

POLICY ELEMENT

1.0 INTRODUCTION

The Scottsdale *General Plan* is the policy foundation for the *Transportation Master Plan* goals and elements. The *Transportation Master Plan* is intended to be an implementation tool to accomplish the goals and vision of the *General Plan*. The foundation of the *General Plan* is the community vision built from a series of citizen-driven processes that formed and shaped that vision. A comprehensive review of the Scottsdale *General Plan* called CityShape 2020 was completed in the late 1990s and the vision, themes, and principles were validated through the *General Plan* update public participation process. CityShape 2020 was intended to be an extensive educational and community outreach process to reaffirm and improve the Scottsdale *General Plan* as an expression of the Shared Vision (created through the Scottsdale Visioning process two years earlier). The recommendations from CityShape 2020 included Six Guiding Principles, intended to highlight and organize in the *General Plan* the most important goals of the community. One of these Guiding Principles (Advance Transportation) specifically focuses on goals for transportation in Scottsdale:

The transportation system must be the backbone of the City, supporting its economy and serving and influencing its land use patterns in a positive way. Scottsdale's commitment to transportation planning will be reflected in both development and redevelopment decisions. Historically, Scottsdale has grown up with the automobile as the primary mode of transportation. Although the automobile will likely remain the primary mode of transportation, Scottsdale shall provide alternatives to diversify the City's transportation system. The alternatives will provide greater accessibility for residents and visitors, alleviate pollution and congestion, and serve and influence land use patterns.

Strategies identified in CityShape 2020 for achieving these goals include:

- ▶ Maintain a continuous and integrated land use and transportation planning process to ensure that development and infrastructure planning accurately reflect the travel demands and complement each other;
- ▶ Provide for adequate transportation corridors by allocating enough land during the planning process to allow for HOV lanes, bike lanes, shared-use paths, and transit facilities for future travel demands;
- ▶ Encourage land use patterns that reduce the amount of travel by the development of neighborhoods where mixed-use centers and services are easily accessible from residences;
- ▶ Expand and enhance pedestrian, bicycle, and transit access by considering safe and inviting access to shopping, offices, schools, etc. From multi use paths and transit facilities in all development decisions; and
- ▶ Ensure that the physical location and design of our transportation corridors are environmentally sensitive to our desert, mountains, scenic corridors, and neighborhoods.

One of the twelve interrelated elements of the *General Plan* is the Community Mobility Element. The Community Mobility Element's policies concentrate on providing safe, efficient, and accessible choices for the movement of people, goods, and information.

The introduction to the Community Mobility Element makes clear statements acknowledging that the automobile is expected to remain an important way of travel in Scottsdale. The Community Mobility Element strives to expand the field of mobility to fully integrate non-

automotive modes, such as public transit, cycling, walking, trip reduction strategies, and telecommunications. It also recognizes the inter relationships among transportation, land use, and neighborhoods. To maintain mobility, land use and transportation policies must emphasize work, live, and play relationships and more efficient and accessible/walkable transportation options must be provided. To reduce traffic congestion and impact on the natural and built environment, appropriate land use decisions must be sought which help reduce the length and number of automobile trips (typically expressed as vehicle miles traveled or VMT). In addition, mobility alternatives to the automobile that can be efficient, accessible, and comfortable, can challenge the reliance on the automobile, and can further help reduce congestion and improve safety on our streets.

There also is a strong recognition that different areas within the City may have unique mobility needs requiring solutions that, while part of a larger system, are designed for specific areas of the City. The policies of the Community Mobility Element are designed to recognize these unique needs and find solutions for them. Those policies are further refined and defined through the policies and goals of the *Transportation Master Plan*, especially through developing context-sensitive design and transportation solutions to local issues.

The Policy Element of the *Transportation Master Plan* addresses general, citywide policies that are not specific to a particular transportation mode, or confined to a specific area within the City. While some of these policies will be reiterated in the modal elements or area circulation studies, this document is intended to provide a global view of policies that will affect transportation and transportation facilities throughout the community.

In addition to the *Transportation Master Plan*, other policies and programs are underway. Information from the neighborhood traffic management program and local area infrastructure plans will be included and referenced in the *Transportation Master Plan* Policy Element. The *Downtown Plan* update is currently being coordinated by the Planning and Development Services Department and will include updates to the Downtown land use and circulation sections. This effort is anticipated to be complete in 2008.

2.0 COMPLETE STREETS

POLICY OBJECTIVES: To design, operate, and maintain Scottsdale's streets to promote safe and convenient access and travel for all users: pedestrians, bicyclists, transit riders, and equestrians, as well as cars, trucks, and buses.

Improve community quality of life in Scottsdale neighborhoods by implementing strategies that reduce the negative impacts created by automobile traffic on neighborhood streets, as well as increase the pedestrian and bicycle options for the neighborhood.

A complete street is one that is designed and operated to enable safe and comfortable access for all users. Pedestrians, bicyclists, motorists, and transit riders of all ages and abilities are able to safely move along and across a complete street. Various streets in the community are currently without sidewalks or paths or have inadequate sidewalks; are too narrow to safely share with bikes; may be intimidating to cross as a pedestrian; or are uninviting for transit users. Incomplete streets are often less safe for multiple users than complete streets.

While the City's current design guidelines are very consistent with the complete streets concept, instituting a complete streets policy ensures that the entire ROW is designed and operated to

enable safe access for all users. Ingredients that may be found on a complete street include: sidewalks and/or paths, bike lanes, frequent crosswalks, wide shoulders, medians, bus pullouts, special bus lanes, raised crosswalks, audible pedestrian signals, sidewalk bulb-outs, and more.

Complete streets policies recognize that there is a need for flexibility as all streets are different and user needs will be balanced. All road projects should result in a complete street appropriate to local context and needs. The following policies will apply to both new and retrofit projects, including design, planning, maintenance, and operations, for the entire ROW.

2.1 Policies and Strategies

2.1.1 Multi-modal Approach

- ▶ Promote a multi-modal approach for all City of Scottsdale new and retrofit roadway projects through formal adoption of a complete streets policy. A multi-modal approach includes all users (pedestrians, bicyclists, transit vehicles and users, equestrians, and motorists of all types) of all ages and abilities. This approach aims to create a comprehensive, integrated, connected network. Understand that a universal “rule” on all streets cannot be applied. For example, pedestrian and bicycle access on highways or freeways is not generally encouraged.
- ▶ Provide facilities and amenities that are recognized as contributing to complete streets, including: roadway and pedestrian-level street lighting; pedestrian and bicycle safety improvements; access improvements in accordance with ADA; transit facilities accommodation, including but not limited to, pedestrian access improvement to transit stops; street trees and landscaping; and street furnishings that are sensitive to the local context.

2.1.2 Systematic Implementation

- ▶ Implement policies and procedures with the construction, reconstruction, or other changes of transportation facilities on arterial streets to support the creation of complete streets including capital improvements and major maintenance.
- ▶ Revise the DS&PM where necessary to address equitable mobility. Ensure that the City balances the needs of diverse users in public and private project review.
- ▶ Collect data to track the performance of complete streets.

2.1.3 Context-sensitive Design

The Federal Highway Administration (FHWA) defines context-sensitive design as an approach to developing and redesigning transportation facilities that fit into the physical and human environment while preserving the aesthetic, historic, community, and natural environmental values.

- ▶ Design, operate, and maintain the transportation network to improve travel conditions for bicyclists, pedestrians, transit, vehicles, and equestrians, in a manner consistent with and supportive of the *General Plan* and *Transportation Master Plan* goals, and adapted to the localized context within the different areas of the City as described in:
 - ▶ The area plans for the North Area, Central/Downtown, and the Scottsdale Airport contained within those sections of the *Transportation Master Plan*; and
 - ▶ Relevant provisions of adopted character area plans for neighborhoods or other localized plans or standards.

2.1.4 Roadway Restriping

This restriping guideline is intended to accommodate bicycle lanes on existing roadways, through optimized use of existing rights-of-way, pavement and facilities. Detail of this guideline can be found in the Bicycle Element.

