



Rail Technical Advisory Team Introductory Meeting Meeting Summary Notes

January 28, 2009, 10:00 am
ADOT Phoenix District Construction Conference Room

The meeting was called to order at approximately 10:00 am by Kristin Bornstein. Kristin and Jennifer Toth-ADOT MPD Project Manager gave a quick overview of the BqAZ project and how the Rail Frameworks is an integral component.

Study Purpose

As one of a series of Framework Studies, the Rail Framework Study will formulate a rail development program and investment strategy for Arizona to promote the development of a healthy and sustainable multimodal transportation system for the movement of people and goods. It will address rail transportation needs across Arizona. The Study will consider existing conditions and estimated future needs for both freight and passenger rail. The Study objectives are:

- Stimulate responsible economic growth within the state of Arizona.
- Maximize the use of existing rail infrastructure through strategic investments to facilitate efficient movement of people and goods.
- Complement other existing and planned transportation systems (highway and transit).
- Help address global and regional economic, climate, environmental and energy issues.
- Partner with private railroad companies to the mutual benefit of all parties.

To meet identified needs for existing rail system improvements, recommended programs and projects will be identified. Improvement projects may consist of modifications to existing systems or the establishment of new facilities and services. When completed, the Study will become the rail component of the Statewide Transportation Planning Framework.



Role of the Rail TAT:

The Rail TAT is a multidisciplinary team representing rail interests that provides technical input and review of interim products as the Study unfolds. They also play a major role in communicating about the Statewide Rail Framework Study. Responsibilities include:

- Attend all meeting in person if possible.
- Review meeting materials prior to the meeting to be prepared for discussions.
- Provide input to the study as technical advisors.
- Represent their organization.
- Participate in stakeholder survey.
- Identify resources within their organization and help the bqAZ team to access those resources.
- Review working papers and provide comments within specified timeframe.

In order to keep the lines of communication clear the following are the points of contact:

Jennifer Toth, ADOT MPD	602-712-6790	jtoth@azdot.gov
Bill Boothe, AECOM	602-337-2629	bill.boothe@aecom.com
Kristin Bornstein, KDA Creative	602-368-9644	kristin@kdacreative.com

Approximately four Rail TAT meetings will be held over the course of the eight month project and the meetings are schedule for:

January 28, 2009
March 25, 2009
June 24, 2009
August 26, 2009

Study Scope

The Rail Framework Study scope was distributed (attached).

Schedule

The Study schedule was distributed (attached).

By the end of March the following items are scheduled to be completed:

- Data Collection
- Travel Demand Forecast
- Identification of Issues



The following papers are scheduled to be completed by the end of March:

- Working Paper #1-Study Management Plan
- Working Paper #2-Summary of Existing Conditions
- Working Paper #3-Summary of Freight and Passenger Demand
- Working Paper #4-Summary of Key Issues

Introductions:

The group was asked the question. "Why are you here? And who are you representing?" and the following is a summary of the responses:

- John Dugan: San Pedro Southwestern/Wilcox Terminal Operator
 - Shortline operator
 - Would like to better understand the direction and focus of the study and the issues and opportunities
- Kevin Wallace: MAG
 - Representing local agencies
 - Interest in passenger rail and creating regional mobility
 - Freight rail and how it relates to passenger rail
- Jermaine Hannon: FHWA
 - Interest in the freight aspect
 - ADOT's Freight Study is a good start in FHWA's mission to develop freight advisory committees across state DOTs
 - Suggested that trucking representation might be missing from the RTAT
- Dianne Arnst: Air Quality division of ADEQ
 - Reducing single occupancy vehicles improves air quality
 - Idling at rail yards will be a concern
 - EPA recently reduced allowable ozone levels
- Rob Marshall: The Nature Conservancy (TNC)
 - TNC seeks to protect natural resources and promote sustainable growth and to provide transportation options for a higher quality of life.
- Mark Hoffman: ADOT Transit
 - Develop passenger and freight rail together to offer advantages to both the public and private sector
 - Support local transit services



