

# Master Plan Update - PAC Meeting #2 of 4

## Ed Carlson Memorial Field - South Lewis County Airport (TDO)



# Welcome and Introductions

## *Welcome*

## *Introductions*

- Lewis County
- WHPacific
- Federal Aviation Administration (FAA)
- WA State Department of Transportation (WSDOT) Aviation
- Planning Advisory Committee (PAC) - Airport Users, Community Representatives, Other Stakeholders

# Agenda

- I. Welcome and Introductions
- II. Recap PAC Meeting #1
- III. Purpose of Today's Meeting
- IV. Study Progress
- V. Present Overview of Draft Report Materials
  - A. Introduction
  - B. Inventory (Chapter 1)
  - C. Forecasts (Chapter 2)
  - D. Requirements (Chapter 3)
- VI. The Next Steps
- VII. Questions and Comments

# Recap PAC Meeting #1

- Purpose of Master Plan Update
- Study Scope & Schedule, Public Involvement
- Airport issues and goals for the plan
- Review Airport History
- Purpose of and Parameters for Master Plan
- Overview of Scope and Process

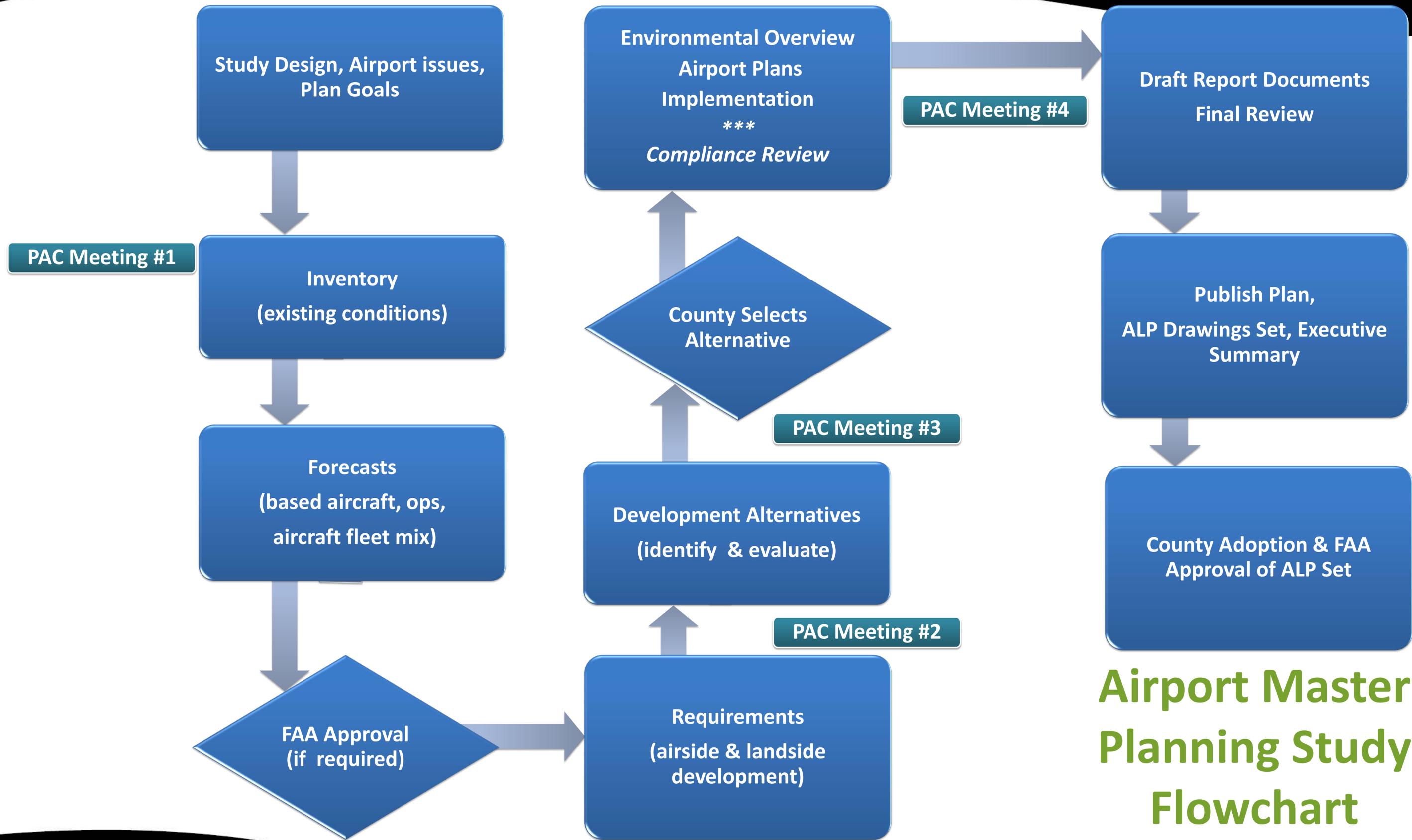
# Purpose of Today's Meeting

To present and discuss the findings of the Forecast and Requirements elements of the Airport Master Plan Update and to begin discussion of the upcoming Development Alternatives element

# Review Study Progress

- Study Design ✓
- Intro/Issues and Goals ✓
- Public Involvement Program<sup>1</sup>
- Inventory ✓
- Forecasts<sup>2</sup> ✓
- Facility Requirements ✓
- Alternatives
- Airport Plans
- Implementation
- Compliance Review
- Master Plan Report
- Executive Summary Report

<sup>1</sup> Ongoing <sup>2</sup> Submitted for FAA review/approval



# Airport Master Planning Study Flowchart

# *PAC and Public Meeting Schedule*

Meeting #	Topics/ Focus	Date
PAC 1	Master Plan Update Process, Issues and Goals	March 27, 2013
PAC 2	Inventory, Aviation Forecasts, Facility Requirements	September 5, 2013
PAC 3 Public 1	Airport Development Alternatives and Evaluation, Identify Preferred Alternative	November 2013*
