

The Future of Airport Transportation

Port Commission Roundtable

November 22, 2016

Councilmember Claudia Balducci, King County, Sound Transit Board

Peter Rogoff, Sound Transit CEO

Rob Gannon, King County Metro General Manager

Craig Stone, WSDOT Gateway Program Administrator

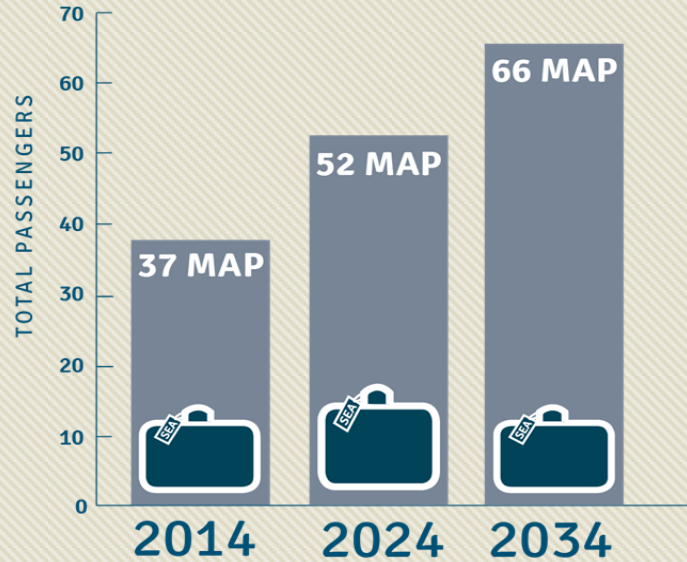
Bryan Mistele, Inrix President and CEO

Vlad Gutman, Washington Director, Climate Solutions

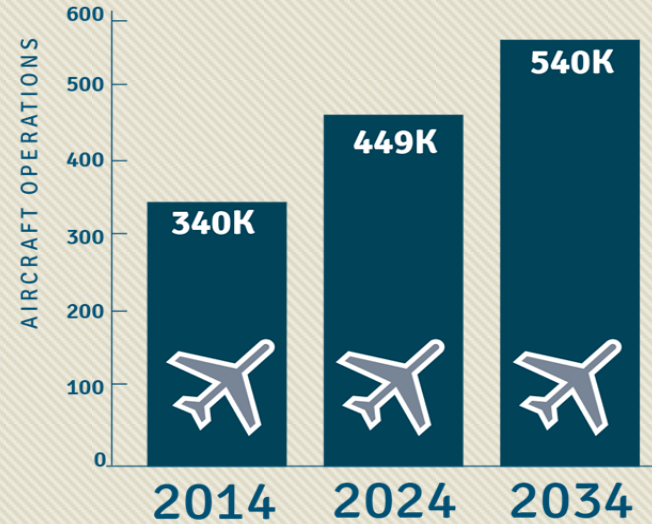
Steve Banfield, President and CEO Reach now

Master Plan - Unconstrained Activity Forecast

GROWTH IN TOTAL PASSENGERS
(BY MILLION ANNUAL PASSENGERS - MAP)



GROWTH IN AIRCRAFT OPERATIONS



Region's economy driving rapid growth in recent years
Master Plan will assess if, and plan how,
Sea-Tac can meet demand

Airport Customer Mode Choice

Approximately 70% of passengers reported using private vehicles and rental cars for Airport access

