



Bicycle and Pedestrian Plan Update

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Working Paper No. 1 Vision, Goals, Objectives, and Performance Indicators

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1 INTRODUCTION

The Arizona Department of Transportation (ADOT) Statewide Bicycle and Pedestrian Plan Update is an update to the 2003 Statewide Bicycle and Pedestrian Plan and will address the most critical bicycle and pedestrian transportation planning needs on the State Highway System (SHS). The Plan Update will reflect the significant changes that have occurred since completion of the 2003 Statewide Plan, including:

- Population growth statewide.
- Significant investment in Arizona's transportation infrastructure.
- A growing trend, in Arizona and nationwide, to ensure that bicycling and walking are routinely accommodated on state highways.
- Constrained budgets to construct and maintain transportation infrastructure for all modes of travel.
- Opportunities to utilize new technologies to communicate with stakeholders, receive their input, and disseminate information about bicycling and walking in Arizona.
- National competitive financial grants to support livability and sustainable communities.
- New infrastructure on the SHS such as roundabouts and pedestrian hybrid beacon signals.

The major product of the Plan Update will be the 2012 Statewide Bicycle and Pedestrian Plan (Final Report). Preliminary study objectives that will guide the Plan Update include:

- Incorporate the collaborative efforts of stakeholders to address the most critical elements to improve bicycling and walking in Arizona and specifically on the SHS.
- Capitalize on national momentum, including Federal Highway Administration (FHWA) initiatives on livability, sustainability, and climate change to better integrate and recognize bicycling and walking as key elements of the overall transportation system.
- Identify policies and improvements that ensure that the needs of bicyclists and pedestrians are appropriately and adequately accommodated.
- Outline activities that will guide the ADOT Bicycle and Pedestrian Program over the short-, mid-, and long-term periods, incorporating both roadway and off-roadway bicycle and pedestrian transportation facilities.

Working Paper No. 1 presents a Vision, Goals, and Objectives for the Bicycle and Pedestrian Plan Update. Specific strategies and action items to achieve each objective will be developed in subsequent working papers.

2 VISION, GOALS, OBJECTIVES, AND PERFORMANCE INDICATORS

A **vision statement** expresses what ADOT and its partners would like to accomplish in the long-term, serving as a guide for identifying a course of action.

Goals are proposed that support the Vision, and describe the desired outcome for the activities or services that may be established through statewide cooperation and collaboration. Goals are long-term and identify a broad plan.

Objectives established within the Plan are results-oriented, focused, measurable, and will direct specific actions and activities. Objectives represent what can realistically be achieved through a collaborative effort of local, regional, and statewide agencies and organizations.

Specific strategies, activities, and actions needed to achieve the objectives will be identified in upcoming working papers.

Performance indicators are proposed to measure progress and achievement towards the objectives. Performance indicators can be realistically calculated from available data sources or data sources that could be collected at a relatively minimal cost.

2.1 Input to Development of Vision

The proposed ADOT Bicycle and Pedestrian Plan Update Vision considers vision statements, goals and objectives, and recommendations of other previously completed and in-progress planning efforts, such as *What Moves You Arizona: A Transportation Plan for 2035 – Arizona’s Long-Range Transportation Plan*; *Building a Quality Arizona (bqAZ)*; *ADOT Pedestrian Safety Action Plan*; *ADOT Bicycle Safety Action Plan*; local, regional, and federal plans; and local, state, and national bicycling and walking organizations.

The Steering Committee also provided input into the vision.

2.1.1 Other Previously Completed and In-Progress Planning

A summary of vision and goals from other related planning studies are listed below. Additional information on these studies is provided in **Appendix A**.

1. ADOT Bicycle and Pedestrian Plan, 2003

The stated goal of the Plan is “To provide a long-term plan for a statewide system of interconnected bicycle and pedestrian facilities that will guide ADOT transportation decisions relating to bicycle and pedestrian travel, planning, and facility development.”

Identified objectives were:

- Inventory existing conditions for bicycle travel.
- Determine preferred bicycle routes on the SHS.

- Evaluate costs and funding sources for bicycle and pedestrian facilities.
- Develop a pedestrian policy. Evaluate the effectiveness of the existing ADOT Bicycle Policy.
- Evaluate facility design and maintenance issues. Develop design standards.
- Implementation – develop a statewide bicycle network.
- Provide model bicycle and pedestrian ordinances for local governments.
- Involve agencies, organizations and citizens in the development of the Plan.

ADOT Bicycle and Pedestrian Plan Update Considerations

ADOT Bicycle and Pedestrian Plan Update should promote a long-term plan for a statewide system of interconnected bicycle and pedestrian facilities.

2. Building a Quality Arizona (BqAZ), 2010

The Vision Statement of BqAZ is:

“Arizona’s integrated, multimodal transportation system provides residents and the traveling public with mobility choices (rail, transit, auto, air, pedestrian, and bicycle) that reflect the high value that Arizonans place on our unique southwestern lifestyle, the extraordinary places we call home, and the natural resources that define us as a state. In recent decades, innovation and technology have changed the way we travel with the introduction of new modes to Arizona, as well as improved fuel efficiency and expanded use of alternative fuels. Through coordinated land use decision-making and wise investments in infrastructure, Arizonans have broad transportation choices.”

“We move people and goods safely and efficiently in a way that promotes sustainable growth and preserves our natural environment, while continuing to position Arizona for diverse economic opportunities based on our unique assets. Arizona’s transportation system connects communities, people, and commerce to enhance our quality of life, while ensuring that future generations can enjoy an even better Arizona.”

Guiding principles were:

- Improve mobility and accessibility.
- Support economic growth.
- Promote a development pattern that links land use and transportation.
- Ensure safety and security.

ADOT Bicycle and Pedestrian Plan Update Considerations

ADOT Bicycle and Pedestrian Plan Update Vision should promote and support a vision of an integrated multimodal transportation system that provides mobility choices.

3. What Moves You Arizona: A Transportation Plan for 2035 – Arizona’s Long-Range Transportation Plan, 2011

The Arizona Long Range Transportation Plan prioritizes \$89 billion of transportation needs in the context of \$26 billion in revenue over the next 25 years. Increased funding is committed to non-highway modes, expanding travel choice. The Plan provides flexibility as part of a continuous process of planning, implementation, operations, and preservation that will be responsive to future changes in needs, resources, and priorities.

The Plan identifies ADOT’s role for transit, highways, urban transit, rural transit, passenger rail, freight rail, air, and bicycles/pedestrians. The Plan articulates the role ADOT expects to have for highway and non-highway modes over the 25-year life of the Plan horizon for decision-making and funding responsibility. Four distinct roles are identified:

- **Owner-Operator:** ADOT is responsible for maintaining, operating, and enhancing infrastructure to achieve the goal and related objectives.
- **Partner:** ADOT will partner with others and will share a role in funding and decision-making to achieve the goal and related objectives.
- **Participant:** ADOT will support public and private transportation delivery entities by providing policy support, guidelines, and/or complementary and opportunistic funding to advance the goals and objectives of the Plan.
- **None:** ADOT does not participate in funding or decision-making and will not engage in this over the life of the Plan.

ADOT defines its role for accommodating bicyclists and pedestrians as a “partner” and “participant.” ADOT does not define its role as an “owner-operator” of bicycle and pedestrian facilities/infrastructure.

ADOT Bicycle and Pedestrian Plan Update Considerations

The Plan identifies ADOT’s role for bicycles and pedestrians as “partner,” “participant” or “none.” ADOT is not identified as an “owner-operator” of bicycles and pedestrian facilities.

The ADOT Bicycle and Pedestrian Plan should: identify policy revisions that are needed to fully consider bicycling and walking as equals with other transportation modes, should strengthen existing provisions for bicycle and pedestrian travel on the SHS, determine needs and funding, and identify policies associated with nonmotorized travel in the State. Policies may include “Complete Streets” that provide highways that are safe and accommodating for all users.

4. ADOT Pedestrian Safety Action Plan (PSAP), 2009

The stated goal of the PSAP is to reduce the number of pedestrian crashes on Arizona State Highways by 20 percent by 2016 (the baseline year is the five-year average for the

years 2002 through 2006). The 2016 goal is to have fewer than 123 pedestrian crashes on State Highways (fatal and non-fatal) per year.

Identified emphasis areas are:

- Reduce pedestrian crashes in urban areas at locations with high pedestrian activity.
- Reduce pedestrian crashes at intersections involving turning vehicles (right and left).
- Reduce pedestrian crashes on undivided (no median barrier) roadways.
- Reduce pedestrian crashes involving pedestrians who had been drinking.
- Reduce dart/dash / mid-block pedestrian crashes.
- Reduce pedestrian crashes involving turning vehicles at traffic interchanges.
- Improve lighting conditions at high pedestrian activity locations.

ADOT Bicycle and Pedestrian Plan Update Considerations

ADOT Bicycle and Pedestrian Plan Update Vision should promote improved safety of pedestrians on the SHS.

5. ADOT Bicycle Safety Action Plan (BSAP), 2011

The stated goal of the BSAP is to reduce the total number of bicycle crashes (fatalities and non-fatalities) on Arizona State Highways by 12 percent by the year 2018.

