Sustainable Airport Master Plan

Presentation to
SeaTac City Council

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Programs

January 23, 2016

Sea-Tac Airport Today

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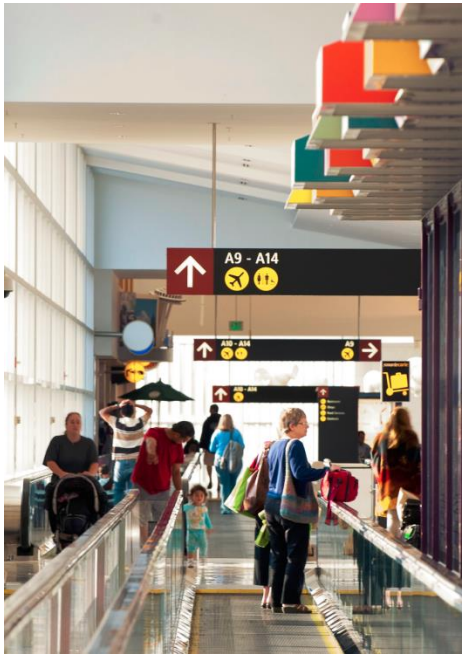
Seattle-Tacoma International Airport

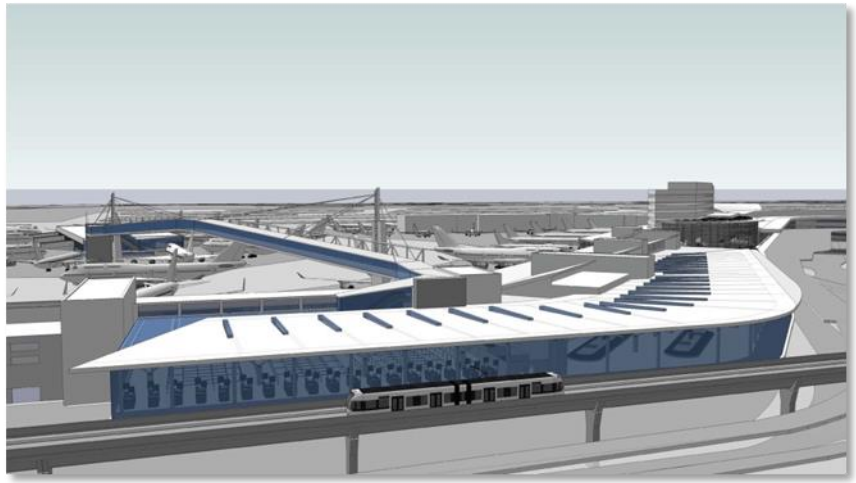
Fastest Growing Large Hub Airport in the U.S.

- 37.5 million passengers in 2014, up 7.7%
- 42.3 million in 2015, up 12.9%
- 340,000 flight operations in 2014, up 7.3%
- 381,000 flight operation in 2015, up 12%
- $220 million in retail and service sales
- 170,000 jobs related to airport activity



Major Current Projects:

- North Satellite Expansion
- International Arrivals Facility
- 16C Reconstruction
- Baggage System Reconstruction



Sea-Tac Airport Activity

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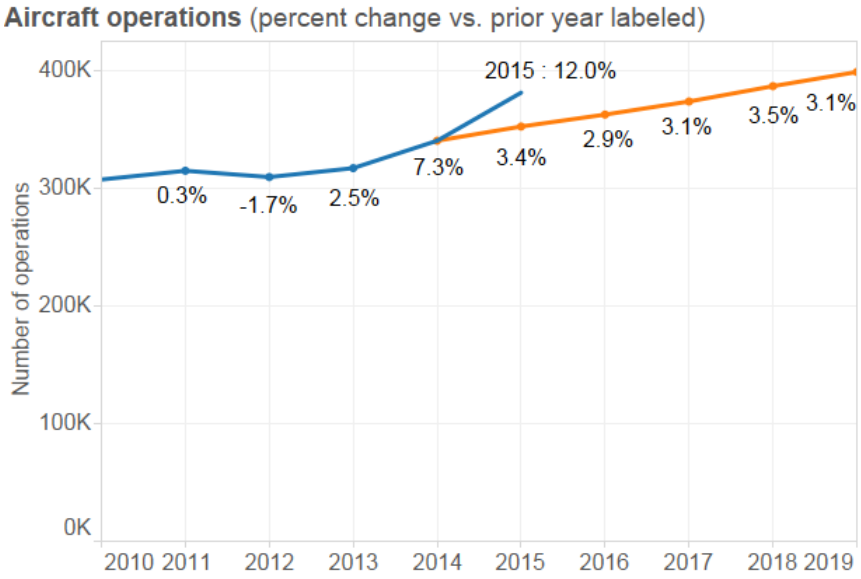
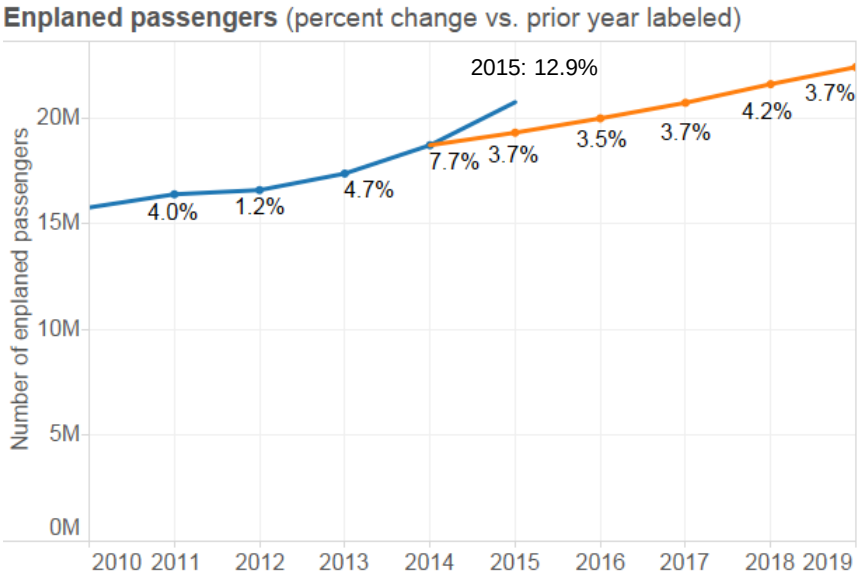
Master Plan Assess If, and How, Sea-Tac Can Meet Demand

