

Development Forum #3 Public Forum

I-10/Hassayampa Valley Roadway Framework Study

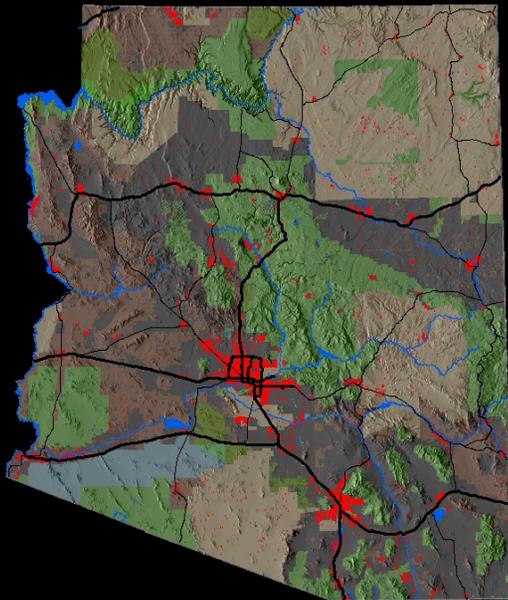


February 26, 2007

Agenda

- Study Background
- Overview of Project to Date
- Alternatives Under Consideration
- Mobility Performance of Base Alternative
- Overview of Evaluation Framework
- Next Steps

