SHOW LOW

Community Transportation Plan

September 2007

WILSON & COMPANY

Community Transportation Plan

Prepared for:

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September 2007

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1.0 INTRODUCTION

Navajo and Apache Counties are located in the central portion of eastern Arizona, as shown in Figure 1-1. This region, known as the White Mountain Region, currently is experiencing tremendous pressure for development. Regional growth has led to the need for an updated plan to address transportation issues and infrastructure needs of the communities located within the White Mountain Region.

1.1 STUDY BACKGROUND

During 1999, the White Mountain Region completed the *White Mountain Regional Transportation Plan*, which covered the southern area of Navajo and Apache counties. At that time, it was identified that the area was becoming increasingly popular for both winter and summer activities, and as a location for retirement and second homes for residents of the Phoenix and Tucson areas. At the time of the 1999 Plan, average annual population growth was approximately:

- 1.3 percent for Apache County;
- 1.4 percent for Navajo County;
- 2.4 percent for Snowflake;
- 6.2 percent for Show Low;
- 2.2 percent for Taylor; and
- 5.7 percent for Pinetop-Lakeside.

Unexpected, significant growth has occurred primarily in a sub-region of the Plan's defined study area since completion of the 1999 Plan.

A need was identified to develop a Sub-Regional Transportation Plan to address needed transportation improvements to accommodate the unanticipated growth. Subsequently, the City of Show Low approved their General Plan in October 1999 and a Major Streets and Routes Plan was completed in January 2002. Also, the City of Snowflake completed their General Plan in November 2000; Pinetop-Lakeside completed their Regional Plan during March 2001; and, Navajo County completed their Comprehensive Plan during May 2004. All of these planning documents used the findings from the 1999 White Mountain Regional Transportation Plan as the basis for their transportation planning efforts. Most recently, the Town of Pinetop-Lakeside completed a Pinetop-Lakeside Population Projection report, dated July 27, 2005, in an attempt to better understand how growth is occurring. Growth projections presented in the report range from 3.01 to 7.0 percent annual growth; 3.0 to 4.0 percent is recommended for planning purposes.

This *Southern Navajo County/Apache County Sub-Regional Transportation Plan* specifically addresses the needs of the Town of Snowflake, Town of Taylor, City of Show Low, Town of Pinetop-Lakeside, and the unincorporated areas of southern Navajo and Apache Counties, including the communities of Concho and Vernon. The focus of this Sub-Regional Transportation Plan is the roadway system in southern Navajo and Apache Counties encompassing an area bounded by the Town of Pinetop-Lakeside in the south, the Town of Snowflake in the north, Pulp Mill Road to the west, and the Concho area in Apache County to the east. Figure 1-2 depicts the Sub-Regional Study Area adopted for planning purposes.

1.2 STUDY PURPOSE

The scope of the Sub-Regional Transportation Plan was developed in a collaborative process involving a project-specific Technical Advisory Committee (TAC) and the standing White Mountain Regional Transportation Committee (WMRTC). The TAC was composed of staff from the following entities:

- Navajo County;
- Apache County;
- Arizona Department of Transportation (Globe District);
- Town of Snowflake;
- Town of Taylor;

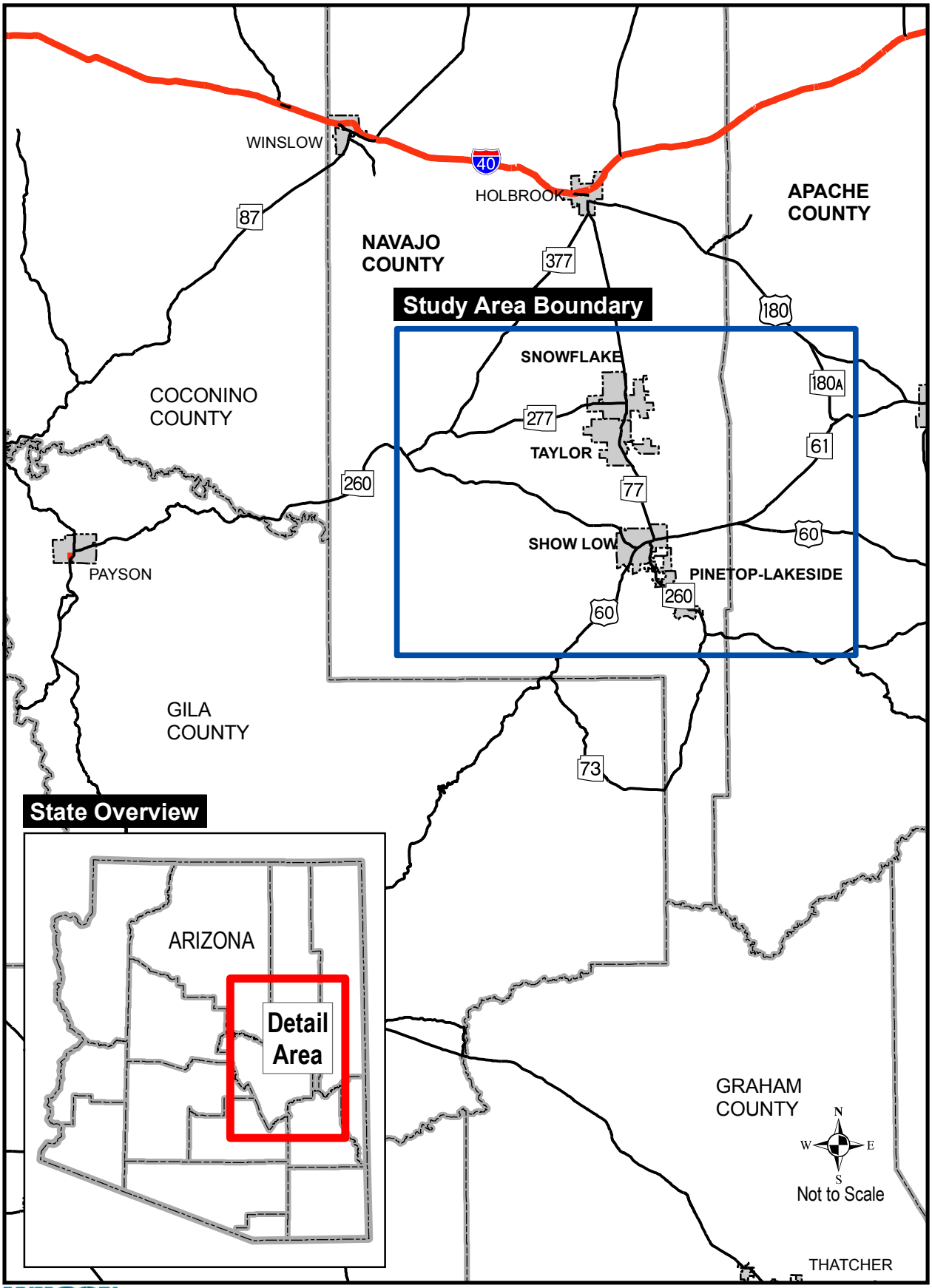

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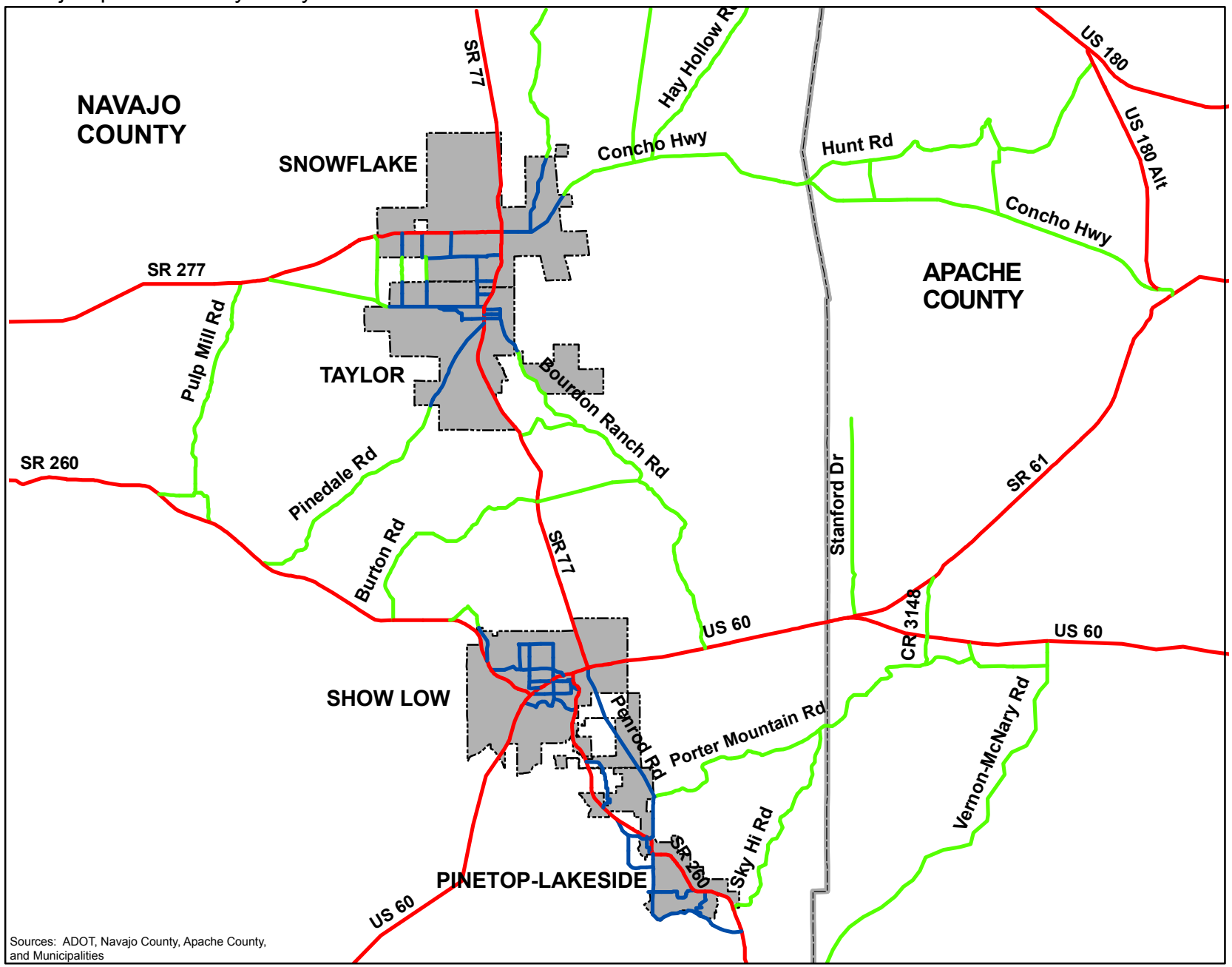
FIGURE 1-1
VICINITY MAP

Navajo/Apache County Study Area Overview



STUDY AREA AND MAJOR ROADWAY NETWORK

Jurisdiction
- County
- Arizona Dept of Transportation
- Municipality

Base Map Features
- Cities/Towns

N

Not to Scale

Sources: ADOT, Navajo County, Apache County, and Municipalities

FIGURE 1-2

- City of Show Low; and
- Town of Pinetop-Lakeside.

The Sub-Regional Transportation Plan addresses transportation issues associated with each community participating in the study. TAC members helped to shape the scope of the planning effort by shaping goals and deliverables. The TAC also provided valuable data regarding existing conditions for their specific municipality or unincorporated area, including: previous studies, comprehensive planning documents, and submitted development proposals. Five goals were set to be addressed within the framework of the Sub-Regional Transportation Plan:

(1) Understand key stakeholder issues and needs;

(2) Identify imminent and future developments within the defined Sub-Region;

(3) Develop a customized travel demand model to enable estimation of transportation volumes relative to both the existing and forecasted land use;

(4) Produce growth forecasts for each municipality and unincorporated area; and

(5) Analyze feasible alternatives for improving the roadway network in the Sub-Region.

1.3 SHOW LOW COMMUNITY TRANSPORTATION PLAN

The *City of Show Low Community Transportation Plan* focuses specifically on the transportation issues and needs of the City. The Plan summarizes existing roadway and traffic conditions, establishes likely future conditions, presents an Implementation Plan for transportation improvements, and provides transportation facility development policies and guidelines. The Plan focuses on future travel conditions in 2015 and 2030 and the recommended Implementation Plan is designed to mitigate potential roadway system deficiencies expected to arise as a result of projected population and employment growth. Detailed information relating to methodologies employed during preparation of the Plan and specific assumptions adopted for forecasting future transportation needs for the City of Show Low may be referenced in the Sub-Regional Transportation Plan.

2.0 EXISTING CONDITIONS

This section provides an overview of socioeconomic and roadway conditions within the Sub-Regional Transportation Plan Study Area and the City of Show Low Planning Area for the year 2006. It includes an updated population and employment estimate and an inventory of roadway facilities.

2.1 CURRENT SOCIOECONOMIC CONDITIONS

An estimate of year 2006 population and employment was developed from several sources including Census 2000 population data, historic building permit activity, and a commercial employment database. This section presents estimates of the 2006 population and employment for the Sub-Region and the City of Show Low.

2.1.1 YEAR 2006 POPULATION ESTIMATE

Significant growth has occurred within the Sub-Region since the year 2000. In 2000, the Census Bureau identified over 22,900 dwelling units (DUs) within the Sub-Region. Census Bureau reports indicated over 35,600 people forming 13,000 households. Approximately 57 percent of the total DUs were occupied on census day, which was April 1, 2000. This low occupancy rate (the rate for the State of Arizona is close to 75%) reflects the large number of seasonal summer homes in the Sub-Region. In addition to variations in seasonal occupancy, the number of persons living in each household also varied by location. There was an average of 2.74 persons per household in the Sub-Regional Study Area.

Building permit information obtained from local jurisdictions participating in preparation of the Sub-Regional Transportation Plan was used to develop an estimate of the population in 2006. The number and type of building permits indicated nearly 5,400 new individual DUs were added between January 1, 2000, and May 31, 2006. Therefore, the estimated number of DUs in the Sub-Region in 2006 was determined to be 28,300. This estimated growth translates into nearly a five percent annual increase in DUs between 2000 and 2006.

The estimated 2006 Sub-Region population was determined by applying the seasonal occupancy patterns and household size reported in Census data to the new estimated number of DUs in 2006. This method resulted in an estimated population of 43,870 in the Sub-Region in 2006. The 2006 population estimate was distributed, based data for 2000 Census districts, to a total of 120 traffic analysis zones (TAZs). A TAZ is defined as a geographic area that contains socioeconomic data attributes regarding population and employment (estimated 2006 employment also was distributed; this is discussed in the next section). Typically, TAZ boundaries are comprised of relatively fixed or permanent physical or geographic features, such as roadways, rivers, mountain ranges, or other physical features. Distributed socioeconomic data was used to model or estimate the number of trips taken throughout the Sub-Region.

Table 2-1 presents the estimated 2006 household and population data for the City of Show Low Planning Area by TAZ. Table 2-1 indicates the City of Show Low Planning Area was home to 4,427 separate households accounting for 11,626 persons in 2006. This translates in to 2.63 persons per household, which is slightly below the average for the Sub-Region. Reflecting, in part, the low occupancy of DUs in the Sub-Region, only 65 percent of the DUs in the Show Low Planning Area were occupied in 2006. Figure 2-1 shows the estimated population distributed to TAZs applicable to the Show Low Planning Area.

2.1.2 YEAR 2006 EMPLOYMENT ESTIMATE

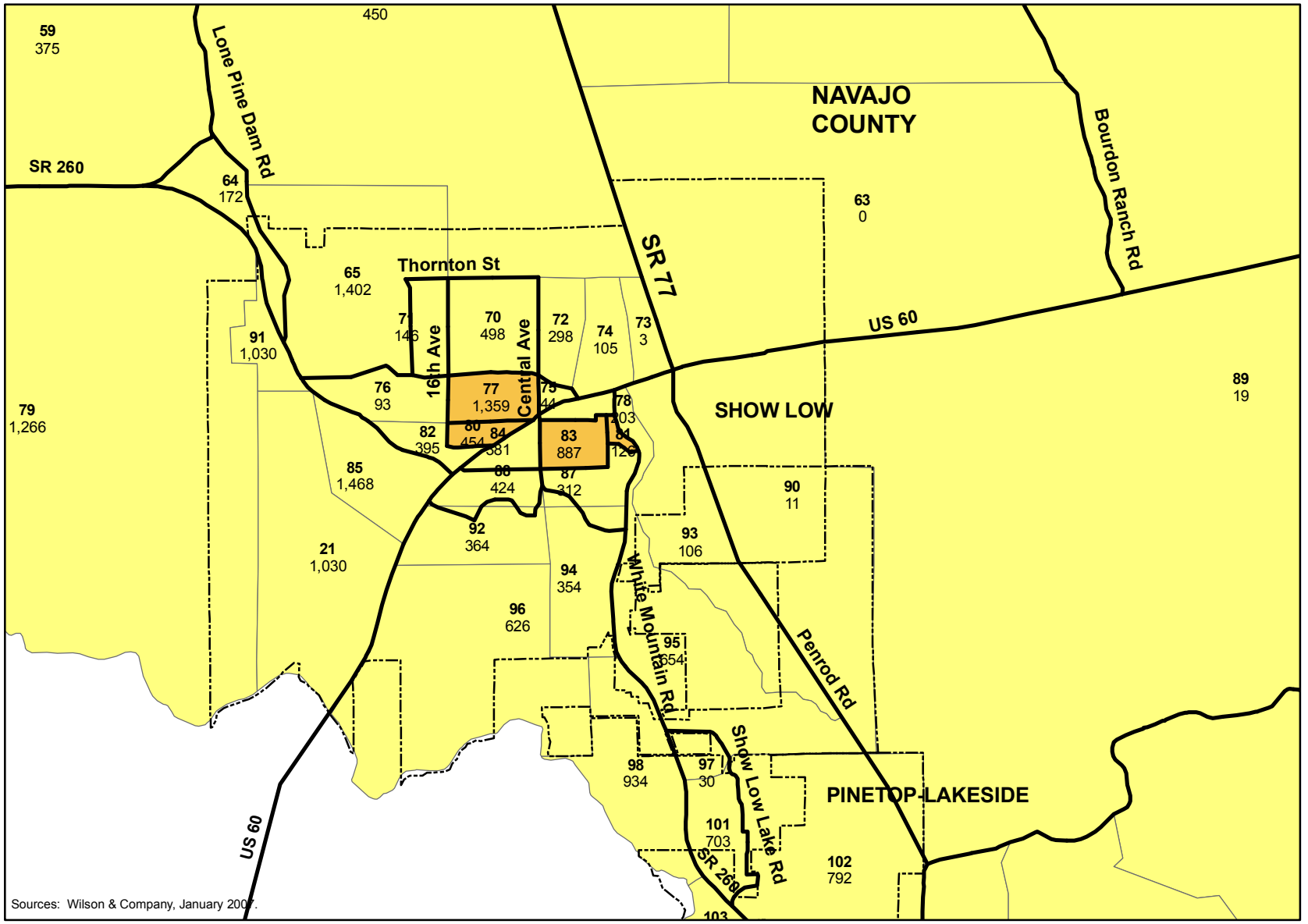
Employment estimates were developed for the Sub-Region using data from the 1999 *White Mountain Regional Transportation Plan* coupled with a commercial database purchased for this study. The employment database provided information on business locations, number of employees, and industry type. Focusing on the major employers, the database information was then cross-checked against employer information included in the 1999 Plan. The study team verified this employment database with study participants and the TAC. Through this process, an estimate of 15,200 jobs was established for the Sub-Region. Table 2-2 shows the job totals by employment classification.

Table 2-1
Estimated 2006 Population in the Show Low Planning Area

Traffic Analysis Zone	Dwelling Units	Households	Population
21	0	0	0
63	0	0	0
65	779	555	1402
70	155	146	498
71	50	46	146
72	262	103	298
73	1	1	3
74	43	39	105
75	14	13	44
76	70	44	93
77	573	479	1359
78	98	88	203
80	271	196	454
81	45	44	126
82	280	157	395
83	351	302	887
84	131	124	381
85	822	570	1468
87	125	111	312
88	216	174	424
91	1048	485	1030
92	133	133	364
94	358	148	354
95	485	217	654
96	554	252	626
TOTAL	6,864	4,427	11,626

Sources US Census of Population, 2000; Wilson & Company, May 2007

Show Low Overview



YEAR 2006 ESTIMATED POPULATION DENSITY BY TRAFFIC ANALYSIS ZONE

Population Density per Square Mile

- 0 - 1,500
- 1,500 - 4,000
- 4,000 - 6,500
- 6,500 +

Base Map Features

- Arterials
- Cities/Towns
- XX Traffic Analysis Zone
- X,XXX Population Estimate

N

Not to Scale

FIGURE 2-1

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Southern Navajo/Apache County Sub-Regional Transportation Plan

Table 2-2
2006 Employment in the Southern Navajo/Apache County Sub-Region

Classification	Employment
Retail	5,028
Office	7,164
Government	1,273
General	1,761
Total	15,226

Sources: White Mountain Regional Transportation Plan, 1999; InfoUSA, 2006; Wilson & Company, May 2007.

The Sub-Region 2006 employment estimate was distributed to TAZs applicable to the City of Show Low in the same manner as described for the estimated 2006 population. Table 2-3 presents the estimated employment in each applicable TAZ by classification. The table indicates there were approximately 5,800 active jobs in the Show Low Planning Area in 2006. The majority of these jobs (over 3,200, 56%) were in the Office sector. Persons employed in Retail-related activities accounted for over 1,500 more jobs. This pattern is similar to the Sub-Region as a whole (refer to Table 2-2). However, as a result of a larger population base and the location of some County offices, employment in the Office sector is more twice the size as that in the Retail sector. In the Sub-Region, employment in the Office sector is only about 43 percent greater than employment in the Retail sector. In contrast to the Sub-Region, employment in the Government sector slightly out numbered General sector employment. Figure 2-2 shows the estimated 2006 employment distributed to TAZs applicable to the Show Low Planning Area.

2.2 CURRENT ROADWAY SYSTEM

2.2.1 JURISDICTIONAL RESPONSIBILITY

The State of Arizona is responsible for all State routes in the Sub-Region. Navajo County and Apache County administer all roadways in the unincorporated portions of their respective jurisdictions. The City of Show Low administers all non-State roadways within its corporate limits (Refer to Figure 1-2, presented in Section 1, for the jurisdictional responsibility for roadways in Show Low).

2.2.2 ROADWAY FUNCTIONAL CLASSIFICATION

Roads are classified according to specific design and traffic characteristics. The functional classification process categorizes roads by how they perform in regard to providing access and mobility within the community. A principal arterial, for example, typically provides mobility for longer distance trips with higher speeds and less access to adjoining properties. Conversely, the function of a local street is to provide direct access to neighborhoods with lower speeds. The Sub-Region's roadway network includes four roadway functional classifications.

