

Central Wisconsin Joint Airport Board Kick-off Presentation

CWA Terminal Area Master Plan | February 14, 2023

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Project Overview

Evan Barrett

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Team Introduction



Evan Barrett, AICP, CM
Project Manager



Stephanie Nikho, CM
Deputy Project Manager



Colleen Bosold
Sustainability Lead



Stephanie Green, CM
Senior Airport Planner



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GA Terminal &
Operations Facility
Planning



Sarah Emmel, AICP
Sustainability Lead

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Project Background

- Recently completed Master Plan focused primarily on airfield needs
- Size of airline and based aircraft are anticipated to increase over the next five years
- General aviation activity and based aircraft have outpaced Master Plan forecasts
- Master Plan landside concepts are no longer viable due to recent airport improvements
- Several landside facilities are reaching the end of their useful life

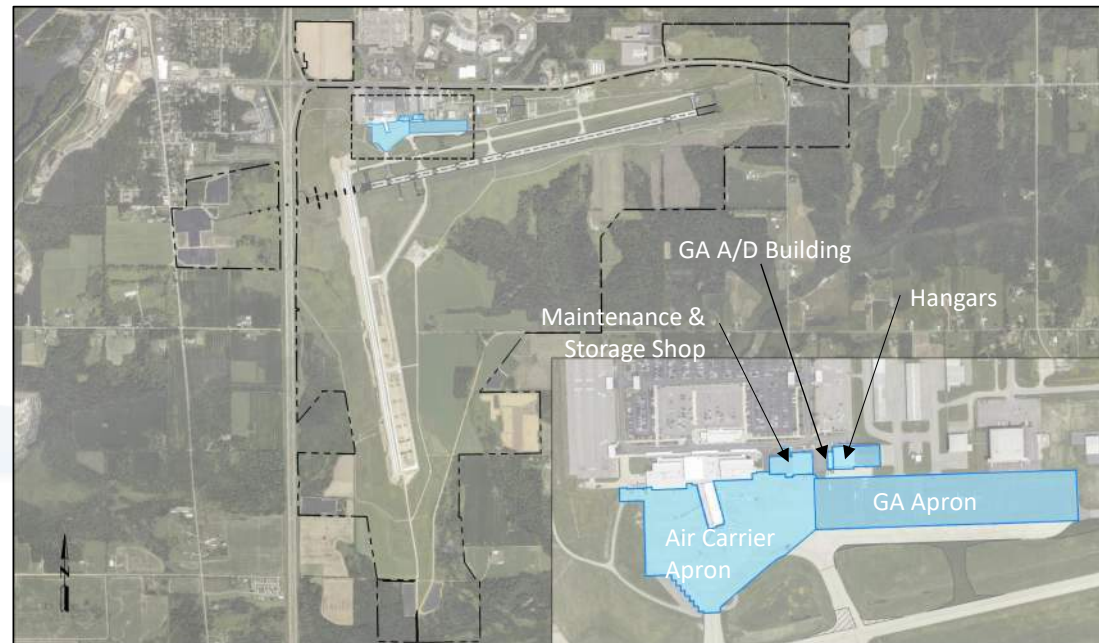


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Focus Areas

- **General Aviation (GA)**
Arrival/Departure Building
- **Airport Equipment Maintenance and Storage Shop**
- **Air Carrier and GA Aircraft Parking Aprons**
- **GA Aircraft Hangar Areas**
- **Sustainable Airport Construction, Operations, and Maintenance**



Project Goals

- **Re-evaluate airport landside needs based on evolving activity trends**
- **Identify proposed short-term and long-term landside facility concepts that:**
 - Meet existing and forecasted airport user needs
 - Maximize productive use of limited developable space
 - Maintain compatibility between different airport uses
- **Prepare a practical and feasible capital improvement plan**
- **Apply sustainable practices to future airport construction, operations, and maintenance**
- **Position the airport to tap new and emerging capital funding sources**



Stakeholder Feedback

- **General aviation should continue to grow at CWA and complement nearby airports (Downtown Wausau and Stevens Point)**
- **Make GA facilities more competitive with airports like ATW and MSP**
- **Consider youth education/STEM activities (e.g. Boy Scouts)**
- **Reduce competition for space between airlines and GA**



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Planning Process

**Aviation Activity
Forecasts**

**Facility
Inventory &
Requirements**

**Alternatives
Analysis**

**Sustainability
Plan**

**Implementation
Plan**

**Airport Layout
Plan**

**Stakeholder
Engagement**

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Project Schedule

| Project Element | 2022 | | | 2023 | | | | | | | | | |
|-----------------------------------|------|-----|-----|------|-------|-----|-----|-----|-----|-----|-----|-----|-----|
| | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct |
| Forecasts | █ | █ | █ | █ | | | | | | | | | |
| Facility Inventory & Requirements | █ | █ | █ | █ | | | | | | | | | |
| Alternatives Analysis | | | | | █ | █ | █ | █ | | | | | |
| Sustainability Planning | | | | | █ | █ | █ | █ | | | | | |
| Implementation Planning | | | | | | | | | █ | █ | █ | █ | |
| Airport Layout Plan | | | | | | | | | █ | █ | █ | █ | █ |
| Final TAMP Report | | | | | | | | | | | | | █ |
| Stakeholder Interviews | | █ | | | | █ | | | | | | | |
| Stakeholder Group Meetings | | | | | Today | | █ | | | | | | |
| Public Meeting | | | | | | | █ | | | | | | |



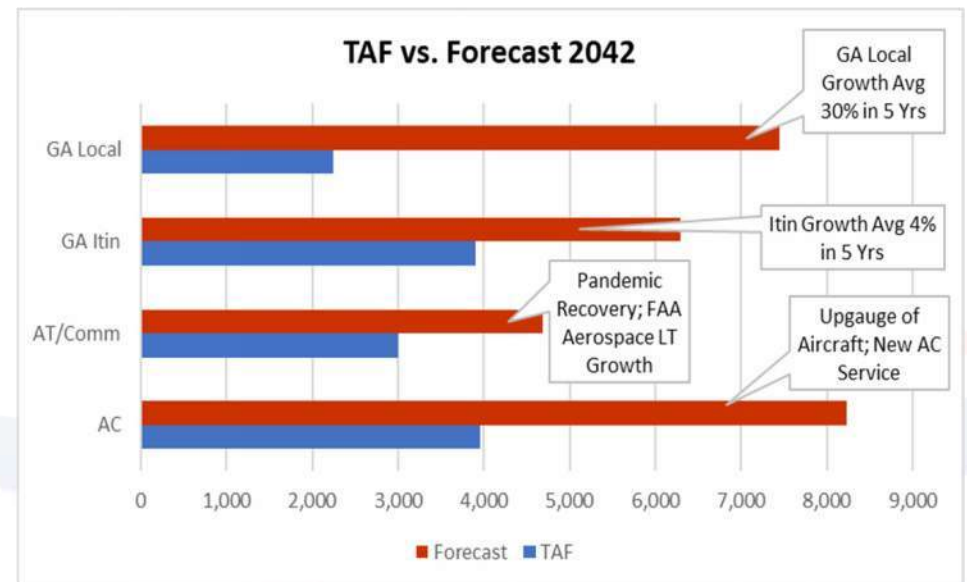
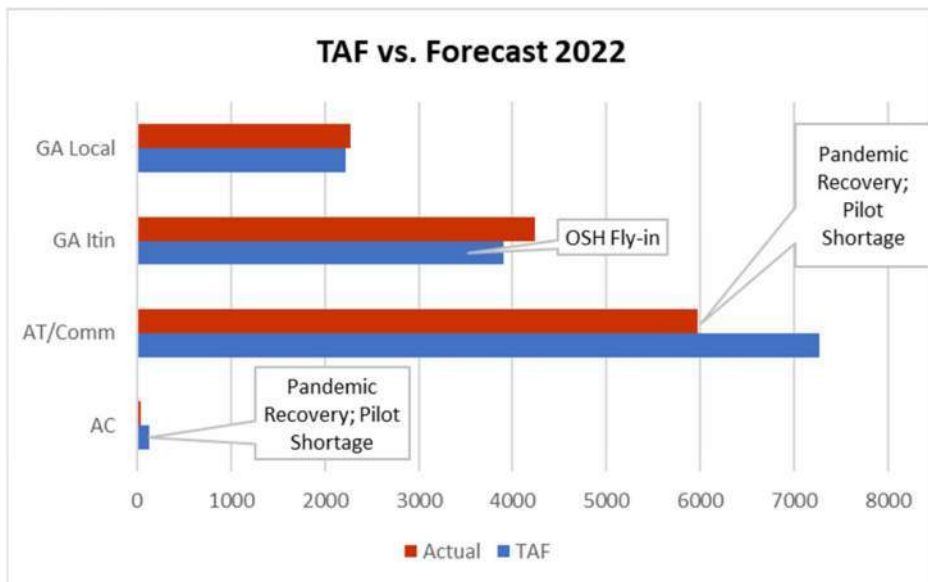
Forecasts

