

For information, discussion, and possible action.

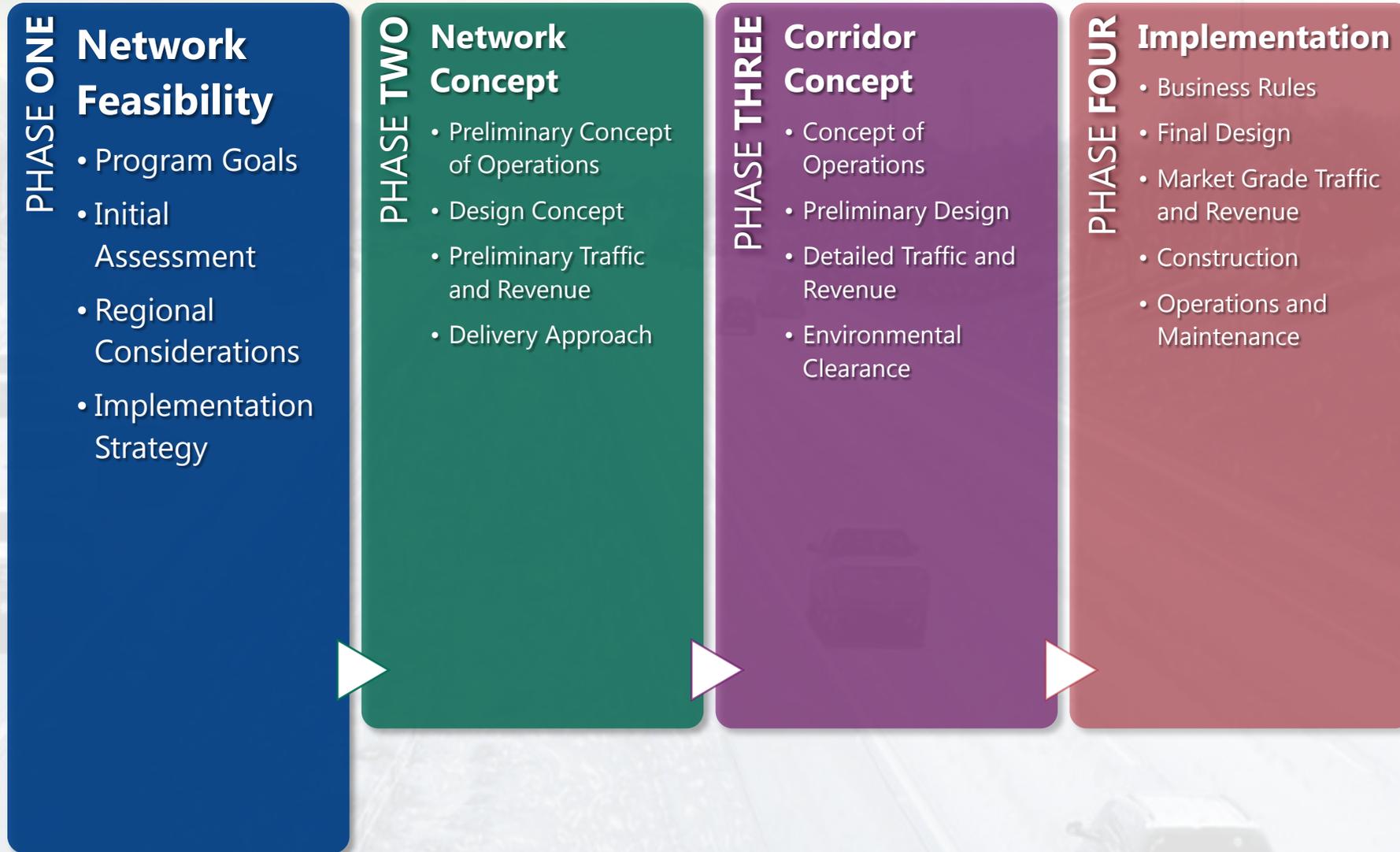
Recommendation from the MAG Managed Lanes Network Development Strategy – Phase I Study