- ▶ Adopt roadway restriping guidelines as part of the Bicycle Element of the *Transportation Master Plan* which consider existing and forecasted motor vehicle traffic, existing pavement and lane widths, American Association of State Highway and Transportation Officials (AASHTO)'s *A Policy on Geometric Design of Highways and Streets*, AASHTO's *Guide for the Planning, Design, and Operation of Pedestrian Facilities*, and AASHTO's *Guide for the Development of Bicycle Facilities*.

3.0 TRANSPORTATION MODE CHOICE

POLICY OBJECTIVE: Provide and support increased transportation mode choices by improving access to, and the function of, the pedestrian, bicycle, vehicle, and transit network in Scottsdale, thus carrying out the mode choice goals in the Community Mobility Element of the General Plan and in the Vision, Values, and Goals section of this Transportation Master Plan.

3.1 Policies and Strategies

3.1.1 Mode Split and Vehicle Miles Traveled Targets

Creating targets for transportation mode splits and/or annual VMT are methods used throughout the nation to promote and support transportation options. In some urban areas, the mode split is as much as 45 percent to 55 percent non-single occupant vehicle (non-SOV). For Scottsdale, a mode split for its most active areas (e.g., Downtown, Scottsdale Road/Loop 101) could approach 25 percent by 2030. Strategies for achieving this mode split include: improving bicycle, pedestrian, fixed-route transit and local circulator transit facilities and services; and working within the *General Plan* Land Use Element to promote live, work, play, and pedestrian-oriented development types. In time the combination of land uses and non-SOV facilities should positively increase the percentage of trips using transit, walking, and biking as the mode of choice.

- ▶ Adopt a non-SOV mode split target of 25 percent by 2030 in the City's most developed and active centers, such as Downtown. (Current citywide mode split during peak hours is approximately 20 percent, including carpooling.)
- ▶ Adopt a target of a 10 percent reduction in annual VMT per capita by 2015 and a 20 percent reduction in VMT per capita by 2030.
- ▶ Support these targets by evaluating land use decisions for the ability to incorporate and promote non-SOV facilities and mixed uses in development, per the *General Plan* and/or *Downtown Plan*.
- ▶ Develop a transit network that improves transit accessibility from neighborhoods to fixed route transit.
- ▶ Improve transit stops with seating, shade, bicycle storage, lighting, and more detailed route information.
- ▶ Implement the *Downtown Pedestrian Mobility Study* recommendations.
- ▶ Complete the pedestrian and bicycle priority projects listed in the Bicycle and Pedestrian Elements of the *Transportation Master Plan*.

- During each five-year capital improvement program budget, dedicate a minimum of one-third of available funding to projects that primarily serve transit, bicycle, and pedestrian system enhancements. (Currently approximately 26 percent of the transportation capital improvement program budget is available for transit, bicycle, and pedestrian system enhancements)

3.1.2 Public Information

- Provide ongoing, relevant, and timely public information about transportation options and choices (such as transit, bicycling, walking, car sharing, horseback riding, and hiking) available to citizens and visitors of the City of Scottsdale. Make this information available through available media including websites, City newsletters, public service announcements, and other means. Specific modal information is contained in the Streets, Bicycle, Transit, and Pedestrian elements.
- Collaborate with homeowner associations, schools, businesses, major employers, and healthcare agencies to develop marketing strategies to promote the benefits of walking, cycling, and transit.
- Continue to promote events such as the annual Walk/Bike to School and Cycle the Arts events which encourage and promote the benefits of walking and cycling.

3.1.3 Transportation Management Associations

Scottsdale, although large in land area and generally low-density, contains several areas where, due to concentration of employment (Airpark or Scottsdale Healthcare campuses) or a combination of residential, employment, retail, and entertainment uses (Downtown, SkySong), may benefit from a district-specific approach to transportation demand management, that is, through the use of transportation management associations (TMAs).

One of the region's first TMAs was formed in the late 1980s to serve Scottsdale area businesses, using grant funding for staff resources. More recently, TMAs throughout the metropolitan area were staffed by the regional public transportation authority's regional Rideshare staff. Although typically city-assisted, TMAs could be formed as independent nonprofit corporations. Other organizations or entities, such as the Scottsdale area chamber or Airpark area business groups, could serve as parent organizations for TMAs. Often, TMA membership is open to any interested party in a given district or area, but should seek to include major employers.

The goals of the TMA should be relevant to the problems of the district, such as maintaining or improving employee access to the district, improving mode choice and mode split among commuters, or reducing demand for parking. Typically, the goals of the TMA would be to reduce congestion, improve employee recruitment/retention, and alleviate parking issues through strategies that reduce reliance on SOV travel. A TMA could provide informational materials and public information events, support localized shuttle service, organize car pools, provide bike-to-work and walk-to-work incentives, Rideshare incentives, transit pass subsidies, and regional/local advocacy.

- Support the formation of TMAs in areas of the City which have the need and capacity for utilizing this tool. Assist interested citizens with technical support and start-up grants from city, regional, or state funds.

4.0 TRANSPORTATION SYSTEM EFFICIENCY

POLICY OBJECTIVES: Improve the efficiency of transportation system operations by maximizing the use of existing facilities, using enhanced technologies, calibrating system level of service measures to the local environment, and promoting an emphasis on transportation mode choice, making person capacity of the City's rights-of-way a measure of efficiency.

Guide the deployment and operation of advanced traffic management technology in an integrated fashion while preserving regional relations, to create a sustainable Scottsdale advanced traffic management system.

Transportation's most essential function is to provide mobility for people and goods. Mobility is the ease with which people can move through their community or region and is valuable because it provides access to jobs, services, and shopping. The efficiency of a transportation system can be determined through performance measures and analysis of traffic volumes and other data. Transportation performance measures are used to: improve the efficiency of system operations; to manage a given road or corridor; to prioritize funding of projects; and to measure the achievement of transportation goals. One of the most frequent measurements of traffic flow is level of service (LOS) of roadway segments or intersections for automobiles, bicycles, pedestrians or transit. However, measurement of person capacity is a more balanced measure which looks at the entire transportation network. In many cases, system capacity can be improved by better using existing facilities rather than simply adding lanes. Improving signing, striping, traffic control, technology, or sight distance should be considered in order to get the full benefits from an existing facility before new or expanded facilities are implemented.

4.1 Policies and Strategies

4.1.1 Congestion and Congestion Management

Virtually everyone who has ever traveled on regional roadways in their own vehicle or on a transit vehicle has had the experience of waiting in traffic. When asked what traffic congestion is, people often have very differing views. To some it is waiting at a signal for more than one cycle, for others it is inconsistent travel time, others say they don't want to have to travel below posted speed limits, and some say they have a problem walking across the street.

To define congestion broadly, congestion is the level at which transportation system performance is not acceptable due to traffic interference. The level of acceptable performance can vary by the type of transportation facility, by location, and by time of day. For instance, commuters typically expect and are generally willing to accept a certain amount of traffic during morning and evening "rush hours." However, they may not be willing to accept that same level of performance in the middle of the day.

Congestion management programs are frequently implemented by establishing LOS standards, travel demand management policies, working with planning entities on long-term land use analyses, identifying congested corridors, recommending multi-modal approaches, and capital improvements programming.

Level of Service Standard

Level of service (LOS) is a term used to qualitatively describe the operating conditions of a roadway based on factors such as speed, travel time, maneuverability, delay, and safety. Level

of service is most frequently a measure of intersection efficiency, but can be used for roadway segments as well. Sidewalk or pedestrian LOS is measured in square feet per pedestrian. Transit LOS is measured in passengers per available seat. Traditionally, the LOS of a facility is designated with a letter, A to F, with A representing the least amount of delay and F the greatest. Each letter, A to F, includes a range of values rather than a single figure indicating signal timing delay, capacity-to-demand ratios, or other measures of flow.

Congestion at a given location will vary throughout the day and is usually measured and analyzed during peak travel times, when most congestion occurs. The vehicular LOS standard adopted in the 2003 *Streets Master Plan* throughout the City of Scottsdale is LOS D. The following policies add measures of person capacity and modify the citywide service standard to recognize the local area environment where lower vehicle LOS is preferred because of higher person capacity or other factors.

