Regional Aviation Baseline Study

Technical Workshop #1

June 11, 2019

Agenda

- Welcome and introductions
- Study overview
- Overview of airport and aviation activities analysis
  - *Data collection and inventory*
  - *Economic and socioeconomic context*
  - *Trends and forecasts*
  - *Multimodal connections*
  - *Goal areas and objectives*
  - *Metrics*
- Discussion
- Next steps

Welcome and introductions

Source: Kenmore Air

Technical Working Group

Membership

- Aircraft Owners and Pilots Association
- Alaska Airlines
- Boeing
- Boeing Field
- Delta Air Lines
- Lynden International
- National Business Aviation Association
- Paine Field
- Port of Bremerton
- Renton Municipal Airport
- Seaplane Pilots Association
- Sea-Tac Airport
- TransGroup
- Washington Airport Management Association
- WSDOT Aviation

Roles & Responsibilities

- Attend 3 meetings
- Represent constituent group by:
  - *Communicating perspective on key issues*
  - *Convey information back to stakeholders*
- Review and comment on draft working papers
- Provide feedback to the project team

Study overview

Background

- Aviation plays a pivotal role in the central Puget Sound Region
  - *Seattle Tacoma International Airport (Sea-Tac), the 8th busiest airport in the nation for enplanements*
  - *Hosts major manufacturing and operations of Boeing, the largest aerospace company in the world, with facilities at three of the regions airports.*
  - *Home base for Alaska Airlines, the 5th largest US airline by revenue in 2018*
  - *Asia hub for Delta Air Lines, the 2nd largest US airline by revenue in 2018*
  - *Supporting high paying jobs and opportunities for economic development in the central Puget Sound Region*
- Recent rapid airline passenger and air cargo growth raises questions about the region's ability to meet the future aviation needs while sustaining high-quality service

Study purpose and outcomes

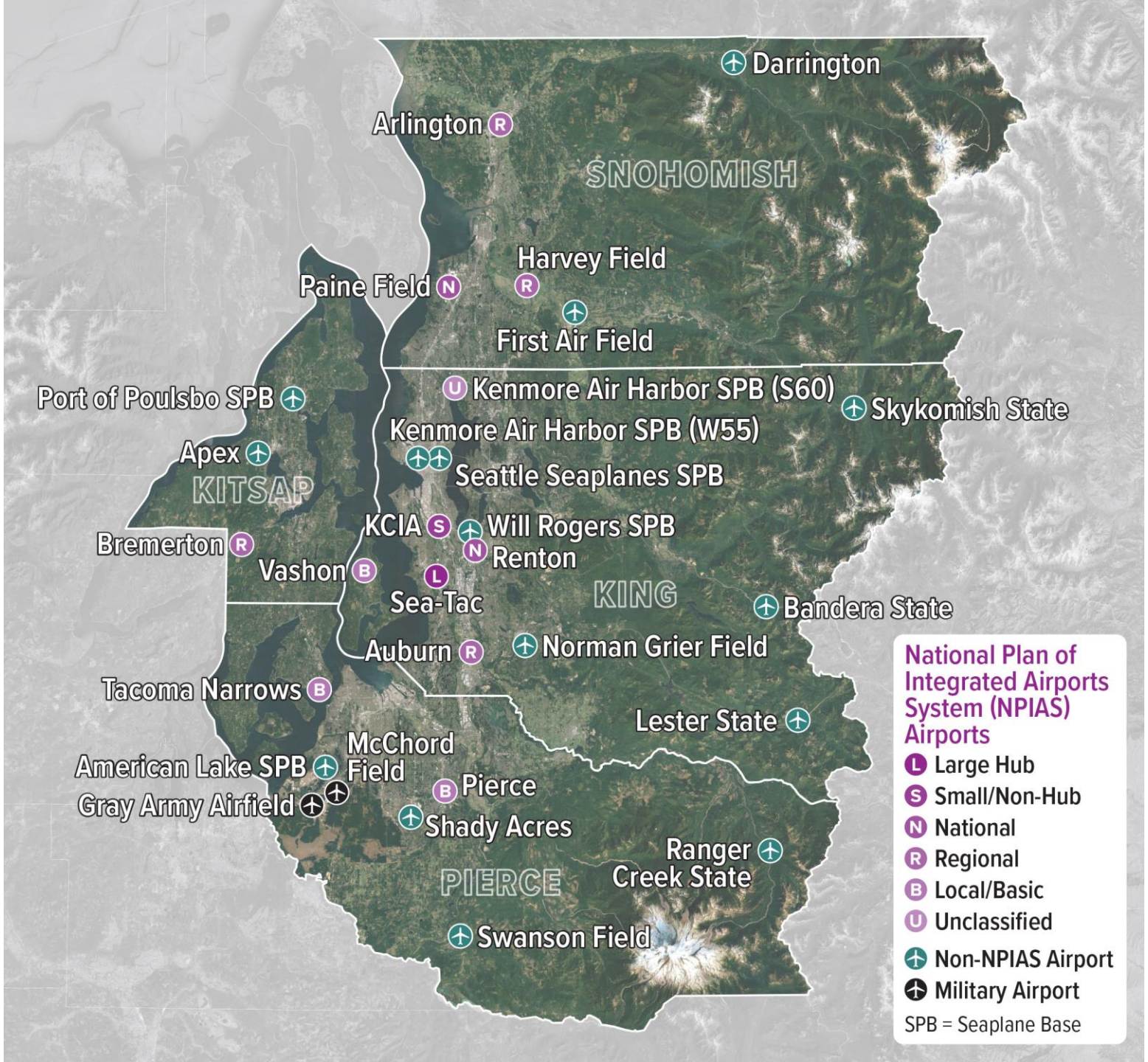
Provide a clear picture of the different roles and aviation activities at each of the region's airports, describe how these activities interact, and set the stage for future planning.