- Region's economy driving rapid growth in recent years
- Higher than previously forecasted growth in recent years
- Dramatic growth in 2015
  - **Operations:** 70% of SAMP 5-year forecasted growth occurred in 2015
  - **Passengers:** 55% of SAMP 5-year forecasted growth occurred in 2015





Master Plan -- Unconstrained Activity Forecast

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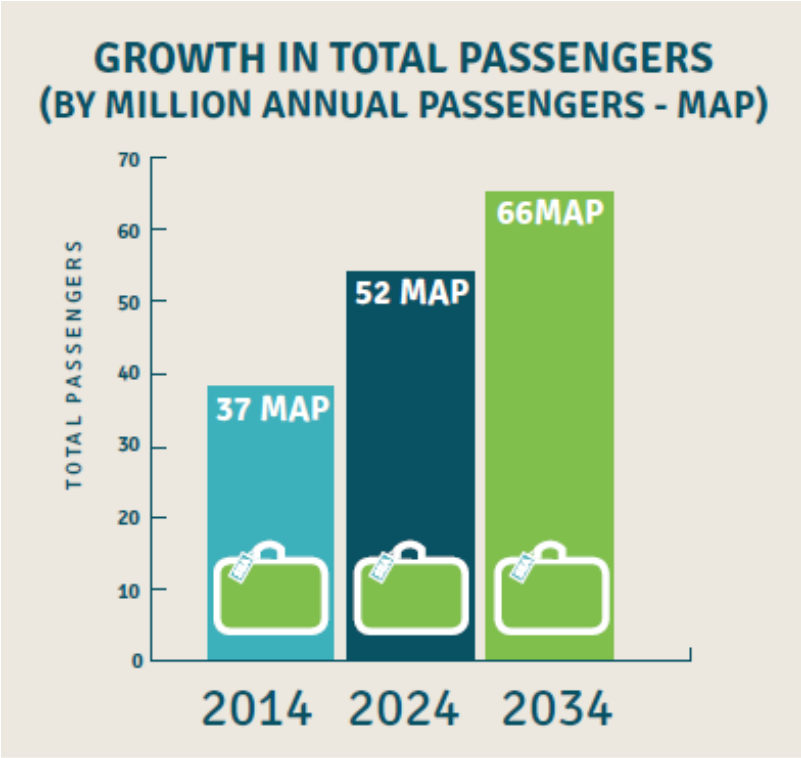
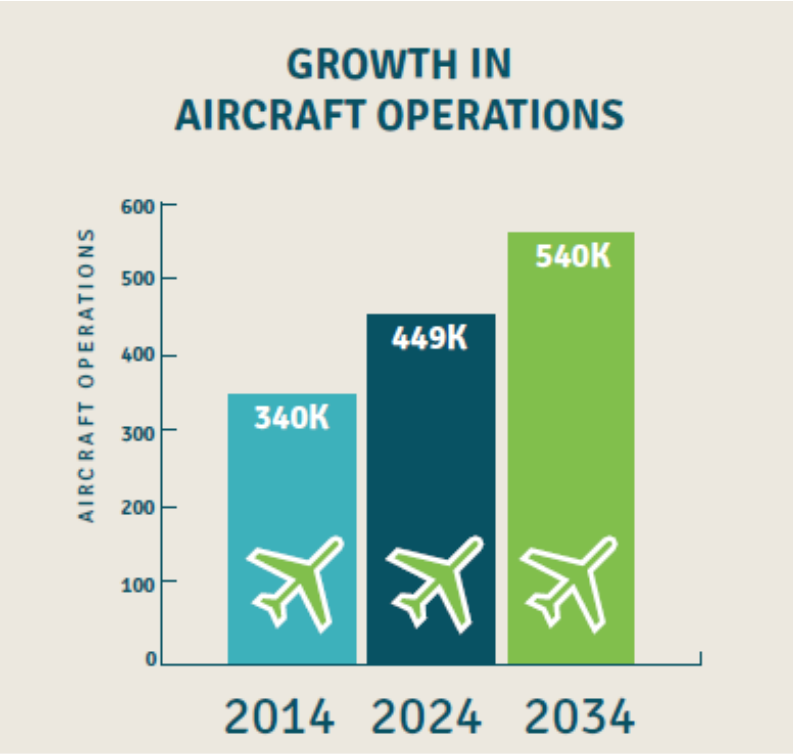
Passengers and operations





Region's economy driving rapid growth in recent years

Master Plan will assess if, and plan how, Sea-Tac can meet demand

Unconstrained Forecast Implications

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What is Needed to Meet Demand

Airfield

- Go from 88 operations per hour to 120 without adding runways
- Move more planes faster despite more gates and aircraft on the airfield

Terminal

- Adding 8 gates now to the existing 92 gates, still need 35 more gates
- Add hold rooms and security processing for 43 new gates while handling existing passenger traffic
- Potentially build a second terminal to serve most of the new gates

Landside

- Need to remove bottlenecks and chokepoints on airport roadways and drives
- Expanding the terminal may wipe out existing airport drives

