

# Introduction and Study Objectives

## Study Objectives

This Planning Study will prepare a long-range transportation plan with short, mid and long-range improvement components to guide the Town of Pinetop-Lakeside in implementing a safe and efficient transportation system within the overall Community vision. The primary focus of the study is pedestrian safety and access control, specifically to investigate the feasibility of installing medians along State Route 260 (SR 260).

The plan will address improvements to meet resident, visitor, and commercial transportation needs generated by significant population growth and economic development that have resulted in the increasingly hazardous conditions created for pedestrians (including many school children) desiring to cross SR 260. A Transportation Improvement Plan (TIP) will also be prepared recommending improvements for the years 2015, 2020, and 2030.

## Milestone Delivery Schedule

### Technical Deliverable Schedule

- Work Plan (including the public involvement plan)
- Draft Working Paper 1: Current and Future Conditions
- Final Working Paper 1: Current and Future Conditions
- Draft Working Paper 2: Transportation Plan
- Final Working Paper 2: Transportation Plan
- Public Involvement Summaries 1 and 2 (by consortium)
- Draft Final Report, Final Report, Executive Summary

### Electronic Submittal

The Work Plan, Working Papers, and Draft Final Report will be submitted for distribution and review electronically.

### Meeting Schedule

- Coordination Meetings with Co-Project Managers.. (18)
- TAC Meetings ..... (4)
- Public Meetings ..... (2)
- Stakeholder Meetings.....(as needed)
- Council Meeting ..... (1)

### CD Submittal and Hard Copies

- 20 CDs/10 hard copies of Final Report and Executive Summary to Town of Pinetop-Lakeside
- 2 CDs/5 hard copies of Final Report and Executive Summary to ADOT Project Manager
- 1 CD/1 hard copy of Final Report and Executive Summary to each TAC member
- CDs will also contain Working Papers 1 and 2

## Project Work Plan

### Overview of Approach

#### Tasks 1 and 2

Lima & Associates will prepare a transportation plan with short-, mid- and long-range elements, as well as a Transportation Improvement Program (TIP) to guide the Town of Pinetop-Lakeside in implementing improvements to ensure a safe and efficient transportation system. We will work closely with the Technical Advisory Committee (TAC), other stakeholders, and the public to develop a transportation plan that meets transportation needs within the community vision. The focus of the plan will be access management along SR 260 and pedestrian safety along the route. Once a refined work plan is developed in consultation with the TAC, a working paper will be prepared documenting the existing and future socioeconomic and multimodal transportation conditions as well as previous and ongoing studies. A key source in developing future conditions will be the 2007 Pinetop-Lakeside Community Transportation Study.

#### Tasks 1 and 4

We will coordinate with the public involvement firm assigned by the ADOT Communication and Community Partnerships Division (CCP) in public involvement activities. Potential public involvement activities could include individual stakeholder meetings, stakeholder workshops, and public open houses. Lima & Associates will also meet one-on-one with individual stakeholders to obtain data, issues, and potential solutions. Individual responsibilities for the consultant, ADOT, TAC members, and the public involvement firm are listed later in this proposal.

#### Tasks 3 and 5

Based on the future conditions, draft short-, mid-, and long-range transportation plans including roadway and pedestrian improvements will be developed in consultation with the TAC and evaluated against an agreed upon set of overall performance and pedestrian safety measures as well as feasibility measures. The draft plans will be documented in the second working paper. A Transportation Improvement Program (TIP) will be prepared identifying recommended projects, project priorities, responsibilities, schedule, and costs. In addition, we will prepare an implementation plan outlining actions to implement multimodal projects, transportation system management strategies, access management strategies, and travel demand management strategies.

#### Task 6

A draft Final Report will be prepared and reviewed by the TAC and revised where necessary. A Final Report and Executive Summary will then be prepared and submitted to ADOT and the TAC members.

## Work Plan Tasks

### Task 1. Project Management/Coordination with TAC

<i>Assigned Staff</i>	<i>Products</i>	<i>Milestones</i>
Lima, PhD, PE, Project Manager Weir, AICP, Deputy Project Manager	Coordination Meetings ..... (18) TAC Meetings ..... (4)	<ul style="list-style-type: none"> <li>■ Establish monthly coordination protocol with ADOT Project Managers</li> <li>■ Establish TAC and meeting milestones, goals, and vision</li> <li>■ Implement internal quality control procedures at Lima</li> </ul>

#### Subtask 1.1. Coordinate with Co-Project Manager

The study will be conducted in close coordination with the ADOT Project Manager, the lead Town contact, and the TAC. The consultant will confer by telephone or E-mail, or meet with the ADOT Project Manager and Pinetop-Lakeside Project Manager on a monthly basis to review study progress, present working papers and study findings, and solicit direction.