Transportation Policy Committee
April 17, 2013



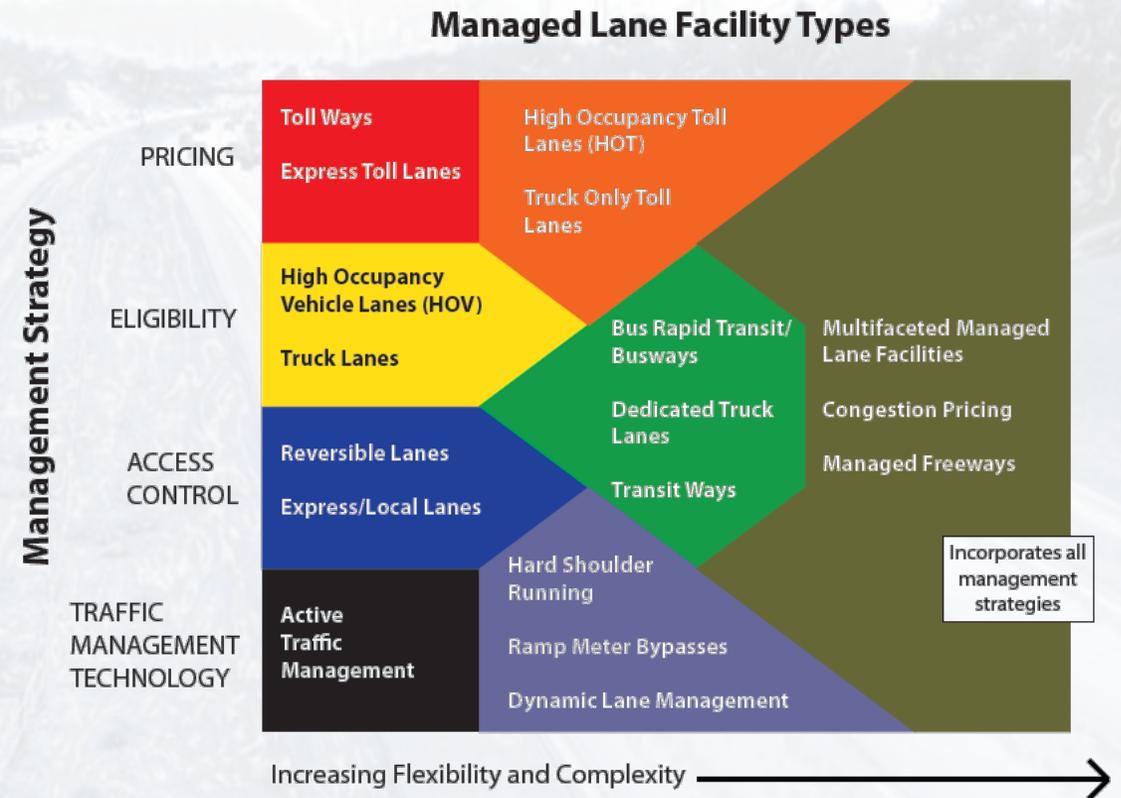
MAG Managed Lanes Network Development Strategy

In part response to
HB2396 enabling
Public-Private
Partnership (P3)
opportunities in
Arizona.



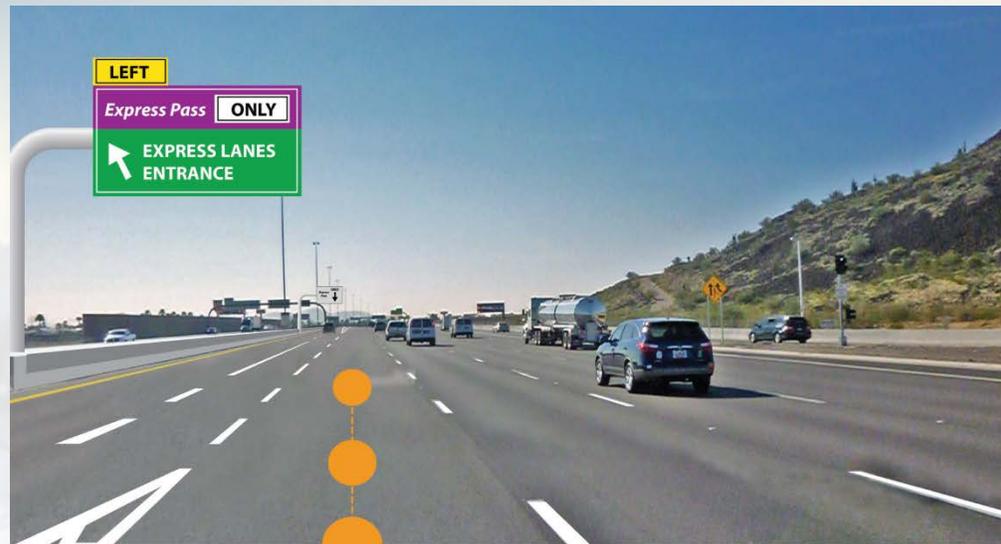
Express Lanes Concept

- Managed Lanes are dedicated lanes for one or more user groups.
- Proactively managed to provide better reliability and/or level-of-service.
- Benefits in **travel time savings and reliability**, as well as:
 - Commuter Choices.
 - Enhanced Transit Services.
 - Positive Environmental Impacts.
 - Revenue.



MAG Managed Lanes Network Development Strategy

- Phase I completed.
- Phase II scheduled to begin Summer 2013.



