

The cover slide features a blue background with a large, diagonal, white-outlined arrow pointing downwards. Inside the arrow, the text "GRAND AVENUE" is written in large, white, bold, sans-serif capital letters. Below the arrow, the text "COMMUTER RAIL CORRIDOR" is written in white, bold, sans-serif capital letters, with "DEVELOPMENT PLAN" in a smaller font size below it. In the top right corner, there is a logo for the "MARICOPA ASSOCIATION OF GOVERNMENTS" consisting of a stylized mountain range above the text. Below the main title, there are three small, overlapping images: a landscape with a building, a train, and a cityscape. At the bottom, the text "Project Review Team Meeting #1 12.18.08" is written in a dark blue font, followed by the "URS" logo in blue.

GRAND AVENUE

COMMUTER RAIL CORRIDOR
DEVELOPMENT PLAN

Project Review Team Meeting #1 12.18.08 **URS**

The meeting agenda slide has a light blue background with a large, faint, white-outlined arrow pointing downwards. The text "Meeting Agenda" is centered at the top in a dark blue, bold, sans-serif font. Below it, a list of agenda items is presented, each preceded by a dark blue left-pointing chevron symbol. At the bottom, there is a dark blue horizontal bar containing the "MARICOPA ASSOCIATION OF GOVERNMENTS" logo on the left, the text "GRAND AVENUE COMMUTER RAIL CORRIDOR" in white, bold, sans-serif capital letters in the center, and the "URS" logo on the right.

Meeting Agenda

- ◁ **Introductions and Roles/Responsibilities of Team**
- ◁ **Project Background and Overview**
- ◁ **Study Goals & Objectives**
- ◁ **Objectives/Work Flow**
- ◁ **Schedule**
- ◁ **Coordination/Milestones**
- ◁ **Next Meeting**

GRAND AVENUE COMMUTER RAIL CORRIDOR
DEVELOPMENT PLAN **URS**

Introductions and Roles & Responsibilities of Team



Consultant Team

- ⟨ **URS:** Project management, operations, stations/land use
- ⟨ **Gannett-Fleming:** Design engineer
- ⟨ **Goodman-Schwartz:** Public involvement
- ⟨ **Lima & Associates:** Mapping, GIS
- ⟨ **Lonnie E. Blaydes Consulting:** Railroad Coordination



Project Review Team

- ◁ **Project Management Team**
(MAG, ADOT, RPTA & METRO)
- ◁ **BNSF Railway**
- ◁ **Local Jurisdictions**



Project Background & Overview



Commuter Rail Strategic Plan

Background

- ◁ Previous transit studies showed that commuter rail service operating on freight rail lines could offer an alternative transportation mode in congested primary corridors in the region.
- ◁ Proposition 400 approved by voters in November 2004 and allocated a portion of sales tax revenues to study the options for commuter rail.
- ◁ The Commuter Rail Strategic Plan was initiated by MAG to define the steps needed to be taken for Maricopa and Northern Pinal Counties to plan for and potentially implement commuter rail service.