Identified emphasis areas are:

- Reduce the number of bicycle crashes in urbanized and developed areas (large urbanized, small urbanized, and small urban).
- Reduce crashes in which a bicyclist or motor vehicle failed to yield at signalized intersections.
- Reduce crashes in which a bicyclist or motor vehicle failed to yield at unsignalized intersections.
- Reduce bicycle crashes involving vehicles making a right turn.
- Reduce crashes in which the bicyclist was riding facing traffic.
- Reduce crashes in which the bicyclist was riding on the sidewalk.
- Reduce bicycle crashes that occurred in dawn, dusk, or dark conditions.

ADOT Bicycle and Pedestrian Plan Update Considerations

ADOT Bicycle and Pedestrian Plan Update Vision should promote improved safety of bicyclists on the SHS.

6. Arizona Strategic Highway Safety Plan, 2007

The Vision Statement is “Zero fatalities on Arizona roads, your life depends on it.”

The vision is supported by a state “stretch” goal designed to bring about clear progress towards the vision. The goal requires a reduction in the number of fatalities on Arizona’s roadways of approximately 12 percent by the year 2012. The base year of comparison will be 2007.

Emphasis areas are:

- Restraint Usage
- Speeding
- Young Drivers
- Impaired Driving
- Roadway / Roadside (lane departure and intersections)
- Data Improvement

The Arizona Strategic Highway Safety Plan does not explicitly focus on bicycle and pedestrian safety. The Plan addresses bicyclist and pedestrian safety through other strategies, promoting the implementation of a statewide pedestrian safety action plan.

ADOT Bicycle and Pedestrian Plan Update Considerations

ADOT Bicycle and Pedestrian Plan Goals, and Performance Measures should recognize and reflect that improvements in the Strategic Highway Safety Plan emphasis areas will also improve the safety of bicyclists and pedestrians on the SHS. The Plan should recommend that future updates to the Strategic Highway Safety Plan specifically address bicyclist and pedestrian safety as an emphasis area.

7. United States Department of Transportation (USDOT) Policy Statement on Bicycle and Pedestrian Accommodation Regulations and Recommendations, 2010

The purpose of the Policy Statement is to support interconnected bicycling and walking networks to increase bicycle and pedestrian safety.

The Policy Statement recommends the following actions:

- Consider walking and bicycling as equals with other transportation modes.
- Ensure that people of all abilities and ages are considered when planning and designing facilities.

- Go beyond minimum standards.
- Integrate bicycle and pedestrian accommodation on new, rehabilitated, and limited-access bridges.
- Collect data on bicycling and walking trips.
- Set mode share targets for bicycling and walking and track them over time.
- Remove snow from sidewalks, bike lanes, and shared-use paths.
- Improve non-motorized facilities during maintenance projects.

ADOT Bicycle and Pedestrian Plan Update Considerations

ADOT Bicycle and Pedestrian Plan Update Vision should promote interconnected bicycling and walking networks to increase bicycle and pedestrian safety. Action items recommended in the policy statement should be considered throughout the ADOT Bicycle and Pedestrian Plan Update.

8. FHWA, National Bicycling and Walking Study (NBWS) 1994, 2000 Status Report, 2010 Status Report

The goal of the 1994 NBWS was to double the percentage of total trips made by bicycling and walking in the United States from 7.9 percent to 15.8 percent of all travel trips, while simultaneously reducing the number of bicyclists and pedestrians killed or injured in traffic crashes by 10 percent. The 2000 Status Report recommended that "The Secretary of Transportation is urged to renew the Administration's commitment to achieving the goals of the NBWS."

The 2010 Status Report stated:

"According to the 2009 National Household Travel Survey (NHTS), walking trips accounted for 10.9 percent of all trips reported, while one percent of all trips reported were taken by bike. Together, the two modes account for 11.9 percent of all reported trips. While those percentages do not meet the National goal, they do reflect some progress toward meeting it."

"Though the reductions in pedestrian and bicyclist fatalities have met the goals set forth in the original study, there is always room for improvement in the area of safety (but) creating environments that are safe for bicyclists and pedestrians of all abilities should continue to be a top priority. Though challenging in the short term, it is also important to improve the process for reporting and documenting pedestrian and bicyclist crashes and injuries."

ADOT Bicycle and Pedestrian Plan Update Considerations

ADOT Bicycle and Pedestrian Plan Update Vision should promote the increased percentage of total trips made by bicycling and walking.

9. FHWA and ADOT Stewardship and Oversight Agreement for Arizona, 2010

The Oversight Agreement currently includes performance measures for pedestrian safety, including the number of pedestrian fatalities (current year + four-year history), and the number of SHS pedestrian fatalities (current year + four-year history).

The ADOT Bicycle Safety Action Plan proposed that bicycle safety performance measures be included in the Oversight Agreement:

- Number of statewide bicyclist fatalities (current year + four-year history).
- Number of SHS bicyclist fatalities (current year + four-year history).

ADOT Bicycle and Pedestrian Plan Update Considerations

ADOT Bicycle and Pedestrian Plan Update Vision should promote activities to reduce the number of bicyclist and pedestrian fatalities that occur statewide and on the SHS.

10. League of American Bicyclists (LAB), Bicycle Friendly State Ranking, 2011

Recommendations made by LAB to Arizona include the following:

- Improve state statutes related to bicycling.
- Improve obligation rate for bicycle related infrastructure

NOTE: Obligations are the federal governments' legal commitment to pay or reimburse the States or other entities for the Federal share of a project's eligible costs. Obligation rate is the percent of obligations compared to the amount available (apportioned and allocated) to the State.
http://www.fhwa.dot.gov/environment/transportation_enhancements/funding/appropriations_obligations/app_ob_summ.cfm

- Utilize highway safety funds to improve bicycle safety.
- Implement bicycle pavement markings on state bicycle network.
- Adopt a US Bike Route System.
- Implement standardized Safe Routes to School training.
- Incorporate bicycle-related questions into state commercial driver's license testing.
- Include bicycling as a stand-alone emphasis area in the Strategic Highway Safety Plan.
- Host a statewide bicycle conference.
- Address bicycling enforcement as part of Police Officer Standards and Training (POST).

ADOT Bicycle and Pedestrian Plan Update Considerations

ADOT Bicycle and Pedestrian Plan Update Vision should promote activities that will improve legislation, funding, infrastructure, education programs, and enforcement.

11. America Walks – Platform Summary, 2011

America Walks is a nonprofit national organization whose objective is to advance and protect walking at the national level through its role as a coordinator, information clearinghouse, and resource provider, as described by their mission statement (<http://americawalks.org/about/>):

The mission of America Walks is to make America a great place for walking by working collaboratively to share knowledge, advance policies and implement effective campaigns to promote safe, convenient and accessible walking conditions for all.

In October 2011, the America Walks Board of Directors adopted a Federal Walking Policy Platform, the first-ever national walking policy guide to advocacy and action. The platform includes three “core policies” and a “core principle”.

Core Policies:

- Core Policy 1: Improve Pedestrian Safety
- Core Policy 2: Develop Performance Measures and Improve Data Collection and Measurement of Walking/Walkability
- Core Policy 3: Incorporate Health-Related Outcomes in Transportation and Built Environment Policy, Planning, and Funding programs

Core Principle:

- Core Principle 1: Protect Dedicated Funding for Walking Infrastructure and Programs

America Walks will also pursue advancement of the following policies to improve pedestrian networks:

- A National “Fix It First” Policy: This would reduce roadway expansion, but would need to be written to permit completion of networks, e.g., lack of sidewalks. If coupled with a Complete Streets bill, such a policy would require reconstruction projects to finish uncompleted networks, such as access to transit stations or ADA compliance, and subsequently, advance the completion of walking infrastructure.
- Complete Streets: Ensure that all roadway funds spent meet a “Complete Streets” standard of performance, for both new and redeveloped facilities and maintenance projects. All transportation expenditures must further the long-term goal of a complete and interconnected system of pedestrian, bike, and transit facilities

across the country that includes not just roadways and transit lines, but sidewalks, greenways, trails, and multi-use pathways to encourage more routine active transportation by Americans.

ADOT Bicycle and Pedestrian Plan Update Considerations

The ADOT Bicycle and Pedestrian Plan Update Vision should promote America Walks vision for improved pedestrian safety, consideration of pedestrians in transportation planning, and integration of transportation planning and public health. The Plan should promote development of critical policies such as Complete Streets.

12. Transportation for America, Dangerous by Design, 2011

In the Dangerous by Design 2011 Report, Transportation for America states that between 2000 and 2009 1,479 people were killed while walking in Arizona, which cost the state \$6.36 billion. The report states that reducing pedestrian fatalities just 10% would have saved Arizona \$635.97 million over 10 years. The report ranks Arizona's overall Pedestrian Danger Index (PDI) as 6th out of the 50 states.

The report states that 67 percent of all 47,000+ pedestrian fatalities from 2000 to 2009 occurred on federal-aid roadways — major roads eligible to receive federal funding for construction and improvements with federal guidelines or oversight for design.