Managed Lanes

Network Development Strategy Phase One

Executive Summary

MARCH 2013

DRAFT



Project Goals and Objectives

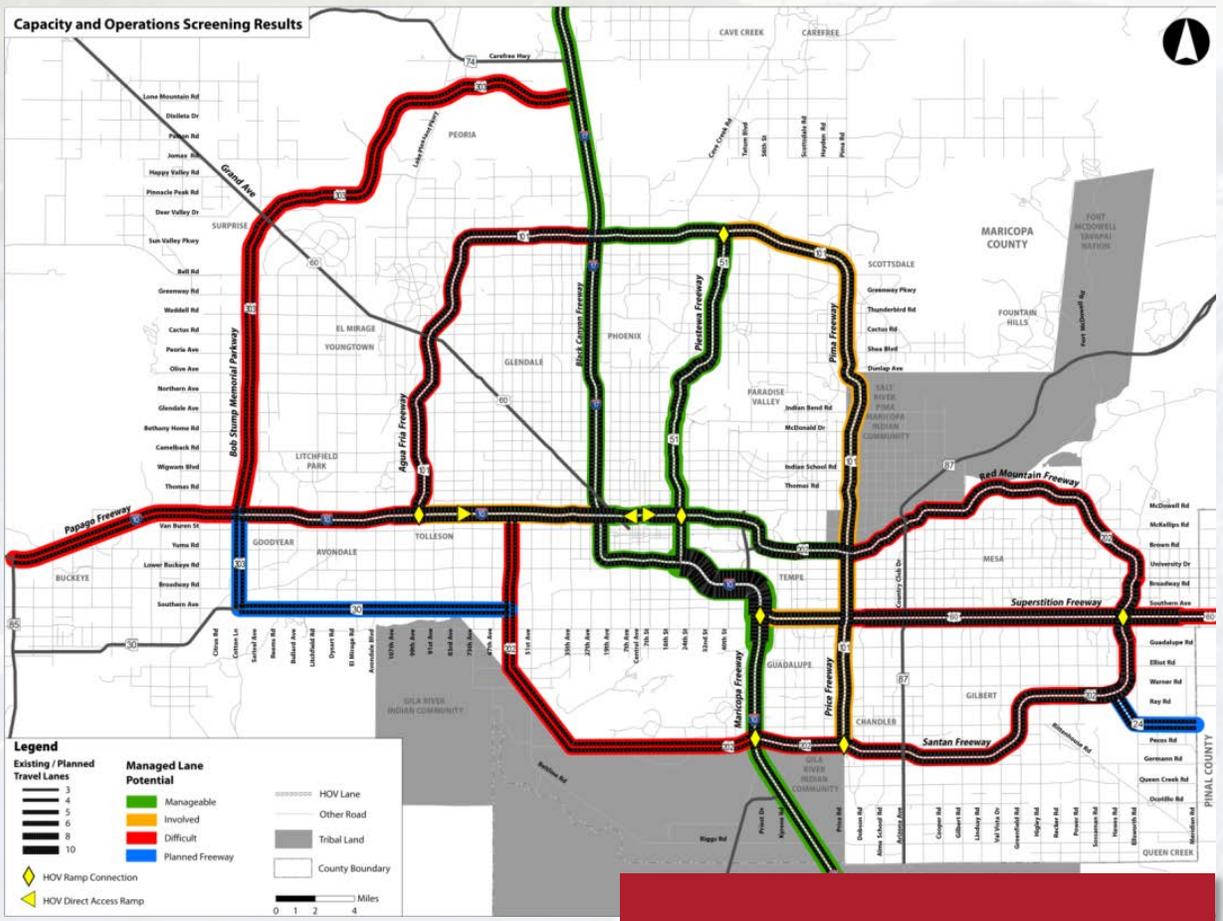
Goals	Objectives	
Improved Mobility	<ul style="list-style-type: none">▪ Reduce travel times and improve travel time reliability.▪ Manage travel demand and traffic congestion.▪ Improve/maximum existing system infrastructure.▪ Maximize use of technology.	<ul style="list-style-type: none">▪ Increase capacity.▪ Provide mobility options.▪ Improve transit service options, efficiency and reliability.
Revenue Alternatives	<ul style="list-style-type: none">▪ Leverage existing revenue sources.▪ Access new/alternative revenue sources.▪ Accelerate project delivery to complete the system.	<ul style="list-style-type: none">▪ Support ongoing operations and maintenance.▪ Support transit service provision.▪ Better plan future investments.
Public and Political Support	<ul style="list-style-type: none">▪ Support public education and outreach.▪ Identify/foster political champions.▪ Facilitate equitable distribution of costs whereby users pay for what they use.	
Improved Environmental Quality	<ul style="list-style-type: none">▪ Provide air quality benefits.▪ Enhance quality of life.	