Development Constraints

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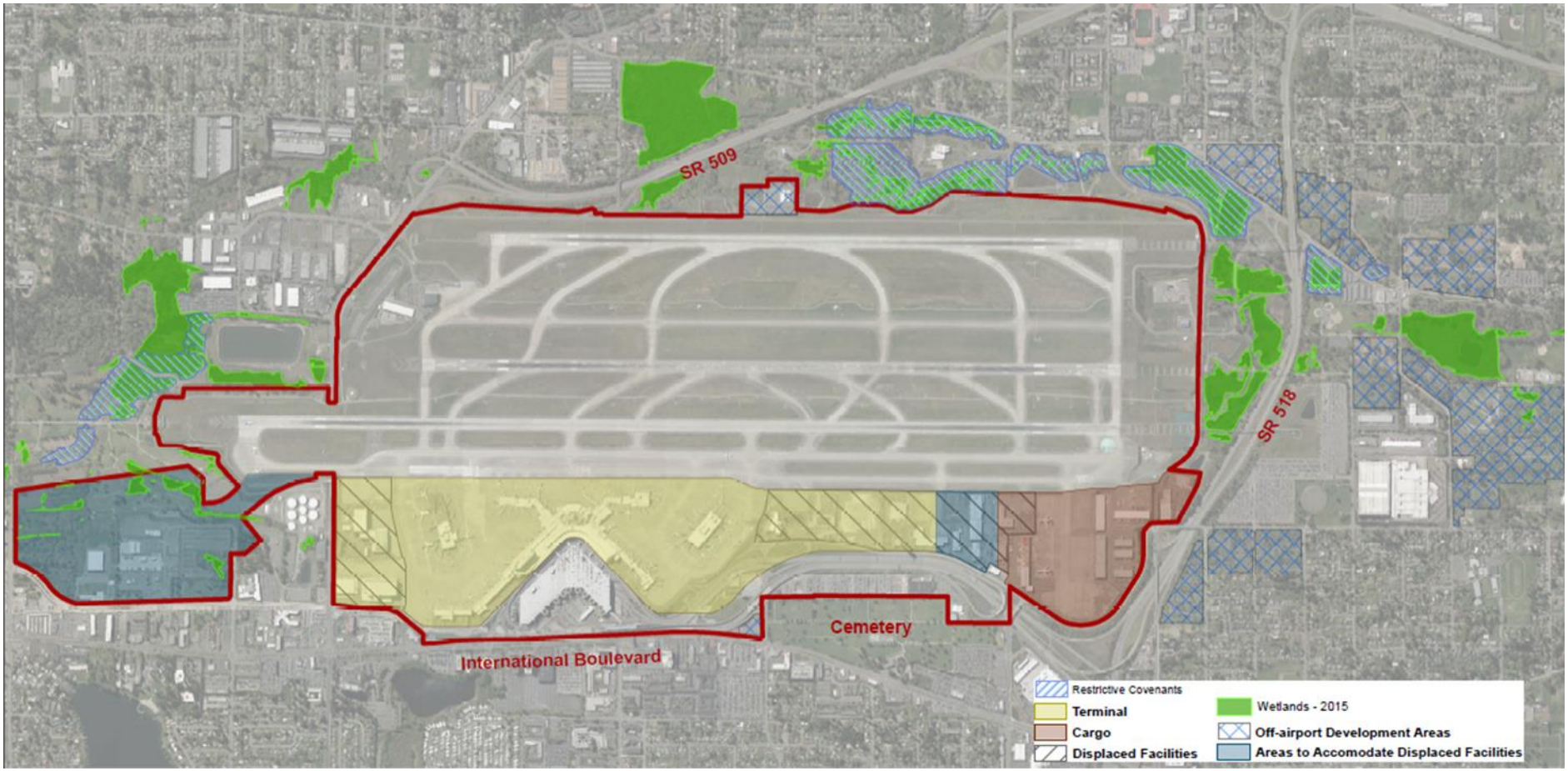
Environmental, airspace, and land use constraints severely limit expansion options



Master Plan Context

Planning Process

✓ **Long-range plan *(e.g. SAMP)***

- Campus-wide, comprehensive planning
- Facility requirements in 5-year increments to 20 years
- Alternatives analysis for major plan elements
- Narrowing alternatives down to Preferred Alternative(s)
- 20-year facilities development plan
  - Balance capacity in key areas to 3-runway airfield
  - Phasing plan to maintain level of service, continuity of operations
- Capital program / plan of finance

❑ **Project definition *(e.g., concourse layouts for new gate piers)***

- Program development for individual projects
- Adequate detail required to transition projects to design

❑ **Project design**

Major Plan Elements

Plan Development (Iterative Process)

- **Determine preferred gate expansion concept**
- **Assess airside capacity and required airfield & terminal facilities**
  - Gates
  - Aircraft hold positions
  - Airfield improvements
- **Allocate remaining land based on hierarchy**
  - Terminal
  - Airfield
  - Landside
  - Cargo
  - Airline support
  - Airport support

Planning Process – Current Status

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Current Work

- **Airfield modeling**
  - Assessed capacity of existing airfield at increased activity levels
  - Assessed capacity of airfield with improvements at increased activity levels
- **Assessing impacts of runway/taxiway separation**
- **Developed options for major plan elements**
- **Evaluated one and two terminal options**
- **Developed mid-term landside strategy**
  - Leverages operational measures and relatively low cost capital projects
  - Consistent with one or two terminal options *(minimal throwaway)*
- **On-going work for phasing for gates, terminal and hardstands**
- **Beginning work towards preferred alternative(s)**