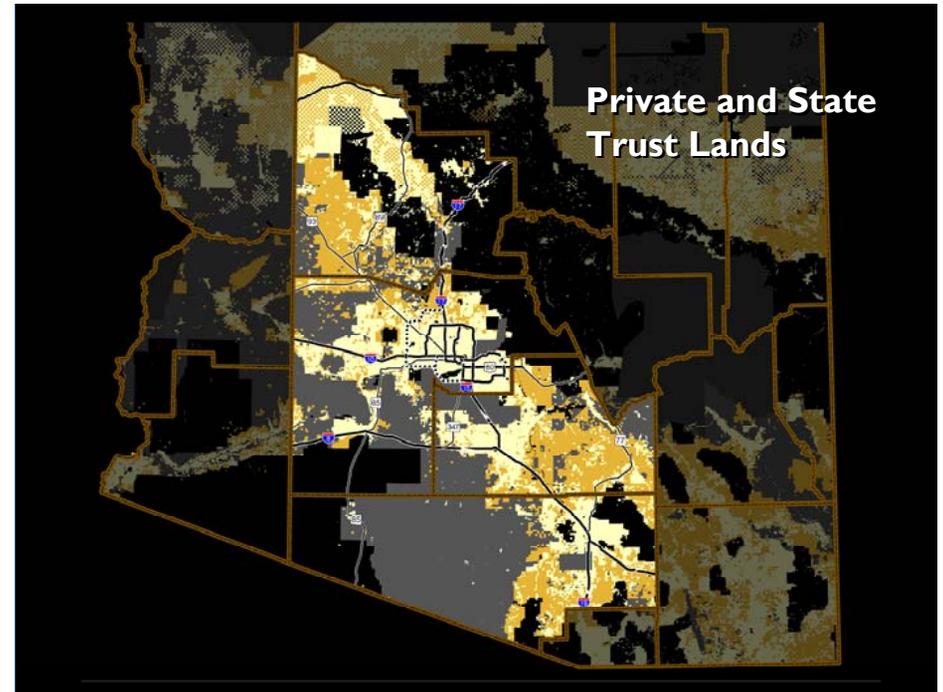
5 Million

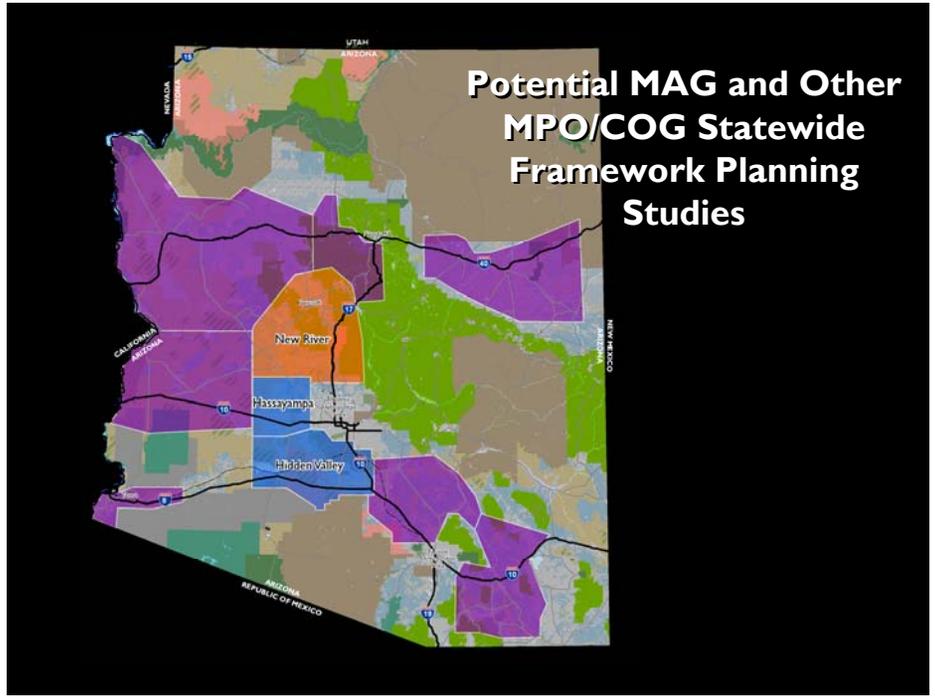
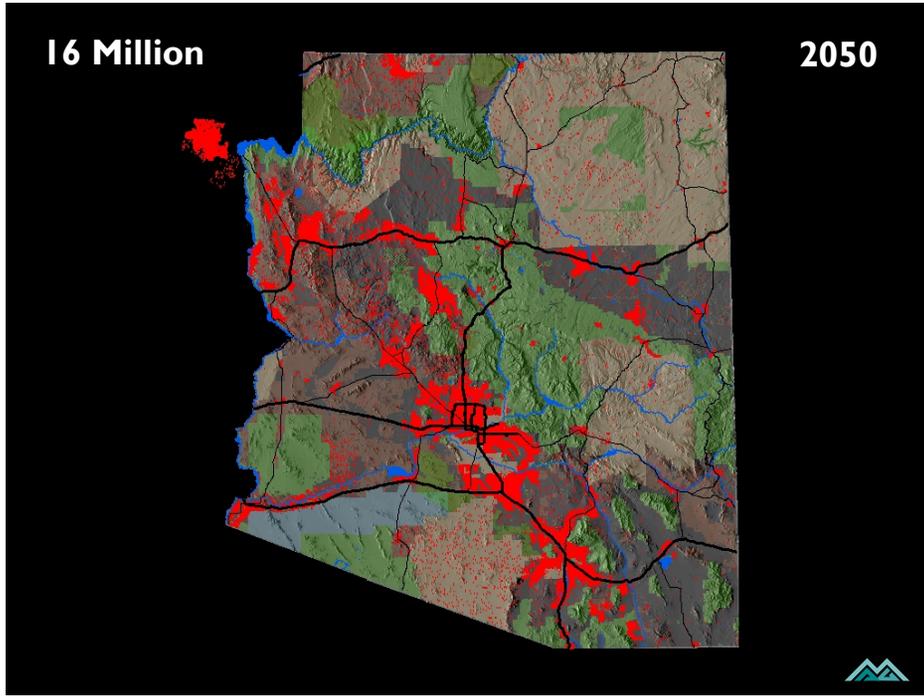
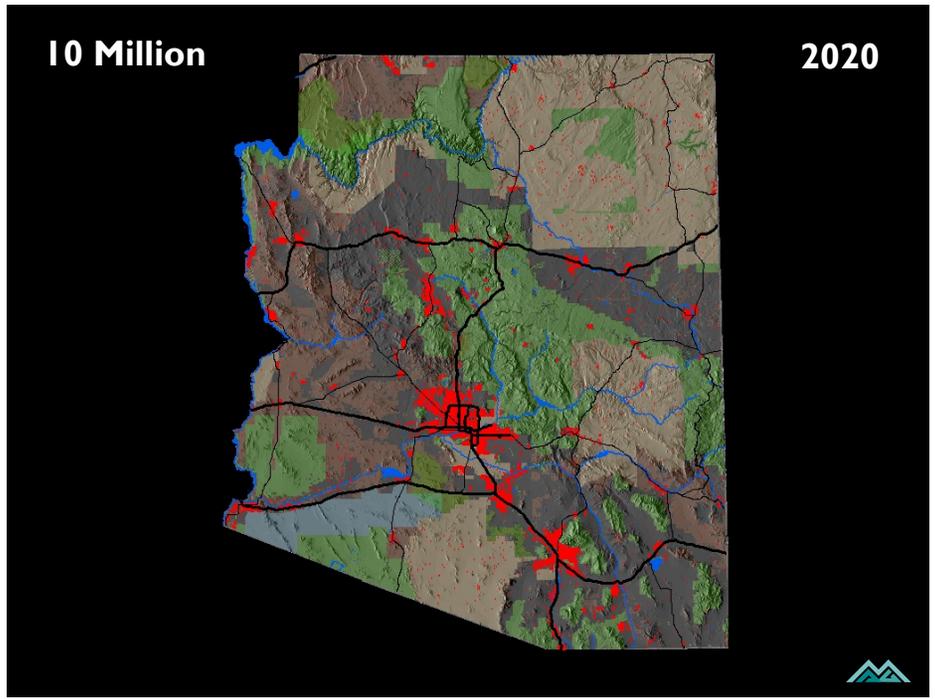
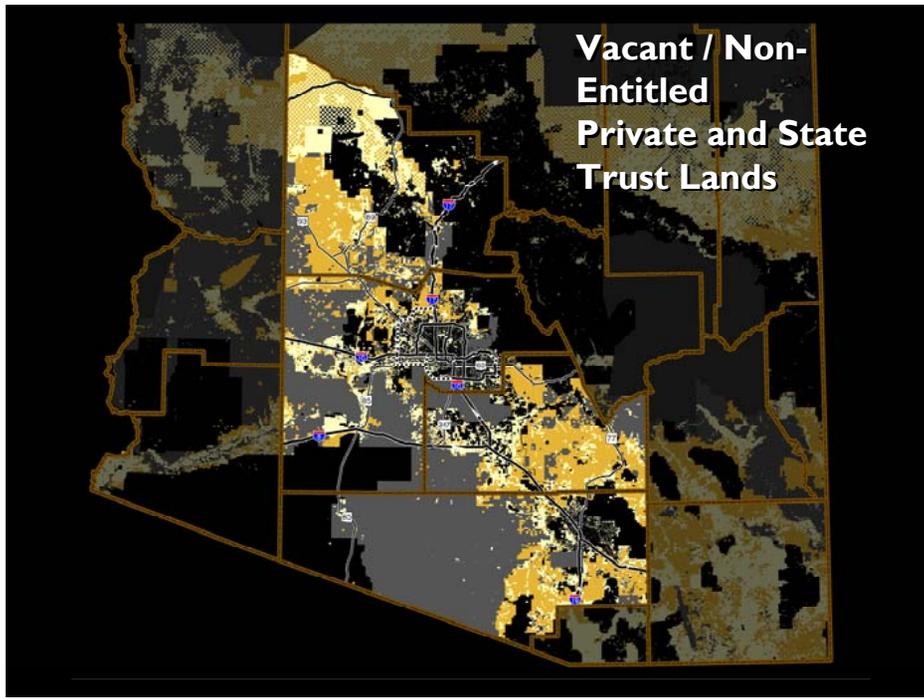