- John Liosatos: PAG
 - Represents his local agencies
 - Interconnection between rail and other facilities
 - Planning sufficiently for extreme growth in Pinal County
 - Economic development connection and interest in freight issues – avoid pass through freight and loss of economic opportunity
- Carol Ketcherside: Valley Metro/RPTA
 - Interest in moving people by providing mobility options
 - Connectivity between transportation systems facilitating movement to and from rail
- Tim Crall: Entellus/Apache Railway
 - Shortline rail operator for the paper mill in Snowflake – connects with BNSF system in Holbrook
 - Interested in economic development in the region
 - Plans to expand to support new wind farm just northeast of Snowflake; also a biomass power plant nearby
 - Maintaining a good relationship with BNSF; trying to offload 3rd party switching from BNSF
- James Chessum: Yuma Port Authority
 - Proponent of logistics as a business for the state
 - New San Luis Port of Entry and new ADOT motor vehicle inspection in 09/2009
 - SR 195 to open at the same time
 - Need more rapid transit to San Diego and Gila Bend
 - Suggested eliminating passenger service at Yuma Airport, replace with freight/cargo service
 - Yuma and Flagstaff are ideal locations to create intermodal facilities for California service; could support activities at Punta Colonet
 - Reduce truck congestion, improve rail
- Luis Heredia: UPRR
 - Promote rail as a mode of freight – reduce impacts of trucks on roads, including pass through traffic
 - Rail reduces carbon footprint
 - Question of inter-relatedness of freight and passenger service on same tracks without reducing ability to transport goods and services across the country
 - If you create bottlenecks you create system-wide problems; have invested in network and Sunset Corridor (LA to El Paso): complete upgrade/double tracking; proposed Red Rock Classification Yard; development of support yards (Phoenix, Tucson, Yuma)



- Wulf Grote: AzTA
 - Arizona is woefully behind other states in the public transportation arena – need to improve public transportation statewide
 - Limited state funding available
 - Greater coordination between agencies and transit organizations needed
 - METRO's role is to plan, build, and operate the light rail system; first 20 miles operating; expansion under way
 - Connectivity between modes important (LRT, bus, commuter rail, bicycles...)
- Angela Mogel: BLM
 - Manage public land rights-of-ways
- Maria Hyatt: City of Phoenix
 - Wants to remain competitive from an economic development standpoint
 - Competition for state funds; interested in funding and funds distribution formula or plan that works for all communities
- Bill Leister: CAAG
 - Air pollution is a problem in Pinal County; likely to reach non-attainment status soon
 - Interested in alternative transportation options for Arizona
 - Need to get trucks off the road – mining traffic is dangerous to leisure travel on state highways
- Melanie Headstream/Ray Moore: ASLD
 - Tremendous amount of land in this state; highly likely that land will be leased for rail
 - ASLD conducting a lot of advanced planning to focus growth
- Paul Rasmussen: ADEQ
 - Improvement to air quality necessary
 - Active participation on former Governor's smart growth team; need for rail and transit is essential to smart growth based on Smart Growth Scorecard
 - Very interested in long range plans and funding



- Brian Lehman/Chris Watson: ACC
 - Safety authority over railroads operating in the state
 - 6 inspectors travel the state
 - ACC approves any improvements at new and existing rail crossings; wants to understand development around key rail infrastructure
 - Maintain data/statistics on railroads statewide
- LaTonya Finch: BNSF
 - Interested in regional economic development; assets and movement throughout the state
 - Capacity constraints exist through congestion and the need to preserve velocity
 - Need to enhance infrastructure for business development
- Bill Lindley: Arizona Rail Passenger Association
 - Supports rail line from Wickenburg to Nogales
 - Represents rail riders
- Dave Wessel: FMPO
 - Peak demand through Flagstaff estimated at 120 trains/day – interested in future demand
 - Economic development
 - Intermodal facility proposed west of Flagstaff (Camp Navajo)
 - Prospects of passenger rail
- Nate Asplund: BNSF
 - Leads Public-Private Partnerships
 - Capacity constraints related to freight rail; a lot can be accomplished by fixing few bottlenecks
- *Other contacts suggested to be included in RTAT*
 - *Gene Hughes, former NAU president; involved with AMTRAK*
 - *National Park Service*
 - *Department of Tourism*
 - *Trucking Representative – Arizona Truckers Association*

Issues and Opportunities Discussion

The group was asked a series of questions. Below are the questions and responses:

Question How do state and federal regulations affect you?

- UPRR
 - ACC: grade crossing change
 - FCDMC, Pinal County, Pima County: drainage structures
 - Army Corp of Engineers: flood control
 - SHPO: bridges of historical significance
 - ADEQ
 - ACC and FRA regulate rail cross safety
 - It is a myth that the railroads are not subject to state and local regulations
- ADEQ Regulations
 - Clean Air Act regulates emissions inventories, idling
- METRO
 - Subject to many federal requirements due to federal funding contribution to projects, i.e. NEPA, FTA, etc.
 - Shortage of federal funds available
 - Changes in federal process equates to increased time and money needed
- ASLD Regulations
 - Use of State Lands through right-of-way lease
 - If perpetual lease, bidding/state process necessary
 - Potential scrutiny of lease activities if through pre-planned areas
 - Cannot obtain right-of-way through conservation lands
- RPTA
 - Homeland security requirements associated with passenger rail should be considered.
 - FRA would require a security plan.