- Proposed outcomes:
  - *Identify the roles of each airport and the aviation activities within the region.*
  - *Provide a regional perspective on how aviation activities interact with each other, the community, and the broader community.*
  - *Obtain input from stakeholders about their needs and build a common understanding about aviation and airspace constraints.*
  - *Identify future aviation needs within central Puget Sound region and set the stage for future planning.*

Proposed goal areas and objectives

- Baseline study was initiated to address concerns about the future of aviation in the central Puget Sound Region
  - *Reviewed PSRC and State aviation-related policies*
  - *Supported related PSRC objectives and policies*
- Built on Washington Aviation System Plan goal areas and objectives relevant to this study:
  - *Economic development and vitality*
  - *Education, outreach, and community engagement*
  - *Infrastructure improvement, preservation, and capacity*
  - *Modal mobility, capacity, and accessibility*
  - *Stewardship*
- Developed objectives for each goal area

Study area and airports



Study area airports

AIRPORT NAME	CITY	COUNTY	FAA CATEGORY
Seattle-Tacoma International (Sea-Tac)	Seattle	King	Commercial Service, Large Hub
King County International/Boeing Field (KCIA)	Seattle	King	Commercial Service, Non-hub
Snohomish County International (Paine Field)	Everett	Snohomish	Reliever, New Commercial Service 2019
Renton Municipal	Renton	King	Reliever
Auburn Municipal	Auburn	King	Reliever
Harvey Field	Snohomish	Snohomish	Reliever
Kenmore Air Harbor Sea Plan Base (SPB) (S60)	Kenmore	King	General Aviation
Vashon Municipal	Vashon	King	General Aviation
Bremerton National	Bremerton	Kitsap	General Aviation
Pierce County	Puyallup	Pierce	General Aviation
Tacoma Narrows	Tacoma	Pierce	General Aviation
Arlington Municipal	Arlington	Snohomish	General Aviation
Bandera State	Bandera	King	General Aviation
Lester State	Lester	King	General Aviation
Skykomish State	Skykomish	King	General Aviation
Norman Grier Field	Kent	King	General Aviation
Kenmore Air Harbor SPB (W55)	Seattle	King	General Aviation
Seattle Seaplanes SPB	Seattle	King	General Aviation
Will Rogers—Wiley Post Memorial SPB	Renton	King	General Aviation
Apex Airpark	Silverdale	Kitsap	General Aviation
Port of Poulsbo SPB	Poulsbo	Kitsap	General Aviation
Ranger Creek State	Greenwater	Pierce	General Aviation
Swanson Field	Eatonville	Pierce	General Aviation
Shady Acres Airport	Spanaway	Pierce	General Aviation
American Lake SPB	Tacoma	Pierce	General Aviation
Darrington Municipal	Darrington	Snohomish	General Aviation
First Air Field	Monroe	Snohomish	General Aviation
McChord Field	Tacoma	Pierce	Military
Gray Army Airfield	Tacoma	Pierce	Military

Study phases

Airport & Aviation Activity Analysis (Summer 2019)	Future Aviation Issues Analysis (Fall/Winter 2019/2020)	Scenarios Definition & Evaluation (Spring /Summer 2020)
• Existing conditions & constraints • Market trends • Regional forecasts • *Airspace flow analysis (later in summer 2019)*	• Future regional landside & airside capacity needs • Future needs by activity and by airport • Major challenges • Economic analysis	• Identify and analyze scenarios • Identify potential next steps • Publish final report

WE ARE HERE

Source: Geekwire/Kevin Lisota

Overview of airport and aviation activities

Data collection and inventory

- Conducted airport manager surveys in February and March 2019
- Supplemented surveys with telephone interviews
- Information was supplemented from:
  - Federal Aviation Administration (FAA) Form 5010, Airport Master Record
  - FAA Aeronautical Data
  - National Plan of Integrated Airport Systems (NPIAS)
  - WSDOT Airport Information System Database
  - WSDOT Aviation Division 2016 Statewide Airports Profile Report
  - Airport Master Plans (as available)
  - Airport Layout Plans (as available)

Data collection and inventory

Three commercial service airports:

- Sea-Tac serves 50 million passengers annually
  - *economic impact totaled $22.5 billion in 2017*
- Paine Field recently began commercial passenger service
  - *economic impact is estimated at $20 billion annually*
- King County International Airport (KCIA) is one of the nation's busiest non-hub airports
  - *contributes $3.5 billion in annual economic impact*
- Three airports involved with large aircraft manufacturing
  - *KCIA*
  - *Paine Field*
  - *Renton*

