



AVIATION ECONOMIC IMPACT STUDY

Technical Appendix H Advisory Committee Roster & Materials

TECHNICAL APPENDIX H: ADVISORY COMMITTEE ROSTER AND MATERIALS

As part of the Economic Impact Study, an Advisory Committee was formed to inform the project's analyses and products, and to act as a sounding board for WSDOT Aviation and the consultant team. The Committee was comprised of a diverse group of 36 individuals, coming from a range of backgrounds in airport management, aviation-related services, economic development, business, economics, national security, and emergency preparedness.

Between April and November of 2011, the Committee met on four occasions in locations across Washington State, including Seattle, Wenatchee, and Spokane. Each meeting included a presentation by the project team and various group discussions, where the Committee reviewed and provided input on preliminary data, analyses, and findings. Committee members shared perspectives and expertise in areas including the state's aviation system, airport operations, use of the airports, and economic development, and provided advice on how best to present and communicate project findings. Throughout the process, the Committee offered valuable input and feedback, much of which was incorporated into the study. However, it should be noted that Committee members were *not* asked to achieve consensus or adopt project findings.

Included in this appendix are a roster of Committee members, presentation materials from each of the meetings, and detailed meeting summaries. The materials are compiled in the following order:

1. Advisory Committee Roster
2. Meeting #1 Presentation Materials (April 26, 2011, Seattle, WA)
3. Meeting #1 Meeting Summary
4. Meeting #2 Presentation Materials (July 12, 2011, Wenatchee, WA)
5. Meeting #2 Meeting Summary
6. Meeting #3 Presentation Materials (September 27, 2011, Spokane, WA)
7. Meeting #3 Meeting Summary
8. Meeting #4 Presentation Materials (November 1, 2011, Seattle, WA)
9. Meeting #4 Meeting Summary

ADVISORY COMMITTEE MEMBERS

Borgan Anderson

Seattle-Tacoma International Airport, Port of Seattle

Peter Anderson

Galvin Flying Services

Craig Baldwin

Grant County Airport

Christina Bandaragoda, Ph.D.

Save Our Communities

Leonard Bauer

Department of Commerce Growth Management Services

Rita Brogan

PRR

Tim Brooks

Kenmore Air

Lorrie Brown, Ph.D.

Washington State Office of Financial Management

Todd Brunner

Brunner Construction

Carl Cadwell, D.D.S.

Cadwell Laboratories, Inc.

Cynthia Chen, Ph.D.

University of Washington, Department of Civil and Environmental Engineering

Ron Cridlebaugh

Kittitas County Chamber of Commerce

John Dobson

Port of Shelton

Amber Hansen

Port of Sunnyside

Sally Harris

Department of Commerce Business Services

Kandace Harvey

Harvey Airfield

Bob Isaman

Washington State Emergency Management Division

Barbara Ivanov

WSDOT Office of Freight Strategy and Policy

Kristi Ivey

National Business Aviation Association

Kathy Jones

City of Oroville

Chuck Kegley

Advanced Aviation Services

Bob Kibler

Desert Aire Airport

Stephen Kiehl

Puget Sound Regional Council

Jerry Litt

Washington Transportation Commission

Mayor Joe Marine

City of Mukilteo

Brenda Nelson

Airlift Northwest

Jim Reinbold

City of Chelan

Jeff Robb

William R. Fairchild International Airport

Elizabeth Robbins

WSDOT Community Transportation Planning Office

Dave Ryan

Friday Harbor Airport

Page Scott

Yakima Valley Conference of Governments

Mayor Ray Stephanson

City of Everett

David Sypher

Southwest Washington Regional Airport

Mark Urdahl

Port of Chelan

Mayor Mary Verner

City of Spokane

Ryan Zulauf

Washington Airport Management Association

WSDOT Aviation Division Advisory Committee Meeting #1

Aviation Economic Impact Study: Project Overview

April 26, 2011

Michael Hodgins

Project Director
BERK

About the Aviation Economic Impact Study

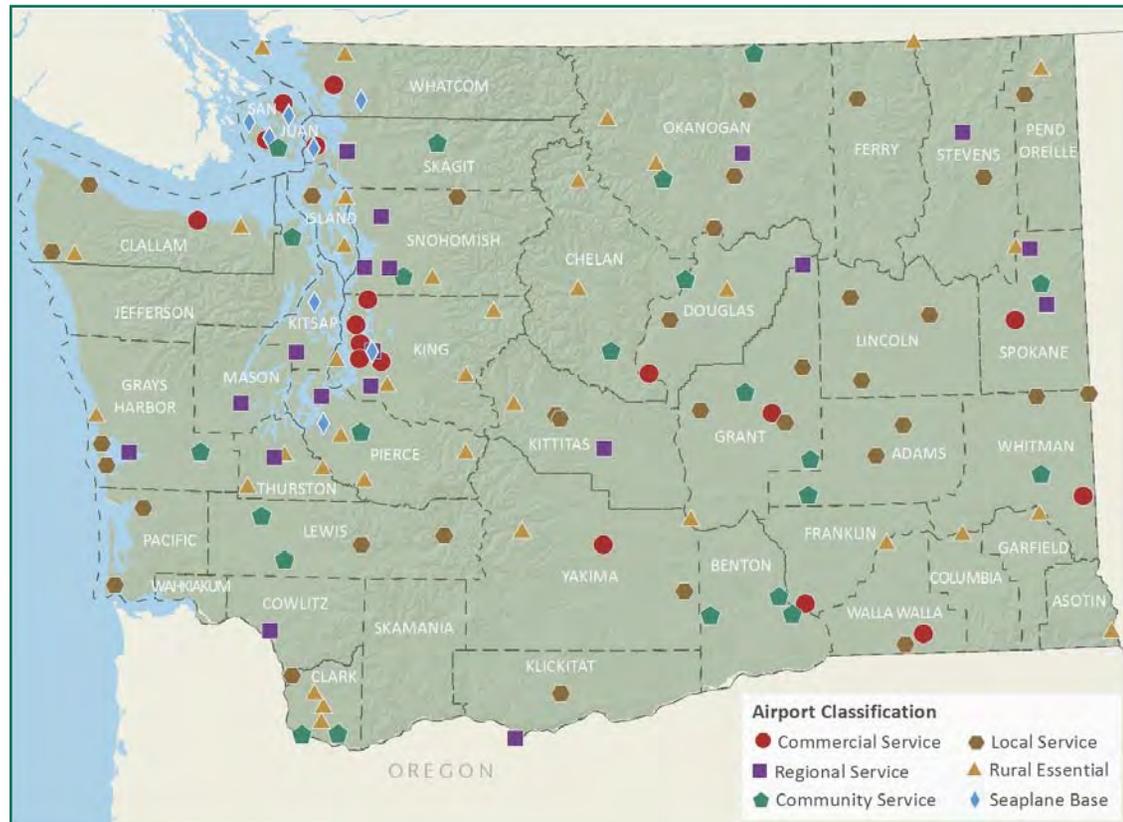
WSDOT Aviation Division is conducting a study on the role aviation plays in Washington's economy. The Aviation Economic Impact Study is:

- Supported by a grant from the Federal Aviation Administration (FAA).
- An update to the 2001 Economic Impact Study, which found aviation supported:
 - 171,312 jobs.
 - \$4.1 billion in wages.
 - \$18.6 billion in total economic output.

To conduct the study, WSDOT Aviation has engaged with a consultant team: BERK and URS, Corporation.

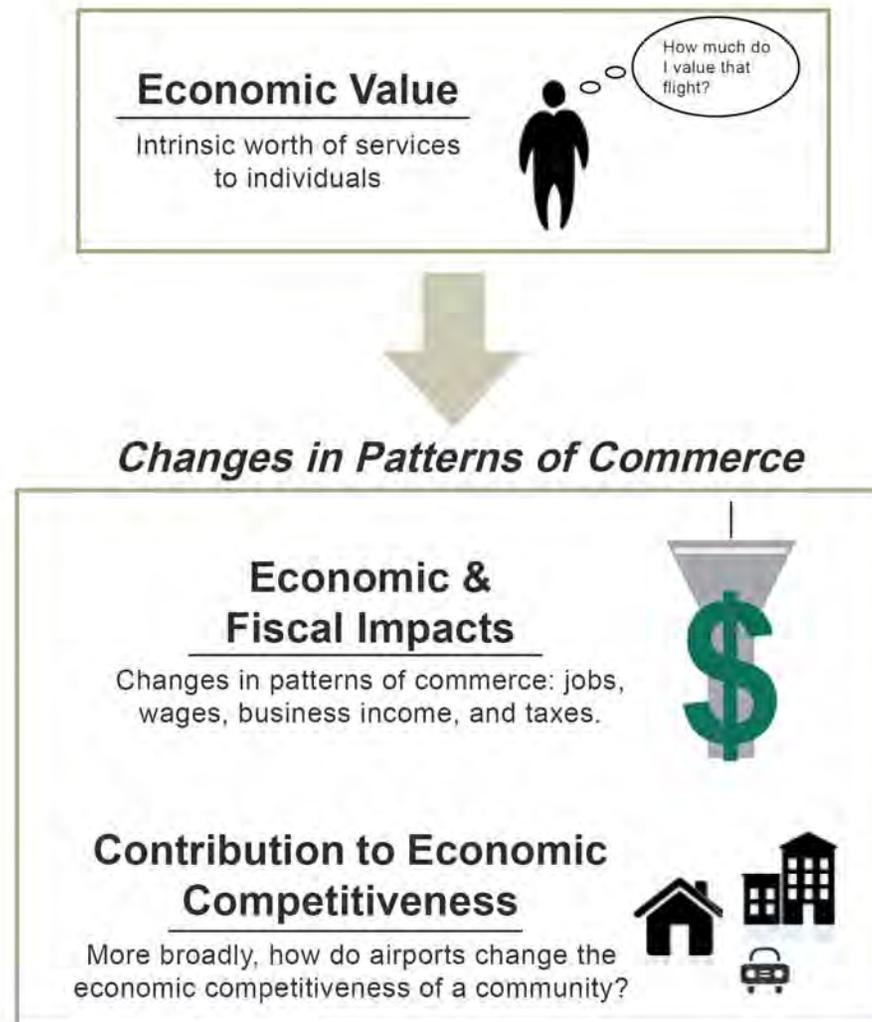
About the Study: The State's Aviation System

This study examines the 138 public use airports located in 36 of the state's 39 counties. These airports are an economic engine for the state and integral to the transportation system.



About the Study: Aviation's Economic Contribution

This study goes beyond typical economic impact studies by examining different measures of **economic contribution**:

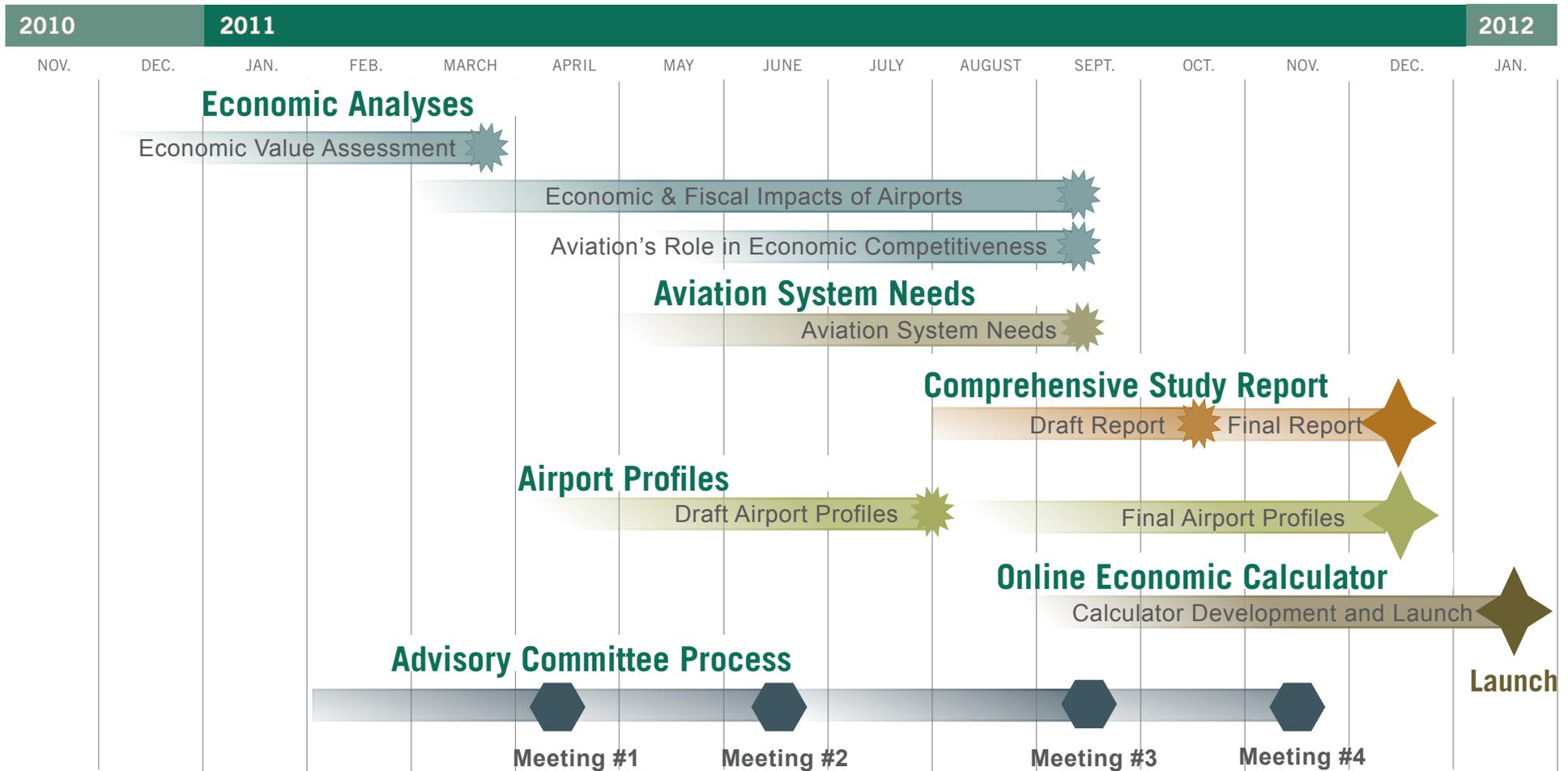


About the Study: Project Outcomes

This project will create a set of useful resources and tools for airports and decisionmakers, including:

- **An economic assessment (report)** will describe and measure the economic value and impacts of the state's aviation system and describe the role of aviation in the economic development of communities across the state.
- **Airport profiles** will be available online and provide a comprehensive summary of each public use airport in Washington, including information such as airport attributes, services offered, and economic impacts (jobs and wages). These profiles will be updated using the Aviation Information Database.
- **An online economic calculator** will be a tool available to everyone—airports, decisionmakers, and the public—to conduct what-if analyses about changes to an airport and its operations.

About the Study: Schedule



Aviation Division Programs

- Airport Grant Program
- Aviation Planning and Technical Assistance Program
- Aviation Emergency Management Program
- State Managed Airport Program
- Aircraft Registration Program

Washington Aviation System

Why is Aviation Important?

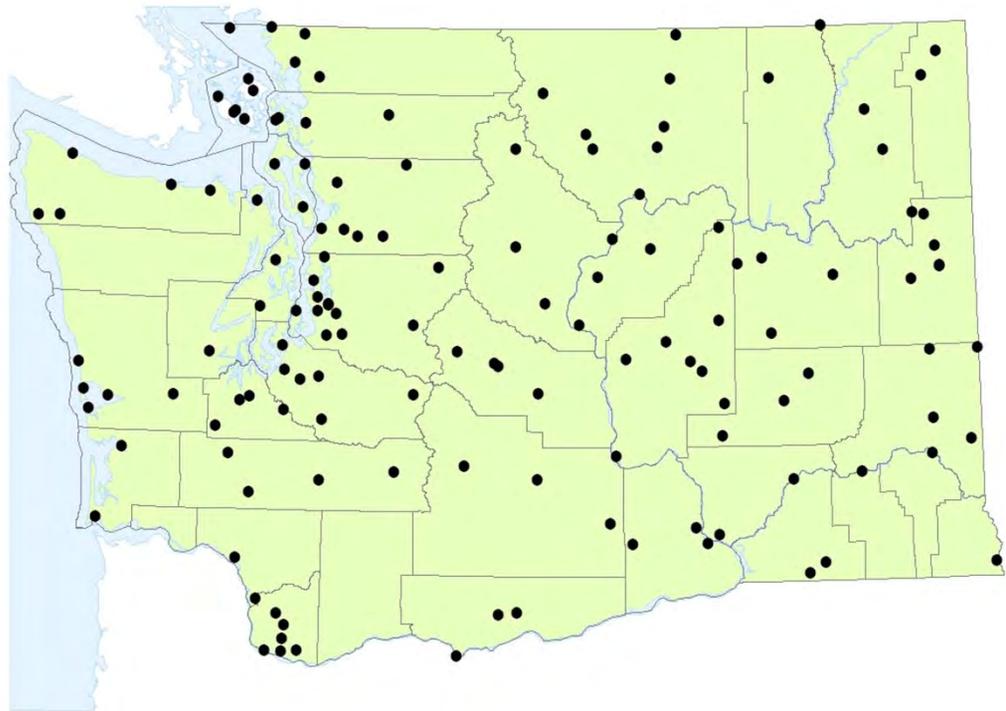
- *Aviation* plays a vital role in the movement of people, goods and services in the state and connects the state to the nation and world economies.

What is the role of the State?

- To enhance airport safety, improve airport facilities to meet future aviation trends and enhance system capacity.

Washington's Air Transportation System

- 138 public use airports
- 65 airports federal support (NPIAS)
- Ownership:
 - WSDOT: 17
 - County: 10
 - City/Town: 42
 - Port District: 33
 - Joint: 5
 - Private: 31



State Airport Classification

The state airport classification system was developed to identify the role of each airport in the state system and to understand the types of facilities and services necessary at each...

Classification	No. Of Airports	Description
Commercial Service	16	Accommodates at least 2,500 scheduled passenger boardings per year for at least three years.
Regional Service	19	Serves large or multiple communities; all NPIAS Relievers; 40 based aircraft and 4,000-foot long runway, with exceptions
Community Service (large)	23	Serves a community; has at least 20 based aircraft; paved runway
Local Service	33	Serves a community; has fewer than 20 based aircraft; paved runway
Rural Essential	39	Backcountry and rural airports, and residential airparks
Seaplane Bases	9	Identified by FAA as a seaplane base, unless it is a Commercial Service Airport

Aviation System Plan (LATS) and Benefits

- Why is Aviation important to the State and local communities, and how does it stack up against other sectors of the state?
- What is the value of my airport to the local community and state economy?
- What types of industries rely on aviation and the air transportation system?
- Provides decision makers with tools to target investments.
- Reinforces airport infrastructure improvements

WSDOT Aviation Division Advisory Committee Meeting #1

Overview of Economic Concepts

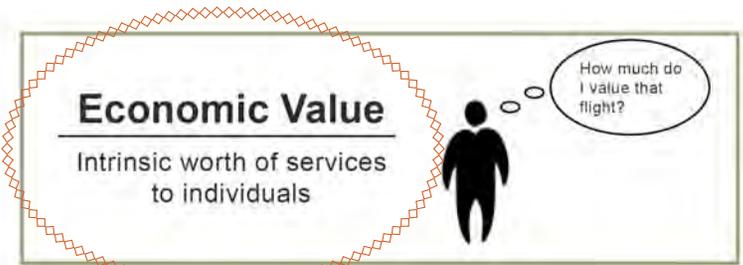
April 26, 2011

Michael Hodgins

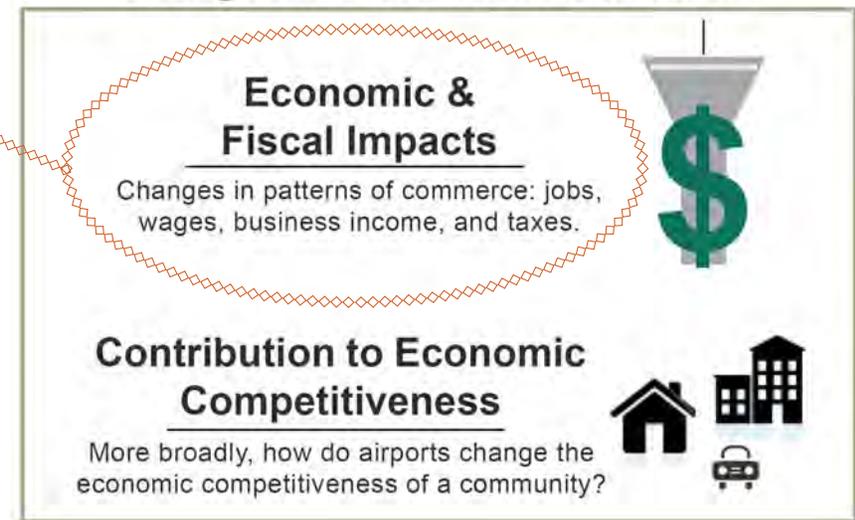
Project Director
BERK

Key Concepts of the Study

- This study goes beyond typical economic impact studies. It examines aviation's economic contribution to the state in multiple ways to get a more complete picture.
- Two key economic concepts are used throughout the Aviation Economic Impact Study:
 - **Economic Value.**
 - **Economic Impact.**



Changes in Patterns of Commerce



Economic Impact Overview

- **Definition.** How airports change the level of commerce in a given community. Impacts include:
 - Economic activity associated with the direct operation of the airports.
 - How airports change the competitive position of Washington's communities.
- There are many ways to measure change in commerce. The most common are:
 - Additional output* generated.
 - Number of jobs generated.
 - Amount of wages generated.
 - Amount of taxes generated (also known as **fiscal impact**).

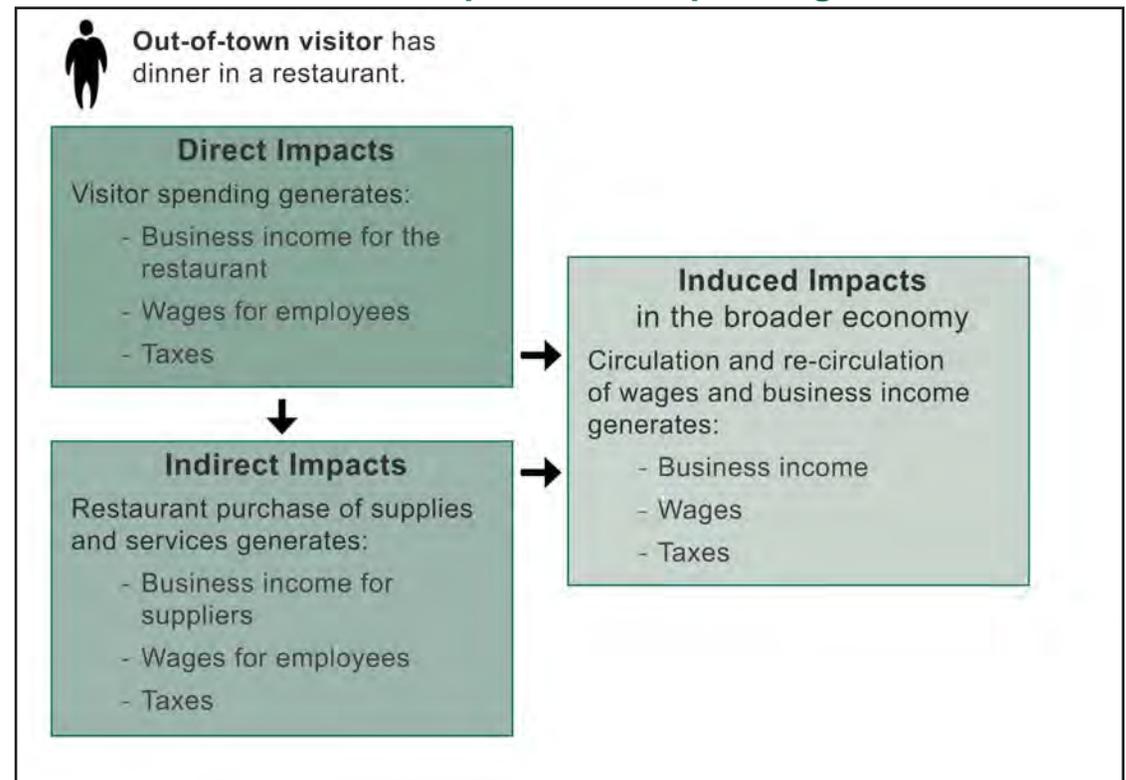
**Output is the total value of production for a company or industry.*

How are Economic Impacts Generated by Airports?

Airports generate economic impacts in two primary ways:

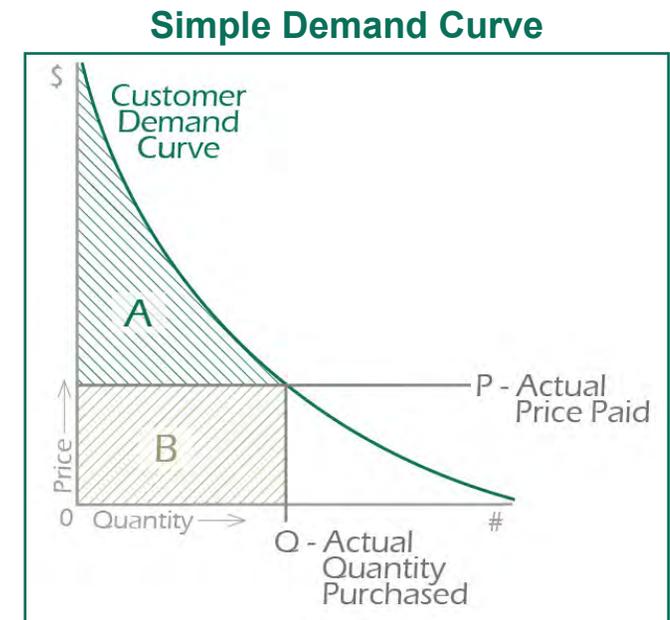
- Activities at airports.
 - Businesses operating at airports.
 - Airport operations.
- People buying goods and services from airports and airport-based businesses.
 - A large portion of this impact comes from out-of-state **visitor spending**.

An Example: Visitor Spending



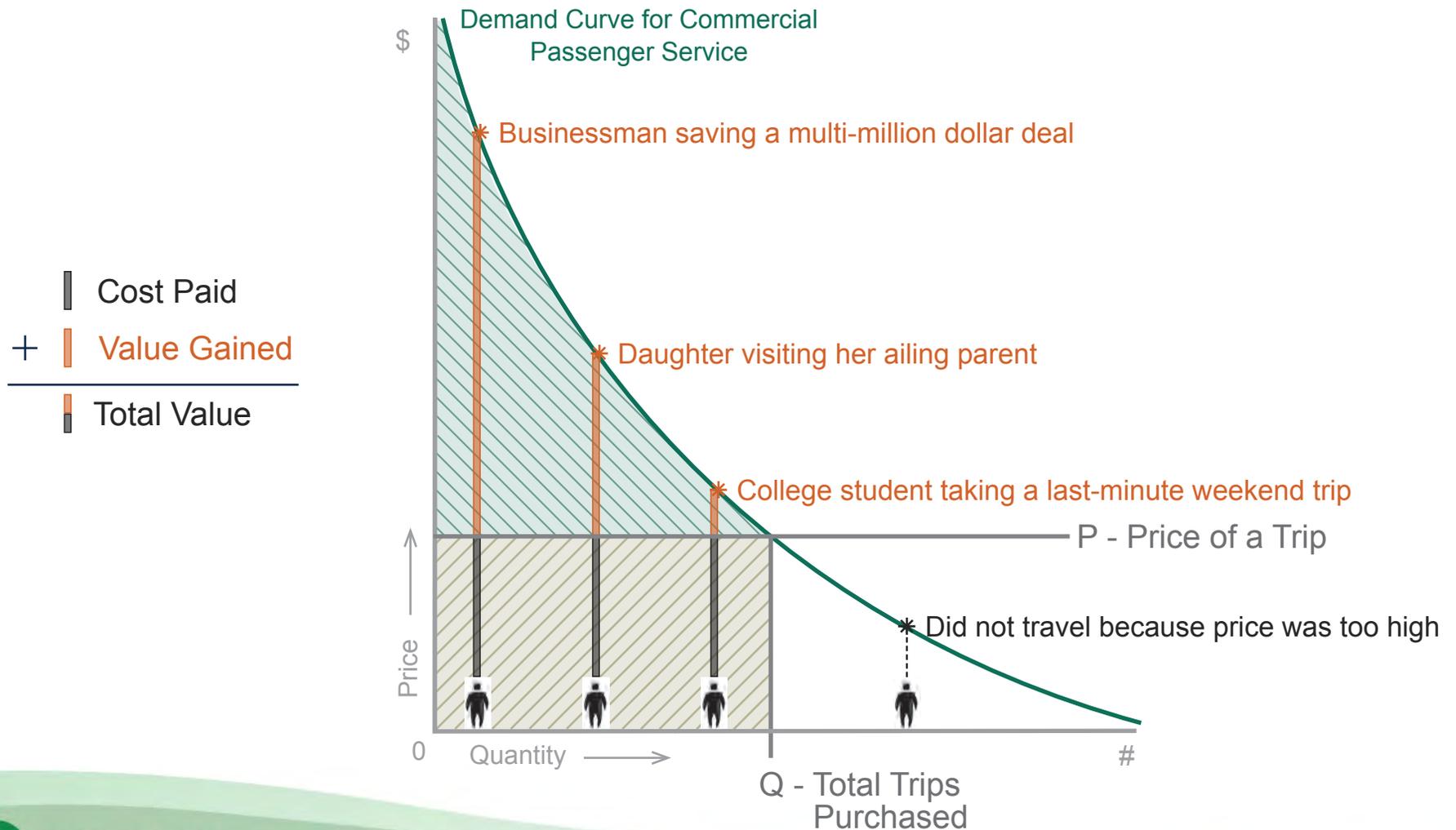
Economic Value Overview

- **Definition.** Intrinsic worth that users derive from the aviation system.
- Economic value is a driving force behind economic impacts - airports and their impacts exist **because** they provide value to individuals and entities.
- The chart to the right shows how economic value is created for a group of consumers.
 - Area B is the **total cost** paid by all users.
 - Area A+B is the **total value** of the service.
 - Area A is the **consumer surplus** generated.
- Consumer surplus (A) is virtually impossible to calculate. Total cost (B) can be used as a proxy to begin to estimate the total value (A+B) of the aviation system.



Economic Value Example

- On a commercial passenger flight, each passenger has a different purpose for taking his or her trip.
- The value created for each individual varies based on this purpose.



Summary of Key Concepts

Economic Impacts

- How airports change the level of commerce in a community.
- Ways of measuring change in commerce:
 - Additional output generated.
 - Number of jobs generated.
 - Amount of wages generated.
 - Amount of taxes generated. (also known as **fiscal impact**)

Economic Value

- Intrinsic worth that users derive from the aviation system.
- Driving force behind economic impacts.
- Total value is virtually impossible to calculate - total cost can be used as a proxy.

WSDOT Aviation Division Advisory Committee Meeting #1

The Economic Value Airports Create

April 26, 2011

Michael Hodgins

Project Director
BERK

Brett Sheckler

Strategic Advisor
Integrated Economics

What is This Study Trying to Measure?

Two questions guide this analysis of economic value:

1) **How does the system generate value** for individuals and entities that operate in the state?

- Airports enable a range of activities that are otherwise virtually impossible.
- At the individual airport level, each airport's existence and capabilities affect the competitiveness of the community it serves.

2) **How great might this value be?**

- Measuring economic value is virtually impossible - this would require knowing what millions of users would ultimately be willing to pay for each transaction.
- Using order-of-magnitude estimates, this study estimates value created by aviation-related activities in Washington in the **billions of dollars**.

Who Are the Users of Aviation in Washington?

The State's 138 public use airports enable activities and create value for many users across the state. This study explores the following activities:

- **Moving People and Goods.** Commercial passenger service; business and corporate travel; personal transportation; air cargo; blood, tissue, and organ transportation.
- **Protecting People and Resources.** Medical air transport, search and rescue, firefighting, national security, emergency preparedness and disaster response.
- **Supporting Research.** Scientific research and aerial photography.
- **Supporting Industry.** Aircraft manufacturing and agriculture.
- **Flight Training and Education.** Pilot training and certification.
- **Flying for Recreation.** Skydiving and aerial sightseeing tours.

How Does This Study Estimate Value?

- This study looks at value from the **user perspective** - how does the individual derive value from using aviation?
- This study estimates value by exploring three questions about each of the core activities:
 - How extensive is the activity in question, or how many transactions occur each year?
 - What cost do users actually pay?
 - Beyond actual cost paid, how can we think about the total value being created?
- The following slides explore the creation of economic value using a few selected example activities.

Example Activity: Commercial Passenger Service

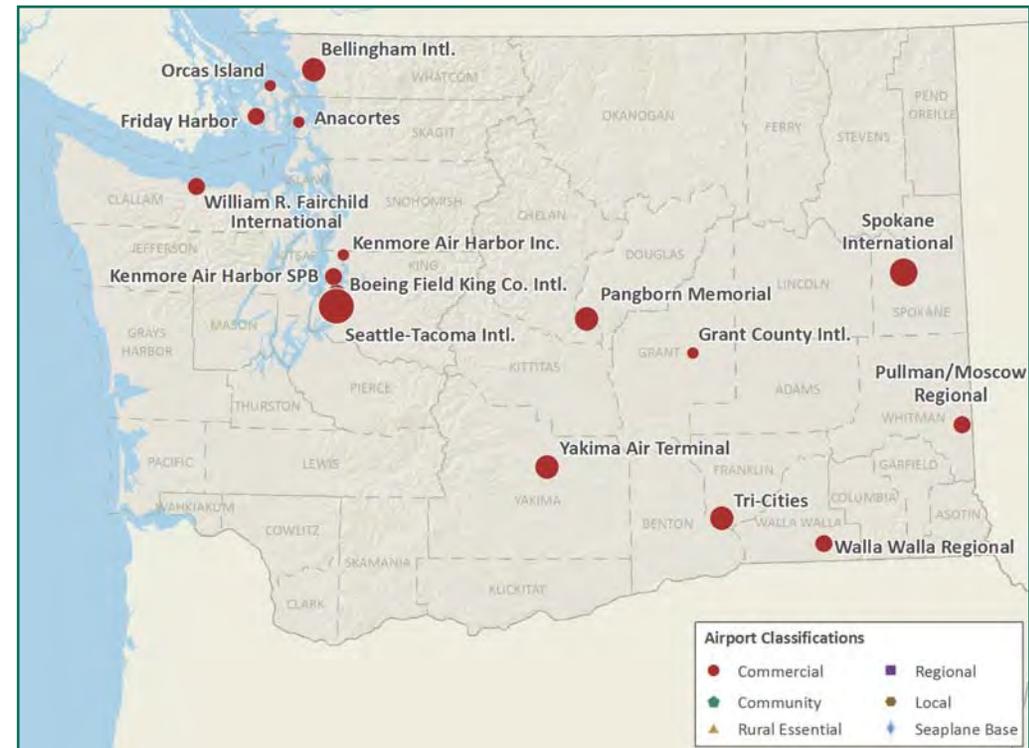
Definition

Scheduled passenger flights operated by commercial airlines.

Level of Activity in Washington

- 16 Washington airports have scheduled commercial passenger service.
 - 5 additional airports have charter commercial services.
- 16.6 million scheduled commercial passenger enplanements in Washington in 2010.
 - Sea-Tac and Spokane account for 95% of statewide commercial passenger traffic.

Commercial Service Airports by Number of Enplanements in 2010



Example Activity: Commercial Passenger Service

How is Value Created?

- Offers access to places, markets, and resources.
- Each user has a different reason for using commercial service, from business trips to personal vacations.

How Much Value is Created?

- At an estimated cost of \$260 per round-trip, users paid **about \$8.6 billion** for commercial passenger service in Washington in 2010.
- A trip generates value for users in different ways and at different levels depending on the trip's purpose:
 - Some trips generate little value: a person taking a \$99 weekend getaway may have stayed home if the price were any higher.
 - Some trips generate significant value: a businessman flying to save a multi-million dollar deal would be willing to pay significantly more than face-value.
- Even if only 1,000 commercial trips per year are for multi-million dollar reasons, this activity generates value in the **billions of dollars**.

Example Activity: Medical Air Transport

Definition

Transporting a patient by air to receive specialized or emergency care at an adequate trauma facility.

Level of Activity in Washington

- Most transports are from rural areas to trauma centers in urban locations.
- More than 1,600 patients use medical air transport in Washington each year.

Public Use Airports Reporting Medical Transport or Air Ambulance Activity in Last 5 Years



NOTE: Patients requiring specialized care need to be treated at a hospital ranked Level I or Level II on the acute care rating system.

Example Activity: Medical Air Transport

How is Value Created?

- Patients receive specialized care quickly and more effectively than if they were transported by ground.
- Reducing the time between injury and care improves outcomes and saves lives.
- Communities derive **option value** from having medical evacuation available. This may drive location decisions for businesses and families.

How Much Value is Created?

- Although these flights happen infrequently, **significant value is created on every trip**. The level of treatment within the first hour after a heart attack or head injury can save lives.
- Difficult to know the value of life or health - impacts are felt by family members and by whole communities.
- These flights are one of the biggest and most important sources of value creation at many rural airports.

