Pinetop-Lakeside Pedestrian Safety and Transportation Study

Final Report

LIMA & ASSOCIATES
Transportation - G.I.S.

May 2010

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1. INTRODUCTION AND EXECUTIVE SUMMARY

The Planning Assistance for Rural Areas (PARA) program is sponsored by the Arizona Department of Transportation (ADOT) Multimodal Planning Division, and provides federal funds for the purpose of conducting transportation planning studies. The PARA program is available only to communities outside the large metropolitan areas. Large metropolitan areas have separate funding sources and programs tailored to their needs.

The Town of Pinetop-Lakeside participated, as a member of the White Mountain Regional Transportation Committee, in another ADOT program for local governments, the Small Area Transportation Study (SATS) program. In 1998-1999 Navajo County was the lead jurisdiction in the regional SATS project. The Town completed the Pinetop-Lakeside Transportation Plan as a part of the White Mountain Regional Transportation Plan. The PARA program replaced the SATS program in 2008. The PARA program is flexible, allowing for studies of specific transportation modes and of sub-areas within jurisdictions, which made it possible for the Town to apply for and receive PARA funding for a pedestrian study in a particular sub-area.

PURPOSE

The Pinetop-Lakeside Pedestrian Safety and Transportation Study (pedestrian study) is a PARA that is a joint effort of ADOT and the Town of Pinetop-Lakeside. The pedestrian study reviewed past and current information and considered future travel demand. Based upon the future demand, options for pedestrian facilities and program improvements were described and discussed. After further analysis and review, the pedestrian study has resulted in a phased 2015, 2020, and 2030 recommended phased program for the pedestrian study area (Figure 1.1).

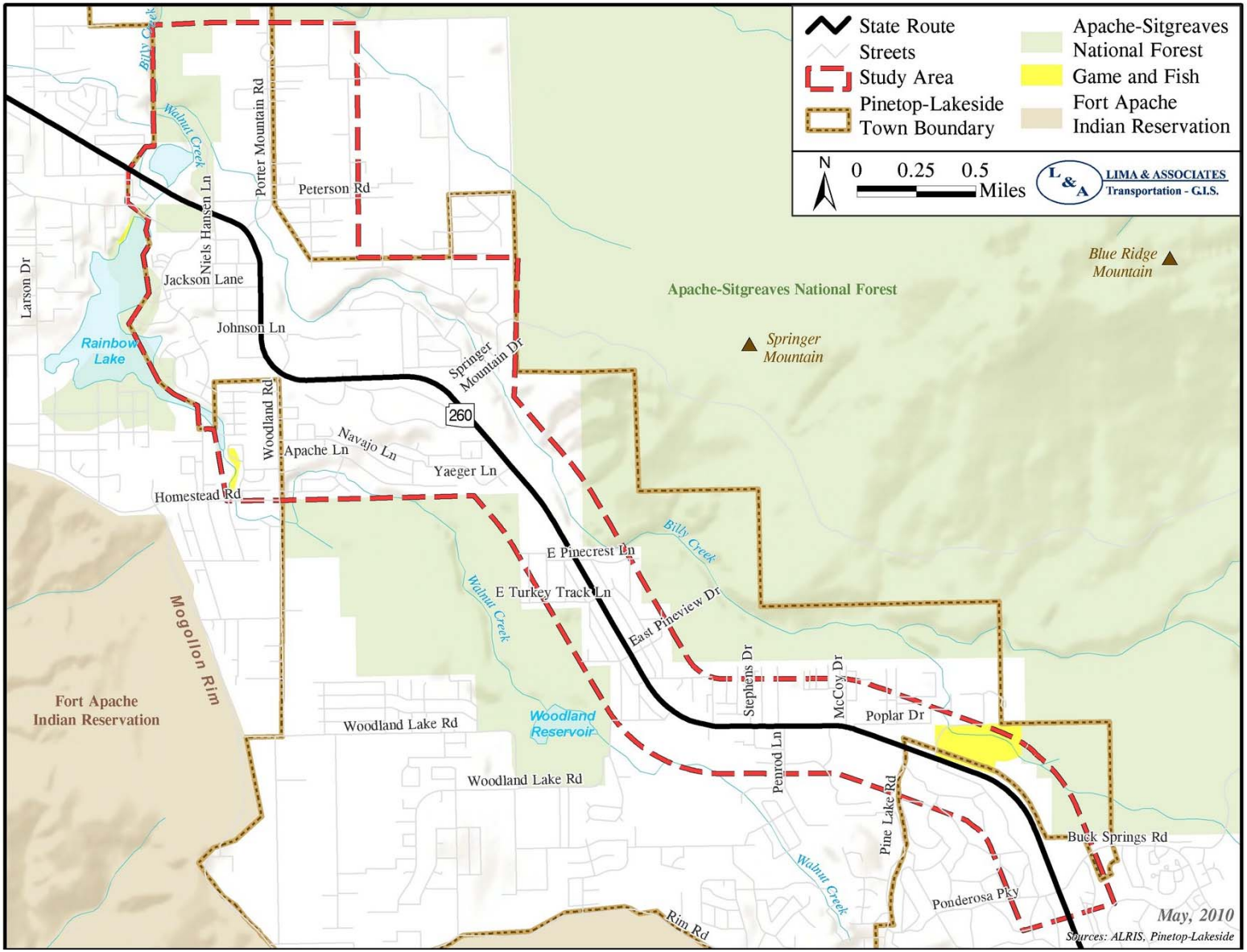
The purpose of the pedestrian study is to:

- Increase pedestrian safety (especially for schoolchildren) in the pedestrian study area.
- Increase pedestrian safety and mobility for all pedestrians along State Route 260
- Coordinate all pedestrian program solutions with those of other area transportation projects.

Beginning at its southeast end, the pedestrian study area is a corridor of two-tenths of a mile each side of the centerline of SR 260 from milepost 355.2 (just south of Ponderosa Parkway) to milepost 351.8 (Yeager Lane). The corridor then becomes wider to include considerable pedestrian traffic around both Blue Ridge Unified School District (BRUSD) campuses, one on SR 260 and the other on Porter Mountain Road. The northwest boundary along SR 260 is at milepost 349.6 (Lakeview Lane).

SR 260 is also known as White Mountain Boulevard throughout Pinetop-Lakeside, with Yaeger Lane as the dividing line between White Mountain Boulevard West and White Mountain Boulevard East. The designation SR 260 is used consistently in this Report.

FIGURE 1.1. PEDESTRIAN STUDY AREA



Two neighborhoods outside the Town boundary are included in this pedestrian study because they are in the school district. Those neighborhoods are located:

- Northwest of the intersection of Homestead Road and Woodland Road, within walking distance of the elementary, intermediate, and high school.
- East of Porter Mountain Road, within walking distance of the middle school and junior high school.

The region beyond the pedestrian study area boundaries will have some influence upon the characteristics of pedestrian travel and on pedestrian safety. The influences are of two types, at different scales (Figure 1.2). First, the relatively nearby area includes the rest of Pinetop-Lakeside, Show Low, the Hon-Dah area of the Fort Apache Indian Reservation, Snowflake, Taylor, McNary, and neighboring areas in Navajo County. One influence from the nearby area would be the effect upon pedestrian traffic when Penrod Road and Porter Mountain Road are developed as an alternative to SR 260. Penrod Road is north of the study area and appears on Figure 1.2 and Figure 2.4. Note that Penrod Land is not connected to Penrod Road; Penrod Lane is within the southeast portion of the study area. Another influence is the sidewalk and trail traffic from outside the area that connects to Porter Mountain Road and the SR 260 corridor. Finally, the residents of the nearby area use walkways in the community when they visit Pinetop-Lakeside to walk about, to shop, and to attend events, some of which are at the schools.

A larger region north to Holbrook and east to Springerville and Eagar also appears on Figure 1.2, and is also an influence area. Regional bus service extends to Holbrook, the Navajo County seat. Much of the traffic passing through the Town on SR 260 is headed east to the Sunrise Park Resort (skiing center), Greer, Springerville, or Eagar.

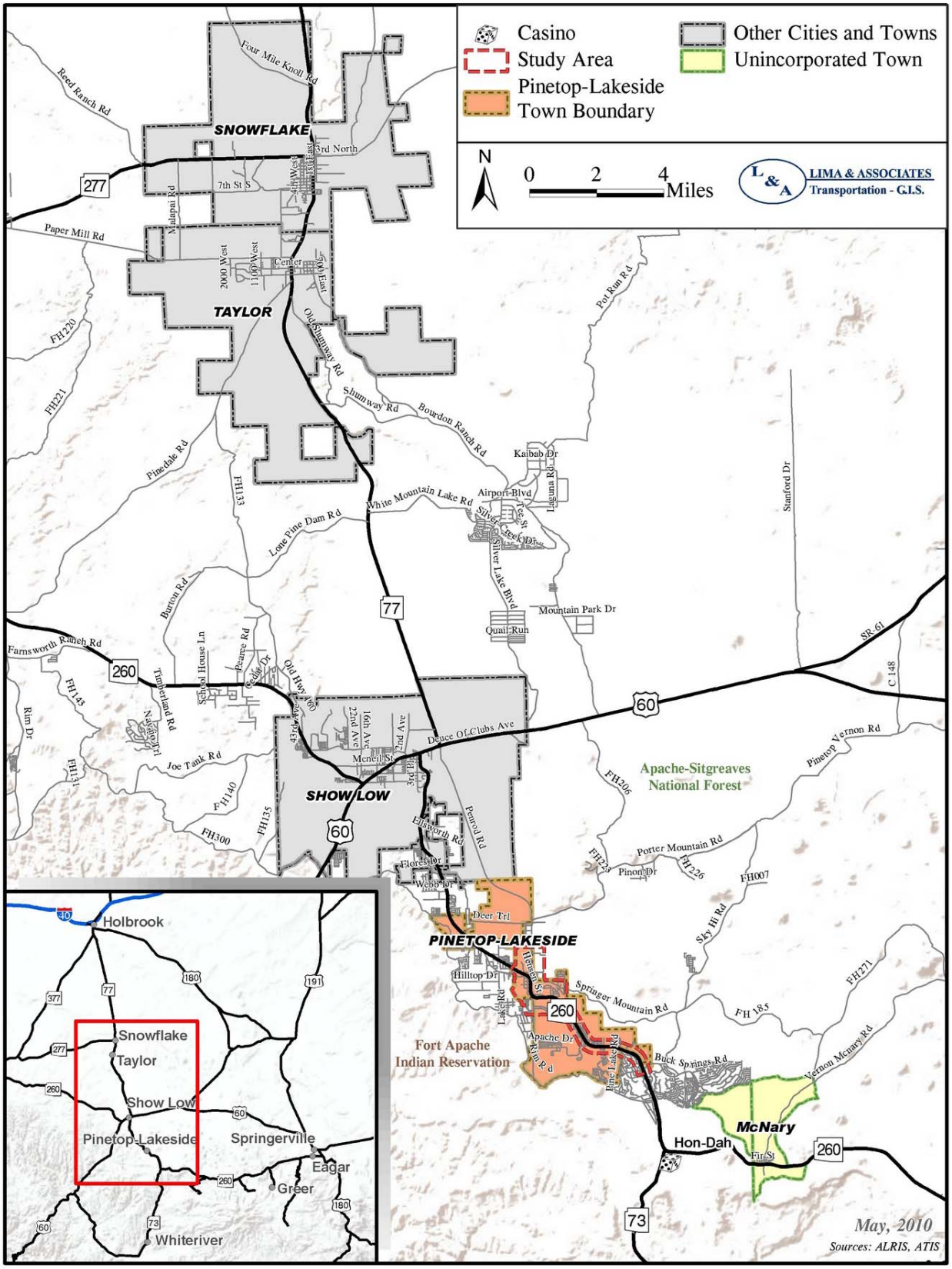
PUBLIC INVOLVEMENT AND STAKEHOLDER COORDINATION

Both of the pedestrian study Working Papers and this Draft Final Report (Report) benefited from the insights of many people. Stakeholders were interviewed early in the planning process. The stakeholders included several Technical Advisory Committee members and representatives of groups that have special knowledge of travel patterns and/or pedestrian, bicycle, and motor vehicle issues in the Town.

Stakeholders expressed needs and deficiencies in interviews held for the pedestrian study on September 16 and 17, 2009 in Pinetop-Lakeside Town Hall. Stakeholder discussions included one to four interviewees plus the consultant and the Town and ADOT project managers. There were 18 total interviewees:

Nancy Bortin	Transportation Staff, BRUSD
Jerry Croney	White Mountain Entertainment Group Owner
Mike Digeno	Red Devil Restaurant Owner
Norris Dodd	Town Councilman
Woody Eldridge	Town Police Chief

FIGURE 1.2. INFLUENCE AREA



Mary French-Jones	Town Grant Coordinator
Brian Gilbert	Town Planning Commissioner
Dennis Hughes	Chief Operating Officer, Navopache Electric
Nick Lund	President, TRACKS
Brian McCabe	Town Planner
Greg Schalow	Superintendent, BRUSD
Luke Smith	Town Mayor and Assistant Principal, Blue Ridge High School
Beverly Stepp	Chamber of Commerce Executive Director
Tom Thomas	Town Public Works Director
George Turner	Governing Board President, BRUSD
Kelly Udall	Town Manager
John Vuolo	Town Parks and Recreation Director
Leslee Wessel	Town Councilwoman

At the interviews maps were displayed that illustrated some of the issues. Follow-up discussion elicited more issue statements and provided details. Stakeholders had received the following questions to consider in advance of their interviews:

1. What improvements are needed to encourage pedestrian travel and to make it safe?
2. What do you suggest regarding how ADOT, the Town, and the Blue Ridge Unified Schools might work with additional partners on facilities or educational programs for safe pedestrian travel?

The stakeholder report in Appendix A is a compilation of the statements made by stakeholders.

An overriding theme emerged both at the stakeholder interviews and the subsequent first public Open House on October 8, 2009:

> **Residents and Visitors to Pinetop-Lakeside want to walk in Town—just as they hike on the nearby trails. More walking would be likely if several types of issues were resolved.**

Two open houses were conducted to receive comments from the public concerning the findings of the pedestrian study. The first open house occurred on October 8, 2009, and was a presentation of the issues under study followed by the solicitation of public and stakeholder input on the needs, deficiencies, and issues. The second open house took place on the evening of March 10, 2010, and focused upon the draft pedestrian safety and mobility plan. The consultant reviewed the insights of the meeting participants and they were incorporated into this Report as appropriate. The public meetings are more fully documented in the Public Involvement Summary Report (under separate cover).

EXECUTIVE SUMMARY

Current and Future Conditions

- Since 2006, several local, state, and federal multimodal studies have included some information on the status of pedestrian travel in Pinetop-Lakeside. The Town recognized that a pedestrian study was warranted that would have a primary emphasis on pedestrian safety and mobility issues along developed SR 260 and extending north to include the area around both school campuses.

- The Town has begun work on a new General Plan that is to further expand upon two recent studies:

  - Pinetop-Lakeside Town Plan, Tejido group (Town Plan), that identified three walkable development nodes within the pedestrian study area—the Old Towne Node, Walnut Creek Node, and Penrod Node.

  - Linking our Landscape, Open Space Assessment for the Town of Pinetop-Lakeside, the Nature Conservancy, 2008 (Linking our Landscape) that identified fifteen open space preservation areas within the pedestrian study area, including twelve with urban trail potential.

- Throughout the state, the same conditions contribute to pedestrian accidents on the State Highway System, including SR 260 in the Town. Key factors include sidewalks directly adjacent to the roadway, a lack of crosswalks between activity centers, lighting conditions, and alcohol consumption.

- Residents and visitors drive, rather than walk, along and across SR 260 to avoid conflicts with vehicles. The avoidance of walking in Town affects public health, business, enjoyment of the scenic landscape, and many other aspects of community life.

- Potential crash points arise from the lack of access management on SR 260:
  - From the northern pedestrian study area boundary to south of Worldmark Drive, there are over thirty driveways and intersections in each mile of SR 260.
  - In the segment between Turkey Track and Stephens Drive, there are 71 driveways and intersections.

- Some specific pedestrian safety concerns on SR 260 are:
  - Traffic congestion and speed.
  - Threat posed by difficult turns for vehicles.
  - Walking too close to traffic, and sharing sidewalks with bicycles.

- Some specific concerns of the school community are:
  - Too few crosswalks
  - Student pathways that are not continuous from home to school
- Many elderly or mobility-challenged seasonal residents and visitors are present, yet no pedestrian facilities assist those who walk slowly or who have deficits in vision, hearing, or reaction-time.
- Pedestrian travel is affected by the terrain and by winter weather, especially by the accumulation of snow. Snow removal operations along the length of SR 260 present additional concerns and complications related to pedestrian safety.
- Many opportunities exist for the Town to link an urban pedestrian network with recreational trails by partnering with neighboring communities, developers, the US Forest Service, the local TRACKS organization, and others.

Plan for Improvements

- Recommendations resulted from the following process:
  - Review of current and future conditions.
  - Review of pedestrian safety and mobility issues identified by the consultant, technical advisory committee, and citizens.
  - Compilation of evaluation measures as criteria for selection of recommendations.
  - Definition of an extensive list of options for improvements.
  - Selection of recommendations from the options, based upon evaluation measures.
  - Phasing of recommendations over three time periods: 2010-2015, 2015-2020, and 2020-2030.
- The recommendations for 2010-2015 include:
  - Billy Creek Bridge as first phase of Porter Mountain Road improvements, and a continuous walkway between the school campuses.
  - A pedestrian refuge area and related facilities on SR 260 between Woodland Road and Yellow Jacket.
  - Signal improvements for safer crossing at several SR 260 intersections.
  - Wayfinding maps, revised as facilities are built or improved.

- The recommendations for 2015-2020 include:

  - Widening of Porter Mountain Road from two to four lanes, between SR 260 and the mid/junior high school, with raised median, curb, gutter, and sidewalk.

  - Sidewalks adjacent to SR 260 set back from the curb in many locations, and sidewalks built to and through the Old Town and Penrod Nodes.

  - Consolidation of driveways as a cooperative program with businesses, for economic benefit and pedestrian and vehicle travel safety, with a focus on Turkey Track to Stephens Drive.

  - Median between Jackson Lane and Woodland Road and between Woodland Lake Road and McCoy Drive, with appropriate pedestrian crossing facilities.

- The recommendations for 2020-2030 include:

  - Median between East Pinecrest Lane and Woodland Lake Road, with appropriate pedestrian crossing facilities.

  - Pedestrian refuge islands between turning lanes and through lanes (on SR 260 at Porter Mountain Road and Woodland Road), for safe travel by children and the elderly.

  - Continuation of programs from previous phases to complete the programs in the pedestrian study area, and to extend the programs outside the study area.

2. REVIEW OF PREVIOUS STUDIES AND PLANS

This chapter presents background related to transportation in the Pinetop-Lakeside Area.

PREVIOUS STUDIES AND PLANS OVERVIEW

Table 2.1 summarizes the documents that were reviewed. Additional detail is provided on the following studies:

- Eastern Arizona Regional Framework Study (bqAZ)
- Arizona Statewide Bicycle and Pedestrian Plan, 2003-2006
- ADOT Pedestrian Safety Action Plan, Profile of Pedestrian Safety in Arizona, 2008
- Community Transportation Plan, September 2007: Town of Pinetop-Lakeside
- Pinetop-Lakeside Town Plan, 2006
- Linking Our Landscape: Open Space Assessment for the Town of Pinetop-Lakeside, 2008
- Pinetop-Lakeside 2008 Application for Safe Routes to School Program
- Southern Navajo County Regional Corridor Tiger Grant Application, 2009

The chapter concludes with an introduction to some professional literature regarding pedestrian safety and access management. Additional information from local studies and other professional literature is cited in later chapters of the pedestrian study.

EASTERN ARIZONA REGIONAL FRAMEWORK STUDY (bqAZ)

A consortium of state, regional, and local stakeholders completed the planning process *Statewide Transportation Planning Framework, 2010* for state transportation infrastructure needs. As part of this process, regional framework studies fed into the statewide transportation planning framework.

The Eastern Arizona Region includes parts of Gila, Navajo, and Apache Counties, and all of Graham, Greenlee, Cochise, and Santa Cruz Counties. Community Workshops introduced the public to the Framework Studies, with two rounds of public involvement—Round One searching for public input as to the needs of the area and Round Two presenting the three resulting Scenarios and searching for public input on the result.

TABLE 2.1. SUMMARY OF LOCAL STUDIES AND PLANS

Study	Description
Federal Studies and Plans	
Apache-Sitgreaves National Forests (ASNFs) Forest Plan Update (ongoing).	Public meetings were held in April 2010 for comment upon initial drafts of four alternatives, which will be analyzed in an Environmental Impact Statement. The desired future conditions regarding community-forest interaction would be the portions of the ASNFs plan most related to the pedestrian study.
State Studies and Plans	
Statewide Transportation Planning Framework, 2010. (Eastern Arizona Region, see entry below).	A consortium of state, regional, and local stakeholders is working on the planning process *Building a Quality Arizona* for state transportation infrastructure needs. The Regional Framework Study below fed into the Statewide Transportation Planning Framework, a long-range visionary plan focusing on transportation needs in the 2030-2050 timeframe.
Eastern Arizona Regional Framework Study. Round One: Public Involvement Report, April 2008; Round Two: Public Involvement Report, April 2009.	The Eastern Arizona Region includes parts of Gila, Navajo, and Apache Counties, and all of Graham, Greenlee, Cochise, and Santa Cruz Counties. Products described in this Report include: Community Workshops, Round 1, March/April 2008 and Round 2, November 2008. The Round 1 document includes public comment on the needs of the area, and the Round 2 document includes public comment on the three developed scenarios resulting from the Round 1 workshops.
Arizona Statewide Bicycle and Pedestrian Plan, Phase I, 2003 Phase II, 2004; maps 2006. http://www.azbikeped.org	The Arizona Statewide Bicycle and Pedestrian Plan provides a long-term plan for a statewide system of interconnected bicycle facilities that will guide ADOT transportation decisions relating to bicycle and pedestrian travel, planning, and facility development.
ADOT Final Report, Pedestrian Safety Action Plan, 2009.	ADOT Pedestrian Safety Action Plan's goal is to identify improvements and programs that will improve pedestrian safety and reduce pedestrian crashes, fatalities, and injuries on state highways.
ADOT State Transportation Improvement Program (STIP), FY 2009-FY 2012.	Contains one major project for SR 260 within the pedestrian study area, a Transportation Enhancement Project from Porter Mountain Road to Woodland Road including construction of landscaping, irrigation and pedestrian lighting, at a cost of $481,000. There is also one minor project, a FY 2010 project at milepost 350 to construct a retaining wall, at a cost of $99,000.
ADOT Five Year Transportation Facilities Construction Program, FY 2010-FY 2014.	The above project from the STIP appears as a FY 2010 project at a cost of $763,000.

TABLE 2.1. SUMMARY OF LOCAL STUDIES AND PLANS (Continued)

Local and Regional Studies and Plans	
Southern Navajo/Apache County Sub-Regional Transportation Plan, Executive Summary, September 2007.	This roadway study resulted in a recommended 2030 alternative projected to cost $620 million (2006 dollars), in 35 projects, (33 projects to be new roadways or increases in the number of lanes, and 2 to be traffic interchanges). The sub-region addressed by the plan included the Towns of Pinetop-Lakeside, Snowflake, Taylor, City of Show Low, and the unincorporated areas of southern Navajo and Apache Counties, (Concho, Vernon, and environs).
Community Transportation Plan, September 2007: Town of Pinetop-Lakeside.	This roadway plan was a part of the 2007 Sub-Regional study described above. The material bound alone as the Community Transportation Plan describes the Town's recommended 2030 alternative projected to cost $102 million (2006 dollars), in 8 projects that would be new roadways or increases in the number of lanes, 3 of which ($45 million) would be projects under the jurisdiction of the Town. The study did not include pedestrian, bike, or transit modes.
Pinetop-Lakeside Town Plan, 2006.	University of Arizona's Tejido Group developed the 2006 Pinetop-Lakeside Town Plan and conducted a community survey to analyze the Town's current development and to create new planning guidelines to direct future growth.
Linking Our Landscape: Open Space Assessment for the Town of Pinetop-Lakeside, The Nature Conservancy, 2008.	The Nature Conservancy completed an assessment of sites that might be maintained as open space for the benefit of the community and the landscape, while encouraging growth in appropriate nodes.
Pinetop-Lakeside 2008 Application for Safe Routes to School Program (SRTS).	Town Council Resolution No. 08-1013 and accompanying application to ADOT, November-December 2008. The Town was not awarded a grant.
Southern Navajo County Regional Corridor TIGER Grant Application, September 2009.	Navajo County Resolution No. 63-09, August 11, 2009; endorsed by ADOT September 14, 2009. Application to fund four projects, three of which would improve pedestrian facilities on Porter Mountain Road. None of the projects was funded, but the application was an informative document.

Public Input, Round One

Two rounds of community workshops were held for the Eastern Framework study. The purpose of the March 2008 workshops was to exchange information with the public early in the framework study. Common themes in public comment throughout the Eastern Region included:

- High level of interest in developing more public transit (in various forms).
- Interstate and State Highway System needs improvement: new north-south and east-west corridors are needed.
- Need for alternate routes/bypasses around population centers to alleviate congestion.
- Safety improvement through access management and better bike and pedestrian facilities.

Mogollon Rim Focus Area Comments:

- Tourism is a large economic factor and brings a lot of traffic in the summer.
- Need for more capacity on existing roadways.
- Need for more rail.
- Roadways already overburdened by tourist travel (weekends/summer).
- Growth is being observed in Snowflake/Taylor, White Mountain Lakes, Heber/Overgaard, Apache City, Holbrook, and around Pinetop and Show Low. Developers are moving out from the towns and cities to the County areas.

Three overarching transportation network scenarios (Personal Vehicle Mobility, Transit Mobility, and Focused Growth) for the Eastern Arizona Regional Framework Study were developed after the March 2008 workshops. The scenarios were based on the following assumptions:

- Each includes multimodal transportation options to varying levels.
- All scenarios address sustainable or smart growth principles to varying levels.
- Land use is consistent with current local and regional plans—except Focused Growth, which encourages increased land use densities in certain areas.
- Each scenario is independent of the others.

Public Input, Round Two

The purpose of the November 2008 workshops was to gather input on the three hypothetical scenarios. The concepts for the Mogollon Rim Focus Area in the three scenarios are described in Table 2.2.

In the Pinetop-Lakeside area, the greatest difference between the scenarios was the presence of a conceptual new roadway bypassing Show Low and Pinetop-Lakeside, along with the extension of intercity bus service between Show Low and Pinetop-Lakeside.

TABLE 2.2. EASTERN ARIZONA REGIONAL FRAMEWORK STUDY: MOGOLLON RIM FOCUS AREA SCENARIOS, 2050

Scenario	Theme	Common Characteristics	Other Characteristics
A	Personal Vehicle Mobility	All three scenarios include local transit service areas, intercity bus extents, and roadway improvements or upgrades	Conceptual new roadway (principal arterial) bypassing Show Low from US 60 along the western border of Show Low and Pinetop-Lakeside to SR 260 in the south.
B	Transit Mobility		Intercity bus from south of Pinetop-Lakeside through Show Low to Holbrook along SR 73/SR 260 and SR 77; Improved roadway (shoulders, passing lanes, drainage, etc.) along SR 73/SR 260.
C	Focused Growth		Improved roadway (shoulders, passing lanes, drainage, etc.) along SR 73/SR 260 through Pinetop-Lakeside; Widen/upgrade SR 260 and Penrod Rd. through Show Low

Source: ADOT, Building a Quality Arizona Community Workshop Exhibits, November 2008.

Exact comments received specific to Pinetop-Lakeside in the Round Two workshops included:

- Show Low needs a safe way for bikes to go along White Mountain Road to Pinetop/Lakeside.
- Extend the sidewalks from the Deuce of Clubs to Pinetop Lakeside.
- I don't know if I would feel safe driving through Show Low, Pinetop and Lakeside. There's barely enough room on the sidewalks to walk.
- When they redid the highway to Pinetop there was a plan for a bike lane. There is high level of interest in developing more public transit (in various forms).

ARIZONA STATEWIDE BICYCLE AND PEDESTRIAN PLAN, 2003-2006

The Statewide Bicycle and Pedestrian Plan, Phase I (2003) provided a long-term plan for a system of shared roadways and bicycle and pedestrian facilities for the ADOT State Highway System. The Plan was intended to serve as a guide to ADOT in making transportation decisions relating to bicycle and pedestrian travel, planning, and facility development and to provide a long-term plan for a statewide system of interconnected bicycle and pedestrian facilities. The plan includes several recommendations that ADOT and agencies around the state could implement to improve bicycling and walking conditions, and also includes terms, definitions, and statutes for bicycles and pedestrians from the Arizona Revised Statutes. A

predominant recommendation of the Plan was to assure adequate provision of bicycle and pedestrian facilities as integral components of all future ADOT projects, unless the project has no relation to bicyclists or pedestrians. The Plan also proposed a pedestrian policy for consideration by ADOT to establish uniform guidelines for accommodating pedestrian travel on the State Highway and State Route System.

A notable product of Phase II was the guide "Sharing the Road with Pedestrians," which advises both motorists and pedestrians to understand travel from the other person's view of the road. Given the large number of pedestrian accidents that involve children, many of its tips concentrate upon teaching children to be wise pedestrians. Specific tips address school buses, and less familiar design elements, such as the roundabouts that have become more common recently. The guide also contains relevant pedestrian statutes in the Arizona Revised Statutes (as of January 1, 2008).

