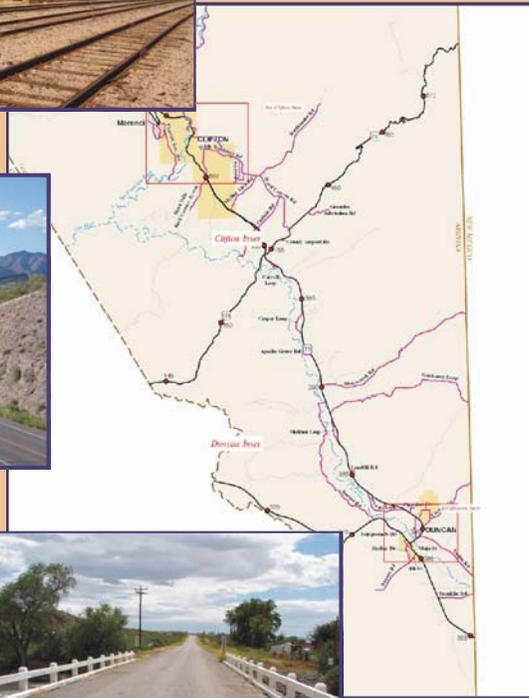
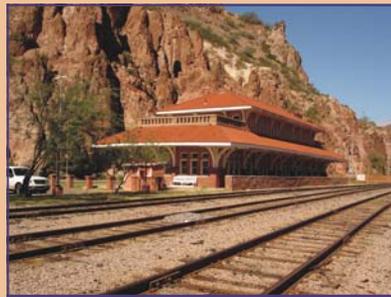




# SOUTHERN GREENLEE COUNTY

SMALL AREA TRANSPORTATION STUDY

## EXECUTIVE SUMMARY



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## **EXECUTIVE SUMMARY**

This document presents an Executive Summary of the Transportation Plan for Southern Greenlee County as a result of the Small Area Transportation Study conducted between March 2006 and December 2007. The study was developed by Greenlee County cooperatively with the Arizona Department of Transportation (ADOT), and the Southeast Arizona Association of Governments. In addition, area residents' and stakeholder input was solicited and incorporated in the study through public participation efforts. Complete documentation of the Study is provided in the Final Report.

### **PURPOSE**

The purpose of the study has been to develop a 20-year transportation plan and implementation program to guide Southern Greenlee County in meeting transportation needs into the future. Roadway and multimodal improvements were identified to address deficiencies and needs to improve mobility and safety in the County. The study also identified how and when these improvements should be implemented and funded. This long-range multimodal transportation plan is intended for use in day-to-day programming and funding of transportation improvements. In addition, transportation improvements have been prioritized to maximize project benefits within budget limitations. Funding strategies and sources have been included to aid the County in pursuing local, regional, state, and federal funding. The study area is shown in Figure 1.

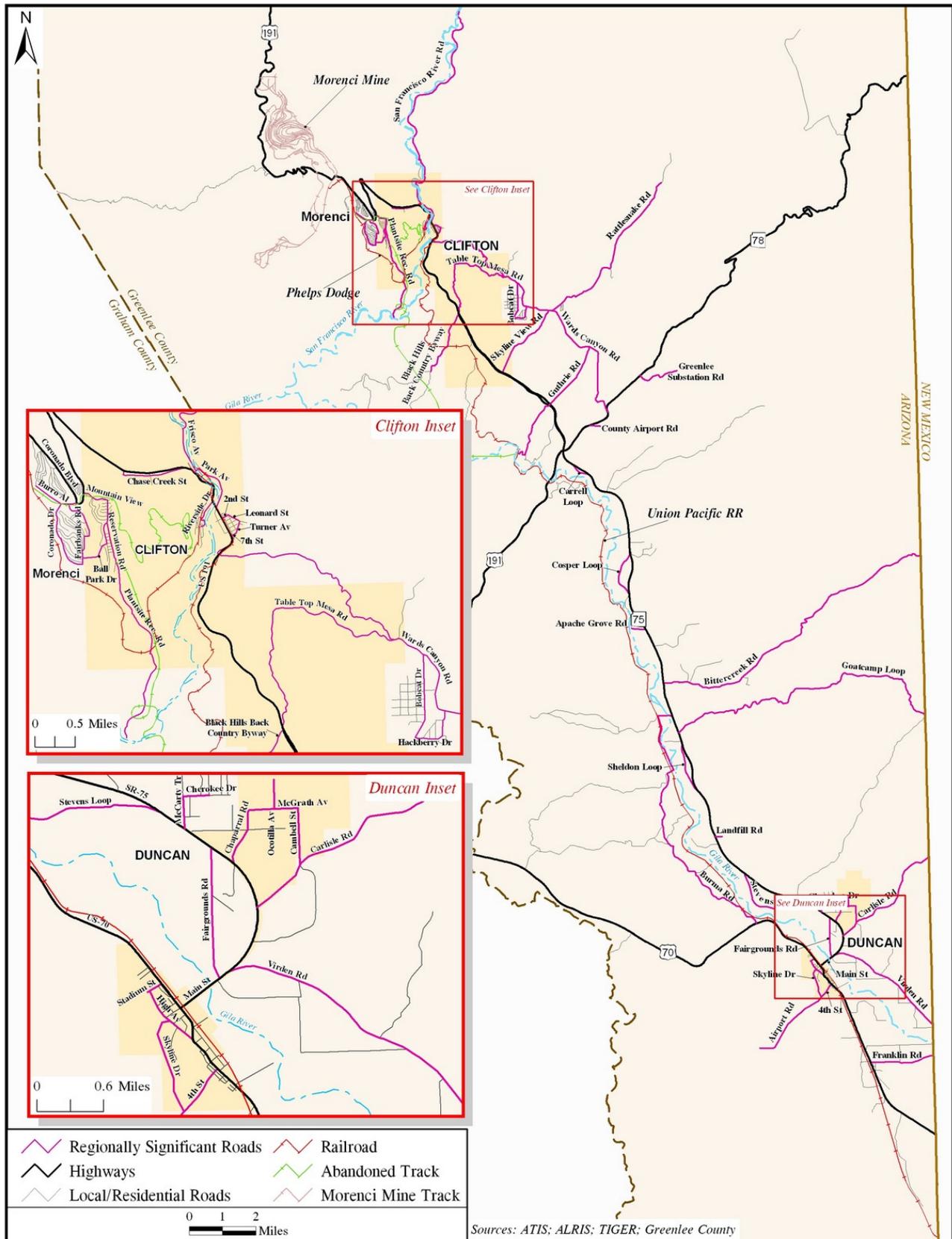
### **BACKGROUND**

Greenlee County is located in eastern Arizona bordering New Mexico. The county is 120 miles long and 20 miles wide, covers approximately 1,800 square miles and is sparsely populated with approximately 8,300 residents. The study area covers approximately 658 square miles. Clifton, the county seat, had an estimated 2005 population of 2,495. The 2005 estimated population of Duncan was 805 residents and the 2000 population of Morenci was 1,879. The majority of the land within the study area is owned by the U. S. Forest Service, Bureau of Land Management, or the State of Arizona. Individual or corporate lands account for around 20 percent of land ownership in the study area. The topography in the southern and central parts of the County consists of desert terrain bisected by river valleys. Further north, the County is mountainous and forested. Mining has been important to Greenlee County since the 1800's and continues to be the dominant part of the economy focused around the Freeport-McMoRan Copper & Gold Inc. (formerly Phelps Dodge) Mine in Morenci.

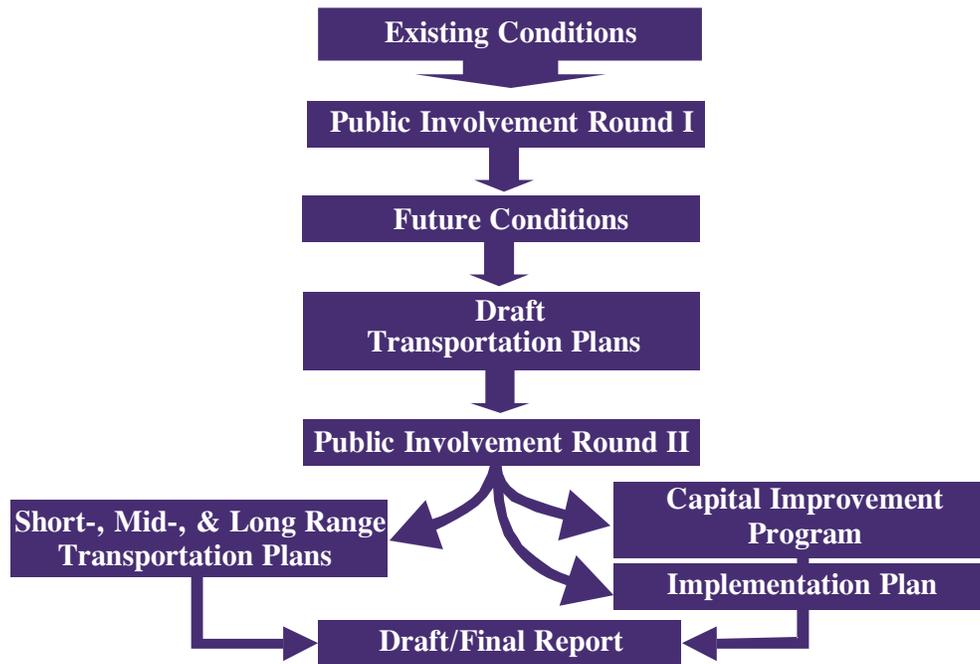
### **STUDY PROCESS**

The study process is illustrated in Figure 2. The study was guided by a Technical Advisory Committee comprised of representatives from the County, the Towns of Clifton

**FIGURE 1. SOUTHERN GREENLEE COUNTY STUDY AREA**



**FIGURE 2. STUDY PROCESS**



and Duncan, ADOT and the Southeast Arizona Association of Governments (SEAGO). An intensive public participation process was undertaken, including two rounds open houses to identify issues, solicit comments, and receive feedback on the study process and recommendations.