Question How can coordination be improved among entities influencing rail issues? (The context for this question is that we need to look at priorities and avoid competition in same state for same funds.)

- In terms of freight rail, UPRR and BNSF drive decisions to facilitate trade; private sector has funding and should not be impeded by the public sector/government should not create more oversights and hurdles
- Coordination at state level is necessary. If Arizona doesn't have its act together as a whole, it will show at the federal level – the same Congressmen will be vying for different projects. There is heavy competition for federal dollars. An organized approach will get money faster. Need to have an understanding of the state's priority for project funding.
- Multijurisdictional coordination is necessary for a cohesive transit service; San Francisco is the counter example – it use to have 26 transit organizations operating in the City and fighting each other; need to avoid this here.
- Need to have public and private sector coordination. Both entities must be on the same page to benefit. An agreement on the public benefits of freight must come first, then an understanding on how freight rail affects the rest of the system. The private sector can be part of the solution, but cannot be the entire solution.
- Must balance general and specific information between entities and to the public. Should be more generic about site locations to leave open more opportunities for development.

Question How will changes in technology affect your decisions making?

- Corridors powered by solar energy could replace electric trains (LRT)
- Positive Train Control (PTC) – controlled by satellites/GPS. All Class 1 Rail Systems must have PTC operational by 2015. Requires massive amounts of funding which will compete with capacity spending.
- Potential to have a combined system (intercity rail, commuter rail) on one set of infrastructure. Logical location is through the Sun Corridor Megapolitan

Question How do rail interests in Arizona fit into the context of regional rail, including the Southwest and Mexico?

- How do we want to get people around the state? We should not only look at our residents and businesses but also tourists/snowbirds.



**Statewide Rail
Framework Study**

- We should be looking at high speed rail connections first between Phoenix and Tucson, and then expand this to form connections with southern California and then others. If Arizona wants to be competitive on an international front, we need to make the investment in high speed rail. Amtrak is for more leisurely travel, not business-related travel.
- It would be advantageous to strengthen relationships with:
 - States that have deep water ports – Mexico, southern California
 - Las Vegas, from a tourism standpoint
 - Sonora, rail and ports – California is taxing containers, if this increases, trade will leave California for Mexico and Vancouver

Question How can the state take advantage of pass-throughs to create economic opportunity?

- Class 1 Railroads employ a lot of staff along railroads in Arizona
- Freight on rails and off the roads reduces the cost for ADOT in terms of highway improvements and congestion. However, increasing rail traffic increases congestion through small communities with grade crossing issues; also noise issues.

Question What is your expectation of the study outcome/recommendations?

- Short-Term: How rail can fit into the network and enhance passenger mobility. Statewide, should whittle down a list of a handful of projects eligible for PPP or Reauthorization funds. Champion projects to benefit many stakeholders – real projects that solve real problems.
- Long-Term: Determine an ongoing funding source to mitigate rail issues; implement identified projects.
- Incorporate existing planning efforts into this study, such as the Commuter Rail Strategic Plan and MAG Transit Framework.
- Acknowledge major airports as connection points/multimodal connections.
- Climate change legislation will change things; rail can play a very significant role in reducing energy footprints. Relevance of this plan to the future will be a function of our view of the future. Spend extra time trying to understand what will make Arizona truly competitive and leave our options open.
- Would like to see high speed rail in the Sun Corridor Megapolitan and coordinated local transit systems within Sun Corridor communities.
- Need a good financing plan and have a serious discussion about the feasibility of implementing PPPs.



- Need a true system approach.

Question How can we advise the Governor/Legislature on a recommended rail program?

- Develop a fact sheet telling the Governor what Arizona has lost by NOT having a successful rail program and then grow it out for the future.
- Share a peer region comparison.

Closing Comments:

The project team appreciates the interest and involvement of all participants in this kick-off meeting. We look forward to your continuing contribution to this important project.

The next meeting will be held March 25th at the Phoenix Construction District Office from 10am-1pm. Please remember lunch will be served.

Meeting Adjourned at approximately 1:00 PM.



