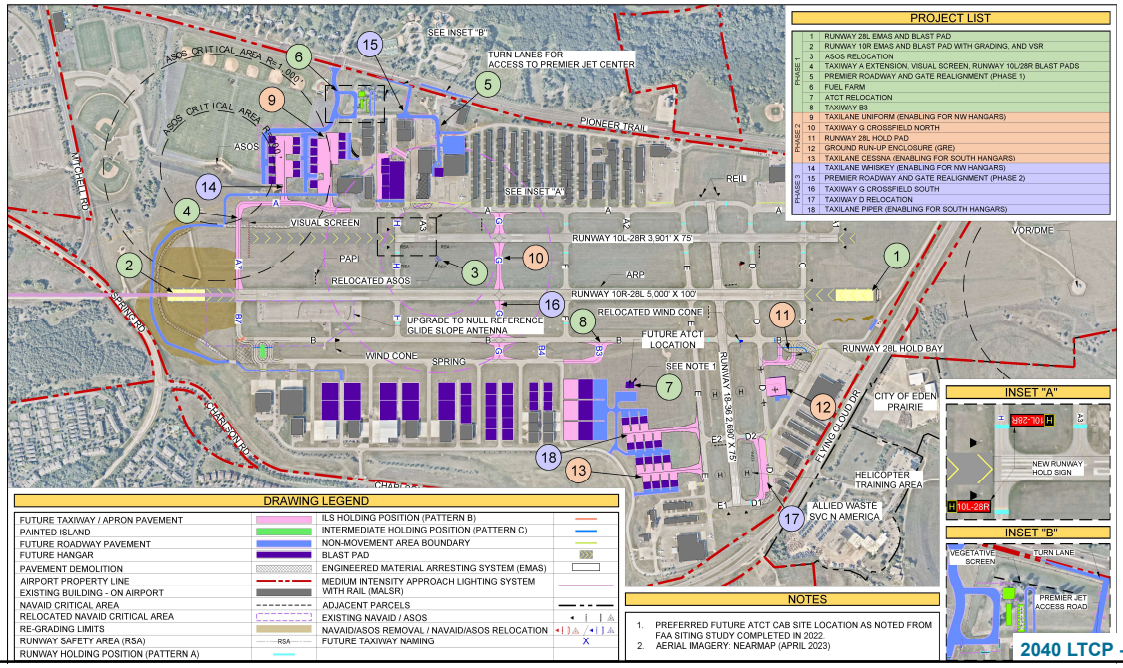
12

Preferred Development Alternative

FCM FLYING CLOUD LONG-TERM PLAN 2040

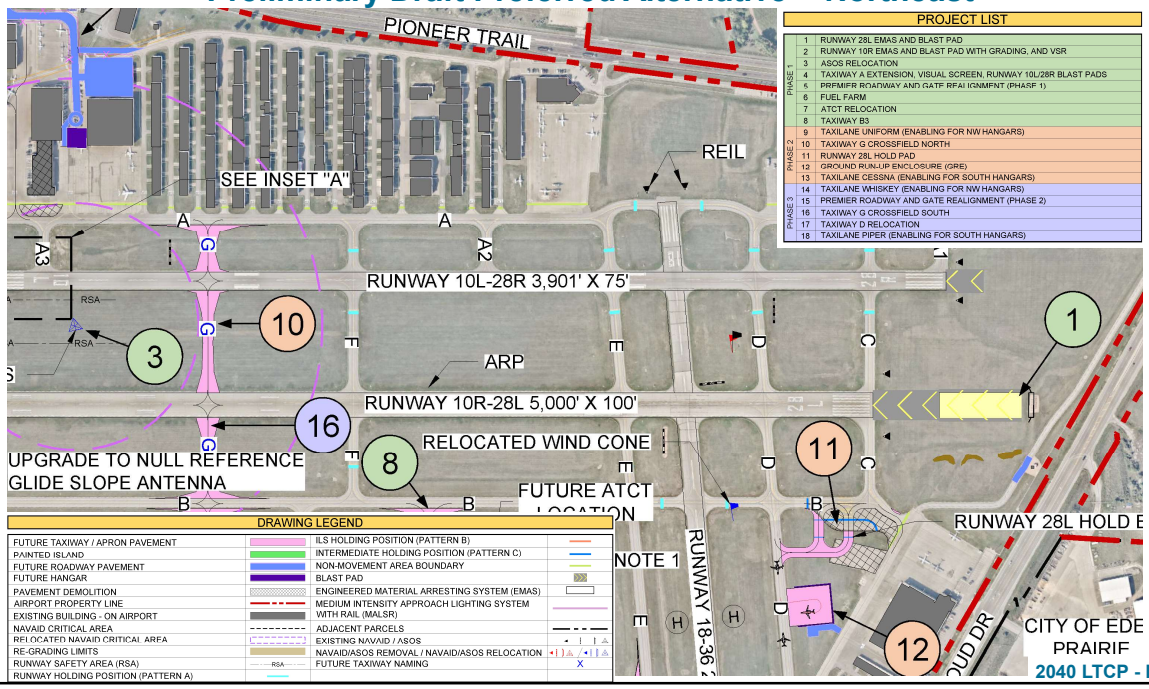
13

Preferred Alternative – Overall



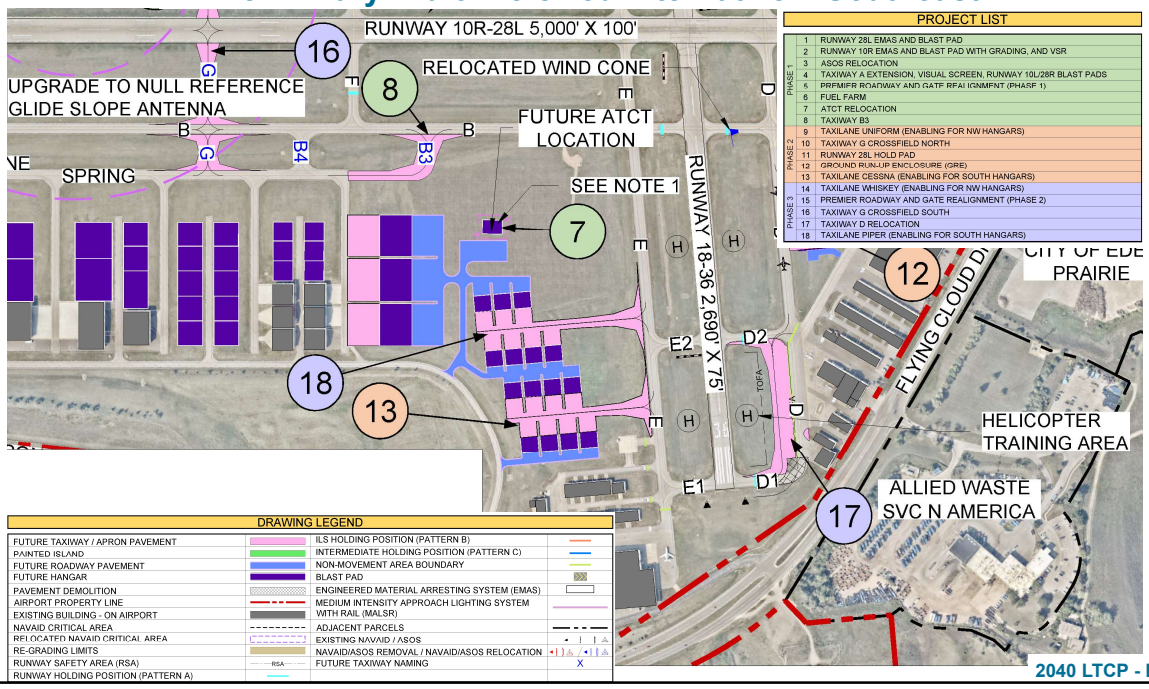
14

Preliminary Draft Preferred Alternative – Northeast

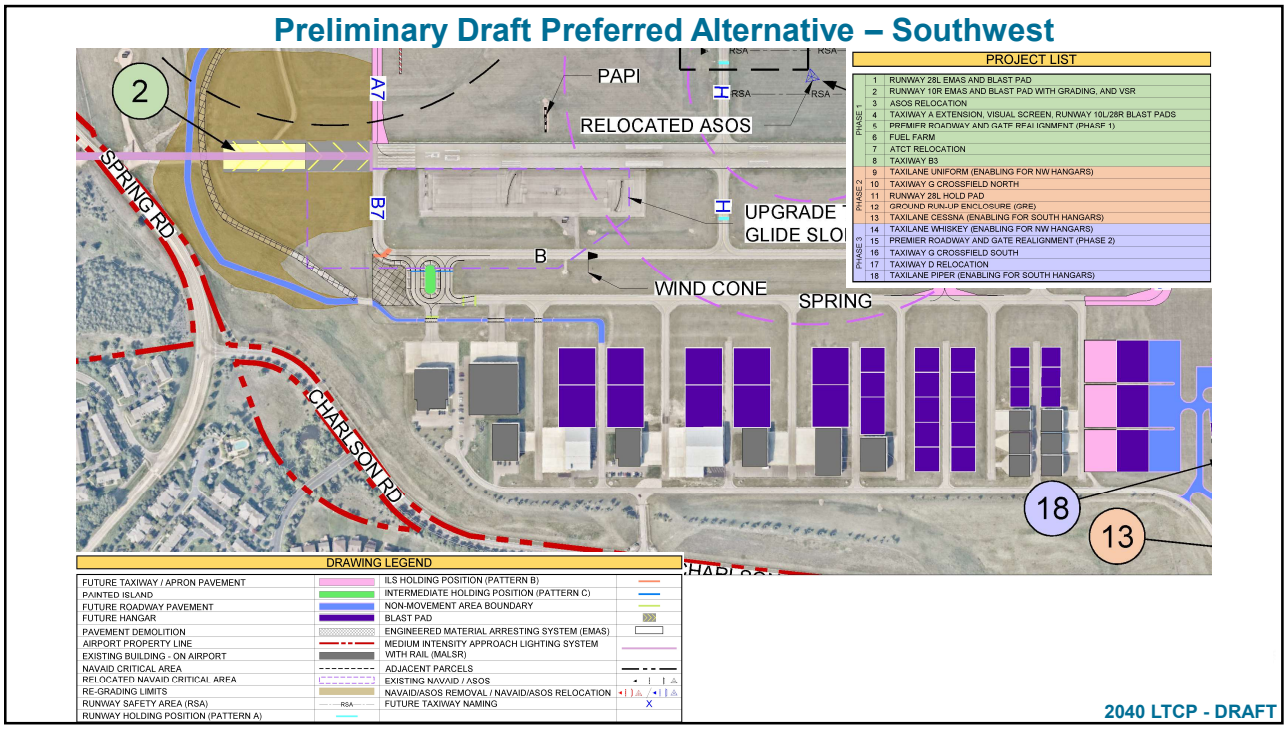


15

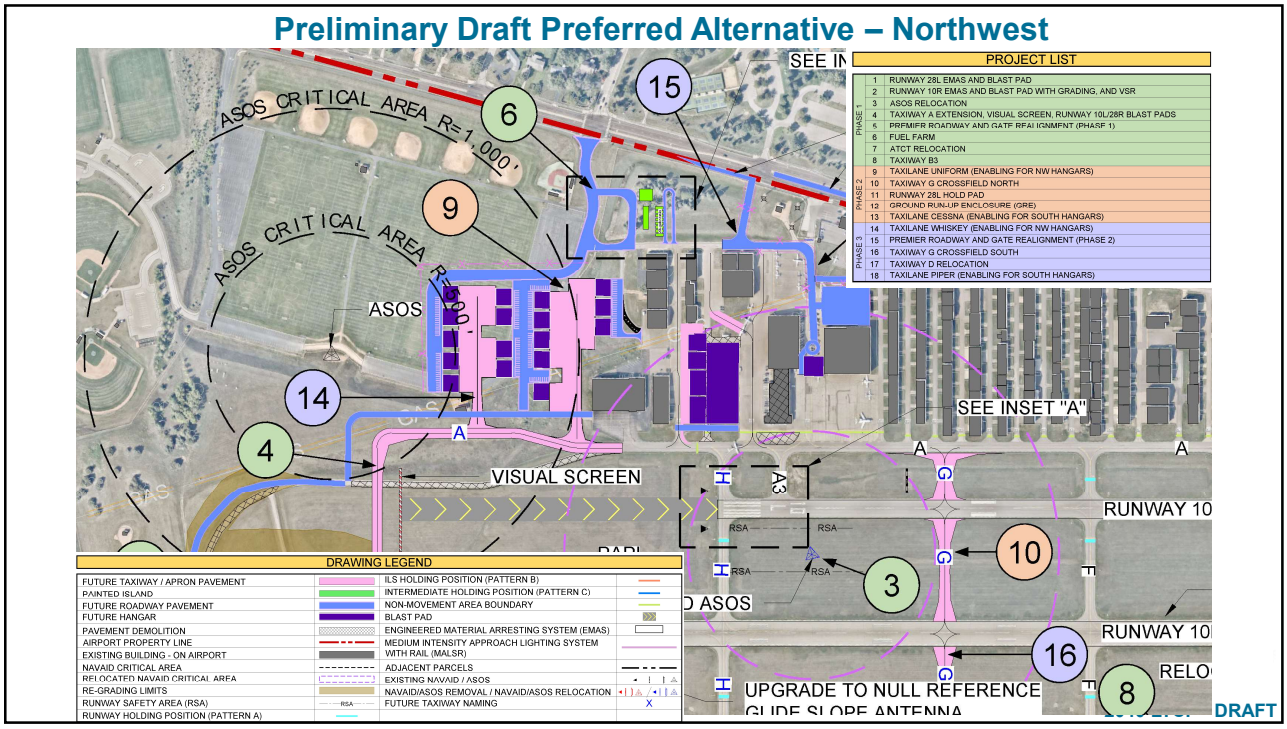
Preliminary Draft Preferred Alternative – Southeast



16

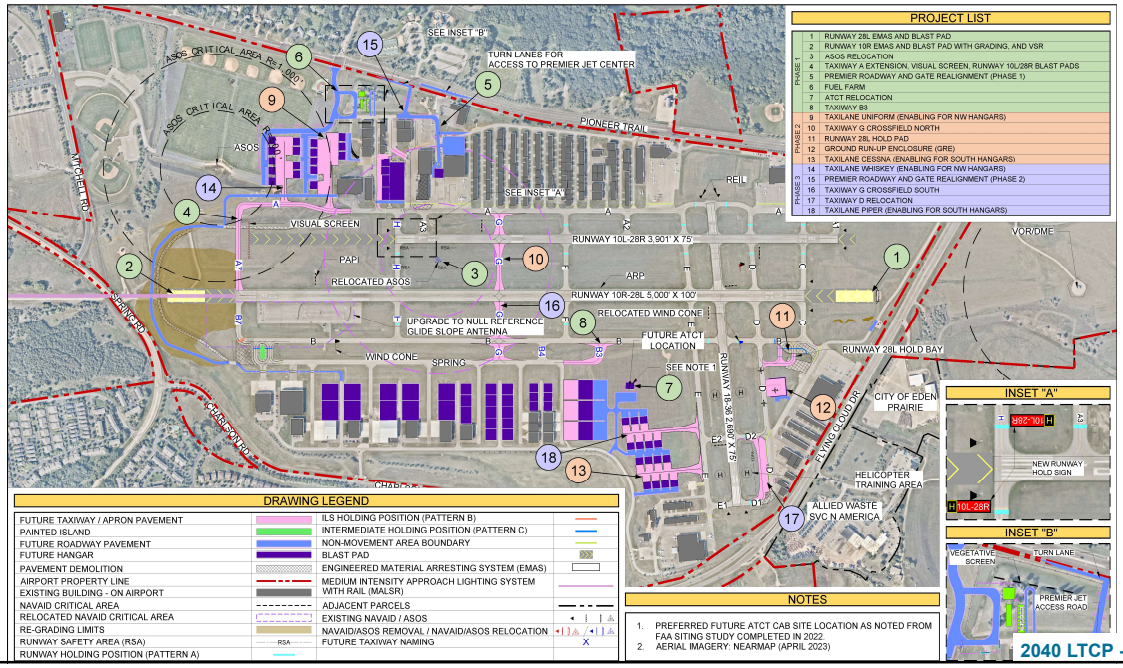

Preliminary Draft Preferred Alternative – Southwest
PROJECT LIST
PHASE 1
1 RUNWAY 28L EMAS AND BLAST PAD
2 RUNWAY 10R EMAS AND BLAST PAD WITH GRADING, AND VSR
3 ASOS RELOCATION
4 TAXIWAY A EXTENSION, VISUAL SCREEN, RUNWAY 10L/28R BLAST PADS
5 PREMIER ROADWAY AND GATE REALIGNMENT (PHASE 1)
6 FUEL FARM
7 ATCT RELOCATION
8 TAXIWAY B3
9 TAXILANE UNIFORM (ENABLING FOR NW HANGARS)
PHASE 2
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)
