



PHILADELPHIA 2026

AIRPORTS COUNCIL INTERNATIONAL – NORTH AMERICA
ANNUAL CONFERENCE AND EXHIBITION
SEPTEMBER 14 – 17, 2026



Driving Change: Accommodating Vehicle Automation in the Airport Environment

Moderator

Naashom Marx

*Advanced Mobility Director
Woolpert, Inc.*

Panelists

Scott Ayers

*Program Management
Officer, SMS Regulatory
Compliance
Hartsfield-Jackson
Atlanta International
Airport*

Paul Horst

*Vice President of
Maintenance
Tampa International
Airport*

**Michael
O'Shaughnessy**

*Deputy Aviation Director
– Operations
Phoenix Sky Harbor
International Airport*

2:00 - 2:45 PM | September 14, 2026

WAYMO AT PHX

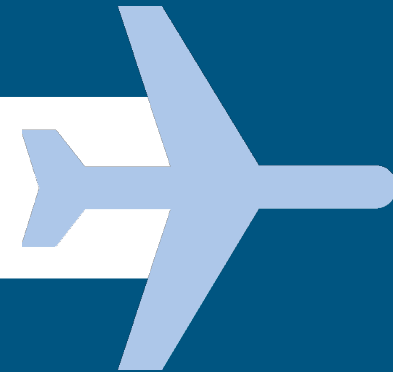
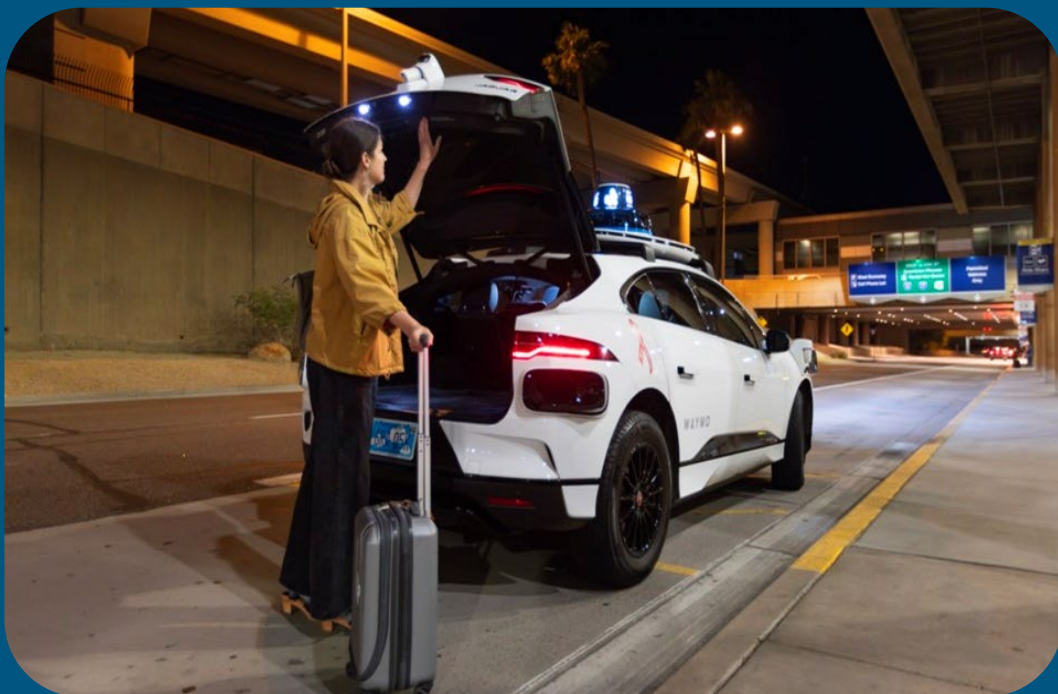
The First Airport to Offer Autonomous Service



PHX DVT EYR

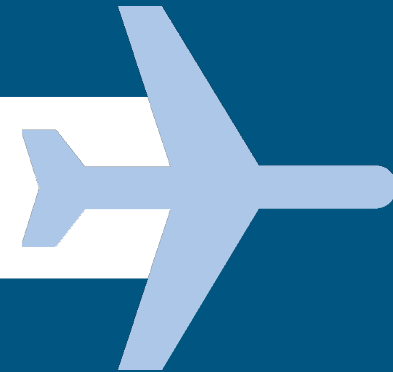


WAYMO OVERVIEW



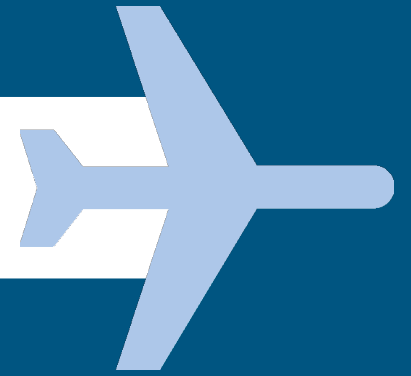
- Waymo currently serves 11 cities
- 21 additional cities coming soon
- More than 20 million rides provided

