

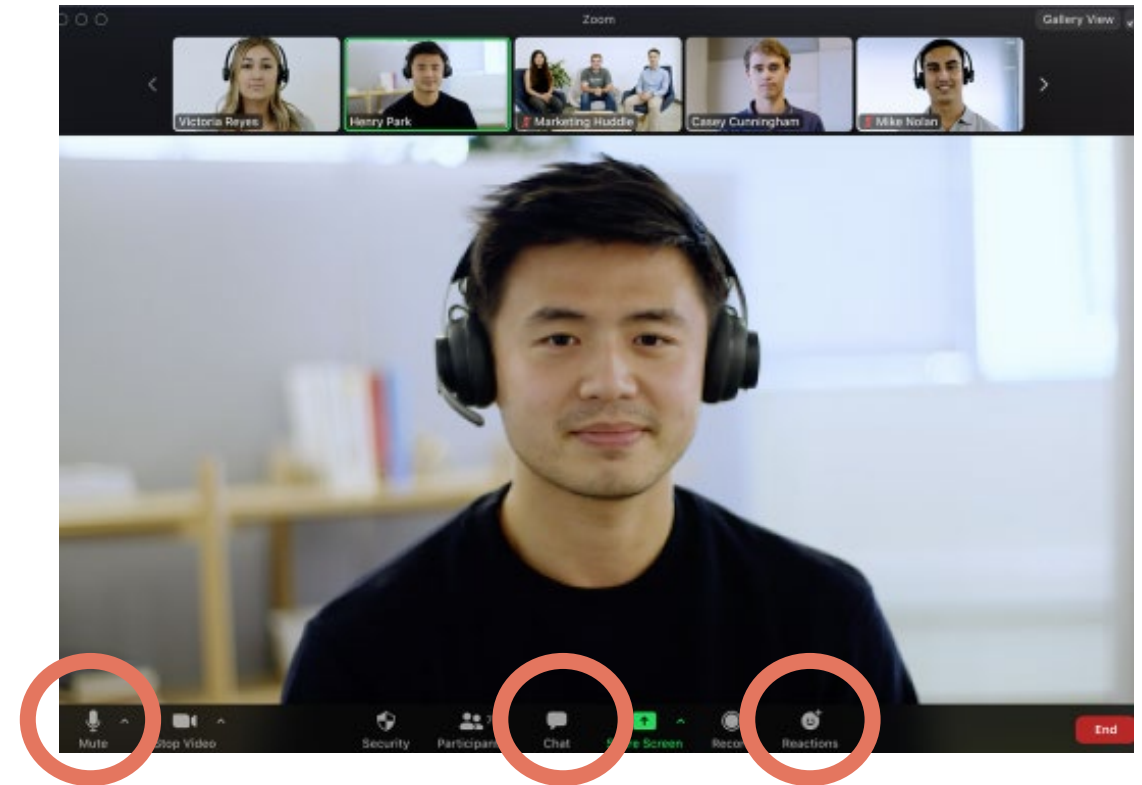
# Aurora State Airport Airport Master Plan



Planning Advisory Committee Meeting #2  
Online Meeting  
March 1<sup>st</sup>, 2022  
3:00pm-5:00pm

## Virtual Meeting Tips

- You will be muted during the presentation
- Raise your hand virtually (reaction button) or physically
  - Press \*9 to raise your hand over the phone
- Keep your video on, if possible
- The PAC can chat with:
  - “panelists” for all PAC members
- Public attendees can submit comments via the website comment form



# Meeting Process & Agenda

Time	Topic
3:00-3:10	Introductions
3:10-3:50	Existing Conditions and Aviation Activity Forecasts
3:50-4:50	PAC Comments
4:50-5:00	Public Comments <a href="https://publicproject.net/AuroraAirport">https://publicproject.net/AuroraAirport</a>

# Introductions



# Oregon Department of Aviation (ODAV)

**Betty Stansbury**

Director

**Tony Beach**

Deputy Director, State Airports Manager

**John Wilson**

Operations Specialist

**Heather Peck**

Planning & Project Manager

**Sarah Lucas**

Aviation Planner / AMP Project Contact

**Seth Thompson**

Aviation Planner, State Aviation and  
Land Use Coordination



# Project Team

## Agency Oversight & Funding



## Airport Owner (Sponsor)



## Planning & Engineering



## Public Involvement



## Cultural Resources



Archaeological  
Investigations  
Northwest, Inc.

## Environmental Review



## AGIS Survey





# PAC Members

- Airport Users/Businesses/Organizations
- Airport Neighbors
- Local Municipalities
- Tribal Organizations
- State Agencies
- Local and Regional Non-Profit Groups
- Environmental / Land Use Groups

Organization	Name	Alternate
1000 Friends of Oregon	Roger Kaye	
AABC/TLM Holdings	Ted Millar	
Atlantic Aviation (formerly Lynx Aviation)	Bob Hala	
Aurora Air Traffic Control	Raul Suarez	
Aurora Airport Improvement Association	Bruce Bennett	
Aurora Butteville Barlow Community Planning Organization	Ken Ivey	
Aurora CTE, Inc	Bill Graupp	
Charbonneau Country Club	Steven P. Switzer	
City of Aurora	Brian Asher	
City of Canby	Scott Archer	
City of Wilsonville	Charlotte Lehan	Chris Neamtzu
Clackamas County	Commissioner Tootie Smith	
Columbia Helicopters	Rob Roedts	Bob Buchanan
Confederated Tribes of Siletz Indians	Robert Kentta	
Confederated Tribes of the Grand Ronde Community of Oregon	Cheryl Pouley	
Confederated Tribes of Warm Springs Reservation of Oregon	Christian Nauer	
Deer Creek Estates HOA	Matt Williams	
Friends of French Prairie	Ben Williams	Wayne Richards
Helicopter Transport Service	Robert Fournier	
Life Flight Network	Ben Clayton	
Marion County	Commissioner Danielle Bethell	
Marion County Planning Department	Austin Barnes	Brandon Reich
Oregon Dept of Aviation	Tony Beach	
Oregon Dept of Aviation Board	Cathryn Stephens	
Oregon Dept of Land Conservation and Development	Matt Crall	Nicole Mardell
Oregon Dept of Transportation	Naomi Zwerdling	
Oregon Farm Bureau	Mary Anne Cooper	
Oregon Office of Emergency Management	Bill Martin	Sarah Puls
Positive Aurora Airport Management	Tony Helbling	
Regional Solutions	Jody Christensen	
Vans Aircraft	Rian Johnson	Greg Hughes
Willamette Aviation	David Waggoner	
Wilsonville Chamber of Commerce	Patrick Donaldson	Kevin O'Malley