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Forecast vs. TAF



Forecast Summary

| | Forecast Year | Air Carrier Operations (Scenario 2) | Air Taxi/Commuter Operations | General Aviation Operations | Based Aircraft | Itinerant ADPM Demand |
|--------------------|---------------|-------------------------------------|------------------------------|-----------------------------|----------------|-----------------------|
| Short-term | 2027 | 4,982 | 3,526 | 9,730 | 29 | 33 |
| Medium-term | 2032 | 5,889 | 3,616 | 11,813 | 32 | 36 |
| Long-term | 2037 | 6,960 | 3,707 | 12,740 | 35 | 38 |
| | 2047 | 8,227 | 4,679 | 13,748 | 39 | 40 |

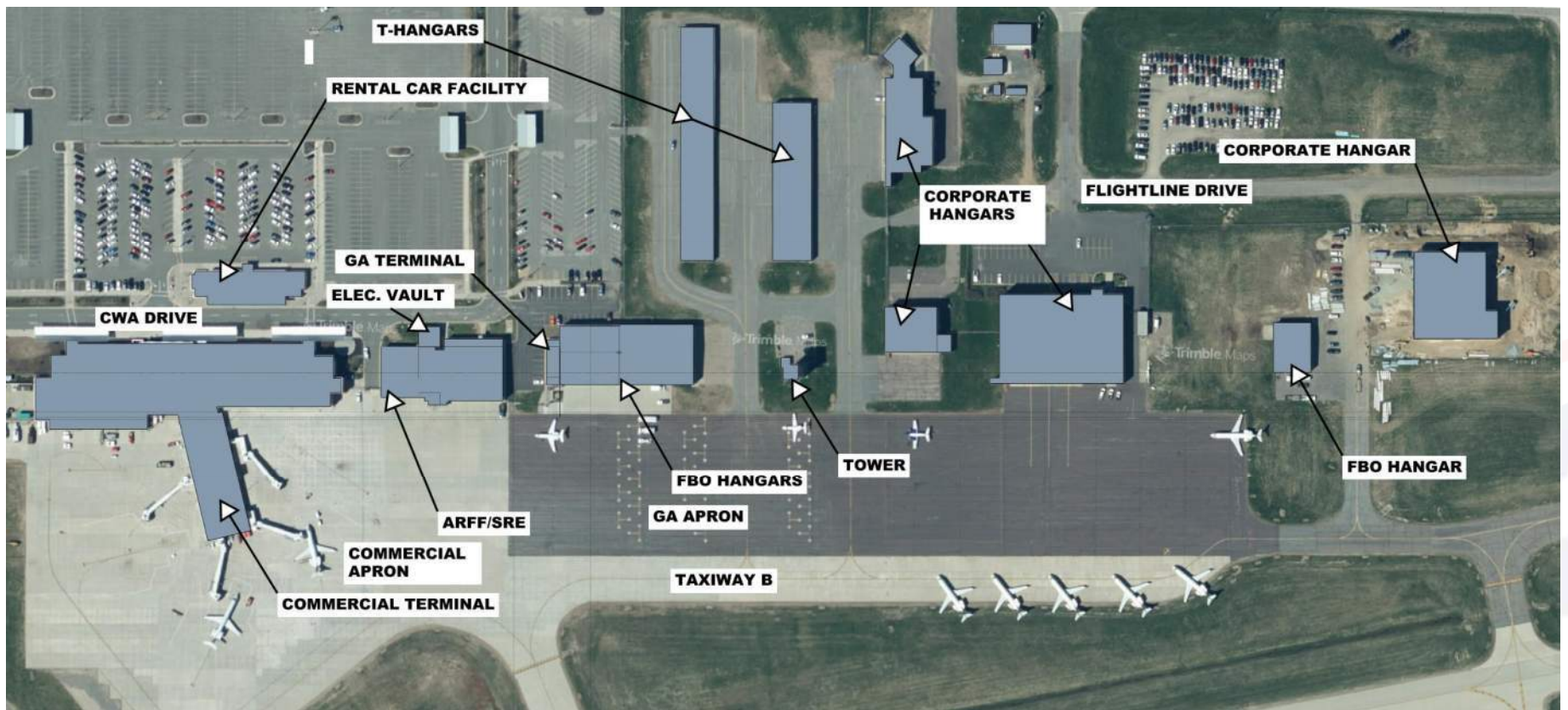
FBO Terminal & ARFF/SRE

Pat Casey



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Existing Facilities Overview

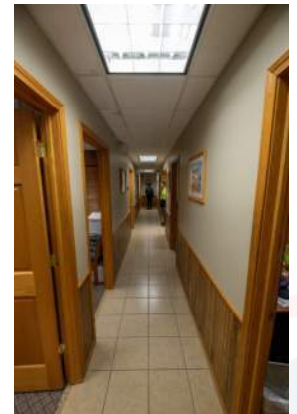


Existing and Projected Facility Needs

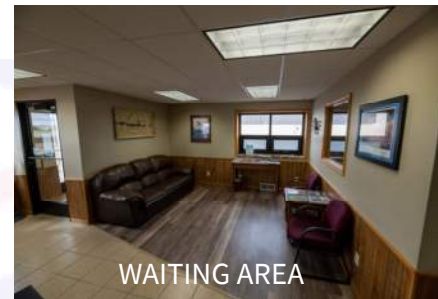
- WAITING AREA HAS SEATING FOR ABOUT 6 PEOPLE
- HOSTS FLIGHT TRAINING SCHOOL
- FBO FUNCTIONS
- PILOTS LOUNGE

- 5,300 SF ESTIMATED FACILITY
- BASED ON 30 PAX CAPACITY
- INCLUDES SPACE FOR FLIGHT TRAINING

FBO OFFICES
AND A/D
LOUNGE
1400 sf +/-



- TOTAL BUILDING = 16600 SF
- ADMIN = 1400 SF
- WEST HANGAR = 6800 SF
- EAST HANGAR = 8400 SF



Concept Development FBO

- **Waiting room capacity for 30 passengers**
- **Seating, coffee bar, and vending**
- **Pilots lounge separated from main traffic areas**
- **Access to maintenance hangars**
- **More customer focus reception area**
- **Multipurpose space**



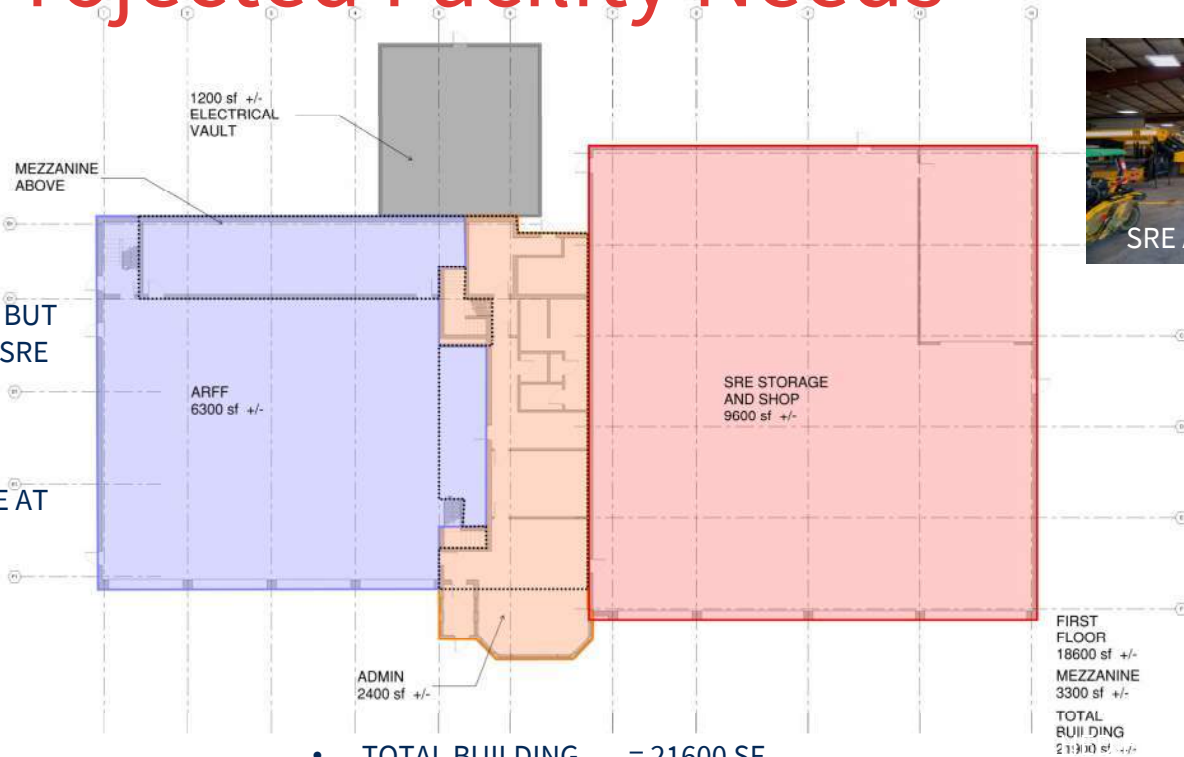
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Existing and Projected Facility Needs