PHASE 3
15 PREMIER ROADWAY AND GATE REALIGNMENT (PHASE 2)
16 TAXIWAY G CROSSFIELD SOUTH
17 TAXIWAY D RELOCATION
18 TAXILANE PIPER (ENABLING FOR SOUTH HANGARS)
PAPI
RELOCATED ASOS
UPGRADE
GLIDE SLO
WIND CONE
SPRING
SPRING RD
CHARLSON RD
A7
B7
B
2
18
13
DRAWING LEGEND
FUTURE TAXIWAY / APRON PAVEMENT
PAINTED ISLAND
FUTURE ROADWAY PAVEMENT
FUTURE HANGAR
PAVEMENT DEMOLITION
AIRPORT PROPERTY LINE
EXISTING BUILDING - ON AIRPORT
NAVAID CRITICAL AREA
RELOCATED NAVAID CRITICAL AREA
RE-GRADING LIMITS
RUNWAY SAFETY AREA (RSA)
RUNWAY HOLDING POSITION (PATTERN A)
ILS HOLDING POSITION (PATTERN B)
INTERMEDIATE HOLDING POSITION (PATTERN C)
NON-MOVEMENT AREA BOUNDARY
BLAST PAD
ENGINEERED MATERIAL ARRESTING SYSTEM (EMAS)
MEDIUM INTENSITY APPROACH LIGHTING SYSTEM WITH RAIL (MALSR)
ADJACENT PARCELS
EXISTING NAVAID / ASOS
NAVAID/ASOS REMOVAL / NAVAID/ASOS RELOCATION
FUTURE TAXIWAY NAMING
2040 LTCP - DRAFT

