



# Clarkdale Transportation Study

ADOT MPD Task Assignment 15-10  
PGTD 0440  
Contract # T08-49-U0001

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## Final Report

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TOWN OF CLARKDALE

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## EXECUTIVE SUMMARY

The Arizona Department of Transportation assisted the Town of Clarkdale to develop the Clarkdale Transportation Study through the Planning Assistance for Rural Areas (PARA) program. The PARA program assists counties, cities, towns, and tribal communities to address a broad range of multimodal transportation planning issues including roadway and non-motorized modes of travel. Objectives of the Clarkdale Transportation Study were:

- Identify transportation system improvements that are needed to better integrate existing and planned developments into the local transportation system.
- Identify transportation system improvements that are needed to provide excellent service to activity centers.
- Identify multimodal transportation system improvements that are needed to serve all users.
- Develop a Plan that addresses both roadway and multimodal needs.
- Develop and incorporate into the plan tools to assist the Town in planning for future growth.
- Coordinate the study with other related local and regional planning efforts and agencies.

### ***Identification of Needs and Deficiencies***

Existing multimodal needs and deficiencies, or those projected as a result of future growth and development, were identified through the analysis of existing transportation conditions, stakeholder input, and review of existing plans and studies. The needs and deficiencies were presented to the public at an open house on August 26, 2010. The public was provided the opportunity to comment on each identified need and deficiency.

### **Short Term Projects**

Short term projects are those identified for implementation within the next five years. These projects are either already in the Town's Capital Improvement Program (CIP), or are lower cost and may reasonably be funded. Projects to address short term needs and deficiencies are summarized in **Table ES-1**.

**Table ES-1 – Short Term (0-5 Years) Projects**

Street or Location	Segment	Description	Project Length (miles)	Total Cost <sup>1</sup>
Roundabouts	Various	Public information campaign on safe driving in roundabouts	N/A	\$10,000
Main Street / North Broadway Road	Intersection	Construct roundabout (currently programmed)	N/A	\$1,200,000*
Clarkdale Parkway	from SR 89A to 11th Street, then north on 11th Street to Main Street	Construct bike lanes (portion from SR 89A to 11th Street is currently programmed)	0.70	\$450,000*
Tuzigoot National Monument Road	Broadway Road to Tuzigoot National Monument	Develop multimodal improvement plan to improve bicycle and pedestrian access to Tuzigoot National Monument.	N/A	\$100,000
SR 89A	Cement Plant Road to Black Hills Drive in Cottonwood	Construct 6-foot sidewalks on the both sides (currently programmed)	2.17	\$1,300,000*
Clarkdale Parkway (11th Street)	SR 89A to First South Street	Construct 6 foot sidewalks along the south side of Clarkdale Parkway from SR 89A to First South Street, and 4 foot wide bike lanes (programmed project)	0.60	\$450,000*

<sup>1</sup>An asterisk by the total cost indicates that funding has been approved.

### Mid-Term Projects

Mid-term projects are summarized in **Table 5-2**. Mid-term projects are those that may be implemented within the next ten years, but are not within the current Five-year Capital Improvement Program.

**Table ES-2 – Mid Term (6-10 Years) Projects**

Street or Location	Segment	Description	Project Length (miles)	Total Cost <sup>1</sup>
Mescal Spur Road	Minerich Road to Rhinos Place	Construct new 2-lane road	0.32	\$615,000
Mescal Spur Road	Old Jerome Highway to SR 89A	Construct new 2-lane road	0.20	\$385,000
Lincoln Drive	East terminus to Palisade Drive/Verde Street intersection	Construct new 2-lane road	0.31	\$600,000
Minerich Road	Abbey Road North to Haskell Springs Road/Black Hills Drive	Construct new 2-lane road	0.37	\$710,000
Minerich Road	Old Jerome Highway to Abby Road North	Reconstruct 2-lane road	0.62 miles	\$1,190,000
Centerville Road	SR 89A to existing west terminus	Construct new 2-lane road	0.23	\$445,000
Centerville Road	0.1 mile south of Randall Road to South Broadway Road	Construct new 2-lane road	0.17 miles	\$325,000
Calle Carillo	Southern terminus to Mingus Shadows Drive	Construct new 2-lane road	0.05	\$95,000
Bitter Creek Bridge	North Broadway Road	Provide improved traffic control, lighting, and ADA improvements	N/A	\$250,000
Private Industrial Road	Location to be determined (between Clarkdale Metals and Cement Plant Road)	Construct new 2-lane roadway (by others)	To be determined	To be determined
South Broadway Road	Main Street to Clarkdale Town limits	Construct bike lanes	1.62	\$485,000
Centerville Road	SR 89A to South Broadway (portion near South Broadway is already out to bid)	Construct bike lanes as part of road construction	0.95	\$288,000
Main Street	Cement Plant Road to Broadway	Construct bike lanes	1	\$300,000
Black Hills Drive	Haskell Springs Drive to connect to existing sidewalks located east of Sky Drive.	Construct sidewalks	0.46	\$144,000
Broadway Road	2nd North Street to Patio Park area	Construct sidewalks and lighting	0.62	\$ 425,000



**Table ES-2 – Mid Term (6-10 Years) Projects (continued)**

Street or Location	Segment	Description	Project Length (miles)	Total Cost
Benatz Trail	3rd North Street to Broadway Road	Reconstruct the bridge and Benatz Trail	0.85	\$420,000
Unsheltered bus stops in Clarkdale	<ul style="list-style-type: none"> <li>Main St and 13th St</li> <li>Main St and Bonnaha Ave</li> <li>Avenida Centerville and SR 89A</li> <li>Lisa St and SR 89A</li> <li>Broadway Rd / Hollow Reed Lane</li> <li>Black Hills Dr / Windy St</li> </ul>	Construct bus stop shelters	N/A	\$120,000

### Long Term Projects

Long-term projects are those that are recommended for implementation in the period from eleven years to beyond twenty years. Most of these require further study before implementation costs can be determined. These projects were determined to be beneficial to the Town and region as growth occurs, or will support other planned development. None of these projects currently have approved funding. Long-term projects are summarized in **Table ES-3**.

**Table ES-3 – Long Term (11-20 Years) Projects**

Street or Location	Segment	Description	Justification
Access road from Haskell Springs Road / Black Hills Drive to Mesquite Hills Drive	To be determined (to serve future Cottonwood West Loop)	Design Concept Study for new two-lane roadway	Provide more connectivity between Clarkdale and Cottonwood
Connection road between new Industrial Road and 11th Street	To be determined	Construct new two-lane roadway	This connection could provide additional access between planned development , and industrial development and the Town
89A Alternative Connection Study	To Be Determined	Construction of an alternative route to 89A	Provide travel alternatives to 89A

### Studies

Additional studies that are needed to address transportation needs in the Town are summarized in **Table 5-1**. The phasing for these studies is variable, and depends on funding availability.

**Table ES-4 – Studies**

Study Description	Segment	Description	Study Cost	Justification
Clarkdale Sustainability Park Alignment Study / Design Concept Report	Access Road (location to be determined )	Alignment Study / Design Concept	\$100,000	Provide access to Sustainability Park Site
Design Concept Study for new road from Haskell Springs Road / Black Hills Drive to Mesquite Hills Drive	To be determined (to serve future Cottonwood West Loop)	Design Concept Study for new two-lane roadway	\$500,000	Provide more connectivity between Clarkdale and Cottonwood
89A Alternative Connection Study	To be determined	89A Alternative Connection Study	\$200,000	To provide travel alternatives to 89A
ADA Intersection compliance study	To be determined	ADA compliance study	\$15,000	Improve accessibility for pedestrians
Sustainable revenue generation evaluation study for Cottonwood Area Transit	N/A	Sustainable revenue generation evaluation study for Cottonwood Area Transit	\$50,000	Recent funding cuts to transit service
CAT Route extension study	Clarkdale neighborhoods	Route extension study	\$50,000	Potentially Increase transit ridership
Shuttle Service Feasibility Study	Shuttle service from Clarkdale to Jerome	Feasibility study	\$50,000	Provide multimodal commuter options

### Planning Tools

A number of planning tools were developed to address specific needs of the Town. These are:

- Standards for Acceptance of Private Streets
- Traffic Impact Analysis Guidelines

These tools were published under separate cover from the Final Report.

## 1 INTRODUCTION

The Town of Clarkdale, Arizona, is located at the upper end of the Verde Valley in north-central Arizona. Clarkdale (Town) was established in 1912 as a mining community. This “first master planned community in Arizona” was laid out in a compact street grid within walking distance of the Verde River and the copper smelter that was the community’s chief employer. Industrial sites were adjacent to the areas available for other land uses.

Clarkdale Parkway, Main Street, and South Broadway in downtown Clarkdale were all part of the original State Highway 89A that passes through the Town. These routes, now also known as Old Highway 89A, are designated as an Arizona Scenic Historic Byway. Historically, Old Highway 89A served as the backbone of Clarkdale residential and commercial districts.

In 1966, Old Highway 89A was bypassed by the current State Route (SR) 89A, along which new housing and commercial areas developed. However, adequate connectivity between the newer parts of Town and the original Old Highway 89A corridor were never established.

Today SR 89A carries over 12,000 vehicles per day. While the historic highway (Clarkdale Parkway, Main Street, and South Broadway) carries significantly less traffic than SR 89A, portions of it are the primary access to downtown Clarkdale and some residential areas of Town.

Recently, Clarkdale grew substantially. Several housing developments were begun in the Town, and when complete will add significant traffic to the Town’s streets and roads. The Town is projected to continue to experience steady growth in the future.

Mixing transportation uses on the existing roads with their existing traffic is a concern in Clarkdale. The Town’s industrial areas — expanding, new, and proposed — are located in north Clarkdale. The Town’s other uses are between the industrial areas and the rest of the Verde Valley. With the industrial areas north of the Town, truck traffic and commuters are required to pass through residential and commercial areas of Town to reach Cottonwood and other communities to the west, adding to the mix of traffic on SR 89A and existing roads in Clarkdale.

In addition, growth in the Verde Valley and Clarkdale is tied to growth in greater Yavapai County. The growing traffic from the Black Hills to Prescott has become a major concern, where daily commuting traffic has to compete with the tourist traffic to Jerome.

### 1.1 Study Objectives

The purpose of the Clarkdale Transportation Study is to conduct an analysis of multimodal transportation needs within the Town, and to develop a transportation master plan (Plan) to meet the identified needs. The Plan will include recommended multimodal transportation improvements for five-, ten-, and twenty-year planning horizons (2015, 2020, and 2030 respectively). The Plan will be developed consistent with the objectives listed in **Table 1-1**.

**Table 1-1 – Study Objectives and Key Activities**

Study Objective	Key Activities to Achieve Study Objective
Identify transportation system improvements that are needed to better integrate existing and planned developments into the local transportation system.	<p>Conduct an analysis of infrastructure needs and the potential impacts of in-progress developments:</p> <ul style="list-style-type: none"> <li>• (1) Mountain Gate (approx. 1/3 built); and</li> <li>• (2) Highlands (construction underway).</li> </ul>
Identify transportation system improvements that are needed to provide excellent service to activity centers.	<p>Development in and adjacent to the Town:</p> <ul style="list-style-type: none"> <li>• (1) Clarkdale Metals</li> <li>• (2) Salt River Materials Group Cement Plant, and</li> <li>• (3) Clarkdale Sustainability Park</li> <li>• (4) Yavapai College Verde Valley Campus</li> <li>• (5) Consider needed improvements to the Industrial Road (unbuilt).</li> <li>• (6) Consider future industrial traffic flow to SR 89A from Industrial Road (to be funded by Clarkdale Metals) and Cement Plant Road.</li> <li>• (7) Consider and document as appropriate the need for long-term future regional connections to SR 89 on the west or a loop to SR 89A on the east.</li> </ul>
Identify multimodal transportation system improvements that are needed to serve all users.	<ul style="list-style-type: none"> <li>• Work with Clarkdale Transit Committee to plan for continued Cottonwood Area Transit services to the Town that emphasize coordination with other transportation modes.</li> <li>• Identify pedestrian and bicycle needs.</li> </ul>
Develop a Plan that addresses both roadway and multimodal needs.	<ul style="list-style-type: none"> <li>• Recommend specific improvement projects and implementation strategies that address identified needs and deficiencies for planning horizons.</li> <li>• Prioritize the projects based on need and financial considerations.</li> </ul>
Develop and incorporate into the Plan tools to assist the Town in planning for future growth.	<ul style="list-style-type: none"> <li>• Traffic impact analysis guidelines and criteria to identify requirements for developer improvements to accommodate anticipated increase in traffic and roadway infrastructure needs.</li> <li>• Basis for resolving issues regarding private streets; recommend standards for acceptance of previously private streets into the Town system. Suggestions on ways to bring streets that are below standard into the system because they are of significant importance, e.g. Bent River Road</li> </ul>

**Table 1-1 – Study Objectives and Key Activities (continued)**

Study Objective	Key Activities to Achieve Study Objective
Coordinate the study with other related local and regional planning efforts and agencies, such as:	<ul style="list-style-type: none"> <li>• Agencies that are represented on the Study's Technical Advisory Committee (TAC).</li> <li>• The on-going Town of Clarkdale General Plan update. The Plan may serve as the Circulation Element of the Town's General Plan Update (in progress).</li> <li>• The Town's Strategic Planning Goals, including any transportation-related goals from the upcoming February 2010 annual Strategic Planning session</li> <li>• The Verde Valley Transportation Planning Organization and implementation of the recently-adopted Verde Valley Multimodal Transportation Study (VVMTS).</li> <li>• Environmental, land management, and natural resource agencies, including National Park Service, Arizona State Parks, ADOT Environmental Planning, U.S. Forest Service, and Arizona Game and Fish. The Arizona State Land Department and the Bureau of Land Management (BLM) were invited to participate as agencies with landholdings in the larger region.</li> </ul>

## 1.2 Study Area

The study area for the Clarkdale Transportation Study consists of the incorporated boundaries of the Town of Clarkdale. The study area is depicted in **Figure 1** on the next page.

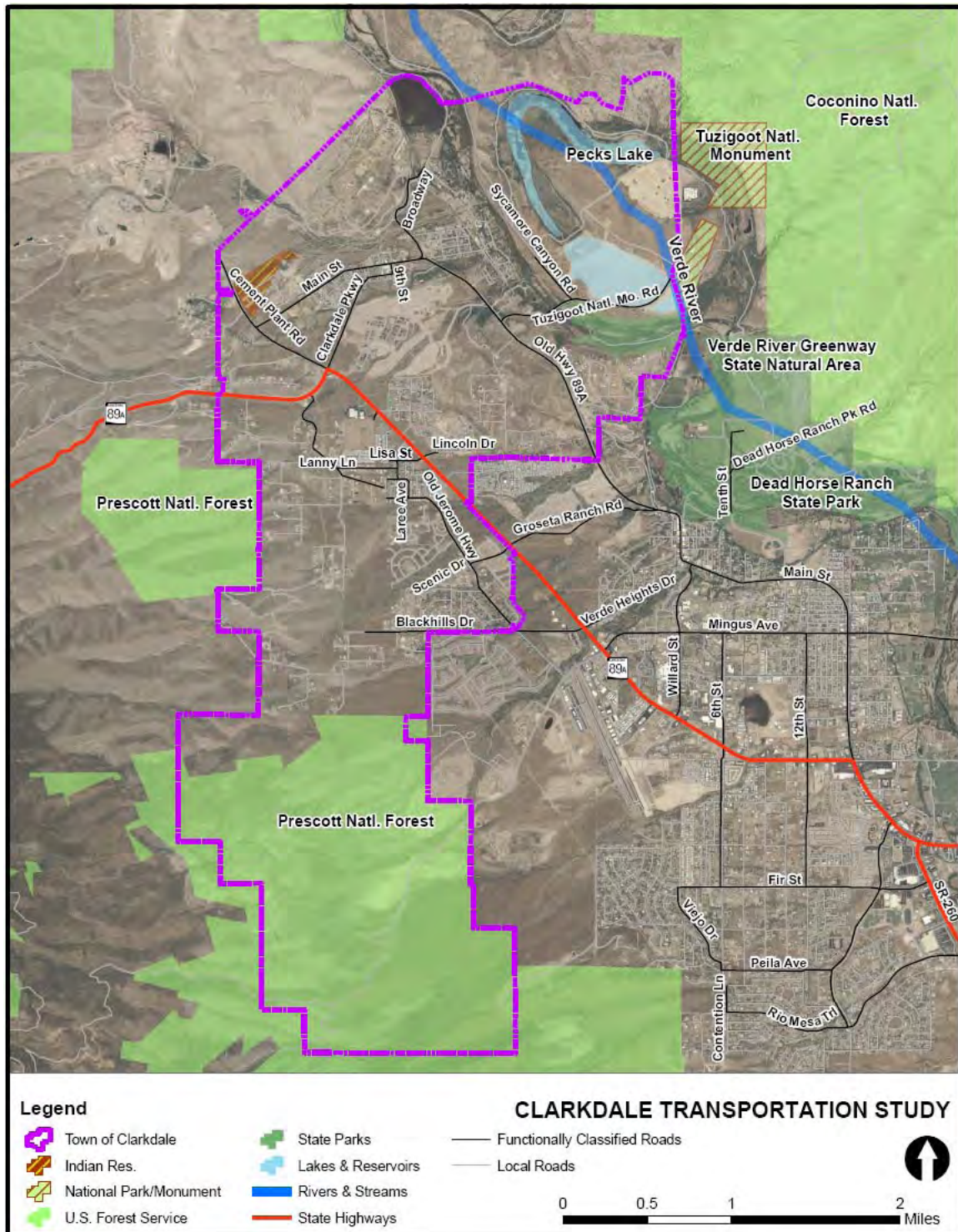


Figure 1 – Study Area

## 2 CURRENT AND FUTURE TRANSPORTATION CONDITIONS

This chapter presents data on current and future transportation conditions to support identification of needs and deficiencies. This task efficiently expands upon data and findings of the *Verde Valley Multimodal Transportation Study (VVMTS)*, which was completed in 2009.

### 2.1 Summary of Completed Plans and Studies in the Clarkdale Area

Several plans and studies that addressed transportation in Clarkdale were completed between 1999 and 2010. The documents are listed in **Table 2-1**. These plans and studies will be referred to as necessary throughout development of the Clarkdale Transportation Study.

**Table 2-1 – Regional, Local, and ADOT Plans and Programs Completed 1999 - 2010**

Title and Date		Summary
<b>Regional and Local General, Comprehensive, and Transportation Studies and Plans</b>		
Clarkdale General Plan	2002	The circulation element provides for an efficient, orderly system of streets and the full range of intermodal transportation opportunities including pedestrian, bicycle, and transit. A General Plan update is in progress in 2010. The Clarkdale Transportation Study will be incorporated as the circulation element of the update.
Clarkdale Sustainability Park, A Comprehensive Economic Development Strategy for Clarkdale White Paper	2010	The White Paper describes the concept for the Clarkdale Sustainability Park. The Park is planned to include multiple renewable energy producers, research associated with the energy and water facilities, and educational facilities. Three sites are being considered: 1) The industrial area in town that runs from near the Salt River Materials Group cement plant east to the slag reclamation facility owned by Clarkdale Metals. 2) Lands to the west of town, and south of the cement plant. Most of this area is owned by Verde Exploration, Ltd. 3) The land owned by Freeport-McMoRan Copper & Gold, which acquired the land when it bought the Phelps Dodge Corporation in 2007.
Yavapai County General Plan	2003	Plan outlines the overall principles guiding Transportation, Land Use, Open Space, and Water Resources planning for Yavapai County. Its chief transportation goals are: <ul style="list-style-type: none"> <li>• Design roadways to complement Yavapai County vision;</li> <li>• Provide for public transportation systems; and</li> <li>• Implement county-wide and community systems for both pedestrians and bicyclists</li> </ul>
State Route 260 Future Corridor Feasibility Study	2003	The purpose was to identify potential highway corridors to improve the connection between SR 89A in Clarkdale and I-17 at Camp Verde.

**Table 2 - Regional, Local, and ADOT Plans and Programs Completed 1999 – 2010  
(continued)**

Title and Date		Summary
State Route 89A Corridor Management Plan	2005-2006	The plan addressed three scenic and historic roads, one of which is the Jerome, Clarkdale, and Cottonwood Historic Road (JCCHR). The plan included strategies to protect, preserve and promote the corridor's scenic, natural, recreational, historic, cultural, and archaeological resources. Some objectives were to form an ongoing consortium and to increase marketing, way finding resources, and to build more scenic pullouts.
Verde Valley Regional Land Use Plan	2006	Plan revisits ADOT and County plans to improve vehicular access and the promotion of a comprehensive trail/pathway system throughout Verde Valley.
SR 89A Construction from Clarkdale to Cottonwood, ADOT	2008-2009	Project on SR 89A from Cement Plant Road to Black Hills Drive. Included the installation of five roundabouts, new box culvert extensions, and new pavement. The finished roadway has two lanes in each direction with a center median.
NACOG Transportation Improvement Plan, 2010-2014	2009	Clarkdale projects listed in the TIP include: <ul style="list-style-type: none"> <li>Main Street at Broadway Intersection Reconstruction – FY 2010, \$1,200,000</li> </ul>
SR 89A Pedestrian Sidewalk Project	2009	Sidewalks both sides, Cement Plant to Black Hills Road, \$1,300,000
Clarkdale Parkway Pedestrian/Bicycle Pathway Enhancement Project (Local category)	2009	On Clarkdale Parkway from First South Street to SR 89A, pedestrian and bicycle connectivity and safety project. Construction to begin by 2012, 0.5 miles of 6 foot wide walkway separated from roadway (south side only) and additional paving of roadway to accommodate bicycle lanes (north and south sides). Grant awarded by State Transportation Board in November 2009.
VVMTS, Yavapai County	2009	The VVMTS was a major update of the 1999 Verde Valley Transportation Study, including highway, transit, and other modes. The study area included the jurisdictions of Jerome, Cottonwood, Clarkdale, Sedona, Camp Verde, the Yavapai-Apache Nation, and surrounding portions of Yavapai County. The long-range plan included network modeling through 2030 for roads of regional significance including I-17, state highways, and roads on the County Regional Road System.
2010 Statewide Transportation Planning Framework Study	2010	The Framework Study recommended an alternative route west from Clarkdale.

## 2.2 Summary of Stakeholder Interviews

Stakeholder interviews were held to give stakeholders an opportunity to provide input to the Plan, and to indicate whether they confirm the study objectives and activities as presented in



**Table 1-1** and at the first TAC meeting. The stakeholders were also asked to describe additional transportation issues in the Town. A summary of stakeholder interviews that were conducted in conjunction with TAC 1 appears in **Table 2-2**, and a more complete record of the interviews appears in **Appendix A**. Stakeholder interviews were completed with representatives of U.S. Forest Service, Cottonwood Area Transit, Clarkdale Fire District, Arizona State Parks, Town of Clarkdale Community Development, and Town of Clarkdale Public Works.

Clarkdale-Jerome Elementary School District, Yavapai County, NACOG, Town of Clarkdale Police Department, Arizona Game and Fish, State Lands and BLM were also invited to participate. Stakeholder interviews with these agencies and others that may be identified may be completed during subsequent study phases.

**Table 2-2 – Comments Received from Stakeholder Interviews**

<b>Comment Category</b>	<b>Comment Summary</b>
<b>Land Use and Transportation</b>	Transportation planning and land use planning should be linked for efficiency and effectiveness in meeting transportation demand.
	The Plan should identify how to transport people and materials into and out of Clarkdale Sustainability Park (a planned development described on Page 18).
	The Clarkdale Metals property's access is constrained; alternatives should consider access with and without the proposed Industrial Road. Future plans include a partnership in which Industrial Road would be built by Clarkdale Metals on Salt River Materials Group (SRMG) land.
	Major prospective rezonings are: the SR 89A corridor toward Jerome to be rezoned from residential to commercial, and the area southwest of Old SR 89A that has had water and sewer improvements rezoned from single-family residential (R-1) to commercial.
	The Town is making its building codes "greener" (more environmentally sustainable). Transportation facilities such as maintenance sites and depots could be "greened" as a part of the same effort. It would be most beneficial to coordinate development of the building code with efforts to link land use and transportation.
<b>Access Management</b>	Old SR 89A would benefit from access management. The Town intends that the corridor be the subject of a form-based zoning code.
<b>Funding for Transportation Facilities and Programs</b>	The Plan should support future funding applications. Two key components would be transportation goals and clear descriptions of how facilities and programs would fulfill needs.
	Transit funding is uncertain.
<b>Identified Vehicular Facility Needs and Issues</b>	Tuzigoot Bridge, which accommodates about 200 automobiles per day across the Verde River, is to be maintained for walking and biking at low speeds. If the Sustainability Park were to be located on the Freeport McMoRan Land, an additional Verde River bridge would be required for vehicular traffic.
	The high volume of cement trucks on SR 89A is considered to be an ongoing issue by many people, who cite traffic flow and safety problems.
	There is a pre-plan for a park-and-ride on the north end of the site for the new fire station (described in the safety section, below). One function of the park-and-ride might be as a shuttle stop for a tourist bus to Jerome.



**Table 2-2 – Comments Received from Stakeholder Interviews (continued)**

<b>Comment Category</b>	<b>Comment Summary</b>
<b>Safety of People and Property</b>	There are some unsafe conditions for children arriving at and leaving school, whether the children are riding or walking.
	Improved access for fire vehicles would result from appropriate location and design of roadways. Improved access would then improve response times.
	Within six years the fire station will be moved to the southwest corner of SR 89A where the route itself turns south.
	The planning documents should include all available safety/crash records for the roadway network. In particular, perceptions of safety problems between Clarkdale and Jerome may not fit the reality.
<b>Relationship to the Natural Environment</b>	There are various impacts on Tuzigoot National Monument from the volume of visitation (48,000 to 60,000 vehicles yearly).
	Transportation facilities could be related to impacts on the Verde River including runoff and invasive species.
	On National Forest lands, three plan-related issues are: retaining the wild character of forest lands, especially where adjacent to development; trail safety; and visual attractiveness.
<b>Pedestrian and Bicycle Issues</b>	The trails plan proposes a trail system with two types of connectivity: trails well connected to one another, and those having intermodal connections. The trails plan should be implemented.
	Bicycle planning has considered both on-road and off-road facilities (Verde Valley Open Space Plan).
	Sidewalks should be constructed on the new portions of SR 89A, planned via a partnership between the Town and the City of Cottonwood.
<b>Transit Issues</b>	Cottonwood Area Transit (CAT) and the Town could work together to make Lisa Street and Centerville Road appropriate for buses, with regard to road geometry, signage, sight distances, etc. The main disadvantage of putting buses on neighborhood streets is the noise of diesel buses.
	Transit ridership is likely to remain high throughout the challenging economic times. As the economy recovers, some communities' past experiences would indicate that many of those riders could be retained.
<b>Railroad</b>	The Arizona Central Railroad from Clarkdale has freight operations on the Clarkdale Arizona Central Railroad to Drake and excursion operations on the Verde Canyon Railroad to Perkinsville. Previous study findings regarding capacity improvements to accommodate more freight into and out of the Salt River Materials Group (SRMG) cement plant may be made available to this transportation study.

## **2.3 Land Use**

In 1911-1912, William A. Clark developed the railroad and the new Clarkdale town site to provide both transportation and a community for workers of the United Verde Copper Company. Broadway (now Old SR 89A) was the main roadway connecting to the town site. Other factors in planning the town site were the placement of the smelter, the mine buildings, and worker housing, on mostly hilly terrain with the Verde River to the east. When the Town incorporated in 1957, the original incorporated area was the old Clarkdale town site at the northern end of the present-day Town. As Clarkdale has grown, the roadway network has continued to be shaped and constrained by the rugged terrain and the Verde River.

The terrain and drainage patterns have resulted in development of neighborhoods that each connect either to Old SR 89A or modern SR 89A. Those two major highways are parallel and only about a mile apart, yet the newer neighborhoods adjacent to the roads were divided by hills and washes. In the past few years, the Town has given high priority to additional roads and trails to connect neighborhoods.

### **2.3.1 Current Land Use**

This general description of current land use indicates the major land use patterns as they currently relate to the transportation system. **Figure 2, Zoning Map (2007)**, illustrates this discussion of current land use. Note that a zoning map distinguishes areas where various land uses are allowed, including areas already developed and areas currently vacant. In addition, when rezoning occurs, previous land uses may continue as nonconforming uses. This description provides information that updates the map and includes comments on some particularly densely developed areas as well as vacant areas.

