

Statewide Rail Framework Study

Rail Technical Advisory Team

March 25, 2009

Agenda

- Morning Session - Rail Technical Advisory Team
 - Status of study
 - Key issue identification summary
 - Facilitated discussion on issues

- Afternoon Session - Joint Session
 - Overviews of Statewide Rail and Commuter Rail studies

Rail Framework Status

- Preliminary identification of key issues
- Outreach efforts
- Existing conditions and studies review
- Passenger and freight demand forecasting
- Next steps



Preliminary Key Issues Identification and Discussion

Preliminary Key Issues

- Systems Planning
- Policy
- Operations
- Project Implementation
- Sustainability



Key Issue: Systems Planning

- Identification and distribution of demand
- Coordination with commuter rail planning
- Multimodal connections
- Mode shift
- Emerging new international markets
- Customs/Homeland Security
- Interstate coordination
- Right-of-way preservation



Key Issue: Operations

- Safety
- Shared rights-of-way
- Motive power and technology Issues
- Positive Train Control (PTC)
- Noise
- Class I/Shortline railroads and branch connections



Key Issue: Project Implementation

- Construction schedules/Implementation timeframes
- Funding sources
- Environmental clearance
- Economic development
- Authority and Responsibility
- Planned new facilities
- Public/Stakeholder support



Key Issue: Sustainability

- Energy efficiency
- Clean technologies
- Focused growth
- Long-term viability



Key Issue: Policy

- Rail as a transportation priority
- Passenger and freight relationship
- Federal and state oversight relationships
- Land use policy
- Cost allocation for rights-of-access
- Interstate operating agreements
- Competitive advantages
- Private sector investment
- Oversight and governance



Outreach Efforts

ADOT/MAG Coordination

- Monthly meetings
- Coordination with Class I railroads
- Areas of common interest



Stakeholder Interviews

- Union Pacific Railroad
- BNSF Railway
- Maricopa Association of Governments
- City of Phoenix Economic Development Department
- Amtrak
- Federal Railroad Administration
- Pima Association of Governments
- Border States Coordination:
 - California
 - Nevada
 - Utah
 - New Mexico
 - Sonora

Surveys/Focus Groups

- Survey available through March 31
 - 563 surveys sent
 - 126 currently completed
- Focus Groups scheduled
 - Central Area: March 25
Phoenix, AZ
(as part of RTAT and Commuter Rail Workshop)
 - Southern Area: April 16
Tucson, AZ
 - Northern Area: April 24
Flagstaff, AZ



Existing Conditions and Studies Review

Related Studies Review

- Summarized studies relative to the physical, social, and economic conditions that affect the rail environment in Arizona
 - Passenger Rail Studies
 - Commuter Rail Studies
 - Freight Rail Studies
 - Port Logistics Studies
 - Local Plans and Policies
- Provided input to preliminary key issues identification



Case Studies Examined

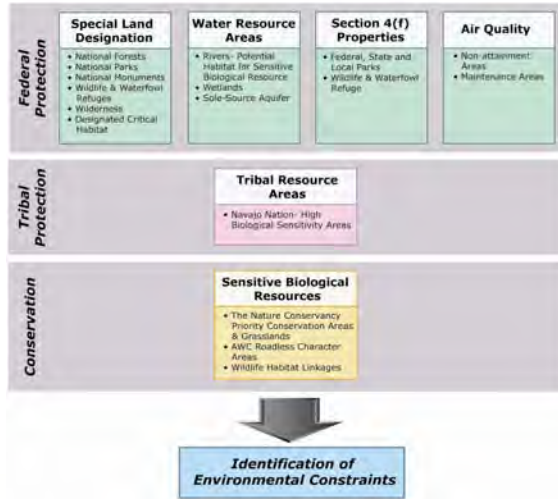
- Comparative analysis of intercity rail systems across the western United States
- High-speed rail corridor designations