Data collection and inventory

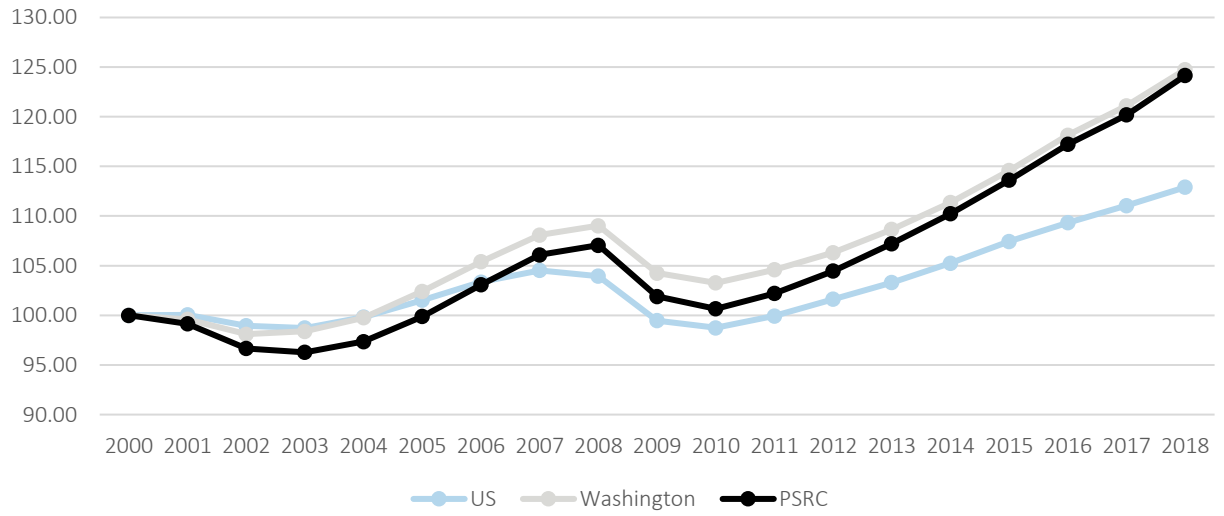
- Twelve NPIAS airports including:
  - *One large hub airport (Sea-Tac)*
  - *One non-hub, primary airport (KCIA)*
  - *10 NPIAS general aviation airports, including 4 reliever airports*
  - *Initiation of commercial service at Paine Field will change status to a non-hub in the next NPIAS report*
- Fifteen non-NPIAS airports (including SPBs)
- One military installation (JBLM) with two airports
  - *Gray Army Airfield*
  - *McChord Field*

Data collection and inventory

- Military airports are included in the study for information purposes
  - *Their internal operations and plans will not be analyzed*
  - *Recognize their airspace requirements*
- Four airports outside of the region considered for influence:
  - *Bellingham International (BLI)*
  - *Spokane International (GEG)*
  - *Grant County International (MWH)*
  - *Olympia Regional (OLM)*

Economic and socioeconomic context

- Aviation is closely tied to economic trends at a national level and also to the regional economy and demographics
- The area has experienced significant population and employment growth and this trend is expected to continue
- The aerospace industry plays a critical role in the regional economy and depends on a well-functioning aviation system

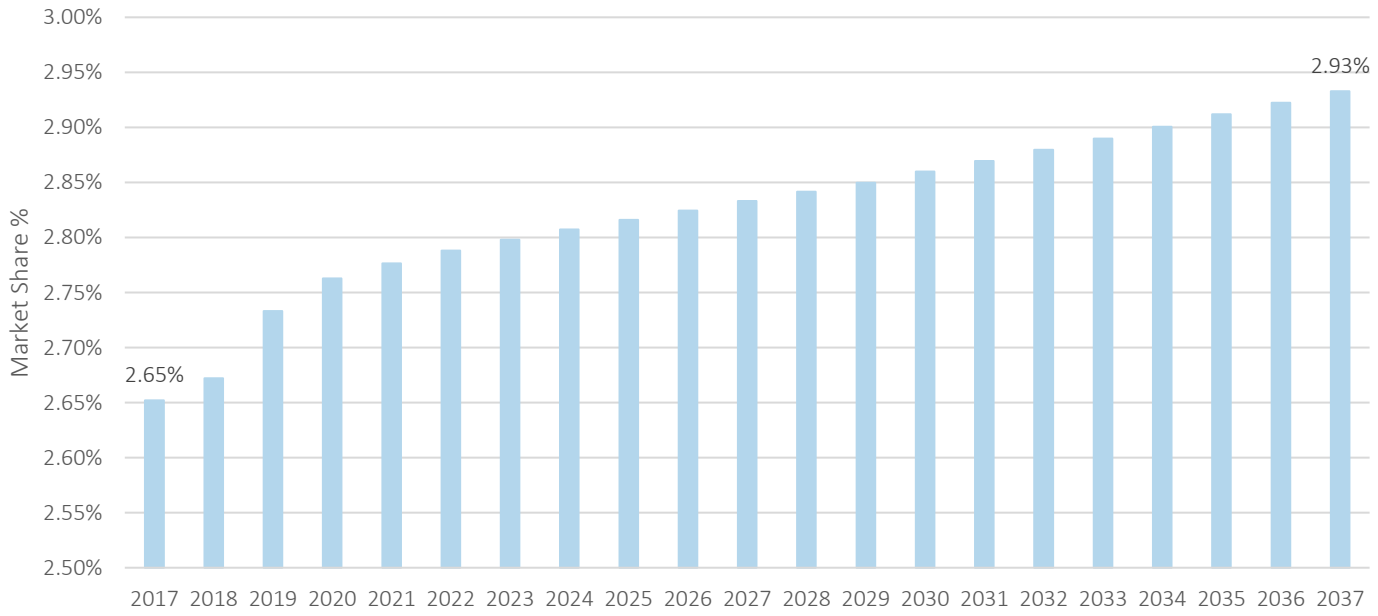


Total nonfarm employment index for U.S., Washington, and central Puget Sound Region

Source: U.S. Bureau of Labor Statistics 2019

Commercial aviation trends and forecast

- Growth of income and employment is driving aviation demand
- Sea-Tac serves as a hub to Asia