- ▶ Vehicular LOS D or better should be maintained at all signalized intersections with the exception of those intersections located within a designated core, a roadway with an urban character designation, or mixed-use area where lower levels of service are acceptable if other factors such as walkability, transit access, and aesthetic or right-of-way (ROW) considerations are overriding.
- ▶ Mitigation measures and intersection improvements should be considered if LOS conditions are not met.
- ▶ At non-signalized intersections with moderate traffic volumes, levels of service below D may be appropriate. Where low volume locations intersect with high volume locations, LOS F is not unusual, but should be considered for mitigation if alternative access is not available.
- ▶ Continue to refine the City's travel demand modeling capabilities to develop a measure of person capacity versus the traditional tool of vehicular capacity.

Travel Time Reliability and Travel Time Index

Travel time is the time it takes a person (in a vehicle, on foot, or on a bicycle) to move from the beginning to the end or between points of a corridor. Travel time is a function of both time and distance and should be representative of a typical traveler's experience in that corridor. The reliability of a system is the percent of travel that takes no longer than the expected travel time plus a certain acceptable delay or additional time. Travel time index is a term used in the *Texas Transportation Institute's Biennial Urban Mobility Report* and refers to the difference between average peak-hour travel time in a corridor versus free-flow conditions. For the most recent calculated year, 2005, the average travel time index for the country's 13 very large urban areas was 1.38, with the Phoenix area's index calculated at 1.31. This means that a trip in the Phoenix area that would take 20 minutes during off-peak conditions would take an average of 25 minutes during the peak period.

- ▶ Use the City's intelligent transportation system (ITS) to measure travel time in specific corridors and record consistency of trip and mitigate inconsistencies of travel in a given corridor.
- ▶ In corridors where ITS equipment is not available, use the traffic demand model to estimate the travel time index for corridors and develop mitigation strategies when the index exceeds 1.25.
- ▶ Coordinate with our regional neighbors to maintain travel time indexes appropriate for regional freeway facilities.

4.1.2 Access Management

Access management seeks to limit and consolidate access along major roadways at the same time providing a street system and access to support businesses and residential development along the roadway. The result is a corridor that functions safely and efficiently, as well as a more attractive corridor.

Some aspects of access management can be addressed at the development review stage, in response to a request for a development or connection permit. This may be accomplished through the subdivision or site plan review process. Larger developments are often required to submit a traffic impact assessment to assist the City in its review and access management can be implemented at this time.

Benefits of access management include the following: improving safety for drivers accessing properties or traveling in a through-travel lane; maximizing roadway capacity; reducing congestion and delay; and making pedestrian and bicycle travel safer.

- ▶ Define acceptable levels of access for each roadway classification to preserve its function, including criteria for the spacing of signalized and unsignalized access points.
- ▶ Apply appropriate geometric design criteria and traffic engineering analysis to each allowable access point.
- ▶ Enforce existing access management regulations that address access spacing and design.

Existing Access Management Policies

The City of Scottsdale has a number of existing access management policies which were incorporated in the 2003 *Streets Master Plan*. These include policies for Shea Boulevard, Via Linda, Scottsdale Road, Pima Road, Dynamite Boulevard, and Frank Lloyd Wright Boulevard. In addition to the specific access management policies for these streets, there are several other policies which control access, including the expressway policy, parkway policy, arterial median break policy, and the scenic corridor policy. These policies are all aimed at controlling the level of access to and from major streets to improve overall traffic safety and capacity.

Shea Boulevard Policy (former Expressway Policy)

In January 1995, the Transportation Commission adopted this policy for Shea Boulevard east of Pima Road (at this time the only designated expressway within Scottsdale). The expressway classification was merged into the arterial classification in the 2003 *Streets Master Plan*; however, this policy still applies as defined to Shea Boulevard. Deviation from this expressway policy requires approval of the Transportation Commission.

Arterial Median Break Policy/Arterial policy

The arterial median break policy outlines the goal of mobility over access on all arterial roadways. The arterial policy details drive separation from streets, number of drives, spacing between private drives, exclusive side street access, side-street access location, residential access, deceleration, traffic signals, intersection control, and access by alternative modes of transportation for all major or minor arterial roadways identified by the *Streets Master Plan*. Deviation from the arterial policy requires approval of the Scottsdale City Council. Dynamite Boulevard, Frank Lloyd Wright Boulevard, Pima Road north of the Loop 101, and Scottsdale Road north of Frank Lloyd Wright Boulevard are subject to the arterial policy, and deviation from these specific policies requires approval of the City Council. Via Linda east of 90th Street to

136th Street is also subject to the policy; however, deviation from this policy requires approval of the Transportation Commission.

On August 21, 2007 the City Council approved a new land divisions ordinance which authorized the Development Review Board to adopt, review, and amend the DS&PM. On August 23, 2007 the Development Review Board adopted the 2007 DS&PM. Access management direction is provided in the DS&PM, making specific access policies redundant.

- ▶ Follow the DS&PM access guidelines for access management on Scottsdale's streets.
- ▶ For consistency, consider transportation general manager or Transportation Commission level of approval for deviation from all access management policies, including the arterial policy or the Shea Boulevard policy. Appeals would be heard by the Transportation Commission.

4.1.3 Intelligent Transportation Systems (ITS)

ITS can be defined as the integration of advanced communications technologies into the transportation infrastructure and in some areas, vehicles. ITS encompass a broad range of wireless and wire line communications-based information and electronics traffic management technologies, including traffic signals, computers, integrated software systems, graphics, video walls, fiber optic cable, closed circuit TV cameras, variable message signs, ramp meters, and vehicle detectors. Intelligent transportation systems are used to coordinate signals, integrate freeway and arterial operations, improve traffic progression, reduce incident clearance times, improve bus progression, and enhance special event traffic management.

The City's ITS automate traffic signal control and roadway congestion response. Scottsdale ITS devices are integrated with a central coordinated electronic traffic signal system in the City's traffic management center (TMC). The Scottsdale ITS include 46 pan-tilt-zoom cameras at intersections allowing TMC personnel to view traffic conditions and make adjustments to approximately 285 signals remotely. Integrating ITS devices with a centrally coordinated electronic traffic signal system results in significant benefits to Scottsdale residents.

The City's ITS strategic plan was developed in 2003 and serves multiple purposes. It guides the deployment, management, and operation of advanced traffic management technology in Scottsdale and strives to improve safety and efficiency of roadways by using this technology. In addition, the ITS strategic plan serves as a tool for education and providing information to the public. The objectives of the Scottsdale ITS strategic plan are as follows:

- ▶ Hold travel time on City streets steady, and where possible, reduce travel time, even as traffic volume increases due to growth;
- ▶ Reduce traffic incident delay;
- ▶ Communicate rapidly among the Police Department, emergency services, ADOT, Fire Department, vehicle drivers, and TMC to enhance roadway safety; and
- ▶ Coordinate between adjacent municipalities and jurisdictions along arterials, crossing borders and at interchanges with freeways.

ITS Benefits

An April 2003 "Indian School Road Corridor Intelligent Transportation System Evaluation" conducted by a consultant for the City, evaluated many of the benefits of ITS. The following was found based upon the Indian School Road corridor study:

- ▶ Travel time was reduced by 64 seconds per vehicle over a 3 mile area;
- ▶ The use of technology potentially doubles the TMC staff capability for output of basic timing changes (from 50 to 100 as of the time of the report);
- ▶ The use of closed circuit TV cameras allows the TMC staff to make additional real time signal adjustments annually (400 at the time of the report); and
- ▶ The Scottsdale Police Department was documented as saving the equivalent of 30 traffic control officers during events such as the Barrett-Jackson Classic Auto Auction and the FBR Open.

Although ITS are locally based, they also have nationwide benefits, when used. The following information is available through FHWA.

- ▶ Implementing advanced traffic surveillance and signal control systems reduces travel time by 8 to 25 percent.
- ▶ Ramp meters and other freeway management systems reduce crashes by 24 to 50 percent and increase highway capacity 8 to 22 percent at speeds 13 to 48 percent faster than existing conditions.
- ▶ Incidents related to traffic congestion were reduced by 10 to 45 percent.