THE BEGINNING



- 3 years of planning and implementation
- Phoenix Sky Harbor
 - 24th and 44th Street
 - All terminals
 - Fully autonomous
 - Crawl, Walk, Run

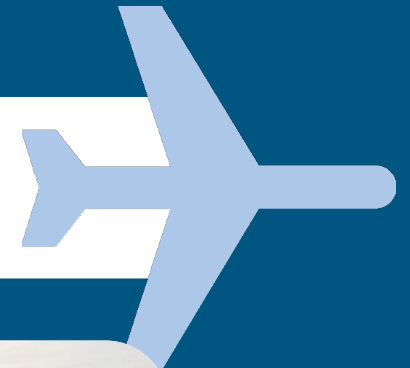
IMPLEMENTATION KEYS



- Innovative leadership
- Agreements
- Transparency
- Collaboration
- Planning



CHALLENGES



- Acceptance
- Training
- Unique issues
- Competitors



THE FUTURE



- New and more vehicles
- Highway access
- Expanding territory
- Other entrants



skyharbor.com



/PhxSkyHarbor



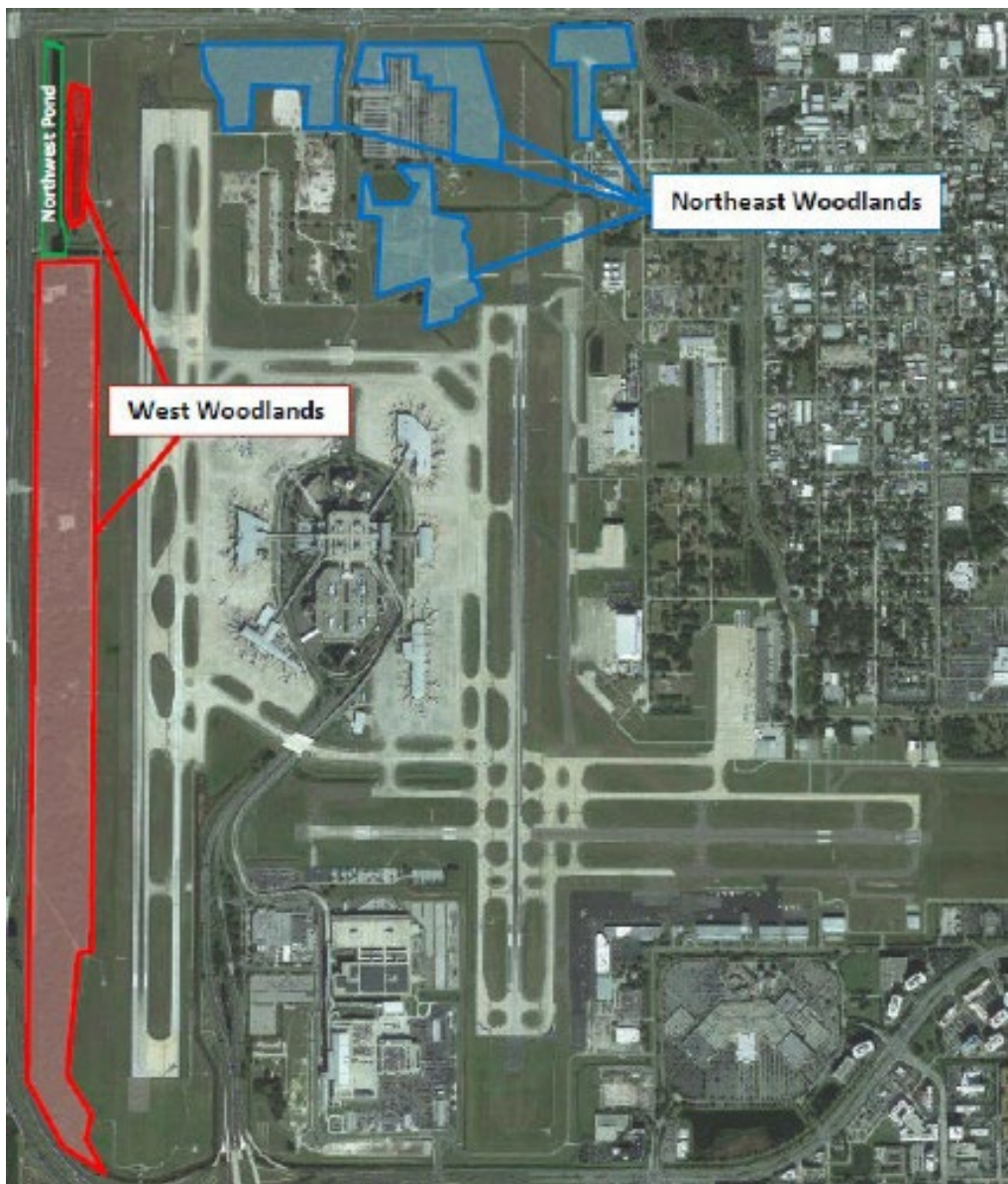
@PHXSkyHarbor



PHOENIX SKY HARBOR
INTERNATIONAL AIRPORT

America's Friendliest Airport®





TPA Campus Overview

- ➔ 3,300 acres
 - ~2,000 acres of mowing
- ➔ 3 runways
 - Parallels: 1L/19R & 1R/19L
 - Crosswind: 10/28
- ➔ 150 acres of woodlands
 - FY26 CIP to remove trees for wildlife mitigation

Autonomous Business Justification



- ➔ Staffing Considerations
 - 24 Airfield positions
 - 24 Grounds positions
- ➔ Scope of work efficiencies
- ➔ Equipment Investments

Operational Considerations

- ➔ Outside of the Fence
 - Consulting with FAA for AOA approval
- ➔ Safety/Risk Assessments
 - SMS
 - Cybersecurity
- ➔ 1-to-1 Operation
 - Human in the loop
- ➔ Team Impacts
 - Enhanced focus on core responsibilities
 - Culture



ATL SMS SRA AUTONOMOUS VEHICLE PANEL

SCOTT AYERS, PROGRAM MANAGEMENT OFFICER

September 14, 2026



HONORABLE ANDRE DICKENS
CITY OF ATLANTA MAYOR



RICKY SMITH
AIRPORT GENERAL MANAGER

AGENDA

The background of the slide features a composite image. On the left, there is a faded, high-angle view of an airport tarmac with various aircraft and ground service equipment. On the right, a prominent, brightly lit air traffic control tower stands against a clear blue sky. The tower has a cylindrical upper section with a glass-enclosed observation deck and a narrower, illuminated column below it.

Safety Risk Management