17


Preliminary Draft Preferred Alternative – Northwest
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)
6 FUEL FARM
7 ATCT RELOCATION
8 TAXIWAY B3
9 TAXILANE UNIFORM (ENABLING FOR NW HANGARS)
PHASE 2
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)
PHASE 3
15 PREMIER ROADWAY AND GATE REALIGNMENT (PHASE 2)
16 TAXIWAY G CROSSFIELD SOUTH
17 TAXIWAY D RELOCATION
18 TAXILANE PIPER (ENABLING FOR SOUTH HANGARS)
ASOS CRITICAL AREA R=1,000'
ASOS CRITICAL AREA R=500'
ASOS
VISUAL SCREEN
SEE INSET "A"
RUNWAY 10
UPGRADE TO NULL REFERENCE
6
15
9
14
4
10
3
16
8
A3
DRAWING LEGEND
FUTURE TAXIWAY / APRON PAVEMENT
PAINTED ISLAND
FUTURE ROADWAY PAVEMENT
FUTURE HANGAR
PAVEMENT DEMOLITION
AIRPORT PROPERTY LINE
EXISTING BUILDING - ON AIRPORT
NAVAID CRITICAL AREA
RELOCATED NAVAID CRITICAL AREA
RE-GRADING LIMITS
RUNWAY SAFETY AREA (RSA)
RUNWAY HOLDING POSITION (PATTERN A)
ILS HOLDING POSITION (PATTERN B)
INTERMEDIATE HOLDING POSITION (PATTERN C)
NON-MOVEMENT AREA BOUNDARY
BLAST PAD
ENGINEERED MATERIAL ARRESTING SYSTEM (EMAS)
MEDIUM INTENSITY APPROACH LIGHTING SYSTEM WITH RAIL (MALSR)
ADJACENT PARCELS
EXISTING NAVAID / ASOS
NAVAID/ASOS REMOVAL / NAVAID/ASOS RELOCATION
FUTURE TAXIWAY NAMING
DRAFT

18

Preferred Alternative – Overall



19

Rough Order of Magnitude (ROM) Cost Estimates

- Costs are based on 2024 dollars with no escalation
- Project list is an estimate of preference
  - Not all projects will be constructed
- Timing is subject to change
  - Funding, environmental efforts, integration with other reliever airport timing
- Project scope may change based on environmental review
  - Additional opportunity for public comment

Project No.	Description	Cost
	Phase 1 Projects (0 – 5 years)	
1	28L EMAS and Blast Pad	$20,925,433
2	10R EMAS and Blast Pad; West Grading: VSR Relocation	$42,497,637
3	ASOS Relocation	$977,791
4	Taxiway Alpha Extension	$9,570,711
5	Premier Roadway and Gate Alignment (Phase 1)	$4,892,945
6	Fuel Farm (Alternative 1)	$5,773,608
7	ATCT Relocation	$2,236,203
8	Taxiway B2	$1,782,475
	Phase 2 Projects (6 – 10 years)	
9	Taxilane Uniform (enabling for NW hangars)	$10,126,432
10	Taxiway G North (Crossfield)	$2,486,407
11	Runway 27L Hold Pad	$1,540,706
12	Ground Run-Up Enclosure	$7,885,657
13	Taxilane Cessna (enabling for South hangars)	$4,004,375
	Phase 3 Projects (11 – 20 years)	
14	Taxilane Whiskey (enabling for NW hangars)	$4,118,089
15	Premier Roadway and Gate Alignment (Phase 2)	$2,682,356
16	Taxiway G South (Crossfield)	$2,496,665
17	Taxiway D Relocation	$2,582,833
18	Taxilane Piper (enabling for South hangars)	$7,990,787
	Total ROM costs	**$134,571,109**

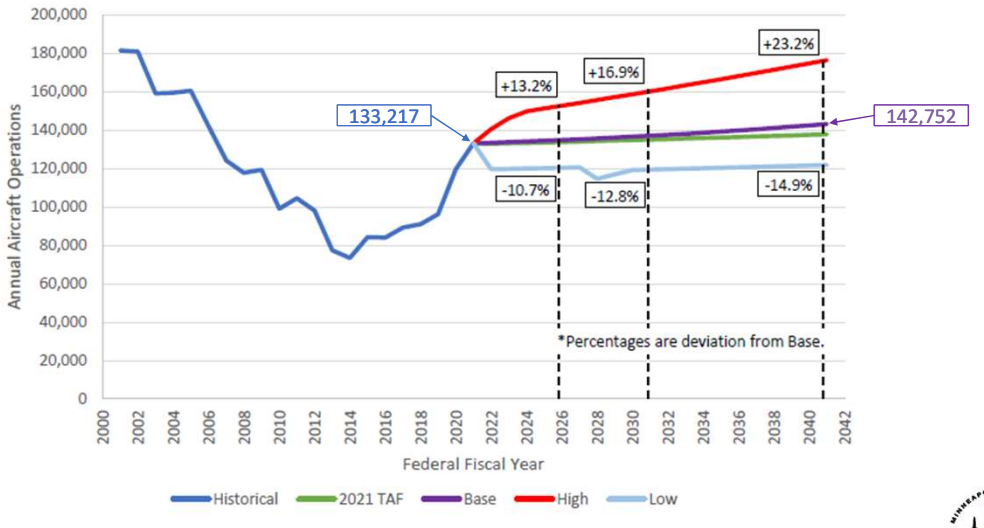
Source: HNTB cost estimates
Note: Costs are presented in $2024 with no future escalation applied

20

Noise Analysis

21

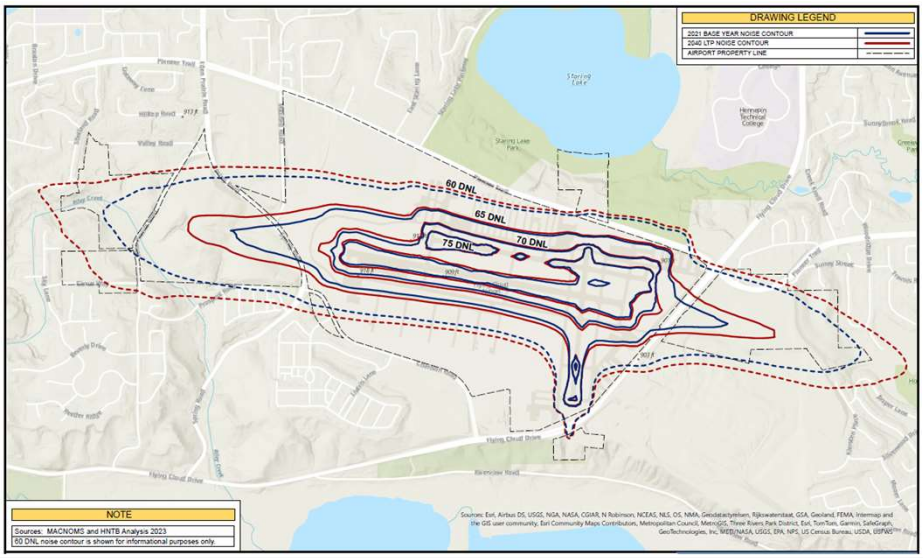
Annual Aircraft Operations Forecast



Source: HNTB and 2021 FAA Terminal Area Forecast, published 2022.

22

Understanding Future Airport Noise



Voluntary Noise Abatement at FCM

- MAC maintains a Noise Abatement Plan for FCM – Fly Neighborly
  - Preferential Runway Use
  - Southbound turns after departure
  - Noise Abatement departure and approach procedures
  - Maintenance runups
  - Helicopter training
  - Voluntary nighttime restrictions
  - Pilot outreach

Project Implementation and Next Steps

25

Key Steps Required for Project Implementation

Stakeholder Input	Final Stakeholder Advisory Panel (SAP) Meeting January 28, 2025.
Public Meeting	MAC hosts final Discover Flying Cloud public meeting March 4 (4:30PM – 6:30PM).
FAA ALP Review	MAC submits proposed projects to the FAA via a draft Airport Layout Plan (ALP).
Public Comment	Public comment period on the LTP report February – March 2025.
Incorporate Feedback	Comments are addressed; Changes are made as required.
Met Council Review	Metropolitan Council reviews and provides consistency review determination.
Project Funding	MAC determines project funding from available funding sources.
Environmental	MAC completes NEPA environmental review process based on project requirements.
Construction	Design and Construction to advance.

26

Thank you for participating!

2040 Long-Term Plan (LTP) Update
Flying Cloud Airport (FCM)

Please complete the post-event survey

January 28, 2025

27

DISCOVER

Flying Cloud Airport

2040 Long-Term Plan Update

March 4, 2025

1

Welcome Remarks

Brian Ryks

Executive Director and CEO

Metropolitan Airports Commission

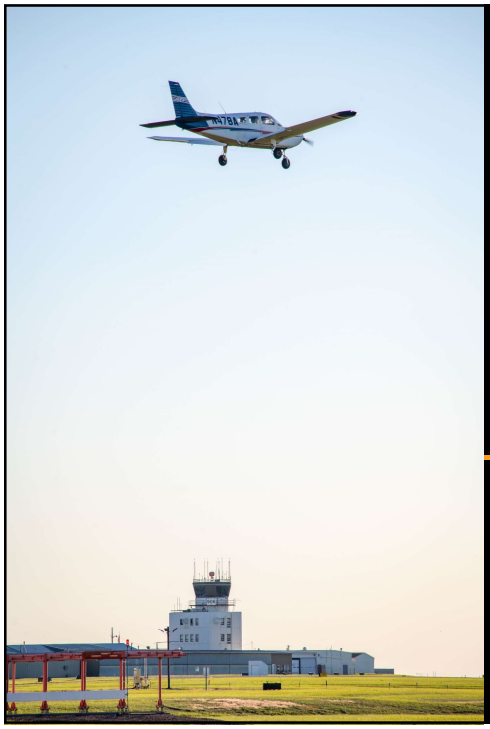
2

Agenda

- Goals, Objectives, and Project Schedule
- FAA Coordination
- Long-Term Plan Review
- Preferred Alternative
- Noise Analysis
- Project Implementation and Next Steps