**Multimodal Transportation Division
January 2009**

Statewide Rail Framework Study

I INTRODUCTION

Purpose:

As one of a series of Framework Studies, the Statewide Rail Framework Study (“the Study”) will formulate a rail development program and investment strategy for the State of Arizona to promote the development of a healthy and sustainable multimodal transportation system for people and goods. It will address rail transportation needs across Arizona. The Study will consider existing conditions and estimated future needs for both freight rail and passenger rail, with the latter including potential intercity and commuter service. Objectives of the Study will be:

- To stimulate responsible economic growth within the State of Arizona
- To maximize the use of existing rail infrastructure through strategic investments to facilitate efficient movement of people and goods
- To complement other existing and planned transportation systems (highway and transit)
- To help address global and regional economic, climate, environmental and energy issues
- To partner with the private sector railroad companies to the mutual benefit of all parties

To meet identified needs for improvements to the existing rail system, recommended programs and projects will be identified. Improvement projects may consist of modifications to existing systems or the establishment of new facilities and services. When completed, the Study will become the rail component of the Statewide Transportation Planning Framework.

Study Area:

The study area will encompass the State of Arizona and areas of influence in adjacent jurisdictions. “Areas of influence” are those portions of California, Nevada, New Mexico, Utah, and Sonora (Mexico) that affect Arizona rail systems.

Study Team and Management:

The Study will be organized and managed by DMJM Harris with assistance from TranSystems, AECOM Consult and Kristin Darr and Associates. DMJM Harris will be the consultant for the study ("Consultant").

This study will be managed by the ADOT Multimodal Planning Division (MPD) Project Manager for the Statewide Transportation Planning Framework (STPF). The Consultant will integrate the Rail Framework Study into the STPF, to ensure the study process and findings are congruent. Maps, graphics, tables, document formats, and other components of the Study will be compatible with the STPF. To the extent feasible, activities and schedules will be coordinated with those of the STPF.

The Consultant will work jointly with the ADOT Communication and Community Partnership Division (CCP) or their representative for the Study. CCP will be responsible for implementing the study's public involvement, communication, government/stakeholder relations, and media relations strategies. CCP will ensure that all templates for all public involvement, communications, government relations, and media relations activities are consistent with those of the STPF. CCP will establish and implement the overall graphic image for the study, and will produce all public communication graphics and informational pieces (e.g., handouts, display boards, fact sheet) according to approved templates. Additionally, CCP will be responsible for maintaining stakeholder databases and updating information on the website. CCP will also be responsible for notifying the Rail Framework Technical Advisory Team (RTAT) of meeting times and dates and documenting the meetings.

The Consultant will provide input to the overall STPF newsletter, website, and other public information as appropriate. This will be provided at key points in the Study.

The Consultant will assist in two sets of community workshops at key milestones in the study. It is anticipated that each set will consist of three events: one in the MAG region, one near the Union Pacific mainline (e.g., Tucson), and one near the BNSF mainline (e.g., Flagstaff). CCP will be responsible for meeting logistics and preparing presentations (with input from the Consultant), displays, handouts, etc. CCP will also be responsible for documenting the workshops. The Consultant will prepare an agenda, lead presentations, and answer questions.

Rail Framework Technical Advisory Team

At the inception of the Study, a Rail Framework Technical Advisory Team (RTAT) will be convened to provide input for the Study. This group may include among others:

- Arizona Statewide Agencies:
 - ADOT, Corporation Commission, State Land Department, Department of Environmental Quality, Department of Commerce (including Tourism), Governor's Office of Highway Safety, State Parks
- Arizona Regional and Local Agencies:

- MPOs, COGs, counties, tribal communities, selected transit agencies, major cities and towns along existing and proposed corridors,
- Railroads (Union Pacific, BNSF, short lines operating in the state, and transfer/switching lines)
- Federal Agencies:
 - Federal Railroad Administration, Federal Highway Administration, Federal Transit Administration, Bureau of Land Management (for corridors that cross federal lands), National Park Service
- Rail Interest Groups:
 - Arizona Rail Passenger Association, Southwest Rail Corridor Coalition, Shortline Association, APTA, Grand Avenue Rail Coalition
- Border States:
 - California, Nevada, New Mexico, Utah, Sonora (Mexico)
- Trade and Economic Development Organizations:
 - Port Authorities, Foreign Trade Zones, Economic Development Authorities
- Major Freight Users
 - Mining companies, power plants, shippers, lumber interests, etc.

The group will meet to provide input for each major task on a schedule to be specified in the Study Management Plan. The schedule will include working sessions coordinated with the completion of each major task. Members of the RTAT will have an opportunity to review and comment on each Study work product.

II WORK PLAN AND TASKS

This section outlines the tasks required to produce the needed analyses and deliverables for ADOT.

