



# Airport Master Plan Update



## Public Open House Meeting #1

September 27, 2021

# Airport Master Plan Update

## Introductions



## Port Staff

**Rudy Rudolph**

Operations & Airport  
Director

**Lisa Parks**

Capital Investments,  
Planning & Environmental  
Programs Director

**Jennie Foglia-Jones**

Senior Manager of  
Communications, Marketing  
& Government Affairs

## Project Team

**Leah Whitfield**

Project Manager, APG

**Justin Heid**

Assistant Project  
Manager/Lead Planner

**Darren Murata, P.E.**

Lead Engineer, DOWL

**Renee Dowlin**

Environmental Planner

## Habitat Conservation Plan

**Troy Rahmig, ICF**

HCP Project Manager

# Airport Master Plan Update

## Participation



This presentation will be recorded and posted on the Port's Airport Master Plan Update website.

We will mute all participants during the presentation.

**Please type in the chat box if you have a comment or question.**

Questions and comments will be heard and answered at the end during the Question & Comments portion of the presentation.

# Airport Master Plan Update

## The Agenda



1. **Overview of the Master Plan Update Process**
2. **Project Schedule**
3. **Airport Inventory** - What infrastructure is at the airport and how is it used?
4. **Draft Aviation Forecast** - What type of activity has historically occurred at the airport?
5. **Draft Aviation Forecast** - What type of activity is expected to occur in the next 5, 10, 15 and 20 years?
6. **Draft Facility Requirements** - How can the airport accommodate existing users and our future users?
7. **Questions & Comments**

# Airport Master Plan Update

## Master Plan Update Process



According to the Federal Aviation Administration (FAA), an airport master plan is...

*A comprehensive study of an airport that usually describes the short-, medium-, and long-term development plans to meet future aviation demand.*

Follows FAA Advisory Circular 150/5070-6B

### What's Included

- Inventory
- Forecast
- Facility Requirements
- Alternatives
- Airport Layout Plan
- Capital Improvement Plan

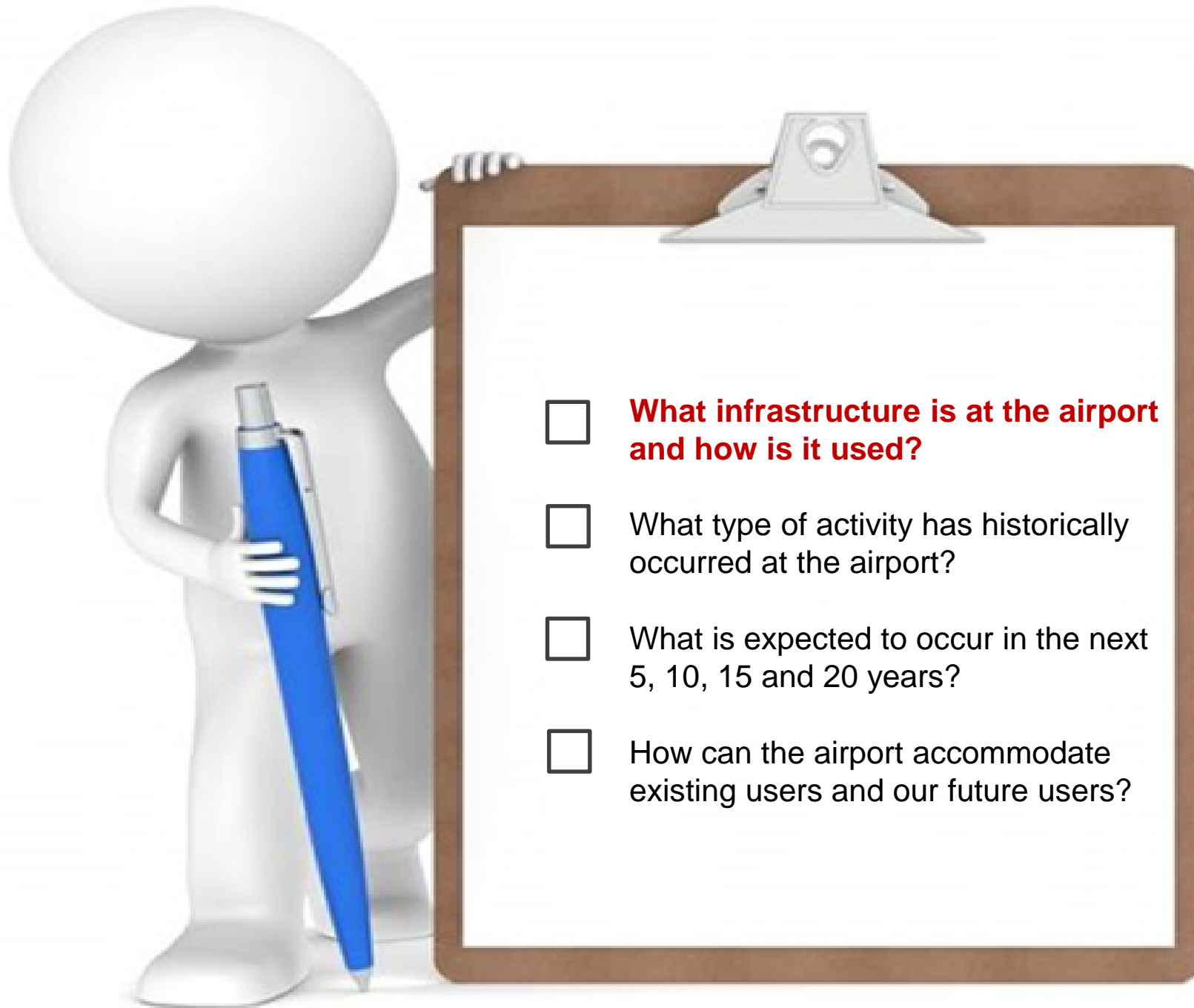
A master plan's purpose is not to solve the airport's management, operations, or maintenance issues.