Example Activity: Agriculture

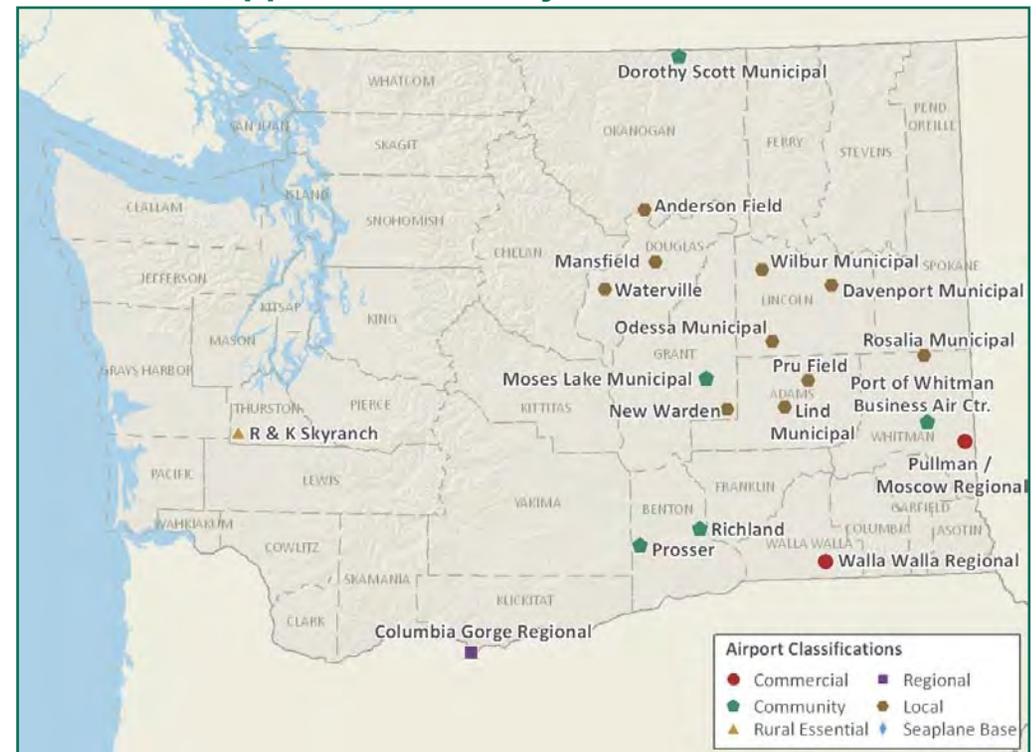
Definition

- Aerial application of crop treatments to treat weeds, pests, insects, and fungal outbreaks.
- Aerial application of fertilizer or seed crops during planting.

Level of Activity in Washington

- About 25% of cropland nationwide is treated with aerial application each year.
- This equates to about 1.9 million of Washington's 7.6 million total acres of cropland.
- 19 public use airports support aerial application, mostly in Eastern Washington.

Public Use Airports Reporting Agricultural Aerial Application Activity in Last 5 Years



Example Activity: Agriculture

How is Value Created?

- Aerial application protects crops by applying a prescription over an area more quickly than a ground rig.
- Creates option value for farmers who consider aerial application an important safety net.

How Much Value is Created?

- Aerial application **supports a multi-billion dollar industry** - Washington agricultural sales totaled \$6.8 billion in 2007.
- Aerial application and the airports that support it are an important piece of infrastructure supporting the agriculture industry.
- To a farmer, an aerial application could be worth a high percentage of an affected crop's worth to avoid losing the crop entirely.
- Additional value is derived by farmers who don't use aerial application in a given year, but value the "insurance" factor.

Value Creation is Different in Different Communities.

So far we have looked at value creation from the aggregate perspective - how much total value is created by Washington's aviation system?

At the community level, the picture of value creation varies.

- At a **large airport in a major city**, major drivers of value creation might include:
 - Commercial passenger service.
 - Air cargo.
 - Business and corporate travel to national and international spheres.
- At a **smaller rural airport**, large contributors to value creation may come from a very different list of services. For example, the list may include:
 - Medical air transport.
 - Agriculture.
 - Firefighting.
 - Improved access for individuals or businesses with facilities in the community.

A Key Challenge: Recognizing Value Creation

- At a large airport in a major city, the buzz of activity makes it easy to sense that value is being created.

However, it is still easy to underestimate the extraordinary levels of value creation that actually occur.

- At a small, relatively quiet airport, the challenge is even more pronounced.
 - Much of the value is created through a **small number of high-value events** that may be spread over a long period of time.
 - Even in the moment when they occur, infrequent, high-value **events can look unremarkable** to a casual observer.

ADVISORY COMMITTEE MEETING #1

Meeting Summary

INTRODUCTION

The first meeting of the WSDOT Aviation Economic Impact Study Advisory Committee took place on April 26, 2011 at the Puget Sound Regional Council Board Room in Seattle, Washington. A total of 24 Advisory Committee Members attended in person and 8 participated via conference phone. There were an additional 6 people in attendance, as well as 9 people from the project team.

LIST OF ATTENDEES

Committee Members

Attending in Person

Borgan Anderson, Sea-Tac Intl. Airport

Peter Anderson, Galvin Flying

Christina Bandaragoda (alternate for Victor Coupez), Save Our Communities

Rita Brogan, PRR

Tim Brooks, Kenmore Air

Lorrie Brown, Office of Financial Management

Todd Brunner, Brunner Construction

John Dobson, Washington Pilots Association

Richard Ford, Washington Transportation Commission

Amber Hanson, Port of Sunnyside

Bob Isaman, Washington State Emergency Management Division

Barbara Ivanov, WSDOT

Chuck Kegley, Advanced Aviation Services

Bob Kibler, Desert Aire Airport

Stephen Kiehl, Puget Sound Regional Council

Mayor Joe Marine, City of Mukilteo

Brenda Nelson, Airlift Northwest

Jeff Robb, Washington Public Ports Association

Elizabeth Robbins, WSDOT

Dave Ryan, Friday Harbor Airport

Susan St. Germain (alternate for Sally Harris), Department of Commerce

Mayor Ray Stephanson, City of Everett

Mark Urdahl, Port of Chelan

Mayor Mary Verner, City of Spokane

Participating by Phone

Leonard Bauer, Department of Commerce

Carl Caldwell, Caldwell Laboratories, Inc.

Cynthia Chen, University of Washington

Ron Cridlebaugh, Economic Development Group of Kittitas County

Kandace Harvey, Harvey Airfield

Jim Reinbold, City Administrator

Page Scott, Yakima Valley Conference of Governments

Ryan Zulauf, Washington Airport Management Association

Other Attendees

Sheila Collins, City of Spokane

John Gowey, Kenmore Air

Reema Griffith, Washington Transportation
Commission

Michael Luis, Governor's Office

Pat McClain, City of Everett

Project Team

Julia Bosch, BERK

Emmy Heatherington, BERK

Michael Hodgins, BERK

Nisha Marvel, WSDOT Aviation

Deepa Parashar, Federal Aviation
Administration

Paul Roberts, BERK

John Shambaugh, WSDOT Aviation

Brett Sheckler, Integrated Economics

Gary Simonson, BERK

Carter Timmerman, WSDOT Aviation

MEETING PURPOSE

The purpose of the meeting was to:

- Launch the Advisory Committee process with an understanding of the committee's role and project scope.
- Introduce economic concepts explored in the study and preliminary findings from economic value assessment.

MEETING SUMMARY

Introductions, Welcome, and Committee Charge

Paul Roberts of BERK welcomed the Committee and all attendees to the meeting, and all members and attendees introduced themselves to the group. Paul then reviewed the Committee charge and operating principles with the group.

John Shambaugh of WSDOT Aviation provided opening remarks which included an overview of Washington's Aviation System and the WSDOT Aviation Division. He spoke about how the current work is building on the Long-term Air Transportation Study (LATS) and discussed the goals of the project, namely: establishing why aviation is important to the State and local communities; measuring the value of local airports to the local community and state economy; and determining what types of industries rely on the air transportation system. He also highlighted the importance of the study as a way to provide decision makers with tools to target investments and to reinforce airport infrastructure improvements.

Presentation: Introduction to the Study

Michael Hodgins of BERK presented a short project overview. He discussed the study's overarching purpose of examining the role aviation plays in Washington's economy, and touched on the different measures of economic contribution utilized in the study, including economic value (the intrinsic worth of services to individuals), economic impact (changes in patterns of commerce), and contribution to economic competitiveness. He then went over project outcomes, which will be a set of resources and tools for airports and decision makers, including: an economic assessment report, airport profiles for all 138 of Washington's airports, and an online economic calculator to conduct what-if analyses. The

presentation concluded with a segmented look at the project schedule, which goes through January 2012.

Following the presentation, Committee members offered various questions and comments regarding different aspects of the study. Michael Hodgins and Brett Sheckler of Integrated Economics provided responses. Key discussion points included:

- **Scope of the Project:** The Committee asked for clarification regarding the scope of the project and whether the study would be examining costs in addition to benefits.

The project team explained that the study's focus is on benefits, and that it is intended to inform conversations at the local level so there is a consistent understanding of what those benefits are. They noted that costs are site-specific and would not be feasible to include in the study. Committee members concurred, but stressed the importance of being as explicit as possible in defining the scope (i.e. benefits, not costs) and explaining the reasoning behind that decision.

- **Credibility:** Committee members emphasized that the success of project outcomes will hinge on the study's credibility, particularly the reliability of the data and information presented in the report. They highlighted the importance of defining the data and explaining key terms (such as "jobs connected to airports") as clearly as possible. In addition, it was suggested to utilize peer-reviewed academic sources to bolster the study's credibility.

The project team concurred that ensuring the reliability and credibility of the data is critical to the project's success and a top priority. Measures to ensure reliability were discussed, including working with individual airports to get review and feedback and leveraging the expertise of the Advisory Committee.

- **Online Calculator:** The Committee raised several questions about the nature of the online economic calculator. Specifically, they asked about the inputs that will go into the calculator, its flexibility across different regions of the state, and whether it will be adaptable to future conditions.

The project team explained that the online calculator will conduct what-if analyses for an individual airport. The calculator will be linked to the Aviation Information Database, which means that airport information can be updated over time.

Additional questions were asked regarding the significance of the 2001 Economic Impact Study and whether manufacturing jobs (like those at Boeing) were included in the "jobs supported" total drawn from that study. The project team noted that the 2001 Study focused on the economic impacts of the state's aviation system, which includes direct, indirect, and induced jobs. The current study will take a broader look at economic contribution to help put context around the number of jobs and overall contribution to the state.

Presentation: Overview of Economic Concepts

Michael Hodgins presented an overview of the study's key economic concepts. Economic impact describes how airports change the level of commerce in a community, with "change in commerce" being measured in several different ways: additional output generated, number of jobs generated, amount of wages generated, and amount of taxes generated. Economic value represents the intrinsic value users derive from their particular use of the aviation system, and is the driving force behind economic impacts.

Following the presentation, Committee members offered additional questions and comments. Michael Hodgins and Brett Sheckler provided responses. Key discussion points included:

- **Distinction between Value and Impact:** The Committee asked for clarification regarding the differences and relationship between economic value and economic impacts in several different ways. A concern was raised regarding the potential for double-counting.

The project team explained that the two concepts are entirely separate lenses for viewing aviation in Washington State. One looks at how the system generates value for individuals by enabling a range of activities that would otherwise be impossible. The other measures how airports change the level of commerce in a given community. The team clarified that while economic value is the driving force behind economic impacts, double-counting would not be possible since they are completely different concepts which are trying to measure different things. The Committee stressed the importance of making clear distinctions and explaining the connections between the two concepts so that the public is able to understand.

- **Scope of the Study:** Committee Members asked several questions about what was included in the study's examination of economic contribution. Questions ranged from whether or not "through the fence" activities would be included in the economic impact analysis and how particular topics and industries, such as air cargo, military, aviation education, and tourism, fit into the study.

The project team responded that "through the fence" activities were being included on a case-by-case basis. In cases where there are adjacent activities which are dependent on access to the airfield, then these would be included in the definition of the airport "footprint." On a broader basis, there will be an exploration of how industries cluster near airports as part of the correlation assessments to be conducted in the competitiveness analysis.

- **Committee Involvement:** There were some questions about committee involvement and what roles committee members would be playing in terms providing input and reviewing products. Some committee members expressed a desire for more opportunities to review materials and provide input. There was a specific question about the committee's role regarding the visitor spending surveys.

The project team clarified that materials will be distributed, and explained that the Committee will act as a sounding board. Its roles are to review and provide input into the project's data collection, analyses, and findings; share perspectives and expertise; and help determine how best to present and communicate findings. The project team will discuss and coordinate how best to solicit and receive input from the Committee on a number of intermediate products, such as the visitor surveys.

Presentation: The Economic Value Airports Create

Brett Sheckler of Integrated Economics presented a closer look at the study's analysis of economic value. He began by introducing the guiding questions: How does the system generate value for individuals and entities that operate in the state, and how great might this value be? He then went over six categories of activities that create value for users across the state: moving people and goods; protecting people and resources; supporting research; supporting industry; flight training and education; and flying for recreation.

Next, Brett discussed the study's approach to estimating value from the user perspective and highlighted the questions driving the estimates. These questions address the extensiveness of the activity, the cost users pay, and other ways (besides cost) to think about value creation. Three example activities that create economic value were included in the presentation—Commercial Passenger Service, Medical Air Transport, and Agriculture—however, discussion in the meeting focused primarily on Commercial Passenger Service.

Committee members offered additional questions and comments. Brett Sheckler and Michael Hodgins provided responses. Key discussion points included:

- **Aerospace/Aircraft Manufacturing:** The Committee emphasized the importance of aerospace/aircraft manufacturing as a key driver of economic activity in Washington State, as well as a provider of significant value to the state's airports. Some Committee members suggested elevating the industry to its own activity category. In addition, the Committee stated that the study should look not only Boeing, but other businesses related to the industry as well.

The project team acknowledged the vast contribution provided by aerospace/aircraft manufacturing and confirmed that it will appear in multiple sections of the report. They also restated the study's goal of making connections and examining how the existence of airports in certain communities allows for industries such as aerospace/aircraft manufacturing to exist there.

- **Value and Impacts to Airport Communities:** There was a discussion around how to view and measure the value and impacts of an airport to individual communities. It was noted that some airport communities, particularly smaller ones, may not immediately see the value of activities such as commercial service, emergency service, and air cargo. There were also questions about how much of the economic impacts brought in by airports remain in the community and how that could be measured.

The project team explained that a key component of the study is to examine the ways in which these activities change the competitive landscape of the community. They also restated the distinction between impacts and value as a way of thinking about how communities are affected: impacts are the money that stays behind and value represents the intrinsic worth for those who live and work in the community, as well as those who are flying into the region. They also clarified that value should be thought of from the perspective of both the community and the State.

- **Transportation System Perspective:** The Committee highlighted the benefits of viewing aviation as an integrated part of the state's complete transportation system, and of recognizing the dependency and interplay between aviation and the other parts of the system.

The project team stated that the scope of the study includes determining how aviation fits into what the state is trying to accomplish and recognizing its role from a higher altitude and a systems perspective.

Additional inquiries were made concerning what the "total cost" for commercial passenger service represents and how those numbers were calculated. The project team explained that total cost equals actual ticket price, and that the estimate is based on defensible assumptions. They also noted that even with conservative assumptions, the benefits are still in the billions of dollars.

Discussion of Study Progress

Next, Paul Roberts of BERK went over the tentative plans for the three remaining Advisory Committee meetings: Meeting #2 will be in June or July and will focus on economic impacts; Meeting #3 will be in September and focus on broader contribution and policy issues; and Meeting #4 will be in November and focus on the study as a whole.

Following a brief discussion about potential sites for the meetings, the Committee asked several additional questions about their roles and responsibilities. Key discussion points included:

- **Individual expertise:** The Committee asked about whether individual members' technical expertise would be utilized to inform the project and lend credibility to the report.

The project team responded that they are looking to leverage committee members' technical expertise, and are currently considering different ways to reach out to individuals with relevant technical knowledge. Committee members were advised to email Nisha if they had an interest in a specific concept or wanted to contribute somewhere in particular.

- **Distribution of Materials:** Committee members asked about whether materials would be distributed to the entire group for review. The project team stated that they will be providing materials to the Committee for input as they are produced.

Roundtable

The meeting concluded with a roundtable, where every committee member had the opportunity to provide one final comment. A number of key discussion points from earlier in the meeting were re-stated, including the importance of credibility, the need to clearly distinguish value and impacts, and the significant economic contribution of aerospace/aircraft manufacturing. Committee members also provided several suggestions regarding the study, including: ensuring the report is clear and accessible to a broader audience, for committee members to maintain focus and understand their role, and for the study to generally take an innovative, colorful, and comprehensive approach. One Committee member offered their assistance in revising the air medical transport numbers.

Several members expressed appreciation for having the opportunity to serve on the Committee. They specifically noted the diverse makeup of the group, John Shambaugh's strong leadership, and the project team's openness to improvement.

Following the roundtable, the meeting adjourned.

WSDOT Aviation Division

Aviation Economic Impact Study

Advisory Committee Meeting #2

Confluence Technology Center | Wenatchee, WA
July 12, 2011

Welcome!

These materials were presented to the WSDOT Aviation Economic Impact Study Advisory Committee during the second Committee meeting on July 12, 2011.

These are DRAFT materials intended for discussion and are not final products.

Today's Meeting

➔ **Objective:** Develop further understanding on the project's approach and analytic components

Agenda:

1:00 Welcome & Introductions

1:15 The Big Picture: Three Perspectives

1:35 Airport Perspective: Draft Product Review

➔ **Objective:** Show preliminary draft products in development for feedback

2:45 *Break*

3:00 Industry Perspective: Industry Selection

➔ **Objective:** Ask for input on industry selection for upcoming analysis

3:30 User Perspective: Revisiting Economic Value

3:45 Next Steps

3:50 Round Table Comments

4:00 Adjourn

The Big Picture: Three Perspectives

The Big Picture: Three Perspectives

Background:

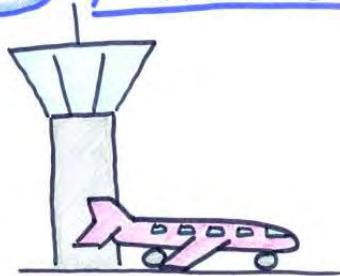
- Analytic Approach Document

Purpose:

- Revisit the three perspectives
- Understand why we are looking at the three perspectives

THREE PERSPECTIVES ON ECONOMIC CONTRIBUTION

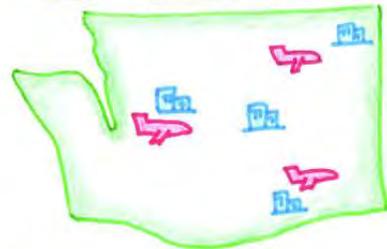
① AIRPORT



An airport's economic impacts (jobs, wages, spending) from:

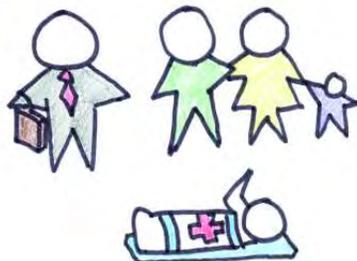
- ① Businesses at the airport
- ② Spending by visitors passing through the airport

② INDUSTRY



The role of aviation in the broader economy and the relationship between aviation and selected industries

③ USERS



The value individuals derive from their use of aviation facilities and services

Airport Perspective: Draft Product Review

Airport Perspective: Draft Product Review

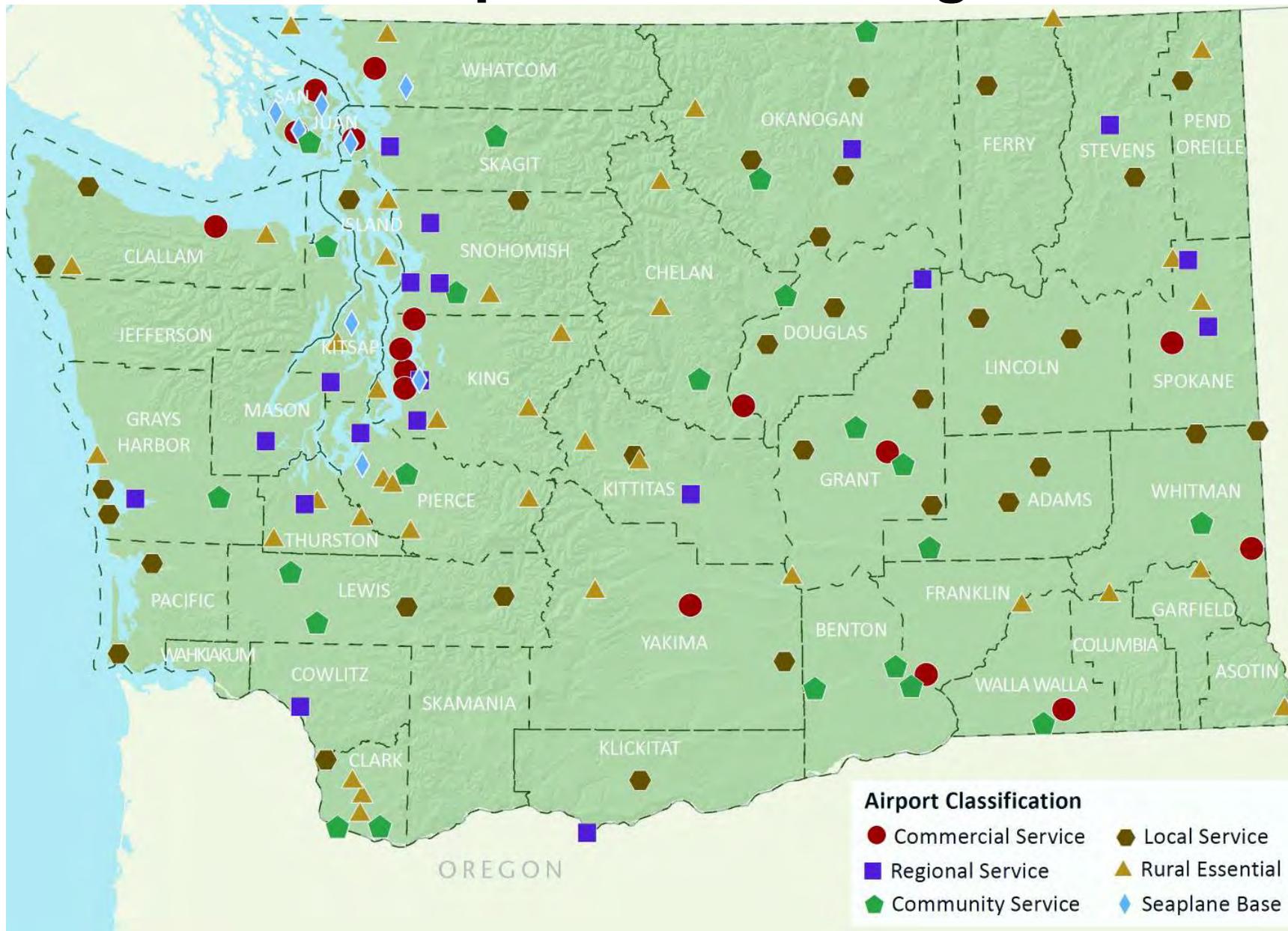
Where we are:

- Completed preliminary analysis
- Designed draft airport profile

What's next:

- Review process: All 136 draft profiles will be vetted by airport managers and sent out via email in late July-August

136 Public Use Airports in Washington

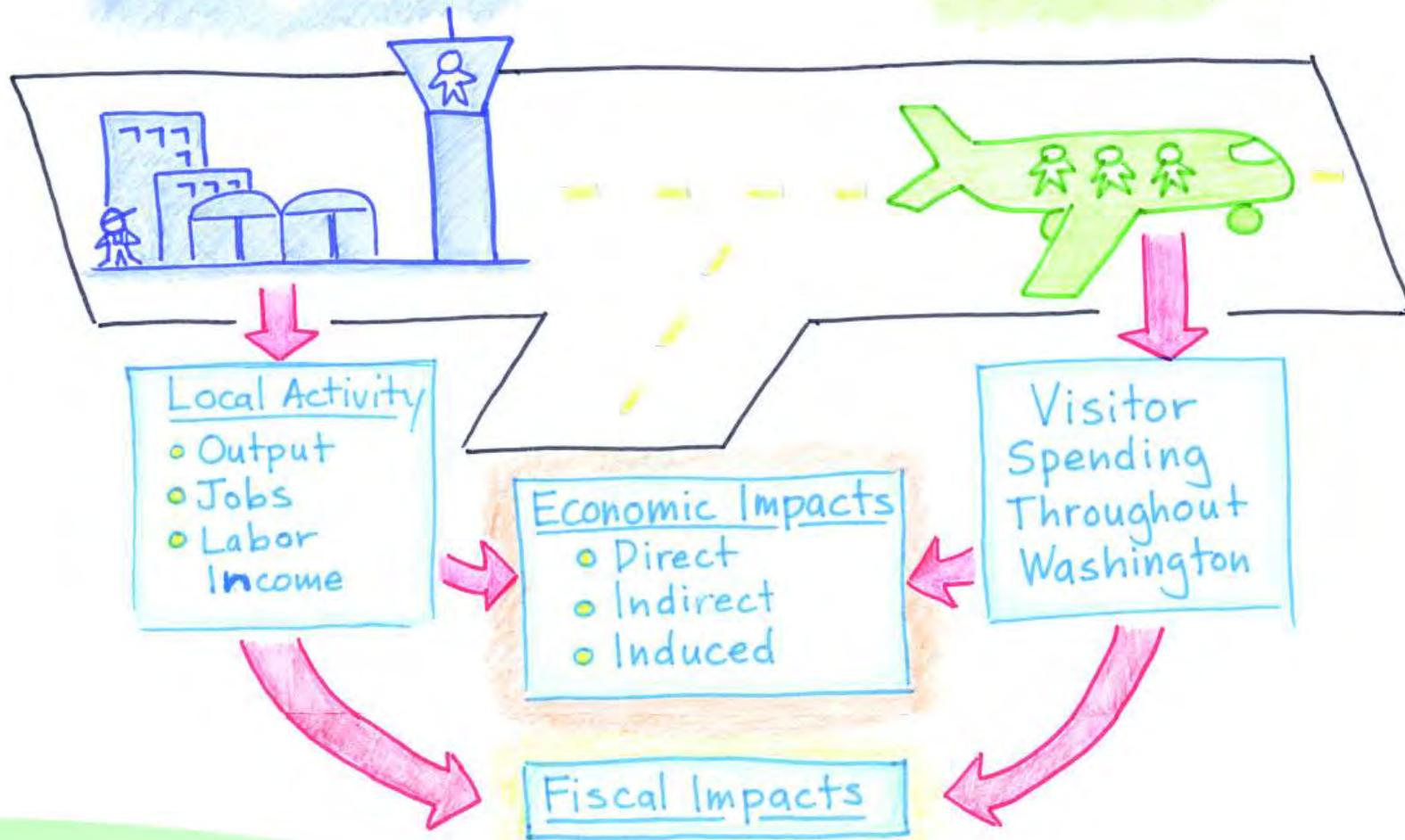


AIRPORT PERSPECTIVE

★ Activity on or Passing Through Airports ★

Source 1
Airport Businesses
and Operations

Source 2
Visitors

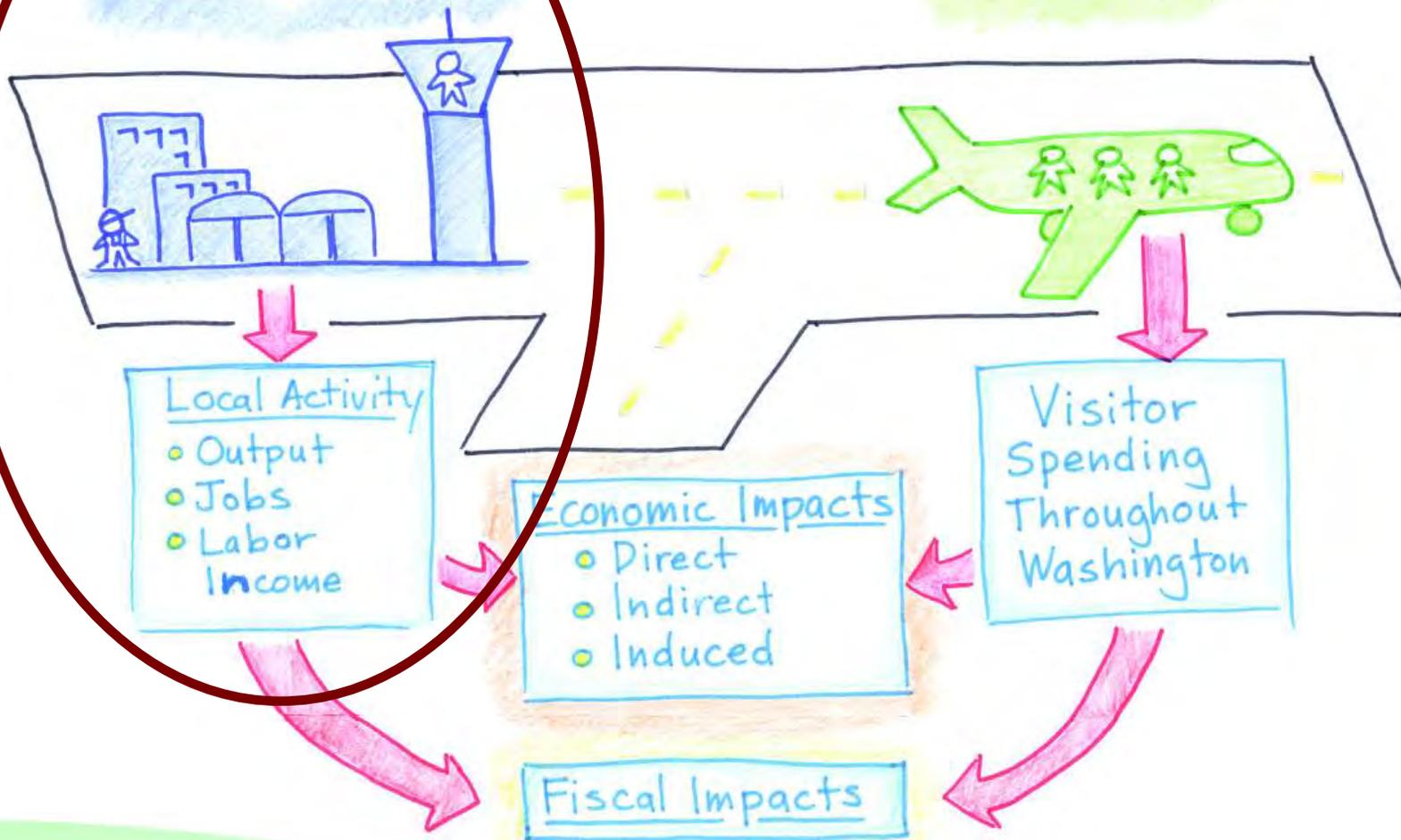


AIRPORT PERSPECTIVE

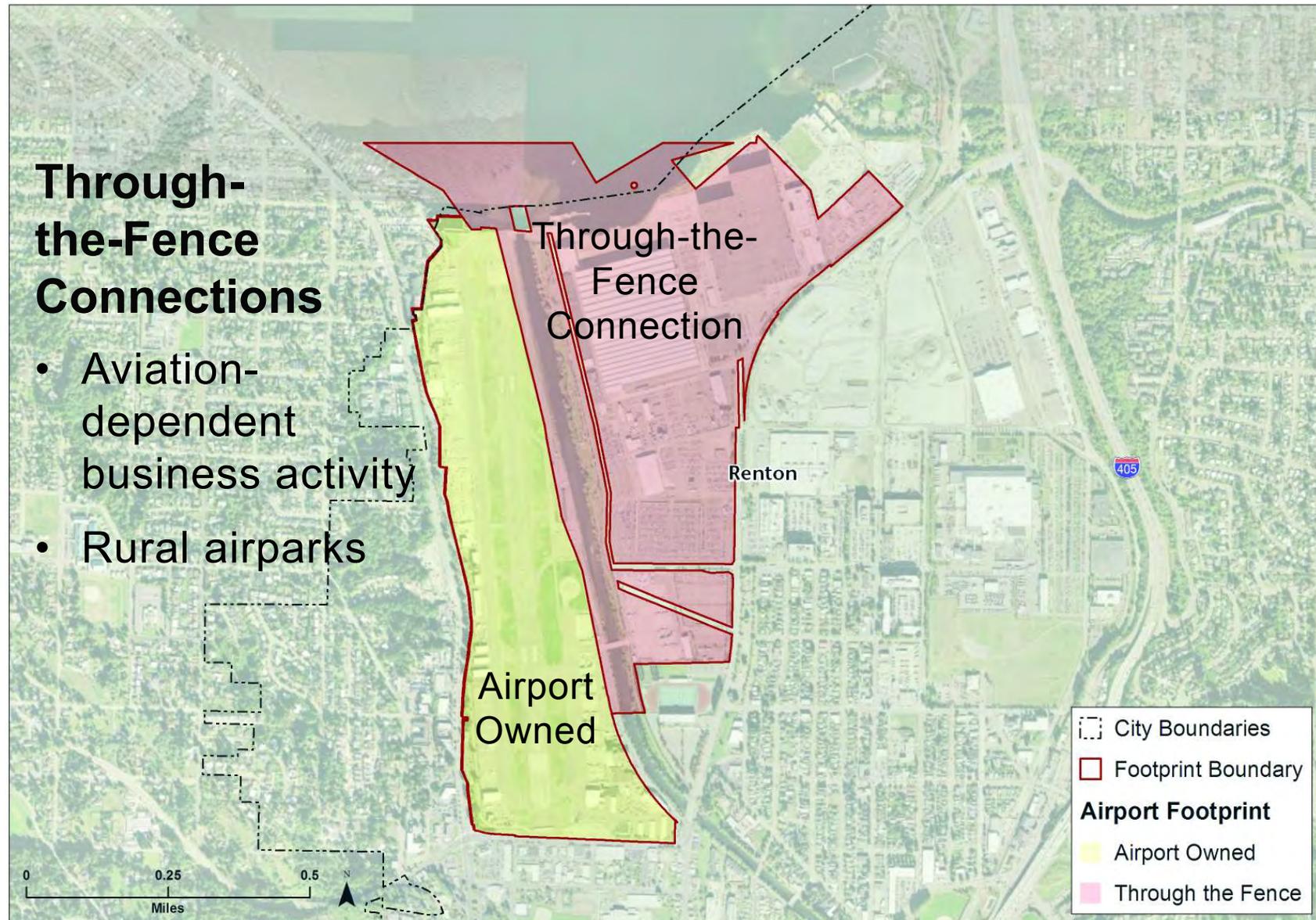
★ Activity on or Passing Through Airports ★

Source 1
Airport Businesses
and Operations

Source 2
Visitors



Renton Municipal Airport Footprint



Which Businesses were Included or Excluded?

The goal is to select businesses *at the airport* that *rely on the presence of the airport to exist*. The selection process is not always clear cut but here are some examples.

Businesses Included in the Footprint

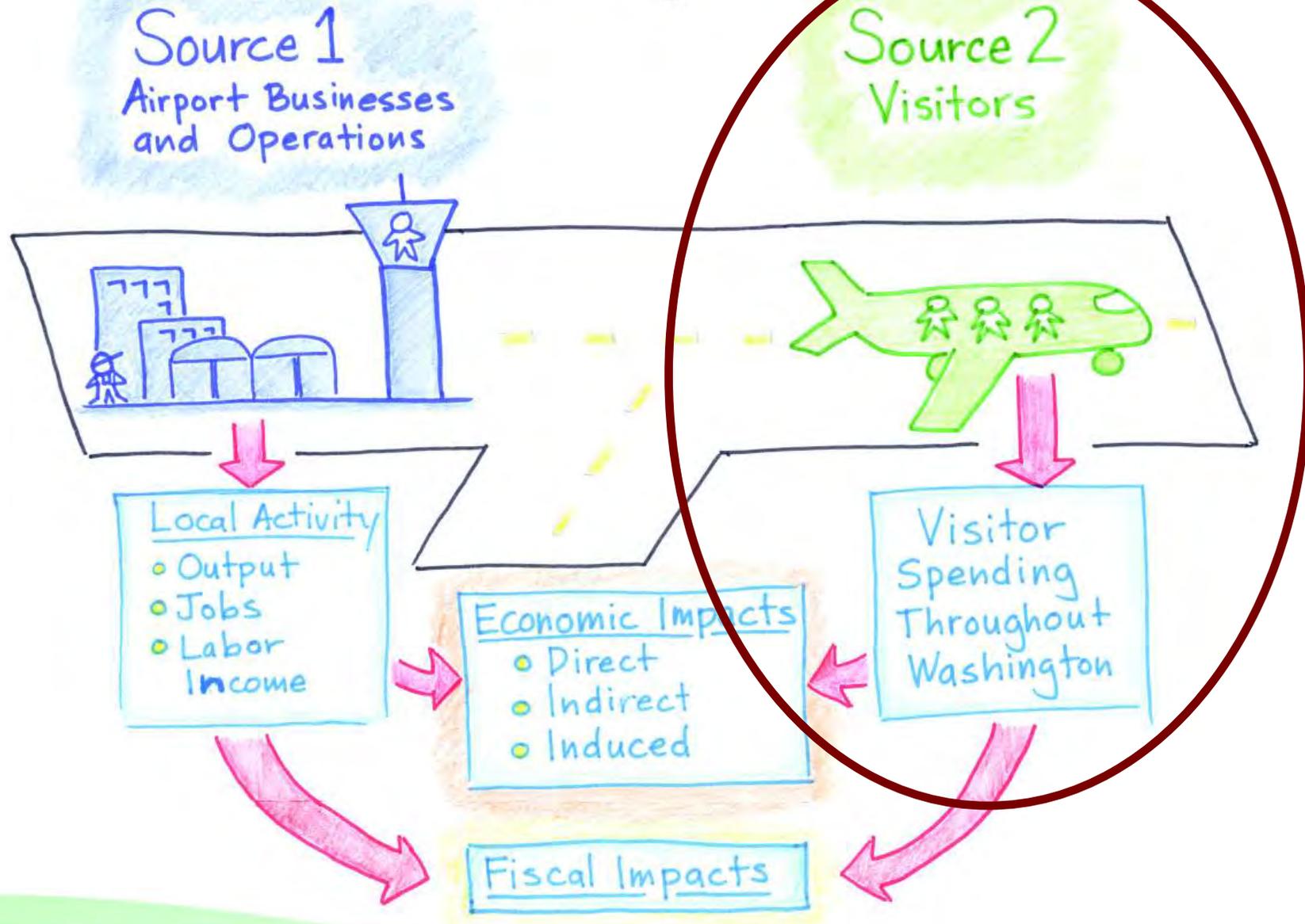
- **Initial selection based on footprint boundaries.** For Boeing, we had additional data and were able to include additional activity surrounding a few airports.