Operating Policy and Practice Considerations

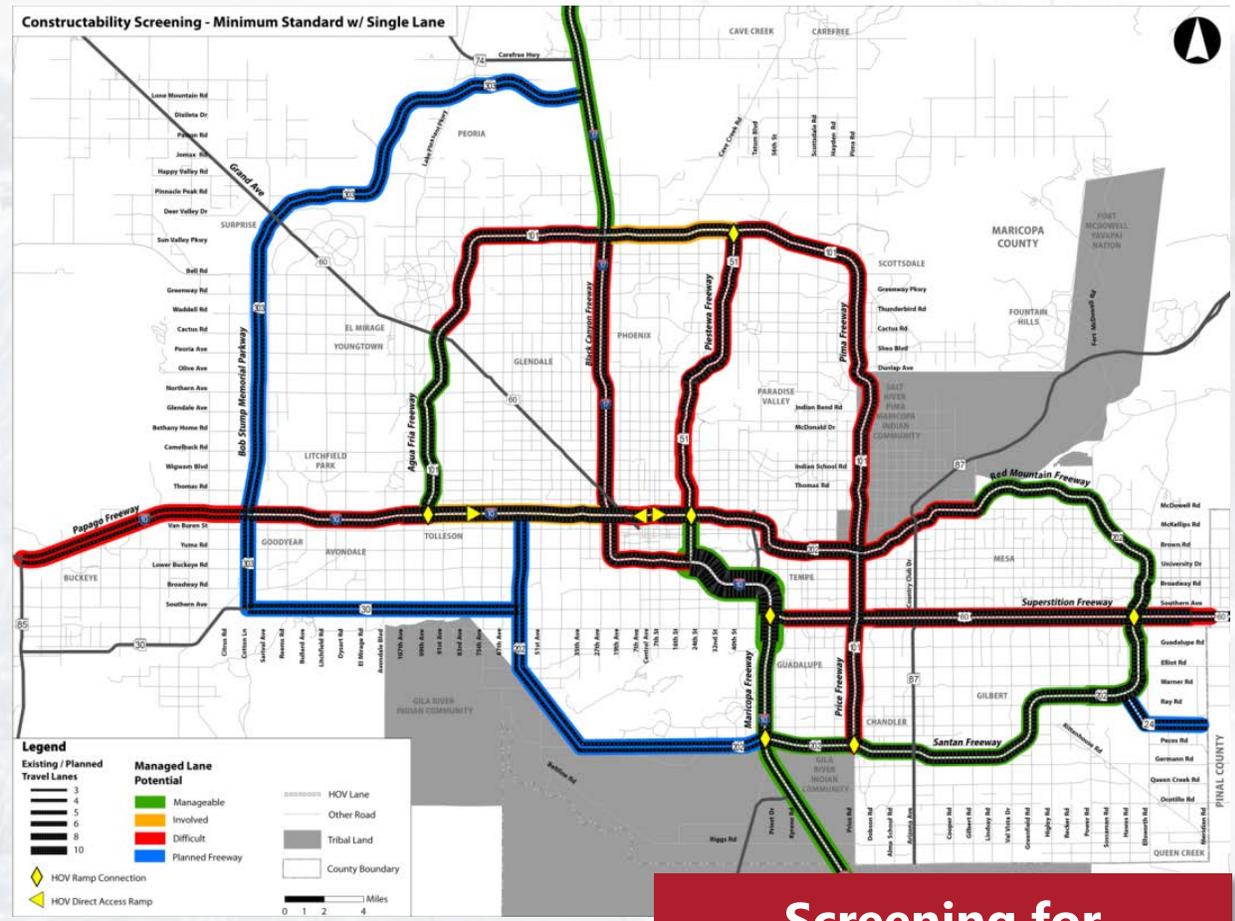
- Lane Separation and Access.
- Hours of Operation.
- Occupancy Requirements.
- Pricing Methods.
- **Active Traffic Management (ATM):**
 - Reducing potential for crashes when speed and conditions change.
 - Reducing congestion with variable speed limits, lane control, and hard shoulder running.
 - Improving reliability and enhancing information to motorists.
 - Providing meaningful traffic-flow benefits at a relatively low cost without tolling.