# Airport Master Plan Update

## SCHEDULE (Draft)





- ☐ **What infrastructure is at the airport and how is it used?**
- ☐ What type of activity has historically occurred at the airport?
- ☐ What is expected to occur in the next 5, 10, 15 and 20 years?
- ☐ How can the airport accommodate existing users and our future users?

# Airport Master Plan Update

## Runway Infrastructure

Airport consists of two runways on 845 Acres.

Runways are numbered with their magnetic heading.

- Primary: Runway 17/35
- Crosswind: Runway 8/26





## AIRCRAFT DESIGN CLASSIFICATIONS

### Aircraft Approach Category

<b>A</b>	Approach speed less than 91 knots.
<b>B</b>	Approach speed 91 knots but less than 121 knots.
<b>C</b>	Approach speed 121 knots but less than 141 knots.
<b>D</b>	Approach speed 141 knots but less than 166 knots.
<b>E</b>	Approach speed 166 knots or more.

### Airplane Design Group

#	Tail Height [ft.(m)]	Wingspan [ft.(m)]
<b>I</b>	<20' (<6m)	<49' (<15m)
<b>II</b>	20' - <30' (6m - <9m)	49' - <79' (15m - <24m)
<b>III</b>	30' - <45' (9m - <13.5m)	79' - <118' (24m - <36m)
<b>IV</b>	45' - <60' (13.5m - <18.5m)	118' - <171' (36m - <52m)
<b>V</b>	60' - <66' (18.5m - <20m)	171' - <214' (52m - <65m)
<b>VI</b>	66' - <80' (20m - <24.5m)	214' - <262' (65m - <80m)

- Runways are designed to accommodate aircraft based on their approach speed and wingspan.
- Combined, these help us determine the geometry of the airfield.