PAC 4	Airport Layout Plan Drawings, Capital Improvement Plan, Draft Final Report	March 2014*

\*Tentative – to be confirmed 30 days prior to meeting

# Public Involvement

## *Planning Advisory Committee (PAC) Meetings*

- Draft materials for review/comment - before meetings
- Four meetings (work sessions)
- PAC member roles

## *Public Information Workshop/Open House*

- Draft materials on the website
- One Open House during Development Alternatives element

## *Other Community Outreach*

- Newsletters, website, meeting advertisements

# *Community Outreach - County Contact*

*Larry Mason, Lewis County Airport System Manager*

*Lewis County*

*2025 NE Kresky Ave*

*Chehalis, WA, 98532*

*(360) 864-4966*

*airportman@toledotel.com*

**Website:** <http://lewiscountywa.gov/ed-carlson-memorial-field-south-lewis-county-airport-tdo>

# Introduction & Inventory

## *Introduction*

- Airport Issues and Goals for Master Plan

## *Inventory*

- Existing Conditions
- Airside - Runway, Taxiways, Apron
- Landside - Hangars, Office Building, Facilities outside aircraft movement areas

# Did you know?\*

- Over 360,000 GA airplanes worldwide, ranging from two-seat training aircraft to intercontinental business jets flying today; 223,000 of those are based in the United States.
- General aviation contributes more than \$150 billion to the U.S. economy annually and employs more than 1.2 million people.
- In the U.S., general aviation aircraft fly almost 25 million hours and carry 166 million passengers annually.
- There are more than 5,000 general aviation airports open to the public in the U.S. By contrast, scheduled airlines serve less than 500 airports.
- Over two-thirds of all the hours flown by general aviation aircraft are for business purposes.
- General aviation is the primary training ground for most commercial airline pilots.

