ITEM NO: 7a

DATE OF MEETING: June 26, 2012

Terminal Development Challenges

Presentation Summary

- **Background and Projections**
- **Current Situation**
- **Future vision/Recommended approach**

Challenges

Problem Dimensions

- **Most cost-effective long-term solution requires increased throughput in existing footprint**
- **Airline competition is intense and the industry is constantly evolving**
- **Technological advances are changing the customer experience and can promote increased throughput**
- **Airport must make decisions in the midst of change**
- **Lengthy development timeframe adds to challenge**

Current Situation

Passenger Statistics

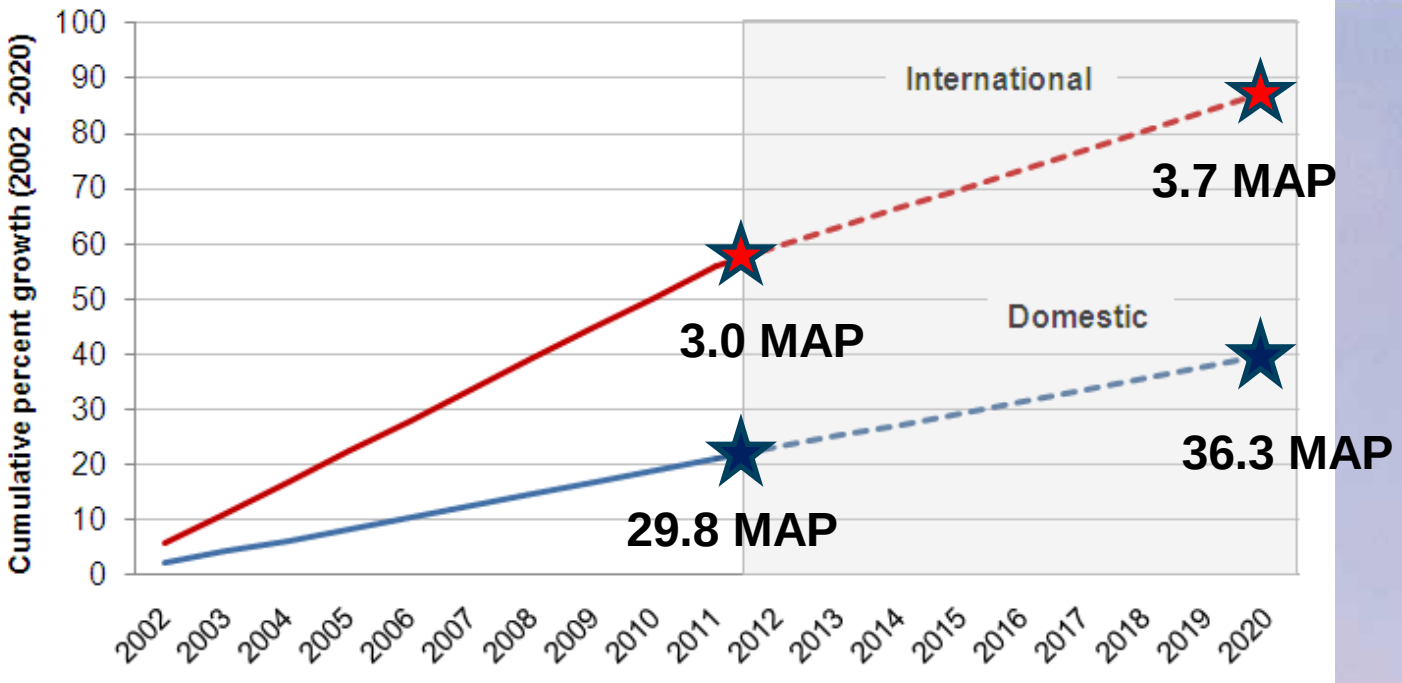
- **32.8 Million Annual Passengers (MAP)**
- **4% growth in passengers over 2010**
- **74% of passengers are O&D; 9th largest O&D airport in U.S.**
- **International passengers: 2.9 million/year, up 6.3%**
- **Growth in FIS passengers: 8.6 %**