#### **2.3.1.1 Commercial**

The bulk of the commercially zoned land is located in an inverted “U” shaped area, of which the spine is formed by SR 89A, Clarkdale Parkway, Main Street, and Old SR 89A. Some commercial land is also along SR 89A as it continues to Jerome. The Town is preparing to rezone lands inside historic downtown Clarkdale to a recently-adopted Town Center Commercial category. Southwest of Old SR 89A and Centerville Road the Town is planning to rezone lands to commercial. Those lands are adjacent to Old SR 89A and they recently received water and sewer line extensions.

#### **2.3.1.2 Industrial**

Industrial land use is largely in one contiguous area north of the historic downtown. Industrial land immediately to the north outside Town limits also puts traffic on roadways in the Town. The following is a discussion of the major industrial land users and their impacts on the current transportation system.

**Salt River Materials Group (SRMG) Cement Plant.** The SRMG Cement Plant is an enterprise of the Salt River Pima-Maricopa Indian Community on Cement Plant Road northwest of Town. It is an important employer of Town residents and it is a principal user of both SR 89A and the

Arizona Central Railroad. The cement truck traffic was one important influence on the design of the recent upgrade of SR 89A.

**Clarkdale Metals Corporation.** Clarkdale Metals Corporation, a project of Searchlight Minerals Corporation, has 194 acres, zoned industrial, inside the Town, with 400 more acres to the north to be annexed as described in **Section 2.3.3**. Clarkdale Metals is currently accessed from North Broadway, Luke Lane, and Industrial Road. Recently, SRMG and Clarkdale Metals have begun active discussion, including possible timing, concerning the construction of Industrial Road, to be financed by Clarkdale Metals over some SRMG land. The proposed collector roadway would serve the industrial traffic and would end at Cement Plant Road, from which there would be direct access to SR 89A.

**Arizona Central Railroad.** The Arizona Central Railroad, which shares ownership and infrastructure with the Verde Canyon excursion train, is a neighbor of Clarkdale Metals in the same large Industrial zoning district.

Currently the primary customer on the line is Phoenix Cement. Three trips per week are made on GP-7 locomotives. Inbound cars are loaded with coal and outbound cars are loaded with cement. There has been discussion of upgrading the track to carry more commercial cargo and providing a transfer to rail in the Phoenix area, but there are no specific plans for this.

A *wikipedia* entry for Arizona Central Railroad includes the following:

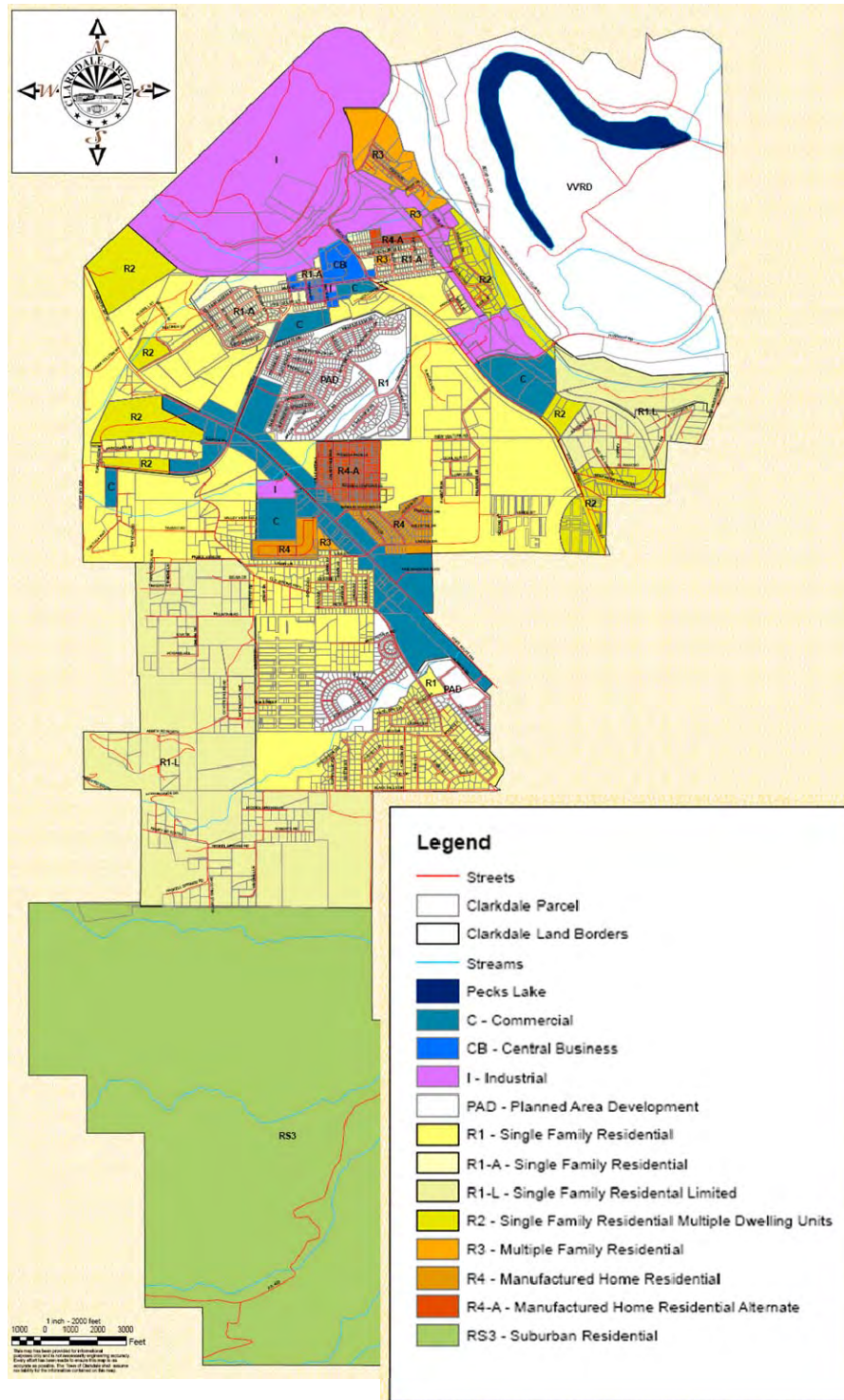
The Arizona Central Railroad (AZCR) is an Arizona short line railroad that operates from a connection with the BNSF Railway at Drake. The AZCR runs 37.8 miles (60.8 km) from Drake to Clarkdale, Arizona. An excursion train also runs on the line through Verde Canyon and is operated by the same owners under the Verde Canyon Railroad. The AZCR is owned by The Western Group.

The AZCR handles 1,500 cars per year (1996 figure) of inbound coal to the Phoenix Cement Company and shipping outbound cement and copper.

The Verde Canyon Railroad carries 100,000 passengers per year (2005 figure).

On April 14, 1989, the Santa Fe Railway sold the Clarkdale branch to the Durbano family (the Western Group). The new railroads were named the Arizona Central Railroad for freight and the Verde Canyon Railroad for passenger service. Passenger service resumed in November 1990. In March 2005 the Verde Canyon Railroad celebrated its one-millionth passenger. The Verde Canyon Railroad has a depot and the John Bell Railroad Museum located in Clarkdale.

**CTI, Inc.** is a large bulk hauler trucking company, with the Cement Plant as a key customer. CTI has a truck terminal in Clarkdale in the same large Industrial zoning district. CTI's facilities in Clarkdale also include extra terminal services such as storage silos and portable dry storage.



**Figure 2 – Town of Clarkdale Zoning**

Source: Town of Clarkdale Zoning Map (2007)

### **2.3.1.3 Residential**

Eight residential zoning categories comprise the remainder of the Town's land. There are four single-family housing districts at various densities, two multiple family housing districts, and two manufactured home districts. Each of the eight residential district types currently have some development, while overall about half the residential land remains undeveloped. RS3 (Suburban) zoning is assigned to the large United States Forest Service (USFS) Prescott National Forest tract (1,854 acres) that is within the Town. Federal ownership/jurisdiction by USFS supersedes local regulations, so there will be no housing on that tract for the foreseeable future.

### **2.3.2 In-Progress Developments**

There are currently two developments being constructed in Clarkdale: Mountain Gate and the Highlands.

Mountain Gate has been planned to be a large residential subdivision comprised of 606 units, of which 488 units were detached houses and 118 units were townhouses. The development is located at the northeast quadrant of the intersection of SR 89A and 11<sup>th</sup> Street. About one-third of its current 606 homes were built by the end of 2007. In early 2008 the developer halted construction because of financial difficulties and construction has not resumed. The Town (using bond financing associated with the development), has taken over the completion of Centerville Road. The developer originally agreed to the construction of this major collector between SR 89A and Old SR 89A.

The Highlands is a 240-lot residential development that was approved in March 2006. It is located both east and west of Old Jerome Highway, between Mescal Spur Road and south of Scenic Drive. There is an associated 11-acre neighborhood commercial center at Scenic Drive and Old Jerome Road. To date, approximately 40 lots have been sold. Some infrastructure has been completed such as some paved roadways, grading to prepare other infrastructure, and drainage ways. During the economic downturn it has not been feasible to continue implementation of a new wastewater treatment plant that would have been a partnership between the Town and the developer. The lack of a wastewater solution has prevented any home construction to this point.

### **2.3.3 Future Land Use**

The Town of Clarkdale is currently in the process of updating its General Plan. The updated Plan will include a new Land Use Plan Map that will depict those changes that occurred between 2002 and 2010. The Map will also show intended changes in land use that may occur between 2010 and 2020. Town officials have shared information regarding potential future developments that will be considered when creating the future Land Use Plan Map. The major future land developments being considered by the Town are:

- Clarkdale Metals and SRMG (SRMG, which is outside the Town, would not show on the Land Use Plan Map, but its influence would be described in the General Plan update);
- Post-reclamation use of much Clarkdale Metals Corporation land (although the development itself would be post-2020);
- Verde Valley Ranch Development;

- Clarkdale Sustainability Park.

### **Clarkdale Metals and SRMG**

The project is described in a press release dated April 19, 2010 as “a reclamation project to recover precious and base metals from the reprocessing of slag produced from the smelting of copper ore mined at the United Verde Copper Mine in Jerome, Arizona.” The same press release announced that “the Company has begun the transition from a research and development focus to an operational status” at the site. There are 400 acres of land owned by Clarkdale Metals, which currently operates outside of Clarkdale Town limits to the north, with access off of Luke Lane. The Town intends to annex the 400-acre property in the near future. The surrounding area is already an established industrial zone within the Town. The Town estimates that Clarkdale Metals will reach its operating peak by the year 2015, and will employ approximately 100 additional workers.

Currently, the only road that can support truck traffic in the industrial area is SR 89A. Therefore, the expanded Clarkdale Metals and SRMG will be competing for the SR 89A corridor with the trucks from SRMG and Cottonwood’s growing traffic congestion, which impacts Clarkdale’s transportation system. As mentioned in the discussion of Clarkdale Metals Corporation, the construction of Industrial Road is planned. The proposed collector roadway would serve the industrial traffic and would end at Cement Plant Road, from which there would be direct access to SR 89A. Connections are desirable from the planned industrial road to the 11<sup>th</sup> Street commercial area along Bitter Creek and the Clarkdale Parkway in order to provide additional access.

### **Post-reclamation use of Clarkdale Metals Corporation Land**

At least 600 homes will eventually be built to the north. The homes would be a mix of single-family and multi-family homes. There is planned 250 acres of commercial and industrial land between the mountain development and the existing town. It should also be noted that the mixed-use, more northerly development on the northern part of the Clarkdale Metals land could occur at the same time as the metals reclamation on the southern part of the land.

The Town anticipates additional traffic from the post-reclamation Clarkdale Metals land development. This may include a possible extension of 11th Street as far as one mile to the north of Main Street, including an intersection with the prospective Industrial Road, as mentioned above.

### **Verde Valley Ranch Development**

The designation of “VVRD” on almost 1,000 acres in northeast Clarkdale is the proposed Verde Valley Ranch Development, originally a mixed-use development agreement between Yavapai County and the former property owner. The Town assumed that agreement when the tract was annexed in 1991, and currently the tract is zoned PAD. Under the agreement, the current owner, Freeport McMoRan, could place 900 homes and 52 acres of commercial properties on the VVRD tract. There has also been much discussion about the potential for the tract to be the home of the Clarkdale Sustainability Park, which is described below, instead of the mixed-use development.

### Clarkdale Sustainability Park

In terms of importance to travel demand and effects upon the transportation network, the Park would be a major employer and would receive materials and send products on the transportation network.

Clarkdale Sustainability Park is envisioned as a traditional master-planned industrial and commercial park; however, its facilities would be occupied by private and public interdependent enterprises dedicated to economic, social, and environmental sustainability. The Park could provide more than enough energy for the Town of Clarkdale, and will introduce new means of disposing waste. The facilities at the Park are expected to feature waste-to-energy recycling, biodiesel facility, solar energy array, potable reuse facility, an interpretive center, and nature trails. The Park could also serve as an educational opportunity for other governments interested in sustainability for their citizens.

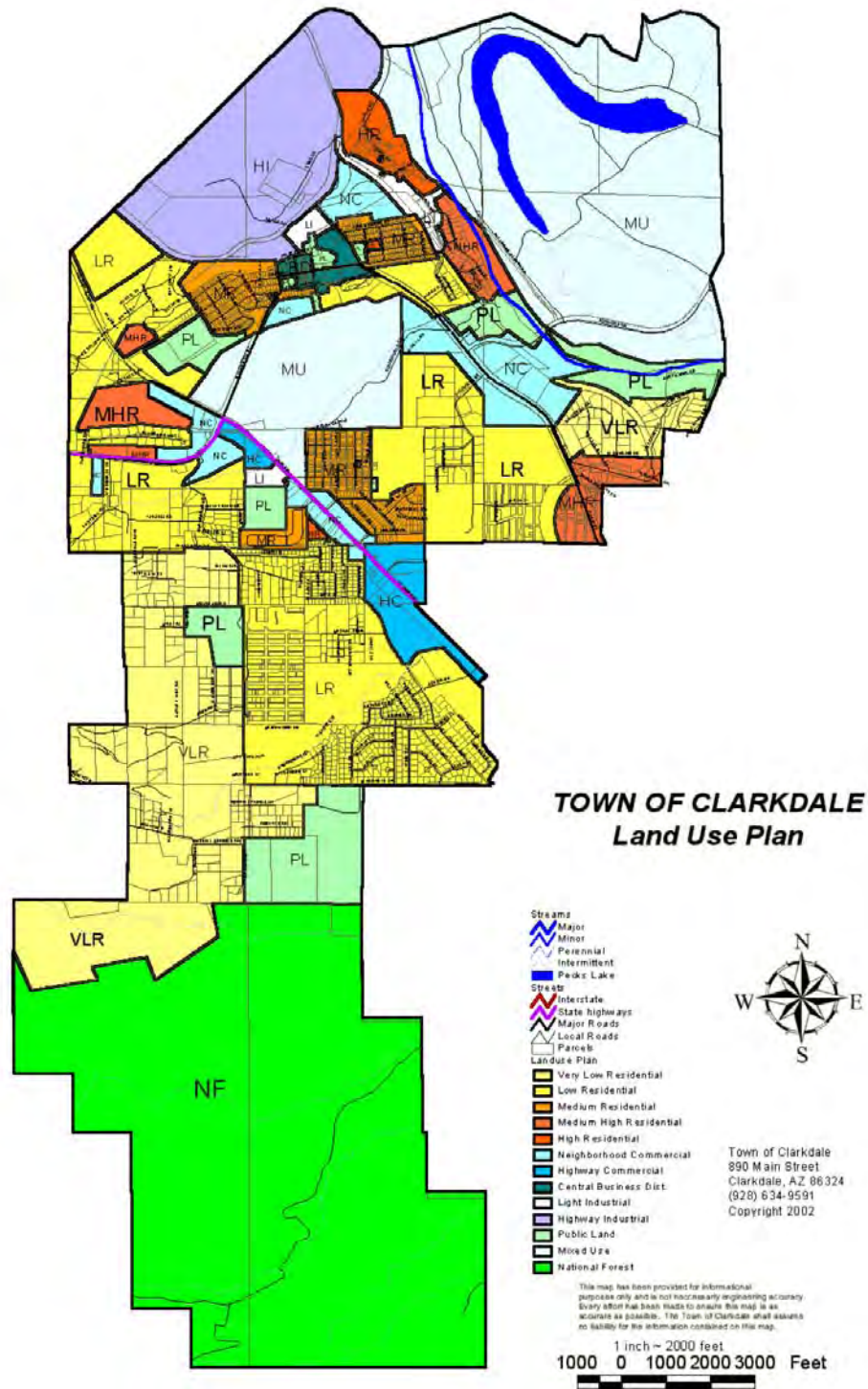
Three locations are being considered to house part or all of the Sustainability Park (according to the Clarkdale Sustainability Park White Paper, dated March 16, 2010), including:

1. The industrial area in town that runs from near the Salt River Materials Group cement plant east to the slag reclamation facility owned by Clarkdale Metals;
2. Lands to the west of Town, and south of the cement plant (most of this area is owned by Verde Exploration, LTD); and
3. The land owned by Freeport-McMoRan Copper and Gold, which acquired the land when it bought Phelps-Dodge Corporation in 2007. Above, this land is referred to as the Verde Valley Ranch Development (VVRD) tract.

The location of the Park will have to take into consideration additional truck and commercial traffic, which could impact Clarkdale's circulation plan.

The Town's Land Use Plan Map, depicting future land use in the 2002 General Plan, is shown as **Figure 3**. The future developments described above may be represented on the updated land use map in the General Plan update.





**Figure 3 – Land Use Plan (2002)**

Source: Town of Clarkdale General Plan, 2002

### 2.3.4 Demographics and Socioeconomics

This section discusses current and future socioeconomic data that were used to develop a transportation model for the Clarkdale area. The 2008 Verde Valley Travel Demand Model was developed for the VVMTS. In the development of the transportation model for the entire Verde Valley area, the region was divided into traffic analysis zones (TAZs), which are the building blocks of a geographic framework used to relate the beginning and ending points of trips to the roadway network. Each TAZ is devised by considering how trips flow from local roadways onto the major regional roadway network. General guidelines for the development of TAZs were:

- A TAZ should be an appropriate size, taking into account the different densities of development in the region;
- In densely developed areas, a small TAZ may account for a large number of trips;
- A TAZ should be an appropriate shape. One or more roadways that connect to the major regional roadway network should be within the TAZ;
- The outer edges of the TAZ are often barriers to travel, such as a steep slope or a stream not crossed by a bridge.

The Clarkdale area comprises ten TAZs, as shown in **Figure 4**. These are numbered as TAZs 162-171.

### 2.3.5 Housing and Employment Density

The following is a general description of housing and employment density in the Clarkdale area. There are 300 to 600 housing units per square mile in the following areas:

- Historic Clarkdale;
- Within the “U” shaped area (defined by SR 89A, Clarkdale Parkway, Main Street, and Old SR 89A) inside SR 89A and Old SR 89A;
- Older neighborhoods southwest of SR 89A, zoned R1 or more intensely.

Some existing neighborhoods south of the Highlands have 1,000 or more housing units per square mile.

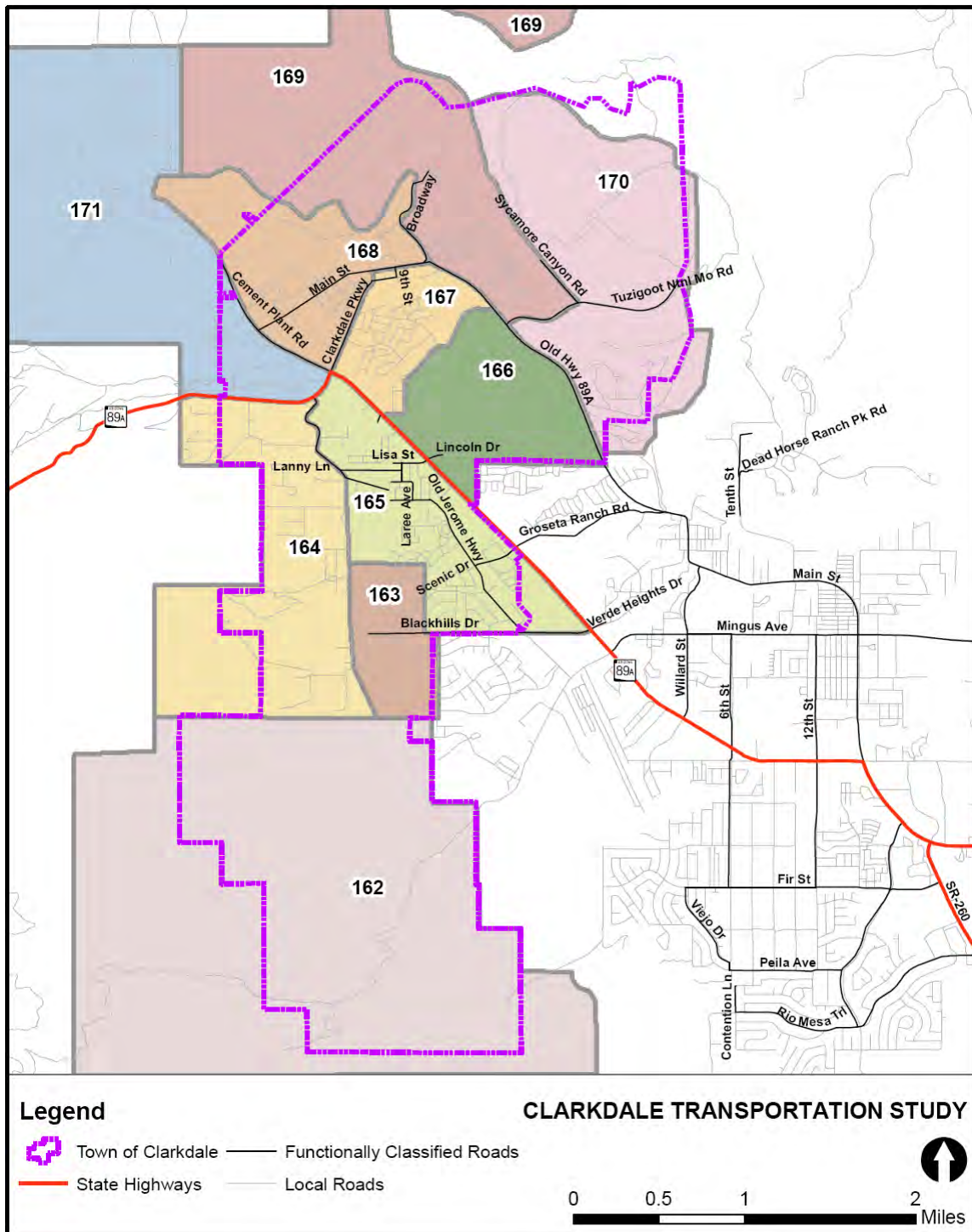
The rest of the Town currently has less intense development. The large R1-L area in central west Clarkdale is required to have lot sizes of at least one acre, and currently there is scattered development in the area.

The establishments with the largest number of jobs in or adjacent to Clarkdale are the Salt River Materials Group cement plant adjacent to the northwest Town and the Yavapai College Verde Campus, which is the community college on Black Hills Drive. Most of the other relatively large employers are also in the areas outside the “U,” including, Verde Canyon Railroad / Arizona Central Railroad, Mold In Graphics, CTI Trucking, Clarkdale-Jerome Elementary School District, most of the Town of Clarkdale facilities, and Bent River Machine. Within the “U” there is very little employment.



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**Figure 4 – TAZ Structure in Clarkdale Area**

Source: Verde Valley Travel Demand Model, Verde Valley Multimodal Transportation Study

## 2.3.6 Current demographics and socioeconomics

### 2.3.6.1 Existing Population and Housing Units

The population of Clarkdale in 2009 was approximately 4,020 persons, according to July 1, 2009 population estimates from the Arizona Department of Commerce, Population Statistics Unit. Population growth trends are shown in **Table 2-3**. Historically, growth has occurred at a 3.18% percent compound annual growth rate between 1990 and 2009.

**Table 2-3 – Population Growth in Clarkdale**

Area	1990 Census	2000 Census	2009 Estimate*	Compound Annual Growth Rate, 1990-2009
Clarkdale	2,216	3,422	4,020	3.18%

\*Source: Arizona Department of Commerce, Population Statistics Unit

In the VVMTS, transportation modeling was done for a 2007 base year, which is still applicable for the purposes of this Transportation Study. The 2007 population projection for Clarkdale was 3,783 persons. Housing data for 2007 was compiled using Census 2000 as a baseline inventory and then updating the information to January 1, 2007, using data on the total number of housing unit completions per year. New housing units completed in subdivisions were verified by using aerial photographs. 2007 estimates for total housing units and occupied housing units are shown in **Table 2-4**.

**Table 2-4 – 2007 Housing Units by Traffic Analysis Zone**

TAZ	2007 Total Housing Units	2007 Occupied Housing Units
162	0	0
163	80	74
164	67	62
165	546	508
166	394	366
167	175	163
168	234	218
169	215	200
170	99	92
171	21	19
<b>Totals</b>	<b>1,831</b>	<b>1,702</b>

Source: Verde Valley Multimodal Transportation Study (2009), page 99.

NOTE: Traffic Analysis Zones are geographic subdivisions of the study area that are used in the database of the travel forecasting model. Similar land uses, physical barriers, or major transportation corridors define the zone boundaries.

### 2.3.6.2 Existing Employment

The 2007 employment data was developed based on data from InfoUSA, a commercial database, with adjustments made by the project team. The InfoUSA information included the latitude and longitude of the employer's geographic location. GIS methods were used to assign each employer to the correct TAZ. Supplemental information came from the Chamber of Commerce concerning new employment establishments. In some cases those establishments were contacted directly. Employment data for public service employees was developed from data in the report "Economy of Clarkdale (January 2008)", by the Arizona Department of Commerce. These data are summarized in **Table 2-5**.

**Table 2-5 – 2007 Number of Employees by Employment Sector**

TAZ <sup>1</sup>	Retail	Service	Office	Public	Industrial	Lodging	School	College	Casino	TOTAL
162	0	0	0	0	0	0	0	0	0	0
163	0	0	5	0	0	0	0	138	0	143
164	0	0	5	0	0	0	0	0	0	5
165	38	95	22	25	82	0	0	50	0	312
166	1	4	0	0	5	0	0	0	0	10
167	0	9	0	0	0	0	0	0	0	9
168	1	75	0	119	0	0	56	0	0	251
169	0	3	0	0	37	0	0	0	0	40
170	0	0	0	0	0	0	45	0	0	45
171	0	48	3	0	160	0	0	0	0	211
<b>Totals</b>	<b>40</b>	<b>234</b>	<b>35</b>	<b>144</b>	<b>284</b>	<b>0</b>	<b>101</b>	<b>188</b>	<b>0</b>	<b>1026</b>

Source: Verde Valley Multimodal Transportation Study (2009), pages 114-115; InfoUSA; and Arizona Department of Commerce, and Kimley-Horn

<sup>1</sup>Traffic Analysis Zones are geographic subdivisions of the study area that are used in the database of the travel forecasting model. Similar land uses, physical barriers, or major transportation corridors define the zone boundaries.

## 2.3.7 Future demographics and socioeconomics

### 2.3.7.1 Future Conditions for Population and Housing

Population and housing forecasts were prepared for 2015 and 2030. The projected future housing unit distribution was tabulated for each TAZ in the Clarkdale area. A summary of the projected housing units and the projected occupied housing units is shown in **Table 2-6**.

**Table 2-6 – Projected 2015 and 2030 Housing Units and Occupied Housing Units**

TAZ <sup>1</sup>	Housing Units		Occupied Housing Units	
	2015	2030	2015	2030
162	5	10	5	9
163	85	90	79	84
164	77	90	72	84
165	582	620	541	577
166	428	495	398	460
167	265	382	246	355
168	239	284	222	264
169	220	230	205	214
170	99	99	92	92
171	25	30	22	27
<b>Town of Clarkdale</b>	<b>2,025</b>	<b>2,330</b>	<b>1,882</b>	<b>2,166</b>

Source: Verde Valley Multimodal Transportation Study (2009)

<sup>1</sup>Traffic Analysis Zones are geographic subdivisions of the study area that are used in the database of the travel forecasting model. Similar land uses, physical barriers, or major transportation corridors define the zone boundaries.