Use code to view presentation

3



DISCOVER
Flying Cloud Airport

Long-Term Plan Goals, Objectives, and Project Schedule

4

Flying Cloud LTP Goals

- 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

5

Review of Discover Flying Cloud Events

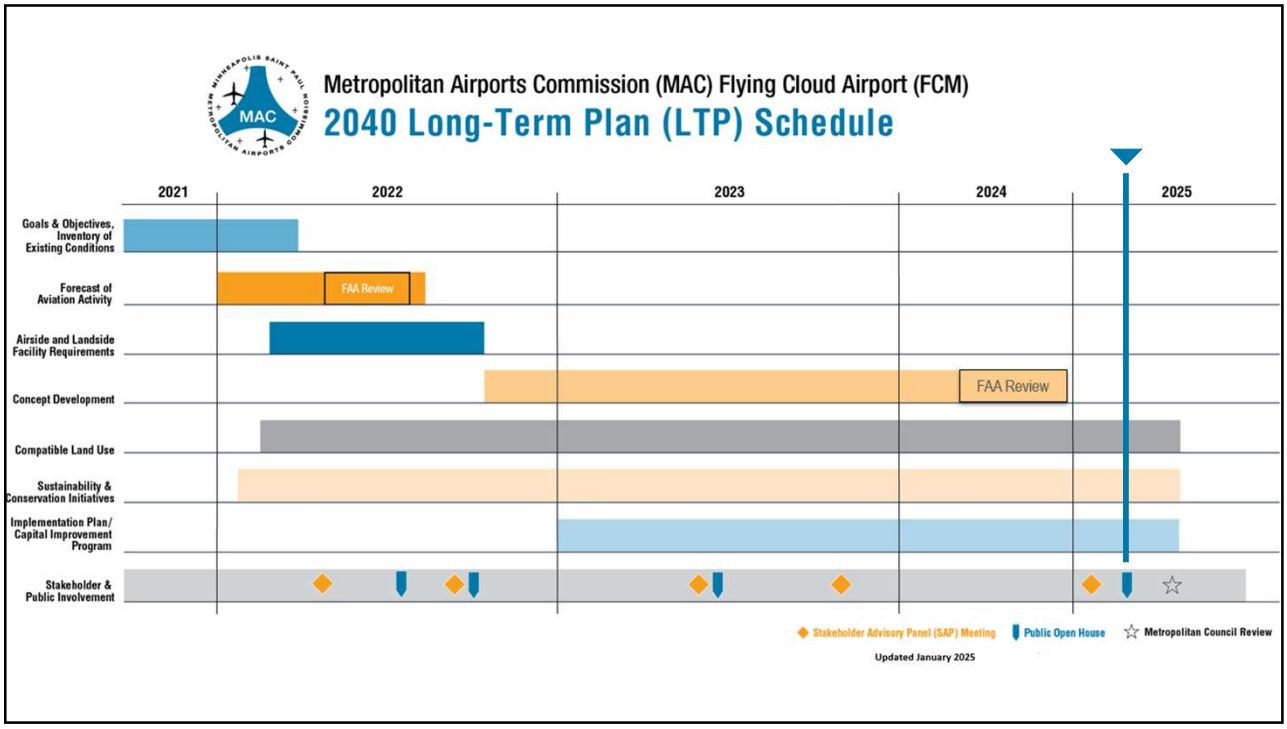
- Discover FCM #1 – June 2022 – Existing Conditions + Forecast Preview
- Discover FCM #2 – October 2022 – Facility Requirements + Noise
- Discover FCM #3 – May 2023 – Airfield Alternative Concepts
- Discover FCM #4 – March 2025 – Preferred Plan + Implementation

6

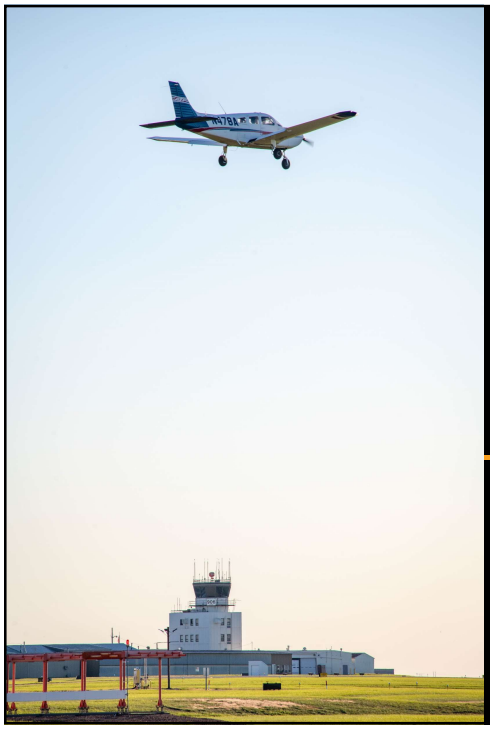
Evolution of the Long-Term Plan

- Identified need to upgrade Runway 10R-28L to C-II standards
- Forecast approved by the FAA in January 2023
  - Slow growth in overall aircraft operations (Approx. 0.37% CAGR)
- Tenants voiced need for hangar development opportunities
- Runway alternatives discussion resulted in EMAS both ends alternative
- Other airfield enhancements and support facilities identified
- Extensive coordination with FAA regarding Taxiway A extension to 10R
- Individual projects and cost estimates developed from preferred alternative

7



8

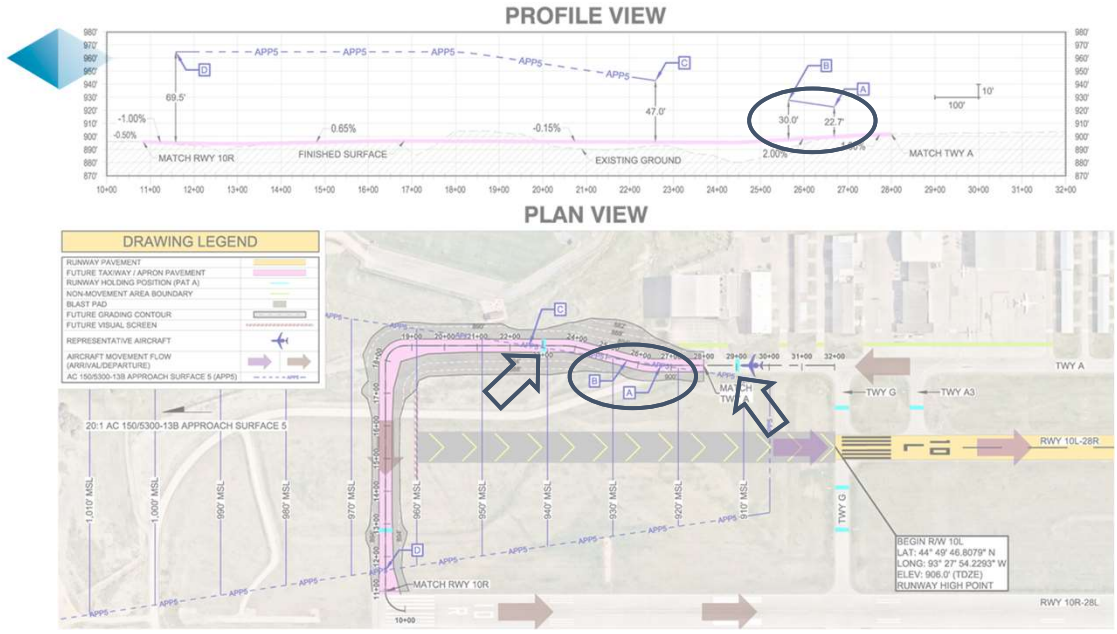


DISCOVER
Flying Cloud Airport

FAA Coordination

9

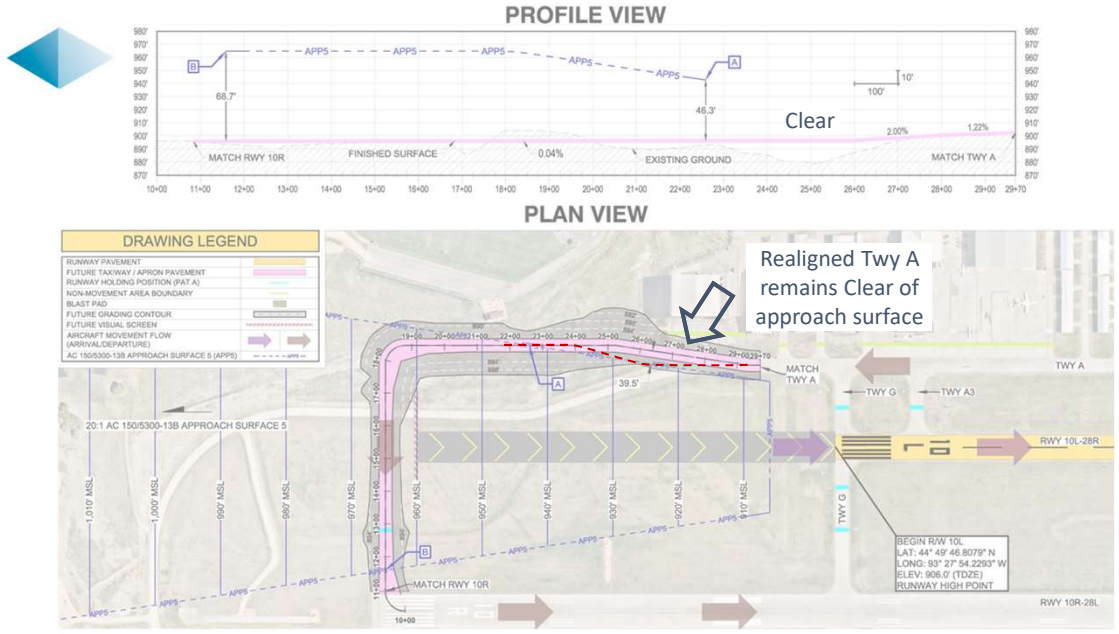
Taxiway A – Initially Preferred Alternative