ARFF APPARATUS BAY



SRE APPARATUS BAY



- TOTAL BUILDING = 21600 SF
- ARFF BAYS = 6300 SF
- ADMIN = 2400 SF
- SRE AND SHOP = 9600 SF
- MEZZANINE = 3300 SF

FIRST FLOOR
18600 sf +/-
MEZZANINE
3300 sf +/-
TOTAL BUILDING
21900 sf +/-

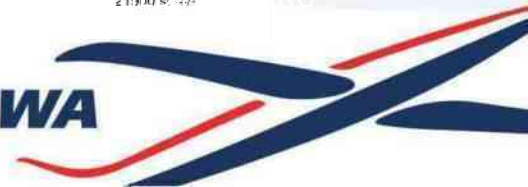
ING

- ARFF APPARATUS BAY IS AN ADEQUATE SIZE BUT IS CURRENTLY ALSO USED FOR ADDITIONAL SRE EQUIPMENT STORAGE
- SRE FACILITY HAS HAD ADDITIONS TO IT PREVIOUSLY
- STORAGE FOR SRE EQUIPMENT NEEDS TO BE AT OTHER FACILITIES ON THE AIRPORT

- WATCHROOM / SNOW DESK
- EMERGENCY OPERATION CENTER (EOC)
- ARFF VEHICLE AND AGENT STORAGE
- MAINTENANCE SPACES
- OPERATIONS EQUIPMENT
- STORAGE FOR VEHICLES AND EQUIPMENT
- STORAGE FOR PARTS, SAND, DE-ICE

• 39,000 SF ESTIMATED - COMBINED FACILITY

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Requirements ARFF/SRE

- **ARFF – (2) 1500 gal Oshkosh Strikers**
- **3 min Response to Midpoint of Furthest Runway**
- **Emergency Operation Center**
- **Resilience**

- **SRE – Eligible Equipment Storage Area = 15000 SF**
- **Onsite Equipment Maintenance Area = 1500 SF**
- **Sand and Chemical Storage**
- **Parts and Equipment Storage**
- **Overhead Hoist**
- **Offices and Support Spaces**

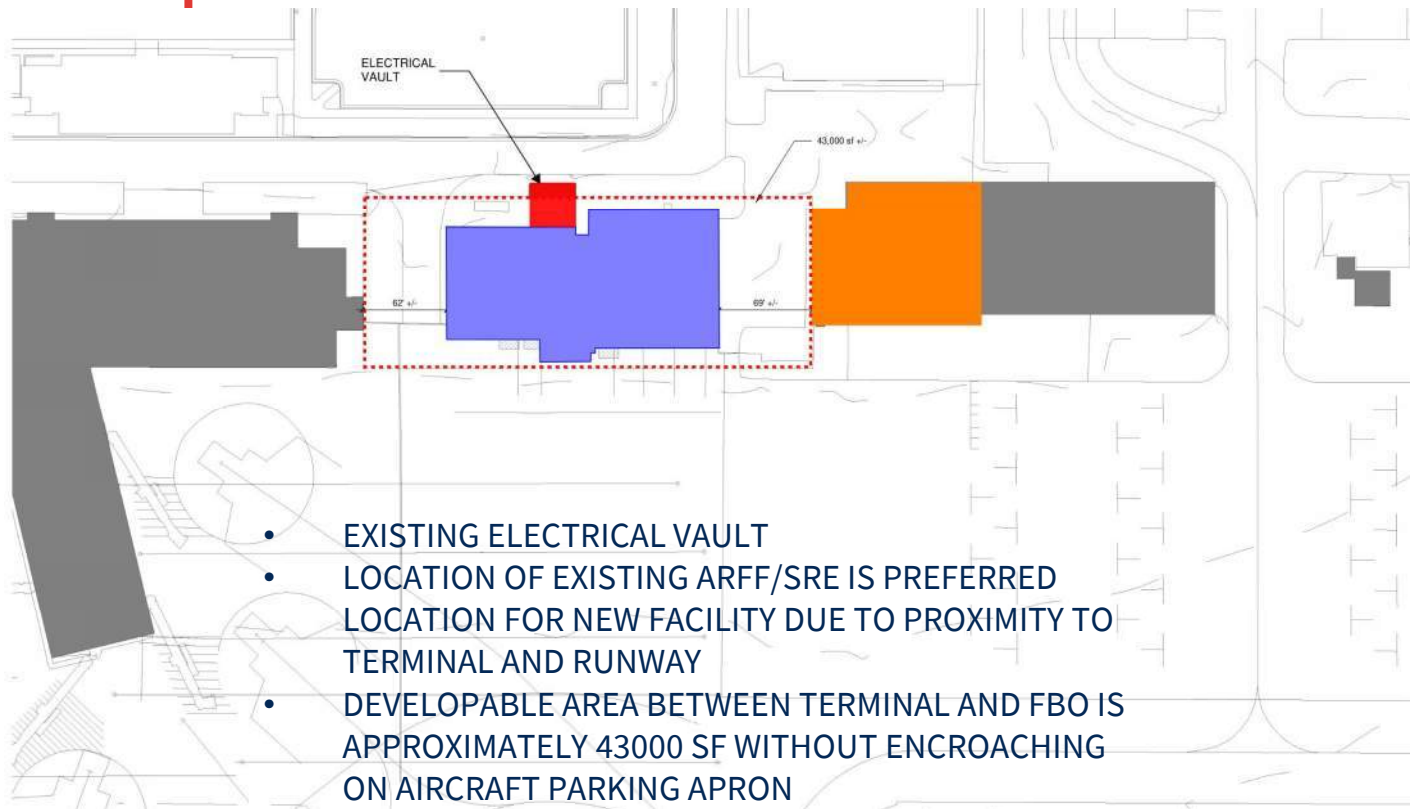
Concept Development ARFF/SRE

- **ARFF and SRE to remain a combined facility**
- **Shared personnel between functions**
- **Requirement for ARFF to meet response times limits relocating elsewhere on the airport**
- **Desire to have drive through bays for SRE equipment**
- **ARFF bays to house 2 vehicles and response trailer**
- **2 Story option available – if can tie into terminal with existing elevator would save costs**
- **Landside delivery point**
- **Low maintenance construction**

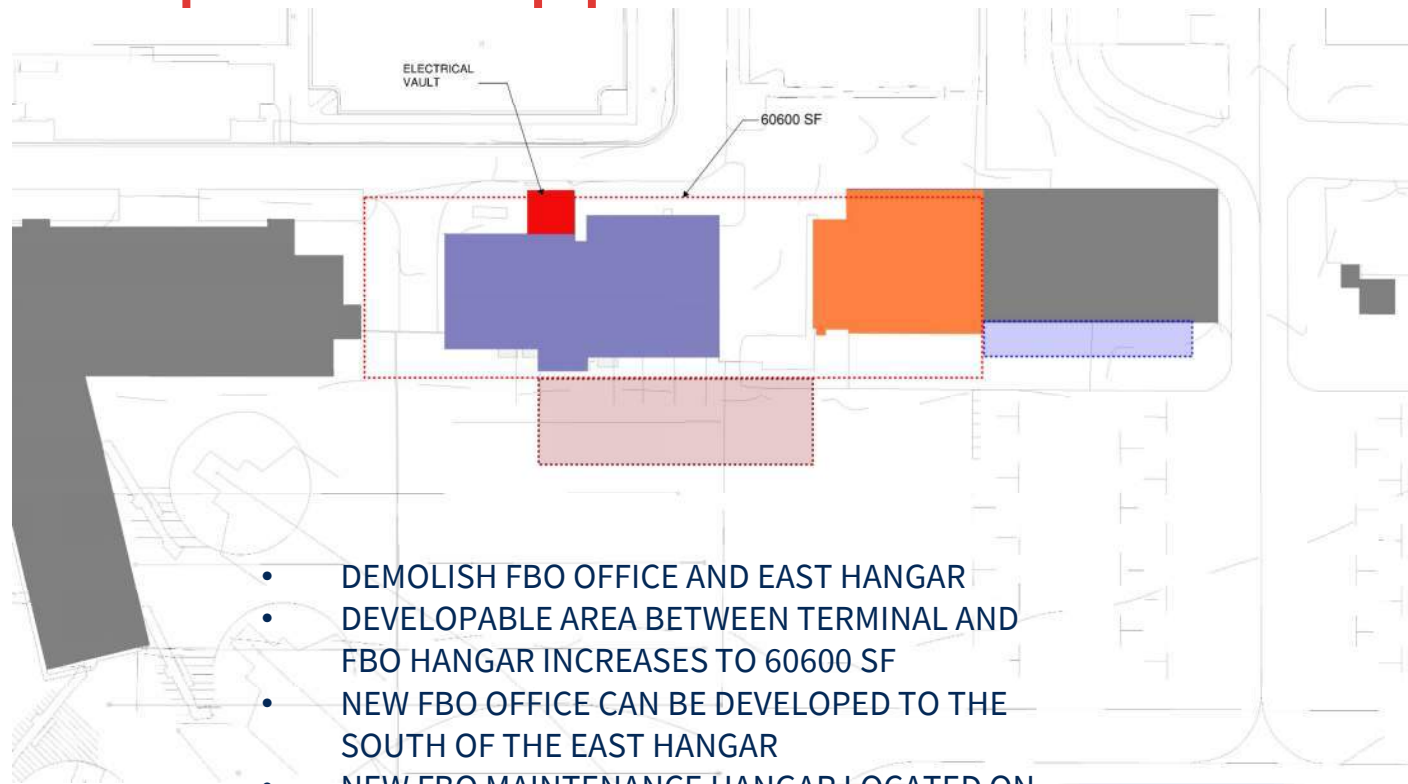
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Development Constraints