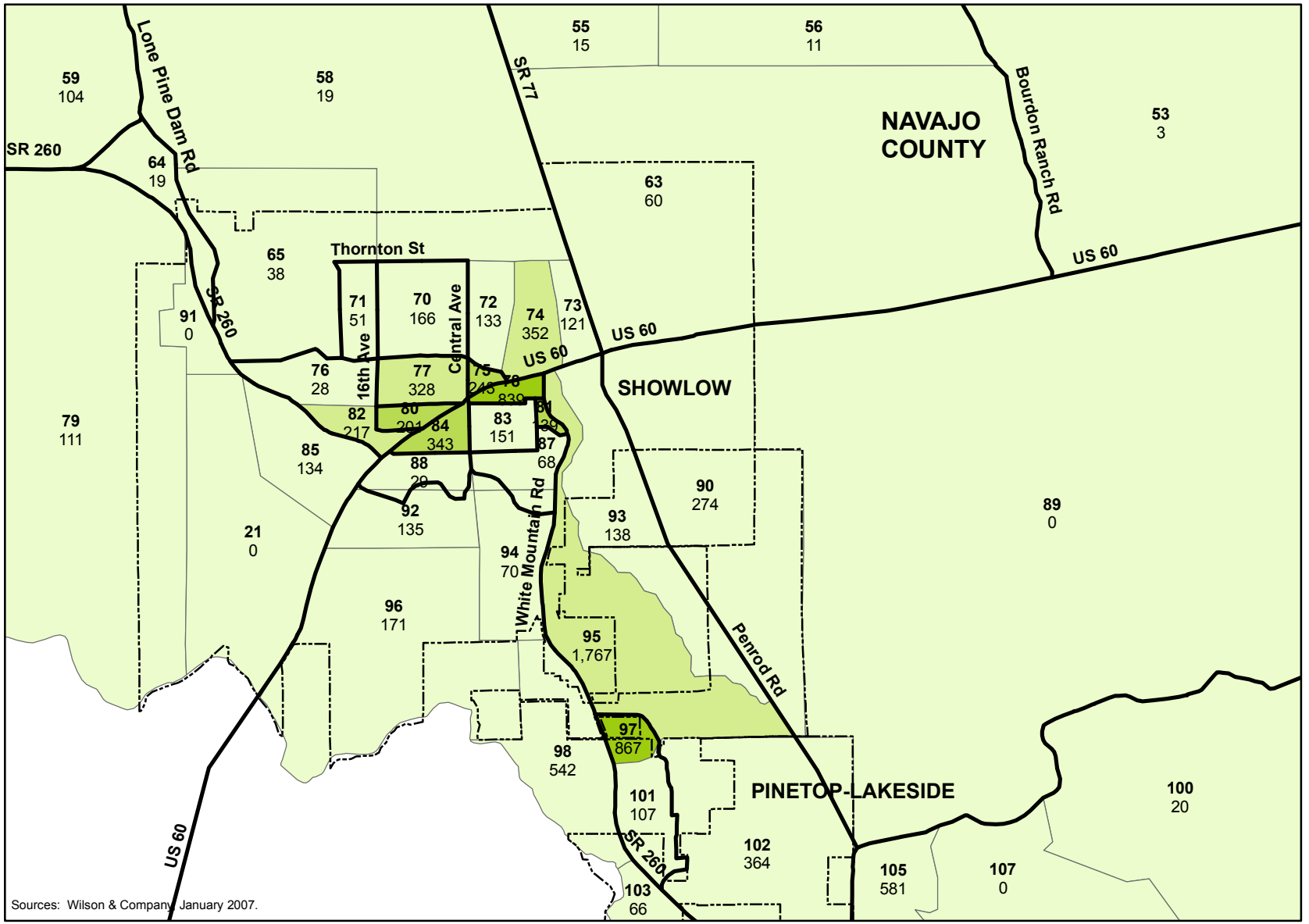
- **Principal Arterial:** This facility serves regional circulation needs. It moves traffic at moderate speeds while providing limited access to adjacent land. Access is controlled through raised medians and through spacing and location of driveways and intersections. In the Sub-Region, a principal arterial is a two- or four-lane State highway.
- **Minor Arterial:** The general purpose of a Minor Arterial is to serve regional/sub-regional traffic circulation needs by moving traffic at moderate speeds, while providing limited access to adjacent land. Access to minor arterial streets is limited to intersections at quarter-mile spacing and to driveways of major developments, such as large commercial, industrial, or office complexes, or master-planned communities. On-street parking is not allowed.
- **Major Collector:** This roadway class serves shorter trips, generally less than three miles, and primarily serves to collect and distribute traffic between key traffic generators, local streets, and arterial streets. Design guidelines for this roadway classification provide for direct access to abutting land. Access to major collector streets is limited to intersections at eighth-mile spacing and to driveways to adjacent developments.

Table 2-3
Estimated 2006 Employment in the Show Low Planning Area

TAZ	Employment Classification				
	Retail	Office	Government	General	Total
21	0	0	0	0	0
63	54	3	3	0	60
65	0	20	0	18	38
70	3	163	0	0	166
71	25	23	0	3	51
72	9	58	62	4	133
73	52	45	0	24	121
74	99	182	13	58	352
75	127	106	0	10	243
76	15	5	0	8	28
77	43	27	205	53	328
78	288	286	233	32	839
80	128	41	0	32	201
81	65	72	0	2	139
82	154	63	0	0	217
83	13	101	18	19	151
84	86	241	1	15	343
85	1	113	0	20	134
87	9	58	0	1	68
88	0	26	0	3	29
91	0	0	0	0	0
92	5	19	0	111	135
94	48	20	0	2	70
95	295	1384	4	84	1767
96	3	168	0	0	171
TOTAL	1,522	3,224	539	499	5,784

Sources: White Mountain Regional Transportation Plan, 1999; InfoUSA, 2006; Wilson & Company, May 2007.

Show Low Overview



YEAR 2006 ESTIMATED EMPLOYMENT DENSITY BY TRAFFIC ANALYSIS ZONE

Employment Density per Square Mile

- 0 - 500
- 501 - 1000
- 1001 - 3000
- 3001 - 6000

Base Map Features

- Arterials
- Cities/Towns
- XX Traffic Analysis Zone
- X,XXX Employment Estimate

N

Not to Scale

FIGURE 2-2

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Southern Navajo/Apache County Sub-Regional Transportation Plan

All vehicles entering the traffic stream must be driving forward; no backing into traffic is allowed. On-street parking is not allowed.

- **Minor Collector:** Minor Collectors serve shorter distance trips than the Major Collector, generally less than one mile. This class of roadway provides direct access to adjacent land and collects and distributes traffic between key traffic generators, local streets, and arterial streets. Access to Minor Collector streets should be restricted except for large contiguous lots

As the functional classification changes from arterial roadway to local roadway, the level of access generally increases, the capacity decreases, and the purpose of the roadway changes from efficiently moving vehicles to providing direct property access. Table 2-4 provides a summary of the characteristics of each of the four roadway functional classifications applicable to the Show Low community.

Table 2-4
Characteristics of Roadway Functional Classifications

Functional Classification	Characteristics
Principal Arterial	Provides regional mobility with limited direct access. Direct commercial access can occur, but access is infrequent to preserve capacity and mobility.
Minor Arterial	Provides access between Principal/Major Arterial and Major Collector routes. The level of access generally is less than on a Major Arterial, but more than a Major Collector. Direct commercial access typically is provided on Minor Arterial routes.
Major Collector	Provides access between Major Collector and Minor Arterial routes. The level of access generally is less than on a Minor Collector, but more than a Minor Arterial.
Minor Collector	Provides access between local streets and Major Collector routes

Source: Wilson & Company, May 2007

2.2.3 PRINCIPAL SUB-REGIONAL ROADWAY NETWORK

STATE HIGHWAY SYSTEM

State and Federal highways form the arterial backbone of the existing sub-regional roadway system in southern Navajo and Apache Counties. They are maintained by the Arizona Department of Transportation (ADOT) and provide intra-regional mobility between the communities of Pinetop-Lakeside, Show Low, Taylor, and Snowflake. ADOT facilities also provide interregional linkages between the Sub-Region and other population centers, including the Phoenix metropolitan area. There are three State Principal Arterials serving the Show Low Planning Area (refer to Figure 1-2):

- **US 60:** US 60 is part of the National Highway System (NHS) and, as such, provides access between an arterial and a major port, airport, public transportation facility, or other intermodal transportation facility. In the Sub-Region, US 60 (aka Deuce of Clubs Highway in Show Low) functions as a State Principal Arterial and provides connectivity between Show Low and Globe and the Phoenix metropolitan area to the southwest and Springerville/Eager in Apache County to the east, as well as New Mexico. In rural portions of the Sub-Region, this facility exists as a two-lane highway. Through Show Low, where is it is coincident with SR 260 and SR 77, US 60 is a four-lane facility with a continuous center turn lane between these two State highways.
- **SR 260:** SR 260 is a State Major Regional Principal Arterial. SR 260 (Clark Road) provides access from Show Low to Payson to the west and Pinetop-Lakeside to the southeast. SR 260 is coincident with US 60 and SR 77 through Show Low. South of US 60, SR 260 (White Mountain Road) connects with Springerville/Eager southeast of Show Low. In the urbanized area between Show Low and Pinetop-Lakeside, SR 260 is a four-lane facility with a continuous center turn lane.

- **SR 77:** SR 77 (aka Penrod Road north of US 60) is a State Principal Arterial providing connectivity between the communities of Show Low and Snowflake/Taylor to the north. Beyond Snowflake to the north, SR 77 provides a connection with Holbrook, the Navajo County seat, and Interstate 40. SR 77, which is coincident with US 60/SR 260 through Show Low, connects Show Low with Globe and Tucson to the south. In rural portions of the Sub-Regional Study Area, this facility exists as a two-lane highway.

REGIONAL/LOCAL ROAD SYSTEM

There are three major highways forming the regional/local road system that are significant to the City of Show Low in terms of sub-regional access.

- **Bourdon Ranch Road:** Bourdon Ranch Road is a County Minor Arterial providing access to growing development in the White Mountain Lakes area. Bourdon Ranch Road is a rural two-lane highway. This facility is expected to become a significant reliever to SR 77 as growth occurs in this corridor.
- **Lone Pine Dam Road:** Lone Pine Dam Road (Old Highway 60) is a County Minor Arterial that provides access between the Linden area west of Show Low and SR 77 near the White Mountain Lakes area. It exists as a rural two-lane highway. Navajo County anticipates this facility will serve as a key bypass facility to SR 77.
- **Penrod Road:** Penrod Road is a Municipal Minor Arterial that parallels SR 260 south of Show Low and provides access between Pinetop-Lakeside and SR 77 at US 60 east of Show Low. It exists as a rural two-lane highway.

2.2.4 EXISTING ROADWAY CHARACTERISTICS

This section summarizes key characteristics and attributes of the roadway system serving the Sub-Region and the City of Show Low.

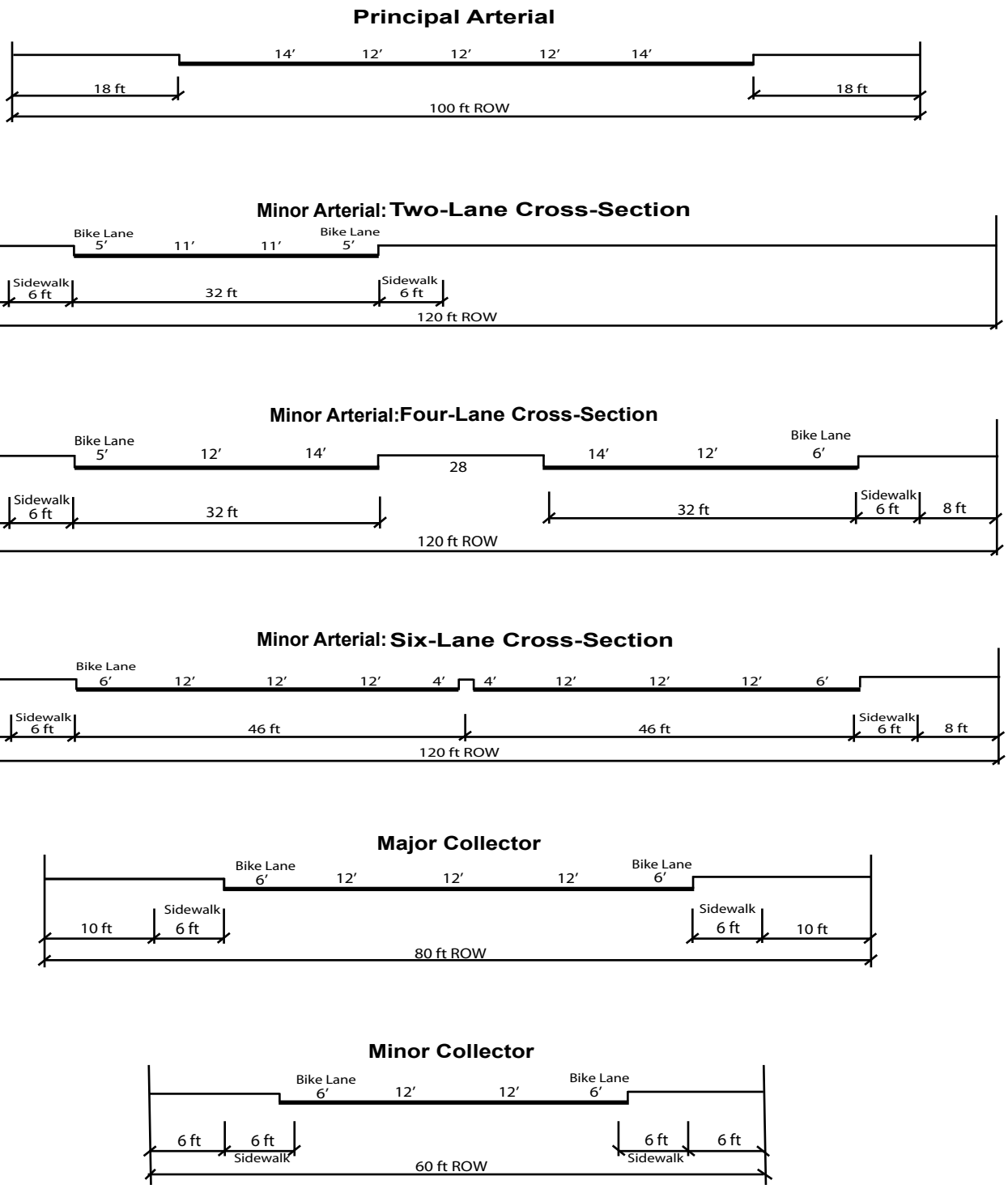
TYPICAL CROSS-SECTIONS

Roadway cross-sections from the *2002 City of Show Low Major Streets and Routes Plan* were adopted and applied for purposes of the Sub-Regional Transportation Plan. Descriptions of roadway cross-sections by functional classification are provided below.

- **Principal Arterial:** The adopted cross-section for a Principal Arterial (Figure 2-3) requires 100 feet of right-of-way (R/W). In urban areas, there typically are four travel lanes and a 12-foot median that could be a raised median or a center two-way, left-turn lane. The two outside lanes are 14 feet in width, measured to the face of curb. In rural areas, there typically are two 12-foot travel lanes with a paved shoulder.
- **Minor Arterial:** A Minor Arterial (Figure 2-3) has two, four, or six travel lanes constructed within a 120-foot R/W. The travel lanes are divided by a two-way, left-turn lane or a raised median. A bike lane is included in the cross-section.
- **Major Collector:** A Major Collector consists of two travel lanes constructed within an 80-foot R/W. As shown in Figure 2-3, opposing travel directions are separated by a two-way left turn lane or a raised median. A bike lane is included in the cross-section.
- **Minor Collector:** The cross-section for a Minor Collector, as shown in Figure 2-3, includes two travel lanes constructed within 60 feet of R/W. The 36-foot roadway consists of two 12-foot travel lanes flanked by 6-foot bike lanes in each direction.

INTERSECTION FLARE

An additional 20-foot by 150-foot parcel of R/W generally is integral to principal arterial/principal arterial, principal arterial/minor arterial, and arterial/major collector intersections to accommodate turn lanes.



SOURCE: 2002 City of Show Low Streets and Routes Plan

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FIGURE 2-3
TYPICAL ROADWAY CROSS-SECTIONS

RIGHT-OF-WAY REQUIREMENTS

Roadway widths and R/W requirements for the four functional classifications identified above are summarized in Table 2-5.

Table 2-5
Roadway Width and Right-of-Way Requirements for Major Roadways

Classification	Roadway Width	Right-of-Way Width	Number of Lanes
Principal Arterial	64 feet	100 feet	5
Major Arterial	32 to 92 feet	120 feet	2 to 6
Major Collector	48 feet	80 feet	3
Minor Collector	36 feet	60 feet	2

Source: City of Show Low Major Streets and Routes Plan, Olsson Associates, 2002.

NUMBER OF LANES

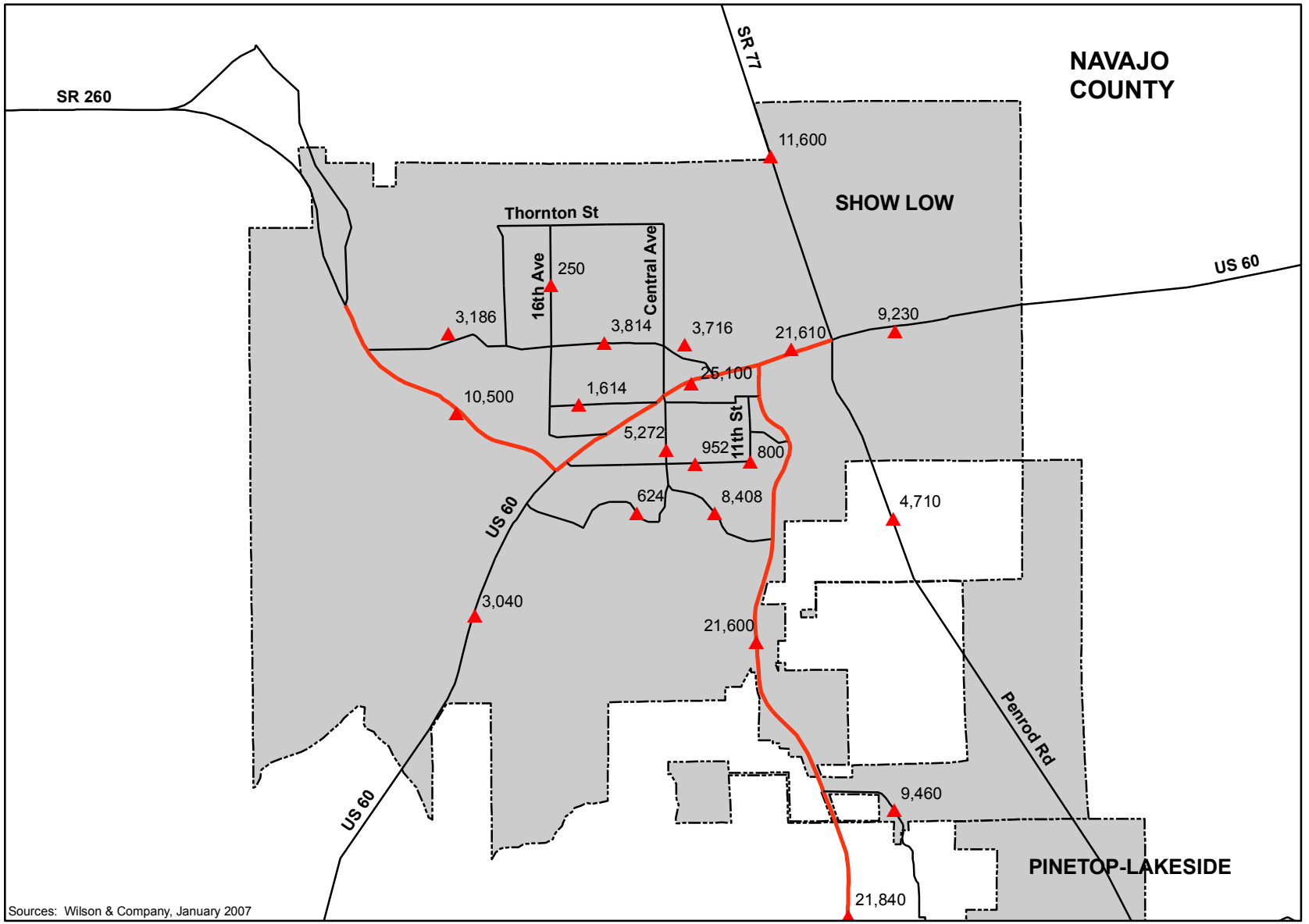
Most roadways in the Show Low Planning Area are two-lane facilities, providing one travel lane in each direction. In the central urbanized area of Show Low between SR 260 (Clark Road) and SR 77 (Penrod Road), US 60 (Deuce of Clubs Highway) is a four-lane facility with two travel lanes in each direction and a continuous center turn lane. South of US 60, SR 260 also is a four-lane facility with two travel lanes in each direction and a continuous center turn lane. Figure 2-4 shows the number of directional travel lanes associated with major roadways in the Show Low Planning Area in 2006.

TRAFFIC COUNTS

A year 2006 traffic count database was compiled from ADOT, Navajo County, Apache County, and municipal sources. Where necessary, historic traffic count data were adjusted based on recent growth trends to approximate year 2006 traffic levels. The highest traffic count in Show Low (25,100 vehicles per day) is associated with US 60 (Deuce of Clubs Highway) between Central Avenue and Old Linden Road (refer to Figure 2-4). Two locations reported average daily traffic (ADT) volumes in excess of 21,000 vehicles per day: between SR 260 (White Mountain Road) and SR 77 (Penrod Road) and near Ellsworth Road on SR 260 (White Mountain Road). A comparably high traffic count (17,780) also was recorded in western Show Low on US 60 between Owens and Whipple Streets.

Reflecting the high degree of intra-regional travel, ADT exceeds 10,000 vehicles per day on SR 260 (Clark Road) between US 60 and Old Linden Road. Similarly high traffic counts were reported on US 60 east of SR 77 (9,230 ADT) and on SR 77 near Frost E Road at the northern city limits (11,600 ADT). Also, Woolford Road/Central Avenue west of SR 260 in the southern portion of the City had a reported ADT in excess of 8,400 vehicles per day. Generally, the major thoroughfares of Show Low carry from 1,500 to over 5,000 vehicles per day.