2040 LTCP - DRAFT

10

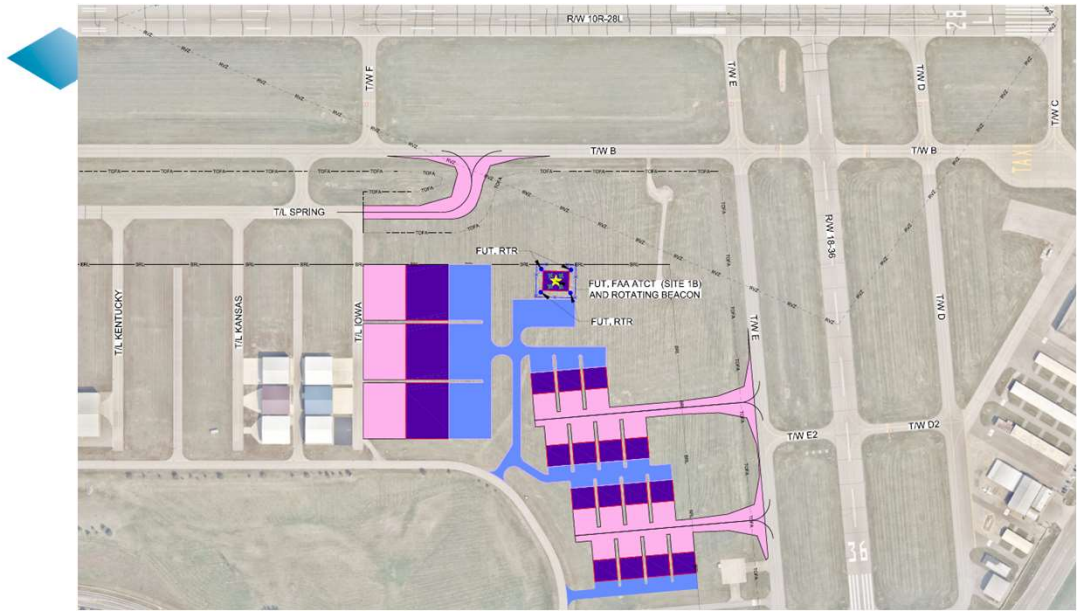
Taxiway A – Revised Preferred Alternative