#### Subtask 1.2. Conduct Technical Advisory Committee Meetings

We will work closely with the TAC to ensure the successful implementation of the plan. Communication and input with the TAC members will be maintained at the inception and throughout the study process as the plan is developed. The TAC will act as the "sounding board" for the Consultant and provide input and feedback throughout the process. The following agencies are represented on the TAC:

- Town of Pinetop-Lakeside
- Arizona Department of Transportation, Communication and Community Partnerships
- Blue Ridge Unified School District (Superintendent)
- Blue Ridge Unified School District (Board President)
- Arizona Department of Transportation, Multimodal Planning Division
- Arizona Department of Transportation, Globe District

Working papers developed during the study will circulate to the TAC for review and comment. Relevant comments and requests will be incorporated into the working papers and final documents.

### Subtask 1.3. Quality Control

The Project Principal, Peter Lima, Ph.D., P.E., will oversee quality assurance throughout the study to review all technical analyses and document preparation. This process is a formal procedure that Lima & Associates follows to check work in developing socioeconomic data, preparing GIS and display maps, and preparing reports and public involvement material.

### Subtask 1.4. Public Involvement Coordination

In addition to the tasks and deliverables, coordination efforts will be undertaken with the public involvement consortium in carrying out a public involvement plan. Lima will be responsible for:

- Participating as a member of the study team in developing all materials used in public involvement activities and providing the technical information needed to produce materials for all outreach activities.
- Participating and attending meetings with the TAC, stakeholders, public, and others as needed to perform the study tasks.
- Attending coordination meetings with consultants conducting other transportation studies, when requested by the ADOT project manager.
- Attend the Town Council Meeting at which the Final Report is presented for approval and assist the Lead Town Contact in addressing technical related questions.