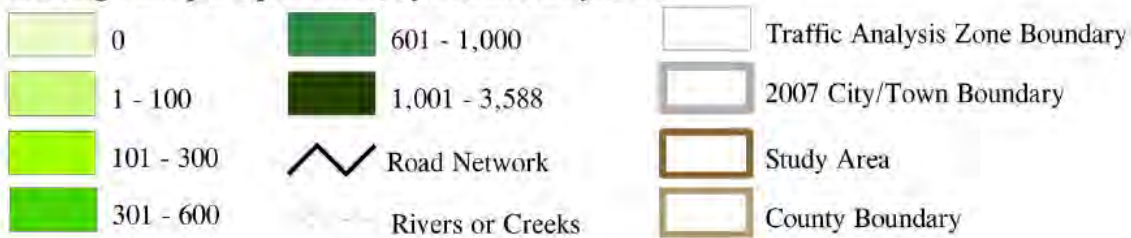
Housing density was projected to be the highest in the southern portion of the Clarkdale area, as shown in **Figure 5**. This area is subject to redesignation in the amended General Plan. A factor of 2.65 was used to convert population and households to persons per household. Based on information from Town staff, the Old Town area of Clarkdale now has the highest density. The southern portion of Clarkdale is subject to redesignation in the amended General Plan currently being prepared.

Projections of housing units for each TAZ for this study were based upon the general plans, zoning, and approved subdivisions in each community. Growth in each TAZ between the year 2000 and 2007 was confirmed using parcel and subdivision maps, aerial photographs, and building permit information. The projection of the 2000-2007 trends into the future was aided by comparing the number of homes already built in various neighborhoods with the buildout capacity of neighborhoods and specific subdivisions, using data from the Yavapai County Assessor's Office.





**Housing Units per Square Mile, by Traffic Analysis Zone**



Source: Verde Valley Multimodal Transportation Study

**Figure 5 – 2030 Housing Unit Density**

### 2.3.7.2 Future Conditions for Employment

The projected employment for Clarkdale is approximately 1,011 employees in 2015 and 1,255 employees in 2030. The employment distribution for each TAZ in Clarkdale is shown in **Table 2-7** and **Table 2-8** for 2015 and 2030, respectively. The Salt River Materials Group Cement Plant, located in an industrial area north of Clarkdale, is a major employer. They have indicated plans to add more employees by 2015. A notable new industrial employer will be the Clarkdale Metals operation in Clarkdale, where by 2015 there are to be 100 industrial workers reclaiming metals from the former mining slag pile, and by 2030 the reclamation workers will be finished, followed by 100 industrial workers on the reclaimed land. **Figure 6** shows a comparison of 2007, 2015 and 2030 employment.

**Table 2-7 – 2015 Number of Employees by TAZ**

TAZ <sup>1</sup>	Retail	Service	Office	Public	Industrial	Lodging	School	Colleges	Casino	TOTAL
162	0	0	0	0	0	0	0	0	0	0
163	0	0	5	0	0	0	0	175	0	180
164	0	0	5	0	0	0	0	0	0	5
165	44	41	25	28	94	0	0	62	0	294
166	1	4	0	0	5	0	0	0	0	10
167	0	9	0	0	0	0	0	0	0	9
168	1	88	0	0	119	35	69	0	0	312
169	0	4	0	0	142	0	0	0	0	146
170	0	0	0	0	0	0	55	0	0	55
171	0	57	3	0	308	0	0	0	0	368
Totals	46	203	38	28	549	35	124	237	0	1260

Source: Verde Valley Multimodal Transportation Study (2009), pages 121-122.

<sup>1</sup>Traffic Analysis Zones are geographic subdivisions of the study area that are used in the database of the travel forecasting model. Similar land uses, physical barriers, or major transportation corridors define the zone boundaries.

**Table 2-8 – 2030 Number of Employees by TAZ**

TAZ <sup>1</sup>	Retail	Service	Office	Public	Industrial	Lodging	School	College	Casino	TOTAL
162	0	0	0	0	0	0	0	0	0	0
163	0	0	5	0	0	0	0	246	0	251
164	0	0	5	0	0	0	0	0	0	5
165	56	54	30	33	117	0	0	86	0	376
166	1	4	0	0	5	0	0	0	0	10
167	0	9	0	0	0	0	0	0	0	9
168	1	116	0	119	0	35	97	0	0	368
169	0	5	0	0	153	0	0	0	0	158
170	0	0	0	0	0	0	78	0	0	78
171	0	74	4	0	373	0	0	0	0	451
Totals	58	262	44	33	648	35	175	332	0	1587

Source: Verde Valley Multimodal Transportation Study (2009), pages 128-129.

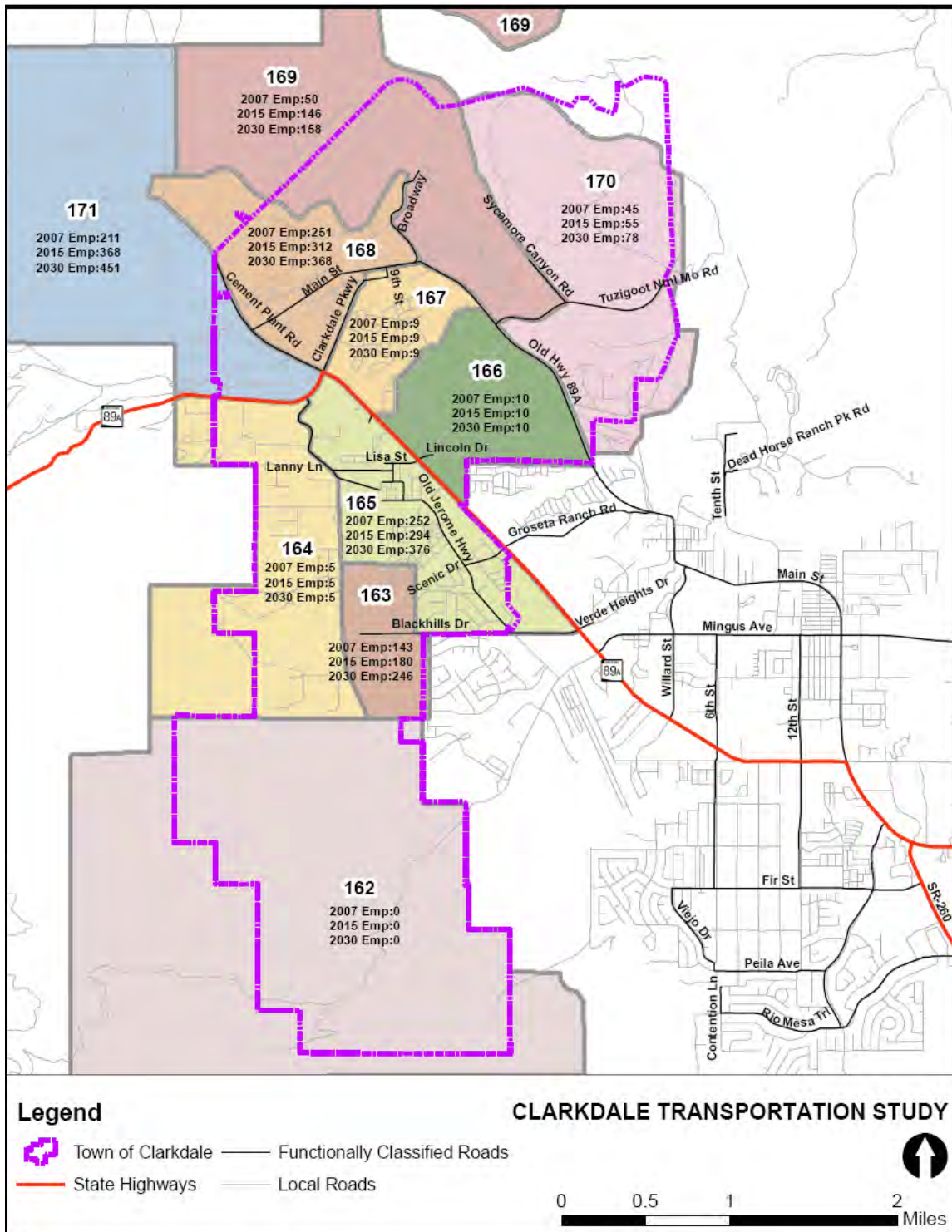
<sup>1</sup>Traffic Analysis Zones are geographic subdivisions of the study area that are used in the database of the travel forecasting model. Similar land uses, physical barriers, or major transportation corridors define the zone boundaries.





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**Figure 6 – Comparison of 2007, and Projected 2015 and 2030 Employment**

## 2.4 Streets and Roadways

This section summarizes current and future roadway conditions for the purpose of identifying current and future needs and deficiencies. Subsequent sections describe traffic volumes data and conditions for alternative modes including bicycle, pedestrian, and transit.

Specifically, this section addresses:

- Street inventory;
- Traffic control;
- Functional classification;
- Level of Service;
- Crash history.

### 2.4.1 Street Inventory

**Table 2-9** presents the roadway inventory for Clarkdale streets. The road system inventory for the major roadways within the Clarkdale area includes:

- Street segment length;
- Number of lanes;
- Curb, gutter and sidewalk.

**Table 2-9 – Existing Road System Inventory**

Road	From	To	Length (Miles)	Lanes	Curb / gutter	Side-walk
1 <sup>st</sup> South St	Clarkdale Parkway	9 <sup>th</sup> St	0.15	2	Yes	Yes
9 <sup>th</sup> St	1 <sup>st</sup> South St	Main St	0.06	2	Yes	Yes
Blackhills Dr	Evergreen Rd	Gerry Sue Dr	0.06	2	No	No
Blackhills Dr	0.0121mi W of Gerry Sue Dr	0.04 mi W of Sky Dr	0.15	2	Yes	No
Blackhills Dr	0.04 mi W of Sky Dr	Old Jerome Hwy	0.53	2	Yes	Yes
Broadway	Fiesta St	2 <sup>nd</sup> North St	0.58	2	No	No
Broadway	2 <sup>nd</sup> North Street	Main Street	0.69	2	Yes	Yes
Broadway	Main St	Tuzigoot National Monument Rd	0.59	2	No	No
Broadway	Tuzigoot National Monument Rd	Clarkdale / Cottonwood town boundary	1.03	2	No	No
Clarkdale Pkwy	0.030mi NE of SR 89A	1 <sup>st</sup> South St	0.56	2		Planned
Lanny Ave	Richard St	Lisa Dr	0.11	2	No	No

**Table 2-9 – Existing Road System Inventory (continued)**

Road	From	To	Length (Miles)	Lanes	Curb / gutter	Side-walk
Lanny Ln	Lanny Ave	Old Jerome Hwy	0.36	2	No	No
Laree Ave	Reta St	Richard St	0.11	2	No	No
Lisa St	Lanny Ln	State Highway 89A	0.15	2	No	No
Main St	Broadway	9 <sup>th</sup> St	0.17	2	Yes	Yes
Main St	9 <sup>th</sup> St	16 <sup>th</sup> St	0.51	2	Yes	Yes
Main St	16 <sup>th</sup> St	Cement Plant Rd	0.89	2	No	No
Old Jerome Hwy	Black Hills Dr	Rogers Pl	0.99	2	No	No
Old Jerome Hwy	Rogers Pl	Deborah Dr	0.66	2	Yes	Yes
Old Jerome Hwy	Lanny Ln	State Highway 89A	0.63	2	No	No
Cement Plant Rd	0.041mi northwest of SR 89A	Industrial(unbuilt) Rd	0.92	2	No	No
Reta St	Old Jerome Hwy	Laree Ave	0.11	2	Yes	No
Richard St	Laree Ave	Lanny Ave	0.07	2	No	No
Scenic Drive	Old Jerome Highway	Chevelon Canyon Dr	0.25	2	Yes	Yes
Scenic Drive	Chevelon Canyon Dr	State Hwy 89A			Yes	No
Sycamore Canyon Rd	Tuzigoot National Monument Rd	Pecks Lake Rd	0.33	2	No	No
Tuzigoot National Monument Rd	Broadway	Sycamore Canyon Rd	0.46	2	No	No
Tuzigoot National Monument Rd	Sycamore Canyon Rd	0.016 mi W of Cottonwood urban boundary	0.69	2	No	No
US 89A	Groseta Ranch Rd	Desert Sky Dr	2.25	4	No	No

Source: Northern Arizona Council of Governments Highway Performance Measurement System (HPMS) Records, 2010, and aerial map review by Kimley-Horn

### Traffic Control

The traffic in the Town of Clarkdale is controlled using stop signs and roundabouts. There are currently no traffic signals in the Town. There are five roundabouts on SR 89A, of which three are in Clarkdale; at Cement Plant Road/Clarkdale Parkway, Valley View/Centerville Road, and Lisa Drive/Lincoln Drive.

Clarkdale also has a roundabout Mountain Gate Boulevard and Clarkdale Parkway, and a roundabout at Scenic Drive and Alamos Drive. A future roundabout is scheduled to be constructed in 2013 at Main Street and Broadway.

The roundabouts for the SR 89A projects were designed to handle large trucks with wheel bases of 67-feet, as well as automobiles and pedestrian traffic.

## 2.4.2 Functional Classification

Roadway functional classification groups roads that have similar design and traffic characteristics. One functional class differs from another according to the degree of access and mobility. Collector and local streets provide land access and carry local traffic to the neighborhoods and distribute traffic to the arterials. Arterial streets provide mobility over long distances with minimal access to adjoining properties. **Table 11** summarizes the federal functional class of each roadway that is functionally classified in Clarkdale. Most of the roads in **Table 11** are categorized as urban collector streets. Broadway, from Tuzigoot National Monument Road to the Clarkdale/Cottonwood town boundary, is classified as an urban minor arterial street. The 2002 General Plan discusses a functional classifications used by the Town, consisting of arterial, collector, local, rural collector, rural local and alley streets. Where noted in the General Plan, these functional classifications are shown in **Table 11** for arterial, collector, and rural collector streets. The town of Clarkdale, in Chapter 12 of the Town Code (Subdivision Regulations), provides roadway standards for Minor Subdivisions, including residential collector streets, residential local streets, rural collector streets, rural local streets, rural lanes, and private streets.

**Table 2-10 – Functional Classification**

Road Segment	From	To	Federal Functional Classification	Clarkdale 2002 General Plan Functional Classification
1 <sup>st</sup> South St	Clarkdale Pkwy	9 <sup>th</sup> St	Urban Collector	
9 <sup>th</sup> St	1 <sup>st</sup> South St	Main St	Urban Collector	
Bent River Ranch Road				Collector
Black Hills Dr	Evergreen Rd	Gerry Sue Dr	Urban Collector	Collector
Black Hills Dr	0.0121 miles west of Gerry Sue Dr	Old Jerome Hwy	Urban Collector	Collector
Broadway	Main St	Fiesta St	Urban Collector	
Broadway	Main St	Tuzigoot National Monument Rd	Urban Collector	Arterial
Broadway	Tuzigoot National Monument Rd	Clarkdale/Cottonwood town boundary	Urban Minor Arterial	
Cement Plant Road				Arterial
Clarkdale Pkwy	0.030mi northeast of SR 89A	1 <sup>st</sup> South St	Urban Collector	
Haskell Springs Road				Rural Collector

**Table 2-10 – Functional Classification (continued)**

Road Segment	From	To	Federal Functional Classification	Clarkdale 2002 General Plan Functional Classification
Lanny Ave	Richard St	Lisa Dr	Urban Collector	
Lanny Ln	Lanny Ave	Old Jerome Hwy	Urban Collector	
Laree Ave	Reta St	Richard St	Urban Collector	
Lincoln Dr	State Highway 89A	Sunrise Dr	Urban Local	
Lisa St	Lanny Ln	State Highway 89A	Urban Local	Collector
Main St	Broadway	9 <sup>th</sup> St	Urban Collector	Collector
Main St	9 <sup>th</sup> St	Cement Plant Rd	Urban Collector	
Mescal Spur Road				Rural Collector
Minerich Road				Rural Collector
Old Jerome Hwy	Blackhills Dr	Deborah Dr	Urban Collector	Collector
Old Jerome Hwy	Lanny Ln	State Highway 89A	Urban Collector	Collector
Phoenix Cement Company Rd	0.041mi northwest of SR 89A	Industrial (unbuilt) Rd	Urban Collector	
Reta St	Old Jerome Hwy	Laree Ave	Urban Collector	
Richard St	Laree Ave	Lanny Ave	Urban Collector	
Scenic Dr	Old Jerome Hwy	Alamos Dr	Urban Collector	
Scenic Dr	Alamos Dr	State Highway 89A	Urban Local	
Sycamore Canyon Rd	Tuzigoot National Monument Rd	Pecks Lake Rd	Urban Collector	
Tuzigoot National Monument Rd	Broadway	Sycamore Canyon Rd	Urban Collector	
Tuzigoot National Monument Rd	Sycamore Canyon Rd	0.016 mi W of Cottonwood urban boundary	Urban Collector	
State Highway 89A	Clarkdale Parkway	Clarkdale/Cottonwood urban boundary	Urban Minor Arterial	Arterial
State Highway 89A	Clarkdale Parkway	Western study area boundary	Rural Minor Arterial	Arterial
Valley View Rd	Cul-de-sac	State Highway 89A	Urban Local	

Source: Northern Arizona Council of Governments Highway Performance Measurement System (HPMS) Records, 2010, Clarkdale General Plan (2002)

### 2.4.3 Crash History

Five years of crash data were obtained and analyzed from ADOT. These data spanned a period from 1/1/2004 to 12/31/2008. During this time period, 46 crashes occurred. As shown in **Figure 7**, a high proportion of these crashes occurred in 2006, when 16 crashes occurred. Other years had between 4 and 10 crashes per year.

Crash severity for all crashes within the analysis period is shown in **Figure 8**. There were no fatal crashes or incapacitating-injury/severe injury crashes during this analysis period. All crashes were relatively minor. Approximately 65% of the crashes involved no injury, 20% of the crashes involved a non-incapacitating injury, and 15% of the crashes involved a possible injury. Details of the crashes involving a non-incapacitating injury or possible injury are provided in **Appendix B**. There were no trends indicating that the crashes would be correctable by an improvement.

It should be noted that two recent severe crashes have occurred in the Town, both at roundabouts: a fatality last month at Clarkdale Parkway and Mountain Gate Drive, and a cement truck rollover at the Valley View Cemetery entrance off of SR 89A. Technical Advisory Committee members noted that Town residents have generally learned to use the roundabouts correctly and consider them beneficial. Still, educating the public on roundabout use should occur on an ongoing basis, as a refresher and for newcomers and new drivers. Sometimes drivers bear left rather than right at the roundabouts.

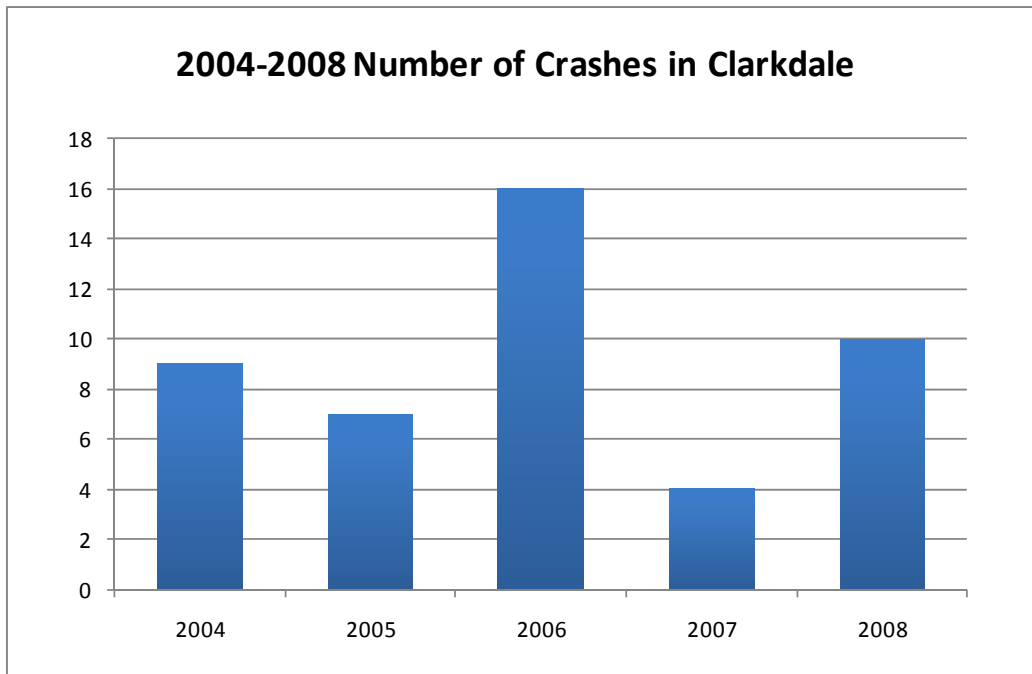
Overall crash types for all crashes are summarized in **Figure 9**.

Single vehicle crashes accounted for the largest proportion of crashes (28%). This was followed by rear end collisions (26%).

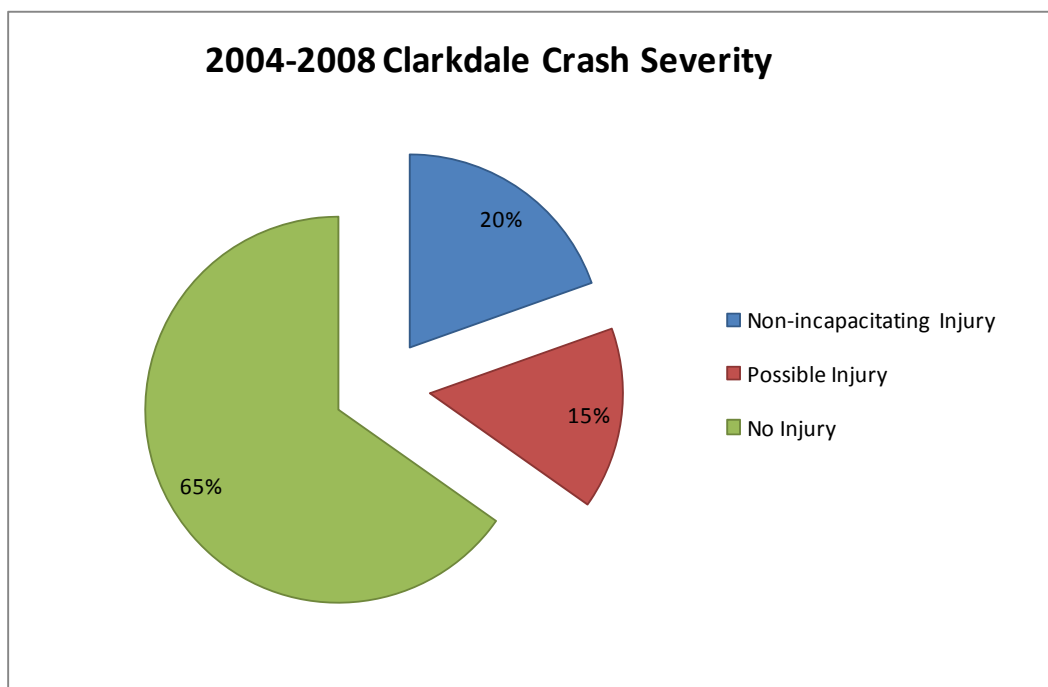
**Figure 10** shows the proportion of crashes that were intersection, driveway, non-junction-related, or unknown. The highest proportion of crashes were intersection-related, comprising 52% of the crashes.

Only one intersection had more than 5 crashes in the 5-year period, which was the intersection of Main Street and 10<sup>th</sup> Street. This intersection had 6 intersection crashes in the 5-year period. The predominate crash type at that location was angle crashes (5 angle crashes making a left turn). There was one rear end crash during this time period.

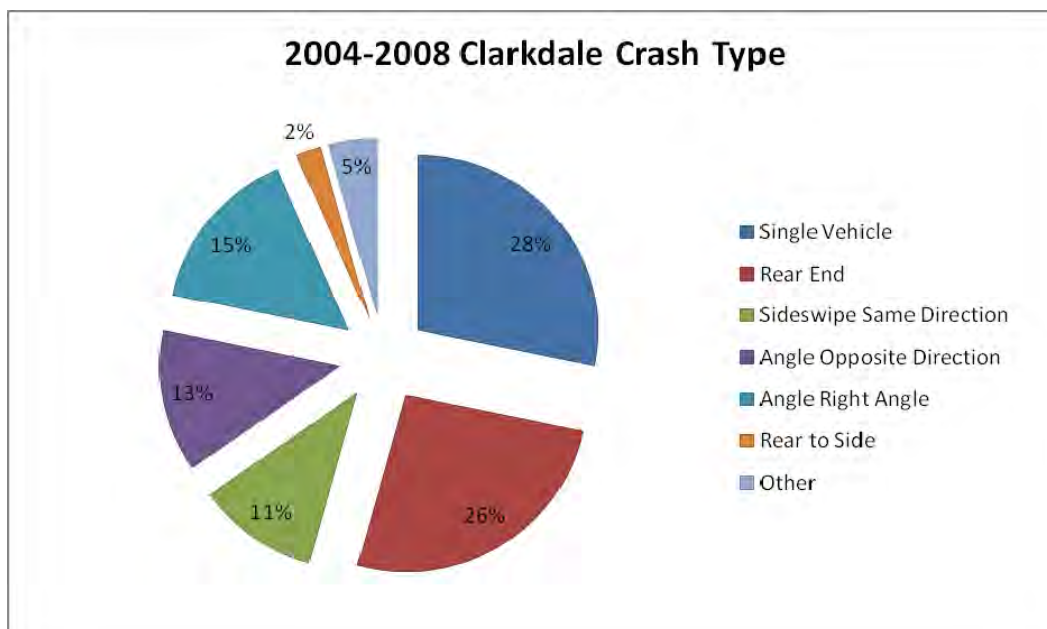
The location of all crashes during this time period is shown in **Figure 11**. The crashes predominately occurred on SR 89A and Main Street.