The first step of the technical analysis was to analyze the existing conditions and Environmental Justice concerns. Open houses in Clifton and Duncan were held to identify issues and vision components for the transportation plan. Stakeholders included County Supervisors, County Public Works Department personnel, elected officials from the Towns of Clifton and Duncan, town staffs, ADOT and SEAGO representatives, and citizens.

The next major step in the technical process was to analyze alternative roadway improvements. Based on the results of this analysis, a draft transportation plan was developed including a transit element. A second series of open houses were held to review the draft transportation plan and identify constraints to the plan.

## **RECOMMENDATIONS**

The consultant team recommends the following for Southern Greenlee County:

- The Capital Improvement Program includes over 70 miles of right-of-way acquisition, preservation, and surveying; 58 miles of minor roadway widening; and 38 miles of roadway construction and reconstruction.

- Of the total of \$49.6 million in projects, \$27.5 million is estimated for the Clifton area, \$4.7 million for the Duncan area, and \$17.4 million for the remainder of the study area.
- Despite the funding shortfall, the County should establish an implementation Task Force to oversee initial steps toward implementation. The Task Force would work with ADOT and SEAGO to ensure that projects that mitigate critical safety concerns—such as locations where multiple crashes or fatal crashes have occurred—are included in the agencies’ current Transportation Improvement Programs.
- The County should adopt road standards as a guide for use when widening and reconstructing roadways. Uniform roadway standards should be developed by the County and the Towns of Clifton and Duncan.
- The County should adopt access management techniques, some of which are comparatively inexpensive to implement and will enhance mobility and safety.
- Policies recommended in this paper should be adopted in anticipation of possible acceleration of the rate of population growth triggered by activity in neighboring Graham County and the growing appeal of the area’s scenery and location by retirees.

## **FUTURE SOCIOECONOMIC AND TRANSPORTATION CONDITIONS**

### **Future Population**

Table 1 shows the DES population projections for Greenlee County. The County is projected to lose population through 2020 and then begin to slightly regain population. However, members of the Technical Advisory Committee (TAC) dispute the DES projected numbers and believe that there has been steady growth in southern Greenlee County and that this growth will continue.

**TABLE 1. POPULATION ESTIMATES - GREENLEE COUNTY**

<b>Year</b>	<b>Population</b>	<b>% Change</b>
2005	8,300	
2006	8,281	-0.23%
2010	8,209	-0.87%
2015	8,188	-0.26%
2020	8,189	0.01%
2025	8,205	0.20%
2030	8,289	1.02%

Source: DES March 31, 2006

### **Future Traffic Volumes**

Table 2 presents the daily traffic volumes for county and local roads for the years 2011, 2016, and 2026 based on locations where previous traffic counts were taken. Table 3 gives future

**TABLE 2. ESTIMATED FUTURE DAILY TRAFFIC VOLUMES  
COUNTY AND LOCAL ROADS IN STUDY AREA**

<b>Location</b>	<b>2011</b>	<b>2016</b>	<b>2026</b>
Carroll Loop 0.2 mi. South of Highway 75	110	120	140
Fairgrounds Rd. 0.5 mi. North of Highway. 75	270	295	344
Franklin Road Btwn. McGrath & Model	391	426	497
Old Virden Road Btwn. Highway 75 & Clesa R	119	130	152
Park Ave. 0.1 mi. North of Coronado Blvd.	357	390	455
Rocky John Loop 0.1 mi. West of Highway 75	112	122	142
Sheldon Loop 0.1 mi. North of Sheldon Swinging	137	149	174
Skyline View 0.2 mi. North of Highway 191	976	1,065	1,243
Stephens Loop 0.1 mi. West of Highway 75	55	60	70
Virden Road S/O Btwn. Clesa & Luntville	272	297	346
Wards Canyon Road East of Highway 191	1,036	1,130	1,318
7th Street North of US 191	420	458	535
Chase Creek Street West of US 191	363	396	462
Riverside Road South of US 191	401	438	511

Source: Lima & Associates

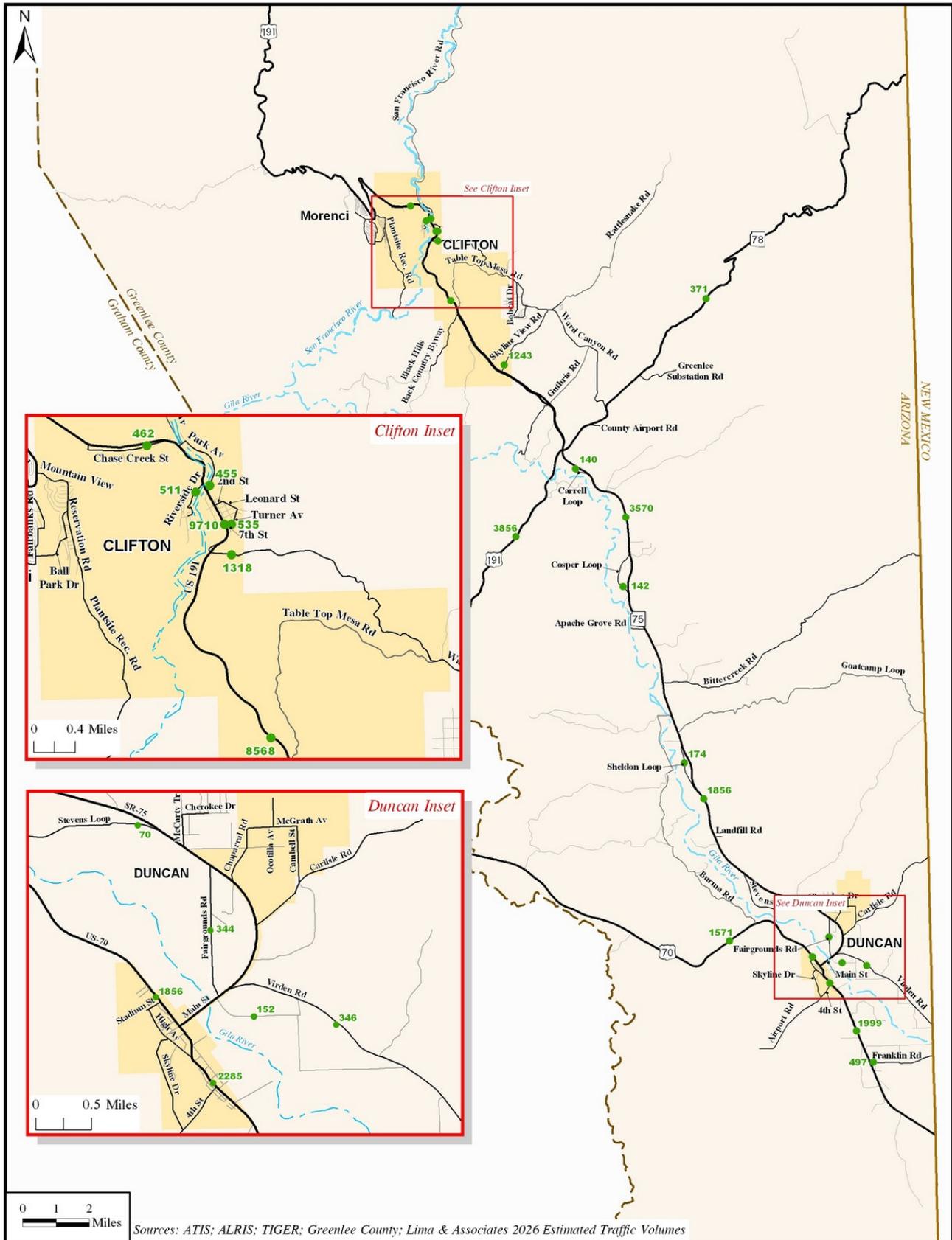
**TABLE 3. ESTIMATED FUTURE DAILY TRAFFIC VOLUMES  
ARIZONA STATE HIGHWAYS IN STUDY AREA**

<b>Route</b>	<b>Bmp</b>	<b>Start</b>	<b>Emp</b>	<b>End</b>	<b>2011</b>	<b>2016</b>	<b>2026</b>
US 70	349.48	US-191 (North)	378.48	Wilson St	1,234	1,346	1,571
US 70	378.48	Wilson St	378.91	SR-75 (Duncan)	1,459	1,591	1,856
US 70	378.91	SR-75 (Duncan)	379.79	7th St	1,795	1,958	2,285
US 70	379.79	7th St	385.25	New Mexico State Line	1,571	1,714	1,999
SR 75	379.46	Virden Rd	391.85	Apache Grove Rd	1,459	1,591	1,856
SR 75	391.85	Apache Grove Rd	398.43	US-191 / SR-78	2,805	3,060	3,570
SR 78	154.55	(South of Clifton)	174.73	New Mexico State Line	292	318	371
US 191	130.64	US-70 (E of Safford)	154.52	SR-78/SR-75 (Guthrie)	3,029	3,305	3,856
US 191	154.52	(Guthrie)	163.07	7th St	6,732	7,344	8,568
US 191	163.07	7th St	163.95	UX-191	7,630	8,323	9,710

Source: Lima & Associates

daily traffic volumes on state highways within the study area. Figure 3 presents the 2026 future traffic volumes for the roads in the study area.