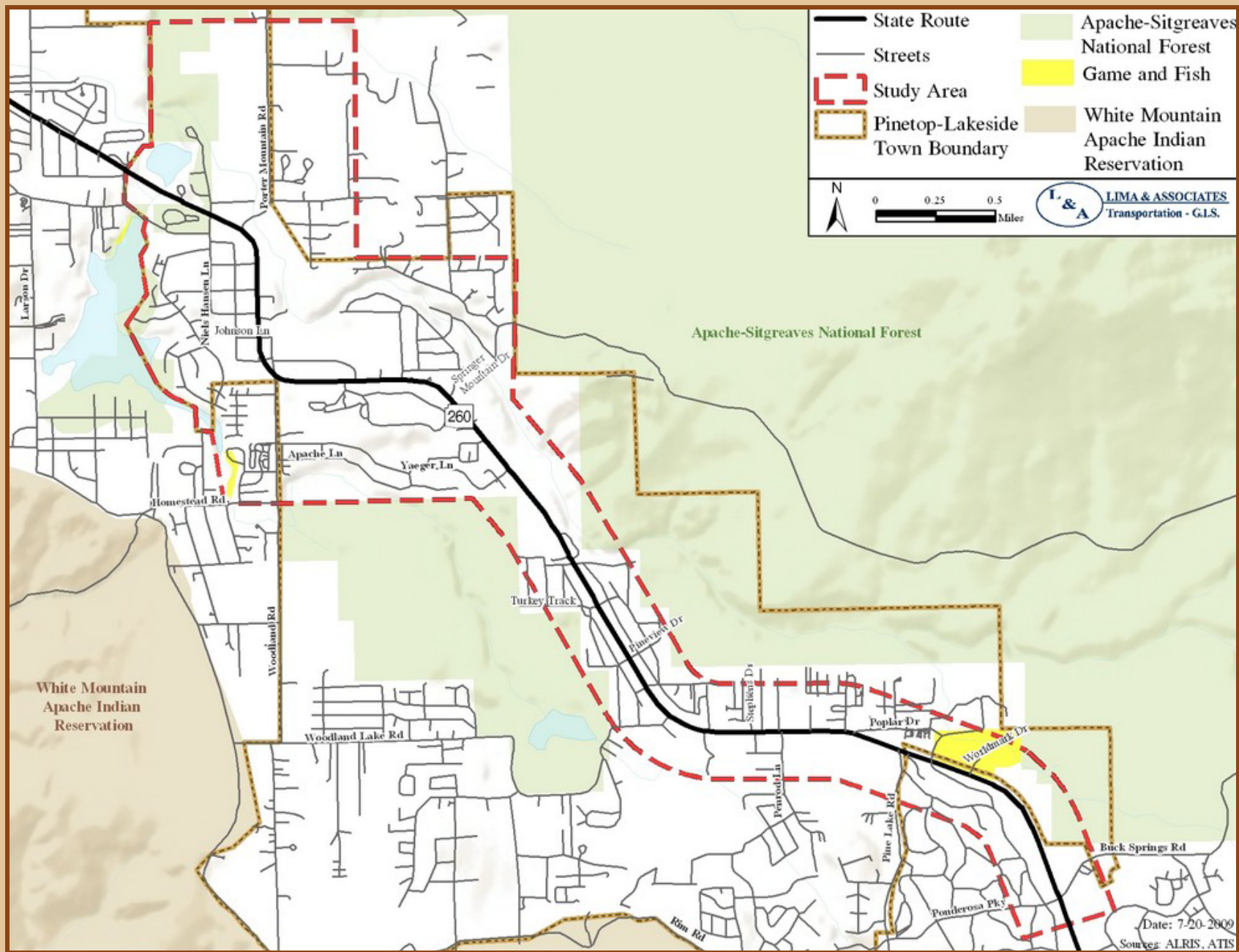
## Task 2. Work Plan

<i>Assigned Staff</i>	<i>Products</i>	<i>Milestones</i>
Lima, PhD, PE, Project Manager Weir, AICP, Deputy Project Manager	TAC Kick-off Meeting .....(1) Refined Work Plan	<ul style="list-style-type: none"> <li>■ Coordination with ADOT Project Manager</li> <li>■ TAC Kick-off Meeting</li> <li>■ Refined Work Plan</li> <li>■ Public Involvement Outreach Plan (by consortium)</li> </ul>

The first product of the study is this refined Work Plan. The work plan presented here has been refined based on comments from the project manager and the TAC. This detailed work plan includes:

- Refinement and mapping of the study area (see Study Area Map below). The larger area of influence will be the entire town and neighboring unincorporated areas of Navajo County; the area of influence will be included on certain maps and tables in working papers as appropriate.
- The major streets and highways to be included in the study are: SR 260, Porter Mountain Road, Woodland Road, the school campus intersections with dedicated streets, Yaeger Lane, Penrod Lane, and Ponderosa Parkway.
- A detailed scope of work
- Project schedule - The schedule includes dates for the earlier TAC and public meetings and the months of the later meetings.
- Staffing requirements
- A plan for outreach to stakeholders and the public and a timeline for the Public Involvement Report (Public Involvement Plan to be developed by a firm under contract with the ADOT Communication and Community Partnerships Division)

# Study Area Map



### Task 3. Define Current and Future Conditions

<i>Assigned Staff</i>	<i>Products</i>	<i>Milestones</i>
Lima, PhD, PE, Project Manager Weir, AICP, Deputy Project Manager Clancy, Senior Transportation Analyst	TAC Meeting .....(1) Draft Working Paper 1 Final Working Paper 1	<ul style="list-style-type: none"> <li>■ Coordination with ADOT Project Manager</li> <li>■ TAC Meeting</li> <li>■ Analysis of Current Conditions</li> <li>■ Review of Previous Plans, Programs, and Studies</li> <li>■ Forecast Future Conditions and Infrastructure deficiencies</li> <li>■ Draft WP 1: Current and Future Conditions</li> <li>■ Final WP 1: Current and Future Conditions</li> </ul>

#### Subtask 3.1. Define Current Conditions

Lima & Associates will describe and analyze existing transportation system conditions and related study area land use and demographics, including:

- Current land use and socioeconomic data
- Characteristics of the physical, natural, and cultural environments
- Available traffic data and current levels of service.
- Street network, intersections, traffic control, and road functional classification
- Intersection spacing, traffic control, and driveway density
- Sidewalks and other pedestrian safety accommodations
- Existing pedestrian routes and crossing measures. We will design a pedestrian data collection method and form, with data collection to be done by Town volunteers.
- Crash history and crash patterns by SR 260 segment. Comparison of crashes by segment to traffic volume and driveway density
- Multimodal transportation currently used