ADOT Bicycle and Pedestrian Plan Update Considerations

As recommended by “Dangerous by Design 2011”, ADOT Bicycle and Pedestrian Plan Update should promote:

- Dedicated federal funding for the bicyclists and pedestrian safety.
- Adoption of a Complete Streets policy.
- Creation of a complete network of sidewalks, bicycle paths, and trails.
- Commitment of a “fair share for safety.” In 2008, only two states spent any of their Highway Safety funding to improve infrastructure for bicycling and walking; yet, pedestrians and bicyclists make up 14 percent of all traffic-related fatalities. Safety goals should be established that not only reduce fatalities overall, but also reduce fatalities for individual modes, with separate safety goals for pedestrians, bicyclists, motorcyclists, and motorists.
- Accountability for creating communities that are safe for walking.

13. National Academy of Sciences, National Cooperative Highway Research Program (NCHRP), Americans with Disabilities Act (ADA) Transition Plans: A Guide to Best Management Practices

The Guide recommends best practices for ADA Transition Plans for State Departments of Transportation in their management of pedestrian facilities in public rights-of-way.

The Guide states that:

“ADA Transition Plans are required from all Departments to cover all facilities under their control. This includes rights-of-way, but also the buildings that may be owned by the Department such as district offices, welcome centers, rest stops, airport terminals, and other types of buildings associated with transportation activities. The focus of this report is solely on Department managed pedestrian facilities in public rights-of-way. This typically includes sidewalks, pedestrian paths, curb ramps, street crossings, driveway crossings, crosswalks, median crossings, public transit stops, and pedestrian activated signal systems. The accessibility of pedestrian facilities in the public right-of-way is only one aspect for providing equal access to state government programs, services, and activities – but it is an aspect that affects many citizens in their daily activities.”

ADOT Bicycle and Pedestrian Plan Update Considerations

A stated objective of the ADOT Bicycle and Pedestrian Plan should be to develop and identify action items to implement an ADA Transition Plan.

2.1.2 Steering Committee Input on Vision and Goal

A Steering Committee meeting was held on September 15, 2011. The stakeholder group was asked to brainstorm elements and key words that should be included in a Vision and Goal Statement. The Steering Committee identified the below words and phrases that should be considered:

- Ability, equity (ages, abilities, addressing all populations, modes)
- Accessibility (for all ages, abilities, modes)
- Americans with Disabilities Act (ADA)
- Choice
- Complete Streets, Context Sensitive Roadways
- Connectivity, seamless, integrated
- Co-exist (break down conflicts between motorized and non-motorized)
- Economic vitality
- Enticing, place making, livability
- Health

- Holistic thinking
- Improving the quality of life for Arizona residents
- Integration with land use
- Mindset shift, lifestyle mentality change, everyday life
- Maintainable and sustainable
- Mobility
- Proximity (connected and close)
- Safety
- Vision should focus on what ADOT can do, including what they can do in partnership with others;

Stakeholders noted that the FHWA “A Vision of the Future” as described in the National Walking and Bicycling Study is a good sample vision.

2.2 Vision Statement

The ADOT Bicycle and Pedestrian Plan Update Vision statement was developed considering other related plans and studies, and input from the Steering Committee. The Vision statement is:

ADOT BICYCLE AND PEDESTRIAN PROGRAM VISION STATEMENT

Adapted from the National Bicycling and Walking Study, A Vision of the Future

Arizona will become a state where people of all ages and abilities can conveniently, comfortably, and safely walk or bicycle to destinations within a reasonable distance as part of their everyday life. The quality of life and health of Arizona residents will be improved as more people choose to walk or bike.

A “Complete System” of new and enhanced bicycle and pedestrian facilities on and off of the State Highway System will make the trip safer, more pleasant, more convenient, more accessible, and with minimal barriers, enhancing the livability and economic vitality of cities and towns in rural and urban areas. A “Complete System” recognizes that transit users often begin or end their trip as pedestrians or bicyclists. Access to transit along state highways will be made safer and more comfortable.

Bicycling and walking will be incorporated into State Highway design to meet the needs of bicyclists, pedestrians, and transit users of all abilities and ages at traffic interchanges, intersections, at traffic signals, and along the State Highway. Bicycle and pedestrian facilities such as underpasses/overpasses, bicycle lanes, sidewalks and paths and transit stops will clearly indicate the right of way or their accommodation on shared roadways.

2.3 Goals and Objectives, and Performance Indicators

Achieving the ADOT Bicycle and Pedestrian Program Vision requires a multi-faceted approach that increases the number of bicyclists and pedestrians statewide, provides them with adequate facilities where they feel safe and comfortable, while simultaneously improving their safety. The goals (as outlined in **Table 1**) are:

- Goal No. 1: Increase Bicycle and Pedestrian Trips
- Goal No. 2: Improve Bicyclist and Pedestrian Safety
- Goal No. 3: Improve Pedestrian and Bicycle Infrastructure

Table 1 outlines objectives that will guide ADOT's activities to achieve the goals and the ADOT Bicycle and Pedestrian Program Vision.

Table 1 presents performance indicators for each objective. Collectively, these performance indicators will measure progress toward achieving the ADOT Bicycle and Pedestrian Plan Vision. Baseline values for the indicators are also shown in **Table 1**.

A selection of the indicators will be compiled and reported on an annual basis. The simple one-page summary of key bicycle and pedestrian indicators may be posted on azbikeped.org, and easily distributed, via email, to bicycle and pedestrian stakeholders, advocates, and professionals statewide. The one-page summary will provide a mechanism to raise awareness for bicycle and pedestrian issues. The following indicators are proposed to be included in the annual summary:

- Percentage of trips to work by walking or bicycling statewide.
- Number of miles of SHS with a paved shoulder width of four feet or greater.
- Number of bicyclist injuries and fatalities statewide.
- Number of pedestrian injuries and fatalities statewide.
- Percentage of transportation funding allocated to bicycle and pedestrian projects (based on available reported data).

Table 1 – ADOT Bicycle and Pedestrian Plan Update Performance Indicators

Goal and Supporting Objectives	Performance Indicator	Data Source	Existing Status/Baseline	Target	Reporting Frequency
Goal No. 1: Increase Bicycle and Pedestrian Trips					
i. Double the percentage of trips to work by walking and bicycling statewide within the next 10 years.	Percentage of trips to work by walking and bicycling statewide.	American Community Survey (ACS), which is conducted annually. The most recent ACS data was collected in 2010.	Trips to Work by Bicycle: 0.9% Trips to Work by Walking: 2.2% (ACS 2008-2010)	Double the percentage of total trips made primarily by bicycling and walking in Arizona within the next 10 years	Annual
Notes: In 2010, American Community Survey data shows that out of 2,621,839 workers in Arizona, 2.2% of them 150,000 workers that commute by walking and 27,000 that commute to work by bicycling.					
Goal No. 2: Improve Bicyclist and Pedestrian Safety					
i. Zero Fatalities: Reduce the number of bicycle-motor vehicle crashes statewide.	Number of bicyclist injuries and fatalities statewide.	ADOT Crash Facts Most recent three-year average of bicycle injuries and fatalities.	2008 to 2010 Average Bicyclists Injured: 1636 Bicyclists Killed: 21	<i>The overall goal is to eliminate all crashes involving bicyclists – “Zero Fatalities”.</i> A progress goal is to reduce the number of bicycle-motor vehicle crashes (injuries and fatalities) by 12 percent by the year 2018, for fewer than 1,440 bicycle-motor vehicle crashes in 2018, and fewer than 18 fatalities.	Annual

Table 1 – ADOT Bicycle and Pedestrian Plan Update Performance Indicators (continued)

Goal and Supporting Objectives	Performance Indicator	Data Source	Existing Status/Baseline	Target	Reporting Frequency
Goal No. 2: Improve Bicyclist and Pedestrian Safety (continued)					
ii. Zero fatalities: Reduce the number of bicycle-motor vehicle crashes on the State Highway System.	Number of bicyclist injuries and fatalities on ADOT SHS.	ADOT Highway Safety Data Mart Identification of bicyclist injuries and fatalities on SHS is not included in ADOT annual crash reporting, analysis of statewide data is required. As such, it is recommended that this data be compiled on a bi-annual or greater basis, not to exceed every five years.	217 crashes per year (average 2004-2008) on the SHS. Analysis of 2007-2010 data shows average of: Bicycle-motor vehicle crashes/year on the SHS: 177 per year Bicyclists Injured: 19 per year Bicyclists Killed: 4 per year	<i>The overall goal is to eliminate all crashes involving bicyclists – “Zero Fatalities”.</i> A progress goal is to decrease the number of bicycle-motor vehicle crashes (injuries and fatalities) by 12 percent by the year 2018. This goal represents a reduction of 21 crashes per year by the year 2018 (as compared to (2007-2010 data) for a goal of fewer than 156 crashes per year on the SHS; fewer than 16 bicyclists injured, and fewer than 3 bicyclists killed per year.	Bi-annual or greater basis, not to exceed every five years.
Notes: <i>The ultimate goal is eliminate all crashes involving bicyclists and pedestrians – “Zero Fatalities”.</i> To chart progress toward this goal, the Bicycle Safety Action Plan established a goal to reduce bicycle-motor vehicle crashes by 12 percent by 2018, as compared to 2004-2008 baseline data. Analysis of 2010 data establishes a baseline of 177 crashes per year.					
iii. Zero fatalities: Reduce the number of pedestrian-motor vehicle crashes statewide.	Number of pedestrian injuries and fatalities statewide.	ADOT Crash Facts Most recent three-year average of pedestrian injuries and fatalities.	2008 to 2010 Average Pedestrians Injured: 1321 Pedestrians Killed: 134	<i>The overall goal is to eliminate all crashes involving pedestrians – “Zero Fatalities”.</i> A progress goal is to reduce the number of pedestrian-motor vehicle crashes (injuries and fatalities) by 20 percent by the year 2018 – fewer than 1,057 crashes in 2018, and fewer than 107 fatalities.	Annual

