

Aurora State Airport Master Plan Project



Planning Advisory Committee Meeting #5
Online Meeting
April 30, 2024

Agenda

Time	Topic
5:00-5:15	Introductions
5:15-6:00	Review Draft Chapter 4: Draft Chapter Facility Requirements
6:00-6:35	PAC Comments
6:35-6:55	Public Comments
6:55-7:00	Next Steps Public comments collected through the website https://publicproject.net/AuroraAirport

Introductions

Oregon Department of Aviation (ODAV)

Kenji Sugahara

Director

Tony Beach

State Airports Manager

Alex Thomas

Planning & Project Manager

Brandon Pike

Aviation Planner

Project Team

Agency Oversight & Funding



Airport Owner (Sponsor)



Planning & Engineering



Public Involvement



Cultural Resources



Archaeological
Investigations
Northwest, Inc.

Environmental Review



AGIS Survey



Project Website Overview

Aurora State Airport Master Plan

[Resources & Documents](#) [Public Meetings](#) [Contact & Comment](#)

AIRPORT MASTER PLAN

The Oregon Department of Aviation (ODAV) in cooperation with the Federal Aviation Administration (FAA) is preparing an Airport Master Plan for the Aurora State Airport to address the airport's needs for the next twenty years.

As required by the FAA, the Airport Master Plan will provide specific guidance in making the improvements necessary to maintain a safe and efficient airport that is economically, environmentally, and socially sustainable. The Airport Master Plan will also:

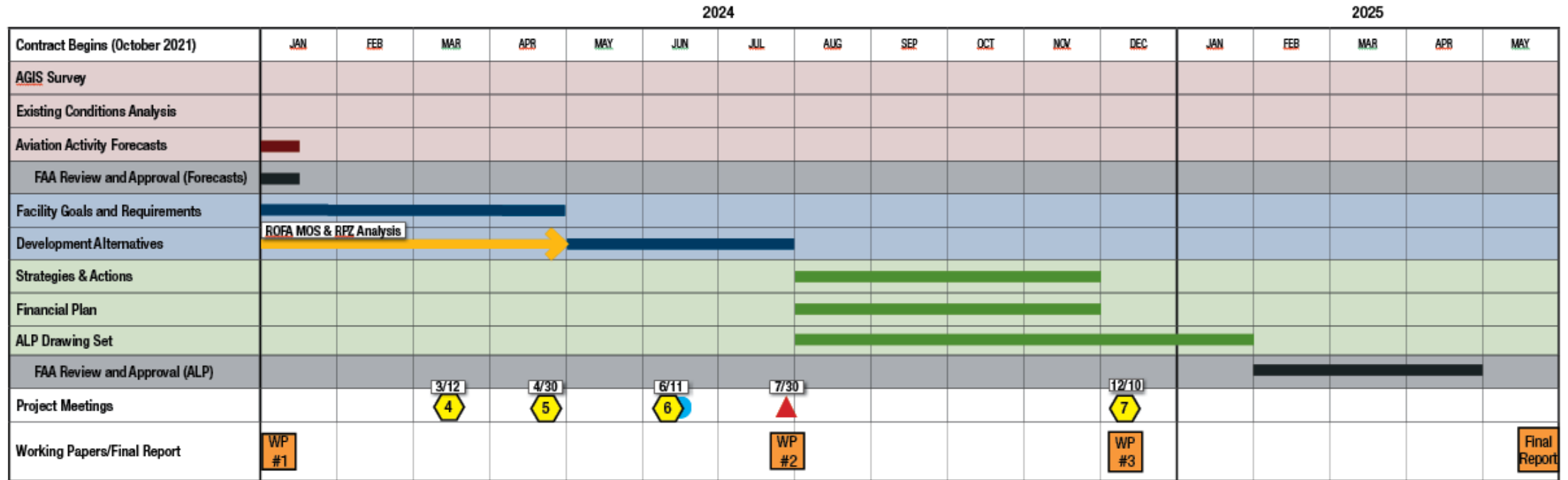
- Define the current, short-term and long-term needs of the Airport through a comprehensive evaluation of facilities, conditions and FAA airport planning and design standards.
- Look at what is happening around the airport that could affect the future plans, development and operation of the airport such as land use, transportation, environmental, economic development, etc.



<https://publicproject.net/AuroraAirport>

Project Schedule – Where are we?