ATL Risk Matrix

ATL SRA Autonomous Example

SAFETY RISK MANAGEMENT TRIGGERS

- An incident or accident occurs
- Safety/Hazard Reporting
- Airport Projects
- Change Management (new process or procedure, equipment, or aircraft)
- Operational Triggers (trend analysis or recurring issues)
- External sources (FAA data or regulation, industry partners and associations data)
- Voluntary Self Disclosures

RISK MATRIX

Severity Levels

Criteria	Effect on <u>aircraft</u> and <u>operations</u>	Effect on <u>people</u>	Effect on airport <u>reputation</u> (corrective action response)	Loss to <u>assets</u>
5 Negligible	Some disruption to operations and services for less than 24 hours.	Minor injuries, medical treatment required	One time impact, no lasting repercussion	Loss is less than \$100,000
4 Minor	Could result in some nonfunctioning operations and services with inconvenience for 48 hours	Minor injuries, medical treatment required	Impact of community reputation and/or airport only stakeholder involvement	Loss between \$100K to \$1M in damages
3 Major	Could result in operations and services partially functioning, some systems unavailable for >=72 hours.	Minor injuries, Some hospitalizations	Impact of state/regional reputation and or multiple stakeholders and federal and state agencies.	Loss between \$1M to \$10M in damages
2 Hazardous	Could result in operations, services, and systems unavailable >=120 hours.	Large number of severe, life threatening injuries requiring hospitalizations	Impact of national reputation and or multiple stakeholders involvement, impact on operating certificate.	Loss between \$10M to \$50M in damages
1 Catastrophic	Could result in operations, services, and systems unavailable, indefinitely.	Significant number of severe life threatening injuries and fatality.	Impact of international reputation and businesses and stakeholders	Loss exceeds \$50M in losses