Central Puget Sound projected U.S. enplanement market share

Source: FAA TAF, FAA Aerospace Forecasts, 2018; Compiled by WSP USA

Commercial aviation trends and forecast

Commercial activity forecast results by methodology

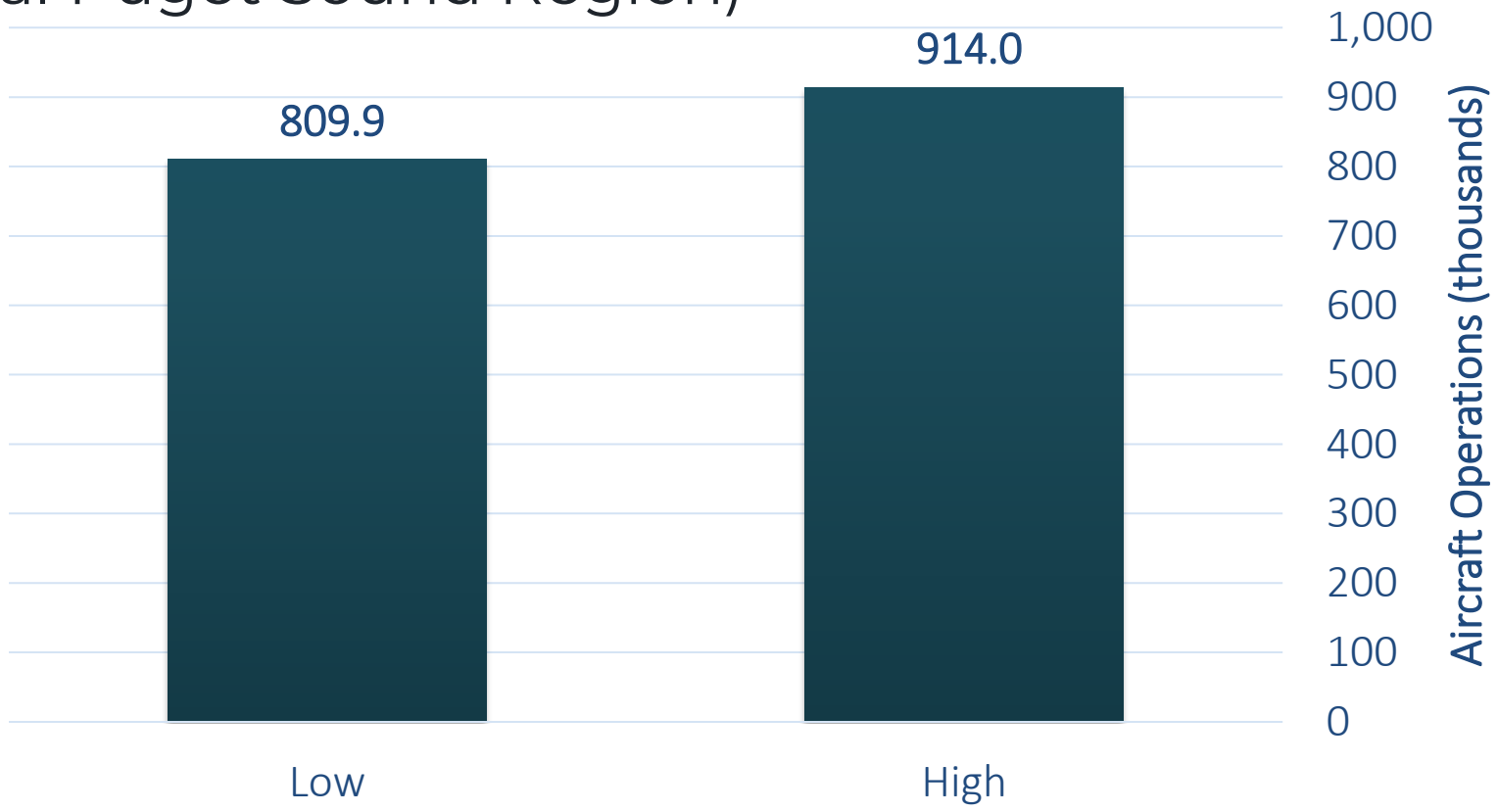
FORECAST METHODOLOGY	ENPLANEMENTS (MILLIONS)			AIRCRAFT OPERATIONS (THOUSANDS)		
	2017	2050	AVERAGE ANNUAL GROWTH	2017	2050	AVERAGE ANNUAL GROWTH
Growth Rate	22.5	55.6	2.8%	411.7	914.0	2.4%
Market Share	22.5	49.3	2.4%	411.7	809.9	2.1%
Regression	22.5	39.9	1.8%	411.7	656.3	1.4%

Commercial aviation trends and forecast

Selected Enplanement Forecast Range for 2050 (Central Puget Sound Region)

Commercial aviation trends and forecast

Selected Aircraft Operations Forecast Range for 2050 (Central Puget Sound Region)