As technology continues to evolve, so will the need for more advanced operational plans. Management of the City's ITS strategic plan requires coordination and partnerships with the Transportation Department, Police and Fire departments, emergency services, and information systems. When properly deployed and operated, ITS decrease congestion common to high traffic volumes, incidents, and special events.

The following ITS policies should be adopted through the *Transportation Master Plan*:

- ▶ Continue to support the ITS strategic plan and the objectives of the ITS strategic plan listed above, by ensuring adequate staffing, personnel training, operations and maintenance, as well as timely equipment updates;
- ▶ Expand the use of ITS for future transportation modes such as BRT corridors programmed in the RTP (Proposition 400); and
- ▶ Explore additional uses of ITS such as applications that show real-time traffic conditions on the internet or real-time transit vehicle speed and estimated trip timing through vehicle sensors.

4.1.4 Rights-of-Way Management

The primary purpose of the City's emerging Right-of-Way Management Program (RWMP) is to effectively and efficiently manage and coordinate activities that occur within the public ROW in a way that enhances safety, coordinates multiple activities, and preserves mobility.

The following are examples of the type of activities that occur within in the ROW (excluding public safety emergencies):

- ▶ Transportation: personal vehicles; transit (public and private); commercial vehicles (product and service delivery); bicycles; pedestrians; shared-use trails;
- ▶ Construction: capital projects; developer improvements; utilities;
- ▶ Maintenance (scheduled and unscheduled): street and sidewalk/path repair; utility maintenance; and
- ▶ Special events.

The RWMP establishes a central point of coordination and management of the often competing activities in the public ROW. This central point of contact will review and schedule activities to avoid conflicts, and will attempt to consolidate similar activities that are scheduled to occur in the same vicinity to avoid multiple lane closures and restrictions. The RWMP proposes to include revisions to City code and ordinances, and introduce new policies and procedures which will facilitate management of the ROW. Field inspections and enforcement of proposed code will reduce unauthorized or ineffective closures and restrictions.

4.1.5 Traffic Control Devices

The way in which intersection travel is controlled is important to the efficiency of the transportation system. There are many ways to control intersections to provide safe, efficient movement of multi-modal traffic including minor street yield, minor street stop, multi-way stop, multi-way yield, roundabouts, traffic signals, and grade separations. Choosing these differing alternatives must be done in accordance with the federal and state guidance and as described in the *Manual on Uniform Traffic Control Devices* (MUTCD). These decisions should also consider new and developing ideas and guidelines, as well as best practices in planning and engineering.

Different intersection traffic control options yield varying intersection capacity. For example, side-street stop control typically has more capacity than a multi-way stop. A roundabout also has greater capacity than a multi-way stop but may have less capacity than a side-street stop with low side-street volume. Traffic signals also typically have more capacity than a multi-way stop, and may or may not have more capacity than a roundabout or side-streets stop depending upon the traffic patterns. Federal standards have been established for the installation of both multi-way stops and for traffic signals. While roundabouts standards have not yet been established, there are design tools which are used that can determine the capacity of a particular roundabout design. In general a single lane roundabout can handle 20,000 to 25,000 vehicles per day (vpd) with multiple lane roundabout capacity varying depending upon the design and the particular traffic patterns.

4.1.6 Roadway Modification Guidelines

In order to address congestion issues, communities are often faced with the need to add additional travel lane capacity to the transportation network. This need must also be weighed against neighborhood impacts and community character or context issues. In Scottsdale, the primary roadway network consists of two-lane collectors, four-lane collectors and arterials and six-lane arterials. The City currently limits local roadway widths to six lanes, and this plan proposes to continue this long-standing policy. One measure that is often used to assist in making decisions regarding adding travel lanes is the volume to capacity ratio, which compares average daily traffic lanes volumes to a predetermined standard.

Based on historic traffic volume trends it is recommended that:

- ▶ There should be no widening beyond six through travel lanes;
- ▶ Target average daily traffic volumes on two-lane collectors to less than 8,000 vehicles per lane per day using 2030 forecasted volumes;
- ▶ Target average daily traffic volumes on four-lane collectors to less than 9,000 vehicles per lane per day using 2030 forecasted volumes;

- ▶ Target average daily traffic volumes on four-lane arterials to less than 10,000 vehicles per lane per day using 2030 forecasted volumes; and
- ▶ Use character type considerations for when roadways should be widened.
 - ▶ Widening of roadways designated as rural in character would be considered when forecasted volumes reach 90 percent of the target threshold.
 - ▶ Widening of roadways designated as suburban in character would be considered when forecasted volumes reach 100 percent of the target threshold.
 - ▶ Widening of roadways designated as urban in character would be considered when forecasted volumes reach 120 percent of the target threshold.
- ▶ Roadway widening will typically be limited to minimum 1-mile segments.
- ▶ To promote sustainability, consider the least impactful solutions for corridor capacity first. The priority for improvements to corridors reaching the target volume thresholds is:
 1. Improve use of existing facilities through the efficient implementation of cost effective signing, striping, intersection control, and sight distance improvements
 2. Improve access to, and amenities at, transit stops, if transit service is available, and review quality of the service
 3. Upgrade pedestrian facilities to at least minimum standards
 4. Upgrade bicycle facilities to at least minimum standards
 5. Consider adding transit service, if not currently available
 6. Install ITS equipment, if none existing, and integrate with transit service
 7. Increase access management
 8. Add right-turn deceleration lanes to commercial and/or multi-family driveways
 9. Add turn lanes at intersections
 10. Add travel lanes
- ▶ Consider a minimum buffering distance from homes on roadways in order to enhance neighborhood preservation and livability when roadway widening may be necessary.
- ▶ Four-lane roadways may be considered for lane reductions when forecasted volumes do not exceed a total of 12,000 vpd (3,000 vehicles per lane per day) and where lane reductions will facilitate other transportation improvements.

5.0 TRANSPORTATION SAFETY

POLICY OBJECTIVES: Reduce injuries and deaths from transportation-related causes, protect neighborhood livability, and support the function of commercial areas by prioritizing safety and livability through decreased intersection conflict and improved speed limit policy; by enforcement of safety regulations; and through a coordinated safety education campaign.

Increase the availability of Safe Routes to School for children in Scottsdale and the utilization of these routes by an increasing number and percentage of students over time through the implementation of a citywide Safe Routes to School program.

5.1 Policies and Strategies

5.1.1 Enforcement

Providing traffic enforcement services and the enforcement of traffic laws and ordinances is a responsibility shared by all law enforcement agencies. Among the primary objectives of this function is encouraging motorists, pedestrians, and bicyclists to comply voluntarily with the laws and ordinances.

Speeding reduces the time drivers have to avoid crashes and lengthens stopping distances, increasing both the likelihood of crashing and the severity of the crashes that do occur. According to the National Highway Traffic Safety Administration (NHTSA), speeding is one of the most prevalent reported factors associated with crashes. Speeding is a factor in 31 percent of all fatal crashes, killing an average of 1,000 Americans every month. In 2002, more than 13,000 people died in speed related crashes. NHTSA estimates the economic cost to society of speed-related crashes to be more than \$40 billion each year.

The Scottsdale Police Department manages a street level photo enforcement program, and managed a photo enforcement demonstration program on the section of the Loop 101 Freeway in Scottsdale during 2006 and 2007. Fixed speed and red-light cameras are present at several locations on city streets. The specific locations are listed on the City's website and are periodically revised.

Four photo enforcement vans are also stationed at varying locations throughout the community. The schedule and location of these vans are posted on the City's website.

- ▶ Prioritize high accident locations and school zones for traffic law enforcement.
- ▶ Use ITS and communicate rapidly among the Police Department, emergency services, ADOT, Fire Department, vehicle drivers, and traffic management center to enhance roadway safety and enforce traffic regulations.
- ▶ Coordinate traffic enforcement between adjacent municipalities and jurisdictions along arterial, crossing borders and at interchanges with freeways.