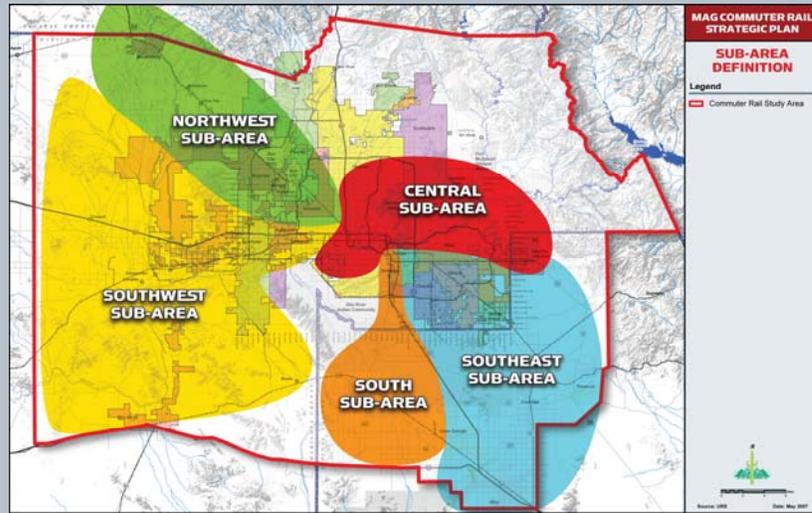
Commuter Rail Strategic Plan

Contributing Organizations/Participants

- ◁ Maricopa Association of Governments (MAG)
- ◁ Pinal County
- ◁ Arizona Department of Transportation
- ◁ METRO
- ◁ Regional Public Transportation Authority (RPTA)
- ◁ Commuter Rail Stakeholders Group



Commuter Rail Strategic Plan



GRAND AVENUE COMMUTER RAIL CORRIDOR
DEVELOPMENT PLAN

URS

Commuter Rail Strategic Plan

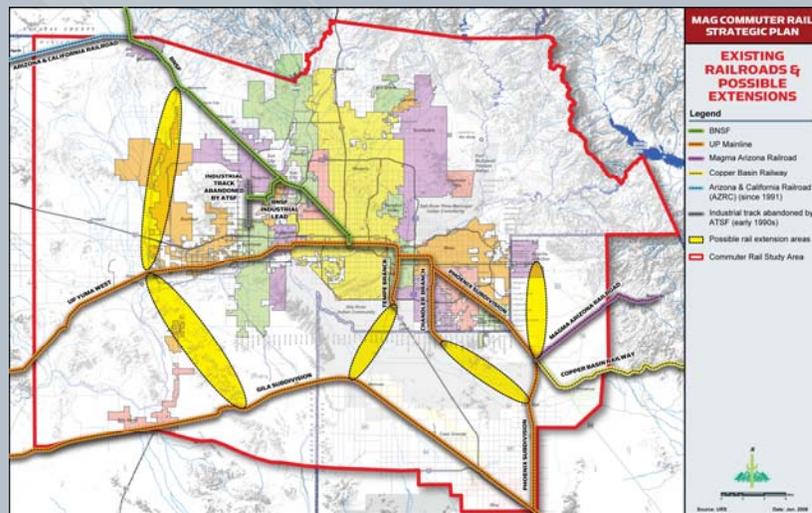
Potential Commuter Rail Corridors

- **BNSF/Grand Avenue**
- UP Mainline/Southeast
- UP Mainline/Chandler
- UP Mainline/Tempe
- UP Mainline Yuma/West
- Possible Extensions/Northern Pinal County

GRAND AVENUE COMMUTER RAIL CORRIDOR
DEVELOPMENT PLAN

URS

Commuter Rail Strategic Plan



GRAND AVENUE COMMUTER RAIL CORRIDOR
DEVELOPMENT PLAN

URS

Commuter Rail Strategic Plan

“Get Started” Scenario - Typical Characteristics

- ⟨ 5 trains per peak period in peak direction
- ⟨ 1 reverse commute trip in peak period
- ⟨ 1 mid-day trip
- ⟨ 1 evening trip
- ⟨ 4-car trains
- ⟨ ~10,000 riders/day
- ⟨ \$50-\$400 million capital cost

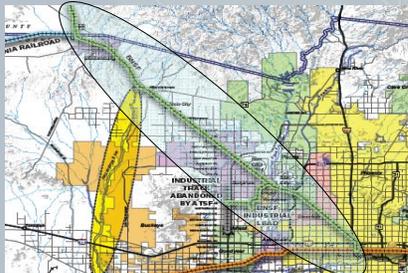
GRAND AVENUE COMMUTER RAIL CORRIDOR
DEVELOPMENT PLAN