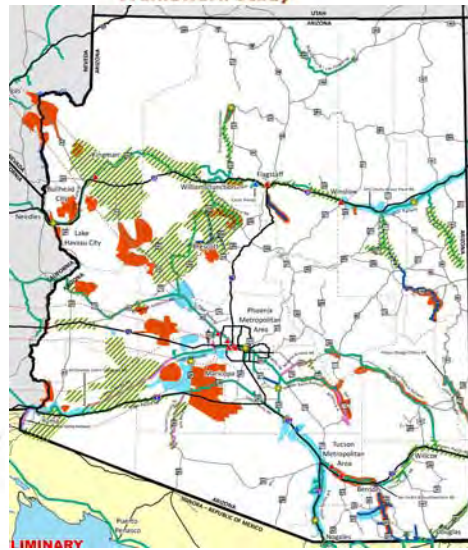
Environmental Resource Categories Evaluated under National Environmental Policy Act (NEPA) of 1969

- Biological resources
- Wetlands and watercourses
- Wild and scenic rivers
- Water quality
- Section 4(f) resources
- Air quality
- Land use
- Social impacts
- Socioeconomics
- Environmental justice
- Farmlands
- Noise
- Aesthetics and visual impacts
- Hazardous materials
- Historic, archaeological, and cultural resources
- Construction impacts
- Cumulative impacts





Statewide Inventory of Environmental Constraints



Environmental Constraints



Air Quality Non-attainment and Maintenance Areas

-  Carbon Monoxide Maintenance
-  Ozone 8-Hour Non-attainment
-  Particulate Matter 10 Non-attainment
-  Particulate Matter 10 Maintenance
-  Sulfur Dioxide Non-attainment
-  Sulfur Dioxide Maintenance



Source: Arizona Department of Environmental Quality,
2009

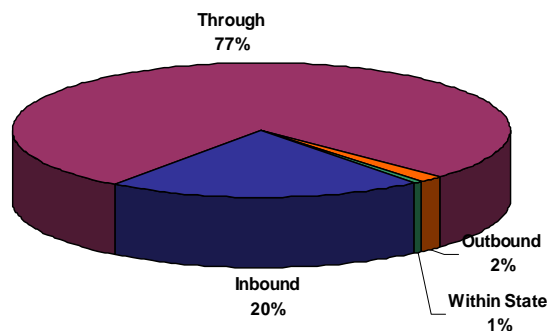
Passenger and Freight Demand Forecasting

Objectives of Freight Demand Analysis

- Key issues driving the direction of freight rail
 - Challenges restricting the implementation of a freight rail network
 - Potential opportunities to enhance a rail network
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- Develop projections to 2050
 - Screen commodities based on tonnage and value
 - Identify commodities with value added opportunities
 - Link rail freight to economic development



Distribution of Rail Traffic in Arizona 2050 Projection



Through intermodal rail traffic is projected at:

- 2010 - 83 million tons valued at \$297 billion
- 2050 - 243 million tons valued at \$894 billion

Screen Commodities on Tonnage and Value (2005)

Commodity	Total Tons	Total Units	Total Value \$	Value per Ton
Freight, All Kinds	27,246,680	2,200,760	\$105,530,000,000	\$3,873
Clothing and Textile Products	525,410	35,840	\$5,609,226,582	\$10,676
Household Goods (cooking equipment, radio/TV, etc.)	159,988	12,929	\$1,876,395,596	\$11,728
Leather Goods	28,180	1,560	\$404,779,201	\$14,364
Motor Vehicle Parts	116,786	12,360	\$1,159,471,574	\$9,928
Food Products	275,066	7,920	\$367,719,322	\$1,337

- High-valued commodities shipped through Ports of Los Angeles/Long Beach in base year
- Tonnage and total value \$ projected to double by 2030 and triple by 2050

Potential Value Added Activities by Commodity

Value Added Activities	Carload Commodities Bulk	Intermodal Commodities				
		Freight of all Kind (FAK)	Clothing Leather Goods	Household Goods	Food	Motor Vehicle Parts
Consolidation	●	●	●	●	●	●
Distribution	○	●	●	●	●	●
Labor Intensive Activities	○	●	●	●	●	●
Storage	○	●	●	●	●	●
Transloading	○	●	●	●	●	●
Reverse Logistics	○	●	●	●	○	●
Order Processing	○	○	●	●	○	●

- Activity is likely at an inland port/intermodal/distribution facility
- Activity is somewhat likely at an inland port/intermodal/distribution facility
- Activity is very unlikely at an inland port/intermodal/distribution facility

Capacity Analysis Ports of Los Angeles (POLA)/Long Beach (POLB)

Year	POLA/POLB TEUs* (millions)	POLA/POLB Capacity TEUs (millions)**	Deficiency TEUs (millions)
2020	36.2	43.2	No deficiency
2023	43.9	43.2	0.7
2030	68.7	43.2	25.5
2040	130.5	43.2	87.3
2050	247.7	43.2	204.5

* TEU=twenty-foot equivalent units

** 43.2 million TEU capacity incorporates \$3 billion in improvements from today's capacity. Future capacity expansion is limited by available land at POLA/POLB.