Businesses Excluded from the Footprint

- **Non-aviation industrial and warehouse businesses.** For example, much of the activity on Port property at the Olympia Regional Airport.
- **Off-terminal hotel and restaurant businesses.** Much of this activity captured by visitor spending analysis. For example, all the hotels along International Boulevard outside of SeaTac are excluded. Restaurant and retail activity located directly in terminals is included (e.g. Sea-Tac businesses).

AIRPORT PERSPECTIVE

★ Activity on or Passing Through Airports ★



Visitor Spending

How did we calculate the number of visitors?

- **Step #1:** Compile existing data on commercial service and general aviation service for each airport
- **Step #2:** Estimate the number of *visiting passengers*, using previous studies from Washington and other states

How did we estimate the amount of spending?

- **Step #3:** Estimate per trip spending by aviation visitor for the county in which the airport is located
- **Step #4:** Multiply number of visitors and spending per visitor
- **Step #5:** For economic impacts, divide total spending into categories and apply factors to account for different spending patterns in different counties

Three airports as examples: Sea-Tac International, Renton Municipal, and Anderson Field.

How did we calculate the number of visitors?

Visitors can arrive on commercial service or general aviation flights.

Step #1: Compile existing data on commercial service and general aviation service for each airport

Definitions:

- Commercial emplanements: passengers boarding a commercial air carrier
- General aviation (GA) itinerant operations: take-offs and landings by airplanes from outside of a 20-mile airport radius

	Commercial Emplanements	GA Itinerant Operations
Sea-Tac	15,273,092	3,273
Renton Municipal	41	34,457
Anderson Field	-	9,261
<i>Sources</i>	<i>FAA</i>	<i>FAA & WSDOT Aviation</i>

How did we calculate the number of visitors?

Step #2: Estimate the number of *visiting passengers*, using previous studies from Washington and other states

	Number of Visitors		Total Visitors Flying into Airport
	from Commercial Service	from General Aviation	
Sea-Tac	7,331,084	2,538	7,333,622
Renton Municipal	16	26,721	26,737
Anderson Field	-	7,182	7,182

How did we estimate the amount of spending?

Base spending estimate comes from *The 2007 Economic Impact Study of the Port of Seattle* by Martin Associates (published in 2009). This means the base estimate is:

- Recent (November 2008)
- Washington-specific
- Generated from a survey of visitors at Sea-Tac, the airport that is the gateway to most visitors to the state
- **Base Number:** Average spending per trip for a commercial service visitor entering through Sea-Tac (King County). Adjustments made for:
 - County variation
 - Type of visitor (GA)

How did we estimate the amount of spending?

Step #3: Estimate per trip spending by aviation visitor for the county in which the airport is located

- County adjustments based on *Washington State Travel Impacts* (Dean Runyan, 2010)
- GA visitor adjustments based on other state studies

	Average Visitor Spending per Trip	
	Commercial Service Visitor	GA Visitor
Sea-Tac (King County)	\$729	\$167
Renton Municipal (King County)	\$729	\$167
Anderson Field (Okanogan County)	\$454	\$104

How did we estimate the amount of spending?

Step #4: Multiply number of visitors and spending per visitor

Total Annual Visitor Spending*	
Sea-Tac	\$5,346,037,200
Renton Municipal	\$4,463,600
Anderson Field	\$745,700
<i>*Rounded</i>	

- Sea-Tac accounts for approximately 89% of all visitor spending
- Visitor spending is not just happening in the county in which the airport is located

How did we estimate the amount of spending?

Step #5: To estimate economic impacts, divide total spending into categories and apply factors to account for different spending patterns in different counties

- County adjustments based on *Washington State Travel Impacts* (Dean Runyan, 2010)

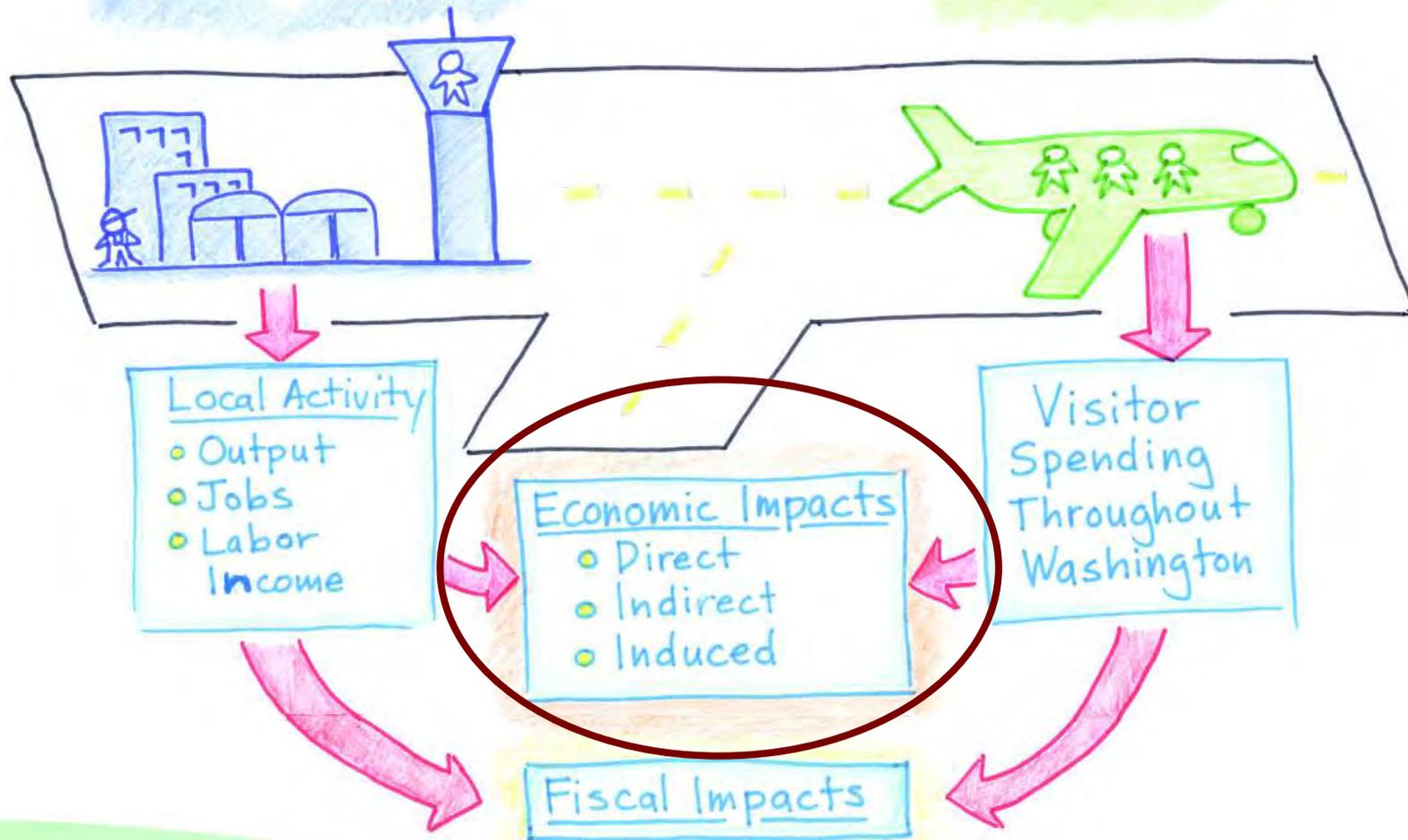
	Accommodations	Food Service & Food Stores	Arts, Entertainment & Recreation	Retail	Local Transportation	
King County	23%	30%	23%	10%	13%	100%
Okanogan County	21%	33%	22%	13%	12%	100%

AIRPORT PERSPECTIVE

★ Activity on or Passing Through Airports ★

Source 1
Airport Businesses
and Operations

Source 2
Visitors



Economic Airport Regions

Businesses on Airport Footprint:

Example 1: Sea-Tac International Airport
King, Kitsap, Pierce and Snohomish Counties



Businesses on Airport Footprint:

Example 2: Tri-Cities Airport
Benton and Franklin Counties



Businesses on Airport Footprint:

Example 3: Renton Municipal Airport
King County



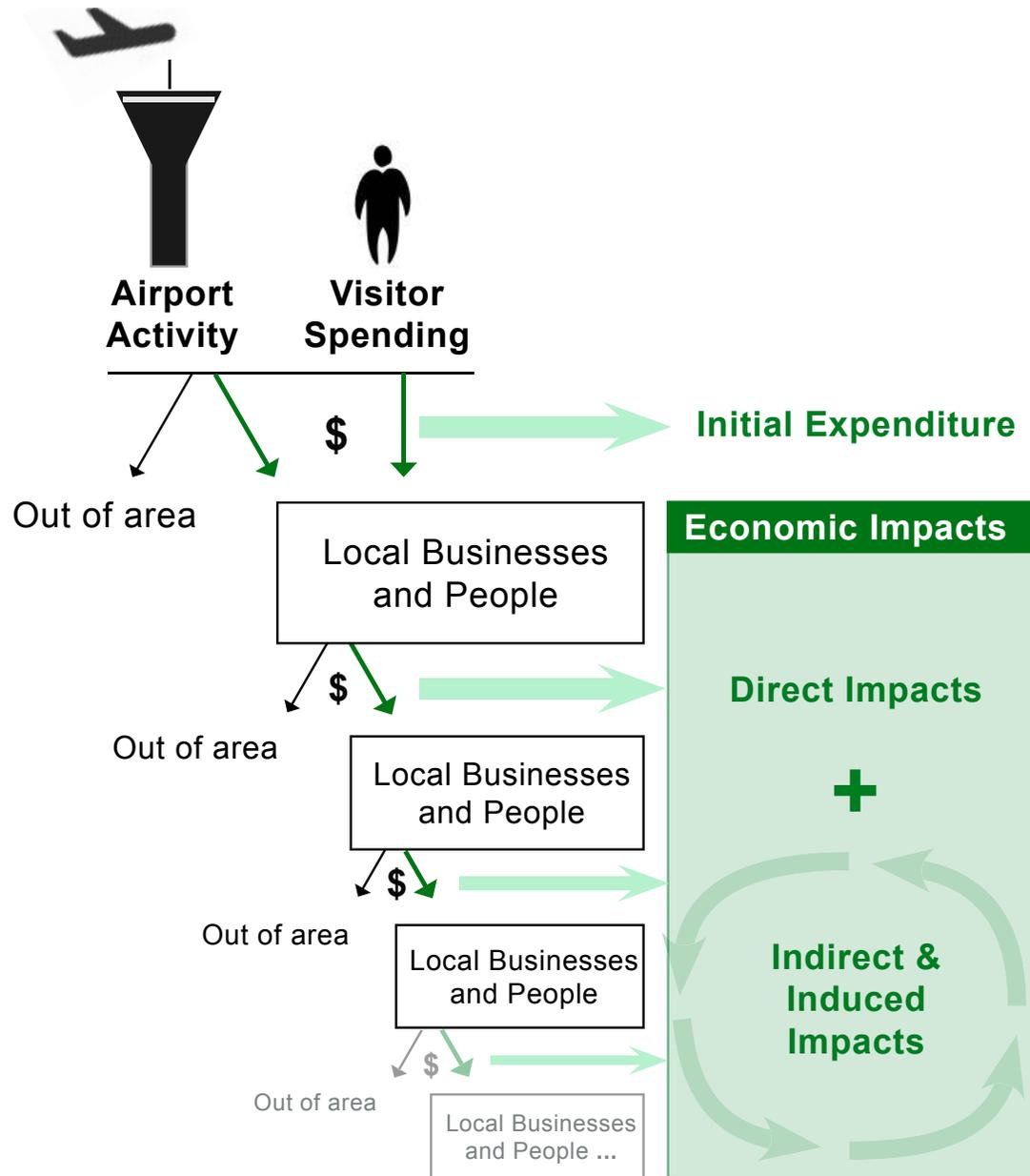
Visitor Spending:

One Economic Region



- Multiplier impacts for each airport are based on a geographic definition of the “local” economy
- Local regions for airport activity impacts are based on county boundaries and may include a single county or multiple counties depending on the size and geographic location of each airport
- Although visitors are “attributed” to the airport through which they arrive, where they spend their money is unknown, therefore the economic impact region for visitor spending is statewide

Economic Impacts



Industry Perspective: Approach and Industry Selection

Industry Perspective

Objectives:

- Explore how aviation supports the economy more generally
- Look at specific industries important to the State economy

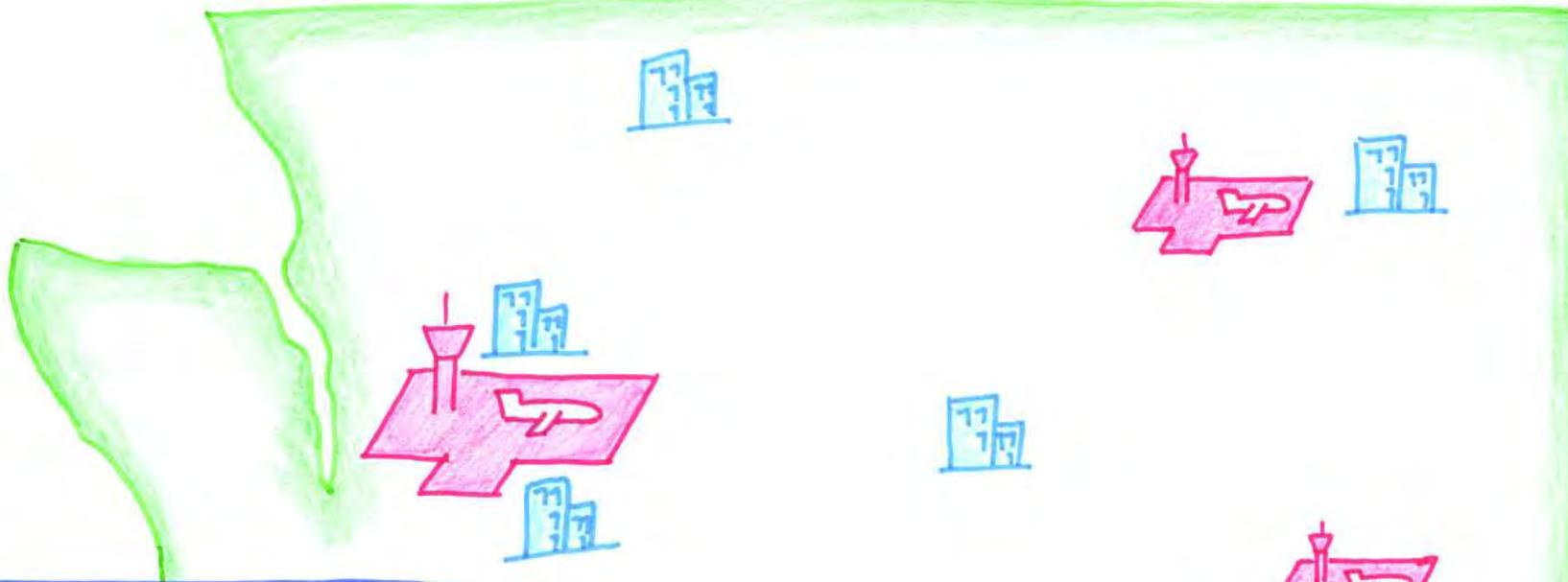
Products:

- Research and framing language about the role of aviation in supporting economic growth
- Data analysis, maps, and charts exploring correlation between selected industries and aviation services in Washington

Where we are:

- Just starting the analysis
- Looking for feedback from the committee on industry selection

INDUSTRY PERSPECTIVE

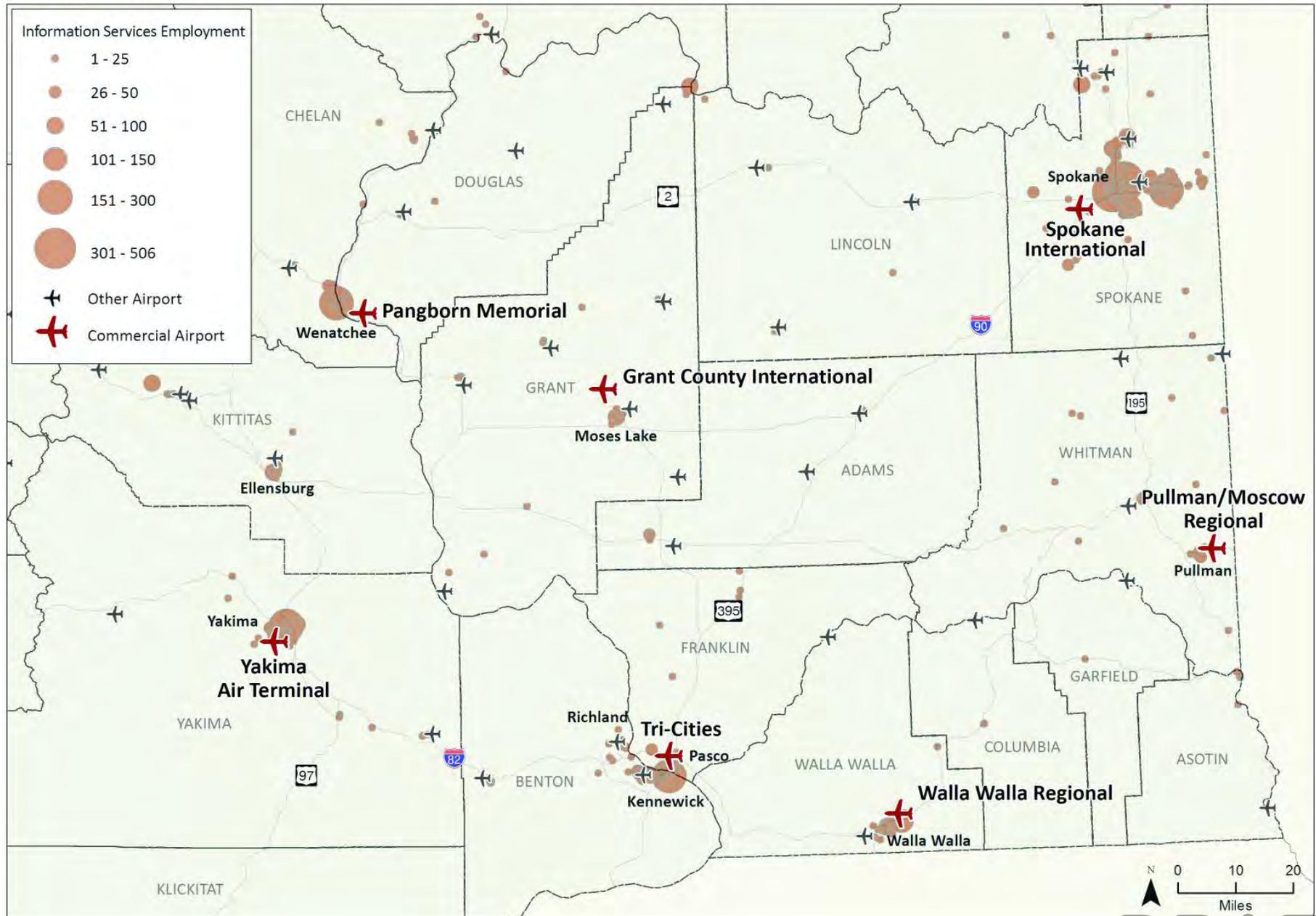


Statewide Assessment of Selected Industries

- How big is it? 
- Where is it located? 
- Correlation with aviation services or facilities?

IT Jobs and Airport Locations in Eastern WA

CENSUS LEHD EMPLOYMENT BY CENSUS BLOCK GROUP, 2008



Initial Industry Selection

Industries that:

- Have strong relationship or dependence on the aviation system
- Are of interest to particular stakeholders (see table on next page)
- Serve more than just local markets (location quotients)
- Are large enough to be important to local or state economies
- May demonstrate the role aviation plays in distributing economic activity throughout the state

Initial Industry Selection - Committee Feedback

Listed below are a few major industry categories we have selected for possible analysis.

Industry	Organization/Agency						
	WA Dept. of Commerce	Puget Sound Regional Council	Greater Spokane Inc.	Yakima County Dev. Assoc.	Econ. Dev. Board of Tacoma-Pierce County	Columbia River Econ. Dev. Council (Vancouver)	City of Seattle
Industries Likely to be Analyzed							
1 Aerospace	✓	✓	✓	✓	✓		
2 Information & Communication Technology	✓	✓	✓		✓		✓
3 Agriculture & Food Processing	✓	✓		✓			
4 Tourism		✓					✓
Other Industries to Consider							
5 Manufacturing	✓		✓			✓	✓
6 Business & Professional Services		✓		✓		✓	
7 Life Sciences		✓			✓		✓
8 Logistics and International Trade		✓		✓	✓		
9 Forest/Wood Products	✓	✓					

- Which industries should be prioritized and why?

User Level Perspective: Revisiting Economic Value

User Perspective

Where we are:

- Draft section written for the report

Next steps:

- Email draft report section to Advisory Committee for review prior to Meeting #3

USER PERSPECTIVE

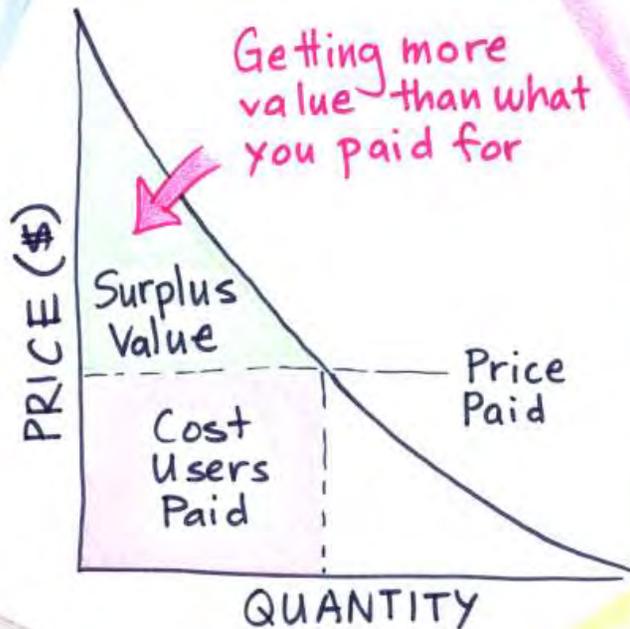
Moving People and Goods



Protecting People and Resources



Supporting Research



Training



Supporting Industry



Recreation



Process for Draft Product Review

- Meeting time is precious: we won't be spending it reviewing draft report sections
- Proposed review process for draft report sections:
 - Draft product emailed out to Advisory Committee for review
 - Your review is encouraged but not required
 - Included in the email are:
 - Prompting questions for feedback
 - Timeline for feedback
 - Provide comments and questions via email

Closing: Next Steps and Round Table

Next Steps

Two meetings left:

- **Meeting 3:** September 27, 2011, 1-4 pm; Spokane Fire Department Training Administrative Center, Spokane, WA
 - Follow ups from Meeting #2
 - Airport-level fiscal analysis
 - Results of industry-level analysis
 - Aviation system needs
- **Meeting 4:** November 1, 2011, 9am-12pm; Puget Sound Regional Council, Seattle, WA
 - Follow ups from Meeting #3
 - Draft report
 - Update on website and economic calculator features

Closing Round Table

- What are your comments, thoughts, and questions after today's meeting?

Thank you!

ADVISORY COMMITTEE MEETING #2

Meeting Summary

INTRODUCTION

The second meeting of the WSDOT Aviation Economic Impact Study Advisory Committee took place on July 12, 2011 at the Confluence Technology Center in Wenatchee, Washington. A total of 12 Advisory Committee Members attended in person and 13 participated via conference phone. There were 7 members from the project team in attendance.

LIST OF ATTENDEES

Committee Members

Attending in Person

Christina Bandaragoda, Save Our Communities

Lorrie Brown, Office of Financial Management

Cynthia Chen, University of Washington

Amber Hansen, Port of Sunnyside

Sally Harris, Department of Commerce

Bob Isaman, Washington State Emergency Management Division

Kathy Jones, City of Oroville

Bob Kibler, Desert Aire Airport

Jerry Litt, Washington Transportation Commission

Brenda Nelson, Airlift Northwest

Greg Phillips (sub for Mark Urdahl), Port of Chelan

David Sypher, City of Kelso, Kelso-Longview Regional Airport

Participating by Teleconference

Borgan Anderson, Sea-Tac Intl. Airport

Peter Anderson, Galvin Flying

Tim Brooks, Kenmore Air

Ron Cridlebaugh, Economic Development Group of Kittitas County

Chuck Kegley, Advanced Aviation Services

John Dobson, Washington Pilots Association

Kristi Ivey, National Business Aviation Association

Pat McClain (sitting in for Mayor Ray Stephenson), City of Everett

Jeff Robb, Washington Public Ports Association

Elizabeth Robbins, WSDOT

Page Scott, Yakima Valley Conference of Governments

Mayor Mary Verner, City of Spokane

Ryan Zulauf, Washington Airport Management Association

Project Team

Julia Bosch, BERK

Michael Hodgins, BERK

Kapena Pflum, BERK

Paul Roberts, BERK

Gary Simonson, BERK

Nisha Marvel, WSDOT Aviation

John Shambaugh, WSDOT Aviation

MEETING PURPOSE

The purpose of the meeting was to:

- Develop further understanding on the project's approach and analytic components
- Show preliminary airport perspective draft products in development for feedback
- Ask for input on industry selection for upcoming analysis

MEETING SUMMARY

Introductions and Welcome

Paul Roberts of BERK welcomed the Committee to the meeting, re-emphasized the Committee's role as a sounding board, and provided an overview of the meeting agenda. All attendees and remote participants then introduced themselves to the group.

John Shambaugh provided his opening remarks. He welcomed the group and thanked them for participating. He emphasized that the study was a statewide effort, highlighted the diversity of the Committee, and re-stated the Committee's role in helping the project team understand how and why aviation is important to the state. He also reviewed the input taken in the previous meeting and noted that the project team has done their best to address and incorporate that input.

Big Picture/Three Perspectives: Presentation

Michael Hodgins of BERK provided an overview of the new framework used to describe the three perspectives being examined in the project: airport, industry, and users. He noted that the project team has adopted more intuitive language for how they talk about these components, as a response to input provided during the last meeting.

- The airport level perspective describes an airport's economic impacts (jobs, wages, spending) from businesses at the airport and from spending by visitors passing through the airport.
- The industry level perspective describes the role of aviation in the broader economy and the relationship between aviation and selected industries of what is happening at the airport.
- Finally, the users perspective describes the value individuals derive from their use of aviation facilities and services.

There were no questions from the Committee following this presentation.

Airport Level Perspective: Presentation and Discussion

The project team then presented on various components of the airport level analysis. This included several sections: an overview of the analysis and the project team's approach, a look at airport footprint

and through-the-fence definitions, an explanation of how visitor spending is being calculated, and an overview of how economic impacts were being measured.

Overview

Michael Hodgins began with an overview of the airport level perspective. He noted that the team has completed the preliminary analysis for this section, and is in the process of conducting quality control efforts and refining initial drafts. After initial draft development, the project team will email draft profiles to representatives from each of the 136 airports for review and feedback. He highlighted that the approach is to look broadly at source data from the Department of Revenue and Employment Securities Department, establish a consistent dataset, and create profiles for all 136 airports. Michael then showed the Committee a draft of the airport level profile for input, noting that page one presents airport activities as reported by the Aviation Information System Database, while page two depicts the summary of economic impacts examined in the current study: activity at the airport, visitor spending, and fiscal impacts.

Footprint and Through-the-Fence (TTF) Activities

Kapena Pflum of BERK spoke about the airport footprint and through-the-fence definitions that the project team was using in the study, highlighting the draft Renton map as an example. He noted that the base footprint was determined through parcel ownership data; anything airport-owned and airport-leased was included in the footprint. TTF activities include significant aviation dependent businesses and rural airparks. He highlighted that a range of sources (WSDOT Aviation database, business records, and aerial photos) were used to identify potential through-the-fence parcels, which were then sent to airports for confirmation. He also discussed how the project team selected which businesses within the footprint were included or excluded – the goal was to select businesses at the airport that rely on the presence of the airport to exist.

Throughout the overview and footprint/TTF activities presentations, Committee members offered various questions and comments. Key discussion points included:

- **Questions about Activity Inclusion.** There were a number of questions and comments from Committee members regarding the types of activities that would be captured (or not captured) via the airport footprint analysis. The project team's general response was that they were taking a relatively conservative approach in terms of defining airport businesses and operations, but that other spinoff-related activities would be captured in the indirect and induced impacts (via the multiplier analysis). It was emphasized that airport footprint boundaries are limited to areas that are airport-owned or -leased, or that have TTF connections (i.e. properties adjacent to the airport that are tied to the presence of the airport). Within the airport footprint, only activities that rely on access to or use of the airport are included.

Specific activities that were discussed by the Committee include:

- **Off-site Cargo Facilities.** Several Committee members stated that off-site cargo facilities should be included under local activity. They contended that, although these facilities are not physically on the footprint, they rely on the presence of an airport to receive cargo and would not be able to exist in certain communities if the airport were not there. The project team stressed that a geographic boundary is the only way to provide a consistently sound basis for attributing impacts to 136 airports, but that off-site cargo facilities would likely be captured through the multiplier analysis. In addition, some of these activities may be identified by airport managers during the review process. It was also noted that off-site cargo facilities could potentially be included in the industry analysis.

- **Transportation for Elected Officials.** A Committee member asked whether transportation for elected officials (e.g. the Governor) would be included. The project team responded that if it were activity related to employment, it would get captured there.
- **Businesses (Non-aviation related) with Aviator Owner.** A Committee member mentioned non-aviation related businesses where the owner is an aviator as an example of activity that would re-locate if the airport disappeared. The project team re-stated that these types of businesses would not be included in direct impacts, but that they would be picked up via multipliers or the industry level analysis.
- **Through-the-Fence (TTF) Definitions.** Some Committee members had questions about how through-the-fence activities were being defined for the study. The project team explained that TTF activities had to both be physically connected to the airport and require airport facilities or the presence of the airport to operate. The two main categories of TTF activity are aviation-dependent business activity and rural airparks.

A Committee member also noted that the Federal Aviation Administration (FAA) recently updated their definition for TTF to include only businesses that have a contract with the tenant. The project team said they would look into this definition, but noted that the way they define the concept in the study will likely differ from the FAA designation.

- **Data Sources: Businesses at the Airport.** A Committee member asked whether business income is reported by all airport companies or is an airport calculation. The project team explained that if the business has only one location and it is on the footprint, they were able to get the Gross Business Income (GBI) from the Department of Revenue (DOR). However, businesses that have multiple locations still only report one number to DOR, so in those cases they had to estimate the GBI using multiple sources.

Visitor Spending

Julia Bosch of BERK then discussed visitor spending, the second source of economic impacts. This analysis captures economic impacts related to visitors entering a community through an airport and spending money in that community and beyond. Using three airports as examples, Julia walked through the five steps used to estimate these values and determine visitor spending: 1) compile existing data on commercial service and general aviation for each airport, 2) estimate the number of visiting passengers, using previous studies from Washington and other states, 3) estimate per trip spending by aviation visitor for the county in which the airport is located, 4) multiply the number of visitors and spending per visitor, and 5) divide total spending into categories and apply factors to account for different spending patterns in different counties.

Following this presentation, Committee members offered additional questions and comments:

- **Corporate Aviation.** Committee members noted that, while corporate aviation is a subset of general aviation, the amount of economic benefit that it provides to a community is significantly greater than most general aviation. It was suggested that general aviation visitor spending estimates are too low for airports with a high amount of corporate aviation, and that this type of travel should be considered separately. Boeing Field was provided as an example of an airport that has received billions of dollars from corporate executives flying in to conduct business. The project team noted they would take this under advisement.
- **Destination/Event Visitor Spending.** Some Committee members asked whether spending by visitors who do not travel through an airport, but attend events or destinations at an airport (e.g. Museum of Flight, Cross-Air Balloon Rally) would be included in the visitor spending total. The

project team responded that the current definition of visitors only includes those who are travelling through the airport, but that they will consider if and how to incorporate spending by those who visit the airport via other means.

- **Visitor Spending Studies in Other States.** Some Committee members asked whether the project team would be looking at studies conducted in other states to help with the visitor spending estimates. It was noted that the Sea-Tac study, which the project team is using as a baseline, may not be representative of all airports in the state (since Sea-Tac is so different from other airports), and that other studies could help supplement the estimates.

The project team responded that, although the Sea-Tac study will serve as a baseline, they will be making adjustments based on county variation and type of visitor. In addition, the Sea-Tac study is appropriate since more than 85% of visitors travelling to Washington State by airport are coming through Sea-Tac. Studies from other states are being used to examine the relationship between general aviation and commercial service, but will not be applied directly to the estimates.

- **Federal Per Diem to Adjust for County Variation.** A Committee member suggested that the project team use Federal Per Diem spending amounts to adjust for county variation in hotel, food, and other costs. The project team agreed that this could be a useful tactic for step five, which involves dividing the total amount of spending by various categories.
- **Data Sources: Visitor Spending.** Several Committee members asked questions and provided suggestions regarding data sources for visitor spending. One member suggested looking at port of entry crossings from customs, while another proposed looking to the Department of Commerce for tourism data. In addition, it was suggested that the project team change some language to more accurately reflect the concepts (e.g. change “visitors” to “visits”).

One Committee member asked from where the project team received their operations data. The team responded that they are compiling it from three sources: the FAA terminal area forecasts, the WSDOT Aviation Information System database updated by airport managers, and other forecasts from the LATS study.

Economic Impacts

Michael Hodgins concluded the airport perspective presentation by discussing the project team’s approach to economic impacts. He explained that the multiplier impacts for each airport are based on a geographic definition of the “local” economy. For businesses on the airport, an airport’s economic region is a county or cluster of counties. For visiting spending, the economic region is the entire state because we don’t know exactly where visitors spend their money in the state.

He then provided an overview of how economic impacts are determined and how dollars are cycled through the local economy – beginning with direct impacts relating to airport activity and visitor spending, and followed by the indirect and induced impacts (which are determined by multipliers).

Throughout this presentation, Committee members raised questions and comments, and various discussions ensued. Key discussion points included:

- **Taxes/Fiscal Impacts.** Some Committee members asked whether taxes/fiscal impacts would be included in the direct, indirect, or induced impacts. The project team explained that they are going to focus on the fiscal impacts of direct activities. However, it is possible some money could ripple through and generate additional taxes. It was also noted that fiscal impacts would be a discussion topic in the next Advisory Committee meeting.

- **Total Statewide Impact.** One Committee member had a question about whether a total statewide impact number would be developed based on the sum of all the airports in the state. The project team emphasized that this analysis is in the service of the 136 individual airport profiles, but that larger questions will be addressed once the profiles have been completed and patterns have been identified.
- **Methodology for Economic Impacts.** There were several questions regarding the methodology for determining economic impacts. This included questions about how job numbers were being developed, the tools that would be used (IMPLAN), and how multipliers were established. Renton was called out as appearing to have low multipliers. The project team said they would review the multipliers, and that they were planning to double-check their enplanements and operations data with the airports during the review.

Industry Level Perspective: Presentation and Discussion

Michael Hodgins of BERK introduced the group to the industry analysis and its primary purposes: examining how aviation supports the economy more generally, as well as how aviation supports and affects specific industries. He noted that a key aspect of this analysis is to look at how aviation-supported activity is distributed around the state and to begin to understand the geographic correlations between the aviation system and patterns of economic activity distribution in the state. The product will include both the broader story of aviation's role in supporting economic growth and an analysis of selected industries. Michael explained that the project team is looking for feedback on industries that they should focus on.

Kapena Pflum of BERK then highlighted what the project team is hoping to describe through the analysis: how big the industries are, where they are located, and what the correlations are between locations of business activities and aviation services. He then went through the criteria for the initial industry selection. Selected industries should have strong relationships or dependence on the aviation system, be of interest to particular stakeholders, serve more than just local markets, be large enough to be important to local or state economies, and potentially demonstrate the role aviation plays in distributing economic activity throughout the state. The group was shown the list of industries likely to be analyzed and several others that are being considered, and were asked to provide feedback that would help guide which industries are selected.

Committee members provided the following feedback on the "other industries to consider" identified in the chart:

- **Life Sciences.** Life Sciences was identified by several Committee members as an industry that would benefit from analysis. It was noted that it is a top three industry in the state and is largely dependent on aviation services (e.g. for transport of medical devices). There were questions about the definition of Life Sciences and whether it includes only hospitals and clinics, or pharmaceuticals and the entire medical industry as well. One Committee member pointed out that there is a strong interconnection between life sciences and professional services. The project team noted they are still determining the scope of life sciences and that this would be established before the analysis began.
- **Business & Professional Services.** Business and professional services also received significant support for an analysis. It was noted that commercial service and access to an international airport is critical for business recruitment and retention. The project team explained that business aviation will be captured in both the airport-level analysis and (potentially) the industry-level analysis. They stated that businesses' headquarters location decisions will be discussed in the broader piece, but not necessarily captured in the more specific industry analyses.