Development Opportunities



- DEMOLISH FBO OFFICE AND EAST HANGAR
- DEVELOPABLE AREA BETWEEN TERMINAL AND FBO HANGAR INCREASES TO 60600 SF
- NEW FBO OFFICE CAN BE DEVELOPED TO THE SOUTH OF THE EAST HANGAR
- NEW FBO MAINTENANCE HANGAR LOCATED ON ANOTHER SITE ON THE AIRPORT
- BUILD OUT ONTO THE EXISTING APRON

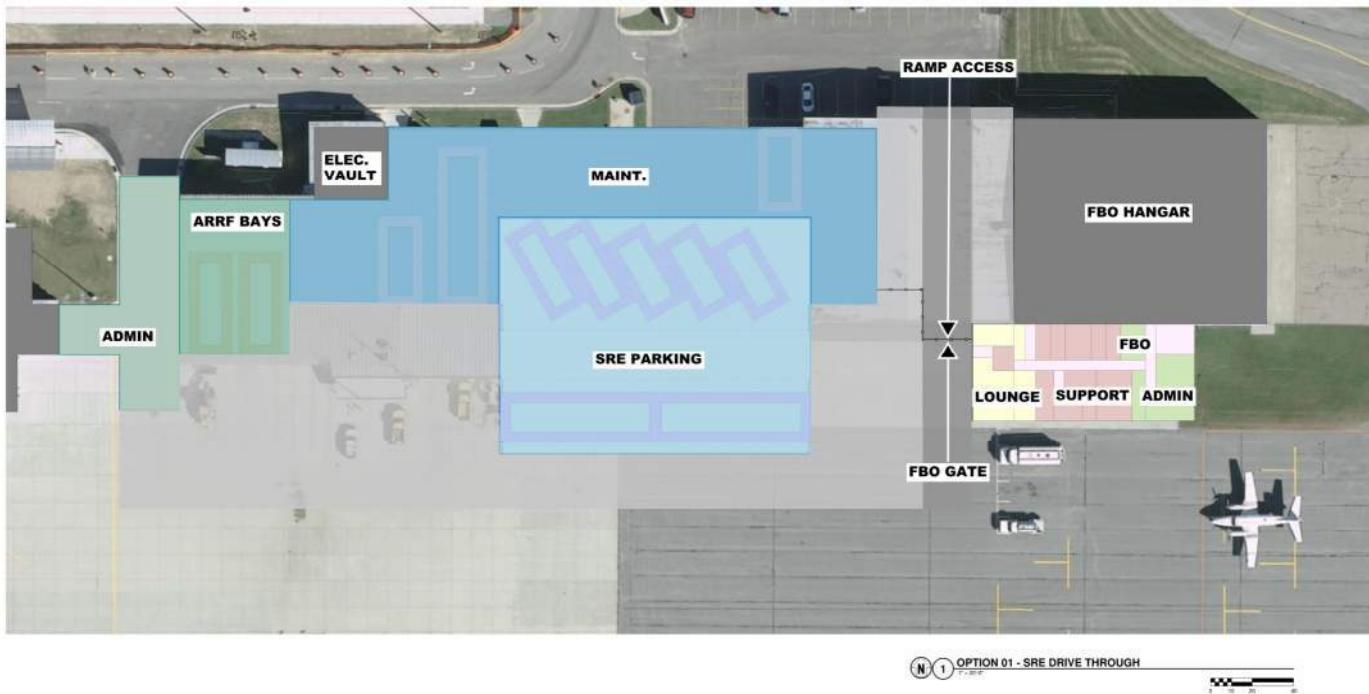
Program Elements

- **New FBO Arrivals and Departures Lounge and FBO Offices**
- **Landside to Airside Access Point for FBO**
- **Combined ARFF and SRE Facility**



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Concept Development



- FBO APPROX. 4900SF
- AIRSIDE PRESENCE, HIGHER PROFILE
- MAINTAINS ACCESS TO MAINTENANCE HANGAR
- VEHICLE ACCESS POINT
- SRE DRIVE THROUGH OPTION
- TWO STORY OFFICE AND EOC SPACE
- ACCESS TO TERMINAL
- REQUIRES DEMO OF WEST FBO HANGAR
- EXTENDS ONTO APRON

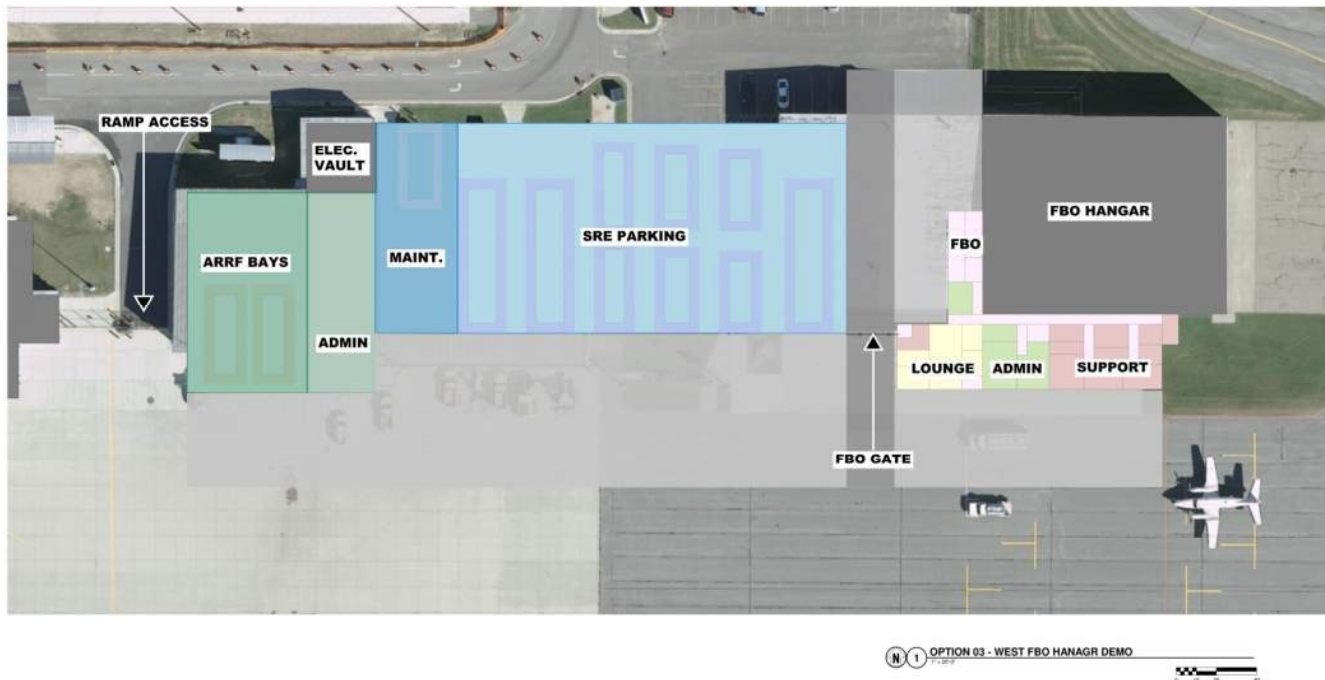
Concept Development



- FBO APPROX. 4900SF
- MAINTAINS FBO HANGARS
- MAINTAINS ACCESS TO MAINTENANCE HANGAR
- VEHICLE ACCESS POINT
- SRE LARGER BACK-IN STORAGE
- TWO STORY OFFICE AND EOC SPACE
- ACCESS TO TERMINAL
- LIMITED SHOP AND STORAGE SPACES
- EXTENDS ONTO APRON