**FIGURE 3. 2026 AVERAGE DAILY TRAFFIC VOLUMES**



## **Future Roadway Needs**

As part of the *Year 2004 Roadway Needs Study Update* conducted by the Arizona Association of County Engineers, Greenlee County identified county road deficiencies. The 2005 to 2010 county roadway deficiencies are shown in Table 4. A total of \$4,569,517 is needed for right-of-way acquisition, minor widening, and reconstruction for this five-year period.

## **MULTIMODAL TRANSPORTATION PLAN**

This section summarizes the Multimodal Transportation Plan for Southern Greenlee County based upon the recommendations of previous plans and studies, consultant research and field views, input from the public involvement process, and additional input from County officials. First, the process of evaluating transportation system deficiencies and needs is summarized. Next, candidate short-term (Phase I) and long-term (Phase II) projects are presented. A summary of the second round of public involvement is presented, followed by an estimation of transit demand and a discussion of access management techniques.

### **Evaluation of Deficiencies And Needs**

#### ***County Roadways***

During the conduct of the Small Area Transportation Study, the consultant team made the following observations regarding existing deficiencies and needs in the County transportation system:

- With the exception of urban areas and State Highway segments, no significant traffic congestion or level of service issues exist on roadways within the County in 2006.
- The mobility of Southern Greenlee County residents is dependent upon the maintenance and improvement of the US and State Highways that traverse the County and function as “spines” that tie the County roadway network together.
- In many areas of the County, alternative routes are inconvenient or non-existent. This could cause problems when the main route is closed due to a traffic crash or natural causes such as high water, floods, or wildfires. Specific areas of concern are:
  - ✓ Congestion on US 191 within the Town of Clifton during peak Morenci Mine employee shift-change periods
  - ✓ Lack of alternate routes for use in case of traffic congestion, floods, or wildfires, particularly within the Town of Clifton and along the SR 75 corridor between Clifton and Duncan
- The County Public Works Department is well-informed regarding the deficiencies and needs of the roadway system and programs maintenance, improvement, or reconstruction projects as funding permits.

**TABLE 4. ANALYSIS OF ROADWAY DEFICINCIES 2005-2010  
SOUTHERN GREENLEE COUNTY**

<b>Improvement Type: 1 Right-of-Way Acquisition</b>					
<b>On Street</b>	<b>From</b>	<b>To Reference</b>	<b>Length</b>	<b>Total Cost</b>	<b>Comment</b>
County Club Road	SR 75 - 394.3 E	End Pvmt	0.70	\$4,327	Fails Right-of-Way Width
Franklin Road	U.S. 70 - 382.1 E	N.M. State Line	2.00	\$74,170	Fails Right-of-Way Width
			<b>Improvement</b>	<b>\$78,496</b>	
<b>Improvement Type: 2 Minor Widening</b>					
<b>On Street</b>	<b>From</b>	<b>To Reference</b>	<b>Length</b>	<b>Total Cost</b>	<b>Comment</b>
Apache Grove Road	SR 75 - 391.8 W	End	0.30	\$12,544	Fails Roadway Width, Right-of-Way Width
Billingsly Loop	SR 75 - 379.4 E	67027 S	1.40	\$49,884	Fails Roadway Width
Billingsly Loop	SR 75 - 379.4 E	67027 S	1.40	\$62,354	Fails Roadway Width
Carlisle Road	SR 75 - 380.1 E	N.M. State Line	3.80	\$169,248	Fails Roadway Width
Carlisle Road	SR 75 - 380.1 E	N.M. State Line	3.80	\$135,398	Fails Roadway Width
Clesa Drive	67002 S	67002 - S	1.40	\$85,175	Fails Roadway Width, Right-of-Way Width
Dairy Street	67002S	67006 End	0.70	\$50,901	Fails Roadway Width, Right-of-Way Width
Hails Road	SR 75 - 385.0 W	End	1.00	\$49,172	Fails Roadway Width, Right-of-Way Width
Lower Eagle Road	U.S. 191 - 171.6 W	Eagle Creek	5.90	\$395,229	Fails Roadway Width, Right-of-Way Width
Luntville Road	67002 S	67007 End	0.40	\$29,086	Fails Roadway Width, Right-of-Way Width
Old Virden Road	SR 75 - 379.3 E	67008	0.90	\$54,755	Fails Roadway Width, Right-of-Way Width
Upper Eagle Road	U.S. 191 - 187.2 W	End - Honeymoon	22.80	\$1,421,682	Fails Roadway Width
Wilbur Lunt Road	67002 S	67002 S	0.80	\$58,173	Fails Roadway Width, Right-of-Way Width
			<b>Improvement</b>	<b>\$2,573,600</b>	
<b>Improvement Type: 3 Reconstruct to the Correct Surface Type</b>					
<b>On Street</b>	<b>From</b>	<b>To Reference</b>	<b>Length</b>	<b>Total Cost</b>	<b>Comment</b>
Calle Alta Vista	67099A	67099A (E)	0.30	\$89,150	Fails Surface Type, Right-of-Way Width
Plantsite Rec. Road	Reservation Morenci	Railroad Tracks	1.30	\$693,419	Fails Surface Type, Roadway Width, Right-of-Way Width
Skyline View Road	U.S. 191 - 157.2(E)	67003	2.40	\$783,172	Fails Surface Type, Roadway Width
Skyline View Road	67003	67099A	0.30	\$87,296	Fails Surface Type, Roadway Width
Wards Canyon Road	U.S. 191 MP 162.8 - E	Skyline View Road	0.50	\$264,383	Fails Surface Type, Roadway Width
			<b>Improvement</b>	<b>\$1,917,421</b>	
			<b>County</b>	<b>\$4,569,517</b>	

Source: Year 2004 Roadway Needs Study Update. Arizona Association of County Engineers

- All of the subgroups living within the County will benefit from the roadway projects already programmed by the County, as well as additional projects proposed in this Report.
- Continued levels of mobility for County residents and visitors are almost entirely dependent on private automobile travel, the maintenance of good roads, and the availability of affordable gasoline.

### **Bicycle, Pedestrian, and Equestrian**

The scenic beauty and comparatively mild climate of Southern Greenlee County are very conducive to outdoor activities including bicycling, hiking, and horseback riding. The Apache Sitgreaves National Forest, which begins in the northern part of the study area and extends northward, has a number of hiking and equestrian trails, several of which are located in the study area.

A number of recreation areas and activity centers are identified in the non-Forest parts of the study area, including locations on private lands and State Trust lands. The eastern portion of the Gila Box Riparian Area is located in the study area, and the Black Hills Back County Byway bisects the southwestern portion of the study area. Other than the Back Country Byway, few trails are specifically identified within the study area for bicycle, pedestrian, or equestrian use. For purposes of both safety and recreation, trails need to be provided outside the National Forest.

### ***Multiuse Pathways***

Multiuse Pathways are needed in urban and suburban areas. The York Valley Walkway needs to be completed and ultimately extended to three miles in length as originally planned. The Sandra Day O'Connor Walkway needs to be completed in the Duncan area. As population and development increase, portions of the rural trail system may need to be brought up to multiuse pathway standards and additional alignments for both pathways and trails identified. Preservation of connectivity among the trails and accessibility to the trails from the urban areas is important.

### **Aviation**

The identification of aviation needs and services, per se, is beyond the scope of this project. However, the roadway access to the Greenlee County Airport is adequate for the current low volume of activity at the airport. Airport activity could increase dramatically due to the introduction of commercial air service or the establishment of some other traffic-generating activity on the airport property such as the proposed satellite prison operation or aviation training. The increased traffic may necessitate improvements to the airport access road itself,

the entrance to the airport from SR 78, or possibly the nearby SR 75, SR 78, US 191 intersection at Three Way.

Proposed airside improvements to the O'Connor Field facility in Duncan would need to be accompanied by improvements to the roadways serving the airfield.

### **Public Transportation**

- Intercity transit services provided by Greyhound Lines along the US 70 corridor through Duncan have ceased. No alternative transportation is provided.
- No scheduled public transportation exists between Duncan, the County's second largest concentration of population, and Clifton, the County seat.
- The County, together with Graham County, the City of Safford, the Towns of Clifton and Duncan, ADOT, the Southeast Arizona Association of Governments (SEAGO), and the Southeast Arizona Community Action Program (SEACAP), needs to implement "Arizona Rides" concepts for ensuring the efficient use of special needs transportation vehicles and operating personnel among the agencies and organizations responsible for seeing to the needs of the clients of these services.

### **Excursion Rail**

The consultant believes that the potential may exist to develop an excursion passenger train operation on the rail line between Clifton and Duncan. The route is scenic, and the beautifully-restored Clifton Depot is a potential asset to such an operation.

Special needs transportation and future excursion rail services are discussed in more detail in Chapter 5 of the Final Report.

### **Candidate Transportation Project Criteria**

Candidate projects were identified by considering the need and the feasibility of implementation. The following criteria were evaluated:

#### *Need*

- Potential to address travel demand
- Potential to serve residents
- Potential to provide connectivity and/or improve mobility between places and major roads

#### *Feasibility*

- Environmental and physical impacts
- Topographical constraints
- Constructability

## **Roadway Projects**

The consultant reviewed key characteristics of the existing roadway system including the surface type of the roadway, the number of lanes, and the AADT. Study area roadway projects that were identified by previous studies or have already been programmed were also evaluated. These programmed roadway projects are depicted in Figure 4. The sufficiency ratings of County and local bridge structures in the study area were also reviewed.