5.1.2 Public Education and Awareness Programs

Traffic safety education is an important corollary to enforcement activity. The extensive education/public outreach component of the Loop 101 photo enforcement demonstration program was thought to impact the number of photo enforcement detections during the program. Education of motorists, bicyclists, and other users is conducted on a spot basis currently through brochures or maps on such topics as the City's bicycle network and effective use of roundabouts. A more comprehensive program of safety education will target areas of concern based on safety analysis and provide continuing outreach to residents/businesses/visitors regarding safety awareness.

- ▶ Provide targeted public information (e.g., brochures, web, public service announcements, other media) about transportation safety topics and other transportation issues.
- ▶ Work with the City's CityCable 11 programming to develop and maintain cable information regarding the topics above (examples include driver behavior, sharing the road, use of bicycle helmets, etc).
- ▶ Encourage more driver training and testing for those most likely to be involved in causing accidents by working with ADOT, the governor's office of highway safety, and other transportation partners.

5.1.3 Engineering

Lagging Left-turn Arrows

The City implemented lagging left-turn arrow operation in 1989. Lagging left-turn arrows appear after the green indication for adjacent through traffic. For a study reported in the ITE Journal, eight years of collision data for intersections with leading and lagging left-run arrow operation were compared, using collision data from 1995 through 2002. The study considered

the City of Scottsdale with predominately lagging left-turn arrow operation and the city of Mesa with predominately leading left-turn arrow operation. The collision experience was compared at 13 intersections with lagging left-turn arrows and nine intersections with leading left-turn arrows. Lagging left-turn arrows had a statistically significant lower collision rate than leading left-turn arrows for all collisions, collisions involving left-turning vehicles, and only collisions involving left-turning vehicles with opposing through vehicles.¹

Modern Roundabouts

The City of Scottsdale has constructed a number of circular intersections (e.g., roundabouts and traffic circles) and is currently reviewing the safety record of these intersections. Preliminary indications are that accidents have been reduced at these locations. The “modern roundabout” has the following defining characteristics:

- ▶ Vehicles approaching must yield to traffic already in the circular portion of the roadway;
- ▶ Geometrics should encourage vehicular speeds of 15 to 25 mph around the circle;
- ▶ Splitter islands that slow and guide traffic into the circle;
- ▶ Splitter islands should provide pedestrian refuges; and
- ▶ Pedestrian crossing to the central island is not encouraged.

A modern roundabout can be a tool for providing safe and efficient intersection control, based on safety history and increasing driver familiarity in the United States. The Insurance Institute for Highway Safety indicates that roundabouts are safer than traffic signals because the most serious kinds of crashes at conventional intersections are virtually eliminated at roundabouts. Crashes that do occur tend to be minor because speeds are slower. The U.S. Department of Transportation states that “roundabouts are a proven safety solution that prevents and reduces the severity of intersection crashes...”

The decision to install a roundabout should be made on a case by case basis in accordance with FHWA’s MUTCD and established state and national guidelines. These guidelines are still evolving and will continue to improve. In general, roundabout installation should be prioritized at high accident locations, congested locations, and locations where geometry or cost-effectiveness would favor installations.

- ▶ Continue to look for innovative engineering solutions that promote safety such as the lagging left-turn arrow, roundabouts, and ITS and technology solutions to reduce both the frequency and severity of accidents.
- ▶ Consider implementing safety enhancements such as Safe Routes To School program (see Section 5.1.6) and safety management and performance tracking through additional City staff.

5.1.4 Collision Analysis and Collision Prevention

The City of Scottsdale publishes a biannual report, the traffic volume and collision rate data report. The purpose of this report is to provide Scottsdale collision rate and traffic volume information on major roadway segments and at major intersections within the City. This information is used in a wide variety of traffic engineering studies and applications. The data within the report is comprised of collision data and seasonally adjusted traffic volume data.

¹ Basha, Paul. ITE Journal (Institute of Transportation Engineers); August 2007.

Collisions that occur on the Loop 101 Freeway or private property are not included in this report.

The data from each biannual *Traffic Volume and Collision Rate Data* report is summarized in an executive summary report that graphs collision trends by type, level of injury, fatalities, and number of collisions related to alcohol. This summary also documents how the population of the City has changed over the same two-year period.

In addition to the executive summary report, the volume and collision rate information in the *Traffic Volume and Collision Rate Data* report is used to prepare a list of the twenty (20) high collision intersection locations in the City of Scottsdale. The 20 high collision intersections are determined by ranking all intersections based both on the total number of collisions and the collision rate. The collision rate takes into account the vehicle volume present at each intersection.

Detailed reports of each collision type, including time of year and hour of the day that the collisions occurred, are gathered for each one of the 20 high collision intersections. Traffic engineering staff reviews this data to determine the collision trends present at the intersections and identify improvements to address those trends. The analysis begins with the preparation of collision diagrams for each of the top 20 intersection locations. These diagrams detail the exact location and type of each collision at these locations. Field observations are conducted at each location to evaluate conditions including signing and striping, signal equipment, driveway locations, sight visibility, etc. The list of possible improvements is separated by collision type (e.g., rear-end, left turn, sideswipe, bicycle, pedestrian, etc.) as there are certain solutions for each collision type. Specific improvements are recommended to address the high collision trends at each of the 20 intersections. These improvements are often implemented as elements of larger capital improvement projects or undertaken as individual site specific safety projects.

The data from the biannual *Traffic Volume and Collision Rate Data* report shows that over the past decade the number of collisions per 1,000 residents has decreased. The number of collisions has remained relatively constant while the population of the City has continued to increase steadily.

- ▶ Continue to have the collision rate decrease by having the total number of collisions remain relatively constant or decrease as the population of the City increases.
- ▶ Use collision analysis to help prioritize photo enforcement efforts.

5.1.5 Speed Limits

Arizona state traffic law allows local authorities within their respective jurisdictions to determine and/or change the maximum speed limit for all arterial streets, as well as businesses and residential districts, to a reasonable and safe speed based on engineering and traffic investigations.² The maximum speed limit per state law is 65 mph and the minimum speed limit is 25 mph. Alleyways are set at 15 mph and school crossings may be set at 15 mph in accordance with state law and ADOT's *Guide for Traffic Control in School Areas*.

It is a widely accepted practice among traffic engineers to consider speed characteristics such as the 85th percentile value and the 10-mph pace when determining a safe and reasonable speed. (The 85th percentile speed is the speed at or below which 85 percent of the vehicles are moving.

² Arizona Revised Statutes Title 28, Article 6, Section 28-703

The 10-mph pace is the range of speed at which the greatest number of drivers are driving). Speed limits are typically set for new roadways based on a roadway's design and whether the surrounding area is urban, suburban, or rural. Design speed is defined as the maximum safe speed that can be maintained based on the geometric design features of the roadway. Speed limits are typically set lower than design speeds to provide a margin of safety and to allow for other operation characteristics that may influence safe speeds along the corridor.

In addition to evaluating speed data on existing roadways, speed studies investigate roadway geometry, adjacent land use and development, roadway hazards, bicycle and pedestrian traffic, and accident history. These factors are outlined in the *Manual on Uniform Traffic Control Devices* (MUTCD), which is the national set of standards for traffic control devices.

A speed limit study will help to determine the appropriate speed for a roadway or roadway segment. The criteria below will help to evaluate the alteration or establishment of speed limits. A speed limit study is not required to include all of these criteria nor should it be limited to these criteria. The study should also include all relevant information pertaining to the segment(s) of roadway being studied to determine the appropriate, legal, speed limit as determined by a qualified professional civil or traffic engineer. All speed limit studies will be conducted in a manner consistent with federal code, Arizona Revised Statutes, MUTCD, and should consider additional City of Scottsdale policies.