ADOT FINAL REPORT, PEDESTRIAN SAFETY ACTION PLAN, 2009

The Final Report, Pedestrian Safety Action Plan, 2009 reviewed a Profile of Pedestrian Safety in Arizona, that had a goal to "identify action items, improvements, or programs that upon implementation will reduce the number and rate of pedestrian crashes, fatalities, and injuries on Arizona's highways." The report stated that Arizona had the 6th highest pedestrian crash rate in the nation in 2006. Additionally, pedestrian fatalities in the state accounted for nearly 13 percent of all motor crash fatalities; whereas the nationwide average is lower at 11.2 percent. From 2002-2006 there were three pedestrian collisions in Pinetop-Lakeside that accounted for .39 percent of all pedestrian crashes in Arizona.

Analysis of the statewide pedestrian data plus input from local officials indicated that the following infrastructure factors contributed to pedestrian crashes on state highways:

- Sidewalk discontinuities
- Lack of crosswalks between activity centers
- Socioeconomic factors, such as alcohol- related crashes
- Lighting
- Sidewalks directly adjacent to the roadway

The Final Report's Pedestrian Safety Emphasis Areas for the State Highway System included two emphasis areas of special relevance to Pinetop-Lakeside:

- 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 high-crash segments, crashes involving pedestrians who had been drinking total 27 percent of crashes along segments and 22 percent of pedestrian crashes at interchanges. Alcohol consumption by pedestrians has also been expressed as a concern by local jurisdiction staff and by tribal communities.

COMMUNITY TRANSPORTATION PLAN, SEPTEMBER 2007: TOWN OF PINETOP-LAKESIDE

The Community Transportation Plan (2007 Plan) made recommendations for roadway needs through the year 2030. While the plan did not include pedestrian, bike, or transit modes, many of its findings were important to this pedestrian study:

- The 2007 Plan's future land use analysis, socioeconomic projections, roadway travel demand modeling process, and results informed this pedestrian study.
- The modeling addressed 2015, the time horizon for a short-term improvement program in this pedestrian study and 2030, the same long-term time horizon as this pedestrian study.
- The 2007 Plan's travel demand findings were the basis for this pedestrian study's initial vehicular travel projections, which were then adjusted because of the downturn in the economy since 2008.

The Pinetop-Lakeside planning area for the 2007 Plan extended beyond the Town boundary. The 2007 Plan's recommendations were organized into eight projects. Each project was listed according to which jurisdiction would be responsible, so a roadway through the Town, Show Low, and unincorporated Navajo County could have multiple projects. The planning area projects recommended by the Community Transportation Plan appear in Figure 2.1.

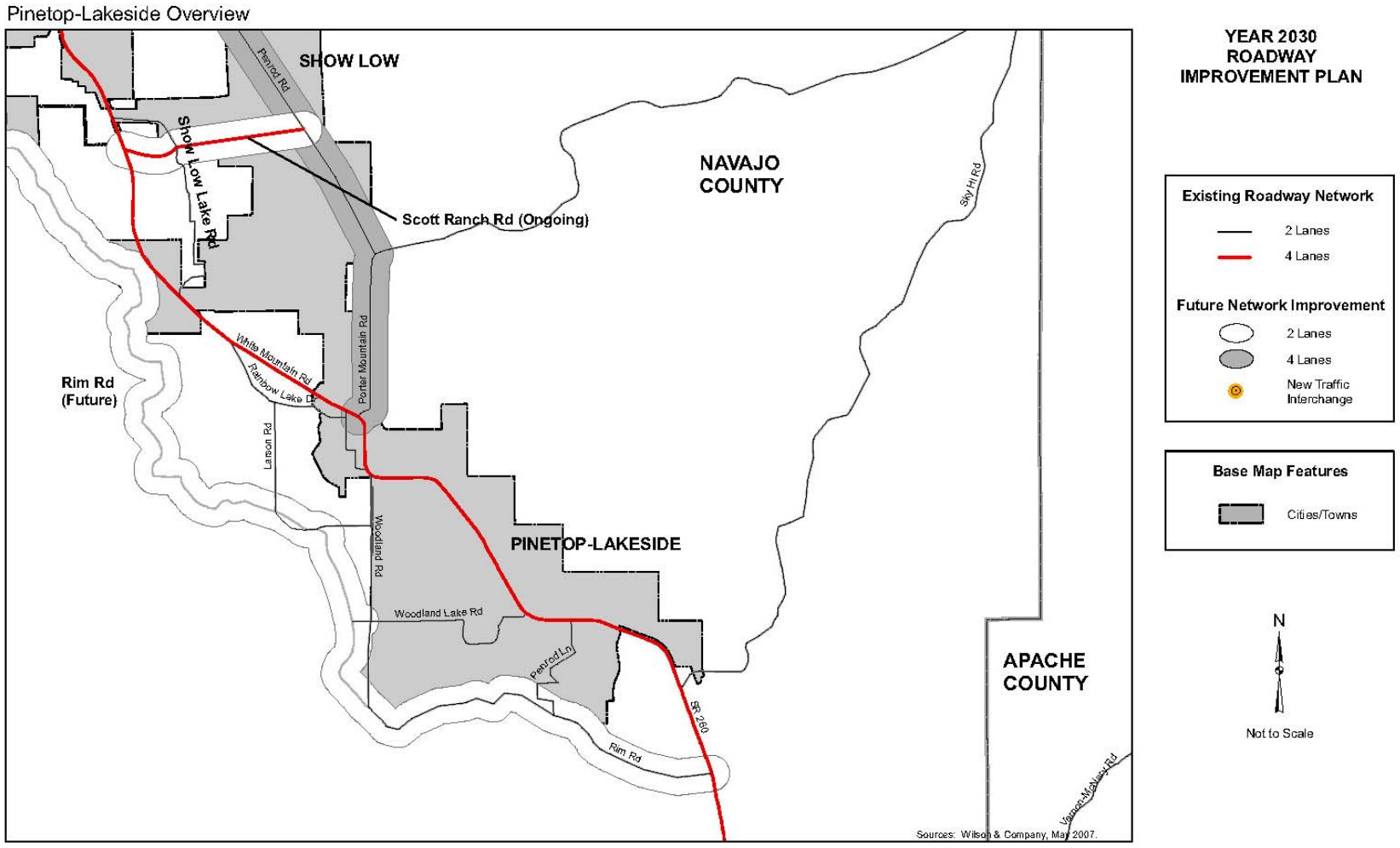
The Scott Ranch Road project from SR 260 to Penrod Road is an ongoing project, recommended for completion by 2015. It is in Show Low's jurisdiction and to be funded by federal grants, Show Low, and Navajo County. While Scott Ranch Road is outside the pedestrian study area, its traffic will impact Porter Mountain Road once both Scott Ranch Road and Porter Mountain Road/Penrod Road improvements are completed.

Portions of Porter Mountain Road/Penrod Road (3 projects) were recommended to be constructed in about 2020; the travel lanes on the road would increase from two to four (approximately one mile of that project would be in the pedestrian study area). The final portion of that roadway (1 project) was recommended to be constructed in 2030. That improved roadway, with strict access control, would accommodate the 42,000 vehicles per day projected for 2030. The continuation of the Porter Mountain Road/Penrod Road widening project outside the pedestrian study area would accommodate the 38,000 vehicles per day projected for 2030 to the north.

The future two-lane Rim Road (2 projects) recommended for 2030 or later does not intersect the pedestrian study area. The Sky-Hi Road Extension recommended for 2030 from Porter Mountain Road to US 60 is also outside the pedestrian study area.

The $45 million estimate for projects under the jurisdiction of the Town comprises $16 million for the Porter Mountain Road project and $29 million for the Rim Road project.

FIGURE 2.1. YEAR 2030 ROADWAY IMPROVEMENT PLAN



PINETOP-LAKESIDE TOWN PLAN, 2006 (TEJIDO)

In 2006 the Tejido Group of The University of Arizona evaluated the Town of Pinetop-Lakeside's socio-cultural, ecological, infrastructure, and economic needs for the Pinetop-Lakeside Town Plan (Town Plan). The primary object of the Town Plan was to analyze the community's needs and to "propose a series of planning options that not only respected the findings of prior studies, but also developed new planning paradigms for directing future development." The final recommendations of the study were organized into three "modules" of development: "creeks and open space, streetscape and highway 260, and the development of individual nodes." Items connected most closely to the purposes of the pedestrian study are briefly summarized below.

The Town Plan analyzed Pinetop-Lakeside's current infrastructure and stated that Porter Mountain Road, Woodland Road, and Woodland Lake Road were considered secondary roads used by residents and visitors to avoid SR 260. The intersection at Yeager Lane and SR 260 was noted as the busiest and most dangerous intersection in need of traffic calming devices and safe pedestrian crossings. Additionally, the Town Plan observed the Town's limited and unsafe routes for alternative transportation, noting that pedestrian crossings on SR 260, bicycle lanes on roads, and sidewalk buffers to provide pedestrian safety were all lacking.

The Tejido Group interviewed key community leaders and also conducted a community survey of business owners, residents, and youth. Survey questions focused on respondents' feelings on the current state of the Town and the needs and wants for future development. Questions related to pedestrian travel produced the following results:

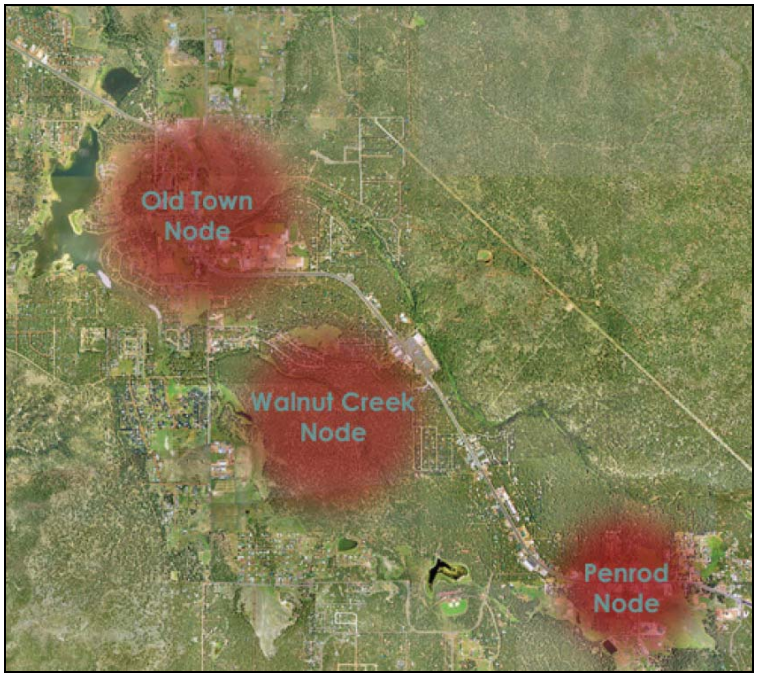
- Enjoyment of Walking around Town. 59 percent of business owners, 45 percent of residents, and 38 percent of the youth surveyed disagreed or strongly disagreed that they enjoyed walking around Town.
- Safety of Travel. 54 percent of youth, 40 percent of residents, and only 24 percent of business owners agreed or strongly agreed that it was safe to drive and walk around Town.

The survey asked various questions regarding a trail system, with the following results:

- Trail System. 80 percent of business owners agreed or strongly agreed that a trail system within the Town would benefit businesses, while 90 percent of residents agreed or strongly agreed that a trail system within the Town would benefit residents. 54 percent of youth said that they would use a recreational trail system often.

To improve the Town's insufficient infrastructure and to address the wants and needs of residents, the Pinetop-Lakeside Town Plan suggested clustering growth in four nodal areas. Three nodal development areas are located in the pedestrian study area, as shown in Figure 2.2: The Old Towne Node, Walnut Creek Node, and the Penrod Node.

FIGURE 2.2. PINETOP-LAKESIDE TOWN PLAN NODAL DEVELOPMENT



Source: Pinetop-Lakeside Town Plan, The Tejido Group, 2006.

Old Town Node

The Old Town Node (old Lakeside) is the area surrounding SR 260 from Porter Mountain Road to east of Woodland Road. Commercial areas, a new civic and senior center, and new trails highlighting historic sites and Billy Creek were important elements proposed for this node. To allow for safe crossings of SR 260's five lanes of traffic, underpasses were proposed to accommodate pedestrians as development increases. The Town Plan also suggested improving intersections along commercial corridors in the Old Town node with the use of medians, crosswalks, and stamped pavers to alert drivers of pedestrian movements.

Walnut Creek Node

The northeast edge of the Walnut Creek Node would be the Safeway Center at Yeager Rd and SR 260, but its heart would be new development across SR 260. There would be a new commercial Main Street oriented southwest/northeast continuing to a new Town Square to the southwest fronting on Walnut Creek. Residential land would be adjacent on either side of the Main Street corridor. The Walnut Creek Node was intended to be a Main Street district between old Pinetop and old Lakeside. The district would have trail linkages to and through Billy Creek, the Big Springs environmental study area, Woodland Lake Road, the Mountain Meadows Recreation Complex, and Woodland Park.

In addition, the Town Plan encouraged a traffic calming design (Figure 2.3) at a new intersection at the Safeway complex and SR 260 with a raised intersection, specific paving, cues to alert drivers if walkers were present, curb extensions, and crossing islands.

FIGURE 2.3. TOWN PLAN TRAFFIC CALMING CONCEPT, WALNUT CREEK NODE

Source: Pinetop-Lakeside Town Plan, The Tejido Group, 2006. "This conceptual sketch shows the implementation of traffic calming devices including curb extensions, crossing islands, and speed tables. The sketch was prepared to represent an intersection of the new Main Street in the Walnut Creek Node."

Penrod Node

The Penrod Node, located at the corner of Penrod Lane and SR 260, would be characterized by parks and creek access allowing residents and visitors more access to outdoor recreation. A median island about 300 feet long would be along SR 260 at the offset Penrod Lane and SR 260 intersection. The median would help overcome street crossing safety issues that come from the offset. An island would guide pedestrians safely across the highway and provide a safe place for those who could not cross in one light cycle. The Town Plan also suggested placing a trailhead at the same intersection to allow public access to Billy Creek.

LINKING OUR LANDSCAPE: OPEN SPACE ASSESSMENT FOR THE TOWN OF PINETOP-LAKESIDE, 2008

The "Linking our Landscape" study was a new community vision regarding future open space areas. The study assessed many sites identified as open space and urban trails/pedestrian pathway priorities.

Table 2.3 lists features of the fifteen sites that were completely or largely within the pedestrian study area. Besides those sites, the area just north of Lake of the Woods (within the pedestrian study area) was labeled an "additional open space parcel identified for conservation."

One of the concerns of those who undertook the assessment was that the lack of linkages between sidewalks and trails discourages pedestrian travel throughout the community.

TABLE 2.3. "LINKING OUR LANDSCAPE" SITES IN THE PEDESTRIAN STUDY AREA

Site Name	Pedestrian Pathway Potential?	Urban Trail Potential?
Billy Creek Natural Area	Yes	Yes
Lakeside Summer Homes	Yes	Yes
Blue Ridge Unified School District Intersection	Yes	No
Big Springs Environmental Study Area	Walk or bike the bicycle lane	Yes
Rhoton Barn	Yes	Yes
Porter Mtn. Road/Hwy. 260 Intersection	Yes	Yes
Lakeside Campground	Yes	Yes
Creekside	Yes	Yes
Billy Creek Private	Yes	Yes
Firefighter Memorial Park	No	No
Fisher Pond	Yes	Yes
Charlie Clark's Orchard	No	No
Lakeside Orchards	Yes	Yes
Aspen Meadow	Yes	Yes
Pine Lake Meadow	Yes	Yes

Source: Summary of information in 'Site Assessments 1-25 Sites' portion of "Linking our Landscape" study.

PINETOP-LAKESIDE 2008 APPLICATION FOR SAFE ROUTES TO SCHOOL (SRTS) PROGRAM

While the SRTS application did not result in an award of funds, the Town Council resolution and the accompanying application are an important record of the Town's recent planning in cooperation with the Blue Ridge Unified School District. The Town council stated that the cooperative effort would educate children (including those with disabilities) and others about safe walking and biking to school. The application also indicated that a feature of the project would be to encourage a healthy and active lifestyle and to pre-plan for an infrastructure project to "improve safety and reduce traffic, fuel consumption, and air pollution near schools." Subsequent infrastructure projects would be "a pedestrian bridge over Billy Creek

and…a sidewalk along Porter Mountain Road on Town right-of-way." In 2009, the Town participated in another application to fund those improvements, described immediately below.

SOUTHERN NAVAJO COUNTY REGIONAL CORRIDOR TIGER GRANT APPLICATION (2009)

Three projects that would directly benefit the pedestrian study area were included in a joint town-county application for American Recovery and Reinvestment Act of 2009 funds under the Transportation Investments Generating Economic Recovery (TIGER) program. Although none of the Town's projects received funds, the needs and criteria for setting priorities were set out well. The common purposes of the projects were stated as: "The proposed projects would enhance regional mobility and connectivity, improve pedestrian and bicycle facilities, and provide safer routes for schoolchildren at Blue Ridge Mid/Junior High School."

The project sites in the Town appear in Figure 2.4 and the project descriptions were:

- Priority Two Project: Construct a new four-lane bridge over Billy Creek, widen and build sidewalks and a pedestrian path along Porter Mountain Road from SR 260 to Blue Ridge Mid/Junior High School, and improve an existing roundabout at the school entrance.
- Priority Three Project: Construct a four-lane vehicle and pedestrian bridge over Porter Creek on Porter Mountain Road (in the Town, less than one thousand feet north of the pedestrian study area boundary).
- Priority Four Project: Widen Penrod Road/Porter Mountain Road to a four-lane road from Blue Ridge Mid/Junior High School to US 60 in Show Low and provide an associated multiuse pathway for pedestrians and bicyclists.

The Priority One Project was the completion of Scott Ranch Road from SR 260 to Penrod Road in Show Low, indirectly benefiting the pedestrian study area as an alternative/emergency route.

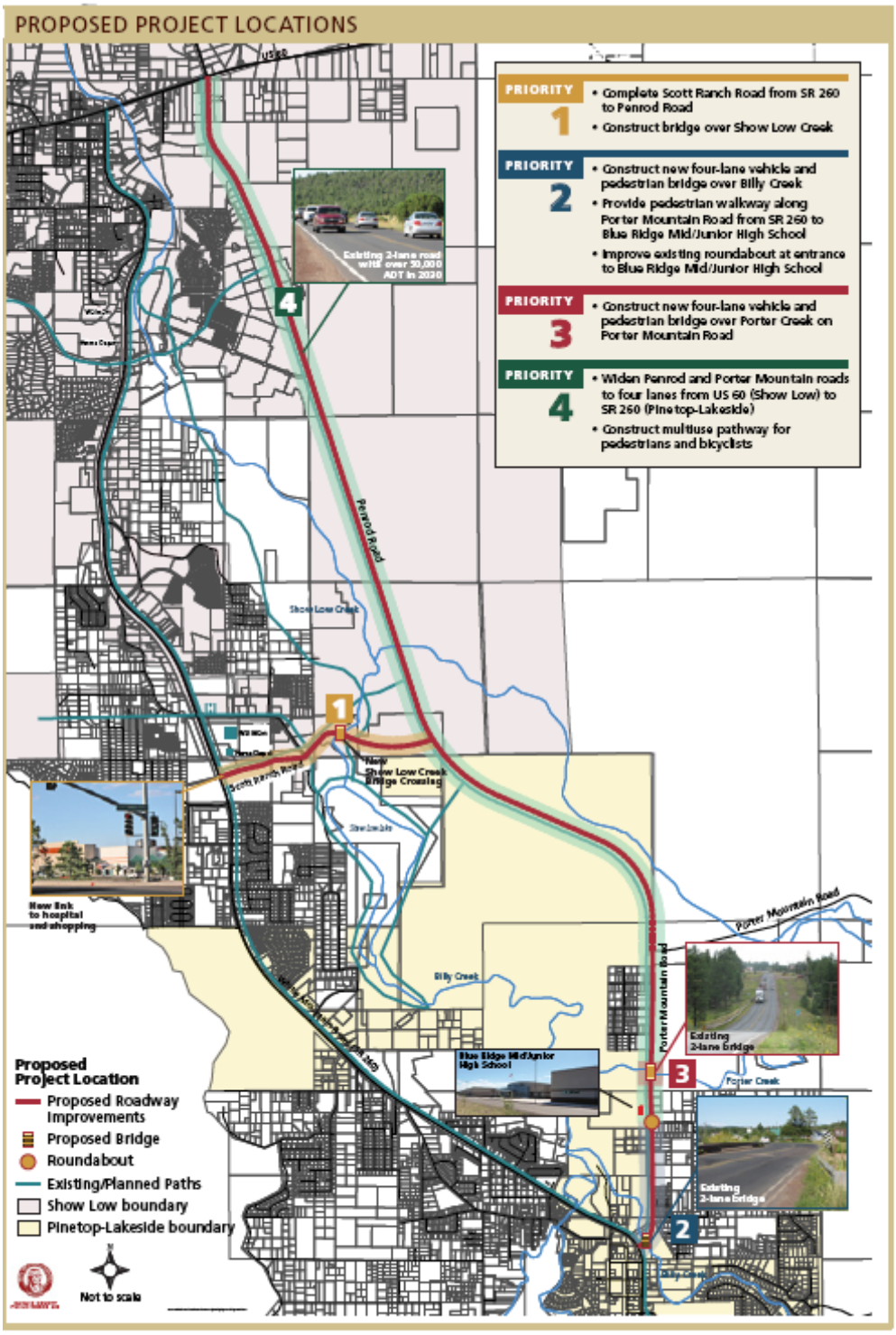
OTHER BACKGROUND

Programmatic guidelines regarding pedestrian safety and access management from federal and state programs, studies of similar topics from elsewhere in Arizona, and selected professional literature also inform this project. Several key documents are summarized below.

Flagstaff Pedestrian Planning

Flagstaff is one of a handful of Arizona cities and towns that share Pinetop-Lakeside's four seasons climate. Extensive pedestrian planning is ongoing by the City of Flagstaff.

FIGURE 2.4. SOUTHERN NAVAJO COUNTY REGIONAL CORRIDOR TIGER GRANT APPLICATION



Source: Southern Navajo County Regional Corridor TIGER Grant Application, Figure 2, Proposed Project Locations, p. 5.

Development of the Flagstaff Urban Trails System (FUTS) has been pursued since the 1980s and the Flagstaff Urban Trails Study was a part of the regional land use plan completed in 2003. Implementation of the trail system continues and the priorities for FUTS facilities are updated annually by the City's Pedestrian Advisory Committee.

The 2004 Flagstaff Urban Mobility Study addressed many multimodal issues for the Old Route 66 (west) corridor and the Milton Road Corridor. Many similarities exist between the Old Route 66 corridor and SR 260 in the Town. For example, average annual daily traffic on two miles of Old Route 66 ranges from 21,900 vehicles at one end down to 4,500 vehicles at the other end, while average annual daily traffic on two miles of SR 260 ranges from 22,300 vehicles at one end down to 8,700 vehicles at the other end. Both roadways have sidewalks directly adjacent to the road and have a similar mix of adjacent land uses, comprising residential neighborhoods, commercial tourist facilities, and open space.

Safe Routes to School

The SRTS program was created as part of the five-year federal transportation funding program for 2005-2009. That federal legislation was named the *Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users*, or SAFETEA-LU. The overall funding package put a particular emphasis on safety programs. The primary reason for developing the nationwide SRTS program was this country's growing epidemic of childhood obesity and diabetes.

The program accomplishes its goals "by providing funds for schools and communities to implement infrastructure projects (such as sidewalk improvements, trails, and 'traffic calming') and non-infrastructure programs (such as education campaigns, law enforcement efforts, and prize giveaways)," according to the ADOT SRTS Program website at http://www.azdot.gov/MPD/srts/Resources.asp.

A large body of resources supports the SRTS program. The Town, in cooperation with the Blue Ridge Unified School District, has prepared for potential participation in the program.

Many of the resources for the SRTS program are available on the ADOT SRTS Program website.

Bicycle and Pedestrian Travel on Highways

Design guidance from the Federal Highway Administration has been available since the year 2000 concerning how to accommodate bicycle and pedestrian travel along major highways. A part of that guidance is the US Department of Transportation policy statement: Integrating Bicycling and Walking into Transportation Infrastructure. The general statement of the policy is that bicycling and walking facilities will be incorporated into all transportation projects

unless exceptional circumstances exist. The policy statement details separate considerations for:

- Urban and rural areas.
- Bicycle and pedestrian crossings (as well as travel along the highway).
- Accommodation of persons with disabilities.

The "complete streets" movement has continued to develop policies and design ideas for the integration of bicycle and pedestrian travel into overall highway operations. According to the National Complete Streets Coalition, "complete streets are designed and operated so they are safe, comfortable, and convenient for all users: pedestrians, bicyclists, motorists and transit riders of all ages and abilities."

Many "complete streets" design concepts are similar to the infrastructure portion of the "Safe Routes to School" program. "Complete streets" tends to be broadened to include other pedestrians, beyond schoolchildren, and other trips beyond the walk to school. In Arizona, the City of Scottsdale has adopted a "complete streets" policy.

Access Management

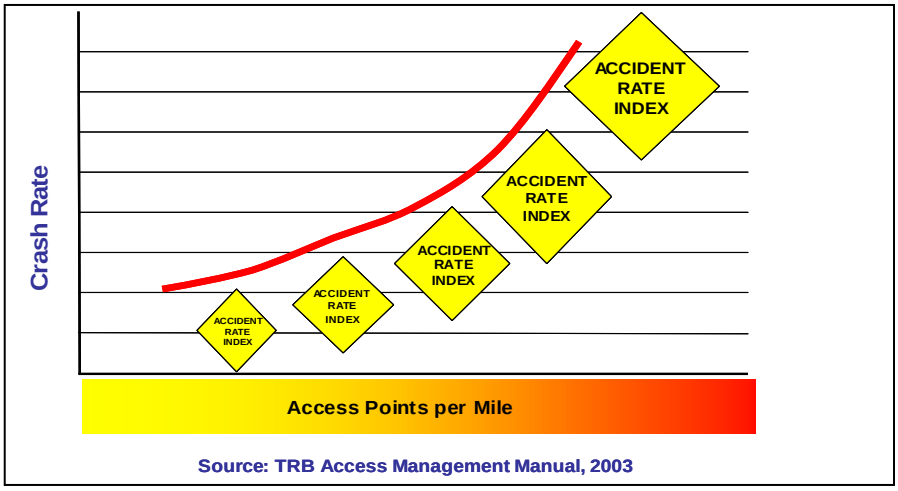
Transportation access management programs have a primary focus on highway safety. They address methods to maintain mobility while increasing safety. Pedestrian safety is one of the topics of a highway's access management program wherever there is pedestrian traffic. An example of a recent access management program in Arizona is the *Pinal County Regionally Significant Roads for Safety and Mobility* study and *Access Management Manual*, adopted in 2008.

Intersection and driveway minimum spacing requirements, varying according to the density of new development, are an example of access management. Those requirements may be found at several phases of the roadway and land development processes of state and local governments. Traffic engineering policies and guidelines may contain the requirements and methods for determining traffic impacts. Special zoning districts such as design review overlay zones may have such guidelines.

Many studies have shown that crash rates increase with greater frequency of driveways and intersections. Figure 2.5 shows that the crash rate goes up as the number of access points per mile goes up. At the upper end of driveway density, each driveway is typically related to more crashes than at the lower end of driveway density.

Conversely, limiting the numbers of driveways decreases the total number of points where there can be vehicle-pedestrian conflicts in addition to the points where there can be vehicle-vehicle conflicts.

FIGURE 2.5. RELATIONSHIP OF CRASH RATE TO ACCESS POINTS PER MILE



Some further types of pedestrian safety benefits that could accrue from a roadway design that included access management features could be:

- Sensible linkages of roadways, sidewalks, parking areas, entrances to developments, and recreational trails.
- Roadway width for bicycles and sidewalks for pedestrians.
- Space for pedestrian and bicycle "refuge areas" associated with right-turn lanes and medians.
- Grade-separated pedestrian and bicycle roadway crossings.

3. CURRENT CONDITIONS

CHARACTERISTICS OF THE PHYSICAL AND NATURAL ENVIRONMENTS

The Town's website describes the community's natural setting as follows: "Pinetop-Lakeside is a community located in the scenic White Mountains of Arizona. Pinetop-Lakeside, at an elevation of 7,200 feet, is known for its extensive tourism and recreational activities, proximity to the world's largest stand of ponderosa pine, and for an outstanding quality of life. The White Mountain Trail system provides over 180 miles of developed multi-use trails."

The natural environment is described well in several of the Town's recent plans, such as "Linking Our Landscape." Figure 1.1 in this pedestrian study, the Pedestrian Study Area map, shows the area's streams, lakes, prominent mountain peaks, and the Mogollon Rim.

Some aspects of the natural environment have particular effects upon pedestrians, such as:

- The high-elevation four seasons climate. Sometimes it is too cold or snowy to walk in the Town in the winter, but hardly ever too hot to walk in the summer.
- The scenic beauty of the area. A walk in an attractive natural environment is especially enjoyable.

Land Ownership

The bulk of the lands in the White Mountains of Arizona near Pinetop-Lakeside are in the Fort Apache Indian Reservation (FAIR; 1.67 million acres, south of the Town) and the Apache-Sitgreaves National Forests (ASNFs), north of the Town. The ASNFs comprise about 2.10 million acres overall. There are about 237,000 acres of United States Forest Service (USFS) land in the ASNFs' geographic area known as Sitgreaves East. USFS planning includes those areas adjacent to forest lands that have a high degree of interaction with forests, so the Town of Pinetop-Lakeside is a part of the Sitgreaves East planning area.