Table 1 – ADOT Bicycle and Pedestrian Plan Update Performance Indicators (continued)

Goal and Supporting Objectives	Performance Indicator	Data Source	Existing Status/Baseline	Target	Reporting Frequency
Goal No. 2: Improve Bicyclist and Pedestrian Safety (continued)					
iv. Zero fatalities: Reduce the number of pedestrian-motor vehicle crashes on the State Highway System.	Number of pedestrian injuries and fatalities on the SHS.	ADOT Highway Safety Data Mart Identification of bicyclist injuries and fatalities on the SHS is not included in ADOT annual crash reporting, analysis of statewide data is required. As such, it is recommended that this data be compiled on a bi-annual or greater basis, not to exceed every five years.	2008 to 2010 Average Pedestrians Injured: on SHS: 38 per year Pedestrians Killed on the SHS: 42 per year	<i>The overall goal is to eliminate all crashes involving pedestrians – “Zero Fatalities”.</i> A progress goal is to reduce the number of pedestrian-motor vehicle crashes (injuries and fatalities) by 20 percent by the year 2018 – fewer than 30 pedestrians injured per year; and fewer than 34 pedestrians killed per year on the SHS.	Bi-annual or greater basis, not to exceed every five years.
<i>The ultimate goal is eliminate all crashes involving bicyclists and pedestrians – “Zero Fatalities”.</i> To chart progress toward this goal, the ADOT Pedestrian Safety Action Plan established a goal to reduce pedestrian crashes (fatal and non-fatal) by 20 percent by the year 2016, as measured by a five-year average.					

Table 1 – ADOT Bicycle and Pedestrian Plan Update Performance Indicators (continued)

Goal and Supporting Objectives	Performance Indicator	Data Source	Existing Status/Baseline	Target	Reporting Frequency
Goal No. 3: Improve Pedestrian and Bicycle Infrastructure					
i. Provide pedestrian infrastructure in urbanized areas along non-access controlled state highways.	Number of miles of SHS with adjacent/parallel sidewalks or shared-use paths in urban areas/small urban areas.	ADOT Photo Log. This data is not readily available in a database and must be extracted through a visual review of the ADOT Photo Log.	Total Sidewalk Length on SHS: 319.2 miles Total Shared use Path Length on SHS: 19.6 miles Total Length (centerline miles) where pedestrian infrastructure is needed: 169 miles	Provide pedestrian infrastructure, including sidewalks, shared use paths, and crossings in urbanized areas where there is a demonstrated need for the infrastructure.	Bi-annual or greater basis, not to exceed every five years.
<p>Notes: Pedestrian Demand Index for State Highway Facilities (May 2007), used GIS mapping of population and roadway network data to identify areas of potential pedestrian demand. State Highway segments with pedestrian demand index (PDI) of “Moderate” or above represent segments where pedestrian infrastructure may be most beneficial. Segments with “Highest”, “High”, and “Moderate” were combined with the ADOT sidewalk and shared use path inventory to identify lengths of state highway (represented as centerline miles) where pedestrian infrastructure may be of most benefit. This analysis yielded the following results:</p> <p>Highest = 10.97 centerline miles of state highway segment lack pedestrian infrastructure; High = 24.83 centerline miles of state highway lack pedestrian infrastructure Moderate = 133.39 centerline miles of state highway lack pedestrian infrastructure TOTAL = 169.2 CENTERLINE MILES OF STATE HIGHWAY LACK PEDESTRIAN INFRASTRUCTURE</p>					

Table 1 – ADOT Bicycle and Pedestrian Plan Update Performance Indicators (continued)

Goal and Supporting Objectives	Performance Indicator	Data Source	Existing Status/Baseline	Target	Reporting Frequency
Goal No. 3: Improve Pedestrian and Bicycle Infrastructure (continued)					
ii. Accommodate bicyclists on all non-access controlled state highways.	Number of miles of SHS with a paved shoulder that meets ADOT design guidelines (4 feet or greater).	ADOT Highway Performance Monitoring System, which is updated annually by ADOT.	Number of miles with effective shoulder width (4 feet or greater): 2,852.65 miles, representing approximately 48.9% of the State Highway System. Effective shoulder width considers rumble strips, providing 4' of ride-able shoulder.	Provide minimum effective shoulder width of 4' or greater on all State Highways except where specifically excluded by administrative regulation.	Annual
<p>ADOT Traffic Engineering Policies, Guidelines, and Procedures November 2011 Section 1000 - Miscellaneous , 1030 Controlled-Access as Bikeway states that bicycles are permitted by law to operate on all State highways, including controlled-access highways, except where excluded by administrative regulation and the posting of signs to give notice of a prohibition.</p> <p>ADOT ITD policy MGT 02-1 Bicycle Policy states that it is ADOT's policy to:</p> <ul style="list-style-type: none"> a. Include provisions for bicycle travel in all new major construction and major reconstruction projects on the state highway system. b. Utilize the AASHTO Guide for the Development of Bicycle Facilities as the design guide for roadway features to accommodate bicycles. c. Provide shared roadway cross-section templates as a minimum condition with new major construction and major reconstruction projects, regardless of the presence of a shared use path. <p>Inventory of right shoulder width information demonstrates that 48.9% of the state highway system has a right shoulder width of 4 feet or greater.</p>					

3 APPENDIX A – RELATED PLANS AND STUDIES

1. ADOT Bicycle and Pedestrian Plan, 2003

In the 2003 ADOT Bicycle and Pedestrian Plan, the study goal and objectives were prepared by ADOT and finalized based on Steering Committee input and a review of goals and objectives from other state plans. A vision statement was not prepared for the plan.

Study Goal

To provide a long-term plan for a statewide system of interconnected bicycle and pedestrian facilities that will guide ADOT transportation decisions relating to bicycle and pedestrian travel, planning, and facility development.

Study Objectives

- A. Conduct an inventory of highways under ADOT jurisdiction to determine existing conditions for bicycle travel.
- B. Determine preferred bicycle routes on the SHS.
- C. Evaluate financial considerations, including costs. Compile a listing of funding sources that are currently being used or can be used to fund shared-lane roadway and bicycle and pedestrian facilities. Identify funding strategies and a system for tracking individual projects.
- D. Develop a pedestrian policy to guide ADOT in State Highway, U.S. Highway, and Interstate Highway development. Evaluate the effectiveness of the existing ADOT Bicycle Policy at least nine months after its adoption and recommend revisions, if needed.
- E. Evaluate facility design and maintenance issues. Develop design standards and cross-section detail design for shared roadways and bicycle facilities that can be integrated into existing design standards, if needed.
- F. Implementation – develop a statewide bicycle network plan that prioritizes corridors, integrates existing plans from other jurisdictions, and identifies funding for future development.
- G. Provide model bicycle and pedestrian ordinances for local governments in Arizona.
- H. Involve representatives from interested agencies and organizations throughout the State and citizens of Arizona in the development of the Plan.

2. Building a Quality Arizona (BqAZ), 2010

The 2010 Statewide Transportation Planning Framework was a statewide study focusing on not only transportation, but also sustainability, Smart Growth, the environment, economic development, and safety and security. It was the first effort by ADOT Multimodal Planning Division (MPD) to establish a truly long-range (forty-year) vision for transportation in Arizona. Long-range transportation planning studies typically look ahead 20 years. In this case, ADOT developed a vision for 2050, with 2030 as an intermediate planning horizon.

The vision established for the study was:

Vision for Arizona Transportation in 2050

“Arizona’s integrated, multimodal transportation system provides residents and the traveling public with mobility choices (rail, transit, auto, air, pedestrian, and bicycle) that reflect the high value that Arizonans place on our unique southwestern lifestyle, the extraordinary places we call home, and the natural resources that define us as a state. In recent decades, innovation and technology have changed the way we travel with the introduction of new modes to Arizona, as well as improved fuel efficiency and expanded use of alternative fuels. Through coordinated land use decision-making and wise investments in infrastructure, Arizonans have broad transportation choices.”

“We move people and goods safely and efficiently in a way that promotes sustainable growth and preserves our natural environment, while continuing to position Arizona for diverse economic opportunities based on our unique assets. Arizona’s transportation system connects communities, people, and commerce to enhance our quality of life, while ensuring that future generations can enjoy an even better Arizona.”