Development Concepts – Airfield

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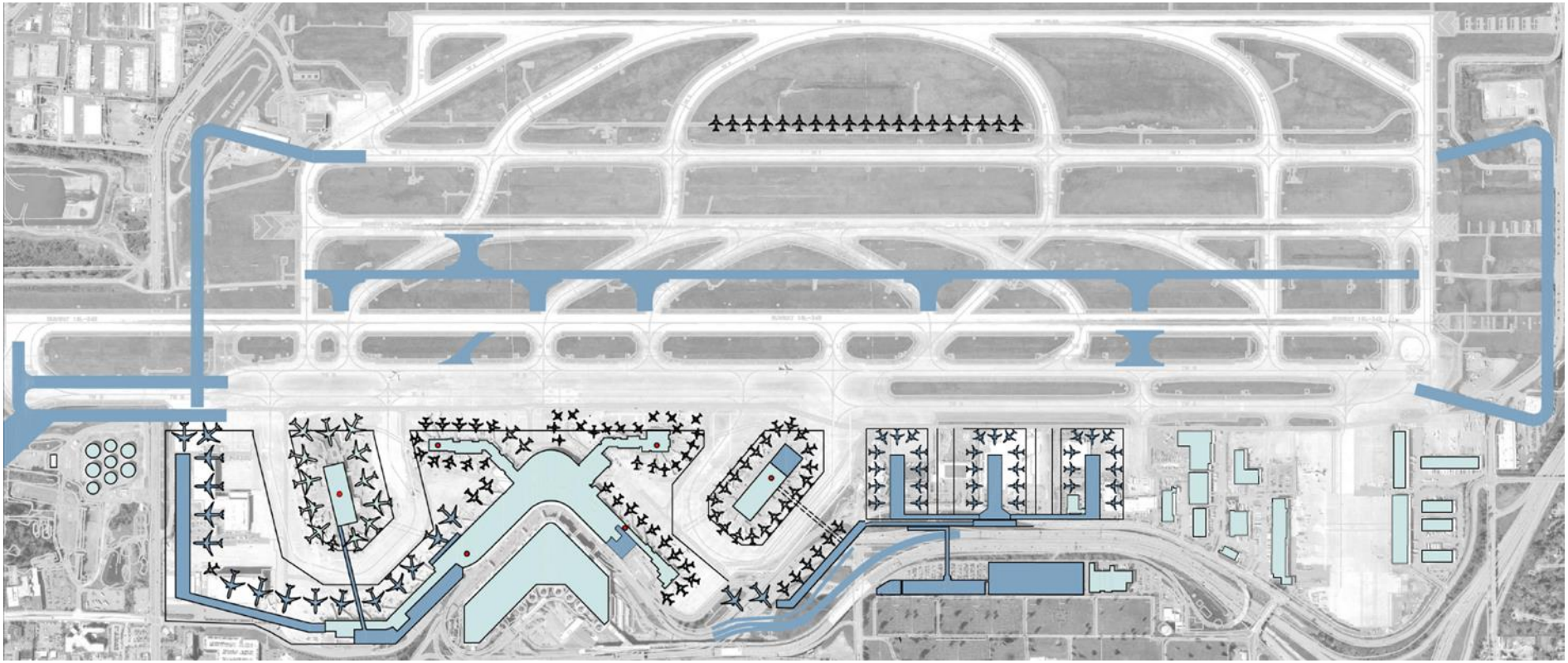
Modeling Preliminary Concepts for Gate Expansion

Concourse A and Main Terminal Expansion ***Second Terminal and Gate Expansion***



Light blue – existing facilities
Dark blue – potential new facilities

Major Plan Elements – Concept 1

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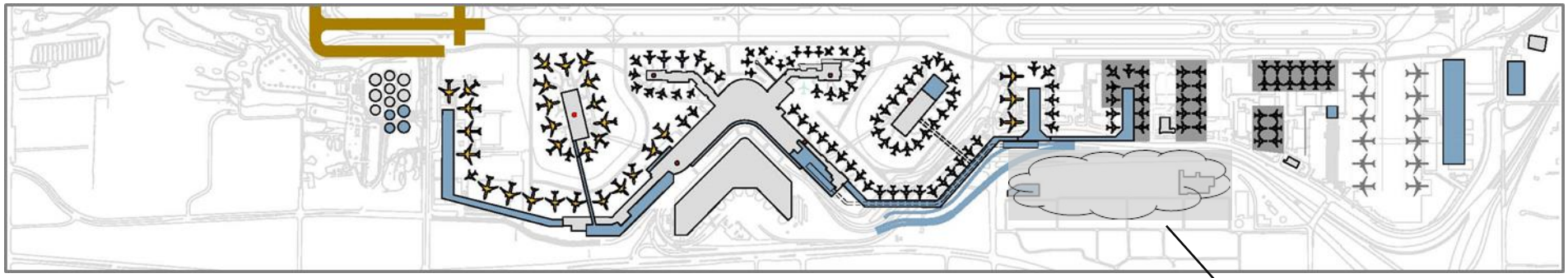
New Widebody Gates in a Congested Area

- Description
  - New widebody international gates on extension of Concourse A
  - Extension of Concourse D to two piers to the north
  - Aircraft hold positions provided to the north only
- Primary concerns/flaws
  - New south end gates in congested aircraft movement area
  - Does not provide aircraft hold positions on south end
  - Displaces aircraft maintenance



Light gray– existing facilities
Dark blue – potential new facilities

NOTE: Development concepts illustrate major plan elements independent of 1 vs 2 terminals

Major Plan Elements – Concept 2

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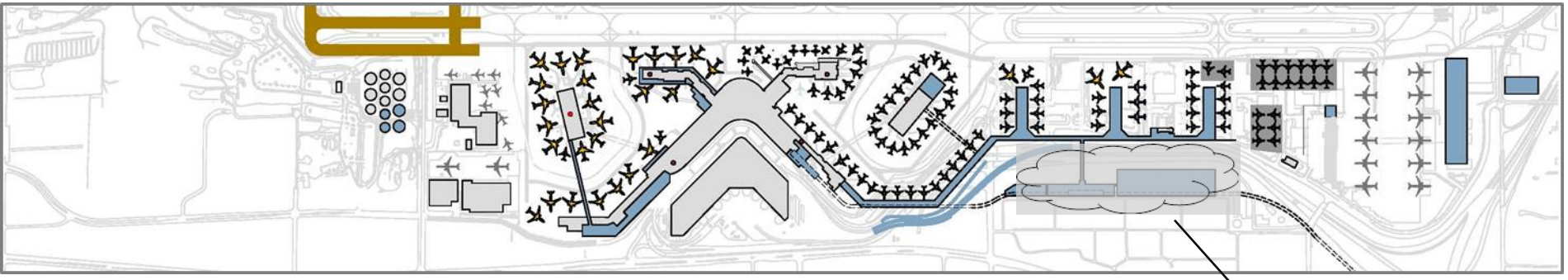
Lacks Aircraft Hold Positions on South End

- Description
  - New widebody international gates on Concourse B
  - Extension of Concourse D to three piers to the north
  - Fewer aircraft hold positions provided to the north
- Primary concerns/flaws
  - Does not provide aircraft hold positions on south end



