

Managed Lanes Network Development Strategy – Phase I

Managed Lane Goals and Objectives

MARICOPA ASSOCIATION OF GOVERNMENTS

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1.0 BACKGROUND

The Maricopa Association of Governments (MAG) is working in cooperation with the Arizona Department of Transportation (ADOT), Federal Highway Administration (FHWA), and other regional partner agencies to explore the regional managed lanes system, including determining future needs for High-Occupancy Vehicle (HOV) system expansion and the potential for introducing enhanced lane management techniques such as value pricing in the form of High-Occupancy Toll (HOT) lanes, and active traffic management. The outcome of this effort will be a MAG Managed Lanes Network Development Strategy – Phase I Report that will guide future planning and investment in HOV and Managed Lanes facilities in the region.

The purpose of the MAG Managed Lanes Network Development Strategy – Phase I study is to examine the existing or planned freeways in the region to identify where managed lanes strategies, policies or actions could improve overall system efficiency. For those corridors where such strategies or policies are considered most promising, the study will then provide an action plan that establishes the framework for subsequent phases to further define the network concept including establishing a preliminary concept of operations and design concept, develop corridor specific concepts including preliminary design and environmental clearance, and complete implementation including business rules, market grade traffic and revenue forecasts, construction and operations.

To support the evaluation of the managed lanes network in the MAG region, a series of technical “white papers” will be developed to examine the relevant issues by drawing upon the substantial and growing research and experience on managed lanes around the nation. These white papers will assess the pros and cons associated with each relevant issue to better enable the regional partners to reach conclusions on the feasibility and specific technical aspects of managed lanes for the Phoenix area.

1.1. Purpose and Methodology

The purpose of this white paper is to confirm regional goals and objectives for managed lanes. The process of confirming regional managed lanes goals involves two steps:

1. Review existing regional transportation goals and objectives that are relevant to managed lanes, and national goals and objectives relating to HOV and other managed lanes facilities; and
2. Conduct an initial stakeholder workshop in conjunction with project initiation to explore the concept of Managed Lanes and confirm the underlying goals for HOV and HOT in the MAG region.

This white paper summarizes the findings of the review of regional transportation and national managed lanes goals and objectives, and the outcomes of the stakeholder workshop. This white paper concludes by defining the regional managed lanes goals and objectives that will become the basis for subsequent study evaluation activities.

2.0 MANAGED LANE GOALS AND OBJECTIVES

Confirmation of regional managed lanes goals and objectives is essential to establishing a framework or foundation upon which all subsequent evaluation and analysis can be linked. Defining regional managed lanes goals and objectives therefore represents a critical first step in the process of evaluating the effectiveness of existing facility investments and determining the feasibility of future network expansions or enhancements.

Policies based on a defined vision, and set of goals and objectives, can provide direction for determining when a managed lane facility or network should be considered for implementation, how it should be operated, and how effective the facility or network performs over time. Policies typically establish guidelines and thresholds for use in identifying the need for managed lane facilities and measuring system performance.

These policy benchmarks typically consider metrics such as traffic congestion, levels of service, transit service levels, commuter market characteristics, or travel patterns within the corridor catchment area. Operational thresholds related to changing conditions may also be utilized to trigger a revision of managed lane operating policy. The level of demand and utilization of managed lane facilities may prompt policy guiding eligibility (minimum occupancy, vehicle types, tolling), access (ingress and egress, direct access) and hours of operation to be reevaluated and adjusted to ensure facilities can more effectively reach defined goals.

2.1. Arizona Transportation Vision and Guiding Principles

The MAG Regional Transportation Plan (RTP) establishes a broad vision for the regional transportation system that addresses freeways and other highways, streets, transit, airports, bicycle and pedestrian facilities, freight, demand management, system management including intelligent transportation systems (ITS), and safety. In addressing federal Metropolitan Planning Organization (MPO) transportation planning requirements and establishing a regional vision, the July 2010 Update of the MAG RTP identifies four goals: System Preservation and Safety, Access and Mobility, Sustaining the Environment, and Accountability and Planning. Although Managed Lanes are not specifically cited in the accompanying objectives, several stated objectives are consistent with Managed Lanes principles. Specific relevant objectives include:

- **Objective 2D:** Provide the people of the region with transportation modal options necessary to carry out their essential daily activities and support equitable access to the region's opportunities.
- **Objective 3B:** Encourage programs and land use planning that advance efficient tripmaking patterns in the region.
- **Objective 4A:** Make transportation investment decisions that use public resources effectively and efficiently, using performance-based planning.
- **Objective 4B:** Establish revenue sources and mechanisms that provide consistent funding for regional transportation and mobility needs.

The recommended plan identified implementation of HOV facilities including the completion of additional HOV corridors and lane expansions, and freeway-to-freeway ramps at system interchanges.

The Arizona Statewide Transportation Planning Framework states, as part of its vision, the importance of investments in infrastructure to broaden mobility and transportation choices throughout the State. The document also discusses a set of transportation planning challenges such as the need to plan for a diversified transportation network and avoid the limits to economic growth created by freeway congestion. Drawing from similar themes, the initiatives discussed in the document draw from a set of guiding principles. These include improving mobility and accessibility, reducing traffic delay to enhance economic activity, and creating a more efficient transportation infrastructure.