URS

MAG Previous Studies

Initial focus on BNSF - Grand Ave. Corridor

- Opportunity – not a mainline, relatively light freight traffic
- Corridor limits from Union Station at 4th Ave/Harrison to Wickenburg
- Relatively high level of support from communities in corridor



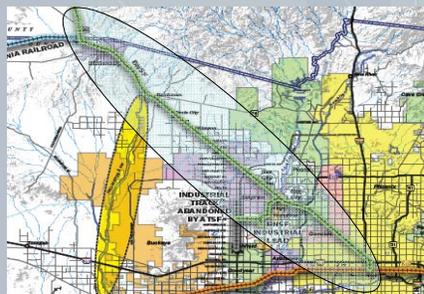
GRAND AVENUE COMMUTER RAIL CORRIDOR DEVELOPMENT PLAN

URS

MAG Previous Studies

Initial focus on BNSF - Grand Ave. Corridor

- Had highest 2040 daily ridership (16,000) in MAG High Capacity Transit Study
- Among highest in cost-effectiveness in same study



GRAND AVENUE COMMUTER RAIL CORRIDOR DEVELOPMENT PLAN

URS

Role of Commuter Rail

- ◁ Larger, heavier, roomier than light rail
- ◁ Higher maximum speed, slower acceleration and deceleration than light rail, but still has good travel time and reliability
- ◁ Uses latest in clean diesel technology
- ◁ Typically longer station spacing (every 3-5 miles avg.) than light rail (1-2 miles) with emphasis on park-and-rides



Role of Commuter Rail

- ◁ Meets federally mandated structural requirements for rolling stock
- ◁ Can share ROW, track with freight (does not need exclusive right-of-way like light rail)
- ◁ Lower cost per mile (\$10-\$20M) than light rail (\$40-\$60M)



Role of Commuter Rail

◁ Locomotive-hauled coaches



◁ Diesel multiple units (DMUs)



Role of Commuter Rail

Characteristic	Light Rail	Commuter Rail
Corridor length	5-20 miles	10-50 miles
Right-of-way	Exclusive (separate from other trains) or semi-exclusive (shared street ROW)	Can be shared with freight
Street running possible?	Yes	No
Average station/activity center spacing	½ to 2 miles	5-7 miles +
Speeds (avg/max)	20/55 mph	30/79 mph
Minimum turning radius	90'-100'	300'
Typical train lengths	2-3 cars	2-8 cars
FRA compliant (crashworthy) required?	No	Yes unless physically or temporally separated from freight
Typical service frequency	5-15 minutes peak 10-20 off-peak	20-30 minutes peak 30-60 off-peak



Why Commuter Rail in This Corridor?

Grand Ave. Characteristic	Commuter Rail Applicability
Diagonal travel path from downtown to northwest part of metro area	Direct rail linkage to activity centers along diagonal in existing freight ROW that can be shared with compliant commuter rail vehicles
Future continued reconstruction of 6-legged intersections	While commuter rail will likely remain at grade level, it can provide travel alternative during reconstruction of intersections
Diverse and widely spread activity centers (population and employment)	Commuter rail works best with station spacing of 5-7 miles or farther (maximizes speed and travel time advantage)



Why Commuter Rail in This Corridor?

Grand Ave. Characteristic	Commuter Rail Applicability
Long travel times due to congestion, especially at traffic signals during peak periods	Commuter rail can bypass congestion and can be coordinated with traffic signals to facilitate movement through intersections
Long corridor length (54 miles total to Wickenburg)	Commuter rail is appropriate for long corridors, particularly on a per mile basis when compared to light rail (\$10-\$20 million per mile for commuter rail vs. \$60-\$80 million per mile for light rail)



Recent Commuter Rail Implementation

- ◁ The implementation of commuter rail in other areas provides an outline of potential issues and lessons to be learned.
- ◁ A project from Rail North Texas provides a useful list of lessons to be learned and potential issues to be aware of.