# Existing Conditions

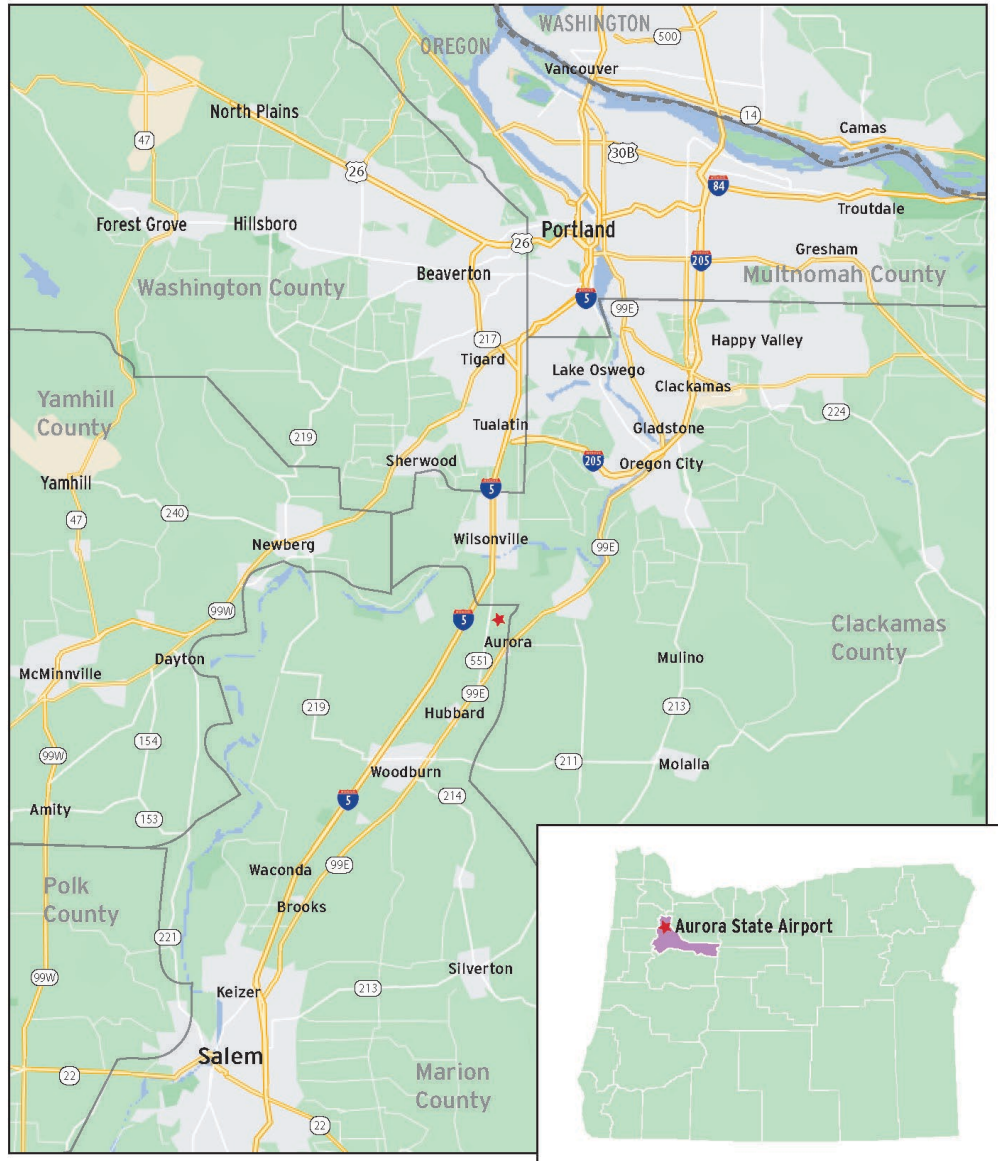


# Airport Master Plan Funding

The Airport Master Plan is 100% funded through an FAA Airport Improvement Program (AIP) grant with no local match requirement.



# Airport Location and Vicinity



Aurora State Airport is located about 1 mile northwest of the City of Aurora, in northern Marion County.

Five counties converge near the I-5 corridor, in the vicinity of the Airport.

Nearby incorporated cities include Aurora, Wilsonville, and Barlow.

## Socio-Economic Data

Population and economic activity in Aurora State Airport's service area has steadily increased over the last ten years, often outpacing Oregon's statewide growth.

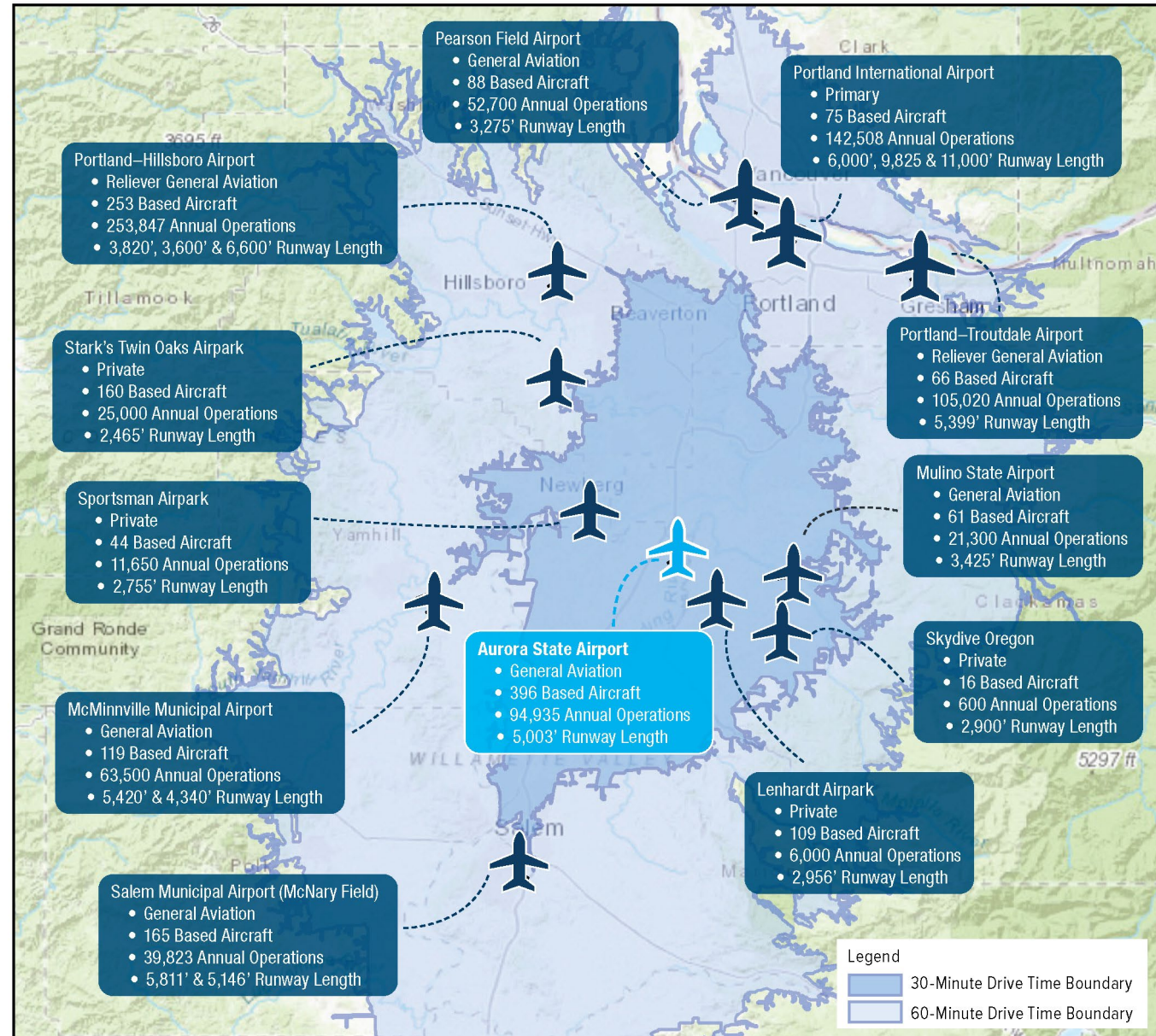
Several areas that experienced downturns related to the COVID pandemic are rebounding.

Marion and Clackamas County economic growth has averaged about 8% annually over the last ten years.

Local forecasts of population and economic activity project continued growth.