2040 LTCP - DRAFT

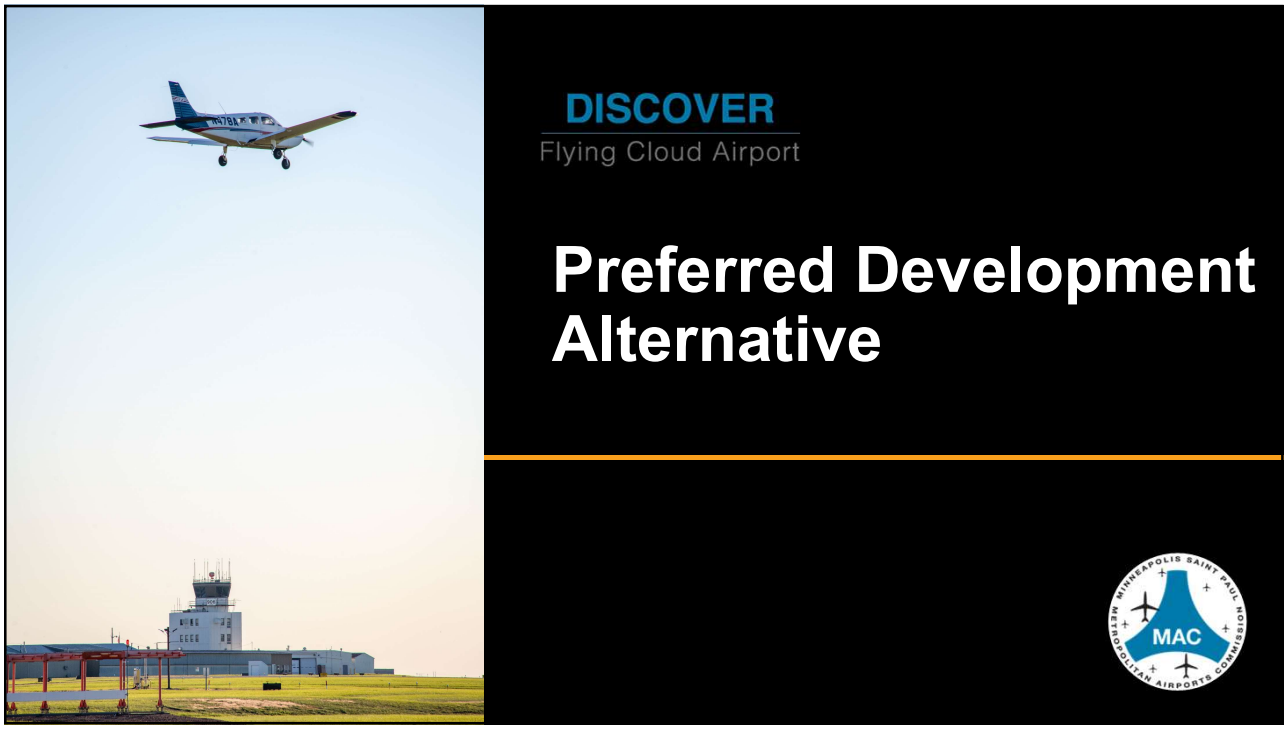
11

ATCT Relocation – FAA Site Design Ongoing



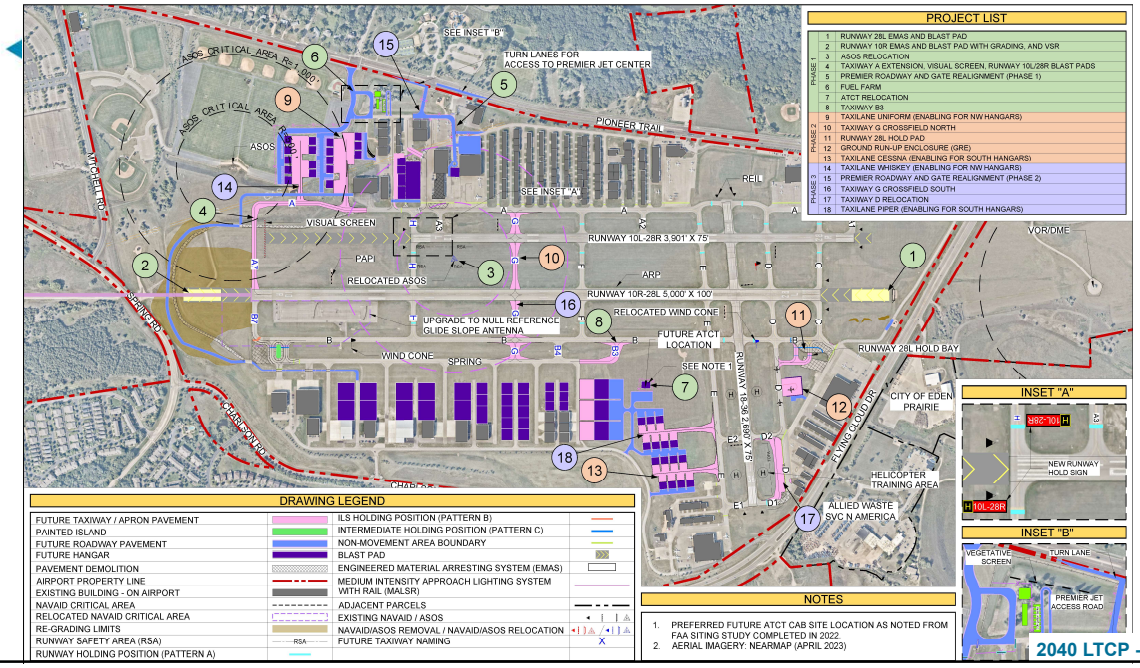
2040 LTCP - DRAFT

12

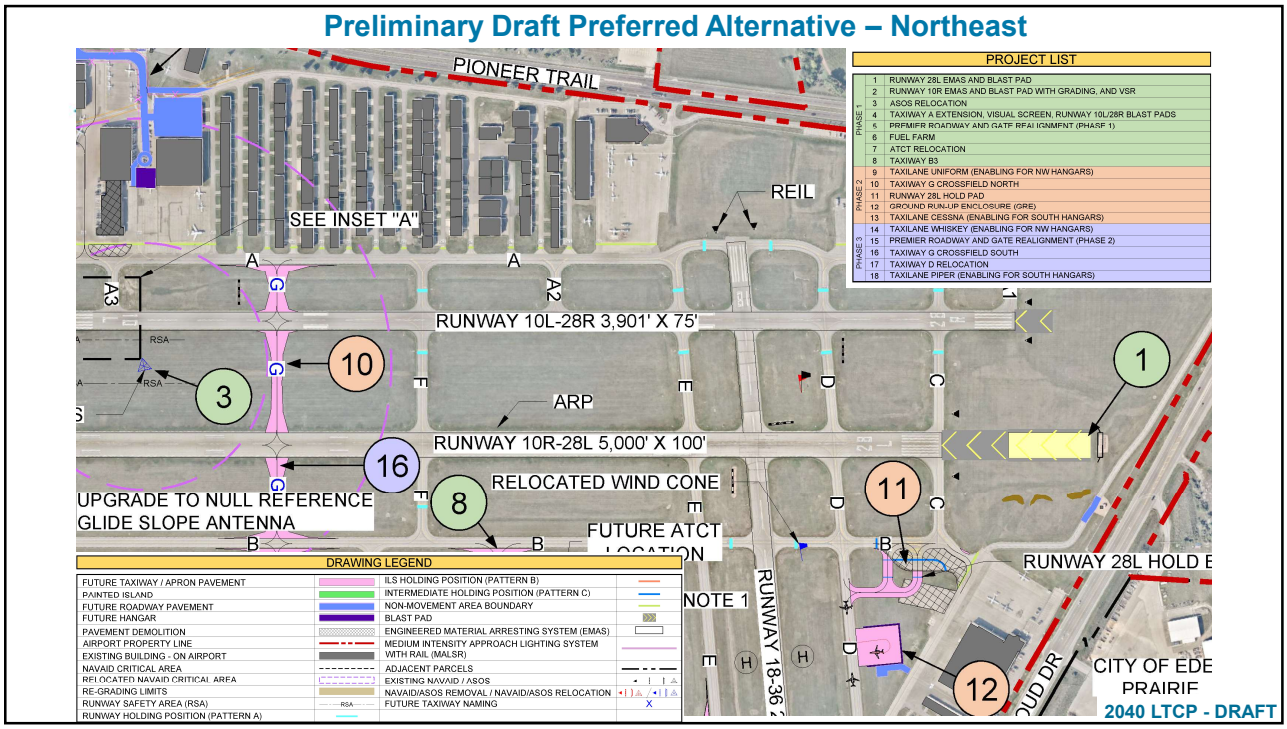


13

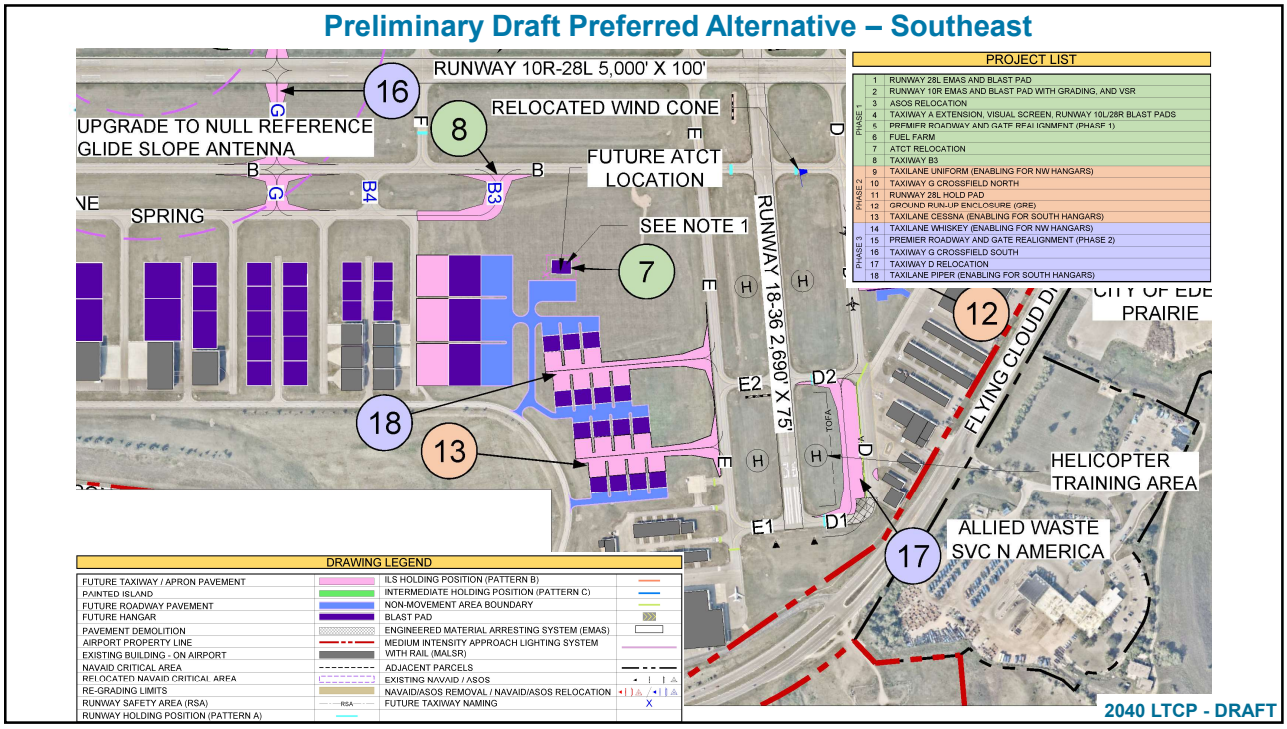
Preferred Alternative – Overall



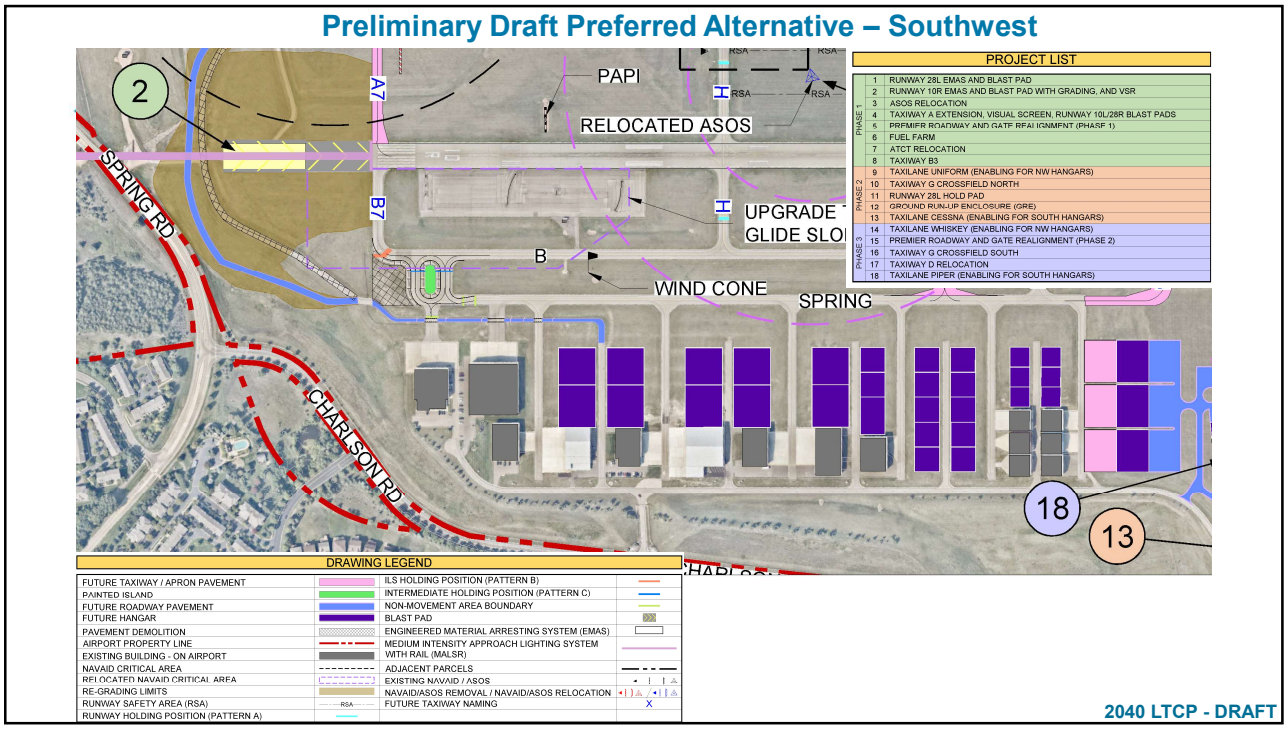
14


Preliminary Draft Preferred Alternative – Northeast
PIONEER TRAIL
SEE INSET "A"
REIL
RUNWAY 10L-28R 3,901' X 75'
RUNWAY 10R-28L 5,000' X 100'
ARP
RELOCATED WIND CONE
UPGRADE TO NULL REFERENCE
GLIDE SLOPE ANTENNA
FUTURE ATCT
NOTE 1
RUNWAY 18-36
RUNWAY 28L HOLD
CITY OF EDE
PRAIRIE
PROJECT LIST
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)
6 FUEL FARM
7 ATCT RELOCATION
8 TAXIWAY B3
9 TAXILANE UNIFORM (ENABLING FOR NW HANGARS)
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)
PHASE 1
PHASE 2
PHASE 3
DRAWING LEGEND
FUTURE TAXIWAY / APRON PAVEMENT
PAINTED ISLAND
FUTURE ROADWAY PAVEMENT
FUTURE HANGAR
PAVEMENT DEMOLITION
AIRPORT PROPERTY LINE
EXISTING BUILDING - ON AIRPORT
NAVAID CRITICAL AREA
RELOCATED NAVAID CRITICAL AREA
RE-GRADING LIMITS
RUNWAY SAFETY AREA (RSA)
RUNWAY HOLDING POSITION (PATTERN A)
ILS HOLDING POSITION (PATTERN B)
INTERMEDIATE HOLDING POSITION (PATTERN C)
NON-MOVEMENT AREA BOUNDARY
BLAST PAD
ENGINEERED MATERIAL ARRESTING SYSTEM (EMAS)
MEDIUM INTENSITY APPROACH LIGHTING SYSTEM WITH RAIL (MALSR)
ADJACENT PARCELS
EXISTING NAVAID / ASOS
NAVAID/ASOS REMOVAL / NAVAID/ASOS RELOCATION
FUTURE TAXIWAY NAMING
2040 LTCP - DRAFT