### Example Aircraft



**A-I** Cessna 182\*



**A-II** Cessna 208\*



**B-I** Cessna 340\*



**B-II** Beechcraft King Air 90\*



**B-II** Cessna Citation Ultra

**Runway 8/26**



**C-II** Bombardier Challenger 600

**Runway 17/35**



**C-III** Gulfstream V



**D-III** Gulfstream G650

\*intended for aircraft weighing 12,500lbs or less

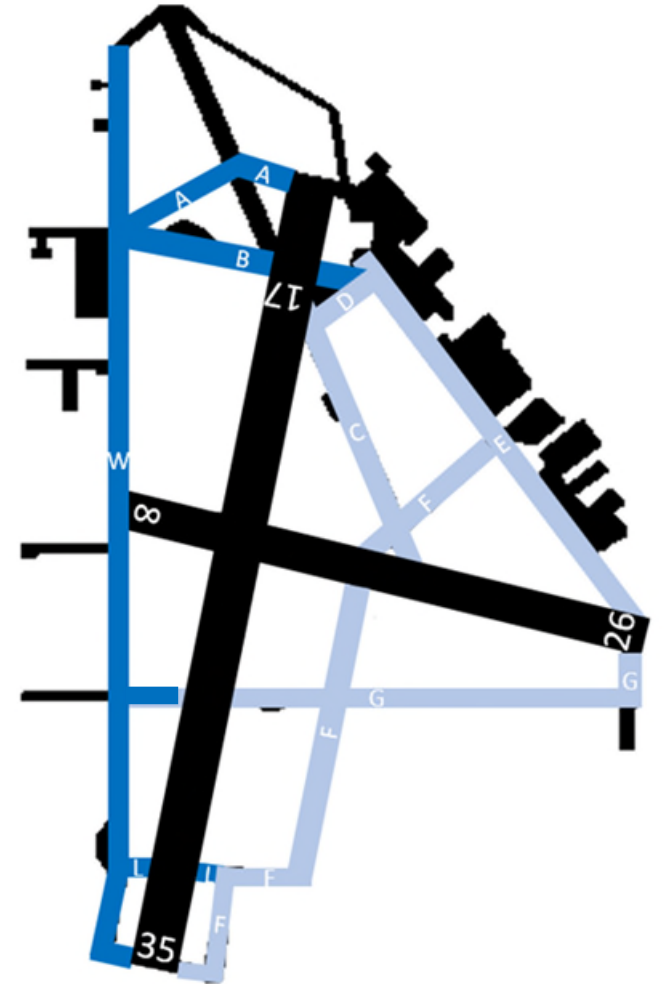
# Airport Master Plan Update

## Taxiway Infrastructure

The airport has a network of taxiways that connect the hangar areas to the runways.

Taxiways are identified by a letter.

The taxiways are a mixture of lighted taxiways and taxiways with reflectors (unlit).



# Airport Master Plan Update

## Noticeable Airport Infrastructure

### Airport Administration Building



### Air Traffic Control (ATC) Tower & Airport Rotating Beacon



### VORTAC

- VHF omnidirectional range (VOR) and a tactical air navigation system (TACAN)
- Radio-based navigational beacon



### Approach Lighting

- MALSR (Medium Intensity Approach Lighting System With Runway Alignment Indicator Lights)





# Airport Master Plan Update

## State Agencies on the Airport

### Washington State DOT – Aviation Division



### Washington State Patrol



Source: Insideout; Washington State Patrol's blog

### Washington State Department of Natural Resources – Fire Aviation



Source: AeroFlite Aerial Firefighting



## Organizations on the Airport

### Airlift Northwest – University of Washington School of Medicine & Harborview Medical Center



Source: Airlift Northwest

## Organizations on the Airport

### Olympic Flight Museum

- Non-profit organization
- Dedicated to the preservation and flying of vintage aircraft
- South Puget Sound's largest collection of vintage aircraft



## Aviation Services on the Airport

### Fixed Base Operators (FBO)

- Glacier Aviation
- Safety in Motion





## Aviation Services on the Airport

### Olympia Avionics

Aircraft Avionics Repair and  
Installation

Avionics include:

- Communication Radios
- Radio Navigational Equipment
- GPS systems
- Transponders
- ADS-B: Automatic Dependent Surveillance - Broadcast





## Aviation Fuel

Fuel stored in large bulk tanks and distributed to aircraft utilizing fuel trucks.

Fuel types:

- Jet-A: 44,000 gallons in 3 tanks and 3 trucks
- 100LL: 37,700 gallons in 3 tanks and 4 trucks

Space for 2 more fuel tanks which have recently been leased.



## Airport User Survey Summary

- 36% of the respondents currently use the airport for their business
- 39% of the users expressed an interest to build a hangar
- 93% of users indicate the runway meets their needs

### Top areas for consideration by based users

- Self-serve fuel: most for 100LL
- Additional hangars to rent/own
- Continued pavement maintenance
- Airfield Lighting
- Improved instrument approaches
- Restaurant
- Commercial/Cargo Service
- More ramp/apron space for helicopters

## Bush Prairie Habitat Conservation Plan (HCP)

### HCP Overview

- Will result in endangered species act permits for all port activities for the next 30 years
- Addresses development and operations activities
- Administrative draft HCP to be completed this fall
- NEPA process and permit issuance will extend through 2022



What infrastructure is at the airport and how is it used?