Express Lanes

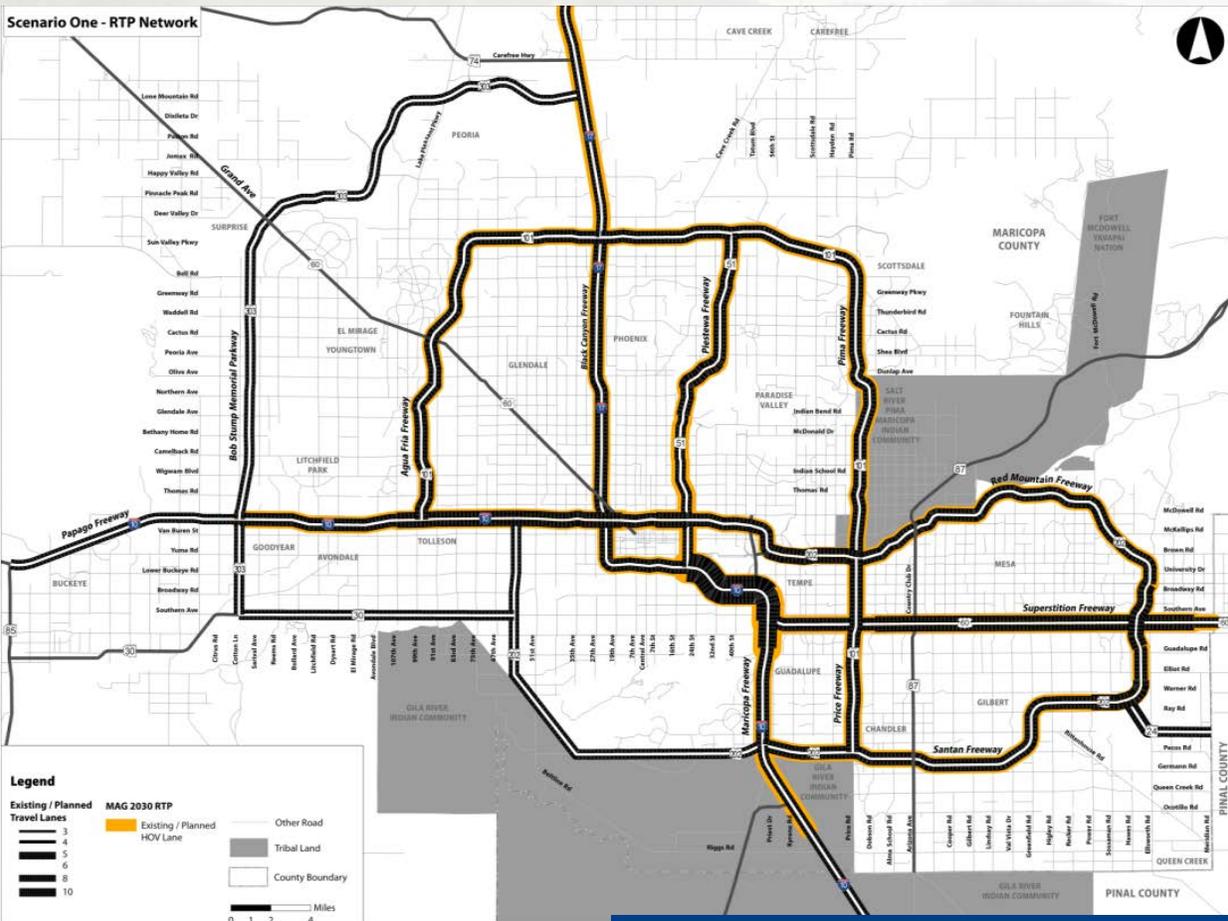


**Screening for Capacity
2031 MAG Regional
Freeway Network**

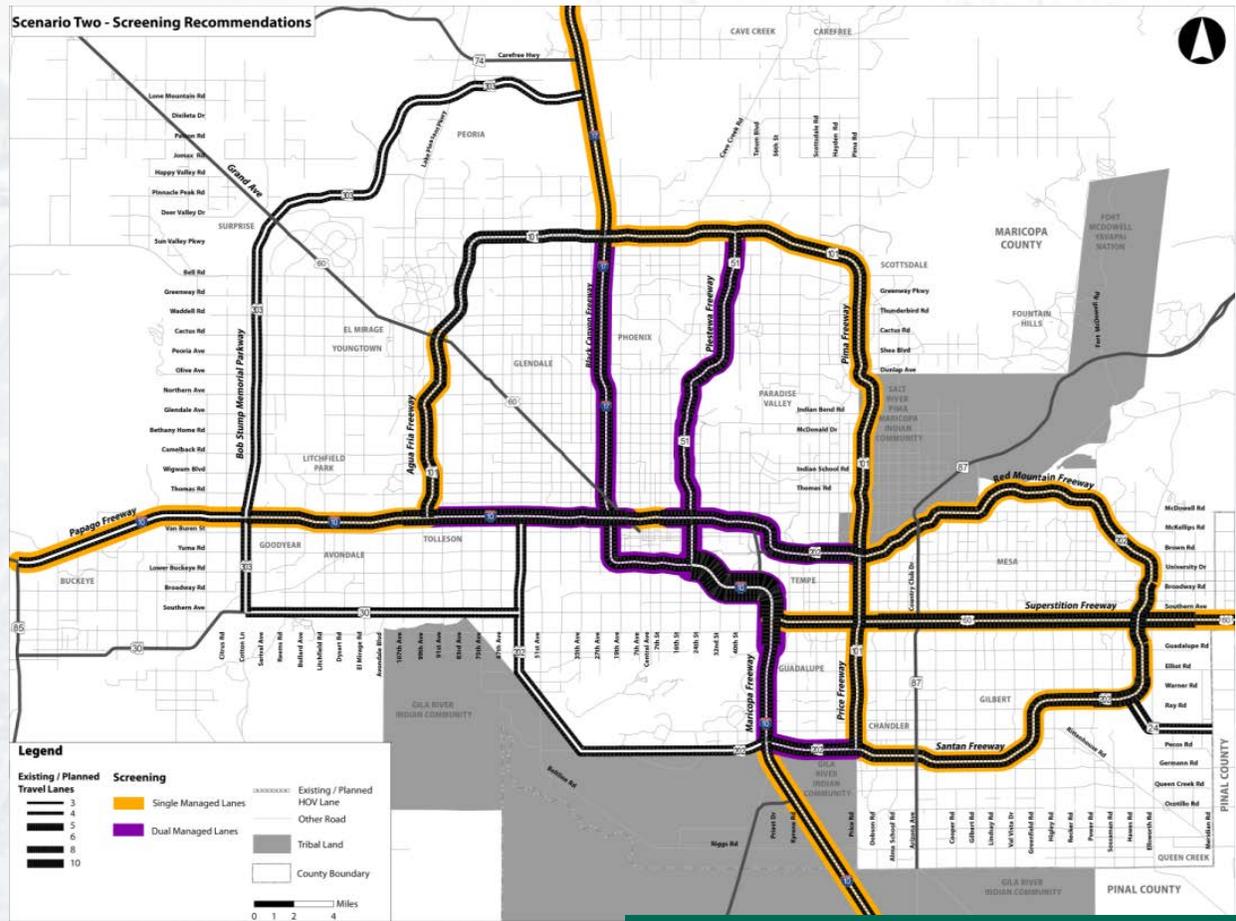


**Screening for Constructability
2031 MAG Regional
Freeway Network**

Express Lanes



Scenario 1 – HOT 1 SINGLE LANE SYSTEM

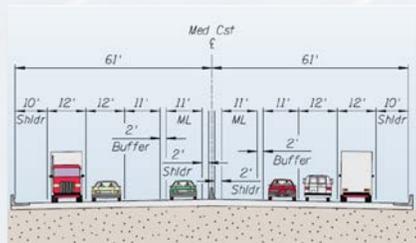


Scenario 2 – HOT 2 DUAL LANE SYSTEM

Revenue Forecasts and Costs

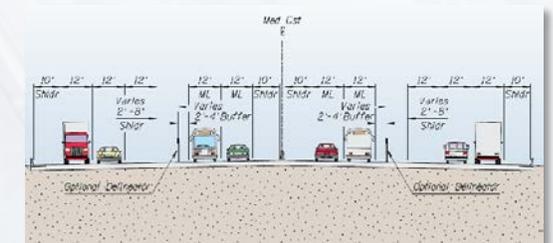
Scenario 1	2010 Dollar Values (millions)	Inflation Adjusted (millions)
2015 Revenue	\$170 - \$210	-
2031 Revenue	\$240 - \$290	\$150 - \$190
Lifecycle Revenue (2015-2045)	\$7,300 - \$9,000	\$4,800 - \$5,800
Lifecycle Cost (2015-2045)	--	\$1,900 - \$2,400
Lifecycle Net Cashflow (2015-2045)	--	\$2,900 - \$3,400

Scenario 2	2010 Dollar Values (millions)	Inflation Adjusted (millions)
2015 Revenue	\$170 - \$210	-
2031 Revenue	\$310 - \$380	\$200 - \$240
Lifecycle Revenue (2015-2045)	\$9,700 - \$11,900	\$6,000 - \$7,400
Lifecycle Cost* (2015-2045)	--	\$4,600 - \$5,700
Lifecycle Net Cashflow (2015-2045)	--	\$1,400 - \$1,700



Costs:

- Tolling Items
- Roadway and Structural Items
- Operations and Maintenance



Based on the findings, it is recommended that MAG and its key transportation partners actively pursue implementing a broad array of enhanced mobility options, including the use of **Managed Lanes, Congestion Pricing, Active Traffic Management**, and other similar innovative transportation solutions.

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Develop a **unified branding** strategy for enhancing mobility in the MAG region to capitalize on the success of projects that focus on maximizing system performance and productivity.





- Projects could include various managed lanes elements, along with freeway and highway system operational improvements, transit services, and bicycle and pedestrian amenities.

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Prioritize implementing an **Active Traffic Management demonstration on the I-10/Papago Freeway** to promote the benefits of integrated managed lanes strategies.





Looking East from 51st Ave, Phoenix, AZ

Prioritize implementing an **Active Traffic Management demonstration on the I-10/Papago Freeway** to promote the benefits of integrated managed lanes strategies.

- Active Traffic Management provides the lowest cost and least intrusive managed lanes solution.
- Active Traffic Management can afford meaningful traffic flow benefits in appropriate locations.