2000



Private and State
Trust Lands





Study Background

- Topographic barriers make identification of high capacity corridors challenging.
- Future I-10 interchanges need to be established now to enable timely development planning.
- Development community can play large role in funding/implementation of transportation improvements.



Study Purpose

- Key elements include:
 - Identify future I-10 interchange locations.
 - Define both north-south and east-west high capacity corridors.
 - Establish future principal arterial network.
 - Develop alternative funding and implementation strategies.
 - Discuss the potential role of alternative modes.



Study Sponsors

- Maricopa Association of Governments
- City of Goodyear
- City of Surprise
- Town of Buckeye
- Arizona Department of Transportation
- Maricopa County Department of Transportation



Study Review Team (SRT)

- Arizona Department of Transportation
- Arizona State Land Department
- City of Glendale
- City of Goodyear
- City of Surprise
- Federal Highway Administration
- Flood Control District of Maricopa County
- Luke Air Force Base
- Maricopa County Department of Transportation
- Town of Buckeye
- U.S. Bureau of Land Management



Development Community

- Large Property Owners
- Development Firms
- Homebuilders
- Real Estate Representatives
- Public and Private Asset Management Organizations
- Chambers of Commerce
- Economic Development Organizations
- Public and Private Utilities
- Railroads
- Municipal and County Planning and Community Development Agencies



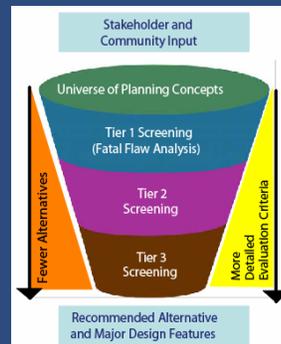
Study Team Composition

- MAG (Bob Hazlett, Project Manager)
- DMJM Harris (prime consultant; transportation and community planning, traffic and civil engineering, environmental review – John McNamara, Project Manager)
- Wilson & Company (WCI – travel demand modeling and planning support)
- Partners for Strategic Action (PSA – community involvement)
- Curtis Lueck & Associates (CLA – funding and implementation)



Development and Evaluation of Roadway Framework Alternatives

- Existing, Committed and Expected Future Transportation Systems
- Comprehensive Set of Evaluation Criteria
- Range of Roadway Framework Scenarios
- “Critical Flaw” Analysis to Screen Alternatives
- Detailed Evaluation of Three Roadway Framework Scenarios
- Select Recommended Scenario
- Prioritize Projects; Funding and Implementation Plan



Work Program and Timeline



Summary of Development Forum #1

May 31, 2006

Common Themes / Divergent Opinions

PLANNING	TRANSPORTATION	ENVIRONMENT	LAND USE
<p>Planning improvements to coincide with growth.</p> <p>Explosive growth occurring along the Valley Highway.</p> <p>I-10 traffic interchange locations.</p> <p>Many master planned communities may not have correctly sized systems.</p> <p>Security of Palo Verde Nuclear Generating Station.</p> <p>Overall impacts to Lake Air Force Base.</p> <p>Road construction impacts on I-10 traffic.</p> <p>Consider toll roads.</p> <p>Public easements of existing gaps.</p> <p>Ability to avoid future environmental cooperation and bypass urban areas to avoid.</p>	<p>Three big urban project planning and coordination.</p> <p>Need for more West Valley economic development.</p> <p>Interagency coordination plan.</p> <p>Addressing how to join interests in Homestead Valley.</p> <p>The I-10 corridor to the SE rim preferred preserve right-of-way for SR-207.</p> <p>Needed regional coordination between I-10 users, SR-207 and in those smaller gaps to avoid Phoenix metropolitan area.</p> <p>Right-of-way protection now.</p> <p>Project funding from public and private sources.</p> <p>Telemarketing to reduce overheads.</p> <p>Joint location of transportation and power facilities.</p>	<p>Form growth regulations.</p> <p>Available funding options.</p> <p>Reduced corridor access and loss the high capacity transit.</p> <p>White Tank Mountain block east-west traffic flow.</p> <p>Homestead River crossings.</p> <p>Proposition 420 funding will not fund new projects in the study area.</p> <p>Least of bad to protect right-of-way.</p> <p>New SR-207 National crossings.</p> <p>History of master planned community job creation in Phoenix metro area is not encouraging.</p> <p>Designs and then correct structures.</p>	<p>Multi-modal transportation framework. The way to raise people and goods.</p> <p>Richard Hillman: Parkway to eliminate west of the White Tank Mountains to eliminate traffic on I-10 and that Road.</p> <p>Understandable and available cost share programs.</p> <p>Alternative routes of travel along I-10 corridor.</p> <p>Create jobs in Homestead Valley to reduce trips into central Phoenix.</p> <p>Tunnel through White Tank Mountains.</p> <p>Road easements in Maricopa County Interchanges along Loop 200.</p> <p>Address roadway design and construction.</p> <p>Creation of Urban-Outer Loop (SR-207) not necessary to CALTRANS Corridor.</p>