**What type of activity has historically occurred at the airport?**



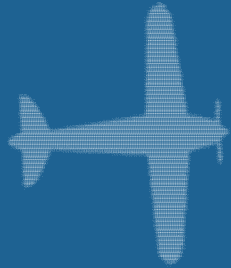
What is expected to occur in the next 5, 10, 15 and 20 years?



How can the airport accommodate existing users and our future users?



# Current Aviation Activity

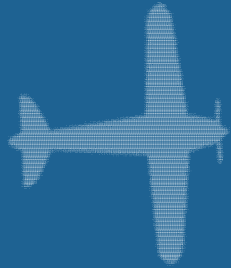


## Top Uses of the Airport:

- Flight Training
- Business Travel
- Personal Travel
- Law Enforcement
- Charter Flights
- Maintenance
- Fire Response
- Emergency Response



# Current Aviation Activity



## Based Aircraft:

- 95 Single-engine
- 8 Multi-engine
- 3 Jet
- 18 Helicopter
- 124 TOTAL



## Historic Tower (8am-8pm)

*“Operation” A takeoff or a landing by an aircraft.*

Month	Year									
	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
<b>Total</b>	<b>47,787</b>	<b>61,434</b>	<b>65,573</b>	<b>62,134</b>	<b>56,525</b>	<b>43,071</b>	<b>41,052</b>	<b>54,108</b>	<b>63,194</b>	<b>64,816</b>

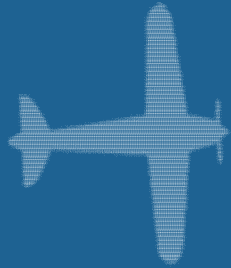
Source: OLM ATC 2021

## 2020 After Hours Operations (8pm-8am)

Organization	Hours
Glacier Aviation Flight School	2,500
Safety in Motion Flight School	780
Department of Natural Resources	225
Northwest Aeromed	250
Washington State Patrol Aviation	800
All Other GA Users	1,095
<b>Total</b>	<b>5,650</b>