2020 and 2030 Forecasts

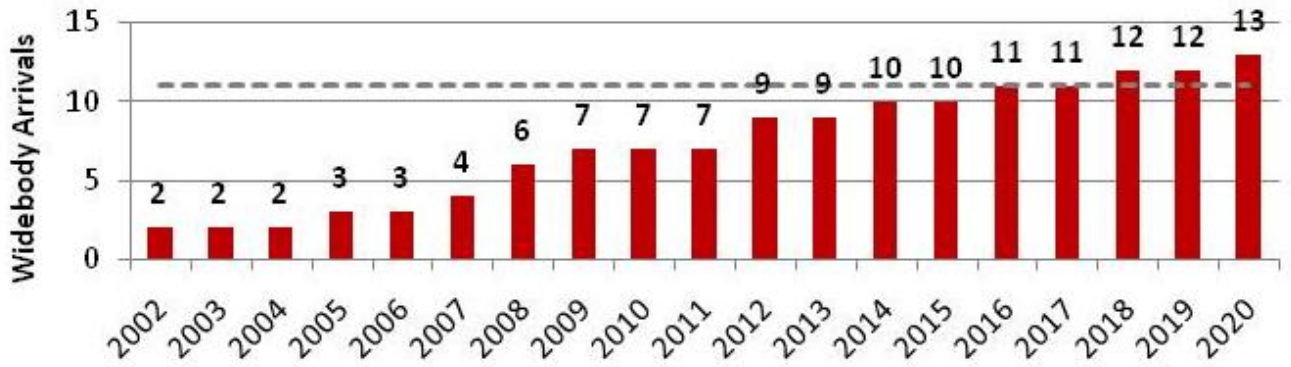
- **2020- 40 MAP projected**
- **2030- 47-53 MAP projected- 1.5 times today's PAX**