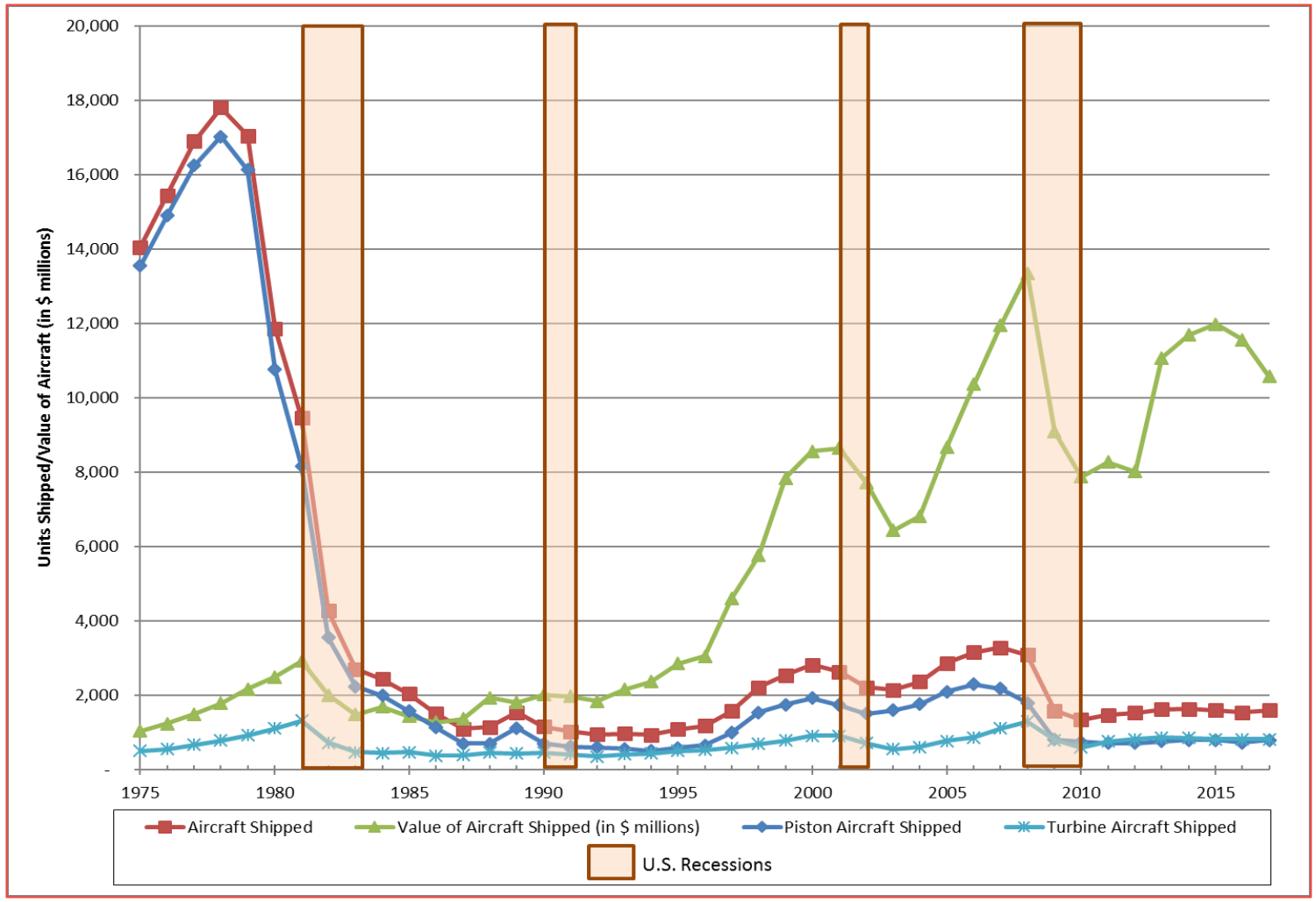


General aviation trends and forecast

- General aviation includes recreational flight and tourism, business, flight instruction, medical, emergency management, law enforcement, local transportation, and search/rescue operations
- Overall pilot population within the region is remaining steady, while private pilot population is experiencing a slow decline – similar to state and national trends
- Aircraft maintenance technician numbers in the region are declining
- There is a nationwide decrease in personal flight hours
- The based aircraft forecast indicates growth
- Aircraft operations forecasts indicate declining piston engine use and increasing use of turbine aircraft