OPTION 02- FBO HANGARS REMAIN

Concept Development



- FBO APPROX. 5000SF
- AIRSIDE PRESENCE, HIGHER PROFILE
- MAINTAINS ACCESS TO MAINTENANCE HANGAR
- VEHICLE ACCESS POINT
- WEST HANGAR DEMO
- MAINTAINS EXISTING RAMP ACCESS TO THE WEST
- LIMITS ENCROACHMENT ONTO APRON
- SMALLER OFFICE AND EOC SPACE
- LIMITED SHOP AND STORAGE SPACES
- 2 STORY OPTIONS LIMITED

Stakeholder Feedback

- **Understand the needs of businesses we are trying to attract**
- **Consider the needs of different types of GA users**
- **Improve aesthetics of FBO terminal**
- **Provide adequate semi-private space, separation of spaces, informal social space**
- **Provide easy access to refreshments, rental cars**
- **Keep space open in front of FBO terminal for arriving airplanes**
- **Improve landside visibility of / wayfinding to the FBO terminal**
- **Consider needs of small freight operations**
- **Consider needs of passengers with disabilities**
- **Consider options to relocate FBO terminal**

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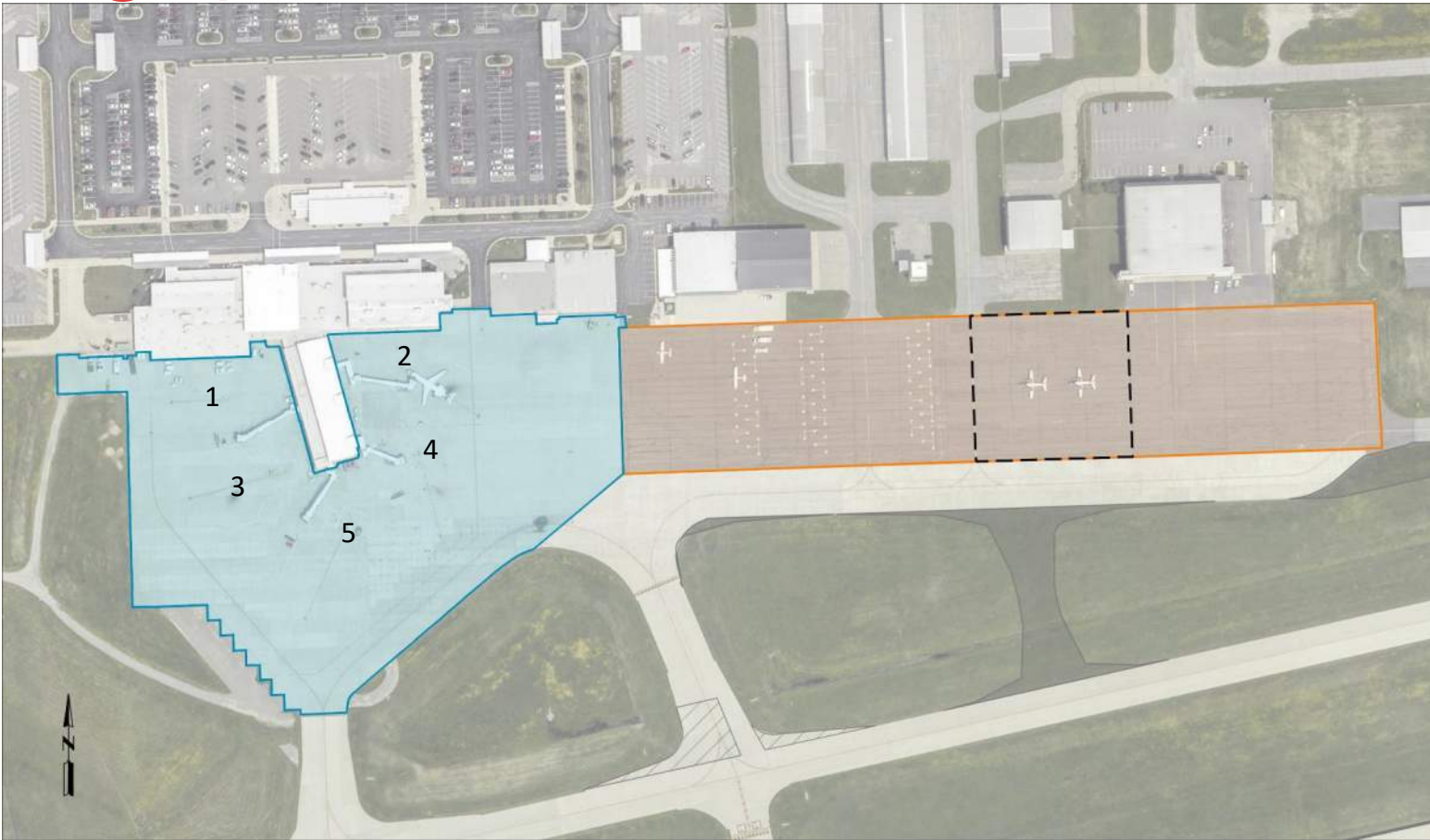
Air Carrier & GA Apron

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Existing Apron Overview



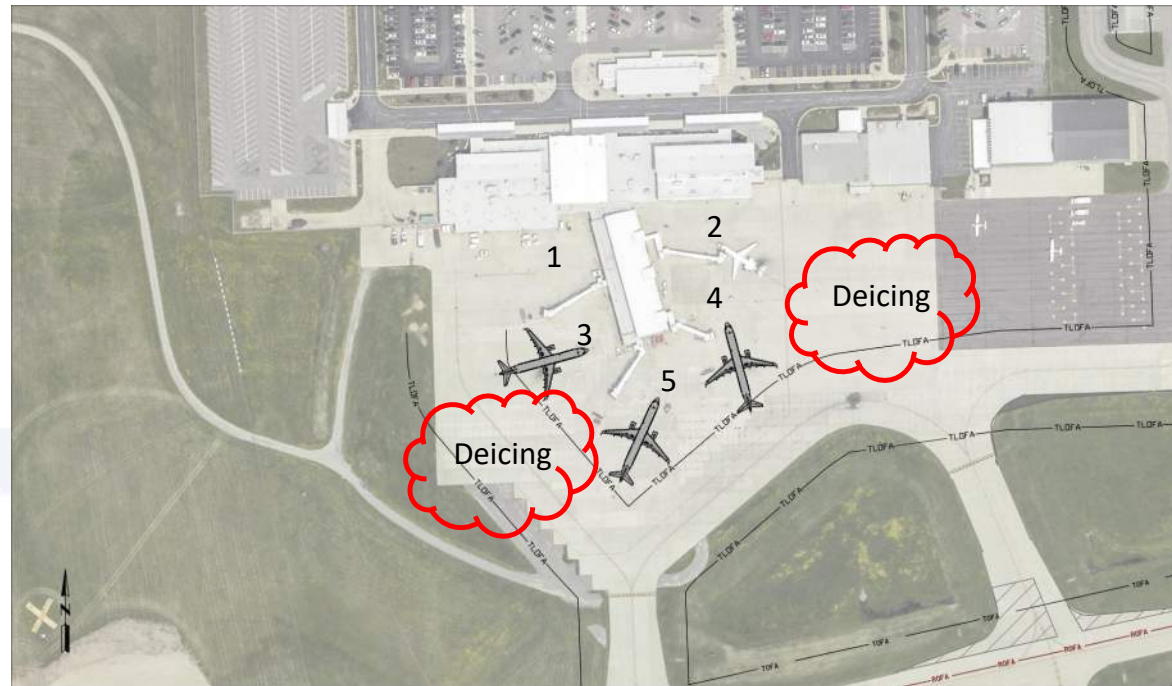
Air Carrier Apron Existing Issues/Needs

Issues:

- Some aircraft tails penetrate taxilane Object Free Area
- Deicing activity interrupts gate pushback activity
- Ground Service Equipment scattered around apron

Needs:

- Additional apron depth
- Designated deicing location



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Stakeholder Feedback

- **Separate deicing from GA corporate jet activity**
- **Consider more indoor storage for ground service equipment**
- **Consider expansion to outbound baggage make-up area in terminal**



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Air Carrier Apron Development Constraints

- New Passenger Boarding Bridges
- ARFF/SRE & FBO Concepts
- Airspace Surfaces
- Object Free Areas



Air Carrier Apron Concept Development



GA Apron Existing Issues

- **Apron is entirely asphalt**
 - Larger aircraft cannot park on asphalt and must park on concrete in front of ARFF/SRE building which interrupts activity
- **Apron depth = 210'**
 - Cannot park more than two ADG II aircraft side by side
- **Parked aircraft often need to be moved to get other aircraft in/out of hangars**
- **Fuel trucks park over tie down positions**
- **Taxilane Object Free Areas**
- **Cargo**
- **Poor pavement**