Show Low Overview



YEAR 2006
ROADWAY NETWORK
AND TRAFFIC COUNTS

Directional Lanes

- 1 Lane
- 2 Lanes
- X,XXX Traffic Count
- Location

Base Map Features

- Cities/Towns

N

Not to Scale

FIGURE 2-4

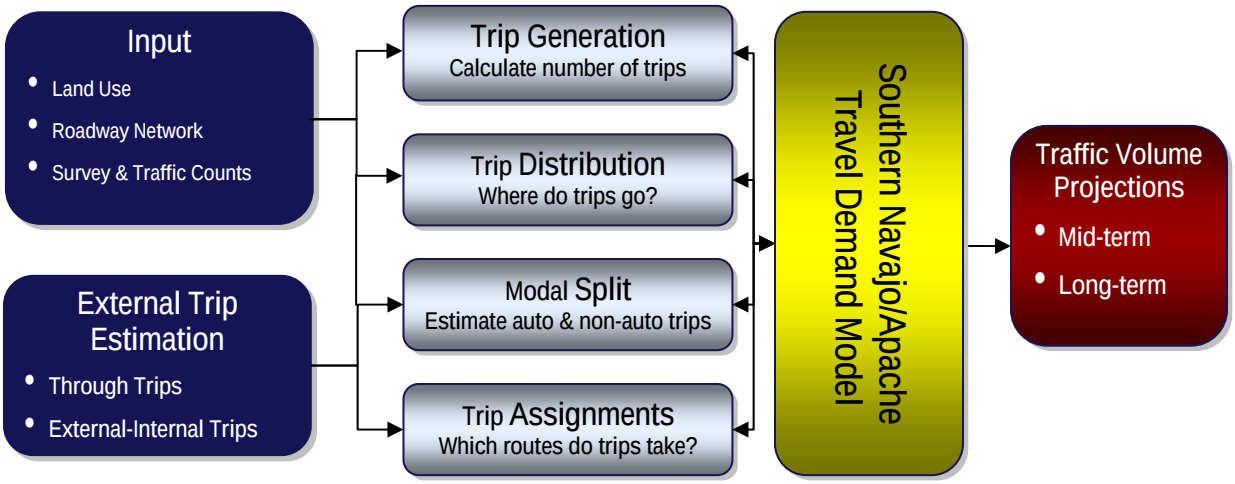
WILSON & COMPANY

Southern Navajo/Apache County Sub-Regional Transportation Plan

3.0 TRANSPORTATION MODEL DEVELOPMENT

The travel demand model of the1999 *White Mountain Regional Transportation Plan* was adopted for this study. Figure 3-1 depicts the traffic model development process employed in preparation of the *White Mountain Transportation Plan*. A brief summary of the modeling process used for forecasting future travel demand and traffic levels on streets and highways in the Sub-Region is presented below. More detailed information on the process is presented in the *Southern Navajo/Apache County Sub-Regional Transportation Plan*, which is included herein by reference.

Figure 3-1 Travel Demand Model Development Process



The model follows a four-step process to determine/project traffic volumes for a defined roadway network based on specified inputs and estimates of external trips. The Trip Generation Module converts household information into vehicle trips between TAZs. Each household generates approximately ten trips daily – five separate round-trips. Employment information is used in the Trip Distribution Module to determine where the trips generated by households want to go. The model includes a Modal Split Module to determine the number of trips or parts of trips by automobile versus transit as part of a trip (this function was not applied for this study). Finally, the Trip Assignment Module then makes a determination as to which routes would be taken by household trips. The fundamental criteria for this determination are the shortest path in the shortest amount of time. Trip assignment takes into account speed, functional class of the roadway, capacity of the roadway, and the amount of traffic using that route. If a route is too congested, the model will assign a different route that offers a shorter travel time. The final result is a forecast of anticipated traffic flows, based on the areas socioeconomic characteristics and the available roadway network. However, before a forecast can be made, a current year model is built to calibrate the model based on existing traffic counts.

4.0 SOCIOECONOMIC PROJECTIONS

Growth within the Sub-Region of southern Navajo and Apache Counties is expected to continue through year 2030, driven by a rising demand for the lifestyle and recreational opportunities offered by the White Mountain region. This section identifies relevant previous studies focused on future conditions, presents base estimates of future population and employment, and provides a summary image of the current growth patterns.

4.1 PREVIOUS PLANS AND STUDIES

General Plans, County Comprehensive Plans, and other planning studies provided a context for the year 2030 growth scenario developed for the Sub-Region. These studies provided information on land use, circulation, and growth areas for input into existing and future socioeconomic forecasts. Relevant plans referenced for this study included:

- *White Mountain Regional Transportation Plan*, Lima & Associates, et al., April 1999;
- *Navajo County Comprehensive Plan*, May 2004;
- *Apache County Comprehensive Plan*, August 2004; and
- *Town of Snowflake General Plan*, July 1999.

The City of Show Low is actively involved in the process of updating its General Plan, which is planned to be presented for voter ratification March 2008. Relevant available transportation-related information associated with this process was incorporated to the extent possible.

4.2 POPULATION AND EMPLOYMENT PROJECTIONS

Population and employment forecasts for years 2015 and 2030 were developed in consultation with the TAC. The process included a review of growth projections from previous plans and studies cited above. Land ownership patterns within the Sub-Region also were assessed; these are discussed in the following section. A workshop was conducted with the TAC to identify planned and approved developments and long-range growth areas. Through this process, population and employment growth projections were established for the Sub-Region. Table 4-1 shows population and employment projections for years 2015 and 2030. Year 2000 census data and year 2006 population and employment estimates have been included for reference.

Table 4-1
Sub-Region Population and Employment Estimates

Year	Dwelling Units	Occupied Dwelling Units	Population	Employment
2000	22,904[1]	13,010[1]	35,653[1]	9,502[2]
2006	28,299[3]	16,135	43,870	15,300[4]
2015	44,300[5]	26,500	74,200	23,800[5]
2030	93,500[5]	61,200	177,000	51,704[5]

Source: Wilson & Company, May 2007.

Notes:
1. U.S. Census Bureau
2. US Census Bureau ZIP Code Business Patterns, 2000.
3. Includes 5,400 single- and multi-family building permits issued between January 1, 2000, and May 31, 2006.
4. Estimate by Wilson & Company based on July 2006 InfoUSA employment data.
5. Estimate by Wilson & Company based on growth projection.

4.2.1 POPULATION PROJECTIONS

Projected growth of DUs was based on a compound annual growth rate of five percent between year 2006 and year 2030. The growth rate would be more gradual at first but would increase as the Sub-Region population base expands. This annual rate is consistent with the growth shown by historic building permit data from year 2000 to year 2006 discussed earlier. Between 2006 and 2030, an average of 2,700 new DUs is expected to be added to the Sub-Region annually. Year 2030 population estimates were developed by applying rates for both seasonal DU occupancy and number of persons per household to the DU projections. The adopted rates for DU occupancy and persons per household vary by location throughout the Sub-Region. On average, the census data shows that 57 percent of the DUs in the Sub-Region are occupied in April. For future planning purposes in the Sub-Region, there are 2.74 persons per household. Figure 4-1 shows the estimated 2030 population distributed to TAZs applicable to the Show Low Planning Area.

4.2.2 EMPLOYMENT PROJECTIONS

Employment growth is predicted to increase at the same pace as population growth. In 2006, there was less than one job per household. This low jobs/housing balance means that many persons living in the Sub-Region rely on outside sources of income or jobs outside the Sub-Region. This also reflects high number of retirement and second homes in the Sub-Region. For planning purposes, the demographic character of the Sub-Region is not expected to change significantly through the year 2030 planning horizon. It is anticipated that the overall ratio of jobs per household in year 2006 will be similar to year 2030. Figure 4-2 shows the estimated 2030 employment distributed to TAZs applicable to the Show Low Planning Area.

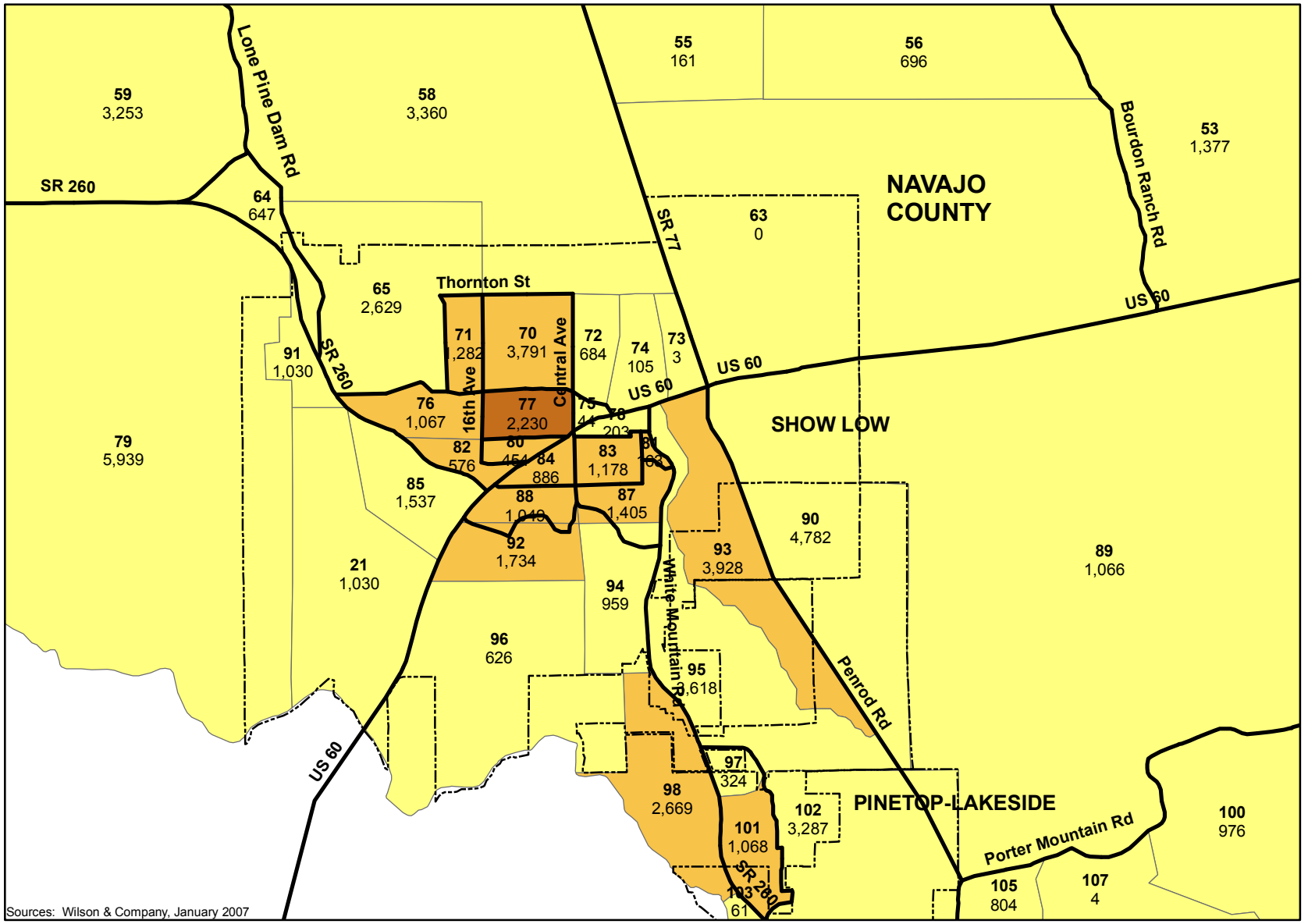
4.2.3 PLANNED DEVELOPMENTS & LAND OWNERSHIP PATTERNS

At a workshop held with the TAC, each participating jurisdiction provided the study team with known active development and residential subdivision information. The jurisdictions identified the following development activity within the Sub-Region that has either been initiated or the entitlement process has been started:

- Approximately 23,000 new residential lots;
- 232 acres of commercial development;
- 15 acres of office park; and
- 60 acres of industrial development.

In order to present the overall context of this growth activity relative to the Show Low Planning Area, Figure 4-3 shows the mosaic of State, Federal, Native American lands, and private lands together with planned developments and future development areas.

Show Low Overview



Sources: Wilson & Company, January 2007

YEAR 2030 ESTIMATED POPULATION DENSITY BY TRAFFIC ANALYSIS ZONE

Population Density per Square Mile

- 0 - 1500
- 1501 - 4000
- 4001 - 6500
- 6500 - 20000

Base Map Features

- Arterials
- Cities/Towns
- XX Traffic Analysis Zone
- X,XXX Population Estimate

N

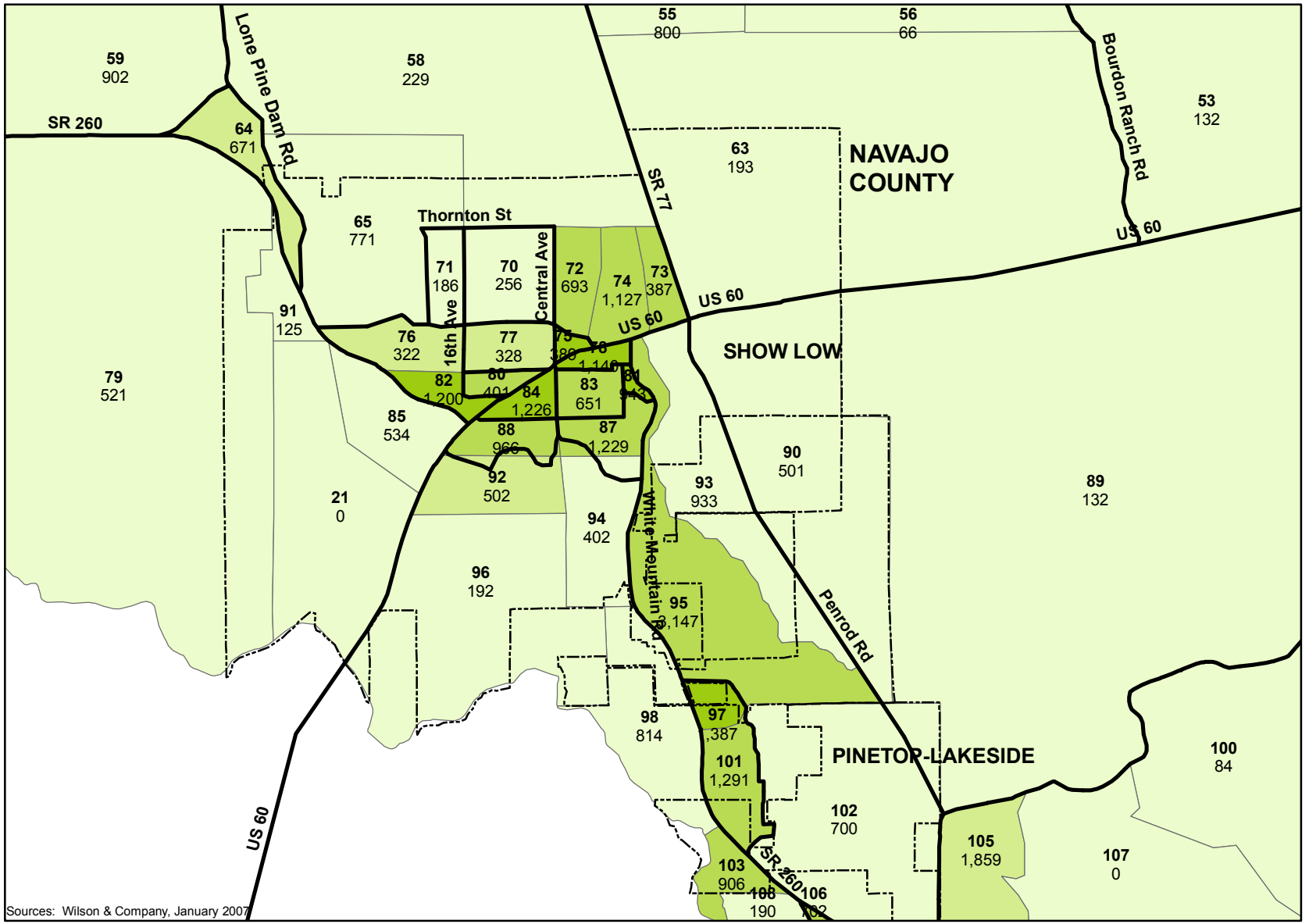
Not to Scale

FIGURE 4-1

WILSON & COMPANY

Southern Navajo/Apache County Sub-Regional Transportation Plan

Show Low Overview



YEAR 2030 ESTIMATED EMPLOYMENT DENSITY BY TRAFFIC ANALYSIS ZONE

Employment Density per Square Mile

- 0 - 500
- 501 - 1000
- 1001 - 3000
- 3000 +

Base Map Features

- Arterials
- Cities/Towns
- XX Traffic Analysis Zone
- X,XXX Employment Estimate

N

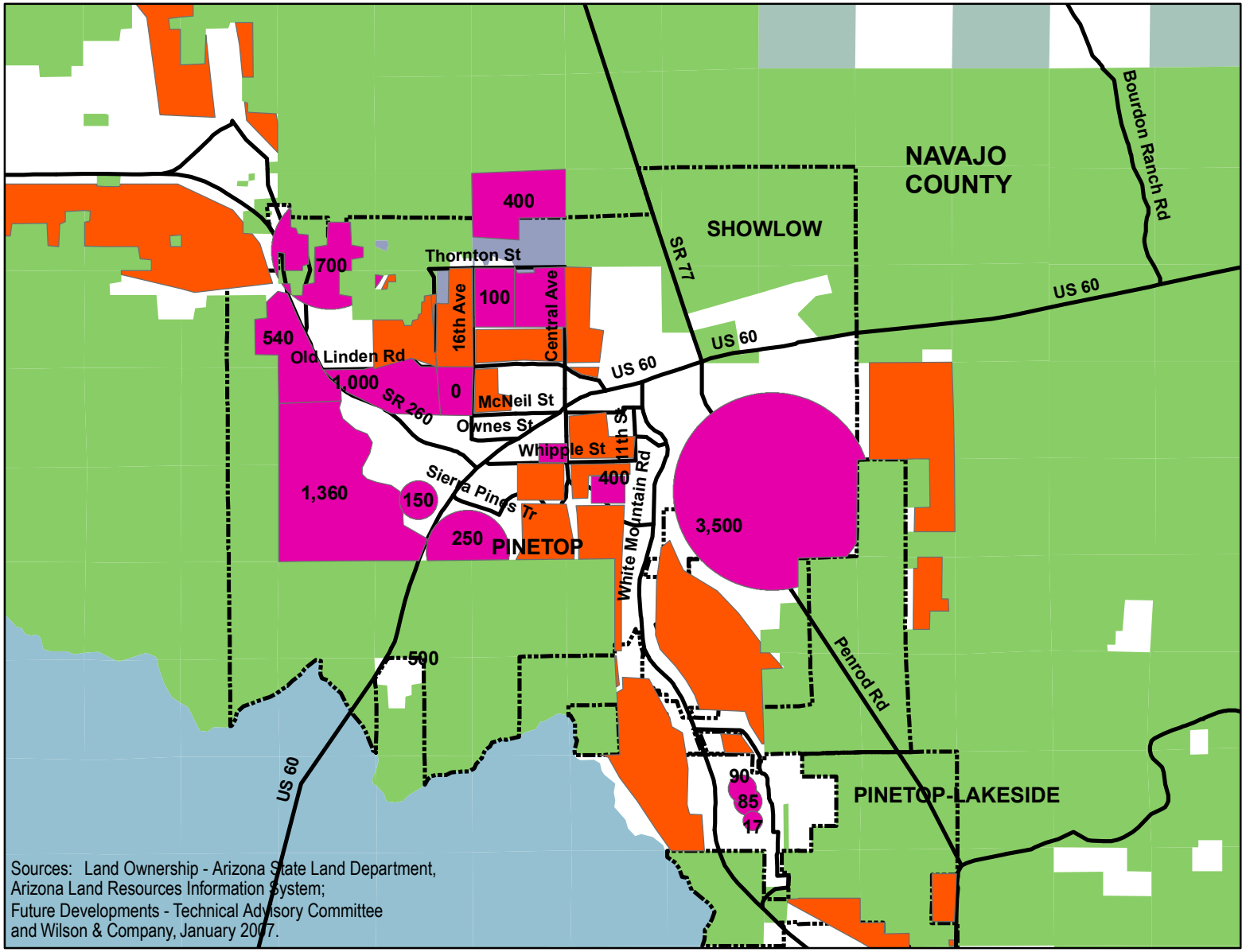
Not to Scale

FIGURE 4-2

WILSON & COMPANY

Southern Navajo/Apache County Sub-Regional Transportation Plan

Show Low Overview



Sources: Land Ownership - Arizona State Land Department, Arizona Land Resources Information System;
Future Developments - Technical Advisory Committee and Wilson & Company, January 2007.

LAND OWNERSHIP AND PLANNED DEVELOPMENTS

Land Ownership

- Bureau of Land Management
- National Forest
- Indian Reservation
- Arizona Game and Fish Department
- Private Land
- State Trust Land

Future Developments

- XXX — New/Pending Development with Potential Dwelling Units
- Potential Development Area

Base Map Features

- Cities/Towns
- Arterials

N

Not to Scale

FIGURE 4-3

WILSON & COMPANY

Southern Navajo/Apache County Sub-Regional Transportation Plan

5.0 FUTURE TRAVEL CONDITIONS

The purpose of this section is to identify for evaluation and modeling purposes the characteristics of the City of Show Low's future roadway network. Having an understanding of future roadway network characteristics is fundamental to estimating traffic volumes and developing appropriate improvement alternatives. The evaluation and modeling includes analyses of both roadway segments and key intersections. This section discusses the following aspects of future travel conditions:

- General Roadway Network Design Parameters;
- External Traffic Forecasts;
- Improvement Scenarios, including possible improvements and potential deficiencies; and
- Intersection Control and Development Requirements.

5.1 FUTURE ROADWAY SYSTEM

5.1.1 GENERAL DESIGN PARAMETERS

The maximum roadway cross-section for the planning period 2006 through 2030 has been limited by consent of the study participants to two travel lanes in each direction. Specifically, urban arterials are limited to a five-lane cross-section with two travel lanes in each direction and a continuous center turn lane. Rural arterials are limited to a four-lane cross-section with two travel lanes in each direction. This policy reflects the desire of Sub-Region communities to meet mobility needs with transportation facilities that maintain the area's rural character. This means that when all existing routes have been widened to the maximum cross-section, new alternative alignments must be considered to accommodate travel demand generated by the year 2030 population and employment growth increment.

Typically, the goal of the long-range transportation planning process is to provide for Level of Service (LOS) 'C' on new roadways and LOS 'D' on existing roadways. The planning goal for rural state highways is LOS 'B'. Nevertheless, constraints to capacity improvements, such as physical barriers, policy decisions, or funding limitations, can limit the ability of a plan to accommodate future travel demand estimates at a desirable LOS.

It also should be noted that the year 2030 travel demand forecasts prepared for this study are an order of magnitude higher than the year 2020 estimates shown in the 1999 *White Mountain Regional Transportation Plan*. The 1999 Plan accommodated year 2020 travel demand estimates at a desirable LOS. However, as projected growth of the Sub-Region occurs, it will be increasingly difficult to maintain a roadway system that satisfies the higher LOS goal generally characteristic of traditional rural areas.