Guiding Principles

Guiding principles that were developed for the study are summarized in **Table A1**.

Table A1 - BqAZ Study Guiding Principles

Principle	Related Guiding Principles
<p>Improve Mobility and Accessibility</p>	<ul style="list-style-type: none"> • Develop a multimodal system moving people and freight that offers transportation choices and connects all of Arizona, while linking the state nationally and globally. Reduce traffic delay to enhance economic activity and provide more time for our families and enjoying other pursuits. • Preserve capacity on the transportation system through efficient operation and management of facilities, effective use of technology and information, and closer coordination between land use and transportation decision-making. • Actively mitigate traffic congestion. • Consider all modes of transportation in aviation, roadway, transit, and rail planning. • Ensure that the transportation system is accessible to all users, including the young, elderly, disabled, and economically disadvantaged. • Ensure that cost-benefit considerations and financial sustainability are included in transportation investment decision-making.
<p>Support Economic Growth</p>	<ul style="list-style-type: none"> • Build a seamless transportation system that moves people and goods to ensure that Arizona’s economy is competitive and thriving. Work toward a seamless system of roads, transit, passenger rail, non-motorized modes, aviation, and freight options to ensure Arizona’s economic vitality. • Link regional activity and employment centers through multimodal transportation options. • Develop a transportation system that supports current and emerging economic opportunities.

Table A1 - BqAZ Study Guiding Principles (continued)

<p>Support Economic Growth (continued)</p>	<ul style="list-style-type: none"> • Provide intermodal facilities that accommodate movement between air, rail, and highway vehicles. • Improve high-priority freight corridors. • Develop interstate and international transportation connections that foster enhanced economic activity.
<p>Promote a Development Pattern that Links Land Use and Transportation</p>	<ul style="list-style-type: none"> • Develop a multimodal transportation system that recognizes and strengthens the relationship between land use and transportation, and connects activity and employment centers statewide. Population growth, community development, economic diversification, and transportation are related, and a comprehensive transportation system can be achieved by working with communities to provide suitable mode choices. • Support infill development and revitalization through transportation investments that reinforce existing communities. • Encourage mixed-use development to foster use of alternative modes. • Use transportation infrastructure as a tool to direct growth. • Work with local, county, and tribal governments to evaluate and plan for regional traffic impacts of major developments. Work collaboratively to minimize these impacts. • Coordinate efforts to identify, preserve, and obtain required right-of-way to support future system growth and demand. • Model and demonstrate Smart Growth practices that link land use and transportation in communities of all sizes.
<p>Consider Arizona's Environment and Natural Resources</p>	<ul style="list-style-type: none"> • Provide access to transportation options that are sensitive to the environment and help reduce congestion. Ensure that the environment – including wildlife habitats, wildlife linkages, and natural resources – is an integral component of transportation planning and development. • Promote and implement context-sensitive planning and design, oriented to achieving Smart Growth and long-term sustainability. • Encourage development patterns and transportation solutions that reduce greenhouse gas emissions and improve air quality. • Implement a green connectivity approach (connecting animals and ecosystems) to transportation system development. • Foster energy independence through broader mode choices, more efficient transportation infrastructure, and the use of renewable energy sources.
<p>Ensure Safety and Security</p>	<ul style="list-style-type: none"> • Design, build, operate, and maintain a transportation system that promotes safety and security, reducing the risk of injury and property damage on or near transportation facilities. • Maintain and enhance transportation safety, reducing crashes, injuries, and deaths. • Address high-priority safety improvements in the statewide transportation system. • Improve safety and reduce risks as more freight moves in and through the state. • Include homeland security measures, as appropriate, as we upgrade international border crossings, while maintaining efforts to promote cross-border economic opportunity and enhanced trade.

3. What Moves You Arizona, Long-Range Transportation Plan 2010-2035, 2011

The Executive Summary includes the following description of the Arizona Long Range Transportation Plan.

What Moves You Arizona is the Arizona Department of Transportation's (ADOT) Long-Range Transportation Plan (LRTP). The LRTP, or "Plan," defines visionary, yet pragmatic, investment choices Arizona will make over the next 25 years to maintain and improve its multimodal transportation system. The Plan is not rigid or fixed. It is part of a continuous process of planning, implementation, operation, and preservation and will evolve over time to reflect and be responsive to future changes in needs, resources, and priorities. The Plan:

- Provides strategic direction to guide future investments in transportation -- it does not identify a specific list of projects for implementation;
- Documents existing conditions with an eye toward future trends that could influence both system performance and investment needs;
- Defines state transportation system goals, objectives and performance measures that reflect input from Arizona's stakeholders and transportation planning partners;
- Incorporates the comprehensive land use and 2050 vision developed in bqAZ as a framework for the State's desired future;
- Recognizes that ADOT's role is evolving from a traditional highway agency toward a more multimodal transportation department;
- Assesses future needs and anticipated revenues for the State's multimodal transportation network;
- Considers an array of outcome-based programmatic investment choices to illustrate likely future system performance under different investment mixes;
- Establishes ADOT'S preferred Recommended Investment Choice (RIC), which provides the Department with a capital investment strategy through 2035 while meeting federal and State requirements for long-range statewide transportation planning;
- Is fiscally constrained – the RIC at baseline includes no new taxes and applies realistic, conservative revenue growth rates coupled with modest assumptions about inflation; and
- Focuses on implementation, not only through the development of the RIC, but also by acknowledging needed changes to mid- and long-range policies, planning and programming linkages, and interagency partnerships.

This Plan is strategic in nature, examining investment types for ADOT's capital program; it does not examine nor recommend any specific projects.

The Plan identifies ADOT's roles and responsibilities with respect to accommodating bicyclists and pedestrians as described in **Table A2**.

Table A2 – ADOT Bicycle and Pedestrian Plan Update Performance Indicators

Plan Goal	ADOT’s Role (for Bicycle/Pedestrian)
Improve Mobility and Accessibility	Partner ¹
System Preservation and Maintenance	None
Support Economic Growth	Participant
Link Transportation and Land Use	Participant
Consider Natural, Cultural, and Environmental Resources	Partner
Enhance Safety and Security	Partner
Strengthen Partnerships	ADOT will work with the appropriate agencies or private parties to advance the Partnership objectives.
Promote Fiscal Stewardship	ADOT will work with the appropriate agencies or private parties to advance the Fiscal Stewardship objectives.
¹ Definitions: <ul style="list-style-type: none"> • Owner-Operator: ADOT is responsible for maintaining, operating, and enhancing infrastructure to achieve the goal and related objectives. • Partner: ADOT will partner with others and will share a role in funding and decision-making to achieve the goal and related objectives. • Participant: ADOT will support public and private transportation delivery entities by providing policy support, guidelines, and/or complementary and opportunistic funding to advance the goals and objectives of the Plan. • None: ADOT does not participate in funding or decision-making and will not engage in this over the life of the Plan. 	

The Plan includes the following statement summarizing ADOT’s role in accommodating non-motorized modes.

Arizona’s bicycle and pedestrian facilities accommodate a range of activities, from recreational outings to everyday commuting to travel back and forth from work and school. While bicycle and pedestrian improvements are implemented primarily by local governments, major construction and reconstruction highway projects in the State consider provisions for bicycle travel per design guidelines, and local agencies may fund the incorporation of bicycle lanes on the State Highway System.

ADOT has begun development of a statewide bicycle and pedestrian plan to consider strengthening existing provisions, determine needs and funding, as well as recommended policies associated with non-motorized travel in the State. “Complete Streets” concepts – supporting highways that are safe and accommodating for all users – may be explored to accommodate all users of the State Highway System, with a focus on bicycle and pedestrian safety.

4. ADOT Pedestrian Safety Action Plan, 2009

The FHWA and the State of Arizona have each established goals to improve pedestrian safety. In support of the Arizona safety vision and goal and the FHWA goals, the ADOT Pedestrian Safety Action Plan established a goal to reduce pedestrian crashes (both fatal and non-fatal) by 20 percent by the year 2016. The reduction in pedestrian crashes will be measured by a five-year average (2012 to 2016). The five-year average for the years 2002 through 2006 will serve as the base years. This equates to 31 fewer pedestrian crashes per year by the year 2016.

Pedestrian Safety Emphasis Areas for State Highways in Arizona

Crash data for the years 2002 to 2006 was provided to the project team. Analysis of the data demonstrated that more than 700 pedestrian crashes occurred on the SHS in Arizona from 2002 to 2006.

Identification of emphasis areas facilitated focusing of resources to areas where the largest benefits can be realized, and the identification of specific action items to improve pedestrian safety on Arizona's SHS. Identified pedestrian safety emphasis areas are presented in **Table A-3** below.