Stakeholder Feedback

- **Separate fuel truck parking from aircraft parking**
- **Pave grass areas near aircraft parking to reduce airborne dirt/dust**
- **Concrete is often preferable to and more useful than asphalt**
- **Park corporate jets in front of FBO terminal**



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GA Apron Existing Issues



GA Apron Existing Issues

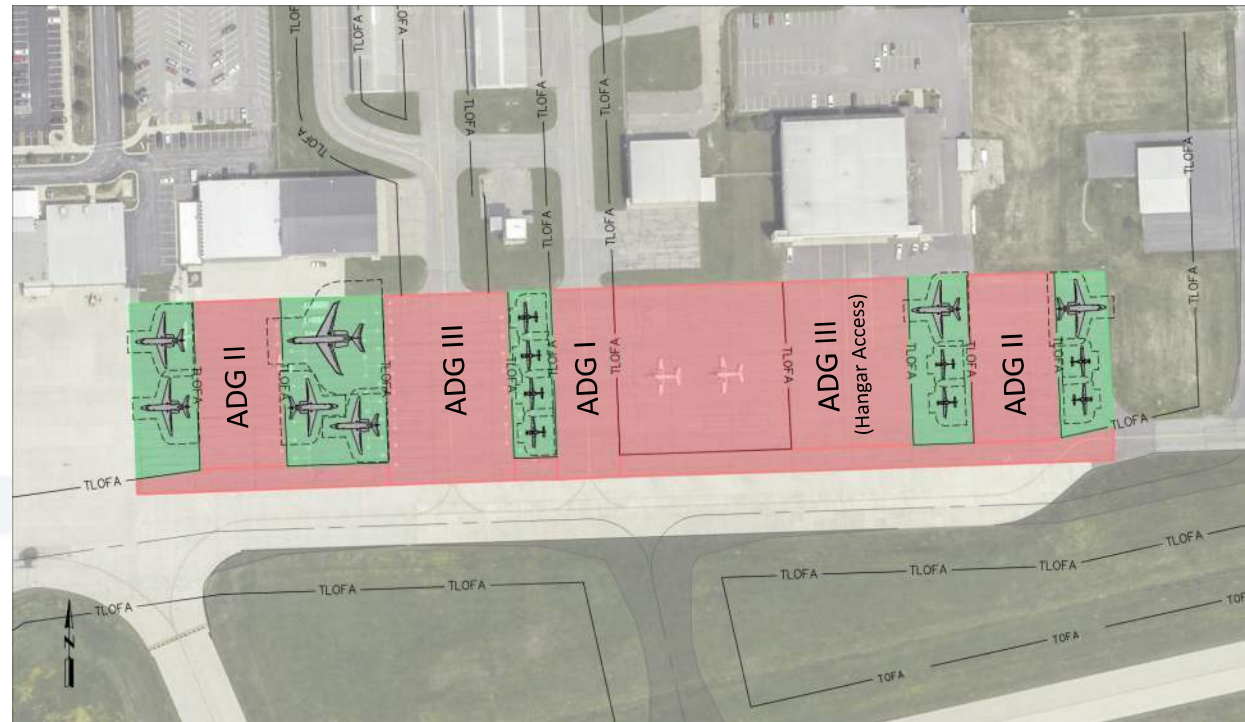


GA Apron Existing Issues



GA Apron Needs

- **Considering Three Scenarios**
 - ADPM Itinerant Operations
 - AirVenture
 - Itinerant ADG III activity (Two ADG IIIs)
- **For planning purposes areas in red are not available for aircraft parking**
- **Total available space approximately 83,800 SF**



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Stakeholder Feedback

- **Consider Endeavor maintenance hardstand on GA ramp**
- **Separate deicing, SRE operations, and corporate jet activity**



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GA Apron Needs

- Area required per aircraft determined using FAA Minimum Parking Position Sizing table
 - (Source: AC 150/5300-13B Table E-1)

ADPM Itinerant Operations

| Aircraft Size | Baseline | 2027 | 2032 | 2037 | 2042 |
|-------------------------------------|----------|---------|---------|---------|---------|
| ADG I | | | | | |
| Forecasted Aircraft | 8 | 9 | 10 | 11 | 11 |
| Aircraft Growth | - | +1 | +2 | +3 | +3 |
| ADG II | | | | | |
| Forecasted Aircraft | 6 | 7 | 8 | 8 | 9 |
| Aircraft Growth | - | +1 | +2 | +2 | +3 |
| ADG III | | | | | |
| Forecasted Aircraft | 1 | 1 | 1 | 1 | 1 |
| Aircraft Growth | - | +0 | +0 | +0 | +0 |
| TOTAL | | | | | |
| Forecasted Aircraft | 15 | 17 | 19 | 20 | 21 |
| Aircraft Growth | - | +2 | +4 | +5 | +6 |
| Total Apron Demand (sq. ft.) | 93,280 | 104,685 | 116,090 | 119,040 | 127,495 |
| Additional Required Apron (sq. ft.) | +9,480 | +20,885 | +32,209 | +35,240 | +43,695 |

GA Apron Needs

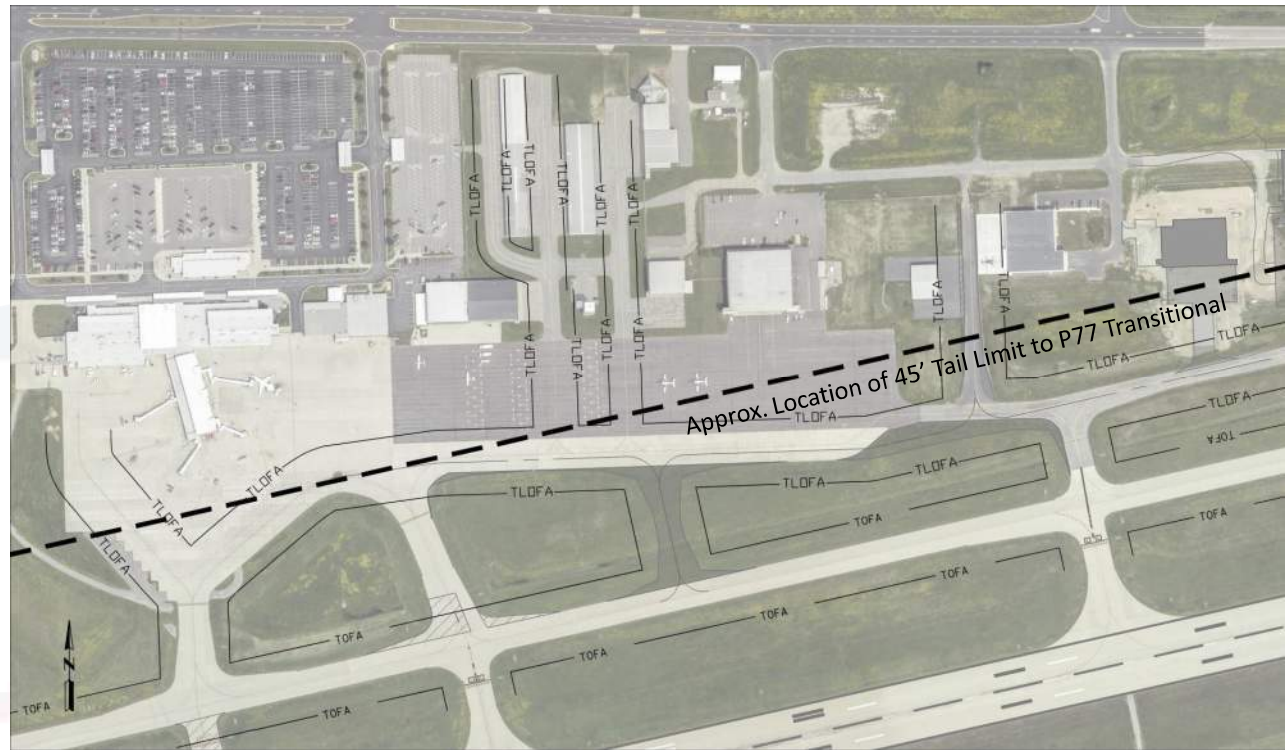
- This scenario accommodates the times that the airport sees two ADG III aircraft
- Provides flexibility with AirVenture and high peak times when the ADPM operations are not split 50/50

