Today’s Briefing

- Scenario Development & Economic Analysis
- Analysis of Region’s Airports
Scenario Development & Economic Analysis
Near-Term Challenges

CORONAVIRUS ECONOMY DAILY CHART

Growth in Sea-Tac Airport passenger traffic has slowed

The number of passengers going through Seattle-Tacoma International Airport is still rising, but the pace has tapered off.

Week’s daily average, for Sunday through Saturday

<table>
<thead>
<tr>
<th>TSA-screened passenger volume</th>
<th>Aircraft takeoffs and landings</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Source: Port of Seattle</td>
</tr>
</tbody>
</table>

THE SEATTLE TIMES
Long-Term Commercial Aviation Trends

Enplanements 1976 - 2018

- 3.4% Annual Growth

Source: International Civil Aviation Organization (ICAO) for the U.S. Total, FAA Terminal Area Forecast (TAF) for SEA.
Commercial Service Forecast & Gap Analysis

Combined Sea-Tac and Paine Field Commercial Capacity/Demand

- Includes Sea-Tac 2027 SAMP Near Term Projects
- Includes Sea-Tac SAMP Long Term Vision Projects
Scenarios Analyzed to Address 2050 Demand

- Scenario 3: Meet 100% of demand
  - 55 million passengers
- Scenario 2: Meet 80% of demand
  - 44 million passengers
- Scenario 1: Baseline (50-60% of demand)
  - 28 million passengers
  - 33 million passengers

2050 Passenger Enplanement Forecast
Scenario 1: Baseline (50-60% of Demand)

Existing Commercial Facilities

— Sea-Tac: Implements range of near-term and long-term projects
  — Increase gates from 83 to estimated 105-113
— Paine Field: Maintains current capacity
  — Limited to 24 flights/day

New Commercial Airports Required

— No new commercial airports
Scenario 2: Meet 80% of Demand

Existing Commercial Facilities

— Sea-Tac: Implements near-term and long-term projects
  — Increase gates from 83 to 113
— Paine Field: Maintains current capacity
  — Limited to 24 flights/day

New Commercial Airports Required

— 1-2 new commercial airports, totaling 2 runways
Scenario 2: Options for New Commercial Airports

One airport with two runways (examples)
- San Jose International
- Sacramento International

Two airports with single runway (examples)
- John Wayne
- Bellingham International
Scenario 3: Meet 100% of Demand

Existing Commercial Facilities

— Sea-Tac: Implements near-term and long-term projects
  — Increase gates from 83 to 113
— Paine Field: Maintains current capacity
  — Limited to 24 flights/day

New Commercial Airports Required

— 1-3 new commercial airports, totaling 3 runways
Scenario 3: Options for New Commercial Airports

One airport with three runways
(example)

Sea-Tac International

Multiple airports totaling three runways
High Speed Rail (Vancouver, B.C. - Seattle – Portland)

Estimated 1.7 - 3 million annual intercity trips by 2040

Projected Sea-Tac Commercial Service Delay

Average Annual Aircraft Delay (minutes per operation)

Operations in 2018

Projected “Baseline” activity in 2050

• Based on airfield capacity: airspace, runways, taxiways
• Not impacted by increase in gates
• Activity levels higher than 490,000 would likely involve FAA management of operations and/or “slot controls” like JFK, LGA and DCA
Fuel Consumption

Since 1960:
- Engine fuel consumption has decreased by 49%
- Due to larger passenger capacity, fuel consumption per passenger has decreased by 82%
- Future fuel types and efficiency should reduce fuel consumption
Commercial Aircraft Noise

- Newer aircraft models have lower noise emissions
- Higher volume of operations mean that airport impacted communities experience more consistent noise at lower decibel levels

![Development of aircraft noise emissions](image)

*EPNdB: Effective perceived noise in decibels
Source: CFD Software E + F GmbH Berlin

www.bdl.aero
Economic Impact

Scenario 1: Would support an additional $4 - $9 billion in economic activity and 27,000 – 61,000 added jobs.

Scenario 2: Would support an additional $20 billion in economic activity and 135,000 added jobs.

Scenario 3: Would support an additional $31 billion in economic activity and 209,000 added jobs.