Speed limit study criteria:

1. Characteristics of the road – design speed; street classification; number of lanes; left and/or right-turn lanes; condition of the pavement; bicycle lanes, shoulder conditions, curb, guardrail, sidewalk, adjacent paths, adjacent walkways, lighting landscaping and/or vegetation; signalization, sign, and pavement markings; curves and grade; sight distance.
2. Characteristics of vehicle travel speed – posted speed limit; mean, median, mode vehicle travel speed; 85th percentile and 95th percentile vehicle travel speed; 10-mph pace speed; historical speed limits resulting from prior studies; speed zones adjacent to study segment; speed limit enforcement measures.
3. The local environment, roadside development – adjacent land use; adjacent schools; type, frequency, and location of access points to adjacent land; public transportation activity; designated transit stops.
4. Pedestrian and parking characteristics – location of crosswalks and pedestrian activity; child and senior pedestrian activity; roadside parking.
5. Collision characteristics (intersections and segments) – twelve month collision experience including speed related crash experience; similar road segment twelve month collision experience prior to and subsequent to speed limit alteration; additional pertinent collision experience information including trends, and historic collision rate summaries.
6. Additional pertinent information could also be considered such as costs of enforcement, costs of engineering measures and their maintenance, delays to traffic, effect of the current and proposed speed limits on local residents, and expected accident savings.

- ▶ Roadway design speeds should be no greater than 55 mph within the City of Scottsdale allowing for maximum safety and to encourage drivers to adhere to the speed limit proposed for the facility based on its function.
- ▶ Arterial roadways should facilitate through-travel and limit access to reduce conflicts and improve safety. Design elements should not encourage speeds above 50 mph.
- ▶ Roadways classified as collector streets should balance access with through-travel and incorporate design elements that encourage driver compliance with speeds of no more than 40 mph.
- ▶ Neighborhood streets should prioritize access over through-travel and should incorporate design elements that encourage driver compliance with speed limits between 25 and 30 mph.
- ▶ For specific enforcements of travel speeds, it is appropriate for travel speed statistics to be determined for different time periods of the day and different days of the week. These different sets of travel speed statistics can be utilized to concentrate enforcement to the hours and days when travel speeds are most disparate and therefore most likely to result in collisions.

5.1.6 Safe Routes to Schools

Promoting safe access to and from the schools in Scottsdale is of primary importance to the City. The Transportation Department has taken several steps to improve the safety of children and their parents around schools. A school crossing safety brochure was created and, at the beginning of the 2005–2006 school year, hand delivered to each public school in Scottsdale that has a designated school crossing.

The City also developed a school transportation safety audit program that is intended to proactively identify potential transportation issues and improvements. The school audit program was also intended to provide the schools a City of Scottsdale contact point to exchange information and ideas to help resolve school related transportation issues. The City solicited input from all public schools and their districts, and used the information received to identify transportation safety aspects all of the public schools in Scottsdale. Transportation Department staff conducted on-site observations of school drop off and dismissal during a typical school day. Recommendations were provided to the school principal, school district Transportation Department representative, City of Scottsdale Transportation Department staff (technicians, planners, and engineers) and the school resource officers for their review. Implementation of the recommendations was performed by the City if the project affected the public right-of-way, (ROW) and other recommendations were implemented by the districts.

The goal of these activities was to provide a precursor to a comprehensive Safe Routes To School program.

Safe Routes to School Program

Many of us remember a time when walking and bicycling to school was a part of everyday life. National research states that in 1969, about half of all students walked or bicycled to school. Today, fewer than 15 percent of all school trips are made by walking or bicycling, one-quarter are made on a school bus, and over half of all children arrive at school in private automobiles. This decline in walking and bicycling has had an adverse effect on traffic congestion and air quality around schools, as well as pedestrian and bicycle safety. In addition, a growing body of

evidence has shown that children who lead sedentary lifestyles are at risk for a variety of health problems such as obesity, diabetes, and cardiovascular disease. Safety issues are a big concern for parents, who consistently cite traffic danger as a reason why their children are unable to bicycle or walk to school. The purpose of the federal Safe Routes to School (SRTS) program is to address these issues head on. At its heart, the SRTS program empowers communities to make walking and bicycling to school a safe and routine activity. The SRTS program makes funding available for a wide variety of programs and projects, from building safer street crossings to establishing programs that encourage children and their parents to walk and bicycle safely to school. Each state administers its own program and develops its own procedures to solicit and select projects for funding. The program establishes two distinct types of funding opportunities: infrastructure projects (engineering improvements) and non-infrastructure related activities (such as education, enforcement and encouragement programs).

The purposes of the SRTS program are:

1. To enable and encourage children, including those with disabilities, to walk and bicycle to school;
2. To make bicycling and walking to school a safer and more appealing transportation alternative, thereby encouraging a healthy and active lifestyle from an early age; and
3. To facilitate the planning, development, and implementation of projects and activities that will improve safety and reduce traffic, fuel consumption, and air pollution in the vicinity of elementary schools.

In 2006, Scottsdale held its first Walk or Bike to School event, partnering with Grayhawk elementary school. A parent's organization worked with the City to advertise the event and encourage participation. Approximately 700 of the 775 Grayhawk elementary school children walked or biked to school on this day, making the event an unqualified success.

- ▶ To promote safety in and around schools, transportation projects will be prioritized which:
 - ▶ Address an identified safety problem along a major school route;
 - ▶ Relieve localized traffic congestion caused by children being driven to and from school;
 - ▶ Complete a "gap" in the bicycle and pedestrian system along a major school route
 - ▶ Maximize daily uses by students and others; and
 - ▶ Demonstrate strong parental and community support.
- ▶ Establish an ongoing SRTS program in the City of Scottsdale.

6.0 SUSTAINABLE TRANSPORTATION/SUSTAINABILITY

Sustainable transportation meets the access needs of the current population while protecting the environment, reducing dependence on non-renewable fuels, and accommodating planned, responsible growth. Planning for sustainable transportation involves developing policies that are appropriate for a given area, whether it is an urban area with good public transit or a rural area more dependent on motor vehicles.

By "sustainable transportation" we mean a transportation system that:

1. Allows the basic access needs of individuals to be met safely and in a manner consistent with human and ecosystem health, and with equity within and between generations;

2. Is affordable, operates efficiently, offers choice of transportation mode, and supports a vibrant economy; and
3. Limits emissions and waste, minimizes the use of land and the production of noise, and minimizes the heat build-up due to pavement.

Local governments across the U.S. are taking a variety of energy efficiency and renewable energy actions that can have multiple benefits including saving money, creating jobs, promoting sustainable development, and reducing greenhouse gases and air pollution. Strategies for increasing transportation sustainability include demand management, operations management, pricing policies, vehicle technology improvements, clean fuels, and integrated land use and transportation planning.

- ▶ Identify and incorporate site design features in non-residential development proposals that will make them more accessible to those walking, cycling or taking public transit and promote more sustainable modes of passenger transportation.
- ▶ Implement a program to install roundabouts at appropriate existing congested intersections and planned new intersections. Studies have shown that roundabouts can significantly reduce maintenance costs, fuel consumption, motorist delay, and vehicle emissions, as well as improve safety for motorists and other users.
- ▶ Incorporate environmentally sensitive materials and technologies in transportation projects/improvements and facilities, including the use of solar technology and recycled materials.
- ▶ Use the City's *General Plan* process as a tool to promote more sustainable local transportation systems.
- ▶ Expand the use of fuel efficient, alternative fuel, or hybrid vehicles in the City's fleet and promote throughout the community.
- ▶ Promote and expand the use of car sharing by Scottsdale residents and businesses by providing dedicated parking and other incentives.
- ▶ Recognize walking and biking as serious modes of transportation and create pedestrian and bicycle friendly travel routes to potentially decrease the number of vehicles on the road, leading to less congestion, air pollution, and greenhouse gas emissions.
- ▶ Create a local action plan for emission reductions by establishing a baseline calculation of greenhouse gas emissions, establish targets to lower emissions, develop a local action plan to reduce greenhouse gas emissions, and monitor, measure, and report performance to the community at large.
- ▶ Incorporate opportunities for shading pavements and using "cooler" pavement technologies to reduce localized "heat island" effects.

7.0 UNIVERSAL DESIGN/ADA COMPLIANCE

Universal design (also called inclusive design, accessible design or just accessibility) refers to facility designs that accommodate the widest range of potential users, including people with mobility and visual impairments (disabilities) and other special needs.