- **Manufacturing.** Manufacturing was also called out by several Committee members as an industry that greatly benefits from aviation. It was noted that airports typically provide available property for manufacturing plants, as well as connectivity to the aviation system (for shipping) and other transportation networks. In addition, policy-makers would be interested in manufacturing since it is a diminishing part of the economy, and it creates middle-class jobs.
- **Logistics and International Trade.** One Committee member argued that international trade is a key part of commerce and should be a big focus. It was noted that commerce exports were expected to increase 35% in the next 5 years.

Committee members also discussed other industries and potential criteria:

- **Aerospace.** It was emphasized that the aerospace industry-level analysis should include all 650 companies that serve the two large Original Equipment Manufacturers (OEMs), as well as the Maintenance, Repair, and Overhaul (MRO) facilities. In addition, a Committee member had a question regarding whether aerospace entailed manufacturing or operations. The project team confirmed that they are examining aerospace manufacturing.
- **State and Local Government.** There was a question about where industry federal, state, and local government services fit in, and whether that should it be its own industry. The project team said they would take this under consideration.
- **Biofuels.** One Committee member stated that sustainable biofuels is a big part of the State's economy, and asked whether it overlaps with agriculture or fits into a separate category (such as fuel refineries).
- **Additional Criteria: Value of Time.** There was a question about whether the value of time was being captured though the industry analysis and the study in general. It was emphasized that there is great value in saving time through using aviation over other forms of transportation, and that aviation provides significant advantages for industries involved in time sensitive activities. The project team agreed and stated that this could be folded into the broader piece that will be included in the industry analysis. They noted that value of time could also be discussed in the user perspective, as a significant benefit to individual users.

User Level Perspective: Presentation

Julia Bosch discussed the user-level perspective and explained that this is the same concept as what was called "economic value" in the previous meeting. The new terminology is more intuitive and is used to differentiate between the airport-level and industry-level analysis. She noted that the team has written a draft section for the report, and will be offering it to the Committee for review prior to meeting #3. She noted that this will be the first time the Committee would have an opportunity to review a draft section of the report. This review will be conducted via email and will not take up meeting time. She then showed the user perspective graphic and reviewed how this analysis aims to get at airports' intrinsic value and the various reasons airports are valuable to individuals.

There were no questions from the Committee following this presentation.

Next Steps and Roundtable

Paul Roberts then discussed next steps, and noted that meeting #3 will be held in Spokane on September 27, and meeting #4 will be in Seattle on November 1.

The meeting concluded with a roundtable, where every committee member had the opportunity to provide one final comment. In general, Committee members were thankful for the opportunity to participate in the study and expressed appreciation for the design of the meetings and the open

approach of the project team. In addition, a number of key discussion points from earlier in the meeting and the previous meeting were re-stated, including:

- The importance of being able to see detailed explanations of the methodology and data processing used in the report. The project team stated that detailed technical appendices would be included.
- The importance of accounting for all aviation-related business and ensuring the study is as all-encompassing as possible.
- The importance of airport proximity to business recruitment and retention.
- The value of airports to businesses in small communities.
- The value of commercial service at airports, and the importance of capturing this in the study.

Following the roundtable, the meeting adjourned.

WSDOT AVIATION DIVISION

Aviation Economic Impact Study

Advisory Committee Meeting #3

Spokane Fire Dept. Training Administration Center | Spokane, WA

September 27, 2011

Welcome!

These materials were presented to the WSDOT Aviation Economic Impact Study Advisory Committee during the third Committee meeting on September 27, 2011.

These are DRAFT materials intended for discussion and are not final products.

Today's Meeting

➔ Objective: Present new findings from the industry and airport-level analyses and gather input prior to the writing of the report

Agenda:

1:00 Welcome & Introductions

1:20 Industry-Level Analysis

➔ Objective: Present preliminary findings

2:20 Break

2:35 Revisiting the Airport-Level Analysis

➔ Objective: Present roll-ups of economic impact numbers

3:15 Economic Calculator Overview

➔ Objective: Provide overview of Calculator features and applications

3:40 Next Steps

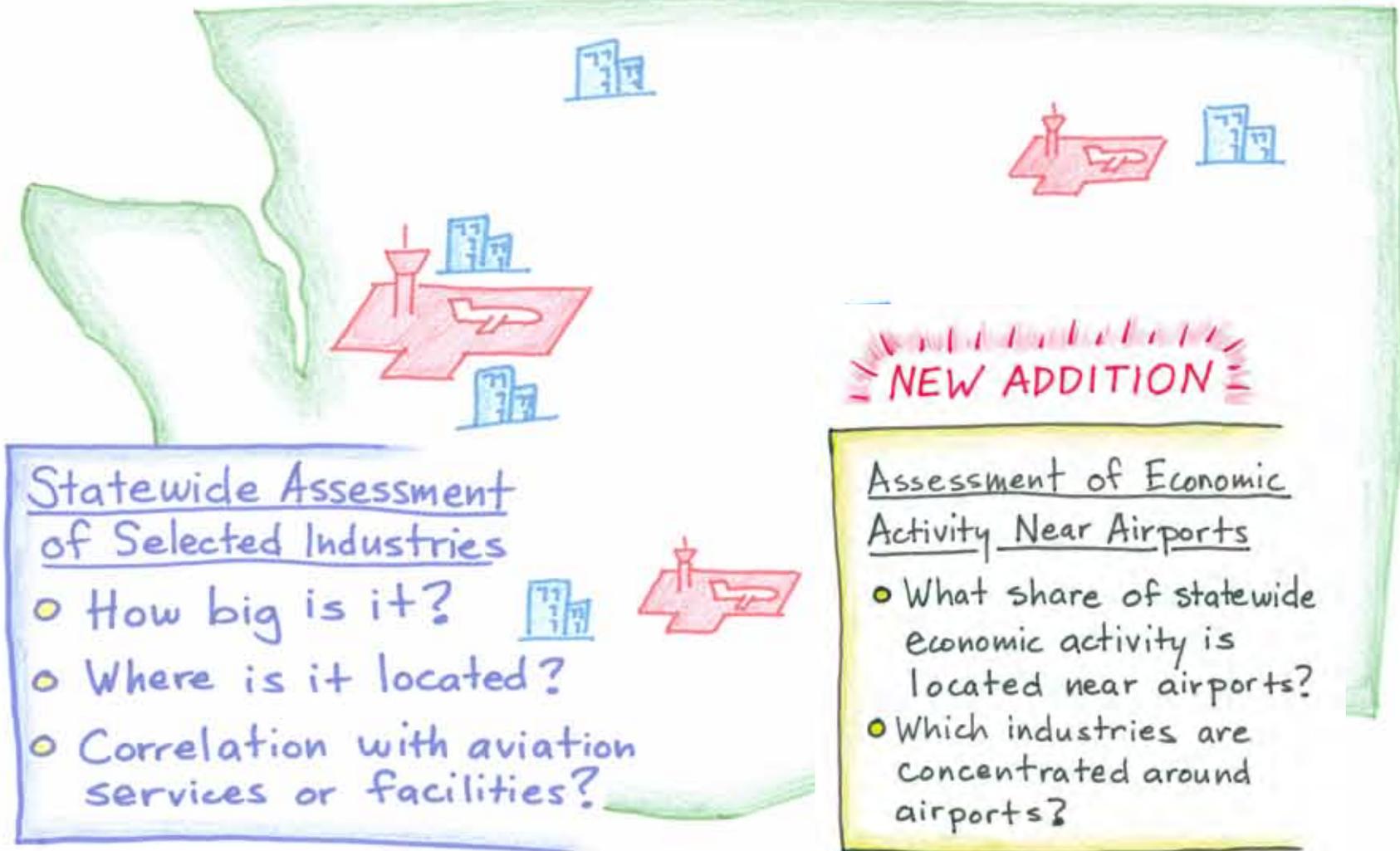
3:50 Round Table Comments

4:00 Adjourn

Industry Level Analysis

Review of Industry-Level Analysis

INDUSTRY PERSPECTIVE



Review of Industry-Level Analysis (cont.)

Where we are:

- Completed preliminary analysis and findings
- Gathering feedback to improve final product for report

What we will share today:

- Amount of Activity Around Airports: Analysis of Five- and Ten-Mile Buffers Around Airports
- Selected Industry Profiles
- Amount of Activity by Sub-State Geography (WSDOT Regions)

What We Will Share Today

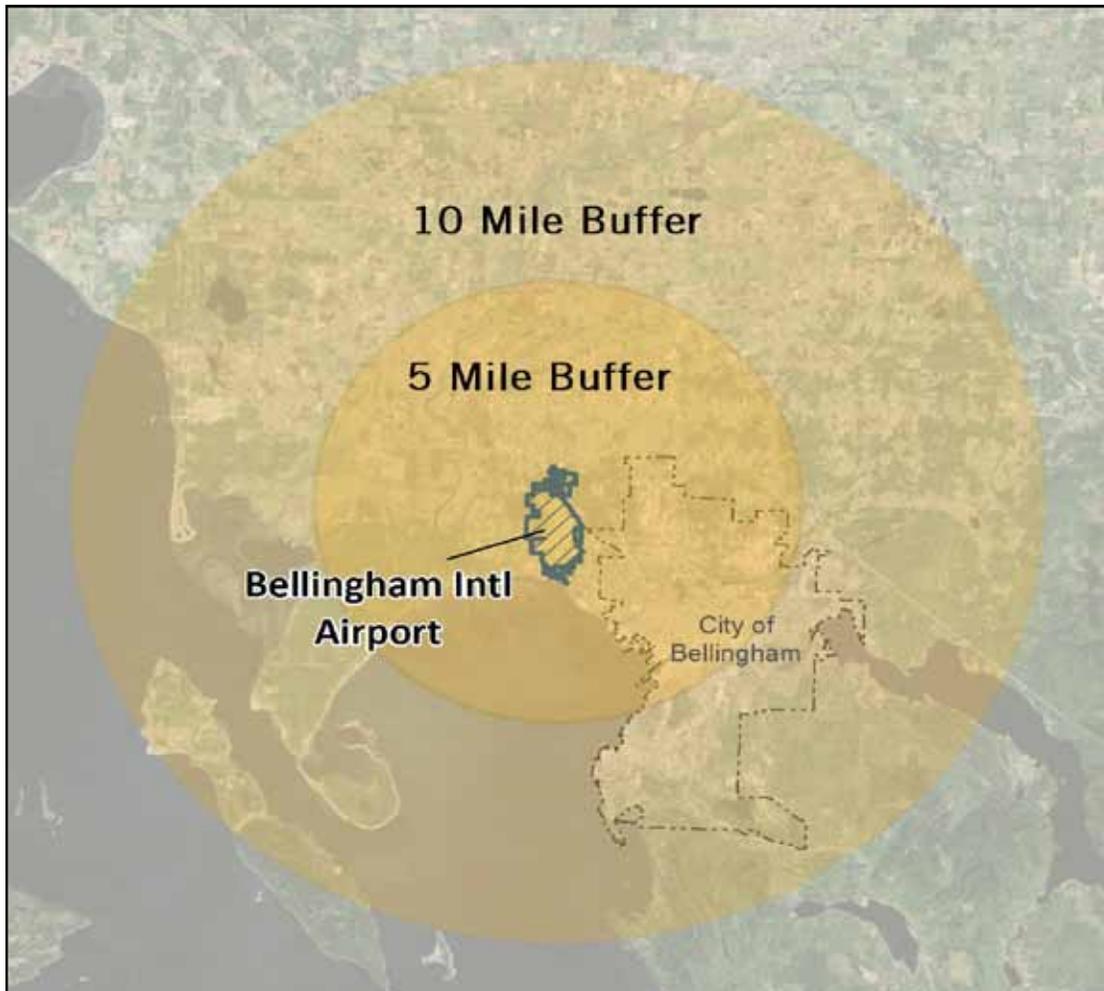


Amount of Activity Around Airports:
Analysis of Five- and Ten-Mile Buffers
Around Airports

Selected Industry Profiles

Amount of Activity by Sub-State Geography
(WSDOT Regions)

Approach To Airport Buffer Analysis



Based on five- and ten-mile buffers from each airport looking at:

- Airports - general business activity located near airports by classification
- Correlations of specific industry concentrations and distribution patterns

Limitations

- Causation impossible to establish
- Not all economic activity geo-located
- We are not estimating market areas

WSDOT Airport Classifications

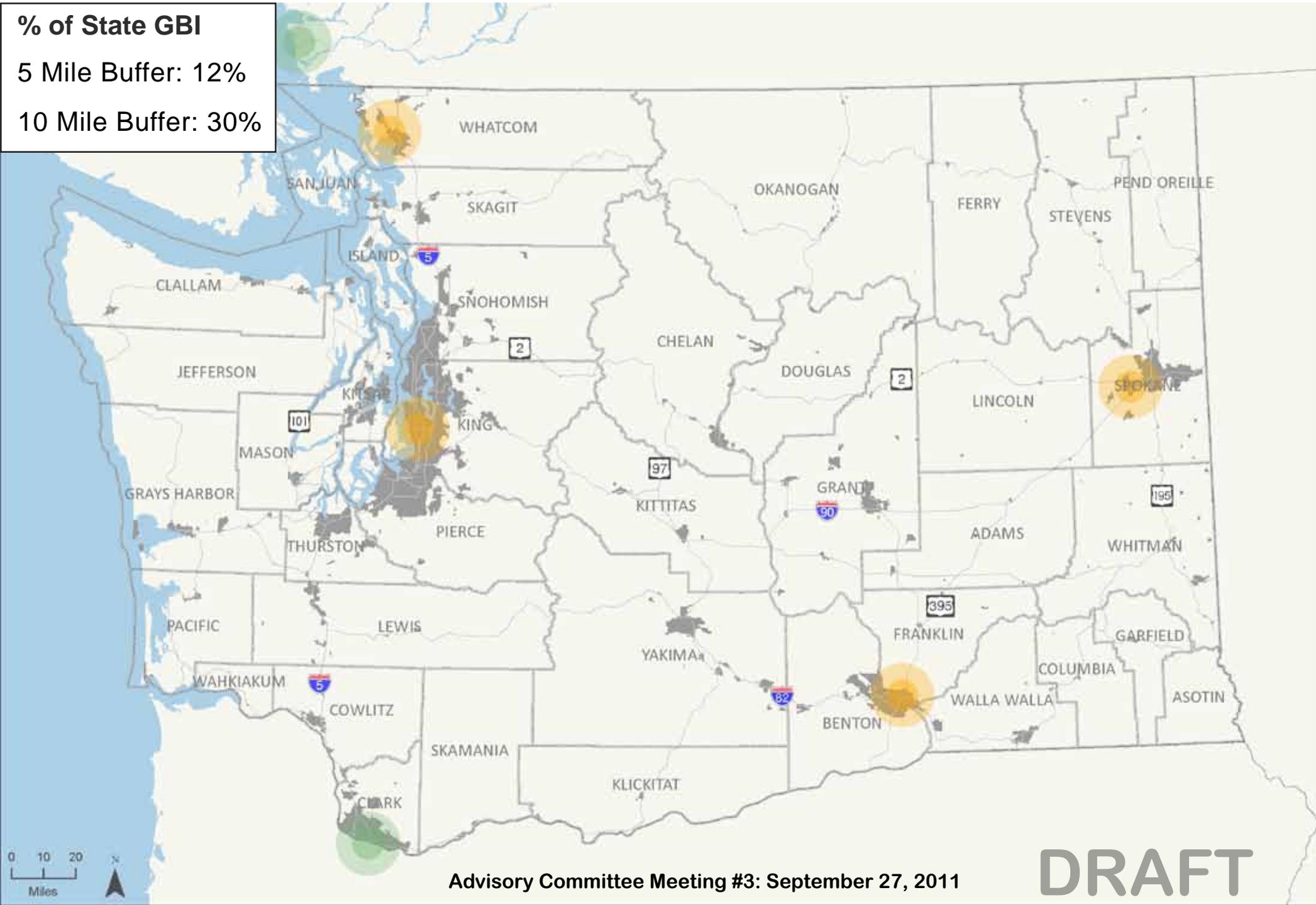
Classification	Description	# Airports	Example Airports
Commercial Service	Accommodates at least 2,500 scheduled passenger boardings per year for at least three years	16	<ul style="list-style-type: none"> • Bellingham International • Sea-Tac International • Spokane International • Tri-Cities
Regional Service	Serves large or multiple communities; all NPIAS Relievers; 40 based aircraft and 4,000-foot long runway, with exceptions.	19	<ul style="list-style-type: none"> • Bremerton National • Olympia Regional • Renton Municipal • Skagit Regional • Snohomish County/Paine Field
Community Service	Serves a community; a least 20 based aircraft; paved runway.	22	<ul style="list-style-type: none"> • Chehalis-Centralia • Chelan Municipal • Lopez Island • Pierce County/Thun Field • Richland
Local Service	Serves a community; fewer than 20 based aircraft; paved runway.	33	<ul style="list-style-type: none"> • Cle Elum Municipal • Davenport Municipal • Port of Ilwaco • Sunnyside Municipal • Willapa Harbor
Rural Essential	Other land-based airports, including residential airparks.	38	<ul style="list-style-type: none"> • Camano Island Airfield • Easton State • Lynden Municipal • Sequim Valley • Tieton State • Vashon Municipal
Seaplane Bases	Identified by FAA as a seaplane base, unless it is a Commercial Service Airport.	8	<ul style="list-style-type: none"> • Friday Harbor SPB • Poulsbo SPB • Roche Harbor SPB • Rosario SPB

Major Commercial with Portland and Vancouver

% of State GBI

5 Mile Buffer: 12%

10 Mile Buffer: 30%

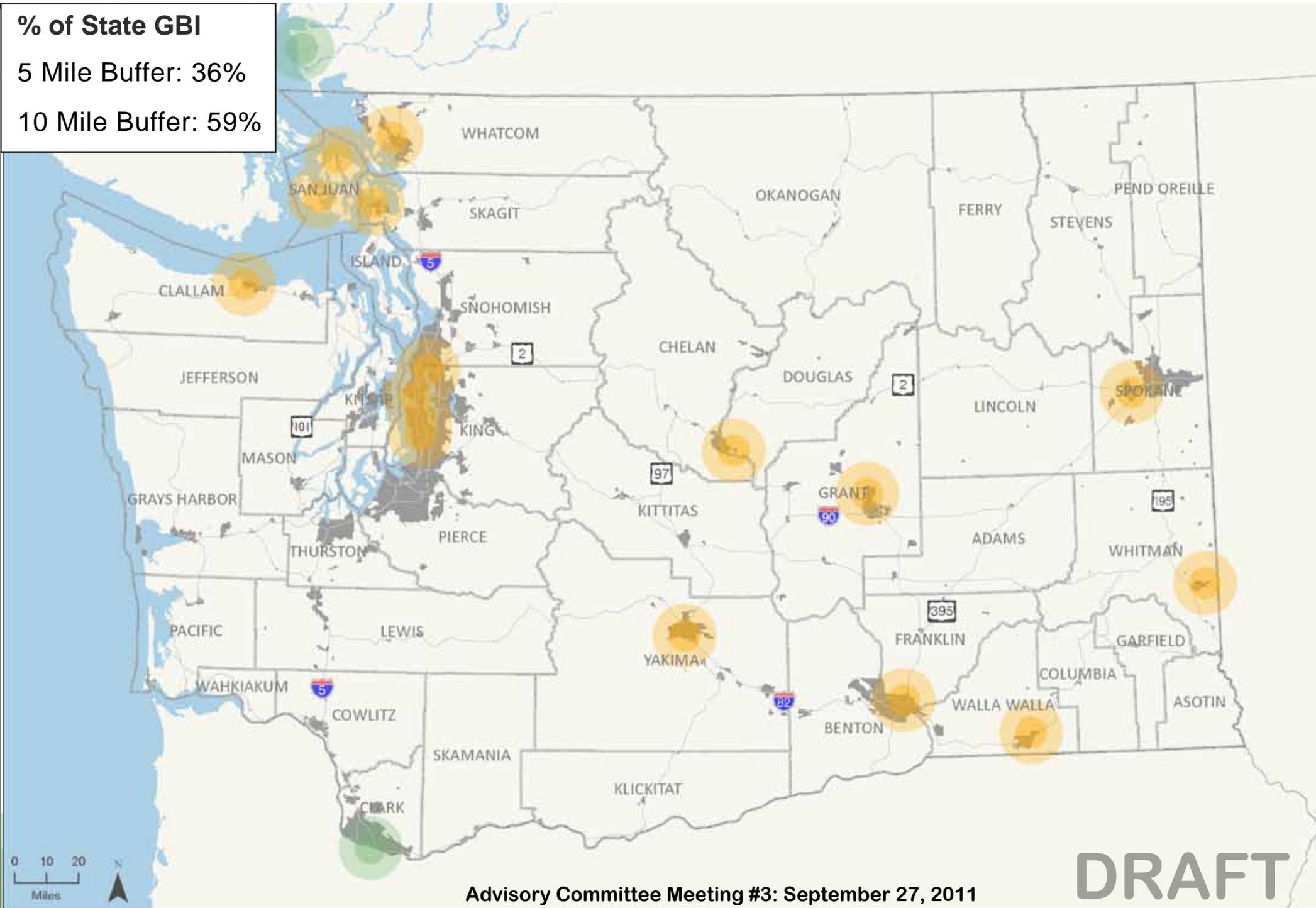


All Commercial

% of State GBI

5 Mile Buffer: 36%

10 Mile Buffer: 59%

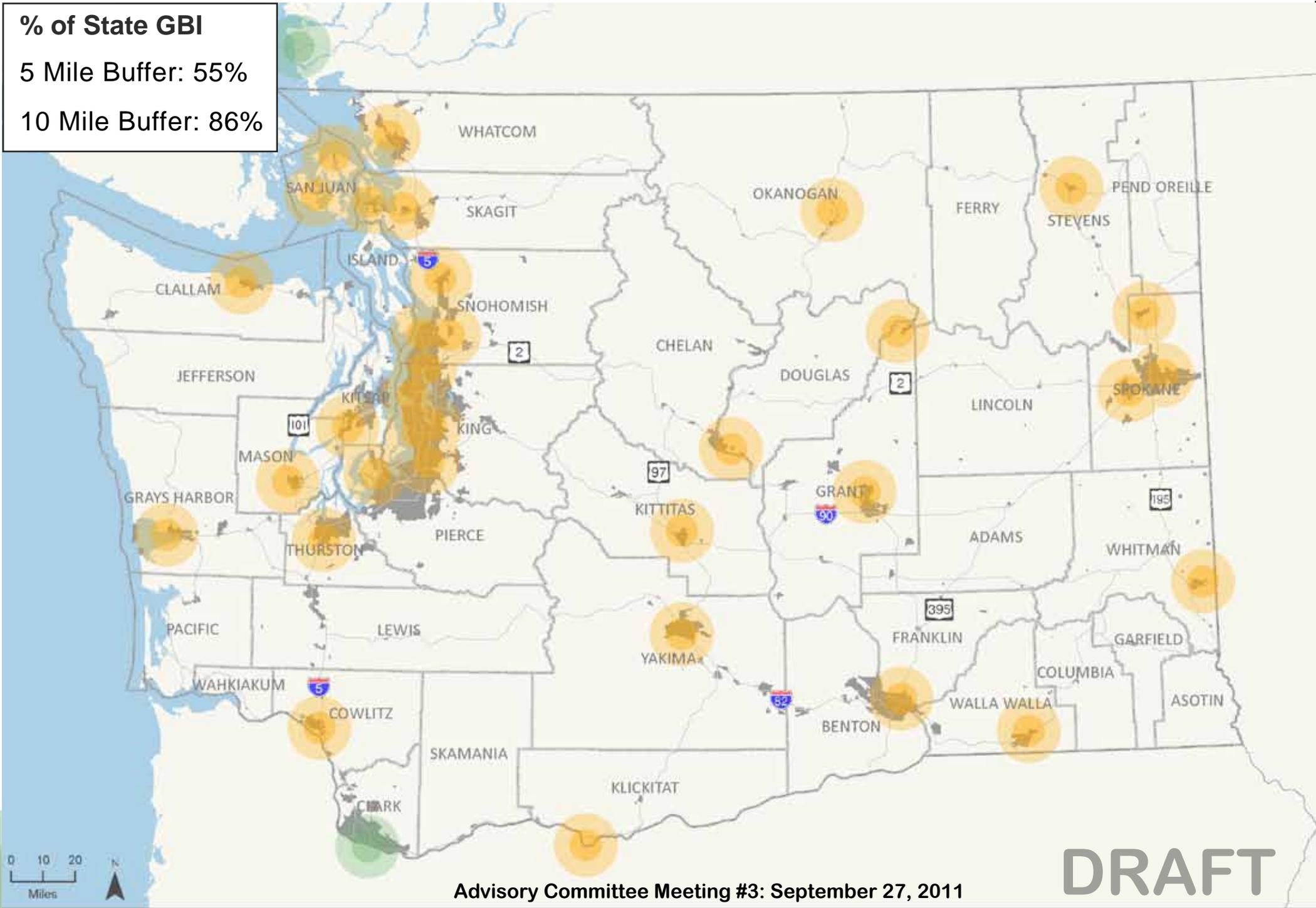


Commercial and Regional

% of State GBI

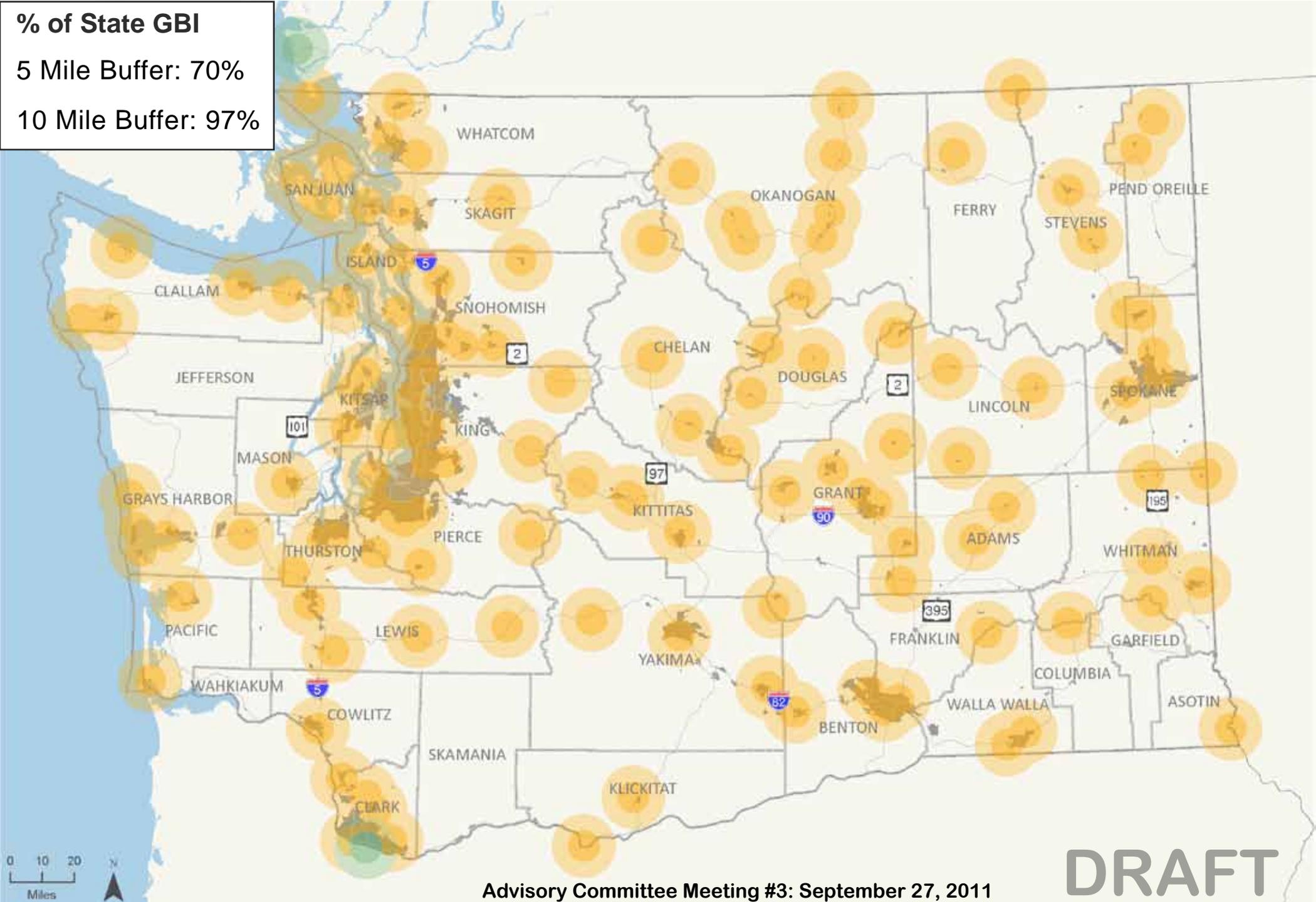
5 Mile Buffer: 55%

10 Mile Buffer: 86%



All Airports

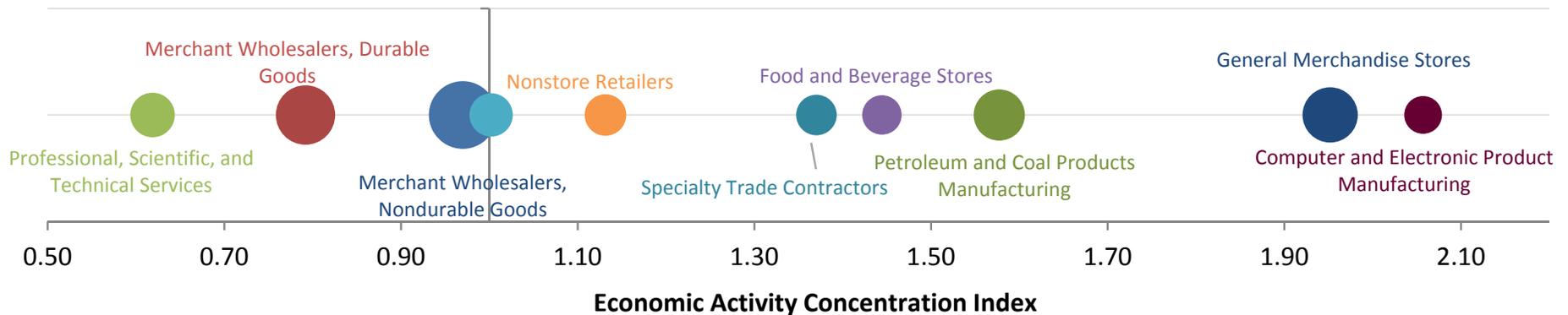
% of State GBI
5 Mile Buffer: 70%
10 Mile Buffer: 97%



Industry Concentrations Around Airports

- What industries are located within five-miles of airports?
- Using a bubble chart, we can graph the concentration of an economic activity around the airport:

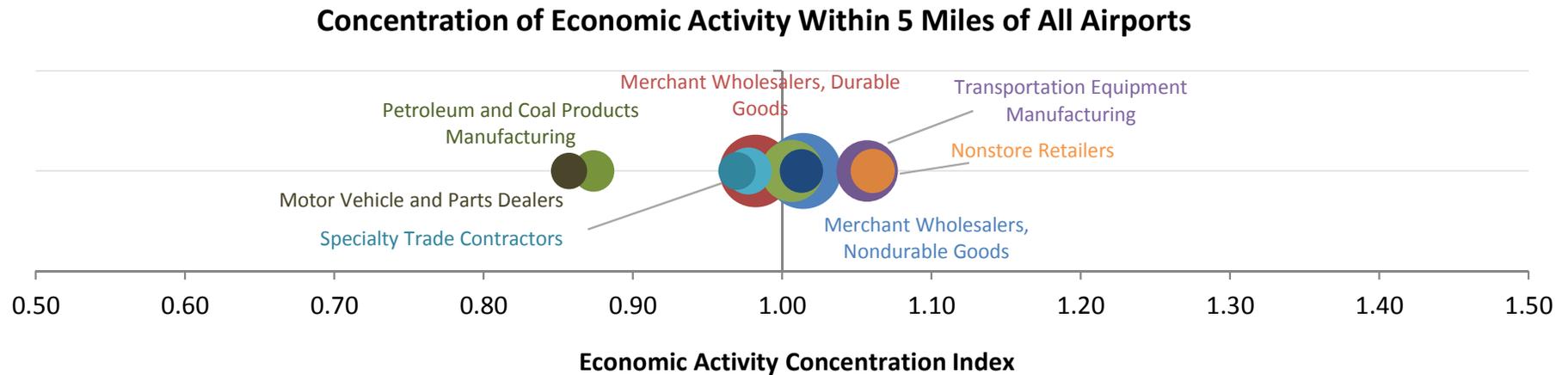
Sample Bubble Chart



- In the chart:
 - Size of dot = amount of GBI.
 - Concentration index = Amount of activity within 5 miles of an airport relative to activity statewide. If the index is over 1.0, then it is more concentrated around airports than it is statewide.

All Airports: Top 10 Industries within 5 Miles

- The top 10 industries are shown in the bubble chart below. Most cluster around 1.0 on the axis because 70% of statewide activity is within the buffer area.



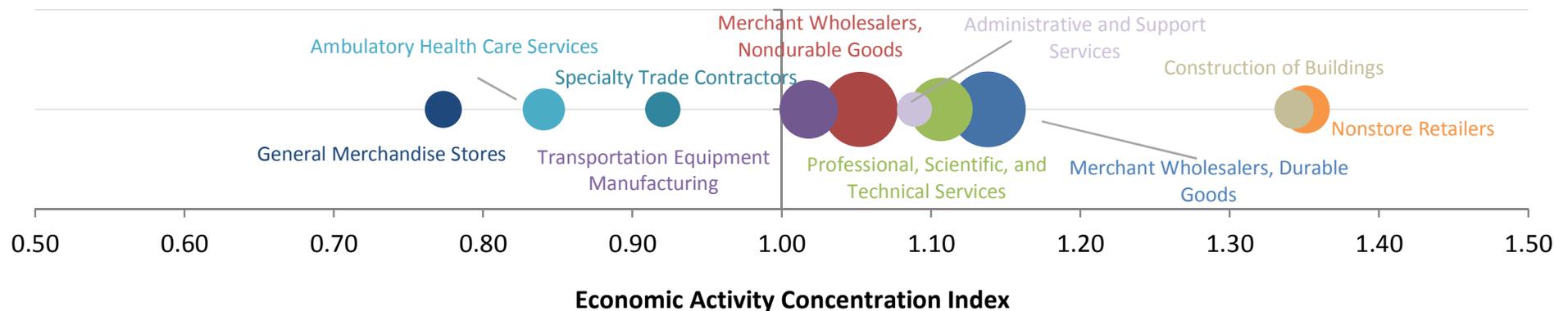
- Next we look at industries by select airport classifications and ask:
 - What industries are concentrated by airports of a specific classification?
 - What is the relationship between these industries and aviation?

Commercial Service Airports

Characteristics of Airport Classification

- Accommodates high levels of activity.
- Can handle performance aircraft.
- Regular, scheduled commercial service.

Concentration of Economic Activity Within 5 Miles of Commercial Airports



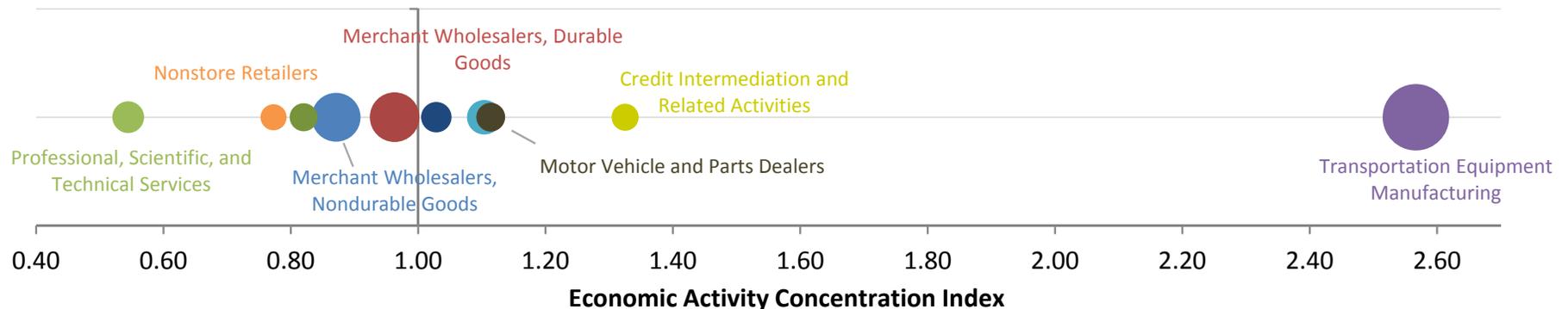
- **Merchant Wholesalers** and **Nonstore Retailers** both require large parcels of industrial land, similar to commercial airports.
- Industries that serve local consumers (**health care offices**, **general merchandise stores** and **specialty trades**) are not clustered around commercial airports.

Regional Service Airports

Characteristics of Airport Classification

- Accommodates high levels of activity.
- Serves large metropolitan areas.
- Can handle most GA or performance aircraft.
- At least 40 based aircraft.
- Has a runway of at least 4,000 feet long.