## Pedestrian Safety Issues

- Pedestrian collisions
- Locations of pedestrian routes. Clearing snow off sidewalks should be more frequent; snow piles up on SR 260's sidewalks partly because the sidewalk is directly adjacent to vehicular travel.
- Vehicular traffic speeds. Speeds are too high for safe street crossings by pedestrians
- Perception of pedestrian safety and walkability
- Funding levels for sidewalk construction/reconstruction
- Pedestrian signal timings
- Degree to which traffic signals meet standards. Too few signals now have left turn arrows
- Adequacy of lighting
- Prospects for Safe Routes to Schools program. Conflicts between pedestrian and vehicle traffic. High school students leave the campus during lunchtime ("grade 10 through 12 open lunch"). There are now three different start and dismissal schedules, each for a district school. While parents seem to prefer those schedules, the schedules have pedestrian safety/mobility issues associated with them.

At the first TAC meeting on July 29 the committee reviewed the list of pedestrian safety issues that had been compiled by the consultant. The committee requested that some details be added to four of the issues. The revised list is at left.

In addition to the current conditions, we will review previous plans and programs and coordinate with ongoing transportation studies such as the ADOT Framework study and ADOT statewide access management study. A key local resource will be the *Pinetop-Lakeside Community Transportation Plan, September 2007*. We will also review the professional literature in regard to pedestrian safety and access management.

### Subtask 3.2. Define Future Conditions

This task will forecast future conditions and infrastructure deficiencies of roadways and pedestrian facilities for the years including 2015, 2020, and 2030:

- Inventory and evaluation of future land use patterns and travel data
- Planned and proposed roads and functional classification of roads
- Projected socioeconomic data
- Projected traffic volumes and future levels of service
- Projected crashes with future travel demand
- Anticipated use of non-motorized transportation modes
- Deficiencies of roadways, transit, and non-motorized facilities within the study area based on future conditions

We will apply growth factors to update the projected 2015 and 2030 traffic volumes produced by the *Community Transportation Study* that may be different due to major changes in projected development. Projected levels of service will be estimated based on the Highway Capacity Manual (HCM) planning methods.

### Subtask 3.3. Document Working Paper 1: Existing and Future Conditions

A draft working paper will be prepared documenting the current conditions and future conditions and submitted to the TAC for review and comment. Working Paper 1 will be finalized by incorporating modifications as appropriate based on input from the TAC.

## Task 4. First Phase and Second Phases of Public Involvement and Summary Reports 1 and 2

<i>Assigned Staff</i>	<i>Products</i>	<i>Milestones</i>
Lima, PhD, PE, Project Manager Weir, AICP, Deputy Project Manager  The Consortium will be responsible to take the organizational and preparation lead, as well as documentation of Summary Reports.	Public Open House .....(2) Summary Report 1 ..... (consortium) Summary Report 2 ..... (consortium)	<ul style="list-style-type: none"> <li>■ Open House 1, presenting existing conditions, future projections, and deficiencies</li> <li>■ Open House 2, presenting recommended program of improvements</li> </ul>

Public involvement meeting(s) concerning both roadways and pedestrian safety accommodations will be conducted within the study area. The Public Involvement Consortium will be responsible for the conduct of the public meetings and the consultant will provide technical input. The meetings will describe what has occurred in the study process as well as future work tasks, and present existing conditions, future projections, deficiencies, and the recommended program of improvements. The consortium will also be responsible for the following:

- Prepare all presentation boards and handouts for public involvement meetings.
- Prepare a comprehensive mailing list for this study, and handle all mailings.
- Prepare a newsletter for distribution by mail before the public meetings, as well as for distribution at the meetings; review and approval of the Project Manager is required before mailing.
- Prepare and issue a press release; the Project Manager will coordinate the press release.
- Document the public involvement process in Summary Reports 1 and 2. This will include the press releases distributed prior to the meetings; mailing lists, comments received at the meeting, and associated responses to each comment.
- Provide Summary Reports to The TAC. The TAC will review all public input for consideration in the analysis of existing and future conditions and in developing recommendations for the draft final report.

Although a public involvement plan will be developed in coordination among the consultant, consortium, and TAC, Lima & Associates will conduct stakeholder interviews in mid-September to gather input from stakeholders on the key issues and possible recommendations. This will ensure that the consultant adequately addresses the pedestrian safety and access management needs and implications of possible solutions.