Aurora State Airport - Airport Master Plan Project Schedule (all future dates tentative)



█ Develop Understanding
 █ Explore Solutions
 █ Implementation
 █ FAA Review and Approval

⬡ PAC Meetings
 ● Public Open House
 ▲ PAC Working Session Meeting

- ⬡ 4 Forecast Approval Overview
- ⬡ 5 Facility Goals and Requirements
- ⬡ 6 Review of Comments and Responses from Facility Requirements & Preliminary Alternatives
- ▲ Review of Comments and Responses from Preliminary Alternatives & Preferred Alternative
- ⬡ 7 CIP, ALP, and Draft Final for FAA Review

Review Draft Chapter 4:

Facility Goals & Requirements

Key Takeaways – Facility Requirements Evaluation

- Not an Alternatives Analysis
- A Review of Applicable FAA Standards
 - Current and Future (Aircraft Category: C-II)
 - Based on:
 - FAA-approved Forecast
 - Design Aircraft
 - FAA-defined Design Standards
- Non-standard items and demand-driven facility needs are identified


Design Aircraft

The existing and future design aircraft corresponds to Aircraft Approach Category C and Airplane Design Group II.

This segment of activity represents the most demanding type of high-performance jet aircraft regularly operating at the Airport.

Aircraft Approach Category	Aircraft Approach Speed knots	Airplane Design Group	Aircraft Wingspan
A	less than or equal to 91	I	less than or equal to 49'
B	92 to 121	II	50' to 79'
C	122 to 141	III	80' to 118'
D	142 to 166	IV	119' to 171'

A-I (small)
12,500 lbs. or less




Beech Baron 55
Beech Bonanza
Cessna 182
Piper Archer

B-I (small)
12,500 lbs. or less



Beech Baron 58
Beech King Air C90
Cessna 402
Cessna 421

A-II, B-II (small)
12,500 lbs. or less



Super King Air 200
Pilatus PC-12
DCH Twin Otter
Cessna Caravan

B-II
Greater than 12,500 lbs.




Super King Air 300, 350
Beech 1900
Cessna Citation
Falcon 20, 50

A-III, B-III
Greater than 12,500 lbs.



DHC Dash 7, Dash 8
Q-200, Q-300
DC-3
Convair 580

C-I, D-I



Lear 25, 35, 55, 60
Israeli Westwind
HS 125-700

C-II, D-II



Gulfstream II, III, IV
Canadair 600
Canadair Regional Jet
Lockheed JetStar

C-III, D-III



Boeing Business Jet
Gulfstream 650
B 737-300 Series
MD-80, DC-9

C-IV, D-IV



B - 757
B - 767
DC - 8-70
DC - 10

Facility Requirements Evaluation Process

1. Define Applicable FAA Standards (current and future)
2. Evaluate Facility Conformance with FAA Standards
3. Define Potential Facility Improvements (by type or category)

The defined facility requirements are the inputs used in the next step of the master plan to evaluate future facility improvement options (Airport Development Alternatives)

Facility Requirements Evaluation

- Landside Facilities
 - Aircraft Parking Aprons
 - Hangars
 - Taxilanes
 - Other, Support Facilities