\*GAMA 2012 GA Statistical Databook and Industry Outlook

GAMA = General Aviation Manufacturers Association

# Forecasts

## *Trends*

- GAMA reports 2011 & 2012 growth in worldwide GA aircraft shipments following three-year decline
- GA operations at ATCT airports declined in recent years, but saw 0.6% increase in 2012
- GA active aircraft and hours flown decreased in 2011 and then remained unchanged in 2012 as recovery began

# Forecasts

## *Trends & Projections*

- FAA projects overall 0.5% AAG in active GA aircraft ranging from -0.2% decline in pistons to 3.5% increase in jets
- FAA projects 1.5% AAG in GA hours flown (down from their 2.2% AAG projection in earlier forecast)
- Worldwide, FAA projects growth with economic recovery
- NextGen economic benefits expected to make doing business in GA airport communities more attractive

AAG = average annual growth

# Forecasts

FAA and other industry experts recommend caution in forecasts, which depend on many unknown factors such as national and world economies, U.S. unemployment, price of oil, and national fiscal issues.

# Forecasts

## *TDO Based Aircraft*

- Current total: 47
- Forecast 2032 total: 53
- AAG: 0.61% (similar to population growth projections)
- Definition of based aircraft: active aircraft (at least one hour flown in a year); spends more than half of year at TDO

# Forecasts

## *TDO Operations*

- Current total: 16,265\* (22 takeoffs/22 landings daily)
- Forecast 2032 total: 19,426
- AAG: 0.93%
- Definition of operation: takeoff or landing

\*estimated annual operations

# Requirements

## *Planning Criteria*

- FAA, TSA
- WA Aviation System Plan (WSDOT Aviation)
- Lewis County & Airport Users

## *Airport Role*

- National Plan of Integrated Airport Systems - GA
- FAA's GA Airports: A National Asset - Regional Airport
- WA Aviation System Plan - Community Service Airport

# Requirements

## *Design Aircraft*

- Most demanding aircraft with 500+ ops/yr
- May be more than one aircraft driving design standards
- Approach speed → runway width, separation, safety area
- Landing & takeoff → runway length
- Main/outer gear-related dimensions → taxiway width, fillet design, apron and parking layout
- Wingspan/tail height → separations, object free areas, parking configuration

# Requirements

## *Key Terms for Airport Design*

- Airport Reference Code (ARC) → B-I, B-II
- Runway Design Code (RDC) → B-II
  - Aircraft Approach Category - approach speed
  - Airplane Design Group - wingspan, tail height
  - Approach Visibility Minimums
- Taxiway Design Group (TDG)
- Small (12,500 lbs. or less) vs. large (>12,500 lbs.) aircraft

*Note: Key terms are important to development alternatives*

# Requirements

## Runway Design Code (RDC) Classifications

Aircraft Approach Category (AAC)	
AAC	Approach Speed
A	Less than 91 knots
B	91 knots to 120 knots
C	121 knots to 140 knots
D	141 knots to 165 knots
E	Approach speed 166 knots or more

Airplane Design Group (ADG)		
Group #	Tail Height (ft)	Wingspan (ft)
I	< 20'	< 49'
II	20' to < 30'	49' to < 79'
III	30' to < 45'	79' to < 118'
IV	45' to < 60'	118' to < 171'
V	60' to < 66'	171' to < 214'
VI	66' to < 80'	214' to < 262'

Approach Visibility Minimums	
RVR (ft)	Flight Visibility Category (statue mile)
4000	Lower than 1 mile but not lower than $\frac{3}{4}$ mile (APV $\frac{3}{4}$ but < 1 mile)
2400	Lower than $\frac{3}{4}$ mile but not lower than $\frac{1}{2}$ mile (CAT-I PA)
1600	Lower than $\frac{1}{2}$ mile but not lower than $\frac{1}{4}$ mile (CAT-II PA)
1200	Lower than $\frac{1}{4}$ mile (CAT-III PA)

Source: FAA AC 150/5300-13A

# Requirements - Airside

## *Runway*

- Capacity adequate, orientation/wind coverage >95%
- Length - adequate in planning period
  - Design aircraft/family of aircraft - most demanding
  - Conditions (elevation, temp)
  - FAA model, performance curves
- Width - Future RDC B-II → 75 feet (B-I → 60 feet)
- Maintain pavements - ongoing need
- Other - Runway Safety Area, Object Free Area, Runway Protection Zone