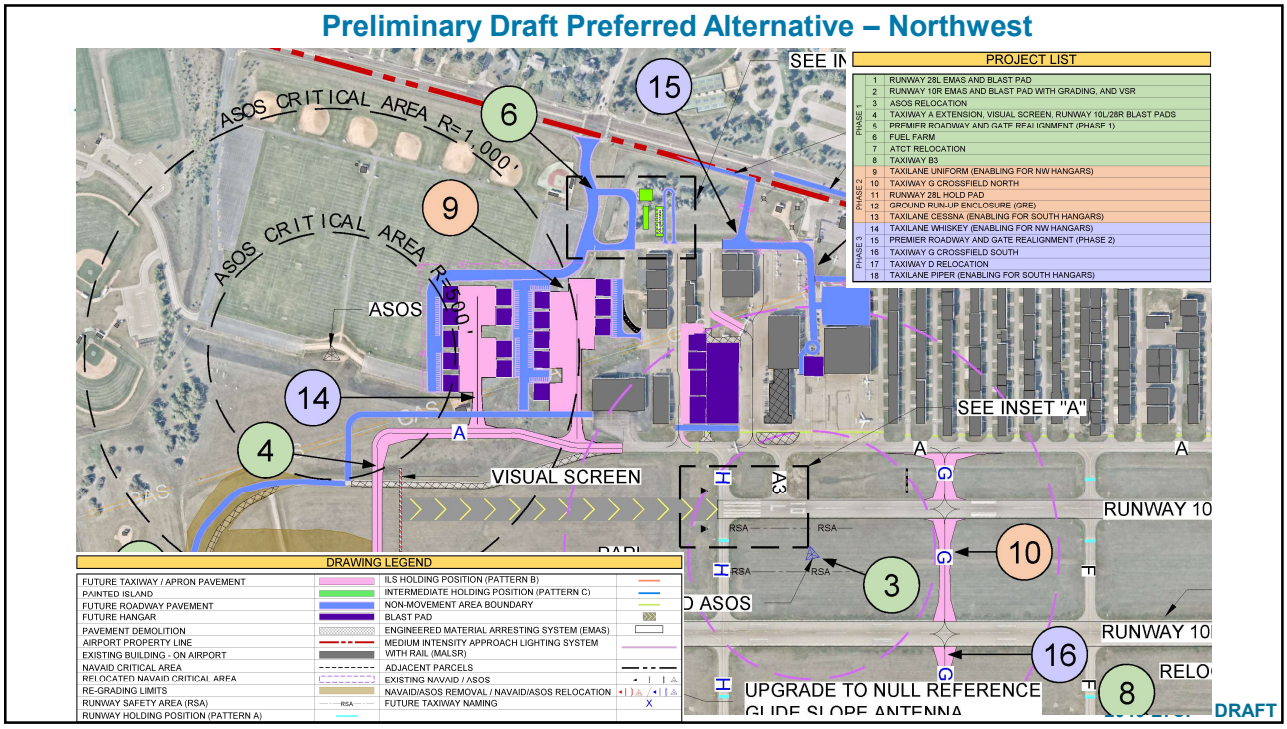
15


Preliminary Draft Preferred Alternative – Southeast
RUNWAY 10R-28L 5,000' X 100'
RELOCATED WIND CONE
UPGRADE TO NULL REFERENCE
GLIDE SLOPE ANTENNA
FUTURE ATCT
LOCATION
SEE NOTE 1
SPRING
RUNWAY 18-36 2,690' X 75'
CITY OF EDE
PRAIRIE
FLYING CLOUD DR
HELICOPTER
TRAINING AREA
ALLIED WASTE
SVC N AMERICA
PROJECT LIST
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)
6 FUEL FARM
7 ATCT RELOCATION
8 TAXIWAY B3
9 TAXILANE UNIFORM (ENABLING FOR NW HANGARS)
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)
PHASE 1
PHASE 2
PHASE 3
DRAWING LEGEND
FUTURE TAXIWAY / APRON PAVEMENT
PAINTED ISLAND
FUTURE ROADWAY PAVEMENT
FUTURE HANGAR
PAVEMENT DEMOLITION
AIRPORT PROPERTY LINE
EXISTING BUILDING - ON AIRPORT
NAVAID CRITICAL AREA
RELOCATED NAVAID CRITICAL AREA
RE-GRADING LIMITS
RUNWAY SAFETY AREA (RSA)
RUNWAY HOLDING POSITION (PATTERN A)
ILS HOLDING POSITION (PATTERN B)
INTERMEDIATE HOLDING POSITION (PATTERN C)
NON-MOVEMENT AREA BOUNDARY
BLAST PAD
ENGINEERED MATERIAL ARRESTING SYSTEM (EMAS)
MEDIUM INTENSITY APPROACH LIGHTING SYSTEM WITH RAIL (MALSR)
ADJACENT PARCELS
EXISTING NAVAID / ASOS
NAVAID/ASOS REMOVAL / NAVAID/ASOS RELOCATION
FUTURE TAXIWAY NAMING
2040 LTCP - DRAFT

16

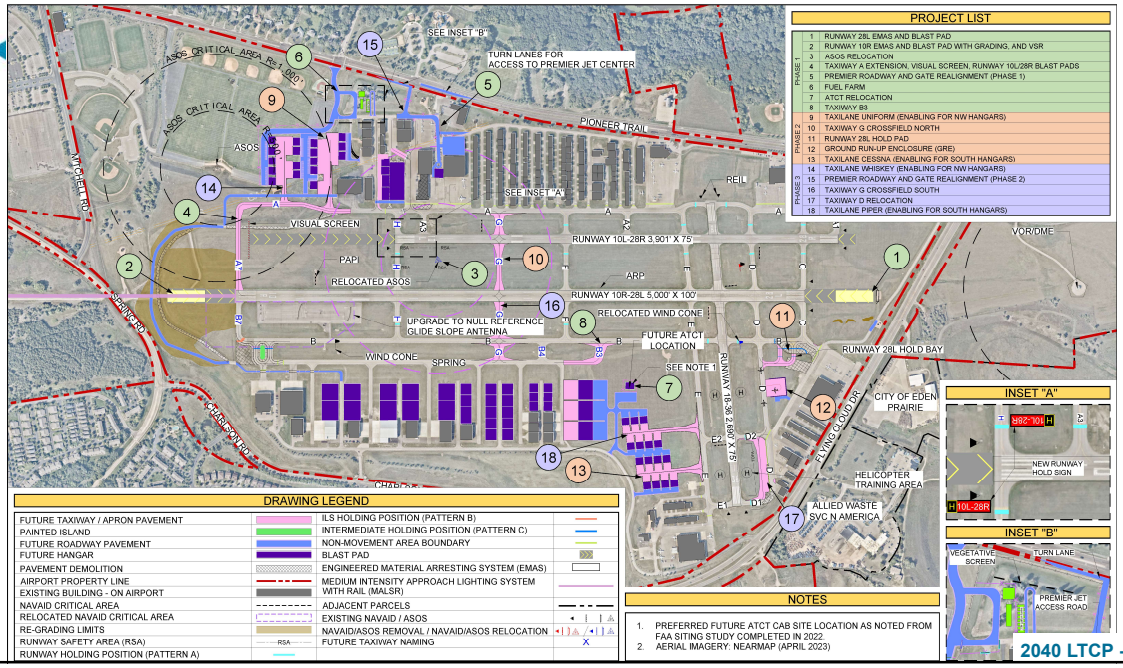

Preliminary Draft Preferred Alternative – Southwest
PROJECT LIST
PHASE 1
1 RUNWAY 28L EMAS AND BLAST PAD
2 RUNWAY 10R EMAS AND BLAST PAD WITH GRADING, AND VSR
3 ASOS RELOCATION
4 TAXIWAY A EXTENSION, VISUAL SCREEN, RUNWAY 10L/28R BLAST PADS
5 PREMIER ROADWAY AND GATE REALIGNMENT (PHASE 1)
6 FUEL FARM
7 ATCT RELOCATION
8 TAXIWAY B3
PHASE 2
9 TAXILANE UNIFORM (ENABLING FOR NW HANGARS)
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)
PHASE 3
15 PREMIER ROADWAY AND GATE REALIGNMENT (PHASE 2)
16 TAXIWAY G CROSSFIELD SOUTH
17 TAXIWAY D RELOCATION
18 TAXILANE PIPER (ENABLING FOR SOUTH HANGARS)
PAPI
RELOCATED ASOS
UPGRADE
GLIDE SLO
WIND CONE
SPRING
SPRING RD
CHARLSON RD
A7
B7
B
2
18
13
DRAWING LEGEND
FUTURE TAXIWAY / APRON PAVEMENT
PAINTED ISLAND
FUTURE ROADWAY PAVEMENT
FUTURE HANGAR
PAVEMENT DEMOLITION
AIRPORT PROPERTY LINE
EXISTING BUILDING - ON AIRPORT
NAVAID CRITICAL AREA
RELOCATED NAVAID CRITICAL AREA
RE-GRADING LIMITS
RUNWAY SAFETY AREA (RSA)
RUNWAY HOLDING POSITION (PATTERN A)
ILS HOLDING POSITION (PATTERN B)
INTERMEDIATE HOLDING POSITION (PATTERN C)
NON-MOVEMENT AREA BOUNDARY
BLAST PAD
ENGINEERED MATERIAL ARRESTING SYSTEM (EMAS)
MEDIUM INTENSITY APPROACH LIGHTING SYSTEM WITH RAIL (MALSR)
ADJACENT PARCELS
EXISTING NAVAID / ASOS
NAVAID/ASOS REMOVAL / NAVAID/ASOS RELOCATION
FUTURE TAXIWAY NAMING
2040 LTCP - DRAFT

17


Preliminary Draft Preferred Alternative – Northwest
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)
6 FUEL FARM
7 ATCT RELOCATION
8 TAXIWAY B3
PHASE 2
9 TAXILANE UNIFORM (ENABLING FOR NW HANGARS)
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)
PHASE 3
15 PREMIER ROADWAY AND GATE REALIGNMENT (PHASE 2)
16 TAXIWAY G CROSSFIELD SOUTH
17 TAXIWAY D RELOCATION
18 TAXILANE PIPER (ENABLING FOR SOUTH HANGARS)
ASOS CRITICAL AREA R=1,000'
ASOS CRITICAL AREA R=600'
ASOS
VISUAL SCREEN
SEE INSET "A"
RUNWAY 10
UPGRADE TO NULL REFERENCE
A3
6
15
9
14
4
10
3
16
8
DRAWING LEGEND
FUTURE TAXIWAY / APRON PAVEMENT
PAINTED ISLAND
FUTURE ROADWAY PAVEMENT
FUTURE HANGAR
PAVEMENT DEMOLITION
AIRPORT PROPERTY LINE
EXISTING BUILDING - ON AIRPORT
NAVAID CRITICAL AREA
RELOCATED NAVAID CRITICAL AREA
RE-GRADING LIMITS
RUNWAY SAFETY AREA (RSA)
RUNWAY HOLDING POSITION (PATTERN A)
ILS HOLDING POSITION (PATTERN B)
INTERMEDIATE HOLDING POSITION (PATTERN C)
NON-MOVEMENT AREA BOUNDARY
BLAST PAD
ENGINEERED MATERIAL ARRESTING SYSTEM (EMAS)
MEDIUM INTENSITY APPROACH LIGHTING SYSTEM WITH RAIL (MALSR)
ADJACENT PARCELS
EXISTING NAVAID / ASOS
NAVAID/ASOS REMOVAL / NAVAID/ASOS RELOCATION
FUTURE TAXIWAY NAMING
DRAFT