# Area Airports

Twelve airports, including Aurora State Airport, generate the majority of aircraft flight activity within the Portland Metro area and upper Willamette Valley.



Note: FAA 5010 data for each airport depicted for reference only. 5010 data not independently verified.

# Baseline Aviation Activity Summary

Task: Develop baseline activity data to support new twenty-year aviation activity forecasts.

**2021 data is used as the base for the airport master plan forecasts  
(2021-2041)**

# Baseline Aviation Activity Summary

## Based Aircraft

ODAV updated the Airport's based aircraft count through a process of aircraft verification in December 2021.

The updated count was 281 aircraft.

The FAA National Based Aircraft Inventory for the Airport was updated in January 2022.

FAA accepted the validated count for use in the airport master plan forecast.

**Baseline: 281 aircraft**

# Aurora State Airport – Based Aircraft January 2022 Validated Count (281 Aircraft)

ODAV also updated its based aircraft storage data for on-airport and through-the-fence (TTF) aircraft for the current count.

Aircraft Type	On-Airport	Off-Airport (TTF)	Total
Single Engine	45	175	220
Multi Engine	1	14	15
Jet	3	33	36
Helicopter	1	9	10
<b>Total</b>	<b>50</b>	<b>231</b>	<b>281</b>

Source: National Based Aircraft Inventory – January 2022

# Baseline Aviation Activity Summary

## Aircraft Operations

Air Traffic Control Tower (ATCT) aircraft takeoff and landing counts are available beginning in fall 2015.

Six years of historical ATCT data was analyzed.

The Aurora ATCT is open 13 hours per day.

Ten years of instrument flight plan data for the Airport was analyzed.





# Baseline Aviation Activity Summary

## Aircraft Operations

ATCT data was adjusted to account for aircraft activity when the tower is closed and to remove activity associated with two private heliports.

**Baseline: 76,028 Aircraft Operations**











# Aircraft Operations (Historical)

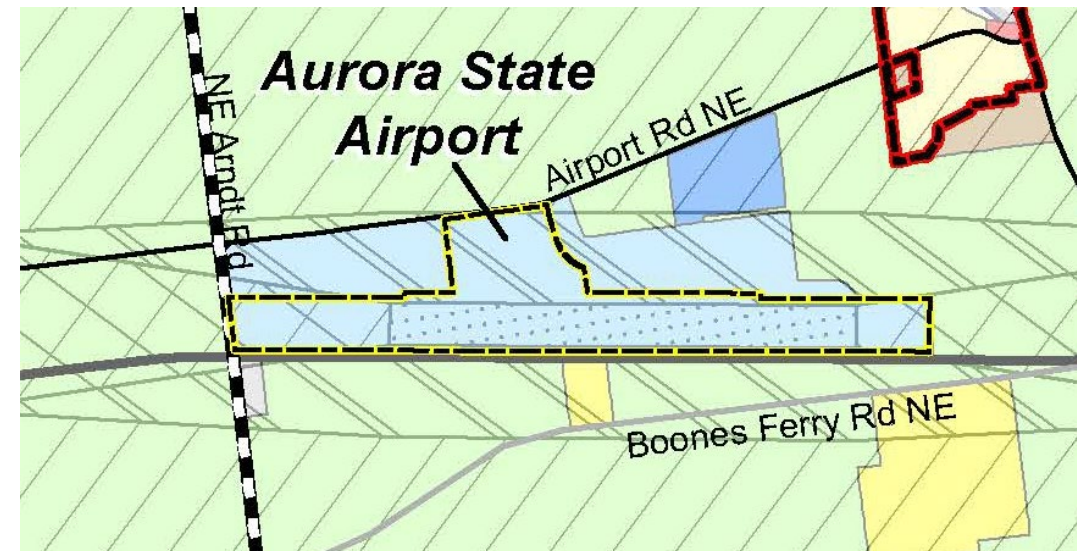
Annual Aircraft Operations Historical ATCT Data (Adjusted)						
	2016	2017	2018	2019	2020	2021
Itinerant						
Air Taxi	2,194	2,319	2,121	1,670	1,129	2,006
General Aviation	32,174	33,502	35,665	33,638	31,621	36,390
Military	265	199	277	107	38	79
<b>Subtotal</b>	<b>34,633</b>	<b>36,020</b>	<b>38,063</b>	<b>35,415</b>	<b>32,788</b>	<b>38,475</b>
Local						
General Aviation	16,191	25,075	28,011	30,453	36,333	37,488
Military	139	129	245	34	19	65
<b>Subtotal</b>	<b>16,330</b>	<b>25,204</b>	<b>28,256</b>	<b>30,487</b>	<b>36,352</b>	<b>37,553</b>
<b>Total</b>	<b>50,963</b>	<b>61,223</b>	<b>66,320</b>	<b>65,902</b>	<b>69,140</b>	<b>76,028</b>

# Land Use Summary

The Airport and its adjacent through-the-fence (TTF) development are located in unincorporated Marion County. All land use actions related to facility development require Marion County approval.

