

Port of Portland International Airport

Intelligent Transportation System Plan



Project Briefing
September 5, 2001



Agenda



- Goals and objectives of briefing
- Progress to date
- Project system descriptions
- System phasing priorities
- Next steps
- Questions and comments



Goals & Objectives of Today's Briefing



- Present preferred systems
 - Recommended implementations
 - Overview of system components
 - Cost Estimates
- Review system prioritization criteria
- Review prioritization of systems



Progress to Date



- ➔ Systems inventory
- ➔ Needs identification
- ➔ Airport ITS white paper
- ➔ Preliminary ITS solutions identification
- ➔ System prioritization
- ➔ Detailed system descriptions

PDX ITS Plan



Project Review

- PDX 1: Commercial Roadway Access Management System
- PDX 2: Parking Shuttle Bus Management
- PDX 3: Taxi/Limo Dispatch System
- PDX 4: Driver/Vehicle Permit Management System
- PDX 5: Parking Information System
- PDX 6: Parking Exit Management System
- PDX 7: Parking and Roadway Surveillance
- PDX 8: Traveler Information System
- PDX 9: Archived Data Collection and Management System



PDX 1: Commercial Roadway Access Management System

The Commercial Roadway Access Management System provides PDX operations staff with the ability to control and accurately monitor commercial vehicle activity on the terminal drives.

- System requires replacement
- AVI based system to replace current "swipe card" system
- Estimated cost - \$328K



PDX 2: Parking Shuttle Bus Management System - Phase I

The Parking Shuttle Bus Management System provides PDX operations staff with the ability to monitor, record and disseminate shuttle bus locations in the Economy Lots, Long-Term Lot and Employee Lot shuttle in real-time.

→ Expansion of AVI system

- Employee Lot
- Economy Lot
- Long-Term Lot
- Terminal

→ Managerial and operational functions

→ Estimated cost - \$310K



PDX 2: Parking Shuttle Bus Management System – Phase II

- GPS/AVL enhancements
 - Real-time shuttle bus tracking
- Shuttle bus arrival time reader boards (e.g., next shuttle 3 minutes)
- Estimated cost - \$675K



PDX 3: Taxi/Limo Dispatch System

The Taxi/Limo Dispatch System provides the “starter” with the ability to monitor operations in the commercial vehicle hold lot and efficiently dispatch taxis, and limousines to PDX travelers waiting at the curbside.

- Expansion of AVI system (readers & control gates)
- Web cam for hold-lot surveillance
- Dynamic Message Sign (DMS)
- Estimated costs - \$210K



PDX 4: Driver/Vehicle Management System

The Driver/Vehicle Permit Management System provides PDX commercial vehicle operations staff with real-time access to the most current database of vehicle and driver permits.

- Driver/Vehicle Database integration
- Workstation at curbside
- Hand-held PDA's
- Estimated cost - \$65K



PDX 5: Parking Information System – Phase I

PDX's Parking Information System enhances the efficiency of parking operations and customer service by providing travelers with real-time availability and guidance information.

Parking Availability by Facility

- ➔ Parking DMS to guide parking patrons to available parking
 - 2 on NE Airport Way
 - 1 on NE 82nd Ave
- ➔ Highway Advisory Radio (HAR) replacement
- ➔ Web Site enhancements
- ➔ Telephone hotline
- ➔ Estimated cost - \$580K



PDX 5: Parking Information System – Phase II

Parking Availability by Level (Garage Only)

- ➔ Parking Availability Signs - Space count by level (e.g., level 4 – 135 spaces)
 - Inside entrance plaza
 - Exit points of helix (entrance to level)
- ➔ Estimated cost - \$370K



PDX 5: Parking Information System – Phase III

Parking Availability by Space (Garage Only)

- ➔ Comprehensive real-time parking availability and guidance information
 - Space count and directional signs at decision points
 - Individual space detectors and indicator lights
- ➔ Estimated cost - \$2.1 Million



PDX 6: Parking Exit Management System

The Parking Exit Management System reduces exit delays and increases the efficiency of the exit plaza.

→ Scheidt & Bachmann Enhancements

- Pay-on-Foot
- Credit In-Credit Out

→ Pay-On-Foot: ~\$3M

→ Credit In-Credit Out - \$50K



PDX 7: Parking and Roadway Surveillance System – Phase I

The Parking and Roadway Surveillance System provides PDX ground transportation operations and planning staff with enhanced tools for real-time ground transportation management and archive data tools

- Collection of real-time operational and archival data
- Web cams
 - Parking exit plaza
 - NE Airport Way
 - Terminal drives
- Detectors – various locations
- Estimated cost - \$285k



PDX 7: Parking and Roadway Surveillance System – Phase II

- ➔ Dynamic Message Sign (DMS)
 - Traveler advisories and public service announcements
- ➔ Estimated cost - \$205k



PDX 8: Traveler Information System – Phase I

The Traveler Information System will foster efficiency and enhanced customer service for enplaning and deplaning PDX travelers by providing real-time and static regional traveler information.