Table A3 – Pedestrian Safety Emphasis Areas for SHS

Pedestrian Safety Emphasis Area	Description and Justification
Reduce pedestrian crashes in urban areas at locations with high pedestrian activity	Statewide, approximately 90 percent of pedestrian crashes occurred in urban areas. 65 percent of pedestrian crashes on the SHS occurred in urban areas.
Reduce pedestrian crashes at intersections involving turning vehicles (right and left)	Turning vehicle type crashes make up 26 percent of pedestrian crashes on high-crash segments
Reduce pedestrian crashes on undivided (no median barrier) roadways	Pedestrian crashes occurring on two-way roadways without a raised median account for approximately 64 percent of statewide pedestrian crashes.
Reduce pedestrian crashes involving pedestrians who had been drinking	On the high-crash segments (which were , crashes involving pedestrians who had been drinking total 27 percent of crashes along segments and 22 percent of pedestrian crashes at traffic interchanges. Alcohol consumption by pedestrians has also been expressed as a concern by local jurisdiction staff and by tribal communities.
Reduce dart/dash / mid-block pedestrian crashes	Crash data for analyzed locations [in the Pedestrian Safety Action Plan] shows that dart/dash crashes make up 50 percent of the pedestrian crashes along segments and 43 percent of pedestrian crashes at traffic interchanges. Targeting these types of crashes can help to reduce a significant amount of pedestrian crashes. Dart/dash crashes include crashes when the pedestrian walked or ran into the roadway at an intersection or mid-block location and was struck by a vehicle.

Table A3 – Pedestrian Safety Emphasis Areas for SHS (continued)

Pedestrian Safety Emphasis Area	Description and Justification
Reduce pedestrian crashes involving turning vehicles at traffic interchanges	At traffic interchanges, 46 percent of pedestrian crashes are turning vehicle crashes with the majority being right-turning vehicles. Focusing on these types of pedestrian crashes may help to make crossing safer for pedestrians at traffic interchanges. Turning vehicle crashes are crashes where the pedestrian was attempting to cross at a traffic interchange and was struck by a vehicle that was turning right or left.
Improve lighting conditions at high pedestrian activity locations	Approximately 50 percent of pedestrian crashes in high-crash segments occurred in dark conditions. This is significant since exposure is considerably less during the nighttime and early morning hours. A majority of pedestrian fatalities occur in dark conditions.

5. ADOT Bicycle Safety Action Plan, 2011

In conjunction with the safety goals established by the USDOT, FHWA, and Arizona, a Bicycle Safety Action Plan goal was developed, which is:

Goal: Reduce the total number of bicycle crashes (fatalities and non-fatalities) on Arizona State Highways by 12 percent by the year 2018.

With a baseline of 217 crashes per year and a goal of 12-percent reduction, the target is a five-year average of 191 crashes per year, a decrease of 26 crashes per year.

Emphasis areas to improve bicycle safety on the SHS are identified as shown in **Table A-4**. Selection of emphasis areas is data driven based on the analysis of bicycle-motor vehicle crash data. Identification of emphasis areas also considered public input as submitted via the on-line survey as summarized in Working Paper No. 1. These emphasis areas support the goal of reducing bicycle crashes by 12 percent by the year 2018.

The majority of bicycle crashes in Arizona (approximately 90 percent) occur on local city and county roadways that are outside of the jurisdiction of ADOT. Although the goal and emphasis areas established in this working paper are focused on State Highways, it is anticipated that the ultimate study recommendations and mitigation strategies that will be identified to achieve the goal will benefit both bicycle safety on State Highways and local roadways.

Table A4 – Emphasis Areas to Improve Bicyclist Safety and Accommodation on Arizona State Highways

Emphasis Areas	Justification
Reduce the number of bicycle crashes in urbanized and developed areas (large urbanized, small urbanized, and small urban).	The vast majority of crashes occurred in urbanized areas. Crashes in rural areas represent a small percentage of crashes.
Reduce crashes in which a bicyclist or motor vehicles failed to yield at signalized intersections.	20 percent of all crashes are attributable to bicyclists or motorists failing to yield at signalized intersections.
Reduce crashes in which a bicyclist or motor vehicles failed to yield at unsignalized intersections.	14 percent of all crashes are attributable to bicyclists or motorists failing to yield at unsignalized (sign-controlled) intersections.
Reduce bicycle crashes involving vehicles making a right turn.	51 percent of bicycle crashes occurred while the motor vehicle was making a right turn. The vast majority of these crashes occurred in commercial areas.
Reduce crashes in which the bicyclist was riding facing traffic.	52 percent of crashes occurred when bicyclists were facing traffic. Of these, 37 percent of crashes occurred while the motor vehicle was making a right turn.
Reduce crashes where the bicyclist was riding on the sidewalk.	32 percent of crashes involved a bicyclist riding on the sidewalk. Of these, 21 percent of the crashes involved the driver making a right turn.
Reduce bicycle crashes that occurred in dawn, dusk, or dark conditions.	22 percent of bicycle crashes occurred in dawn, dusk, or dark conditions.

6. Arizona Strategic Highway Safety Plan (SHSP)

In 2007, the Arizona Governor’s Traffic Safety Advisory Council developed the Arizona Strategic Highway Safety Plan (SHSP). The Plan identifies a vision and associated goals for reducing crashes in Arizona. The vision of the Arizona SHSP Plan is “zero fatalities on Arizona roads, your life depends on it” (the Every One Counts vision).

The Every One Counts vision is supported by a state “stretch” goal designed to bring about clear progress towards the Every One Counts vision. The goal requires a reduction in the number of fatalities on Arizona’s roadways of approximately 12 percent by the year 2012. The base year of comparison was 2007.

The study reported that efforts to reduce the number of fatalities would likely have a positive effect on the number of serious injuries and non-serious injuries, and on the number of property-damage-only crashes. As time enables the state safety partners to effectively adopt SHSP guidance and direction into current planning and programming processes and to collectively make progress towards reducing the annual number of fatalities, an additional SHSP goal addressing serious injuries may be added in the future.

The Plan selected a number of emphasis areas, and sub-goals and strategies were

developed for each emphasis area.

1. Restraint Usage
2. Speeding
3. Young Drivers
4. Impaired Driving
5. Roadway / Roadside (lane departure and intersections)
6. Data Improvement

Although the Plan emphasis areas did not focus explicitly on bicycle emphasis areas, the report stated that all areas of safety will have to be addressed to support a zero fatality vision. As each emphasis area involves many aspects of crashes, it is likely that addressing the selected emphasis areas will provide benefits in other areas of traffic safety.

7. United States Department of Transportation (DOT) Policy Statement

On March 11, 2010, the United States DOT signed the Policy Statement on “Bicycle and Pedestrian Accommodation Regulations and Recommendations.” The purpose of this Policy Statement is to support interconnected bicycling and walking networks to increase bicycle and pedestrian safety. The policy statement states that to accomplish this goal, every transportation agency is responsible for integrating bicycle and pedestrian facilities into transportation systems. The Policy Statement recommends the following actions:

- Consider walking and bicycling as equals with other transportation modes
- Ensure that people of all abilities and ages are considered when planning and designing facilities
- Go beyond minimum standards
- Integrate bicycle and pedestrian accommodation on new, rehabilitated, and limited-access bridges
- Collect data on bicycling and walking trips
- Set mode-share targets for bicycling and walking and track them over time
- Remove snow from sidewalks, bike lanes, and shared-use paths
- Improve non-motorized facilities during maintenance projects

The policy concludes:

Increased commitment to and investment in bicycle facilities and walking networks can help meet goals for cleaner, healthier air; less congested roadways; and more livable, safe, cost-efficient communities. Walking and bicycling provide low-cost mobility options that place fewer demands on local roads and highways. DOT recognizes that safe and convenient walking and bicycling facilities may look different depending on the context — appropriate facilities in a rural community may

be different from a dense, urban area. However, regardless of regional, climate, and population density differences, it is important that pedestrian and bicycle facilities be integrated into transportation systems. While DOT leads the effort to provide safe and convenient accommodations for pedestrians and bicyclists, success will ultimately depend on transportation agencies across the country embracing and implementing this policy.

The full text of the Policy statement is available at (accessed on 10/18/2011 at http://www.fhwa.dot.gov/environment/bikeped/policy_accom.htm).

8. FHWA National Bicycling and Walking Study

The safety mission for the Federal Highway Administration (FHWA) is to improve bicycle and pedestrian safety by integrating the “4Es” of safety: engineering, enforcement, education, and emergency services. The FHWA plans to incorporate these “4Es” into bicycle and pedestrian plans by using a systematic, data-driven approach.

FHWA documented the following goals in 1994 National Bicycling and Walking Study (page 2):

"to double the percentage of total trips made by bicycling and walking in the United States from 7.9 to 15.8 percent of all travel trips; and to simultaneously reduce by 10 percent the number of bicyclists and pedestrians killed or injured in traffic crashes."

The report is available at: <http://tinyurl.com/26ggzw5>, and at:

http://www.hsrrc.unc.edu/research_library/PDFs/The%20National%20Bicycling%20and%20Walking%20Study%20Title%20Page.pdf (accessed on October 27, 2011).

The 1999 update report entitled, National Bicycling and Walking Study (NBWS) Five Year Status Report by the U.S. Department of Transportation intended for the goals to be renewed every five years:

"The Secretary of Transportation is urged to renew the Administration's commitment to achieving the goals of the NBWS."

This report is available at <http://www.fhwa.dot.gov/environment/bikeped/study.htm> (accessed on October 27, 2011).