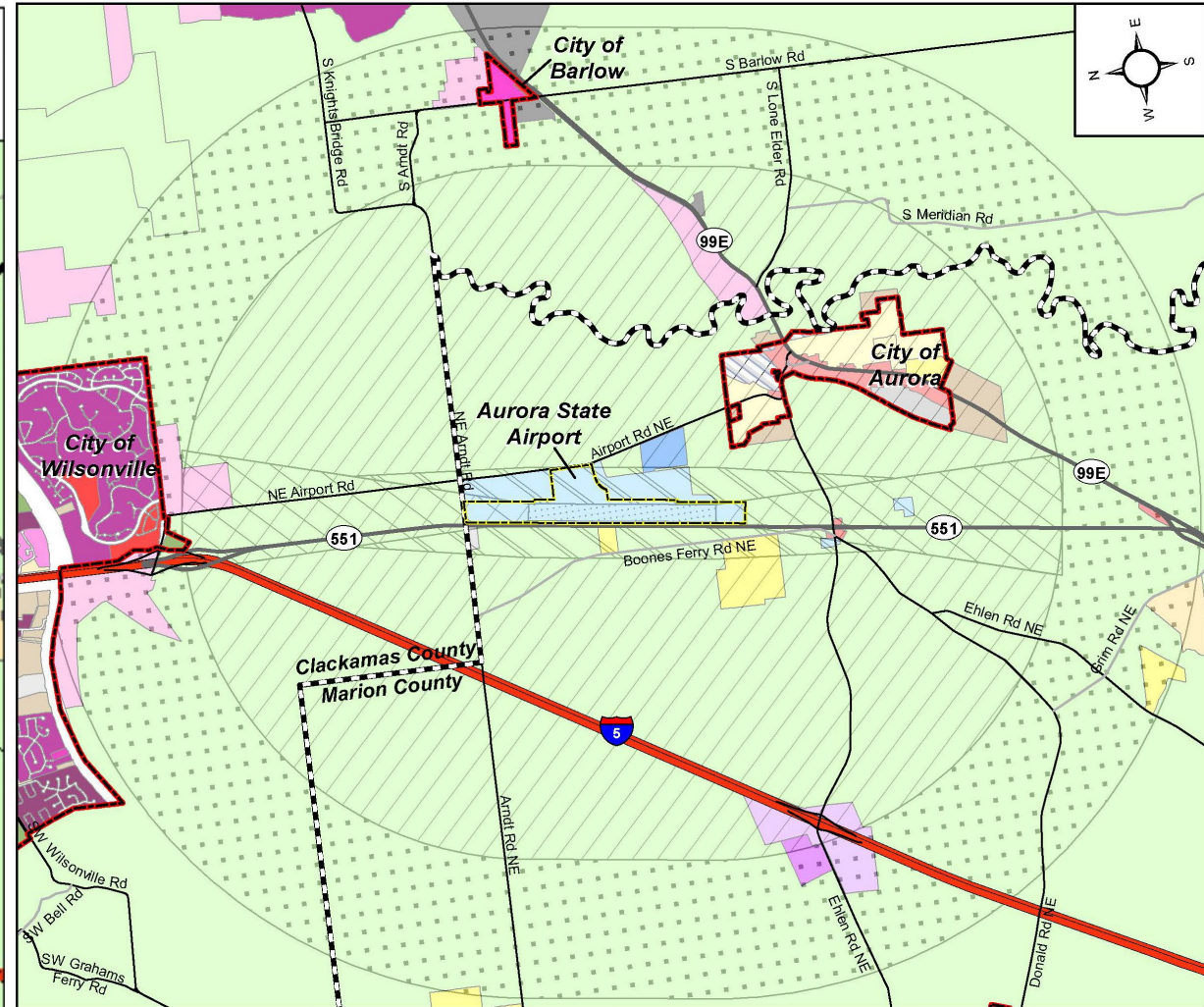
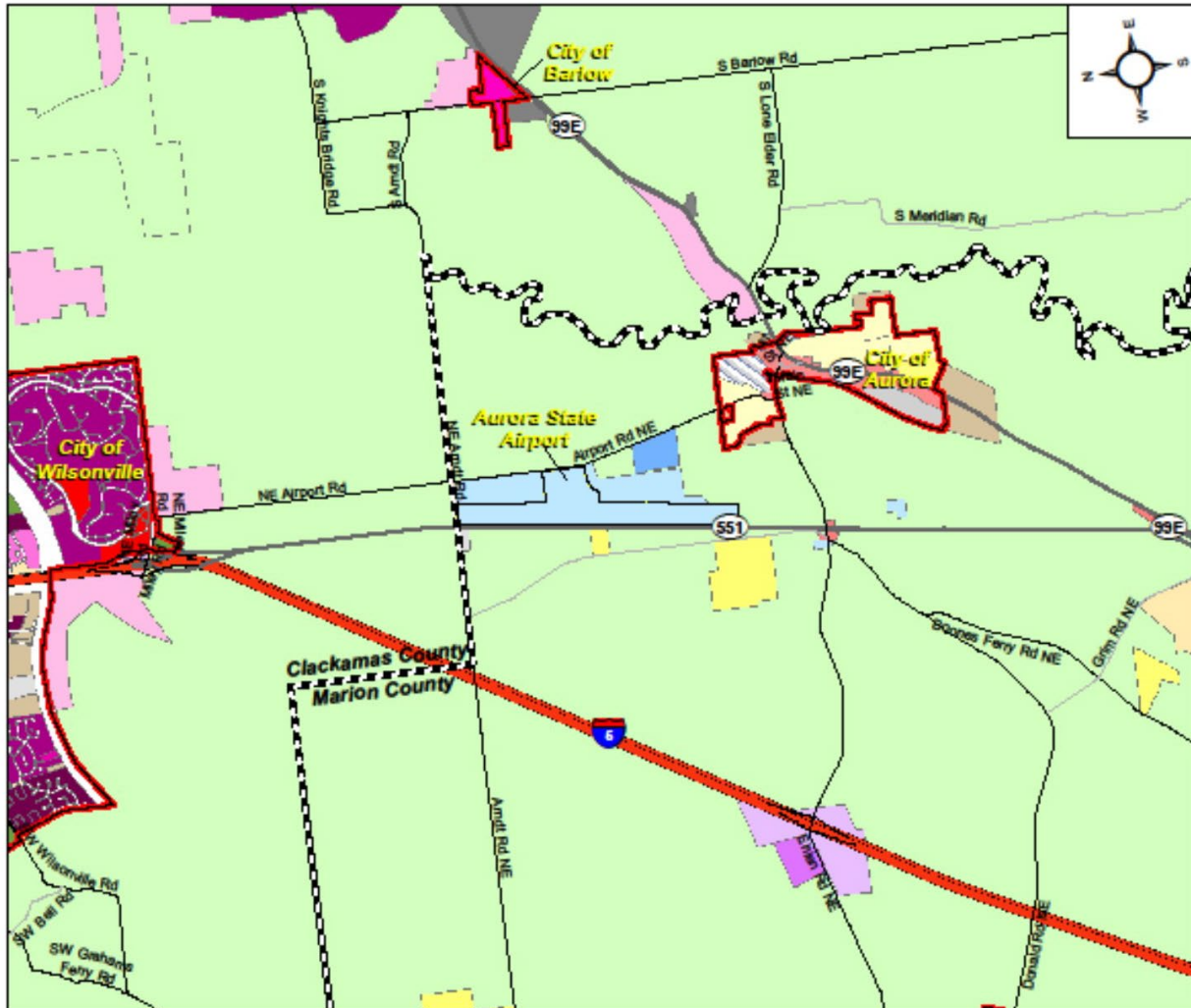
The Airport and adjacent TTF aeronautical development is zoned **Public (P)** by Marion County.

Marion County Zoning <sup>1</sup>			
	AR		ID-LU
	C		P
	EFU		P-LU
	I		RS
	ID		UT-20



# Airport Land Use & Zoning

Marion County Zoning <sup>1</sup>	Clackamas County and City of Wilsonville Zoning <sup>2</sup>	City of Aurora Zoning <sup>3</sup>	FAR Part 77 Overlay <sup>4</sup>
AR	CN	C	Primary Surface
C	EFU	FH	Approach Surface
EFU	FUD	I	Transitional Surface
I	IC	R1	Horizontal Surface
ID	MFR1	R2	Conical Surface
ID-LU	PF	SFR3	
P	RI	SFR5	
P-LU	RRFU	SFR7	
RS	SFR10		
UT-20	SFR2		