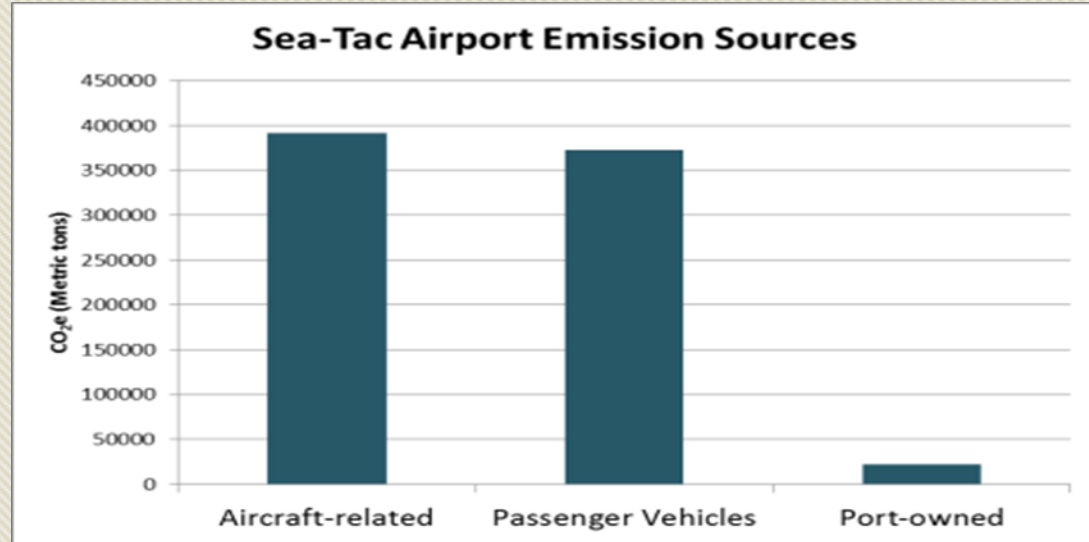
Sustainability Goal

Increase the percentage of passengers accessing the airport via environmentally-preferred modes of transportation from 60% in 2014 to 70% in 2020

Sustainability Goals & Mode Shift Strategies

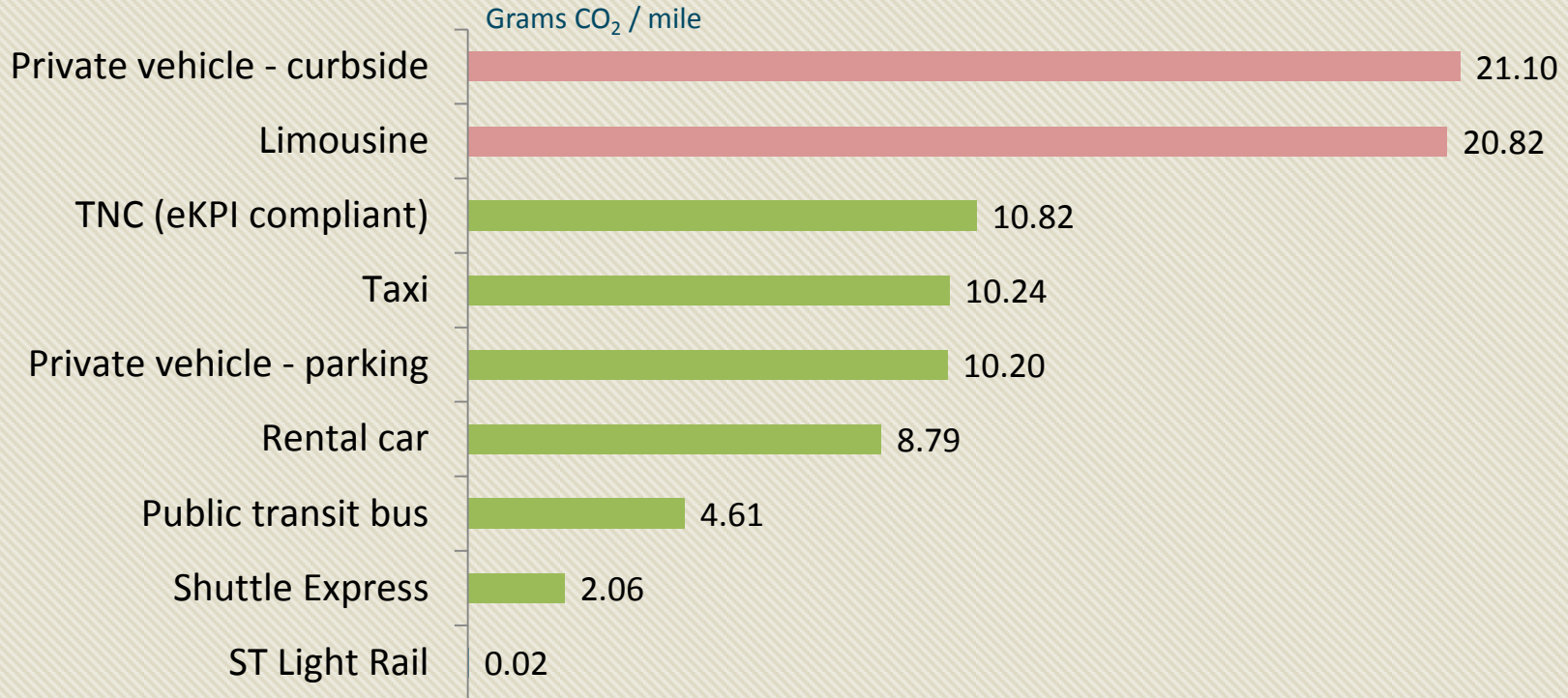
Why target passenger vehicles?