Land ownership in the pedestrian study area appears on the Figure 1.1 Study Area map. The pedestrian study area was defined to include areas of much pedestrian traffic adjacent to major roadways. Therefore, it is not surprising that most of the land in the pedestrian study area is in private ownership.

The proximity of the ASNFs and FAIR to the pedestrian study area is pertinent to the plan. North of SR 260 a few acres at the edge of the ASNFs are within the northeast portion of the pedestrian study area near Pineview Drive. South of SR 260, the edge of Woodland Lake Park, which is isolated USFS land, is within the pedestrian study area. The park is maintained and operated by the Town under a use permit from the USFS, and the Town is working toward the eventual acquisition of the park. While no FAIR land is within the pedestrian study area, the reservation is within a mile of the western and southern study area boundary at some points.

Other public lands in the pedestrian study area are parcels owned by the Blue Ridge Unified School District and used for the public school campuses, and lands owned by the Arizona Game and Fish Commission.

CURRENT LAND USE

This current land use description comprises two parts of the pedestrian study area, the northwestern portion and the southeastern portion. Figure 3.1, Current Zoning, provides a view of current and potential land use.

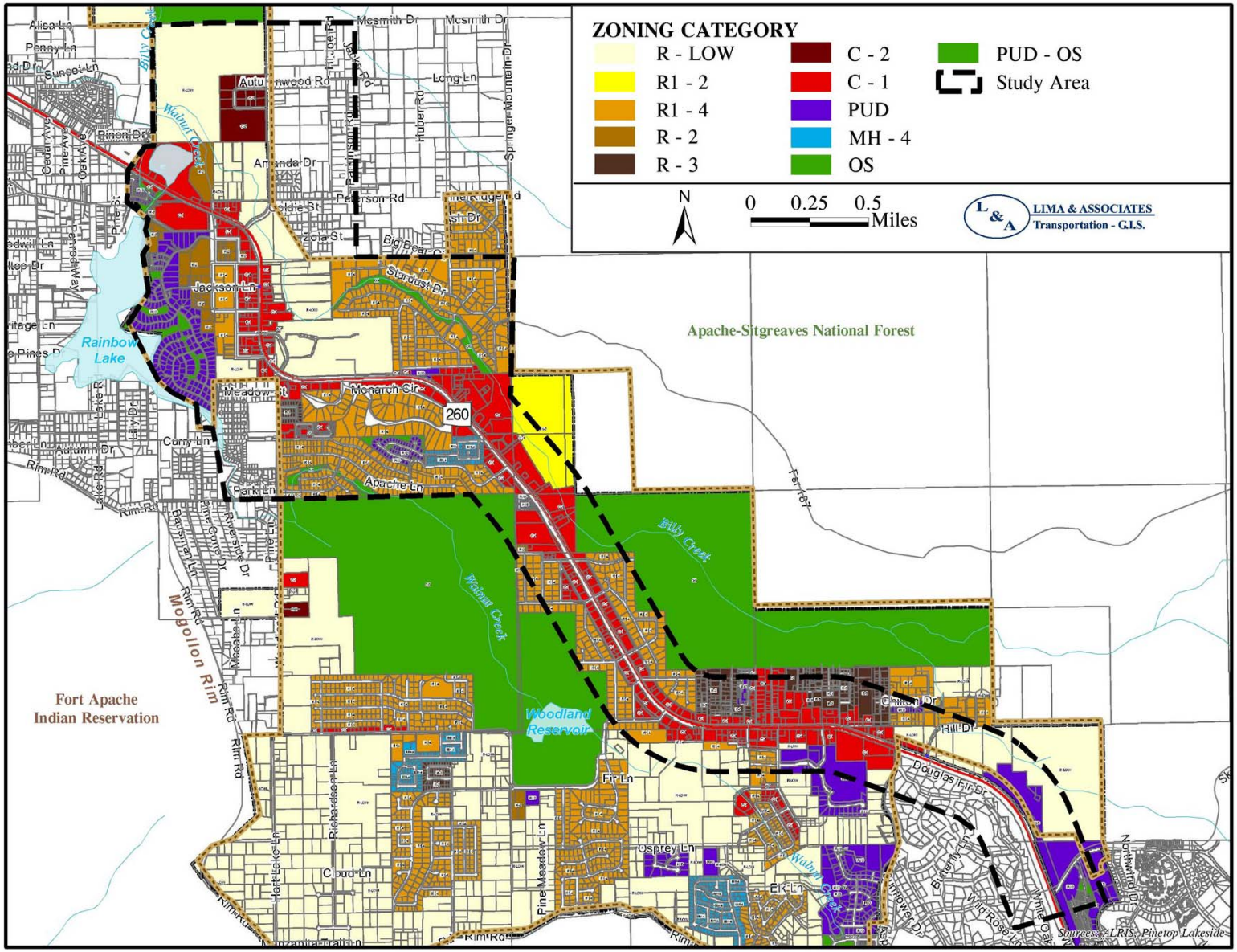
The northwestern portion of the pedestrian study area is where the major focus is the safety of schoolchildren's walking and biking routes to school, although it is also important to address all of the pedestrian issues in the northwestern area. The northwestern portion ends at Yaeger Lane and SR 260. The northwestern portion of the pedestrian study area is largely private residential land surrounding the two Blue Ridge Unified School District campuses.

The Blue Ridge high school, elementary school, and school district offices are housed on the south campus. The north campus comprises the middle and junior high schools. The north and south campuses include some shared facilities, such as athletic fields, meaning some students travel the nearly 1.5 miles from one campus to the other every day, largely along Porter Mountain Road.

The recent TIGER grant application describes land uses along Porter Mountain Road, as follows:

> "Porter Mountain Road is also an important industrial location. Construction of the Navopache Electric Cooperative's industrial campus and headquarters is scheduled to begin in fall 2009 within one block of the Blue Ridge Mid/Junior High School campus. Navopache Electric Cooperative provides service in a five-county region, including Catron, New Mexico. The cooperative's new 70,000-square-foot headquarters on Porter Mountain Road will represent a $10 million capital investment. The cooperative retains 115 high-wage skilled and professional positions in the region. The cooperative's regional membership/consumer base is 39,500.
>
> The Town of Pinetop-Lakeside estimates that additional future development on Porter Mountain Road could result in over 816,000 square feet of new building space with up to 2,000 jobs.
>
> Pinetop-Lakeside Commerce Park is situated next to Blue Ridge Mid/Junior High School. The commerce park consists of Pineview Medical Facility, Hospice Compassus, and light industrial manufacturing operations. The commerce park is currently at 50 percent capacity. In addition, Savanna Apartments, a planned 153-unit rental housing development, will front Porter Mountain Road."

FIGURE 3.1. CURRENT ZONING



The southeastern portion of the pedestrian study area is the corridor two-tenths of a mile each side of the centerline of SR 260 from Yaeger Lane to the southeast end of the pedestrian study area just south of Ponderosa Parkway. There are no schools in the southeastern portion, but many children's trips to school pass through this area.

All together approximately two-thirds of the land in the pedestrian study area is developed, compared to less than one-third of the land in the Town overall.

SOCIOECONOMICS OVERVIEW

The Town of Pinetop-Lakeside has fewer than 5,000 year-round residents, yet serves a seasonal population of 30,000. Second home owners, seasonal visitors, and tourists come to the Town for various reasons in every season. Many summer visitors have second homes and stay for extended periods, while relatively more winter visitors stay in the Town temporarily, especially those whose interest is in skiing nearby.

Between 2000 and 2008 Pinetop-Lakeside grew at a rate slightly faster than that of the State of Arizona overall, and at double the rate for Navajo County overall (Table 3.1). At 4,758 in 2009, the Town's population was virtually unchanged over 2008.

TABLE 3.1. POPULATION CHANGE 2000 TO 2008
ARIZONA, NAVAJO COUNTY, AND AREA CITIES AND TOWNS

Area	DES Estimate July 1, 2008	Population, Census 2000	Numeric Change	Percent Change
Arizona	6,629,455	5,130,632	1,498,823	29.2%
Navajo County	114,780	97,470	17,310	17.8%
Pinetop-Lakeside	4,765	3,582	1,183	33.0%
Eagar	4,810	4,033	777	19.3%
Holbrook	5,611	4,917	694	14.1%
Show Low	12,315	7,695	4,620	60.0%
Snowflake	5,565	4,460	1,105	24.8%
Springerville	2,194	1,972	222	11.3%
Taylor	4,453	3,176	1,277	40.2%

Source: Arizona Department of Commerce population statistics unit, December 12, 2008.

The Community Transportation Plan contained Traffic Analysis Zone (TAZ) housing and population estimates as of 2006. The consultant estimated the proportion of each TAZ's housing that is in the pedestrian study area based upon a careful review of aerial photographs, Town land use maps, and certain assessor parcel information. Final adjustments also included accounting for development that occurred between 2006 and 2009. The result is the following estimate of study area housing units, households, and population in Table 3.2.

TABLE 3.2. 2009 POPULATION OF THE PEDESTRIAN STUDY AREA

Area	Housing Units	Households	Population
Northeast of SR 260	1,009	547	1,440
Southwest of SR 260	851	508	1,104
Total Study Area	1,860	1,055	2,544

The population density in the pedestrian study area in the year 2000 appears in Figure 3.2.

The Community Transportation Plan included a 2006 employment estimate of 4,231 jobs for the greater Pinetop-Lakeside area. An inspection of aerial photos and the zoning map for the TAZs of which the pedestrian study area was a part indicated that 3,200 to 3,400 of the jobs were in the pedestrian study area. A more refined employment estimate was beyond the scope of this study.

The number of students whose homes are within a radius of one mile of school campuses appears in Table 3.3 below.

TABLE 3.3. STUDENTS WITH HOMES WITHIN ONE MILE OF SCHOOL

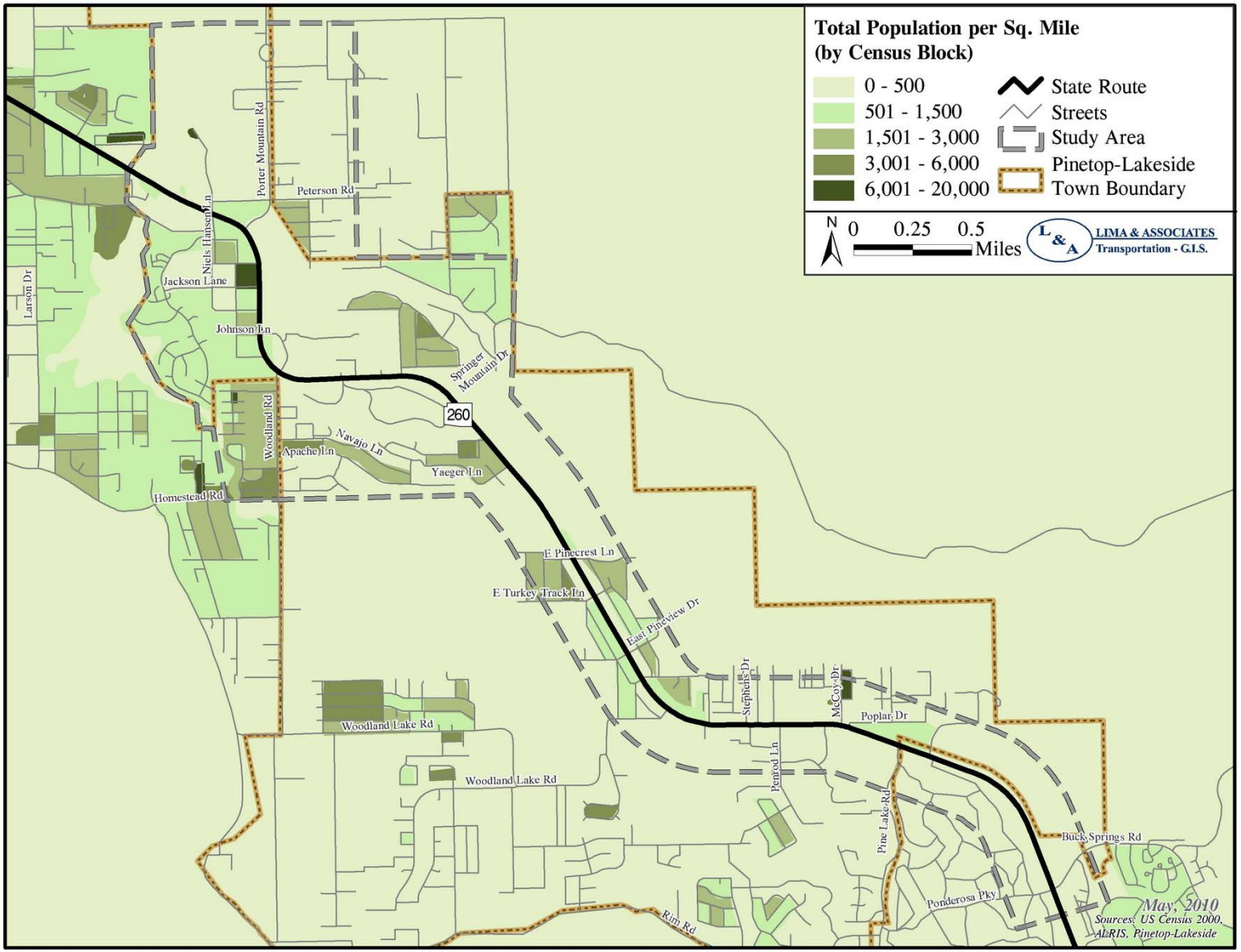
Campus	Number of Schoolchildren[1]
North Campus (Grades 5-8)	87
South Campus (Kindergarten-Grade 4)	135
South Campus (Grades 9-12)	143

[1]Source: Blue Ridge Unified School District, 2009.

About 57 percent of the pedestrian study area's housing units are occupied by households on a year-round basis, and those year-round households average about 2.4 persons per household.

As of 2008, the pedestrian study area population was about half as large as the Town's population. The pedestrian study area has two neighborhoods within it that are outside the Town boundary, but in the school district boundary, as noted in Chapter 1.

FIGURE 3.2. TOTAL POPULATION PER SQUARE MILE



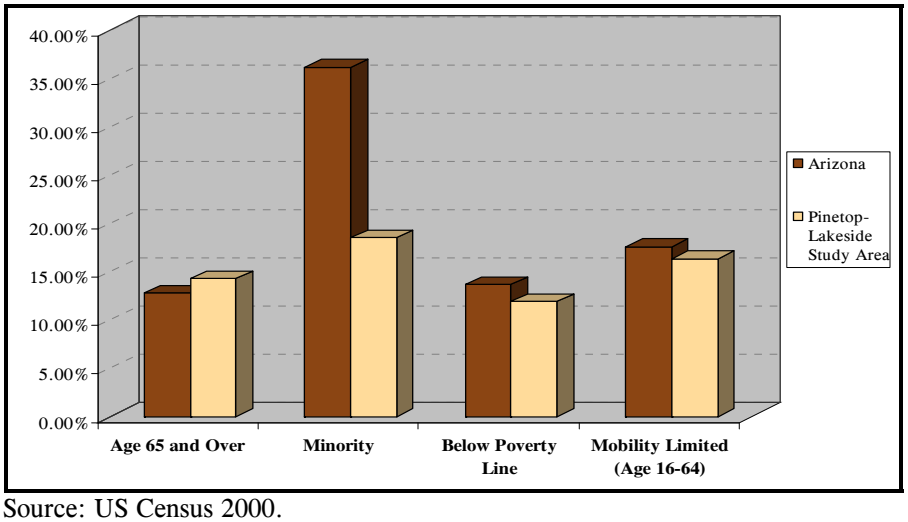
ENVIRONMENTAL JUSTICE (TITLE VI POPULATIONS)

Title VI of the Civil Rights Act of 1964 and related statutes ensure that individuals are not discriminated against based on race, color, national origin, age, sex, or disability. Following the issuance in 1994 of Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low Income Populations,* procedures were developed to analyze the effects of transportation plans and facilities upon environmental justice populations. This pedestrian study addressed the environmental justice protected classes including the elderly (Aged 65 and older), minority and low-income populations, and mobility-limited populations. Environmental justice issues related to transportation in the Pinetop-Lakeside Area were addressed in the following manner:

- **Background data.** US Census data appears below that describes the population living within geographic areas that could be affected by proposed transportation improvements.
- **The Pedestrian Safety and Mobility Plan** – analyzed whether the recommended projects may differentially affect environmental justice populations. Examined the potential effects, both positive and negative, that those projects may have on the environmental justice populations. Explained the considerations that dictated this recommendation over alternative actions, if any of the potential projects places a disproportionate burden on elderly, minority, low income, or mobility-limited populations.
- **Public Involvement Activities** - concerted effort to reach minority and low-income populations when conducting the study's public meetings.

The proportion of the population in each of the four protected classes in the Pinetop-Lakeside area is compared to the corresponding proportions in the State of Arizona shown in Figure 3.3.

FIGURE 3.3. COMPARISON OF PERCENTAGES OF TITLE VI POPULATIONS



Source: US Census 2000.

The proportion of the Pinetop-Lakeside study area population that is in each group is fairly close to the state's percentage except for the percentage of minority population, which is considerably higher for the state. The population age 65 and older is the only group with a share of study area population that is higher than its share of state population. The maps that follow show the densities calculated for the entire blocks or block groups covering the Pinetop-Lakeside study area.

Elderly Population: The elderly population was over 14 percent of the total persons in the Town of Pinetop-Lakeside in the year 2000, and only 10 percent of the persons in Navajo County (Table 3.4., Figure 3.4).

Minority Population: The minority population was almost 11 percent of the total persons in the Town of Pinetop-Lakeside in the year 2000 (Table 3.4., Figure 3.5).

Mobility-Limited Population: The mobility-limited population was just over 11 percent of the total persons in the Town in the year 2000 (Table 3.4., Figure 3.6).

Low-Income Population: The population under the poverty level was almost 10 percent of the total persons in the Town in the year 2000 (Table 3.4., Figure 3.7).

TABLE 3.4. SUMMARY OF ENVIRONMENTAL JUSTICE POPULATIONS

Minority And Elderly Population

Area	Population	Population 65 & Over	Percent Population 65 & Over	Minority Population	Percent Minority Population
Arizona	5,130,632	667,839	13.02%	1,856,374	36.18%
Navajo County	97,470	9,758	10.01%	56,274	57.73%
Pinetop-Lakeside Town	3,582	531	14.82%	388	10.83%

Mobility Limited And Below Poverty Level Population

Area	Population	Mobility Limited	Percent Mobility Limited	Population Below Poverty	Percent Below Poverty
Arizona	5,130,632	1,021,844	19.92%	698,669	13.62%
Navajo County	97,470	24,465	25.10%	28,054	28.78%
Pinetop-Lakeside Town	3,582	404	11.28%	355	9.91%

Source: US Census 2000.

FIGURE 3.4. AGE 65 AND OLDER POPULATION PER SQUARE MILE

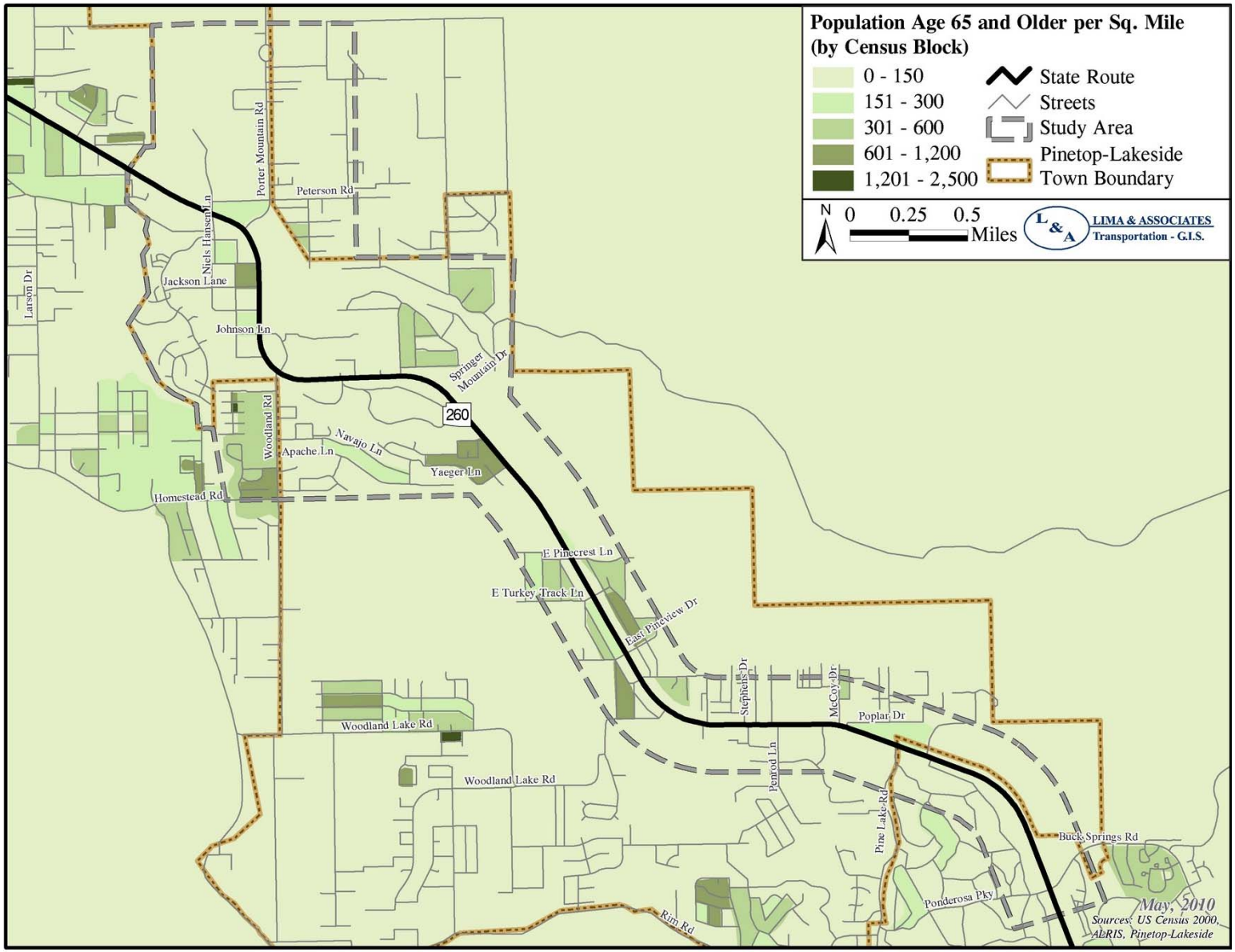


FIGURE 3.5. MINORITY POPULATION PER SQUARE MILE

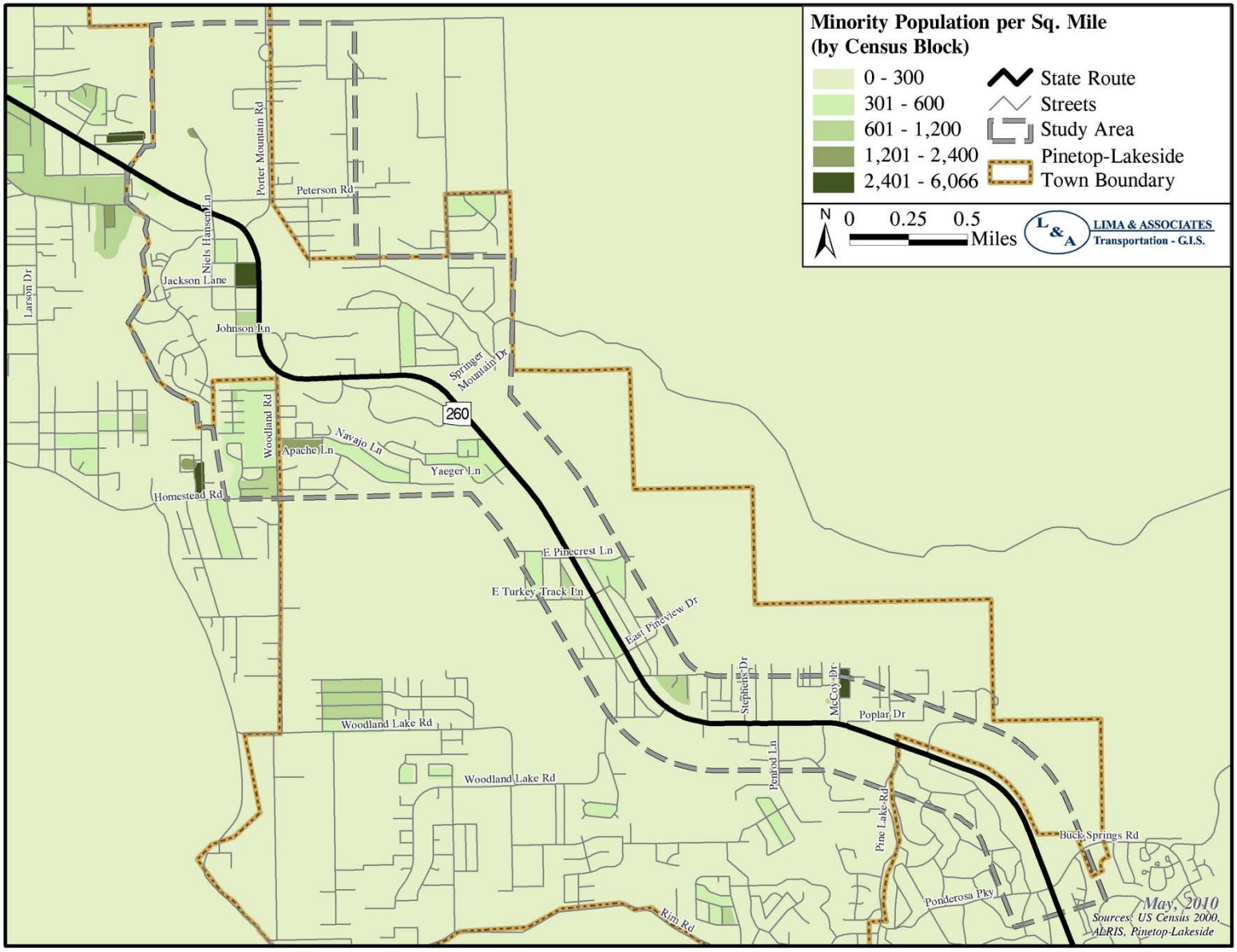


FIGURE 3.6. MOBILITY-LIMITED POPULATION PER SQUARE MILE

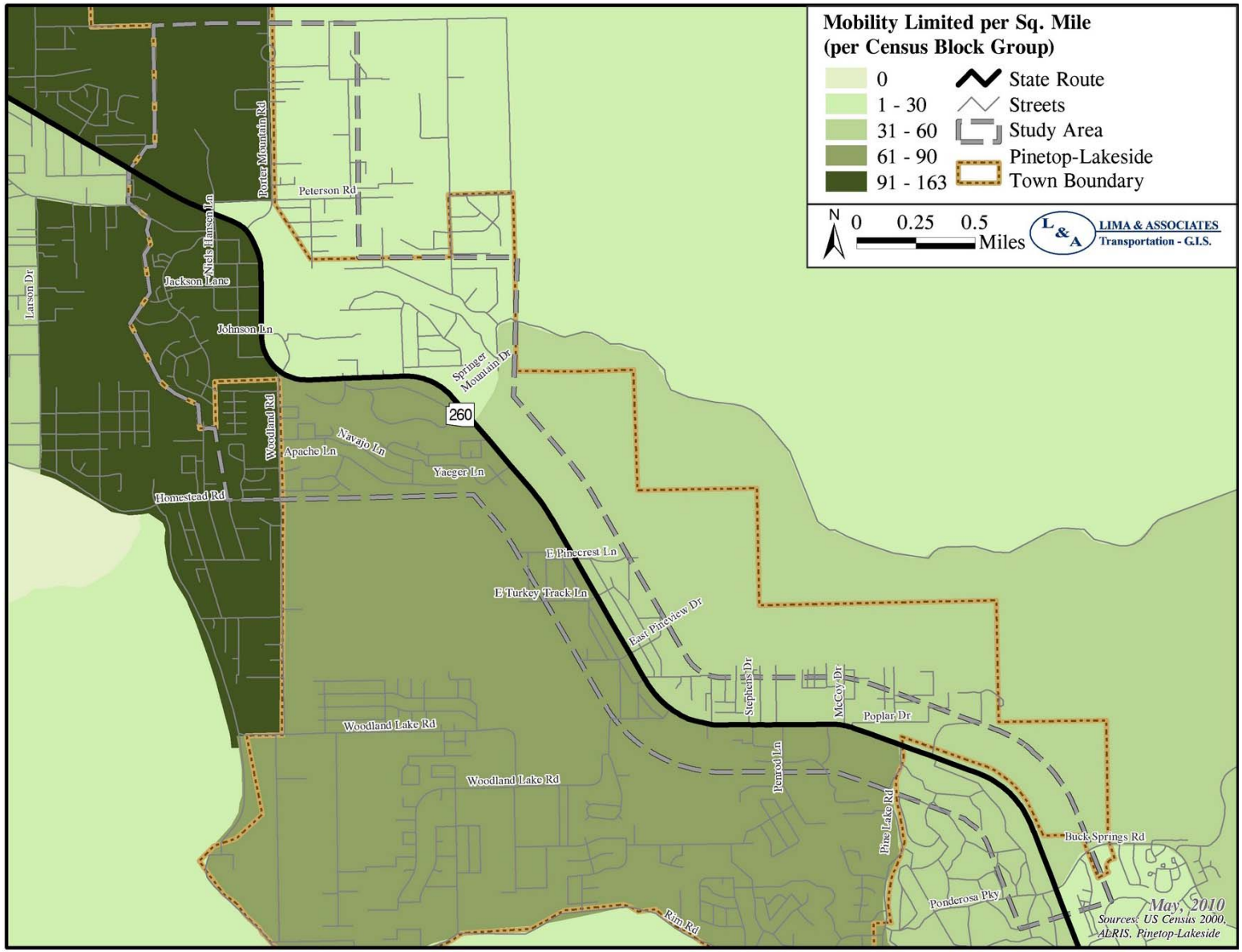
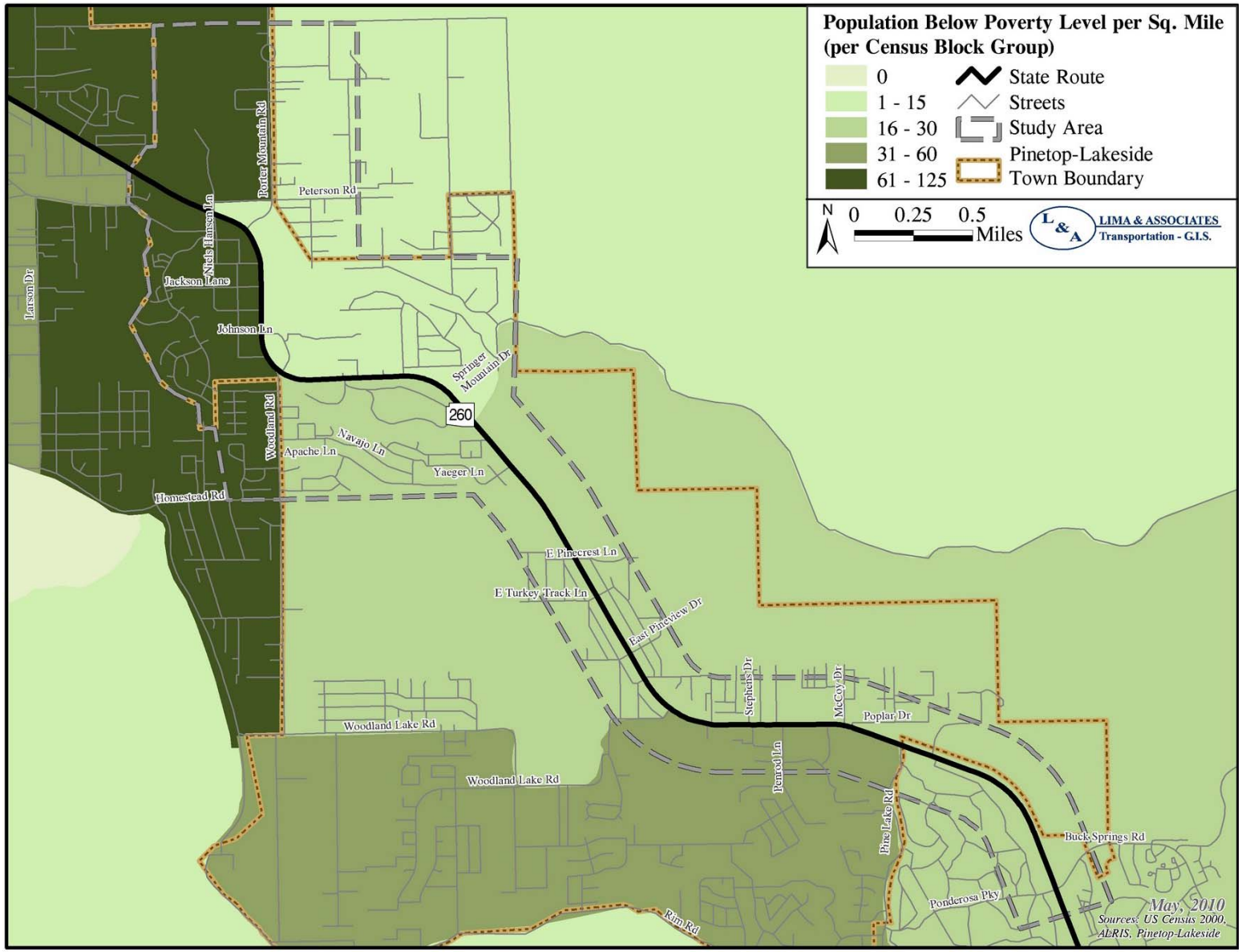