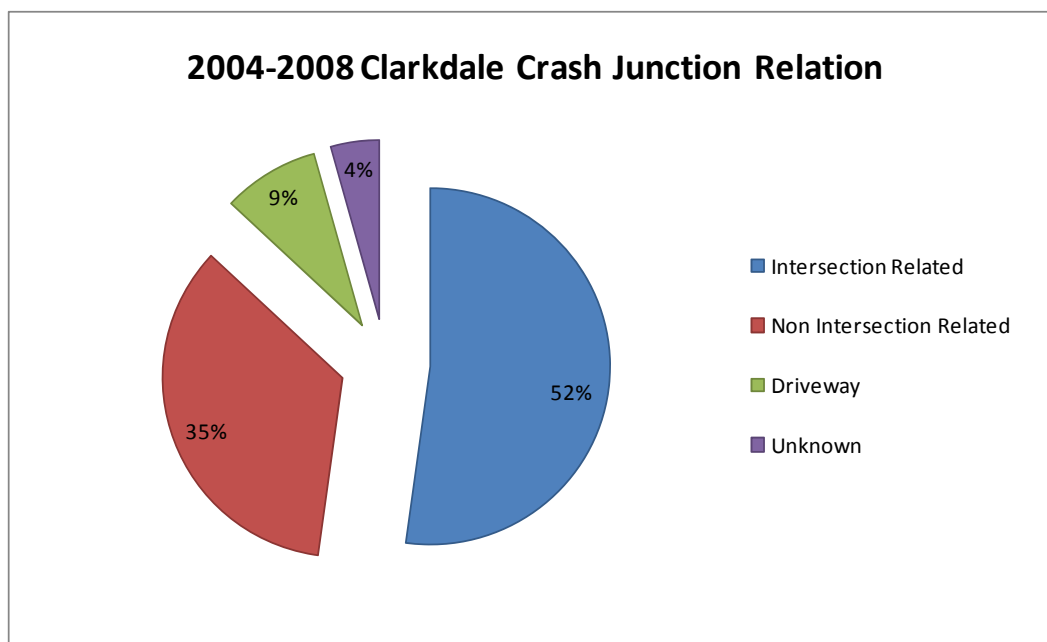
**Figure 7 – Number of Crashes by Year**



**Figure 8 – Crash Severity**

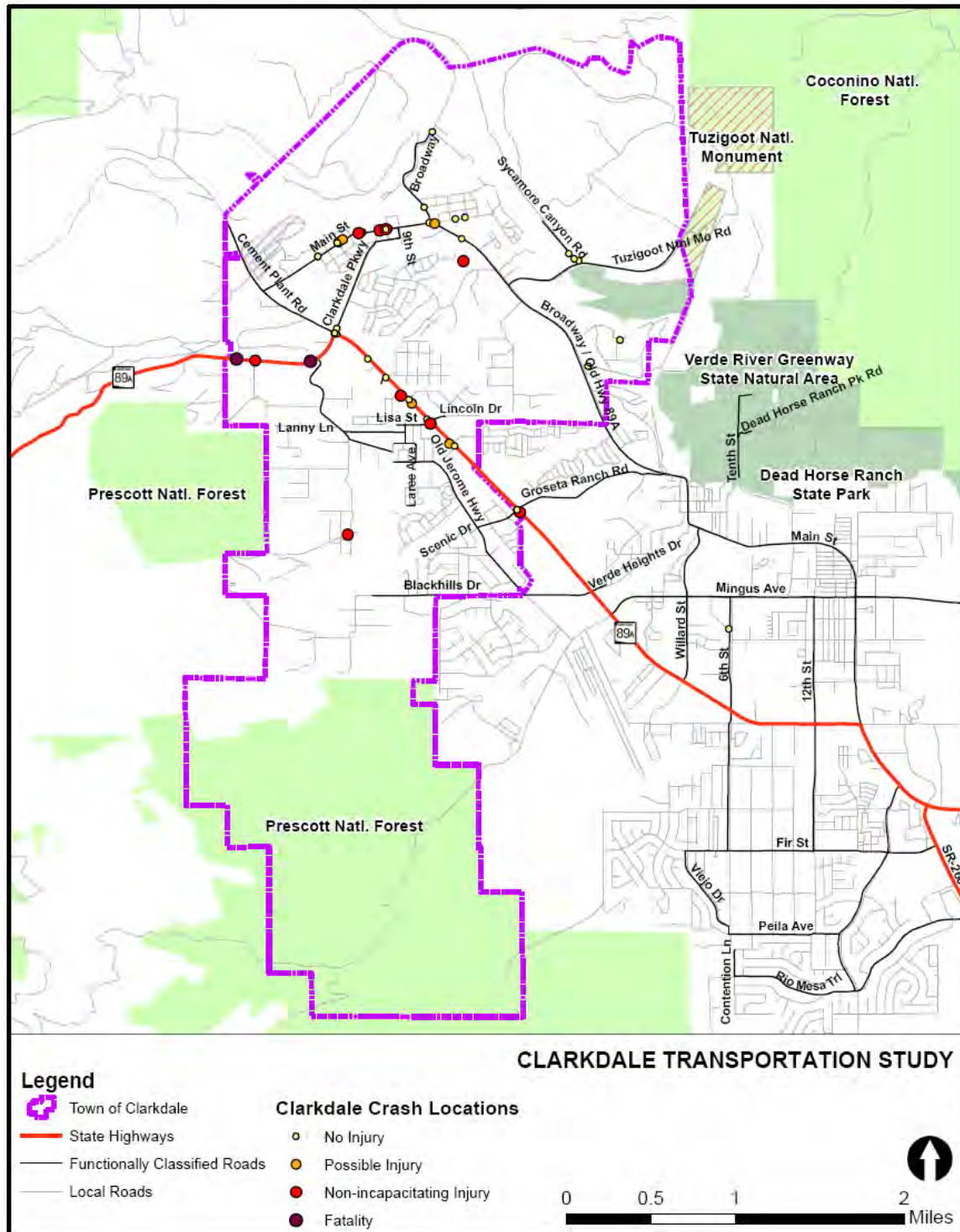


**Figure 9 – Crash Types**



**Figure 10 – Proportion of Crashes by Location**





**Figure 11 – Crash Locations, 2004-2008**

## 2.5 Travel Data

### 2.5.1 Existing Traffic

Annual average daily traffic (AADT) counts in the study area are shown on **Figure 12**, and are summarized in tabular form in **Table 2-11**. Many of these data were collected by the Town of Clarkdale traffic counting program. These data were supplemented by available HPMS data.

The local road with the highest traffic volume is Black Hills Drive, near the southern boundary of Clarkdale, which carries 5,341 vehicles per day between Evergreen Road and Gerry Sue Drive, near Yavapai College (Verde Valley campus). Broadway (Old SR 89A) is another higher volume road in Clarkdale, which carries approximately 3,500 to 3,800 vehicles per day.

**Table 2-11 – Annual Average Daily Traffic Volumes**

Road Segment	From	To	AADT (Vehicles)	Traffic Count Date (where available)
1 <sup>st</sup> South St	Clarkdale Pkwy	9 <sup>th</sup> St	3,115	2008
9 <sup>th</sup> St	1 <sup>st</sup> South St	Main St	1,795	2008
Black Hills Dr	Evergreen Rd	Gerry Sue Dr	5,341	2008
Black Hills Dr	0.0121 mi west of Gerry Sue Dr	Old Jerome Hwy	3,125	2008
Black Hills Dr	At Old Jerome Hwy		701	11/2009
Broadway	Main St	Fiesta St	1,795	2008
Broadway	Main St	Tuzigoot National Monument Rd	3,490	2008
Broadway	Tuzigoot National Monument Rd	Clarkdale / Cottonwood town boundary	3,675	2008
Broadway	At Clarkdale / Cottonwood town boundary		3,832	1/2010
Clarkdale Pkwy	0.030 mi northeast of SR 89A	1 <sup>st</sup> South St	2,853	2008
Clarkdale Pkwy	West of roundabout		2,050	12/2009
Lanny Ave	Richard St	Lisa Dr	712	2008
Lanny Lane	Lanny Ave	Old Jerome Hwy	625	2008
Lanny Lane	West of Lanny Ave		538	11/2009
Laree Ave	Reta St	Richard St	976	2008
Lisa St	Lanny Lane	State Highway 89A	1,421	2008
Lisa St	West of 89A		1,128	12/2009

**Table 2-11 – Annual Average Daily Traffic Volumes (continued)**

Road Segment	From	To	AADT (Vehicles)	Traffic Count Date (where available)
Main St	Broadway	9 <sup>th</sup> St	2,428	2008
Main St	9 <sup>th</sup> St	Cement Plant Rd	2,532	2008
Main St	West of 11 <sup>th</sup> St		1,120	1/2010
Old Jerome Hwy	South of State Highway 89A		213	10/2009
Old Jerome Hwy	South of Lanny Ln		500	10/2009
Old Jerome Hwy	Deborah Dr	Black Hills Dr	1,012	2008
Old Jerome Hwy	South of Rodgers Pl		24	8/2009
Old Jerome Hwy	South of Foothills Terrace		502	10/2009
Phoenix Cement Company Rd	0.041 mi northwest of SR 89A	Industrial Rd	1,172	2008
Reta St	Old Jerome Hwy	Laree Ave	986	2008
Richard St	Laree Ave	Lanny Ave	722	2008
Scenic Dr	Old Jerome Hwy	State Hwy89A	562	2008
Sycamore Canyon Rd	Tuzigoot National Monument Rd	Pecks Lake Rd	221	2008
Tuzigoot National Monument Rd	Broadway	Sycamore Canyon Rd	447	2008
Tuzigoot National Monument Rd	East of Broadway		542	1/2010
Tuzigoot National Monument Rd	Sycamore Canyon Rd	0.016 mi west of Cottonwood urban boundary	219	2008
US 89A	Scenic Dr	Desert Sky Dr	12,200	2008

Source: Northern Arizona Council of Governments Highway Performance Measurement System (HPMS) Records, 2010, and Verde Valley Multimodal Transportation Study (US 89A counts), Town of Clarkdale

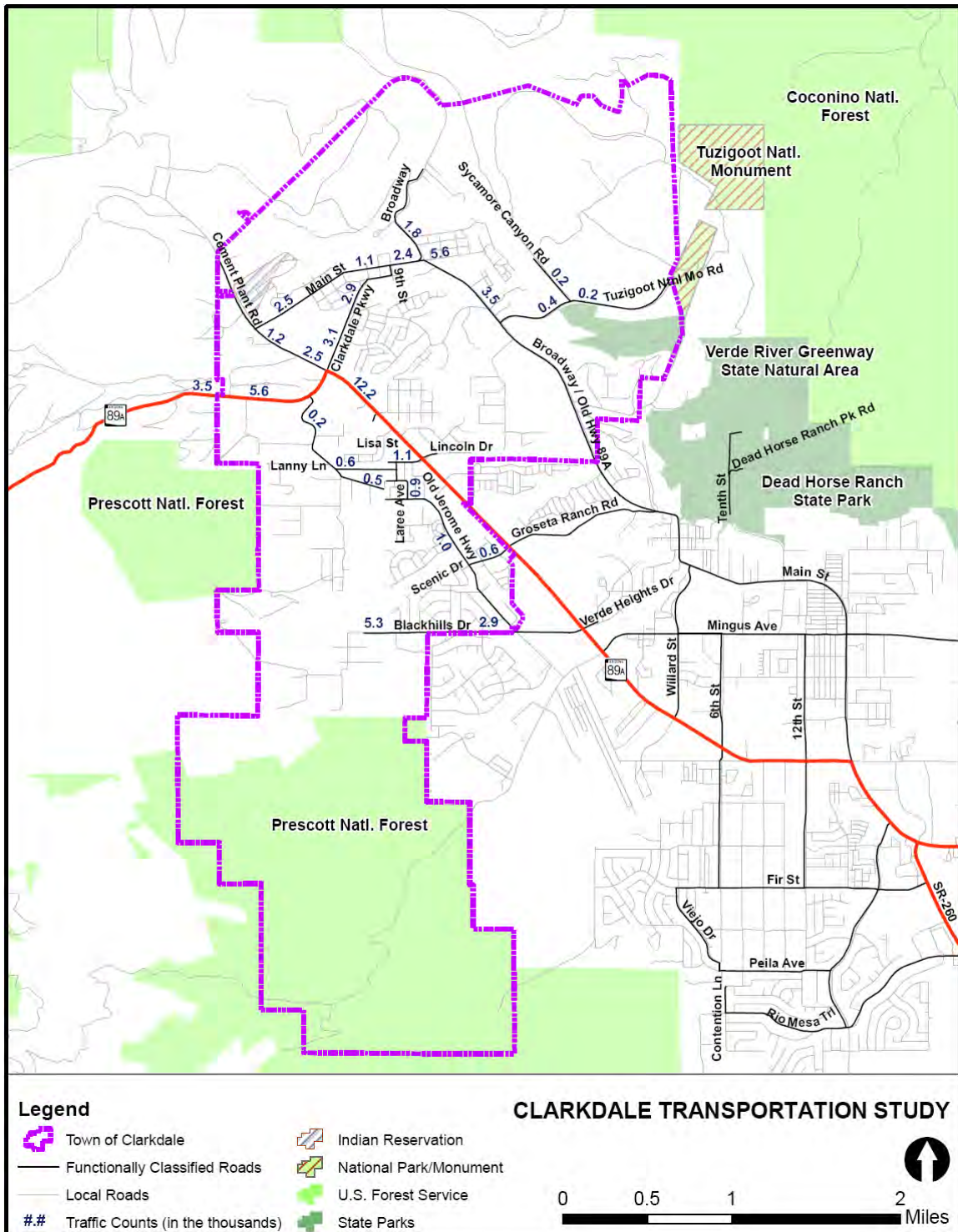


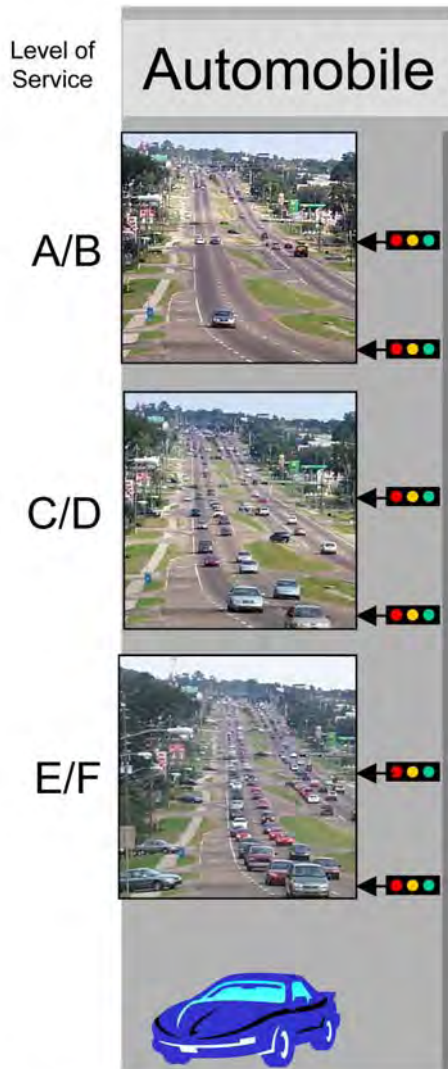
Figure 12 – Traffic Counts





## 2.5.1.1 Roadway Level of Service

Roadway traffic operations are defined and categorized by the delay experienced by an average driver. The operations are categorized by a grading system called level of service (LOS) which is a letter designation ranging from A (no delay) to F (severe congestion). These levels are depicted at left.



Highway Capacity Software (HCS), developed by McTrans, for two-lane segments and multi-lane road segments, was utilized to develop traffic service volume thresholds for each LOS grade (A – E) for Clarkdale area roadways. The underlying methodologies in HCS are based on HCM 2000 procedures and other research. LOS is generally defined as follows:

- Level of Service A represents free flow.
- Level of Service B is in the range of stable flow, but the presence of other users in the traffic stream begins to be noticeable.
- Level of Service C is in the range of stable flow, but marks the beginning of the range of flow in which the operation of individual users becomes significantly affected by interactions with others in the traffic stream.
- Level of Service D represents high-density but stable flow. Speed and freedom to maneuver are severely restricted, and the driver or pedestrian experiences a generally poor level of comfort and convenience.
- Level of Service E represents operating conditions at or near the capacity level. All speeds are reduced to a low but relatively uniform value.
- Level of Service F is used to define forced or breakdown flow. This condition exists wherever the amount of traffic approaching a point exceeds the amount that can traverse the point.

Source: Florida DOT Quality of Service Handbook, 2002

Traffic volumes on road segments within the study area were compared to Level of Service D volumes for various types of roadways in order to determine relative congestion levels for existing conditions and future conditions. The criteria for level of Service D are shown in **Table 13**.

**Table 2-12 – HCS Service Volume Threshold for LOS D**

Roadway Category	LOS D Threshold
2 Lane Undivided	10,800
2 Lane with a Center Left Turn Lane / 2 Lane Divided	13,400
4 Lane Divided	27,000

Source: Kimley-Horn and Associates, Highway Capacity Software Analysis

Based on the criteria in **Table 2-11** and the traffic volumes in **Table 2-12**, none of the roadways are operating at Level of Service D or worse.

## 2.5.2 Future Traffic Data

The VVMTS developed future travel demands were projected for 2015 and 2030 conditions. Within the Clarkdale Transportation Study area, traffic forecasts were developed for SR 89A, Broadway (Old SR 89A), Main Street, and Groseta Ranch Road. The model was developed using the TransCAD transportation forecasting software and was calibrated using the year 2007 transportation network and estimated 2007 socioeconomic data.

### 2.5.2.1 2015 Forecast Travel Volumes and Road Network

In the Clarkdale area, the 2015 roadway network included one committed project on SR89A. The project is located along SR 89A, from Cement Plant Road/Clarkdale Parkway intersection to Black Hills Drive. The project includes widening the roadway to four lanes (two lanes with a center median), and five roundabouts designed to handle large trucks (wheelbase of 67 feet). This project is complete. The 2015 forecast travel demand volumes are summarized in **Table 2-13**.

**Table 2-13 – 2015 Forecast Travel Demand Volumes**

Road	Segment	2015 Forecast Travel Demand Volume (vehicles per day)
SR89A	South of 11 <sup>th</sup> Street	13,157
SR89A	North of Groseta Ranch Road	20,478
Broadway (Old SR 89A)		1,375
11 <sup>th</sup> Street	North of SR89A	4,374
Groseta Ranch Road	Between SR89A and Broadway (Old 89A)	483-587

Source: Verde Valley Multimodal Transportation Study

### 2.5.2.2 2030 Forecast Travel Volumes and Road Network

The 2030 travel demand forecasting was conducted as part of the VVMTS. The study modeled a 2030 base condition and a number of alternative model runs. The base 2030 roadway network was the same as the 2015 network, because no major projects were recommended in planning documents for the Clarkdale area in the timeframe between 2015 and 2030. In all networks SR 89A was modeled as a four-lane facility south of 11<sup>th</sup> Street.

Two alternative 2030 traffic improvement networks were developed to address traffic deficiencies found in the 2030 base network. These were called Alternative 1 and Alternative 2. Alternative 1 included a new West Bypass route that would be constructed in phases from SR 89A in Clarkdale (west of the Cement Plant Road intersection) to SR 260 in the general vicinity of Ogden Ranch Road. The new route would be designed to divert traffic from the most congested portions of SR 89A and SR 260 through the urbanized area. In addition, a second model run was made for the Alternative 1 network to test the effects of alternate modes. In this model run vehicular travel was assumed to be reduced by 5 percent to account for a shift in alternate modes. However, this model run did not result in significant improvements in congestion. The forecast 2030 travel demand volumes for each alternative are summarized in **Table 2-14**. These traffic volumes were also compared to the 2015 forecast travel demand volumes. As can be seen from the table, there was not a significant difference among 2030 alternatives in the Clarkdale area.

Alternative 2 included a “Cement Plant Road Loop,” a two-lane minor collector largely to accommodate an expected increase in industrial truck traffic. It would arc to the east through National Forest lands, intersecting with SR 89A northeast of Cornville Road. The project was not recommended for the VVMTS plan because its projected volume (2,800 in 2030) could be managed elsewhere in the network and it would have potential environmental impacts to the Verde River; all together, about 2.25 miles of its length would be on rugged terrain on National Forest lands.

A “preferred” model run was not conducted for the VVMTS. Instead, elements from both alternatives were assessed and recommended if warranted. The final recommended projects from the VVMTS that affect Clarkdale are summarized in **Table 2-15**. One recommended project, a new minor collector referred to as the West Loop, would serve Black Hills Road, on the Clarkdale border, and thus provide better access to Yavapai College (Verde Valley campus). The new road would extend from Black Hills Drive to Quail Springs Ranch Road. This road is shown in **Figure 13**. Another recommended project is an upgrade of Groseta Ranch Road to a two-lane minor collector in Cottonwood. Groseta Ranch Road transitions to Scenic Drive in Clarkdale. Improvements to Groseta Ranch Road will provide better access to drivers traveling east from Scenic Drive.



**Table 2-14 – Comparison of 2015 and 2030 Forecast Travel Demand Volumes**

Road	Segment	2015 Base Forecast Travel	2030 Base Forecast Travel	2030 Alternative 1	2030 Alternative 1 with demand reductions	2030 Alternative 2
		<b>Travel Demand Volume (vehicles per day)</b>				
SR89A	South of 11 <sup>th</sup> Street	13,157	16, 549	16,144	15,563	15,356
SR89A	North of Groseta Ranch Road	20,478	25,613	24,771	23,766	24,030
Broadway (Old SR 89A)	South of Main Street	1,375	2,135	2,045	1,739	1,631
Broadway (Old SR 89A)	North of Groseta Ranch Road		3,635	3,924	3,516	2,372
11 <sup>th</sup> Street	north of SR89A	4,374	7,423	7,090	6,939	6,514
11 <sup>th</sup> Street	West of Broadway		5,309	4,918	4,875	4,680
Groseta Ranch Road	Between SR89A and Broadway (Old 89A)	483-587	700-836	691-828	655-783	694-819

Source: Verde Valley Multimodal Transportation Study, 2009



**Table 2-15 – Recommended Projects from VVMTS**

Road Name	From	To	Description	Cost (2007 Dollars)	Impact to Clarkdale
<b>2010-2020 Proposed Roadway Improvement Projects</b>					
West Loop (new road)	Black Hills Drive	Fir Street	New Access Controlled two- lane roadway – Fir Street would be extended to the West Loop	\$5,975,000	Better access to Yavapai College (Verde Valley campus)
Groseta Ranch Road	SR 89A	Old SR 89A	Groseta Ranch Road would be upgraded to a two-lane minor collector (Cottonwood).	\$2,563,000	Improvements to Groseta Ranch Road in Cottonwood would improve access for residents in Clarkdale
<b>2020-2030 Proposed Roadway Improvement Projects</b>					
West Loop (new road)	Fir Street	Quail Springs Ranch Road/Old SR 79	New two-lane roadway	\$3,280,000	Better access to Yavapai College (Verde Valley Campus)

Input from the Town of Clarkdale regarding future project needs include a number of new roadway connections, including:

- Connectors from Broadway to 89A, via Lincoln Drive / Palisades Drive and Centerville Road.
- Connector from Highway 89A to Black Hills Road and West Loop via Old Jerome Highway / Minerich Road.

These needs are further described in **Chapter 5**.

- Clarkdale Metals and SRMG (SRMG, which is outside the Town, would not show on the Land Use Plan Map, but its influence would be described in the General Plan update).
- Post-reclamation use of much Clarkdale Metals Corporation land (although the development itself would be post-2020).
- Verde Valley Ranch Development.



Source: Verde Valley Multimodal Transportation Study, 2009

**Figure 13 – Recommended Roadway Improvements from the VVMTS**

### 2.5.2.3 Adjustments to Forecast Volumes Based on Updated Current and Future Conditions

The Clarkdale Transportation Study project team reviewed a number of studies and related information to determine whether manual adjustments to traffic forecast projections were needed based on recent developments. A brief summary of the status of recent developments in the Clarkdale area are:

**Clarkdale Sustainability Park** – Currently a proposal is being developed for a feasibility study on the Sustainability Park, including an assessment of the site. As part of the feasibility study, a transportation study will be done to determine all routes to the sites and identify anticipated traffic impacts and mitigation. It is anticipated that the study will take 18 months to complete.

Three sites are being considered for the Sustainability Park:

- Site 1 is a 977 acre parcel owned by Freeport – McMoRan. This site is located in the northeast portion of Clarkdale. There is an existing development agreement on this land for 900 homes and some commercial development. The area is zoned Planned Area Development. Approximately 200 acres of this property was used as a mining tailing site in the past. That section has been capped by two feet of earth as a result of a remediation project. This parcel is adjacent to the Verde River and contains a lake fed by a diversion dam. This land is fairly level with power available to the site.
- Site 2 is a 594 acre parcel owned by the Clarkdale Metals Corporation. The site is located in the northern portion of Clarkdale with 400 acres being just outside the town boundary and slated for annexation in to the town. The property within the town is zoned Industrial. This site involves some level land, and an elevation rise of approximately 100 feet. Power is available to the site.

Previous modeling work included new employment in the area by Clarkdale Metals Corporation. The transportation forecasts assumed that by 2015 there are to be 100 industrial workers reclaiming metals from the former mining slag pile, and by 2030 the reclamation workers will be finished, followed by 100 industrial workers on the reclaimed land.

- Site 3 is a 522 acre parcel owned by Verde Exploration. This entire parcel is outside of the town, in Yavapai County but could be annexed in to the town limits. There are two ten-year leases on this parcel which would require a release of those leases. This parcel has access off State Highway 89A. This parcel has the greatest elevation changes within the site and does not have power to the site.

These sites are shown in **Figure 14**. Once a site is selected, specific traffic impacts will need to be evaluated, such as a river crossing bridge and a connector road to Highway 89A.

The **Salt River Materials Group Cement Plant**, located in an industrial area north of Clarkdale, is a major employer. They have indicated plans to add more employees by 2015. Employment growth was a component of the VVMTS. It was determined that potential traffic impacts were evaluated as part of the VVMTS. The location of this plant is shown in **Figure 14**.

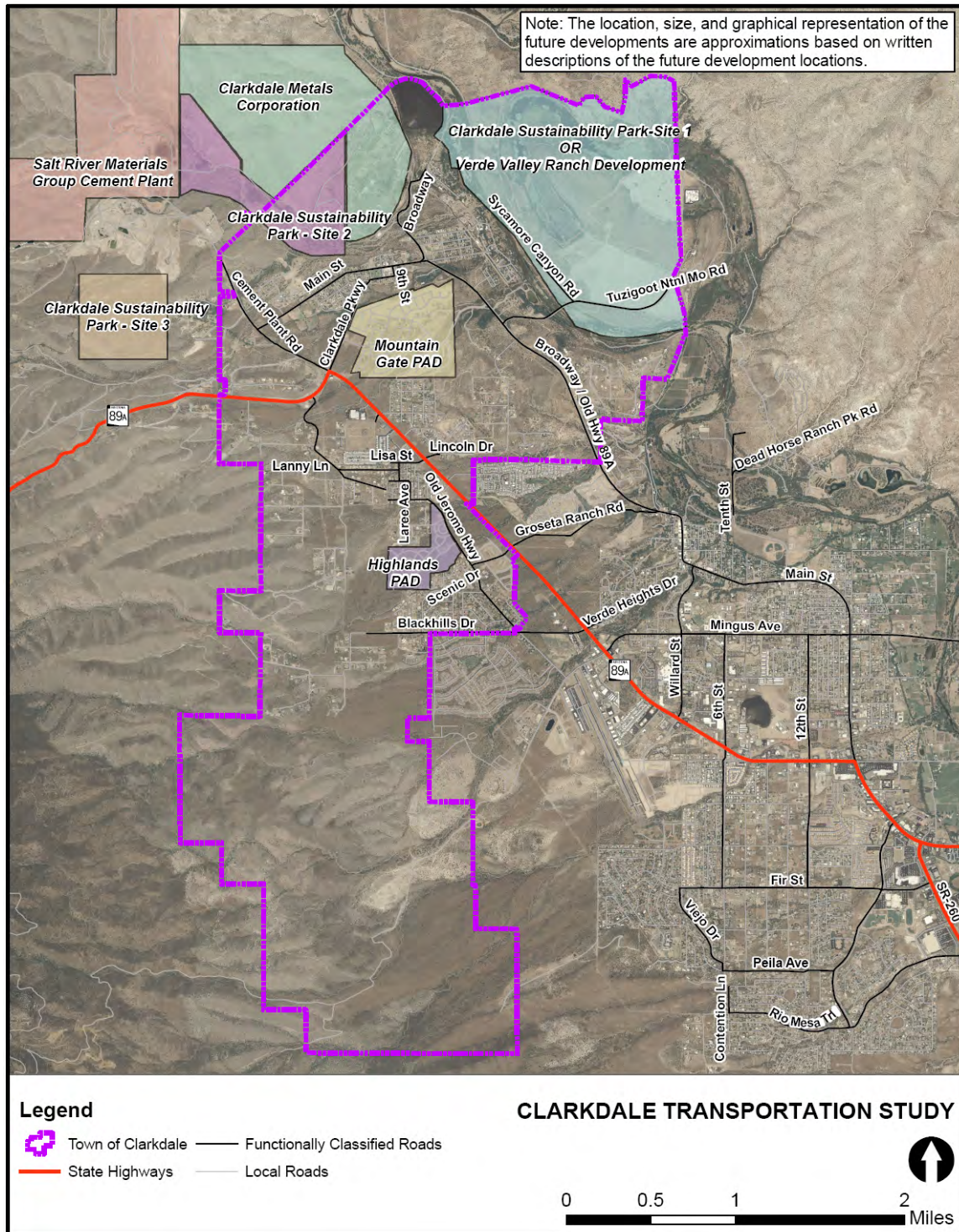




# CLARKDALE

TRANSPORTATION STUDY

ADOT TASK ASSIGNMENT MPD 15-10



**Figure 14 – Clarkdale Future Growth Areas**

The original Traffic Impact Study for the Mountain Gate development, discussed in Section 2.3.2, recommended construction of a right turn deceleration lane for northbound traffic turning off of 11<sup>th</sup> Street (Clarkdale Parkway) into the two subdivision roads, and construction of a left turn lane for westbound traffic turning off of the two access roads onto 11<sup>th</sup> Street (Clarkdale Parkway). Instead, a roundabout was constructed at Mountain Gate Drive and 11<sup>th</sup> Street (Clarkdale Parkway), the main entrance into the development.