Concentration of Economic Activity Within 5 Miles of Regional Airports



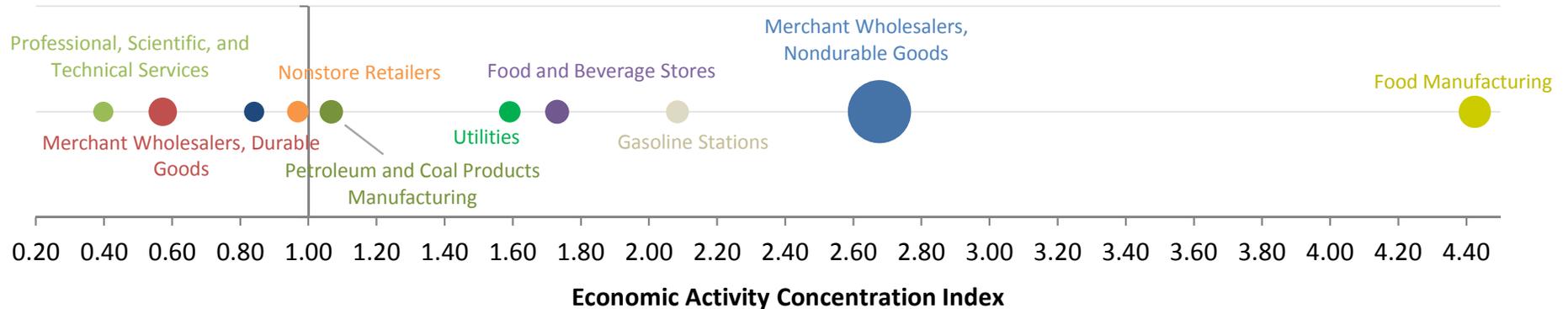
- **Transportation Equipment Manufacturing** firms (including suppliers) are more than twice as concentrated near regional service airports than in the State overall.
 - Airplane and airplane part manufacturing, in particular needs access to airports for the production, testing, and delivery of their products.

Local Service Airports

Characteristics of Airport Classification

- Fewer than 20 based aircraft.
- Used primarily by smaller, piston-driven aircraft.
- Serves small sized communities.
- Has a paved runway.

Concentration of Economic Activity Within 5 Miles of Local Airports



- **Food Manufacturing** may require larger, industrial-type facilities which may be located near airports.
 - Direct customers are likely to be out-of-area food manufacturers, wholesalers, or commodity brokers.
- High concentrations of population-serving industries (**Gasoline Stations**, and **Food and Beverage Stores**) due to local-serving economies of smaller communities.

What We Will Share Today

Amount of Activity Around Airports:
Analysis of Five- and Ten-Mile Buffers
Around Airports



Selected Industry Profiles

Amount of Activity by Sub-State Geography
(WSDOT Regions)

Criteria for Industry Selection

Industries that:

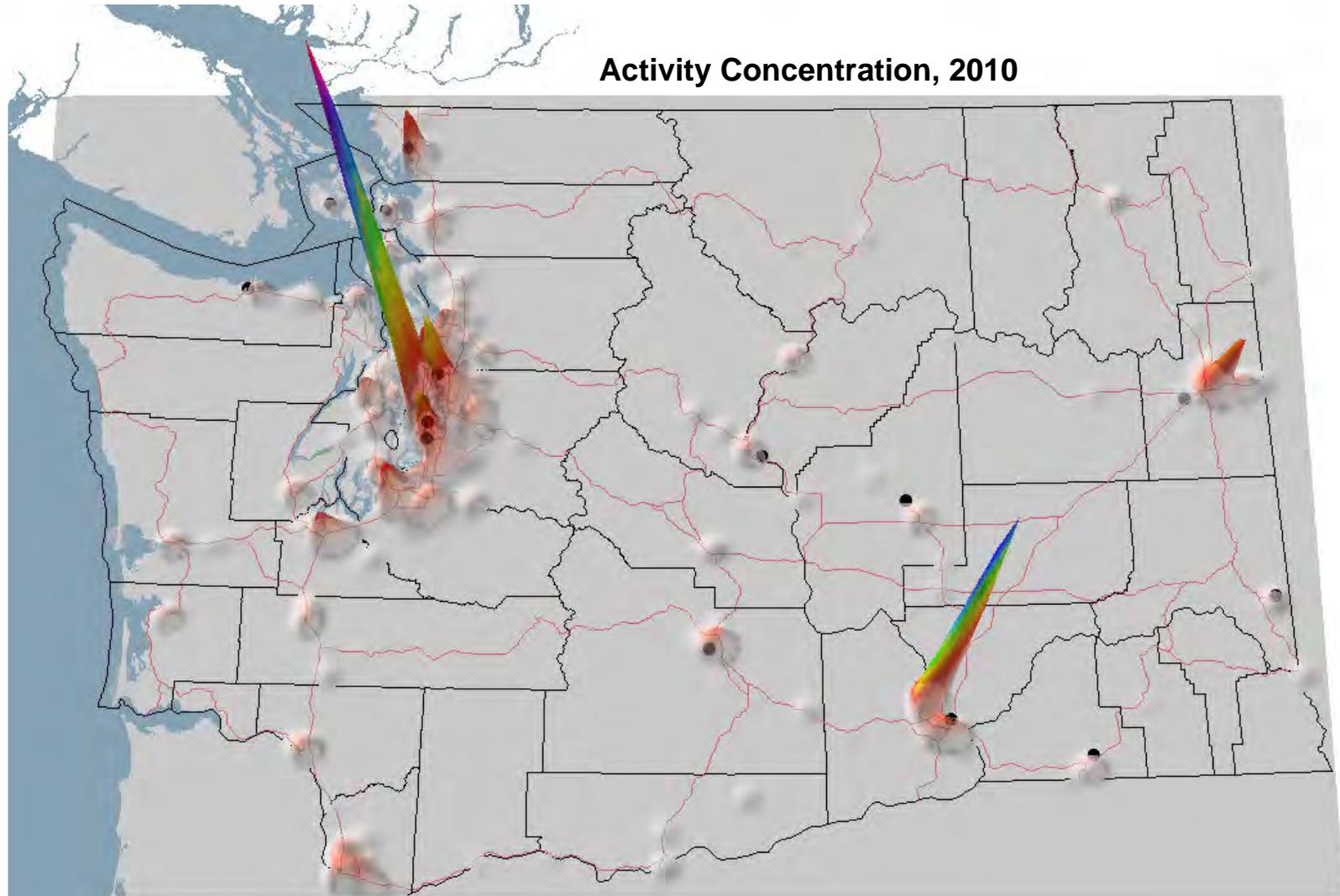
- Have strong relationship or dependence on the aviation system
- Have strong stakeholder interest (including advisory committee feedback)
- Serve more than just local markets
- Are large enough to be important to local or State economies
- May demonstrate the role aviation plays in distributing economic activity throughout the state

Industries Chosen:

- Business and Professional Services
- Agriculture
- Tourism
- Manufacturing (including Aircraft Manufacturing)

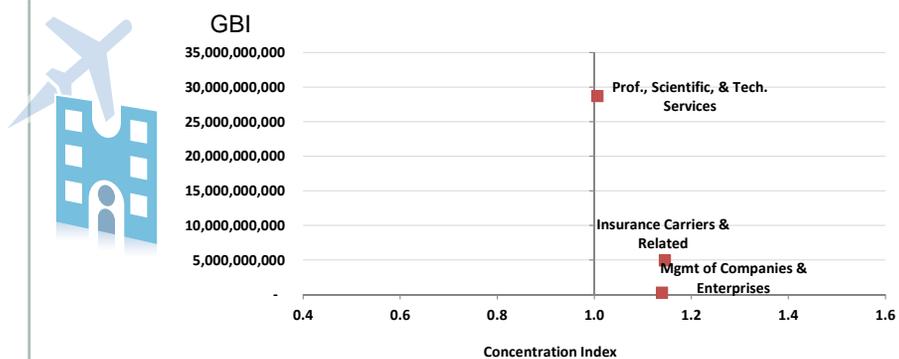
Professional and Business Services Industry Map

	Industry Size	% of State
TOTAL JOBS	208,000	7.4%
TOTAL GBI	\$45 billion	7.7%



Professional and Business Services

Concentration Around Airports



Based on 5-mile buffer selection

Location Decision Factors



- Access to educated workforce
- Proximity to business and population centers
- IT infrastructure

How Does This Industry Use Aviation



- Business travel to national and international markets/clients/partners
- Regional travel to work sites and clients

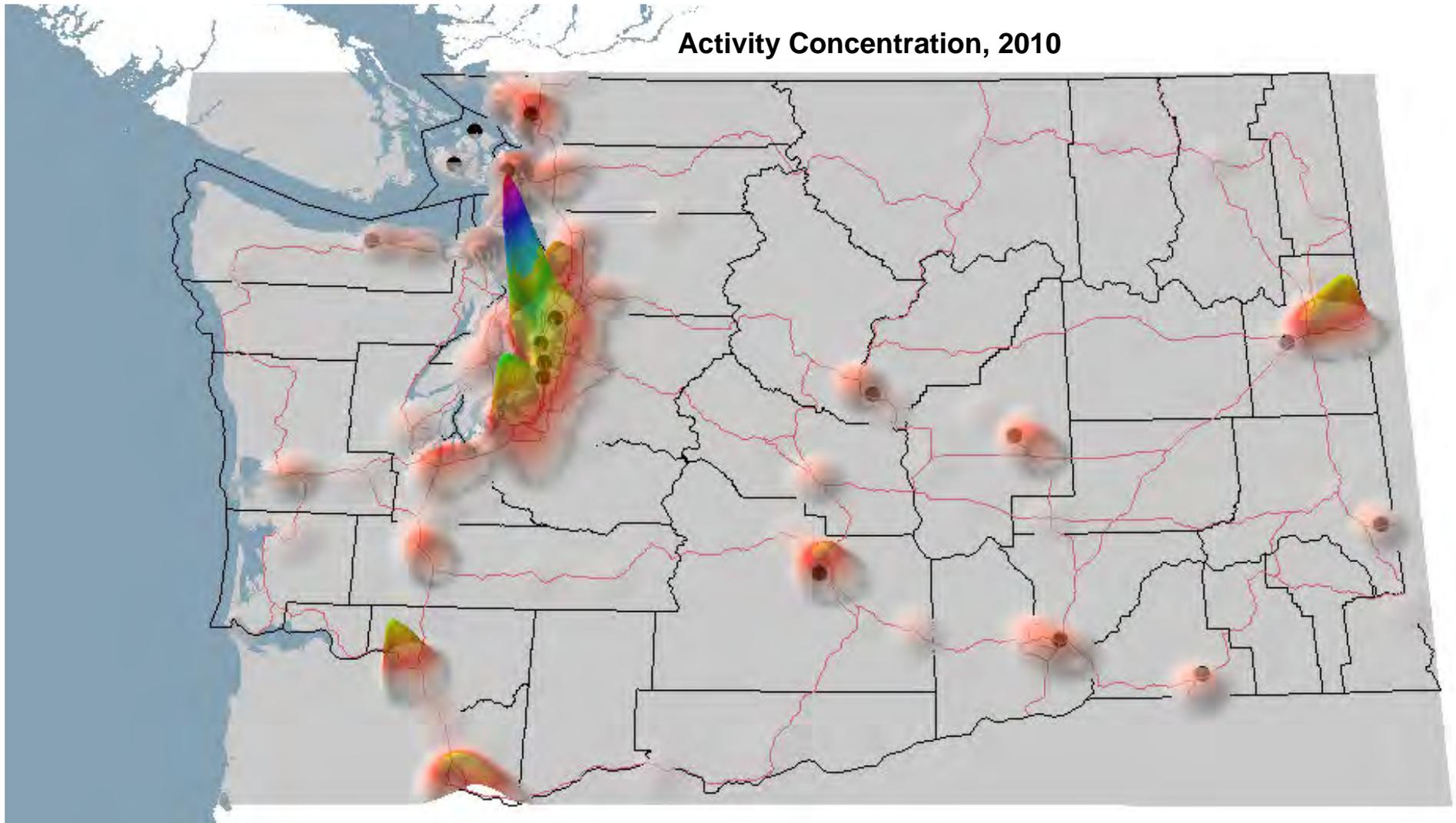
How Important is Aviation for Location Decisions?



- Proximity to airports is a key location decision factor for businesses that serve clients beyond the regional market
- Proximity to airports is not likely to be important for local-serving businesses.
- Generally, professional and business services tend to locate near urban airports and dense population centers

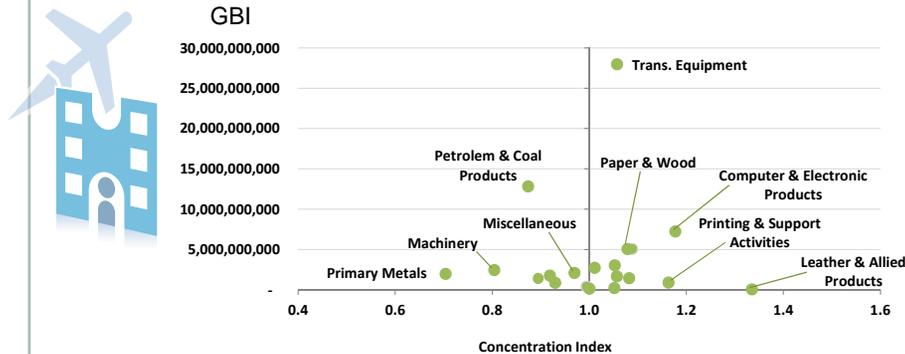
Manufacturing Industry Map

	Industry Size	% of State
TOTAL JOBS	217,000	7.7%
TOTAL GBI	\$112 billion	19.2%



Manufacturing

Concentration Around Airports



Based on 5-mile buffer selection

Location Decision Factors



- Access to transportation infrastructure - major highways, rail, and airports
- Large plots of appropriately zoned, affordable land just outside population centers
- Access to skilled workforce
- Adequate utility service

How Does This Industry Use Aviation



- Air cargo to receive and export materials, components, and final products
- Corporate travel between facilities regionally, nationally, and internationally

How Important is Aviation for Location Decisions?

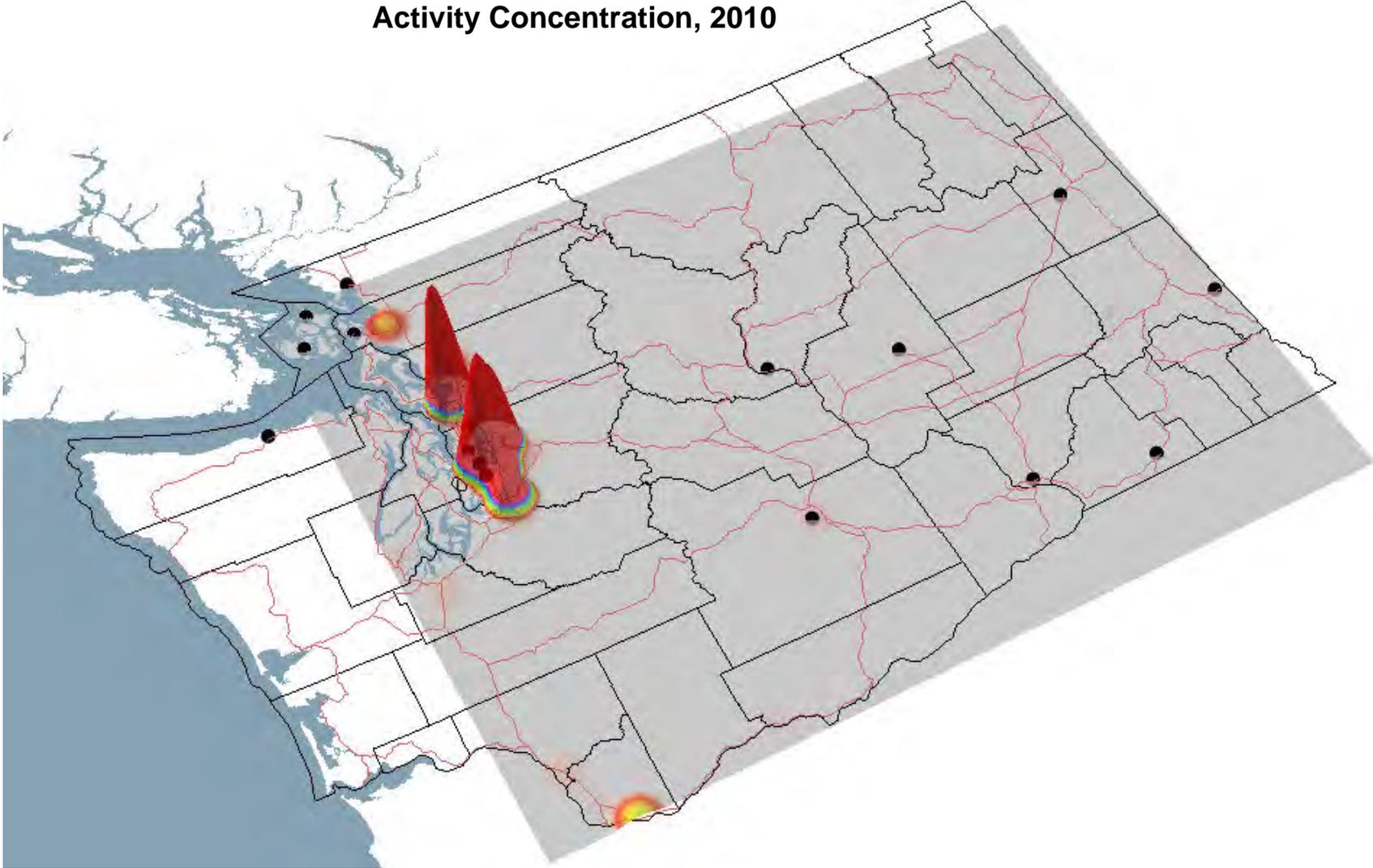


- Proximity to airports is one of several important location decision factors for manufacturing sub-sectors that rely on aviation for air cargo and supply networks.
- Large affordable plots of land found near airports are attractive to manufacturing companies that need space and access to transportation infrastructure, and are not as sensitive to noise issues associated with airports.

Aircraft Manufacturing Industry Map

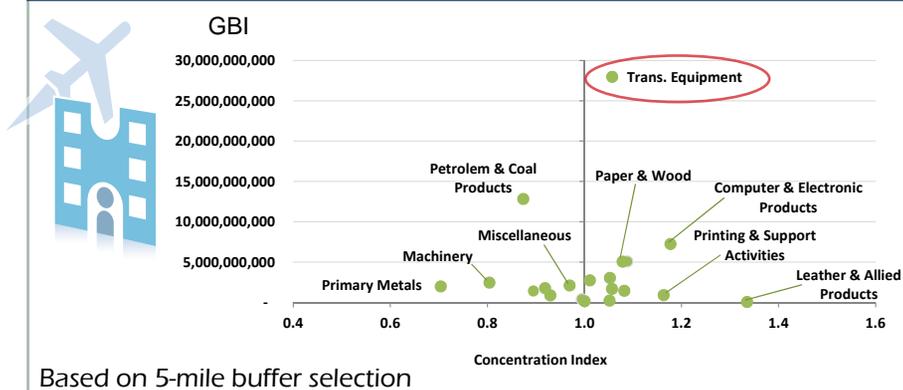
	Industry Size	% of State
TOTAL JOBS	80,000	2.9%
TOTAL GBI	\$35 billion	6.0%

Activity Concentration, 2010



Aircraft Manufacturing (subset of Manufacturing)

Concentration Around Airports



Location Decision Factors



- Proximity to airports for aircraft testing, storage, and delivery
- Access to skilled workforce (engineering, machining)
- Other factors listed for manufacturing

How Does This Industry Use Aviation



- Airports used for flight testing and hangar space
- Air cargo supports global network of suppliers
- Corporate travel between facilities regionally, nationally and internationally

How Important is Aviation for Location Decisions?

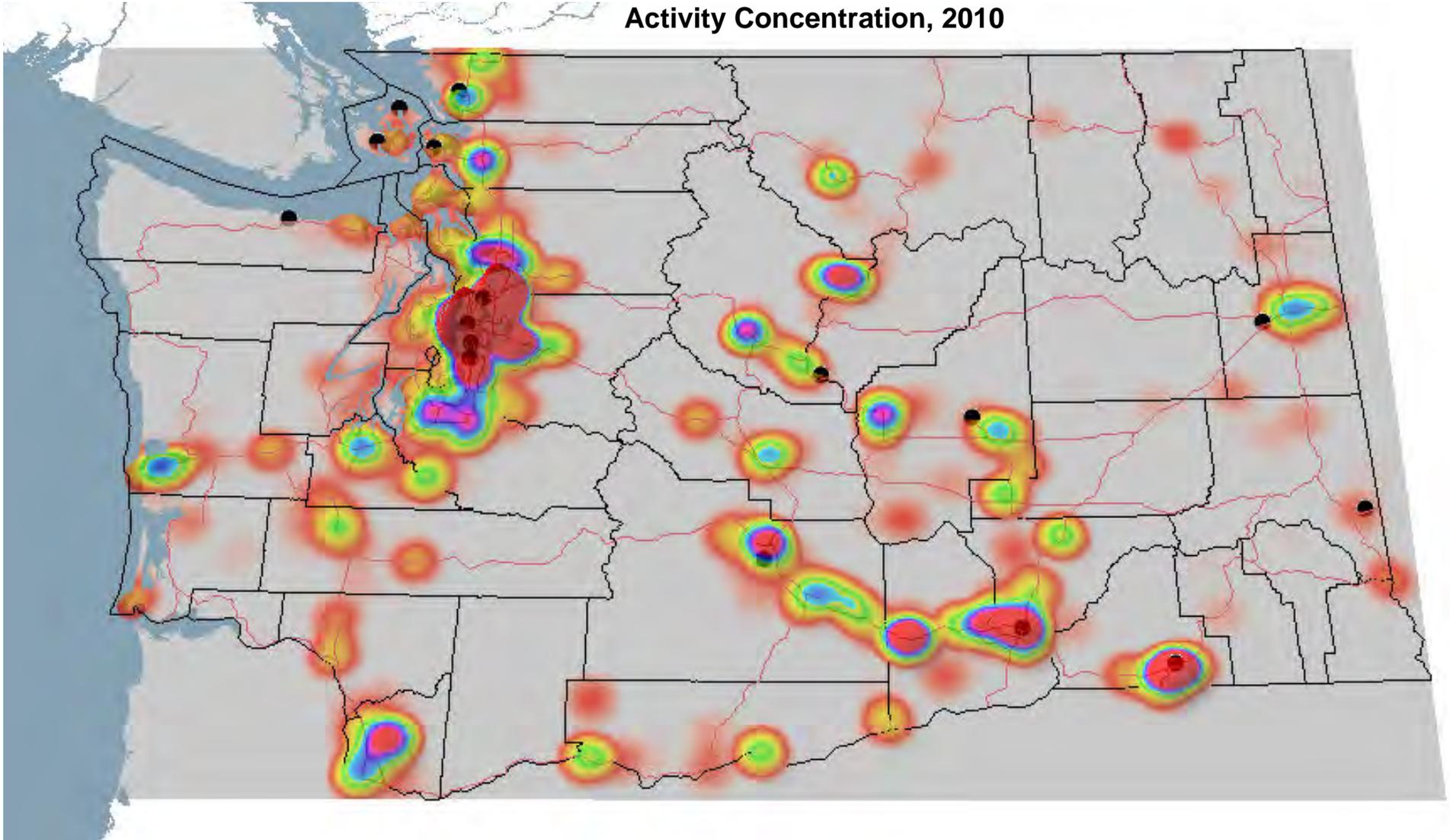


- Proximity to airports is a critical location decision factor for aircraft manufacturers such as Boeing, as they require air fields for aircraft testing, storage, and delivery
- Aviation infrastructure is intrinsically tied to aircraft manufacturing's core market and sources of demand.

Agriculture Industry Map

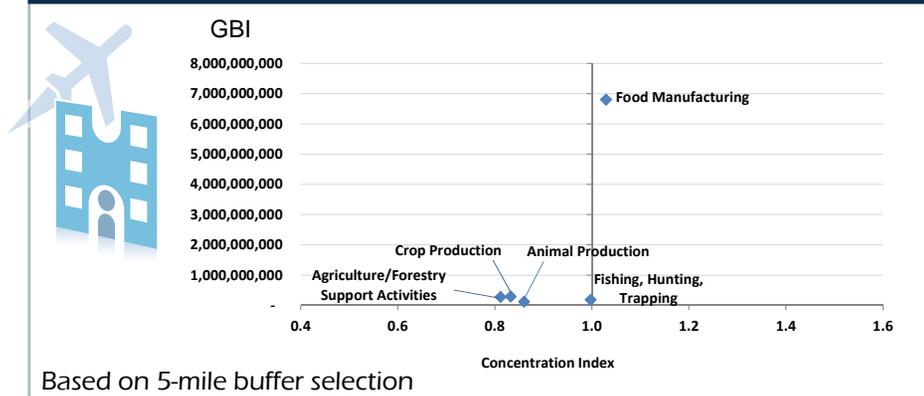
	Industry Size	% of State
TOTAL JOBS	120,000	4.3%
TOTAL GBI	\$11 billion	1.9%

Activity Concentration, 2010



Agriculture

Concentration Around Airports



Location Decision Factors



- Access to fertile land, adequate water supply and other key environmental resources
- Processing and distribution facilities need access to transportation infrastructure and markets
- Affordable workforce

How Does This Industry Use Aviation



- Aviation allows for time sensitive delivery of fresh produce and other agricultural products to markets around the state, nation, and world
- Aerial application is an efficient way to apply treatments to fertilize and protect cropland

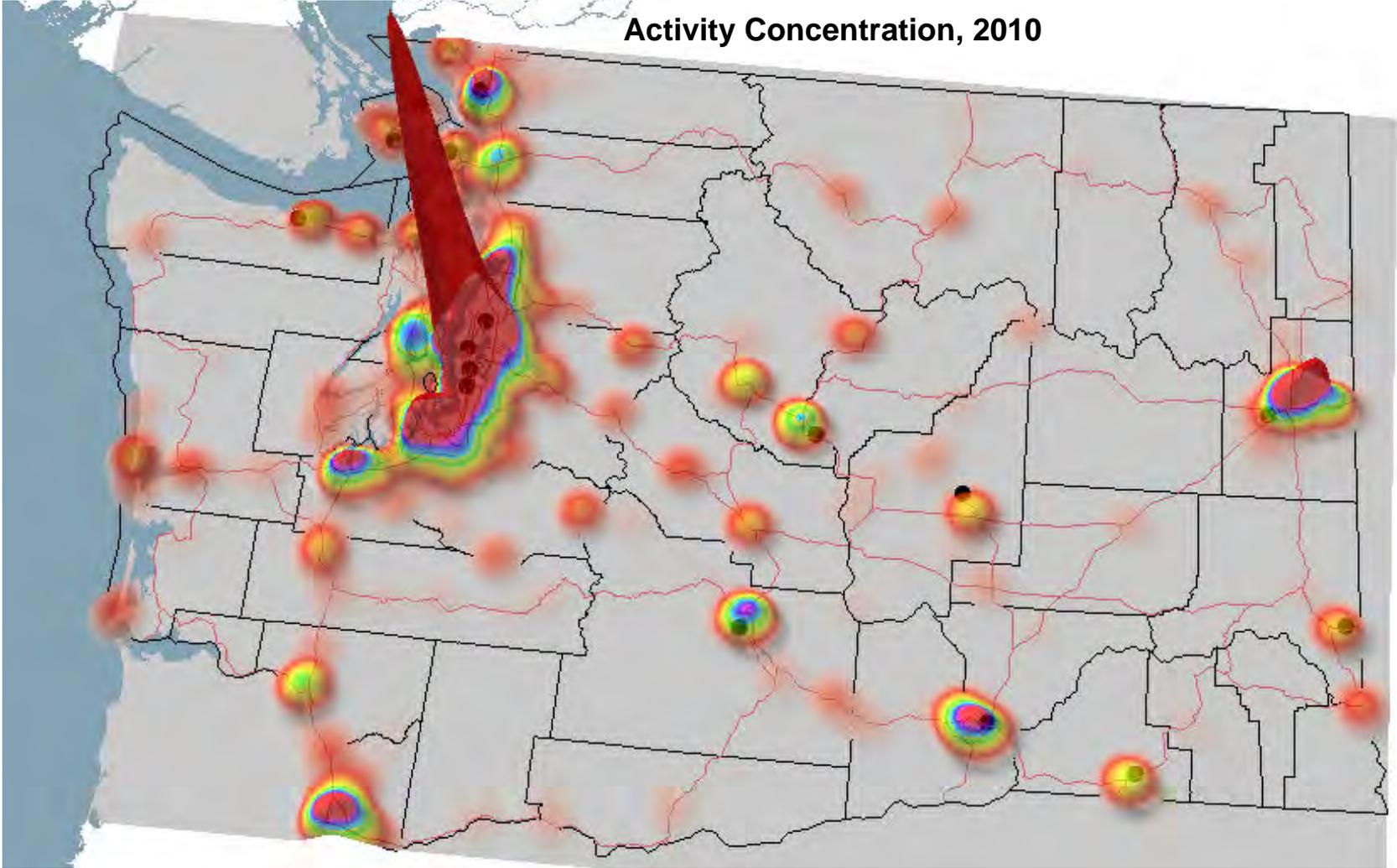
How Important is Aviation for Location Decisions?



- Proximity to airports is not a primary location decision factor for most agriculture. However, it may play a role for food manufacturers who require time-sensitive delivery of fresh produce and other agricultural products.
- Sub-sectors that focus on animal production and support forestry activities tend to locate away from population centers and not near airports.

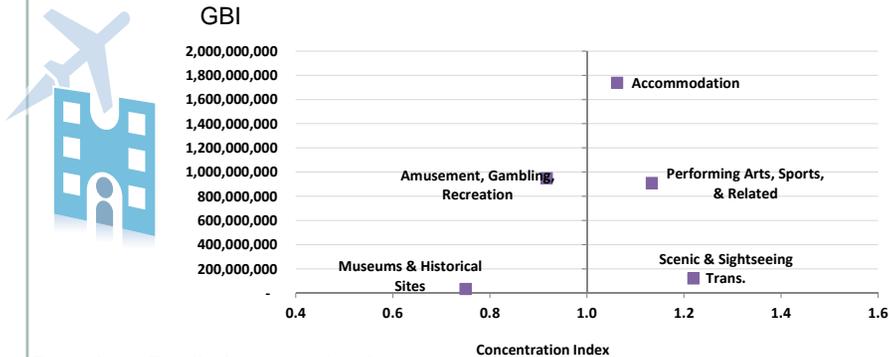
Tourism Industry Map

	Industry Size	% of State
TOTAL JOBS	64,464	2.3%
TOTAL GBI	\$5 billion	1%



Tourism

Concentration Around Airports



Location Decision Factors



- Proximity to population centers and tourist attractions
- Locations with potential for year-round activity
- Access to affordable workforce

How Does This Industry Use Aviation



- Customers travel via commercial air service, charter service, and personal aircraft
- Restaurants rely upon aviation for deliveries of specialty and fresh ingredients

How Important is Aviation for Location Decisions?



- Aviation is critical to tourism as it provides the pathway to connect the state to the rest of the world.
- Proximity to airports is important for sub-sectors of the industry that serve airport customers (hotels, ground transport).
- The tourism industry and airports tend to co-locate near population centers.

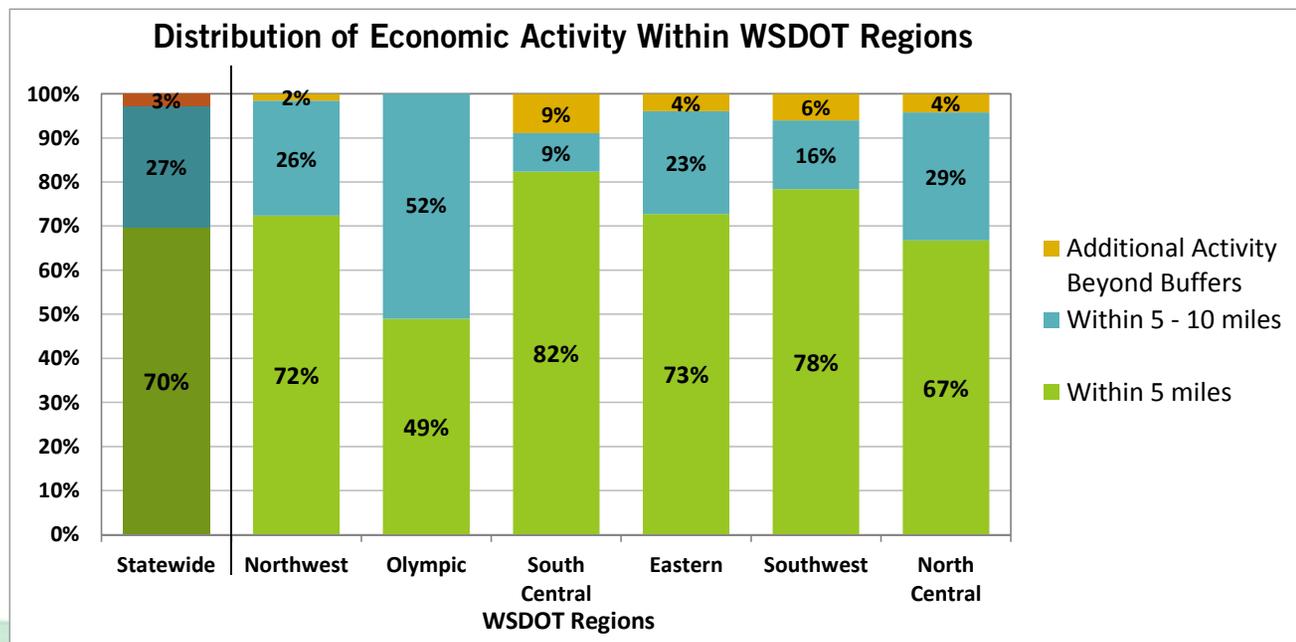
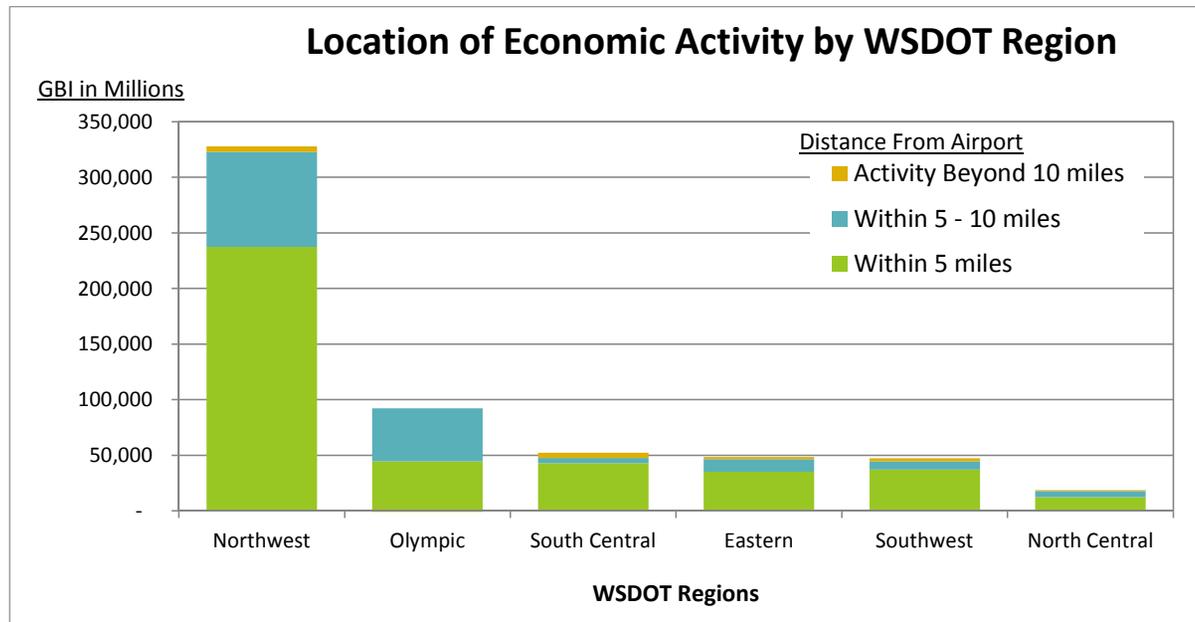
What We Will Share Today

Amount of Activity Around Airports:
Analysis of Five- and Ten-Mile Buffers
Around Airports

Selected Industry Profiles

NEXT  **Amount of Activity by Sub-State Geography
(WSDOT Regions)**

All Economic Activity by Sub-State Geography



Airport Level Analysis

Re-Introduction to the Airport Perspective



- The airport perspective looks at the level of economic activity reasonably attributable to an individual airport.
- This is different from the industry-level analysis and only includes:
 - Aviation-related activity.
 - Activity on the airport footprint (a subset of the 5-mile buffer).

Airport Level Impacts: Economic and Fiscal

- **Economic Impacts** are the jobs, wages, and spending associated with public use airports. Economic impacts include **direct, indirect, and induced impacts** from:
 - **Businesses Operating on the Airport Footprint.** Economic activity from aviation-related businesses **located on the airport footprint**. Estimated employment and gross business income from these businesses served as input for the analysis.
 - **Visitors Traveling through the Airport.** This analysis captures economic impacts related to visitors entering a community through an airport and spending money in that community and beyond.
- **Fiscal Impacts** are how these airport businesses and visitors affect local and state tax revenues.

Sample Airport Footprint



Impacts of an Airport

Product: Sample Airport Profile

Renton Municipal

616 West Perimeter Road, Unit A, Renton, WA, 98057



Text about your airport here . . .

NOTE: Data on this page comes from the WA Airport Information System Database (AIS).