FIGURE 3.7. POPULATION BELOW POVERTY LEVEL PER SQUARE MILE



STREET NETWORK CHARACTERISTICS AND PERFORMANCE

Roadway Network Characteristics

The functional class and number of lanes for existing major roadways in the pedestrian study area appear in Table 3.5. Figure 3.8 displays the Functional Classification. The number of lanes and traffic volumes appear in Figure 3.9.

TABLE 3.5. FUNCTIONAL CLASS AND NUMBER OF LANES

Roadway	Functional Class	Number of Lanes
SR 260	State Highway System Major Regional Principal Arterial	Two lanes each direction and continuous center turn lane
Porter Mountain Road	Town Minor Arterial (Rural except for ¼ mile closest to SR 260)	One lane in each direction
Niels Hansen Lane, then west on Rainbow Lake Lane	Town Urban Collector	One lane in each direction
Woodland Road	Town Urban Collector	One lane in each direction
Apache Lane, then north on Yaeger Lane	Town Urban Collector	One lane in each direction
Woodland Lake Road	Town Urban Collector	One lane in each direction
Buck Springs Road, crossing SR 260 to become Ponderosa Parkway	Town Urban Collector	One lane in each direction

SR 260 is a four-lane facility with two travel lanes in each direction and a continuous center turn lane through most of the pedestrian study area. SR 260 is a divided highway (with a 23-foot median) in the .6 miles at the southeastern end of the pedestrian study area, continuing as a divided highway for two more miles east, then becoming undivided just north of Hon-dah Casino at SR 73. All other roads have two lanes (one lane in each direction).

Traffic Volume

The current traffic volumes appear in Figure 3.9.

SR 260 and local roadways handle weekday traffic well other than some peak-hour congestion near key intersections. Weekend events that bring many visitors to the Town include the Fall Artisan's Festival, Run to the Pines Car Show, Native American Art Festival, and Bluegrass Music Festival. Traffic congestion associated with such events begins Thursday and extends through Sunday. Additional weekend events draw most of their attendance from the White Mountains; those events create traffic congestion on Saturday and Sunday.

FIGURE 3.8. FUNCTIONAL CLASSIFICATION

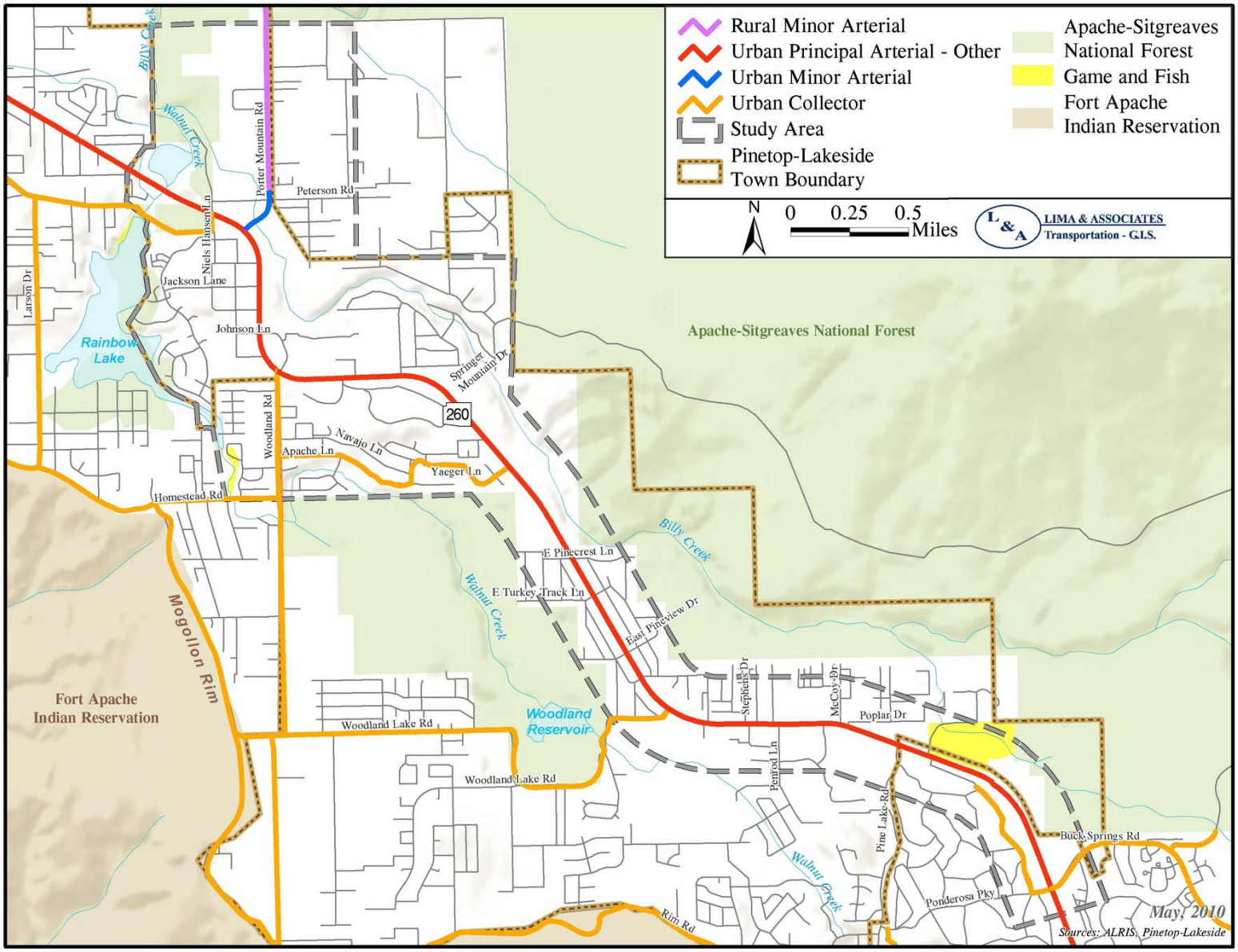
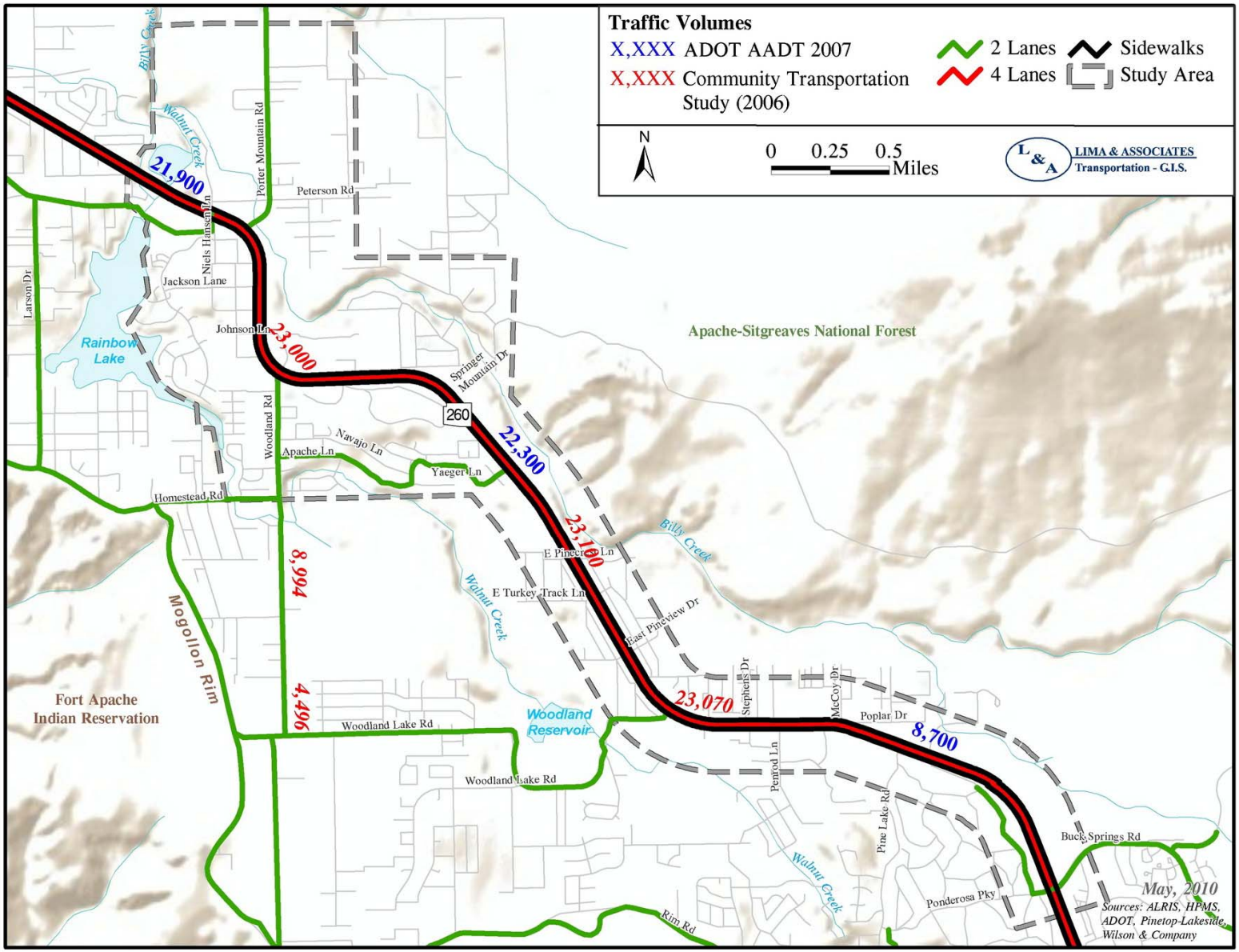


FIGURE 3.9. NUMBER OF LANES, TRAFFIC VOLUMES, AND SIDEWALKS



Traffic Safety and Accidents, 2003-2008

SR 260 carries a high proportion of the total vehicle and pedestrian trips in Pinetop-Lakeside. Records of accidents and other incidents on the Town's roadways are kept according to the relationship of the roadway segment to SR 260, because the route is on the State Highway System. A total of 1,675 crashes occurred in the Town in the six-year period of 2003-2008.

The number of accidents by milepost or intersection appears in Table 3.6 for those locations that were the site of 25 or more accidents. An intersecting street name typically appears if the accident was at or very near the intersection. A milepost number (MP) typically appears if the accident was not intersection-related; the accidents listed by milepost number could have been anywhere along the mile segment (e.g. an accident listed by MP350 could have occurred anywhere between MP350.00 and MP350.99).

Pedestrian accident information appears in the Pedestrian Network Characteristics and Performance section in turn.

TABLE 3.6. INTERSECTIONS WITH HIGH NUMBER OF ACCIDENTS, 2003-2008

Intersection or Milepost	Total Number of Accidents	Fatalities	Incapacitating	Non-incapacitating
S 260 and MP350	102	0	2	6
SR 260 and MP351	95	2	0	8
SR 260 and Porter Mountain Rd	70	0	2	7
SR 260 and Neils Hansen Ln	67	0	0	17
SR 260 and Woodland Rd	66	2	0	6
SR 260 and MP353	56	2	2	7
SR 260 and MP352	48	0	2	9
SR 260 and Penrod Ln	47	0	0	6
SR 260 and Yellow Jacket Ln	44	0	0	5
SR 260 and Pineview Dr	37	0	0	0
SR 260 and Yeager Ln	36	0	0	5
SR 260 and MP354	36	4	2	8
SR 260 and MP355	34	0	2	9
SR 260 and Woodland Lake Rd	34	0	0	0
SR 260 and Moonridge Dr	32	1	0	5
SR 260 and Yaeger Ln	30	0	0	7
SR 260 and Pinecrest Rd	26	3	1	2

Source: ADOT, Traffic Group, Traffic Records Section.

Driveway and Intersection Density

Many intersections and driveways exist on SR 260, as listed on Table 3.7 and mapped on Figure 3.10. Several of the intersections and driveways were constructed before modern ADOT regulations and practices took effect concerning intersection spacing, driveway encroachments, and traffic impact studies.

TABLE 3.7. DRIVEWAY AND INTERSECTION DENSITY ON SR 260

From Road	To Road	Number of Driveways and Intersections per Mile
Northern Study Area Boundary	North of Johnson Ln	45
North of Johnson Ln	North of Springer Mountain Dr	31
North of Springer Mountain Dr	North of Turkey Track	39
North of Turkey Track	Stephens Dr	71
Stephens Dr	South of Worldmark Dr	37
South of Worldmark Dr	Southern Study Area Boundary	3

Source: Lima & Associates, GPS field survey.

A partial roundabout for vehicular travel was completed on Porter Mountain Road at the entrance to the school district's middle school/junior high school campus. However, there are no sidewalks at the roundabout.

Traffic Control Mechanisms

Traffic signals are placed at sites where studies indicate that the traffic conditions justify them, unless there are extenuating circumstances. The conditions studied are the volume of traffic, number and types of crashes, pedestrian activity, and physical characteristics of the location. Currently all of the traffic signals in the pedestrian study area are on SR 260, at the following locations:

- Porter Mountain Road
- Penrod Lane
- Main entrance to the school district's south campus (Yellow Jacket Drive)
- Woodland Road
- Yaeger Lane
- Ponderosa Parkway/Buck Springs Road

Three recent Traffic Signal Needs Studies were conducted by ADOT upon the request of the Town to investigate the need for additional traffic signals. The details of the study results are in Table 3.8. None of the three studies reported enough pedestrian activity for it to be a determining factor in recommending a traffic signal.

FIGURE 3.10. DRIVEWAY DENSITY

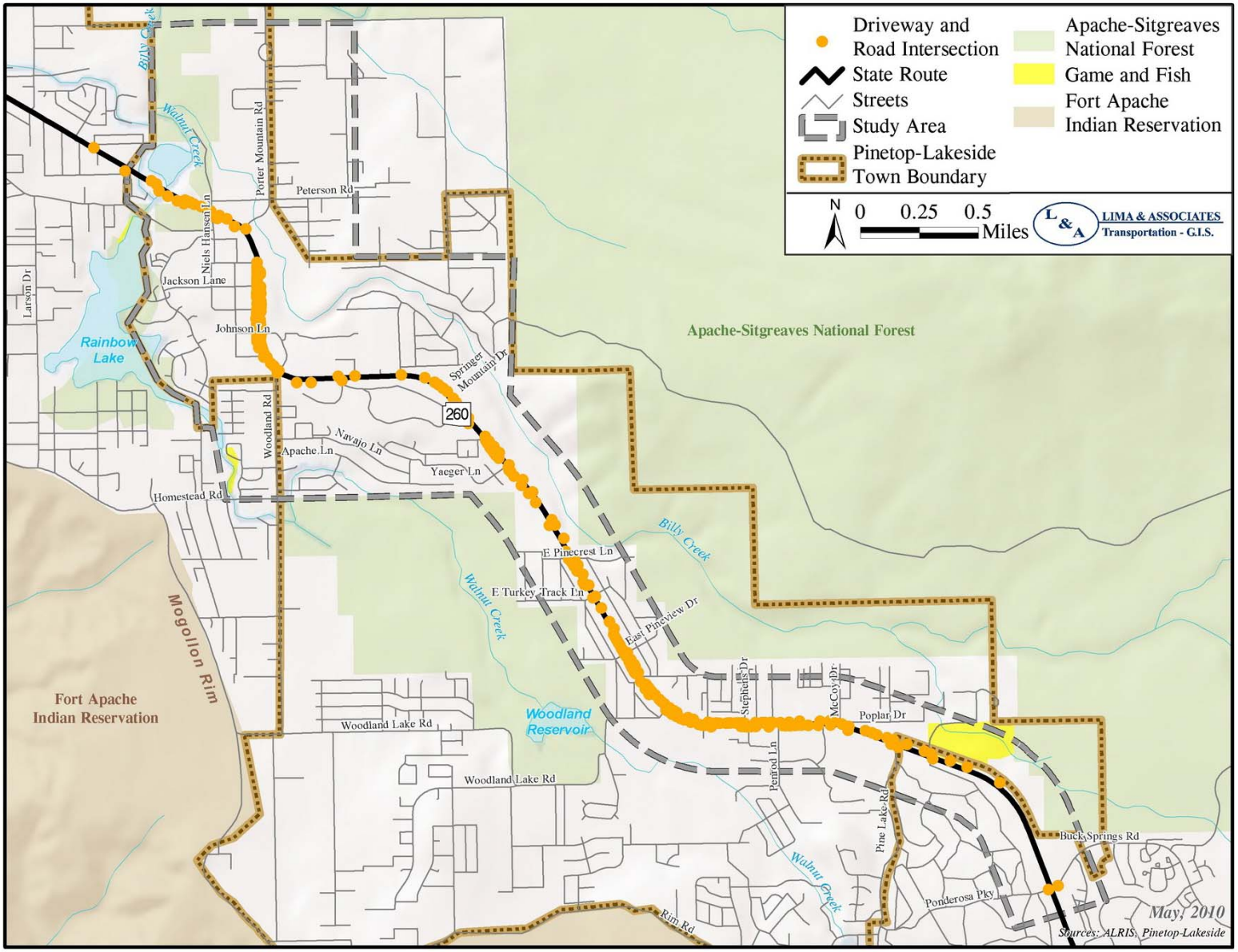


TABLE 3.8. RECENT TRAFFIC SIGNAL NEEDS STUDIES

Study (Location/Date)	Results
SR-260 at Pineview Drive and Pineview Lane MP 352.77 2004	Two vehicular volume conditions and the crash experience condition were met. The Pinetop Post Office attracts a relatively high volume of traffic, but signalization was not recommended because of geometrics not conducive to signal operation. In addition, an anticipated post office move to a different location did not occur.
SR-260 at Woodland Lake Road MP 353.09 2006	The eight-hour vehicular volume condition and the four-hour vehicular volume condition were met. ADOT's conclusion was that signalization "may be considered." The Town requested raised concrete medians to be part of the signal project. ADOT responded that the expense would be high and snowplowing operations would be hindered by isolated medians.
SR-260 Pine Lake Road MP 354.16 2006	Measured data failed to meet the minimum values for any of the signal warrants; therefore, a signal was not recommended in 2006. The study noted that additional new housing is anticipated that would use Pine Lake Drive.

Source: ADOT, Traffic Group, Traffic Records Section.

PEDESTRIAN NETWORK CHARACTERISTICS AND PERFORMANCE

Sidewalks and Other Pedestrian Safety Accommodations

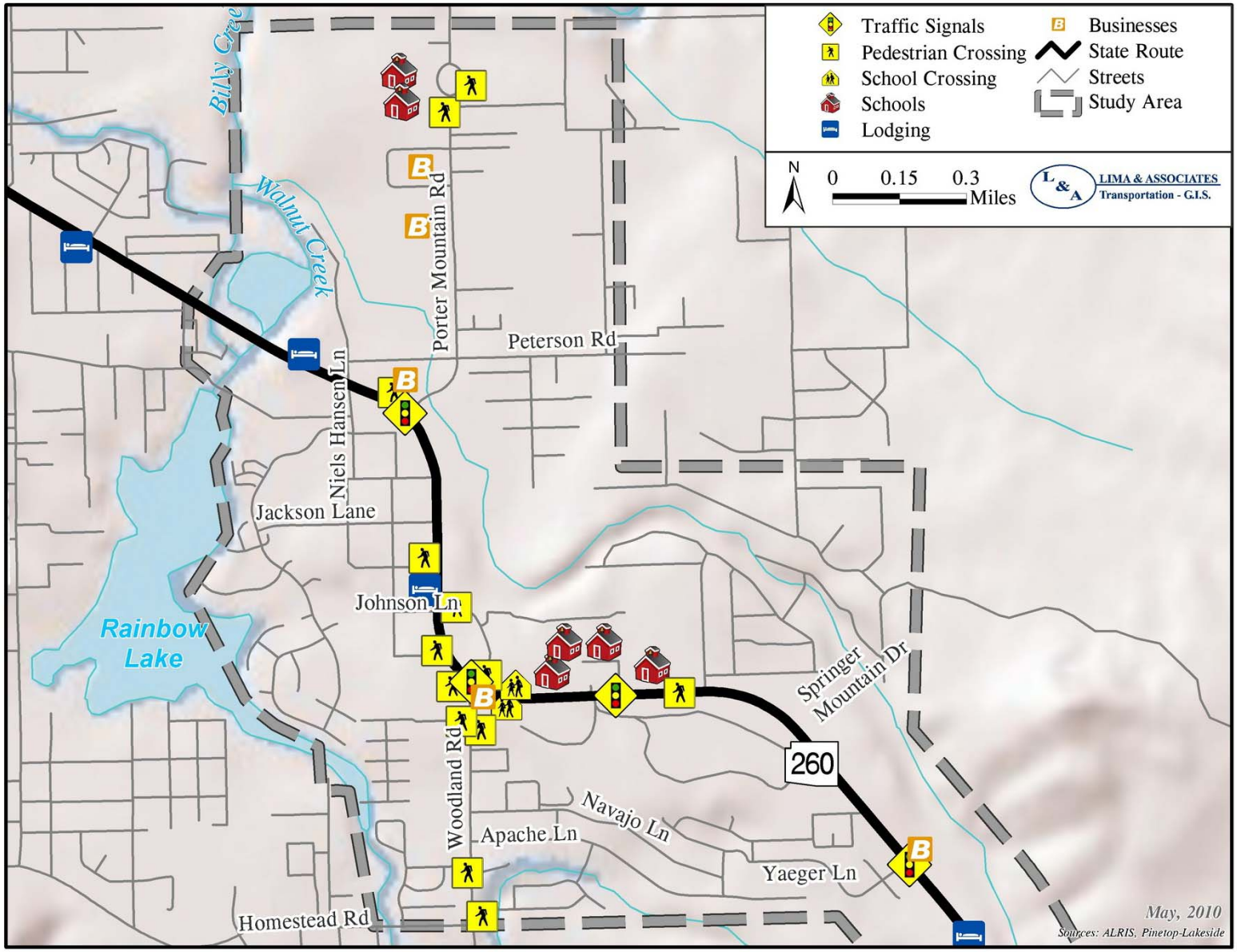
The current sidewalks in the pedestrian study area appear in Figure 3.9. As shown, sidewalks are on SR 260 only.

Existing Pedestrian Routes and Crossing Measures: Schoolchildren and Others

School destinations and pedestrian crossings are shown in Figure 3.11. Because of the varied distances from homes to school, those students who walk to school routinely are those who live in the northwestern part of the pedestrian study area, closest to the schools. The northwestern area is shown in Figure 3.11, including the locations of school crossing and pedestrian crossing warning signs for motorists.

The safety of students crossing the area of SR 260 in front of the elementary and high school campus is of concern. Of particular concern is the large number of high school students who cross the highway at lunchtime. The segments where many students cross SR 260 stretch from Woodland Road east to Moonridge Drive. Within those segments there are traffic signals and marked crosswalks at both the Woodland Road and Yellow Jacket Drive

FIGURE 3.11. LOCATIONS WITH WALKING ISSUES (NORTHWESTERN PORTION)



intersections with SR 260. Town staff conducted a pedestrian traffic count on the four segments between 11:00 a.m. and 12:30 p.m. on three days in October 2009. The average number of times students walked across SR 260 each day (one crossing, from north to south or south to north counts as one trip) appears in Table 3.9.

TABLE 3.9. HIGH SCHOOL STUDENTS CROSSING SR 260

SR 260 Segments (West to East)	Number Trips Across SR 260
Woodland Road and SR 260 Intersection	31.3
Woodland Road to Elementary School Exit	58.7
Elementary School Exit to Yellow Jacket Drive	37.7
Yellow Jacket Drive to Moonridge Drive	65.5
Total Trips	**193.2**
Jay Walking as a Proportion of Total Trips	**85%**

Jay walking comprises any crossing outside of marked crosswalks and any crossing against a red signal light. Students were observed to be jay walking on 85 percent of their trips across SR 260.

The pedestrian safety issues on the remainder of the SR 260 corridor are less directly connected to the schools. The needs of pedestrians in all age groups must be considered. Those who walk in the area include local year-round residents, seasonal residents, and tourists who stay for a short time, such as skiers in the winter season. Figure 3.12 illustrates some of the issues. The locations of lodging establishments are included on the Figure because they indicate some of the areas where tourists might be walking.

Pedestrian Traffic Safety and Accidents, 2003-2008

The traffic accident summary appears in Table 3.6 earlier in this chapter. Most of the accidents did not involve pedestrians or bicyclists. Eight accidents occurred for which pedestrians were considered responsible and twelve accidents for which bicyclists were considered responsible during the same six-year period. Table 3.10 indicates the violation reported in each of those accidents.

Several additional accidents involved pedestrians and bicyclists. Two were fatal pedestrian accidents and four incapacitating injury accidents. The total number of pedestrians and bicyclists injured or killed in accidents over the six-year period appear in Table 3.11.