# Requirements - Airside

## FAA Runway Lengths (Computer Model)

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Airport elevation . . . . .	374 feet
Mean daily maximum temperature of the hottest month . . . . .	78.80 F.
Maximum difference in runway centerline elevation . . . . .	20 feet
Length of haul for airplanes of more than 60,000 pounds . . . . .	500 miles
Dry runways	

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## RUNWAY LENGTHS RECOMMENDED FOR AIRPORT DESIGN

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Small airplanes with approach speeds of less than 30 knots . . . . .	310 feet
Small airplanes with approach speeds of less than 50 knots . . . . .	830 feet
Small airplanes with less than 10 passenger seats	
75 percent of these small airplanes . . . . .	2510 feet
95 percent of these small airplanes . . . . .	3040 feet
100 percent of these small airplanes . . . . .	3630 feet
<b>Small airplanes with 10 or more passenger seats . . . . .</b>	<b>4140 feet</b>
Large airplanes of 60,000 pounds or less	
<i>75 percent of these large airplanes at 60 percent useful load . . . . .</i>	<i>4830 feet</i>
<i>75 percent of these large airplanes at 90 percent useful load . . . . .</i>	<i>6200 feet</i>
100 percent of these large airplanes at 60 percent useful load . . . . .	5320 feet
100 percent of these large airplanes at 90 percent useful load . . . . .	7730 feet
Airplanes of more than 60,000 pounds . . . . .	Approximately 5140 feet

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Source: Chapter 2 of AC 150/5325-4A, Runway Length Requirements

# Requirements - Airside

## *Other Airside*

- Runway lighting -replace MIRL long-term
- Taxiway lighting - reflectors non-standard; future MITL
- Navaids - replace VASI with PAPI on Runway 6
- Runway to parallel taxiway separation adequate
- Taxiway pavements - need near-term reconstruction; pave gravel taxiway
- Hangars in Taxilane Object Free Area (OFA)
- Apron - additional area needed in the near-term for based and transient; infield turf tiedowns in OFA

# Requirements - Landside & Support

## *GA Terminal*

- Future - dedicated GA terminal space/amenities

## *Hangars*

- Hangars filled
- Future - 6 based aircraft + additional maintenance space

## *Aviation Services*

- Fuel storage - improve facility, future Jet A

## *Auto Access, Parking & Security*

- Improve access, designate parking, & enhance security

# Development Alternatives Overview

## *Process*

- Identify opportunities and challenges
- Brainstorm - identify development concepts
- Define evaluation criteria
- Prepare/refine development alternatives - 3 total
- Conduct comparative evaluation- alternatives & “no action”
- Select draft “preferred alternative” to recommend to Lewis County

# Development Alternatives

## *Opportunities and Challenges*

- Opportunities are conditions that offer flexibility and possibility in development.
- Challenges are limitations or constraints that may restrict or prohibit development in certain areas or must be overcome with substantial cost, mitigation, or complex engineering solutions.

# Development Alternatives

## *Brainstorm*

- Airside development
  - *Runways*
  - *Taxiways*
  - *Apron*
- Landside development
  - *Hangars*
  - *GA Terminal*
  - *Access/circulation*

# Development Alternatives

## *Define Evaluation Criteria*

- Compliance with FAA design standards
- Responsive to long-term aviation demand
- Flexibility in long-term development
- Availability of airport property for development
- Community compatibility
- Preliminary environmental issues
- Magnitude of cost, funding eligibility/phasing
- Land acquisition
- Others...

# The Next Steps

- Prepare/refine development alternatives in coordination with the County (up to 3 build alternatives & no action)
- Prepare Draft Chapter 4, Development Alternatives
- Present alternatives to PAC & Public (Open House)
- PAC selects a “preferred development alternative” and submits recommendation to the County
- County selects “preferred development alternative” and Master Plan can be completed based on preferred alternative

# Discussion