Historic and Future Growth

Passengers



Peak intl. widebody arrivals

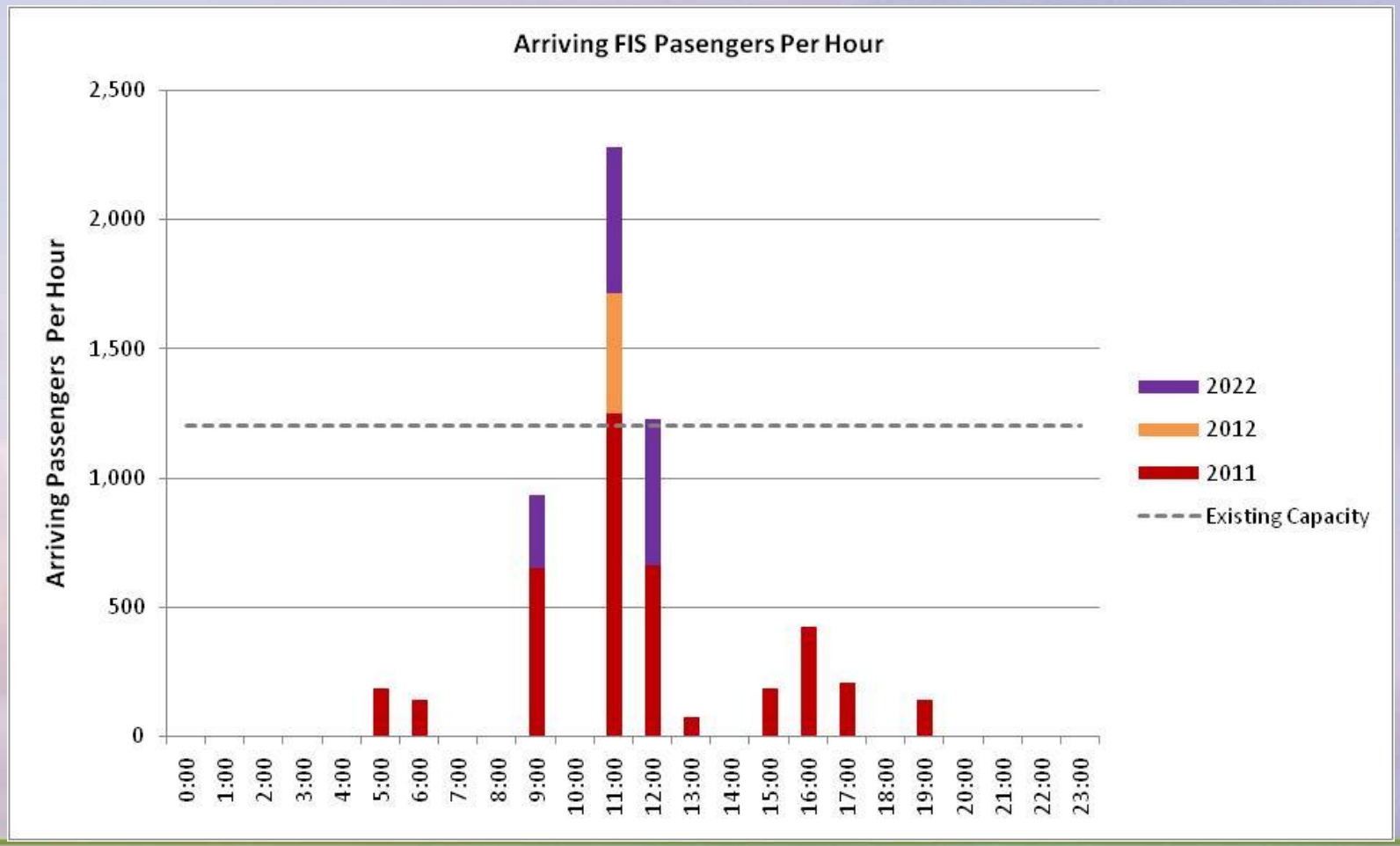


MAP: million annual passengers

Source (passenger growth): historic activity and Sea-Tac Part 150 forecast

FIS Passenger activity trends

- **Passengers arriving during mid-day peak increasing dramatically**
- **Peak periods drive facility needs, not annual passenger volumes**



Industry Dynamics

Since 2005

- **US Air and America West merged**
- **Frontier, Republic and Midwest merged**
- **Delta and Northwest merged**
- **Continental and United merged**
- **Southwest and AirTran merging**
- **American Airlines bankruptcy; prospective merger?**
- **Newer entrant growth - JetBlue and Virgin**

2011 Airline Market Share

Changes due to industry consolidation

Alaska Airlines, Horizon Air	50.0%
Delta Air Lines, Delta Connection	11.5%
United Airlines, United Express	11.3%
Southwest Airlines, AirTran Airways	9.7%
American Airlines	4.2%
US Airways	3.0%
Virgin America	1.9%
Frontier Airlines	1.5%
JetBlue Airways	1.5%
Hawaiian Airlines	1.2%
All other	4.4%

Source: as reported to the Port of Seattle by the airlines.

Current Situation

Airport Drives and Curbs

- **Congested terminal curb, related to dwell time**
- **Enforcement of dwell time at curb critical to capacity**
- **Rental car busing dependent on maintaining regular headways**