### ***Functional Classification and Level of Service***

**Roadway Level of Service** is a measurement of how well a roadway operates. An LOS of “A” indicates a free flow condition and an LOS of “F” indicates forced traffic flow or breakdown. No capacity problems exist on County-maintained roadways. The only capacity concerns within the study area exist on US 191. US 191 has two areas with an LOS of “C”—one within the Town of Clifton and one just north of the Three Way junction. The remainder of US 191 between the Three Way area and Clifton operates at LOS “B.” All other roadways within the study area are at LOS “A.” With the exception of the segment of US 191 beginning at Three Way and extending through Clifton, no future capacity issues are anticipated on roads in the study area.

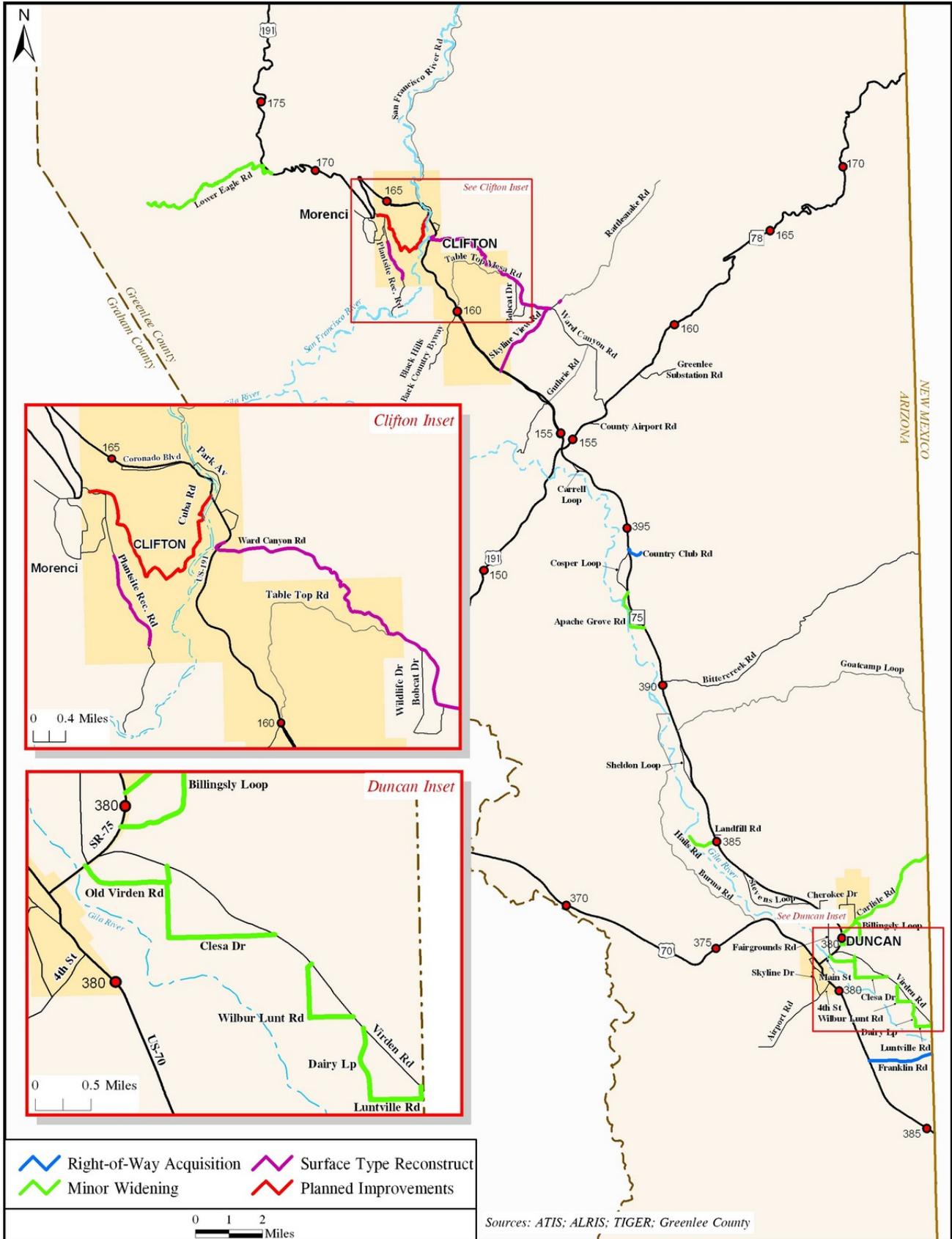
## **Improvements to Existing Roadways**

The consultant reviewed the existing roadway alignments in the study area and identified key future roadway corridors for construction or improvement as warranted by future population growth and development. First, activity centers that serve as attractors or generators of motor vehicle traffic were identified. Next, current and future roadway corridors that serve—or could serve—these activity centers were identified. Figure 5 depicts the corridors. Table 5 lists the improvements keyed to the map reference letter included on Figure 5. Along existing roadways, including US 191, US 70, SR 75 and SR 78, efforts should be made to preserve rights-of-way as needed for possible widening and addition of elements such as deceleration and right-turn lanes, center medians, and left-turn lanes.

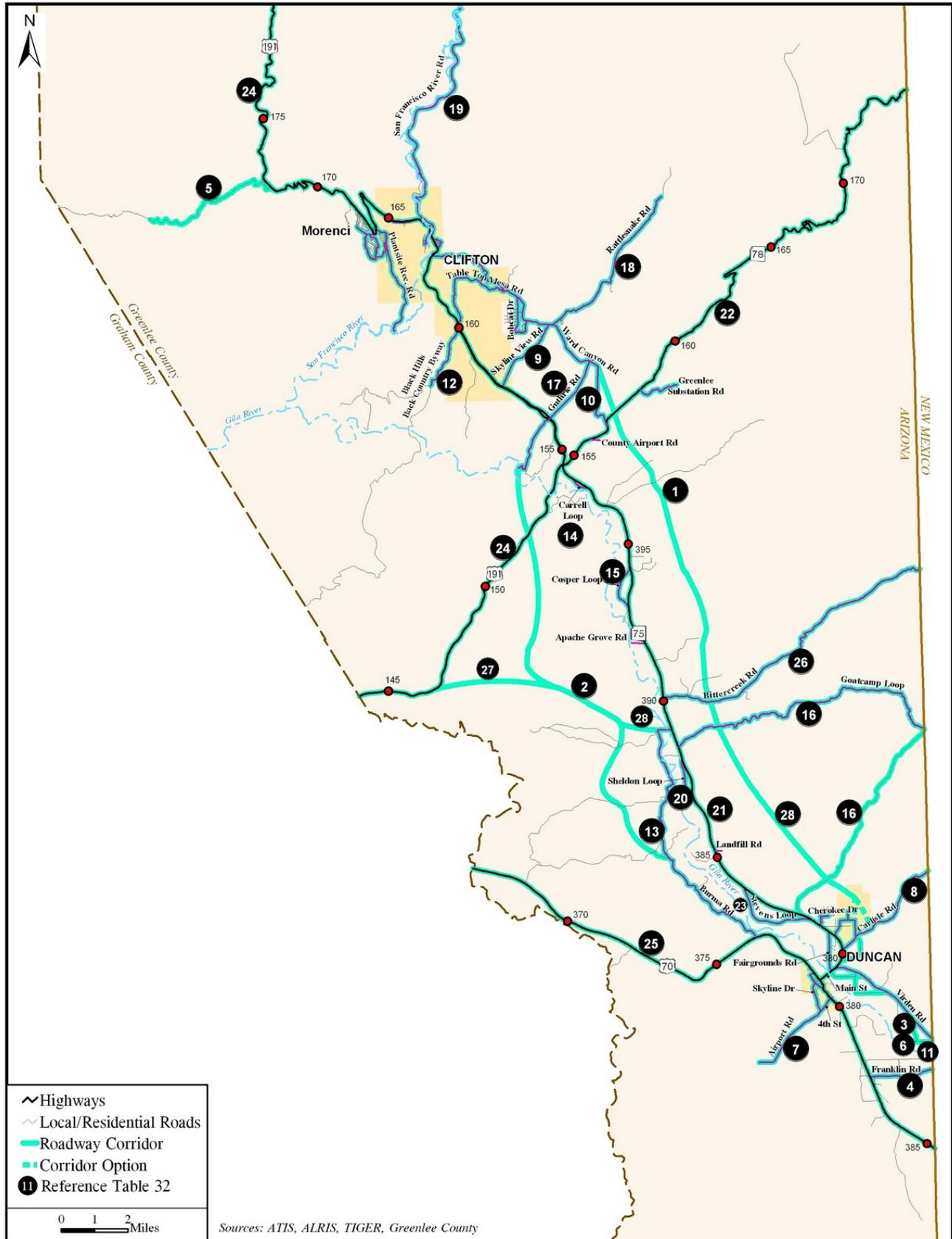
Other existing alignments are identified that could become roads of regional significance as area population grows over time. These include Ward Canyon Road, Table Top Mesa Road, San Francisco River Road, Rattlesnake Road, Guthrie Road, Bittercreek Road, Burma Road, and Virden Road. Sufficient rights-of-way should be preserved in these and other alignments to allow for reconstruction to correct deficient geometrics, paving, and ultimate widening as needed.

In the York Valley area, Cospers Loop on the West side of SR 75 needs to be reconstructed and widened. In addition, the multiuse pathway on the East side of SR 75 needs to be improved and extended. Ideally, when the SR 75 bridge across Cottonwood Wash is rehabilitated or replaced, room for the pathway as a striped lane or sidewalk on the East side of the bridge should be provided so that the pathway can continue beyond Cottonwood Wash.