Although universal design standards address the needs of people with disabilities, it is a comprehensive concept that can benefit all users. For example, people who are carrying packages or pushing a cart or stroller are not disabled, but their needs should be considered

in facility design. Increased walkway widths, low-floor buses, and smooth walking surfaces improve convenience for all travelers, not just those with mobility impairments. Curb ramps are important for people using handcarts, scooters, baby strollers, and bicycles, as well as wheelchair users. Automatic door openers are another example of universal design features that can benefit many types of users.

Universal design should be comprehensive, meaning that it results in seamless mobility options from origin to destination for the greatest possible range of potential users. It should consider all possible obstacles that may exist in buildings, transportation terminals, sidewalks, paths, roads, and vehicles.

- ▶ Work with the Planning and Development Services Department to create programs to educate planners, designers, and inspectors on incorporating universal design into planning and transportation facility design and construction. Staff members that are responsible for integrating accessibility features into their designs should seek additional training on ADA requirements and emerging issues including the draft *Guidelines for Accessible Public Rights-of-Way*.
- ▶ Work with Planning and Development Services to ensure that specifications to meet the guidelines are included on design drawings.
- ▶ Identify special projects and funding to reduce barriers and upgrade facilities to meet new accessibility standards.
- ▶ Develop multi-modal access guides, which include maps and other information on access by people with disabilities to a particular destination, including availability of transit and taxi services, and the quality of walking conditions.
- ▶ Maintain or improve the current Scottsdale bus stop design which provides for a 6-foot deep bus stop and shelter to be located behind the sidewalk. Vertical shade elements should be included in bus shelter design.
- ▶ Adopt the technical provisions for recreation trails in outdoor developed areas as proposed in the final report of the regulatory negotiation committee on accessibility guidelines for outdoor developed areas (<http://www.access-board.gov/outdoor/outdoor-rec-rpt.htm>). In this report, a trail is defined as a route that is designed, designated, or constructed for recreational pedestrian use or provided as a pedestrian alternative to vehicular routes within a transportation system.
- ▶ Each year a percentage of all shared-use paths should be assessed or reassessed for accessibility, maintenance, and geographic information system (GIS) mapping using the universal trail assessment process that records objective grades, cross slopes, tread width, surface firmness and stability, and obstruction information.
- ▶ Trail access information should be placed at all access points on shared-use paths so that hikers of all abilities have the opportunity to determine the conditions of any particular section of a trail or shared-use path before they start to negotiate the route.
- ▶ Consider augmenting the Human Services Commission with a Disability Advisory Committee to create a resource for planning and prioritization of pedestrian and universal access improvements within Scottsdale.
- ▶ Develop a comprehensive information source to simplify the process for persons needing to utilize transportation services such as Dial-a-Ride and Cab Connection.
- ▶ The provision of shaded bus stops is a critical issue for persons with physical disabilities and every attempt should be made to increase the number of shaded bus stops, including shelters.

- ▶ Follow best practice planning and design for pedestrians with disabilities (revised draft *Guidelines for Accessible Public Rights-of-Way*) which recommend that marked crosswalks be provided at all signalized intersections.
- ▶ Incorporate a walking speed of 3.5 feet per second or slower to calculate pedestrian clearance time as recommended in the revised draft *Guidelines for Accessible Public Rights-of-Way*.

8.0 NEIGHBORHOOD TRAFFIC MANAGEMENT

The City is currently in the process of finalizing modifications to a neighborhood traffic management program. This program is a comprehensive set of policies and procedures used by the City in ongoing efforts to assist neighborhoods who identify impacts of speeding or cut-through traffic. The draft Neighborhood Traffic Management Program has the following goals which are supported through the Policy Element of the *Transportation Master Plan*:

- ▶ Minimize the negative impacts of traffic in neighborhoods through the ongoing monitoring and improvement of the overall transportation system.
- ▶ Protect Scottsdale's residential neighborhoods from "unwanted" traffic – defined as either:
 - ▶ Excessive vehicle travel speeds or;
 - ▶ Vehicles with an origin and destination outside the neighborhood or;
 - ▶ Excessive vehicle traffic volumes.
- ▶ Balance the often conflicting needs of reducing traffic volumes and travel speeds, while maintaining short emergency vehicle response times.
- ▶ Resolve the traffic concerns of a neighborhood without negatively affecting other citizens and neighborhoods.
- ▶ Ensure broad-based citizen participation as an essential element in the development of a safe, effective neighborhood traffic management program.

9.0 FREIGHT MOBILITY/TRUCK ROUTES

Commercial truck vehicle traffic is a basic feature of community living. Grocery stores need food deliveries and businesses need their goods delivered or picked up. Most of Scottsdale's arterial streets have residential frontage, making the need for buffering solutions and mitigation imperative. Currently, the City has several designated truck routes, but those designations do not extend north of Indian Bend Road.

It is recommended that all major roadways are considered truck routes. All neighborhood/local system routes will NOT be considered for truck route designations. Roadways will be considered for truck routes based on the following:

- ▶ Connection to a regional freeway;
- ▶ Reasonable alternative routes for truck traffic;
- ▶ Historical usage by truck traffic;
- ▶ Zoning, land uses (commercial, residential, schools) along the route; and
- ▶ Noise mitigation measures such as rubberized pavement.

In accordance with the provisions of Scottsdale City Code Article 3, Section 17–60 and when signs are erected giving notice of the adopted truck routes, no persons shall operate any commercial vehicle exceeding 10,000 pounds gross vehicle weight at any time upon any streets or part of a street, except for the purpose of pick-up or delivery of materials or merchandise.

Operators of said commercial vehicles may leave an adopted truck route by the nearest route to travel a distance no greater than 3/4 mile to complete deliveries and pick-ups. At the completion of said delivery and/or pick-up, commercial vehicle operators must return immediately by the nearest route, not to exceed 3/4 mile. However, such travel detours shall not entail crossing another truck route.

- ▶ Major roadways will be considered routes for freight delivery with restrictions on the hours of day when deliveries can be made to help mitigate adverse impacts of trucks to residential areas.
- ▶ In Downtown and other designated urban character areas, trucks should not block travel lanes especially during peak hours in the morning and evening.

10.0 ROADWAY NOISE MITIGATION

The City of Scottsdale does not provide noise mitigation on roadways that are not being widened or realigned closer to residences. If it becomes necessary to widen a roadway, the City uses ADOT policies for roadway noise levels and when mitigation should occur, excluding the cost ceilings identified in ADOT policies. In addition, the City uses rubberized asphalt on new and major resurfacing roadway paving projects, decreasing the levels of roadway noise on City streets. Often, noise mitigation involves the installation of sound walls, which may conflict with other City policies and practices in the northern area such as the *Scenic Corridor Design Guidelines*, Environmentally Sensitive Lands Ordinance (ESLO), and the Foothills Overlay (F-O) zoning district.

- ▶ Use rubberized asphalt and other methods to minimize roadway noise.
- ▶ Prioritize noise mitigation alternatives to sound walls, such as berming or vegetation. Avoid the use of sound walls where scenic corridor setbacks exist.
- ▶ Consider Transportation Commission and Council adoption of a modified version of the ADOT noise mitigation policies (without the cost limitation for roadway mitigation) for use in City roadway projects.

11.0 ROADWAY CONSTRUCTION IMPACTS

Roadway construction has a range of impacts on mobility for autos, pedestrians, bicyclists, and transit users. The City works with contractors doing road construction to maintain through travel and business access during construction. Construction barricading and scheduling is required to be submitted to the City's right-of-way (ROW) manager. Through the master plan process there has been some discussion about limiting construction to nighttime hours, to making sure that weekend and special event travel is unimpeded, and ways to limit the duration of travel lane closures. In addition, the City's Right-of-Way Management Program (RWMP) works to coordinate construction occurring within the City's rights-of-way.

- ▶ Schedule arterial roadway construction so that parallel arterials will not be under construction at the same time.
- ▶ During roadway construction avoid limiting through travel to one lane in either direction if possible.