## Task 5. Develop Plan for Improvements

<i>Assigned Staff</i>	<i>Products</i>	<i>Milestones</i>
Lima, PhD, PE, Project Manager Weir, AICP, Deputy Project Manager Clancy, Senior Transportation Analyst	TAC Meeting .....(1) Draft Working Paper 2 Final Working Paper 2	<ul style="list-style-type: none"> <li>■ Coordination with ADOT and Town Project Manager</li> <li>■ TAC Meeting</li> <li>■ Identify criteria for evaluating alternative transportation options</li> <li>■ Identify and evaluate access management and pedestrian safety projects</li> <li>■ Prepare master plan for access management and pedestrian safety improvements</li> <li>■ Address Title VI Concerns regarding Environmental Justice</li> <li>■ Prepare Implementation Plan and Funding Matrix</li> <li>■ Prepare Strategy Toolkit</li> <li>■ Draft Working Paper 2: Transportation Plan</li> <li>■ Final Working Paper 2: Transportation Plan</li> </ul>

This work task will produce a draft Transportation Plan describing vision, goals and policies; strategies; and multimodal facilities to accommodate current and future travel demands. The plan will include multimodal components. The following topic areas will be addressed in the plan.

### Subtask 5.1. Identify Evaluation Measures

We will work closely with the TAC to identify a comprehensive set of criteria for evaluating alternative transportation options. Potential measures are shown below and have been divided into performance and feasibility measures. The overall performance measures are those measures mandated in the State Statutes for performance based planning and programming and the other measures indicate the feasibility of implementing an improvement.

### Pedestrian Safety Performance Measures

- Reduce pedestrian collisions
- Reduce average traffic travel speeds
- Increase perception of pedestrian safety and walkability
- Increase the annual sidewalk construction/reconstruction
- Complete Safe Routes to Schools improvements
- Review/update pedestrian signal timings
- Upgrade traffic signals to current standard
- Complete lighting projects improvements
- Increase the number of elementary school students being trained through the Safe Walks program
- Increase the number of schools that participate in Walk to School

### Overall Performance Measures

- Mobility/Congestion Relief (Travel Demand, Street level of service)
- Accessibility and Connectivity
- Integration and connectivity with other modes
- Safety (Reduction in Crashes)
- Economic Benefits

### Feasibility Measures

- Engineering
- Environmental and Cultural Resources
- Socioeconomic and Land Use
- Multimodal Considerations
- Public Support
- Costs/Right-of-way/Funding

#### Subtask 5.2. Identify and Evaluate Alternatives

We will review and document the array of access management and pedestrian safety projects to meet the performance objectives. A key source for access management techniques is the *TRB Access Management Manual*. One objective of access management techniques is to reduce the number of vehicle/vehicle and vehicle/pedestrian conflict points. We will document the benefits, techniques, and implications of access management and pedestrian safety projects.

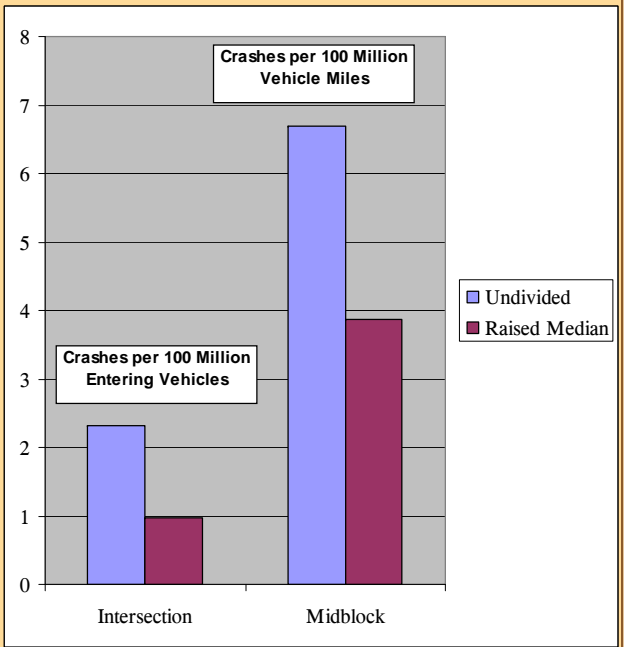
Based on potential improvements identified by the TAC, stakeholders, and the public, we will evaluate performance measures for the years 2015, 2020, and 2030. In addition, the feasibility of implementing improvements will also be evaluated and an evaluation matrix will be prepared comparing the performance of the alternatives against the evaluation criteria.