Light gray – existing facilities
Dark blue – potential new facilities

NOTE: Development concepts illustrate major plan elements independent of 1 vs 2 terminals

Major Plan Elements – Concept 3

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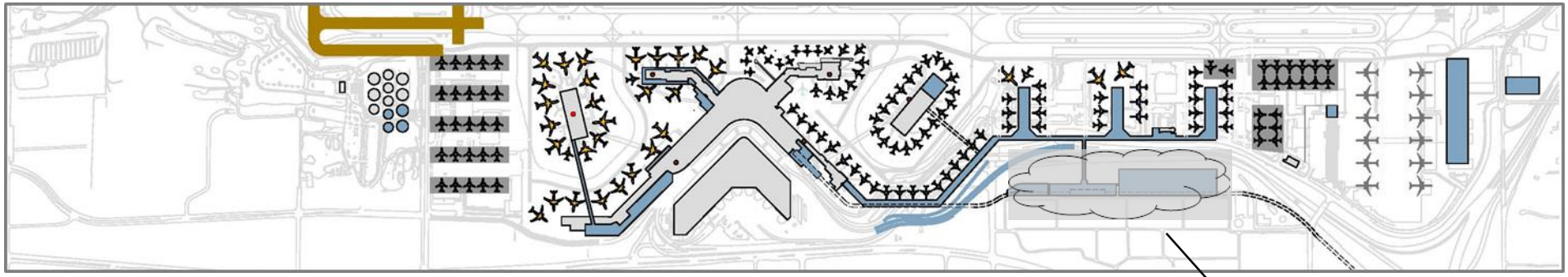
Displaces Aircraft Maintenance

- Description
  - New widebody international gates on Concourse B
  - Extension of Concourse D to three piers to the north
  - Aircraft hold positions provided to the south and north
- Primary concerns/flaws
  - Displaces aircraft maintenance



Light gray – existing facilities
Dark blue – potential new facilities

NOTE: Development concepts illustrate major plan elements independent of 1 vs 2 terminals

Major Plan Elements – Concept 4

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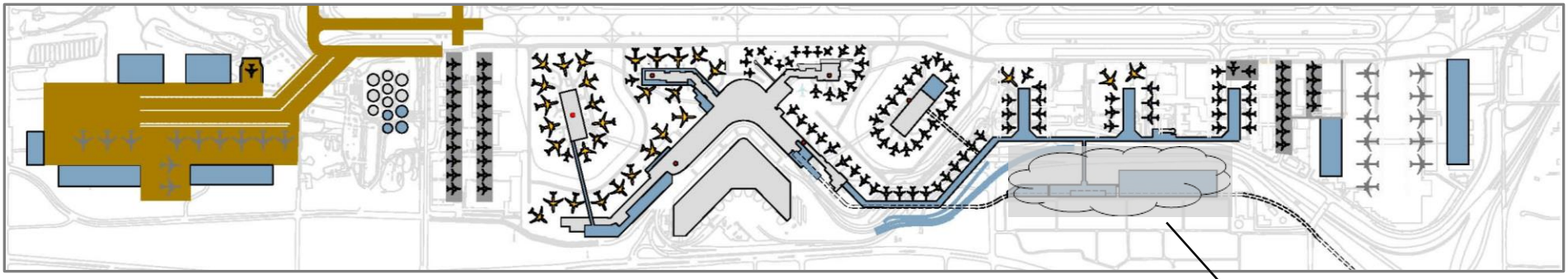
Best Option to meet program needs and operational layout

- Description
  - New widebody international gates on Concourse B
  - Extension of Concourse D to three piers to the north
  - Aircraft hold positions provided to the north and south
  - SASA accommodates displaced aircraft maintenance and cargo growth
- Primary advantages
  - Meets program needs
  - Best operational layout



Light gray– existing facilities
Dark blue – potential new facilities

NOTE: Development concepts illustrate major plan elements independent of 1 vs 2 terminals

Development Concepts - Terminal

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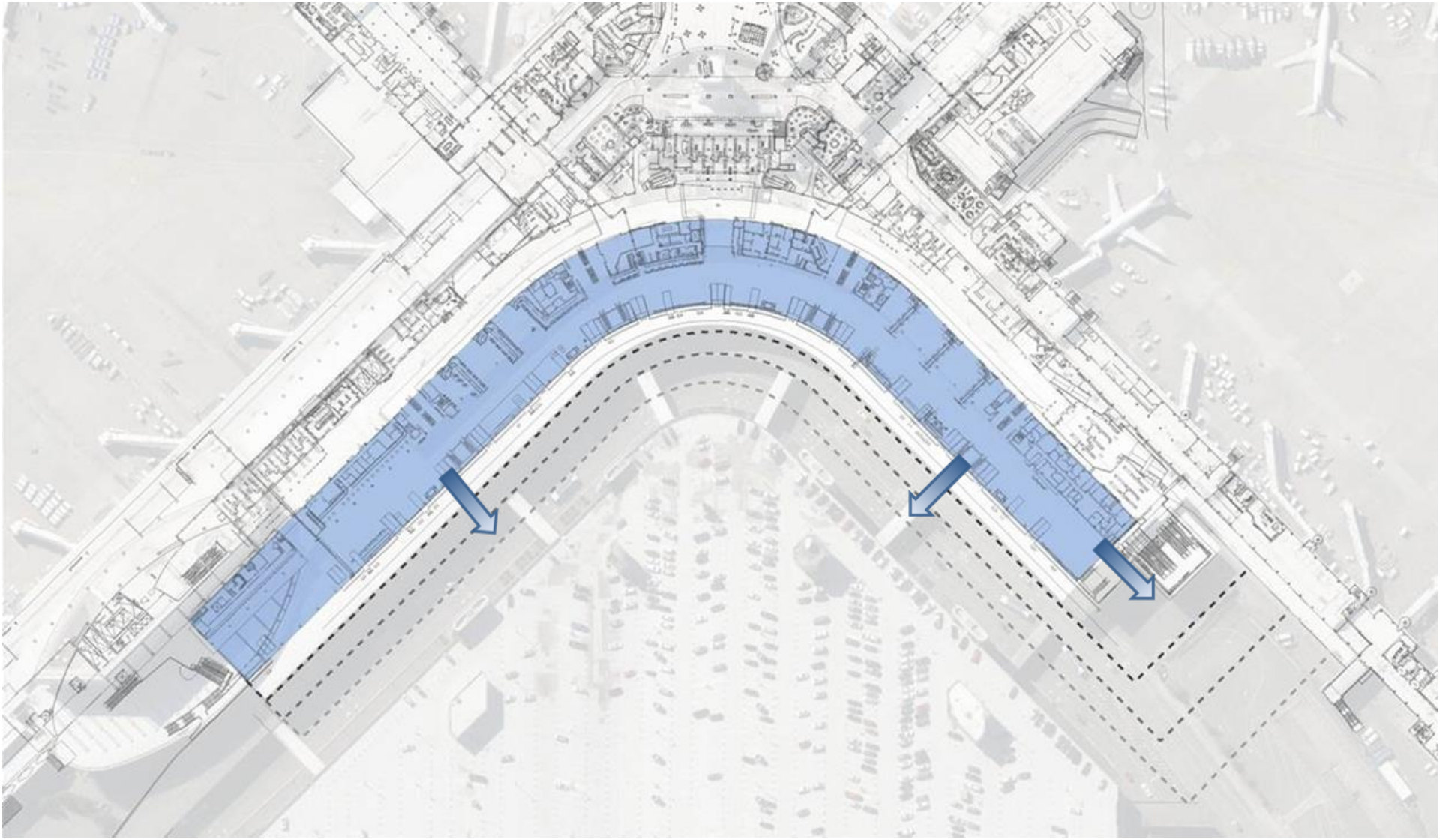
How Best to Expand the Main Terminal