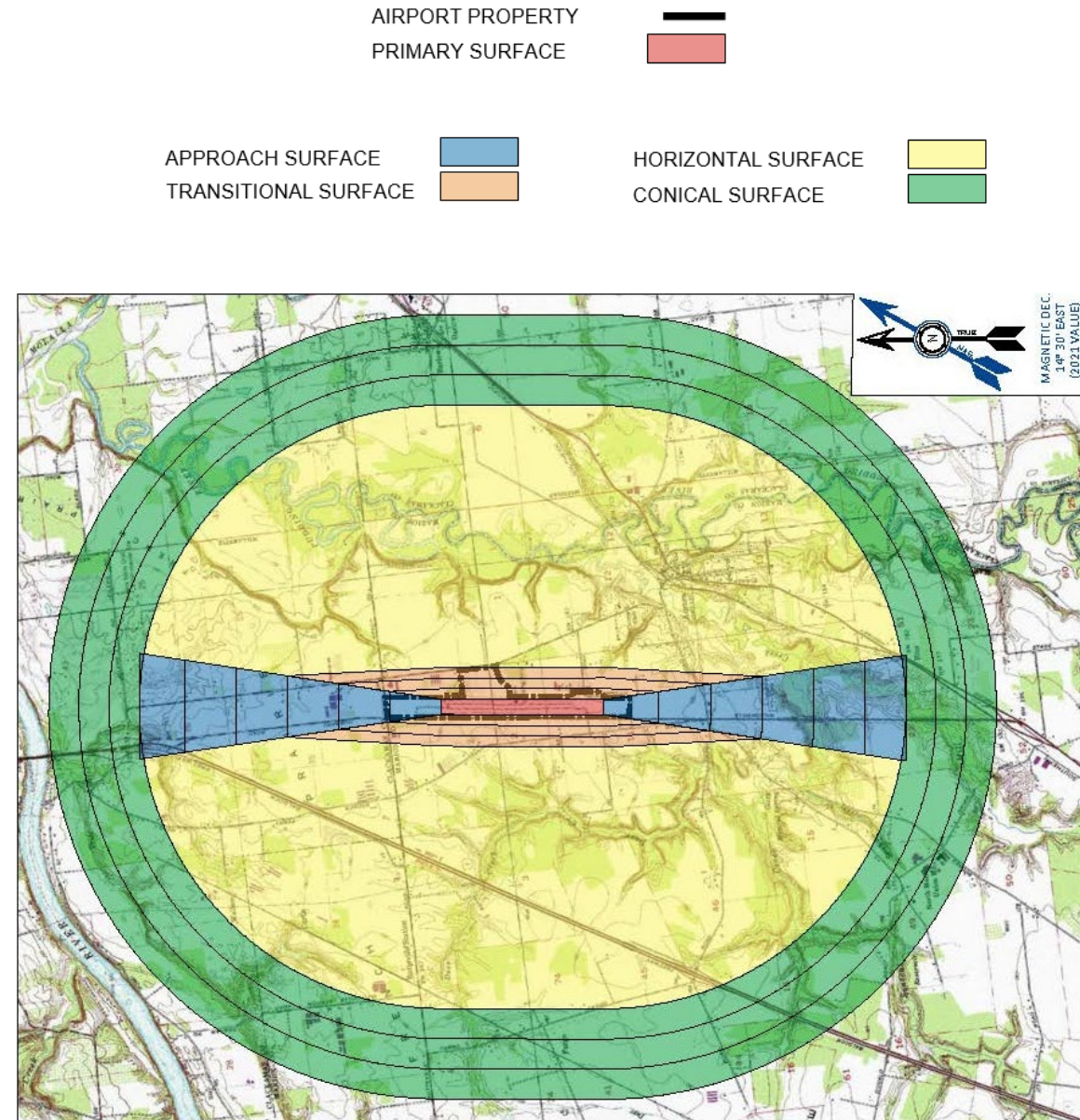


# FAR Part 77 Airspace

The Airport's FAR Part 77 airspace extends over areas of Marion and Clackamas Counties, and the Cities of Aurora, Wilsonville, and Barlow.

Each of these jurisdictions are responsible for protecting the areas of airport airspace that fall within their boundaries and most employ overlay zoning districts as a mechanism to do so.

**For Aurora State Airport, the approach surfaces for the runway extend 10,000 feet beyond each runway (beginning 200 beyond the runway end).**

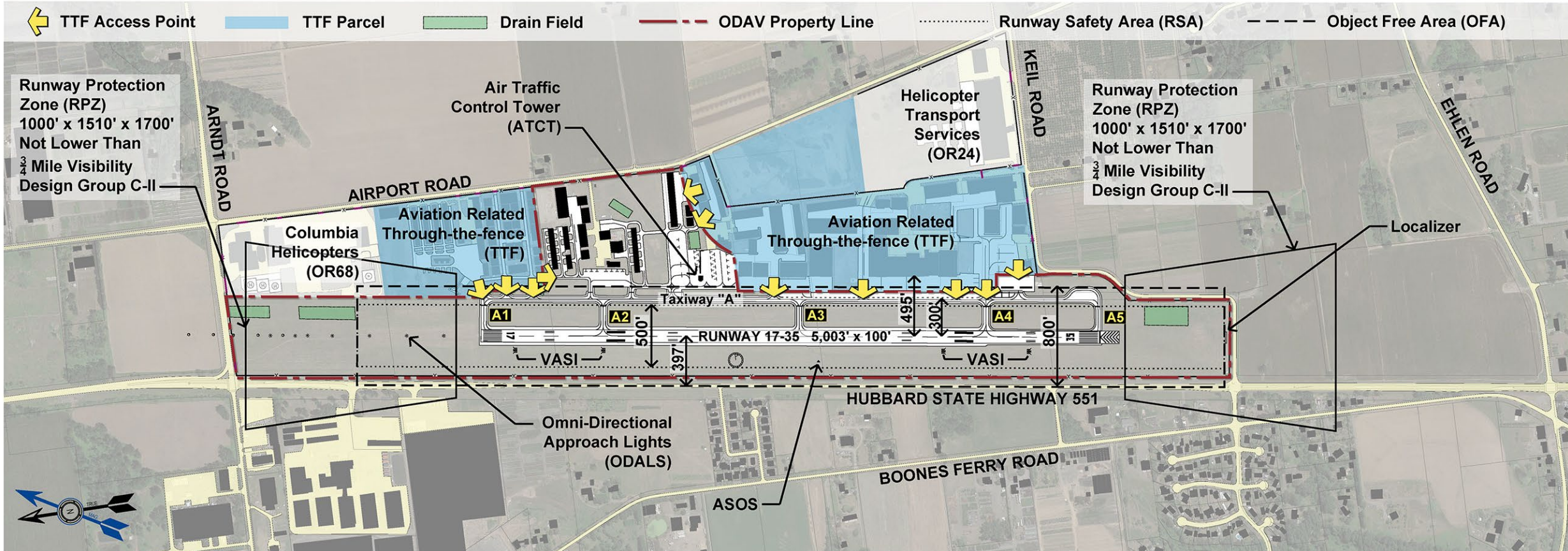


# Aurora Airport Property – ODAV Owned



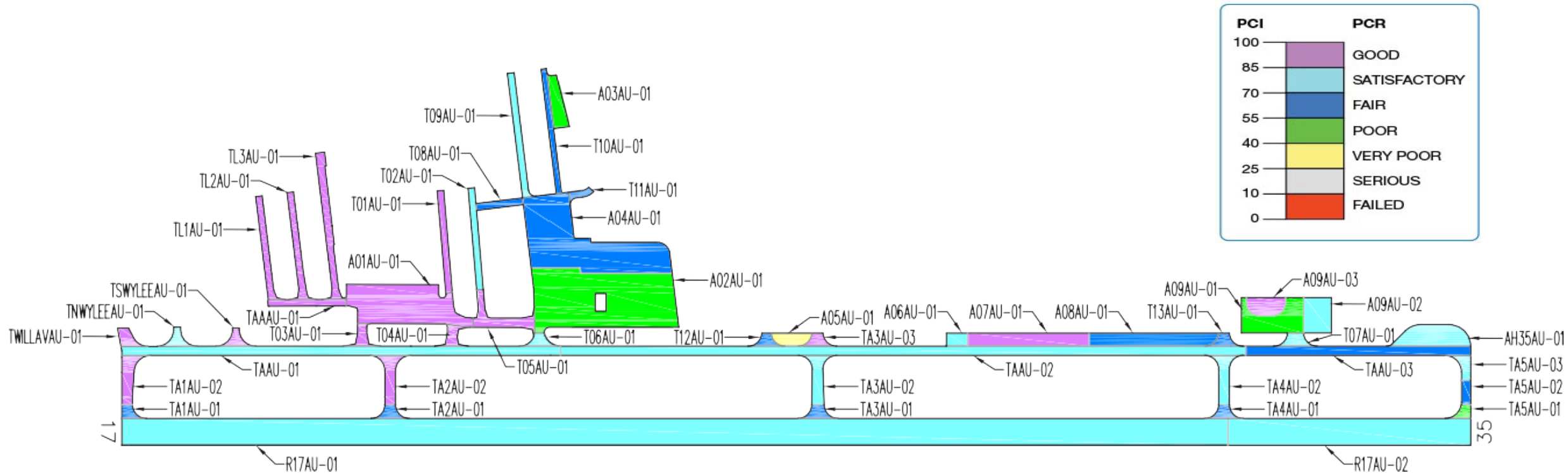
The enhanced area depicts land owned by ODAV and is considered "on-airport".