FIGURE 3.12. LOCATIONS WITH WALKING ISSUES (SOUTHEASTERN PORTION)

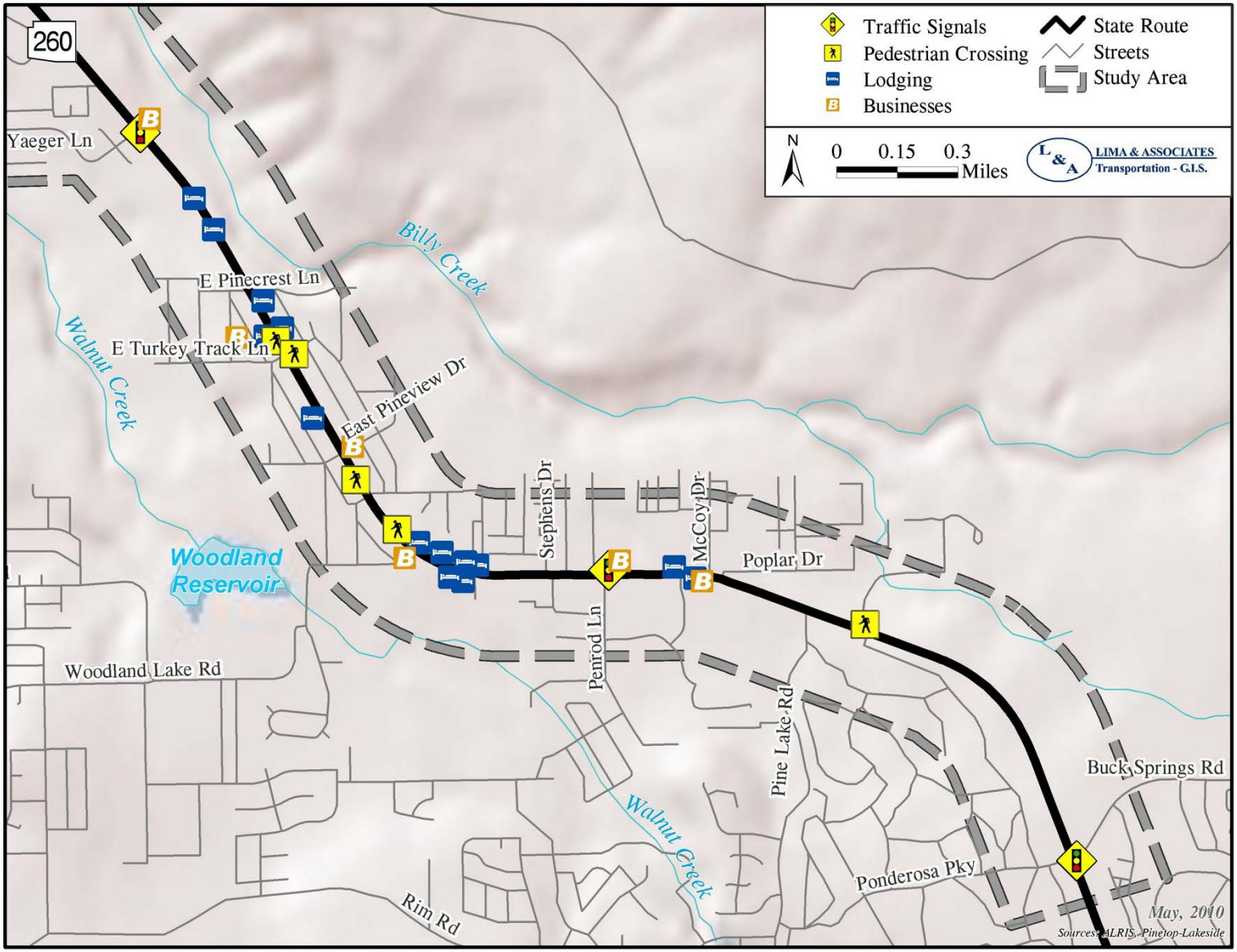


TABLE 3.10. TRAFFIC ACCIDENTS, PEDESTRIANS OR BICYCLISTS, 2003-2008

Responsible Person	Violation	Number of Accidents
Pedestrian	Did not use crosswalk	3
Pedestrian	Unknown	2
Pedestrian	Other	1
Pedestrian	Inattention distraction	1
Pedestrian	Failed to yield right-of-way	1
Bicyclist	Other	3
Bicyclist	Inattention distraction	3
Bicyclist	No improper action	2
Bicyclist	Knowingly operated with faulty or missing equipment	1
Bicyclist	Rode in opposing traffic lane	1
Bicyclist	Other	1
Bicyclist	Inattention distraction	1

Source: ADOT, Traffic Group, Traffic Records Section.

TABLE 3.11. FATAL AND INJURY TRAFFIC ACCIDENTS AFFECTING PEDESTRIANS OR BICYCLISTS, 2003-2008

Person Affected	Injury Severity	Number of Persons Affected
Pedestrian	Fatal	2
Pedestrian	Incapacitating injury	4
Pedestrian	Non incapacitating injury	2
Bicyclist	Incapacitating injury	1
Bicyclist	Non incapacitating injury	2
Bicyclist	Possible injury	4

Source: ADOT, Traffic Group, Traffic Records Section.

SCHOOL TRANSPORTATION

State guidelines suggest a maximum walking distance to school should be 1.0 miles for students in grades K through 8 and 1.5 miles for students in grades 9 through 12. Blue Ridge Unified School District buses children who live close to the schools, because of the lack of sidewalks and the harsh winter weather in the Town.

The school district and the Town recognize that if there is a safe walking route to school, health, educational, and social benefits result from walking to school. That recognition was one of the motivations for this pedestrian study. The district currently participates in an annual International Walk to School Day, co-sponsored in 2009 by the Town and charitable organizations. In addition, on bus routes where there is a safe route to school for children who live near the school, the route is scheduled so that those who live nearest are picked up from home first, so they are on the bus for the longest time. That scheduling presents some families with a reasonable choice for their children to walk a short distance rather than spending additional time on the bus.

TRANSIT SERVICE

Two transit services currently serve the Pinetop-Lakeside Area: A local circulator, Four Seasons Connections, and a regional service, White Mountain Connection. This section summarizes both systems.

Four Seasons Connection

The Four Seasons Connection is a public transit system operated with funding provided by the City of Show Low and the Town of Pinetop-Lakeside, with matching funds from the Federal Transit Administration's Section 5311 Rural Transit Program administered through the Arizona Department of Transportation. Four Seasons operates 16-passenger cutaway minibuses on two routes, a Show Low route and a Pinetop—Lakeside route. The routes connect at Wal-Mart (at the south end of Show Low), providing continuous service between all points within the two communities. All vehicles are accessible for persons with disabilities. Table 3.12 lists the fare structure.

TABLE 3.12. FOUR SEASONS CONNECTION FARE STRUCTURE

Single Ride	$1.00
All Day Pass	$3.00
General 10 Ride Punch Pass	$7.50
Senior - 20 Ride Punch Pass	$10.00
Disabled - 20 Ride Punch Pass	$10.00
Monthly Pass	$30.00
Student Pass (Fall, Spring, or Summer Semester)	$35.00

Hourly service is provided Monday through Saturday from 6:30 am to 6:30 pm along SR 260. Figure 3.13 depicts the 27 stops served by the Four Seasons scheduled service. Table 3.13, presents the Four Seasons bus schedule in effect in July 2009. In addition, Four Seasons operates complementary paratransit service for patrons unable to reach one of the bus stops.

FIGURE 3.13. FOUR SEASONS CONNECTION PINETOP-LAKESIDE STOPS

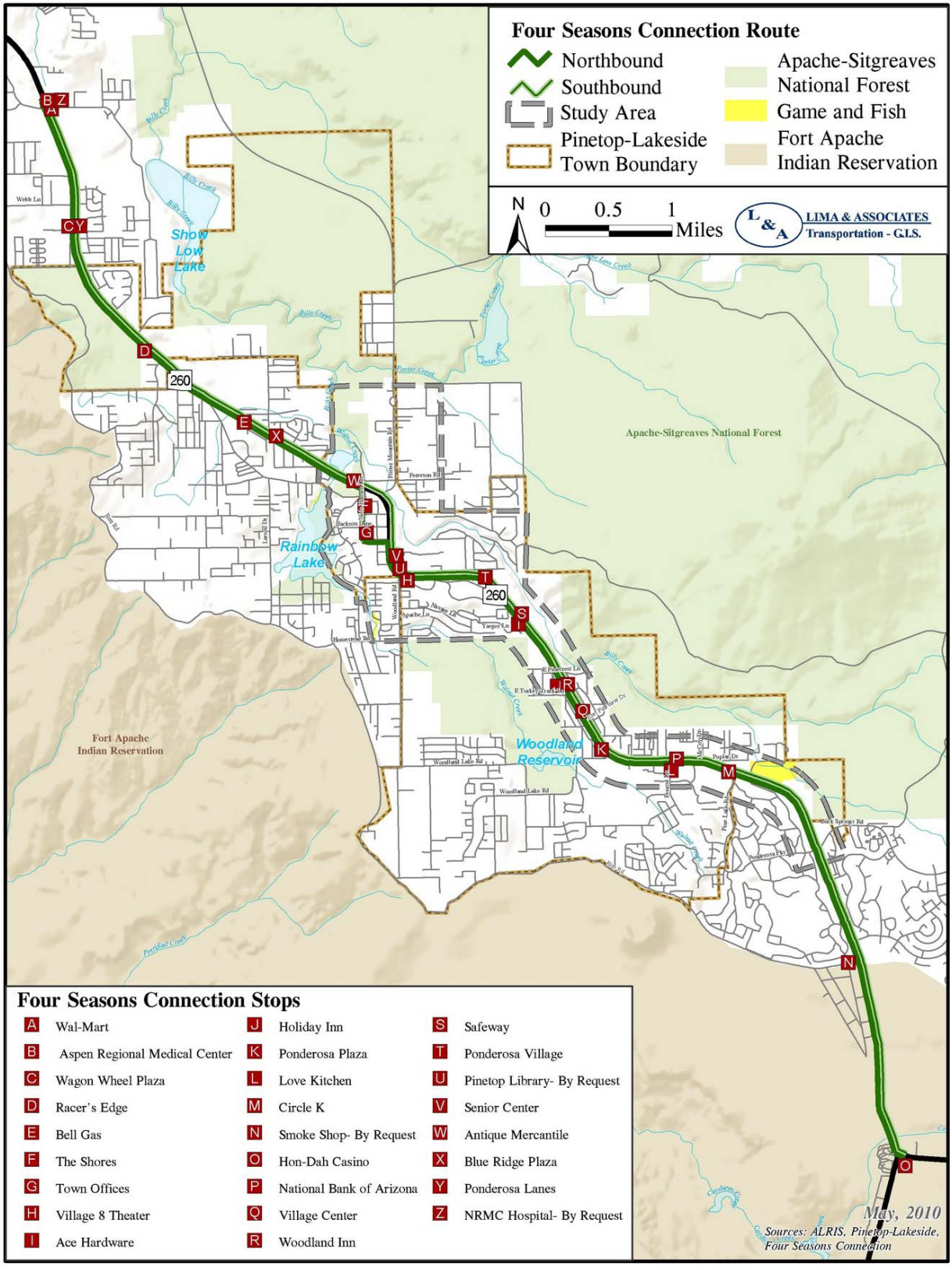


TABLE 3.13. FOUR SEASONS CONNECTION – PINETOP-LAKESIDE ROUTE SCHEDULE

Wal-Mart	6:30	7:30	8:30	9:30	10:30	11:30	**12:30**	**1:30**	**2:30**	**3:30**	**4:30**	**5:30**
Aspen Medical Center	(By Request)											
Wagon Wheel Plaza	6:35	7:35	8:35	9:35	10:35	11:35	**12:35**	**1:35**	**2:35**	**3:35**	**4:35**	**5:35**
Racer's Edge	6:39	7:39	8:39	9:39	10:39	11:39	**12:39**	**1:39**	**2:39**	**3:39**	**4:39**	**5:39**
Bell Gas	6:40	7:40	8:40	9:40	10:40	11:40	**12:40**	**1:40**	**2:40**	**3:40**	**4:40**	**5:40**
The Shores	6:42	7:42	8:42	9:42	10:42	11:42	**12:42**	**1:42**	**2:42**	**3:42**	**4:42**	**5:42**
Town Offices	6:43	7:43	8:43	9:43	10:43	11:43	**12:43**	**1:43**	**2:43**	**3:43**	**4:43**	**5:43**
Village 8 theater	6:44	7:44	8:44	9:44	10:44	11:44	**12:44**	**1:44**	**2:44**	**3:44**	**4:44**	**5:44**
Ace Hardware	6:46	7:46	8:46	9:46	10:46	11:46	**12:46**	**1:46**	**2:46**	**3:46**	**4:46**	**5:46**
Holiday Inn	6:48	7:48	8:48	9:48	10:48	11:48	**12:48**	**1:48**	**2:48**	**3:48**	**4:48**	**5:48**
Ponderosa Plaza	6:50	7:50	8:50	9:50	10:50	11:50	**12:50**	**1:50**	**2:50**	**3:50**	**4:50**	**5:50**
Love Kitchen	6:52	7:52	8:52	9:52	10:52	11:52	**12:52**	**1:52**	**2:52**	**3:52**	**4:52**	**5:52**
Pinetop Circle K	6:55	7:55	8:55	9:55	10:55	11:55	**12:55**	**1:55**	**2:55**	**3:55**	**4:55**	**5:55**
Smoke Shop	(By Request)											
Hon-Dah Casino	7:00	8:00	9:00	10:00	11:00	**12:00**	**1:00**	**2:00**	**3:00**	**4:00**	**5:00**	**6:00**
National Bank of Arizona	7:05	8:05	9:05	10:05	11:05	**12:05**	**1:05**	**2:05**	**3:05**	**4:05**	**5:05**	**6:05**
Village Center	7:09	8:09	9:09	10:09	11:09	**12:09**	**1:09**	**2:09**	**3:09**	**4:09**	**5:09**	**6:09**
Woodland Inn	7:11	8:11	9:11	10:11	11:11	**12:11**	**1:11**	**2:11**	**3:11**	**4:11**	**5:11**	**6:11**
Safeway	7:13	8:13	9:13	10:13	11:13	**12:13**	**1:13**	**2:13**	**3:13**	**4:13**	**5:13**	**6:13**
Ponderosa Village	7:15	8:15	9:15	10:15	11:15	**12:15**	**1:15**	**2:15**	**3:15**	**4:15**	**5:15**	**6:15**
Pinetop Library	(By Request)											
Senior Center	7:18	8:18	9:18	10:18	11:18	**12:18**	**1:18**	**2:18**	**3:18**	**4:18**	**5:18**	**6:18**
Antique Mercantile	7:20	8:20	9:20	10:20	11:20	**12:20**	**1:20**	**2:20**	**3:20**	**4:20**	**5:20**	**6:20**
Blue Ridge Plaza	7:22	8:22	9:22	10:22	11:22	**12:22**	**1:22**	**2:22**	**3:22**	**4:22**	**5:22**	**6:22**
Ponderosa Lanes	7:25	8:25	9:25	10:25	11:25	**12:25**	**1:25**	**2:25**	**3:25**	**4:25**	**5:25**	**6:25**
NRMC Hospital	(By Request)											
Show Low VA	(By Request)											
Wal-Mart	7:30	8:30	9:30	10:30	11:30	**12:30**	**1:30**	**2:30**	**3:30**	**4:30**	**5:30**	**6:30**

PM Route Times are shown in **bold face** type
Source: Four Seasons Connections; schedule.

White Mountain Connection

The White Mountain Connection is a regional commuter service that was initiated in April 2009. The system is funded cooperatively by the Town of Pinetop Lakeside, Navajo County, Northland Pioneer College, City of Holbrook, City of Show Low, Town of Snowflake, and Town of Taylor. White Mountain Connection provides three daily round trips between Pinetop-Lakeside and Holbrook. Table 3.14 presents the revised schedule published July 23, 2009. Table 3.15 presents the fare structure.

TABLE 3.14. WHITE MOUNTAIN CONNECTION BUS SCHEDULE

	Morning	Mid-Day	Evening
Northbound			
Pinetop-Lakeside			
Safeway	5:45a	11:10a	3:40p
Show Low			
Summit HealthCare/Wal-Mart*	5:50a	11:20a	3:50p
D.E.S.	6:00a	11:30a	4:00p
Taylor			
Bashas'	6:20a	11:45a	4:15p
Snowflake			
Northland Pioneer College (NPC)	6:25a	11:50a	4:20p
West First Street	6:30a	11:55a	4:25p
Holbrook			
County Complex	7:00a	12:25p	4:55p
Old County Court House	7:10a	12:35p	5:05p
NPC	7:20a	12:40p	5:10p
Southbound			
Holbrook			
NPC	7:20a	12:40p	5:10p
Circle K Greyhound Station	7:25a	12:45p	5:15p
Buffalo/Navajo	7:30a	12:50p	5:20p
County Complex	7:40a	1:00p	5:30p
Snowflake			
West First Street	8:10a	1:30p	6:00p
Police Department	8:12a	1:32p	6:02p
NPC	8:15a	1:35p	6:05p
Taylor			
Bashas'	8:20a	1:40p	6:10p
Show Low			
D.E.S.	8:50a	2:00p	6:30p
Summit HealthCare/Wal-Mart*	9:05a	2:10p	6:40p
Pinetop-Lakeside			
Safeway	9:15a	2:25p	6:55p

*Estimated

Source: White Mountain Connection, Schedule Revision #2, July 23, 2009.

TABLE 3.15. WHITE MOUNTAIN CONNECTION FARE STRUCTURE

Single Ride:	
Within the same town	$1.00
To the next town	$3.00
Anywhere else on the route	$5.00
All Day Pass*	$8.00
Senior and Disabled – 20 Ride Punch Pass	$10.00
Monthly Pass (unlimited rides)	$60.00
Student Semester Pass	$70.00

Provides a free transfer to Four Seasons connection in Show Low

4. FUTURE CONDITIONS THROUGH THE YEAR 2030

The Pinetop-Lakeside Pedestrian Safety and Transportation Study is to result in recommendations that would be implemented between 2010 and 2030. The study's purposes are to increase safety and mobility for pedestrians along SR 260 and in the area around the two school campuses, in a manner that coordinates with other transportation projects.

Recent plans described in Chapter 2 have suggested future pedestrian safety and mobility programs. As work began on this pedestrian study Town officials reconfirmed that recommendations in those recent plans should be considered further in the pedestrian plan.

Current conditions described in Chapter 3 include some new land developments, such as the new middle school/junior high school campus, and projects in the near future, such as completion of Navopache Electric Cooperative headquarters on Porter Mountain Road. Various reports connected to the ongoing projects include some suggested programs that would influence pedestrian travel and that are to be accomplished over the next few years.

Therefore, this Future Conditions Chapter refers back to appropriate material in Chapters 2 and 3 and then supplements the previous material with additional descriptions of future land use and travel demand. The Chapter also describes the outlook for the following over the 2010-2030 time period:

- Anticipated roadway and pedestrian system performance in meeting the travel demand.
- Deficiencies in the system requiring correction to assure pedestrian safety and mobility.

FUTURE LAND USE

Preparation of a Town of Pinetop-Lakeside General Plan began in late 2009 and is scheduled for completion and adoption in 2011. The plan will guide the next ten years of the Town's development. The plan is to be based on a vision for the Town that includes the following:

- A vision statement. The vision statement is to stress economic development and employment and is likely to describe the Town as a neighborly and scenic community with high standards for quality growth and a distinct community character.
- Town development based on the nodes envisioned in the Town Plan (Tejido group) described above in Chapter 2.
- Open space preservation and linkages envisioned in the Linking our Landscape study (The Nature Conservancy, 2008) described in Chapter 2.

The future land use map will be updated as a part of the General Plan process. Currently, the Town's official future land use map appears in the Pinetop-Lakeside & Navajo County Regional Plan 2000 (as updated through 2004). Figure 4.1 displays the future land uses for the pedestrian study area, taken from the official land use map. Figure 4.1 also shows current parcel boundaries.

FIGURE 4.1. FUTURE LAND USE

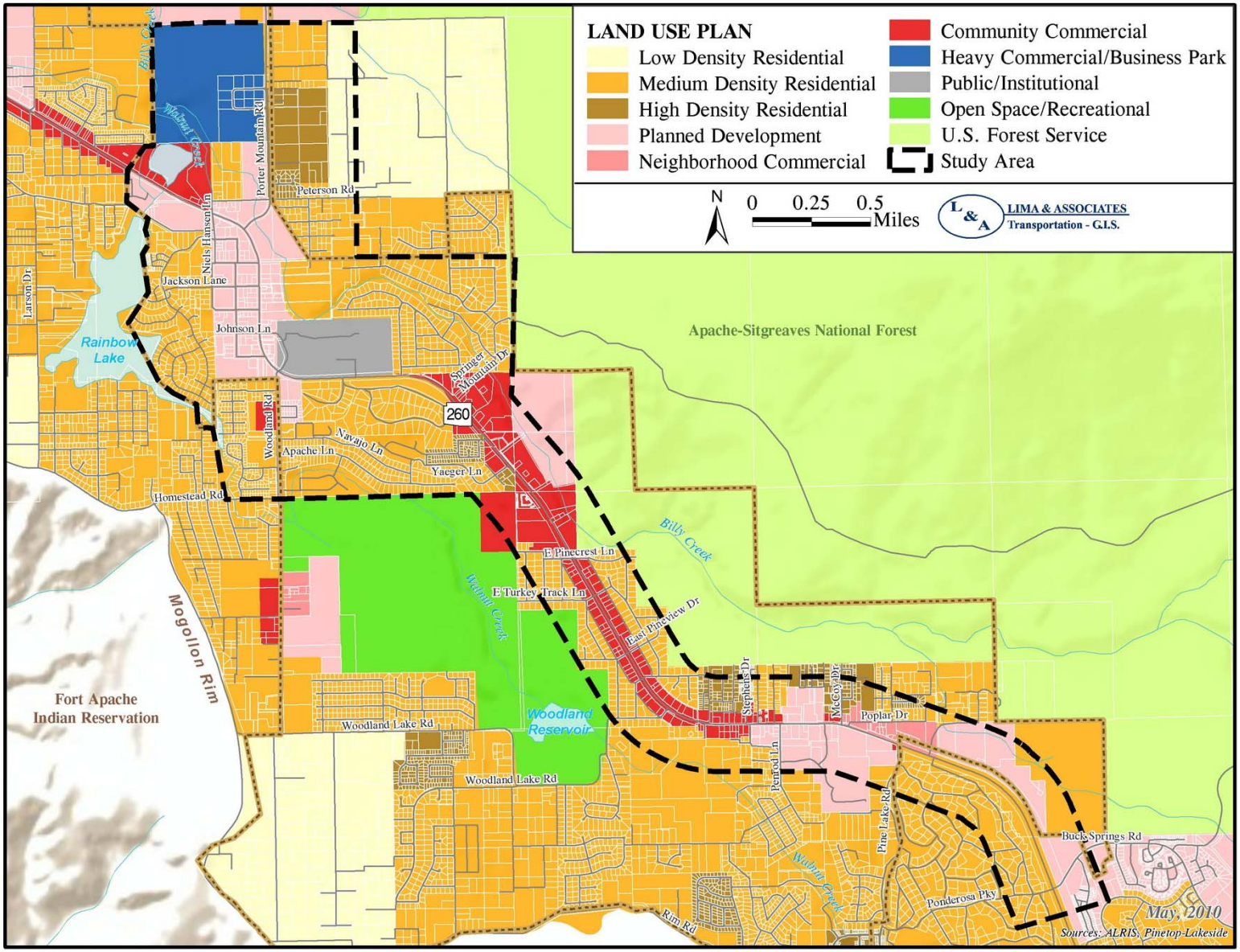
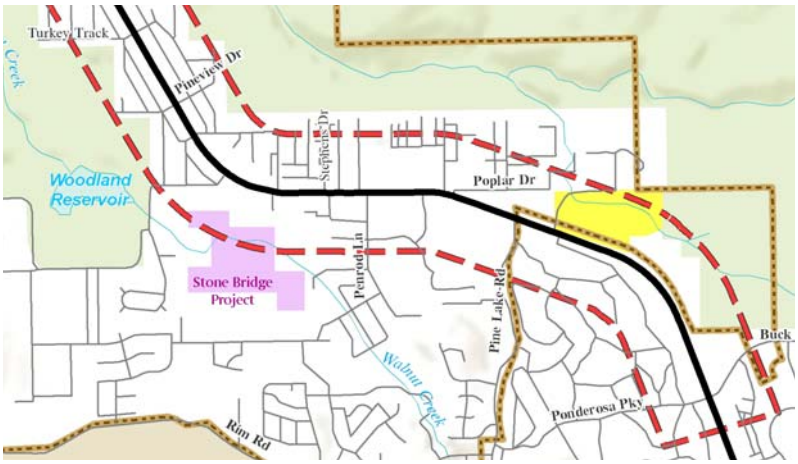


FIGURE 4.2. STONE BRIDGE



Stone Bridge is the only planned unit development in the pedestrian study area approved for rezoning in 2009 (Figure 4.2). The conceptual plan calls for 79 single-family residential lots, 64 condominium units, and at least 30 percent open space on approximately 58 acres.

SOCIOECONOMIC PROJECTIONS

The 2007 Community Transportation Plan (described in Chapter 2) estimated that the greater Pinetop-Lakeside planning area had 8,300 residents in 2006, and would grow to 17,600 residents in 2030. The same plan contained socioeconomic projections for TAZ subareas within the Town. Those projections assumed a population growth rate of 2.5 percent per year for the Town's greater planning area, but a lower growth rate of 1.5 percent per year in the pedestrian study area. The pedestrian study area is the older, more intensively developed area, so it has less vacant developable land than the remainder of Town.

The base study area population estimate calculated for this pedestrian study was 2,544 in 2009 (see Table 3.2.). The pedestrian study area population was projected by applying the 1.5 percent annual growth rate over the future time intervals. The resulting projected population of the pedestrian study area is:

- 2600 residents in 2010
- 2800 residents in 2015
- 3000 residents in 2020
- 3450 residents in 2030

The above projection was compared with two other sets of population projections for the region. Findings were that those projections used similar growth assumptions and yielded similar results when the different geographic boundaries were taken into account:

- In 2006 the Arizona Department of Commerce projected that the population of the Town would grow from 4,779 in 2010 to 5,891 in 2020, an annual growth rate of just over two percent. The annual growth rate would slow to just over one percent during the next decade, yielding a Town population of 6,758 in 2030.
- The Pinetop-Lakeside & Navajo County Regional Plan 2000 also included regional planning area population projections for 1995-2020. Multiple annual growth rate assumptions were also included: slow (1.1%), medium (3.5%), and high (7%).

Estimates and projections of employment for this pedestrian study began with TAZ estimates and projections found in the 2007 Community Transportation Plan and then accounted for the fact that the pedestrian study area includes some of the entire TAZs and a portion of other TAZs. The results appear in Table 4.1.

TABLE 4.1. COMMUNITY TRANSPORTATION PLAN EMPLOYMENT PTOJECTIONS

Year	Town Planning Area[1]	Pedestrian Study Area[2]
2006 Estimate	4,231	3,200 to 3,400
2015 Projection	6,484	4,000 to 4,200
2030 Projection	14,400	9,900 to 10,100

Source: [1]Community Transportation Plan, September 2007, entire town planning area.
[2]Community Transportation Plan, September 2007, apportioned to pedestrian study area, accounting for smaller study area boundary.

Note that the Community Transportation Plan was completed previous to the start of the current recession, so the above projections did not account for the severe effects of the recession on Arizona employment. The next paragraphs account for the recession's effects.

The University of Arizona reported that Arizona was ranked 50th for job growth among all fifty states between October 2008 and 2009; rather than job growth there was a loss of 6.8 percent of all jobs in the state. The Arizona Department of Commerce short-term jobs forecast in late 2009, projected that the state would experience nonfarm job losses of 6.8 percent in 2009 compared to jobs in 2008 and 0.7 percent in 2010 compared to jobs in 2009.

Unemployment trends for the Town and Navajo County for 2006-2009 appear in Table 4.2. The report shows that the number of jobs held by Town and County residents in 2009 were less than in 2006.

TABLE 4.2. UNEMPLOYMENT REPORT 2006-2009, TOWN AND NAVAJO COUNTY (Place of Residence)

	Pinetop-Lakeside Town				Navajo County less Native American Reservations			
Yearly Average	2006	2007	2008	2009	2006	2007	2008	2009
Labor Force	1,935	1,961	1,987	1,973	25,494	25,839	26,174	25,967
Total Employment	1,862	1,896	1,890	1,825	24,560	24,998	24,921	24,064
Total Unemployment	73	65	97	148	934	841	1,253	1,903
Unemployment Rate	3.8%	3.3%	4.9%	7.5%	3.7%	3.3%	4.8%	7.3%

Source: Arizona Unemployment Statistics Program, Special Unemployment Report, Arizona Department of Commerce, 2009.

The recession has had negative effects on the Town's tourism-based economy. While there is long-term potential for seasonal resident and tourism visitation to grow faster than the Town's year-round resident population, there has been a recent decline in visitation. For example, the lodging room occupancy rate in Navajo County declined from 63.5 percent in 2007 to 61.7 percent in 2008 and 56.2 percent through November 2009.

Given the current economic outlook, it is acknowledged that employment in the pedestrian study area may not recover to 2006 levels until 2011. Even if growth were rapid over the next several years, it is likely that 2015 employment levels would lag. Therefore, it is assumed that the 2015 projection from the Community Transportation Plan, in Table 4.1 above, will actually be achieved in 2020, and the 2030 projection above will not be achieved until 2035, beyond this plan's planning period. Because of the change in conditions compared to those present in the 2007 Community Transportation plan's analysis, the resulting projections of pedestrian study area employment will be used for the pedestrian study:

Pedestrian Study Area Employment

- 2015 3,400 to 3,600
- 2020 4,000 to 4,200
- 2030 7,900 to 8,100

Future pedestrian facilities would serve all pedestrians in the pedestrian study area:

- Residents of the pedestrian study area (projected to be 3,450 in 2030)
- Students at the two school district campuses (currently at 2,700 students, with a capacity of approximately 3,100)
- Persons employed in the pedestrian study area (projected to be 8,000 in 2030)
- Seasonal residents and tourists (not able to be estimated, but a large portion of pedestrians during peak and special events)

Seasonal residents are an increasingly large proportion of the homeowners in the Town. Subdivisions in Navajo County just east of Town have grown faster than the Town or the County as a whole since the year 2000.