Development Concept – Terminal/Landside

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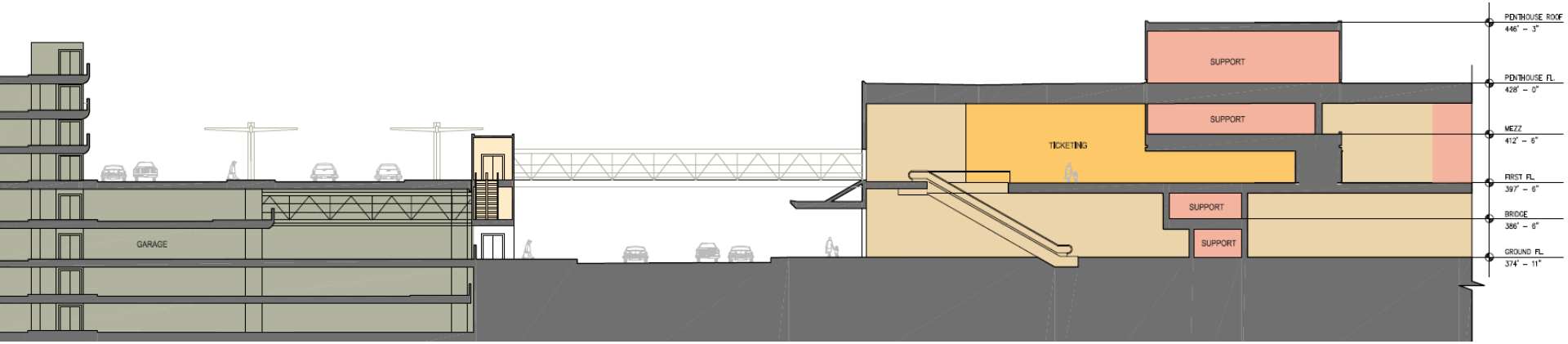
Option for one terminal concept

Relocate Upper Drive into fifth floor of garage and remove

Floors six - eight above

- Adequate Upper & Lower Drive capacity
- Requires rebuild of Lower Drive, Service Tunnel & Main Terminal support structure
- Requires relocation of elevator cores
- Loss of long-term parking stalls and revenue



Development Constraints - Landside

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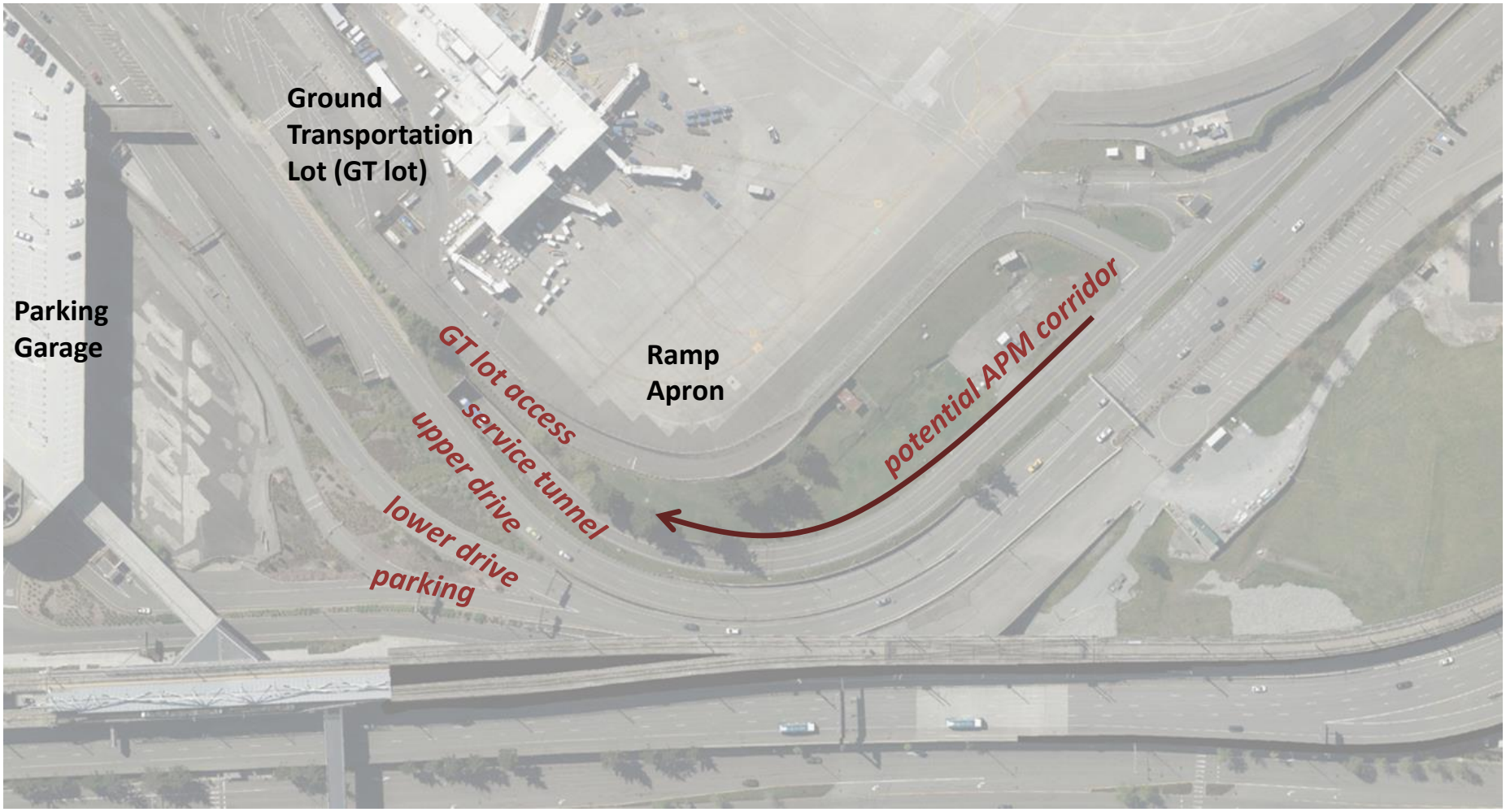
Addressing 'Chokepoint" for Vehicle Traffic