Source: Stakeholder interviews 2021

# 2020 Aviation Activity



## Annual Operations

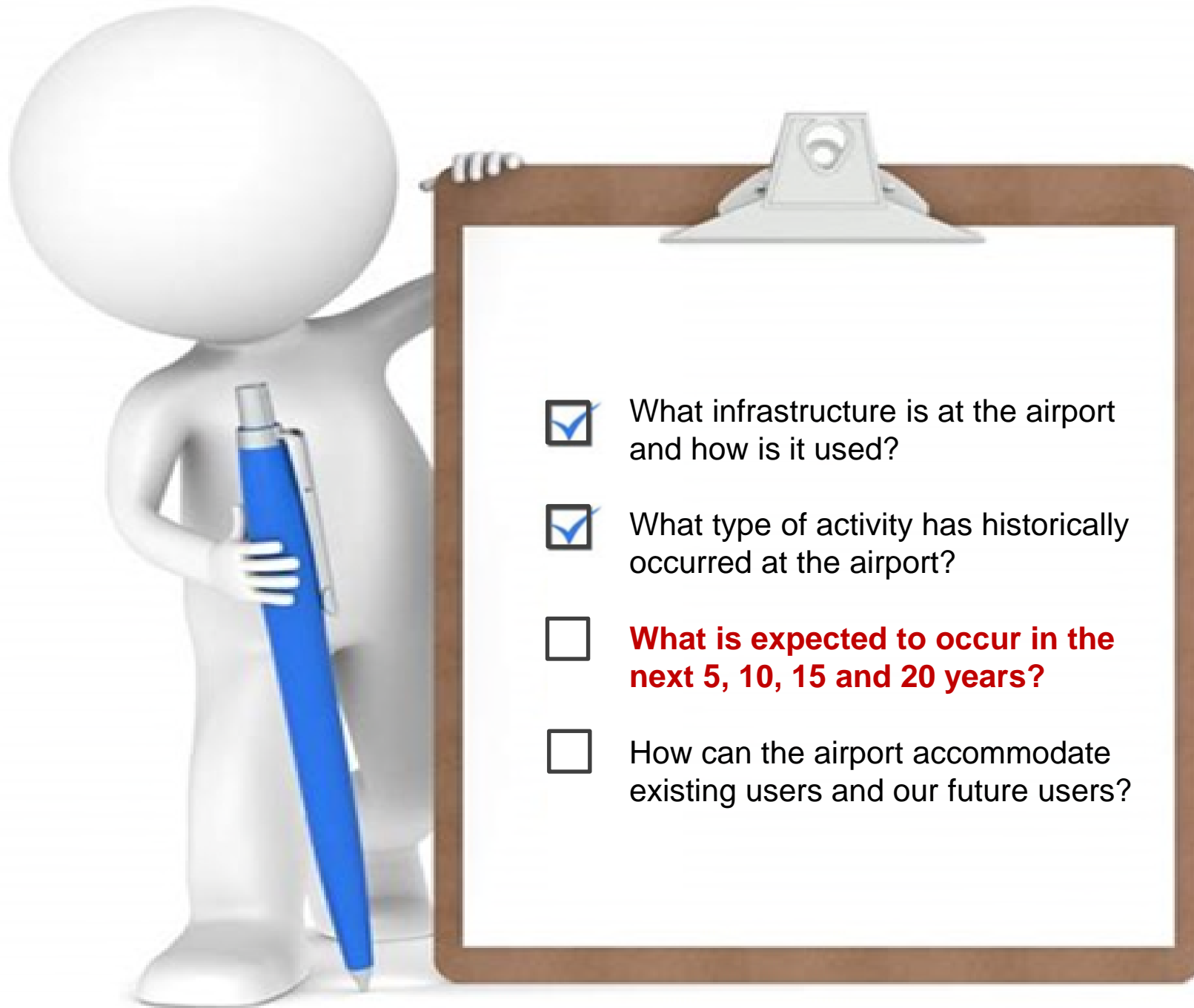
70,466 Operations per year

- 39,196 GA Local Operations
- 31,270 GA Itinerant Operations
- 193 Operations per day

***“Local”** operations include aircraft activity that remains in the vicinity (e.g. traffic pattern) of an airport.*

***“Itinerant”** operations include activity that is arriving from or destined for other locations.*





What infrastructure is at the airport and how is it used?



What type of activity has historically occurred at the airport?



**What is expected to occur in the next 5, 10, 15 and 20 years?**



How can the airport accommodate existing users and our future users?

## OLM Forecast

Type of Operation	Base Year	Short-Term Forecast	Intermediate-Term Forecast	Long-Term Forecast	Average Annual Growth Rate
	2020	2025	2030	2040	AAGR
Total Based Aircraft	124	126	129	139	0.57%
Total Operations	70,466	73,775	77,239	84,665	0.92%

*Source: The Aviation Planning Group 2021, FAA Airport Master Record 5010 2021, FAA TAF 2019, OFM GMA 2017, OLM Master Plan 2013, and WASASP 2017.*