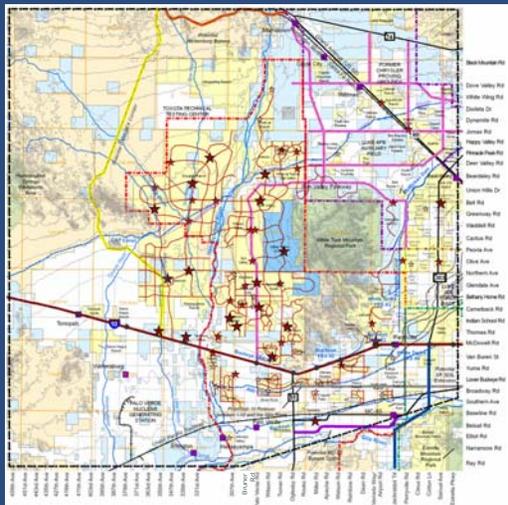
Summary of Development Forum #2

July 26, 2006

Transportation Framework Sketch Planning



Opportunities and Constraints



- Study Area
- Washes/Canals
- Wilderness Areas
- Noise Contours
- Topography
- Jurisdictions
- Proposed Transportation Corridors
- Planned Developments
- Proposed Arterials
- Proposed Employment Center Locations

Conceptual Transportation Framework

- Study Area Opportunities and Constraints
- Freeways
- Parkways
- Major Arterials

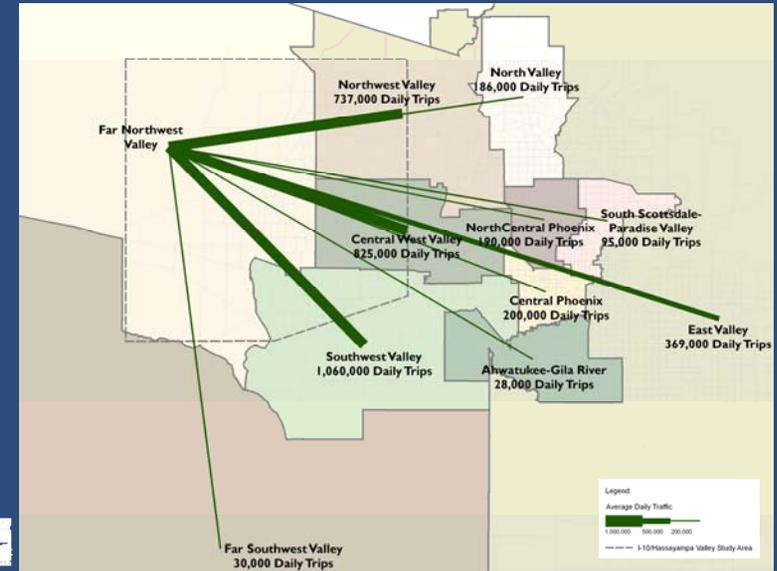


Conceptual Transportation Framework Needs Assessment



- Study Area Assumptions at Buildout
 - Population: 2.7 million
 - Employment: 840,000
 - Dwelling Units: 980,000
 - Total Daily Trips: 6 million (approximate)
 - Estimated Trip Capture:
 - 30% +/- Internal
 - 70% +/- External

Buildout Travel Desire Lines



Conceptual Transportation Framework Direction



- Overall Direction
 - Minimum – 4 east-west freeways to link Hassayampa Valley to the Metropolitan Area, over and above existing facilities.
 - North-south high capacity corridors (e.g. freeways, parkways) required east and west of the White Tanks.
 - A 3-tiered major corridor hierarchy is proposed (freeways, parkways, major arterials).
 - Preferred spacing of high capacity corridors:
 - Freeways: 8 – 10 miles
 - Parkways: 3 – 4 miles

Conceptual Transportation Framework

January 8, 2007



Freeways

- Existing Freeway Improvements
- Future RTP Freeways
- New Freeway Proposals

Parkways

- New Parkway Alternatives
- New Parkway Proposals

Major Arterials

- Future Major Arterial Network

I-10 Traffic Interchange Spacing Recommendation

Ref Post (expressed in miles)	Exit Number	Crossing	Type
88.2 (e)	88	459th Avenue (Proposal)	Service
90.2 (e)	90	443rd Avenue (Proposal)	Service
92.2 (e)	92	427th Avenue (Proposal)	Service
94.2	94	411th Avenue (Proposal)	Service
96.3 (e)	96	395th Avenue (Proposal)	Service
98.3	98	379th Avenue (Wintersburg Pkwy Proposal)	Service
100.5 (e)	100	Hassayampa Freeway (36300 W) (CANAMEX Corridor) (Proposal)	System
102.5 (e)	102	347th Avenue (Approved)	Service
103.5	103	339th Avenue	Service
105.5 (e)	105	Desert Creek Parkway (32300 W) (Proposal)	Service
107.6	108	Johnson Road (30700 W) (Proposal)	Service
109.7	110	Sun Valley Parkway/Palo Verde Road (28300 W)	Service
112.8	112	SR-85/Turner Parkway (26700 W)	System
114.9	115	Miller Road (25100 W)	Service
117	117	Watson Road Parkway (23500 W)	Service
120.0 (e)	120	Verrado Way (21100 W)	Service
121.7	122	Jackrabbit Trail (19500 W)	Service
122.7	123	Perryville Road (18700 W) (Proposal)	Service
124.7	124	SR-303L/Estrella Freeway (Cotton Lane) (17100 W)	System

(e) - estimated reference post location; shaded lines represent existing (2006) TI locations