18

Preferred Alternative – Overall



19

Rough Order of Magnitude Cost Estimates

Costs based on 2024 dollars with no escalation

Project is an estimate of preference

- Not all projects will be constructed

Timing is subject to change

- Funding, environmental efforts, integration with other reliever airport timing

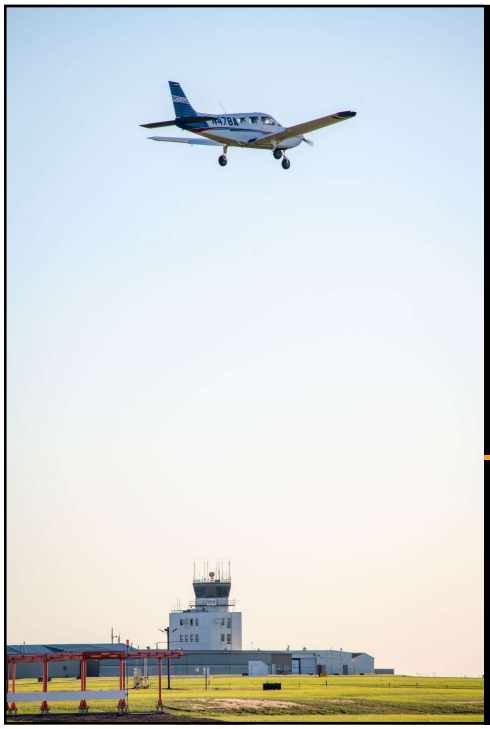
Project scope may change based on environmental review

- Additional opportunity for public comment

Project No.	Description	Cost
	Phase 1 Projects (0 – 5 years)	
1	28L EMAS and Blast Pad	$20,925,433
2	10R EMAS and Blast Pad; West Grading: VSR Relocation	$42,497,637
3	ASOS Relocation	$977,791
4	Taxiway Alpha Extension	$9,570,711
5	Premier Roadway and Gate Alignment (Phase 1)	$4,892,945
6	Fuel Farm (Alternative 1)	$5,773,608
7	ATCT Relocation	$2,236,203
8	Taxiway B2	$1,782,475
	Phase 2 Projects (6 – 10 years)	
9	Taxilane Uniform (enabling for NW hangars)	$10,126,432
10	Taxiway G North (Crossfield)	$2,486,407
11	Runway 27L Hold Pad	$1,540,706
12	Ground Run-Up Enclosure	$7,885,657
13	Taxilane Cessna (enabling for South hangars)	$4,004,375
	Phase 3 Projects (11 – 20 years)	
14	Taxilane Whiskey (enabling for NW hangars)	$4,118,089
15	Premier Roadway and Gate Alignment (Phase 2)	$2,682,356
16	Taxiway G South (Crossfield)	$2,496,665
17	Taxiway D Relocation	$2,582,833
18	Taxilane Piper (enabling for South hangars)	$7,990,787
	Total ROM costs	**$134,571,109**

Source: HNTB cost estimates
Note: Costs are presented in $2024 with no future escalation applied

20

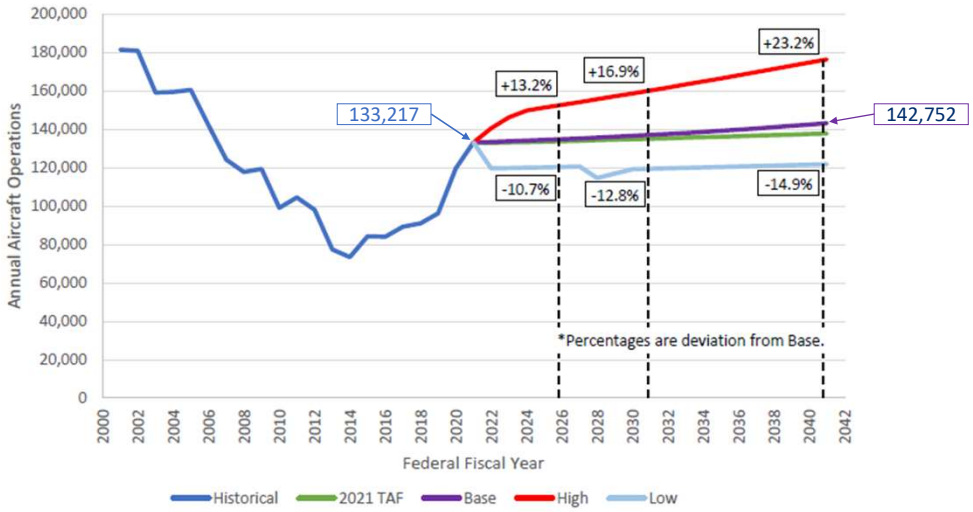


DISCOVER
Flying Cloud Airport

Noise Analysis

21

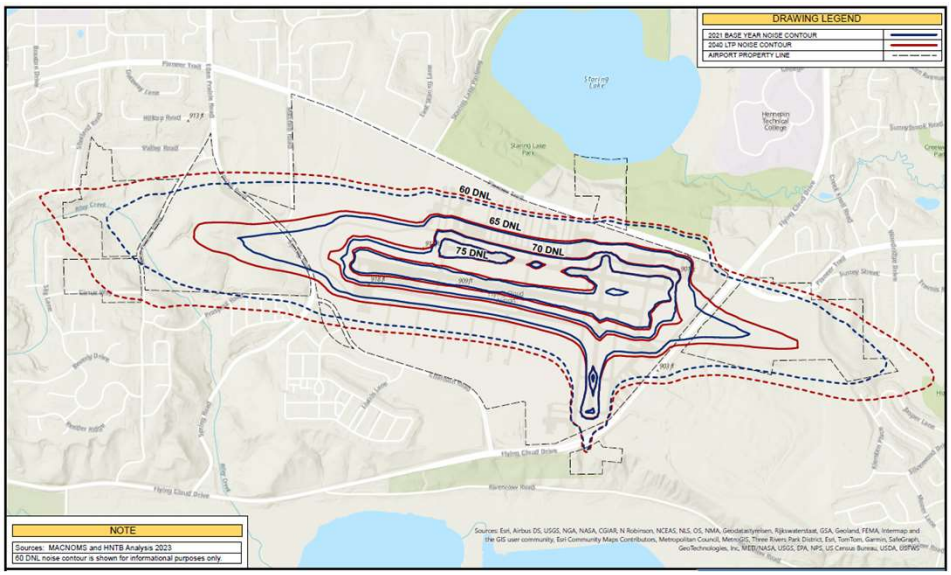
Annual Aircraft Operations Forecast



Source: HNTB and 2021 FAA Terminal Area Forecast, published 2022.

22

Understanding Future Airport Noise



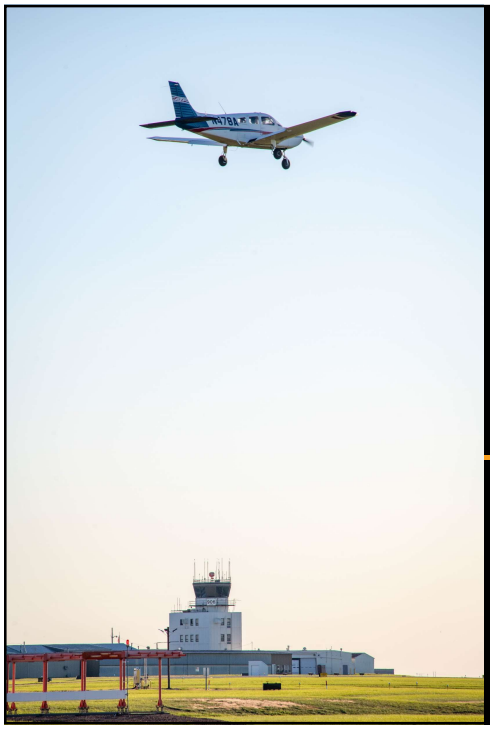
23

Voluntary Noise Abatement at FCM

MAC maintains a Noise Abatement Plan for FCM – Fly Neighborly

- Preferential Runway Use
- Southbound turns after departure
- Noise Abatement departure and approach procedures
- Maintenance runups
- Helicopter training
- Voluntary nighttime restrictions
- Pilot outreach

24



DISCOVER
Flying Cloud Airport

Project Implementation and Next Steps

25

Key Steps Required – Project Implementation

Stakeholder Input	Final Stakeholder Advisory Panel (SAP) Meeting January 28, 2025
Public Meeting	MAC hosts final Discover Flying Cloud public meeting March 4 (4:30PM – 6:30PM)
FAA ALP Review	MAC submits proposed projects to the FAA via a draft Airport Layout Plan (ALP)
Public Comment	45-day Public comment period on the LTP report beginning February 19th through April 5th
Incorporate Feedback	Comments are addressed; Changes are made as required
Met Council Review	Metropolitan Council reviews and provides consistency review determination
Project Funding	MAC determines project funding from available funding sources
Environmental	MAC completes NEPA environmental review process based on project requirements
Construction	Design and Construction to advance

26


DISCOVER
Flying Cloud Airport
Questions?
Please complete our survey
MAC
MINNEAPOLIS SAINT PAUL METROPOLITAN AIRPORTS COMMISSION

27