## OLM Forecast

### Critical Aircraft

Current (2020) Critical Aircraft

Cessna Citation 560



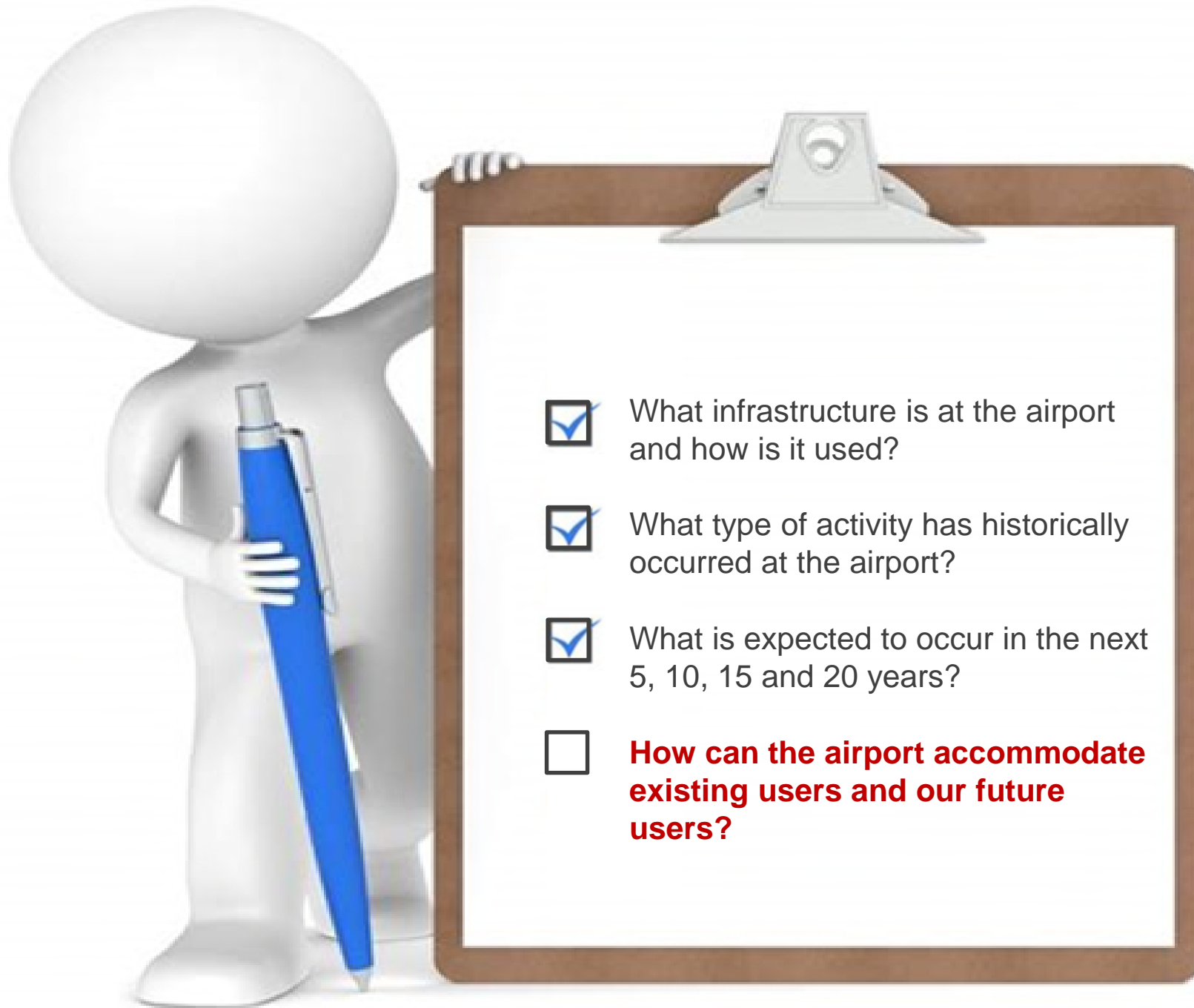
B-II

Ultimate (2040) Critical Aircraft

Bombardier Challenger 700



C-II



What infrastructure is at the airport and how is it used?



What type of activity has historically occurred at the airport?



What is expected to occur in the next 5, 10, 15 and 20 years?



**How can the airport accommodate existing users and our future users?**

## Runway Facility Requirements

Both runways have adequate length to accommodate the aircraft that regularly utilize the Airport.

It is recommended that the runways be re-numbered to their corrected magnetic headings due to the changes that have occurred over time from natural magnetic shift.