Most recently, the 2010 National Bicycling and Walking Study 15-Year Status Report stated:

"Though the reductions in pedestrian and bicyclist fatalities have met the goals set forth in the original study, there is always room for improvement in the area of safety (but) Creating environments that are safe for bicyclists and pedestrians of all abilities should continue to be a top priority. Though challenging in the short term, it is also important to improve the process for reporting and documenting pedestrian and bicyclist crashes and injuries."

This report is available at: http://katana.hsrc.unc.edu/cms/downloads/15-year_report.pdf (accessed on October 27, 2011).

9. The FHWA and ADOT Stewardship and Oversight Agreement for Arizona, 2010

FHWA and ADOT Stewardship and Oversight Agreement for Arizona (March 2010) includes performance measures associated with the performance of the Federal Aid Highway Program in Arizona. These performance measures are developed, reassessed, and/or revised as necessary on an annual basis. The Agreement currently includes performance measures for pedestrian safety, including the number of pedestrian fatalities (current year + four-year history) and the number of SHS pedestrian fatalities (current year + four-year history).

It is proposed that bicycle safety performance measures be considered for inclusion in the Oversight Agreement:

- Number of statewide bicyclist fatalities (current year + four-year history).
- Number of SHS bicyclist fatalities (current year + four-year history).

Inclusion of bicycle safety data in the Oversight Agreement will demonstrate bicycle safety trends both statewide and on the SHS.

10. League of American Bicyclists – Bicycle Friendly State Ranking

Arizona participated in the 2011 League of American Bicyclists (LAB) annual Bicycle Friendly State ranking. In 2011, the state ranking for Arizona was 16, with an overall grade of C. Specific grades in each of the six categories were:

- B in Legislation
- D in Policies & Programs
- F in Infrastructure
- B in Education & Encouragement
- F in Evaluation & Planning
- D in Enforcement

The LAB provided feedback to ADOT on how to improve their ranking. Specific feedback provided by LAB is described below.

Legislation (B)

State statute that requires bicyclists to ride to the right as far as practicable must make the following exceptions outlined in the Uniform Vehicle Code (UVC):

- When riding in the right turn only lane.

There should be a statewide ban of handheld cell phone use and texting for all drivers, in addition to other restrictions on teens and bus drivers.

Infrastructure (F)

Arizona had low obligation rates for bicycling in the following funding programs:

- Transportation Enhancements
- Recreational Trails Program
- Safe Routes to School

A low percentage of the following federal funding programs are spent on bicycling projects:

- Transportation Enhancements
- Highway Safety Improvement Program (HSIP)

In 2010 the state disproportionately rescinded potential funding for bicycling from the following programs:

- Transportation Enhancements
- Recreational Trails Program
- The state should use Section 402, hazard elimination and/or other highway safety funds to decrease the number of cyclist fatalities.
- The state should implement signage and/or pavement markings directing cyclists along the state's bike route network.
- The state should adopt a US Bike Route System policy, criteria, or program to address routes that cross the state.

Education and Encouragement (B)

There should be a standard Safe Routes to School training curriculum available for all Safe Routes to School programs throughout the state.

The state driver's Commercial Driver's License (CDL) testing and manual should contain questions and information regarding motorists' rights and responsibilities towards bicyclists.

Evaluation and Planning (F)

The Strategic Highway Safety Plan should include bicycling as either a standalone emphasis area or combined with pedestrians or other vulnerable road users.

Highway safety plans and safety funding should address decreasing the number of cyclist fatalities, which currently falls above the national average.

There should be a statewide bicycle conference or summit that combines best practices in programs, infrastructure design, and funding and/or advocacy campaigns.

Enforcement (D)

Bicycling enforcement should be included as a part of the overall Police Officer Standards and Training (POST).

Enforcing bicycling related traffic laws and safe vehicle operation when encountering cyclists should be a police academy requirement.

11. America Walks – Platform Summary, 2011

Core Policy 1: Improve Pedestrian Safety

Walking comprises 11% of transportation trips, 12% of roadway fatalities and yet receives less than one percent of transportation safety funding. People of all ages, abilities, races, income, and education levels are killed and injured while engaged in the simple act of walking. And many cities and towns that have employed strong pedestrian safety measures have reduced their total traffic crashes, injuries, and fatalities. For everyone's sake, federal transportation legislation, health organizations and both federal and state DOTs must seriously address pedestrian safety.

Strategy: Prioritize and implement cost effective strategic safety projects to improved safety for all transportation users, especially the most vulnerable populations and roadway users.

Tactic: America Walks will encourage USDOT and federal agencies to conduct a national campaign emphasizing the need to protect vulnerable road users such as children, the elderly, and low-income populations by reducing automobile speeds in high-crash corridors and special zones such as business districts, transit routes, and near schools and parks.

Action Items:

1. USDOT will provide new resources to increase traffic speed enforcement.
2. USDOT will create a speed study to evaluate the effectiveness and practicality of automated enforcement, especially red light cameras and speed enforcement.
3. FHWA will codify the safety of people, rather than throughput and safety of automobile users in federal traffic design policy.
 - USDOT will publish a report on the safety records of communities that employ total traffic safety programs.

- USDOT will create a federal inventory or report of successful speed reduction policies in different states and local communities and use this to push a federal agenda for speed reduction.
- USDOT will revise engineering standards that drive design, and thus high operating speeds. The 85th percentile measurement that defines design speed will be revised to create a tool that helps create a “desired speed.”

Tactic: Revise HSIP Criteria so that state DOTs must plan for and expend funds for safety projects on all levels of roadways – from state to local roadways – with crash problems. Maintain the requirement to develop strategic highway plans; add that plans must directly address safety across all modes of travel, and develop accountability through metrics requiring the reduction of crashes involving the most vulnerable roadway users, including pedestrians, and especially senior, children, and low-income populations.

- Addressing all travel modes increases transportation options. Reducing reliance on one mode cuts both congestion and roadway maintenance.
- Nationally 12% of roadway fatalities are stricken pedestrians; less than 1% of safety funding is spent to improve pedestrian safety.

Core Policy 2: Develop Performance Measures and Improve Data Collection and Measurement of Walking

Federal funding should be closely tied to performance measurements on accomplishing key national policy goals. Projects that increase walking cost-effectively meet transportation goals such as reducing VMT, improving safety to all transportation users, increasing transportation access and affordability for all people. Walking is a critical strategy to increasing physical activity and curbing run-away health costs. And walking projects excel as economic development in that they create more jobs per million dollars spent than roadway expansion and they improve the business environment in the most bustling business districts and main streets.

Performance measures must also be accompanied by clear understanding of the inputs. Robust investments must be made to accurately collect and analyze data on walking trends, routes, and issues; Traffic models must forecast pedestrian travel to measure positive potential outcomes of projects.

Strategy: Federal state, and local agencies will implement performance measures and set benchmarks for walking and active transportation. Data collection methods will be reviewed and improved to accurately count modes of travel and reflect safety metrics.

Tactic: Establish specific performance goals and benchmarks based on standardized measures of active transportation, with funding awarded accordingly. Award funding based on the anticipated positive impact on active transportation levels and related benefits, such as system connectivity and completeness, improved safety, reduced congestion, enhanced air quality and benefits for the economy and health.

Action Items:

1. Ensure equal attention for the non-automotive travel modes in both performance measurement, inclusion in modeling and implementing safety measures.
 - a. Inventory data issues and address the most problematic areas. Identify lower hanging fruit, such as including walking in counted transit trips. Continue to refine, implement and improve new tools such as the Pedestrian Level of Service
 - b. Develop methodologies to measure impacts of projects on walking metrics.
 - c. Revise transportation models to count walking, such as an activity based model. Revise assumptions to include higher priced oil and flat to declining auto usage.
2. State regulations must require transportation plans to incorporate a process for analyzing health impacts, including physical activity, for all new construction and redevelopment projects.
3. State regulations must require all transportation plans to ensure equal access for all people of all ages, abilities, and ethnicities.
 - a. Analysis will include level of connectivity and completeness of the walking routes.

Tactic: Federal funding for state and local transportation programs and plans requires including criteria for walking and pedestrian connectivity and safety. These criteria would include data on the completion of walking system, walking trips, modeled walking trip forecasts, walkability factors, pedestrian injuries, etc

Core Policy 3: Incorporate Health-Related Outcomes in Transportation and Built Environment Policy, Planning, and Funding programs

Transportation and the built environment have direct impacts on the health of Americans. America Walks will work to integrate health outcomes in transportation policies and programs, as well as collaborate with health agencies to address the built environment. America Walks will help bridge a conversation between transportation and health officials and associated agencies. America Walks will focus on health disparities, and work explicitly on improving the built environment for low income, minority, and age diverse populations. We will drive health policy planning down into all community and transportation planning conducted by states, metropolitan and rural planning organizations, cities, and towns.

Strategy: Agencies will incorporate health-related outcomes in their existing interagency programs and coordinate and work together in ensuring that health outcomes are heavily weighted at all levels of the transportation planning process. Federal transportation policy will add health as a major planning criterion; this policy will be adopted by state and local planning entities.