The Traffic Impact Study completed for the Highlands development, discussed in Section 2.3.2, determined that left turn lanes, right turn auxiliary lanes, or deceleration lanes at any of the site access points are not required. The development was planned for completion in 2007, and is reflected in the base year (2007) VVMTS. As such, it is determined that no adjustments to travel demand modeling is required to account for this development. Instead, ADOT constructed a roundabout at Scenic Drive in 2008.

The Mountain Gate and Highlands developments are shown in **Figure 14**.

## **2.6 Alternative Transportation**

### **2.6.1 Transit**

Cottonwood Area Transit, operated by the City of Cottonwood, operates three bus routes that serve the communities of Cottonwood, Clarkdale and Verde Valley. These routes are shown in **Figure 15**.

Route 3, the Red Route, serves Cottonwood to Clarkdale and runs every 60 minutes. The fixed route transit service runs from 7 a.m. to 6 p.m. Monday through Friday. The buses stop only at designated bus stops. There are approximately 12 bus stops in the Clarkdale area. These are located at:

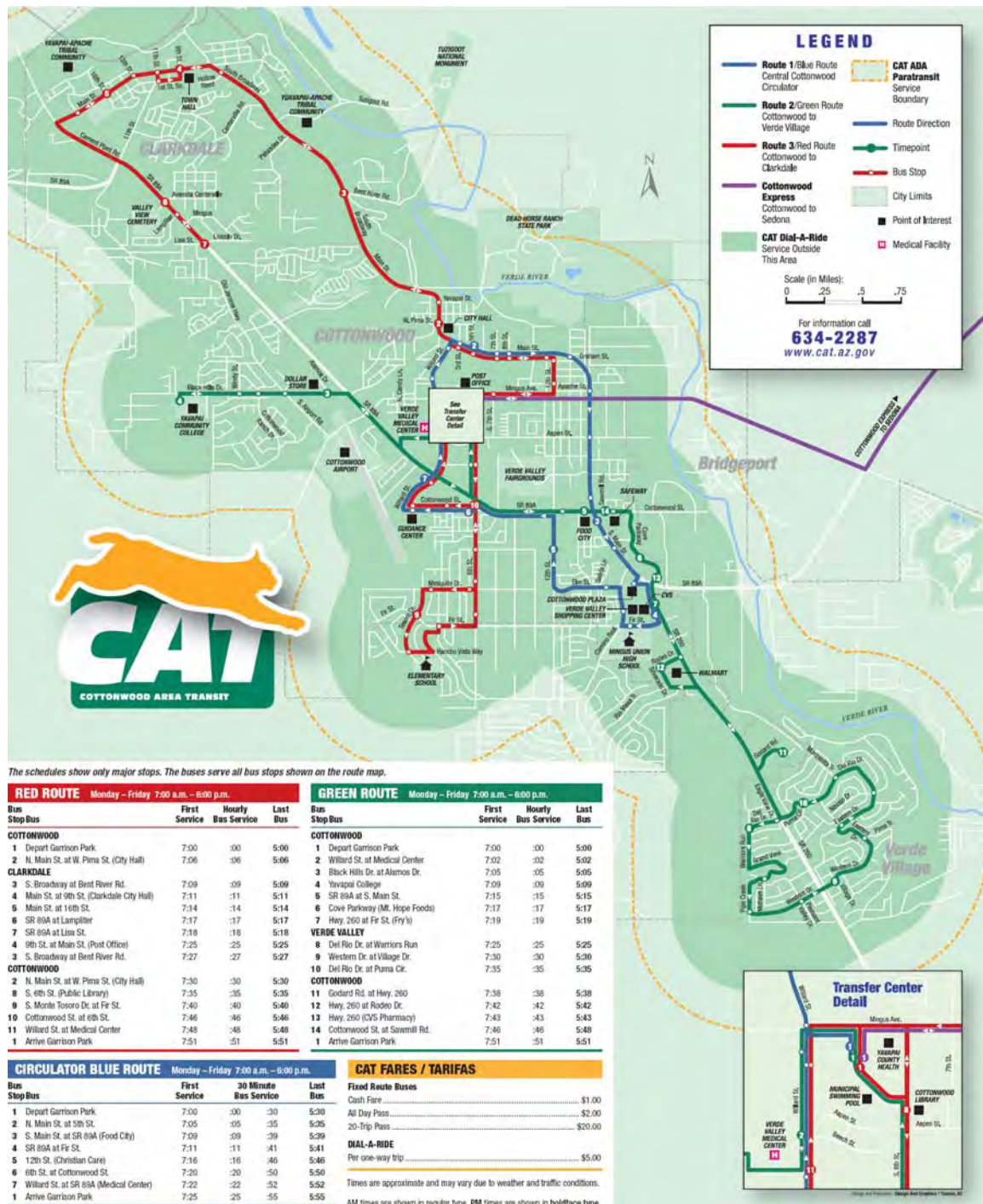
- South Broadway at Bent River Road
- South Broadway at Hollow Reed Road
- Main Street at 9th Street (Clarkdale City Hall)
- Main Street at 11th Street
- 11th Street at 1st Street South
- Main Street at 13th Street
- Main Street at 16th Street
- Main Street at Clarkdale-Jerome School
- Main Street at Bonnaha Avenue
- SR 89A at Ave. Centerville
- SR 89A at Lampliter Road
- SR 89A at Lisa Street

The three routes connect at Garrison Park in Cottonwood every hour so that a rider can transfer from one route to another.

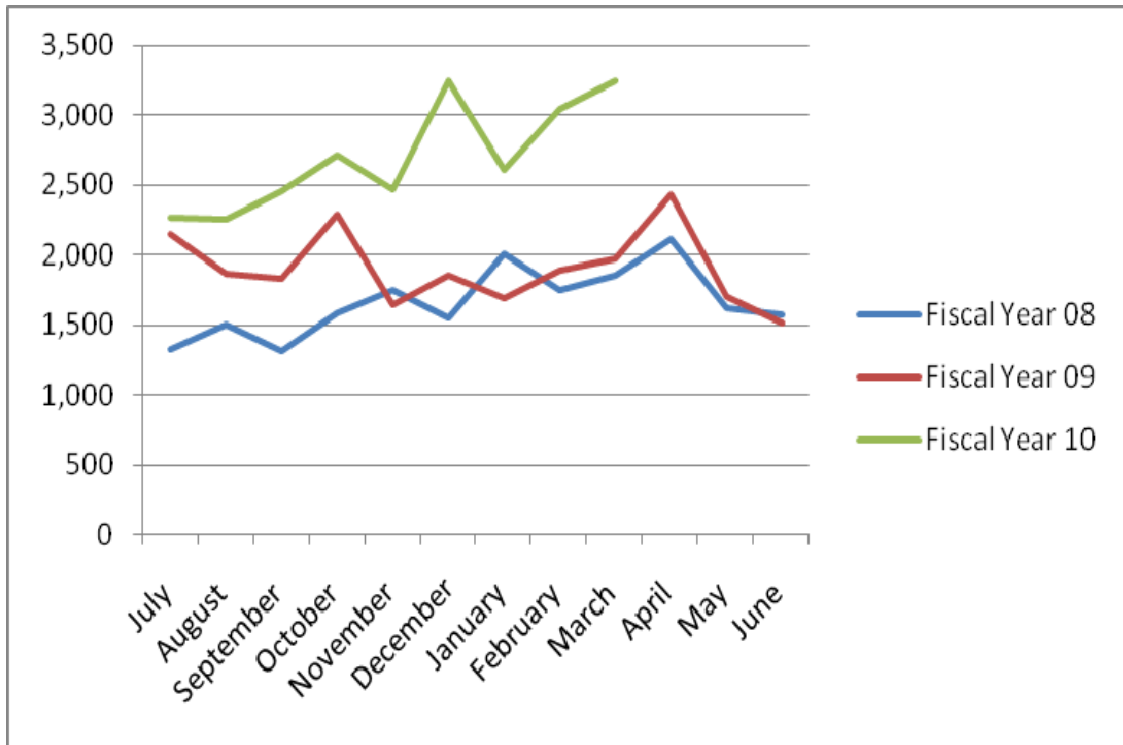
Ridership on the fixed route transit system is growing. In fiscal year 2010, the system attracted between 2,267 and 3,237 riders per month. The total ridership to date (July 2009 through March



2010) for fiscal year 2010 has already exceeded the totals for fiscal years 2009 (total of 22,798 riders) and 2008 (total of 19,961 riders), with a total of 24,272 riders. A graph showing monthly ridership trends is shown in **Figure 16**.



**Figure 15 – Route Map for Cottonwood Area Transit**



**Figure 16 – Ridership Trends for Cottonwood Area Transit, FY 2009-2010**

CAT provides curb to curb paratransit service for persons with disabilities and requires ADA eligibility that are unable to use CAT fixed route buses. Service is provided to locations that are within  $\frac{3}{4}$  of a mile of a fixed route bus service. The services are shared ride and require a 24-hour advance reservation. This service requires ADA eligibility.

CAT Dial-a-Ride provides weekday service to any rider who needs to board more than one-half mile from a fixed route bus stop. It does not require ADA eligibility. On Saturdays, when the fixed route service is not running, the dial-a ride service provides public transportation service. The dial-a-ride service operates Monday through Fridays from 8 a.m. to 5 p.m. and Saturday from 9 a.m. to 2 p.m. It is recommended that passengers call one to five days ahead to make a reservation for a trip.

Ridership trends on the demand responsive services in fiscal year 2010 (to date) are significantly lower than in the previous two fiscal years. Between July 2009 and March 2010, monthly ridership varied between 832 and 1,213 passengers. Ridership trends are shown on **Figure 17**.

Bus shelters are planned at the Clarkdale-Jerome Elementary School. There is an existing bus shelter at 9th Street / Main Street, and there are two shelters at Yavapai College, one at the front of the Administration Building, and one at the back, by the Library. Current unsheltered bus stops are located at:

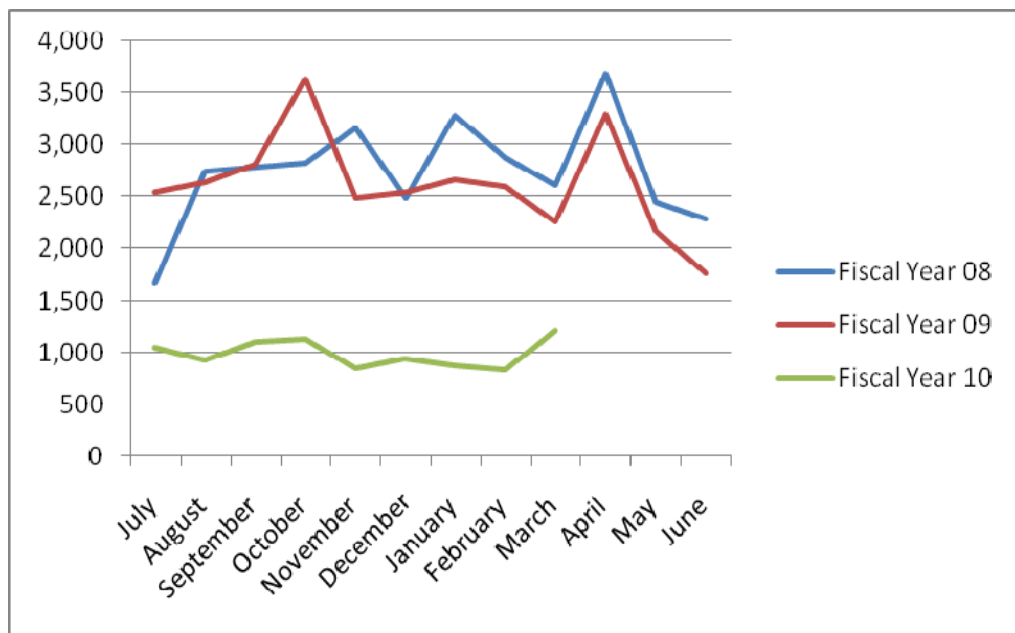
- Main Street and 13th Street
- Main Street and Bonnaha Avenue
- Centerville Avenue and SR 89A

- Lisa Street and SR 89A
- Broadway / Hollow Reed Lane
- Black Hills Drive / Windy Street

ADOT and NAIPTA recently obtained funding for a park and ride lot with a shelter, on the east side of South Broadway, about 0.25-0.5 miles south of Tuzigoot Road.

An issue raised by the CAT representative was the potential for CAT service within certain neighborhoods in Clarkdale. The noise of diesel buses and available funding for additional service has been constraints to expanding service into neighborhoods. Potential roads mentioned for transit service are Lisa Street and Centerville Road.

Another issue has been the repeal of all Local Transportation Assistance Funds (LTAF) that will have a substantial impact on the ability of local governments to continue services. In late May, 2010, CAT is in active discussions with the Town of Clarkdale and Yavapai County regarding their ability to assume some of the lost funding during FY 2011. In case complete service to the Town cannot be retained, various reductions in service are under discussion. The Town contribution to CAT during fiscal year 2011 should be known when the Town's overall budget is adopted in June.



**Figure 17 – Ridership Trends, CAT Demand Responsive System, FY 2009-2010**

## 2.6.2 Proposed Transit and Travel Demand Strategies from the VVMTS

The VVMTS evaluated long term service concepts proposed in the draft Northern Arizona Intergovernmental Public Transportation Authority (NAIPTA). NAIPTA was formed to coordinate public transportation service planning in Northern Arizona. Current members of the organization include Coconino and Yavapai Counties; the cities of Flagstaff, Sedona, and



Cottonwood; and Northern Arizona University. Transit service recommendations that affected Clarkdale included development of a valley-wide van pool program.

## 2.6.3 Bicycle and Pedestrian Facilities

### 2.6.3.1 Pedestrian System

There are approximately 9 segments of sidewalks on major roadways in Clarkdale. **Table 2-16** lists the roadway segments with sidewalks. These areas are shown in **Figure 18**.

**Table 2-16 – Road Segments with Sidewalks**

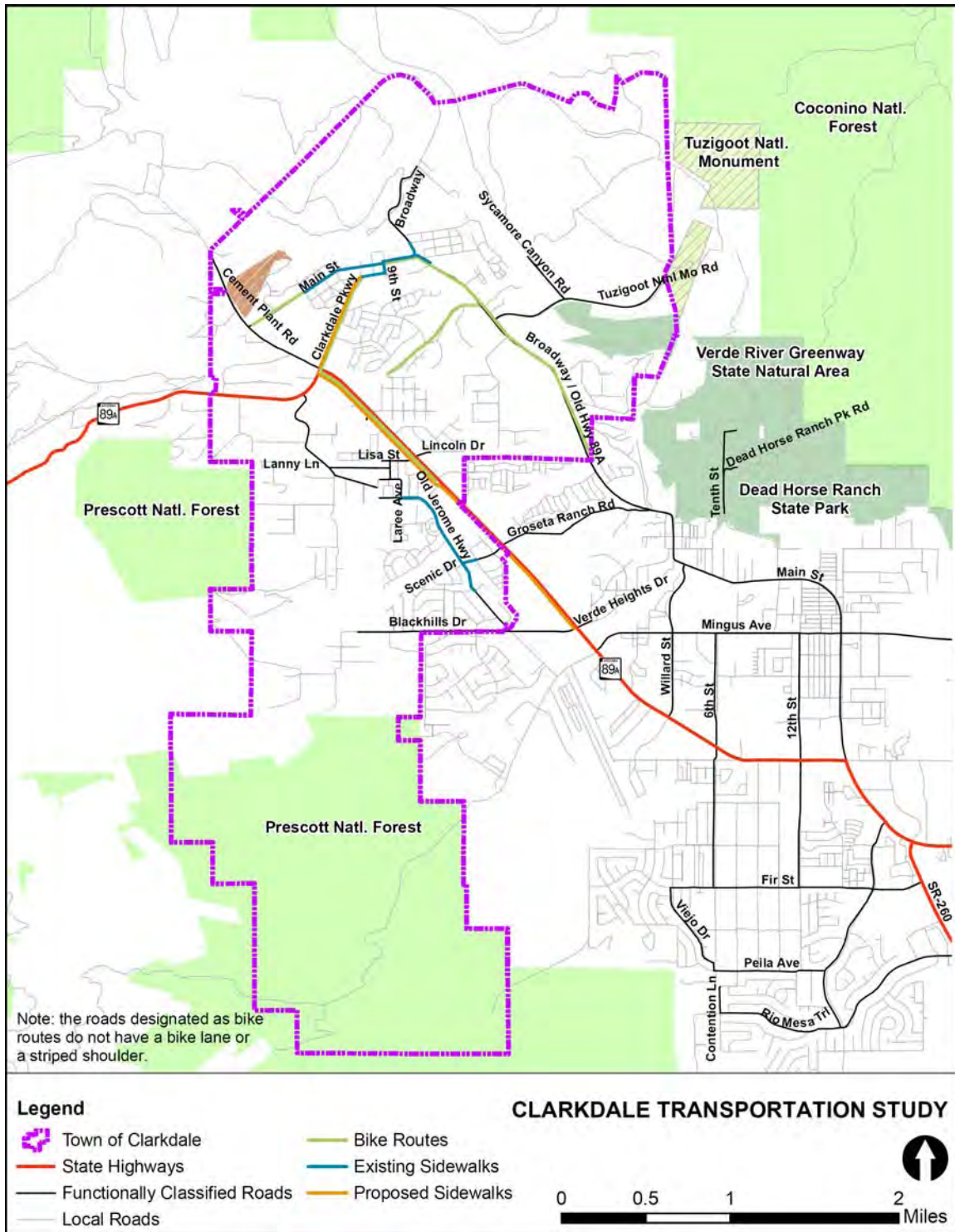
Road	From	To
1 <sup>st</sup> South St	Clarkdale Parkway	9 <sup>th</sup> St
9 <sup>th</sup> St	1 <sup>st</sup> South St	Main St
Broadway	2 <sup>nd</sup> North Street	Main Street
Main St	Broadway	9 <sup>th</sup> St
Main St	9 <sup>th</sup> St	16 <sup>th</sup> St
Old Jerome Hwy	Rogers Pl	Deborah Dr
Reta St	Old Jerome Hwy	Laree Ave
Scenic Drive	Old Jerome Highway	Chevelon Canyon Dr

Source: Northern Arizona Council of Governments Highway Performance Measurement System (HPMS) Records, 2010, and aerial map review by Kimley-Horn

Two enhancement projects have been awarded that together will provide sidewalks near the southernmost town limits on 89A to downtown Clarkdale. They are:

- **SR 89A Pedestrian Sidewalk Project** – This ADOT project involves the construction of 6 foot sidewalks on the both sides of 89A from Cement Plant Road to Black Hills Drive in Cottonwood.
- **Clarkdale Parkway Pedestrian/Bicycle Enhancement Project** - This project involves the construction of 6 foot sidewalks along the south side of Clarkdale Parkway (11<sup>th</sup> Street) from SR 89A to First South Street. The project also includes 4 foot wide bike lanes on both the north and south sides of Clarkdale Parkway in this area.

A Community Development Block Grant (CDBG) project was awarded to the Town to construct sidewalks along Broadway from Third North to the Patio Park neighborhood.



**Figure 18 – Sidewalks and Bicycle Routes**

### 2.6.3.2 Bikeway System

The Town of Clarkdale currently lacks a connected bicycle route network. The General Plan (2002) states that there is a general perception that bicycling on streets is unsafe due to poor surface conditions, a lack of adequate roadway width, and the lack of an interconnected bicycle routes system. According to GIS data provided by the Town of Clarkdale, bike routes are located on the following streets:

1. Main Street: between Cement Plant Road and 16<sup>th</sup> Street - although designated a bike route, currently there are no paved shoulders between Cement Plant Road and 16<sup>th</sup> Street. Traffic volumes are low, and east of 16<sup>th</sup> Street, Main Street transitions to a residential area (between 16<sup>th</sup> Street and 9<sup>th</sup> Street), and then transitions further east to the downtown and government center.
2. 11<sup>th</sup> Street (Clarkdale Parkway): between 89A and 1<sup>st</sup> South Street - this road does not have paved shoulders, however traffic volumes are low and it serves residential areas. This road is planned to have 4 foot bike lanes and sidewalks installed under a transportation enhancement grant.
3. SR 89A: between 11<sup>th</sup> Street and 0.18 miles south of Pine Shadows Boulevard – the new construction on SR 89A did not include bike lanes.
4. Broadway: between Main Street and Clarkdale Town Limits – except near the intersection of Tuzigoot Road, there are no paved shoulders in this area
5. Centerville Road: currently planned to be completed, this road will provide a good east-west bicycle route when paved with shoulders.

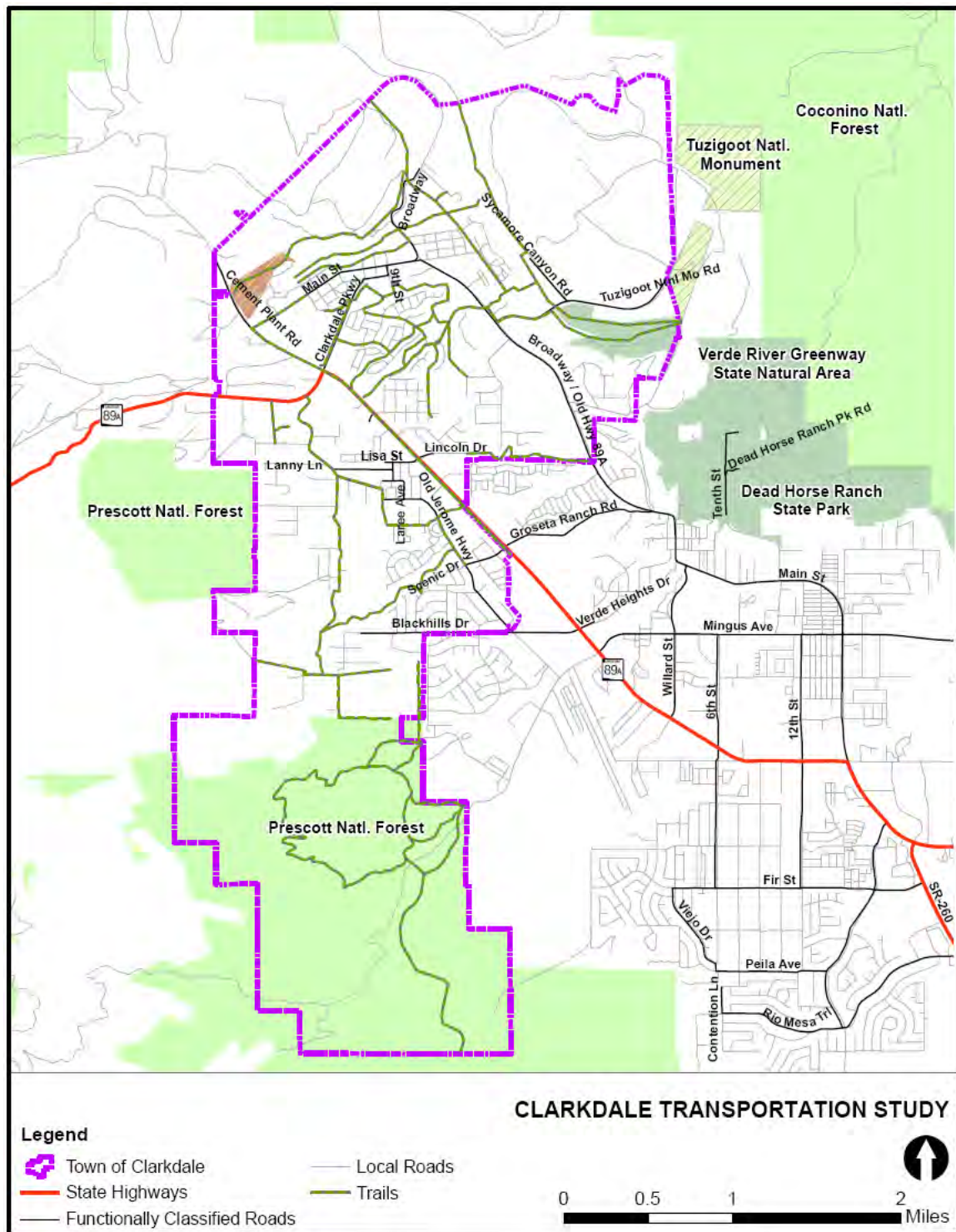
**Figure 18** illustrates the location of these routes. Although these roads are designated as bike routes, they do not have a bike lane or a striped shoulder. TAC members indicated that, in particular, there is a need for bikeways on Broadway and Main Street. It was also noted that cost savings could be accomplished by constructing any off-road bikeways on only one side of some roadways.

### 2.6.3.3 Trail System

Information on trails was obtained from the draft Verde Valley Regional Trails Plan and from the Arizona State Parks representative. Needs expressed in discussion with the Arizona Parks representative were a desire to interconnect trails and develop a “rails to trails” system. The northern part of the rail trail is the Dorothy Benatz trail (described below) and the southern part is not yet a designated trail. A trail would go west from Dorothy Benatz along Bitter Creek, all the way to the Burro Trail (described below), which then goes to Jerome. Hikers and bikers would be on adjacent streets part of the way, while equestrians would stay along the creek. The old tracks went all the way to the Clemenceau Smelter in Cottonwood.

It should be noted that in the discussion of future trails across United States Forest Service (USFS) lands, trail additions are conditioned on USFS decisions.

Existing major trails in the Clarkdale area can be summarized as follows, and are shown in **Figure 19**.



**Figure 19 – Trails**

Source: Town of Clarkdale

**Lime Kiln Trail** - Cottonwood/Clarkdale to Sedona. This trail connects the communities of Cottonwood/Clarkdale to Sedona and provides recreationists an opportunity to travel short or long sections of the trail and see many of the original “grades” traveled by the pioneers on horseback and in “buckboard” wagons.

Proposed Trails in the Clarkdale area are:

- **Burro Trail** - Jerome/Clarkdale Area, Community Connector Trail. This trail would connect Jerome to Clarkdale along historic railroad route. The railroad was removed many years ago but the bench that remains provides a great opportunity for a trail along the steady moderate grade. The trail starts near the Jerome State Historic Park at 5,000’ elevation with a segment where burros were originally used to transport material up and down the hill. Further down the trail connects with the old railroad alignment which was used to transport copper ore from the mines in Jerome to the smelter operation in Clarkdale at about 3,500’ elevation.
- **Dorothy Benatz Trail** - Clarkdale, Community Collector Trail. Total of 3 phases, Phase 1 of 3 complete. This proposed trail would connect with the Verde Greenway Trail System, connecting the Clarkdale and Cottonwood Communities. This trail’s north end would allow for future connections with trails leading to Jerome and lower Clarkdale neighborhoods. This trail is in memory of Ms. Dorothy Benatz. It was often noted that “Folks in Clarkdale set their watches by her morning walks to Tuzigoot National Monument”, when referring to this trail namesake. Dorothy Benatz walked this route daily. Ms. Benatz was a distinguished resident of Clarkdale who served as Town Clerk for 10 years until 1979 when she ran for Mayor and won the seat serving as Clarkdale’s Mayor from 1980 until 1988.
- **Mesquite Multi-Use Trail** - Clarkdale / Cottonwood. Shared Recreational Pathway. This trail will link Clarkdale to Cottonwood and ultimately with Camp Verde. Although the present description of the route ends at the 260 Intersection with Old 279 from the west, it is recommended that with any future corridor or SR 260 improvement / realignment between Camp Verde and Cottonwood, consideration be given to the extension of this paved recreation trail from the highway to Camp Verde. Additional consideration should be given for the trail to pass underneath SR 260 and continue east to become part of a Verde River Greenway project.
- **West Mingus Avenue Trail Network** - Clarkdale / Cottonwood, Circle Community Trail. System of loop trails in a portion of the Prescott National Forest located mostly in Clarkdale in the area immediately west of the Cottonwood at the west end of Mingus Avenue. Most of the trail network would be able to use existing old mining and ranching roads with several new segments constructed to complete the looped connections. The trails would include several easier, shorter segments through the area closest to Clarkdale and Cottonwood and a longer, more challenging two-mile loop trail that climbs and wraps around the adjacent ridges that stretch down from Mingus Mountain.

During stakeholder interviews, it was expressed that the Arizona State Parks would like the Tuzigoot Bridge maintained for multimodal travel including walking and biking at low speeds.