Task 1 – Study Initiation

Purpose: To provide a solid foundation for collaborative relationships with ADOT and stakeholders, and to establish processes allowing timely completion of the study

- 1.1 Prepare a Study Management Plan and Quality Control/Quality Assurance (QC/QA) plan, modeled on the equivalent plans for the Statewide Framework Studies as a whole. Complete the detailed schedule, based on the final scope of work approved by ADOT prior to execution of the contract.
- 1.2 Define how the results of the Study will be incorporated into the STPF.
- 1.3 Gather all necessary GIS and other information needed to develop base mapping, to include existing operating, non-operating, and abandoned (but physically intact) rail infrastructure and associated facilities; mapping of pertinent physical and natural features; and other mapping deemed necessary. The Study Management Plan will contain a master list of maps to be produced. Compile a

- list of pertinent resources available from ADOT, the COGs/MPOs, local governments, tribes, railroads, and other rail and economic development related organizations. Confer with ADOT about strategies and priorities for data collection in the most efficient manner.
- 1.4 Hold a study initiation meeting of the RTAT. Prepare displays including study area map, rail systems, key issues and schedule.
 - 1.5 Produce Working Paper #1, Study Management Plan, to include a detailed work plan, schedule, list of maps and graphics, and QC/QA plan.

Task 2 – Data Collection

Purpose: To compile and document pertinent and necessary information on existing and proposed rail systems, as well as related physical, social, and economic conditions that affect current and potential future rail facilities.

- 2.1 Review and summarize existing data sources: Secondary source data readily obtainable from ADOT, the Internet, U.S. Census, publicly available agency files, and the railroads will be used. There will be no primary data collection in the field, except cursory windshield surveys to verify selected information. The consultant will be responsible for obtaining data from sources other than ADOT and the COGs/MPOs, except that ADOT will be responsible for providing all necessary information from the tribes. Members of the Rail Framework Study Team (RFST) are expected to be an important source of data. Review and summarize rail-related transportation and planning studies completed within the last ten years or currently underway, either by public agencies or private railroad entities. These should include, but not be limited to:
 - ADOT Rail Inventory
 - ADOT Freight Study
 - UP and BNSF system and capacity studies (if available)
 - MAG Commuter Rail Study- Phases 1 and 2
 - MAG High Capacity Transit Study
 - METRO Tempe South Corridor Study (which had a commuter rail alternative)
 - PAG High Capacity Transit Study
 - ADOT Intercity Rail Study - Phases 1 and 2
 - Department of Commerce Commodities Inventory
 - TREO Inland Port Studies
 - Welton Refinery Study
 - UP Picacho/Red Rock Yard Study (if available)
 - Shortline Railroad Studies (if available)
 - Transfer/Switching Railroad Studies (if available)
 - Mine Railroad Studies (if available)
 - Amtrak Studies (if available)
 - Tourist railroad studies (if available)

- State Freight Flow Study (conducted for ADOT by Cambridge Systematics)
 - Mexican Freight and Passenger Rail Studies (if available)
 - Mexican Port Studies (if available)
 - Local general plans or comprehensive plans with a rail element
 - Others as appropriate
- 2.2 Summarize information from the ADOT Rail Inventory on railroad/highway grade crossings statewide, including all state highway crossings with a critical average train travel speed, to be agreed on. Map basic information on the number and severity of crashes, if available from the Rail Inventory.
- 2.3 Interview planning/development staff and transportation or public works staff from each major jurisdiction served by the statewide railroad system to determine existing and projected impacts of rail on those communities, and any goals and objectives related to rail passenger or freight service. CCP will assist in establishing the meetings and will summarize and document all interviews.
- 2.4 Conduct and document interviews with key stakeholders, including agency staff, elected officials, tribal representatives, railroad organizations and related entities, to determine rail-related issues and objectives. CCP will assist in establishing the meetings and will summarize and document all interviews.
- 2.5 Interview representatives from the DOTs of adjacent states including Sonora to obtain freight and passenger rail data pertinent to the Study, and to define interface issues.
- 2.6 Collect data to define the relationship between the rail network and other components of the transportation system. Collect data to describe the relationship of the rail system to the urban development and local communities that it affects. Collect data to establish the effects of the rail system on environmentally sensitive areas of the state and map this information.
- 2.7 Participate in community workshops to present and receive comments on existing conditions and key issues.
- 2.8 Meet with the RTAT to review existing conditions and receive comments.
- 2.9 Produce Working Paper #2, Summary of Existing Conditions, to include pertinent summaries of documents researched, data collected, discussions and interviews summarized, results of related studies, and other key findings of the inventory phase.

Task 3 – Freight and Passenger Rail Travel Demand Forecast

Purpose: To estimate the demand for freight movement focusing on value capture opportunities, and passenger travel, and to analyze the implications of these as the basis

for developing alternatives. As part of this task there will be an explicit focus on the potential for intercepting cargo at intermodal centers to create value added opportunities.