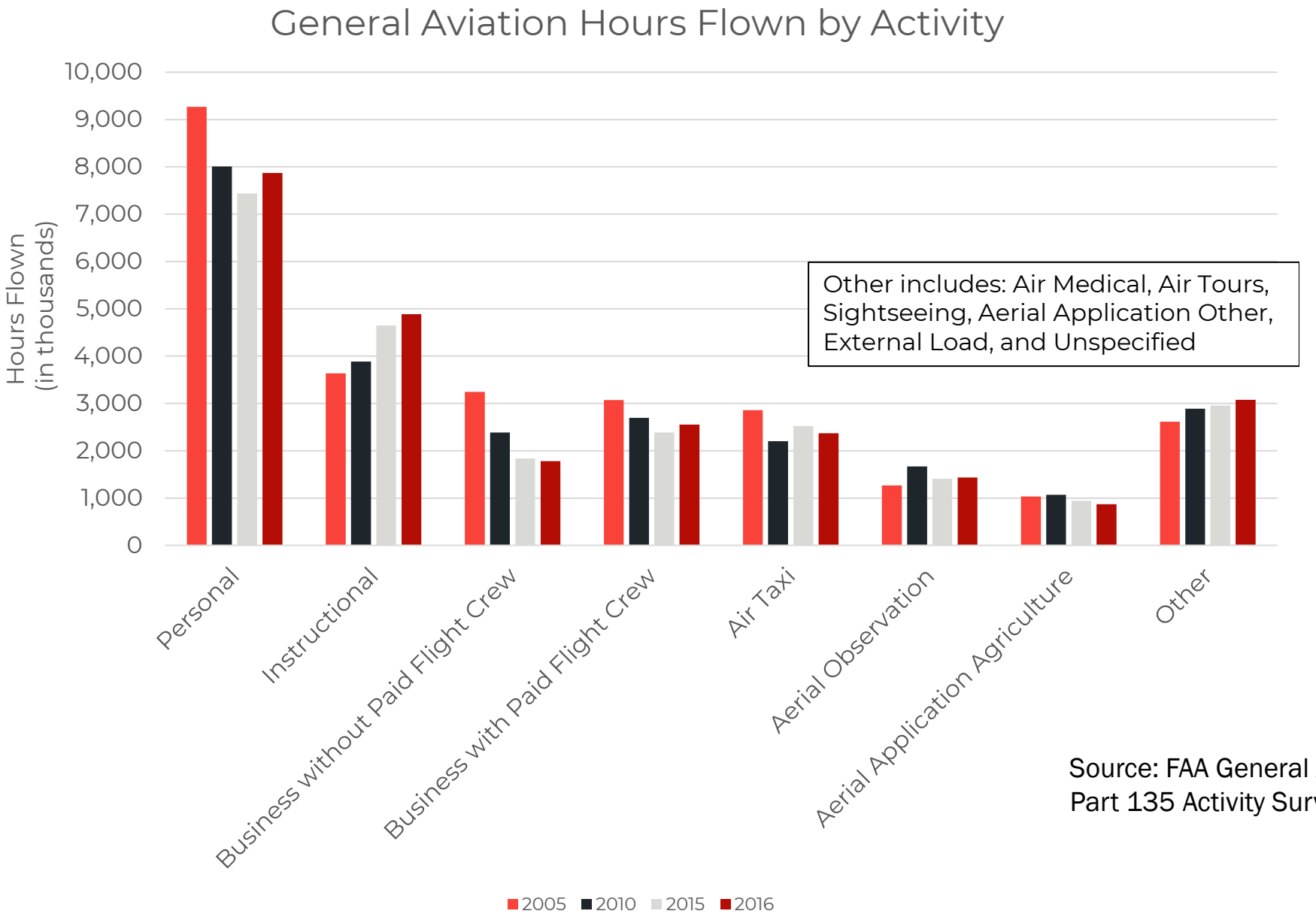
General aviation trends and forecast

US manufactured GA aircraft



Source: 2017 General Aviation Manufacturers Association Annual Report

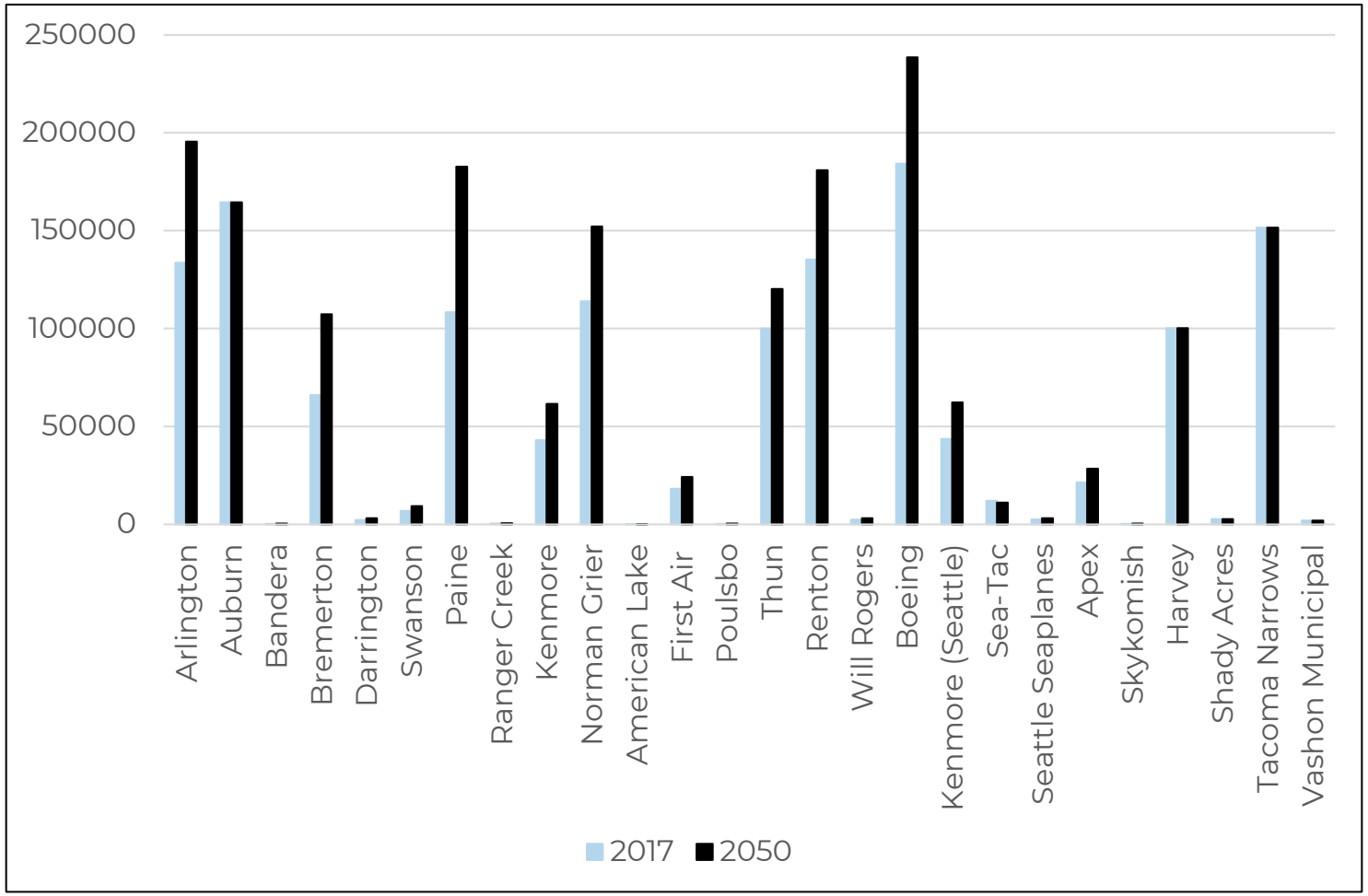
General aviation trends and forecast



Source: FAA General Aviation and Part 135 Activity Surveys CY 2016

General aviation trends and forecast

GA Aircraft operations forecast for central Puget Sound



Source: FAA ATADS, NFDC, FAA Aerospace Forecast, and WASP

Air cargo trends and forecast

- Air cargo in the central region is generated primarily by activity at Sea-Tac and KCIA
  - *Paine Field air cargo is almost entirely related to Boeing aircraft assembly and considered general aviation for purposes of this study*