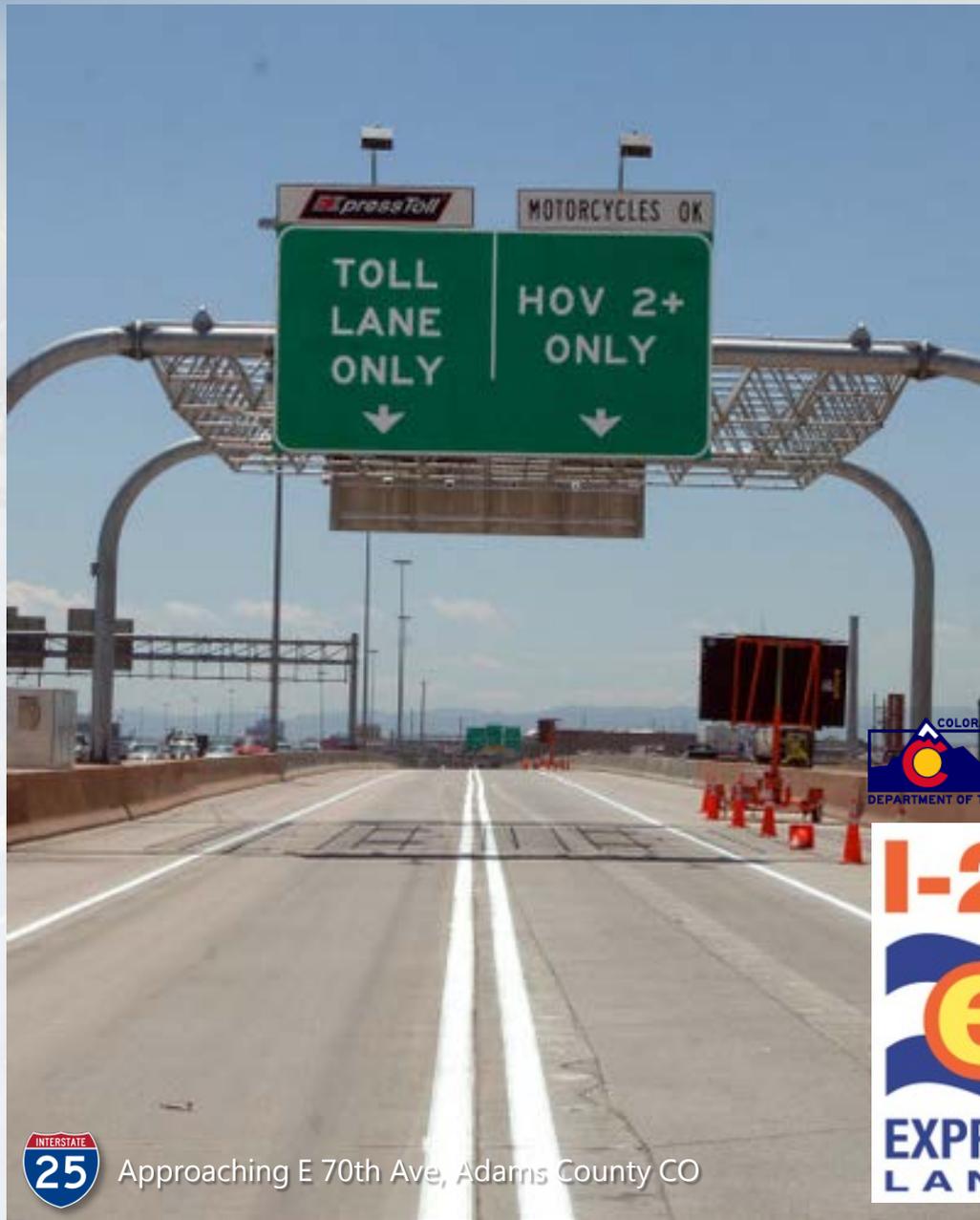


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Determine **possible congestion pricing demonstration projects** to pursue as an initial proof of concept.



- Seek an initial relatively low cost conversion to demonstrate benefits.
- Build toward more substantial and complex managed lanes projects in the most congested freeway corridors.

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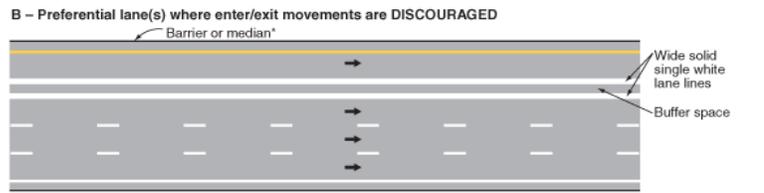
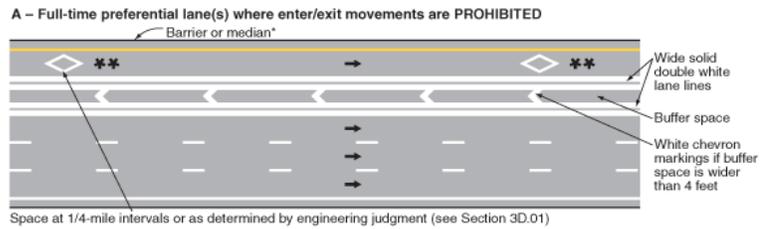
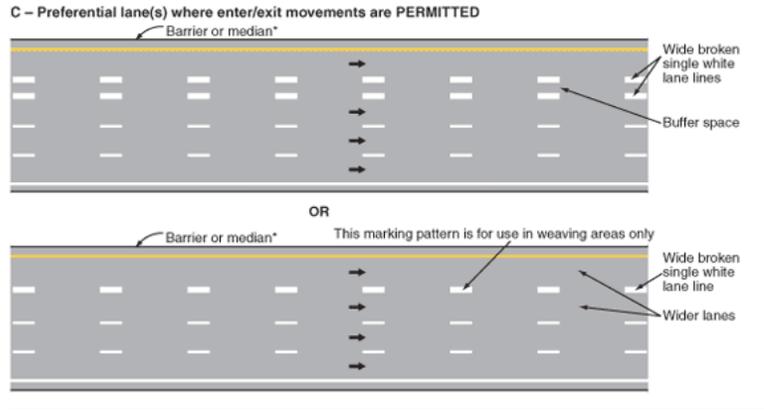
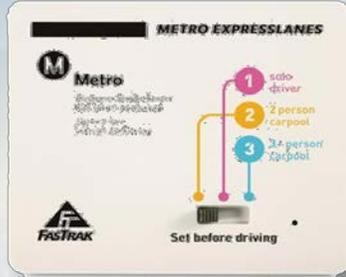
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Use **guiding policies** to further enhance existing HOV operations or to facilitate the introduction of HOT operations on the regional freeway system.