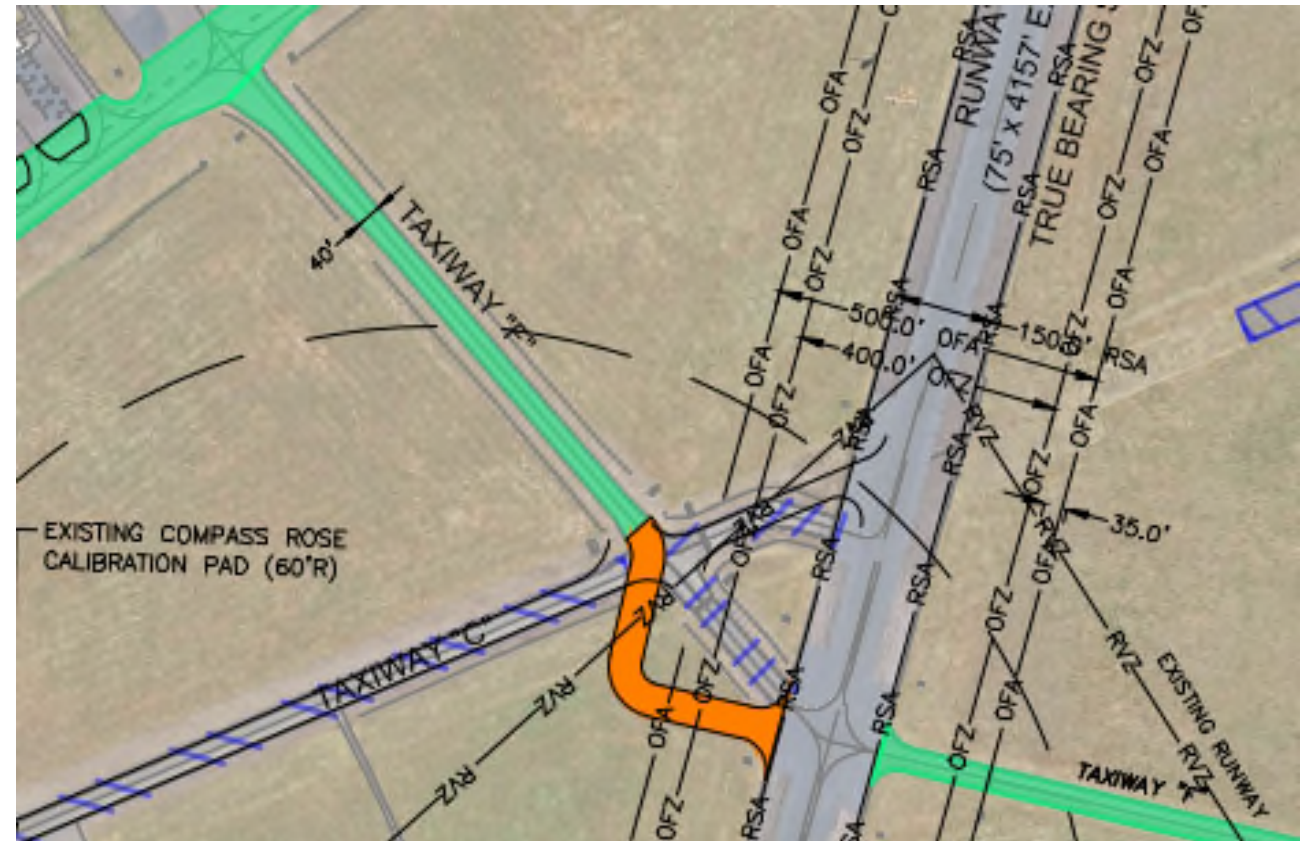


## Taxiway Facility Requirements

Taxiway geometry throughout the airport needs to be revised to meet the following FAA standards:

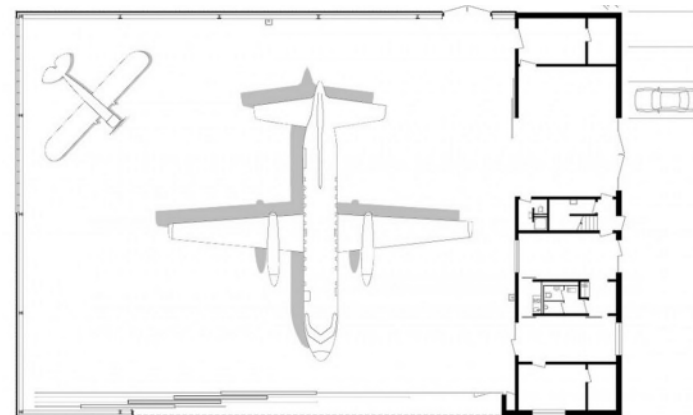
- Removing Direct apron to runway access
- Right-angle intersections
- Optimally locate exit taxiways

Examine taxiway locations for efficiency.

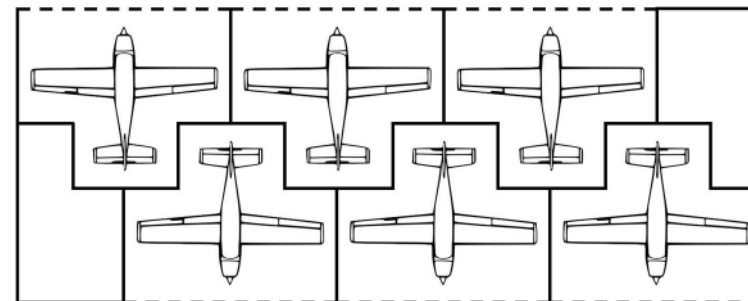


## Hangars

- Corporate box hangars



- T-hangars



- Planeports





# Developable Areas

## Development Focus Areas:

- Small Hangars
- Corporate Hangars
- General Aviation Terminal
- Aircraft Parking
- Vehicle Parking
- VTOL/Electric Aircraft
- Future Commercial Terminal
- Future Passenger Support Facilities
- Aviation Related Industrial



## Sustainable Alternative Fuels

### AKA: Biofuel/Plant Based Fuels:

- Created by using feedstock produced by green plants, that absorb CO<sub>2</sub> from the atmosphere and convert it oils/sugars to make low-carbon jet fuel.
- Biofuels Forecast: 20% of aviation fuel demand by 2040.
- Bio/Plant material
  - Waste oils
  - Plant and algae material
  - Animal fats
- Biofuel can be blended with conventional fuel.