Economic benefit of airport activity includes direct and indirect jobs and labor and business income.
## Comparison of Scenarios

### Scenario 1: Baseline
50-60% of 2050 demand met

- **460-540k** annual operations
  - 2 commercial airports
  - 0 additional runways
- **28-33 million** enplanements
  - **22-27 million** unmet enplanements
- **$4-9 billion** added annual benefit
  - **27-61k** added jobs

### Scenario 2
80% of 2050 demand met

- **720k** annual operations
  - 2-4 commercial airports
  - 2 additional runways
- **44m** enplanements
  - **11 million** unmet enplanements
- **$20 billion** added annual benefit
  - **135k** added jobs

### Scenario 3
100% of 2050 demand met

- **900k** total operations
  - 2-5 commercial airports
  - 3 additional runways
- **55m** enplanements
  - **0** unmet enplanements
- **$31 billion** added annual benefit
  - **209k** added jobs
Analysis of Region’s Airports
29 Regional Airports
Airport Evaluation Criteria

All 29 regional airports were analyzed for the ability to potentially accommodate commercial air service.

Evaluation criteria included:

- Ability to accommodate at minimum one 7,000 ft. runway
- Airfield capacity
- Airspace analysis
- Flood zone constraints
- Ownership considerations
- Impact to aerospace manufacturing
- Transportation infrastructure
- Proximity to population and jobs
Airport Screening Results

Reasons for some airports to be dropped from consideration:

— **Renton Municipal**: airspace conflicts, airfield capacity constraints, manufacturing impacts, inability to accommodate 7,000 ft runway
— **Boeing Field & Thun Field**: dense development
— **McChord Field**: military use challenges
— **Auburn Municipal**: inability to accommodate 7,000 ft runway
— **Harvey Field**: location in floodplain
No regional airports demonstrated the ability to support a three-runway airport.

Airports with potential to provide additional commercial capacity:

— Arlington Municipal
— Bremerton National
— Paine Field
— Tacoma Narrows

Note: First step for any current airport to provide commercial air service is for the airport owner to conduct an FAA Airport Master Plan with a commitment from at least one airline to serve the airport.
## Airport Proximity to Population & Jobs (2050)

<table>
<thead>
<tr>
<th>Airport</th>
<th>Population &lt;60 mins. drive time</th>
<th>Employment &lt;60 mins. drive time</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>#</td>
<td>% of total</td>
</tr>
<tr>
<td>Sea-Tac</td>
<td>2,473,000</td>
<td>42%</td>
</tr>
<tr>
<td>Paine Field</td>
<td>2,286,000</td>
<td>39%</td>
</tr>
<tr>
<td>Arlington Municipal</td>
<td>895,000</td>
<td>15%</td>
</tr>
<tr>
<td>Bremerton Municipal</td>
<td>814,000</td>
<td>14%</td>
</tr>
<tr>
<td>Tacoma Narrows</td>
<td>1,679,000</td>
<td>29%</td>
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Source: PSRC
## Airport System Proximity to Population & Jobs (2050)

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<th>Population &lt;60 mins. drive time</th>
<th>Employment &lt;60 mins. drive time</th>
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<tbody>
<tr>
<td></td>
<td>#</td>
<td>% of total</td>
</tr>
<tr>
<td>Paine Field + Sea-Tac</td>
<td>4,090,000</td>
<td>70%</td>
</tr>
<tr>
<td>+ Arlington Municipal</td>
<td>4,134,000</td>
<td>71%</td>
</tr>
<tr>
<td>+ Bremerton Municipal</td>
<td>4,904,000</td>
<td>84%</td>
</tr>
<tr>
<td>+ Tacoma Narrows</td>
<td>5,333,000</td>
<td>92%</td>
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Source: PSRC
## Study Phases

<table>
<thead>
<tr>
<th>Q1 2019</th>
<th>Q2 2019</th>
<th>Q3 2019</th>
<th>Q4 2019</th>
<th>Q1 2020</th>
<th>Q2 2020</th>
<th>Q3 2020</th>
<th>Q4 2020</th>
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<tbody>
<tr>
<td><strong>Technical Analysis</strong></td>
<td><strong>Scenario Evaluation</strong></td>
<td><strong>Project Completion</strong></td>
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<td><strong>Airport &amp; Aviation Activity</strong></td>
<td><strong>Aviation Issues Analysis</strong></td>
<td><strong>Identify &amp; evaluate future scenarios</strong></td>
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<tr>
<td>• Existing conditions</td>
<td>• Airspace flow analysis</td>
<td>• Analysis of existing airports</td>
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<tr>
<td>• Aviation sector analysis</td>
<td>• Future capacity needs</td>
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<tr>
<td>• Regional forecasts</td>
<td>• Economic analysis</td>
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### Public Involvement

<table>
<thead>
<tr>
<th>Stakeholder outreach meetings</th>
<th>Media briefings</th>
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<tr>
<td>Technical Working Group</td>
<td>Community meetings</td>
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<td></td>
<td>Public survey</td>
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<td></td>
<td>Online open house</td>
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Thank you

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