**FIGURE 4. PROGRAMMED ROADWAY IMPROVEMENTS**



**FIGURE 5. CURRENT AND FUTURE ROADWAY CORRIDORS**



**TABLE 5. CANDIDATE ROADWAY IMPROVEMENTS  
FOR SOUTHERN GREENLEE COUNTY**

Map Reference	Roadway or Corridor	Project Description
1	SR-78 – Goatcamp Loop	Study new roadway parallel to SR 75 as extension of Wards Canyon Road alignment
2		Study connecting roadway
3	Dairy Loop*	Minor widening
4	Franklin Road*	Right-of-way acquisition
5	Lower Eagle Road*	Minor widening
6	Luntville Road*	Minor widening
7	Airport Road	Reconstruct and Pave
8	Carlisle Road	Reconstruct and Pave
9	Skyline View Road*	Reconstruct and Pave
10	Ward Canyon Road*	Reconstruct and Pave
11	Wilbur Lunt Road*	Minor widening
12	Black Hills Back Country Byway	Preserve right-of-way for future improvements for two miles west of US 191
13	Burma Road	Reconstruct and Widen
14	Carrell Loop	Reconstruct and Widen
15	York Area	Reconstruct and Widen Cospers Loop; Study Access Management; Improve and extend multiuse pathway on East side of SR 75
16	Goatcamp Loop	Reconstruct and Widen
17	Guthrie Road	Reconstruct and Pave
18	Rattlesnake Road	Reconstruct and Pave
19	San Francisco River Road	Reconstruct and Pave
20	Sheldon Loop	Reconstruct and Widen
21	SR 75	Preserve right-of-way for future improvements
22	SR 78	Preserve right-of-way for future improvements
23	Stevens Loop	Reconstruct and Widen
24	US 191	Preserve right-of-way for future improvements
25	US 70	Preserve right-of-way for future improvements
26	Bitter Creek Road	Reconstruct and Widen
27		Study connecting roadway
28		Study connecting roadway

Source: Greenlee County, Lima & Associates

\*Previously Planned or Programmed Projects

### **Additional Roadway Alignments**

In addition to existing alignments, additional alignments have been identified that could be developed into future roadways as warranted. As area population and development increase, the provision of alternate routes for use to avoid or alleviate traffic congestion, as well as emergency use in case of floods or wildfires, will become more critical. The objective of the consultant was to initiate thinking in terms of identifying and preserving rights-of-way for a matrix of interconnecting roadways for future mobility. Future studies will identify specific alignments, conduct the engineering and design, and develop cost estimates.

The consultant suggests a new candidate alignment that would parallel SR 75 to the east. This alignment would begin in the Clifton area as a southern extension of Ward Canyon Road and extend southeasterly toward Duncan following the existing pipeline or power line utility corridor. The alignment would cross Bitter Creek Road and both legs of the Goatcamp Loop and enter the Duncan area on either the Campbell Road alignment or an alignment east of Campbell that would tie into Carlisle Road.

Other new candidate alignments would:

- Extend Guthrie Road to intersect US 191 and then parallel SR 75 to the west, ultimately tying into Burma Road in the Sheldon area.
- Add a link from US 191 just east of the County line over to the new Guthrie Road extension

In the Clifton area, the consultant suggests a connection from a point on Table Top Mesa Road to a point on US 191. This connection would serve Morenci Mine commuters and other motorists driving from points south and east of Clifton to Morenci and beyond.

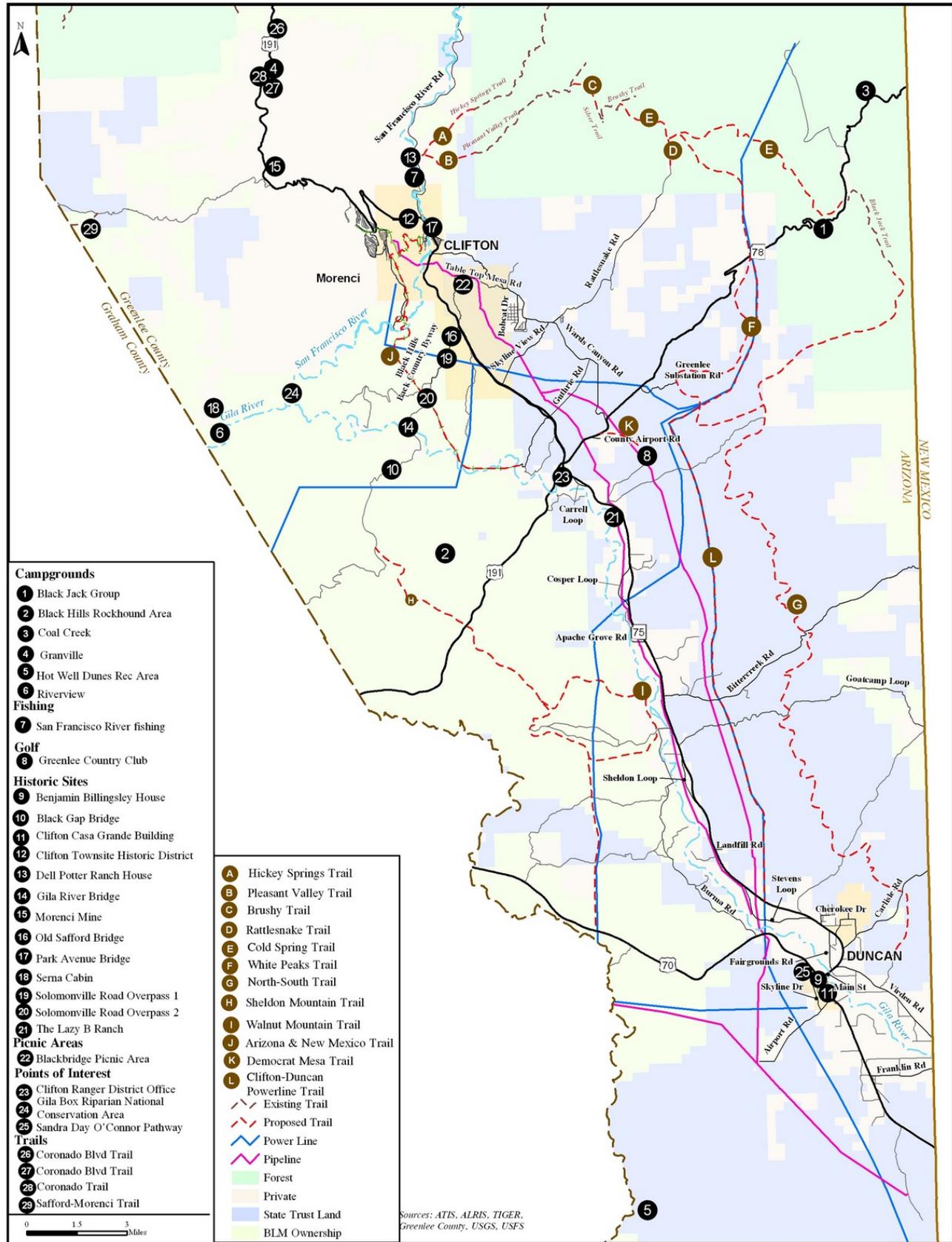
In the Town of Duncan, the consultant suggests that the area of Church Avenue (SR 75) east of US 70 where Fairgrounds Road and Old Virden Road tie into Church Avenue be studied to identify ways in which these roadways might be realigned to develop a functional four-way intersection. This intersection would anchor the southwest corner of the new subdivision being developed in the semi-circular acreage bounded by Fairgrounds Road and SR 75.

## **Improvements and Additions to Trail System**

The consultant identified a number of opportunities within the study area for adding trails for pedestrian, equestrian, or bicycle use. First, key recreation areas within the study area were identified. The locations of existing trails in the National Forest in the northeast corner of the study area were identified, and several trail alignments were suggested by connecting these existing Forest trails with potential trailhead sites accessible by area roadways. Other trail alignments were suggested by the locations of abandoned railroad rights-of-way, utility alignments, and activity centers. Figure 6 depicts the recreation areas and suggested additions to the trail system. Table 6 lists the suggested trails, including a map reference letter included on Figure 6. Note that some alignments such as utility corridors could also be developed as either roads or trails—or in some cases—both, with parallel roadway and trail facilities.

Not all the suggested trail alignments are likely to be practical to implement. Some traverse privately held land, and Arizona landowners have a variety of attitudes toward trails crossing their properties. Some forbid any form of “trespassing” while others— including ranchers who may be trail enthusiasts themselves—simply ask that gates be kept closed to contain livestock. In areas where rural buildings or natural features are recognized as local landmarks, eventual acquisition for public use by the County, a town, or some other agency may be feasible.

**FIGURE 6. RECREATION AREAS AND TRAIL SYSTEM ADDITIONS**



**TABLE 6. SUGGESTED ADDITIONAL TRAILS**

<b>Map Reference</b>	<b>Name</b>	<b>Description</b>
A	Hickey Springs Trail	Runs east from vicinity of Dell Potter Ranch House to join existing Hickey Springs Trail at National forest boundary
B	Pleasant Valley Trail	Runs east from vicinity of Dell Potter Ranch House to join existing Pleasant Valley Trail at National forest boundary
C	Brushy Trail	Connects Pleasant Valley Trail with existing Brushy Trail at National forest boundary
D	Rattlesnake Trail	Runs north from end of Rattlesnake Road to junction with Brushy Trail
E	Cold Spring Trail	Connects Rattlesnake Trail with Black Jack Trail near Black Jack Group
F	White Peaks Trail	Connects Rattlesnake and Cold Spring Trails with the North-South Trail east of the County airport
G	North-South Trail	Runs through the eastern portion of the County from the end of the Black Jack Trail to the Duncan area
H	Sheldon Mountain Trail	Connects the Back Country Byway with US 191 and US 70. Possible trailheads at highway crossings
I	Walnut Mountain Trail	Loop from Sheldon Mountain Trail over to west bank of Gila River
J	Arizona & New Mexico Trail	Follows old Arizona & New Mexico Railroad right-of-way from Morenci to Back Country Byway.
K	Democrat Mesa Trail	Connects County Airport with Country Club
L	Clifton-Duncan Power Line Trail	Follows existing power line alignment. Could eventually be replaced by new roadway parallel to SR 75.