5.1.2 EXTERNAL TRAFFIC FORECASTS

External traffic growth is an important component of understanding how the future roadway network will operate and developing reliable future year travel demand forecasts. External traffic growth was estimated based on historic traffic and population growth trends. Table 5-1 shows the existing year 2006 daily traffic counts and 2015 and 2030 daily traffic volume forecasts at five external stations located at the perimeter of the Sub-Region. These data were employed in the travel demand modeling process. In 2006, there were close to 30,000 daily vehicle trips in and out of the Sub-Region on an average weekday. Weekday external daily vehicle trips in the Sub-Region are forecast to grow at five percent per year over the 24-year planning horizon. In 2030, it is estimated there will be over 106,000 average weekday vehicle trips traveling to, from, and through the Sub-Regional Study Area.

5.1.3 IMPROVEMENT SCENARIOS

EXISTING-PLUS-COMMITTED ROADWAY NETWORK

As southern Navajo and Apache Counties grow, new roadway facilities are being added both to provide access to new developments and to meet additional travel demand. When a roadway capacity improvement is incorporated in a jurisdiction's Five-Year Capital Improvement Program (CIP), it is considered a committed improvement.

Table 5-1
Current and Future External Daily Traffic Volume Estimates

Location	Year		
	2006	2015	2030
US 180, West of SR 180A	710	930	1,750
US 180, East of SR 180A	460	610	1,130
SR 61, East of Concho	2,480	7,600	13,950
US 60, East of Vernon	2,140	4,200	7,600
SR 260, South of Rim Rd. (Pinetop-Lakeside)	9,570	15,900	36,800
US 60, West of Rim Rd (Show Low)	3,040	5,900	10,800
SR 260, West of Paper Mill Rd.	4,390	6,900	12,800
SR 277, West of Paper Mill Rd.	2,590	5,080	9,300
SR 77, North of Snowflake	4,500	6,900	12,600
TOTAL	29,880	54,020	106,730

Source: Table 6-1, Southern Navajo Sub-Regional Transportation Plan, Wilson & Company, May 2007.

Roadway Improvements

The committed roadway improvements were identified that are relevant to definition of the sub-regional roadway network. They primarily are developer-funded and related to growth in the SR 260 corridor between Pinetop-Lakeside and Show Low:

- Woolford Extension, SR 260 to Penrod Road, new two-lane road; and
- Scott Ranch Road, SR 260 to Penrod Road, new two-lane road.

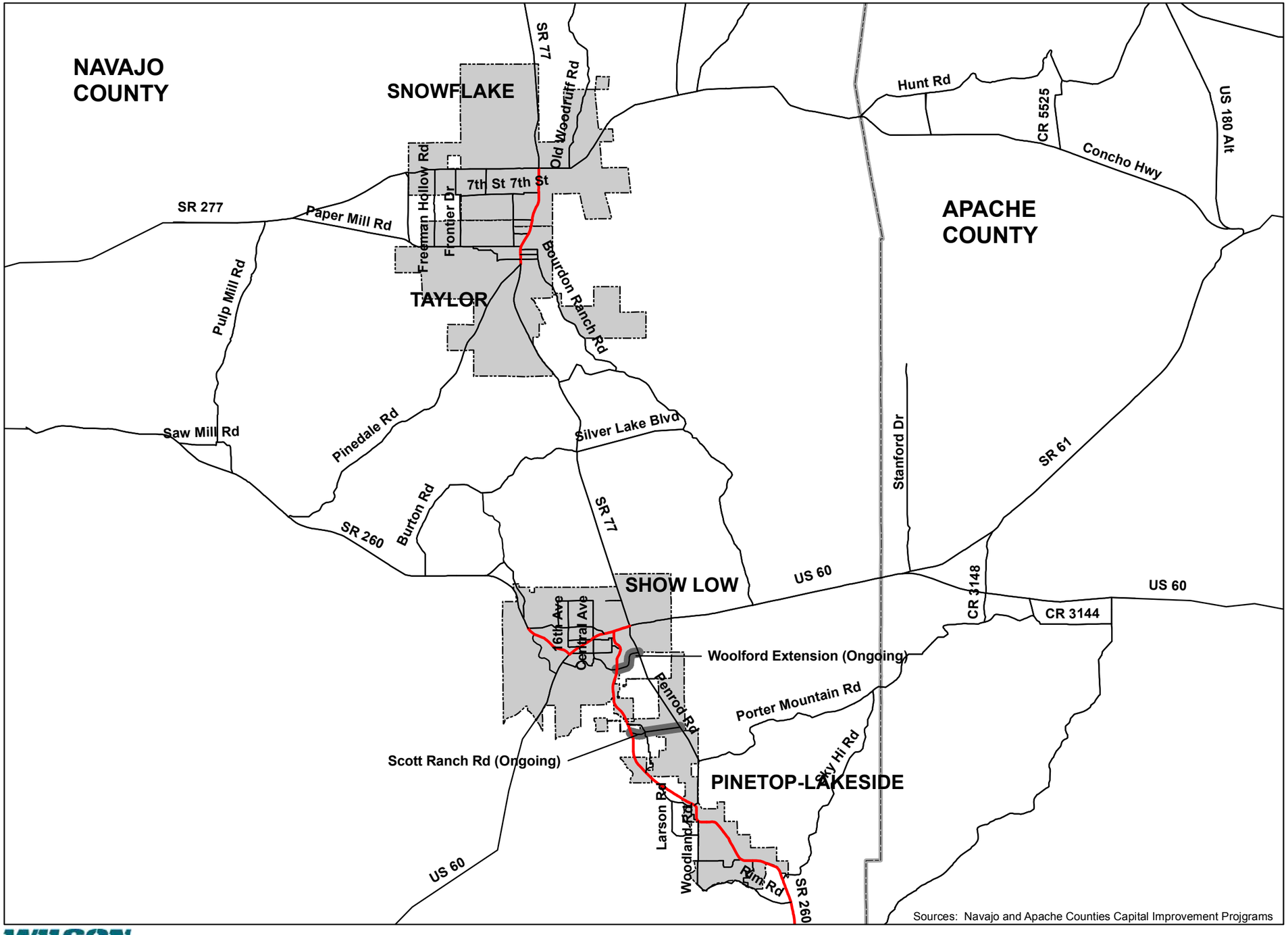
These five-year programmed roadway improvements were incorporated into the Existing-Plus-Committed 2030 transportation network, which is shown in Figure 5-1.

Evaluation of Roadway Network Deficiencies

The Southern Navajo/Apache County Travel Demand Model was used to distribute and assign 2030 average daily traffic to the sub-regional roadway network. Traffic levels were based on a forecast of trips generated from the year 2030 population and employment growth estimates. The traffic forecast was based on seasonal occupancy rates found in the Census 2000 population and DU data. Figure 5-2 shows that under this "No-Build" scenario a large number of the 2030 sub-regional arterial network would be carrying daily traffic volumes in excess of available capacity. A significant number of roadway segments would be operating at LOS 'E' or worse in the City of Show Low, as cited below:

- LOS 'E'
  - E. Old Linden Road – between N. Central Avenue and US 60 (Deuce of Clubs Highway);
- LOS 'F'
  - US 60 (Deuce of Clubs Highway) – from the junction with SR 260 on the west side of the City to the City's eastern boundary;
  - SR 260 – the complete length of this arterial through the City from the northwest corner boundary to the southeast corner boundary;
  - SR 77 (N. Penrod Road) – the complete length of this arterial in the City north of US 60;
  - Penrod Road – the complete length of this arterial in the City south of US 60;
  - S. Central Avenue/Woolford Road – south of Whipple Street to SR 260 (White Mountain Road);
  - W. Whipple Road – between US 60 and Central Avenue

Navajo/Apache County Study Area Overview



EXISTING-PLUS-COMMITTED ROADWAY NETWORK

Directional Lanes

1 Lane

2 Lanes

Improvement Scenario

Existing-Plus-Committed

Base Map Features

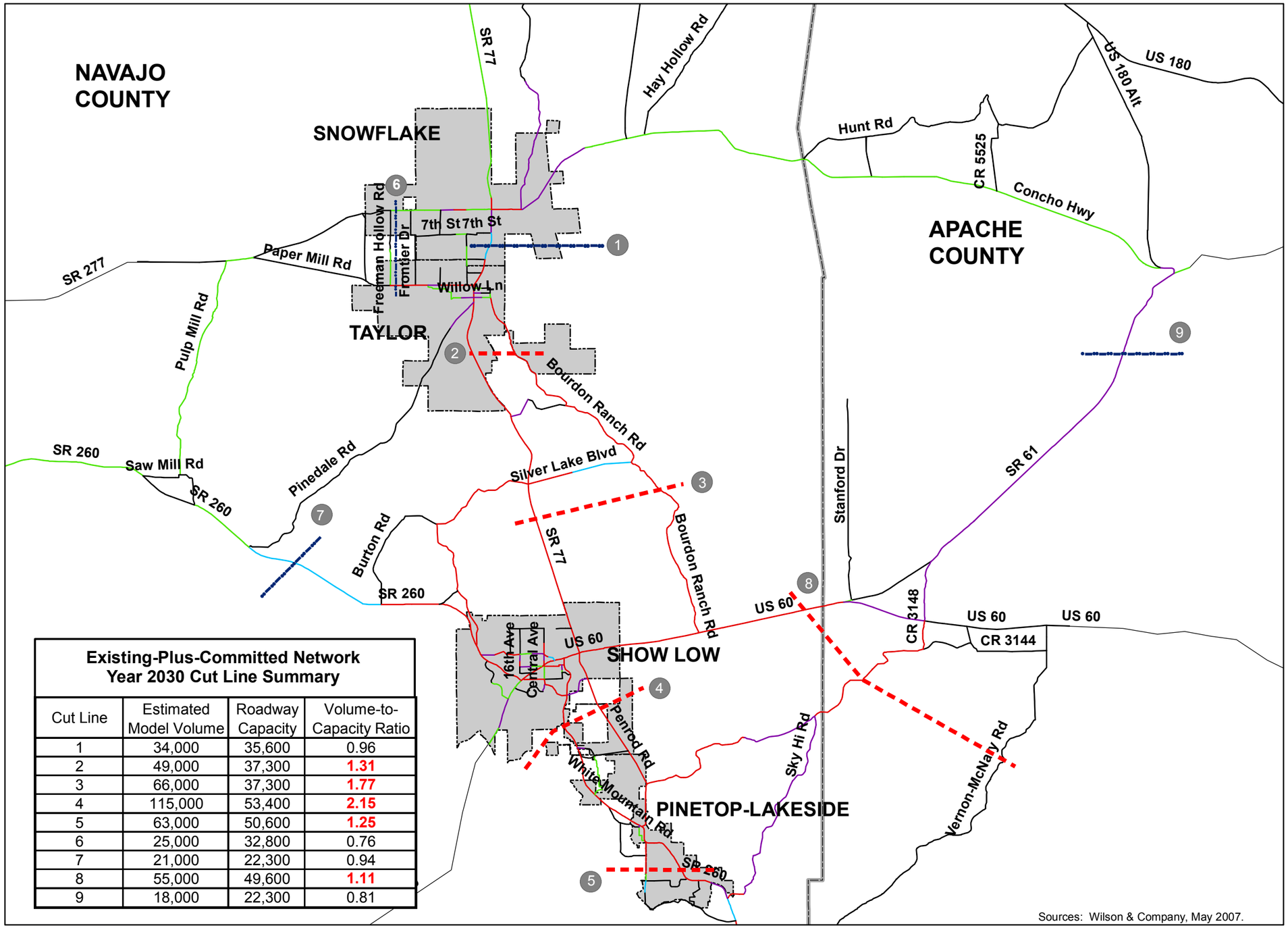
Cities/Towns

N

Not to Scale

FIGURE 5-1

Navajo/Apache County Study Area Overview



Existing-Plus-Committed Network Year 2030 Cut Line Summary

Cut Line	Estimated Model Volume	Roadway Capacity	Volume-to-Capacity Ratio
1	34,000	35,600	0.96
2	49,000	37,300	**1.31**
3	66,000	37,300	**1.77**
4	115,000	53,400	**2.15**
5	63,000	50,600	**1.25**
6	25,000	32,800	0.76
7	21,000	22,300	0.94
8	55,000	49,600	**1.11**
9	18,000	22,300	0.81

FORECAST 2030 LEVEL OF SERVICE: EXISTING-PLUS-COMMITTED ROADWAY NETWORK

Level of Service

- LOS A - B
- LOS C
- LOS D
- LOS E
- LOS F

* Based on 2030 Socioeconomic Data

Base Map Features

- Cities/Towns
- 1 — Cut Line Reference Number
- Cut Line Over Capacity
- Cut Line Under Capacity

N

Not to Scale

Sources: Wilson & Company, May 2007.

FIGURE 5-2

- E. McNeil Street/E. Huning – between Central Avenue and SR 260 (White Mountain Road);
- N. Central Avenue – between US 60 and W. Cooley Street and north of Old Linden Road to N. Paloma; and
- Old Linden Road – between N. 32nd and N. 16th Avenues and east of N. Central Avenue.

Certain roadway segments in the central portion of the Town would be operating at LOS 'D' or better, which is satisfactory for existing roadways. All others would be operating at LOS 'C' or better.

Figure 5-2 also shows a second level of assessment—a focused "cut-line" analysis. Cut-line analysis is a technique involving an imaginary line drawn across all of the major roadway facilities in a given travel corridor. The total traffic volume crossing the cut-line on individual roadways in the corridor is summed up. The cut-line volume represents the total demand for travel in a given direction over a broader portion of the network. The total volume is compared to available capacity to yield a volume-to-capacity (V/C) ratio. A V/C ratio greater than one means the forecast traffic volume is greater than the capacity of the roadway segments crossing the cut-line. Cut-Line 4 is relevant to the City of Show Low. The Year 2030 Cut-Line Summary table inset to Figure 5-2 indicates roadways in the southeast corridor between the City and Pinetop-Lakeside have a V/C ratio in excess of 1.0; in fact, the V/C ratio for Cut-Line 4 exceeds 2.0.

Cut-Lines 3, 7, and 8 offer a glimpse of the traffic levels on intra- and inter-regional travel relative to the City. Cut-Line 3, which gauges the level of traffic in the northern corridor connecting Show Low with the communities of Snowflake and Taylor, has a V/C ratio of close to 2.0. Cut-Line 7 has more manageable V/C ratio of 0.94,while Cut-Line 8 is over capacity with a V/C ratio of 1.11. The table inset to Figure 5-2 clearly demonstrates the principal travel demand pattern in the Sub-Region is north-to-south versus east-to-west.

COMMITTED-PLUS-PLANNED ROADWAY NETWORK

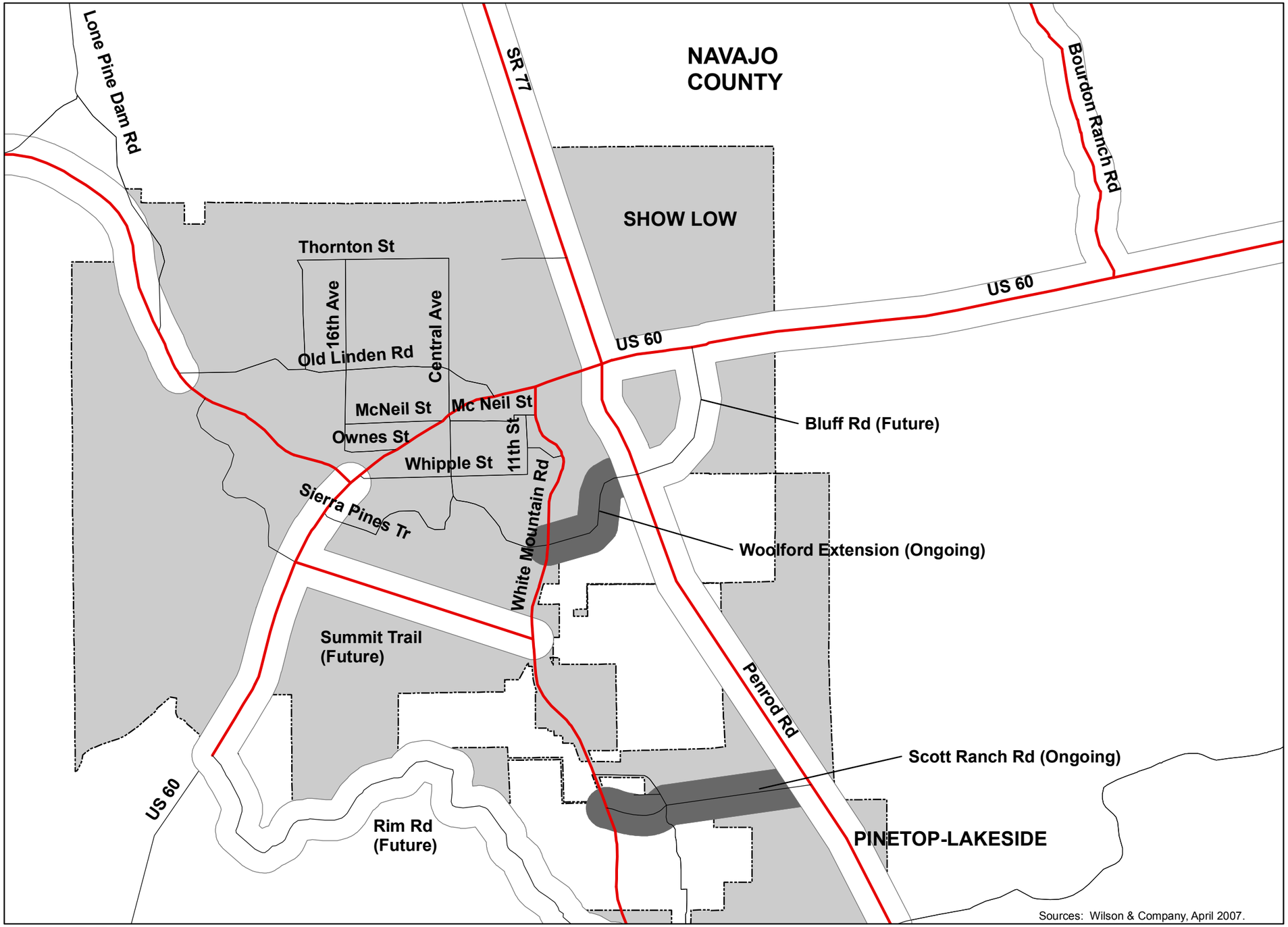
The analysis of 2030 travel demand on the Existing-Plus-Committed roadway network shows a definite need for improving existing facilities, particularly in the City's north-south corridors. Clearly, the network will not provide adequate capacity to handle projected year 2030 travel demand within the Sub-Region without significant improvement to existing facilities and the addition of new sub-regional transportation corridors. Steady population growth is forecast for the Sub-Region and the City of Show Low through the year 2030 planning horizon. The travel demand results and cut-line analysis indicate additional capacity is needed in the Sub-Region.

Roadway Improvements

The Committed-Plus-Planned roadway network includes committed capacity improvements, new alignment and widening proposals presented in earlier planning studies, and needed widening of existing facilities. Details concerning projects to improve Sub-Region roadways are identified in the *Southern Navajo/Apache County Sub-Regional Transportation Plan*. A map showing the Committed-Plus-Planned roadway network for the City of Show Low is presented in Figure 5-3. Specific improvements are planned by the State, County, and the City of Show Low, as cited below:

- ADOT
  - US 60 (West) – between Rim Road and Summit Trail: The paving of Rim Road between US 60 and Pinetop-Lakeside is expected to provide relief to SR 260 (White Mountain Road) and, thereby, reduce traffic through central Show Low on US 60. Bypass traffic from Rim Road, however, is expected to increase traffic volume on this segment of US 60 to more than 20,000 vehicles per day. Widening to four lanes will be required to accommodate this volume.
  - US 60 (West) – between Summit Trail and SR 260 (N. Clark Road): The planned Summit Trail Bypass in the City of Show Low between US 60 and SR 260 (White Mountain Road) is expected to increase traffic volume on this segment of US 60 to more than 35,000 vehicles per day in year 2030. Widening to four lanes with strict access management control will be required to accommodate this volume
  - SR 260 (N. Clark Road) – between Burton Road and Old Linden Road: Due to population growth pressures on the west side of Show Low, the volume on this segment of SR 260 is expected to exceed 37,000 vehicles per day. Widening to four lanes together with strict access management control will be required to accommodate this volume.

Show Low Overview



COMMITTED-PLUS-PLANNED ROADWAY NETWORK

Directional Lanes

1 Lane

2 Lanes

Improvement Scenario

Existing-Plus-Committed

Committed-Plus-Planned

Base Map Features

Cities/Towns

N

Not to Scale

FIGURE 5-3

- US 60 (East) – between SR 77 and Bourdon Ranch Road: The traffic volume on US 60 on this segment of US 60 is forecast to increase to more than 54,000 vehicles per day by year 2030. This volume is more typical of a limited access expressway than an arterial. Widening to four lanes together with strict access management control will be required to accommodate this volume.

- SR 77 (N. Penrod Road) – between SR 60 and Silver Lake Boulevard: Traffic volume on this segment of SR 77 is estimated to exceed 72,000 vehicles per day in the year 2030. This volume is more typical of a limited access expressway than an arterial. Widening to four lanes together with strict access management control will be required to accommodate this volume.

o Navajo County
  - Bourdon Ranch Road – between US 60 and Bourdon Ranch Road: Bourdon Ranch Road provides access to the growing White Mountain Lakes area north of Show Low and serves as a sub-regional bypass to SR 77. The traffic volume on this segment is expected to increase to more than 27,000 vehicles per day in year 2030. Widening to four lanes to will be required to accommodate this volume at an acceptable level of service.

o City of Show Low
  - Penrod Road – US 60 to south of Porter Mountain Road: Penrod Road provides sub-regional connectivity between Show Low and Pinetop-Lakeside as a parallel facility to SR 260 (White Mountain Road). Traffic volume on the northern portion of this roadway segment is expected to exceed 54,000 vehicles per day in year 2030. This volume is more typical of a limited access expressway than an arterial. Widening to four lanes together with strict access management control will be required to accommodate this volume at an acceptable level of service.

  - Summit Trail – between US 60 and SR 260 (White Mountain Road): This planned four-lane extension of Summit Trail will provide relief for US 60 (Deuce of Clubs Highway) through central Show Low. This bypass is expected carry more than 21,000 vehicles per day in year 2030.

  - Rim Road – between US 60 in Show Low and SR 260 (White Mountain Road): This planned improvement of Rim Road, enhancing connectivity to Pinetop-Lakeside, is expected to help relief congested US 60 and State highway corridors. This two-lane facility is expected to carry more than 11,000 vehicles per day near Show Low.