Tourists include many who stay overnight in Town and others who stop in Pinetop-Lakeside when they pass through on SR 260. A 2003 statewide study reported on visitors by region, including the "High Country," stretching from Payson through Pinetop-Lakeside and east to the New Mexico border. In the "High Country," general sightseeing and hiking were the major activities of overnight visitors. In contrast, hiking is typically ranked seventh or eighth among the activities of overnight visitors throughout the state, while shopping and fine dining are consistently the two highest-ranked activities. The statewide information was most recently reported in "Arizona 2008 Tourism Facts."

FUTURE STREET NETWORK CHARACTERISTICS AND PERFORMANCE

The primary roadway project planned in the pedestrian study area through 2030 is the widening of Porter Mountain Road and the Billy Creek Bridge. The project was set out in the Community Transportation Plan, September 2007: Town Of Pinetop-Lakeside (2007 Plan). In 2009, the Southern Navajo County Regional Corridor Tiger Grant Application was made in an effort to accelerate funding of the project. Both the 2007 plan and the 2009 application were described in Chapter 2.

TIGER funds were not awarded in the early 2010 round of funding for the Billy Creek Bridge project. Still, the first phase of the project, limited to design, is a high priority ADOT project (a part of amendment 29, May 2009, ADOT State Transportation Improvement Program, as submitted by NACOG). The project description was for minor arterial bridge design for a project of .1 centerline miles, for two lanes both before and after the project, using High Priority Project funds (Federal, $190,000, Local, $10,830, Total, $200,830).

The pedestrian improvements anticipated for the Porter Mountain Road project would be vital for pedestrian safety. The 2007 Plan indicated that Porter Mountain Road – between White Mountain Road (SR 260) and Penrod Road would have a traffic volume of 42,000 vehicles per day in 2030. The projected Level of Service (LOS) without improvements would be LOS F. Level of Service is a quantitative measure of quality of service represented by six letter grade levels, LOS A through F. LOS A represents the best condition and LOS F represents the worst condition. Generally the range of LOS C-D is judged an acceptable level of service.

The widening to four lanes together with strict access management control is projected to improve mobility, but the modeled LOS was not reported in the 2007 Plan. The 2007 Plan did provide an LOS calculation for a cut line combining the travel demand for Woodland Road and the central SR 260 corridor in the pedestrian study area. The LOS improved from F to E largely because the Rim Road project outside the pedestrian study area would be an alternative to SR 260.

Access Management

The 2007 Plan analyzed six intersections to determine whether to recommend a change in traffic control by 2015 or 2030. Three out of the six intersections are in the pedestrian study area: Porter Mountain Road, Woodland Road, and Buck Springs Road. All of those intersections are already signalized. The conclusions were that the signalized intersections would continue to perform satisfactorily.

FUTURE PEDESTRIAN NETWORK CHARACTERISTICS AND PERFORMANCE

Two projects are already underway that could be considered pedestrian facilities to serve the pedestrian study area in the near future:

- One pedestrian project occurred on SR 260 during 2009, although the project was modified when site conditions required limiting the amount of sidewalk constructed. Transportation Enhancement funds ($175,000) were used to move the sidewalk from the edge of SR 260 near Woodland Road along approximately one-quarter mile of SR 260.
- The pedestrian facilities associated with the prospective Porter Mountain Road and Billy Creek Bridge project were described in Chapter 2.

No other future pedestrian facilities have conceptual plans devised. Many needs and deficiencies exist related to the capability of the pedestrian network in the pedestrian study area to serve future residents, employees, and visitors.

PEDESTRIAN TRAVEL AND SAFETY: OTHER FUTURE TRENDS

Regarding bicycle-pedestrian interaction, the Town Council, the City Council of Show Low, and the Navajo County Board of Supervisors are urging ADOT to consider installing bike lanes on SR 260 from Show Low through Wagon Wheel and Pinetop-Lakeside. In January 2008, the Town Council passed a resolution to that effect.

Several locations exist where the urban pedestrian network could link to the trails in the Apache-Sitgreaves National Forests (ASNF). Continued planning by the TRACKS organization and review of a draft Apache-Sitgreaves Forest Plan are underway as of April 2010.

5. EVALUATION MEASURES

PRINCIPLES

The recommendations will be devised to increase both safety and mobility for pedestrians. As options are considered, the following principles are important in setting priorities:

- If limits in potential funding or constraints due to roadway characteristics make it necessary to favor one purpose over the other, safety is given priority over mobility.
- Recommended pedestrian crossing projects on SR 260 are to be at current traffic signal locations, plus other areas where there is evidence that more people would wish to walk. The locations of additional crossings are ones where stakeholders have mentioned that people would walk if it were safer and other areas where there are obvious potential start and end points of walking trips on opposite sides of SR 260.
- Any investment in safety and access management for vehicles on SR 260 is to be done in a way that also ensures safe pedestrian crossings.

Maps of the two portions of the study area appear below as Figures 5.1 and 5.2. The figures include the locations of the nodes that were conceptualized in the Town Plan and the locations of the open space sites identified in Linking Our Landscape, both described in Chapter 2. Both studies were adopted by the Town and are to be used as guidance for this pedestrian plan and for the Town's general plan that is underway. The figures also incorporate existing features that influence pedestrian travel, compiled from findings in Chapter 3. Consideration of the purpose of each walking trip has influenced the development of alternatives (Table 5.1). The planning principle is to match solutions to the characteristics of those served:

TABLE 5.1. WALKING TRIP PURPOSES BY VARIOUS PERSONS

Typical or Potential Walking Trip	Persons Likely to Make the Trip
To shop, walk to work, visit neighbors, or connect to recreational trail	Residents of the study area (projected to be 3,450 in 2030)
To school in the morning, and from school to home or off-campus activities in the afternoon To special events at the schools *Note: in the 2010-11 school year, students in grades 11 and 12 will be permitted to leave campus for lunch*	Students at the two school district campuses (currently at 2,700 students, with a capacity of approximately 3,100)
Restaurant (for pre-, mid- or after-work meal)	Persons employed in the study area (projected to be 8,000 in 2030)
Home or another location, to shopping, restaurant, sightseeing, hiking, community event	Seasonal residents
Lodging place or another location, to shopping, restaurant, sightseeing, hiking, community event	Tourists

Source: Lima & Associates, projected populations in Chapter 4.

FIGURE 5.1. PLANNING CONCEPTS FOR THE NORTHWEST STUDY AREA (BRUSD SCHOOLS)

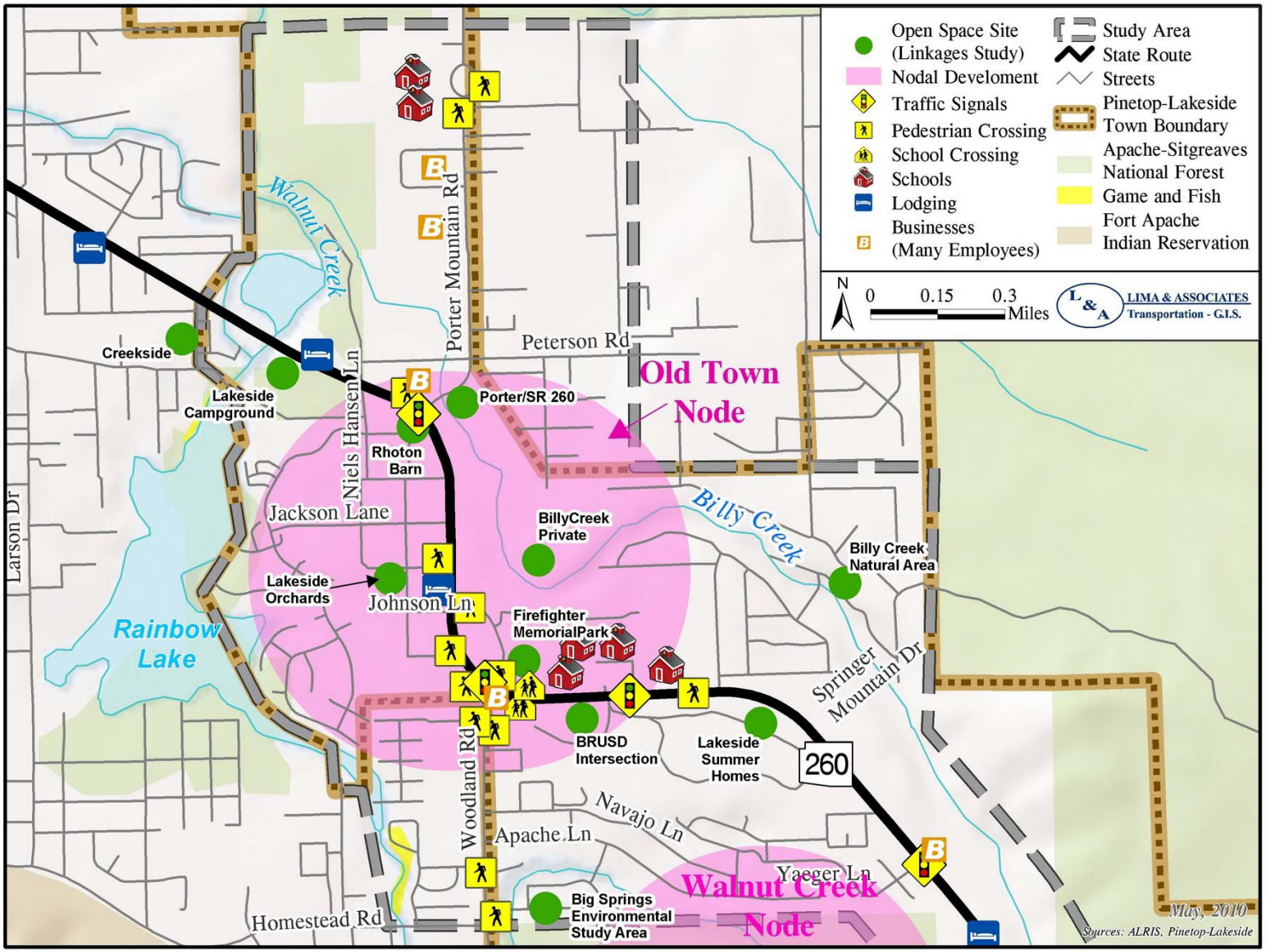
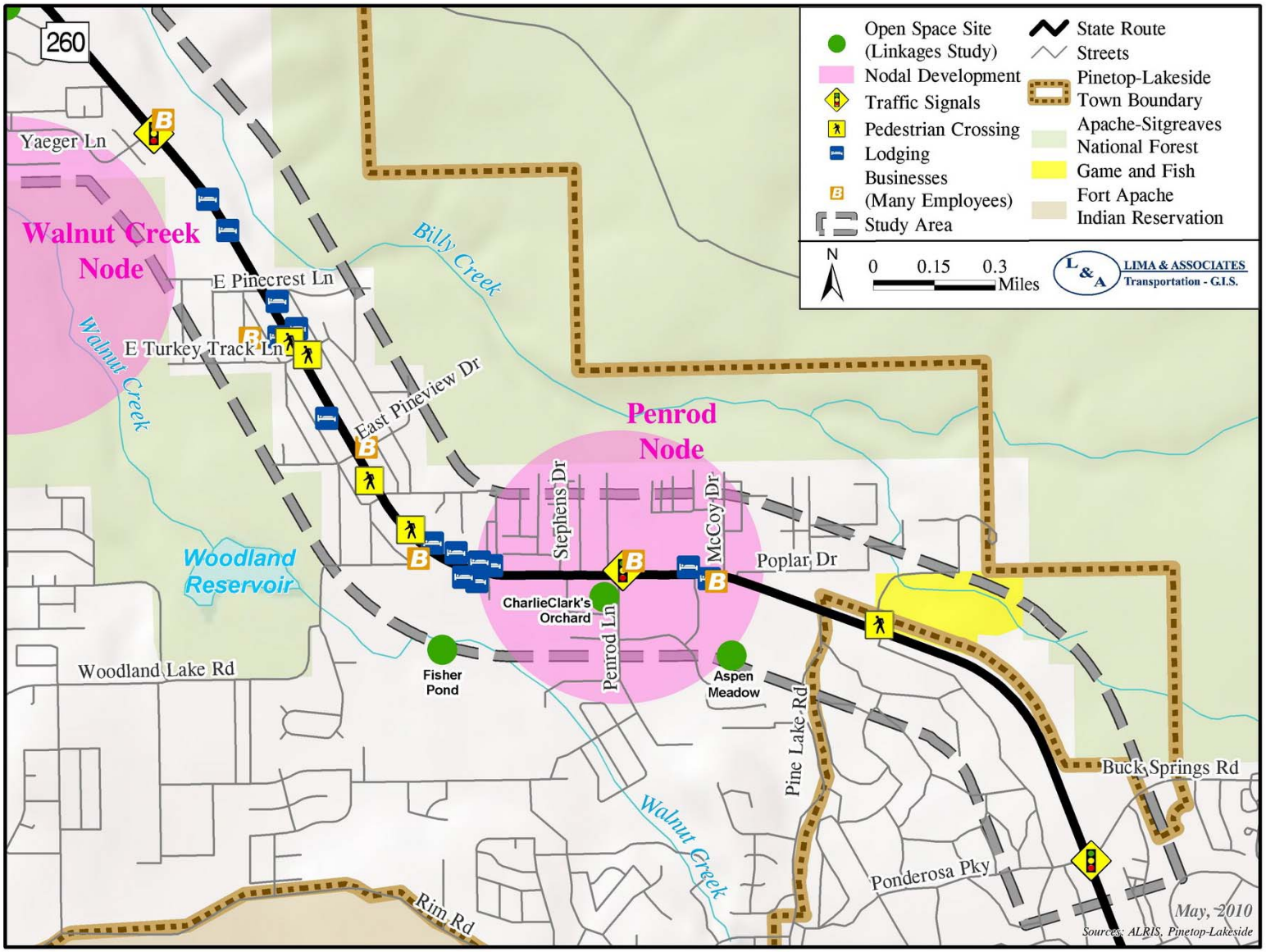


FIGURE 5.2. PLANNING CONCEPTS FOR THE SOUTHEAST STUDY AREA (SR 260)



Over the past few decades, there has been a continuing trend for Americans to walk less as a part of their daily activities. The Town is somewhat of an exception to the trend, as both residents and visitors spend much time hiking for recreation. Still, only a few persons routinely walk to school, grocery shopping, or work. Proof of the health benefits of walking has been documented in much recent literature.

Planning for pedestrians of any age includes consideration of those who can walk unassisted as well as those who require walking assistance. Many walkways may be made accessible for far more persons simply by constructing them with an even surface.

The special benefits of walking for children and the elderly are many. The Town recognized the health and quality of life benefits of walking for young children when the following statements were included in the Town's application for Safe Routes to School funds in December 2008:

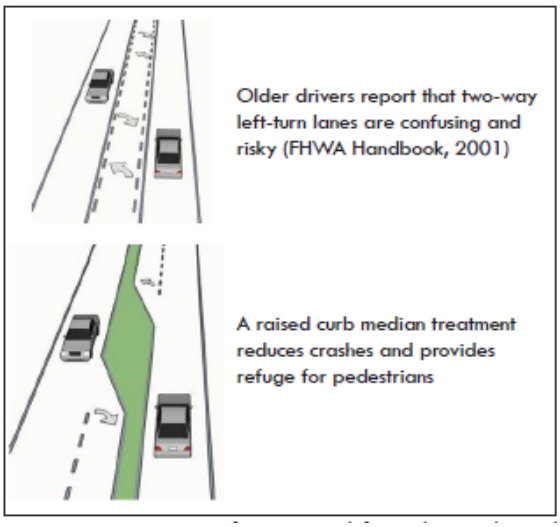
> The primary reason for developing the nationwide Safe Routes to School Program is the growing epidemic of childhood obesity and diabetes. One of the causes of the epidemic is children's growing inability to get physical activity due to the lack of safe and convenient ways to do so.
>
> [The project would] make bicycling and walking to school a safer and more appealing transportation alternative, thereby encouraging a healthy and active lifestyle from an early age.

Senior citizens are a large proportion of those who visit the Town or who have recently moved to the Town. Elderly persons (sixty-five and over) receive special health benefits from walking. Several studies have indicated that the inability to walk one-fourth mile is related to failing health, while the ability to walk two miles yields half the risk of heart attack compared to the risk experienced by the average senior citizen.

"Complete Streets" is a planning approach that is becoming more common. "Complete Streets" involves planning a major roadway from the right-of-way edge inward, typically including walkways, rather than emphasizing vehicle travel lanes to the exclusion of other modes—often referred to as planning "from the centerline outward." Very recently the American Association of Retired Persons' (AARP) Public Policy Institute sponsored the project "Planning Complete Streets for an Aging America," (Lynott et al., 2009).

The project took a more in-depth look at some special concerns of aging drivers and walkers that began to be identified several years ago, as shown in Figure 5.3. The illustration on the left indicates that older drivers find two-way left-turn lanes confusing and risky, and a raised curb median is cited as a solution. As noted, otherwise alert and capable older drivers still experience a slowing of reaction times as they age, and the raised curb median solution makes it less vital to have quick reactions. The illustration below on the right shows a crosswalk that is safer for older walkers than is the case with a typical crosswalk, because no slippery painted surface is within the unpainted central walkway.

FIGURE 5.3. SENSITIVITY TO NEEDS OF ELDERLY DRIVERS AND WALKERS



The principles used to devise specific options are somewhat different in the northwest portion of the study area than in the southeast portion. The L-shaped northwest portion in Figure 5.1 surrounds the school campuses. The principles applied in the northwest area were:

- Employ Safe Routes to School techniques for their health and safety benefits (both the formal program and the general goal of safe travel to school).
- On Porter Mountain Road, stay with the recommended project description as set out in the 2009 TIGER grant application.
- Design pedestrian projects in a way that strengthens the Old Town Node. This is important to the economic development emphasis of the general plan. Walkways along SR 260 and on Porter Mountain Road and Woodland Road close to SR 260 might have more design features such as landscaping, street furniture, and distinctive materials for sidewalks.
- Design walking facilities adjacent to local streets in a manner that might be a model for connections to other residential areas (outside the study area). If the facilities were relatively low-cost more residential areas of town could have sidewalks.
- Design crossing facilities that address the problem of students jay walking across SR 260 between Woodland Road and Moonridge Drive that was previously discussed on page 44.

The southeast area is the SR 260 corridor, which appears in Figure 5.2. The principles applied in the southeast area were:

- Make safe and scenic vistas along SR 260 to encourage walking from lodging places to the Penrod Node. This is important to the economic development emphasis of the general plan.

- Make connections between sidewalks and recreational trailheads where opportunities exist. Also, assist with wayfinding signs and maps to trails where it is more practical to drive and park at trailheads than to walk to the trails.
- Enhance the "pedestrian entrance" to the Walnut Creek Node (Yaeger Lane). However, most of the Walnut Creek Node is outside the study area and not included in this study.

ASSUMPTIONS

This pedestrian study assumes that it is more likely that investments in pedestrian infrastructure would be made in or approaching the Tejido study nodes than in much of the rest of the Town. This study also assumes that trails are more likely to be located to connect the "Linking Our Landscape" sites than to be placed elsewhere. Further, the study assumes that the Town intends that such trails interconnect with urban sidewalks where possible.

This study also assumes the roadway improvements as set out in the 2007 Community Transportation Plan (2007 Plan). The major project in the study area is to be a four-lane Porter Mountain Road. This study assumes that the study area will have 3,450 residents in 2030, in line with the 2007 Plan. However, this study assumes employment of 7,900 to 8,100 in the study area in 2030, less than the 9,900 to 10,000 projected in the 2007 Plan. Chapter 4 explains the rationale for the differences in projections.

This study assumes that Rim Road will be constructed by 2030 outside the study area to the south and Rim Road will relieve some of the demand on SR 260 in the study area. Rim Road will also provide another emergency evacuation route.

According to the 2007 Plan, after completion of the Rim Road, the highest average daily traffic on SR 260 in 2030 would be 45,000 vehicles, at a level of service of F, from Woodland Lake Road east to Penrod Lane. The highest traffic segment on the Rim Road would carry 17,400 vehicles at LOS F, west of Woodland Road. With the substantially lower employment estimate in this study, it is assumed that the congestion on SR 260 would be less than that predicted by the 2007 Plan. The roadway still would carry 50 percent to 80 percent higher volumes than in 2007.

The 2007 Plan did not include any recommendations for additional through lanes on SR 260 within the pedestrian study area. Therefore, it is assumed that there will be no additional through lanes. The 2007 Plan indicated that increased vehicular travel would demand improvements in most intersections of SR 260 by 2030, and the 2007 Plan included traffic intersection analysis for three intersections, all of which are currently signalized. Those intersections are at SR 260 and the following roadways: Porter Mountain Road, Woodland Road, and Buck Springs Road.

The intersection analysis in the 2007 Plan was considered in this study's recommendations. Many persons interviewed for this study indicated that residents and visitors avoid walking on SR 260, and especially avoid walking across SR 260, because of a perception that walking

would not be safe. Further, many persons indicated that residents and workers who drive in Town avoid making left turns onto or off SR 260 for safety reasons. Many indicated that there should be links between sidewalks and recreational trails, and signs to direct walkers to both. People have expressed their wish for walking trips such as those listed in Table 5.1 above less than they have expressed their more immediate concerns about safety. Because of the requests for pedestrian facilities, it is assumed that once some of the safety measures are in place, people would be more vocal about their interest in walking along and near the SR 260 corridor.

EVALUATION MEASURES

Many specific pedestrian and access management techniques have been considered for the study area. Table 5.2 describes each technique and evaluates each by showing its advantages and disadvantages.

TABLE 5.2. PEDESTRIAN AND ACCESS MANAGEMENT TECHNIQUES: ADVANTAGES AND DISADVANTAGES

Technique	Advantages	Disadvantages
Construct raised median	• Reduces crashes by reducing vehicle/vehicle and vehicle/pedestrian conflicts. • Provides refuge for pedestrians crossing streets.	• Perceived adverse impact on adjacent business. • Creates circuitous routes. • Snow removal is more difficult and would take more time. Snow would need to be plowed from the center to the outside of the roadway where it would need to be loaded and removed. • Moderate cost.
Construct pedestrian overpass.	• Reduces pedestrian/vehicle and bicycle/vehicle crashes by separating pedestrian and bicycles from vehicle traffic.	• High cost and visually intrusive. • High space requirements. • May be avoided by pedestrians and bicyclists.
Construct pedestrian underpass.	• Reduces pedestrian/vehicle and bicycle/vehicle crashes by separating pedestrian and bicycles from vehicle traffic.	• High cost. • High space requirements. • May be avoided by pedestrians and bicyclists.
Reduce number of driveways. Combine driveways.	• Reduces crashes by reducing the number of conflicts among vehicles, pedestrians, and bicycles.	• Requires agreement of property owners. • May require redesign of parking and access.
Provide cross-access across adjacent business properties.	• Reduces direct access thereby reducing conflicts among vehicles, pedestrians, and bicycles.	• Requires agreement of property owners. • May require redesign of parking and access.
Restrict driveway use to right-in/right-out only access.	• Reduces vehicle conflicts due to left-turning vehicles.	• Reduces full vehicle access.
Construct pedestrian refuges.	• Provides a refuge for pedestrians crossing wide streets. • Relatively low cost.	• May not be acceptable by pedestrians and bicyclists.
Provide access from rear of property.	• Redirects traffic from Main Street.	• May require reorientation of parking and building access.
Provide frontage road.	• Reduces direct access to adjacent properties thereby reducing vehicle conflicts.	• Requires additional right-of-way. • Additional construction cost.

TABLE 5.2. PEDESTRIAN AND ACCESS MANAGEMENT TECHNIQUES: ADVANTAGES AND DISADVANTAGES (Continued)

Technique	Advantages	Disadvantages
Implement countdown timers at walk signals	• Increases pedestrian protection; especially helpful for disabled, elderly, and persons with small children	• More costly than ordinary walk signals
Implement pedestrian activated mid-block walk signal.	• Provides pedestrian protected signal. • Reduces pedestrian and bicycle crashes. • Relatively low cost.	• Drivers may not expect signal at mid-block. • Potential increase of vehicle crashes.
Implement pedestrian activated walk signal at intersection.	• Provides pedestrian protected signal. • Reduces pedestrian and bicycle crashes. • Relatively low cost.	• Potential increase of vehicle crashes.
Install pedestrian warning signs	• Provides warning to drivers that pedestrians may be crossing. • Low cost.	• Does not provide pedestrian protection.
Install cross walk with pedestrian warning signs.	• Provides some protection to pedestrians and bicyclists.	• Does not provide pedestrian signal protection.
Install guide signs (Wayfinding)	• Directs pedestrians and bicyclists to safe routes and crossings. • Low cost.	
Distribute Safe Routes to School Map	• Provides guidance to schoolchildren to safe routes. • Low cost	
Provide educational material and programs.	• Provides guidance to pedestrians and bicyclists. • Low cost.	

PEDESTRIAN LEVEL OF SERVICE

The Florida Department of Transportation has developed state-of-the art methods to evaluate quality/level of service (Q/LOS) for various transportation modes, including the pedestrian, auto, bicycle, and transit modes. The methods are documented in the 2009 Quality/Level of Service Handbook and level of service software located at http://www.dot.state.fl.us/planning/systems/sm/los/. Level of service for pedestrian facilities is also a quantitative measure of quality of service represented by six letter grade levels, LOS A through F. LOS A represents the best condition and LOS F represents the worst condition. Generally the range of LOS C-D is judged to be an acceptable level of service.

Pedestrian LOS comprises the factors shown in Table 5.3.

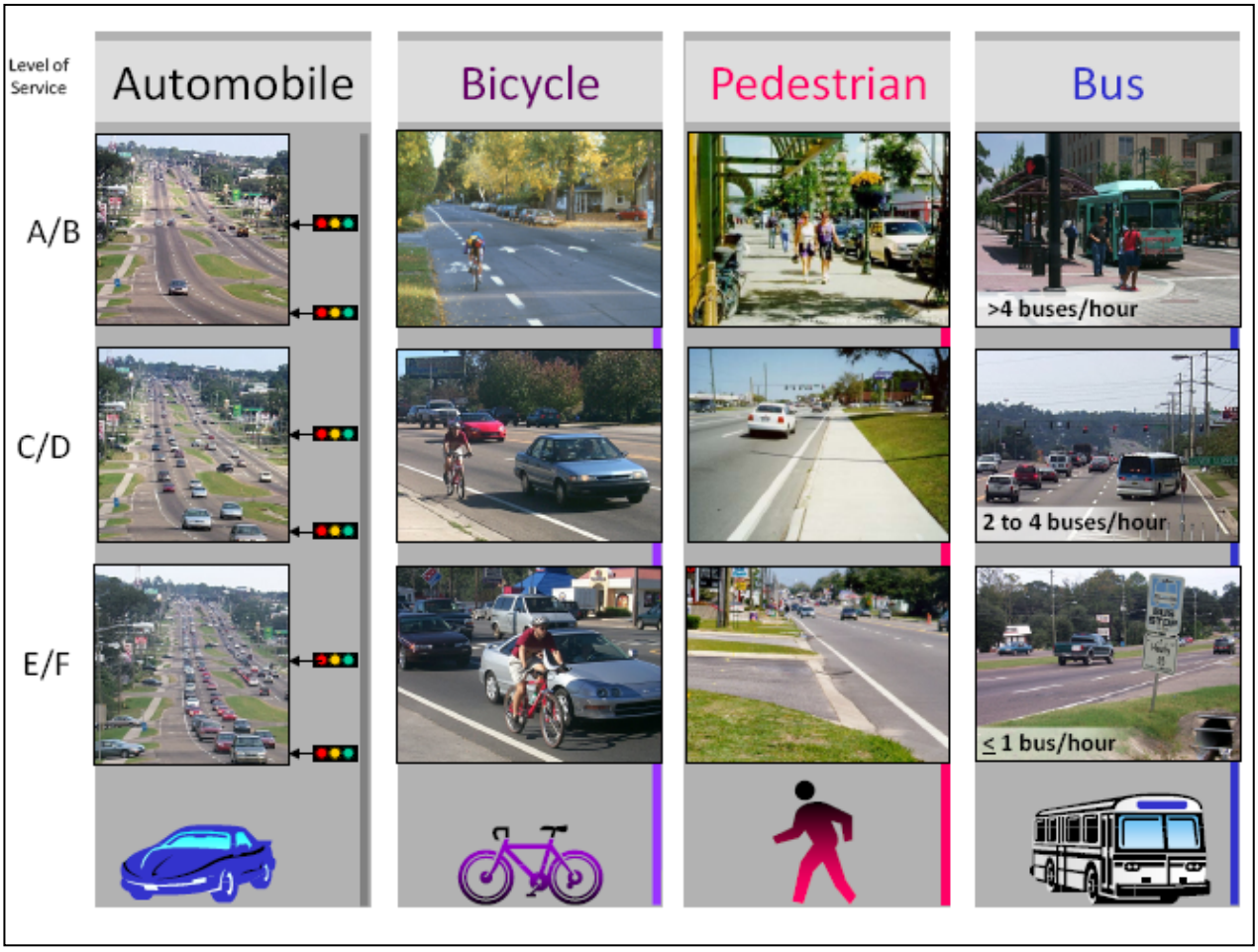
TABLE 5.3. PEDESTRIAN LEVEL OF SERVICE FACTORS

Pedestrian Walkway	Pedestrian Intersection
• Pedestrian density	• Right turns on red
• Presence of sidewalk	• Left turns during "Walk" phase
• Width of sidewalk	• Cross-street vehicle traffic
• Lateral separation between vehicles and pedestrians	• Cross-street vehicle speeds
o Barriers (trees, bushes, barricades)	• Lanes on the cross-street
o On-Street parking	• Vehicle volumes
• Vehicle volumes	• Vehicle speeds
• Vehicle speeds	• Delay waiting to cross at signal

Photographic illustrations of the various modes of transportation at level of service A through F are shown in Figure 5.4.