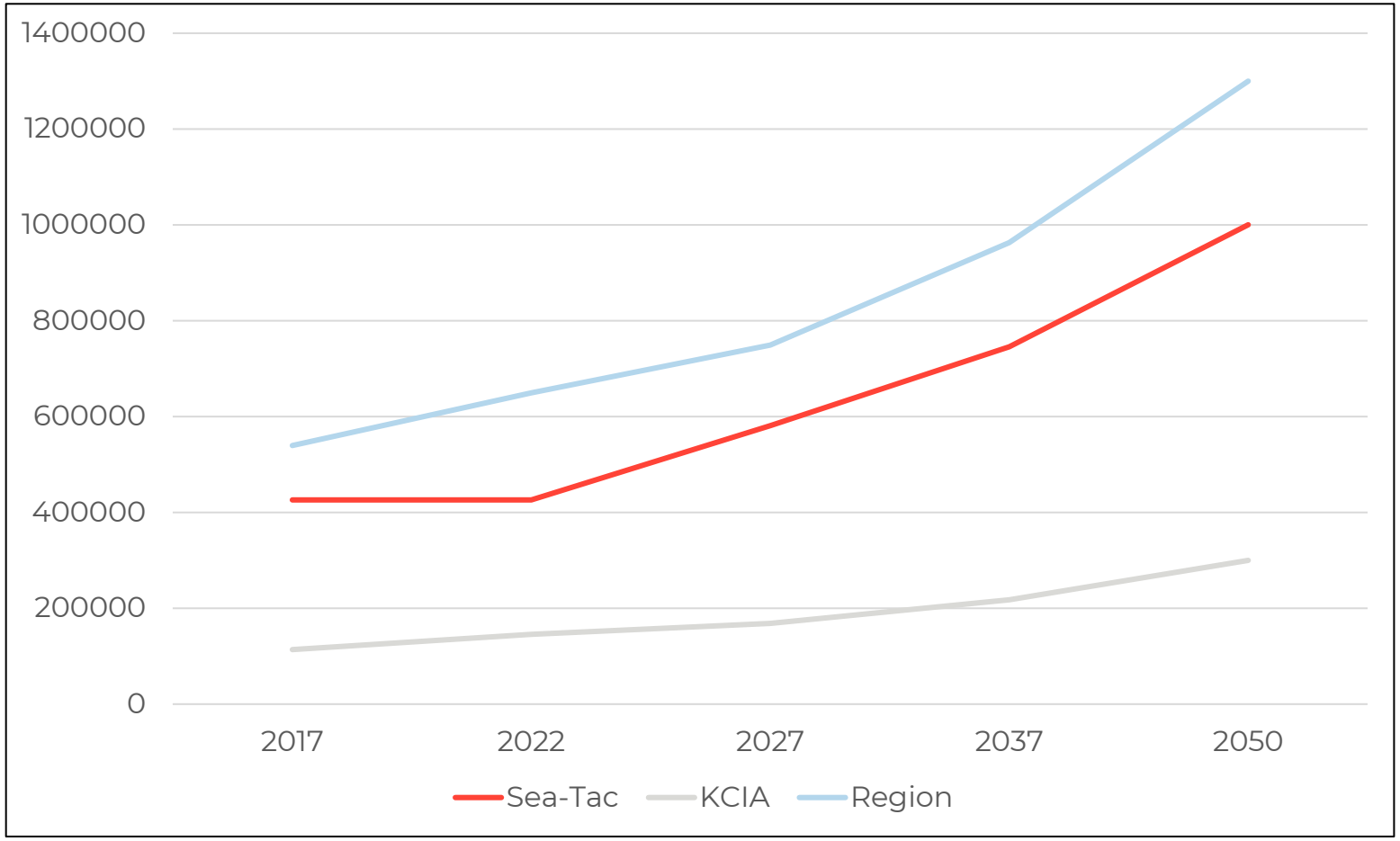
Commercial air cargo airports	Metric Tons Year 2017	Market share
Sea-Tac	425,856	64.7%
KCIA	113,718	35.2%
Total air cargo	539,574	100%

Air cargo trends and forecast

- Air cargo at Sea-Tac increased by 16% from 2016 to 2017
- Preliminary data from 2018 indicates less than 2% growth due to a significant drop in the cherry export season
- “Middle mile” air cargo is an emerging model in air cargo
- Robust regional economy will serve as a catalyst for domestic and international air cargo demand
- WSP recommended air cargo forecast anticipates average annual growth of 2.75% between 2017 and 2050

Air cargo trends and forecast

WSP/KPA forecasted air cargo trends (metric tons)



Multimodal connections and access

- Good roadway and transit connections to the interstate highway system, state highways, and public transportation are essential to a thriving airport system
- Different types of access have varying levels of importance to airports based on the types of uses occurring at those airports
- The region is expected to see 16.6 million more vehicles miles per day by 2040, increasing hours of delay and drive time to airports
- 5 airports have Hight Capacity Transit service today (including Sea-Tac, Paine Field and Renton)
- Planned improvements will bring HCT service to 4 others (including KCIA and Auburn) in the future

Multimodal connections and access

Nine airports with master plans were evaluated for adequacy of landside access:

Airport	Access
Arlington Municipal	Adequate access at current levels with potential room for growth
Auburn Municipal	Adequate access at current levels with potential room for growth
King County International (Boeing)	Adequate access at current levels but limited transit access to passenger terminal and constrained by land and location in a congested area
Bremerton National	Adequate access at current levels with potential room for growth
Harvey Field	Inadequate parking facilities and constrained by local roadways
Paine Field	Adequate access but may change based on the addition of commercial service
Renton Municipal	Inadequate parking facilities and constrained by land and location in a congested area
Sea-Tac International	Adequate parking and transit access, constrained by local roadways for movement of passengers and freight
Tacoma Narrows	Adequate access at current levels with potential room for growth

Proposed goal areas and objectives

- Reviewed PSRC and State aviation-related policies
- Supported relevant PSRC objectives and policies
- Built on Washington Aviation System Plan goal areas and objectives relevant to this study
- Developed objectives for each goal area

Goal: Economic development and vitality

Objectives:

- Identify aviation needs of growing population.
- Support meeting aviation needs to support economic growth now and in future.
- Support needs of aerospace industry for manufacturing and cargo that must be on, or in the immediate vicinity of, the airport.
- Quantify the economic impacts of each airport using Federal Aviation Administration guidance.