AIRPORT CHARACTERISTICS

Location		Service Classification	
Legislative Dist:	37	Federal:	Reliever Airport
Associated City:	Renton	State:	Regional
County:	King		
Organizational Structure		Runway(s)	Type of Airport
Ownership Type:	City Govt.	Number:	1
Owner:		Type(s):	Asphalt

AIRPORT ACTIVITY

Activities (Based/Transient)	Based Aircraft	Number of Carriers
<input type="checkbox"/> Agriculture/Spraying	<input type="checkbox"/> Jet	2
<input type="checkbox"/> Air Ambulance	<input type="checkbox"/> Multi-Engine	12
<input type="checkbox"/> Medical Transport	<input type="checkbox"/> Single-Engine	267
<input checked="" type="checkbox"/> Airplane Parts Manufacturing	<input type="checkbox"/> Rotor Based	4
<input type="checkbox"/> Aerial Surveying		
<input type="checkbox"/> Wildlife Freighting		
<input type="checkbox"/> Skydiving/Parachute Drops		
<input type="checkbox"/> Aerial Tours	<input type="checkbox"/> Seaplane	25
<input checked="" type="checkbox"/> Civil Air Patrol	<input checked="" type="checkbox"/> Total	300
<input type="checkbox"/> Cargo Activity	<input type="checkbox"/> Fixed Based Operators	
<input checked="" type="checkbox"/> Flight Training	AIS Last Updated: 12/21/2010	
<input type="checkbox"/> Commercial Air/Civil Activity	No. of FBOs	2
		<input checked="" type="checkbox"/> Other Ground Transportation

Airport Rankings

Take Offs and Landings (Operations)

Based Aircraft Operations
Number of Carriers

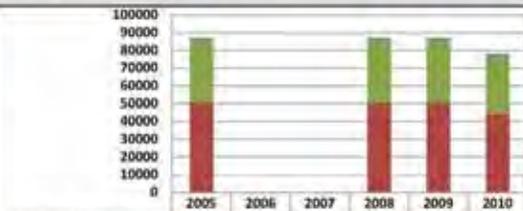
Commercial Enplanements*

2010	0
2009	0
2008	0

*Commercial enplanements are passengers boarding a commercial aircraft. Does not include chartering passengers.

Fuel Service

50 LL	<input type="checkbox"/>
100 LL	<input checked="" type="checkbox"/>
MoGas	<input type="checkbox"/>
Jet A	<input checked="" type="checkbox"/>
Helicopter Fuel	<input type="checkbox"/>



Commercial Enplanements*	0	0	0	0	0	0
Commercial Air Taxi	939	939	939	939	939	1018
Commercial Air Carrier	203	203	203	203	203	402
General Itinerant	35453	35669	35669	35669	35669	32164
General Local	50591	50375	50375	50375	50375	44253



DISCUSSION DRAFT

8/19/2011

Renton Municipal

616 West Perimeter Road, Unit A, Renton, WA, 98057

Airport Businesses and Visitors

Economic and Fiscal Impacts calculated for each airport start with activity that can be directly associated with the airport, namely the businesses operating at the airport and the visitors traveling through the airport. From this initial activity, multiplier effects are estimated as wages and other spending are re-spent in the local economy. Impacts of airport businesses are analyzed within the defined economic impact region, visitor spending is analyzed statewide.



ECONOMIC IMPACTS

AIRPORT BUSINESSES

Counties in Impact Region:	King
Total Gross Business Income:	Estimated annual revenue received by all businesses located on the airport footprint.
Direct Jobs:	Estimated jobs supported by the total Gross Business Income on the airport footprint.
Direct Labor Income:	Estimated income paid to the Direct Jobs located on the airport footprint.
Direct Total Output:	Estimated portion of total Gross Business Income that will cycle through the economic impact region.
Indirect/Induced Impacts:	Increases in regional impacts from the local re-spending of direct dollars.
Total Impacts:	The sum of Direct, Indirect, and Induced Impacts, for a total regional impact.

Estimated Regional Impact from Airport Businesses

Total Estimated Gross Business Income:	\$6,018,612,733		Total Impact
Estimated Economic Impact	Direct	Indirect/Induced	Total Impact
Jobs	10,288	8,483	18,769
Labor Income	\$ 1,296,207,162	\$ 452,216,130	\$ 1,748,423,292
Total Output	\$ 2,877,749,810	\$ 774,506,424	\$ 3,652,256,234

VISITOR SPENDING

Impact Region:	Washington State
Total Visitor Spending:	Estimated total annual average spending by visitors traveling through this airport.
Direct Jobs:	Estimated jobs supported by the total estimated visitor expenditures.
Direct Labor Income:	Estimated income paid to the Direct Jobs supported by visitor expenditures.
Direct Total Output:	Estimated total visitor expenditures, which are all assumed to occur within the economic impact region.
Indirect/Induced Impacts:	Increases in regional impacts from the local re-spending of direct dollars.
Total Impacts:	The sum of Direct, Indirect, and Induced Impacts, for a total regional impact.

Estimated Regional Impacts from Visitor Spending

Total Estimated Visitor Spending:	\$ 4,156,400		Total Impact	Statewide Impact	% State Impact
	Direct	Indirect/Induced	Total Impact	Statewide Impact	% State Impact
Jobs	41	22	63	XX	XX
Labor Income	\$ 1,193,999	\$ 1,037,785	\$ 2,231,784	XX	XX
Total Output	\$ 3,668,136	\$ 3,198,381	\$ 6,866,517	XX	XX

FISCAL IMPACTS

Estimated Taxes Paid to Each Jurisdiction

	Cities	County	SP Dist	State	Total Taxes
Airport Businesses	\$ 1,737,600	\$ 279,600	\$ 1,153,800	\$ 24,594,000	\$ 27,765,000
Visitors	\$ 39,800	\$ 40,400	\$ 41,600	\$ 209,900	\$ 331,700
Total	\$ 1,777,400	\$ 320,000	\$ 1,195,400	\$ 24,803,900	\$ 28,096,700

NOTE: The tax estimates include Aircraft Excise Tax, Property Tax, Business & Occupation Tax, Sales Tax, Aviation Fuel Tax, State and Local Utility Taxes, Rental Car Tax, and Lodging Tax.



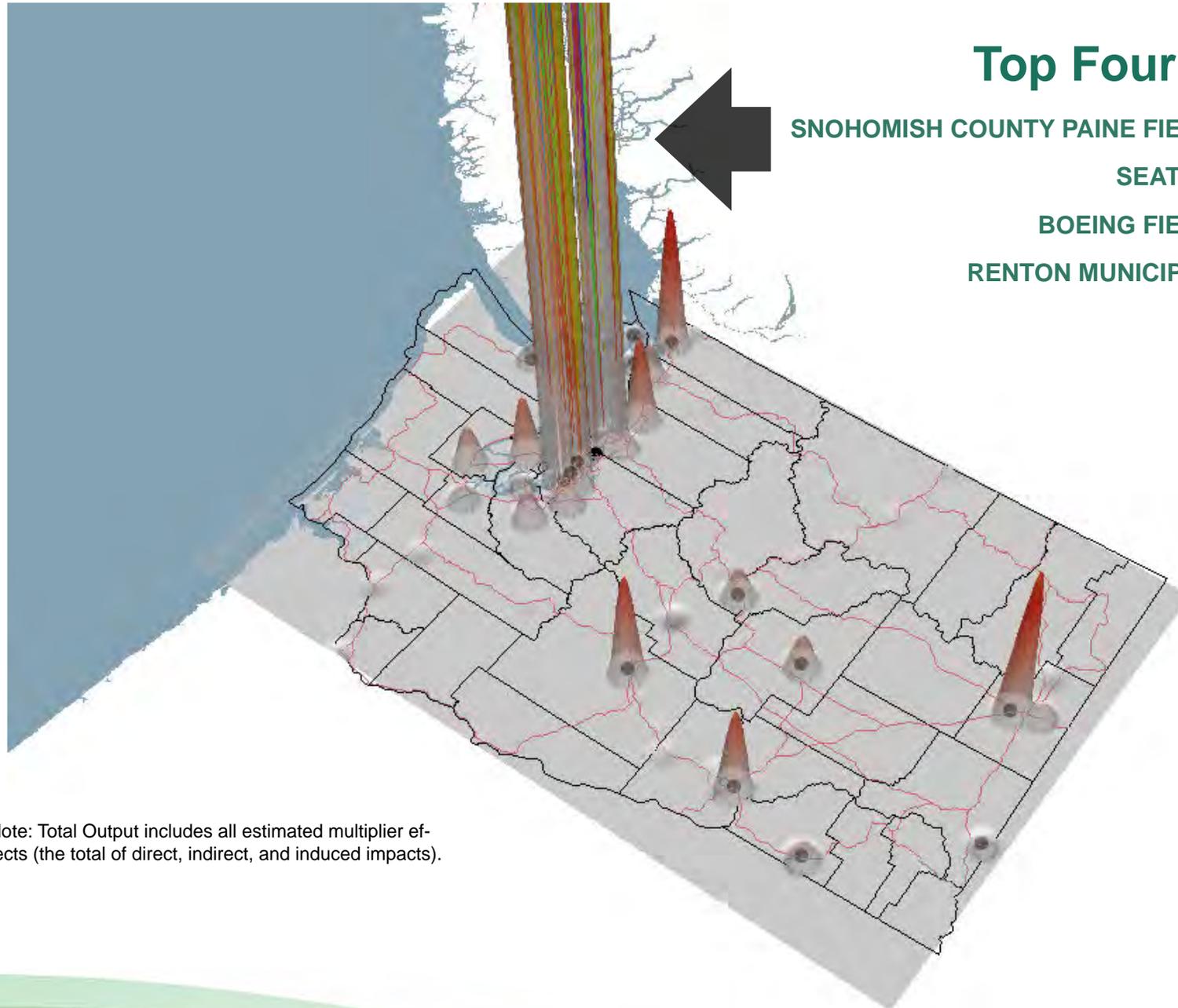
DISCUSSION DRAFT

8/19/2011

Airport Profile: Review Process

- The **airport profile** was first introduced in Meeting #2.
 - Each public use airport has its own profile.
 - The profile describes the airport's key characteristics, activities, and economic and fiscal impacts.
- **136 airport profiles sent out to airport representatives in August** for their review and feedback on airport activity and direct inputs (such as employment and tax base information).
- The numbers presented today are still **draft numbers**.
 - **The review process is ongoing.** Airport feedback is being incorporated and will affect the final economic impact numbers.
 - GBI was a key input for economic activity estimates. We may make adjustments to output based on additional research on the relationship between output and GBI.

Economic Activity: Total Output by Airport



Top Four Airports

SNOHOMISH COUNTY PAINE FIELD: \$19.4 billion

SEATAC: \$11.1 billion

BOEING FIELD: \$9.2 billion

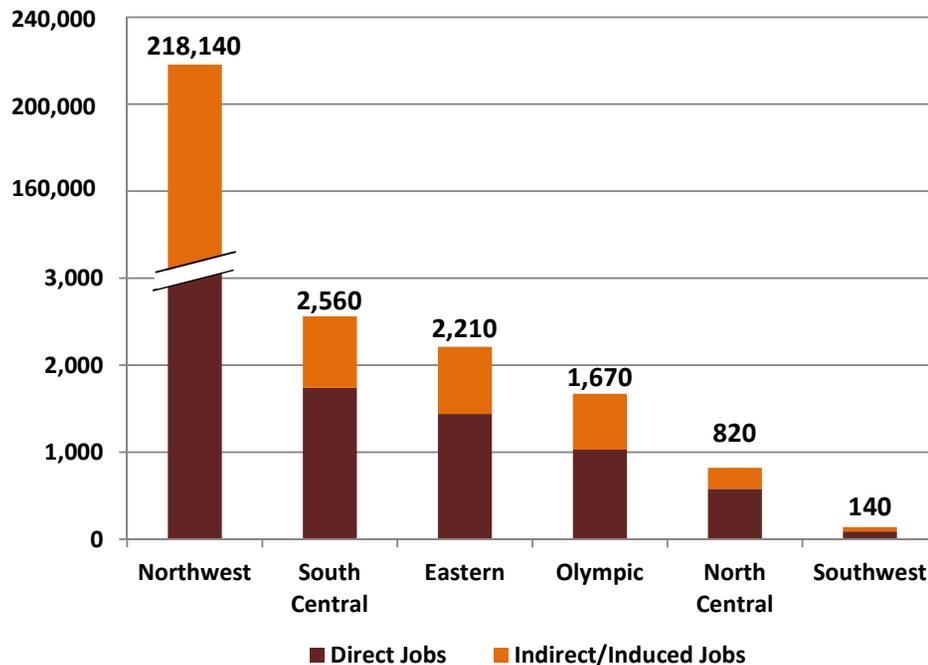
RENTON MUNICIPAL: \$6.2 billion

Note: Total Output includes all estimated multiplier effects (the total of direct, indirect, and induced impacts).

Roll Up: Impacts by Geographic Region

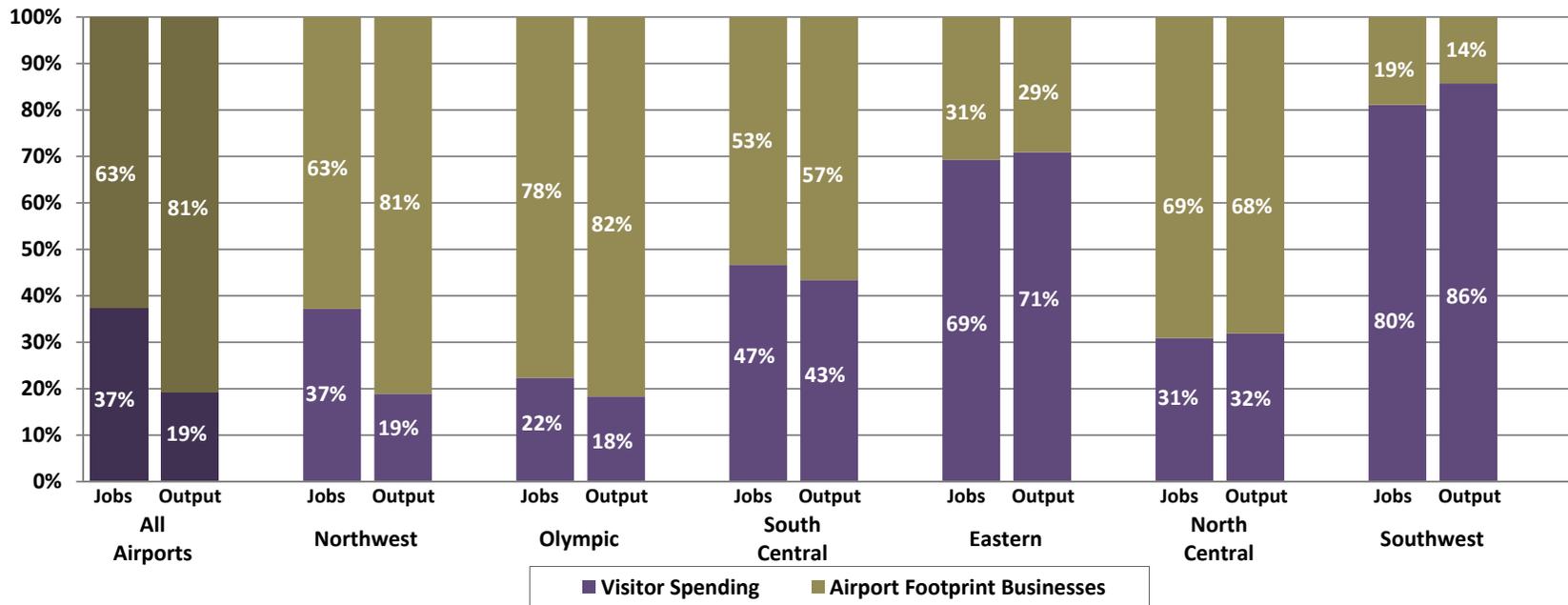
Total Economic Impacts by WSDOT Region

WSDOT Region	Direct Jobs	Total Jobs	Direct Labor Income	Total Labor Income	Direct Output	Total Output
Northwest	124,650	218,140	9,010,274,000	13,748,374,200	32,195,990,600	46,418,949,500
South Central	1,740	2,560	69,579,800	104,496,000	177,468,400	280,290,200
Eastern	1,440	2,210	48,546,100	83,036,800	122,735,900	225,843,700
Olympic	1,030	1,670	51,531,400	76,895,600	128,608,600	207,215,400
North Central	580	820	20,686,200	30,184,500	59,982,500	88,282,000
Southwest	90	140	2,730,100	4,727,400	7,580,400	13,705,800
Total	129,530	225,540	9,203,347,600	14,047,714,500	32,692,366,400	47,234,286,600



- The NW Region accounts for 97% of total jobs and 98% of total output.
- About 74,000 direct jobs are from businesses on the footprints, and about 55,000 direct jobs are from visitor spending.
 - Over 50,000 direct jobs on the footprints are from Boeing.

Source of Impacts by Region

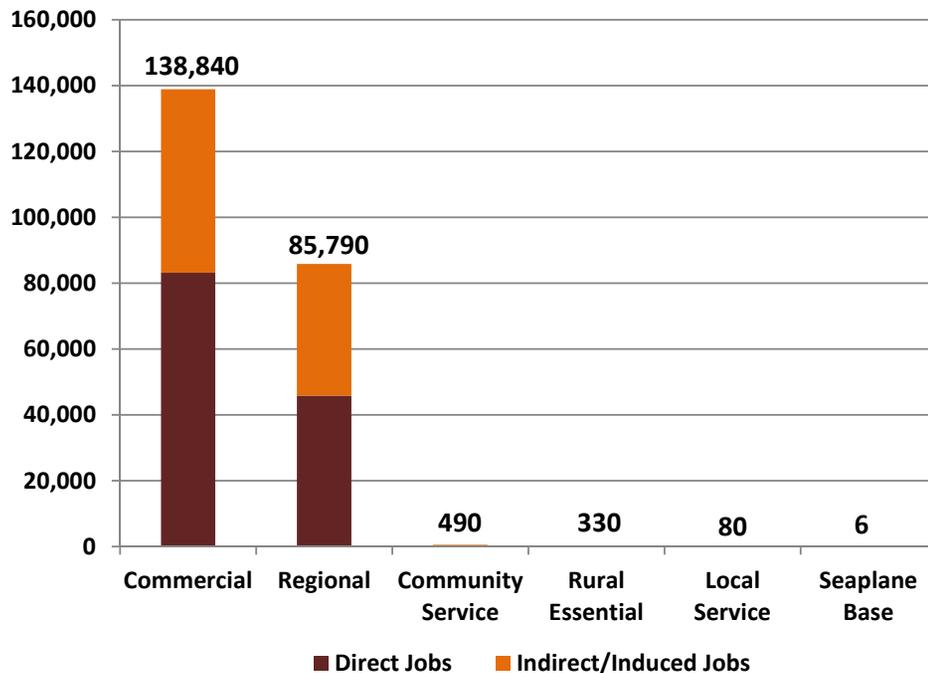


- Statewide, businesses on the airport footprints account for 63% of total jobs in the study and 81% of total output.
- In the Eastern and Southwest regions, visitor spending creates a higher percentage of output and jobs than businesses.
- Statewide and in the Northwest, Olympic, South Central, and North Central regions, airport businesses create more jobs and total output than visitor spending.

Roll Up: Impacts by Airport Classification

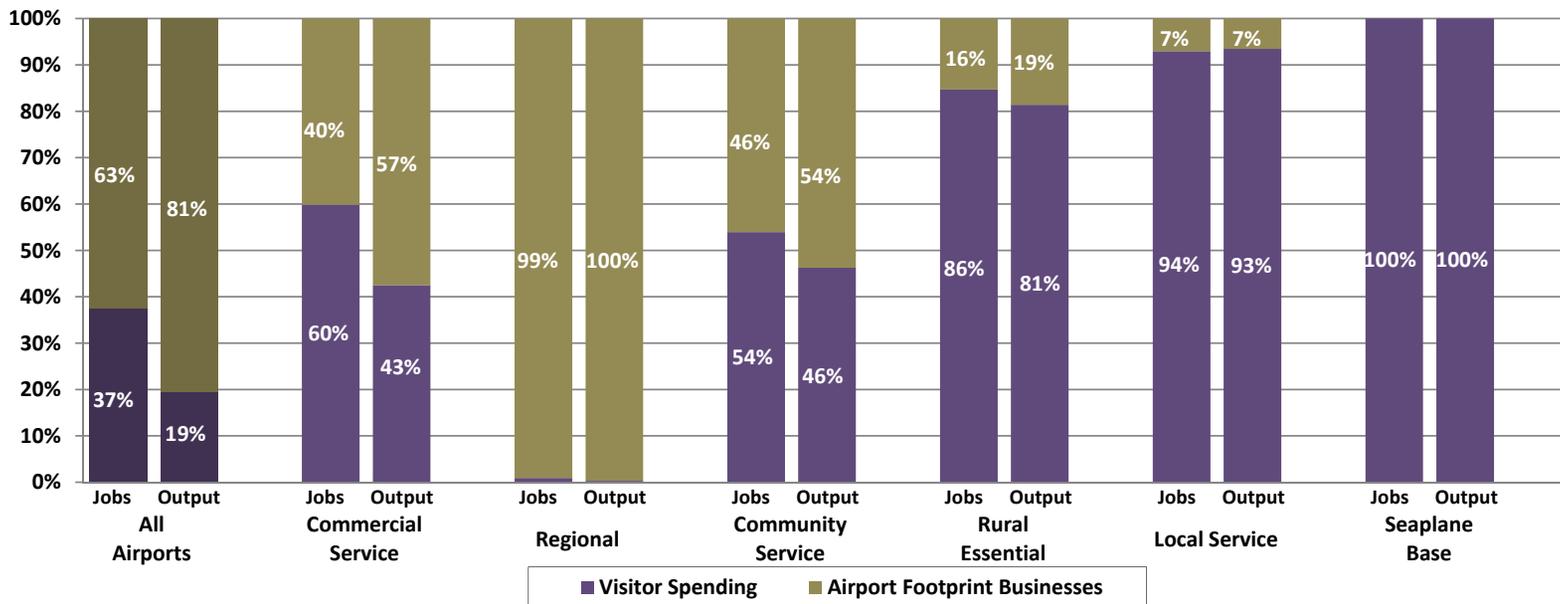
Total Economic Impacts by Airport Classification

Classification	Direct Jobs	Total Jobs	Direct Labor Income	Total Labor Income	Direct Output	Total Output
Commercial	83,130	138,840	3,965,579,100	6,687,681,400	12,916,176,600	21,127,061,500
Regional	45,840	85,790	5,217,478,200	7,324,504,600	19,717,531,700	26,001,444,100
Community Service	300	490	11,222,400	19,613,100	33,055,400	59,198,400
Rural Essential	220	330	7,323,700	12,820,000	20,646,100	37,461,500
Local Service	50	80	1,630,800	2,894,700	4,643,400	8,534,800
Seaplane Base	4	6	113,400	200,800	313,200	586,300
Total	129,530	225,540	9,203,347,600	14,047,714,500	32,692,366,400	47,234,286,600



- Commercial and Regional airports account for over 99% of total jobs and total output.
 - Commercial airports generate 62% of total jobs and 45% of total output.
 - Regional airports generate 38% of total jobs and 55% of total output.
 - Regional airports have a higher output-per-job ratio than commercial airports.

Source of Impacts by Airport Classification



- Statewide, businesses on airport footprints account for 63% of total jobs and 81% of total output.
- At Rural Essential, Local Service, and Seaplane Base airports, visitor spending generates the large majority of jobs and output.
- At Commercial and Community airports, jobs from footprint businesses create more output per job than visitor spending.
- Within the Regional airport classification, visitor spending jobs and output are outweighed by the presence of Boeing.

Roll Up: Statewide Impacts

Summary of Draft Impact Findings

- The estimated direct impacts for Washington's public-use airports are: **129,530 direct jobs, \$9.2 billion in direct labor income, and \$32.7 billion in direct output.**
- Including indirect and induced impacts, airports generate about **225,540 total jobs, \$14.0 billion in total labor income, and \$47.2 billion in total output.**
- **Businesses operating on the airport footprint** generate about:
 - 140,980 total jobs
 - \$11.1 billion in total labor income
 - \$38.1 billion in total output
- **Visitor spending** from tourists traveling through airports generates about:
 - 84,560 total jobs
 - \$3.0 billion in total labor income
 - \$9.1 billion in total output

Comparison to the 2001 Economic Impact Study

- The last statewide economic impact study was completed in 2001. Comparing the results between the 2001 and 2011 studies is difficult because of differences in methodology.
- Unlike 2001, the new 2011 study:
 - Includes Boeing and other through-the-fence connections.
 - Limits economic activity on airport footprints to businesses that are aviation-dependent.
 - Uses a consistent statewide methodology; the 2001 study relied heavily on surveys.
 - Incorporates an independent analysis of Sea-Tac Airport's economic impact.

Addressing Other Airport Studies

- Many airports have recently completed their own economic impact studies, including:
 - Sea-Tac International
 - Bellingham International
 - Boeing Field
 - Olympia Regional
 - Spokane International
- The results of these studies were analyzed and considered in creating this analysis, but numbers will likely be different due to differences in methodology.
 - Broadly, these studies estimated impacts for all business activity on airport property, including non-aviation-related businesses.
 - The final report will address additional differences in approach and results.

Fiscal Impacts

Introduction to Fiscal Impacts

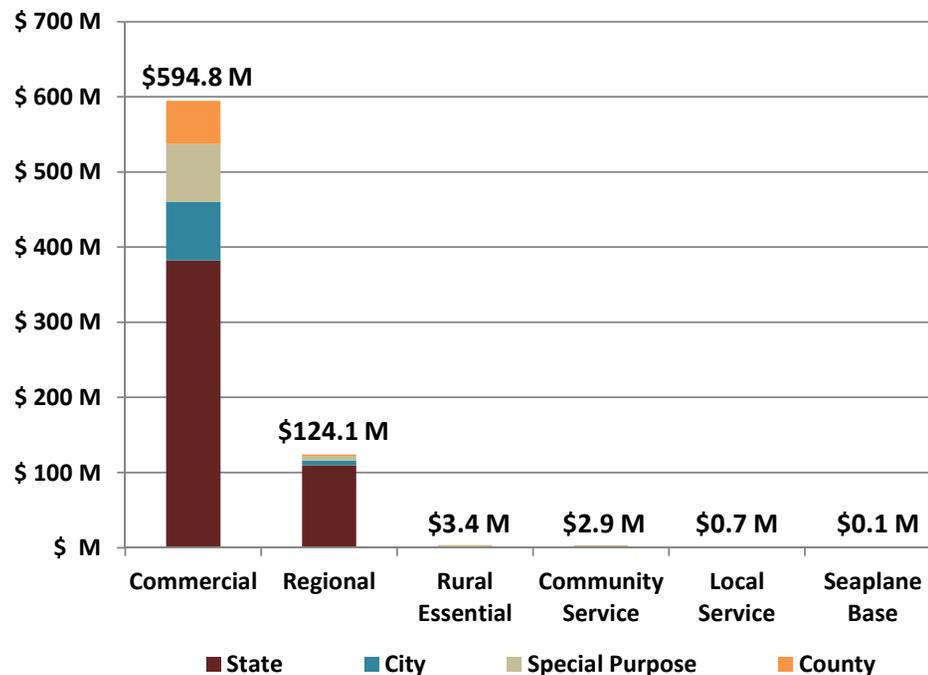
- **A New Approach.** This study goes beyond many traditional studies by looking at how airport-related activity generates tax revenue.
 - The fiscal impact analysis is based on an understanding of local and state tax structure, not national averages.
- **Types of Taxes.** Taxes come from both airport-specific taxes (such as the aviation fuel tax or aircraft excise tax) and from general business activity (such as B&O tax, sales tax, or property tax).
- **Multiple Jurisdictions.** Fiscal impacts are estimated for and summarized by the jurisdiction that receives the tax revenue:
 - Cities
 - Counties
 - Special Purpose Districts
 - Washington State

Introduction to Fiscal Impacts (cont.)

- Fiscal impacts are generated in two ways:
 - **Impacts from Businesses on the Airport Footprint.** Tax revenues are estimated from a list of key revenue-generating activities located on the airport footprints.
 - **Impacts from Visitor Spending.** Tax revenues from visitor spending are based on the direct visitor spending numbers estimated for each airport.
 - For visitor spending revenue, the impact associated with an airport is not necessarily fully received by the county or city where the airport is located.
 - Travelers flying into an airport may take additional ground transportation to a final destination where money is spent.
- Only the **Direct Fiscal Impacts** are calculated - taxes being paid by airports, airport businesses and users, and visitors. This study does not analyze induced or indirect fiscal impacts.

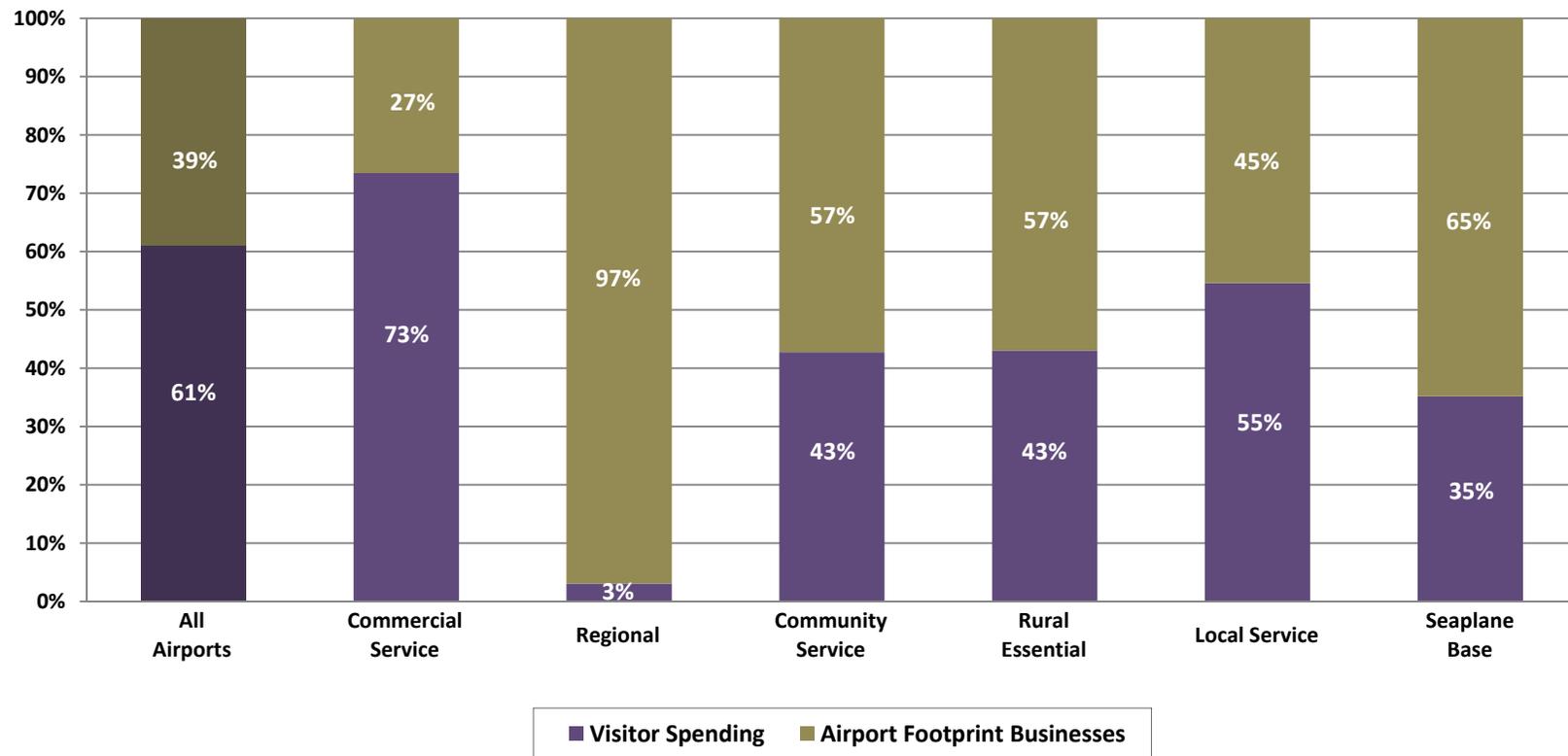
Total Fiscal Impacts by Airport Classification

Classification	City	County	Special Purpose	State	Total
Commercial	77,907,500	57,475,100	77,170,400	382,227,200	594,780,300
Regional	6,074,600	1,877,100	6,409,700	109,752,700	124,114,100
Rural Essential	218,600	330,700	1,217,000	1,676,100	3,442,400
Community Service	224,800	237,300	456,100	2,004,300	2,922,500
Local Service	83,800	72,700	112,500	403,900	672,900
Seaplane Base	9,300	9,800	26,800	36,700	82,700
Total	84,518,600	60,002,700	85,392,500	496,100,900	726,014,900



- Commercial and Regional airports generate 99% of the fiscal impacts.
 - 82% from Commercial
 - 17% from Regional
- 68% of fiscal impacts are paid to the State of Washington, 12% each to cities and special purpose districts, and 8% to counties.

Source of Fiscal Impacts by Classification



- Statewide, visitor spending accounts for 61% of fiscal impacts and businesses on the footprint account for 39%.
- The Regional airport classification is heavily weighted toward taxes from businesses, largely due to Boeing's presence at Paine Field, Renton Municipal, and Boeing Field.

Fiscal Impacts by Tax Type

Classification	Aircraft Excise Tax*	Aviation Fuel Tax	Sales Tax***	Property Tax**	B&O Tax***	Other***	Total
Commercial	142,100	455,200	374,118,100	29,269,200	93,282,300	97,513,400	594,780,300
Regional	248,500	831,800	6,631,300	13,508,200	98,014,100	4,880,200	124,114,100
Rural Essential	47,500	116,400	1,200,700	1,634,000	128,700	315,100	3,442,400
Community Service	105,400	389,200	1,229,300	604,300	362,300	232,000	2,922,500
Local Service	20,300	54,500	273,900	222,200	31,200	70,800	672,900
Seaplane Base	700	0	21,900	52,900	1,900	5,300	82,700
Total	564,500	1,847,100	383,475,200	45,290,800	191,820,500	103,016,800	726,014,900
% of Total	0.1%	0.3%	52.8%	6.2%	26.4%	14.2%	

* Based on number of based aircraft.

** Includes taxes paid on airline service providers' personal property.

*** Include impacts from visitor spending and airport footprint businesses

- Aviation specific taxes such as the Aircraft Excise Tax and the Aviation Fuel Tax comprise about 0.4% of the total fiscal impacts from airports.
- Sales tax (52.8%) and B&O Tax (26.4%) are the largest sources of fiscal impacts.
- Other taxes include Utility Taxes, Leasehold Excise Tax, Rental Car Tax, and Lodging Tax.

Economic Calculator Overview

Technology Developments

- In addition to economic analysis, technology developments in three areas are being conducted as a part of this project:
 - Additions/enhancements to the AIS database.
 - Creation of an airport profile tool to generate 136 airport profiles.
 - Development of an online economic calculator.
- Today we are focusing on one component: the online calculator.

Overview of Economic Calculator

Purpose:

- Create a web-based aviation economic impact calculator, which will be a tool for airport managers, decisionmakers, business owners, and the general public.
- Allow users to run “what-if” scenarios for changes in airport activity and see estimated changes in economic impacts.
- Provide a consistent way to evaluate potential economic impacts of changes to airport activity across the State.

Where we are:

- Determined drivers of activity at airports, completed design of draft interface, and identified how inputs will drive economic changes in the tool.
- Next steps include:
 - Ongoing design through October 2011.
 - Creation, testing, and deployment of the calculator, with an expected release in February 2012.

What the Calculator Will and Will Not Do

- What the calculator will do:
 - Allow users to perform what-if scenarios to see how changes in airport activity affect an airport's economic impacts.
 - Users will be able to change: flight activity, business activity, visitor activity, and construction projects.
 - Utilize the study's findings regarding relationships and correlations between activities and impacts.
- What the calculator is not designed to do:
 - Measure costs. The calculator only captures a specific set of economic benefits that were analyzed as a part of this study.
 - Be an all-encompassing decision tool. Benefits are just one piece in decisionmaking. This tool only estimates how economic benefits change based on a changes in activity.
 - Do all the work. The user has to estimate how a project will impact the four activity categories. For example, the user has to estimate how a change in the airport will affect flight activity.

Using the Economic Calculator

As with the airport profiles, this tool relies on data from the Aviation Information System (AIS) database.

1 User determines how the new scenario will impact the four core categories of activity: flight, business, visitor, and construction.

2 User can see measurement of current activity, as recorded in the AIS database, in the interface.

3 User can increase, decrease, or add new activity in given categories **+** **-**

4 User can view current impacts and adjusted impacts in tables at the bottom of the interface

5 Users can print a report showing current activity, new scenario, and estimated changes in economic impacts

Airport Name		Counties in the Economic Impact Region	
Airport Name Drop-Down Box		County1, County2, County3	
Changes in Flight Activity			
Use this area of the calculator if you want to see the impacts of changes in flight activity.			
	Most Recent Data	New Scenario	% Change
+	Cargo Volume (tons)	300,000	375,000 25%
	General Inherent Operations	10,342	15,000 45%
	General Local Operations	6,735	8,000 19%
	Commercial Air Taxi Operations (Charters)	-	20,000 N/A
	Commercial Air Carrier Operations (Scheduled)	30,000	25,000 -17%
Text here about how to use the employment section.			
	Estimated Employment per Air Taxi Operations	30	200,000
	Estimated Employment per Air Carrier Operations	48	4,375,000
Changes in Business Activity			
Use this area of the calculator if you want to see the impacts of adding or removing businesses from the airport footprint.			
	Estimated Current GDI	New Scenario	% Change
+	Fuel Sales	\$ 650,000	\$ 950,000 46%
	Fuel sales <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
	Air Transportation	\$ 2,000,000	\$ 2,500,000 25%
	Manufacturing/Fabrication	\$ 3,000,000	\$ 3,000,000 0%
	Warehousing and Storage	\$ -	\$ 500,000 N/A
	Consulting Services	\$ 800,000	\$ 800,000 0%
	Machinery/Equipment Repair and Maint	\$ 1,550,000	\$ 1,550,000 0%
	Research and Development	\$ 700,000	\$ 700,000 0%

CURRENT ESTIMATED ECONOMIC IMPACTS			
	Direct	Indirect/Induced	Total Impact
Jobs	104	30	134
Labor Income	\$ 4,561,049	\$ 1,133,220	\$ 5,694,269
Total Output	\$ 12,770,984	\$ 5,626,246	\$ 18,397,230
NEW SCENARIO ONGOING ESTIMATED ECONOMIC IMPACTS			
	Direct	Indirect/Induced	Total Impact
Jobs	130	40	170
Labor Income	\$ 5,739,241	\$ 2,277,832	\$ 8,017,073
Total Output	\$ 18,321,874	\$ 7,623,876	\$ 25,945,750

PRINT RESULTS

Draft Interface

+ INSTRUCTIONS

Text instructions here - perhaps collapsible.