#### ***2.6.3.3.1 Recommendations from the VVMTS***

During the preparation of the VVMTS, the trails network within the Verde Valley was currently undergoing a comprehensive planning process, which is still underway. The process is being conducted cooperatively by Yavapai County, the United States Forest Service, and local community groups.

Of particular interest to the VVMTS are the candidate locations of future trailheads. Opening a trailhead on a specific roadway will generate additional motor vehicle traffic on the roadway as trail users access the trailhead. In addition, future vehicle parking needs will exist at each trailhead, including adequate space for pick-up and horse trailer “rigs” at the beginning of equestrian trails. Signage, sight-distance, and other considerations with respect to pedestrians and equestrians will need to be made in the immediate vicinity of the trailheads.

Candidate trailhead locations that have been identified within the Cottonwood / Clarkdale area are:

1. One-fourth mile West of Desperado at Rustler
2. One-half mile south of Airport Road on Mingus Avenue
3. Chuckwalla Drive at Fir Street
4. End of Mingus Avenue at the beginning of Forest Service Road 493

### **3 NEEDS AND DEFICIENCIES**

This report outlines sources of projected increased travel demand between 2010 and 2030. Potential increases in travel demand are due to a resumption of housing construction in two planned area developments as well as increased employment opportunities at Clarkdale Metals, the prospective Sustainability Park, and Salt River Materials Group.

Existing multimodal needs and deficiencies, or those projected as a result of future growth and development, were identified through the analysis documented in this working paper, stakeholder input, and review of existing plans and studies, and are summarized below. Needs and deficiencies are presented by mode.

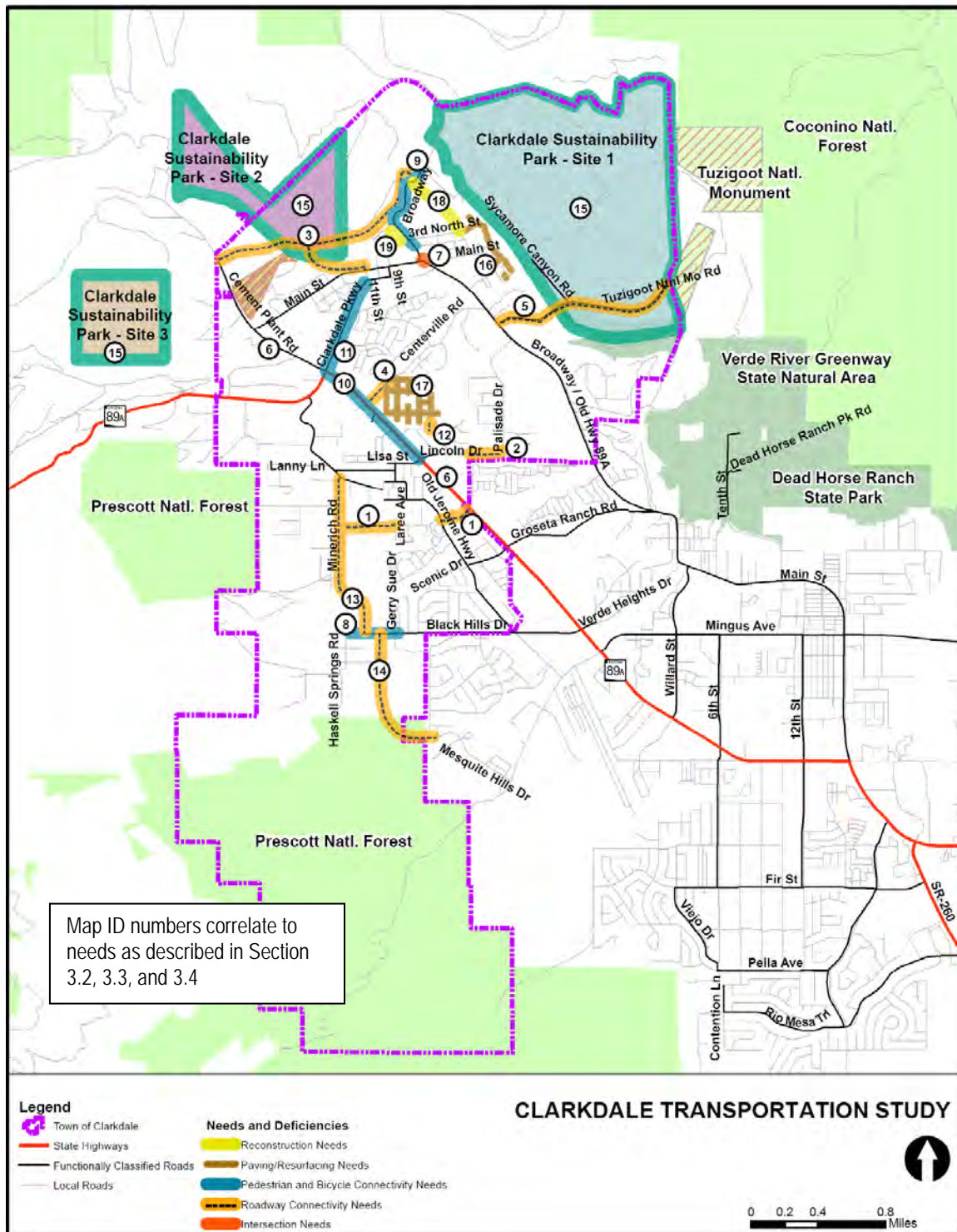
The needs and deficiencies were presented to the public at an open house on August 26, 2010. The public was provided the opportunity to comment on each identified need and deficiency. Public comment, as provided at the August 26, 2010 open house, is incorporated below.

#### **3.1 General Needs and Deficiencies**

- Currently, the Town does not have a cohesive document that outlines requirements for new development, including right of way requirements, lanes, street-sections, etc.
- Town streets have largely been developed to accommodate vehicular traffic. Many Town streets have been constructed without sidewalks or bicycle lanes, and do not accommodate all roadway users including bicyclists, pedestrians, and transit users. Currently, there are no standards or guidelines that emphasize the role of all users in street development. New development is not currently required to provide bicycle and pedestrian facilities.
- The Town does not have traffic impact guidelines and analysis criteria to guide future development projects, and to assist the Town in identifying potential impacts of these developments, and the infrastructure that is required to address these developments.
- Frequently, private landowners submit requests to the Town to adopt private roadways into the public right of way. Many of these roadways are substandard. The Town does not have a mechanism to communicate standards that are required to be met in order to adopt the roadways into the Town as public right of way, and ways to incorporate the streets, even if they require exceptions in certain areas.

#### **3.2 Roadway Needs and Deficiencies**

- Stakeholder input identified a number of areas that would benefit from improved connectivity, repaving, or redesign. These are listed below. The Map ID numbers (#) that are listed below with each roadway need and deficiency correspond to those shown on **Figure 20**.
  - Extend Mescal Spur Road west to Minerich Road and east to SR 89A, to improve connectivity and facilitate emergency vehicle access and response to this area (Map ID #1).



**Figure 20 – Summary of Multimodal Transportation Needs**





- Improve connectivity between Lincoln Drive and Palisade Drive, to facilitate access and connectivity (*Map ID #2*).
- Facilitate truck access to Clarkdale Metals and Salt River Materials Group industrial areas via new industrial road and 11<sup>th</sup> Street connector (*Map ID #3*).
- Improve connectivity between Old Highway 89A and SR 89A in the vicinity of Centerville Road, to serve the residents near Centerville Rd and the Mountain Gate subdivision (*Map ID #4*).
- Improve multimodal access and mobility to Tuzigoot National Monument (*Map ID #5*).
- Stakeholders identified that heavy vehicle traffic on SR 89A is of concern. Other alternative routes to SR 89A may reduce truck impacts near the Town. Stakeholders indicated concerns that alternate routes may be needed, particularly to serve Salt River Materials and Clarkdale Metals (*Map ID #6*).
- A previously identified need is improvements to the Main Street / Broadway intersection. There is an improvement project for this intersection in the FY 2010-2014 Transportation Improvement Program project (*Map ID #7*). A roundabout with a speed of 25 mph is planned to improve traffic flow at that intersection (which is on a slope), especially important when there is a “pulse” of vehicular traffic just before or after a Verde Canyon train trip. Some vehicles encroach on the current traffic island when they fail to negotiate a turn at the intersection.
- Improve connectivity between Calle Carillo and Mingus Shadows Drive (*Map ID #12*).

*Public Comment on Map ID #2:*

- A welcome addition, but some sort of traffic calming devices would be necessary.
- Major Wash between Palisade Drive and Lincoln Drive. Groseta Ranch Road is a better choice.

*Public Comment on Map ID #3:*

- Taking truck traffic along SR 89A and through town is a short term non-solution. The town is a vehicular dead end. Rail needs to be developed for both Clarkdale Metals and Salt River Materials.

*Public Comment on Map ID#4:*

- This project would be easy to complete.

*Public Comment on Map ID #5:*

- What precisely is multimodal? Bus would be good. Light rail possible? Truck traffic for the Clarkdale industrial (“sustainable” facilities). No, there will be a battle over this site.

*Public Comment on Map ID#6:*

- There are no options that I see or are proposed. No land and no money. The only solution for the volume of traffic projected for Salt River is rail. You are not bringing truck traffic through my residential neighborhood on Old Jerome Highway.



- Upgrade Minerich Road and extend it south to Black Hills Drive to improve connectivity and facilitate emergency access and response (*Map ID #13*).
- Improve connectivity between Black Hills Drive and Mesquite Hills Drive (*Map ID #14*).
- Three sites are being reviewed for the Clarkdale Sustainability Park. New road connections will be needed to accommodate access and mobility to this potential employment center. (*Map ID #15*). Any additional development east of the Verde River on the north end of town would require a bridge over the river to Sycamore Canyon Road. Some of the prospective industrial development sites are “road locked” without a lot of choices for access.
- Resurfacing of streets is needed on Rincon Drive, Hopi Drive, River Rat Road, Rio Lane, and Vista Lane (*Map ID #16*).
- Resurfacing is needed on streets in the Centerville area (*Map ID #17*).
- Improve the bridge at Bitter Creek with traffic signage and lighting (*Map ID #19*).
- ADOT’s 2010 Statewide Transportation Planning Framework Study (bqAZ Statewide Technical Team, October 2009) depicted conceptual corridors for future transportation facilities (shown as Principal Arterials) that extend west from Clarkdale and connect to SR 89 north of Prescott and Chino Valley. The projected timeframe for these facilities is between 2030 and 2050. These facilities, as shown in the Framework Study, would not replace the existing SR 89A segment through Jerome. Rather, the two conceptual facilities would depart to the northwest from SR 89A just west of Jerome; the facilities then diverge with one facility heading west and linking to a future parkway and freeway that connects to Chino Valley. The other facility heads north and west, reaching SR 89 approximately 20 miles north of Chino Valley. These facilities are shown exhibited in **Figure 21 – 2050 Recommended Statewide Transportation Planning Framework Study, Roadway Plan in Clarkdale Area**
- While these facilities are outside of Town limits, and of the study limits, they would significantly impact circulation within the Town.
- Two recent severe crashes at roundabouts indicated that education may be needed on using the roundabouts.

*Public Comment on Map ID#7:*

- Roundabouts are universally hated. As you well know from the backlash on I-17 at Anthem.

*Public Comment on Map ID #15:*

- Don’t count those facilities before they hatch. There will be a battle royal over the Tuzigoot site. Again, increasing truck traffic is not smart, not green, not sustainable, not acceptable. Rail is okay.

*Public Comment on Map ID #17:*

- There are far worse streets in Clarkdale than those in Centerville.

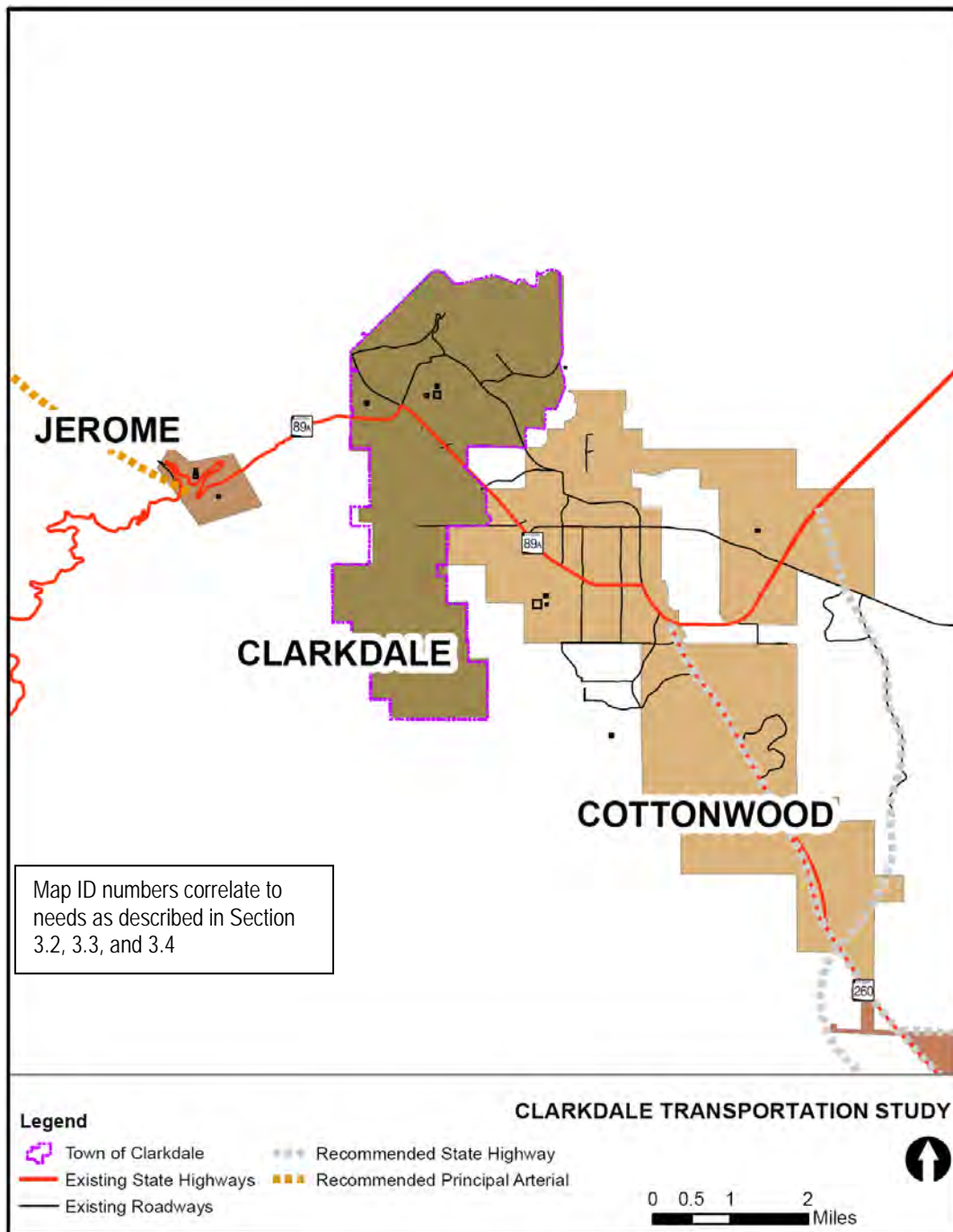


### 3.3 Bicycle and Pedestrian Needs and Deficiencies

- The Town of Clarkdale currently lacks a connected bicycle route network. The General Plan (2002) states that there is a general perception that bicycling on streets is unsafe due to poor surface conditions, a lack of adequate roadway width, and the lack of an interconnected bicycle routes system. Bicycle and pedestrian improvements are needed throughout the Town, including identification and designation of an interconnected and continuous network of bicycle routes, and improvements to these routes such as bicycle lanes or shoulder widening. GIS information provided by the Town included designation of the following as bicycle routes, although they do not have bicycle lanes:
  - Main Street, between Cement Plant Road and 16<sup>th</sup> Street: currently there are no paved shoulders between Cement Plant Road and 16<sup>th</sup> Street.
  - 11<sup>th</sup> Street (Clarkdale Parkway), between 89A and 1<sup>st</sup> South Street: this road does not have paved shoulders, however traffic volumes are low and it serves residential areas. This road is planned to have 4 foot bike lanes and sidewalks installed under a transportation enhancement grant.
  - SR 89A, between 11<sup>th</sup> Street and 0.18 miles south of Pine Shadows Boulevard: the recently completed construction on SR 89A did not include bicycle lanes.
  - Broadway, between Main Street and Clarkdale Town Limits: with exception to near the intersection of Tuzigoot Road, there are no paved shoulders in this area
  - Centerville Road: currently planned to be completed, this road can provide a good east-west bicycle route when paved with shoulders.
- Stakeholders expressed a need for improved multimodal accommodation and connectivity to Tuzigoot National Monument (*Refer to Map ID #5*).
- Sidewalk discontinuities were identified:
  - Black Hills Drive: Haskell Springs Road to Gerry Sue Drive (*Map ID #8*).
  - Broadway: Second North Street to Patio Park neighborhood (*Map ID #9*).
- Stakeholders expressed a need for pedestrian improvements throughout Town. The Town has begun to address this need through the two recent transportation projects.

*Public Comment on Map ID #8:*

- Agreed. However, please don't consider any excessive lighting.



**Figure 21 – 2050 Recommended Statewide Transportation Planning Framework Study, Roadway Plan in Clarkdale Area**

Source: 2010 Statewide Transportation Planning Framework, Final Report, March 2010



1. SR 89A Pedestrian Sidewalk Project (*Map ID #10*). This ADOT project involves the construction of 6 foot sidewalks on the both sides from Cement Plant Road to Black Hills Drive (in Cottonwood).
  2. Clarkdale Parkway Pedestrian/Bicycle Enhancement Project (*Map ID #11*) - This awarded enhancement project involves the construction of 6 foot sidewalks along the south side of Clarkdale Parkway (11th Street) from SR 89A to First South Street, and 4 foot wide bike lanes (as mentioned above). This project will enhance bicycle and pedestrian travel between downtown Clarkdale and SR 89A.
- The Verde Valley Regional Trails Plan has been developed and there is a desire to interconnect trails and develop a “rails to trails” system. The trails plan should be implemented. A priority, as indicated in discussions on potential Community Development Block Grant projects, is to reconstruct the bridge and Benatz Trail from Third North Street to Broadway (*Map ID #18*).
  - 76 crosswalks have been identified as in need of improvements to comply with ADA guidelines.

### **3.4 Transit Needs and Deficiencies**

- LTAF funding which was partially used to fund the Cottonwood Area Transit System is no longer available.
- The Cottonwood Area Transit System currently limits its fixed route operations in Clarkdale to major roads, and attempts to stay out of residential neighborhoods. The noise of the diesel buses is the main concern keeping the buses off of neighborhood streets. Town government supported the idea of a fixed route through some neighborhoods, but funding is a consideration.
- Stakeholders discussed an opportunity to minimize vehicular traffic on SR 89A by providing a shuttle service from Clarkdale to Jerome. A parking and staging area for the shuttle service would be required.

## 4 RECOMMENDED PROJECTS

This chapter describes recommended projects that address the needs and deficiencies identified through the engineering analyses conducted in Working Papers 1 and 2, as well as input from stakeholders and the public. The projects are divided into the following categories:

- Roadway Projects
- Pedestrian Projects
- Bicycle Projects
- Transit Projects

### 4.1 Recommended Roadway Projects

Roadway needs in the Clarkdale area primarily relate to providing improved street and neighborhood connectivity, better accommodation of truck traffic, and traffic generated from planned new developments. Recommended projects were developed to meet roadway needs, which will ultimately enhance connectivity throughout the Town. The recommended projects are summarized in **Table 4-1**. Each of these projects is exhibited in **Figure 22**, and described in more detail in the project sheets that follow. The location of the project appears as a blue line (as appropriate). The projects are referenced by the identification numbers listed in **Table 4-1**, and include a brief description, project justification, planning level cost estimate, and comments on major design constraints identified during field reviews of the project areas.

It is recommended that new road projects be designed as “Complete Streets.” According to the National Complete Streets Coalition, Complete Streets are designed and operated to enable safe access for all users. Pedestrians, bicyclists, motorists and transit riders of all ages and abilities must be able to safely move along and across a Complete Street.

Since each Complete Streets is unique, it is impossible to give a single description for a Complete Street. However, ingredients commonly found on a Complete Street include sidewalks, bicycle lanes (or wide paved shoulders), comfortable and accessible transit stops, frequent crossing opportunities for pedestrians, median islands, accessible pedestrian signals, and curb extensions. A Complete Street in a rural area will look quite different from a Complete Streets in a highly urban area, but both are designed to balance safety and convenience for everyone using the road, including bicyclists, pedestrians, children, and the elderly.

Estimated project costs are provided for each recommended project in **Table 4-1**. For new road construction, a per-lane mile cost estimate was developed based on recent bid tabs for construction projects. The per-lane mile cost was estimated at \$800,000 per lane mile. The cost estimate was developed based on a pavement section of 4 inches of asphalt over an 8 inch aggregate base. It was designed to include construction items such as small retaining walls, relocation of mailboxes, grading, sidewalks, relocating utilities, and moderate drainage costs. The cost estimates do not include right-of-way costs or major bridge/drainage structures.

Shoulder widening to accommodate bicycle lanes was estimated at \$250,000 per mile (for improved shoulders and bicycle lanes on both sides of the roadway).

Sidewalk costs, unless otherwise available from other sources, were developed based on a 5-foot sidewalk. A cost of \$5.00 per square foot of sidewalk was assumed for the sidewalk cost, or \$264,000 per mile, assuming sidewalks on both sides of the street.

Design and administration costs were estimated to be 20 percent of the construction cost.

Bus shelters were estimated at \$17,000 per shelter, based on information in the *Verde Valley: RoadRunner and CAT Rural Transit Five Year Plan* (May, 2009).

**Table 4-1 – Recommended Future Roadway Projects**

Need or Deficiency	Project Number	Project Location	Project Description
Improve street and neighborhood connectivity	R-1	Mescal Spur Road, Minerich Road to Rhinos Place	Construct new two-lane road, 0.32 miles
	R-2	Mescal Spur Road, Old Jerome Highway to SR 89A	Construct new two-lane road, 0.20 miles
	R-3	Lincoln Drive, east terminus to Palisade Drive/Verde Street intersection	Construct new two-lane roadway, 0.31 miles
	R-4	Minerich Road, Abbey Road North to Haskell Springs Road / Black Hills Drive	Construct new 2-lane road, 0.37 miles
	R-5	Minerich Road, Old Jerome Highway to Abbey Road North	Reconstruct 2-lane road, 0.62 miles
	R-6	Centerville Road, SR 89A to current west terminus	Construct new 2-lane road, 0.23 miles
	R-7	Centerville Road, 0.1 mile south of Randall Road to South Broadway	Construct new 2-lane road, 0.17 miles
	R-8	Calle Carrillo, southern terminus to Mingus Shadows Drive	Construct new two lane road, 0.05 miles
	R-9	Clarkdale Sustainability Park access (location to be determined)	Construct roadway connection to serve Clarkdale Sustainability Park (site to be determined)
	R-10	Access road from Black Hills Drive to Mesquite Hills Drive. Exact location to be determined	2-lane road extension (to serve future Cottonwood West Loop).
Safety	R-11	One lane bridge at Bitter Creek	Provide improved traffic control, lighting, and ADA improvements
	R-12	Roundabouts within town limits	Roundabout public education campaign materials.



**Table 4-1 – Recommended Future Roadway Projects (continued)**

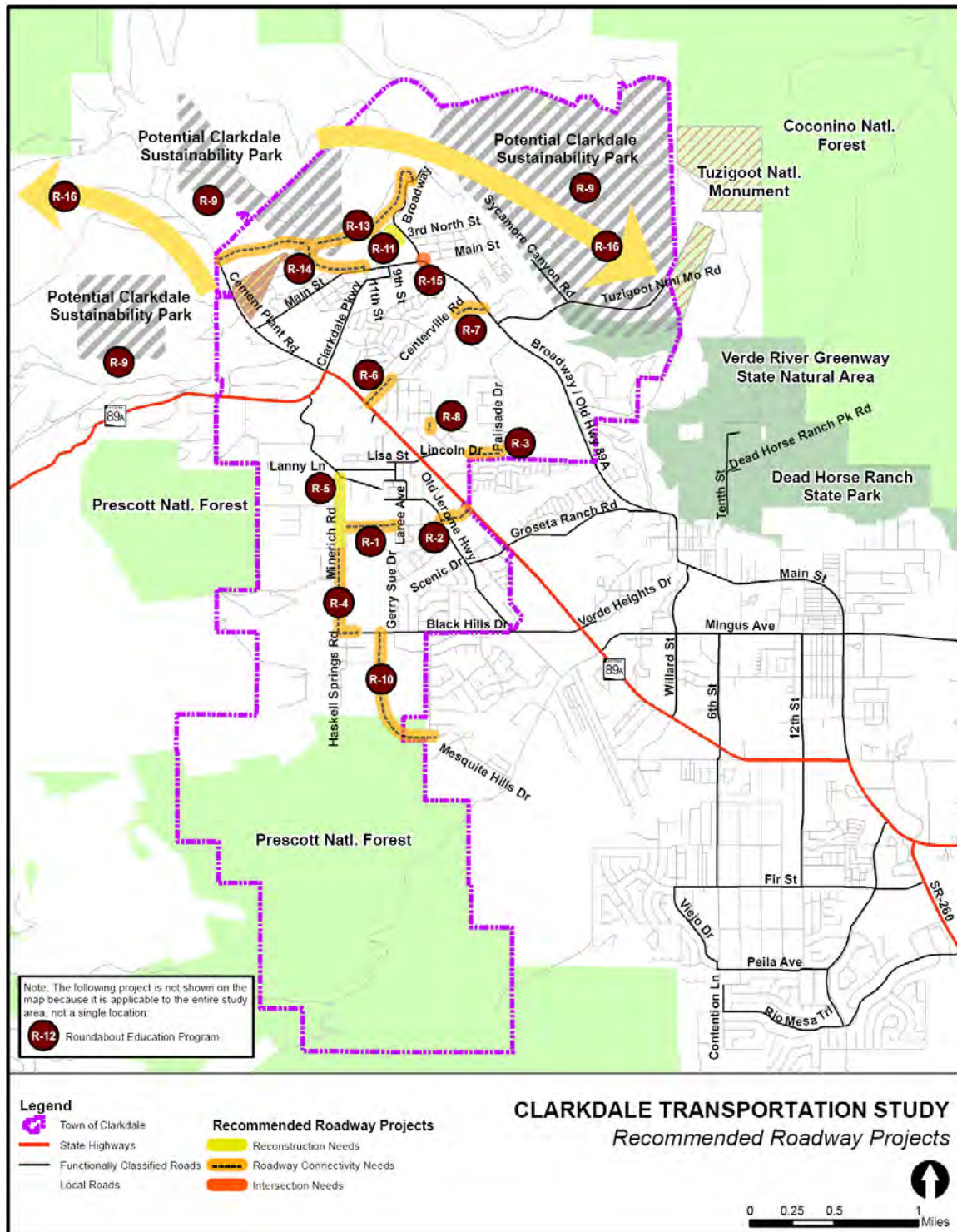
Need or Deficiency	Project Number	Project Location	Project Description
Provide alternate routes for truck traffic, particularly to serve Salt River Materials and Clarkdale Metals	R-13	Industrial Road – location to be determined (between Clarkdale Metals and Cement Plant Road)	Construct new two-lane roadway (by others)
	R-14	Connection road between new Industrial road and 11 <sup>th</sup> Street – location to be determined	Construct new two-lane roadway
Improve Main Street / Broadway intersection	R-15	Main Street / North Broadway Intersection	Construct roundabout
Provide travel alternatives to 89A	R-16	To be determined	89A Alternative Connection Study





# CLARKDALE

TRANSPORTATION STUDY | ADOT | TASK ASSIGNMENT MPD 15-10



**Figure 22 – Recommended Roadway Projects**



## Project Information Sheet R-1

<b>Project No.</b>	R-1
<b>Project Location</b>	Mescal Spur Road, Minerich Road to Rhinos Place
<b>Project Description</b>	Construct new two-lane road, 0.32 miles
<b>Project Justification</b>	Improved connectivity
<b>2010 Cost Estimate</b>	\$515,000 construction cost \$100,000 design and administration cost
<b>Comments</b>	Mescal Spur is classified as a rural collector in 2002 General Plan