Likelihood Levels

Quantitative (occurrence)				
A Frequent (Occurs any time within 2 years)	B Probable (Occurs every 2-19 years)	C Remote (Occurs every 20 - 49 years)	D Extremely Remote (Occurs every 50 - 99 Years)	E Improbable (Occurs every 100 years)
Qualitative (exposure)				
Strong likelihood event will re-occur. High level of recorded incidents and/or very strong scientific evidence in our jurisdiction.	Event will occur. Regular recorded incidents and strong scientific evidence in our jurisdiction.	Event should occur at some point in time. Random recorded with no pattern and/or moderate recorded incidents and scientific evidence in our jurisdiction.	Event could occur at some point in time. Minimal recorded incidents and/or scientific evidence in our jurisdiction	Event may occur only in extreme circumstances.
Between 96% - 100% chance of occurrence in any year.	Between 51% - 95% chance of occurrence in any year.	Between 11% - 50% chance of occurrence in any year.	Between 1% - 10% chance of occurrence in any year.	Less than a .99% chance of occurrence in any year.
5A	5B	5C	5D	5E
4A	4B	4C	4D	4E
3A	3B	3C	3D	3E
2A	2B	2C	2D	2E
1A	1B	1C	1D	1E

RISK RATINGS

L (Low)	Mitigation may not be necessary	Controls such as elimination, substitution, isolation and barriers are still preferable, but these hazards may rely more on warnings, training and other devices that may require operator intervention.
M (Medium)	Mitigate on a priority basis	Controls such as elimination substitution and engineering controls are preferable. If reliance on warnings and training, these should be redundant to additional controls, or additional barriers, guards and other protective devices. (monitor controls based on severity levels)
H (High)	Senior Management attention is required	Risk is acceptable but requires a hazard mitigation plan. The mitigation plan must be presented to the risk acceptor as soon as possible, but short-term mitigation no later than 7 calendar days.
Extreme Risk	Immediate action required	The operation must be stopped until hazard mitigation is in place that reduces risks to an acceptable category. Use controls or multiples of controls (defense in depth), such as elimination, substitution or engineering controls like interlocking barrier guards, controls with built in redundancies, physical devices that do not require adjustment or operator intervention, or provide positive, ongoing indicators of operation. (monitor controls)

Safety Risk Assessment Autonomous Tug Technology

(1) Hazard#	2) Hazard Description	(7) Possible Effect (*Determine Risk)	(8) Severity/ Rationale	10) Likelihood	(12) Initial/ Current Risk	(14) Organization Responsible for Implementing Safety Requirement	(15) Predicted Residual Risk
1	Autonomous tug fails to yield right way to aircraft or multiple aircraft	Collision, Near miss, Large number of severe, life threatening injuries requiring hospitalizations , Property damage	2 - Hazardous	C - Remote	2C High Risk	DOA and Delta	2D Medium Risk
4	Autonomous tug drives in between aircraft and marshallers	Collision, Near miss, Large number of severe, life threatening injuries requiring hospitalizations, Property damage	2 - Hazardous	C - Remote	2C High Risk	DOA and Delta	2D Medium Risk
6	Autonomous tug deviates off the NLVR into a movement area	Surface incident, Collision, Near miss, Large number of severe, life threatening injuries requiring hospitalizations, Property damage, Impact on aircraft operations	2 - Hazardous	C - Remote	2C High Risk	DOA and Delta	2D Medium Risk
10	Autonomous tug technology gets hacked and used to commit unsafe acts	Collision, Near miss, Large number of severe, life threatening injuries requiring hospitalizations , Property damage, Impact aircraft and ground vehicle operations	2 - Hazardous	C - Remote	2C Medium Risk	DOA and Delta	2D Low Risk
23	Autonomous tug and control room lose communication, or tug receives incorrect routing instruction	Unplanned stop on the NLVR or proceeding on an incorrect route, Surface incident, Impact aircraft and ground vehicle operations	2 - Hazardous	C - Remote	2C High Risk	DOA and Delta	2D Medium Risk

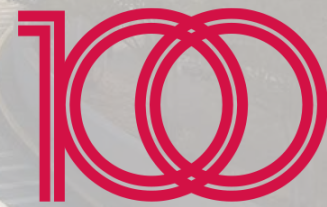
Safety Risk Assessment Autonomous Tug Technology



16 SRA Panel Members -10 Hours
24 Hazards : 4 High Risk, 1 Medium Risk, 19 Low Risk

THANK YOU

CENTENNIAL CELEBRATION



YEARS
CENTENNIAL
CELEBRATION  Hartsfield-Jackson
Atlanta International Airport
1925 - 2025