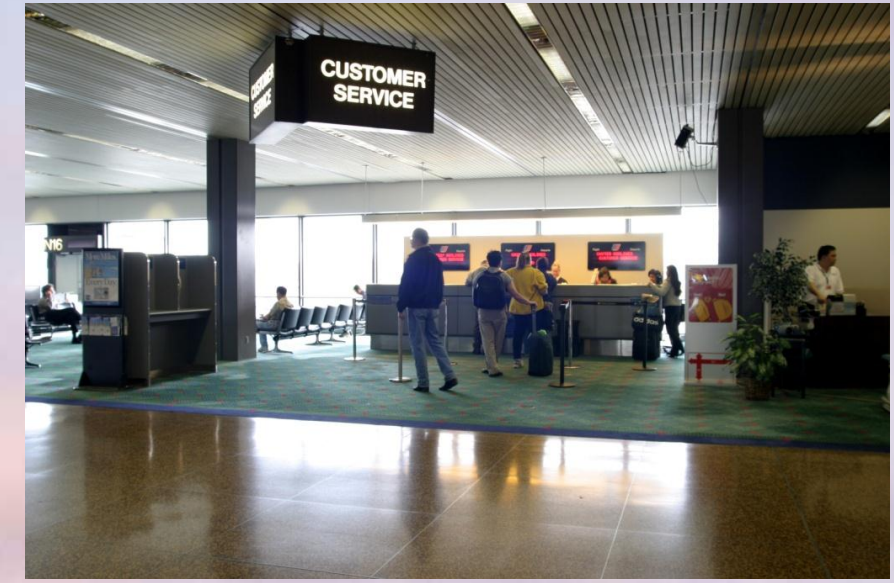
Congested Upper and Lower Curbs

- Narrow congested sidewalks
- Static curb signs do not optimize capacity
- Congestion backs up onto roadways
- Weaving issues on roadway sections
- Service tunnel seismically weak

Current Situation

Terminal Buildings

- **Concourse A and Central Terminal - built in 2004**
- **Concourses B,C and D - last renovated in 90's**
- **Main Terminal and Satellites - built in 1970, minor updates**



North Satellite Built in 1970

- Aging systems
- Outdated appearance
- High energy use
- Business case for renewal
- Lack amenities
- Lack technology enabling shared use

Current Situation

Terminal Passenger Circulation

- **Vertical circulation - improvements underway**
- **Ticketing lobby congestions and aesthetics**

Congested Ticket Lobby with 1-Step Process

- Functional obsolescence
- Lack of capacity
- Slow process
- Lack of flexibility for change
- Reliability issues with vertical circulation

Current Situation

Security Checkpoints

- **Changing equipment by TSA and passenger loads with realignment**
- **Port can't influence significant throughput**

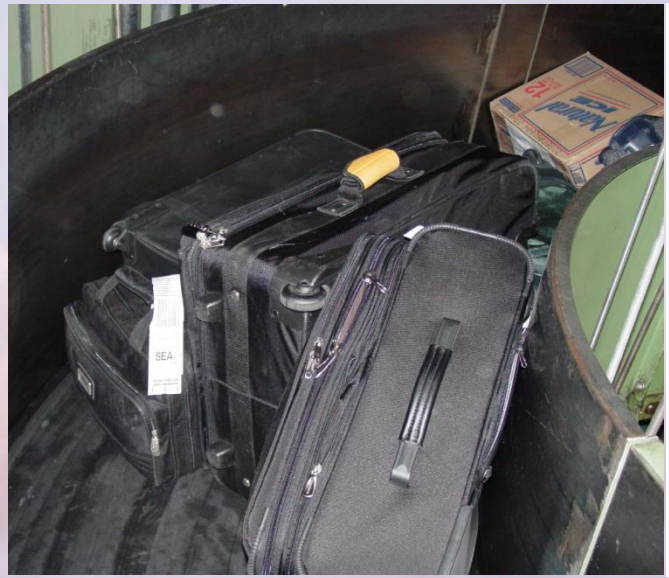
Checkpoint 5 in Main Terminal

- Crowded and confusing
- Realignment shifts passenger loads
- More space needed for new equipment
- Without space, slower/less secure

Current Situation

Baggage Systems

- **Seven separate systems**
- **EDS machines are slow and at end of design life**



Jam in Baggage System

- Bag jams
- High cost when bags miss flight
- Lacks latest technology
- Inefficient separated systems
- Evolving check-in will drive upgrades

Current Situation

Airfield Runways and Taxiways

- **New 3rd runway and 16R rehab in 2009**
- **16C rehabilitation in 2016**
- **Ongoing pavement replacements**

Current Situation

Gates

- **90 Total gates**
- **74 Narrow Body Gates**
- **11 Widebody/FIS gates**
- **5 additional Widebody capable gates**

Current Situation

Federal Inspection Service (FIS)