Mescal Spur Road, looking west towards Minerich Road







## Project Information Sheet R-2

<b>Project No.</b>	R-2
<b>Project Location</b>	Mescal Spur Road, Old Jerome Highway to SR 89A
<b>Project Description</b>	Construct new two-lane road, 0.20 miles
<b>Project Justification</b>	Improved connectivity
<b>2010 Cost Estimate</b>	\$320,000 construction cost \$65,000 design and administration cost
<b>Comments</b>	Mescal Spur Road is classified as a Rural Collector Road in the 2002 General Plan

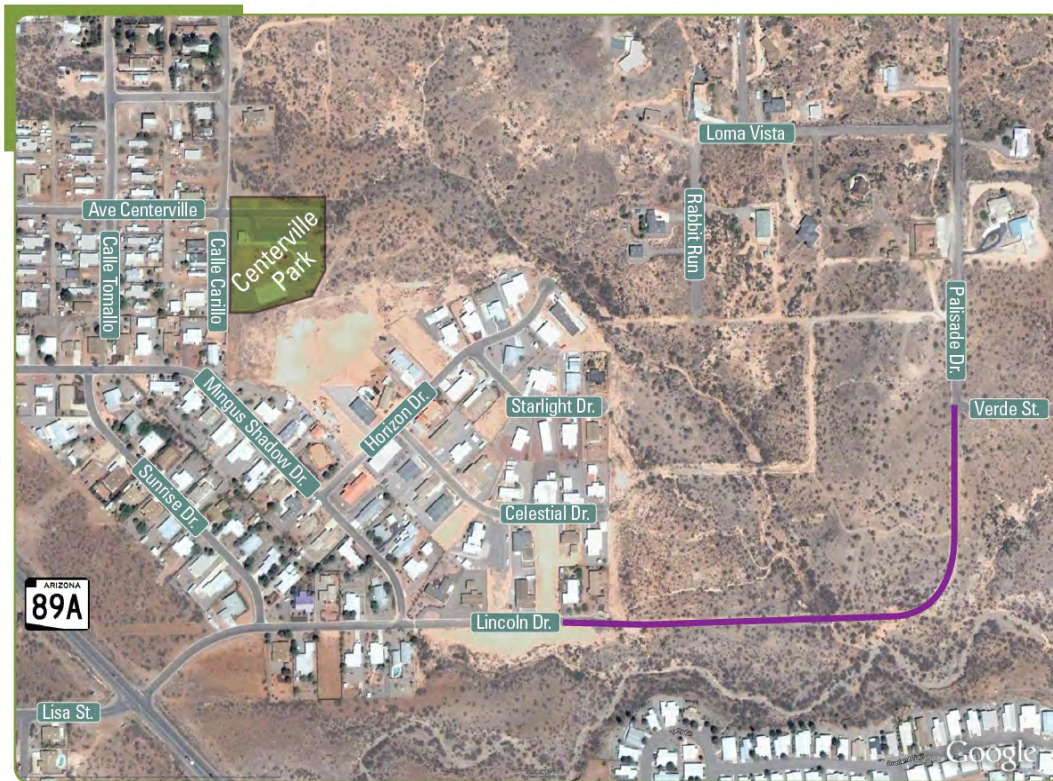


MESCAL SPUR ROAD, OLD JEROME HIGHWAY TO SR 89A



## Project Information Sheet R-3

<b>Project No.</b>	R-3
<b>Project Location</b>	Lincoln Drive, east terminus to Palisade Drive/Verde Street intersection
<b>Project Description</b>	Construct new two-lane road, 0.31 miles
<b>Project Justification</b>	Improved connectivity
<b>2010 Cost Estimate</b>	\$500,000 construction cost \$100,000 design and administration cost
<b>Comments</b>	Construction will involve a wash crossing. Lincoln Drive is Federally functionally classified as an urban local street, and unclassified in the 2002 General Plan



LINCOLN DRIVE, EAST TERMINUS TO PALISADE DRIVE/VERDE STREET INTERSECTION





## Project Information Sheet R-4

<b>Project No.</b>	R-4
<b>Project Location</b>	Minerich Road, Abbey Road North to Haskell Springs Road/ Black Hills Drive
<b>Project Description</b>	Construct new two lane road, 0.37 miles
<b>Project Justification</b>	A new road connection will improve access and emergency response
<b>2010 Cost Estimate</b>	\$590,000 construction cost \$120,000 design and administration cost
<b>Comments</b>	Design will involve a wash crossing at the southern end of the project (shown as a wavy blue line in aerial photo below). Minerich Road is classified as a rural collector in the 2002 General Plan.



MINERICH ROAD, ABBEY ROAD NORTH TO  
HASKELL SPRINGS ROAD/BLACK HILLS DRIVE



View of Minerich Road, looking  
south towards Abbey Road North



## Project Information Sheet R-5

<b>Project No.</b>	R-5
<b>Project Location</b>	Minerich Road, Old Jerome Highway to Abbey Road North
<b>Project Description</b>	Reconstruct two-lane road, 0.62 miles
<b>Project Justification</b>	Improve north-south access
<b>2010 Cost Estimate</b>	\$990,000 construction cost \$200,000 design and administration cost
<b>Comments</b>	Cost estimate assumes major reconstruction. Minerich Road is classified as a rural collector in the 2002 General Plan.







## Project Information Sheet R-6

<b>Project No.</b>	R-6
<b>Project Location</b>	Centerville Road, SR 89 A to existing west terminus
<b>Project Description</b>	Construct new two-lane road, 0.23 miles. Bicycle lanes are included in this project.
<b>Project Justification</b>	Provide better east-west access and serve Centerville and Mountain Gate neighborhoods
<b>2010 Cost Estimate</b>	\$370,000 construction cost \$75,000 design and administration cost Costs include bicycle lanes on the entire length of Centerville Road.
<b>Comments</b>	Large wash crossing will be a design constraint. Centerville Road is functionally unclassified, but will serve as a collector street when completed.



CENTERVILLE ROAD, 89A TO EXISTING WEST TERMINUS



## Project Information Sheet R-7

<b>Project No.</b>	R-7
<b>Project Location</b>	Centerville Road, 0.1 miles south of Randall Road to South Broadway (currently out to bid, funded by Mountain Gate Bonds)
<b>Project Description</b>	Construct new two-lane road, 0.17 miles. Bicycle lanes are included in this project.
<b>Project Justification</b>	Completing Centerville Road between SR 89A and South Broadway will provide a major east-west route through Clarkdale.
<b>2010 Cost Estimate</b>	\$270,000 construction cost \$55,000 design and administration cost Costs include bicycle lanes
<b>Comments</b>	Centerville Road is functionally unclassified, but will serve as a collector street when completed.



**CENTERVILLE ROAD, 0.1 MILES SOUTH OF RANDALL ROAD  
TO SOUTH BROADWAY ROAD**





## Project Information Sheet R-8

<b>Project No.</b>	R-8
<b>Project Location</b>	Calle Carillo, southern terminus to Mingus Shadows Drive
<b>Project Description</b>	Construct new two-lane road connection, 0.07 miles
<b>Project Justification</b>	This short road connection will provide a link between the Centerville and Mingus Shadows neighborhoods
<b>2010 Cost Estimate</b>	\$80,000 construction cost \$15,000 design and administration cost
<b>Comments</b>	There are potential impacts to the Centerville Park (shown on aerial) and potential right-of way impacts to 1-2 homes, and Centerville Park. This street is functionally unclassified, and serves as a local street.



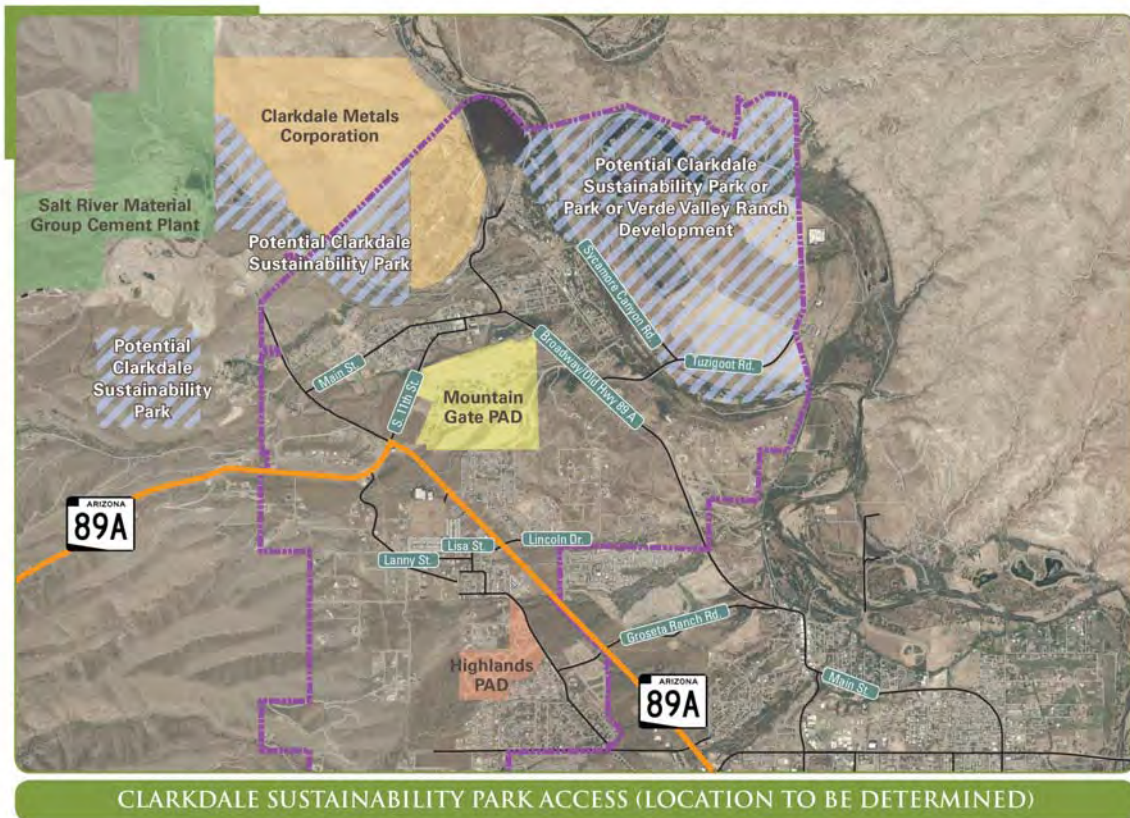
CALLE CARILLO, SOUTHERN TERMINUS  
TO MINGUS SHADOWS DRIVE



View of south end of Calle  
Carillo, showing Centerville  
Park at left

## Project Information Sheet R-9

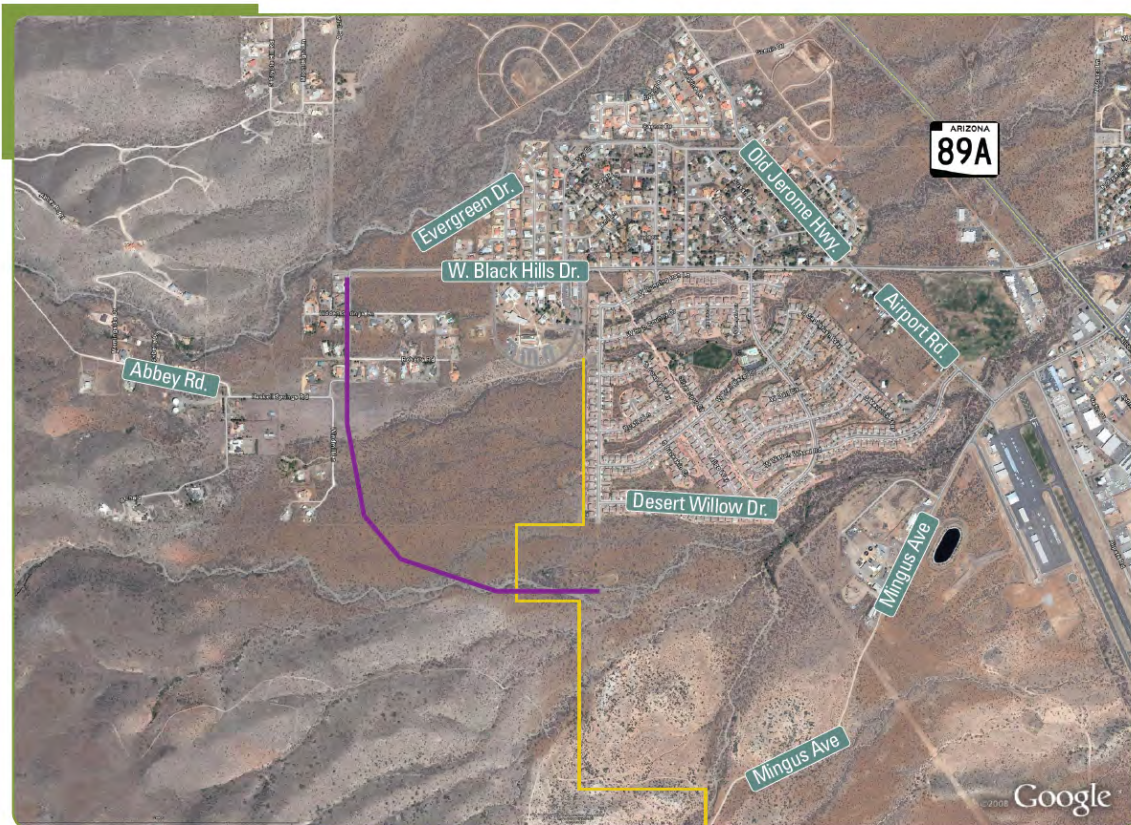
<b>Project No.</b>	R-9
<b>Project Location</b>	Clarkdale Sustainability Park Access (location to be determined)
<b>Project Description</b>	Design concept study of roadway connection to serve the Clarkdale Sustainability Park
<b>Project Justification</b>	Determination of traffic impacts and laneage needs once site is selected.
<b>2010 Cost Estimate</b>	\$100,000 (Alignment Study / Design Concept Report)
<b>Comments</b>	Site to be determined





## Project Information Sheet R-10

<b>Project No.</b>	R-10
<b>Project Location</b>	Access Road from Haskell Springs Road/Black Hills Drive to Mesquite Hills Drive (and to serve future Cottonwood West Loop). Exact location to be determined.
<b>Project Description</b>	Design concept study of new two lane road
<b>Project Justification</b>	Improve connectivity between Clarkdale and Cottonwood
<b>2010 Cost Estimate</b>	\$500,000 (for Alignment Study / Design Concept Report)
<b>Comments</b>	Cost will depend on specific location. This road would serve as a collector street.



ACCESS ROAD FROM HASKELL SPRINGS ROAD/BLACK HILLS DRIVE TO MESQUITE HILLS DRIVE (AND TO SERVE FUTURE COTTONWOOD WEST LOOP).  
EXACT LOCATION TO BE DETERMINED.

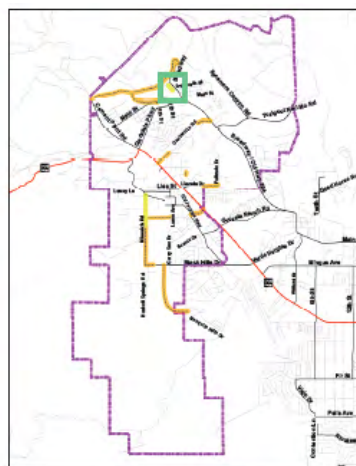
## Project Information Sheet R-11

<b>Project No.</b>	R-11
<b>Project Location</b>	Bitter Creek Bridge (one-lane bridge) on North Broadway
<b>Project Description</b>	Provide improved traffic control, lighting, and ADA improvements
<b>Project Justification</b>	Safety improvement
<b>2010 Cost Estimate</b>	\$200,000 <sup>1</sup> construction cost \$50,000 design and administration cost
<b>Comments</b>	Curbing needs to be modified to provide ADA accessibility



Bitter Creek Bridge, looking north

Bitter Creek Bridge, View Looking North



Project Location

<sup>1</sup> Cost estimate was obtained from Clarkdale Town Council Meeting Minutes dated 2/9/10, #1474, page 3.

## Project Information Sheet R-12

<b>Project No.</b>	R-12
<b>Project Location</b>	Roundabouts within town limits
<b>Project Description</b>	Roundabouts Education Program
<b>Project Justification</b>	Goal of education materials is to provide increased safety at roundabouts. Stakeholder input indicated drivers may be unfamiliar driving on roundabouts
<b>2010 Cost Estimate</b>	\$10,000
<b>Comments</b>	An education program could include education pamphlets, and press releases describing roundabout operations, and driving protocol.



View of advance warning sign for roundabout on Clarkdale Parkway



View of advance warning sign for roundabout on SR 89A

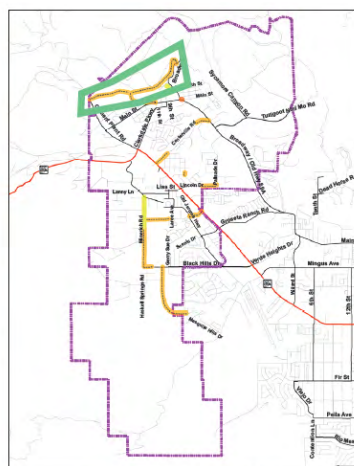


## Project Information Sheet R-13

<b>Project No.</b>	R-13
<b>Project Location</b>	Private Industrial Road (location to be determined – between Clarkdale Metals and Cement Plant Road)
<b>Project Description</b>	Construct new private two-lane roadway (by others)
<b>Project Justification</b>	To serve planned development and truck traffic
<b>2010 Cost Estimate</b>	To be determined (by others)
<b>Comments</b>	This road would serve as a collector road.



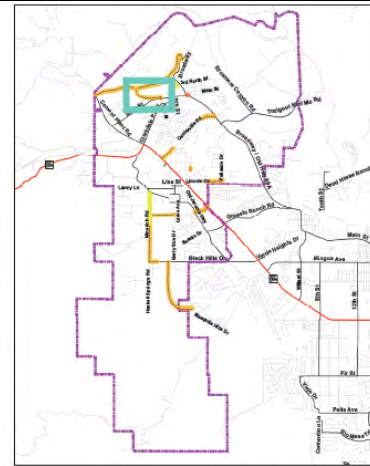
View of potential Private Industrial Road location, looking north



Project Location

## Project Information Sheet R-14

<b>Project No.</b>	R-14
<b>Project Location</b>	Connect road between new industrial road and 11 <sup>th</sup> Street (location to be determined)
<b>Project Description</b>	Design and construct new two-lane road
<b>Project Justification</b>	Provide additional access for new development traffic and truck traffic
<b>2010 Cost Estimate</b>	\$500,000 Design Concept Study; Construction costs to be determined
<b>Comments</b>	A design concept report would be needed to identify a preferred alternative alignment.



Project Location

View at the north end of 11th Street, showing topographic constraints



## Project Information Sheet R-15

<b>Project No.</b>	R-15
<b>Project Location</b>	Main Street/North Broadway Intersection
<b>Project Description</b>	Design and construct roundabout
<b>Project Justification</b>	Improve safety and traffic flow
<b>2010 Cost Estimate</b>	\$1,200,000 (per Town of Clarkdale) (assume cost includes design, construction and administration)
<b>Comments</b>	Programmed for FY 2011



MAIN STREET/NORTH BROADWAY ROAD INTERSECTION



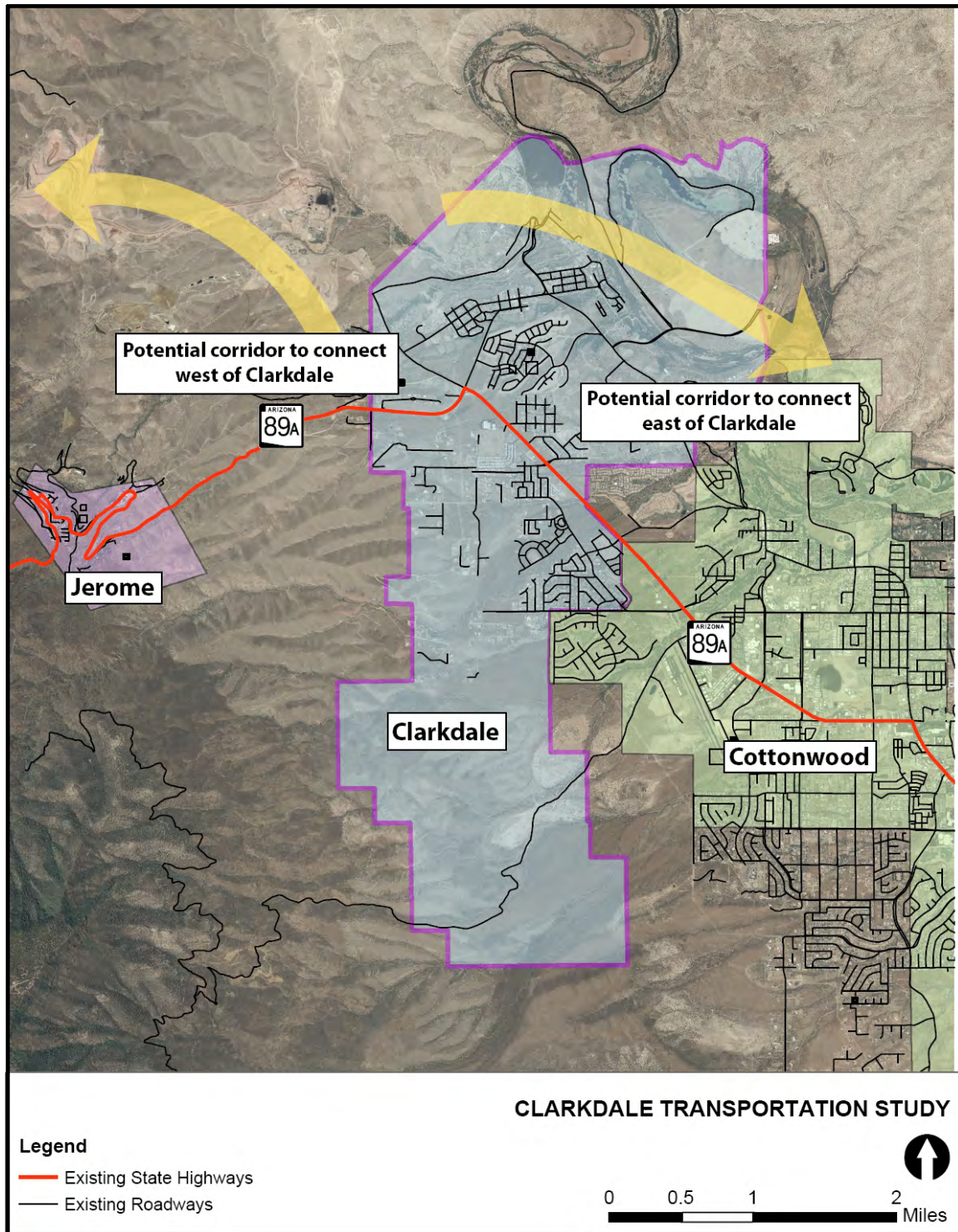
### Project Information Sheet R-16

<b>Project No.</b>	R-16
<b>Project Location</b>	To be determined
<b>Project Description</b>	89A Alternative Connection Study
<b>Project Justification</b>	To provide travel alternatives to 89A
<b>2010 Cost Estimate</b>	\$250,000 corridor study
<b>Comments</b>	<i>Refer to potential SR 89A Alternative Connection Study concepts on next page.</i>



# CLARKDALE

TRANSPORTATION STUDY | ADOT | TASK ASSIGNMENT MPD 15-10



*Potential Concepts for SR-89A Alternative Connection Study*

## **4.2 Recommended Bicycle and Pedestrian Projects**

Providing an interconnected bicycle and pedestrian system will provide more travel options for residents and visitors. An improved system of sidewalks, paths, and pedestrian crossing amenities supports the objective of the General Plan to “Provide an adequate, safe, convenient and interconnected system of pedestrian facilities throughout the Town” (Objective 3-B.a).

Similarly, provision of more bike routes within the Town supports the 2002 General Plan objective to “Improve Opportunities for Bicycling” (Objective 3-B.b).

General advantages of an enhanced bicycle and pedestrian system includes:

- Bicycling and walking are non-polluting means of transportation.
- There are health benefits to bicycling and walking. Incorporating cycling and walking into a daily exercise program can improve fitness.
- Bicycling and walking is economically efficient, compared to driving a car.

### **4.2.1 Recommended Bicycle Projects**

The Town of Clarkdale currently lacks a connected bicycle route network. The General Plan (2002) states that there is a general perception that bicycling on streets is unsafe due to poor surface conditions, a lack of adequate roadway width, and the lack of an interconnected bicycle routes system. Implementation of the following projects will greatly enhance the bike system in Clarkdale, and provide travel alternatives. The following recommended projects, summarized in **Table 4-2**, and depicted in **Figure 23**, resulted from a review of information provided by the Town of Clarkdale, and from input from the Technical Advisory Committee and stakeholders. Each of these recommended projects is described in more detail on the following projects sheets.



**Table 4-2 – Recommended Bicycle Projects**

Need or Deficiency	Project Number	Project Location	Project Description
The Town of Clarkdale currently lacks a connected bicycle route network for commuters and recreational bicyclists.	B-1	South Broadway, between Main Street and Clarkdale Town limits	Striped bike lanes; shoulder improvements may be necessary
	B-2	Clarkdale Parkway, from SR 89A to 11 <sup>th</sup> Street, and north to on 11 <sup>th</sup> Street to Main Street	Construct striped bike lanes (portion from SR 89A to 11 <sup>th</sup> Street is currently programmed)
	B-3	Centerville Road, SR 89A to South Broadway (portion near South Broadway is already out to bid)	Striped bike lanes
	B-4	Main Street, from Cement Plant Road to Broadway	Striped bike lanes
	B-5	Tuzigoot National Monument Road	Develop a plan to improve bicycle and pedestrian improvement access to National Monument. The plan may consider on-road bicycle accommodation (striped bicycle lanes, as well as a shared use path adjacent to the road. Bridge improvements may be necessary.



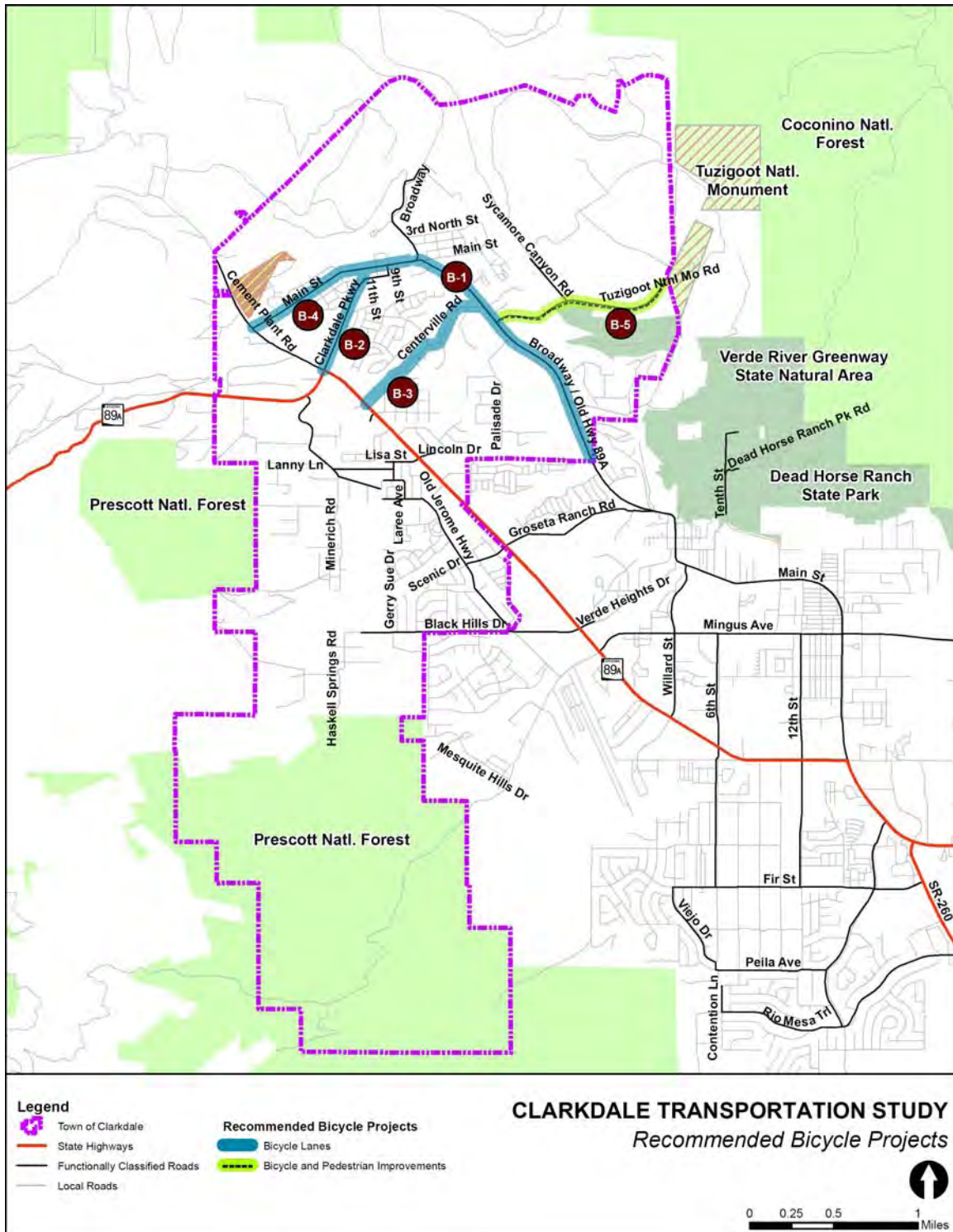


Figure 23 – Recommended Bicycle Projects



## Project Information Sheet B-1

<b>Project No.</b>	B-1
<b>Project Location</b>	South Broadway, between Main Street and Clarkdale Town limits
<b>Project Description</b>	Construct bike lanes on South Broadway between Main Street and Clarkdale Town limits, 1.62 miles
<b>Project Justification</b>	Improved safety for bicyclists
<b>2010 Cost Estimate</b>	\$405,000 construction cost \$80,000 design and administration
<b>Comments</b>	This project will provide a major link in the bicycle system.