Tactic: Federal agencies will integrate health planning in transportation projects, including setting financial incentives for state DOTs and local agencies to incorporate health planning when developing new projects.

Action Items:

1. America Walks will learn the touch points within HHS as well as DoD (Department of Defense), VA (Veterans Administration), and OPM (Office of Personnel Management), including the Office of Disease Prevention and Health Promotion and Healthy People 2020. Other agencies such as HUD (Housing and Urban Development) will be included.
2. Require interagency community planning and development grants to add a strong focus on the health impacts of projects.
 - a. Set interagency standards and provide financial incentives for integrating land-use planning with health planning, with a strong focus on walkable, bikeable, and transit reliable cities.
 - b. Fund communities to evaluate planning techniques and projects that integrate community health into other program areas.
 - c. Provide technical assistance for planning professionals and planning boards and commissions to ensure widespread implementation of proven approaches.
 - d. Provide a focus on healthy planning approaches for low-income and high-need communities.
3. Require that public health criteria to be integrated into state and regional transportation planning and decision-making.
 - a. Support development of healthy, safe and sustainable communities through use of health impact assessments (HIAs) of proposed transportation plans, projects and policies, the distribution of those effects across race, income, ethnicity, and geography, and the provision of recommendations to maximize health benefits and minimize harms.
 - b. Support funding and training for public health and transportation officials so they are able to conduct an assessment of, and provide recommendations relating to, the health effects of a transportation project or projects, a long-range transportation plan, a transportation improvement program, a redevelopment plan, or transportation scenario planning, at the planning level. Such assessment shall incorporate community input and public engagement at all stages and shall also include an analysis of the distribution of health effects across race, income, ethnicity, and geography.

Core Principle 1: Protect Dedicated Funding for Walking Infrastructure and Programs

Existing dedicated federal funding and programs for walking such as Transportation Enhancements (TE) and Safe Routes to School have built thousands of mobility projects in towns and cities across the nation. Existing programs like TE and Safe Routes to School have advanced walking and pedestrian safety leveling communities nationwide. Traditionally, however, when given more discretionary power over funding, states will only spend a very small percentage of funding towards enhancing active transportation and walking infrastructure.

STRATEGY: America Walks supports the following key federal programs, and encourages increasing dedicated funding exclusively for walking and active transportation at the national level.

Transportation Enhancements: TE is the largest funding program for walking projects and programs. Ten percent of a State's Surface Transportation Program (STP) apportionment must be set-aside for TE activities. In order to receive this TE funding, the programs must meet one of the 12 eligibility criteria, 3 of which relate specifically to bicycle and pedestrian transportation:

1. Provide facilities for bicyclists and pedestrians
2. Provide safety and educational activities for pedestrians and bicyclists
3. Preserve abandoned railroad corridors (including conversion and use for pedestrian or bicycle trails).

Safe Routes to School: This program funds infrastructure and programs to increasing safely walking and bicycling to schools serving children grades k – 8. Extending the program to grades 9-12 could help provide alternatives for students to taking up driving early (but are doing in fewer numbers than the past).

Recreational Trail Program: The program provides funds to the States to develop and maintain recreational trails and trail-related facilities for both non-motorized and motorized recreational trail uses.

Maintain the requirement of bicycle/pedestrian coordinator, planning, PBIC, etc.: “Each State receiving an apportionment under sections 104(b)(2) and 104(b)(3) of this title shall use such amount of the apportionment as may be necessary to fund in the State department of transportation a position of bicycle and pedestrian coordinator for promoting and facilitating the increased use of non-motorized modes of transportation, including developing facilities for the use of pedestrians and bicyclists and public education, promotional, and safety programs for using such facilities.” This is necessary in order to coordinate and organize bicycle and pedestrian promotion and access.

Policy Advances: Complete the Streets, Fix it First, and Pedestrian Networks**Tactics**

A National “Fix It First” Policy: This would reduce roadway expansion, but would need to be written to permit completion of networks, e.g., lack of sidewalks. If coupled with a Complete Streets bill, such a policy would require reconstruction projects to finish uncompleted networks, such as access to transit stations or ADA compliance, and subsequently, advance the completion of walking infrastructure.

Complete Streets: Ensure that all roadway funds spent meet a “Complete Streets” standard of performance, for both new and redeveloped facilities and maintenance projects. All transportation expenditures must further the long-term goal of a complete and interconnected system of pedestrian, bike, and transit facilities across the country that includes not just roadways and transit lines, but sidewalks, greenways, trails, and multi-use pathways to encourage more routine active transportation by Americans.

Possible Future America Walks Policy Initiative

Tactic: Develop a program that provides concentrated investments in walking and active transportation networks to make rapid progress in improving walkability.

1. Work with partner organizations that have concepts in development, such as RTC, AARP, SRTSNP, and others.

Tactic: Develop a new Small Town Revitalization cross-agency program that focuses on main-street revitalization; integrating transportation investments with storefront improvement and housing grants and encourages walking access from nearby neighborhoods.

1. Provide planning and organizing grants with technical support and training opportunities
2. Create a follow-up implementation module that funds construction and development

Tactic: Enhance transit accessibility criterion:

1. Transit funding focuses on the construction of new fixed rail lines as well as the operation and maintenance of bus and other transit services. Improving accessibility to transit is eligible for federal funding but is not an important part of the scoring criteria for transit projects. America Walks advocates for a stronger focus on the first and last mile to transit as part of all transit programs.

12. Transportation for America, Dangerous by Design, 2011

In the Dangerous by Design 2011 Report, Transportation for America states that between 2000 and 2009, 1,479 people were killed while walking in Arizona, which cost the state \$6.36 billion. The report states that reducing pedestrian fatalities just 10% would have

saved Arizona \$635.97 million over 10 years. The report ranks Arizona's overall Pedestrian Danger Index (PDI) as 6th out of 50 states.

The report states that 67 percent of all 47,000+ pedestrian fatalities from 2000 to 2009 occurred on federal-aid roadways — major roads eligible to receive federal funding for construction and improvements with federal guidelines or oversight for design.

The report recommends that federal legislation include the following:

- Retain dedicated federal funding for the safety of people on foot or on bicycle. Congress is currently contemplating elimination of dedicated funding for Transportation Enhancements and the Safe Routes to School program, the two largest funding sources for bike and pedestrian facilities. Without these committed funding streams, states will likely reduce spending for safety features like sidewalks, crosswalks and trails.
- Adopt a national Complete Streets policy. Ensure that all federally funded road projects take into account the needs of all users of the transportation system, including pedestrians, bicyclists and public transportation users, as well as children, older adults, and individuals with disabilities.
- Fill in the gaps. Beyond making new and refurbished roads safer for pedestrians, we need to create complete networks of sidewalks, bicycle paths, and trails so that residents can travel safely throughout an area.
- Commit a fair share for safety. In 2008, only two states spent any of their Highway Safety funding to improve infrastructure for bicycling and walking. Yet, pedestrians and bicyclists make up 14 percent of all traffic-related fatalities. Federal, state, and local governments should set safety goals that not only reduce fatalities overall, but also reduce fatalities for individual modes, with separate safety goals for pedestrians, bicyclists, motorcyclists, and motorists.
- Hold states accountable for creating communities that are safe for walking. Congress must hold states accountable to ensure that transportation funds are spent wisely, by ensuring that:
 - New streets are built to be safe for pedestrians, bicyclists, public transportation users, and motorists alike;
 - The most dangerous roads are retrofitted for safety; and,
 - Federal safety dollars result in lives saved and a more active population.

13. NCHRP, ADA Transition Plans, A Guide to Best Management Practices

The National Cooperative Highway Research Program developed a guidance document for developing ADA transition plans: ADA Transition Plans, A Guide to Best Management Practices. The Guide recommends best practices for ADA transition for

State Departments of Transportation in their management of pedestrian facilities in public rights-of-way. These include sidewalks, pedestrian paths, curb ramps, street crossings, driveway crossings, crosswalks, median crossings, public transit stops, and pedestrian-activated signal systems.

The Guide states that:

“The requirements of the ADA apply to all public entities or agencies, no matter the size. The transition plan formal procedures as outlined in 28 C.F.R. section 35.150 only govern those public entities with more than 50 employees. The obligation to have some planning method to make facilities ADA-accessible is required for all public entities. This includes State Departments of Transportation and the extensive public transportation systems that they manage.”

The Guide states that meeting the requirements of ADA with regard to the accessibility of facilities in the public right-of-way would involve the following steps:

- (1) Designating an ADA Coordinator,
- (2) Providing notice to the public about ADA requirements,
- (3) Establishing a grievance procedure,
- (4) Developing internal design standards, specifications, and details,
- (5) Assigning personnel for the development of a Transition Plan and completing it,
- (6) Approving a schedule and budget for the Transition Plan, and
- (7) Monitoring the progress on the implementation of the Transition Plan.

A Transition Plan must contain at a minimum:

- A list of the physical barriers that limit the accessibility of services to individuals with disabilities (the inventory),
- A detailed outline of the methods to be used to remove these barriers and make the facilities accessible
- A schedule for taking the necessary steps to achieve compliance, and
- The name of the official responsible for the plan’s implementation.