ADPM Itinerant Operations with ADG III

| Aircraft Size | Baseline | 2027 | 2032 | 2037 | 2042 |
|-------------------------------------|----------|---------|---------|---------|---------|
| ADG I | | | | | |
| Forecasted Aircraft | 8 | 9 | 10 | 11 | 11 |
| Aircraft Growth | - | +1 | +2 | +3 | +3 |
| ADG II | | | | | |
| Forecasted Aircraft | 6 | 7 | 8 | 8 | 9 |
| Aircraft Growth | - | +1 | +2 | +2 | +3 |
| ADG III | | | | | |
| Forecasted Aircraft | 2 | 2 | 2 | 2 | 2 |
| Aircraft Growth | - | +0 | +0 | +0 | +0 |
| TOTAL | | | | | |
| Forecasted Aircraft | 16 | 18 | 20 | 21 | 22 |
| Aircraft Growth | - | +2 | +4 | +5 | +6 |
| Total Apron Demand (sq. ft.) | 112,230 | 123,635 | 135,040 | 137,990 | 146,445 |
| Additional Required Apron (sq. ft.) | +28,430 | +39,835 | +51,240 | +54,190 | +62,645 |

GA Apron Development Constraints

- ARFF/SRE and FBO Concepts
- Airspace Surfaces (P77 Transitional)
- Object Free Areas
- Reconfiguration Limited
 - (hangars need taxilane access)



GA Apron Concept Development



Hangar Development

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Hangar Development Overview

- **T-Hangars**
- **Corporate Hangars**
- **Transient Hangars**

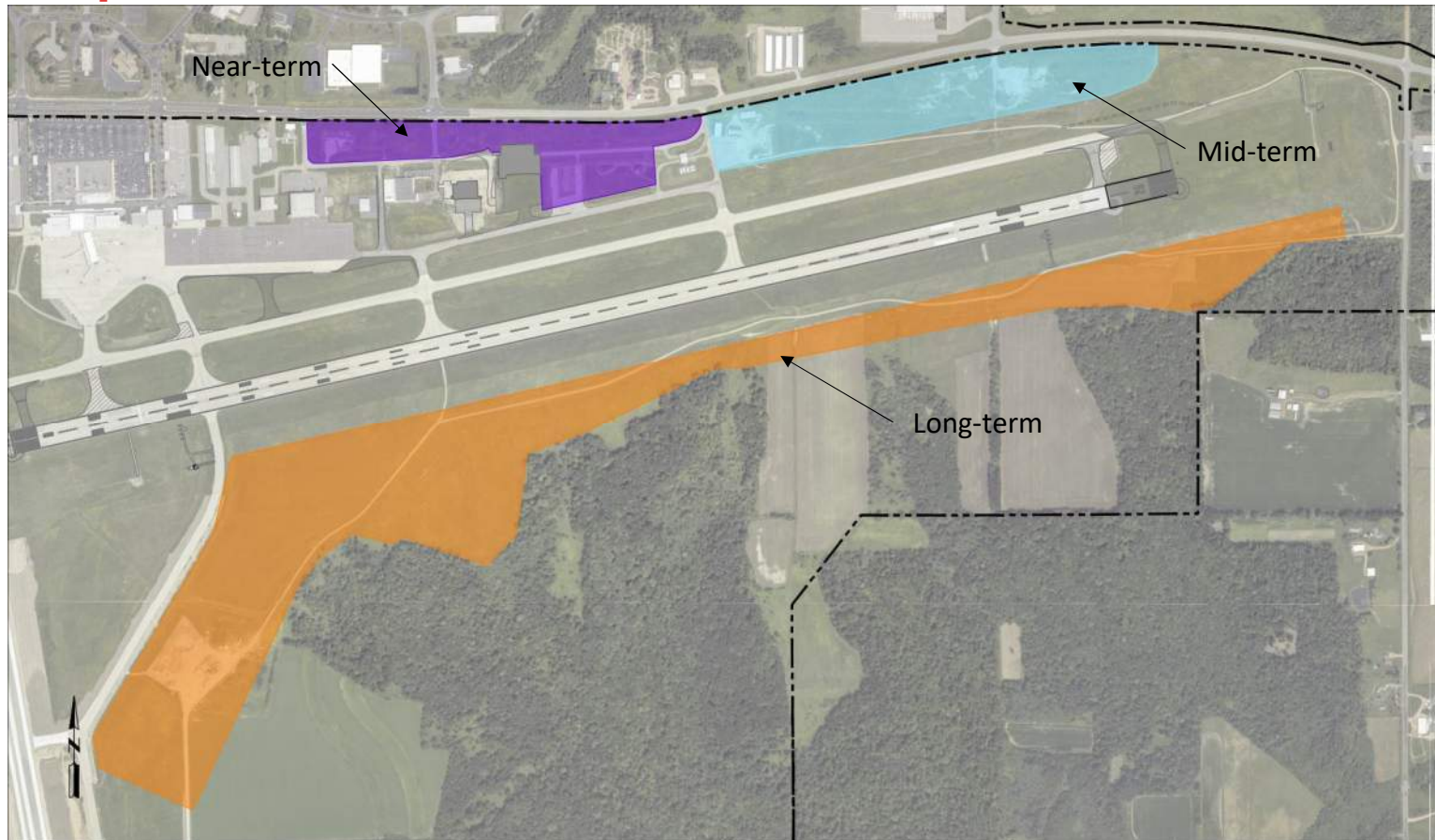


Hangar Development Needs

- **Two Scenarios:**
 - Conventional Hangars
 - Executive Hangars
- **Due to limited space, needs will be determined using executive hangars**
- **Hangar needs determined using based aircraft forecast**
- **Hangar dimension requirements determined using ACRP Report 113**

| Aircraft Type | Baseline | 2027 | 2032 | 2037 | 2042 |
|----------------------|----------|------|------|------|------|
| Single Engine | | | | | |
| Forecasted Aircraft | 17 | 19 | 21 | 23 | 26 |
| Aircraft Growth | - | +2 | +4 | +6 | +9 |
| Multi Engine | | | | | |
| Forecasted Aircraft | 3 | 3 | 4 | 4 | 5 |
| Aircraft Growth | - | +0 | +1 | +1 | +2 |
| Jet | | | | | |
| Forecasted Aircraft | 5 | 6 | 6 | 7 | 8 |
| Aircraft Growth | - | +1 | +1 | +2 | +3 |
| Helicopter | | | | | |
| Forecasted Aircraft | 1 | 1 | 1 | 1 | 2 |
| Aircraft Growth | - | +0 | +0 | +0 | +1 |

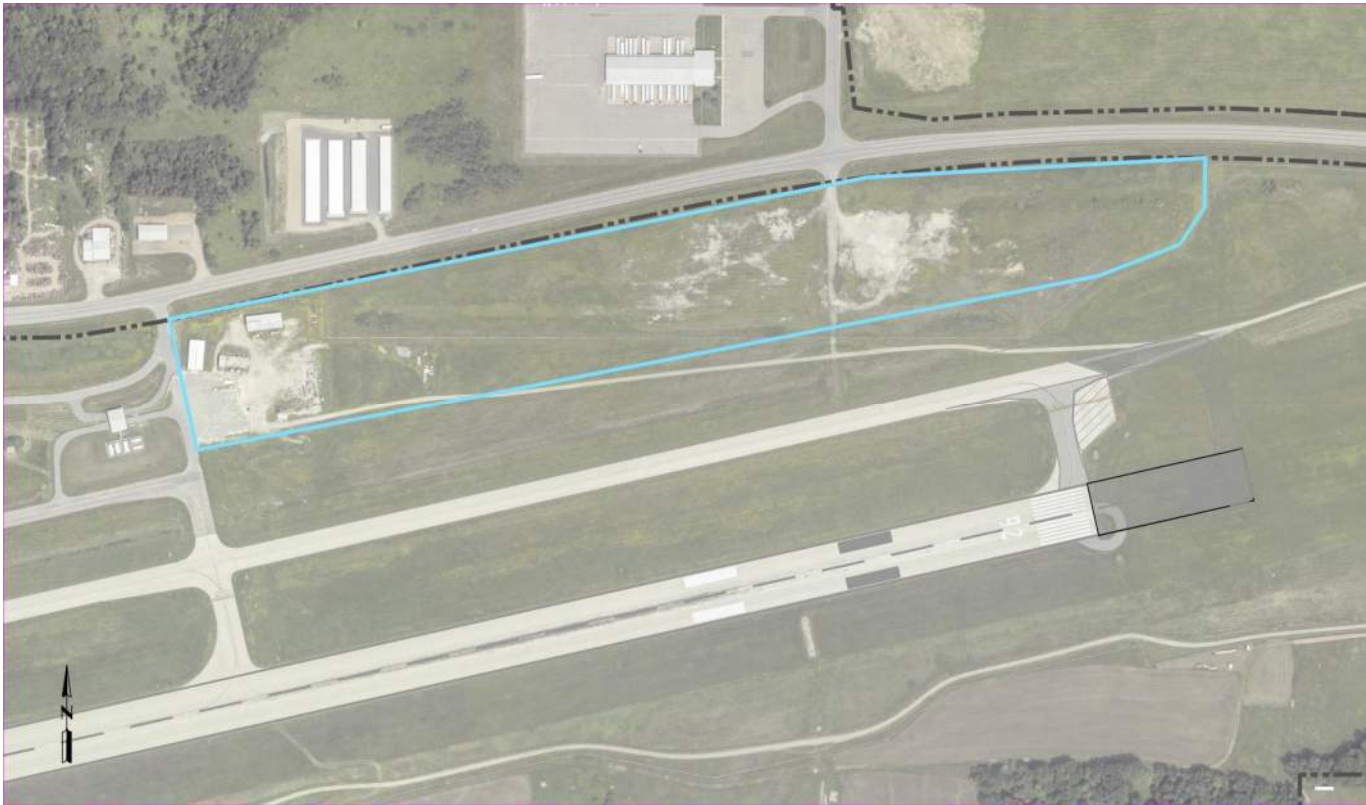
Near-Term, Mid-Term, & Long-Term Development