- **Forty-year-old facility not competitive with other gateways**
- **Challenges span the whole customer experience**

Congested Primary Inspection

Congested FIS Bag Claim

Current Situation

Technology

- **Technology is a major component of the solution, both now, and in the future**

Mobile phone boarding pass

- Improvements needed for capacity/flexibility
- Boarding passes from home/phones
- Customer service/re-ticketing
- Passengers self-tagging bags
- Common bag drops
- Two-step and flow-through processing
- Common Use Self Service Kiosks (CUSS)

Current Situation

Work completed to maximize existing facility

- **Two-Step and flow through Ticket Counters**
- **Garage Floor Count and pay booths**
- **Upgrades to FIS primary inspection**
- **SSAT gate restriping for 11 wide bodies**
- **Dynamic wayfinding for checkpoints**
- **Common use capacity at gates**

Future Vision

Challenges

- **Tension with carriers about controlling costs and when and how to invest in facilities**
- **Preparing for growth in a high-density operating environment**
  - Just in time/in advance of need/after need is visible
  - Level of service provided
  - Cost
  - Time horizon for usefulness of new facilities
  - Sustainability considerations

Future Vision

Goals

- **Future of the airport - solution grounded in balance of Strategic Goals**
  - Century Agenda
    Meet region's air transportation needs for next 25 years
    International gateway
    Sustainability/Energy Conservation/TCO
  - Customer service
  - Technology evolution
  - Continue to meet the needs of our O&D passengers
  - Minimize cost through "inspansion"

Future Vision

Considerations

- **Smart investment for potential growth/comfortable allowance for growth**
- **Timing – just in time or slightly ahead of need?**
- **Balance capacity and increase throughput in terminal**
- **Anticipate and respond to airline structure (growth, mergers, bankruptcies)**
- **Preparing for growth in a high density operating environment**
- **Preparing facilities for flexibility and change**

Future Vision

“Inspansion”

- **Technology**
  - IATA strategies for improving PAX flow
  - Rapid evolution to gain flexibility
  - Common use systems
- **Cost**
  - Costs reduced through inspansion
  - Total cost of ownership (TCO)
  - Airport cost increases and airline operating cost decreases

Future Vision

Balancing airfield, terminal and roadway capacity

- **Airfield**
  - With the 3rd Runway- 550,000 operations
- **Gates**
  - Number of gates is adequate to 35 MAP but need to continue developing infrastructure that can be shared by multiple carriers
  - Anticipate need for more gates

    NSAT - 1st expansion 35-40 MAP, 2nd 40-45 MAP

    SSAT - expansion 50 MAP

    Concourse D - expansion 55-60 MAP

    Concourse A - 60 MAP

Future Vision

Balancing airfield, terminal and roadway capacity

- **Baggage systems technology evolution**
  - Self tagging and bag drop
  - Flexible and interconnected systems
  - Recapitalization of TSA equipment

- **FIS - balanced to Seattle growth ambitions**
  - SSAT constraints
  - CBP staffing - National and SEA
  - Mid-term vs. long-term solutions

Recommended Approach

- **Vertical Circulation**
  - Improve elevators in main terminal and satellites
- **Baggage Systems**
  - Self-tagging, common bag drop, connected systems
- **Checkpoints**
  - Reconfigure north to improve processing rate of our slowest checkpoint, and add lanes for growth
- **FIS**
  - Begin design and construction of Phase I of long-term solution that can be expanded when needed

Future Vision

Balancing airfield, terminal and roadway capacity

- **Ticketing built for current and future needs**
  - Evolution from ticketing to bag drop area
  - New entrants, new routes
  - Maximize use of technology

Future Vision

Balancing airfield, terminal and roadway capacity

- **Curbside**
  - Maintain enforcement to reduce dwell times
  - Dynamic signage linked to flight schedules to optimize capacity
  - Seismic improvements to service tunnel for life safety
  - Enhancements for passenger growth - new curb needed?
- **Roadways**
  - Improve areas with weaving issues
  - Enhancements for hotel development and cargo growth

Questions?