# Existing Conditions Overview



# Pavement Condition Analysis

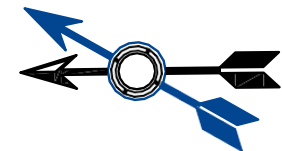
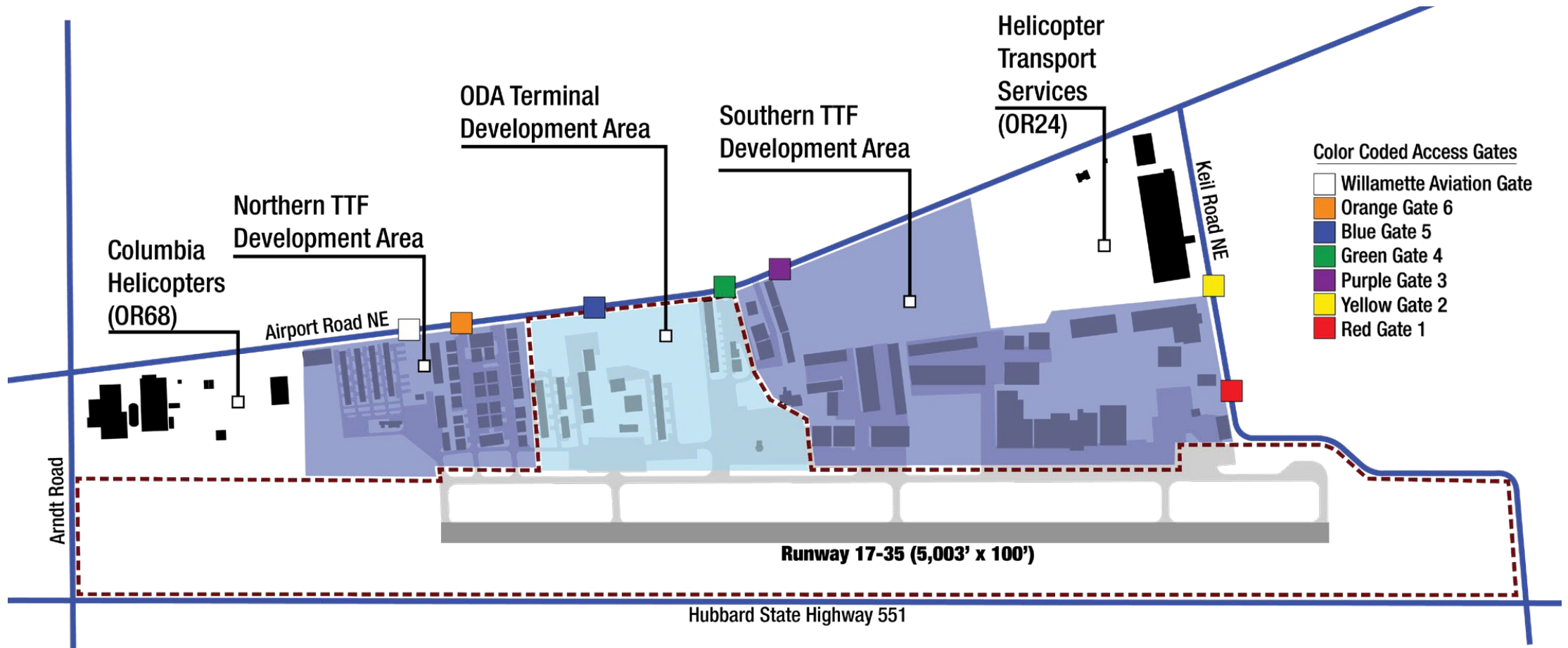
ODAV completed its most recent pavement evaluation in July 2018.



Note: The survey was performed using a Pavement Condition Index (PCI) methodology developed by the U.S. Army Corps of Engineers.



# General Aviation (GA) Areas & Vehicle Gate Locations



# Hangars & Airport Buildings Summary

	T-Hangar Buildings	T-Hangar Buildings SF	Conventional / Multiple-Aircraft	Conventional / Multiple-Aircraft SF	Other (business, office, etc)	Other (business, office, etc) SF	Total	Total SF
Northern TTF Development Area	5	47,300	33	163,100	1	1,500	35	211,900
ODA Terminal Development Area	5	64,400	10	73,300	3	6,000	17	143,700
Southern TTF Development Area	-	-	28	623,000	2	14,500	30	637,500
<b>Total</b>	<b>10</b>	<b>111,700</b>	<b>71</b>	<b>859,400</b>	<b>6</b>	<b>22,000</b>	<b>82</b>	<b>993,100</b>

Source: Century West Engineering - Aerial photo based analysis

New construction at Aurora State Airport has added nearly 140,000 square feet (net increase) over the last ten years.

Hangar Inventory	
Includes On-Airport and Off-Airport (TTF) Development	
2012	833,000 SF
2021	971,100 SF
Net Change	138,100 (+17%)
CAGR	1.72%

CAGR: Compound Annual Growth Rate

# Aviation Activity Forecasts

# Aviation Activity Forecasts

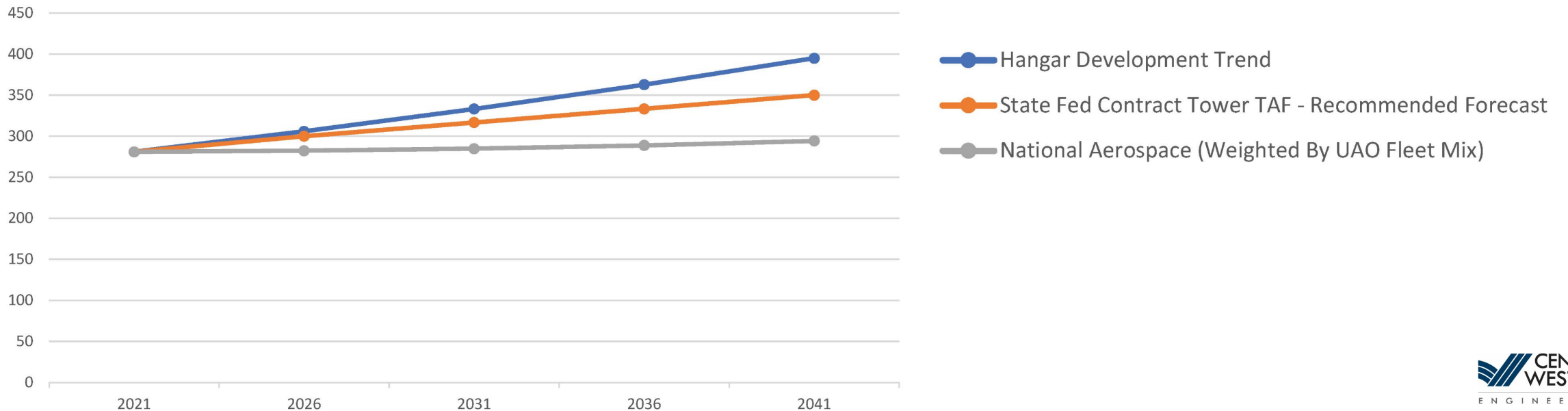
## Based Aircraft

- Baseline (2021: 281 Aircraft)
- Several existing forecasts were reviewed and compared to baseline.
- COVID-19 impacts were not anticipated in previous forecasts.
- Seven new forecast models were developed using a variety of methodologies and all models were applied to the baseline:
  - Three models were identified for further evaluation
  - Annual growth rates range from 0.2% to 1.7%
  - Range of +13 to +114 aircraft over twenty years