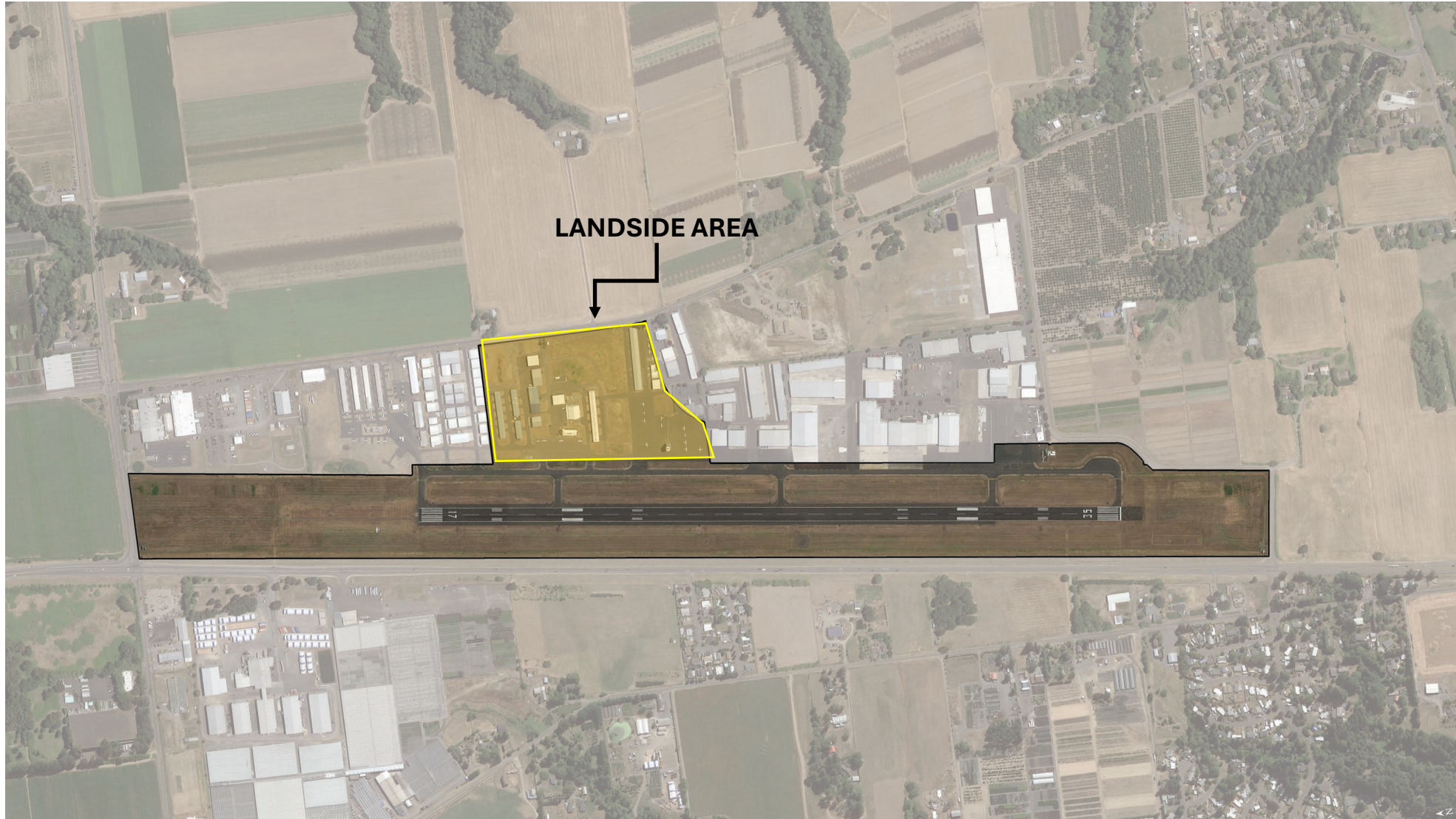
- Airside Facilities
 - Runway
 - Taxiways
 - Airfield Lighting, Navigational Aids, Signage

Aurora State Airport (ODAV Property)