+ SAMPLE ACTIVITIES

Sample projects or changes in activity that a user might want to test, and the correct way to change the data.

DISCLAIMERS

Text here about what this tool can and cannot do, and how to interpret results. This section is not hideable, but will always remain visible so that each time a user works with this tool, these disclaimers will be highly visible.

Airport Name
Airport Name Drop-Down Box

Counties in the Economic Impact Region
County1, County2, County3

Changes in Flight Activity	Most Recent Data	New Scenario	% Change
+ Use this area of the calculator if you want to see the impacts of changes in flight activity.			
Cargo Volume (tons)	300,000	375,000	25%
General Itinerant Operations	10,342	15,000	45%
General Local Operations	6,735	8,000	19%
Commercial Air Taxi Operations (Charters)	-	20,000	N/A
Commercial Air Carrier Operations (Scheduled)	20,000	25,000	25%
Text here about how to use the enplanements section . . .			Total
Estimated Enplanements per Air Taxi Operations	-	10	200,000
Estimated Enplanements per Air Carrier Operations	150	175	4,375,000

Changes in Business Activity	Estimated Current GBI	New Scenario	% Change
+ Use this area of the calculator if you want to see the impacts of adding or removing businesses from the airport footprint.			
Fuel Sales	\$ 650,000	\$ 950,000	46%
Fuel sales <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			
Air Transportation	\$ 2,000,000	\$ 2,500,000	25%
Manufacturing/Fabrication	\$ 3,000,000	\$ 3,000,000	0%
Warehousing and Storage	\$ -	\$ 500,000	N/A
Consulting Services	\$ 800,000	\$ 800,000	0%
Machinery/Equipment Repair and Maint	\$ 1,550,000	\$ 1,550,000	0%
Research and Development	\$ 700,000	\$ 700,000	0%

Draft Interface (cont.)

Changes in Visitor Assumptions		% of Total Operations	New Scenario
+	Use this area of the calculator if you want to see the impacts of targeting different types of visitors such as tourists or corporate travelers.		
	% Annual Visitors (Commercial Flights)	60%	65%
	% Annual Visitors (General Aviation Flights)	40%	50%

Capital Projects		Project Cost		
+	This portion of the calculator estimates the impacts of construction dollars only. If the project is assumed to impact activity levels at the airport (enplanements, operations, etc.), please enter those changes above.			
		FEDERAL GRANTS	STATE GRANTS	LOCAL FUNDING
	Infrastructure (roads, utilities, etc.)	\$ 1,000,000	\$ 500,000	\$ 500,000
	New Buildings	\$ 5,000,000	\$ 2,000,000	\$ 1,000,000

CURRENT ESTIMATED ECONOMIC IMPACTS			
	Direct	Indirect/Induced	Total Impact
Jobs	104	30	134
Labor Income	\$ 4,561,049	\$ 1,133,220	\$ 5,694,269
Total Output	\$ 12,770,984	\$ 5,626,246	\$ 18,397,230

NEW SCENARIO ONGOING ESTIMATED ECONOMIC IMPACTS			
	Direct	Indirect/Induced	Total Impact
Jobs	130	40	170
Labor Income	\$ 5,739,241	\$ 2,277,832	\$ 8,017,073
Total Output	\$ 18,321,874	\$ 7,623,876	\$ 25,945,750

NEW SCENARIO ONE-TIME ESTIMATED ECONOMIC IMPACTS (From Construction)			
	Direct	Indirect/Induced	Total Impact
Jobs	10	2	12
Labor Income	\$ 806,376	\$ 332,721	\$ 1,139,097
Total Output	\$ 8,761,325	\$ 3,791,465	\$ 12,552,790

PRINT RESULTS

An Example: A New Airport Hangar

An airport manager wants to estimate the changes in economic impacts from the addition of a new hangar.

- 1) The manager estimates how an additional hangar will impact flight activity, business activity, visitor activity, and construction.
- 2) The manager accesses the online calculator and sees the measurement of the airport's current activity, as recorded in the AIS database.
- 3) The manager can adjust relevant activity measures, based on his/her estimates. In the case of a new hangar, this could include:
 - Increasing Operations under Flight Activity.
 - Note: Operations and visitors are linked. The number of visitors will automatically increase with an increase in flight activity. There is no change in the Visitor Activity sections unless the hangar changes the percent of visitors per operation.
 - Increasing GBI under Business Activity for Machinery/Equipment Repair and Air Transportation.
 - Adding the construction costs under Construction Projects.

An Example (cont.)

- 4) The manager can see current impacts and the adjusted scenario impacts in tables at the bottom of the interface.
- 5) The manager can print the estimated results.

Closing: Next Steps and Round Table

Next Steps

One meeting left:

- **Meeting 4:** November 1, 2011, 9am-12pm; Puget Sound Regional Council, Seattle, WA
 - Follow ups from Meeting #3
 - Draft report
 - Update on website and economic calculator progress

Closing Round Table

- What are your comments, thoughts, and questions after today's meeting?

Thank you!

ADVISORY COMMITTEE MEETING #3

Meeting Summary

INTRODUCTION

The third meeting of the WSDOT Aviation Economic Impact Study Advisory Committee took place on September 27, 2011 at the Spokane Fire Department Training Administration Center in Spokane, Washington. A total of nine Advisory Committee Members attended in person and eight participated via web conference. There were two additional attendees and seven members from the project team in attendance.

LIST OF ATTENDEES

Committee Members

Attending in Person

Craig Baldwin, Grant County Airport
Christina Bandaragoda, Save Our Communities
Todd Brunner, Brunner Construction
Amber Hansen, Port of Sunnyside
Sally Harris, Department of Commerce

Bob Isaman, Washington State Emergency Management Division
Mayor Joe Marine, City of Mukilteo
Jim Reinbold, City of Chelan
Mayor Mary Verner, City of Spokane

Participating by Teleconference

Peter Anderson, Galvin Flying
Tim Brooks, Kenmore Air
Lorrie Brown, Office of Financial Management
Jerry Litt, Washington Transportation Commission
Pat McClain (sitting in for Mayor Ray Stephenson), City of Everett

Page Scott, Yakima Valley Conference of Governments
David Sypher, City of Kelso, Kelso-Longview Regional Airport
Ryan Zulauf, Washington Airport Management Association

Other Attendees

Greg Figg, WSDOT Eastern Region

John Townsley, Participant

Project Team

Michael Hodgins, BERK
Kapena Pflum, BERK
Paul Roberts, BERK
Gary Simonson, BERK

Tristen Atkins, WSDOT Aviation
Nisha Marvel, WSDOT Aviation
John Shambaugh, WSDOT Aviation

MEETING PURPOSE

The purpose of the meeting was to:

- Present new findings from the industry and airport-level analysis.
- Provide an overview of Economic Calculator features and applications.
- Gather input prior to the writing of the draft report.

MEETING SUMMARY

Introductions and Welcome

Paul Roberts of BERK welcomed the Committee to the meeting. All attendees, remote participants, and project team members then introduced themselves to the group.

Paul provided a brief overview of the two previous meetings and reviewed the current agenda. He noted that the project team would be sharing more details about the development of the study's analytical components and tools, including the industry level analysis, the airport level analysis, and the economic calculator.

Industry-Level Preliminary Findings: Presentation and Discussion

Overview

Kapena Pflum of BERK presented several components of the industry level analysis. He began with an overview of the analysis and highlighted the key components:

- an activity analysis using five- and ten-mile buffers around airports,
- specific industry concentrations within five miles of airports,
- profiles of selected industries and their relationships with aviation, and
- an activity analysis using sub-state geographies (WSDOT regions).

Buffer Activity Analysis

For the buffer analysis, Kapena showed the percentage of State GBI captured within the buffers by airport classification; for all airports, 70% of State GBI is captured in the five-mile buffer and 97% in the ten-mile buffer. Kapena then discussed industry concentrations, highlighting the top ten industries within five miles of airports using an economic activity concentration index. This was followed by a breakout of industry concentration by airport and a look at the relationship between these industries and aviation. Generally, it was emphasized that the purpose of the industry-level analysis is to look at correlations and relationships between activity and airports, not to imply causation.

Selected Industry Profiles

Kapena then presented the selected industry profiles for several industries chosen for analysis: professional and business services, manufacturing (including aircraft manufacturing as a subset), agriculture, and tourism. The profiles included several components:

- a map showing 2010 activity concentration (including total jobs and GBI)
- a scatter-plot showing five-mile buffer concentration around airports,
- some key location decision factors,

- ways in which this industry uses aviation, and
- the overall importance of aviation to this industry.

Economic Activity by WSDOT Region

Kapena concluded the industry-level section with a brief look at roll-ups of economic activity by WSDOT region, showing total GBI by distance from the airport, as well as the distribution of economic activity within each region. The Northwest region had the highest GBI by a large margin and most regions (aside from the Olympic Region) had the majority of economic activity occur within five-miles of an airport.

Throughout the industry level presentation, Committee members offered various questions and comments. Key discussion points included:

- **Industry Definitions.** There were several questions about how industries were being defined for the analysis. The project team explained that they were relying primarily on DOR data and 3-digit NAICS codes, but were also using more specific codes (4-6 digit NAICS) if it was feasible and potentially more precise.

In particular, Committee members asked specific questions about definitions for the following industries:

- **Aircraft Manufacturing.** A couple of Committee members were concerned that manufacturing was under-represented in certain areas because the definition was too constrained. One Committee member noted that maintenance was likely not being captured by the NAICS codes applied to the analysis, while another highlighted that some manufacturing companies have expanded the scope of their operations so they no longer are classified under manufacturing NAICS codes and would not be captured. The project team stated that they would like to refine their definition to better capture the industry and welcome input from Committee members on how to do so. They also noted that the stakeholder interview process could potentially reveal some key case studies of businesses that are based around aviation but have expanded their scope.
- **Tourism.** There were questions about whether restaurants or the wine industry were being included in the analysis, as well as a question regarding the differences between the tourism component of the industry-level analysis and the visitor spending component of the airport-level analysis. The project team responded that they were using a relatively narrow definition for tourism-based activity, and not including restaurants. They also noted the wine industry was likely not being captured, as the focus is on businesses that serve tourism, not attractions.

In addition, they also explained that the tourism component of the industry-level analysis was from the perspective of businesses that cater to tourists within a certain distance of airports, while the visitor spending analysis was from the perspective of visitors coming through a particular airport.

- **Agriculture.** One Committee member noted that basing the agriculture analysis on DOR data is problematic, as most agricultural activity is exempt from taxation. She offered to provide a different dataset from the State Department of Agriculture. The project team noted that they have applied an adjustment factor to DOR data to account for tax exemption issues but would appreciate any data that may be more accurate and incorporate it into the analysis if possible.

- **Buffer Analysis/Industry Concentration Limitations.** The Committee also noted several key limitations of the buffer analysis and industry concentration index:
 - **Smaller Airport Communities.** One limitation highlighted was that in some of the smaller airport communities, a 10-mile buffer captures all development and population in the area. Therefore, a strong industry concentration within that buffer does not reveal anything significant about the relationship between the industry and airport. The City of Sunnyside, where food manufacturing is a large portion of the economy, was provided as an example where the entire city is captured in the buffer. While this places food manufacturing high on the concentration index, it would be misleading to imply any type of correlation with the airport.

The project team acknowledged that this was a limitation and also noted that, in some cases, widely dispersed activities occurring outside the buffer were being captured as one data point in an office within the buffer. They said they would continue to examine how to account for these limitations.
 - **Concentration Index.** One Committee member noted that, when an industry (such as aircraft manufacturing) has almost all of its activity statewide occurring near airports, the concentration index will be close to 1.0, which masks a very strong correlation. This makes it impossible to distinguish between industries that are evenly dispersed across the state (who may also be close to 1.0) and those that are concentrated almost entirely near airports. The project team agreed that this was a significant limitation and said they may incorporate an additional coefficient to account for these differences.
 - **Aircraft Manufacturing Outside of the 10-mile Buffer.** It was also noted that several aircraft manufacturing companies do not fall within the 5 or 10 miles buffers. The project team again noted that these businesses would hopefully be identified through the stakeholder interviews.
- **Questions about Correlation and Causation.** Several Committee members asked questions relating to the correlation analysis. Some were concerned that the analysis was implying that airports are a primary location decision factor for most businesses. They noted that establishing causation is not possible, and that other entities (such as ports) may have at least as much influence. Another Committee member suggested using a more nuanced word than “correlation” to describe the analysis, since it may imply a sense of causality.

The project team re-emphasized that the study does not attempt to establish causation, but to highlight patterns and show relationships between activity and airports. They noted that airports and businesses often have similar location decision needs, and that this explains high concentrations of some industries near airports. They also highlighted that one of the biggest takeaways from the analysis so far is that, for most industries, airports are not a primary driver. However, on a meta-level, almost all of the activity is a reasonable distance from airports.

In addition, the project team said they would consider using a word other than “correlation”, and stressed that using the „right“ language in the report will be crucial to conveying the results effectively.

Revisiting the Airport-Level Analysis: Presentation and Discussion

Overview

Kapena Pflum and Michael Hodgins of BERK re-introduced the airport-level analysis, highlighting that that this component represents the more traditional economic impact analysis, focusing on jobs, wages, outputs, and multiplier effects. Unlike the industry analysis, which relies on buffers, this perspective

looks only at economic impacts occurring through: 1) aviation-related activity on the airport footprint or 2) visitor spending by those who travel through the airport.

Kapena then went through the airport footprint map to remind Committee members of the geographic constraints of the analysis, and also showed a draft airport profile. He noted that the project team is currently in the process of collecting and incorporating feedback from all 136 airports in the state, and that this feedback will affect the final economic impact numbers. He also noted that they are currently revisiting some assumptions regarding GBI and total output that may affect the final estimates. It was emphasized that the numbers being shown were in draft form and subject to revision.

To provide a broad perspective on how economic activity is distributed across the state's airports, Michael then showed a map highlighting "total output by airport." The state's top four airports (Paine Field, SeaTac, Boeing Field and Renton Municipal) all have total output that is exponentially higher than any of the other airports in the state. The project team cautioned against marginalizing the importance of smaller airports based on statewide comparisons, as they all likely have significant economic impacts on their respective local communities.

Economic Impact Roll-ups

Michael then presented a series of roll-ups of total economic impacts, based on different criteria. The first showed impact by WSDOT Region, with the Northwest Region accounting for 97% of total jobs and 98% of total output. Another graph showed the source of impacts by region, with businesses on the airport footprint accounting for most jobs and output in the state, and visitor spending accounting for a smaller percentage (except in the Eastern and Southwest Regions).

The second series of roll-ups showed impact by airport classification, with commercial and regional accounting for over 99% of total jobs and output. For most airport categories, visitor spending generates the large majority of jobs and output, but within the regional airports, it is outweighed by the presence of Boeing. The last series highlighted several key statewide impacts, including direct, indirect & induced, and a breakdown of impacts from businesses operating on the footprint and visitor spending. In total, the estimated direct impacts are: 129,530 direct jobs, \$9.2 billion in direct labor income, and \$32.7 billion in direct output.

Michael then briefly addressed the differences between the current study and the 2001 study, and noted that comparing the results is difficult because of difference in methodology. Key points are that unlike 2001, the new study: includes Boeing and other through-the-fence connections, limits economic activity on airport footprints to businesses that are aviation-dependent, and uses a consistent statewide methodology to estimate airport activity. The project team noted that comparisons with other airport studies will also be difficult as a result of different methodologies. These differences will be raised explicitly in the final report to prevent inaccurate comparisons between this study and other airport economic impact studies.

Fiscal Impacts

The airport level presentation concluded with a look at fiscal impacts. Michael noted that the current study goes beyond many traditional tax studies by looking at how airport-related activity generates tax revenue. He noted that this was based on an understanding of local and state tax structure, not national averages. After reviewing the types of taxes that would be incorporated, Michael showed a map highlighting total fiscal impacts by airport classification, with Commercial and Regional generating 99% of the fiscal impacts. He then reviewed the source of fiscal impacts by classification and a breakdown of fiscal impacts by tax type. Sales tax and B&O tax were noted as the largest sources.

Throughout the airport level presentation, Committee members offered various questions and comments. Key discussion points included:

- **Breaking out the Economic Impact Analysis in Different Ways.** Several Committee members offered different ways of breaking out the analysis to potentially bring out key findings that may be masked by the current assumptions. The project team was amenable to these suggestions, and agreed that pulling out or reconfiguring certain components of the analysis (i.e. “slicing and dicing”) would better allow the full story to be told. Suggestions provided by the Committee included:
 - **Creating a new ‘Aircraft Manufacturing’ Airport Classification.** Some Committee members suggested that the project team should pull the major aircraft manufacturing airports out of the regional category and into a separate classification. This would prevent the other regional airports from being overshadowed and distinguish the exclusive impacts of the manufacturing-oriented airports.
 - **Pulling out the ‘Big Four’ Airports.** Another suggestion was to conduct the analysis again without the „big four“ airports (SeaTac, Paine Field, Renton Municipal, and Boeing Field). As the scale of economic impacts at these airports is so much greater, it dramatically skews the data at a statewide level and in the Commercial and Regional classifications. Pulling them out would allow analysis of the differences between the remaining airports that are potentially being masked or overshadowed by the „big four“.
 - **Keeping the Airports but Breaking out the Manufacturing Components.** Another variation suggested by Committee members was keeping the major aircraft manufacturing airports in the Regional category, but breaking out the manufacturing components and showing those separately. That way, other components of those airports could be preserved and directly compared to other Regional airports.
- **Capturing the Local Importance of Airports.** Some Committee members expressed concern that the significant impacts smaller airports have on their local community may be lost in the rolled-up findings. One Committee member suggested reporting airport output as a percentage of the given area’s total output. Another suggested comparing the economic impact, on an airport-by-airport basis, to a specific standard. The project team said they would try and include some of those elements. They generally agreed that providing meaningful context for output estimates in smaller communities would be a critical component of the final report.
- **Capturing Intangible but Valuable Airport Contributions.** A couple of Committee members expressed concern that the airport level analysis is not capturing the intangible but valuable benefits of airports, such as medical evacuations or broader business attraction. The project team noted it would be impossible to quantify and capture these elements in the traditional economic impact section of the analysis, but that the user perspective analysis would be dealing directly with these types of contributions.
- **Questions about Fiscal Impact Analysis.** The Committee had a range of questions regarding the fiscal impacts analysis. One Committee member asked if the study could break out fiscal impact by industry (e.g. aircraft manufacturing, agriculture, etc.) to assist policy makers. The project team responded that this analysis was focused on the airport footprint, though it may be possible to show some industry break out.

There were also questions about Boeing’s overall tax structure, and if the study was capturing sales tax paid by Boeing when they purchase materials or equipment. The project team stated they were focusing on the taxes collected on spending and activity within the airport footprint and not on the

taxes paid by businesses when they make purchases elsewhere, which will likely understate the total tax impacts of the activity within the footprint. A Committee member offered to provide imputations of sales tax data from businesses when they make purchases.

Finally, there was a discussion around the differences in aviation fuel tax structure between Commercial and other types of airports. One Committee member asked why SeaTac's total is not higher, and the project team responded that commercial air carriers are exempt from the state aviation fuel tax, though all commercial carriers pay the federal aviation fuel tax.

Economic Calculator: Presentation and Discussion

Michael Hodgins of BERK then presented an overview of the Economic Impact Calculator, one of three technology tools being developed as part of the project. The Economic Calculator will be a tool for airport managers and other users around the State to run "what-if" scenarios for changes in airport activity and see estimated changes in economic impacts. Users will be able to change flight activity, business activity, visitor activity, and construction projects. Michael highlighted that the tool is not designed to measure costs or be an all-encompassing decision tool, but to utilize the study's findings regarding relationships and correlations between activities and impacts to the benefit of decision makers.

Michael then detailed a five-step guide outlining how users will be able to use the economic calculator, followed by a brief look at a draft interface for the calculator. Finally, he went through a specific example of how an airport manager would utilize the calculator: estimating changes in economic impacts from the addition of a new hangar.

After the calculator presentation, a Committee member asked the following question:

- **Individual Airport Context.** One Committee member asked how the calculator would address the specific needs and conditions of individual airports. He noted that the calculator would not account for the fact that every airport has its own unique context and could potentially allow users to estimate unrealistic scenarios. The project team explained that the user has to apply significant thinking and consider how the specific airport will be affected in order to understand the benefits. They stressed that the calculator was not all-knowing and appropriate usage of the tool will require local decision makers to do some research and preparations on their own.

Roundtable and Next Steps

The meeting concluded with a brief roundtable, where every committee member who wanted to contribute had a chance to speak. In general, Committee members expressed appreciation for the work being done, and it was noted that the products will be useful tools for decision-makers.

Paul Roberts then reminded the Committee of the various opportunities for continued feedback, and noted that meeting #4 (the final meeting) will be in Seattle on November 1. Michael provided a brief overview of the next meeting, noting that the project team will be asking for feedback on the report and prompting a discussion on key takeaways from the study.

Paul Roberts thanked all attendees and remote participants for their contributions and the meeting adjourned.

WSDOT AVIATION DIVISION

Aviation Economic Impact Study

Advisory Committee Meeting #4

Puget Sound Regional Council | Seattle, WA

November 1, 2011

Welcome!

These materials were presented to the WSDOT Aviation Economic Impact Study Advisory Committee during the fourth Committee meeting on November 1, 2011.

These are DRAFT materials intended for discussion and are not final products.

DRAFT

Today's Meeting

- ➔ Objective: Review preliminary draft report and discuss high-level messages and implications of findings

Agenda:

9:00 Welcome & Introductions

9:10 Draft Report Presentation

10:25 Break

10:40 Policy Implications of Study

11:10 Next Steps

11:20 Roundtable/Discussion

11:50 Wrap-up and Thank You

12:00 Adjourn

➔ Objective: Present summary of report and receive input

➔ Objective: Discuss policy implications to incorporate in study

➔ Objective: Provide additional opportunity for input and discussion

Draft Report Summary

Where we are in the Process

- Still collecting individual airport data and adjusting numbers. All numbers are still draft.
- Finalizing technical appendices.
- Today soliciting feedback on the Preliminary Review Draft.

Guidance for the Review Today

- High-level comments about tone, key elements, and flow of overall story.
- Other detailed comments will be accepted via email.

Study Objectives

- Estimate **economic benefits** of the **statewide aviation system** (135 public-use airports) to the state
- Use a **consistent** methodology that can be **replicated**
- Support aviation planning and programmatic efforts under the **Washington Aviation System Plan**

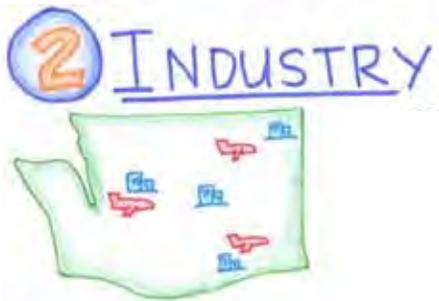
Report Objectives

- Create an **approachable** and **compelling** report targeted to policy makers and other stakeholders
- Tell the story of economic contributions provided by aviation facilities and services from **multiple perspectives**

Findings by Perspective



- Economic impacts are **significant** and **concentrated** at four large airports
- Significant share of activity on through-the-fence connections (**aircraft manufacturing**)



- **97% of state GBI** within 10 miles of an airport
- Some industries concentrated near airports, some less so, but **many depend on aviation for critical business factors** (markets, inputs, labor)



- Immense value derived from other aviation services **not captured by traditional impact analysis**
- User value **important for smaller communities** where airports provide a valuable link to services, commerce, and the broader aviation network

Airport Perspective

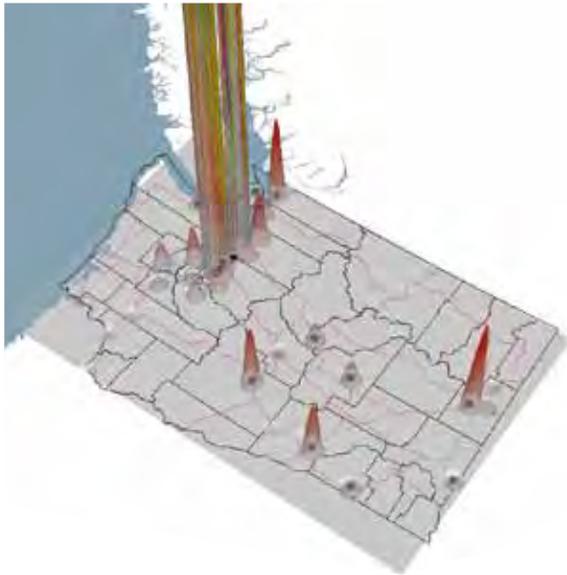
Why is this perspective important?

- This is traditional economic impact analysis under FAA guidelines.
- Direct, quantifiable estimate of jobs, wages, and economic activity associated with aviation facilities and services.
- Particularly important for airports with large amounts of on-site business activity or visitor traffic.



Overall Impacts and Comparisons to 2001

Economic Impacts of Airport Activity



Summary of Statewide Impacts

	Direct	Indirect/ Induced	Total
Jobs	132,400	97,350	229,750
Labor Income	\$ 9.3 B	\$ 4.9 B	\$ 14.2 B
Output	\$ 32.9 B	\$14.7 B	\$ 47.6 B

Impacts in 2001 Study

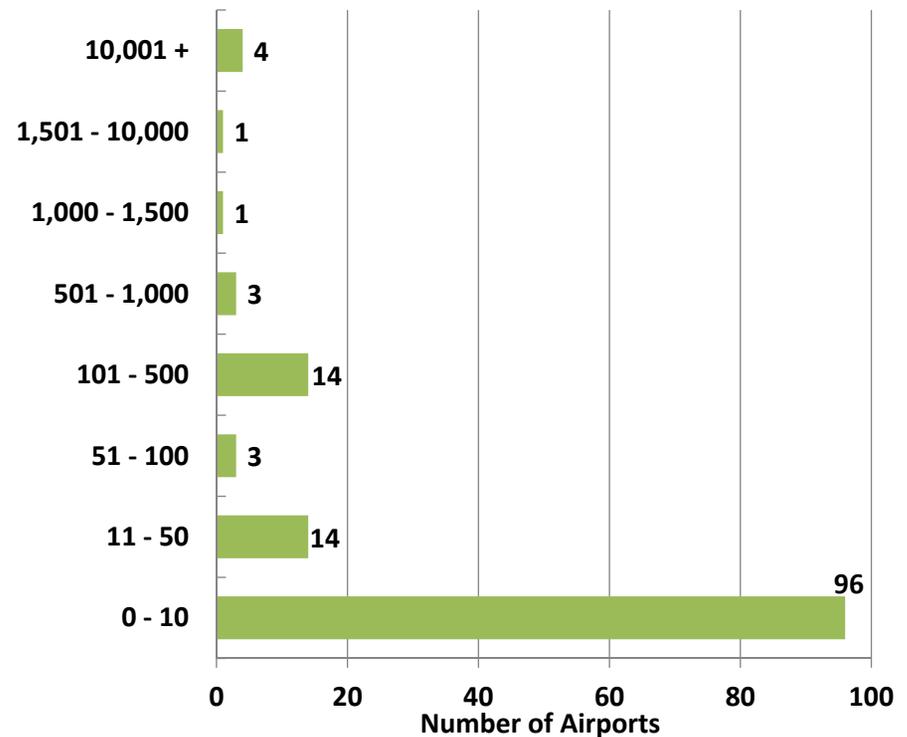
	Direct	Indirect/ Induced	Total
Jobs	98,100	73,211	171,311
Labor Income	\$ 1.9 B	\$2.2 B	\$ 4.1 B
Output	\$ 11.9 B	\$6.8 B	\$ 18.6 B

- Impacts are concentrated in the Central Puget Sound - four airports account for **93% of jobs and 96% of output**. The three airports with major aircraft manufacturing activity account for **52% of jobs and 73% of output**.
- Overall impacts are higher than 2001 study but several factors are at play. The largest influence is the addition of Boeing and TTF connections in this study.

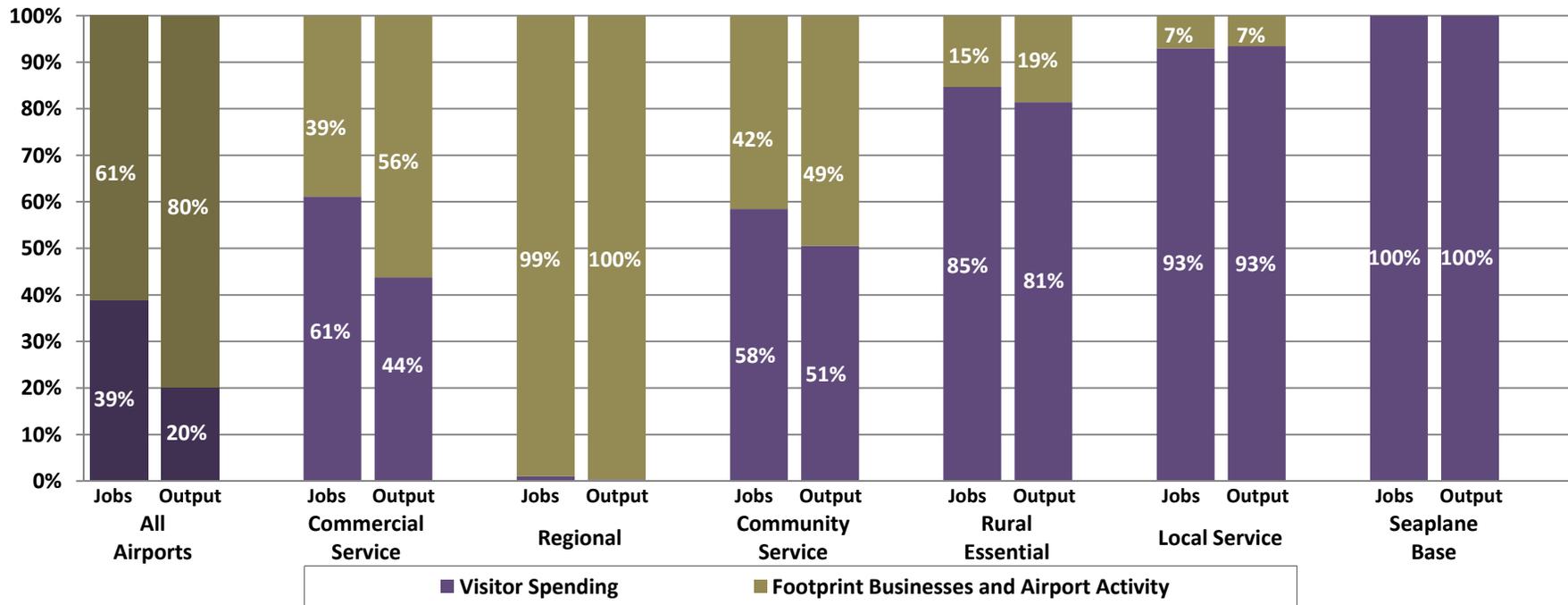
Impacts at Smaller Airports

- 96 airports have 10 or fewer jobs.
- The economic contribution of aviation services at these smaller airports is **not fully captured in traditional measures of jobs, wages, and output**. Different ways to look at economic contribution are presented in the Industry Perspective and User Perspective sections.

Distribution of Job Impacts

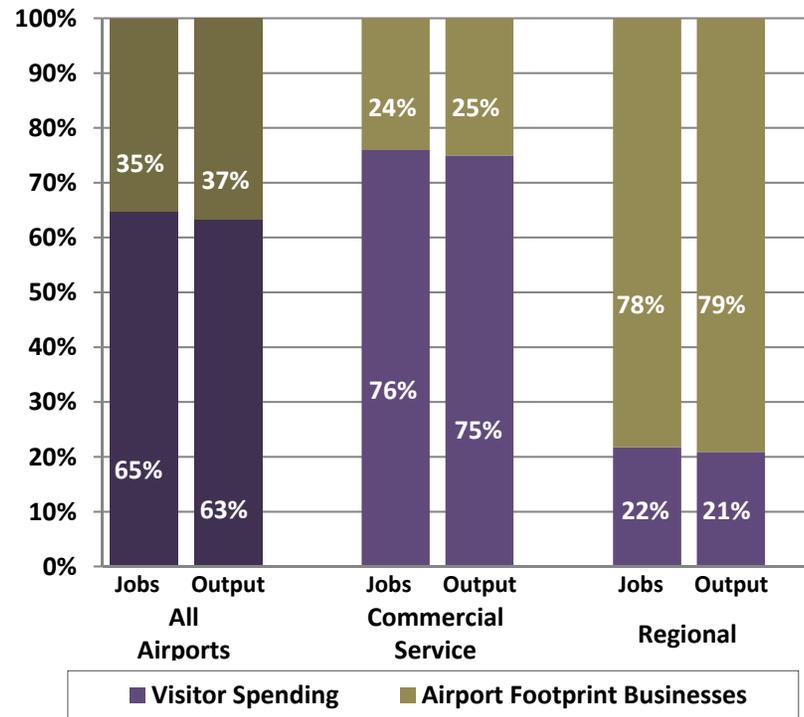


Impacts by Airport Classification



- Regional and commercial categories account for over 99% of total jobs and output.
- Footprint businesses account for 61% of jobs and 80% of output. On regional airports almost all impacts are from footprint businesses (Boeing).
- At Rural Essential, Local Service, and Seaplane Base airports, visitor spending generates the large majority of jobs and output.

What if you Exclude the Big Four?



- Statewide, businesses on airport footprints account for 35% of total jobs and 37% of total output.
- This is a **swing toward visitor spending** at the Commercial and Regional airports.
- Impacts at Regional airports are still primarily coming from on-site employment

Fiscal Impact Analysis

- Public-use airports generated about \$730M in tax revenue in 2009
 - 99% of impacts are from commercial (84%) and regional airports (15%)
 - Sales tax accounts for 55% of total, B&O tax accounts for 24%
 - About \$493M of this revenue goes to the state. The rest is split fairly evenly amongst cities, counties, and special purpose districts.
- Washington provides many tax incentives for the aerospace industry, such as reduced B&O rates for aircraft manufacturers and a fuel tax exemption for commercial service providers.

Summary of Fiscal Impacts by Tax Source

Classification	Aircraft Excise Tax	Aviation Fuel Tax*	Sales and Use Tax**	Property Tax***	B&O Tax	Other	Total
Commercial	142,000	444,000	390,271,000	29,269,000	88,546,000	103,646,000	612,318,000
Regional	248,000	876,000	6,872,000	13,508,000	83,413,000	5,284,000	110,201,000
Rural Essential	52,000	123,000	1,200,000	1,634,000	129,000	316,000	3,454,000
Community Service	106,000	346,000	1,417,000	604,000	379,000	306,000	3,158,000
Local Service	20,000	58,000	274,000	222,000	31,000	71,000	676,000
Seaplane Base	1,000	0	22,000	53,000	2,000	4,000	82,000
Total	569,000	1,847,000	400,056,000	45,290,000	172,500,000	109,627,000	729,889,000
% of Total	0.1%	0.3%	54.8%	6.2%	23.6%	15.0%	

* Fuel used for commercial aviation is exempt from the state aviation fuel tax.

** Includes sales and use tax paid on general and commercial aviation fuel.

*** Includes taxes paid on airline service providers' personal property.

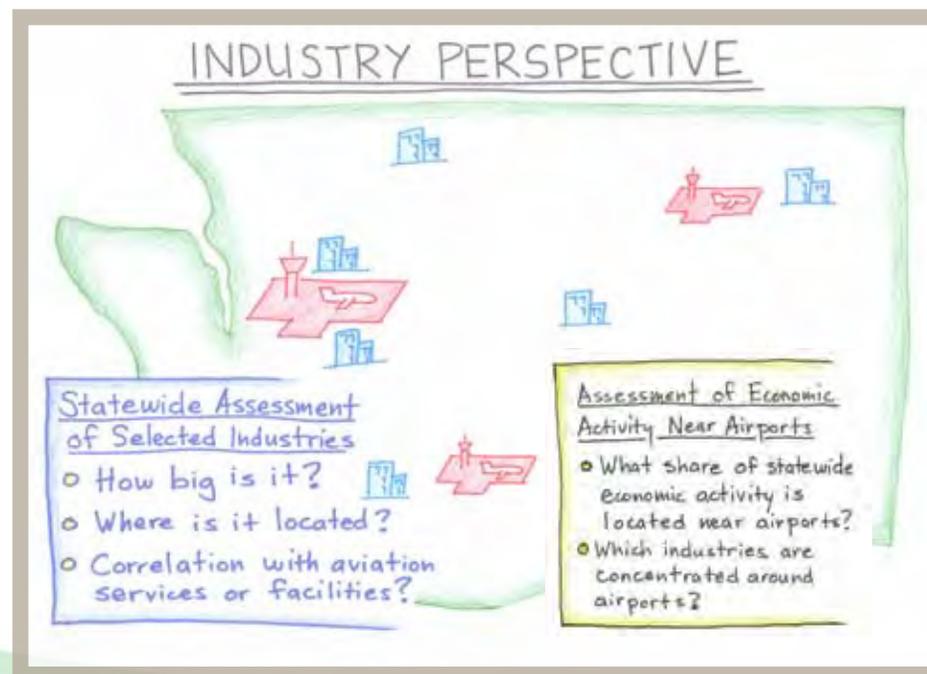
Discussion Questions: Airport Perspective

- Does the report focus on the right issues and findings?
- Is there anything missing?
- Is the emphasis correct?