Goal: Education, outreach & community engagement

Objectives:

- Understand community perceptions about regional aviation needs.
- Provide information that is credible and provides a consistent base for stakeholders and decision makers regarding the aviation system and constraints.
- Obtain feedback from the general public regarding aviation needs and scenarios to address them.

Goal: Infrastructure improvement, preservation, and capacity

Objectives:

- Develop a set of benchmarks that identify what each airport needs to fulfill its role.
- Determine the aviation demand and capacity at each airport based on airport master plans and other existing plans.
- Assess the existing and future regional aviation airspace configurations and constraints, taking into consideration Federal Aviation Administration NextGen airspace improvements.

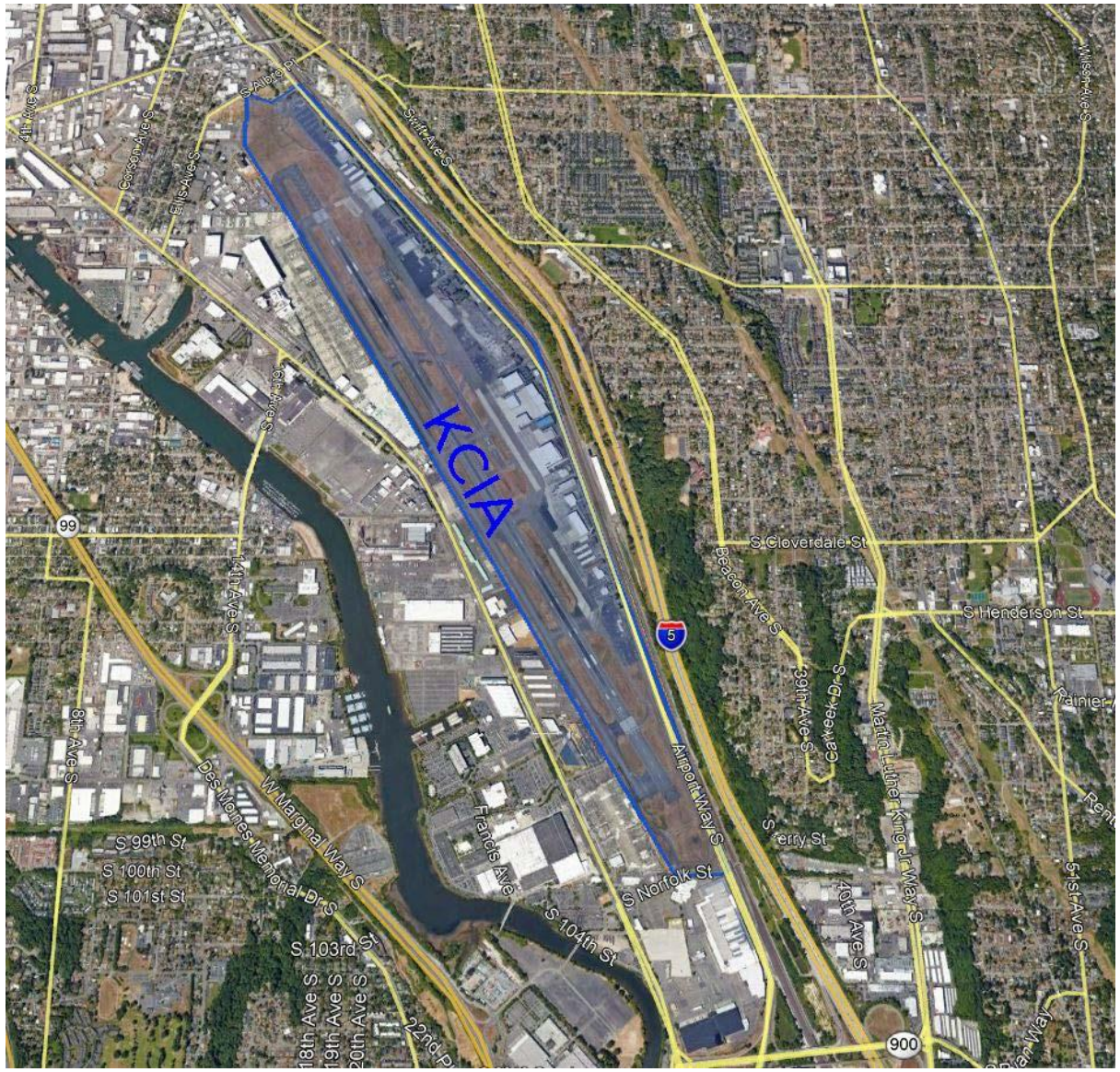
Goal: Modal mobility, capacity, and accessibility

Objectives:

- Provide adequate ground access to/from airports.
- Support road capacity and access improvement alternatives.
- Support and improve multimodal connections, including multiple transportation options for users.
- Support adequate vehicle parking at airports.

Goal: Stewardship

- Protect the continued operation of airports from encroachment by limiting incompatible uses and development on adjacent lands.



Metrics

- Draft metrics were discussed in Chapter 8 of the Technical Working Paper and detailed in Appendix A
- Next step: create benchmarks for analyzing current and future forecasted performance
- Benchmarks and metrics are intertwined
- We will finalize metrics and benchmarks based on feedback for Working Paper 1
- Benchmarks and system evaluation will be included in Working Paper 2

Discussion

- Do you have any feedback on the information that has been provided?
- Do the study objectives make sense?
- What are the biggest challenges and opportunities facing the region in terms of aviation?

Next Steps

— WP#1 comments due by June 18th

— Airspace Flow Analysis (Summer 2019)

— Evaluate Aviation Issues & Needs, Identify Challenges and Opportunities (Summer/Fall 2019)

— Present Working Paper #2 (Fall 2019)

Wrap up

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