# Based Aircraft Forecasts

	CAGR	2021	2026	2031	2036	2041
Historical Hangar Development Trend Model	1.7%	281	306	333	363	395
<b>Federal Contract Tower (Oregon) TAF Model - Recommended Forecast</b>	<b>1.1%</b>	<b>281</b>	<b>300</b>	<b>317</b>	<b>333</b>	<b>350</b>
National Aerospace Forecast (Weighted By UAO Fleet Mix) Model	0.2%	281	282	285	289	294

Source: Century West Engineering



# Aviation Activity Forecasts

## Based Aircraft

- Recommended Forecast:
  - **Federal Contract Tower (Oregon) Terminal Area Forecast (TAF) Model**
  - 20-year average annual growth rate: 1.1 percent
  - Forecast increase from 281 to 350 aircraft

This model reflects FAA TAF forecast growth for all of Oregon's GA airports with contract air traffic control towers. These airports share many operational characteristics with Aurora State Airport, which provides a reasonable projection of future activity.

# Aviation Activity Forecasts

## Aircraft Operations

Baseline (2021: 76,028 annual operations)

Several existing forecasts were reviewed and compared to baseline.

COVID-19 impacts were not anticipated in previous forecasts.

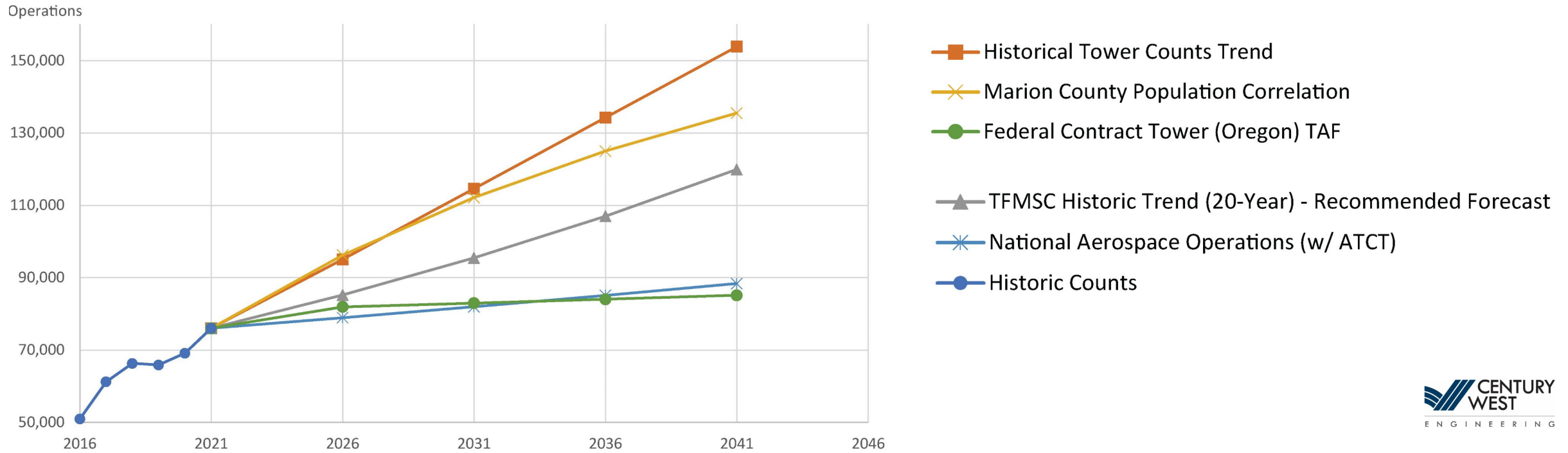
Ten new forecast models were developed using a variety of methodologies and applied to the baseline:

- Five models were identified for further evaluation

# Aircraft Operations Forecasts

Operations Forecast Models	CAGR	2021	2026	2031	2036	2041
	CAGR	2021	2026	2031	2036	2041
Historical Tower Counts Trend	3.6%	76,028	95,039	114,646	134,254	153,862
<b>TFMSC Historic Trend (20-Year) - Recommended Forecast</b>	<b>2.3%</b>	<b>76,028</b>	<b>85,201</b>	<b>95,480</b>	<b>107,000</b>	<b>119,909</b>
Marion County Population Correlation	2.9%	76,028	96,244	112,162	124,981	135,506
National Aerospace Forecast Operations (w/ ATCT)	0.8%	76,028	78,939	81,966	85,114	88,388
Federal Contract Tower (Oregon) TAF	0.6%	76,028	81,924	82,972	84,046	85,151

Source: Source: Century West Engineering developed using FAA TFMSC Data





# Aviation Activity Forecasts

## Aircraft Operations

### Recommended Forecast:

- **TFMSC Historic Trend (20-year) Model**
- The model is based on an extended trend line of documented flight activity at the Airport
- 20-year average annual growth rate: 2.3 percent
- Forecast increase from 76,028 to 119,909 annual aircraft operations

This model reflects a trend line of documented instrument flight activity at the Airport that represents the current and future design aircraft and broad mix of general aviation users.

# Operations Fleet Mix

Aircraft Type	2021	2026	2031	2036	2041
<b>Total Airport Operations</b>	<b>76,028</b>	<b>85,201</b>	<b>95,480</b>	<b>107,000</b>	<b>119,909</b>
Single Engine*	60,823	67,650	75,143	83,674	92,929
Multi Engine Piston	760	767	764	642	600
Turbo Prop	3,041	3,578	4,297	5,029	5,995
Jet	5,322	6,390	7,638	9,095	10,792
Helicopter	6,082	6,816	7,638	8,560	9,593
<b>Fleet Mix Percentages</b>					
Single Engine*	80.0%	79.4%	78.7%	78.2%	77.5%
Multi Engine Piston	1.0%	0.9%	0.8%	0.6%	0.5%
Turbo Prop	4.0%	4.2%	4.5%	4.7%	5.0%
Jet	7.0%	7.5%	8.0%	8.5%	9.0%
Helicopter	8.0%	8.0%	8.0%	8.0%	8.0%

Source: Century West Engineering

\*Includes LSA/Experimental Operations Fleet Mix

# FAA Design Standards

The design standards for an airport are determined by the current and future **Design Aircraft**;

The Design Aircraft is defined as the most demanding aircraft or grouping of aircraft that make **regular use** of the airport; and

**Regular use** is 500 annual operations (takeoffs and landings), including both itinerant and local operations, but excluding touch-and-go operations.