Near-Term Development

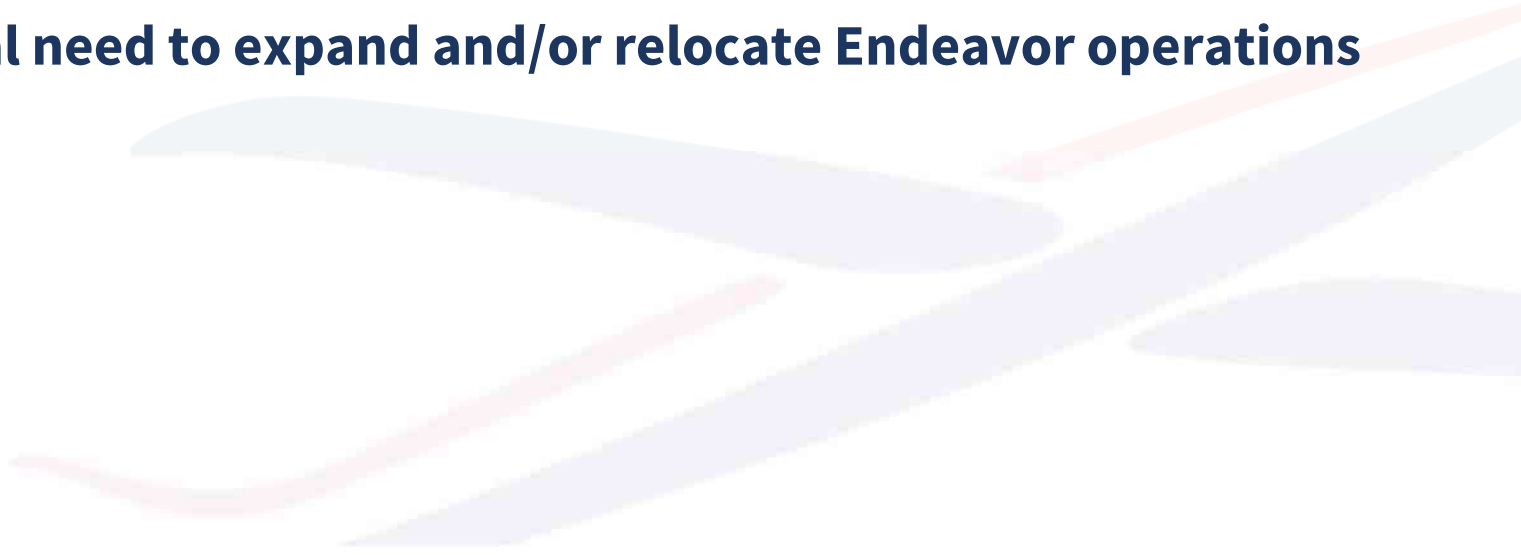


Mid-Term Development



- **Dependent on relocation of equipment storage buildings**
- **Plan will consider:**
 - MRO facility
 - Cargo apron
 - Corporate hangars
 - Executive hangars
 - Utilities/Circulation

Stakeholder Feedback

- **Provide a variety of aircraft storage options**
 - **Prefer T-hangar location near FBO**
 - **Consider outdoor parking for medevac helicopters**
 - **Current FBO hangar doors not tall enough for many aircraft**
 - **Consider potential need to expand and/or relocate Endeavor operations**
- 

Other Focus Areas

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Sustainability Planning

- **February 14: Visioning session**
- **Sustainability chapter will be developed concurrent with alternative concept development**
- **Project elements include:**
 - Vision statement
 - Focus areas
 - Screening criteria
 - Solar photovoltaic assessment
 - Electric vehicle planning
- **FAA 2050 Net Zero Climate Challenge**



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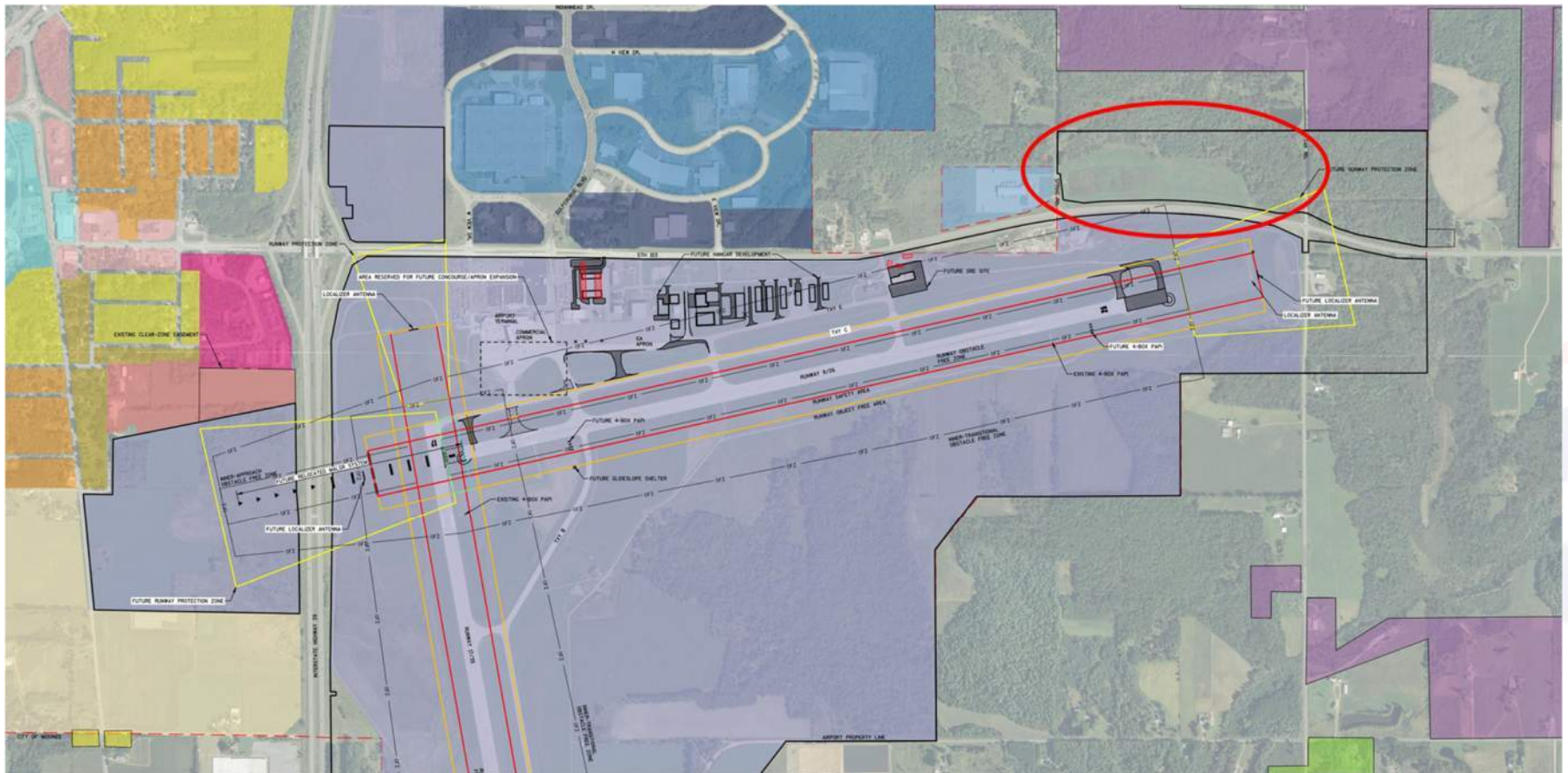
Parking & Access

- **Access points**
- **Circulation**
- **Passenger convenience**



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Non-Aeronautical Use



Conclusion & Next Steps

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Upcoming Milestones

■ End of February

- Incorporate stakeholder feedback into initial project deliverables
- Submit revised forecasts and draft facility requirements for FAA review

■ March

- Identify/refine development concepts
- Development sustainability vision, goals, initiatives

■ Early April

- FAA in-person meetings
- Stakeholder group meetings #2
- Public meeting

Questions?



Mead
& Hunt

Thank You!