- Traveler information monitors near Pay-on-Foot stations
 - Regional traffic conditions
 - Web-based traveler information – ODOT's site the most likely candidate
- Estimated cost - \$150K



PDX 8: Traveler Information System – Phase II



- Additional traveler information monitors
 - Rental car facilities
 - Air-Trans Center
- Estimated cost - \$75K



PDX 9: Data Collection and Management System

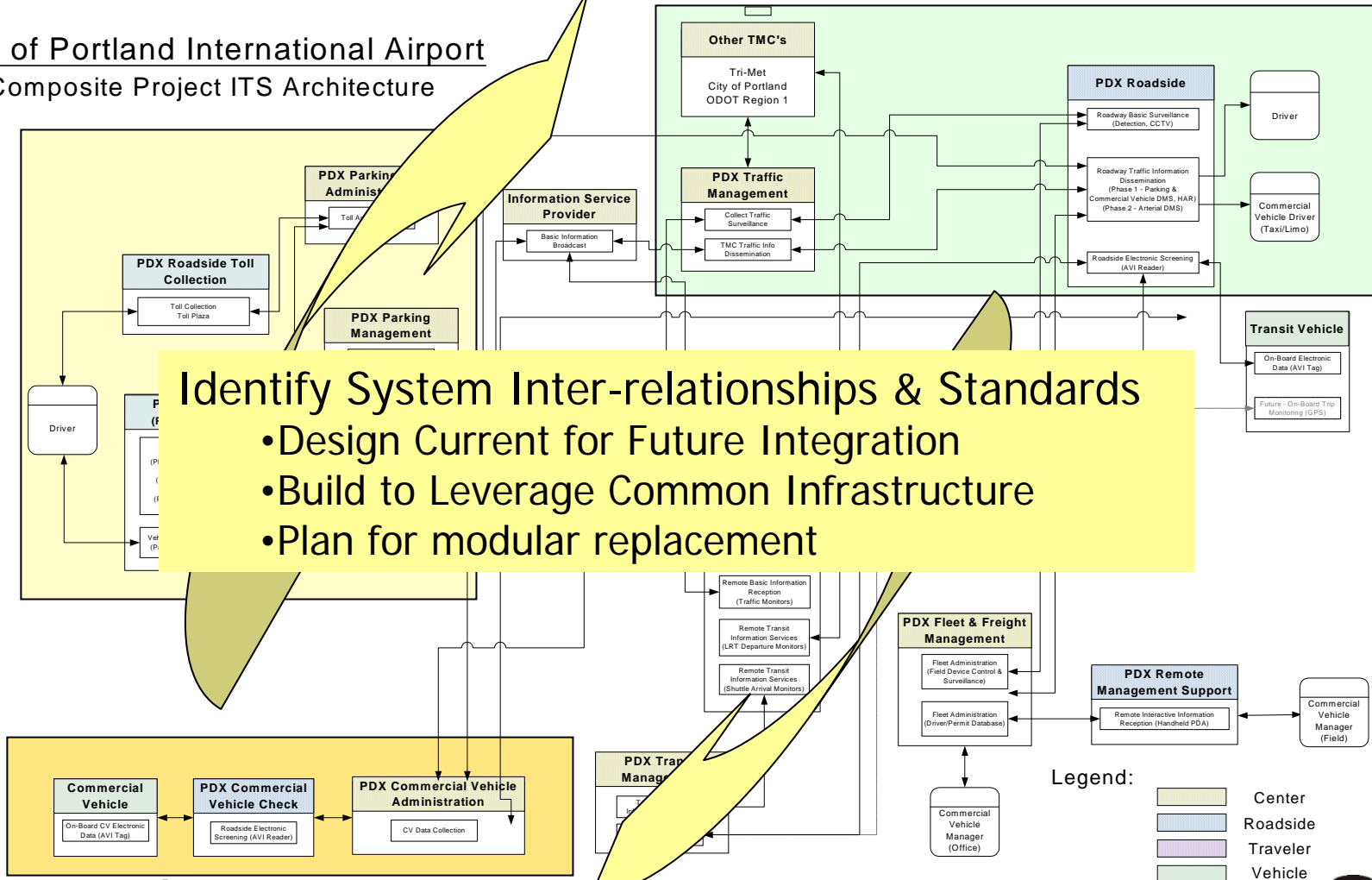
The Data Collection and Management System provides PDX staff with archive data for operations and planning activities.