Mid-Term Landside Strategy

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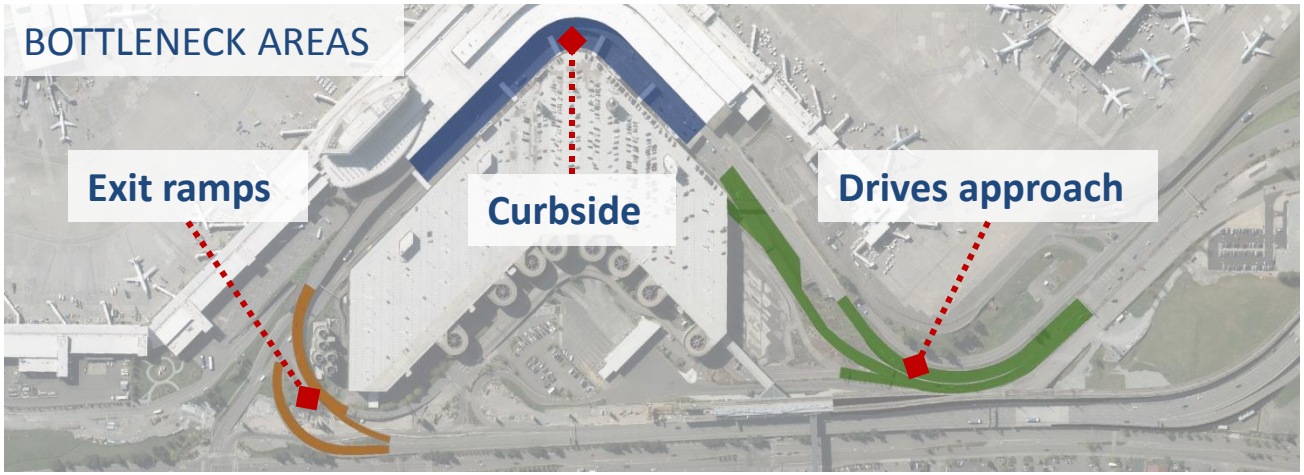
Combination of Operational and Lower-cost Solutions Identified

Problem:

- Existing terminal roadways and curb will need to accommodate increased demand in near- to mid-term
- Three bottleneck areas may all need to be addressed or congestion will persist and Level of Service (LOS) will rapidly diminish further

Goal:

- Leverage operational strategies before phasing in capital projects
- Minimize throwaway and maximize flexibility through relatively low cost capital projects that are no regrets under one or two terminal solutions



Environmental Stewardship

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Reducing Environmental Impact of Airport Operations

Airline Partners: Port provided infrastructure for pre-conditioned air and electric ground service equipment

Fleet vehicles: renewable natural gas buses, alternative fuel vehicles required for taxi fleet

Facilities: LED lighting replacement and electric vehicle charging stations in parking garage, and central mechanical plant upgrades

Aquatic Resources: Completed Airport stormwater retrofit, advanced wetland mitigation development through aggressive management

- **1st Airport in North America to Receive Airports "Carbon Accreditation Certification"**
- **2014 Best Workplace Recycling Award – Honor Roll** *King County Solid Waste Division*