Arizona Advantages

- Multiple locations to serve Class I RRs
- Yuma is a prime location for an intermodal facility through Punta Colonet, Mexico
- Located on north-south NAFTA corridor



Arizona Advantages

- Sun Corridor projected to be as large as the Los Angeles market
- No inventory tax; incentive for large distribution facilities
- Foreign Trade Zones/inland ports receive property tax relief



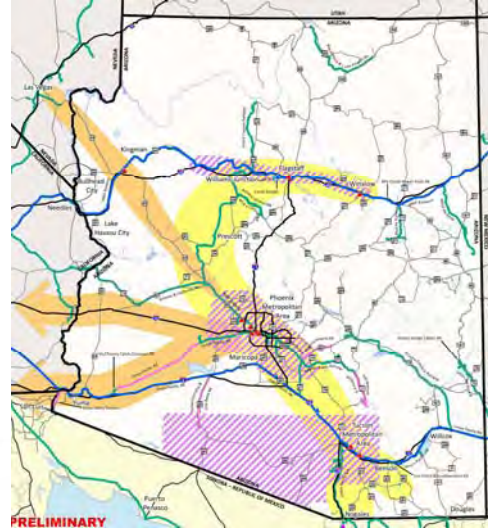
Potential Arizona Rail Corridors

- Intercity and High-Speed Rail
 - Phoenix – Tucson
 - Phoenix – Yuma
 - Tucson – Nogales
 - Phoenix – Flagstaff – Winslow
 - Phoenix – Los Angeles
 - Phoenix – San Diego
 - Phoenix – Las Vegas
- Commuter Rail
 - Phoenix
 - Tucson
 - Phoenix – Prescott
 - Flagstaff



Potential Arizona Rail Corridors

- Intercity Rail
- High-Speed Rail
- Commuter Rail



Sources of Existing Rail Passenger Forecasts

- 1998 Arizona High Speed Rail (HSR) Feasibility Study
- 2003 MAG High Capacity Transit Study
- 2007 High-Speed Passenger Rail Strategic Plan
- 2007 Arizona Public Transportation Response to Executive Order (EO)
- 2008 Transit Propensity and Regional Transit Demand Working Paper



Summary of Intercity Forecasts

Corridor	Service Summary	2050 Daily Ridership Estimates	Source
Phoenix-Tucson	Conventional rail, 5-7 daily RT	4,400-5,200	1998 HSR; 2007 HSR
Phoenix-Yuma	7 daily RT	1,500-2,600	2007 Response to EO
Tucson-Nogales	7 daily RT	1,600-2,700	2007 Response to EO
Phoenix-Winslow	3-5 daily RT	550-1,000	2007 Response to EO
Phoenix-Los Angeles	6-12 daily RT	5,000-12,000	AECOM Estimate*
Phoenix-San Diego	6-12 daily RT; estimates reflect increment over Phoenix-Yuma	800-1,600	AECOM Estimate
Phoenix-Las Vegas	6-12 daily RT	1,200-2,300	AECOM Estimate

* AECOM estimates created for corridors not previously studied; based on anticipated service levels and market sizes (e.g., population and employment projections); 2009.

Summary of Commuter Rail Forecasts

Corridor	Service Summary	2050 Daily Ridership Estimates	Source
Phoenix	30+ daily one-way trips	13,000-18,000	2003 MAG
Tucson	15+ daily one-way trips	3,500	2007 Response to EO
Phoenix-Prescott	Will serve 11 stations	28,000	2008 Transit Propensity
Flagstaff	15+ daily one-way trips	3,000	AECOM Estimate

Next Steps

- Review and incorporate survey findings
- Area Focus Groups
- Refine and finalize key issues
- Begin alternatives definition
- Ongoing coordination with stakeholders



Focus Groups

- Southern Area: Tucson
April 16th, 1:00 – 3:00 pm
- Northern Area: Flagstaff
April 24th, 10:00 am – Noon

Thank You!

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