Recommended Roadway Classification Capacities

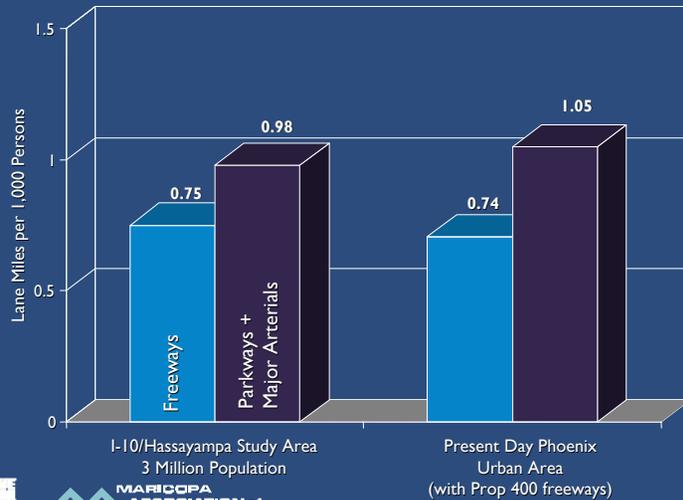
Classification	General Purpose Lanes	Buildout Capacity at LOS E/Lane	Buildout Capacity at LOS E
Arterial	6 lanes	11,000 vehicles/day/lane	66,000 vehicles/day
Parkway	6 lanes	16,000 vehicles/day/lane	96,000 vehicles/day
Freeway	10 lanes	20,000 vehicles/day/lane	200,000 vehicles/day



MARICOPA ASSOCIATION of GOVERNMENTS

Preliminary Network Assessment

Phoenix Urban Area Transportation Service Comparison



MARICOPA ASSOCIATION of GOVERNMENTS

Preliminary Network Assessment

Peer City Transportation Service Comparison



MARICOPA ASSOCIATION of GOVERNMENTS

Conceptual Transportation Framework



Freeways

Parkways

Major Arterials

Potential Transit

- Bus Rapid Transit
- High Capacity Shuttle Transit
- Commuter Rail
- Rail Connector
- Light Rail Transit

Preliminary Implementation Considerations



- Current revenue sources will fall far short of the long term needs.
- New sources will be needed to implement the “framework” system.
- A single funding source will probably not work; will need a mix of sources.
- A mix of public and private funds may be required.
- Toll roads are worthy of re-examination.
- Community Facility Districts have potential.
- Regional impact fees may be viable.
- Need to increase gas tax, or implement a replacement of the gas tax.
- None of the revenue sources will be easy to implement; sources that generate the most revenue will likely be the hardest to implement.

Public Outreach Summary



Outreach Methods:

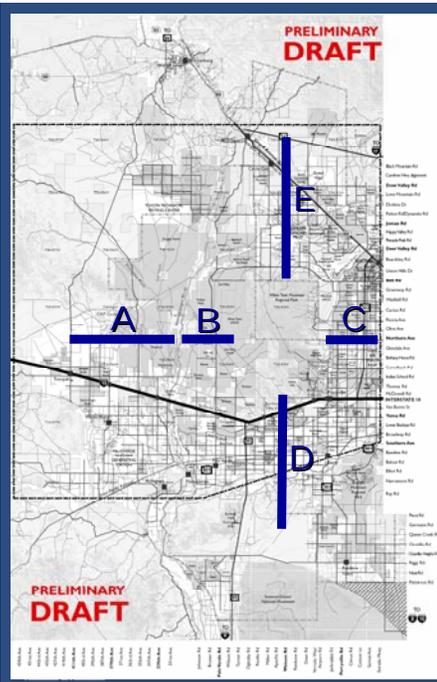
- Three Development Forums
- One Project Newsletter; One Yet to be Published
- Over 100 One-on-One Meetings with the Development Community, Property Owners, and Stakeholder Agencies
- Stakeholder Agency Outreach
 - Regular Study Sponsor Meetings
 - Regular Study Review Team Meetings
- Environmental Resource Agency Coordination Meeting
- MAG Project Website Regularly Updated
- Summary Poster Publication; Planned at Project Completion

Public Outreach Summary



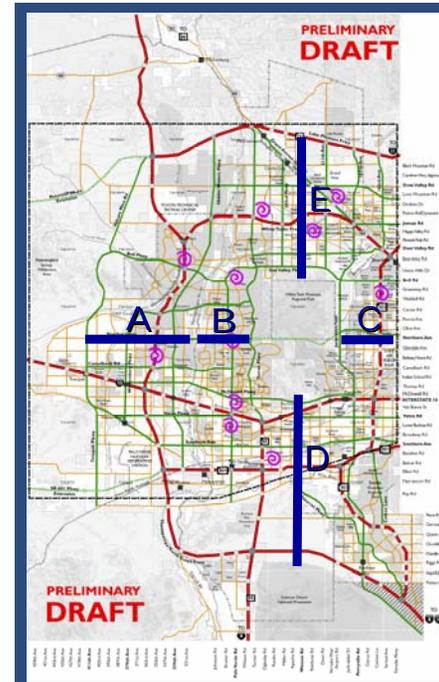
Outreach Achievements:

- Meetings with major stakeholders to discuss status of planning and development activities.
- Meetings with municipal stakeholders to discuss status of community and public facility planning.
- Refined study area map opportunities and constraints.
- Worked with FHWA and ADOT to establish traffic interchange spacing guidelines and locations.
- Continuous refinement of roadway framework network with all stakeholders.
- Worked with Agency/Consultant Teams on related studies.