- Major contributor to greenhouse gas emissions
 - Nearly equivalent to aircraft-related emissions
- Congestion on the airport drive
 - Risk to airport operations
 - Negative passenger experience



Sustainability Goal & Mode Shift Strategies

Environmental impact by travel mode



Mode Split Characteristics at Airports

Best Practice report in airport ground transportation*. On average:

- 71% of pax use is private transportation

Mode split by region

- N America:
 - 49% car
 - 15% rental cars
 - 14% taxi/limo
 - 12% bus/shuttle
- Europe:
 - 37% car
 - 20% taxi/limo
 - 17% bus/shuttle
 - 16% subway/rail
 - 5% rental car
- Asia: about same as Europe

* ACI ASQ 2012

Passenger travel mode to Sea-Tac

	2014	2015	2016 ^a
Private vehicle - curbside/hourly parking	39%	39%	40%
Private vehicle - daily parking	16%	17%	16%
Rental vehicle	15%	15%	16%
TNC	^b	2%	5%
Link light rail	5%	6%	5%
Shuttle Express	5%	5%	5%
Taxi	8%	6%	4%
Limousine	4%	1%	1%
Public transit bus	1%	1%	1%
Other	8%	7%	8%

^a 2016 data through Q3

^b w as not a response option in 2014

Source: Ongoing Enplaning Passenger Survey
Prepared by Business Intelligence

Air Passengers: Potential Transportation Issues

- Time sensitive trips with high stakes if you are late
- Peak arrival and departure times often don't line up well with transit service
- Parking availability at transit locations may be scarce or include time limits
- Vacation travelers
 - Infrequent travelers may perceived unfamiliar travel mode as risky
 - Arriving passengers may be unfamiliar with the region and our transit options
 - Larger party size and luggage makes transit less attractive
- Business travelers
 - May travel to/from the airport frequently, but cost of taxi, limo or rental car often built into travel expense and is typically a small share of total cost

Current Bus Service to Airport

King County Metro Transit (International Blvd)

- Rapid Ride A line (Federal Way)
- Route 156 (Southcenter/Des Moines)
- Route 180 (Burien/Auburn)