Legend

→ Direction of travel

* If no barrier or median is present and the left-hand side of the lane is the center line of a two-way roadway, use a double yellow center line

** Example of HOV only lane symbol markings

Source: MUTCD (2009)

- Implement 2009 MUTCD standards.
- Transition to near-continuous access design.
- Expand HOV hours as warranted.
- Maintain existing HOV occupancy.
- Use variable pricing for HOT operations.
- Require all users to use switchable transponders.
- **Ensure regional consistency.**



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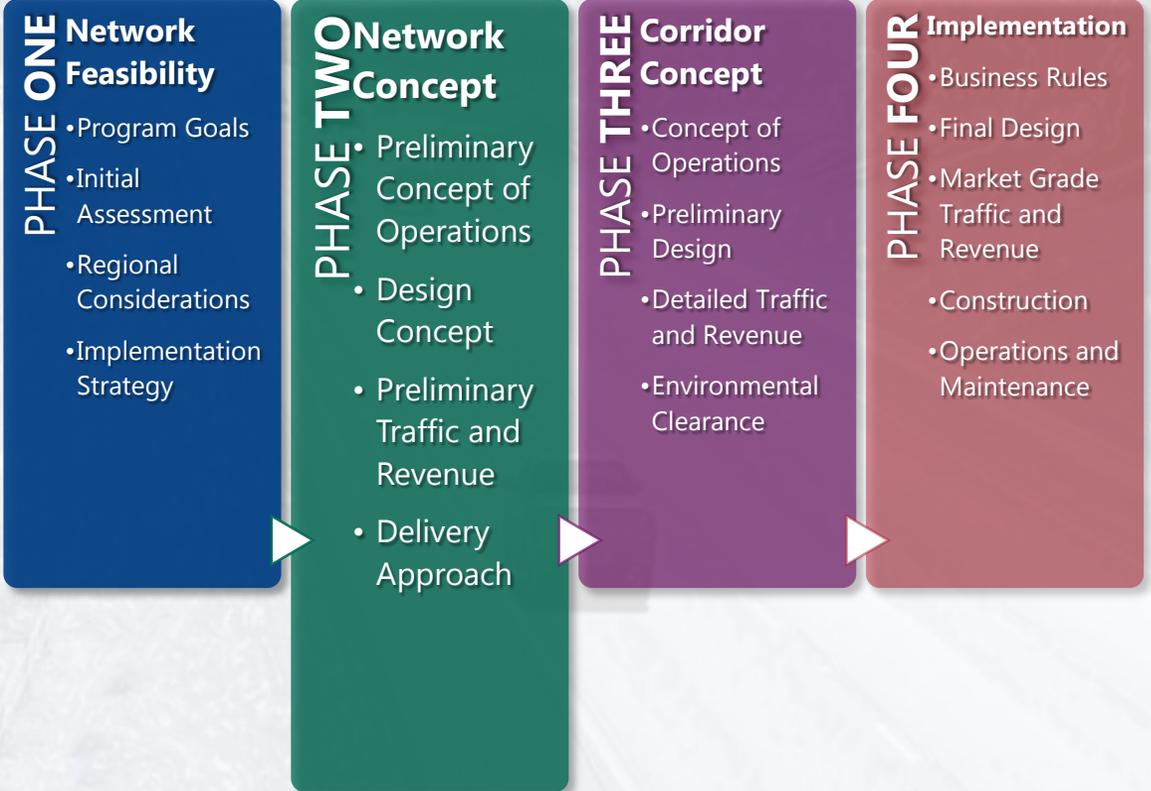
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Action Needed

Recommend approval to move on to Phase 2 of the MAG Managed Lanes Network Development Strategy Project.



For information, discussion, and possible action.

Recommendation from the MAG Managed Lanes Network Development Strategy – Phase I Study

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Capitol Beltway Express Lanes, Northern Virginia