Recent Commuter Rail Implementation

Key Issues/Lessons Learned

- ◁ Issue: **Railroad Coordination**
 - Keep railroads informed and involved
 - Collect as much data as possible
 - Be realistic in developing operating agreements and scenarios
 - Understand the railroads' perspective



Recent Commuter Rail Implementation

Key Issues/Lessons Learned

◁ Issue: **Cost Estimating**

- Update cost estimates annually or more often
- Be conservative but use recent actual industry prices
- Be sure stakeholders understand the baseline estimate



Recent Commuter Rail Implementation

Key Issues/Lessons Learned

◁ Issue: **Rail Vehicles**

- Long lead-time, unpredictable cost item
- Explore options early
- Prepare stakeholders for options
- Be flexible
- Look for partnering opportunities with other agencies



Recent Commuter Rail Implementation

Key Issues/Lessons Learned

◁ Issue: **Existing and Future Land Use Plans**

- Consider necessary land use changes and timing
- Consider jurisdictional desires
- Manage expectations and be realistic
- Additional work needed before located station nodes



Recent Commuter Rail Implementation

Key Issues/Lessons Learned

◁ Issue: **Community Issues**

- There will always be opposition so be prepared
- Try to answer all questions (within reason)
- Educate the public and be proactive
- Be realistic as to what the impacts will be
- Usual suspects: traffic impacts at crossings and park-and-rides, safety, quiet zones, property values



Recent Commuter Rail Implementation

Key Issues/Lessons Learned

◁ Issue: **Funding**

- There are no easy answers
- Federal funding may not always be realistic
- Local funding has budget and schedule advantages
- Finding right mix of funding that has public, agency and legislative support
- Funding sources needed for both capital and operating expenses



MAG Regional Transit Framework Study

◁ What is it?

- Component of statewide transportation planning framework
- Multi-modal strategy to achieve a sustainable transportation future
- Defines long range transit needs with multiple planning horizons: 2030, 2050



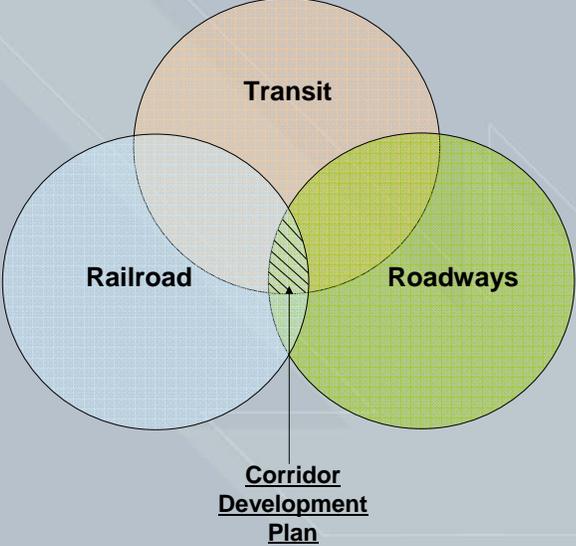
Study Goals

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Objectives



Study Elements



Needs in the Corridor

- ◁ Population and employment growth will result in an **increase in travel demand and intra-corridor trips.**
- ◁ Existing and committed roadway improvements **will not keep pace with travel demand.**
- ◁ There is no **high-capacity, high-speed travel corridor** connecting the population and employment centers in the corridor with the central business district.
- ◁ There is a need to **slow the growth in vehicle miles traveled** in the corridor to improve air quality.



Suggested Purposes of the Project

- ◁ Improve mobility **between and among major activity centers** in the corridor for all population groups.
- ◁ Provide **high-speed, high-capacity multimodal solutions** that help mitigate **congestion** and improve **air quality.**
- ◁ Provide a high-quality transportation system that meshes **seamlessly** with other planned transportation improvements in the region.
- ◁ Provide a high-quality transportation system that facilitates and encourages **economic development and redevelopment** in the corridor.