*Aurora State Airport Master Plan =
Facility Plan for ODAV-owned property*



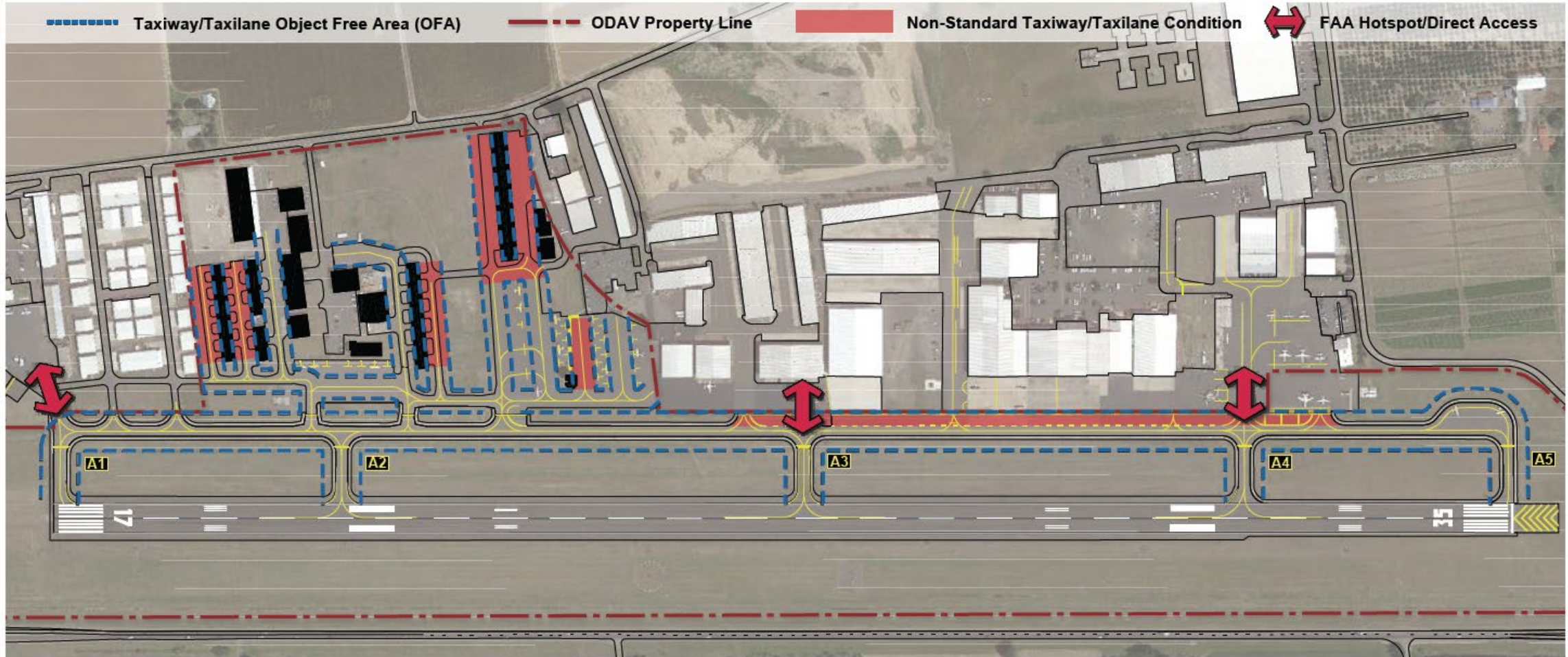
Landside Facility Requirements



Landside - Facility Requirements

- Aircraft Storage
 - Aircraft Parking Apron
 - Aircraft Hangars
- Aircraft Access
 - Taxilanes connecting landside facilities to parallel taxiway & runway
- Other, Support
 - Vehicle parking, access, utilities, fencing/gates

Landside - Facility Requirements



Source: Century West Engineering

Landside - Facility Requirements

- Transient Aircraft Apron Requirements
 - Projected demand based on a percentage of transient aircraft operations
 - 9 additional parking positions by 2041 (turboprop, jet, helicopter)
 - Net decrease in demand for single-engine and multi-engine piston parking
 - **72,300 square feet of additional apron** estimated based on aircraft types:
 - 5-year demand: +18,750 square feet
 - 10-year demand: +18,750 square feet
 - 20-year demand: +34,800 square feet

Landside - Facility Requirements

- Aircraft Hangar Requirements

- Projected demand for additional hangar space to accommodate jets and helicopters. Demand for small aircraft hangars for single-engine and multi-engine piston aircraft projected to decline.
 - 19 additional hangar units by 2041 (turboprop, jet, helicopter)
 - Redevelopment/replacement of existing small hangars will follow market demand
- 62,750 square feet of additional (new) hangar space for larger aircraft and helicopters:
 - 5-year demand: +13,000 square feet
 - 10-year demand: +17,250 square feet
 - 20-year demand: +32,500 square feet

Landside - Facility Requirements

- Airport Support
 - Surface Roads and Gates – maintain existing roads and gates, update as needed
 - Vehicle Parking – maintain existing parking, incorporate vehicle parking into new hangar developments
 - Fencing – maintain existing fencing, replace as needed
 - Utilities - maintain existing systems, extend service to new facilities, as needed

**Clarifying
Questions?**

Airside - Facility Requirements

Airside Facilities

- Runway and Taxiway Evaluations
 - Runway Length
 - Pavement Width, Shoulder Width
 - Pavement Markings and Signage
 - Safety Areas, Object Free Areas
 - Runway-Taxiway Geometry
 - Lighting