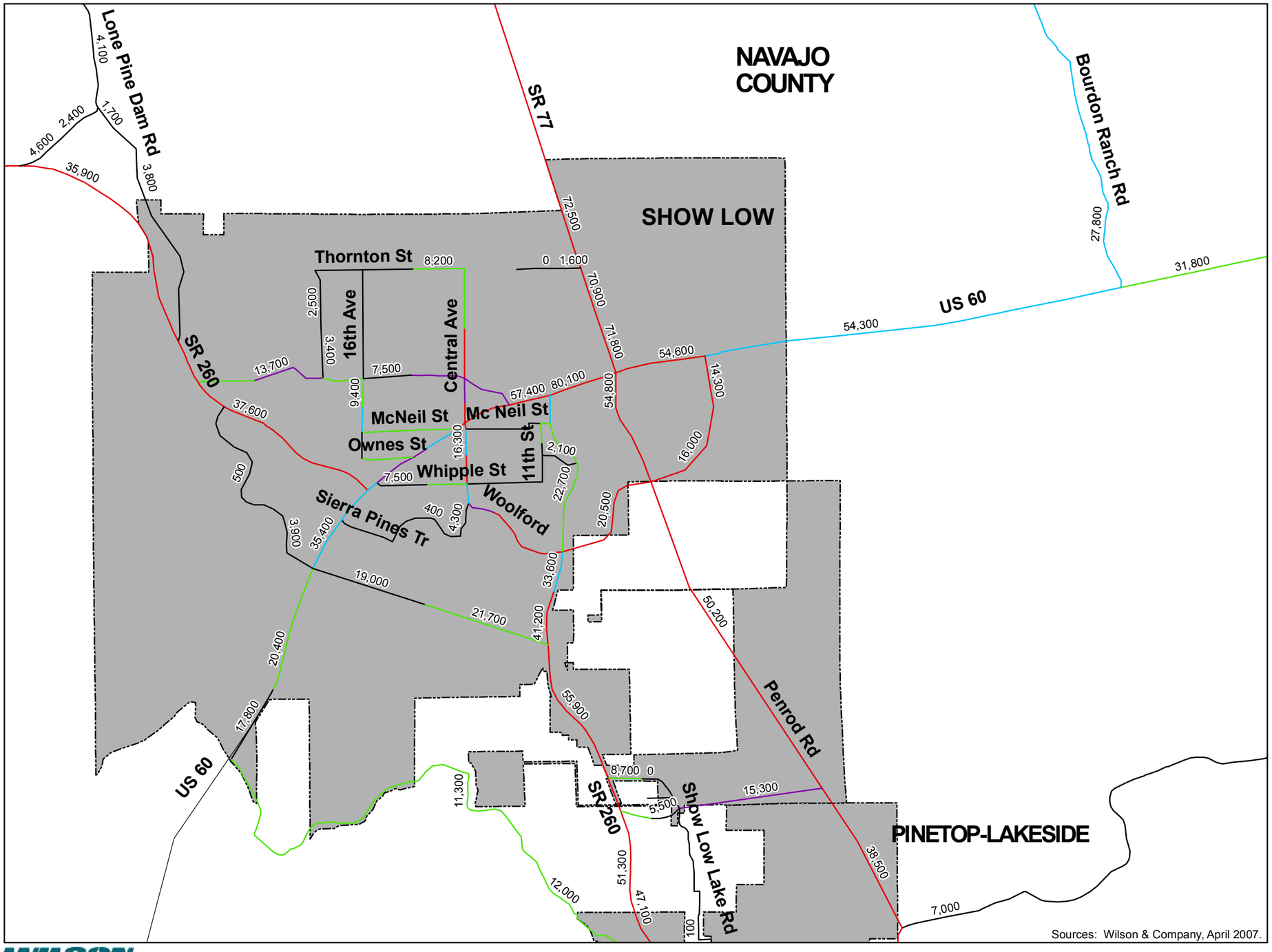
  - Bluff Road – between US 60 and Penrod Road: Construction of this new two-lane collector is planned as part of the Show Low Bluff Planned Unit Development (PUD). This road will provide access to development in the southeast quadrant of the US 60/Penrod Road intersection and tie into Woolford Extension to the west. It is expected to provide some relief to the US 60/SR 77 intersection in the eastern part of the City. This facility is expected to carry 16,000 vehicles per day in year 2030.

Evaluation of Roadway Network Deficiencies

Changes to other roadways in the Sub-Region can have an impact on roadways in Show Low. An analysis was conducted to determine how the sub-regional roadway network likely will respond with the addition of capacity improvements in Show Low and elsewhere in the Sub-Region, as identified in the *Southern Navajo/Apache County Sub-Regional Transportation Plan*. The sub-regional Southern Navajo/Apache County Travel Demand Model transportation network was modified to incorporate the Committed-Plus-Planned improvements. A new traffic assignment was based on the same year 2030 population and employment data used for the previous assignment. The new table of forecast traffic volumes for roadway segments provided a basis for determining whether deficiencies remained in the sub-regional roadway network. This was accomplished by revising the cut-line analysis. Figure 5-4 presents a map showing the revised traffic counts for the Committed-Plus-Planned roadway network, based on 2030 socioeconomic data.

Table 5-2 summarizes the results of the cut-line analysis for the Committed-Plus-Planned roadway network with cut-lines relevant to the City of Show Low highlighted in blue (refer to Figure 5-2 for cut-line locations). The table indicates planned improvements clearly would address many of the deficiencies identified within the sub-regional Existing-Plus-Committed roadway network. In particular, sufficient capacity is anticipated along each of the east-west cut-lines with the Committed-Plus-Planned roadway network. However, key north-south arterials are still forecast to have 2030 traffic volumes in excess of their capacities.

Show Low Overview



FORECAST LEVEL OF SERVICE:
COMMITTED-PLUS-PLANNED
ROADWAY NETWORK

Level of Service

- LOS A - B
- LOS C
- LOS D
- LOS E
- LOS F
- X,XXX - Daily Volume Estimate

*** Based on 2030 Socioeconomic Data**

Base Map Features

- Cities/Towns

N

Not to Scale

Sources: Wilson & Company, April 2007.

FIGURE 5-4

Table 5-2
Cut-Line Summary: Year 2030 Committed-Plus-Planned Roadway Network

Cut-Line	Location	Roadway Capacity	Year 2030 Daily Volume	V/C Ratio
North-South Cut-Lines				
1	Town of Snowflake	35,600	37,000	1.04
2	Town of Taylor	77,800	76,000	0.98
3	Between Town of Taylor and City of Show Low	77,800	94,000	1.21
4	City of Show Low	89,000	133,000	1.49
5	Town of Pinetop-Lakeside	71,200	71,000	0.99
East-West Cut-Lines				
6	West of Towns of Snowflake and Taylor	47,800	28,000	0.59
7	West of City of Show Low	35,600	12,000	0.34
8	East of City of Show Low and Town of Pinetop-Lakeside	77,800	41,000	0.53
9	SR 61, West of Concho Highway	17,800	12,000	0.67

Source: Figure 6-6, Southern Navajo Sub-Regional Transportation Plan, Wilson & Company, August.

Note: Shading identifies Cut-Lines relevant to the City of Show Low.

The cut-line analysis indicates substantial improvement for the City of Show Low. The V/C ratio for the City's southeast corridor (Cut-Line 4) would improve from 2.15 to 1.49; however, roadways in the corridor still would be operating over capacity. Cut-Line 3, north of the City also would show improvement over the Existing-Plus-Committed roadway network (refer to Cut-Line Summary table inset in Figure 5-2). The V/C ratio for the corridor between the community or Show Low and Snowflake/Taylor (Cut-Line 3) definitely would improve with implementation of planned projects for the area, as identified in the *Southern Navajo/Apache County Sub-Regional Transportation Plan*. However, the V/C ratio of 1.21 indicates the corridor roadways connecting Show Low and Snowflake/Taylor still would be operating over capacity in 2030. Cut-lines 7 and 8, west and east of the City, respectively, would experience notable relief with planned improvements. V/C ratios for these cut-lines would be reduced by more than one-half.

ALTERNATIVE 'A' ROADWAY NETWORK

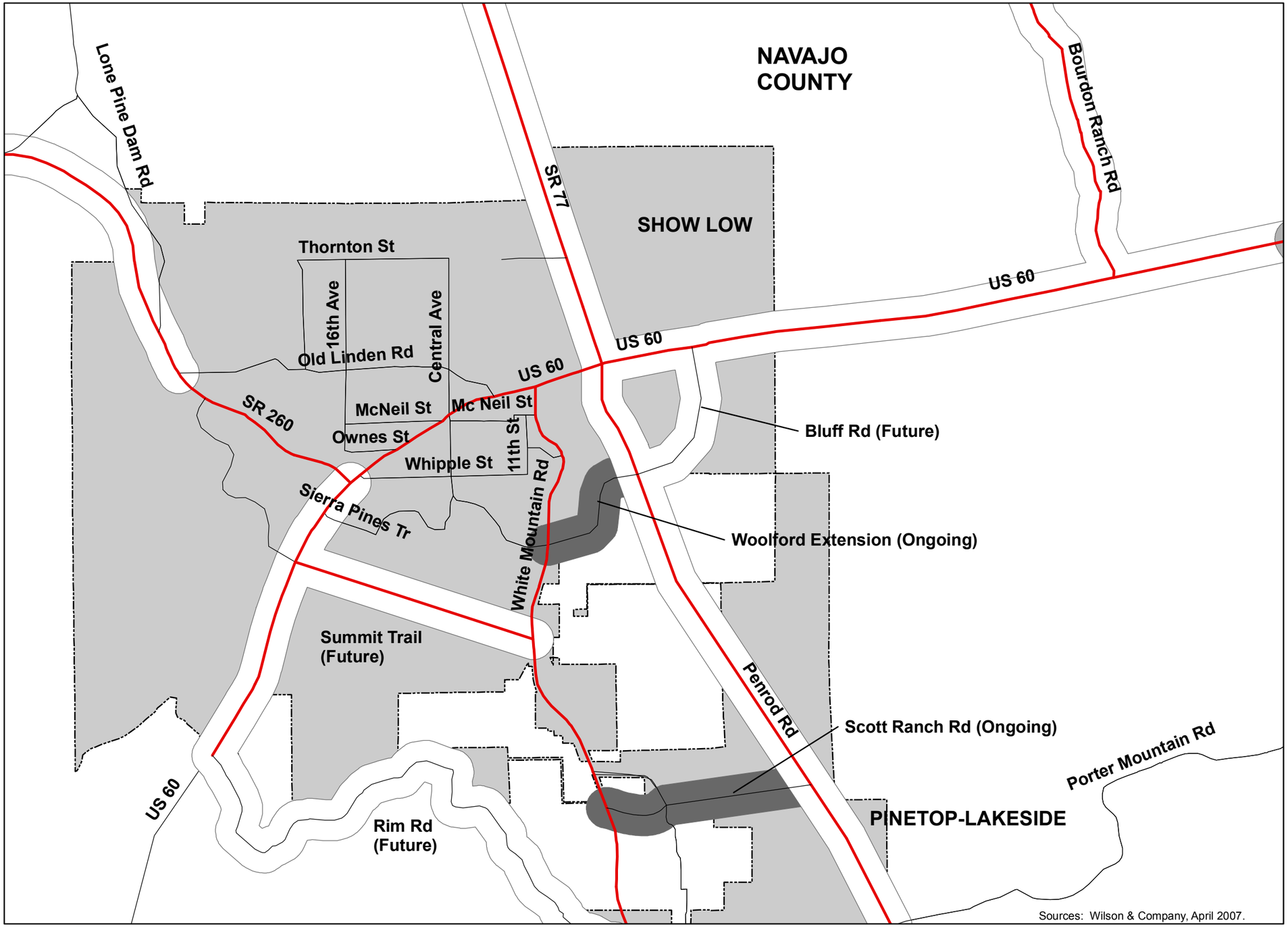
Information in the previous section indicates the Committed-Plus-Planned roadway network still will need enhanced network capacity and connectivity to facilitate efficient north-south travel. In consultation with the TAC, possible new Navajo County transportation corridors were added to the Committed-Plus-Planned roadway network to address this need. These potential new transportation improvements, when added to the Committed-Plus-Planned roadway network, constitute Alternative 'A'.

Roadway Improvements

One improvement recommended by the TAC potentially would have direct impacts on the City of Show Low's roadway network:

- **Lone Pine Dam Road:** Lone Pine Dam Road is an important Navajo County minor arterial that provides a north-south bypass around Show Low between SR 260 (Clark Rd) and SR 77. This facility also forms the southern section of a possible new North-South Corridor, generally following the Forest Road 133 alignment between Lone Pine Dam Road and Pinedale Road to Paper Mill Road in the Town of Taylor. Year 2030 traffic volume on Lone Pine Dam Road is expected to exceed 18,000 vehicles per day. As part of upgrading Lone Pine Dam Road to handle this increased bypass traffic volume, the facility should be relocated west of its existing location away from the growing residential neighborhood at the existing SR 260/Lone Pine Dam Road intersection. A detailed corridor study should be conducted to select an appropriate new alignment to begin R/W protection.

Show Low Overview



ALTERNATIVE A ROADWAY NETWORK

Directional Lanes

- 1 Lane
- 2 Lanes

Improvement Scenario

- Existing-Plus-Committed
- Committed-Plus-Planned

Base Map Features

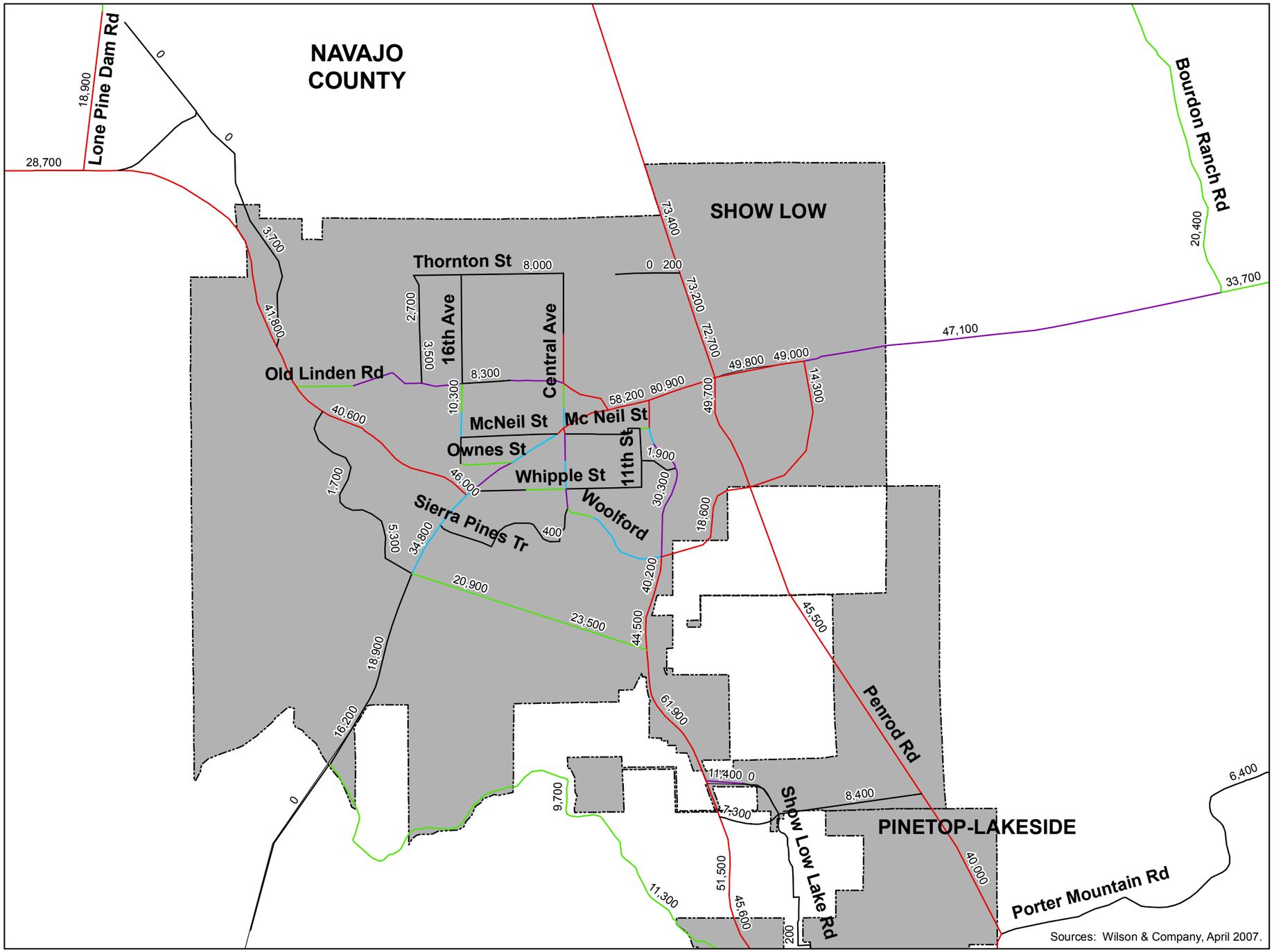
- Cities/Towns

N

Not to Scale

FIGURE 5-5

Show Low Overview



Sources: Wilson & Company, April 2007.

YEAR 2030 TRAFFIC ASSIGNMENT AND FORECAST LEVEL OF SERVICE: ALTERNATIVE A ROADWAY NETWORK

Level of Service

- LOS A - B
- LOS C
- LOS D
- LOS E
- LOS F
- X,XXX - Daily Volume Estimate

* Based on 2030 Socioeconomic Data

Base Map Features

- Cities/Towns

N

Not to Scale

FIGURE 5-6

WILSON & COMPANY

Southern Navajo/Apache County Sub-Regional Transportation Plan

Figures 5-5 and 5-6 show the Alternative 'A' roadway network with planned and proposed system improvements and the expected LOS for the traffic volumes shown, respectively.

Other possible new sub-regional roadway improvements incorporated under Alternative 'A' that potentially could impact Snowflake are cited below. Detailed information about these proposed/potential improvements may be referenced in the *Southern Navajo/Apache County Sub-Regional Transportation Plan*.

- **Sky Hi Road Extension:** The unused Apache Railroad R/W between US 60 east of Bourdon Ranch Road and Porter Mountain Road is a potential opportunity for a new north-south, two-lane collector. This facility would enhance connectivity between Pinetop-Lakeside in the south and residential growth areas in Apache County. It also would serve to relieve congested SR 260 (White Mountain Road) and Penrod Road in Show Low's southeast corridor. Year 2030 traffic volume on this Sky Hi Road Extension is expected to exceed 6,000 vehicles per day.
- **Mazatzal Street Extension:** Extend Mazatzal Street north of Show Low, connecting Bourdon Ranch Road with Stanford Drive in Apache County.
- **New North-South Corridor:** Construct a new two-lane North-South Road northwest of Show Low and west of the Town of Taylor, extending from US 60 and Lone Pine Dam Road in the south to Centennial Boulevard at Paper Mill Road in the north (refer to Lone Pine Dam Road discussion above).
- **Bourdon Ranch Road Extension:** Construct a new two-lane minor arterial east of the Towns of Taylor and Snowflake, extending from Old Woodruff Road at Concho Highway in northeast Snowflake to Bourdon Ranch Road southeast of Taylor.

Detailed corridor studies would be conducted prior to selecting an appropriate new alignment to begin R/W protection for any of these options.

Evaluation of Roadway Network Deficiencies

Table 5-3 compares the results of the cut-line analysis for the Committed-Plus-Planned roadway network with the improvements defined under the Alternative 'A' roadway network (cut-lines relevant to Show Low are highlighted in blue). The data in the table indicate additional improvements would provide the best network performance under projected year 2030 growth projections. The V/C ratios attained with the Alternative 'A' show there would be a notable capacity improvement relative to the corridor north of Show Low (Cut-Line 3); the V/C ratio would be reduced from 1.21 to 1.05, leaving a marginal capacity situation. There only would be very slight improvement associated with Cut-Lines 4, the southeast corridor, and Cut-Line 7, SR 260 to the west. The southeast corridor would remain well over capacity with a V/C ratio of 1.48. Very slight deterioration is forecast to occur at Cut-Line 8, where the V/C ratio would change from 0.65 to 0.67.

5.1.4 YEAR 2015 MID-TERM IMPROVEMENT NEEDS

The full menu of Alternative 'A' roadway improvements was analyzed in the context of the 2015 population and employment forecasts (Appendix A) to prioritize the roadway capacity improvements needed to accommodate mid-term growth. Appendix A also presents a graphic depicting the phasing of the Alternative 'A' improvement plan in Snowflake for 2015 and 2030, and there is a map showing network traffic volumes and predicted LOS for the 2015 roadway network.

5.2 INTERSECTION ANALYSIS

As traffic volumes on roadways in the Sub-Region increase because of population and employment growth, intersection upgrades will be an important part of the overall sub-regional mobility solution. The study team conducted planning-level analyses of key existing and future intersection locations to identify lane configuration and traffic control type required to meet 2030 traffic demands. The analysis was conducted to determine both traffic control type and the intersection lane configuration needed to accommodate traffic at LOS 'D' or better.