12.0 TRAFFIC INCIDENT MANAGEMENT

Traffic incident management should bring together several City departments to work together to promote, develop, and sustain effective traffic incident management programs. The Transportation Department will coordinate with the Police, Fire, Municipal Services departments and the Communications and Public Affairs (CAPA) division to develop a mechanism for achieving the following goals:

- ▶ Improved responder safety;
- ▶ Safe, quick clearance; and
- ▶ Prompt, reliable, interoperable communications.

Traffic incident management will achieve these goals through a series of strategies that will improve operations and communications; provide multidisciplinary training; track performance and progress; promote improved technologies; and provide increased driver awareness and education.

Law enforcement agencies are first responders at traffic incident scenes, providing 24-hour emergency response and operating under a paramilitary command structure. At most traffic incidents, law enforcement officers act alone and are trained to make unilateral command decisions.

Emergency medical services have evolved as primary care givers to individuals needing medical care in emergencies. As with police, emergency medical personnel have a defined set of priorities. They focus on providing patient care, crash victim rescue, and ensuring the safety of their personnel.

Transportation agencies are secondary responders. That is, they are typically called to the incident scene by first responders, usually law enforcement. Transportation agencies are rarely connected directly to public safety emergency communications and dispatch systems.

Towing and recovery companies that respond to highway incidents are indispensable components of all incident management programs. Even programs that include service patrols with relocation capability depend heavily on towing and recovery service providers. Challenges facing this industry are unique because they are not public agencies. As such, they must remain profitable to retain a skilled work force, purchase and maintain expensive and complex equipment, and to stay in business.

Traffic information service providers are primarily private sector companies that gather and disseminate traffic condition information. These private providers are the primary source of information for commercial radio traffic information broadcasts, the most common source of traffic information for motorists. These companies also package specific information on a route or time of day basis to paying clients who subscribe for the information. In recent years, many Internet sites have been created to provide road condition and traffic information. A mixture of public sector agencies and private information service providers maintains these sites.

- ▶ The Transportation Department will coordinate with Police, Fire, Municipal Services, and CAPA to develop a mechanism for achieving improved responder safety; safe, quick clearance; and prompt, reliable, interoperable communications.

13.0 LOCAL AREA INFRASTRUCTURE PLANS

Local area infrastructure plans have been drafted for some areas of the City outside of master planned communities. The purpose of these plans is to guide local decisions for infrastructure improvements (streets, water, trails, etc.) and related development, and to help coordinate the efforts of various City departments in providing these necessary services. These plans have not been approved or adopted by an official body, but serve as guides for City staff when reviewing development proposals. The goals and policies of the local area infrastructure plans will be adopted as part of the *Transportation Master Plan*. The maps displaying recommended infrastructure will be appended to the Streets Element of the *Transportation Master Plan* and adopted by reference. Significant public outreach will be required prior to finalizing the maps, which will be revised when/if conditions change.

A set of goals and policies were developed for local area infrastructure plans to help guide the need and location of planned service infrastructure and are based on the City of Scottsdale *General Plan* and the City Council's goals:

1. Coordinate infrastructure (streets, water, trails, etc.) so that they are not planned independently of one another.
2. Create a neighborhood design that establishes a balance between accessibility and access control and builds only the streets that are needed to serve each parcel.
3. Coordinate the location of utilities and public access improvements to reduce long-term costs and minimize disruptions to neighborhoods.
4. Provide predictability for City budgeting and maintenance programs.
5. Provide consistency in decision making across the City while also allowing for the ability to make informed site decisions that would alter the plans.
6. Increase public awareness about what may happen in their neighborhood regarding infrastructure.
7. Provide property owners with consistent information as to the planned service infrastructure as it relates to their property.

Additionally, specific goals and objectives were created for each infrastructure area including; transportation, trails, water resources, and environmental. The transportation goals and objectives are:

- ▶ Provide a safe and efficient transportation system;
- ▶ Maintain and improve traffic flow on the major street network;
- ▶ Protect neighborhoods from unwanted through traffic;
- ▶ Maintain existing/utilized street layout whenever possible; and
- ▶ Minimize the cost of the improvements.

The following policy for local area infrastructure plans should be adopted through the *Transportation Master Plan*.

- ▶ Implement local area infrastructure plans for areas of the City outside of subdivisions or master planned communities to guide neighborhood infrastructure planning and

development, and to help coordinate the efforts of various City departments in providing these necessary services.

14.0 PARKING

Parking management policies can contribute to sustainable transportation practices as well as land use efficiencies and can make modal choice more convenient.

- ▶ Consider landscaping, design and potential for the use of first floor retail to make parking structures more aesthetically pleasing and appropriate for locations in activity centers and urban character areas.
- ▶ Work with all Scottsdale area school districts to assist with parking issues as well as pick-up and drop-off issues.
- ▶ Use ITS and other technologies to help mitigate parking issues.
- ▶ Work with the Planning and Development Services Department regarding thresholds for the inclusion of parking structures versus parking lots and the design and aesthetics of each type of facility.
- ▶ Reinforce walkable, “park once” districts in Downtown and other urban character and activity centers within the City, where multiple trip purposes can be accomplished with a single automobile trip.
- ▶ Recognize that City funding for the construction of public parking garages will be considered as a business support function and not a transportation enhancement.

15.0 PUBLIC ART AND TRANSPORTATION

POLICY OBJECTIVE: Reflect Scottsdale’s commitment to its public art program in the design and construction of transportation improvements.

Although transportation projects frequently include artists as members of design teams and related public art integration or stand alone components, there is no requirement to do so in the City’s ordinances. The purpose of this set of policies/recommendations is to formalize current practice and assure its consistency with other City projects/programs.

15.1 Policies and Strategies

15.1.2 Percentage of Transportation Project Budgets for Public Art

- ▶ Ensure that transportation projects incorporate public art elements that promote and support the City’s and Scottsdale Cultural Council’s vision and mission.
- ▶ Implement a public art program in the City’s capital improvement program, dedicated for transportation projects. This transportation public art program would be supported by dedication of up to two percent of the total eligible costs of all transportation improvement projects to the selection, acquisition, fabrication, installation, and maintenance of public art.

A Transportation improvement project is any transportation project paid for wholly or in part by City funds in which the City’s contribution equals \$100,000 or more for the construction, rehabilitation, remodeling, improvement or purchase for a public use of any street, sidewalk,

parking facility, bicycle or transit facility. Routine maintenance and repair does not constitute a transportation improvement project.

16.0 MAINTENANCE AND LIFE CYCLE PLANNING

Maintenance of the City's streets and alleyways is managed by the Municipal Services Department. The Field Services Division of Municipal Services handles street resurfacing, alley maintenance, and streetlight and traffic signal maintenance. Schedules of street resurfacing with preservative seals, rubberized asphalt, slurry seal or hot mix asphalt are available on the City's website. In 2005 a pavement condition inventory was completed and a map of results is also available on the website.

To maintain the health, safety, and appearance of alleys, the City seeks resident cooperation to keep the alleys in the best condition possible by following guidelines provided on the City's website for alley maintenance program schedules, construction debris disposal, and brush and large object pick up schedules. The Solid Waste Division and the Revitalization Program have worked together to promote citizen/city partnerships to help maintain alleys in a neat and sanitary condition.

Annually, the City:

- ▶ Treats the center portion of the alley for dust control;
- ▶ Removes vegetation from alley perimeters; and
- ▶ Treats alley surfaces to inhibit the return of vegetation.

The adjacent property owners are asked to keep the alley behind their property free from litter and debris, construction waste, and landscaping granite. The Solid Waste Division picks up landscape trimmings and contained waste.

The Field Services Division applies dust control treatments to unpaved roadways when average daily traffic counts exceed 100 vehicles per day. The City works closely with Maricopa County to control dust and particulate pollution through these treatments. Unpaved roads that were graded by the County prior to their annexation by the City continue to be graded at approximately six week intervals. Other unpaved roads are graded as needed.

Funding for roadway-related maintenance and operations is provided through the City's share of state Highway User Revenue Funds (HURF). Maintenance and operations of existing facilities should continue to be the first priority for the use of HURF revenue.