- Repository for data collected by landside transportation systems
- Priority need for traffic monitoring data
- Plan development is critical first step
- Estimated cost - \$300K



System Architecture

Port of Portland International Airport Composite Project ITS Architecture



PDX Prioritization Criteria

- ➔ Customer Service
- ➔ Enhanced Operations
- ➔ Capital Cost
- ➔ Systems Synergy
- ➔ Benefit/Cost
- ➔ Cost Savings
- ➔ System Reliability
- ➔ System Flexibility

Does the project enhance the level of customer service provided to PDX travelers and other customers?

Does the project enhance current PDX operations?

Order of magnitude comparison of project costs – higher cost equals lower rating.

Can the functionality provided by the system support other operations or systems (e.g., AVI component of commercial roadway access management supporting taxi/limo dispatch)?

Does the system show potential for significant benefits with minimal capital investments?

Does the system help PDX to perform normal operations (taxi/limo dispatch) in a more cost effective manner?

Will the system require significant expenditures for normal operations and management?

Can the system be adapted as PDX's needs change or expand in the future?



Criteria Ranking – Consumer Reports Method

- 1 Excellent
- 2 Good
- 3 Moderate
- 4 Limited
- 5 Poor



Criteria Application



Port of Portland International Airport Intelligent Transportation Systems Project Prioritization - Criteria Evaluation		Customer Service	Enhanced Operations	Capital Cost	System Synergy	Benefit/Cost	Cost Savings	System Reliability	System Flexibility	Weighted Performance
System		20	20	10	5	15	10	10	10	100
Criteria Weighting		20	20	10	5	15	10	10	10	100
PDX 1: Commercial Roadway Access Management System		○	○	○	○	○	○	○	○	○
PDX 2: Parking Shuttle Bus Management	Phase I	○	●	●	○	●	●	○	○	●
	Phase II	●	●	●	●	●	●	○	○	●
PDX 3: Taxi/Limo Dispatch System		○	○	○	●	●	●	○	○	○
PDX 4: Driver/Vehicle Permit Management System		●	○	○	○	○	○	○	○	○
PDX 5: Parking Information System	Phase I	○	○	●	○	○	○	○	○	○
	Phase II	○	●	●	●	●	●	○	○	○
	Phase III	○	●	●	●	●	●	○	○	○
PDX 6: Parking Exit Management System		○	○	●	●	○	○	○	○	○
PDX 7: Parking and Roadway Surveillance	Phase I	●	○	○	○	○	○	○	○	○
	Phase II	●	○	○	○	○	●	○	○	○
PDX 8: Traveler Information System	Phase I	○	●	○	○	○	●	○	○	○
	Phase II	○	●	○	○	○	●	○	○	○
PDX 9: Archived Data Collection and Management System		●	○	○	○	○	○	○	○	○



10 Year Phased Cost Summary



Port of Portland International Airport				
<u>Intelligent Transportation Systems</u>				
Project Cost Summary				
System	Short Term	Medium Term	Long Term	TOTAL
	1 - 3 Years	4 - 6 Years	7 -10+ Years	
PDX 1: Commercial Roadway Access Management System	\$ 327,500	\$ -	\$ -	\$ 327,500
PDX 2: Parking Shuttle Bus Management				
Phase I	\$ -	\$ 308,000	\$ -	\$ 308,000
Phase II	\$ -	\$ -	\$ 676,000	\$ 676,000
PDX 3: Taxi/Limo Dispatch System	\$ 211,000	\$ -	\$ -	\$ 211,000
PDX 4: Driver/Vehicle Permit Management System	\$ -	\$ 65,000	\$ -	\$ 65,000
PDX 5: Parking Information System				
Phase I	\$ 581,000	\$ -	\$ -	\$ 581,000
Phase II	\$ -	\$ 371,000	\$ -	\$ 371,000
Phase III	\$ -	\$ -	\$ 2,070,000	\$ 2,070,000
PDX 6: Parking Exit Management System	\$ 3,491,000	\$ -	\$ -	\$ 3,491,000
PDX 7: Parking and Roadway Surveillance				
Phase I	\$ 286,000	\$ -	\$ -	\$ 286,000
Phase II	\$ -	\$ 206,000	\$ -	\$ 206,000
PDX 8: Traveler Information System				
Phase I	\$ 149,000	\$ -	\$ -	\$ 149,000
Phase II	\$ -	\$ 74,000	\$ -	\$ 74,000
PDX 9: Archived Data Collection and Management System	\$ -	\$ 300,000	\$ -	\$ 300,000
	\$ 5,045,500	\$ 1,324,000	\$ 2,746,000	\$ 9,115,500



Next Steps



- ➔ Revise Criteria Evaluation (as necessary)
- ➔ Refine PDX ITS Architecture
- ➔ Develop Draft ITS Plan (Late September)



Questions & Comments