Source: Greenlee County, Lima & Associates

### **Trail Planning, Design, and Construction Resources**

A number of resources are available for use by local and regional agencies in planning, designing, constructing, and maintaining trails.

As examples, the following documents are available from the American Association of State Highway and Transportation Officials. These documents may be ordered by writing AASHTO at 444 North Capitol St NW, Washington DC 20001, by telephone at 1-800-231-3475, or online at <https://bookstore.transportation.org/>.

- *Guide for the Development of Bicycle Facilities*, 1999 (*AASHTO Bike Guide*); \$85.00 (AASHTO members \$72)
- *Guide for the Planning, Design, and Operation of Pedestrian Facilities*, 2004 (*AASHTO Pedestrian Guide*); \$90 (AASHTO members \$75)

In addition, *Planning, Design and Development Guidelines*, 2006, from the Minnesota Department of Natural Resources, Trails and Waterways, is a best-practices guide for both motorized and nonmotorized trails. The Document may be obtained from Minnesota's Bookstore, 660 Olive Street, St. Paul, MN 55155, by phone at 1-800-657-3757, or online at <http://www.comm.media.state.mn.us/bookstore/bookstore.asp>.

*ATV Route Guideline and Suggestions* (A Community Official's Handbook), produced by the Bureaus of Law Enforcement and Community Financial Assistance of the Wisconsin Department of Natural Resources, is available online free of charge at <http://dnr.wi.gov/org/caer/cfa/lr/atv/Manual.pdf>.

## **Transit Element**

This section suggests and describes potential services, facilities, and equipment and presents the findings of an estimation of 2030 demand for intercity transit in Southern Greenlee County. Some best practices for rural transit operation, together with Federal, State, and local sources of transit funding are summarized in detail in the Final Report.

Potential Services and Facilities - Options for area public transportation to be considered by the County are presented below. Two general forms of public transportation have been identified as being particularly suitable for meeting the local and regional needs of study area residents over the next twenty-five years: Transportation Demand Management (TDM) alternatives and four types of transit service.

Transportation Demand Management - consists of a wide range of programs and services that enable people to get around without driving alone. Included are alternative transportation modes such as carpooling, vanpooling, transit, bicycling, and walking, as well as programs that alleviate traffic and parking problems such as telecommuting, variable work hours, and parking management.

Transportation Demand Management can address the needs of those traveling long distances with rideshare options such as vanpools and carpools. These types of services are vital in moving people around large areas, whether for work or for traveling to regional centers that have special services, medical facilities, or retail stores.

Rideshare Matching Programs - provide service by identifying people who live and work close to each other and then facilitate carpooling and vanpooling. Matching services can pair full-time partners, or simply someone to call in an emergency. Rideshare matching can be done by individual employers or on a community-wide basis. In addition to commute trips, travelers can be matched with others participating in the same extracurricular school function, medical-related trip, shopping trip, or community activity.

Rideshare matching is typically done through a computerized system. A variety of vendors have created inexpensive, effective software that makes this process easy to use. Rideshare services can also be offered on-line.

Two common forms of ridesharing are carpools and vanpools. Carpool participation is higher than the national average in rural Arizona, suggesting that a potential for developing additional carpools in the area exists.

Arizona Rides - is a statewide effort to coordinate provision of human services transportation within counties or regions of counties to increase efficiency, limit service duplication and confusion, and save costs. Arizona Rides was initiated in response to the federal “United We Ride” program established in 2004. “Pinal Rides,” a pilot project of the program, funded a study of the concept in Central Pinal County. The Final Report of the pilot project was published in December 2005. Recommendations included the establishment of a transit coordinating council for the study area and the implementation of service along two regional corridors.

Types of Transit Vehicles - A number of roadway-based and fixed-guideway forms of transit service exist, including bus service, light rail, commuter rail, subways, and monorail. Three modes of transit have been identified as likely candidates for eventual implementation in Southern Greenlee County:

- Expanded Dial-A-Ride and Paratransit Service
- Deviated Fixed Route Service
- Excursion Rail Service

The specific features of the two types of bus services are detailed in the Final Report. The concept for excursion rail service is also discussed in the Final Report.

### ***Estimating Transit Demand***

Estimating demand for transit in the study area provides a general idea of what type of services may be feasible and how many people may be expected to use a transit system. To estimate possible demand for transit service in the County, TCRP Report 3, *Workbook for Estimating Demand for Rural Passenger Transportation*, was utilized. This workbook provides a methodology for estimating transit demand for rural systems, using population data for the year of proposed service start-up and assumptions of service area size and route lengths.

The demand methodology in TCRP Report 3 included both base and alternative methods of demand estimation. The consultant conducted both procedures to compare the results from each. The base and alternative methods of transit demand estimation resulted in daily estimates of 16 and 20 trips, respectively. Note that this procedure was not designed to forecast the demand for the type of dedicated commuter bus operation currently being provided by Freeport McMoRan to Morenci Mine employees.

## **RECOMMENDATION AND IMPLEMENTATION STRATEGY**

This section presents a capital improvement program designed to address the transportation challenges faced in Southern Greenlee County, together with a plan for implementing the program in short-, mid-, and long-term phases. Working with the TAC and the County

Project Manager, the consultant team developed cost estimates for the short-, mid-, and long-term transportation projects. Recommendations were presented to the County Project Manager, the Town Managers of Clifton and Duncan, and the Technical Advisory Committee for review and comment.

Recommendations include over 70 miles of right-of-way acquisition, preservation, and surveying; 58 miles of minor roadway widening; and 38 miles of roadway construction and reconstruction. Roadway standards presented in this Chapter are recommended as guides for roadway widening, construction, or reconstruction. Order of magnitude draft cost estimates were developed based on data provided by the County Project Manager or by the experiences of peer jurisdictions. The most expensive set of projects is the rehabilitation or replacement of 14 bridges in the study area, estimated to cost over \$24 million. The construction or reconstruction of 38 miles of roadway is estimated at \$16.5 million; roadway widening at about \$3.5 million; and right-of-way preservation at just over \$3 million. Just over \$1 million is programmed for pedestrian sidewalks and walkways, and just under \$1 million is estimated for recommended studies and plans, and miscellaneous items estimated at \$280,000. These include the conduct of an Access Management Implementation Plan in the York Valley area, a Trail System Strategic Plan, and the future purchase of shuttle vans to replace those acquired for Clifton and Duncan in 2006.

Of the total of \$49.6 million in projects, \$27.5 million is estimated for the Clifton area, \$4.7 million for the Duncan area, and \$17.4 million for the remainder of the study area. Table 7 lists the short-term projects; Table 8 lists the mid-term projects; and Table 9 lists the long-term projects. As a reference, the “Standard Code” refers to the cross-sections presented in this Chapter.

## **IMPLEMENTATION PLAN**

Funding permitting, the short-term projects are intended to be addressed within five years, or by 2012. Mid-term projects would be addressed within 10 years, or by 2017; and long-term projects within 20 years, or by 2027.

In areas such as Southern Greenlee County, where the population growth rate is very low, mobility concerns caused by future traffic congestion are less likely to occur. However, existing traffic safety concerns exist in any jurisdiction, regardless of the growth rate. For example, geometries of both paved and unpaved roads need to be corrected to enhance safety as well as the utility of the roadways.

At the same time, the comparatively low level of tax revenues generated by smaller communities such as those that comprise the study area does not facilitate the funding of necessary improvements.

**TABLE 7. SOUTHERN GREENLEE COUNTY - SHORT-TERM PROJECTS**

Road or Project Name	From	To/Reference	Improvement Type	Standard Code	Total Cost	Jurisdiction
Trail System Strategic Plan	Throughout Study Area including utility corridors, abandoned rail lines, SR 75 Corridor, Duncan area		Trail System Strategic Plan	N/A	200,000	County
Billingsly Loop	SR 75 - 379.4 E	67027 S	Minor roadway widening	GCUL2	62,384	County
Clesa Drive	67002 S	67002 - S	Minor roadway widening	GCUL2	85,175	County
County Club Road	SR 75 - 394.3 E	End Pvmt	Acquire right-of-way	GCUL2	4,327	County
Fairgrounds Road	SR 75	SR 75	Minor widening	GCUL2	71,400	County
Guthrie Road	US 191	Gila River	Reconstruct and Pave	GCRL2	909,500	County
Old Safford Road	Abandoned RR OP	2.71 mi W Jct US 191	Rehabilitate bridge	N/A	182,000	County
Old Safford Road	SPRR Overpass	1.05 mi W Jct US 191	Rehabilitate bridge	N/A	182,000	County
Plantsite Rec. Road to Burma Road	Clifton	Duncan	Study new roadway parallel to SR 75 west of Gila River	GCRC2	250,000	County
SR 75	Three Way	Duncan	Preserve right-of-way for future improvements	GCRC2	585,600	County
SR 75		York Valley Area	Access Management Implementation Plan	GCRC2	100,000	County
SR 78	Three Way	State Line	Preserve right-of-way for future improvements	GCRC2	605,400	County
Stevens Loop Road	Medium Wash Bridge	0.7 mi W Jct SR 75	Rehabilitate bridge	GCRL2	82,000	County
Stevens Loop Road	Waters Wash Bridge	0.5 mi S Jct SR 75	Rehabilitate bridge	GCRL2	82,000	County
US 191	County Line	Three Way	Preserve right-of-way for future improvements	GCRL2	716,400	County
Ward Canyon Road to Campbell Street	Clifton	Duncan	Study new roadway parallel to SR 75 as extension of Wards Canyon Road alignment	GCRC2	250,000	County
Sheldon Loop Road	Goat Camp Canyon Bridge	1.0 mi S Jct SR 75	Rehabilitate bridge	N/A	82,200	County
Fairgrounds Road	Packer Wash Bridge	0.4 mi N Jct SR 75	Rehabilitate bridge	N/A	82,200	County
SR 75	At MP 395.7, York Valley	Cottonwood Creek	Construct pedestrian walkway bridge	N/A	514,638	County
			Subtotal		5,047,224	