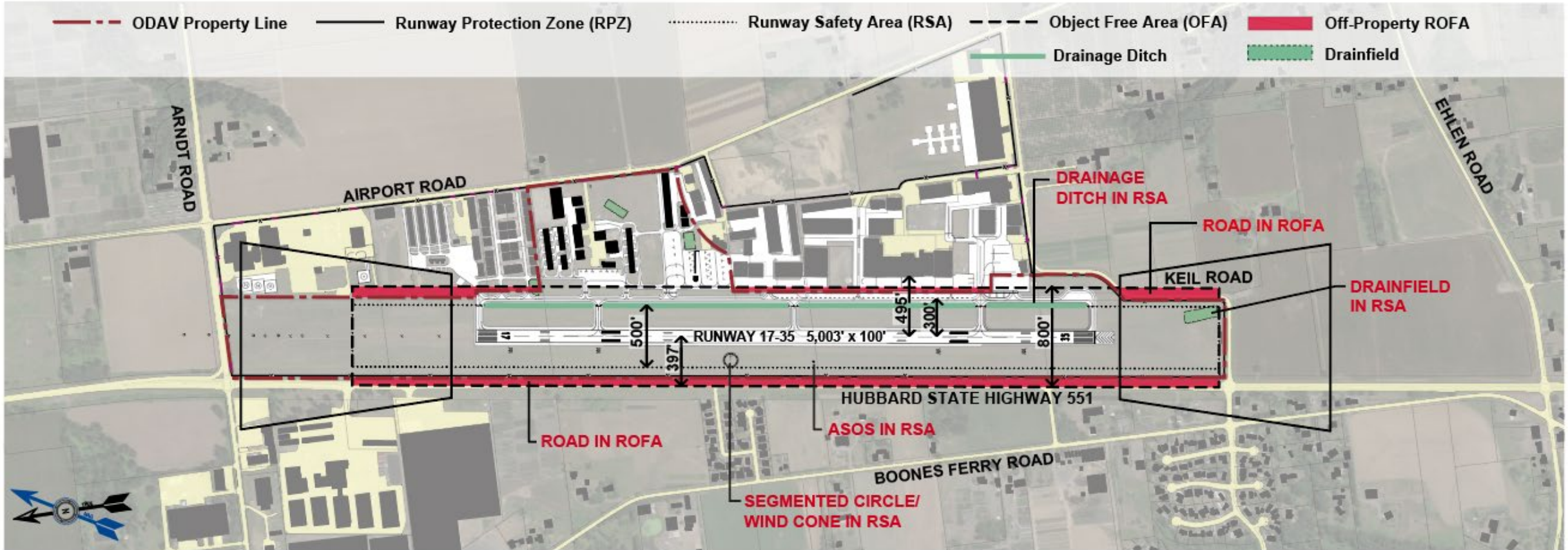
The FAA design standards for the runway-taxiway system are intended to provide the safest possible environment for aircraft movement.