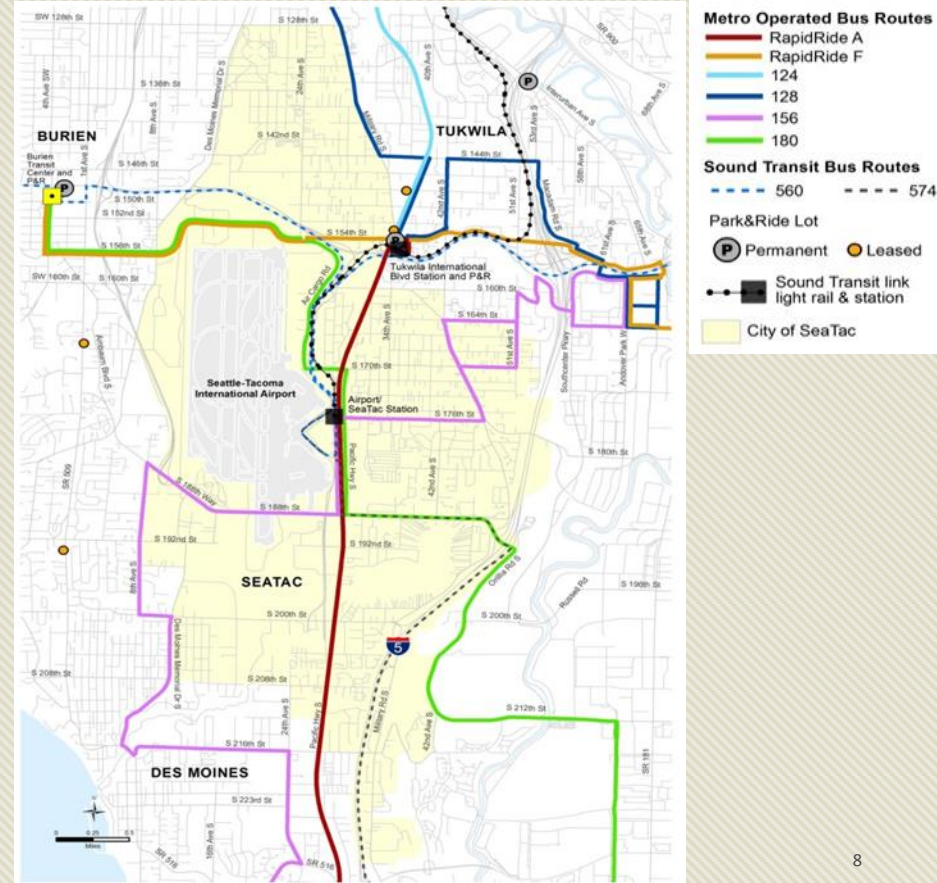
Sound Transit Regional Express Buses (Main Terminal Stop)

- Route 560 (West Seattle – Sea-Tac – Bellevue)
- Route 574 (Lakewood – Sea-Tac)

Frequency of Service

Route	Peak	Off-Peak	Evening	Sat/Sun
A Line	10 min	15 min	15 - 30 min	15/15 min
156	30 min	30 min	30 – 60 min	60/60 min
180	30 min	30 min	30 – 60 min	30/30 min
560	30 min	30 min	60 min	60/60 min
574*	30 min	30 min	30 – 60 min	30/30 min

*Route 574 also operate early AM trips arriving at SeaTac starting around 3AM (intended for Airport employees).



Sound Transit Link Light Rail

Home > Schedules > Link light rail

Weekday Saturday Sunday Stations Holidays Map

Link light rail

Link weekday schedule

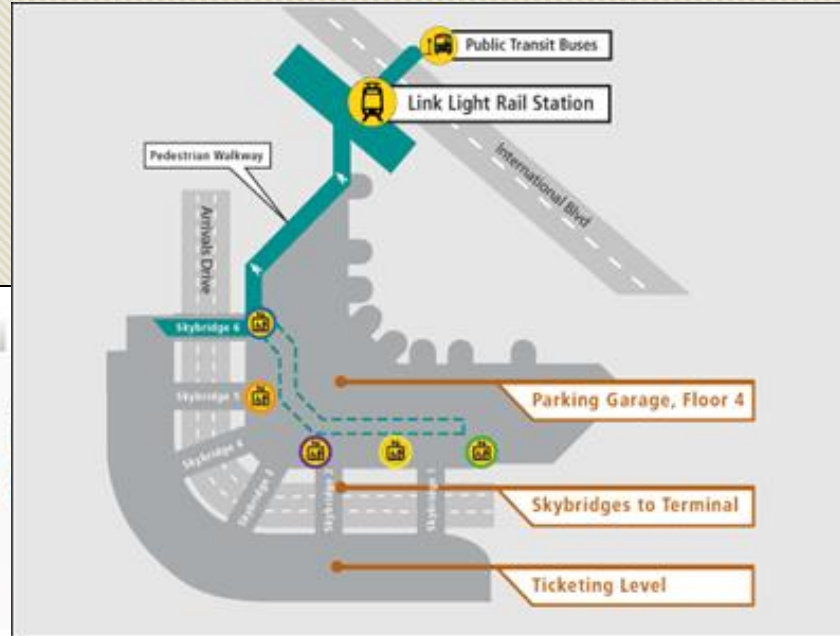
- ➔ From Sea-Tac Airport to the University of Washington (Northbound)
- ➔ From the University of Washington to Sea-Tac Airport (Southbound)