United Airlines buys approximately 10M gallons per year at LAX.

**There is adequate space for fuel farm expansion if demand for biofuels occurs.**



## Electric Aviation

Washington State Department of Transportation's *Washington Electric Aircraft Feasibility Study* (November 2020) recommended OLM as an initial beta test site for electric aircraft

Manufacturers indicate that by 2023 and 2024 the electric aircraft that are being built and tested in Washington will be flying.

The aircraft are proving to be quieter than traditional aircraft.

The electric aircraft market is expected to cover:

- General Aviation (GA)
- Small Commercial Aircraft (9 Passengers)
- Small Cargo Aircraft



## Electric Aviation

### Battery swapping

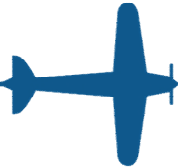
- Replaces a spent battery out of an aircraft with fully charged battery.
- Less peak demand on the electrical grid as opposed to direct aircraft charging.
- Potential to reduce turn-around times for aircraft as well.
- Testing: magniX's eCaravan currently flying out of Moses Lake, WA

### On-site, direct aircraft charging

- Similar to current electric vehicle charging
- An industry standard has not yet been established and any charging station infrastructure would require adaptors to accommodate the variety of standards.
- Battery to Battery Charging options



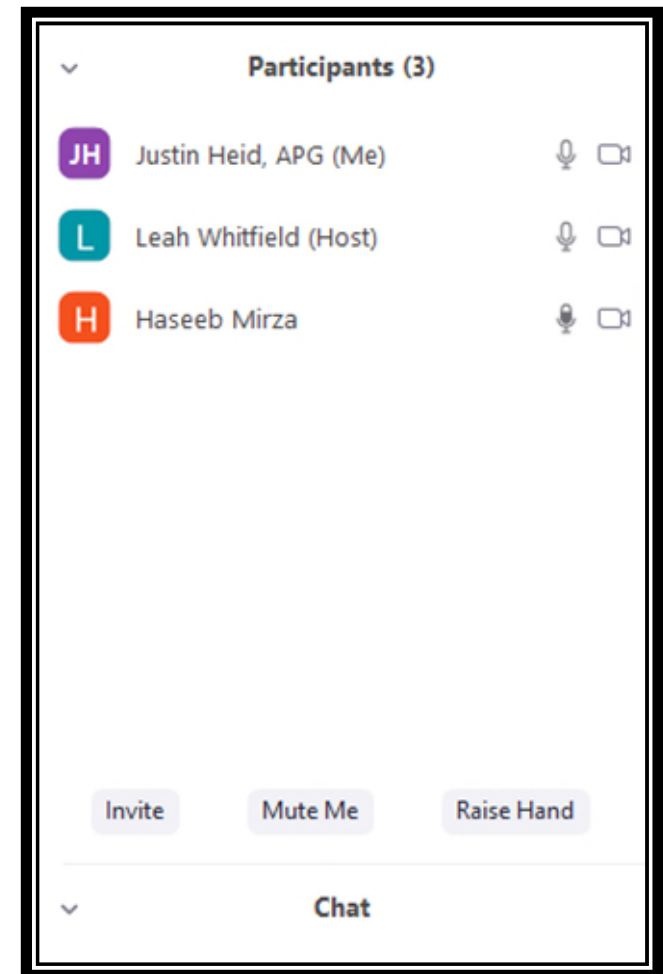
## Questions & Comments



If you have a comment or question you can:

- Use the “Raise Hand” button
  - Under “Participants” or
  - Under “Reactions”

Type a comment in the chat box





# Airport Master Plan Update

## Next Steps



We Are Here



Technical Advisory Committee Meeting



Public Open House



Feasibility Study Meeting



# Airport Master Plan Update

THANK YOU!

## Contact:

Leah Whitfield

[Leah@theaviationplanninggroup.com](mailto:Leah@theaviationplanninggroup.com)

Justin Heid

[Justin@theaviationplanninggroup.com](mailto:Justin@theaviationplanninggroup.com)

OLM MPU Email address: [AMPUpdate@PortOlympia.com](mailto:AMPUpdate@PortOlympia.com)