**TABLE 7. SOUTHERN GREENLEE COUNTY - SHORT-TERM PROJECTS (CONTINUED)**

Road or Project Name	From	To/Reference	Improvement Type	Standard Code	Total Cost	Jurisdiction
2nd Street	US 191	Leonard Street	Minor Widening	GCUL2	\$5,400	Clifton
7th Street	US 191	Turner Avenue	Minor Widening	GCUL2	3,600	Clifton
Park Avenue	East Bridge Street	US 191	Minor Widening	GCUL2	39,000	Clifton
Plantsite Rec. Road	Reservation Morenci	Railroad Tracks	Reconstruct to the Correct Surface Type	GCUL2	693,419	Clifton
Riverside Drive	US 191	Shannon Road	Minor Widening	GCUL2	15,000	Clifton
Skyline View Road	U.S. 191 - 157.2(E)	67003	Reconstruct to the Correct Surface Type	GCUC2	783,172	Clifton
Skyline View Road	67003	67099A	Reconstruct to the Correct Surface Type	GCUC2	87,296	Clifton
Table Top Mesa Road	US 191	Ward Canyon Road	Reconstruct and Pave	GCRL2	1,419,500	Clifton
Turner Avenue	Leonard Street	7th Street	Minor widening	GCUL2	9,600	Clifton
Ward Canyon Road	U.S. 191 MP 162.8 - E	Skyline View Road	Reconstruct to the Correct Surface Type	GCUC2	264,383	Clifton
Ward Canyon-US 191	Ward Canyon Road	US 191	Study connecting roadway	GCUC2	150,000	Clifton
US 191	Copper Crystal Park	200 Chase Creek	Construct pedestrian sidewalk	N/A	277,895	Clifton
				<b>Subtotal</b>	<b>\$3,748,265</b>	
Campbell Street	McGrath Avenue	Carlisle Road	Reconstruct and Pave	GCUL2	216,750	Duncan
Carlisle Road	SR 75	End (State Line)	Reconstruct and Pave	GCRL2	1,619,250	Duncan
High Street	Stadium Street	US 70	Minor widening	GCUL2	36,000	Duncan
Lower Eagle Road	U.S. 191 - 171.6 W	Eagle Creek	Minor roadway widening	GCUL2	395,229	Duncan
Luntville Road	67002 S	67007 End	Survey right-of-way	GCRL2	10,000	Duncan
Luntville Road	67002 S	67007 End	Minor roadway widening	GCRL2	29,086	Duncan
Main Street	High Street	Railroad Avenue	Reconstruct to the Correct Surface Type	GCUL2	42,500	Duncan
Ocatilla Avenue	McGrath Avenue	End	Reconstruct and Widen	GCUL2	110,500	Duncan
Old Virden Road	SR 75 - 379.3 E	67008	Minor roadway widening	GCRC2	54,755	Duncan
US 70	MP 378	Wilson Street	Construct pedestrian walkway	N/A	217,600	Duncan
				<b>Subtotal</b>	<b>\$2,731,670</b>	
				<b>TOTAL</b>	<b>\$11,527,159</b>	

**TABLE 8. SOUTHERN GREENLEE COUNTY - MID-TERM PROJECTS**

Road or Project Name	From	To/Reference	Improvement Type	Standard Code	Total Cost	Jurisdiction
Apache Grove Road	SR 75 - 391.8 W	End	Minor roadway widening	GCRL2	12,544	County
Bitter Creek Road	SR 75	End (State Line)	Minor Widening	GCRL2	574,800	County
Bobcat Drive	Ward Canyon Road	Hackberry Drive	Minor Widening	GCUL2	64,800	County
Burma Road	SR 75	US 70	Minor widening	GCRL2	520,800	County
Carrell Loop	SR 75	SR 75	Minor widening	GCRL2	35,400	County
Cosper Loop	SR 75	SR 75	Minor widening	GCRL2	88,800	County
Goatcamp Loop	SR 75	End (State Line)	Minor widening	GCRL2	567,000	County
Rattlesnake Road	Loma Linda Road	Forest Service Boundary	Reconstruct and Pave	GCRL2	2,337,500	County
San Francisco River Road	Frisco Avenue	End	Reconstruct and Pave	GCRL2	2,979,250	County
Sheldon Loop	SR 75	SR 75	Minor widening	GCRL2	97,800	County
Stevens Loop	SR 75	SR 75	Minor widening	GCRL2	168,000	County
UPRR	Clifton Depot	Duncan Depot site	Study Excursion Train	N/A	100,000	County
				<b>Subtotal</b>	<b>\$7,546,694</b>	
Calle Alta Vista	Skyline View Road	Rattlesnake Road	Reconstruct to the Correct Surface Type	GCUL2	89,150	Clifton
Frisco Avenue	US 191	Clifton Limits	Minor Widening	GCUL2	79,800	Clifton
Hackberry Drive	Bobcat Drive	Ward Canyon Road	Minor Widening	GCUL2	40,200	Clifton
Leonard Street	2nd Street	Turner Avenue	Minor Widening	GCUL2	9,600	Clifton
McCarty Trail	SR 75	Cherokee Drive	Minor widening	GCUL2	17,400	Clifton
Park Avenue	San Francisco River Bridge	100'W of US 191	Replace bridge	N/A	5,000,000	Clifton
Replacement Clifton Van			Special needs transportation	N/A	40,000	Clifton
Reservation Road	Mountain View	Plantsite Rec. Road	Survey and Design	GCRL2	30,000	Clifton
Ward Canyon Road	Soap Box Canyon Bridge	3.39 mi E Jct US 191	Replace bridge	N/A	2,500,000	Clifton
				<b>Subtotal</b>	<b>\$7,806,150</b>	
4th Street	US 70	Skyline Drive	Minor widening	GCUL2	\$30,000	Duncan
Carlisle Road	SR 75 - 380.1 E	N.M. State Line	Survey right-of-way	GCRL2	10,000	Duncan
Carlisle Road	SR 75 - 380.1 E	N.M. State Line	Minor roadway widening	GCRL2	135,398	Duncan
McGrath Avenue	Chaparral Road	Campbell Street	Minor widening	GCUL2	22,200	Duncan
Replacement Duncan Van			Special needs transportation	N/A	40,000	Duncan
Wilbur Lunt Road	67002 S	67002 S	Minor roadway widening	GCUL2	58,173	Duncan
				<b>Subtotal</b>	<b>\$295,771</b>	
				<b>TOTAL</b>	<b>\$15,648,615</b>	

**TABLE 9. SOUTHERN GREENLEE COUNTY - LONG-TERM PROJECTS**

Road or Project Name	From	To/Reference	Improvement Type	Standard Code	Total Cost	Jurisdiction
Franklin Road	U.S. 70 - 382.1 E	N.M. State Line	Survey right-of-way	GCRC2	10,000	County
Franklin Road	U.S. 70 - 382.1 E	N.M. State Line	Correct Drainage	GCRC2	200,000	County
Franklin Road	U.S. 70 - 382.1 E	N.M. State Line	Construct Roadway	GCRC2	816,000	County
Guthrie Road	US 191	Wards Canyon Road	Reconstruct and Pave	GCRL2	909,500	County
Old Safford Road	Pumroy Canyon Bridge	6.4 mi W Jct US 191	Rehabilitate bridge	N/A	300,000	County
US 70	US 191	State Line	Preserve right-of-way for future improvements	GCRC2	1,073,100	County
Virden Road	SR 75	End (State Line)	Reconstruct and Widen	GCRC2	1,487,500	County
<b>Subtotal</b>					<b>\$4,796,100</b>	
Chase Creek Road	Chase Creek Bridge #3	200'S Jct US 191	Rehabilitate bridge	N/A	300,000	Clifton
City Parking Lot	Chase Creek Bridge	adjacent to # 307 on 191	Rehabilitate bridge	N/A	300,000	Clifton
Coomb Street	Chase Creek Bridge #2	50'S Jct US 191	Rehabilitate bridge	N/A	300,000	Clifton
Frisco Avenue	Chase Creek Bridge #1	0.1 mi N of Park Ave	Replace bridge	N/A	5,000,000	Clifton
Reservation Road	Mountain View	Plantsite Rec. Road	Minor Widening	GCRL2	60,000	Clifton
UPRR	UP RR Bridge	300 ft E of Jct US 191	Replace bridge	N/A	10,000,000	Clifton
<b>Subtotal</b>					<b>\$15,960,000</b>	
Airport Road	Skyline Drive	End	Reconstruct and Pave	GCRL2	\$1,088,000	Duncan
Chaparral Road	SR 75	McGrath Avenue	Minor widening	GCUL2	35,400	Duncan
Cherokee Drive	McCarty Trail	Shoshone Lane	Reconstruct and Widen	GCUL2	102,000	Duncan
Skyline Drive	D Street	Airport Road	Reconstruct and Widen	GCUL2	467,500	Duncan
<b>Subtotal</b>					<b>\$1,692,900</b>	
<b>TOTAL</b>					<b>\$22,449,000</b>	

Insufficient funds exist to implement many of the recommended improvements. The Transportation Improvement Program presented in this chapter can be used by the County to draw attention to the unfunded needs that exist. While the long-term project list incorporates many of the higher priced projects, an effort was made, with proactive input from the County Project manager, to prioritize projects based on need. For example, improvements to all of the collector roadways experiencing multiple crashes are listed as short-term projects.