Airside - Facility Requirements

Runway 17/35 Evaluation

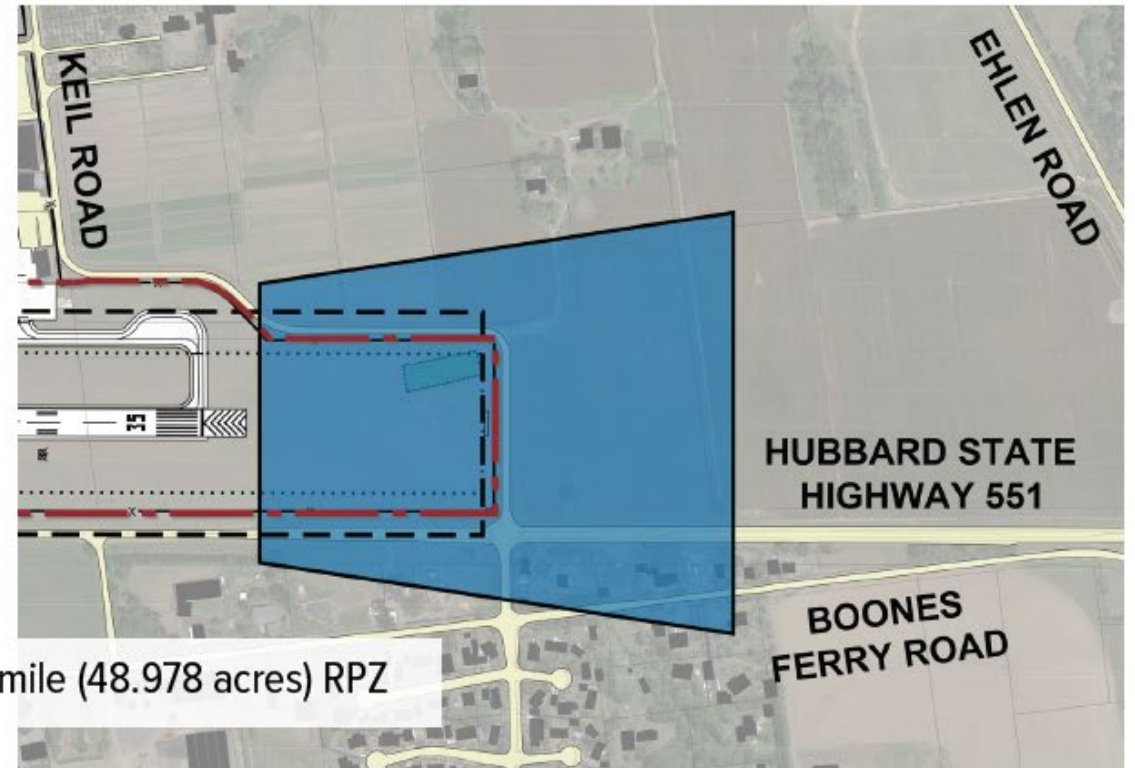
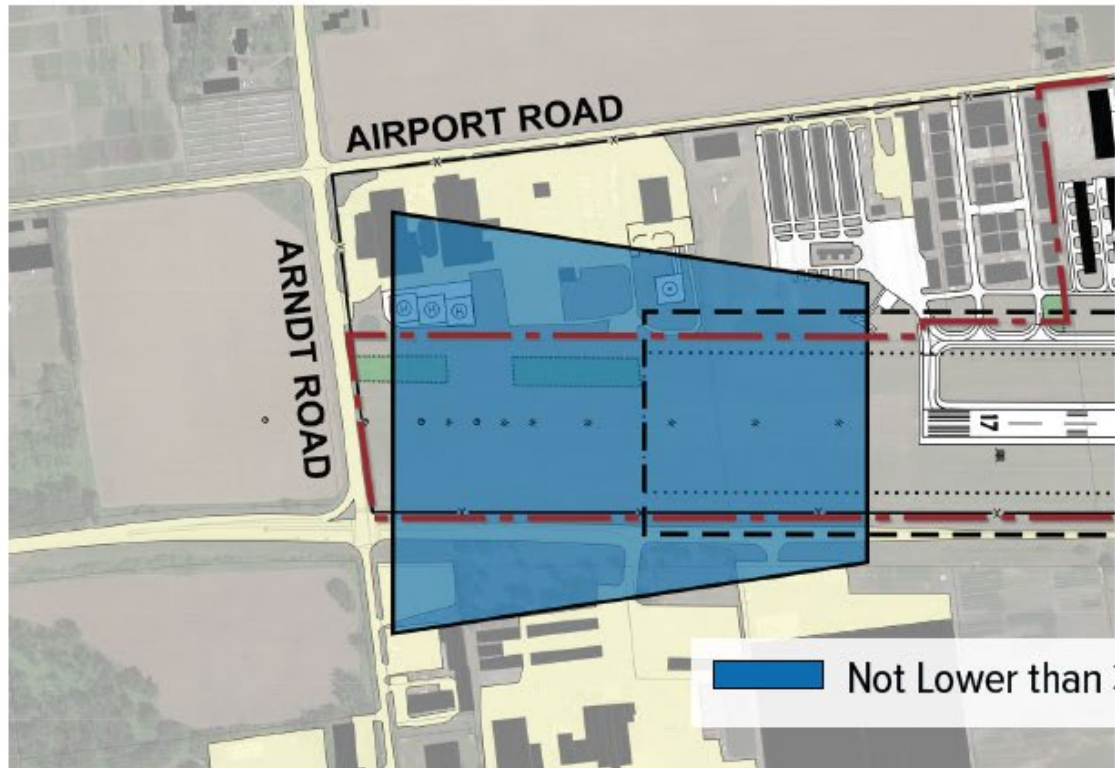
- The existing runway meets C-II standards for:
 - Pavement Width
 - Shoulder Width
 - Markings
- The existing runway pavement strength will be maintained in the near term and studied for future strengthening based on aircraft fleet mix.
- Runway length is addressed later in this section.
- Runway Protection Zones (RPZ) - compatible land use and airport control

Runway Non-Standard Conditions



Source: Century West Engineering

Runway Protection Zone (RPZ)



Airside - Facility Requirements

Airside Facilities

- Parallel Taxiway (Taxiway A)
 - Potential Facility Needs:
 - Enhanced taxiway centerline markings, surface painted direction markings, or taxiway geometry
 - North Aircraft Run Up/ AC Hold Area
 - Mitigation options for 3 direct access points (apron to runway) connections to Taxiway A (parallel taxiway)
 - ODAV coordinating with FAA on hotspot mitigation

Airside - Facility Requirements

Airside Facilities

- Additional Evaluations - Runway and Taxiway
 - Lighting
 - Visual Aids
 - Electronic Navigational Aids
 - Airfield Signage
 - Weather Observation

Runway Length Evaluation

- The purpose of this evaluation is to define the runway length required to accommodate current and future demand, consistent with the FAA-approved airport master plan forecast.
- The FAA requires a multi-step process be used to define lengths for runways that accommodate large airplanes (12,501 to 60,000 pounds).
- This definition establishes a future runway length that meets the FAA's criteria for long-term planning.
- Additional evaluations are required prior to the FAA approving funding for related improvement projects.