# Current and Future Design Aircraft

The existing and future design aircraft identified in the aviation activity forecasts corresponds to Airport Reference Code C-II (ARC C-II)

**C-II, D-II**



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

## AIRPORT REFERENCE CODE (ARC)

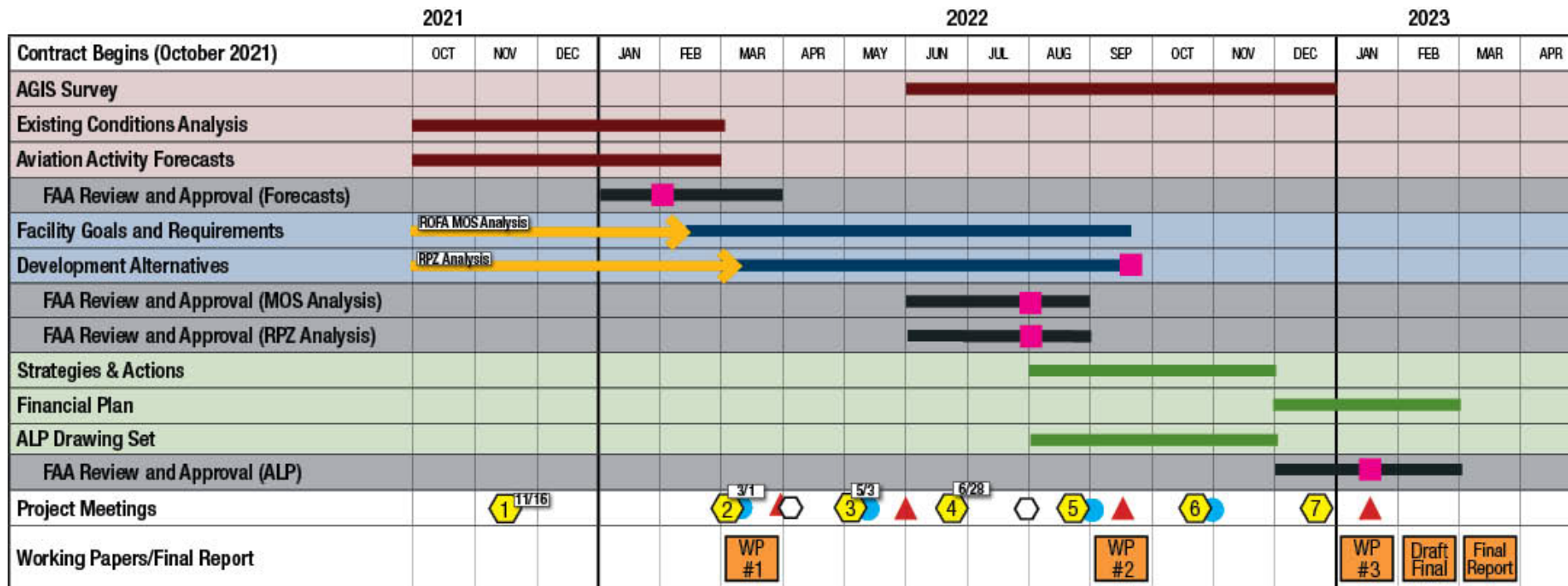
Aircraft Approach Category	Aircraft Approach Speed	Airplane Design Group	Aircraft Wingspan
A	less than or equal to 91	I	less than or equal to 49'
B	92 to 121	II	50' to 79'
C	122 to 141	III	80' to 118'
D	142 to 166	IV	119' to 171'

<b>A-I (small)</b> 12,500 lbs. or less	 Beech Baron 55 Beech Bonanza <b>Cessna 182</b> Piper Archer	<b>B-I (small)</b> 12,500 lbs. or less	 <b>Beech Baron 58</b> Beech King Air C90 Cessna 402 Cessna 421	<b>A-II, B-II (small)</b> 12,500 lbs. or less	 Super King Air 200 <b>Pilatus PC-12</b> DCH Twin Otter Cessna Caravan
<b>ARC - B-II</b> Greater than 12,500 lbs.	 Super King Air 300, 350 Beech 1900 <b>Cessna Citation</b> Falcon 20, 50	<b>A-III, B-III</b> Greater than 12,500 lbs.	 DHC Dash 7, Dash 8 <b>Q-200, Q-300</b> DC-3 Convair 580	<b>C-I, D-I</b>	 <b>Lear 25, 35, 55, 60</b> Israeli Westwind HS 125-700
<b>C-II, D-II</b>	 Gulfstream II, III, IV <b>Canadair 600</b> Canadair Regional Jet Lockheed JetStar	<b>C-III, D-III</b>	 Boeing Business Jet <b>Gulfstream 650</b> B 737-300 Series MD-80, DC-9	<b>C-IV, D-IV</b>	 <b>B - 757</b> B - 767 DC - 8-70 DC - 10

Source: Century West Engineering

# Next Steps

- Review PAC comments received
- FAA review of Working Paper 1
- After reviews are complete, a preferred forecast will be confirmed.
- Prepare the Facility Goals and Requirements
- Next PAC meeting & public open house May 3<sup>rd</sup> (tentatively)



- Develop Understanding
- PAC Meetings
- Optional PAC Meetings
- Explore Solutions
- Public Open House
- Implementation
- Regional Stakeholder Meeting
- FAA Review and Approval
- FAA Coordination Meetings

AMP schedule updated February 2022

Please visit the project website for ongoing schedule updates

# Poll Questions



# PAC Comments



# PAC Questions and Comments

Project Website:

<https://publicproject.net/AuroraAirport>

Organization	Name	Alternate
1000 Friends of Oregon	Roger Kaye	
AABC/TLM Holdings	Ted Millar	
Atlantic Aviation (formerly Lynx Aviation)	Bob Hala	
Aurora Air Traffic Control	Raul Suarez	
Aurora Airport Improvement Association	Bruce Bennett	
Aurora Butteville Barlow Community Planning Organization	Ken Ivey	
Aurora CTE, Inc	Bill Graupp	
Charbonneau Country Club	Steven P. Switzer	
City of Aurora	Brian Asher	
City of Canby	Scott Archer	
City of Wilsonville	Charlotte Lehan	Chris Neamtzu
Clackamas County	Commissioner Tootie Smith	
Columbia Helicopters	Rob Roedts	Bob Buchanan
Confederated Tribes of Siletz Indians	Robert Kentta	
Confederated Tribes of the Grand Ronde Community of Oregon	Cheryl Pouley	
Confederated Tribes of Warm Springs Reservation of Oregon	Christian Nauer	
Deer Creek Estates HOA	Matt Williams	
Friends of French Prairie	Ben Williams	Wayne Richards
Helicopter Transport Service	Robert Fournier	
Life Flight Network	Ben Clayton	
Marion County	Commissioner Danielle Bethell	
Marion County Planning Department	Austin Barnes	Brandon Reich
Oregon Dept of Aviation	Tony Beach	
Oregon Dept of Aviation Board	Cathryn Stephens	
Oregon Dept of Land Conservation and Development	Matt Crall	Nicole Mardell
Oregon Dept of Transportation	Naomi Zwerdling	
Oregon Farm Bureau	Mary Anne Cooper	
Oregon Office of Emergency Management	Bill Martin	Sarah Puls
Positive Aurora Airport Management	Tony Helbling	
Regional Solutions	Jody Christensen	
Vans Aircraft	Rian Johnson	Greg Hughes
Willamette Aviation	David Waggoner	
Wilsonville Chamber of Commerce	Patrick Donaldson	Kevin O'Malley



# Public Comments

# Public comments

**If you would like to speak, you have 2 minutes:**

- Please “raise your hand”
- Press \*9 for callers



**Submit your comments via the online comment form:**

**[publicproject.net/AuroraAirport](https://publicproject.net/AuroraAirport)**

- All comments will be responded to in the meeting summary
- Themes from comments will be shared at PAC Meeting #3



# Thank You

**Heather Peck – ODAV**

**Sarah Lucas – ODAV**

**Brandy Steffen – JLA Public Involvement**

**David Miller – Century West Engineering**



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