Education and public outreach is a key to the public acceptance of access and pedestrian safety improvements. We will develop a set of educational materials including a brochure the outlining benefits.

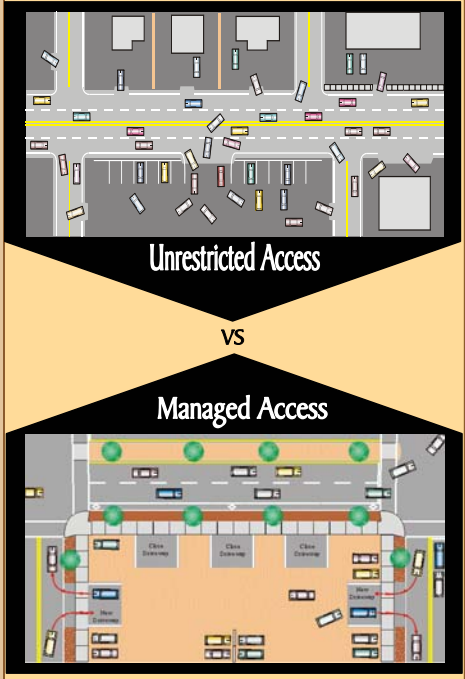
### Potential Improvements

- ◆ Reconfigure / redesign intersections
- ◆ Construct pedestrian refuges
- ◆ Construct pedestrian overpasses/underpasses
- ◆ Construct median on SR 260
- ◆ Construct frontage/backage roads
- ◆ Reduce number of driveways
- ◆ Construct parallel routes to reduce traffic on SR 260
- ◆ Improve pedestrian/bicycle connectivity
- ◆ Improve pedestrian sidewalks/walkways
- ◆ Modify traffic signal spacing
- ◆ Modify traffic signals

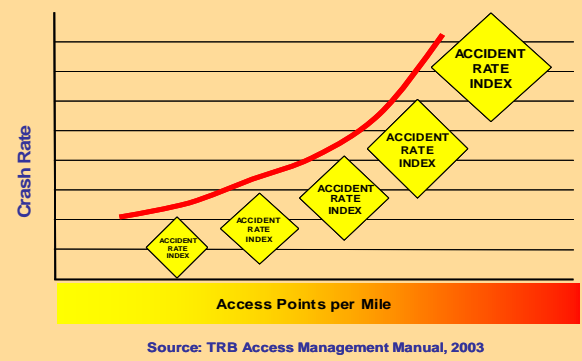
### Access Management Reduces Pedestrian Crashes



### Access Management Reduces Conflict Points



### Crashes Increase with More Access Points



## Access Management Benefits

#### Subtask 5.3. Prepare Draft Short-, Mid-, and Long-Range Community Transportation Plan

Based on the evaluation of the alternatives, a master plan will be developed for access management, pedestrian safety improvements, and other improvements. The implications and impacts of the proposed improvements will also be evaluated against the set of evaluation criteria and discussed. The plan will incorporate the findings and recommendations.

#### Subtask 5.4. Address Environmental Justice Concerns

The consultant will ensure that Title VI Concerns regarding Environmental Justice will be addressed throughout the study. GIS maps will be prepared and used to analyze potential impacts on Title VI population groups including ethnic groups, groups below the poverty level, elderly population, and mobility-limited population.

### Subtask 5.5. Prepare Working Paper 2: Transportation Plan

A draft working paper will be prepared documenting the draft Community Transportation Plan and will be reviewed by the TAC and redistributed. The Draft Plan will be modified as appropriate based on input from the TAC, stakeholders, and the public.

### Subtask 5.6. Prepare Implementation Plan

This subtask will develop an implementation plan for the transportation plan. Five-year and ten-year transportation improvements for the TIP will be documented in the draft final report. The consultant will work closely with the TAC to prepare Five-Year Multimodal Transportation Improvement Program for the Town. A standard format for project descriptions, level of detail, and assumptions will be agreed upon by the TAC. The project categories could include pre-design, design, right-of-way acquisition, construction, pavement preservation, and maintenance activities. Projects that may require broader participation by regional and state stakeholders will also be identified. Specific projects will be defined with project description, estimated costs, schedule, project priorities, and funding sources.