Runway Length Evaluation

Step 1 – Aircraft Operational Factors

Determine Fleet Mix and Aircraft Useful Load Percentages to be used

- *Percentage of Large Airplane Fleet: 100%*
- *Aircraft Useful Load: 60%*

These factors are used to select the appropriate aircraft performance curves, consistent with FAA runway length planning guidance.

The percentage of fleet selected is consistent with the design aircraft identified in the FAA-approved aviation activity forecasts.

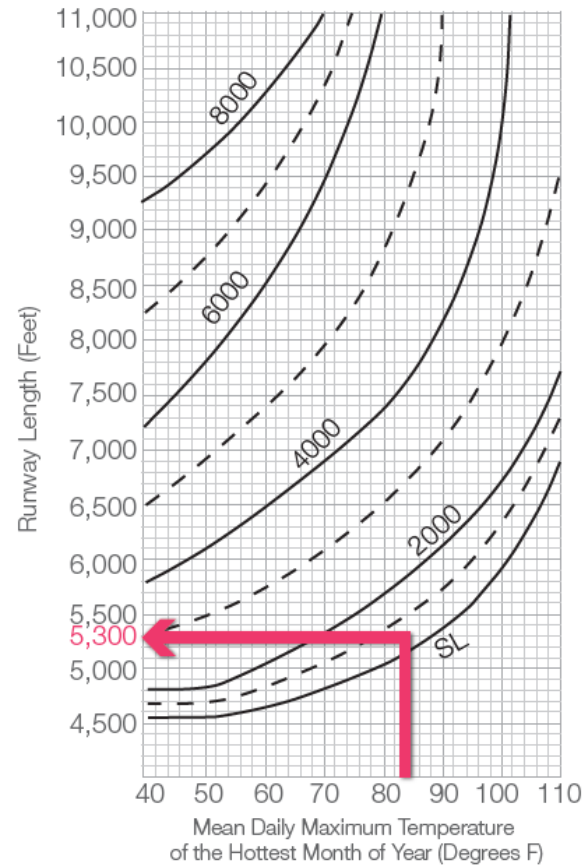
Runway Length Evaluation

Operational Factors

- **Percentage of the Fleet.** For the design aircraft type at Aurora State Airport (business jets weighing 12,501-60,000 pounds), the FAA defines two fleet groupings:
 - **75%** - jets that require less than a 5,000' runway at sea level on a standard day (59°F)
 - **100%** - jets that require at least a 5,000' runway for the same conditions

Runway Length Evaluation

100% OF FLEET AT 60% USEFUL LOAD CURVES



100 Percent of Fleet at
60 Percent Useful Load

Source: FAA Advisory Circular 150/5325-4B

Runway Length Evaluation

Step 2 – Basic Site Inputs

- **Airfield Elevation**

- Surveyed Runway Elevation 199.8' MSL (high point on runway)

- **Temperature**

- Average (Mean) High Temperature in Hottest Month 83° F (August)

Baseline (Unadjusted) Runway Length: 5,300 feet

Runway Length Evaluation

Step 3 – Adjustment #1

- **Runway Gradient**

- 3.3-foot difference between high and low points on Runway 17/35
- 10 feet of length added for each 1-foot difference in elevation
- $10 \times 3.3 = 33$ feet

Gradient Adjusted Runway Length: 5,333 feet

Runway Length Evaluation

Step 4 – Adjustment #2

- **Wet and Slippery Conditions** (commonly found on site)
 - 15% increase in runway length, up to 5,500 feet
 - 15% of 5,333 feet = 800 feet, which exceeds the FAA-defined limit of 5,500 feet, when added to current runway length (5,003 feet)
 - The FAA maximum adjusted length used to compensate for wet and slippery conditions in this analysis

Wet and Slippery Adjusted Runway Length: 5,500 feet

Runway Length Evaluation

The runway length required to accommodate current and future demand at Aurora State Airport, consistent with the FAA-approved airport master plan forecast.

The final (adjusted) runway length reflects existing runway conditions, applicable aircraft requirements, and common weather conditions.