Study Goals & Objectives

This Study Will

- ◁ Explore and document:
 - Existing and forecast demographics, land use, and travel characteristics in the corridor
 - Existing and forecast transportation network and conditions in the corridor
 - Barriers and opportunities for implementation of commuter rail service in the corridor
 - The range of commuter rail vehicle options (and procurement opportunities) available
 - Alternative implementation or operating scenarios and associated costs and ridership (and potential for New Starts funding)



Study Goals & Objectives

This Study Will

- ◁ Explore and document:
 - Fatal flaw environmental issues
 - Alternative administrative and operating structures and funding opportunities (including a conceptual financial *pro forma*)
 - Initial ideas on station locations and park-and-rides
- ◁ Recommend a conceptual path forward for funding and implementation
- ◁ Develop conceptual design concepts (1-2% design level) for refinement in future phases



Study Goals & Objectives

This Study Will Not

- ◁ Conduct a full-scale federally-sanctioned alternatives analysis
- ◁ Include detailed environmental impact analysis
- ◁ Provide detailed engineering drawings or design-level cost estimates
- ◁ Develop detailed station concepts or location analyses
- ◁ Develop station area plans



Primary Project Objectives

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Work Flow



Primary Project Objectives & Work Flow

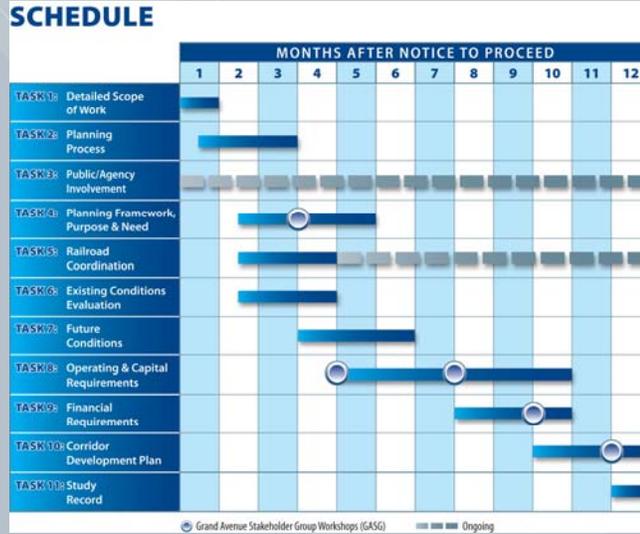
- ⟨ Public and Agency Involvement
- ⟨ Ongoing Railroad Coordination
- ⟨ Data Collection/Existing and Future Conditions
- ⟨ Operating and Capital Requirements
- ⟨ Corridor Framework
- ⟨ Initial Scenarios
- ⟨ Refine Scenarios
- ⟨ Infrastructure Needs and Costs
- ⟨ Final Plan



Project Schedule



Project Schedule



Project Coordination

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Major Milestones

Project Coordination & Major Milestones

- ◁ PMT Meetings
- ◁ Project Review and Team Meetings
- ◁ GASG Meetings
- ◁ MAG Committee Briefings
- ◁ Project Management Plan
- ◁ Public Involvement Plan
- ◁ Corridor Development Plan Framework
 - Purpose and Need
- ◁ Railroad Issues Report
- ◁ Existing Conditions Report



Project Coordination & Major Milestones

- ◁ Future Conditions Report
 - Sketch Level Ridership Estimates
- ◁ Conceptual Operating Plans
 - Initial Scenarios
- ◁ Railroad Improvement Plans
- ◁ Ridership/Summit Forecasts
- ◁ Capital/Operating Cost Estimates
 - Refined Scenarios
- ◁ Draft and Final Reports



Next Meeting

- ◁ **Project Review Team Meeting – January 22nd**
- ◁ **Meeting Frequency**
- ◁ **Meeting Location**