The principles, the evaluation measures in Table 5.3, and the Pedestrian Level of Service concepts are later applied to the options presented in Chapter 6 to conclude with the recommendations in Chapter 7.

FIGURE 5.4. EXAMPLES OF LEVEL OF SERVICE BY MODE FOR URBAN ROADWAYS



Source: Florida Department of Transportation, *2009 Quality/Level of Service Handbook,* *http://www.dot.state.fl.us/planning/systems/sm/los/pdfs/2009FDOTQLOS_Handbook.pdf*

6. OPTIONS FOR PEDESTRIAN SAFETY AND MOBILITY IMPROVEMENTS

The options for improvements are presented below. The Northwest Study Area options are presented first, followed by the Southeast Study Area options.

All transportation network components, including facilities for pedestrians and vehicles, are shown as lines on Figures 6.1 and 6.4. Additional planning and engineering studies are required to define sidewalk and trail centerline alignments and right-of-way. While neither this study nor any previous study have recommended a relocation of Porter Mountain Road or SR 260, the centerline of the future right-of-way of those or any other roadway might be adjusted by a few feet.

Potential improvements to SR 260, the one study area highway that is on the State Highway System, can be made only after in-depth planning and engineering studies are conducted by ADOT, and upon approval of the State Transportation Board. The recommendations made by this study for improvements on SR 260 can serve only as suggestions for further study.

NORTHWEST STUDY AREA OPTIONS

The Northwest Study Area options appear in Figure 6.1, following principles set out on page 65:

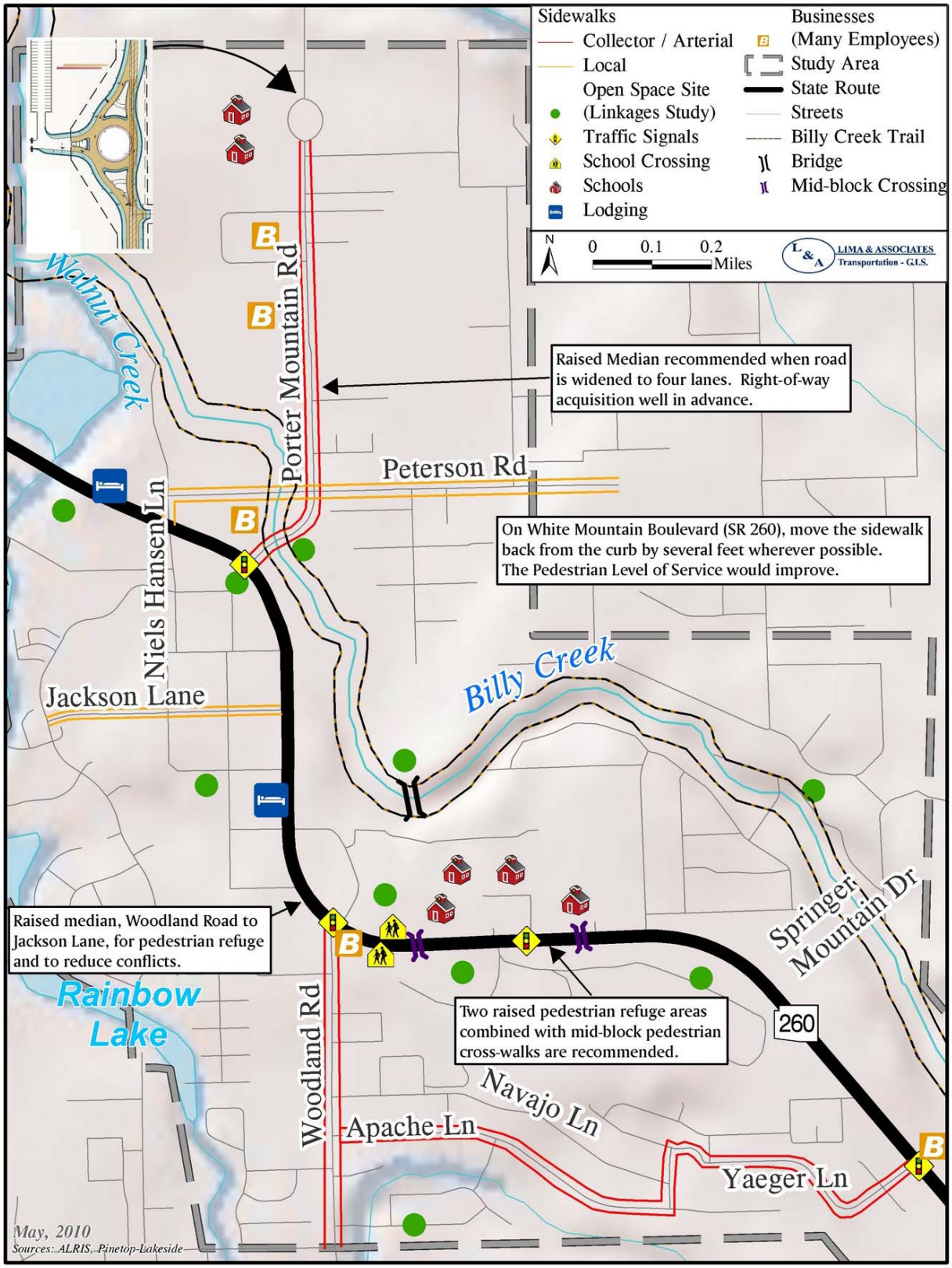
- There are a number of facilities that would provide safe pedestrian travel to school and facility configurations that could qualify for Safe Routes to School funding.

- The recommended projects on Porter Mountain Road are as set out in the 2009 TIGER grant application. Salient features include widening of the roundabout to two lanes in each direction, and curb, gutter, and sidewalk on Porter Mountain Road. This pedestrian study recommends that right-of-way preservation for the four-lane roadway occur well in advance of construction and that a raised median with a limited number of full intersections be a part of the design.

- Improvements are concentrated to serve the Old Town Node and Open Space sites. The Billy Creek Trail is key to the Town trails plan, linkages of Open Space sites, and safe routes to school.

- Local street sidewalks are provided on some streets that directly connect to neighborhoods, and additional connections could serve other residential areas (such as a sidewalk on Niels Hansen Lane and extension of Woodland Road sidewalks to the south).

FIGURE 6.1. PEDESTRIAN SAFETY AND MOBILITY OPTIONS FOR THE NORTHWEST STUDY AREA (BRUSD SCHOOLS)



Consideration of needs on the SR 260 corridor near the south schools campus has led to specific facility suggestions for two different segments, as follows:

Install Raised Median – Jackson Lane to Woodland Road. A raised median is recommended on SR 260 from Jackson Lane to Woodland Road to provide pedestrian refuge and reduce conflicts along SR 260. The median would have no more than one or two breaks where left turns would be allowed. Most intersections between Jackson Lane and Woodland Road would be re-designed as right-in/right out intersections. Sidewalks should be constructed on both sides of the side streets leading to intersections with SR 260.

The facility design would take into consideration the wide turning radii of large vehicles when turning left or right. U-turns are not anticipated to be permitted along the segment from Jackson Lane to Woodland Road.

Install Pedestrian Refuge– Woodland Road to Moonridge Drive. For this section of SR 260, two raised pedestrian refuge areas combined with mid-block pedestrian crosswalks are recommended. The SR 260/Woodland Road and SR 260/Yellow Jacket intersections would remain signalized. One refuge area would be located between Woodland Road and Yellow Jacket and another refuge area would be located between Yellow Jacket and Moonridge Drive. Warrant studies should be conducted to determine if a pedestrian signal would be warranted in the refuge areas. The type of pedestrian signals considered along SR 260 would be similar to those installed in the Tucson area at intersections and mid-block crossings.

ADOT crash history records became available late in this study and a limited crash analysis appears in Appendix C. The mapping of crashes indicates that crashes are more prevalent at Woodland Road, Yellow Jacket, and Moonridge Drive than in some of the areas between the intersections. The crash history will be taken into account as the locations are recommended for median refuge areas and mid-block crossings.

All intersections and driveways between Woodland Road and Moonridge Drive except Yellow Jacket should be considered to be re-designed as right-in/right out intersections, and some would be selected for re-design. Sidewalks should be constructed on both sides of the side streets leading to intersections with SR 260. Pedestrian Refuge islands with crosswalks have been installed where schools have frontage on major roadways in some Arizona communities. Two examples appear below in Figures 6.2 and 6.3. Figure 6.2 is on SR 180, at Charles W Sechrist Elementary School, 2230 N Fort Valley Road, Flagstaff. Figure 6.3 is at Shadow Mountain High School, Shea Boulevard at 30th Street, Phoenix.

The length of the entire fenced area (Figure 6.3) could vary from fifty to 100 feet, and the placement of the fenced area along the road segment would take into consideration any need for permitting left turns, and for dedicated left-turn lanes in particular.

FIGURE 6.2. PEDESTRIAN REFUGE ISLAND ON TWO-LANE STATE HIGHWAY

FIGURE 6.3. PEDESTRIAN REFUGE ISLAND ON FOUR-LANE URBAN ARTERIAL

The Tucson area pedestrian crossings with signals are described in the brochure that is attached as Appendix A. Various types of pedestrian-actuated signals and associated facilities have been designed for specific traffic volumes/types and roadway characteristics. After a period of experimentation with each, some of them have been accepted as a standard in the 2009 update of the Manual on Uniform Traffic Control Devices. With that guidance, use of this type of crossing may increase and there will be a wider experience base on which their suitability to the SR 260 corridor might be assessed by traffic engineering studies.

SOUTHEAST STUDY AREA OPTIONS

The Southeast Study Area options appear in Figure 6.4, following principles set out on page 65:

- Connections between sidewalks and recreational trailheads are seen at Pinecrest Lane and the Arizona Game and Fish Trail.
- Walking from lodging places along SR 260 to the Penrod Node would be enhanced by specific streetscape improvements on the south side of SR 260. Sidewalks on Woodland Lake Road and South Penrod Lane would assist visitors in exploring away from the commercial corridor. Safer crossings of SR 260 would help pedestrians walk to businesses on both sides of SR 260 and would make it easier to access the forest lands just to the north.
- The Yaeger Lane "pedestrian entrance" to the Walnut Creek Node will be enhanced by providing a sidewalk along the Yaeger Lane/Apache Lane collector street. (Most of the Walnut Creek Node is outside the study area).

The intersection/driveway density study in Chapter 3 may particularly influence some access management suggestions. Figure 6.5 displays crashes on SR 260 between the four year period of 2005-2008, compared to intersection and driveway locations. In general, it can be seen that crashes occurred where there are the most intersections and driveways. An exception is the area east of Yellow Jacket, where there are many crashes, although there are few driveways. Typically, when that situation exists, it is because there is much stacking behind an intersection, and many rear-end collisions. The data indicates that is the case at Yellow Jacket.

The small number of intersections and the lack of accidents over several hundred feet of SR 260 centerline between Woodland Road and Yellow Jacket may represent an opportunity. A potential mid-block pedestrian crossing appears that it would not be in a high-risk location. Very few crashes in that mid-block area occur, while there are many accidents just to the east.

Figure 6.6 displays injury and fatal crashes on SR 260 from 2005-2008. In general, injury crashes are distributed over the entire length of SR 260 in the study area. The most notable cluster is the large number of accidents near the SR 260/Penrod Lane intersection. Note that the crash mapping analysis background and limitations are described in Appendix C.

FIGURE 6.4. PEDESTRIAN SAFETY AND MOBILITY OPTIONS FOR THE SOUTHEAST STUDY AREA (SR 260)

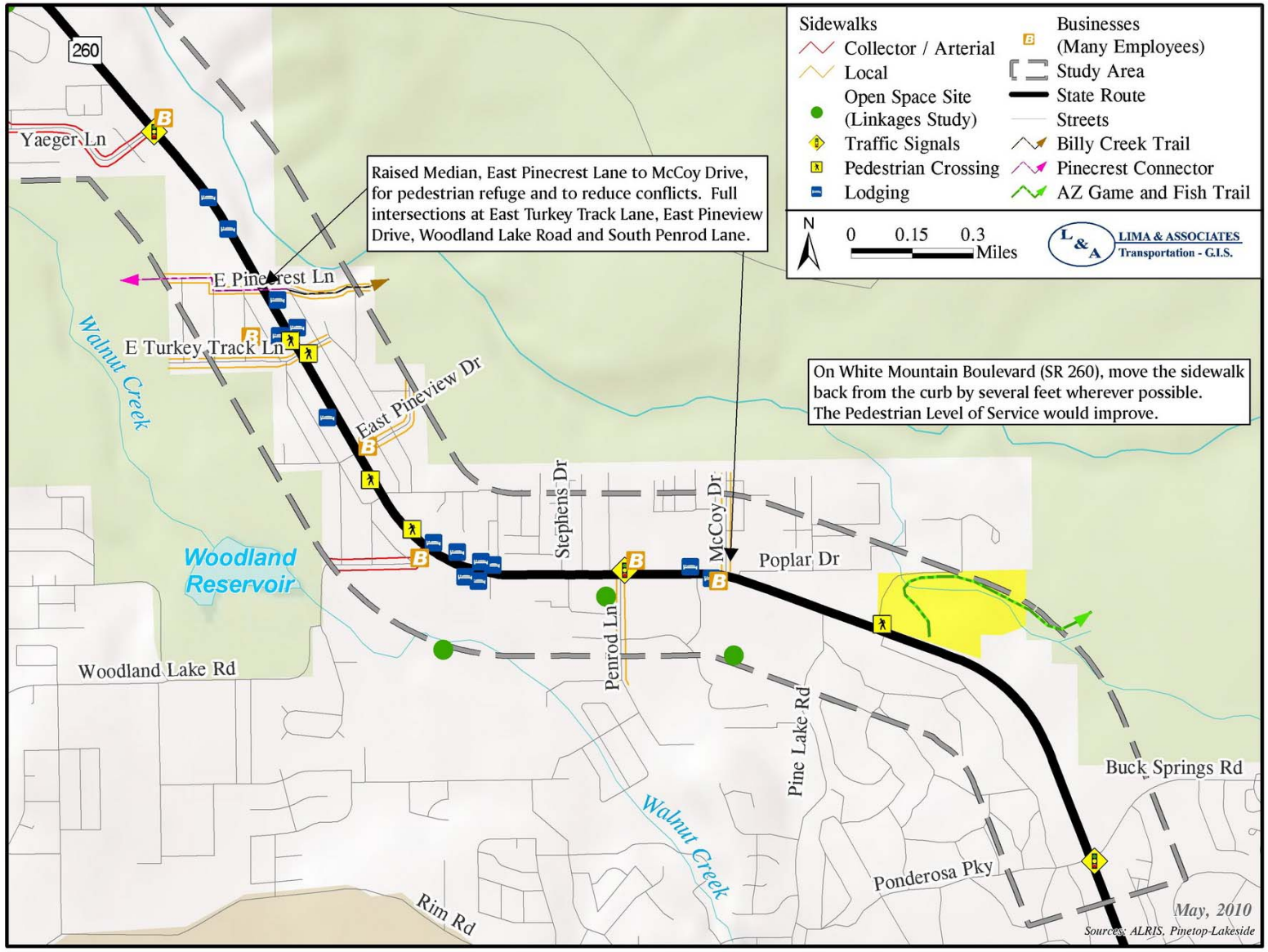


FIGURE 6.5. CRASHES ON SR 260, 2005-2008, COMPARED TO INTERSECTION AND DRIVEWAY LOCATIONS

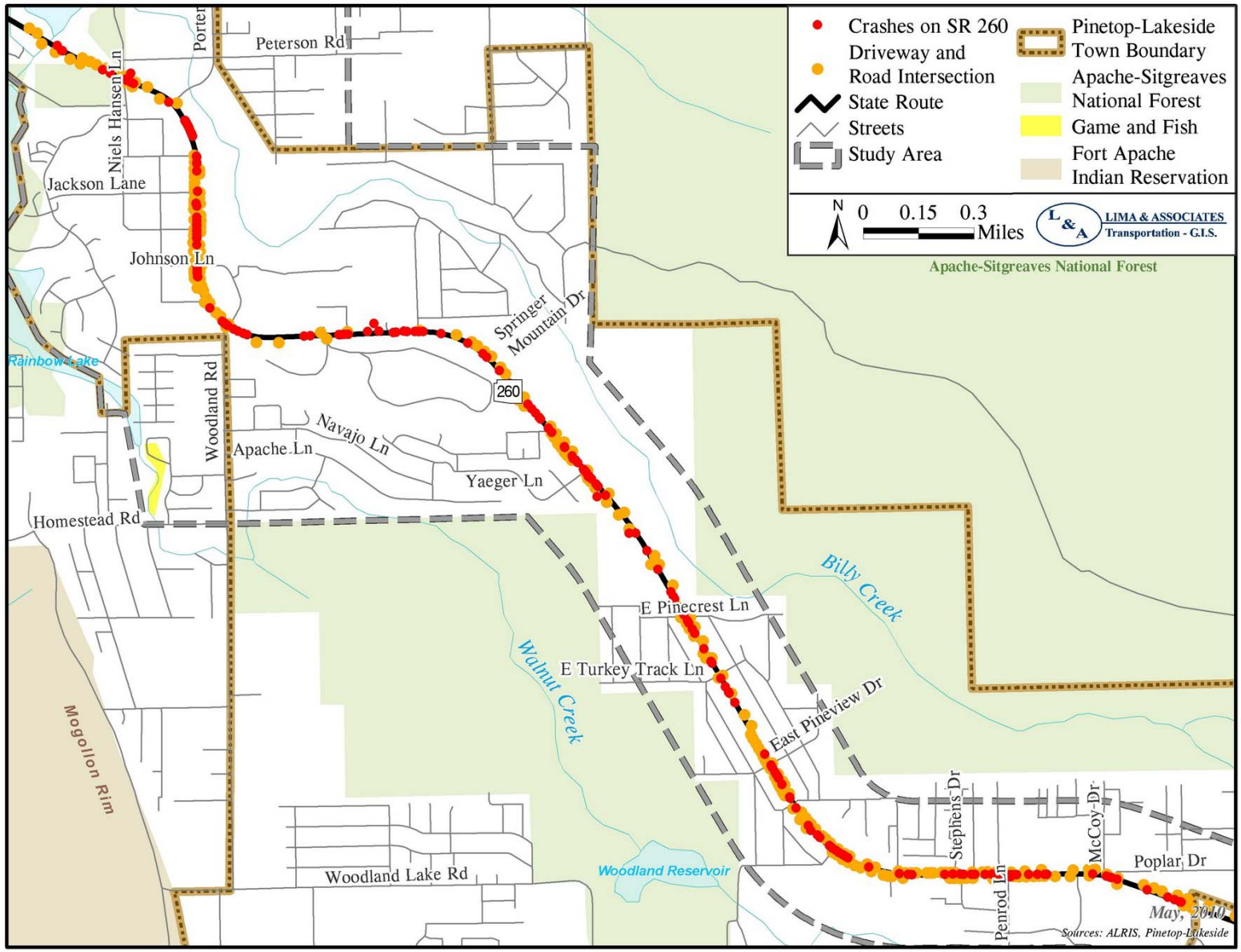
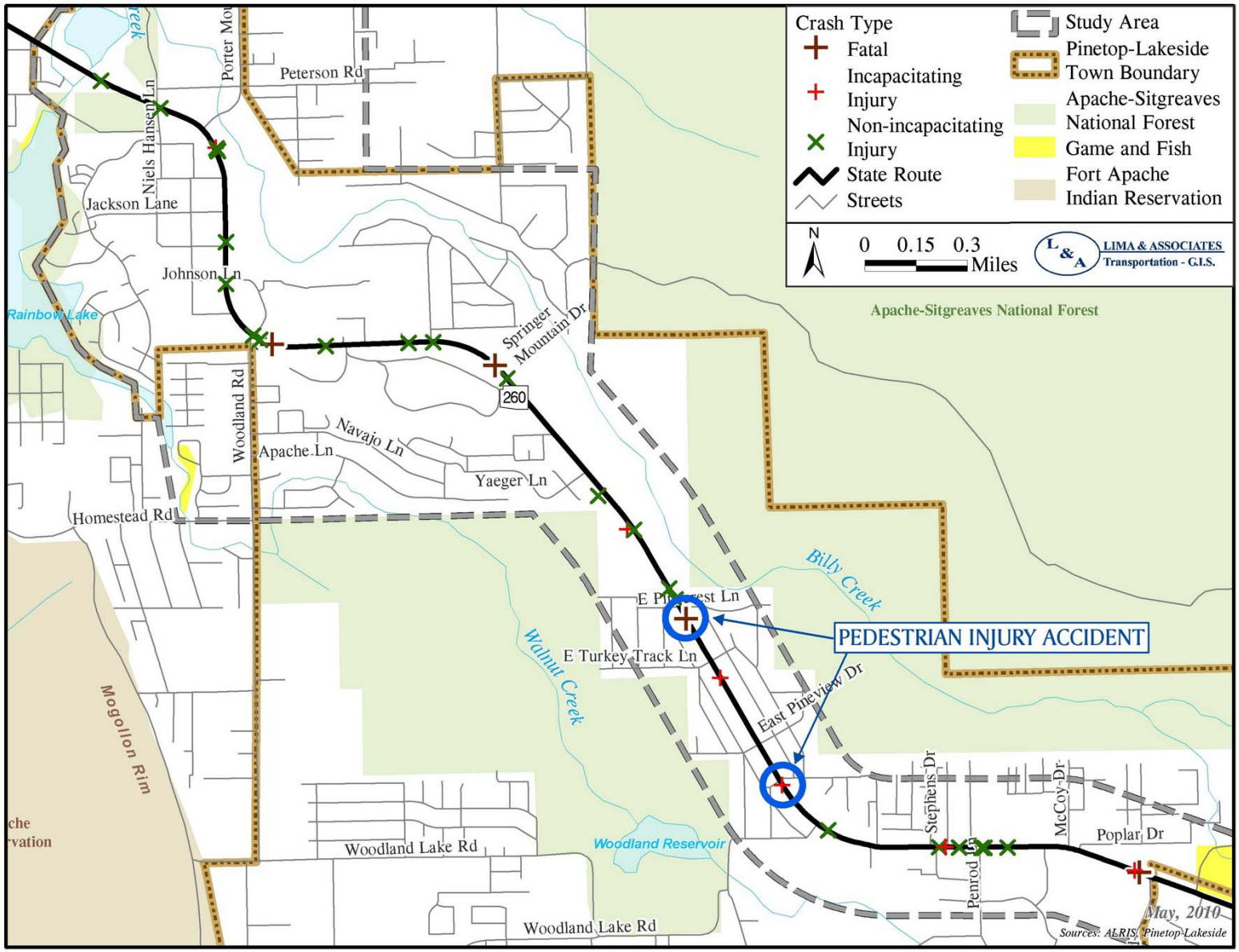


FIGURE 6.6. INJURY AND FATAL CRASHES ON SR 260, 2005-2008



Consideration of needs on the SR 260 corridor has led to specific facility suggestions for the East Pinecrest Lane to McCoy Drive area, as follows:

Install Raised Median – East Pinecrest Lane to McCoy Drive. A raised median is recommended on SR 260 from East Pinecrest Lane east to McCoy Drive to provide pedestrian refuge and reduce the many conflicts arising from businesses along SR 260. The SR 260 intersections with East Turkey Track Lane, East Pineview Drive, Woodland Lake Road, and South Penrod Lane would remain as full intersections. The South Penrod Lane intersection would remain signalized. Other intersections and all driveways would be right-in/right-out only. The facility design would take into consideration the wide turning radii of large vehicles when turning left or right. U turns are anticipated to be permitted at no more than one or two points along the segment from East Pinecrest Lane to McCoy Drive. Sidewalks should be constructed on both sides of the side streets leading to intersections with SR 260.

OPTIONS THROUGHOUT THE STUDY AREA

U-Turns and Access from Side Streets

The planning and design of raised refuge island and medians must make provision for U-turns at median openings and at full intersections to provide access to properties on both sides of SR 260. In addition, it is beneficial to provide access from the side streets where feasible to allow access to properties from both directions on SR 260.

Transportation Demand Management

Transportation Demand Management (TDM) refers to strategies that result in more efficient use of transportation facilities and services. An excellent source of information on TDM strategies is the Online (http://www.vtpi.org/tdm/) TDM Encyclopedia of Victoria Transport Policy Institute, updated January 2010.

TDM strategies should be considered by the Town to reduce auto trips. Such strategies would encourage the use of other transportation modes and facilities. Example strategies include the following:

- Implement carpooling.
- Encourage hotels to provide vanpools for visitors and employees to reduce auto trips.
- Implement transit shuttle service.
- Provide parking-lots for parking along SR 260 where people could drive to the lot and walk to their destination.
- Provide bicycle racks.
- Provide educational materials and maps to encourage bicycling and walking.
- Implement accessible, livable community design.

7. RECOMMENDATIONS

The recommendations in this chapter are based upon the outcome of evaluating options presented in Chapter 6. The evaluation led to some specific recommendations and other more general recommendations to be defined after studies subsequent to this pedestrian study. Preferably, some of the projects will be completed sooner than the recommendations indicate. Economic considerations have led to the phasing set out in this chapter.

All transportation network components, including facilities for pedestrians and vehicles, are shown as lines on this plan's maps. While neither this study nor any previous study have recommended a relocation of Porter Mountain Road or SR 260, the centerline of the future right-of-way of those or any other roadway might be adjusted by a few feet.

Potential improvements to SR 260, the one study area highway that is on the State Highway System, can be made only after in-depth planning and engineering studies are conducted by ADOT, and upon approval of the State Transportation Board. The recommendations made by this study for improvements on SR 260 can serve only as suggestions for further study.

PEDESTRIAN SAFETY AND MOBILITY IMPROVEMENTS 2010-2015

1. **The Porter Mountain Road vehicle and pedestrian bridge at Billy Creek, and improvements to the roundabout at the entrance to the Blue Ridge Mid/Junior High School.** These are projects that have been consistently advocated by the Town for pedestrian safety. The projects were the subject of the Southern Navajo County 2009 TIGER Grant Application, for which the County's application was not selected. Within the overall project, the bridge and roundabout improvements were high-priority. Both of the projects are recommended to be designed in anticipation of the later widening of Porter Mountain Road to four lanes. For example, there would be a design concept report, preliminary design, and right-of-way acquisition for the entire Porter Mountain Road project. The bridge width would be sized for the widened roadway.

2. **One of two types of continuous walkway should be completed between the Blue Ridge Elementary/High School campus and the Blue Ridge Mid/Junior High School.** Very different funding sources might be available depending upon whether the project was the sidewalk proposed in the TIGER application or (on its southern end) an off-road walkway and pedestrian bridge over Billy Creek. Both appear on Figure 6.1.

3. **School crossing facilities between Woodland Road and Moonridge Drive. The school crossing(s) in front of the Blue Ridge Elementary/High School campus should be improved by 2015.** Subject to consultation with ADOT, it is suggested that at least two pedestrian refuge areas, one between Woodland Road and Yellow Jacket, and another between Yellow Jacket and Moonridge Drive, be constructed. However, the pedestrian refuge areas might be staged, with a refuge area between Woodland Road and Yellow Jacket by 2015, with the other to follow.

A recommendation is that the previous easternmost entrance from SR 260 to the school campus be reopened as an entrance only. School district transportation officials have considered how traffic could enter, travel through the school property, and exit at Yellow Jacket. The importance of this change to pedestrian safety would be to reduce the rear-end collisions that occur on SR 260 where there is stacking. That stacking is associated with risks to pedestrians crossing the roadway or on adjacent sidewalks.

Options for initial safety improvements (with or without the first refuge area) could include warning signs and flashers and school speed zones. A promising new, low-cost technology is shown in Figure 7.1, which has received interim approval for the MUTCD. The technology is known as a rectangular LED stutter flash beacon, to be side mounted. The technology has increased the frequency of motorists yielding to pedestrians in a test in St. Petersburg, FL. Compared to other similar technologies, with yielding levels of roughly 25 percent, the device increased yielding to between 80 and 90 percent. At several multilane pedestrian crossings, the device produced yielding levels that are equivalent to a traffic signal. No other device without a red indication has produced similar yielding data.

FIGURE 7.1. EXAMPLE LED STUTTER BEACON

Another technology would be one in the family of signals installed in many areas of Tucson (Appendix B), which are pedestrian-actuated and may be used under certain guidelines at school crossings. A guideline for their use is included in MUTCD, 2009. Note, that while there are many items to consider before such a signal would be installed on SR 260 in front of the schools, the distances along the roadway segments should not be an obstacle. The MUTCD indicates that the "School Crossing signal warrant shall not be applied at locations where the distance to the nearest traffic control signal along the major street is less than 300 feet." A mid-block signal on SR 260 would have the potential for a distance of well over 300 feet to the west to Woodland Road and over 300 feet to the east to Yellow Jacket.