Baseline Performance Curve + Gradient Adjustment + Wet & Slippery Adjustment

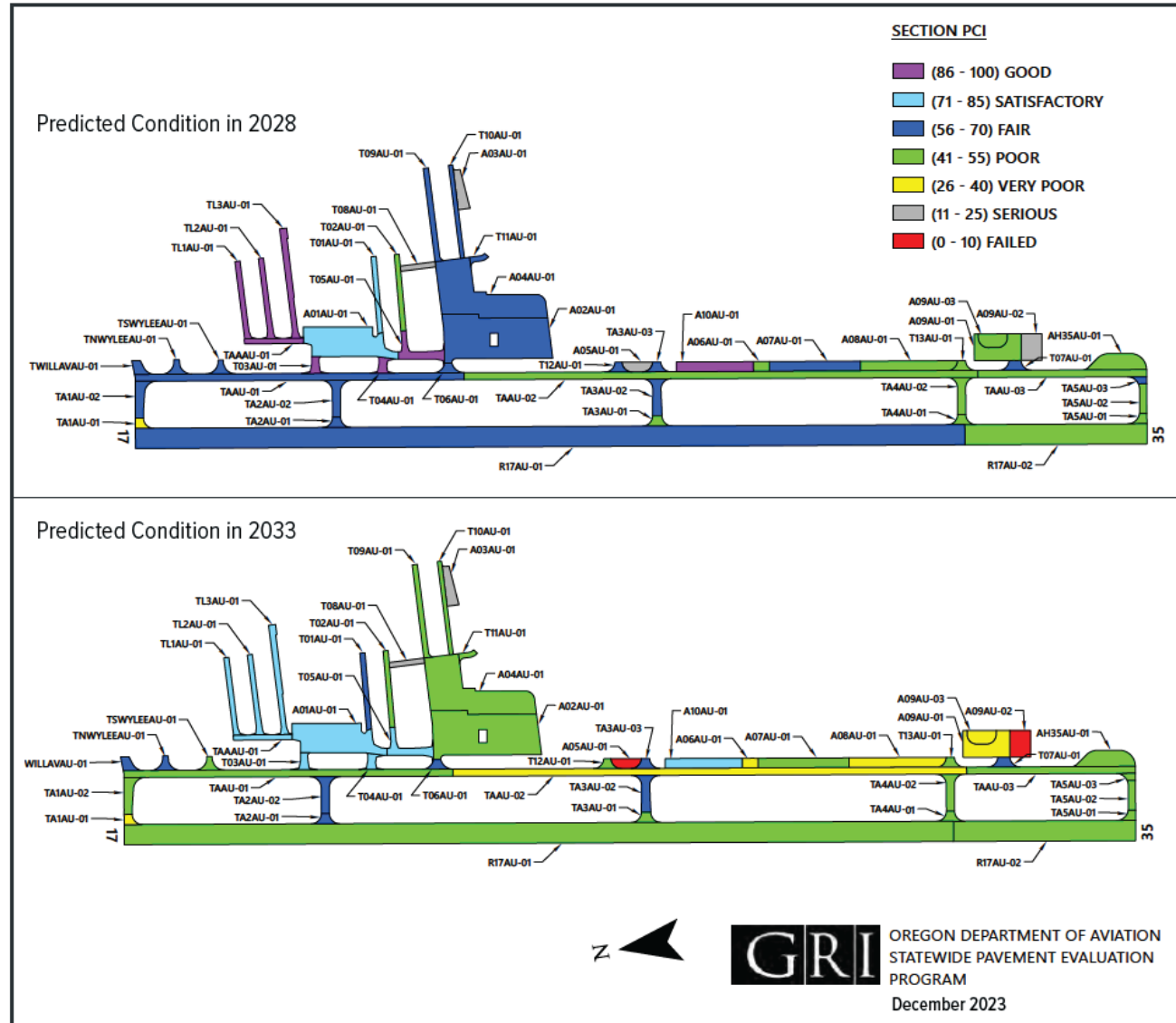
$$5,300' + 33.1' + 167' = 5,500 \text{ feet}$$

Final Adjusted Runway Length: 5,500 feet

Facility Requirements

• Airfield Pavement

- **Runway 17/35** -rehabilitation in the near term (0-5 years)
- **Taxiway A** – rehabilitation of the southern two-thirds during the 10 to 20-year period
- **Main Apron** - rehabilitation during the 10 to 20-year period
- Ongoing pavement maintenance is required to maximize the longevity of existing and future airfield pavements



**Clarifying
Questions?**

PAC Comments?

Public Comments?

Next Steps

Next Steps

- Prepare Preliminary Alternatives Concepts
- PAC Meeting 6 – June 11th, 2024 (5pm-8pm Virtual)
- Public Open House – June 13th, 2024 (In-Person, Location TBD)

Thank You

Alex Thomas – ODAV

Tony Beach – ODAV

Brandy Steffen – JLA Public Involvement

David Miller – Century West Engineering



Project Website: <https://publicproject.net/AuroraAirport>