Industry Perspective

Why is this perspective important?

- Looks at relationships between aviation and businesses beyond the limited airport footprint.
- Important to capture the ways in which aviation affects business factors of production and location decisions.
- This is something that has not been done before.



Economic Activity Near Airports

- Economic activity and aviation are **intrinsically linked**.
- Airports play an important role for many industries core business needs: **access to markets, access to inputs of production, and access to labor**.
- GBI appears to be **equally concentrated** around commercial and non-commercial airports.
 - 36% near commercial airports
 - 34% near non-commercial airports



Share of State GBI

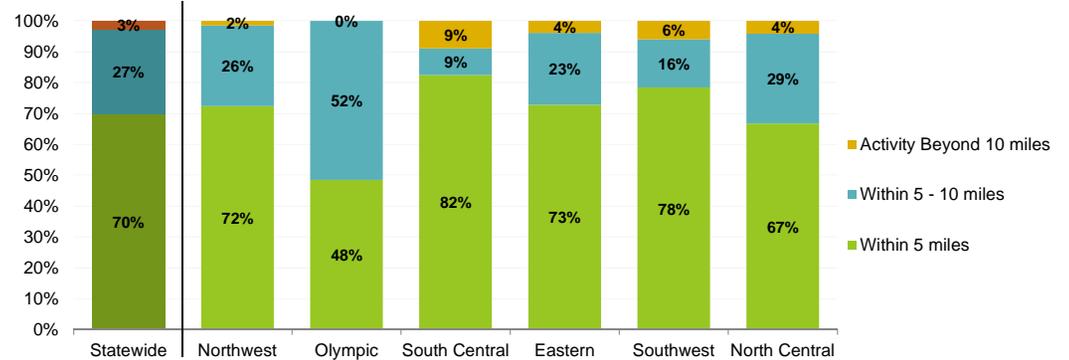
Within 5 miles: 70%

Within 10 miles: 97%

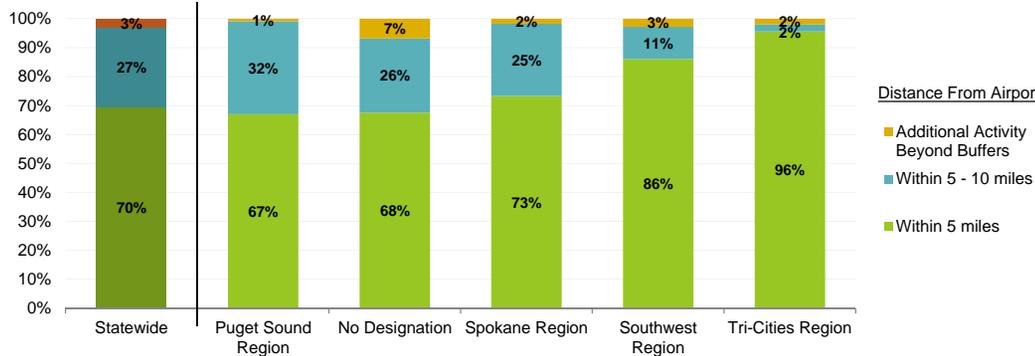
Regional Concentrations Around Airports

- WSDOT Regions used in report. Likely to shift to an RTPO-based exhibit.

Distribution of Economic Activity Within WSDOT Regions

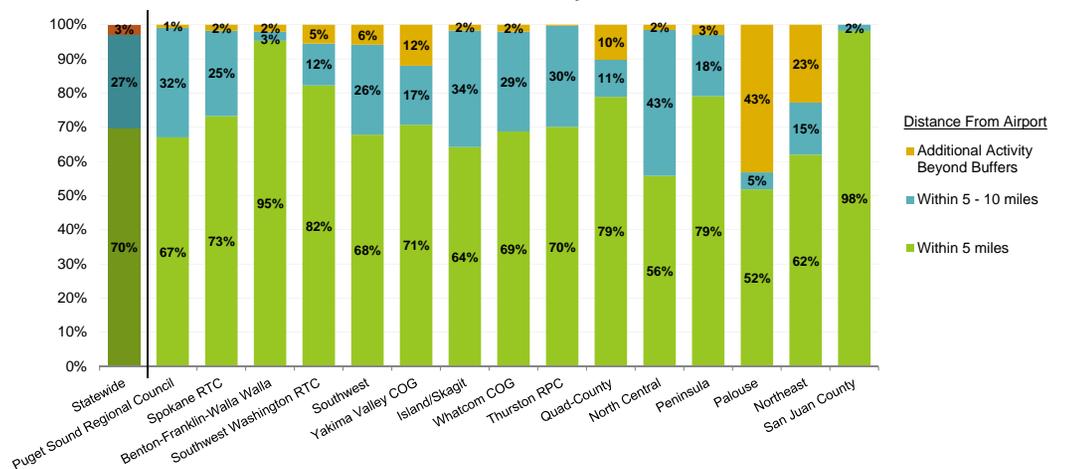


Distribution of Economic Activity Within LATS Special Emphasis Areas



- LATS Special Emphasis Areas only focus on a few regions

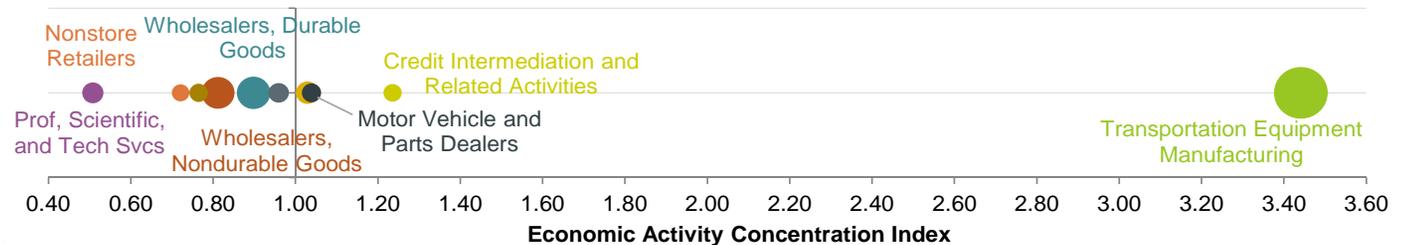
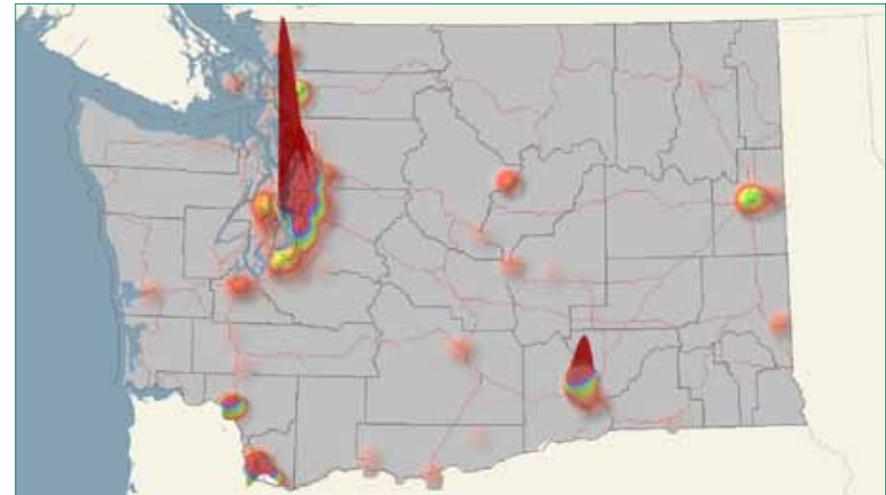
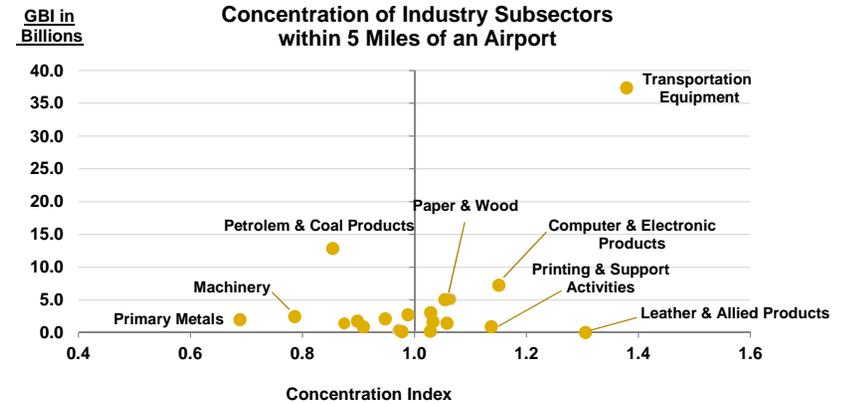
Distribution of Economic Activity Within RTPOs



- 14 RTPOs a challenge to represent

Selected Industry Analysis

- Whether concentrated around airports or not, all industries have some subsectors that depend on aviation services for access to markets, inputs, or labor.
- Wide variety of ways businesses use aviation - more than just business class commercial travel.



Sidebar Examples in Report

Difficult to prove causation but there are numerous concrete examples of ways aviation supports business activity off airport footprints.

- **PETNET Solutions.** Radiopharmacy network in Mountain West region. Uses isotope with **eight-hour halflife**.
- **Pacific Cataract and Laser Institute.** Network of eye clinics. Business model based on **flying specialized surgeons** throughout clinic network to maximize efficiency.
- **Tek Construction.** Construction and engineering firm that uses small aircraft to **transport workers to remote work sites** throughout state.
- **Cherry Farmers.** Use **helicopters to dry cherries** and prevent cracking of fruit.

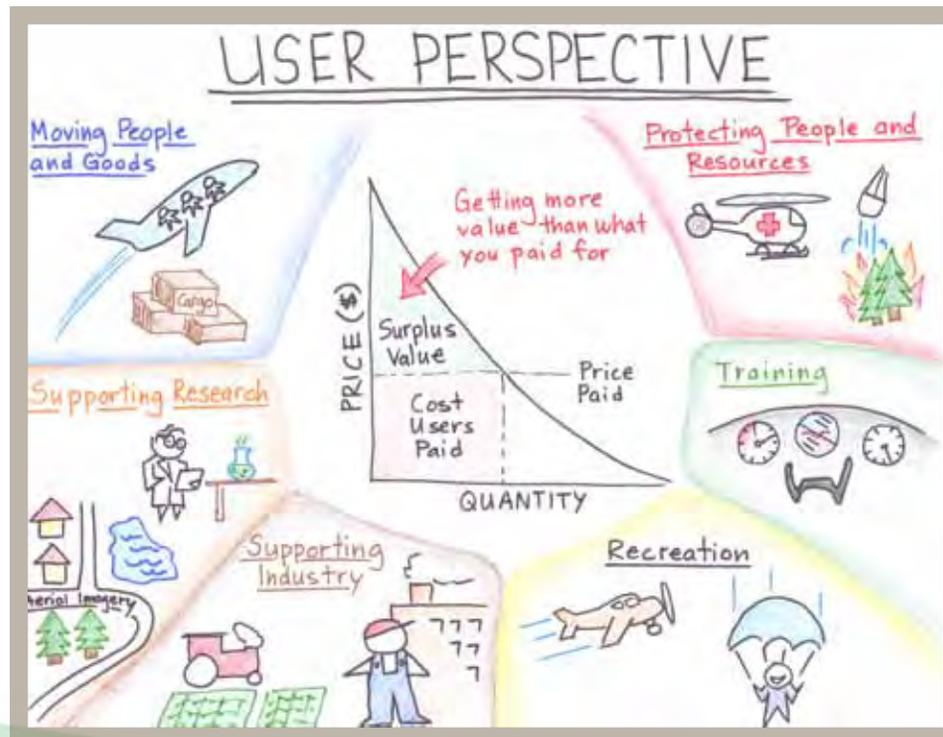
Discussion Questions: Industry Perspective

- Does the report focus on the right issues and findings?
- Is there anything missing?
- Is the emphasis correct?

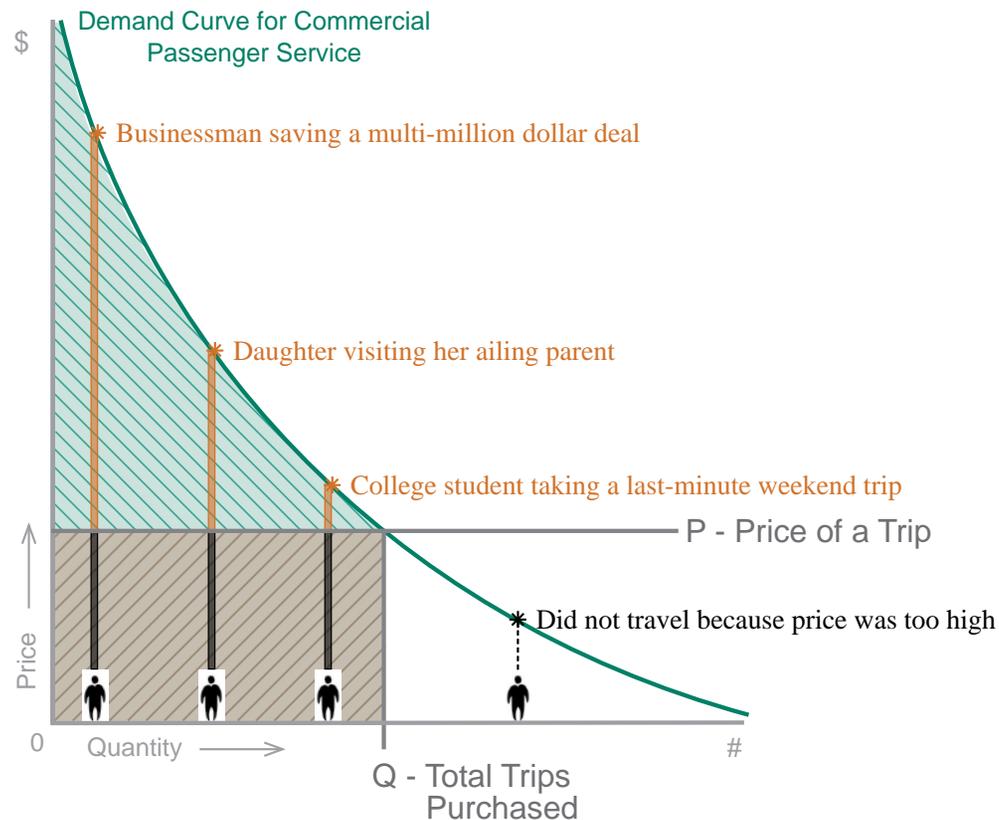
User Perspective

Why is this perspective important?

- Looks at the value users derive from all types of aviation services.
- Includes benefits not captured in traditional economic impact analysis of jobs, wages, and output.
- This perspective particularly demonstrates the importance airports have in smaller communities.



The Concept of User Value



- Getting more than what you paid for
- Where you can find a proxy for value (often by estimating costs paid) the value estimates are immense

17 Activities Users Derive Benefits From

Users benefit from services enabled by aviation facilities.

- **Moving people and goods.** Commercial passenger service; corporate travel; personal travel; pilot training; air cargo; and blood, tissue, and organ transportation.
- **Supporting industry.** Analysis considered two examples: Aircraft manufacturing and agriculture.
- **Protecting people and resources.** Medical air transport, search and rescue, firefighting, national security, and emergency response.
- **Supporting research.** Scientific research and aerial photography.
- **Flying for recreation.** Aerial sightseeing and skydiving.

Examples in the Report

Value of Medical Air Transport

- For traumatic injuries, access to treatment during the first hour can save lives and prevent long-term disability.
- Air transport grants access to medical facilities to people who do not live near them.
- Air transport saves 5.6 more lives per 100 patients than ground transport.
- The value to users (a life saved) is far in excess of the jobs and wages associated with this activity.

Omak Municipal: Value of an Airport to a Smaller Community

- Medical air transport, cargo, agricultural spraying, law enforcement.
- Spotlight on wildland firefighting.
- The airport supports seven jobs and limited GBI but the value to the community is much higher because of the services the airport gives them access to.

Discussion Questions: User Perspective

- Does the report focus on the right issues and findings?
- Is there anything missing?
- Is the emphasis correct?

Incorporation of Committee Feedback

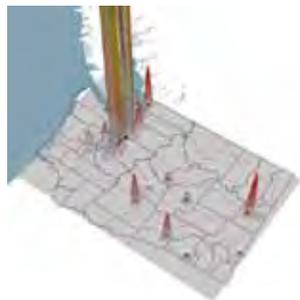
Incorporation of Committee Feedback

Terminology Confusion: Economic Value vs. Economic Benefit

Solution: Adjusted framework to more approachable “3 Perspectives” and incorporated more graphics



Economic Impacts Outside the Largest Four Airports



Solution: Included sidebar in report (pg 13)

- Is this sufficient?

Aviation-related Businesses off the Airport Footprint

Solution: Addressed broader impacts through Industry Perspective section and included sidebars on several off-footprint businesses that use aviation in unique ways



- Are the sidebars compelling and useful?

Incorporation of Committee Feedback

Industry Definition of Aerospace - can Suppliers be Included?

Solution: There is no readily available estimate of jobs in the aerospace supplier network. Our industry definition is consistent with the one used by the industry. We included a sidebar on aerospace suppliers (pg 27)



Importance of Non-aviation Tenants to some Airports (particularly those with large amounts of surplus property)

Solution: Included discussion of this point in the Policy Implications section (pg 38) and acknowledge that many of these impacts are captured in individual airport studies (sidebar on pg 14)

Incorporation of Committee Feedback

Questions about how Aerospace Activity Represented in Industry Concentration Analysis

Solution: Changed the allocation mechanism for Boeing activity to base it on jobs rather than retail sales. This improved the analysis.



Use of the Term Correlation in Industry Analysis

Solution: Did not use the term anywhere in the report.

Corporate GA Visitor Spending is Higher than Average

Solution: Researched the issue and adjusted methodology to treat corporate GA spending more like commercial spending. Also added sidebar on diversity and value of corporate aviation activities.

Policy Implications

Policy Implications Section in Report

- Washington State aviation facilities and services provide significant benefits to the state economy, businesses, and communities.
- The report cites obvious implication that economic benefits provided by aviation justify continued investment in the system.
- What other implications should WSDOT be considering as a result of this study?

Policy Context

State Legislative Direction

These are the state's Transportation Policy Goals from RCW 47.04.280)

- Economic Vitality
- Preservation
- Safety
- Mobility
- Environment
- Stewardship

Aviation System Plan

The state has an interest in the following aspects of the state's aviation system:

- Capacity
- Land Use
- Environment
- Safety
- Stewardship
- Economy
- Mobility

Recommendations from LATS and the State Aviation Planning Council

- Aviation Capacity
- Minimizing Land Use Conflicts
- Stewardship of the Aviation System

Next Steps

Report Timeline: Draft to Final

- Accepting report comments until November 11 (two weeks)
- Finalize airport profiles by mid-November
- Technical appendices can be finalized after profiles
- Final report in December

Technology Products Schedule

This is a draft working schedule. Since we are still finalizing design, it is difficult to predict the exact schedule of completion and testing. This schedule continues to be updated as needed.

- 1) Initial design of back-end calculations and interface – complete
- 2) Finalization of design and building of prototype of calculator tool – October and November, 2011 (currently in process)
- 3) **Testing of prototype – December 2011**
- 4) Implementation of changes to AIS and construction of actual interface (by WSDOT OIT) – January and February 2012
- 5) **Testing of final calculator tool – February and March 2012**
- 6) Deployment to website – March or April 2012

There will likely be a role for stakeholders to participate in the testing phases.

Roundtable/Discussion

Thank you for your participation! Say Cheese! (Group Photo Time)

Any other questions or thoughts?
Email Nisha Marvel at: MarvelN@wsdot.wa.gov

ADVISORY COMMITTEE MEETING #4

Meeting Summary

INTRODUCTION

The fourth meeting of the WSDOT Aviation Economic Impact Study Advisory Committee took place on November 1, 2011 at the Puget Sound Regional Council in Seattle, WA. A total of 16 Advisory Committee Members attended in person and five participated via web conference. There were four additional attendees and participants, and seven members from the project team were in attendance.

LIST OF ATTENDEES

Committee Members

Attending in Person

Borgan Anderson, SeaTac Airport
Peter Anderson, Galvin Flying
Leonard Bauer, Department of Commerce
Tim Brooks, Kenmore Air
Lorrie Brown, Office of Financial Management
Todd Brunner, Brunner Construction
John Dobson, Port of Shelton
Amber Hansen, Port of Sunnyside
Sally Harris, Department of Commerce

Bob Kibler, Desert Aire Airport
Stephen Kiehl, PSRC
Mayor Joe Marine, City of Mukilteo
Greg Phillips, Pangborn Memorial Airport
Jeff Robb, Port of Port Angeles
Mayor Ray Stephenson, City of Everett
Ryan Zulauf, WA Airport Management Association

Participating by Teleconference

Christina Bandaragoda, Save Our Communities
Jerry Litt, WA Transportation Commission

Elizabeth Robbins, WSDOT
David Sypher, City of Kelso
Mayor Mary Verner, City of Spokane

Other Attendees and Participants

Spencer Cohen, WEDC
Pat McClain, City of Everett

Deepa Parashar, FAA
Paul Parker, WA Transportation Commission

Project Team

Michael Hodgins, BERK
Kapena Pflum, BERK
Paul Roberts, BERK
Gary Simonson, BERK

Tristen Atkins, WSDOT Aviation
Nisha Marvel, WSDOT Aviation
John Shambaugh, WSDOT Aviation

MEETING PURPOSE

The purpose of the meeting was to:

- Present a summary of the draft report and receive input on high-level messages and report structure
- Discuss policy implications to incorporate in the study
- Provide additional opportunity for Committee input and discussion

MEETING SUMMARY

Introductions and Welcome

Paul Roberts of BERK and John Shambaugh of WSDOT welcomed the Committee to the meeting. All attendees, remote participants, and project team members then introduced themselves to the group.

Paul reviewed the current agenda and discussed the objectives of the meeting. He noted that the project team would be sharing a brief summary of the preliminary review draft report, and was looking to receive input from the Committee on high-level findings and the report structure. In addition, he noted there would be a discussion around the study's policy implications.

Michael Hodgins of BERK then reviewed where the team was in the process, highlighting that they are still receiving feedback from individual airports and working on finalizing the report and technical appendices. He noted that this draft report is the first time the team has pulled all of the analytical pieces together, and that they will be looking for comments from the Committee about tone, key elements, and the overall flow of the story.

Draft Report Presentation

Objectives

Michael began the draft report presentation by reviewing the objectives of the study and the report. The purpose of the study is to estimate economic benefits of the statewide aviation system to the State, use a consistent methodology that can be replicated, and support aviation planning and programmatic efforts under the Washington Aviation System Plan. The purpose of the report is to create an approachable and compelling product targeted to policy makers and other stakeholders, as well as to tell the story of economic contributions provided by aviation facilities and services from multiple perspectives.

Airport Perspective

Michael then discussed the findings by perspective. For the airport perspective, he highlighted that economic impacts are significant and concentrated at four large airports, and that a significant share of the activity is via through-the-fence (TTF) connections. It was noted that impacts are higher than in the 2001 study, largely because of the inclusion of Boeing activity located on TTF connections. Michael then looked at impacts by airport classification, noting that regional and commercial airports account for 99% of total jobs and output. In total, footprint businesses account for 61% of jobs and 80% of output, and almost all impacts on regional airports are from footprint businesses. When the big four airports (SeaTac, Renton Municipal, Paine Field, and Boeing Field) are excluded from the analysis, there is a swing toward visitor spending, although impacts from regional airports still come primarily from on-site employment. Michael concluded this section with a look at the fiscal impact analysis, highlighting that 99% of impacts are from Commercial and Regional airports, and that public use airports generated a total of \$730 Million in tax revenue in 2009.

Industry Perspective

Kapena then discussed the Industry Perspective, which looks at relationships between aviation and businesses beyond the limited airport footprints, and captures the ways in which aviation affects business factors of production and location decisions. It was emphasized that economic activity and aviation are intrinsically linked, and that airports play an important role for many industries core business needs: access to markets, access to inputs of production, and access to labor. Based on a 5- and 10-mile buffer analysis, 70% of Washington's GBI is within 5 miles of an airport and 97% is within 10 miles. GBI appears to be equally concentrated around commercial and non-commercial airports. Kapena then discussed the various options for sub-state regional concentration breakouts: (WSDOT regions, LATS Special Emphasis Areas, and Regional Transportation Planning Organizations [RTPOs]) and highlighted potential options for grouping the RTPOs into broader categories. Committee members were asked to provide feedback on which groupings were most meaningful and best suited for the analysis.

Next, Kapena discussed the selected industry analysis, which looked at five key industries in the state, discussed the ways in which each industry uses aviation, analyzed the importance of aviation in location decisions, and provided a measure of their activity concentrations near airports. He noted that, whether concentrated or not, it was not always clear why an industry would choose to locate near an airport. However, when delving into industry subsectors, it became clear that all industries have some subsectors that depend on aviation services for access to markets, inputs, and labor. In addition, another key finding was that there is a wide variety of corporate aviation aside from business class commercial travel. Finally, Kapena provided several concrete examples of ways aviation supports business activity off airport footprints, which are included as sidebars in the report.

User Perspective

Michael then discussed the user perspective, which examines the value users derive from all types of aviation services, and includes benefits not captured in a traditional economic impact analysis of jobs, wages, and output. He noted that this perspective particularly demonstrates the importance airports have in smaller communities. Michael also discussed the concept of user value, and explained that you can get a proxy for that value by examining the cost people are willing to pay for those services. However, in many cases that cost is going to be only a fraction of the actual value of that trip (e.g. an individual traveling to visit a dying relative).

Michael reviewed the 17 activities users derive benefit from, which fall into five categories: moving goods and people, supporting industry, protecting people and resources, supporting research, and flying for recreation. He discussed a couple of examples used in the report, the value of medical air transport and the value of an airport to a smaller community (Omak Municipal). For medical air transport, Michael emphasized that the value to users (a life saved) is far in excess of the jobs and wages associated with the activity. Similarly, the value of Omak Municipal to that community is much higher than the limited jobs and GBI it provides, because of the services the airport gives residents of the community access to.

Following each of the perspectives, the project team asked for feedback via the following questions: Does the report focus on the right issues and findings? Is there anything missing? Is the emphasis correct? Committee members offered the following feedback and comments on each of the perspectives, respectively.

Airport Perspective

- **Comparative Summary Tables.** Several Committee members asked if the information gathered about the various airports could be presented in the appendices as comparative summary tables. One Committee member asked for a table comparing the characteristics of the regional airports, while another asked for a table that compares regional and commercial airports, highlighting any potential additive value of commercial service. There was also a question about whether the calculator would be able to provide these types of comparisons. The project team agreed that side-by-side summary tables would be useful in the appendix, and said they would work on putting them together.
- **Inclusion of Literature Review.** Committee members asked whether a summary of the literature review was going to be included in a separate technical appendix, and if that review would delve into the differences between airport services and facilities in Washington and other states. The project team responded that they could include a summary of the literature review, but that the literature they looked at focused more on the role of aviation in supporting economic activity, not comparisons with other states.
- **Breakdown of High-Level Numbers.** One Committee member asked if the project team would be providing more detailed breakdowns of the high-level numbers. As an example, he asked whether the number attributing 52% of the aviation jobs in the state to the 3 major manufacturing airports could be broken down by airport. The project team responded that in the report they will be providing that type of information, and will be delving into the components of the numbers and where they are derived from.
- **Data from Smaller Airports.** One Committee member asked about the challenge in collecting individual airport data for really small airports that do not have any paid positions. The project team acknowledged that this has been a challenge, but said that they have utilized the individual airport review process to attempt to track down this information. In some cases, they may have to speak to a public works agency or another municipal agency that deploys part-time labor (e.g. maintenance) to the airport.

Industry Perspective

- **Industry Analysis by RTPO.** A Committee member argued that using all 14 RTPOs for the industry analysis breakdown would be more valuable to communities who want to leverage this analysis in their favor. He said that using the larger WSDOT regions or grouped RTPOs would be too broad and “watered-down” to be effective in demonstrating the value of aviation to a specific community.
- **Industry Concentration by Region.** A Committee member suggested conducting an analysis to show the regional breakdown of which selected industries are concentrated near airports. The project team agreed that this could be a useful addition to the Industry Perspective.
- **Trade-related travel.** Another Committee member asked about whether trade-related travel to and from out-of-state markets (Alaska, elsewhere in the United States, international destinations) was being included in the analysis, and noted that it could be useful given the State’s emphasis on promoting export trade. The project team said that it is not a part of their analysis, but that they would consider whether it would be possible to incorporate it.
- **Airport and Large Parcels.** A Committee member suggested including in the report a discussion about the importance of airports in providing large parcels for businesses that need them. He noted that given the finite number of large parcels in the State, this could be highlighted as another way in which aviation supports industry.

- **Differences between Industry and User Perspective Examples.** One Committee member asked about the differences between the examples used in the industry perspective and the user perspective. The project team stated that you can use the same examples to illustrate both perspectives: in the industry perspective, they are used to emphasize the ways in which businesses depend on aviation, while in the user perspective they are used to show how individual users derive value from having access to those services.
- **Breaking out the Aerospace Component.** Another Committee member asked if the project team could break out the Aerospace component from the broader “Transportation Manufacturing” category shown in the selected industry graphs. The project team highlighted that they have done so in the report, breaking out aerospace manufacturing by 6-digit NAICS codes.

User Perspective

- **Aviation-related Education beyond Flight Training.** A Committee member noted that there is significant aviation-related education beyond flight training, and this should be included as an activity that users derive benefit from. He noted that many of the people involved in aerospace will be retiring in the next five years, and that there will be significant trade-school and other opportunities that airports could provide. Another Committee noted the new aerospace high school that broke ground on Boeing Field.
- **Consumer Surplus vs. Special Value.** Another Committee member suggested making a distinction between two categories of value within the User perspective, consumer surplus and special value, and placing more emphasis on the special value. She noted that all goods and services provide consumer surplus, but that special values like medical air transport or search and rescue can only be provided by aviation.
- **Duplicative value in User Perspective.** One Committee member had questions about whether some of the components of user value were duplicative with the airport or industry perspectives. He suggested that it may be worthwhile to note where added value is provided and where there is overlap. The project team will consider this comment when revising the report and introducing the three perspectives and how they relate to, and potentially overlap, each other.
- **Validating Interview Data and Detailing Methodology.** Committee members highlighted the importance of validating interview and other data that was collected for the study, as well as providing thorough detail on the study’s methodology. This will be key to ensuring the study’s credibility.
- **Value from Protecting Timber Lands.** A Committee member noted that the State gains significant value from aerial firefighting through the protection of valuable timber lands.
- **Value to Rural Communities.** One participant noted the value of rural airports in providing more economic diversity to the communities where they exist, allowing technically skilled people to telecommute and travel into the area when necessary.

Incorporation of Committee Feedback

Kapena Pflum of BERK then discussed the various ways that the project team has incorporated Committee feedback into the study and the report. He emphasized that Committee feedback has been invaluable so far. The issues addressed include:

- Clearing up terminology confusion by adjusting to the more approachable “3 perspectives” framework
- Including a sidebar on the economic impacts outside of the largest four airports
- Accounting for aviation-related businesses off the footprint by addressing broader impacts through the Industry Perspective and including sidebars on several off-footprint businesses
- Including a sidebar on aerospace suppliers
- Including a discussion of the importance of Non-aviation tenants to some airports
- Improving the industry concentration analysis (and better representing aerospace activity) by changing the allocation mechanism of Boeing activity to base it on jobs rather than retail sales
- Removing the term “correlation” from the analysis
- Addressing higher spending in corporate aviation by adjusting methodology and adding sidebar on diversity and value of corporate aviation activities.

Following Kapena’s presentation on the incorporation of Committee feedback, Committee members offered the following input:

- **Additional Data on Aerospace Industry.** One Committee member noted that the Washington Aerospace Alliance may be able to provide additional data that could bolster the sidebar on aerospace suppliers. The project team said they would contact the Alliance to see what was available and incorporate the data if possible.
- **Military Use.** Another Committee member suggested that the report include a discussion of any present use by the military (beyond its own facilities) of other non-military airports for auxiliary functions. If not, she suggested a look into whether there is potential or opportunity there. The project team stated that the study does not capture military activity, as most of it occurs on non-public use airports. However, in regards to the (relatively limited) military usage of public-use airports, the user perspective section of the report could describe the value the airports provide.

Policy Implications

Michael Hodgins of BERK then briefly discussed the policy implications section of the report, stressing that the state’s aviation facilities and services provide significant benefits to the state economy, businesses and communities. He noted that the report currently cites the obvious implication that economic benefits provided by aviation justify continued investment in the system, but then asked the Committee for input on what other implications WSDOT should be considering as a result of the study? In order to prompt the discussion, Michael provided some policy context by highlighting state legislature transportation goals, Aviation System Plan policy objectives, and recommendations from LATS and the State Aviation Planning Council. John Shambaugh highlighted the importance of the policy implications section to identify and implement improvements to the system.

The Committee provided the following input on the policy connections that should be included in the report:

Legislation

- **Leverage study to apply more pressure for State legislation.** State legislation is key to helping protect, preserve, and grow the system, and this study could provide a lot more teeth for that type of legislation. It was noted that land use legislation currently requires a study of impacts but does not actually require protection of the airport.
- **Join aviation-related groups together to become facile and get message to legislators.** The study can serve as a springboard to bring different aviation-related interests together to respond to budget cuts and get the message to the legislature. The study can become an impetus for action.

Capacity

- **Leverage study to maximize inventory across the State.** The study provides the state with the ability to look at the best economic models for expanding capacity and maximizing our current inventory of aviation facilities.
- **Advocate for NextGen technology for maximizing capacity of existing airports.** The FAA is currently working on a study to help prepare airports for the acquisition and implementation of NextGen technology, which increases capacity and safety, as well as reduces emissions and noise. This study could serve as a vehicle to advocate for getting that technology in our state's airports.
- **Answer question on compatibility of aerospace manufacturing and commercial service.** This study should answer the question regarding the compatibility of aerospace manufacturing and commercial service as a matter of state policy. Does each airport have its own role, or do some airports have capacity for multiple uses?

Land Use/Accessibility/Mobility

- **Improve compatible land use around airports.** In the LATS study, land use around airports was a critical issue. This study should speak to the importance of improving compatible land use as well as preserving facilities.
- **Accessibility and integration with transportation network.** This study should speak to the importance of preserving accessibility to the airports and integration with the existing transportation network.
- **Importance of moving freight.** This study should emphasize the importance of mobility and connectivity for both people *and* freight.

Rural Airports

- **Aviation infrastructure as critical groundwork for growing rural economies.** Industries in rural areas of the state, particularly Eastern Washington, will be seeing the most growth in the coming decades, and aviation infrastructure will be critical. This study could underscore the importance of aviation facilities and services in these parts of the state.
- **Critical nature of rural airport services, aside from economics.** The study should also emphasize the life-saving aspects of medical air transport and other critical services to small rural Eastern Washington airports.

Costs

- **Acknowledge an understanding of costs.** The study should demonstrate an understanding that airports are expensive to maintain, otherwise critics will attempt to discredit it. There is value in highlighting that the best ways to grow often mean understanding the best ways to cut, and determining which services are most critical.
 - The project team noted that, although the purpose of the study is to discuss benefits, in the policy implications section they can bring in costs as part of the larger context and demonstrate an understanding of those pressures.

Job Growth

- **Improve facilities at regional airports for job growth.** We should leverage this study and the jobs numbers to emphasize the importance of maintaining and improving facilities at regional airports for increasing job growth.

Diversity

- **Acknowledge diversity as strength of the system statewide.** This study highlights the diverse nature of Washington's aviation system, and should be used to promote that diversity as a strength of the system statewide.

Next Steps

Michael Hodgins of BERK then discussed next steps, noting that additional comments on the report would be accepted until November 11, and that the airport profiles would be finalized by mid-November. He also noted that the technical appendices would be finalized after the profiles, and the final report would be completed in December.

Michael then went over the schedule for the project's technology products. For the online economic calculator: the prototype is in development and will be tested in December, the final calculator tool will be tested in February and March of 2012, and the tool will be deployed to the website in March or April 2012. The implementation of changes to the Airport Information System (AIS) and construction of the interface will occur in January and February of 2012. These improvements will support the calculator and allow users to automatically generate updated airport profiles. Interested stakeholders will have opportunities to test prototypes during development of the calculator tool.

Roundtable and Wrap-up

The meeting concluded with a brief roundtable, where every committee member who wanted to contribute had a chance to speak. Committee members expressed gratitude for the work being done and for the opportunity to be able to contribute to the process.

In particular, a number of Committee members emphasized the importance of the State's entire system of airports, and voiced appreciation for the fact that the study attempts to capture that system from multiple perspectives. Several Committee members also said they were looking forward to the online economic calculator and believe it will be a very useful tool.

The project team thanked all Committee members for their contribution, an Advisory Committee photo was taken, and the meeting adjourned.