The ADOT Long-Range Transportation Plan (LRTP) and MAG Regional Transportation Plan (RTP) both call for increased mobility and efficiency. The ADOT LRTP specifically mentions the goals of improving mobility and accessibility, alleviating congestion, expanding highway capacity, and utilizing toll and pricing facilities. As described previously, the MAG RTP draws from similar goals, including the provision of transportation systems and services that encourage mobility and accessibility, and programs that advance efficient trip making patterns. The following table summarizes regional transportation goals and principles related to managed lanes.

Table 2-1 Arizona Transportation Goals and Principles Related to Managed Lanes

| Regional or Statewide Plan | Goals and Objectives Related to Managed Lanes |
|---|---|
| ADOT Statewide Transportation Planning Framework (2010) | Long-Range Transportation Planning Challenges <ul style="list-style-type: none"> • Plan a diversified transportation network • Adopt policies to reduce greenhouse gas emissions • Avoid limits to economic growth from freeway congestion Guiding Principles <ul style="list-style-type: none"> • Improve mobility and accessibility • Reduce traffic delay to enhance economic activity • Create more efficient transportation infrastructure |
| ADOT Long-Range Transportation Plan (June 2011) | Goals, Performance Measures, and Needs <ul style="list-style-type: none"> • Improve mobility and accessibility • Support economic growth by alleviating congestion • Expand transportation system capacity through new highway lanes and facilities • Utilize non-traditional revenue sources such as roadway tolls and pricing facilities |
| MAG Regional Transportation Plan (2010) | Goals, Objectives, and Priority Criteria <ul style="list-style-type: none"> • Provide transportation systems and services that encourage mobility and accessibility • Encourage programs and planning that advance efficient trip making patterns |

Through the regional transportation goals and principles discussed above, MAG has demonstrated a long-term vision of moving more people within existing and planned transportation corridors by providing a broader range of options for travelers in central Arizona. By planning, developing and operating a comprehensive managed lane system, travel time savings and trip reliability can be used as an incentive to encourage people to use transit or to carpool thereby maximizing investments in transportation infrastructure by moving more people, particularly where options to expand roadway capacity and protect future mobility are limited. These same travel time and trip reliability benefits can also be extended to toll paying customers, where sufficient capacity exists, further maximizing the use of infrastructure and creating the potential for revenue generation.

It is the vision of MAG to develop a system of managed lanes serving freeways in the Phoenix metropolitan area, extending to major urban and suburban arterial streets, and incorporating essential support facilities. The development of an encompassing managed lane system can evolve to accommodate bus rapid transit and be complimentary with other fixed guideway transit investments made to move more people.

2.2. National Managed Lane Goals and Objectives

Managed lane goals and objectives should be consistent with regional and statewide goals and objectives, and should represent one component of a larger congestion management planning effort, since managed lanes are only one of the many tools available. Although managed lane vision, goals, and objectives for central Arizona will be unique and specific to local needs, examples from other areas are appropriate as a basis for further consideration and development in a local context. The following table provides examples of goals and objectives related to HOV and managed lanes identified and adopted for other major metropolitan areas.

Table 2-2 Managed Lanes Goals and Objectives

| Area Scope | Managed Lane Goals and Objectives |
|------------------------|--|
| National (FHWA) | <ul style="list-style-type: none"> • Move more people in fewer vehicles <ul style="list-style-type: none"> • Provide travel time savings • Provide reliable and predictable travel times |
| State of California | <ul style="list-style-type: none"> • Increase people-moving capacity • Reduce congestion • Provide travel time and cost savings • Increase system efficiency • Improve air quality |
| Minneapolis, Minnesota | <ul style="list-style-type: none"> • Maximize people-moving capacity • Provide support for bus services and rideshare programs |
| State of Texas | <ul style="list-style-type: none"> • Increase people per vehicle • Preserve person-movement capacity • Enhance bus operations |
| State of Washington | <ul style="list-style-type: none"> • Maximize people-moving capacity • Mitigate transportation related pollution • Reduce fuel consumption |
| District of Columbia | <ul style="list-style-type: none"> • Increase people per vehicle • Preserve person-movement capacity • Enhance bus transit operations • Support air quality improvements • Provide predictable travel times |

2.3. Regional Managed Lane Goals and Objectives

This section will be used to clarify and define the intent of MAG with regard to the development of managed lane facilities in central Arizona. Building upon the vision and guiding principles discussed in the previous sections, this section defines the specific goals and objectives to be strived for in pursuing managed lane investments in the MAG region.

The Project Planning Partners Advisory Group (herein referred to as “Project Partners”) established for this study is comprised of representatives from each of the MAG member agencies. Through an interactive work session held in conjunction with the project kick-off meeting on August 5, 2011, the Project Partners identified the following goals and objectives for managed lanes in the MAG region. These goals and objectives will establish the parameters by which subsequent specific policy elements can be defined and the performance of managed lanes can ultimately be evaluated.

Table 2-3 MAG Region Managed Lanes 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 • 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 • 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 |

Overall, the Project Partners placed an emphasis on improving mobility over revenue alternatives, with providing travel time reliability being identified and the most important aspect of mobility. In balancing potentially conflicting mobility and revenue goals, the group placed 2/3 emphasis mobility and 1/3 revenue, where the emphasis on revenue should be used to meet the mobility goals. The group felt that utilizing revenue to leverage existing funding should be a priority over generating new revenue. Achieving political support was also viewed as a key goal to advocate and facilitate implementation of a network of managed lanes within the MAG region.