Alternatives Development

- Conceptual Transportation Framework (Alternative A) is Base Case
- Modified primary corridors to test higher and lower capacity options
- Modified primary corridors in response to:
 - Environmental sensitivity
 - East-west high capacity needs
 - North-south high capacity needs
 - Internal mobility needs
 - Access to key economic activity centers
- Establish cut-lines for evaluation purposes



ALTERNATIVE A

Maximum Balanced Capacity

Characteristics

- Environmentally moderate, some high capacity corridors near environmentally sensitive features.
- Balanced east-west high capacity.
- Balanced north-south high capacity.
- Balanced internal mobility.
- Highly supportive of key economic activity centers.

Preliminary Modeling V/C Observations*

Cut-Line	Freeway	Parkway	Arterial	Total
A	0.42	0.39	0.08	0.29
B	N/A	0.73	0.58	0.66
C	1.68	0.78	1.57	1.46
AVERAGE	1.05	0.63	0.74	0.81
D	1.71	1.01	1.62	1.40
E	1.33	1.10	1.53	1.29
AVERAGE	1.52	1.06	1.58	1.35

*Reflects land use inputs from municipalities as of 11/06 for Hassayampa Valley Study Area only.



ALTERNATIVE A1

Maximum Balanced Capacity

Characteristics

- Environmentally moderate, some high capacity corridors near environmentally sensitive features.
- **Decreased east-west high capacity north of the White Tanks.**
- Balanced north-south high capacity.
- Balanced internal mobility.
- Highly supportive of key economic activity centers.

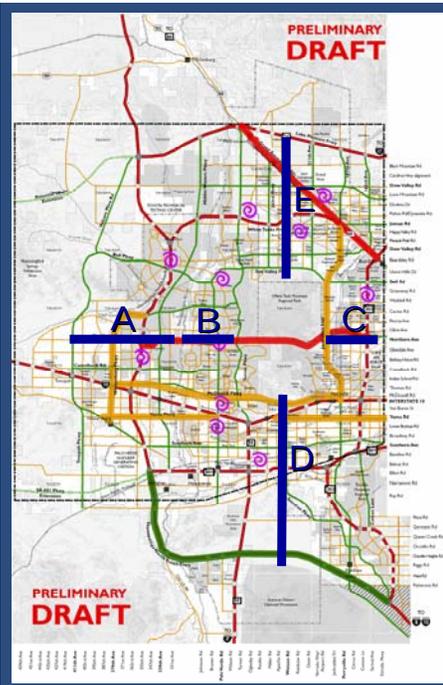


ALTERNATIVE A2

Maximum Balanced Capacity

Characteristics

- **Environmentally sensitive, lower capacity corridors near sensitive environmental features.**
- **Decreased central east-west high capacity.**
- **Decreased north-south high capacity west of the White Tanks.**
- Balanced internal mobility.
- Highly supportive of key economic activity centers.



ALTERNATIVE B

Balanced East-West Capacity

Characteristics

- Environmentally less sensitive – freeway adjacent to White Tank Mountain Regional Park.
- Highly balanced east-west capacity; freeway spacing approximately every 8 miles.
- Decreased north-south high capacity corridors.
- Balanced internal mobility.
- Highly supportive of key economic activity centers.

Preliminary Modeling V/C Observations*

Cut-Line	Freeway	Parkway	Arterial	Total
A	0.48	0.54	0.03	0.30
B	N/A	0.59	0.62	0.60
C	1.53	N/A	1.58	1.56
AVERAGE	1.01	0.57	0.74	0.82
D	1.35	1.12	1.79	1.46
E	1.01	0.88	1.73	1.13
AVERAGE	1.18	1.00	1.76	1.30

*Reflects land use inputs from municipalities as of 11/06 for Hassayampa Valley Study Area only.



ALTERNATIVE BI

Balanced East-West Capacity

Characteristics

- Environmentally less sensitive – freeway adjacent to White Tank Mountain Regional Park.
- Balanced east-west capacity; freeway spacing approximately every 8 miles.
- Decreased north-south high capacity corridors.
- Balanced internal mobility.
- Highly supportive of key economic activity centers.



ALTERNATIVE C

Enhanced White Tanks Capacity

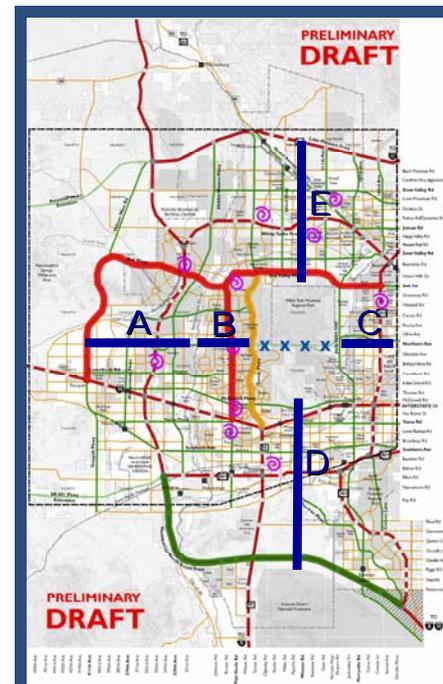
Characteristics

- Environmentally least sensitive – high capacity transportation corridors flanking all sides of White Tank Mountain Regional Park.
- Balanced east-west high capacity; parkway spacing approximately every 3 miles.
- Balanced north-south high capacity.
- Balanced internal mobility.
- Highly supportive of key economic activity centers.