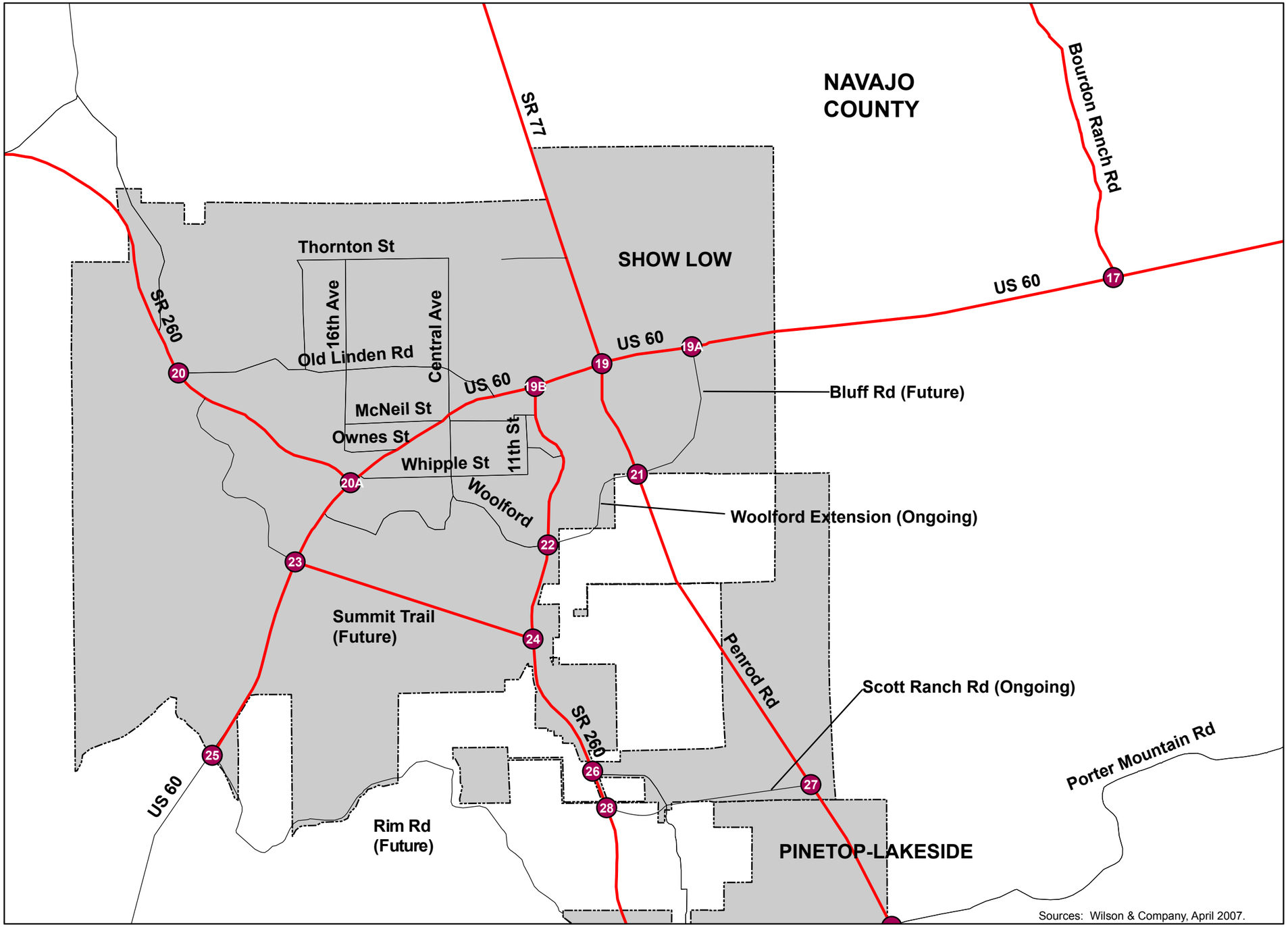
In all, 45 intersections in the Sub-Region were analyzed for the Alternative 'A' transportation improvement scenario. The same intersections were analyzed for a subset of near-term improvement needs implemented in 2015. Thirteen of the intersections are located in Show Low (Figure 5-7). Table 5-4 shows the type of traffic for

Table 5-3
Cut-Line Analysis Comparison: Year 2030 Committed-Plus-Planned Network v. Alternative 'A' Network

Cut-Line	Location	Year 2030 Committed-Plus-Planned Network			Alternative 'A' Network		
		Roadway Capacity	Forecast Daily Volume	V/C Ratio	Roadway Capacity	Forecast Daily Volume	V/C Ratio
North-South Cut-Lines							
1	Town of Snowflake	35,600	37,000	1.04	53,400	52,000	0.97
2	Town of Taylor	77,800	76,000	0.98	95,600	72,000	0.75
3	Between Town of Taylor and City of Show Low	77,800	94,000	1.21	95,600	100,000	1.05
4	City of Show Low	89,000	133,000	1.49	89,000	132,000	1.48
5	Town of Pinetop-Lakeside	71,200	71,000	0.99	71,200	71,000	0.99
East-West Cut-Lines							
6	West of Towns of Snowflake and Taylor	47,800	28,000	0.59	47,800	27,000	0.56
7	West of City of Show Low	35,600	12,000	0.34	35,600	11,000	0.31
8	East of City of Show Low and Town of Pinetop-Lakeside	62,800	41,000	0.65	62,800	42,000	0.67
9	SR 61, West of Concho Highway	17,800	12,000	0.67	29,000	13,000	0.45

Source: Table 6-4, Southern Navajo Sub-Regional Transportation Plan, Wilson & Company, August 2007.

Show Low Overview



SHOW LOW PLANNING AREA INTERSECTIONS

Legend

- 2 Travel Lanes
- 4 Travel Lanes
- XX Study Area Intersection

Base Map Features

- Cities/Towns

N

Not to Scale

Sources: Wilson & Company, April 2007.

FIGURE 5-7

WILSON & COMPANY

Southern Navajo/Apache County Sub-Regional Transportation Plan

Table 5-4
Traffic Control at Show Low Intersections: Existing, 2015, & 2030

ID	Intersection	Traffic Control Type		
		Existing	Year 2015	Year 2030
19	US 60/SR 77	Signal	Signal	Grade-Separated Intersection
19A	US 60/Bluff Rd (Future)	N/A	N/A	Signal
19B	US 60 (Deuce of Clubs)/SR 260 (White Mountain Rd)	Signal	Signal	Signal
20	SR 260 (Clark Rd)/Old Linden Rd	Stop	Signal	Signal
20A	SR 260 (Clark Rd)/US 60 (Deuce of Clubs)	Signal	Signal	Signal
21	SR 77/Penrod Rd (Future)	N/A	Signal	Signal
22	SR 260 (White Mountain Rd)/Woolford Rd	Signal	Signal	Signal
23	US 60/Summit Trail	Stop	Signal	Signal
24	SR 260 (White Mountain Rd)/Summit Trail (Future)	N/A	N/A	Signal
25	US 60/Rim Rd (Future)	N/A	N/A	Signal
26	SR 260 (White Mountain Rd)/Show Low Lakes Rd	Signal	Signal	Signal
27	Scott Ranch Rd/Penrod Rd	N/A	Stop	Signal
28	SR 260 (White Mountain Rd)/Scott Ranch Rd	Stop	Signal	Signal

Source: Table 6-6, Southern Navajo Sub-Regional Transportation Plan, Wilson & Company, May 2007.

Note: Shading indicates changes in traffic control type from the previous period.

control associated with existing intersections in Show Low as well as the control types anticipated to be needed intersections in 2015 and 2030. Appendix B contains figures showing for each intersection a recommended 2030 lane configuration and forecast peak-hour traffic volume estimates for 2015 and 2030.

5.2.1 YEAR 2015 INTERSECTION PERFORMANCE

Most existing intersections in the Sub-Region should continue to function at LOS 'D' or better under existing (2006) and anticipated year 2015 traffic conditions. Five intersections located in Show Low will require signalization by 2015:

- SR 260 (Clark Rd)/Old Linden Rd
- SR 77/Penrod Rd (Future)
- US 60/Summit Trail
- Scott Ranch Rd/Penrod Rd
- SR 260 (White Mountain Rd)/Scott Ranch Rd.

5.2.2 YEAR 2030 INTERSECTION ANALYSIS

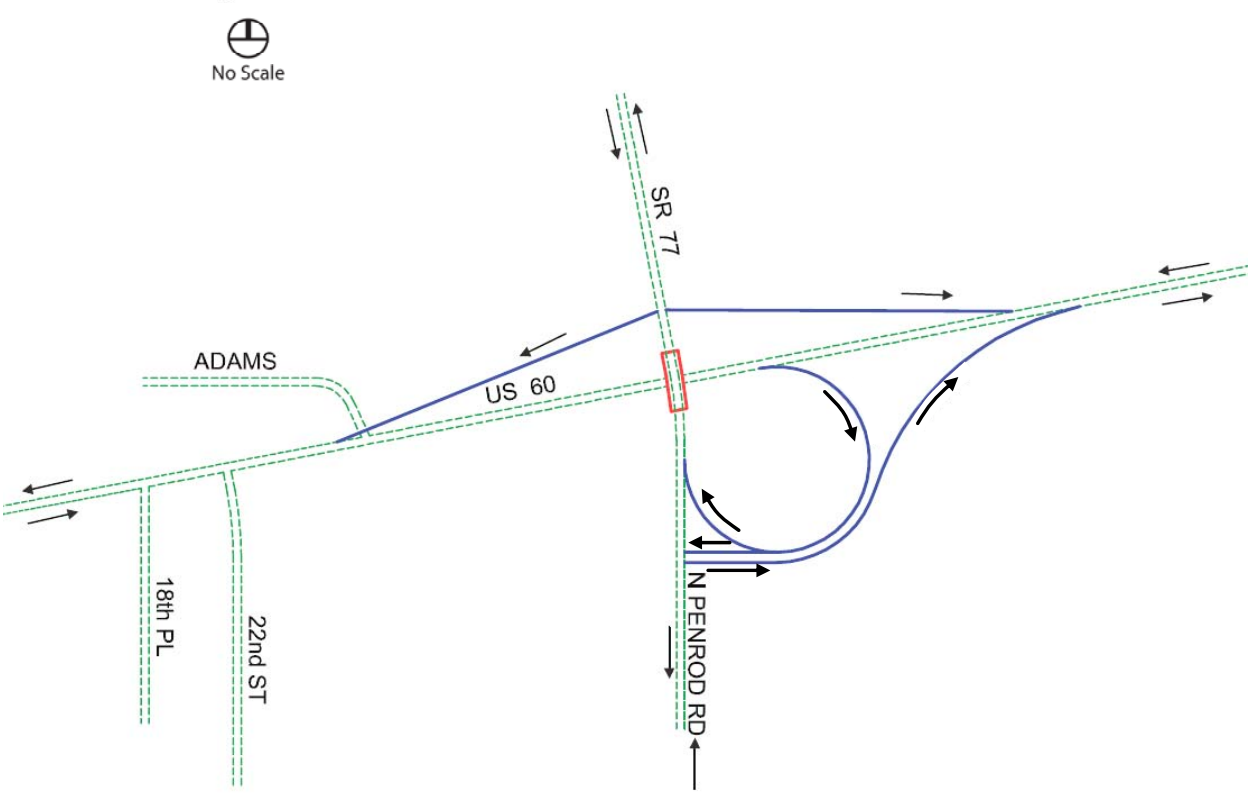
The population and employment growth projected to occur by 2030 will require significant upgrades at most intersections in the Sub-Region. In the City of Show Low, specifically, signalization projects will be needed at four intersections to assure LOS 'D' performance:

- US 60/Bluff Rd (Future)
- SR 260 (White Mountain Rd)/Summit Trail (Future)
- US 60/Rim Rd (Future)
- Scott Ranch Rd/Penrod Rd

In addition, in 2030, the volume of traffic passing through the intersection of US 60, SR 77, and Penrod Road is expected to exceed 230,000 vehicles per day. Therefore, this major intersection of key sub-regional routes will

require a grade-separated interchange solution to accommodate expected travel demand and maintain LOS 'D' performance. Figure 5-8 shows a typical modified diamond interchange or "trumpet" interchange design that would be applicable to this intersection. This interchange includes a loop ramp in the southeast quadrant to reduce potential impacts to businesses on US 60 west of Penrod Road. While a detailed engineering study will be required to identify the best interchange solution to accommodate travel demand, this concept shows the kind of investment needed to accommodate anticipated year 2030 travel demand.

Figure 5-8 Potential US 60/SR 77 Interchange Concept



6.0 IMPLEMENTATION PLAN

This section establishes the overall framework for the City of Show Low Community Transportation Plan. It includes the following elements:

- Future Roadway Functional Classification Plan
- Year 2030 Roadway Improvement Plan
- Transportation Revenue Sources
- Implementation Action Items

The recommendations for each of these elements are based on the technical analyses of existing and future transportation conditions presented in the previous sections as well as input from the TAC.

6.1 FUTURE ROADWAY FUNCTIONAL CLASSIFICATION PLAN

The Future Roadway Functional Classification Plan, shown for the City of Show Low (Figure 6-1) is based on the 1999 *White Mountain Regional Transportation Plan*, as updated by the travel demand analysis for 2030 presented in the previous sections of this report. The Future Roadway Functional Classification Plan establishes the overall design framework to guide development of Show Low's roadway network over the planning period through 2030. Each major roadway is classified according to four principal roadway classifications: Principal Arterial, Minor Arterial, Major Collector, and Minor Collector.

The protection of R/W is critical for implementing future roadway improvements needed to accommodate forecast 2030 travel demand. The functional classifications shown in Figure 6-1, therefore, establish a basis for requiring the necessary R/W to construct roadway to the full design cross-sections specified in Section 2. Specific R/W requirements for each planned roadway should be considered when reviewing future development proposals.

6.2 YEAR 2030 ROADWAY IMPROVEMENT PLAN

This Year 2030 Roadway Improvement Plan (Figure 6-2) includes the improvement needs defined by Alternative 'A', as discussed in Section 5 of this report. Based on the analyses conducted, these improvement recommendations should assure adequate roadway system capacity to handle the 2030 travel demand in the Sub-Region and in the City of Show Low. It is important to note that the Year 2030 Roadway Improvement Plan is not expected fully to accommodate the seasonal influx of visitors experienced annually by the Sub-Region and the City of Show Low. Thus, study participants and the TAC understand and expect the roadway system defined by Alternative 'A' will operate over capacity in several key corridors as a result of the seasonal increase in traffic.

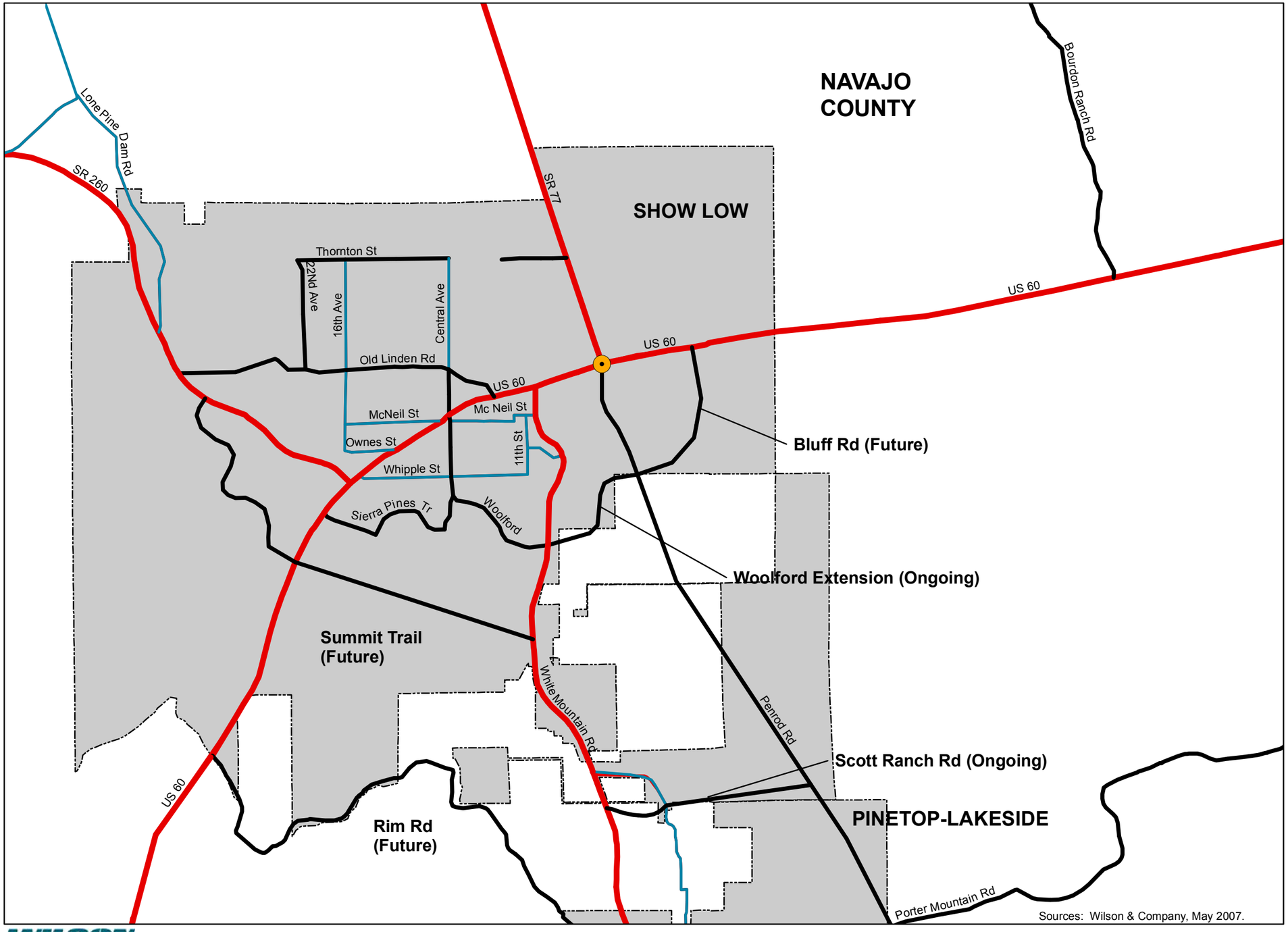
Table 6-1 lists 13 roadway improvement projects that would have direct impact on Show Low's transportation system, as specified for the Year 2030 Roadway Improvement Plan reported in the *Southern Navajo/Apache County Sub-Regional Transportation Plan*. Roadway improvements are defined in terms of their location, roadway capacity needs, planning-level capital cost estimate, and recommended time horizon for implementation. The total estimated cost of all improvements of $265,915,200 includes planning, design, construction management, and R/W acquisition. Estimated capital costs in 2006 dollars for roadway improvements planned by the City of Show Low (highlighted in blue) total $25,778,400. An additional $30 million has been included for the construction of the US 60/SR 77 interchange. The capital cost estimates presented in Table 6-1 assume an average cost of $1,270,000 per lane mile in 2006 dollars, which is based on year 2006 Maricopa County Department of Transportation (MCDOT) cost data presented in the MCDOT Transportation System Plan Update, 2006. When an existing two-lane roadway showed a need to be upgraded to four travel lanes, it was assumed that the entire facility would be reconstructed.

6.3 TRANSPORTATION REVENUE OUTLOOK

Existing and potential revenues available for funding the recommended Year 2030 Roadway Improvement Plan are briefly described below.

Show Low Overview

FUTURE ROADWAY FUNCTIONAL CLASSIFICATION PLAN



Roadway Classifications

- Principal Arterial
- Minor Arterial
- Major Collector
- Minor Collector

Base Map Features

- Cities/Towns
- Traffic Interchange

N

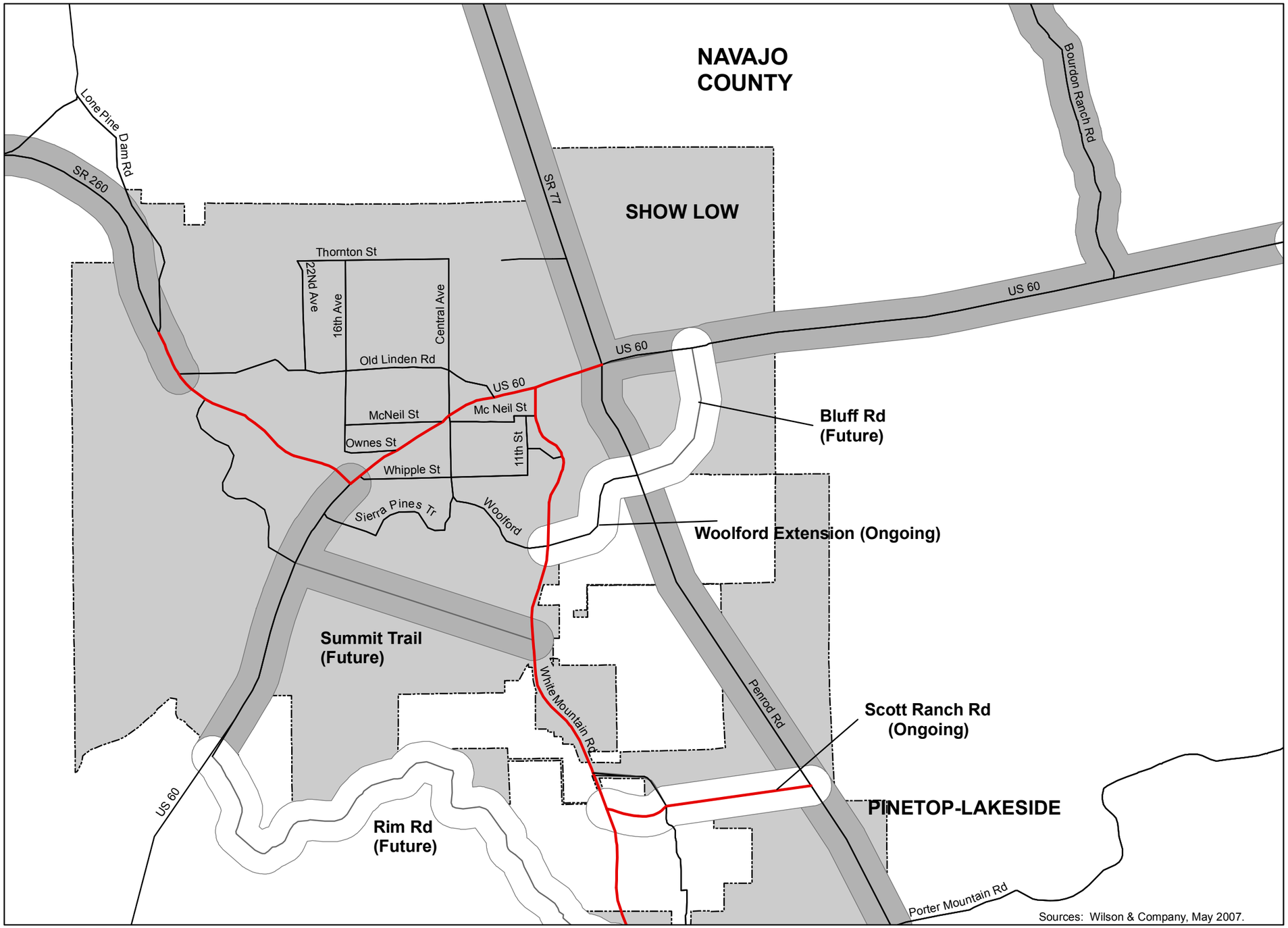
Not to Scale

FIGURE 6-1

WILSON & COMPANY

Southern Navajo/Apache County Sub-Regional Transportation Plan

Show Low Overview



YEAR 2030 ROADWAY IMPROVEMENT PLAN

Existing Roadway Network
- 2 Lanes
- 4 Lanes

Future Network Improvement
- 2 Lanes
- 4 Lanes
- New Traffic Interchange

Base Map Features
- Cities/Towns

N

Not to Scale

FIGURE 6-2

WILSON & COMPANY

Southern Navajo/Apache County Sub-Regional Transportation Plan

Table 6-1
City of Show Low Planning Area Roadway Improvement Needs

Street Name	From	To	Length (Mi.)	Existing Travel Lanes	Needed Travel Lanes	Improvement Cost Estimate (2006 dollars)*	Recommended Priority	Jurisdiction
East-West Facilities								
SR 260 (Clark Rd)	Burton Rd	Old Linden Rd	5.00	2	4	$ 25,400,000	Long-Range	ADOT
US 60 (Deuce of Clubs)	Rim Rd	Clark Rd (SR 260)	1.96	2	4	$ 9,956,800	Long-Range	ADOT
US 60 (Deuce of Clubs)	SR 77	Bourdon Ranch Rd	4.80	2	4	$ 24,384,000	Mid-Range	ADOT
US 60	Bourdon Ranch Rd	SR 61	5.90	2	4	$ 29,972,000	Long-Range	ADOT
Bluff Rd	SR 260 (White Mountain Rd)	Penrod Rd	1.22	0	2	$ 3,098,800	Short-Range	Show Low
Summit Way	US 60 (Deuce of Clubs)	SR 260 (White Mountain Rd)	2.30	0	4	$ 11,684,000	Long-Range	Show Low
Scott Ranch Rd	SR 260 (White Mountain Rd)	Penrod Rd	1.94	0	2	$ 4,927,600	Short-Range	Show Low
Rim Rd	Pinetop-Lakeside City Limits	US 60	5.00	0	2	$ 12,700,000	Long-Range	Show Low
North-South Facilities								
SR 77	Deuce of Clubs (US 60)	White Mountain Lakes Rd	8.00	2	4	$ 40,640,000	Mid-Range	ADOT
Bourdon Ranch Rd	US 60 (Deuce of Clubs)	Silver Lake Blvd	8.20	2	4	$ 41,656,000	Long-Range	County
Lone Pine Dam Rd	SR 260 (Clark Rd)	Forest Rd 133	3.20	0	2	$ 8,128,000	Long-Range	County
Penrod Rd	Pinetop-Lakeside City Limits	US 60 (Deuce of Clubs)	4.60	2	4	$ 23,368,000	Mid-Range	Show Low
New Traffic Interchanges								
US 60 (Deuce of Clubs) at SR 77						$ 30,000,000	Long-Range	ADOT
					Total Estimated Improvement Need	$ 265,915,200		

Source: Table 7-2, Southern Navajo Sub-Regional Transportation Plan, Wilson & Company, May 2007.