The improvement program will address costs, revenue forecasts, and benefits and financing of recommended transportation actions. **We will identify funding strategies, strategies for potential partnerships to accomplish the transportation improvement programs.**

**Develop Funding Matrix.** Funding is the keystone of implementation and this subtask will analyze both current and potential revenue sources. Funding sources will include federal, state, regional, local, and private sources for all modes of transportation. Potential funding sources are listed below. In addition, funding strategies necessary to implement the short-, mid-, and long-range plans will be identified. A comprehensive funding matrix will be prepared as a tool for the Town to obtain funds. The matrix will include the following: source of funds, description of source, use of funds, funds available, lead time to acquire funds, comments, and potential yield to the municipalities.

### Subtask 5.7. Prepare a Toolkit for Pedestrian Safety, Travel Demand/System Management, and Access Management Strategies

A Strategy Toolkit will be prepared for the Town to maintain transportation safety and efficiency as the population grows. The toolkit will include strategies for Pedestrian Safety, Travel Demand Management (TDM), Transportation System Management (TSM), Access Management, and Land Development Strategies. Potential strategies are presented below.

- **Pedestrian Safety Strategies.** Strategies to encourage safe walking and bicycling including pedestrian connectivity, pedestrian crossings/refuges, and education strategies.

- **Transportation Demand Management Strategies.** Strategies to reduce automobile traffic including carpooling, vanpooling, park-and-ride lots, alternative work hours, telecommuting, and other strategies
- **Transportation System Management Strategies.** Traffic operations techniques to improve safety and efficiency such as management of traffic signalization, traffic and way finding signing, and Intelligent Transportation System components.
- **Access Management Strategies.** Strategies to manage access and reduce conflicts including implementing general level of access control by functional classification, raised medians, frontage/backage roads, right-in/right-out driveways, and driveway and intersection spacing guidelines.
- **Land Development Strategies.** Strategies for implementing land use that encourage the reduction in automobile trips and the non-motorized travel such as Mixed-Use Development and minimization of access points

### *Potential Pedestrian Safety Strategies*

- ◇ Target pedestrian safety improvements in High Incidence Areas
- ◇ Assess and improve pedestrian network and connectivity needs
- ◇ Construct pedestrian overpasses/underpasses
- ◇ Identify and implement corridor and intersection modifications and traffic calming treatments
- ◇ Upgrade pedestrian signals
- ◇ Assess and enhance street lighting
- ◇ Modify pedestrian and driver behavior through enhanced enforcement and educational efforts
- ◇ Develop a school-based pedestrian safety curriculum for elementary schools
- ◇ Establish a bicycle and pedestrian task force and partnerships with local organizations
- ◇ Implement a bicycle and pedestrian facilities plan
- ◇ Develop educational materials
- ◇ Develop a public awareness and education campaign
- ◇ Establishment of a clearinghouse of pedestrian safety materials
- ◇ Produce a quarterly newsletter
- ◇ Create a Pedestrian Safety Advisory Committee
- ◇ Create a Street Smart pedestrian and bicycle safety public awareness campaign
- ◇ Mandate use of Pedestrian and Bicycle Safety Impact Statements for all public projects and private developments
- ◇ Initiate town-wide Safe Routes to Schools program with a Safe Routes to Schools Coordinator
- ◇ Implement traffic calming to increase pedestrian safety and comfort

## Task 6. Prepare Draft Final Report, Final Report, and Executive Summary

<i>Assigned Staff</i>	<i>Products</i>	<i>Milestones</i>
Lima, PhD, PE, Project Manager Weir, AICP, Deputy Project Manager	TAC Meeting .....(1) Draft Final Report Final Report Executive Summary	<ul style="list-style-type: none"> <li>■ Coordination with ADOT and Town Project Manager</li> <li>■ Draft Final Report</li> <li>■ Final Report</li> <li>■ Executive Summary</li> </ul>