Preliminary Modeling V/C Observations*

Cut-Line	Freeway	Parkway	Arterial	Total
A	0.44	0.36	0.12	0.27
B	0.94	0.63	0.44	0.50
C	1.61	N/A	1.58	1.59
AVERAGE	1.00	0.50	0.71	0.79
D	1.74	1.09	2.16	1.46
E	1.39	0.89	1.91	1.32
AVERAGE	1.57	0.99	2.04	1.39

*Reflects land use inputs from municipalities as of 11/06 for Hassayampa Valley Study Area only.



ALTERNATIVE D

Enhanced Inter-Mountain Capacity

Characteristics

- Environmentally moderate, roadways adjacent to, but not through White Tanks.
- Decreased central east-west high capacity.
- Increased north-south high capacity.
- Balanced internal mobility.
- Highly supportive of key economic activity centers.

Preliminary Modeling V/C Observations*

Cut-Line	Freeway	Parkway	Arterial	Total
A	0.42	0.23	0.08	0.27
B	0.48	N/A	0.77	0.64
C	1.76	0.77	1.52	1.47
AVERAGE	0.89	0.50	0.79	0.79
D	1.55	1.20	1.86	1.50
E	1.13	1.12	1.65	1.24
AVERAGE	1.34	1.16	1.76	1.37

*Reflects land use inputs from municipalities as of 11/06 for Hassayampa Valley Study Area only.

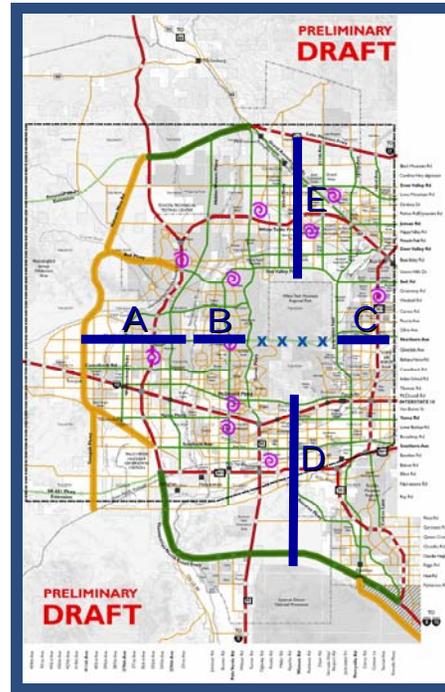


ALTERNATIVE DI

Enhanced Inter-Mountain Capacity

Characteristics

- Environmentally moderate, roadways adjacent to, but not through White Tanks.
- Decreased central east-west high capacity.
- Increased north-south high capacity.
- Balanced internal mobility.
- Highly supportive of key economic activity centers.



ALTERNATIVE E

Environmentally Sensitive, Minimum Capacity

Characteristics

- Environmentally sensitive, lower capacity roadways near sensitive environmental features.
- Decreased east-west high capacity.
- Slightly decreased north-south high capacity.
- Balanced internal mobility.
- Decreased western and southern access to key economic activity centers.

Preliminary Modeling V/C Observations*

Cut-Line	Freeway	Parkway	Arterial	Total
A	0.43	0.23	0.32	0.32
B	N/A	0.86	0.52	0.69
C	1.76	0.77	1.52	1.47
AVERAGE	1.10	0.62	0.79	0.83
D	1.55	1.20	1.86	1.50
E	1.33	1.17	1.65	1.34
AVERAGE	1.44	1.19	1.76	1.42

*Reflects land use inputs from municipalities as of 11/06 for Hassayampa Valley Study Area only.

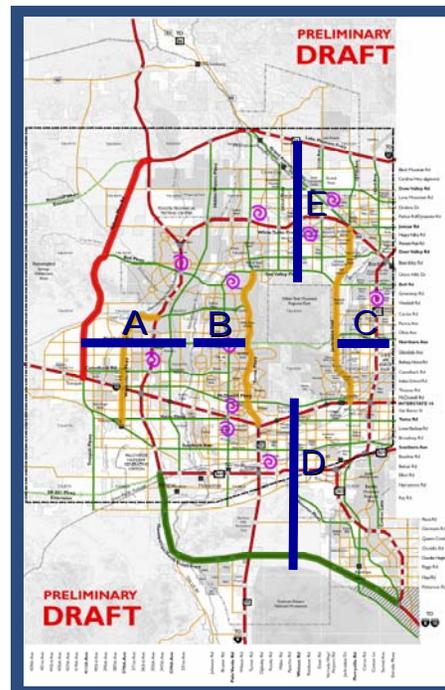


ALTERNATIVE EI

Environmentally Sensitive, Minimum Capacity

Characteristics

- Environmentally sensitive, lower capacity roadways near sensitive environmental features.
- Decreased east-west high capacity.
- Slightly decreased north-south high capacity.
- Balanced internal mobility.
- Decreased western and southern access to key economic activity centers.



ALTERNATIVE F

Testing Miscellaneous Segments

Characteristics

- Environmentally moderate, some high capacity corridors near environmentally sensitive features.
- Balanced east-west high capacity.
- Balanced north-south parkway density.
- Increased central study area internal mobility.
- Decreased parkway accessibility to key economic activity centers.

Preliminary Modeling V/C Observations*

Cut-Line	Freeway	Parkway	Arterial	Total
A	0.49	0.41	0.06	0.33
B	N/A	0.69	0.77	0.75
C	1.64	N/A	1.52	1.56
AVERAGE	1.07	0.55	0.78	0.88
D	1.67	1.14	1.76	1.47
E	1.31	1.08	1.48	1.26
AVERAGE	1.49	1.11	1.62	1.37

*Reflects land use inputs from municipalities as of 11/06 for Hassayampa Valley Study Area only.