- 3.1 Using TRANSEARCH data and the data contained in “Arizona Multimodal Freight Analysis Study”, identify commodity tonnage moving through Arizona by rail, current and projected to 2030 (projection to 2050 will rely on trend data).
- 3.2 Disaggregate commodity movements by Standard Transportation Commodity Codes (STCC) at the 4-digit level.
- 3.3 Identify those commodity movements by STCC that have value added opportunities.
- 3.4 Screen commodity movements to select those offering the most opportunity based on projected tonnage and value added opportunities.
- 3.5 Conduct industry analysis to identify the differentiators in location choice.
- 3.6 Conduct competitive analysis for Arizona compared to destination states of commodity movements. Assess strategies to create an inland port in Arizona to relieve congestion at California ports and create value added opportunities at an intermodal center.
- 3.7 Size opportunities by investment in plant and equipment and employment.
- 3.8 Apply RIMS II multipliers to value direct and indirect employment, earnings and output for state of Arizona.
- 3.9 Prepare a prospectus on strategies/actions needed to enhance Arizona’s competitiveness with regard to freight rail movements. Assess strategies to create an inland port in Arizona to relieve congestion at California ports and create value added opportunities at an intermodal center. Assess strategies to create value added opportunities with regard to NAFTA freight e.g., distribution centers, transloading, warehousing, expansion of activities in Arizona’s Free Trade Zones.
- 3.10 Assemble, review and document available demand forecasts, and the underlying inputs and assumptions, associated with specific intercity and commuter rail service proposals, including MAG Commuter Rail Feasibility Study, METRO Tempe South Corridor Study, ADOT Intercity Rail Study (Phases 1 & 2), and Amtrak studies (if available). Key information to be assembled would include base and forecast years, key baseline assumptions, including characteristics of competing modes of travel and growth (e.g., gas prices and congestion), markets serviced and travel times, frequencies, fares, and other characteristics of proposed passenger rail services, and demand forecast results.

- 3.11 Identify additional markets and service levels, not addressed by available demand forecasts and studies, to be considered.
- 3.12 Assemble available socio-economic and travel market data from state and local sources, including regional/MPO models, statewide model (if available), and national sources.
- 3.13 Develop an approach for estimating demand outside the scope of available forecasts.
- 3.14 Develop and apply high-level analysis approach for estimating demand in markets and/or for services not addressed by existing available demand forecasts, based on: estimated total market size (quantified by available travel market data and/or socio-economic data/forecasts of population, employment, etc.), and proposed rail service characteristics, including estimate travel times, frequencies, etc. by market/service.
- 3.15 Produce Working Paper #3, Summary of Freight and Passenger Demand.

Task 4 - Identification of Issues

Purpose: To identify issues that may determine alternative futures for statewide rail system development.

- 4.1 Based on data from Working Paper #2 and from stakeholder interviews, and on the estimates of future demand, enumerate and map key freight rail issues. These may include but not be limited to the following:
 - Existing and forecast freight movement
 - Existing and forecast freight rail facility requirements
 - Through traffic capabilities and current limitations
 - Planned new corridors and facilities
 - New and improved classification yards/programs
 - Development of intermodal facilities to take advantage of rail use for “first wave” deliveries from west coast ports
 - Application of existing and new technologies
 - Strengthening north-south rail connections between Class 1 railroads, as well as with Mexico
 - Strengthening interface with shortline and transfer/switching railroads
 - Safety issues including grade crossings and separations
 - International facilities and movement (Nogales port of entry)
 - Potential Canamex options
 - Existing corridor and facility improvements
 - Options for freight rail system public/private partnerships and alternate sources of financing

- 4.2 Based on data from Working Paper #2 and from stakeholder interviews, and on the estimates of future demand, enumerate and map key passenger rail issues. These may include but would not be limited to the following:
- Existing and forecast passenger demand
 - Existing and forecast passenger rail facility requirements
 - Application of existing and new technologies
 - Intercity rail service through the Megapolitan Sun Corridor between Phoenix and Tucson, and beyond
 - Commuter rail in the greater Phoenix and Tucson areas
 - Phasing and coordination of future commuter and intercity rail service
 - Re-establishment of Amtrak service to the Phoenix Metropolitan Area
 - Planned new passenger rail corridors
 - Hassayampa and Hidden Valley Framework Study rail proposals
 - Other origin/destination alternatives (Los Angeles; Clark County, Nevada; northern Arizona)
 - The potential for sharing various corridors with freight railroads
 - Possible purchase of service from Amtrak (Section 403(b) service)
 - Funding options for existing and proposed new service
- 4.3 Based on data from Working Paper #2 and from stakeholder interviews, enumerate key governance and management issues. These may include but would not be limited to the following:
- Future roles of oversight agencies
 - Business relationships with Class 1, shortline, and transfer/switching railroads
 - Planning strategies
 - Growth economics and pressure points analysis
 - Policy issues
 - Correlation with investment plan approved by State Transportation Board
 - Relationship to associated plans and studies
 - Stakeholder process issues
- 4.4 Describe environmental issues that might affect the development of project alternatives.
- 4.5 Describe potential changes in technology that might affect the development of project alternatives.
- 4.6 Describe the federal and state requirements related to SAFETEA-LU and the Arizona Statutes that might affect the development of project alternatives.
- 4.7 Meet with the RTAT to review key issues and to receive comments.
- 4.8 Produce Working Paper #4, Summary of Key Issues.