Sea-Tac Airport Sustainability Goals and Objectives

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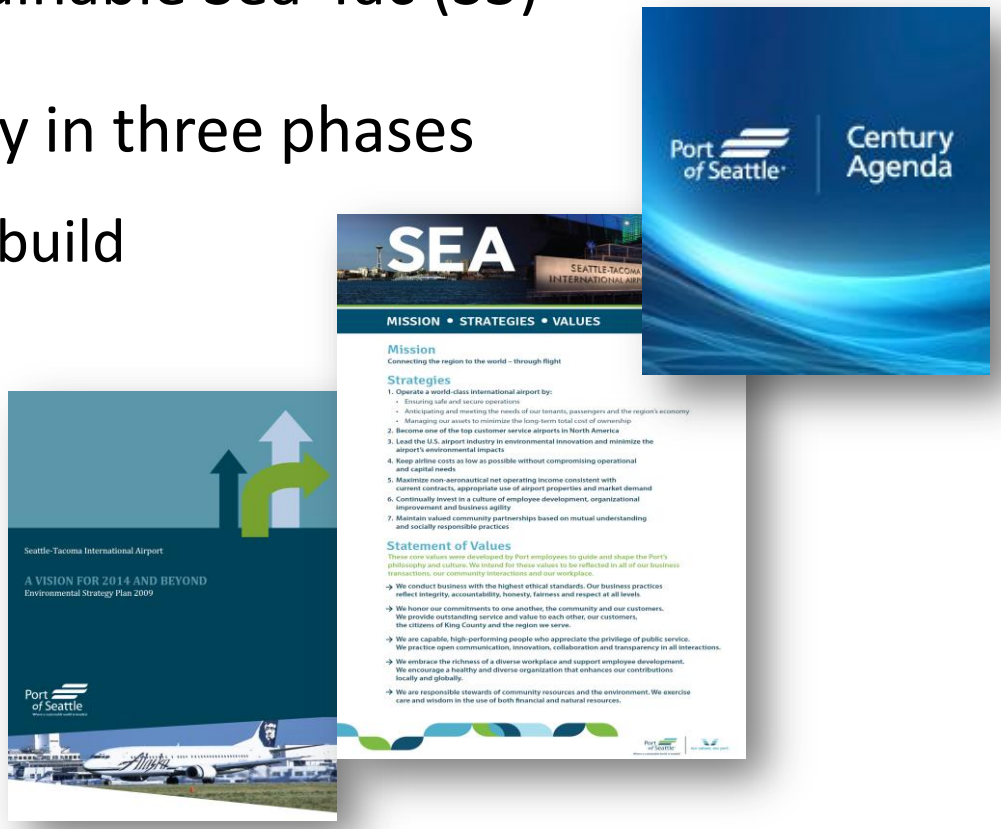
Integrating sustainability into the Master Plan

- Master Plan work is designed to meet sustainability goals in the Century Agenda, Airport's strategic goals, and in our new Strategy for a Sustainable Sea-Tac (S3)
- Integrating sustainability in three phases
  - What and where we build
  - How we build
  - How we operate



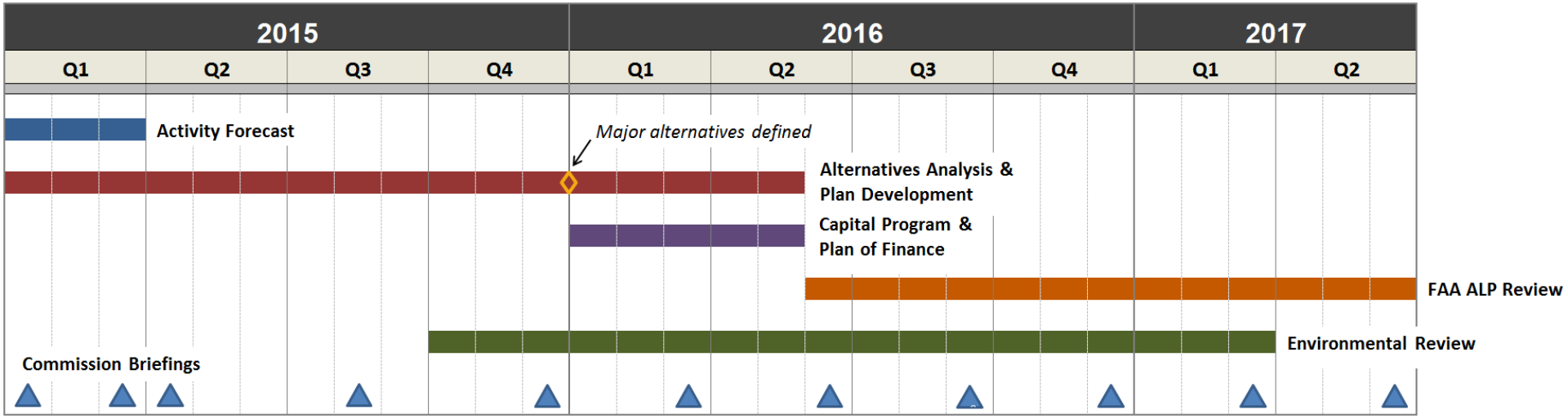
Next Steps in Sustainability Process

Green Buildings and Sustainable Operations

- **Evaluate the gap between goals and future emissions:**
  - Building a spreadsheet model that measures energy, water, GHGs, and operational costs
  - Entering final concepts and evaluating building options (BAU, LEED Silver, net zero/neutral)
  - Estimate future emissions based on energy and water use
- **Develop management approaches to reduce the gap**
- **Conduct formal environmental review for SEPA/NEPA**

Planning Schedule

- **Activity forecast** *(completed Q1 2015)*
- **Alternatives analysis & development alternatives(s)** for major elements *(Q4 2014 – Q4 2015)*
  - Iterative process, finalizing facility requirements and defining development alternatives
  - Commission engagement at key decision points
- **Development of integrated preferred alternative(s)** *(Q4 2015 – Q2 2016)*
  - Constructability assessment
  - Phased implementation plan
  - Planning level cost estimates
- **Program plan of finance** *(Q1 2016 – Q2 2016)*
- **FAA ALP review** *(Q2 2016 – Q2 2017)*
- **Environmental review** *(Q4 2015 – Q1 2017)*



Public Outreach

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Engaging Stakeholder Interests

- **Community Open houses to engage local and regional audience**
  - —1st Series: Process, goals, forecast, and development concepts (Q2 2015)
  - —2nd Series: Preliminary Alternatives (Q1 2016)
  - —3rd Series: Preferred Development Alternative (Q2 2016)
- **Forums and focus groups to reach specialized audiences**
  - —Local & regional planners on transportation issues in SAMP
  - —Targeted audiences on sustainability and social responsibility
  - —Local business outreach and economic development
- **Federal, state, regional and local government briefings**
- **Regional and local community groups, associations**
- **Ongoing engagement with tenants, operators, FAA, TSA**

Questions?

For more information, visit the Port's SAMP webpage and sign up to receive updates:

www.portseattle.org
or
http://bit.ly/airport-master-plan