ALTERNATIVE F1

Testing Miscellaneous Segments

Characteristics

- Environmentally moderate, some high capacity corridors near environmentally sensitive features.
- Balanced east-west high capacity.
- Balanced north-south parkway density.
- Increased central study area internal mobility.
- Decreased parkway accessibility to key economic activity centers.



Travel Demand Forecast Modeling Methodology

- MAG receives and utilizes General Plan buildout land use data from jurisdictions in the MAG Region and Pinal County.
- Alternative network development.
- MAG regional travel demand model is the federally-recognized platform for transportation planning in the MAG Region and Pinal County.
- Establish sub-regional buildout travel demand within context of MAG.
- Evaluate network alternatives performance.
- Input to regularly updated Regional Transportation Plan, in accordance with federal requirements.

Draft Evaluation Criteria

Purpose: To establish a reasonably objective foundation for comparing roadway network alternatives and selecting a preferred network.

Study Goals:

- Maximize safety on roadways
- Maximize mobility to meet travel needs
- Provide sufficient access to land uses
- Ensure a high degree of planning consistency
- Minimize negative environmental impacts
- Minimize the construction and maintenance costs and maximize opportunities for project implementation
- Select an alternative that has attracted community support

Draft Evaluation Criteria

Goal	Evaluation Criteria	Notes/Remarks
Safety	Intensity of roadway system use	Minimize daily vehicle miles of travel (VMT) per lane mile in study area
	Proportion of travel on the safest facilities	Maximize percent of study area VMT on freeways

Draft Evaluation Criteria

Goal	Evaluation Criteria	Notes/Remarks
Mobility	Adequate level of directional network capacity	Minimize the number of individual network facilities, and cut-line groupings of facilities, operating over daily volume threshold levels
	Prevalence of freeway congestion	Minimize percent of freeway lane miles operating at Level of Service E or worse in the PM peak period
	Prevalence of arterial street congestion	Minimize percent of major (arterial-arterial) intersections operating at LOS E or worse in the PM peak
	Extent of potential unmet need for grade separations on the surface street system	Minimize number of at-grade intersections with more than 120,000 entering vehicles per weekday
	Efficiency of freeway traffic flow	Maximize average PM peak travel speed on freeways in study area
	Efficiency of surface street traffic flow	Maximize average PM peak travel speed on arterials and parkways in study area
	Regional connections	Maximize number of continuous freeway and expressway lanes crossing a north-south screenline drawn through the White Tank Mountains

Draft Evaluation Criteria

Goal	Evaluation Criteria	Notes/Remarks
Access	Residential access to freeways	Maximize percent of study area residents within two miles of a freeway interchange
	Business access to freeways	Maximize percent of study area employment within two miles of a freeway interchange
	Convenience of access from home to work	Minimize average length of work trips by study area residents



Draft Evaluation Criteria

Goal	Evaluation Criteria	Notes/Remarks
Planning Consistency	Public land use planning	Maximize consistency with jurisdictional land use plans
	Public transportation planning	Maximize consistency with jurisdictional circulation plans
	Public economic development planning	Maximize consistency with jurisdictional economic development plans
	Private community planning	Maximize consistency with development master plans



Draft Evaluation Criteria

Goal	Evaluation Criteria	Notes/Remarks
Environmental Impacts	Environmental justice impacts	Minimize deleterious impacts to any study area residents belonging to protected groups under Title VI
	Utility impacts	Minimize impacts to existing overhead, buried and other utilities, plus canals and flood control structures
	Floodplain and drainage impacts	Minimize impacts associated with crossing of floodplains or disturbance of drainage features, including Waters of the U.S. under jurisdiction of the U.S. Army Corps of Engineers
	Impacts to public recreational land	Minimize impacts to resources protected under Section 4(f) or 6(f)
	Potential impacts to sensitive habitats and species	Minimize impacts to areas containing known or likely habitat for Threatened, Endangered and other sensitive species
	Air quality and fuel conservation	Minimize number of SOV (single occupant vehicle) work trips by study area residents
	Air quality	Minimize estimated daily emissions of major pollutants (CO ₂ , O ₃ , PM ₁₀) by vehicles in study area
	Hazardous materials impacts	Minimize number of known hazardous materials sites potentially disturbed by proposed transportation facilities

Draft Evaluation Criteria

Goal	Evaluation Criteria	Notes/Remarks
Cost and Implementation	Construction cost	Minimize (order of magnitude) capital cost
	Cost of maintaining transportation infrastructure	Minimize (order of magnitude) operating and maintenance cost
	Land acquisition cost	Minimize (order of magnitude) right-of-way cost
	Feasibility of funding	Minimize any legal or institutional barriers that may make one alternative harder to implement than others

Draft Evaluation Criteria

Goal	Evaluation Criteria	Notes/Remarks
Community Support	Known or expected community consensus supporting alternative	Maximize support as expressed by stakeholders, study participants and the SRT

Next Steps:



- Conduct sensitivity analysis for jobs-housing enhancement
- Complete evaluation of alternatives
- Prioritize best performing alternatives or formulate hybrid alternative
- Detail the Preferred Alternative
 - Typical cross sections
 - Cost estimate
 - Phasing program
- Complete Implementation Program
 - Financial strategies
 - Implementation responsibilities
 - Institutional requirements
 - Identify conceptual multi-modal complements

Next Steps:



- Study Acceptance
 - MAG Regional Council
 - Maricopa County
 - Municipalities
- Recommendations
 - Key Framework Corridors
 - Freeway Interchange Recommendations
 - New "Limited-Access Parkway" Recommendation
 - Implementation Strategy
 - Financial Element
 - Constructability Element

...For More Information

Please contact:

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