Effective Mar 19, 2016—Sep 9, 2016

Line map - to downtown Seattle

Station	Travel Time to Next Station
Sea-Tac Airport	12 min.
Tukwila International Blvd	
Rainier Beach	10 min.
Orchella	
Columbia City	9 min.
Mount Baker	
Beacon Hill	
SODO	
Stadium	
International District/Chinatown	7 min.
Pioneer Square	
University Street	
Westlake	
Capital Hill	6 min.
University of Washington	

Downtown Seattle Transit Tunnel



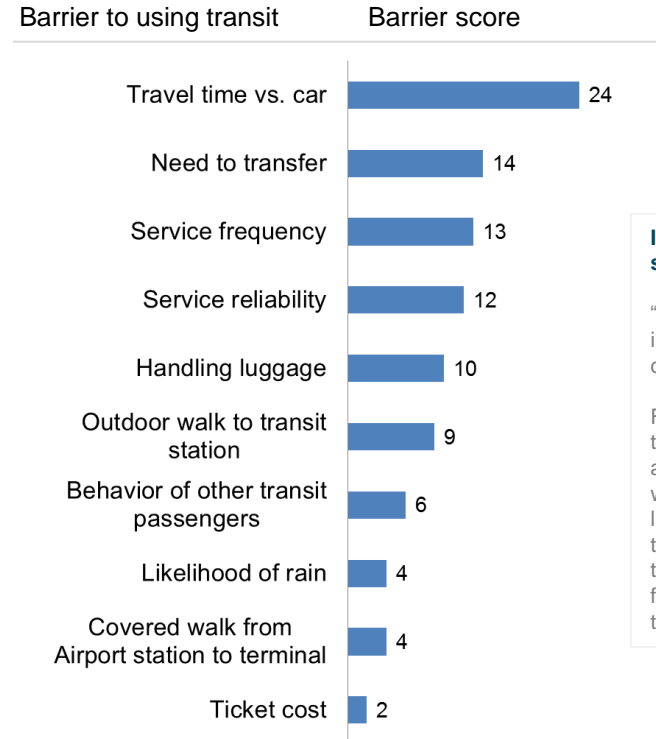
Barriers to Light Rail Use for Air Travelers

A sample of King County residents who were waiting to board aircraft at Sea-Tac read a bus-and-light-rail scenario for reaching the airport.

The travelers then completed a tablet-based self-administered survey regarding factors that could affect the difficulty of using public transit.

Additional time necessary to use public transit was largest barrier to taking transit, followed by need to transfer, and frequency of service.

The smallest barriers were weather, walk from Airport light rail station to terminal, and transit cost.



Interpreting Barrier scores:

“Barrier scores” indicate the influence of each factor.

For example, the travel time factor with a barrier score of 24 was six times more likely to be selected as the largest barrier than the covered walkway from the Airport station to terminal.

Employees: Commute Trip Reduction

Over 40% of the 18,000 badged employees reside in just 14 zip codes south and southeast of airport.