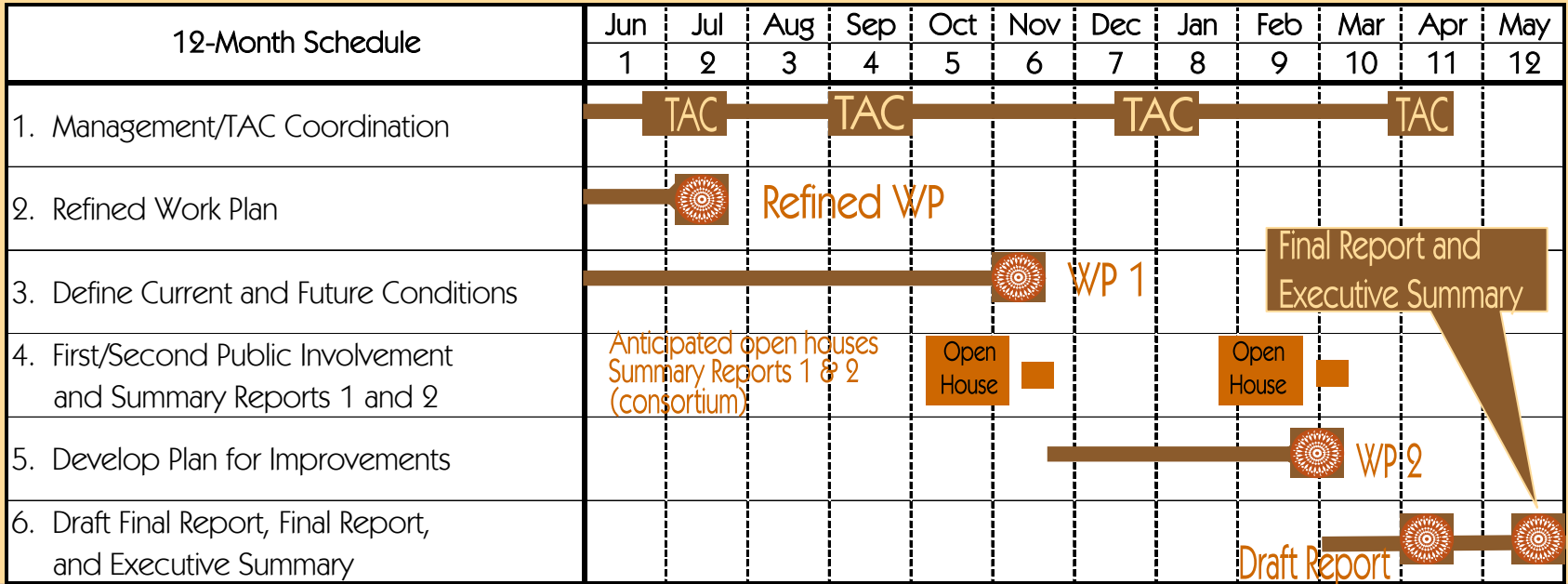
The draft final report will be prepared including at a minimum the following, and will be distributed for review and comment:

- Compilation of Working Papers.
- Summary Reports that document the public involvement process.
- Accompanying maps and other exhibits supporting the recommendations.
- Implementation Plan and Strategies
- Recommendations regarding future studies in the study area.

A final report will be prepared as amended following review by the TAC and approval of the Town of Pinetop-Lakeside and the Arizona Department of Transportation. The Executive Summary will be a brief stand-alone document that concisely documents the study process and recommendations.

Upon completion of the study, CD and hard copies of the final reports and executive summary will be distributed to the TAC, ADOT, and the Town of Pinetop-Lakeside as outlined in the milestone deliverable schedule.

## Study Schedule



### Meeting Dates

Second TAC Meeting: Wednesday, September 16, 2009  
 First Public Open House: Thursday, October 8, 2009, 5:30 – 7:30 p.m.

### Tentative Meeting Date

Second Public Open House: Thursday, February 11, 2010, 5:30 – 7:30 p.m.  
 "Weather Delay" Contingency Date: Thursday, February 25, 2010

## Cooperative Features

### Public Involvement Consortium

- Participating as a member of the study team in developing all outreach materials for public meetings, forums, and stakeholder meetings; including placing newspaper ads, and documenting the Public Involvement Summary Reports.
- Schedule and take minutes of public meetings.
- Contracting for meeting locations and developing meeting notices.

### ADOT Project Manager

- Participating and coordinating with the study team regarding all aspects of the outreach process including: public meetings, forums, stakeholder meetings, and reviewing material.
- Overall management of the study.
- Providing technical input and administrative guidance.
- Communicating with the TAC.

### Pinetop-Lakeside

- Participating in developing all public involvement materials.
- Providing local guidance and oversight to the ADOT project manager.
- Providing technical input and administrative guidance.
- Providing existing daily traffic counts; socioeconomic, land use, and street inventory data, and reports to the consultant.