Despite the funding shortfall, the County should take the initial steps toward implementing the program. While Greenlee County is not currently experiencing significant population growth, that could change. A housing boom is taking place in neighboring Graham County as Freeport-McMoRan opens the new Safford Mine. Mining activity at Morenci itself is also increasing. Freeport-McMoRan advertises in the Phoenix and Tucson newspapers for employees and offers cash bonuses to compensate for the commuting time between those cities and the mines. Freeport-McMoRan operates free shuttle service from Safford park-and-ride lots and, according to the operator of the Safford Airport, has even been flying in management-level personnel from Phoenix, Tucson, and elsewhere.

As real estate prices increase in Graham County, mine employees may look to Greenlee. The commute from Duncan to Morenci is no longer than that from Safford, and the commute from other residential areas such as Three-Way and York Valley is even shorter. Significant population growth in any of these areas would quickly lead to increased traffic volumes, especially on “commute routes” between these locations and the Morenci Mine. More mine employees will attract more retail and other services, making scenic Greenlee County even more attractive to retirees—accelerating the population growth.

The consultant recommends that the County take the following initial steps toward plan implementation:

**Establish an Implementation Task Force.** Such a Task Force could be a continuation of the Technical Advisory Committee established to oversee the conduct of this study and include the County Engineer, the Town Managers of Clifton and Duncan, and representatives from SEAGO and the ADOT District.

**Identify Responsibilities and Timeline.** The first task of the Task Force would be to identify Task Force roles, such as keeping in contact with local State Legislators, ADOT, SEAGO, and other potential funding sources. Rather than “hard” dates, the Timeline could be a series of milestones triggered by specific thresholds such as new funding sources, population growth, and so forth.

**Program ADOT and County Projects.** Working through the ADOT District and SEAGO, the Task Force should ensure that essential projects are included in the current Transportation Implementation Plans of these agencies. As the prioritization of projects is revised over time, the costs of borrowing funds in the short term will need to be weighed against the risk that future right-of-way acquisition, engineering, and construction costs will be higher in the long-term.

The Task Force should take these specific actions for implementation:

- Adopt Transportation Plan and Transit Element
- Adopt Cross Section Standards
- Adopt Access Management Strategies
- Adopt Trails Map
- Implement Traffic Impact Analysis Review
- Update Transportation Plan and Transit Element

**Adopt Funding Mechanisms as Warranted.** As the County population increases in response to new area employment opportunities in the mining industry and elsewhere, new developers will inevitably enter the area. As this Study is being concluded, evidence that this is already taking place exists. The County and local agencies will want to consider the adoption of exactions, impact fees, and other mechanisms that enable the developers to help pay for the effect of the new residents who rent or purchase homes in their developments on the local infrastructure. The County and local agencies could adopt “Adequate Public Facilities Ordinances” to justify the use of exactions. These ordinances require that sufficient infrastructure such as roadways, utilities, schools, and so forth are provided for before additional development can take place.

Freeport-McMoRan is by far the major employer in the area. While the copper industry is unavoidably cyclical in nature, the industry’s cycles can significantly affect area planning and infrastructure. Certainly Freeport-McMoRan needs to participate in the Implementation Task Force, and frank discussions need to take place concerning options for responding to these business cycles.

## **FUNDING AND REVENUE ESTIMATES**

This section summarizes multimodal revenue sources and estimates that are applicable to Southern Greenlee County. A number of funding mechanisms exist that could be used to fund multimodal improvements for the County. Key federal, state, regional, and local sources are shown in Table 10.

Funding options include both traditional and innovative sources. Traditional sources are the Arizona Highways User Revenue Fund (HURF); the Local Transportation Assistance Fund (LTAF); Federal-Aid Funds (Surface Transportation, Bridge, Safety, and Transportation Enhancement Funds); and local general funds, such as general obligation bonds and revenue bonds. Alternative sources of funding include special assessment districts, developer dedications, and exactions such as impact fees.

Greenlee County currently has two primary sources of revenue, vehicle license tax (VLT) and the highway user revenue fund (HURF). County revenues from HURF in recent fiscal years is summarized in Table 11 and discussed in more detail in the Arizona State Shared Revenue section of Chapter 8 in the Final Report.

**TABLE 10. MATRIX OF KEY FUNDING SOURCES**

<b>Fund Name</b>	<b>Description</b>	<b>Eligible Uses</b>	<b>Application Process</b>	<b>Sample Project</b>
<b>Federal</b>				
STP	Federal funds, administered by FHWA and ADOT	Variety of capital projects including highways, bridges, transit and enhancement projects	Programmed and distributed through SEAGO and ADOT District	Fairgrounds entrance, highway-rail crossings
FTA Section 5310 funds	Federal funds administered by ADOT	Local jurisdictions and private non-profit agencies	Programmed through ADOT Public Transportation Division	Van for Senior Center
High Risk Rural Roads	Federal funds, administered by FHWA and ADOT	Correct safety problems on roadways classified as rural major collectors, rural minor collectors and rural local roads	Programmed through ADOT	Correct safety problems on rural roads
Safe Routes to School Program	Federal funds, administered by FHWA and ADOT	sidewalk, traffic calming and speed reduction improvements, pedestrian and bicycle crossing improvements, traffic diversion improvements near schools	Programmed through ADOT	Traffic calming improvement in school zone
<b>State</b>				
HURF	State funds, derived from fuel tax and VLT, administered by ADOT	Nearly any capital project related to roadway improvements	Funds allocated to jurisdiction as proportion of population	Improvements to County Road
LTAF	State funds derived from lottery sales	General transportation improvements	Funds allocated to jurisdiction as proportion of population	Extension of County Road
LTAF II	State funds derived from Powerball lottery sales	Used as local matching funds for FTA transit funds	Funds allocated to jurisdiction as proportion of population	Match 5311 funds for provision of dial-a-ride service
<b>County</b>				
Impact Fees*	Fee imposed by local jurisdiction on development on per unit basis	Used to fund a variety of infrastructure needs including transportation	Locally administered	Greenlee County Roads
Development Stipulations*	Requirements that developers dedicate appropriate ROW and build streets adjacent to project	Benefits are derived by offsetting cost of acquiring ROW and building infrastructure	Locally administered	ROW dedication adjacent to new developments

\*If Enacted

**TABLE 11. ARIZONA HIGHWAY USER REVENUE FUND DISTRIBUTIONS TO GREENLEE COUNTY AND TOWNS OF CLIFTON AND DUNCAN, FY 2002 - 2006**

Jurisdiction	Distributions				
	FY 2002	FY 2003	FY 2004	FY 2005	FY2006
Total					
Counties in State	\$194,432,532.00	\$200,465,084.00	\$214,601,120.00	\$226,464,000.00	\$240,538,000.00
Greenlee County	654,672.78	708,991.71	803,059.82	862,297.05	966,223.50
Town of Clifton	192,166.64	186,913.29	222,868.18	38,695.75	280,559.60
Town of Duncan	60,050.09	\$58,520.21	69,681.33	74,630.43	87,794.71

Source: Arizona Department of Transportation, Financial Management Services, January 31, 2007

### Potential Sources of Additional Funding

Most Arizona counties—both heavily populated counties such as Maricopa and Pima, as well as more rural counties such as Gila—have created regional area road or transportation funds that are funded by revenues from sales tax initiatives passed and periodically renewed by the voters. As population increases warrant upgrades to County infrastructure, the County may want to work with the local jurisdictions to develop a similar approach for Greenlee County. Alternatively, additional local taxes could be enacted to provide monies for Area Road Funds in the Clifton and Duncan areas.

### *Impact Fees, Right-of-Way, Facilities In-Lieu*

Traffic impact fees, development impact fees, dedication of right-of-way, and/or construction of facilities in-lieu are additional local funding sources. As portions of the study area with available deeded land develop, the improvement of County roads to and within these areas may require additional rights-of-way. In order to acquire additional rights-of-way in these areas, private developers should be required to incorporate potential rights-of-way into their plans. In addition, right-of-way exactions from developers should be sought through the coordination with planning and zoning authorities in local jurisdictions as areas are annexed or incorporated.

### ROADWAY CRITERIA

Chapter 9 of the Final Report discusses the characteristics of the three basic types of roadways, local, collector, and arterial. In addition, both rural and urban designs for each functional class of roadway are provided. Local and collector roads are the two most likely types of County roadways. In the near term, the functions of arterials in Greenlee County are performed by the US and State Highways.

## **Access Management**

Access management is defined as the regulation of vehicular access to public roadways from adjoining property. Access management is provided through legal, administrative, and technical strategies available to a political jurisdiction under its police powers in order to maintain the health, safety, and welfare of the jurisdiction's residents. Access management regulates the level of access control on roadways and is needed to help retain the capacity of public highways, access to private land, and maintain public safety

Access management techniques useful for maximizing the intended functions of the different functional classes of roadways are also discussed in detail in Chapter 9.

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