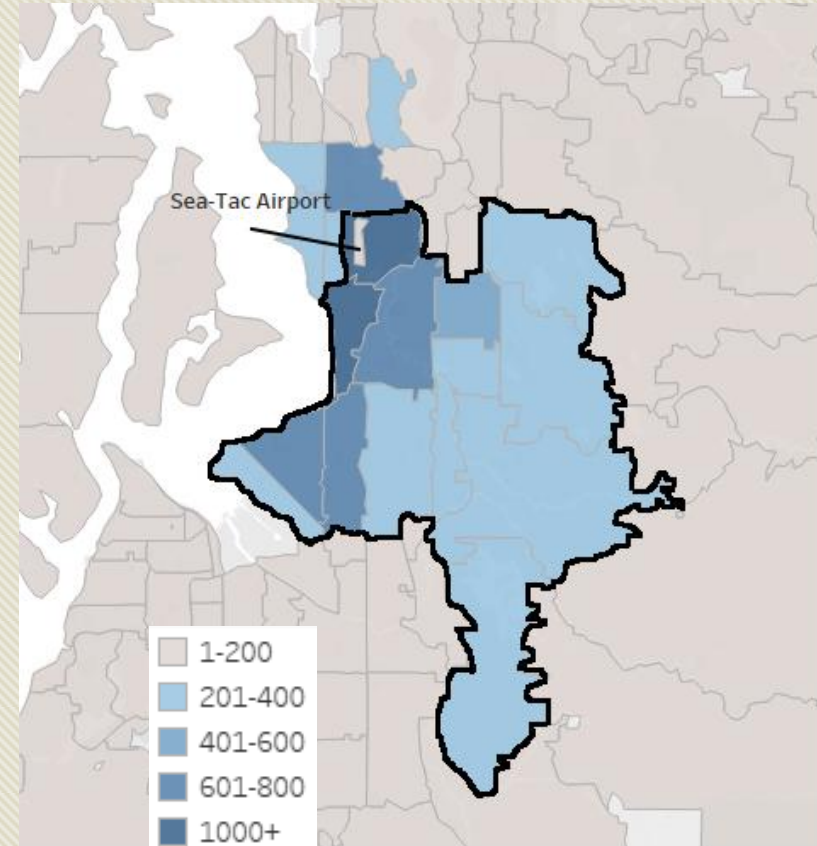
Remaining 60% of employees are spread thinly across entire Puget Sound region.

Recent Port of Seattle employee commute trip reduction trends

- Drive-alone rate is around 70% with transit around 10-15%
- Shift from carpools/vanpools to drive alone

Potential for employee commute trip reduction?

- Trip length on transit (stops enroute, frequency)
- Access to transit routes
- Time of day / shift starts and ends



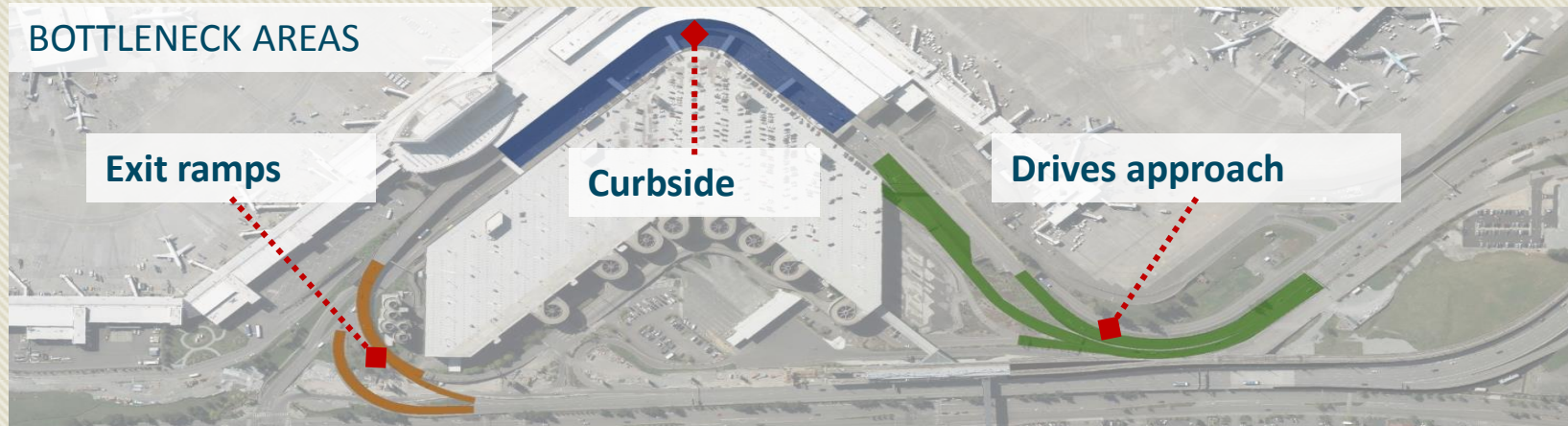
Mid-Term Landside Strategy

Problem:

- Accommodate near- to mid-term demand on existing terminal roadways and curb
- Address bottleneck areas to reduce congestion and improve Level of Service (LOS)

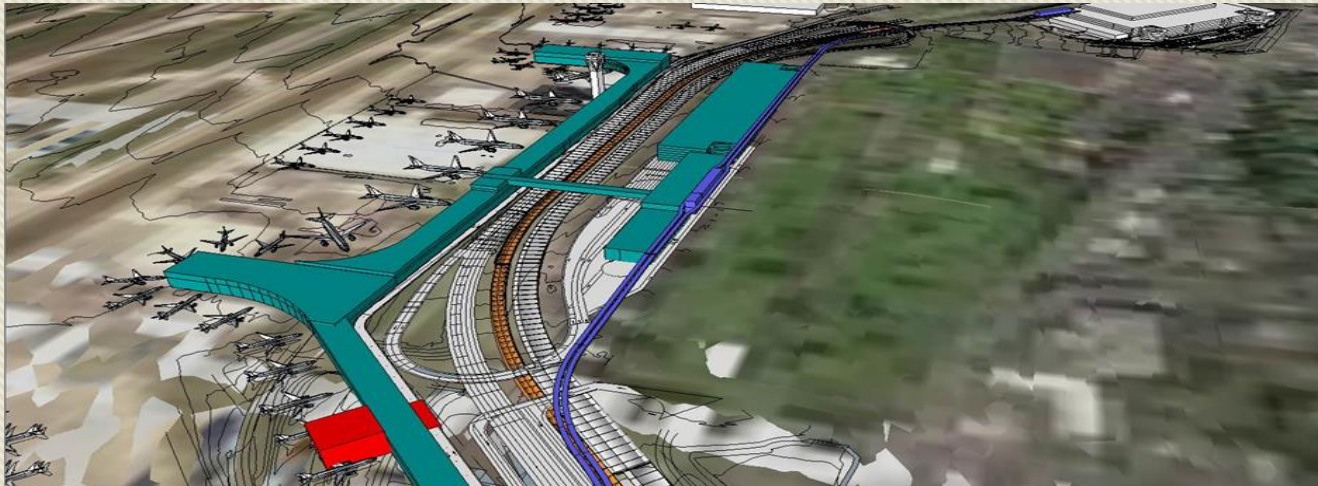
Goal:

- Leverage operational strategies before phasing in capital projects
- Seek lower cost capital projects that minimize throwaway work, maximize flexibility for either one or two terminal solutions



Proposed second terminal

- Supports independent north terminal ingress and egress
- Reduces passenger traffic and congestion at main terminal
- Served by APM or bus guideway and stations, removing rental car buses from roadway
- Provides additional regional and local access to airport



3-D model in AutoCAD set geometry of facilities in North Terminal area

How are the Port and regional transit partners already working together?

- Transportation Review Committee
- Regional Mobility Forum staff work group conceptualized
- Routing buses off of drives due to congestion
- Sound Transit's signage study underway
- Built Link to Airport (2009) and extension to south (2016), pedestrian skybridge to transit kiss 'n' ride, and city businesses
- ORCA cards subsidies for employees from POS and TSA
- Some route adjustments to compensate for employee shifts

Near-term

- Expand Link to new markets north and south
- Extend route for night-owl service
- Incorporate technology innovations
- Enhance airport connection to Link Light Rail Station
- Identify employee incentives

Long-term

- Accelerate ST3 Link extensions (north, east, south)
- Expand light rail East-West: ST3 will study future light rail extension from West Seattle to Burien, and Renton
- Explore remote park & fly
- Incorporate technology innovations