Task 5 – Development of Rail System Alternatives

Purpose: To describe alternatives for the future development of freight rail and passenger rail, including commuter and intercity rail, for subsequent evaluation. Key measures of effectiveness for evaluation of alternatives will be described.

- 5.1 Working with stakeholders, based on the forecasts developed in Task 3, and building on the key issues identified in Task 4, prepare a statement describing the vision, goals, and objectives for future rail development. The statement will reflect the interests of ADOT, the railroads and other stakeholders.
- 5.2 With the vision, goals, and objectives as the foundation, develop measures of effectiveness for evaluating alternatives. These measures will include cost-effectiveness (using order-of-magnitude cost estimates) and consistency with the STPF, among others. Additionally they will address environmental issues, potential changes in technology, and tradeoffs that might be made between competing state investments in other transportation development options.
- 5.3 Identify key corridors for rail freight and passenger demand throughout Arizona. Define the relationship of the rail system to the Megapolitan Sun Corridor. Identify high-capacity corridors in which stand alone, integrated and no-system options may be described.
- 5.4 Identify potential locations for intermodal linkages that offer economic development opportunities from freight diversions and growth in freight traffic.
- 5.5 Research at least three existing multimodal corridors that intercity passenger and freight rail share with a major highway. The selected corridors will vary in their length and intensity of passenger and freight rail usage. Possible examples include:
 - Sacramento to Oakland CA (Commuter Rail)
 - San Francisco to Gilroy CA (SR 101, Commuter Rail)
 - San Diego to Santa Barbara CA (I-5/US 101, Amtrak Surfliner corridor, two commuter rail systems)
 - Eugene OR to Seattle WA (I-5, Amtrak, Sounder commuter rail)
 - Northeast Corridor, Newport News RI to Boston MA (I-95, Amtrak, eight commuter rail systems)
 - Chicago to Aurora IL (I-88, Amtrak, Metra/BNSF)
 - Belen to Santa Fe, NM (I-25, Rail Runner, limited Amtrak)
 - Salt Lake City to Ogden, UT (I-15, FrontRunner)
- 5.6 Define a full range of potential rail system development alternatives at the conceptual level, based on known (and estimated) demands and constraints, the objectives of the railroads, stakeholder input, and community concerns. This will include both freight and passenger rail components. The needs for specialty movements will be included.

- 5.7 Perform an initial screening of the conceptual alternatives, and remove any that are infeasible or critically flawed. Examples of critical flaws include: clearly unacceptable environmental impacts, opposition from freight railroads whose right-of-way would be needed, and little or no demonstrable demand for service.
- 5.8 Conduct multimodal evaluation of key corridors within the state to evaluate the trade-offs between investments in various modes of transportation and the most effective and efficient means to achieve estimated travel demand.
- 5.9 Participate in community workshops to review the conceptual alternatives and provide community input.
- 5.10 Present the preliminary alternatives to the RTAT for review and comment. The presentation will compare and contrast the alternatives, and will report results of the critical flaw analysis.
- 5.11 Produce Working Paper # 5, Definition of Alternatives.

Task 6 – Evaluation of Alternatives

Purpose: To compare alternatives according to the vision, goals, objectives, and measures of effectiveness, in order to determine the most effective set of recommendations.

- 6.1 Based on the analyses conducted in Task 5, above, and using input from stakeholders and the community workshops, define and prioritize a series of feasible alternatives for more detailed evaluation. These alternatives will be developed to the point at which measures of effectiveness can be applied. Each alternative will include freight and passenger components and related facilities, and will outline key governance and management issues related to each.
- 6.2 Develop order-of-magnitude construction, operating, maintenance and right-of-way costs for each alternative, using generalized assumptions derived from typical rail costs in Arizona and similar operating environments (both urban and rural).
- 6.3 Continue to actively participate and provide input to the I-10 South Design Concept Report and Environmental Assessment process to coordinate the eventual full build-out of I-10 and the potential development of an intercity rail corridor between Phoenix and Tucson.
- 6.4 Prepare a matrix for the evaluation of the shortlisted alternatives. Alternatives will be evaluated according to the measures of effectiveness developed in Task 4.
- 6.5 Present the matrix and evaluation results to the RTAT for review and comment.