4. Other Pedestrian Crossings. To determine the relative priority of pedestrian crossings or sidewalk improvements and the phasing of each, the pedestrian LOS was estimated using the Florida Department of Transportation software ARTPLAN 2009 based on the following assumptions: 1) estimated Average Annual Daily Traffic (AADT); 2) estimated 10 percent of AADT occurs in the peak hour; and 3) a typical sidewalk section. The estimated auto and pedestrian levels of service are presented in Table 7.1.

TABLE 7.1. PEDESTRIAN LEVEL OF SERVICE, SIDEWALK ALONG SR 260

Year	Average Annual Daily Traffic (AADT)	Auto Level of Service	Pedestrian Level of Service
2007 (1)	23,000	LOS C	LOS D
2015	31,000	LOS E	LOS D
2020	36,000	LOS F	LOS F
2030 (2)	45,000	LOS F	LOS F

Levels of service estimated using Florida Department of Transportation software ARTPLAN 2009
(1) ADOT Traffic Count
(2) *Pinetop Lakeside Community Transportation Plan*, September 2007

The analysis shows that current level of pedestrian level of service is at LOS D. This level indicates that conditions for walking along SR 260 are marginally acceptable. Walking conditions along SR 260 will be unacceptable by the year 2020. Auto level of service is expected to degrade to an unacceptable level by 2015 and congested conditions by 2030 if traffic growth trends continue. The higher auto traffic volumes experienced in the future years will make walking across SR 260 much more difficult and impede pedestrian safety. It is important to note that traffic volumes on SR 260 during peak events already approach the 2030 traffic levels.

The level of service analysis indicates that pedestrian crossing projects along SR 260 will be required by 2015 given the anticipated traffic volumes and pedestrian conditions. Actually, the pedestrian level of service of LOS D indicates that pedestrian crossing improvements could be implemented now, particularly in the school area along SR 260. The analysis further indicates that all the recommended improvements should be implemented by 2030.

From this analysis, the specific recommendation for 2010-2015 is for crossing projects to be undertaken at each currently signalized intersection on SR 260. At a minimum, signal sequencing and timing should be reviewed and adjusted and countdown timers should be installed at walk signals.

5. As each of the above improvements is implemented, wayfinding maps should be created and revised to indicate safe walking route options from homes and lodging places to shopping areas, Four Seasons Connection bus stops, and trailheads.

PEDESTRIAN SAFETY AND MOBILITY IMPROVEMENTS 2015-2020

1. Widening of Porter Mountain Road from two to four lanes, between SR 260 and the mid/junior high school. This project was recommended in the 2007 Community Transportation Plan for completion by 2020 and it was the priority 2 project in the recent 2009 TIGER grant application. If the Billy Creek Bridge project were constructed by 2015, then the project in 2015-2020 would consist of design and construction of a 4-lane roadway.

   The specific improvements recommended to benefit pedestrians would be a raised median, curb, gutter, and sidewalk. Without those facilities in place, a widened Porter Mountain Road would be as unsuitable for pedestrians, including schoolchildren, as the SR 260 corridor is currently.

2. Additional sidewalk construction or improvements. Pedestrian crossings are recommended for the 2010-2015 time period (item 4 above). During 2015-2020, the sidewalks adjacent to SR 260 should be improved and set back from the curb in many locations. Sidewalk construction should occur to and through the Old Town and Penrod Nodes.

   Timing the sidewalk construction for the 2015-2020 time period allows for the further development of the Old Town and Penrod Node planning and design as a part of the Town's General Plan.

3. Consolidation of Driveways. The sidewalk improvements along SR 260 should be fully coordinated with a program to work with businesses to consolidate driveways and concurrently provide cross-access across properties. This is particularly important to both pedestrian and vehicle travel safety in the area between Turkey Track and Stephens Drive where there are currently 69 driveways and intersections over a distance of .9 miles.

4. Median between Jackson Lane and Woodland Road and between Woodland Lake Road and McCoy Drive. The median between Jackson Lane and Woodland Road would be fully integrated with the design of the Old Town node, while the median between Woodland Lake Road and McCoy Drive would be fully integrated with the design of the Penrod node. After in-depth traffic studies, suitable pedestrian crossings would be constructed in

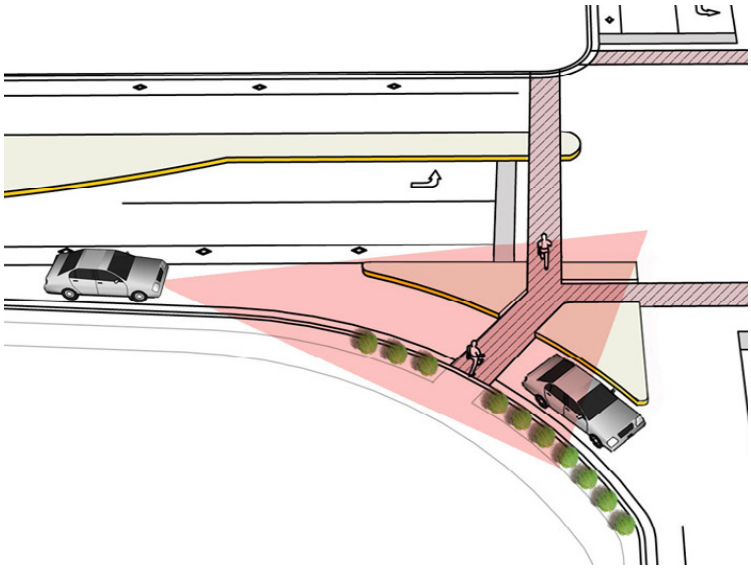
connection with the median. They could range from crosswalks similar to the one that appears in Figure 6.3 above to mid-block signals such as those described in Appendix B.

PEDESTRIAN SAFETY AND MOBILITY IMPROVEMENTS 2020-2030

1. Median between East Pinecrest Lane and Woodland Lake Road. This would be the last of the median areas recommended along SR 260. The particular pedestrian crossing features would be planned and constructed similarly to those described in earlier phases for the other median areas.

2. Pedestrian refuge islands between turning lanes and through lanes (on SR 260 at Porter Mountain Road and Woodland Road), with features as shown in Figure 7.2.

FIGURE 7.2. PEDESTRIAN REFUGE ISLAND AT INTERSECTION



Source: AARP Public Policy Institute, Planning Complete Streets for an Aging America, Lynott et al., 2009.

Additional turning lanes on SR 260 at both intersections would make the islands necessary, due to increase crossing distances and times for pedestrians. Subject to further study, pedestrian refuge islands are recommended at those two intersections between turning lanes and through lanes. The pedestrian refuge island and intersection design shown in Figure 7.2 has features particularly designed for older drivers and walkers and young children. The 2007 Community Transportation Plan recommended the additional turning lanes, based upon intersection modeling that followed the modeling of traffic volumes on SR 260.

3. Continuation of programs from previous phases to complete the programs in the pedestrian study area, and to extend the programs outside the study area.

8. IMPLEMENTATION AND FUTURE STUDIES

The phased implementation plan appears in Table 8.1. Table 8.1 is consistent with the recommendations in Chapter 7, and it provides further detail concerning the incremental construction of some of the facilities and provides a cross-reference to the various improvements at the three time periods, 2010-2015, 2015-2020, and 2020-2030.

FUTURE STUDIES

As soon as possible, there should be a detailed analysis to determine the best type of pedestrian refuge area and programs to improve the safety of the SR 260 crossing between Woodland Road and Moonridge Drive. Warrant studies should be conducted to determine if a pedestrian signal would be warranted in the refuge areas. Beginning such studies by 2011 might make it possible to have the improvement in place by 2015. The Pinetop-Lakeside Police Department is key to the discussion of speed limit adjustments and other related issues.

The general plan discussions may provide opportunities to extend some ideas introduced in this pedestrian study, but beyond the central purposes of this study. For example, economic development emerged as a focus of the general plan in the early general plan discussions. The planning for development of each of the three nodes should consider opportunities for a wide variety of pedestrian safety and mobility solutions related to economic development, such as:

- Parking facilities for employees, customers, and deliveries, and shared parking for carpooling, park and ride, and/or trailheads.
- Access management related to construction of new businesses.
- Opportunities for customers to walk to businesses and employees to walk to lunch or at break times.

A study of property availability for right-of-way should be as inclusive as possible, in the interest of early preservation of right-of-way for future facilities. Established methods of determining right-of-way needs would be a part of any corridor location study for Porter Mountain Road and other roadway improvements. A study of opportunities for driveway consolidation might be done at the same time, as good designs for the resulting property access and parking lots might involve small amounts of property acquisition, sales, or exchange by businesses or the Town.

PARTNERSHIPS

The Town, the City of Show Low, and Navajo County will continue to work together on the Porter Mountain Road (see Figure 2.4 and the phased recommendations in Table 8.1).

Joint interest is shared regarding the combined urban sidewalk and trails network in the pedestrian study area. Occasional workshops should be held that include the Town, BRUSD, Four Seasons Connection and White Mountain Connection transit officials, the Senior Center, the Chamber of Commerce, the TRACKS group, and others in exploring their common interests. The Town and BRUSD should continue their ongoing joint planning for facilities and education for pedestrians.

Several stakeholders indicated that it is important to build two bridges over Billy Creek: both the Porter Mountain Road vehicle and pedestrian bridge and the off-road pedestrian bridge further east. Advantages to building both exist. Many additional walking route options would be created because of the various loop and "out and back" walks that could include those bridges. In addition, certain weather conditions or vehicle traffic congestion conditions would favor the use of one of the bridges, while different conditions would favor the other.

Special Populations

Several of the recommended improvements would be concentrated in areas with relatively high numbers of persons in environmental justice protected classes (see background in Chapter 3). The area west of Porter Mountain Road and west of Woodland Road has some blocks with more low-income, minority, and/or mobility limited persons than in the Town overall. The recommendations include improvements in that area, which is also near the southern schools campus and in or near the prospective Old Town Node, with a priority to that area in the first time period (2010-2015).

Recommended sidewalk construction and SR 260 crossing improvements in the schools/Old Town area are concentrated in the time period 2015-2020. Detailed planning for those improvements should include the benefits to the low-income population, senior citizens, and the schools. For example, facilities to help senior citizens access the senior center on Johnson Lane should be considered.

TABLE 8.1. PEDESTRIAN SAFETY AND MOBILITY IMPLEMENTATION, 2010-2030

Phase	Schools (Northwest)			SR 260 (Southeast)		
	Median / Refuge	**Sidewalk/Path/ Trail**	**Other Facilities And Programs**	**Median / Refuge**	**Sidewalk/Path/ Trail**	**Other Facilities And Programs**
2010-2015	- SR 260 between Woodland Road and Yellow Jacket.	- Continuous walkway between the school campuses	- Billy Creek Bridge construction and Porter Mountain Road widening/ improvements to SR 260 - Wayfinding maps			- Signal improvements for safer crossing at several SR 260 intersections - Wayfinding maps
2015-2020	- Porter Mountain Road raised median - Median between Jackson Lane and Woodland Road, with appropriate pedestrian crossing facilities	- Porter Mountain Road sidewalk - Sidewalks built to and through the Old Town Node - Selected existing SR 260 sidewalks relocated back from the curb	- Widening of Porter Mountain Road from two to four lanes, between SR 260 and the mid/junior high school, curb, gutter - Signage. Wayfinding map revisions	- Median between Woodland Lake Road and McCoy Drive, with appropriate pedestrian crossing facilities	- Sidewalks built to and through the Penrod Node - Selected existing SR 260 sidewalks relocated back from the curb	- Consolidation of driveways as a cooperative program with businesses. - Focus on Turkey Track to Stephens Drive - Signage. Wayfinding map revisions
2020-2030	- Pedestrian refuge islands between turning lanes and through lanes (on SR 260 at - Porter Mountain Road and Woodland Road), for safe travel by children / elderly.	- Completion of SR 260 sidewalk improvements in study area	- Continuation of programs: completion in study area; extension to remainder of Town	- Median between East Pinecrest Lane and Woodland Lake Road, with appropriate pedestrian crossing facilities.	- Completion of SR 260 sidewalk improvements in study area	- Continuation of programs: completion in study area; extension to remainder of Town

APPENDIX A. STAKEHOLDER STATEMENTS OF NEEDS AND DEFICIENCIES

STAKEHOLDER STATEMENTS OF NEEDS AND DEFICIENCIES

PEDESTRIAN SAFETY

- It is dangerous for walkers to cross SR 260 and for motorists to turn onto or off from SR 260.
- A pedestrian bridge is needed across SR 260. Perhaps the best location would be near the Safeway store.
- Need more crosswalks and stop lights for safer crossings. Additional stop lights within one-half mile either side of Penrod might be appropriate.
- Stop lights for pedestrians are currently all of the "triggered" type. They will be checked periodically as to whether they are working properly. Also, since half of summer visitors are elderly, the lights should stay green for longer to allow more time for crossing.
- Elderly people want to limit their driving. Some effects of that fact on Pinetop-Lakeside are that more elderly seasonal residents stay in their second homes in Pinetop-Lakeside for a greater share of the year, rather than going on longer trips.
- On roads other than SR 260 there should be more sidewalks
- There should be a crosswalk at SR 260 adjacent to the Best Western, for access to a popular trailhead.
- The dual left-turn lane makes for a high risk of head-on vehicular collisions. Near the Chevron gas station is the worst location.
- Left turns are risky so area utilities require that meter readers make right-hand turns, only.
- Street lights that are a part of the landscape project on SR 260 will help in that area.
- More street lights are needed, especially for summer evening walkers; however, many town residents perceive lighting would ruin the "dark skies." Lighting aids safety, aesthetics, and more. Business persons find it difficult to settle upon lighting that is acceptable to all. Might some solutions in Sedona help Pinetop-Lakeside?
- Many Pinetop-Lakeside residents like the lights in Snowflake that were not funded by ADOT and that do not meet ADOT standards. Might ADOT allow lights that are not standard if Pinetop-Lakeside town paid for them?
- There should be a median either side of the Woodland Lake Road and SR 260 intersection (across from the Chevron Station, etc.). Medians or pedestrian refuge should be considered near Safeway, near Turkey Track, and on SR 260 near the Lakeside post office.
- It is known by most town residents that it is risky for schoolchildren to cross SR 260 in front of the school campus. There would be much support for placing a high priority on a demonstration project with safety, access-control, and mobility components at that location. How about a demonstration project comprising a median and detached sidewalk, from Moon Ridge to Woodland Road?
- Medians on SR 260 should include landscaping.
- Town police are noticing pedestrian traffic infractions at the schools and will start to cite soon.

STAKEHOLDER STATEMENTS OF NEEDS AND DEFICIENCIES (Continued)

- Two town police officers have been trained as bicycle officers and will have bikes in their cars at all times. They will accompany the "walking schoolbus" in October for educational and safety purposes.
- Additional analysis of a possible Woodland Road median, discussed as part of the signal study, was one of the stated needs leading to this pedestrian study.
- The perception of unsafe conditions influences how much people walk. When one walks on the sidewalk directly in front of the schools and adjacent to SR 260, "it feels dangerous," especially when logging trucks are present. Similarly, "it feels dangerous" when walking near Penrod and SR 260.
- The high school is limiting the "open lunch" policy partly to protect students from the danger of crossing SR 260. Those who cannot leave campus at lunch are freshmen this year, adding sophomores next year.
- The community may resist unfamiliar access and safety facilities at first but accepts them when they prove to function well. The roundabout on Porter Mountain Road is an example.
- The Penrod Lane and SR 260 intersection is dangerous for walkers. High speeds are a special problem. Parking space demand exceeds supply. Business persons have asked about pedestrian refuge islands as part of the solution. Some want consideration of a longer median either side of Penrod.
- People walk from motels to the restaurants and grocery at Penrod Lane and SR 260. A longer stop light cycle to cross SR 260 would help. In general, better pedestrian facilities would be good for safety, businesses, and tourists' enjoyment of their visit to Pinetop-Lakeside.

FUNDING

- Neither motorists nor walkers can make trips around town at a reasonable level of service in the winter season, because SR 260 is the town's main street and inadequate funds are available for SR 260 improvements, maintenance, and operations.
- Transit funding levels are poor. Examples of long walks to work are from the Penrod mobile home park to the nurseries.
- Pinetop-Lakeside supports the recommendation of the 2007 Regional Transportation Study that Porter Mountain Road should be four lanes by 2030. The Town is seeking funding (TIGER grant application, etc.) to build portions of the Porter Mountain Road improvements sooner.

ADOT POLICY

- ADOT, after much discussion with Pinetop-Lakeside town government, lowered the speed limit from 45 to 35 mph in much of Pinetop-Lakeside and speed enforcement is strong.
- On SR 260 traffic passes through Show Low, while Pinetop-Lakeside is often its destination. Separate policies are needed to manage "pass-through" and "trip-end" traffic.

STAKEHOLDER STATEMENTS OF NEEDS AND DEFICIENCIES (Continued)

MULTIMODAL SAFETY

- School bus routes have changed for 09-10 for purposes of safety and efficiency.
- Many schoolchildren live in neighborhoods with bar ditches and without a walking path
- Porter Mountain Road, especially the narrow bridge, is dangerous for walkers.
- The bus stop locations have been reduced. When the bus stops to drop off several children, there is a delay while children leave the road, before the bus may resume its trip.
- Some routes require buses to make 3-point turns (Poplar and Phipps)
- State guidelines state the maximum walking distance to school at 1.0 miles for K-8 and 1.5 miles for 9-12.
- BRUSD continues to bus children who live closer to the schools than state guidelines state, because of the winter weather and lack of sidewalks. Some children have a 45 minute bus ride; on some routes those who live closest to the school are picked up at home first, so ride the farthest.
- Trails may make good walking paths to school; in Pinetop-Lakeside some of the trails are on private property (i.e. Springer Mountain and Twin Knolls)
- Bicyclists are angry because there was a wide shoulder by Game & Fish that bikes used and it was "cut off" to construct a sidewalk.
- Could there be a median on SR 260 combined with opening up the "old junior high entrance" to the campus for right in, only (not right out)? It would lessen congestion both on the south school campus and on westbound SR 260.
- The Yellowjacket Road and SR 260 traffic light is an example of incremental improvements: the light was installed in about 2004, followed by eliminating the offset in Yellowjacket's intersection, and finally improving the light timing.
- More street lights at transit stops would make them safer, especially in winter.
- Access management could improve transportation conditions for businesses, such as:
- Education on how to use the center lane of SR 260.
- Install "Hawk" facilities as in Tucson, with a pedestrian switch to trip the light, which is never red otherwise.
- Driveways with high curbs require tighter turns than new rolling curb driveways that meet ADOT specifications.
- A cooperative program could make it profitable for businesses to encourage customers to park one place, patronize that business, then walk to shop at two other businesses, then return.
- Several adjacent businesses could connect their parking lots, and in some cases remove at least one access to SR 260. An existing example is Iguana Imports/West USA, etc; the Chamber of Commerce that is connected to Safeway; and Pueblo Southwest/Taco Bell/Ace Hardware.
- There is no town-owned parking lot; the Tejido plan calls for one. Parking space demand exceeds supply at Log Cabin shopping center, Darbys, and Pinetop P.O.

STAKEHOLDER STATEMENTS OF NEEDS AND DEFICIENCIES (Continued)

SEASONAL /OCCASIONAL

- ADOT Snow plowing is to the center of SR 260 in Show Low, where there is less snow and it melts faster. In Pinetop-Lakeside ADOT snow plowing is to the outside of SR 260. Plowed snow covers the sidewalks; some walkers move into the road while others stop walking.
- A solution to the problem of snow plowing to the outside of SR 260 would be to move the sidewalks back a few feet; at that point the snow could be plowed into the buffer space between the street and sidewalk.
- ADOT has one blade that clears the curb to plow sidewalks, often as late as one week after a snowfall, and the town has no plows.
- Traffic congestion for weekend events begins Thursday for events popular with tourists such as the Fall Festival, Run to the Pines, and Car Show. Congestion is Saturday and/or Sunday only for the more local events.
- Traffic patterns have been affected because two large employers, Navopache and Pinetop-Lakeside town, and other smaller employers have switched to a four-day workweek. Whether the four-day workweek will be permanent cannot be predicted at this time.
- Congestion is high for two months Aug-Oct, once school is in session but summer residents are still in town
- Outdoor recreation is the top reason for visits to Pinetop-Lakeside but visitors and residents (seasonal and year-round) drive, rather than walk, except in their own immediate neighborhoods.

PEDESTRIAN FACILITIES (safety and additional components)

- There should be more signs to direct people to parking in locations that would encourage trip completion by walking. Whenever gas prices are relatively high, people plan more multiple-purpose trips to save on gasoline costs.
- The urban trails plan would provide trails in locations where the "trip purpose" would be purely recreational, and where the "trip purpose" would also include shopping or a commute, etc. All of those could support health and safety and ease congestion.
- There should be a traffic light at Pine Lake Road where there will be a link between the WMTS and Pinetop-Lakeside urban trail system.
- There should be more signs to direct people to trailhead parking and to the trails.
- A trail that would connect the two school campuses, perhaps along Billy Creek, could be eligible for Safe Routes to School funding

SOCIOECONOMIC FACTORS AND INFLUENCES ON TRAVEL BEHAVIOR

- Low-income workers: Many who are residents of Pinetop-Lakeside walk to work along SR 260. Others commute by driving from Vernon, Heber, and other areas.
- Middle- and high-income workers: Most drive to work in Pinetop-Lakeside in single-occupant vehicles.

STAKEHOLDER STATEMENTS OF NEEDS AND DEFICIENCIES (Continued)

PARTNERSHIP EXAMPLES AND OPPORTUNITIES

- A trail along Scott Ranch Road (northwest of the study area) is being developed by a partnership of Pinetop-Lakeside, Navajo County, Show Low, and perhaps others.
- The town has IGAs with ADOT for a trail at Buck Springs Road and for the new landscaping on SR 260.
- Perhaps snow plowing could be handled jointly via an IGA, whereby ADOT would plow travel lanes and Pinetop-Lakeside would plow median turnouts.
- Perhaps there could be a solution on SR 260 that would be as satisfactory as the median with a crosswalk that was done jointly between ADOT and the Flagstaff Unified School District on SR 180 at Sechrist School (2230 N Fort Valley Rd).

LAND USE PLANNING

- A mixed-use referendum failed recently, but Town government is not giving up on the Town Plan (Tejido group) ideas.
- This pedestrian study and the upcoming general plan could support more travel by bicycle, walking, horses, and transit. A more walking-friendly design of land use and the transportation network would result in more alternate mode use.
- The Walnut Creek node of the Town Plan is a good concept and there would be an opportunity for visitors at existing hotels to walk throughout that node.

BICYCLES (*bicycle planning is not part of the study but pedestrian-bicycle interaction will be considered*)

- There should be a bicycle path separate from the road on Porter Mountain Road, especially because of the large amount of bicycle travel by children.
- There should be a bicycle lane along SR 260. A study confirmed that there are many riders on SR 260 even without a bicycle lane (some riding in town only, some headed for trails), and there are conflicts with motor vehicles already.
- Limited right-of-way availability is the most common obstacle to adding bicycle lanes to SR 260.
- There is a lack of bicycle facilities within the developed town, on and off SR 260.
- Some businesses have rings in walls where bicycles may be locked. Some have a fenced area where bicycles may be parked.

APPENDIX B. SPECIAL PEDESTRIAN/BICYCLE BEACON SIGNALS
(City of Tucson Brochure)

Children's Safety Program

The Tucson Department of Transportation's (TDOT) Traffic Safe Kids Program is teaching children about staying safe on Tucson's streets. The program presented to local elementary school children is a high-energy, 30-minute show using magic and humor. Whether they are walking or taking the bus to school, riding their bike or scooter, or playing ball in their neighborhood, we want to help children remember important safety tips.

An educational activity book accompanies the Traffic Safe Kids Program. The lessons in the book are geared for children in elementary school and use fun characters to have a lasting impact. Zack Rabbit, a trusty fellow with a floppy ear, and Lenny Lizard, Zack's mischievous partner, are TDOT's honorary safety messengers. These characters teach some important lessons for young kids that include:

- Look both ways before and while crossing the street and watch for turning cars.
- Obey the school crossing guard.
- Ask an adult to show you a safe route to walk to school.

- Wear safety protective gear when riding your bike or scooter.
- Don't play in or near the street.
- Buckle up for safety – and remind everyone else to buckle up too!

Special Pedestrian/Bicycle Beacon Signals

Every corner is a crosswalk, marked or not, where the driver must yield. Some have beacon signals for special circumstances. Remember to act responsibly and look out for children.

"If you have people engaging in activities that put lives at risk, engineering countermeasures can only go so far. Convincing people to change their behavior will have the most lasting effects. However, this may be the most difficult thing to do in order to ensure pedestrian safety."

Federal Highway Administration

Safety is TDOT's number one priority. For a free kid's traffic safety activity book that features Zack Rabbit and Lenny Lizard, call 791-4371.

Learn more about how bicyclists, motorists and pedestrians can SHARE the ROAD legally and safely in the Tucson Region with free guides. Contact 791-4372 for guides and other information.

Para recibir esta información en español, llame al 791-4371.

CITY OF FOUNDED 1775 TUCSON

Bicycle Friendly Community TUCSON & EAST PIMA REGION, AZ GOLD

A community service of the **Tucson Department of Transportation**

rev. 3/9/09

CROSSINGS

Special Pedestrian/Bicycle Beacon Signals

CITY OF FOUNDED 1775 TUCSON

City of Tucson Department of Transportation

PELICAN Crossing: Pedestrians Activate

The PEdestrian LIght Control ActivatioN (PELICAN) system provides a safe, two-stage crossing for pedestrians. The crossing incorporates the median island refuge between the two stages. These crossings can be easily identified by artwork displayed on the median. The PELICAN is placed mid-block on major streets, and minimizes the potential for stops, delays, and accidents.

A pedestrian uses the crossing by pressing a button to activate the first signal. When the light turns red, a "WALK" signal prompts them to proceed to the median. The pedestrian then walks a short distance along the median to activate the second signal. A second "WALK" indication appears when the traffic signal turns red.

The PELICAN uses a standard Red-Yellow-Green signal for motorists and remains green unless activated by a pedestrian. Bicyclists should yield to pedestrians, dismounting if necessary.

TOUCAN Crossing: Bicycle and Pedestrian

The TwO GroUps CAN cross (TOUCAN) system was designed to provide a safe crossing for two groups — pedestrians and bicyclists. TOUCAN systems are placed at locations of heavy bicycle and pedestrian crossing activity and along roadways that are prioritized for non-motorized uses, sometimes known as "Bike Boulevards." An added benefit to the TOUCAN signal system is that motorized traffic is not allowed to proceed through these signals, decreasing the number of cars on neighborhood streets, and enhancing the neighborhood's quality of life.

A TOUCAN can be activated only by bicyclists or by pedestrians. Both use a push button to activate the signal. Bicyclists respond to an innovative bicycle signal and use a special lane when crossing. Pedestrians get a standard WALK indication and have a separate, adjacent crosswalk. The system uses a standard signal for motorists.

HAWK Crossing: "Watching over the Pedestrian like a Hawk"

The High Intensity Activated Cross WalK (HAWK) is one of the newest crossing systems in use. It is based on a European design and resembles the American school bus "children present" warning. The HAWK consists of a Red-Yellow-Red signal format for motorists. The signals remain off until a pedestrian activates the system by pressing a button. First, a FLASHING YELLOW light warns motorists that a pedestrian is present. The signal then changes to SOLID YELLOW, alerting drivers to prepare to stop. The signal then turns SOLID RED and shows the pedestrian a "WALK" symbol. The signal then begins ALTERNATING FLASHING RED and the pedestrian is shown a flashing "DON'T WALK" with a countdown timer. Drivers are allowed to proceed during the flashing red after coming to a full stop and making sure there is no danger to pedestrians. In school zones, drivers must wait until the children and crossing guard are completely out of the crossing before proceeding. Bicyclists are advised to yield to pedestrians and dismount if necessary.

APPENDIX C. CRASH ANALYSIS BACKGROUND

BACKGROUND

Two tables of crash data were received from ADOT.

The first table included 1,675 crashes in the vicinity of the Town of Pinetop-Lakeside during the years 2003-2008, with many characteristics of each crash. The table did not include point locations that could be mapped for the crashes. Therefore, it was not possible to filter the data by location in order to find the total number of crashes that occurred in the study area. The lack of location data also made it more difficult to check for errors in the data.

A limited amount of analysis was done and the following tables were included in Chapter 3:

- Table 3.6. Intersections with High Number of Accidents, 2003-2008.
- Table 3.10. Traffic Accidents, Pedestrians or Bicyclists, 2003-2008.
- Table 3.11. Fatal and Injury Traffic Accidents Affecting Pedestrians or Bicyclists, 2003-2008.

The second table, received in February 2010, included 534 crashes for 2005-2008. That table included the latitude and longitude of each crash, so it was possible to map the crashes. However, other than the latitude and longitude, the table included only:

- A unique crash "incident number."
- The location expressed as "on road", "crossing feature," and "offset" from the crossing.

The first and second tables were combined using the unique crash "incident number" as the common information (the common "field"). However, it was discovered that 163 of the crashes in the second table did not appear in the first table.

Therefore, information for 371 crashes was able to be combined for the years 2005-2008. The data was filtered in various ways to check whether the latitude and longitude map points matched up with each record's description of "on road and crossing feature." There was internal inconsistency between the map point an "on road and crossing feature" description on many records. Several dozen crashes were displayed as points placed in areas where there are no roads. The portion of the 371 crashes that were within 150 feet of the SR 260 centerline and that were judged to have accurate latitude and longitude point locations were mapped on Figures 6.5 and 6.6.