Notes:
* Planning-level construction cost estimates include: allowances for planning, design, construction management, and right-of-way.
Shading identifies those improvement projects within the jurisdiction of the City of Show Low.

- **Highway User Revenue Fund (HURF).** This is the principal source of funding for roadway construction and maintenance in Arizona. HURF revenues come from a variety of sources including state motor fuel taxes, motor carrier taxes, vehicle registration fees and a portion of vehicle license taxes. These funds are distributed by formula to every city and county in the state and to ADOT. The State Constitution earmarks HURF funds exclusively for street and highway purposes.
- **Local Transportation Assistance Fund (LTAF).** The LTAF provides State Lottery proceeds to cities and towns for transportation improvements. LTAF funds are allocated using a population-based formula.
- **Federal Highway Funds.** Federal Highway Funds are apportioned in accordance with the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) enacted by Congress in year 2005.
- **Developer Impact Fees.** Navajo County is currently starting the process to establish a development impact fee to help fund roadway infrastructure needed to accommodate growing travel demand. The City of Show Low and the Towns of Pinetop-Lakeside and Snowflake also are considering a development impact fee for transportation.
- **Half-Cent Sales Tax.** Another funding alternative is a half-cent sales tax dedicated to transportation improvements. It is authorized in Arizona Revised Statute 42-1484: *County Transportation Excise Tax For Roads; Counties with Population of Four Hundred Thousand or Fewer Persons.* This revenue stream could have a significant role in funding the transportation improvements identified in this study.

6.4 IMPLEMENTATION ACTION ITEMS

The principal action items required to support and implement key elements of the Year 2030 Roadway Improvement Plan include: on-going stakeholder coordination; maintaining a current database of traffic information; conducting key corridor studies; participating in regional planning efforts; and periodically updating this transportation study.

6.4.1 STAKEHOLDER COORDINATION

An important part of the long-term roadway improvement plan outlined in this report is continued coordination between the State, the County, and the City of Show Low. The White Mountain Regional Transportation Committee is an effective forum for coordinating timely improvements to the State Highway System to ensure regional mobility as growth occurs.

6.4.2 CORRIDOR STUDIES

Protection of R/W for future roadways is essential to maintaining the integrity of the planned high-capacity regional and sub-regional roadways identified in this long-range transportation plan. Corridor studies typically are the vehicle for identifying the required roadway R/W footprint, intersection configurations, bridges and other drainage needs, and potential environmental concerns. It is recommended that the City of Show Low, in partnership with other key stakeholders in the Sub-Region, undertake detailed engineering studies to define and evaluate the following corridors:

- SR 77, between US 60 and White Mountain Lakes Road;
- US 60, between SR 77 and Bourdon Ranch Road;
- Summit Trail, between US 60 and SR 260 (White Mountain Rd);
- Rim Road, between US 60 west of Show Low and SR 260 (White Mountain Road) south of Pinetop-Lakeside;
- Scott Ranch Road, SR 260 to Penrod Road, new two-lane road;
- Sky Hi Road Extension on Apache Railroad right-of-way, between US 60 and Porter Mountain Road; and
- New North-South Corridor, between SR 260 and Paper Mill Road in the Town of Taylor comprised of relocated Lone Pine Dam Road, National Forest Road 133, Pinedale Road, and a new connector to Paper Mill Road.

These studies would be an essential tool in working with adjacent jurisdictions, ADOT, and the development community to maintain the integrity of future transportation corridors.

6.4.3 ROADWAY SAFETY REVIEW

The City of Show Low should conduct periodic reviews of roadway accident data to identify safety trends.

6.4.4 TRAFFIC DATA COLLECTION

Permanent traffic count stations should be established at strategic locations to collect data on the daily, weekly, and annual variations in traffic volumes. Data from permanent count stations would be a valuable resource to engineers and planners establishing transportation infrastructure needs. The City of Show Low also should continue updates of traffic conditions through periodic roadway inventories and/or an annual system-wide traffic count program.

6.4.5 HOUSEHOLD TRAVEL SURVEY

To provide more accurate travel demand forecasts, the City of Show Low should participate in a household travel survey focusing on the southern Navajo/Apache County Sub-Region. This household travel survey would seek to measure sub-regional trip making characteristics. It would collect data on trip generation, trip length, and modal choice for both the permanent and seasonal populations. Comprehensive and current travel data would enable future studies to establish peak-season travel demand forecasts. Because transit will have an important role in future mobility solutions; data from a travel survey also would enable analysis of mode choice.

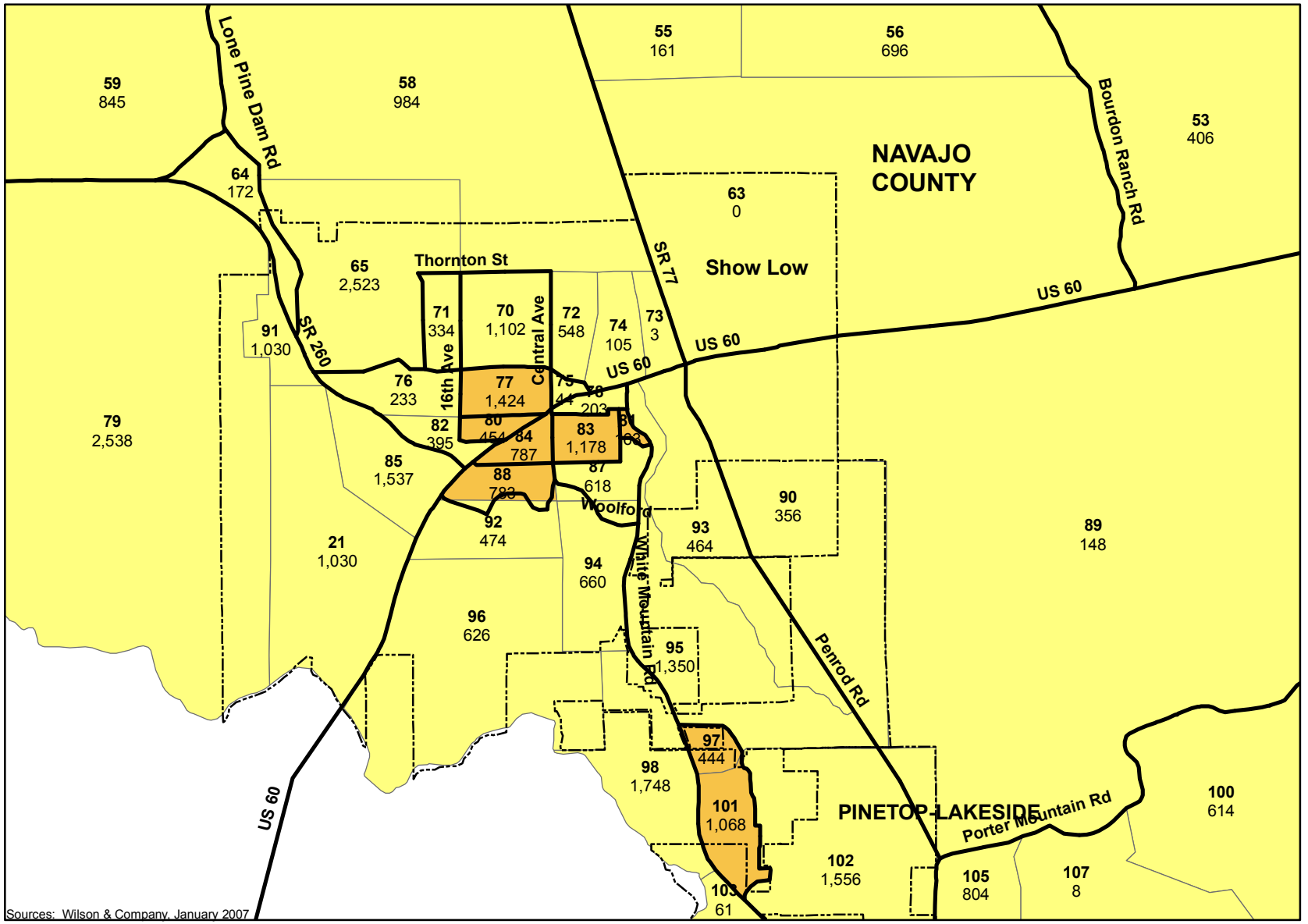
6.4.6 MONITOR AND UPDATE SUB-REGIONAL TRAVEL DEMAND MODEL AND TRANSPORTATION PLAN

To facilitate periodic updates of the sub-regional travel demand model and project prioritization analysis, the City of Show Low should strive to maintain current DU and employment databases. Significant changes in development patterns should trigger an update of the travel demand forecasts for the Sub-Region. At a minimum, a major review of this transportation plan should be undertaken every five years.

APPENDIX A

Year 2015 & Year 2030 Phased Roadway Improvements

Show Low Overview



YEAR 2015 ESTIMATED POPULATION DENSITY BY TRAFFIC ANALYSIS ZONE

Population Density per Square Mile

- 0 - 1500
- 1501 - 4000
- 4001 - 6500
- 6500 +

Base Map Features

- Arterials
- Cities/Towns
- XX Traffic Analysis Zone
- X,XXX Population Estimate

N

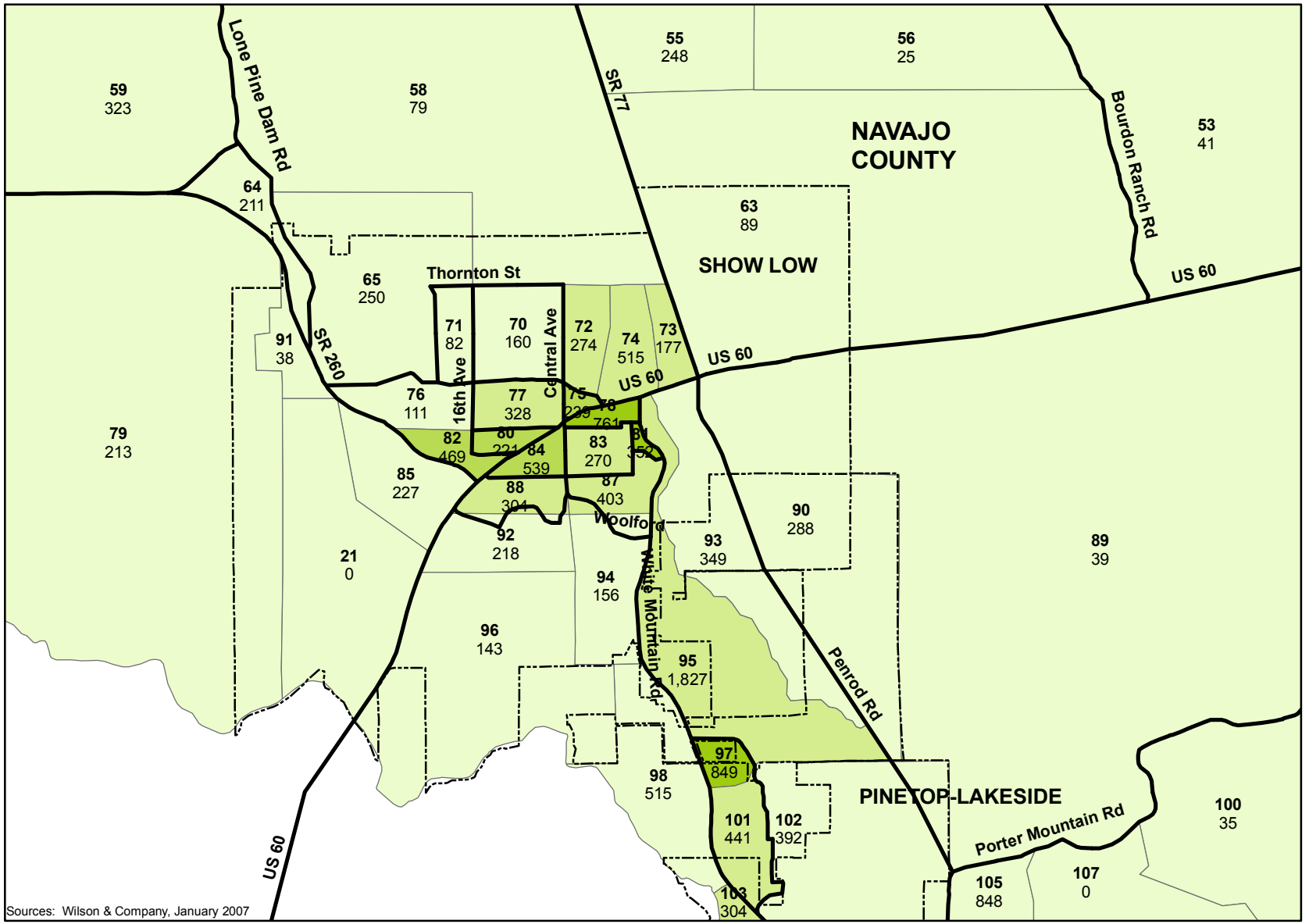
Not to Scale

FIGURE A-1

WILSON & COMPANY

Southern Navajo/Apache County Sub-Regional Transportation Plan

Show Low Overview



YEAR 2015 ESTIMATED EMPLOYMENT DENSITY BY TRAFFIC ANALYSIS ZONE

Employment Density per Square Mile

- 0 - 500
- 501 - 1000
- 1001 - 3000
- 3000 +

Base Map Features

- Arterials
- Cities/Towns
- XX Traffic Analysis Zone
- X,XXX Employment Estimate

N

Not to Scale

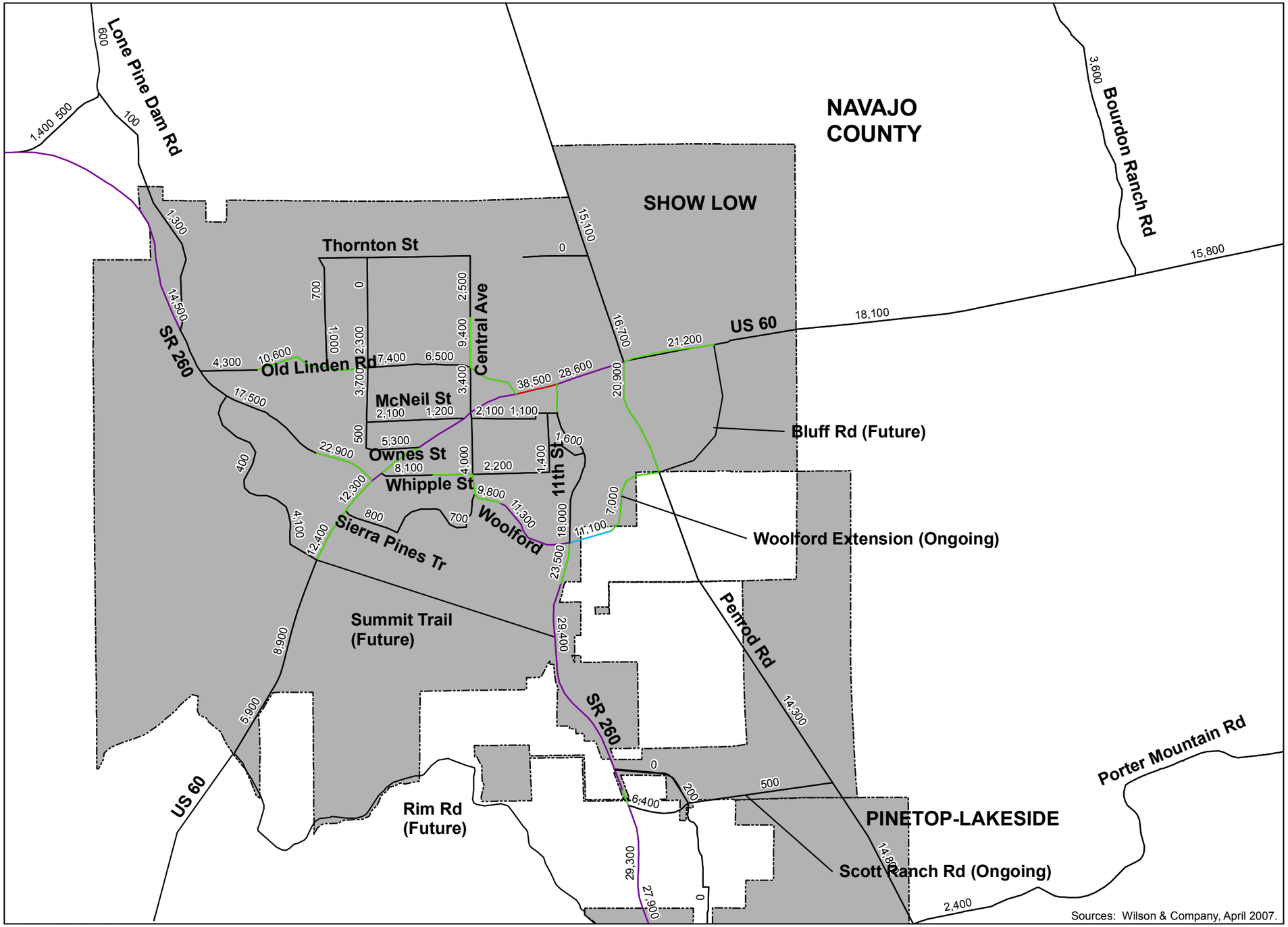
FIGURE A-2

WILSON & COMPANY

Southern Navajo/Apache County Sub-Regional Transportation Plan

Show Low Overview

FORECAST LEVEL OF SERVICE: YEAR 2015 IMPROVEMENTS



Sources: Wilson & Company, April 2007.

Level of Service

- LOS A - B
- LOS C
- LOS D
- LOS E
- LOS F

X,XXX - Daily Volume Estimate

* Based on 2015 Socioeconomic Data

Base Map Features

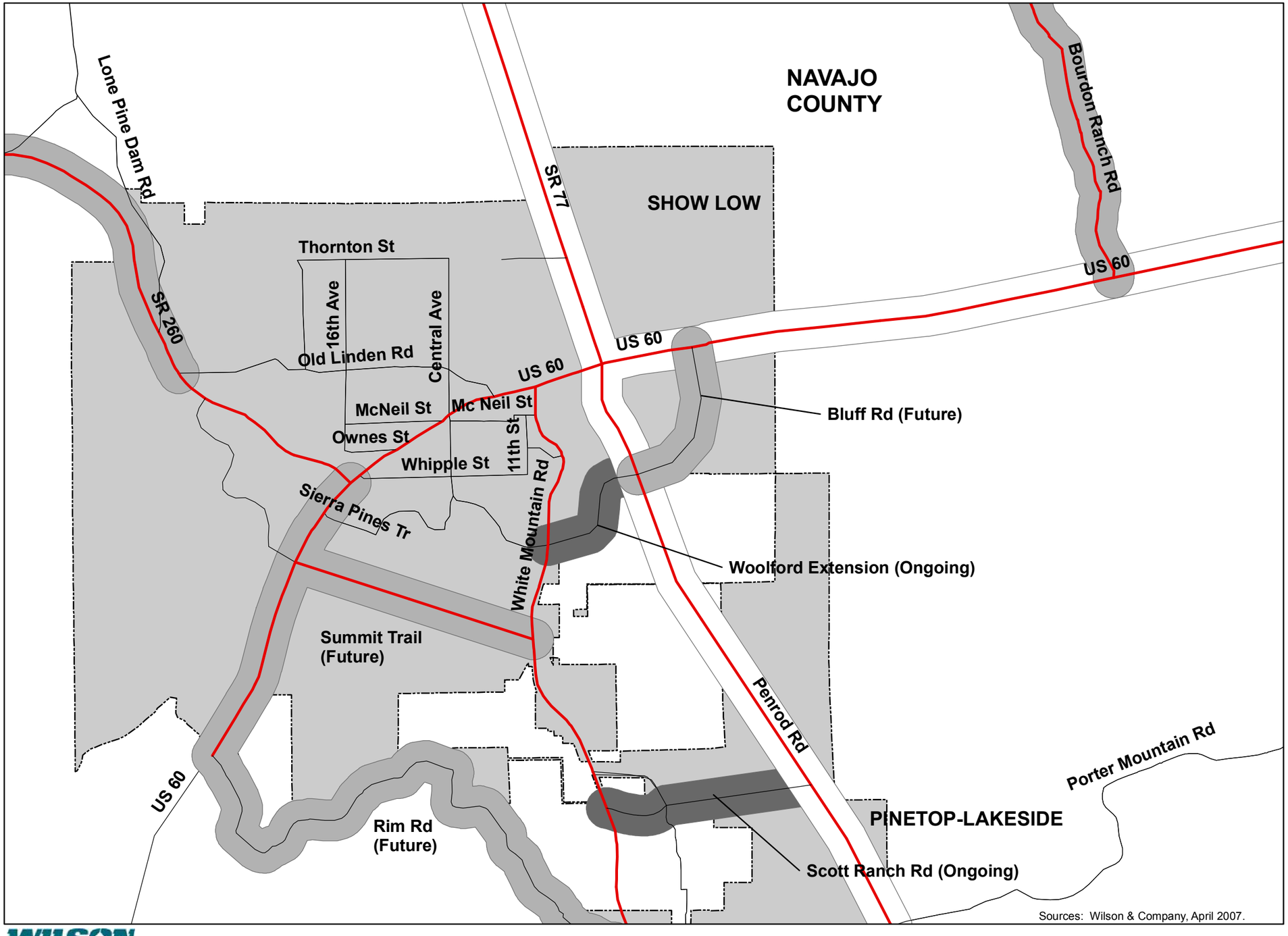
- Cities/Towns

N

Not to Scale

FIGURE A-4

Show Low Overview



PHASED ROADWAY IMPROVEMENTS: 2015 AND 2030

Directional Lanes

- 1 Lane
- 2 Lanes

Improvement Phase

- Existing-Plus-Committed
- Year 2015
- Year 2030

Base Map Features

- Cities/Towns

N

Not to Scale

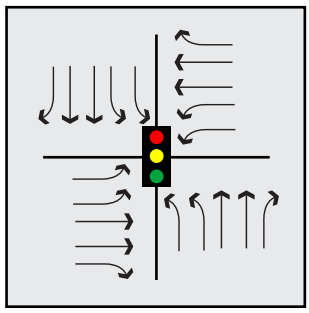
FIGURE A-3

WILSON & COMPANY

Southern Navajo/Apache County Sub-Regional Transportation Plan

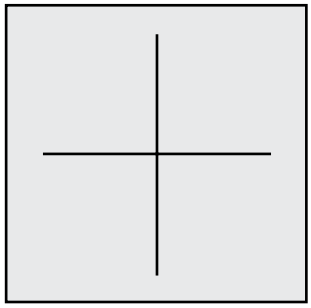
APPENDIX B

Intersection Lane Configuration and Forecast Peak-Hour Traffic Volume Estimates



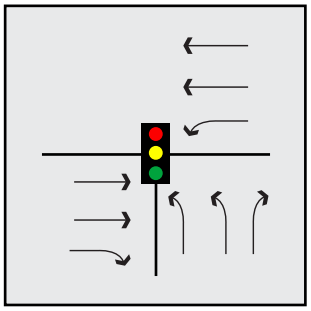
19

US 60 and SR 77



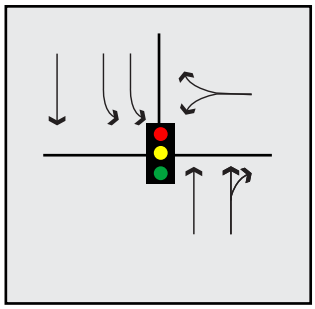
19A

Bluff Rd and US 60 (Future)