Produce Working Paper # 6, Evaluation of Alternatives.

Task 7– Draft and Final Rail Framework Recommendations

Purpose: To elaborate and refine the preliminary recommendation for a package of freight and passenger rail transportation improvements.

71. Compile a list of projects, programs and management actions that constitute the key elements of the recommended alternative. The list will include not only construction projects, but also policies, strategies and other actions necessary to achieve implementation. A general timeframe and phasing schedule for implementation will be included.
- 7.2 Create a matrix listing projects by proposed timeframe, along with other implementation considerations (e.g., potential funding mechanisms and management/operating entities). Create mapping to represent the recommended system components in both 2030 and 2050.
- 7.3 Incorporate the Rail Framework recommendations into the STPF.
- 7.4 Produce Working Paper #7, Draft Recommendations.
- 7.5 Review the draft recommendations with the RTAT for comment. Appropriate comments will be incorporated in the final version of the recommended rail system.
- 7.6 Revise the draft into a final set of recommendations.
- 7.7 Submit the final recommendations to the STPF management consultant for incorporation into the STPF.

Task 8 - Study Documentation

Purpose: To convey information on the study and its findings in the manner that will be most useful to ADOT, the stakeholders, and the STPF management.

- 8.1 Prepare the Draft Final Report documenting all work done in the study, including the complete set of working papers. The report will emphasize clear and concise presentation of information, with extensive use of graphics and tables. An executive summary will present the objectives and findings concisely to a wide readership. Follow the established QC/QA procedures prior to submittal of the Draft Final Report to and to ADOT.
- 8.2 Electronically distribute (e.g., on Compact Disks) along with 5 hard copies the Draft Final Report to ADOT for review and comment.

- 8.3 Hold the final RTAT meeting to present highlights of the report and field comments and questions.
- 8.4 Revise the report to reflect comments; add an appendix with a matrix recording all comments and their disposition. Use the established QC/QA procedures for this study to conduct a final internal review of the document before its resubmittal to ADOT.
- 8.5 Submit a pre-final "proof version" of the report to ADOT for final review prior to publication (Six copies provided to ADOT assumed).
- 8.6 Issue a number of copies to be agreed upon of the Final Report and Executive Summary in a format designed for convenient user access and easy distribution (20 copies and compact disks assumed).

III. DELIVERABLES

- Working Paper #1, *Study Management Plan*
- Working Paper #2, *Summary of Existing Conditions*
- Working Paper #3, *Forecast of Freight and Passenger Demand*
- Working Paper #4, *Summary of Key Issues*
- Working Paper #5, *Definition of Alternatives*
- Working Paper #6, *Evaluation of Alternatives.*
- Working Paper #7, *Draft Recommendation.*
- *Draft Final Report and Final Report* documenting the entire study, including extensive graphics, an Executive Summary (which will be included in the report and will also stand alone), appendices with meeting minutes, public and stakeholder input, and additional technical materials.

IV SCHEDULE

The Study will begin on December 2, 2008 and conclude by September 30, 2009. The scheduled completion date for each task is listed in the following table.

Task	Scheduled Completion Date
1. Study Initiation	February 1, 2009
2. Data Collection	March 1, 2009
3. Freight and Passenger Rail Travel Demand Forecast	April 1, 2009
4. Identification of Issues	April 1, 2009
5. Development of Alternatives	July 1, 2009
6. Evaluation of Alternatives	August 15, 2009
7. Draft and Final Recommendations	September 15, 2009
8. Study Documentation	September 30, 2009



Statewide Rail Framework Study: Schedule

Months	January	February	March	April	May	June	July	August	September
	Task 1: Study Initiation	Task 2: Data Collection	Task 3: Freight and Passenger Rail Travel Demand	Task 4: Identification of Issues	Task 5: Development of Alternatives	Task 6: Evaluation of Alternatives	Task 7: Draft and Final Recommendations		Task 8: Study Documentation
Interim and Final Work Products									
Working Papers (WP)	WP #1: Study Management Plan		WP #2: Summary of Existing Conditions WP #3: Summary of Freight and Passenger Demand WP #4: Summary of Key Issues			WP #5: Definition of Alternatives	WP #6: Evaluation of Alternatives		Draft Final Document to ADOT and Input into the Statewide Planning Framework Program
Public Involvement									
RTAT Meetings									
Community Meetings									

Rail-related Issues Identified Through Statewide Planning Framework Program