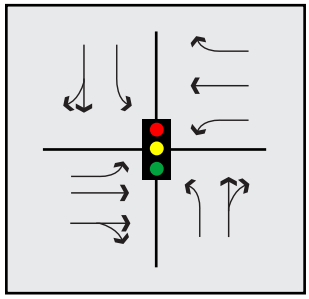
19B

US 60 (Duece of Clubs) and SR 260 (White Mountain Rd)



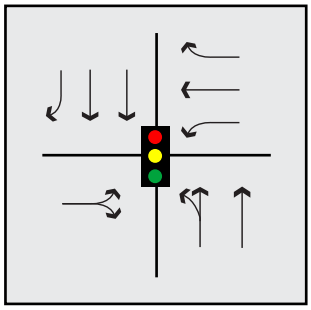
20

SR 260 (Clark Rd) and Old Linden Rd (Future)



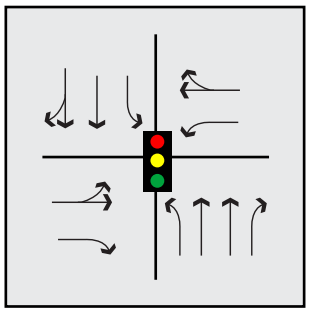
20A

SR 260 (Clark Rd) US 60 (Duece of Clubs)



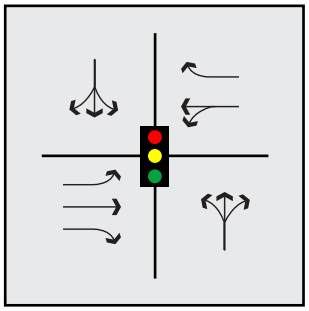
21

Bluff Rd and SR 77 (Future)



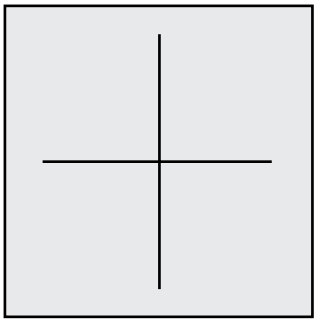
22

SR 260 (White Mountain Rd) and Woolford Rd.



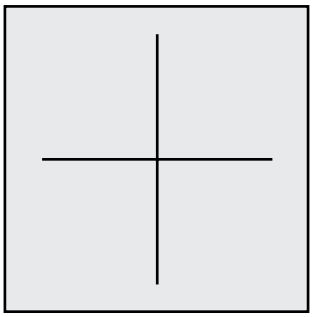
23

Summit Trail and US 60 (Future)



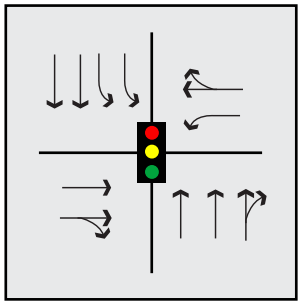
24

Summit Trail and White Mountain Rd (SR 260)



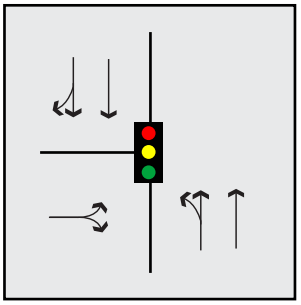
25

US 60 and Rim Rd (Future)



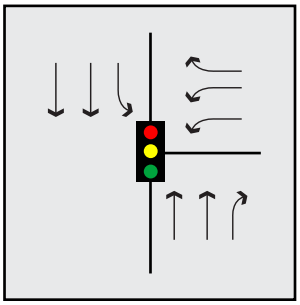
26

White Mountain Rd (SR 260) and Show Lakes Rd



27

Scott Ranch Rd and Penrod Rd



28

White Mountain Rd (SR 260) and Scott Ranch Rd

Source: Wilson & Company, May, 2007

X = Key Study Area Intersection

XX = AM Peak Hour Volume

[XX] = PM Peak Hour Volume

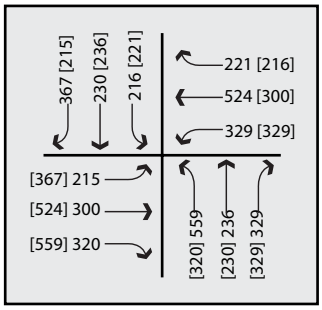
No Scale

WILSON & COMPANY

YEAR 2015 LANE CONFIGURATION SHOW LOW

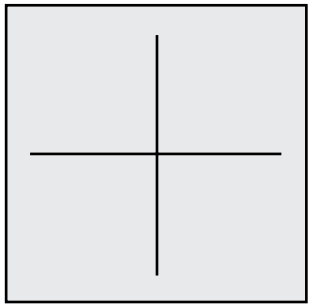
SOUTHERN NAVAJO-APACHE COUNTY SUBREGIONAL TRANSPORTATION PLAN

FIGURE B-1



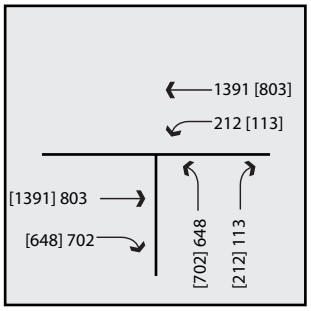
19

US 60 and SR 77



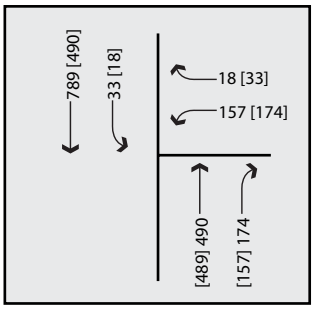
19A

Bluff Rd and US 60



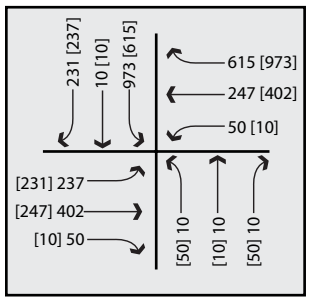
19B

US 60 (Duece of Clubs) and
SR 260 (White Mountain Rd)



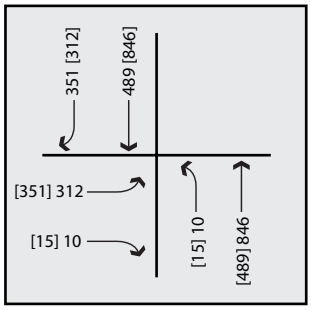
20

SR 260 (Clark Rd) and Old Linden Rd



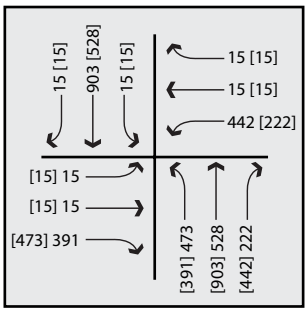
20A

SR 260 (Clark Rd) US 60 (Duece of Clubs)



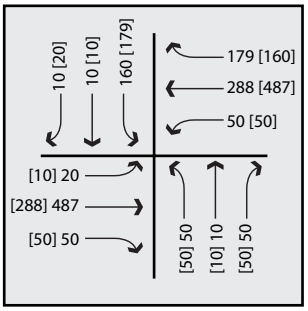
21

Bluff Rd and SR 77 (Future)



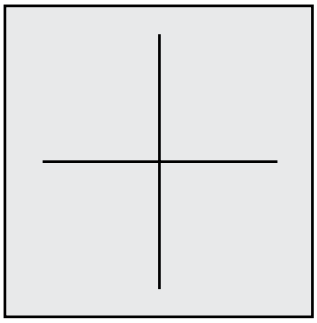
22

White Mountain Rd and Woolford Rd.



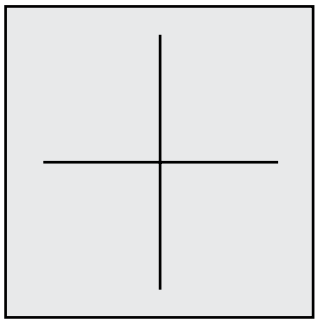
23

Summit Trail and US 60 (Future)



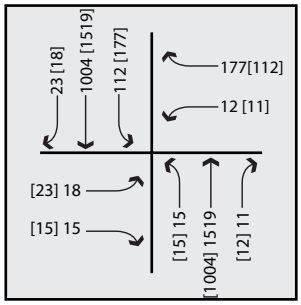
24

Summit Trail and
White Mountain Rd (SR 260)



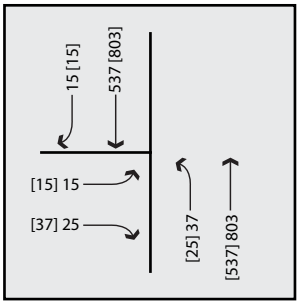
25

US 60 and Rim Rd (Future)



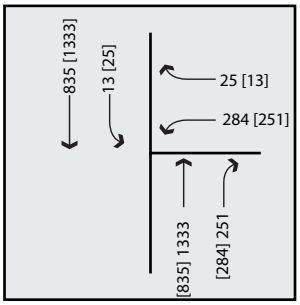
26

White Mountain Rd)SR 260)
and Show Lakes Rd



27

Scott Ranch Rd and Penrod Rd



28

White Mountain Rd (SR 260)
and Scott Ranch Rd

Source: Wilson & Company, May, 2007

X = Key Study Area Intersection
XX = AM Peak Hour Volume
[XX] = PM Peak Hour Volume

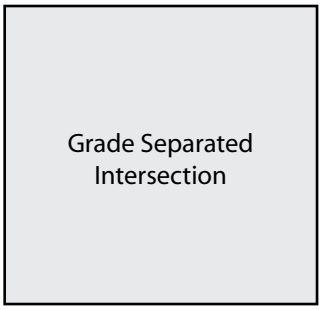
No Scale

WILSON & COMPANY

YEAR 2015 AM/PM PEAK HOUR TRAFFIC ESTIMATES SHOW LOW

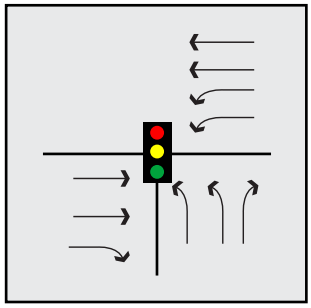
SOUTHERN NAVAJO-APACHE COUNTY SUBREGIONAL TRANSPORTATION PLAN

FIGURE B-2



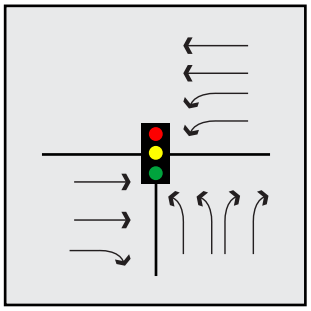
19

US 60 and SR 77



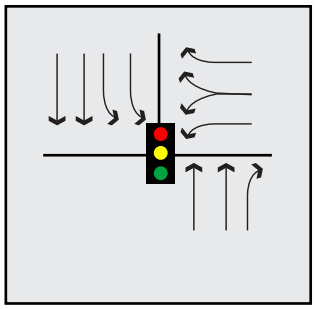
19A

Bluff Rd and US 60 (Future)



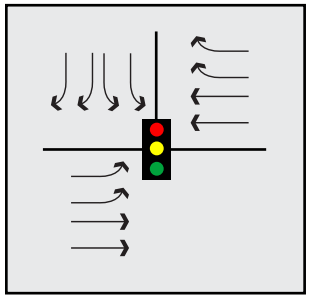
19B

US 60 (Duece of Clubs) and
SR 260 (White Mountain Rd)



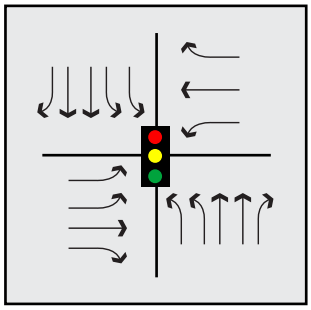
20

SR 260 (Clark Rd) and Old Linden Rd
(Future)



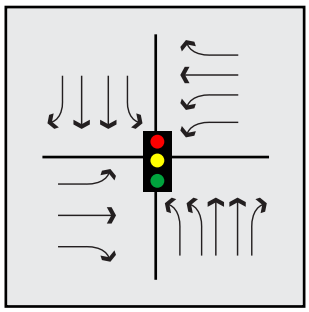
20A

SR 260 (Clark Rd) US 60 (Duece of Clubs)



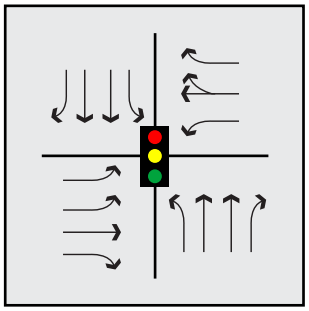
21

Bluff Rd and SR 77 (Future)



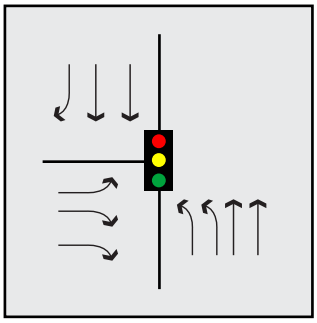
22

SR 260 (White Mountain Rd)
and Woolford Rd.



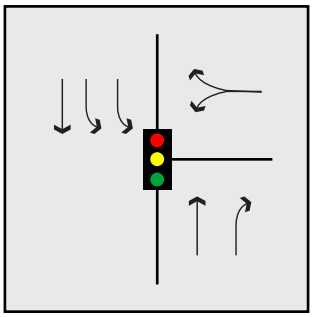
23

Summit Trail and US 60 (Future)



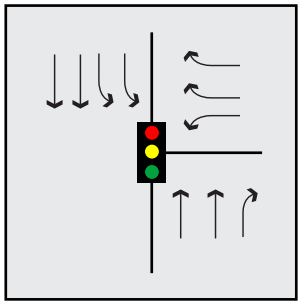
24

Summit Trail and
White Mountain Rd (SR 260)



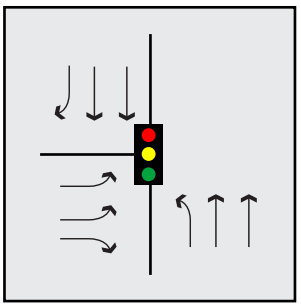
25

US 60 and Rim Rd (Future)



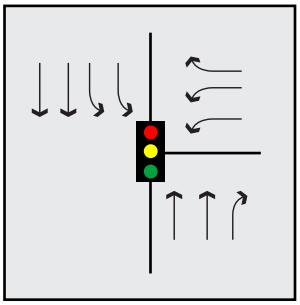
26

White Mountain Rd (SR 260)
and Show Lakes Rd



27

Scott Ranch Rd and Penrod Rd



28

White Mountain Rd (SR 260)
and Scott Ranch Rd

Source: Wilson & Company, May, 2007

X = Key Study Area Intersection
XX = AM Peak Hour Volume
[XX] = PM Peak Hour Volume

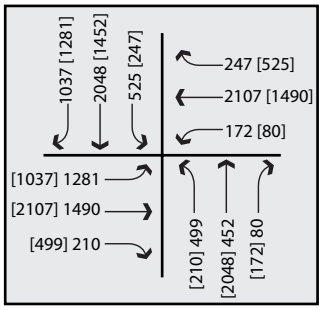
No Scale

WILSON & COMPANY

YEAR 2030 LANE CONFIGURATION
SHOW LOW

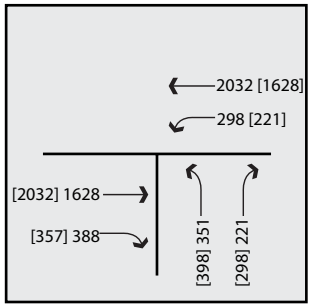
SOUTHERN NAVAJO-APACHE COUNTY SUBREGIONAL TRANSPORTATION PLAN

FIGURE B-3



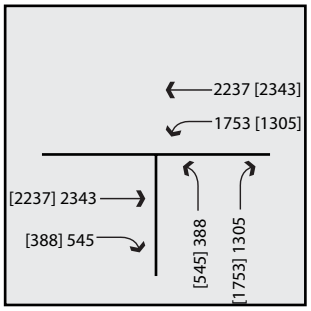
19

US 60 and SR 77



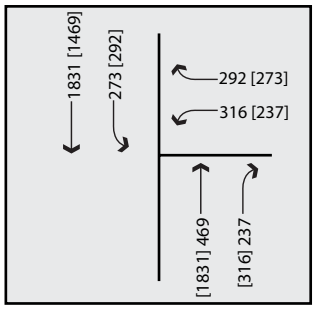
19A

Bluff Rd and US 60



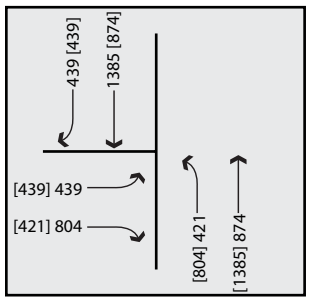
19B

US 60 (Duece of Clubs) and
SR 260 (White Mountain Rd)



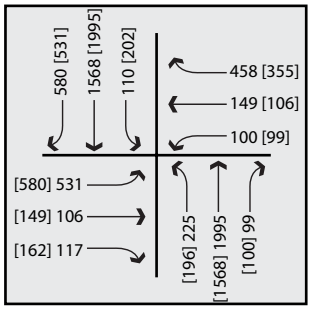
20

SR 260 (Clark Rd) and Old Linden Rd



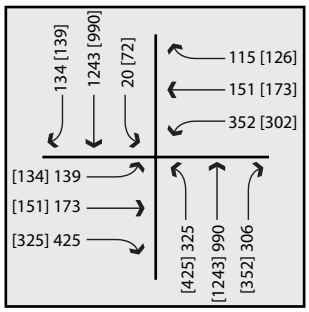
20A

SR 260 (Clark Rd) US 60 (Duece of Clubs)



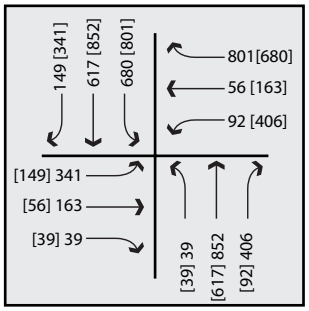
21

Bluff Rd and SR 77 (Future)



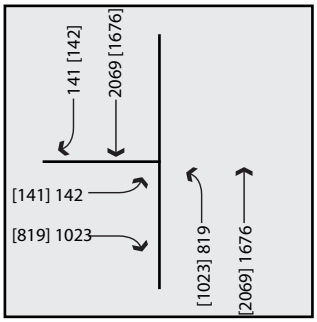
22

White Mountain Rd and Woolford Rd.



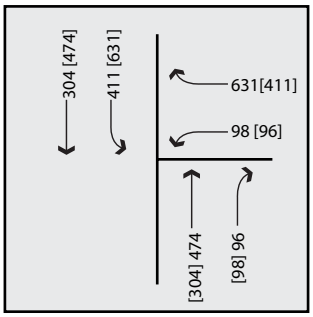
23

Summit Trail and US 60 (Future)



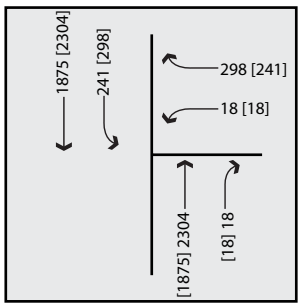
24

Summit Trail and
White Mountain Rd (SR 260)



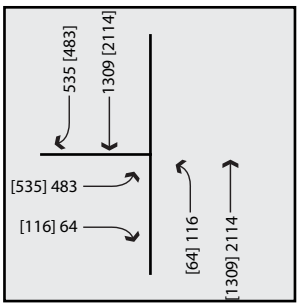
25

US 60 and Rim Rd (Future)



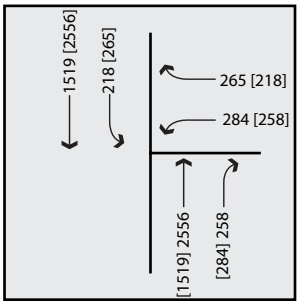
26

White Mountain Rd)SR 260)
and Show Lakes Rd



27

Scott Ranch Rd and Penrod Rd



28

White Mountain Rd (SR 260)
and Scott Ranch Rd

Source: Wilson & Company, May, 2007

X = Key Study Area Intersection
XX = AM Peak Hour Volume
[XX] = PM Peak Hour Volume

No Scale

WILSON & COMPANY

YEAR 2030 AM/PM PEAK HOUR TRAFFIC ESTIMATES SHOW LOW

SOUTHERN NAVAJO-APACHE COUNTY SUBREGIONAL TRANSPORTATION PLAN

FIGURE B-4