SOUTH BROADWAY ROAD, BETWEEN MAIN STREET AND CLARKDALE TOWN LIMITS





## Project Information Sheet B-2

<b>Project No.</b>	B-2
<b>Project Location</b>	Clarkdale Parkway, from SR 89A to 11th Street, then north on 11th Street to Main Street, 0.70 miles
<b>Project Description</b>	Construct bike lanes and sidewalks (portion from SR 89A to 11th Street is currently programmed)
<b>Project Justification</b>	Clarkdale Parkway is a major route serving residential areas, and connecting homes, schools, and commercial areas. Currently there are no pedestrian and bicycle facilities on this road, and this has led to safety concerns.
<b>2010 Cost Estimate</b>	\$450,000 (local share approximately \$25,000) (assume cost includes design, construction and administration)Source: NACOG TIP
<b>Comments</b>	Programmed for FY 2012 per NACOG TIP



CLARKDALE PARKWAY, FROM SR 89A TO 11TH STREET, THEN NORTH ON 11TH STREET TO MAIN STREET, 0.70 MILES





## Project Information Sheet B-3

<b>Project No.</b>	B-3 (Refer to Project R-6 and Project R-7).
<b>Project Location</b>	Centerville Road, SR 89A to South Broadway (Note: segment near South Broadway will be constructed in early 2011.), 0.95 miles
<b>Project Description</b>	Bike lanes should be incorporated into future Centerville Road improvement projects (R-6 and R-7). Bike lanes should extend the full length of Centerville Road, from South Broadway to SR 89A.
<b>Project Justification</b>	Bike lanes on this road extension will connect neighborhoods and provide access to SR 89A and South Broadway
<b>2010 Cost Estimate</b>	Included in project R-6 and R-7.
<b>Comments</b>	Bike lanes for the southwestern and northeastern ends of the project will be constructed as part of projects R-6 and R-7. Bicycle lanes are included in the R-6 and R-7 project costs.



## Project Information Sheet B-4

<b>Project No.</b>	B-4
<b>Project Location</b>	Main Street, from Cement Plant Road to Broadway
<b>Project Description</b>	Construct bicycle lanes (uncurbed sections) and stripe bike lanes (curbed sections) on Main Street, between Cement Plant Road and Broadway (1 mile)
<b>Project Justification</b>	There are few existing bike lanes in Clarkdale. A network of bike lanes in Clarkdale will improve bicycle access to residences, schools, commercial, and government buildings.
<b>2010 Cost Estimate</b>	\$250,000 construction cost \$50,000 design and administration cost
<b>Comments</b>	



MAIN STREET, FROM CEMENT PLANT ROAD TO BROADWAY

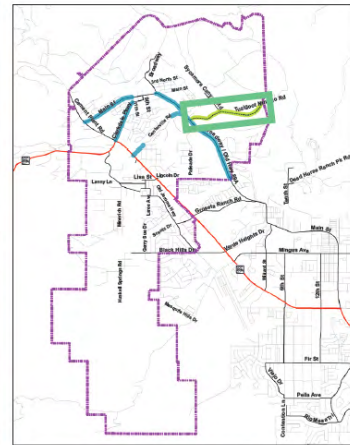


## Project Information Sheet B-5

<b>Project No.</b>	B-5
<b>Project Location</b>	Tuzigoot National Monument Road
<b>Project Description</b>	Develop multimodal improvement plan, to improve pedestrian and bicycle access to Tuzigoot National Monument. Plan may include bicycle lanes and a shared use path. Improvements to the existing bridge may be required.
<b>Project Justification</b>	Improved safety for bicyclists and pedestrians
<b>2010 Cost Estimate</b>	\$100,000
<b>Comments</b>	This project could be developed jointly with the National Park Service.



Tuzigoot National Monument Bridge, looking westbound



Project Location

## 4.2.2 Recommended Pedestrian and Trail Projects

Pedestrian and trail projects were developed from a number of sources including Transportation Enhancement grant applications, suggestions for Community Development Block grant projects, stakeholder input, and assessment of sidewalk and pedestrian conditions.

Information on trails was obtained from the draft Verde Valley Regional Trails Plan and from input provided by the Arizona State Parks. Needs expressed in discussion with the Arizona State Parks representative were a desire to interconnect trails and develop a “rails to trails” system. It should be noted that in the discussion of future trails across United States Forest Service (USFS) lands, trail additions are conditioned on USFS decisions. Pedestrian and trail projects are listed in **Table 4-3**, and are exhibited in **Figure 24**.

**Table 4-3 – Recommended Pedestrian and Trail Projects**

Need or Deficiency	Project Number	Project Location	Project Description
Address sidewalk discontinuities	P-1	Black Hills Drive, from Haskell Springs Drive to the Town boundary	Construct sidewalks
	P-2	North Broadway, from 2 <sup>nd</sup> North Street to Patio Park area	Construct sidewalks and lighting
	P-3	SR 89A, from Cement Plant Road to Black Hills Drive in Cottonwood	Construct 6-foot sidewalks on both sides (currently programmed)
	P-4	Clarkdale Parkway (11th Street), from SR 89A to First South Street	Construct 6 foot sidewalks along the south side of Clarkdale Parkway (11th Street) from SR 89A to First South Street, and 4 foot wide bike lanes (programmed project)
Implement Verde Valley Regional Trails Plan	P-5	Benatz Trail	Reconstruct the bridge and Benatz Trail from 3 <sup>rd</sup> North Street to South Broadway
Improve ADA accessibility at intersections	P-6	To be determined	Conduct an ADA compliance inventory of intersection crosswalks





# CLARKDALE

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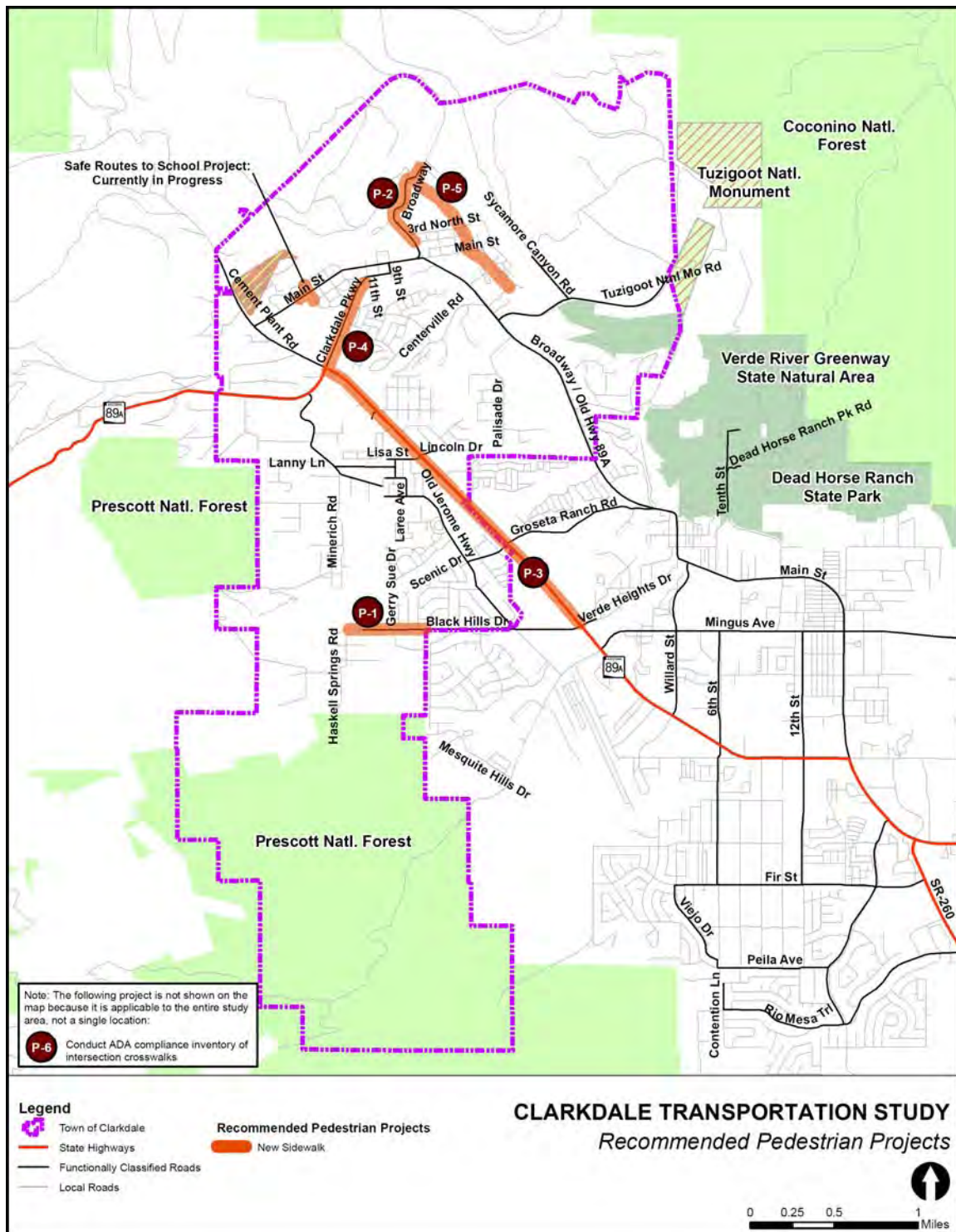


Figure 24 – Recommended Pedestrian and Trail Projects



## Project Information Sheet P-1

<b>Project No.</b>	P-1
<b>Project Location</b>	Black Hills Drive, from Haskell Springs Drive to end of existing sidewalk, at approximately 225 feet east of Sky Drive (0.46 miles total project length)
<b>Project Description</b>	Construct sidewalks
<b>Project Justification</b>	Extend missing segment of sidewalk
<b>2010 Cost Estimate</b>	\$120,000 construction cost \$24,000 design and administration cost
<b>Comments</b>	



**BLACK HILLS DRIVE, FROM HASKELL SPRINGS DRIVE  
TO THE TOWN BOUNDARY (0.46 MILES)**





## Project Information Sheet P-2

<b>Project No.</b>	P-2
<b>Project Location</b>	North Broadway, from 2 <sup>nd</sup> North Street to Patio Park area
<b>Project Description</b>	Construct sidewalks and lighting, 0.62 miles
<b>Project Justification</b>	This project will improve safety for pedestrians in this residential area.
<b>2010 Cost Estimate</b>	\$355,000 <sup>1</sup> construction cost \$ 70,000 design and administration cost
<b>Comments</b>	This has been proposed as a Community Development Block Grant project



<sup>1</sup> Cost estimate was obtained from Council meeting minutes dated 2/9/10, #1474, page 3.





## Project Information Sheet P-3

<b>Project No.</b>	P-3
<b>Project Location</b>	SR 89A, from Cement Plant Road to Black Hills Drive in Cottonwood
<b>Project Description</b>	Construct 6-foot sidewalks on the both sides (currently programmed), 2.17 miles
<b>Project Justification</b>	This project is needed to provide a safe corridor for pedestrians. Currently there are only sidewalks in the roundabout areas.
<b>2010 Cost Estimate</b>	\$1,300,000 (assume cost includes design, construction and administration) (source: Town of Clarkdale).
<b>Comments</b>	



Aerial view of roundabout at SR 89A and Clarkdale Parkway, showing limited sidewalks



## Project Information Sheet P-4

<b>Project No.</b>	P-4
<b>Project Location</b>	Clarkdale Parkway, 89A to First South Street
<b>Project Description</b>	Construct 6-foot wide sidewalks along the south side of Clarkdale Parkway and bike lanes from SR 89A to First South Street (funded Transportation Enhancement project), 0.6 miles
<b>Project Justification</b>	Clarkdale Parkway is a major route serving residential areas, and connecting homes, schools, and commercial areas. Currently there are no pedestrian and bicycle facilities on this road, and this has led to safety concerns.
<b>2010 Cost Estimate</b>	\$450,000 (local share approximately 25,000), assume cost includes design, construction and administration. Source: NACOG TIP
<b>Comments</b>	Programmed for Fiscal Year 2012 per NACOG TIP



11TH STREET (CLARKDALE PARKWAY), BETWEEN SR 89A AND 1ST SOUTH STREET, 0.60 MILES





## Project Information Sheet P-5

<b>Project No.</b>	P-5
<b>Project Location</b>	Benatz Trail
<b>Project Description</b>	Reconstruct the bridge. Reconstruct and extend Benatz Trail, starting at N. Broadway and going south for 1.4 miles along an old railroad alignment.
<b>Project Justification</b>	This trail project was recommended in the trails plan and is a popular trail in Clarkdale
<b>2010 Cost Estimate</b>	\$350,000 construction cost \$70,000 design and administration cost
<b>Comments</b>	



Former rail bridge to be redesigned as a trail



Existing Benatz Trail



Project Location

1 Cost estimate was obtained from Council meeting minutes dated 2/9/10, #1474, page 4. The cost estimate was comprised of three elements: Reconstruct surface - \$39,775; Rebuild "burnt out trestle" - \$22,800; Continue trail Third North Street to Broadway Road - \$285, 750



## Project Information Sheet P-6

<b>Project No.</b>	P- 6
<b>Project Location</b>	Various throughout the Town
<b>Project Description</b>	Conduct ADA compliance inventory
<b>Project Justification</b>	There is a need to bring a number of crosswalks to meet ADA standards
<b>2010 Cost Estimate</b>	\$15,000
<b>Comments</b>	Retrofitting intersections was a candidate Community Development Block Grant project



View of ADA compliant crosswalk at 11th St. and Main St.

### 4.3 Recommended Transit Projects

Funding for transit improvements and operations is a critical need in the Town. As such, one of the first transit projects is a study to identify sustainable funding alternatives for transit in Clarkdale.

Other recommended transit projects include feasibility studies to determine if it is cost effective, and feasible to provide fixed route transit service in some of the Clarkdale neighborhoods, and whether a shuttle service between Clarkdale and Jerome would attract passengers. Transit projects are summarized in **Table 4-4**, and exhibited in **Figure 25**. Individual project descriptions follow this table.

**Table 4-4 – Recommended Transit Projects**

Need or Deficiency	Project Number	Project Location	Project Description
LTAF funding which was partially used to fund the Cottonwood Area Transit System is no longer available.	T-1	N/A	Sustainable revenue generation evaluation study
Provision of fixed route transit service through some neighborhoods.	T-2	To be determined	Route extension study
Stakeholders discussed an opportunity to minimize vehicular traffic on SR 89A by providing a shuttle service from Clarkdale to Jerome. A parking and staging area for the shuttle service would be required.	T-3	Clarkdale to Jerome	Feasibility study of shuttle service from Clarkdale to Jerome
There are a number of bus stop locations that do not have bus shelters. Construction of bus shelters would encourage ridership.	T-4	<ul style="list-style-type: none"> <li>▪ Main Street and 13th Street</li> <li>▪ Main Street and Bonnaha Avenue</li> <li>▪ Centerville Avenue and SR 89A</li> <li>▪ Lisa Street and SR 89A</li> <li>▪ Broadway / Hollow Reed Lane</li> <li>▪ Black Hills Drive / Windy Street</li> </ul>	Construct bus shelters at unsheltered bus stop locations



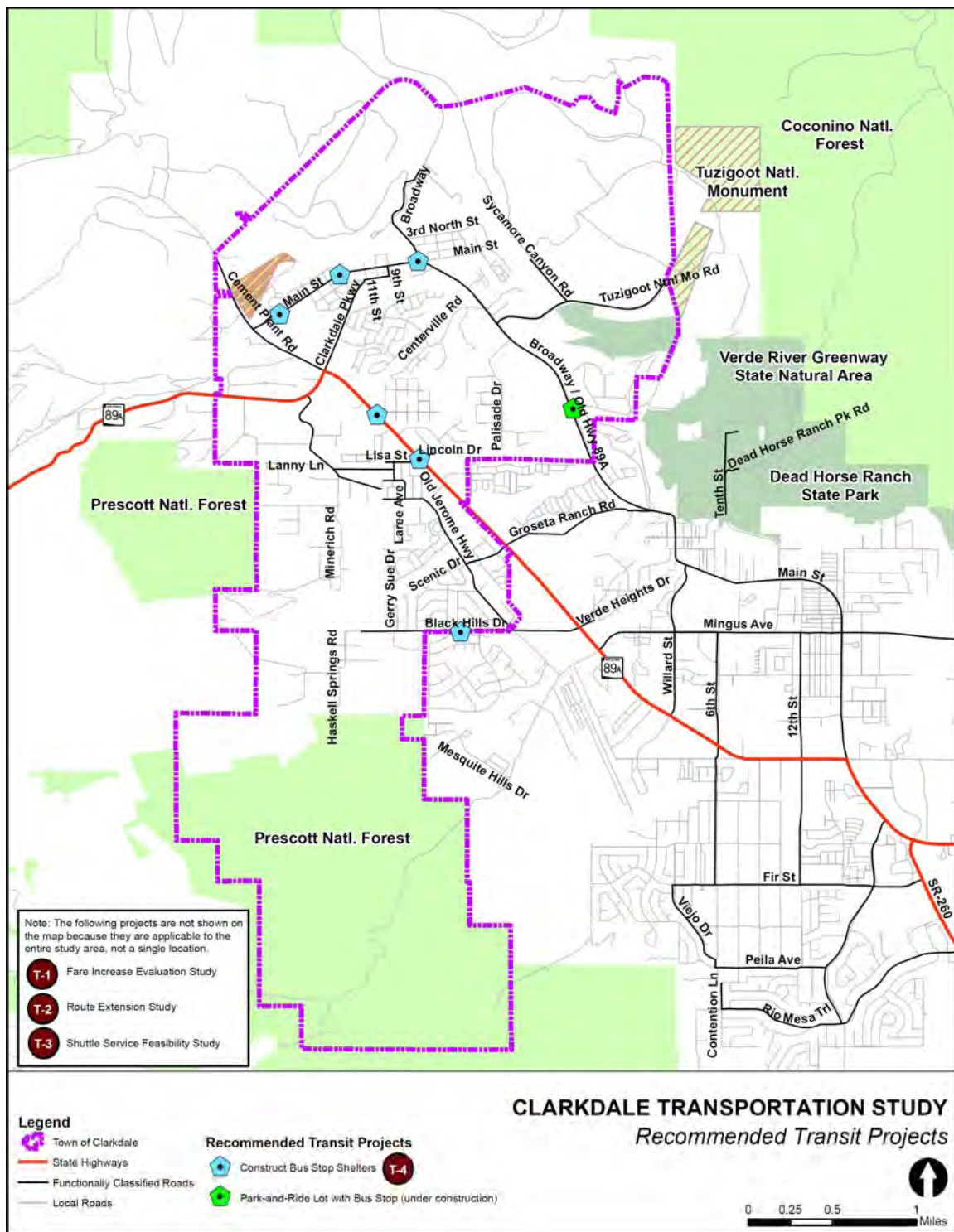
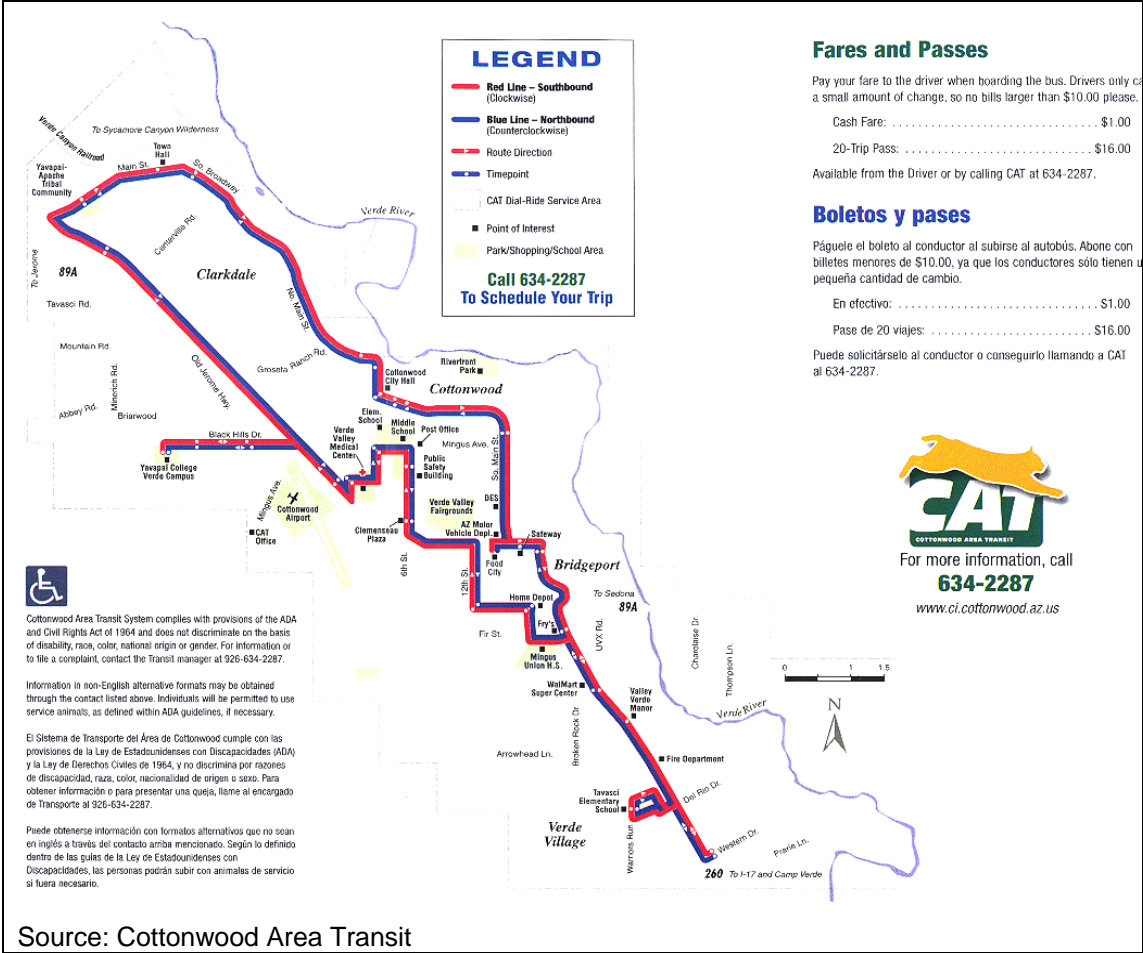


Figure 25 – Recommended Transit Projects



Project Information Sheet T-1

Project No.	T-1
Project Location	Not applicable
Project Description	Sustainable revenue generation evaluation study for Cottonwood Area Transit
Project Justification	Loss of transit funding may require fare increases in the future.
2010 Cost Estimate	\$50,000
Comments	Study should be coordinated with the Northern Arizona Intergovernmental Public Transportation Authority (NAIPTA)



Source: Cottonwood Area Transit



## Project Information Sheet T-2

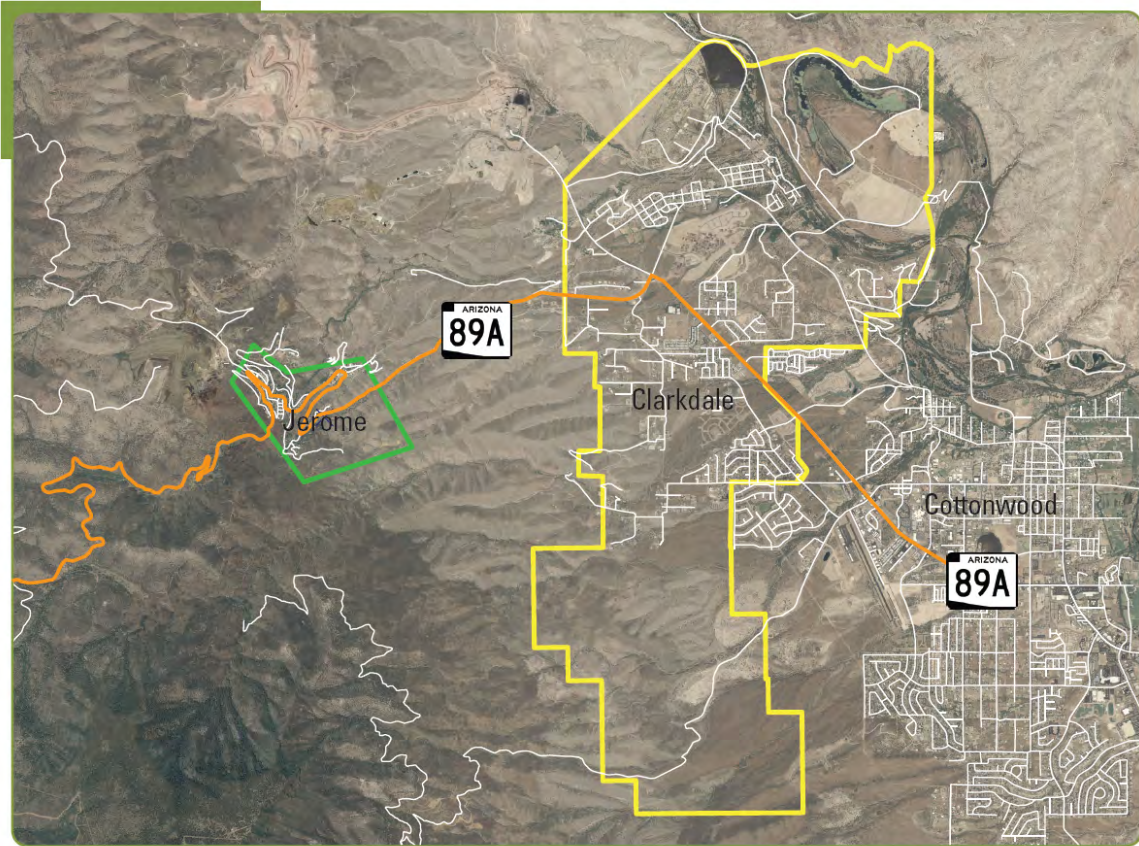
<b>Project No.</b>	T-2
<b>Project Location</b>	To be determined
<b>Project Description</b>	Route extension study
<b>Project Justification</b>	This issue was raised by the CAT transit representative, based on input from the public
<b>2010 Cost Estimate</b>	\$50,000
<b>Comments</b>	<p>The study should evaluate the potential for serving internal streets.</p> <p>An issue raised by the CAT representative was the potential for CAT service within certain neighborhoods in Clarkdale. The noise of diesel buses and available funding for additional service has been constraints to expanding service into neighborhoods. Potential roads mentioned for transit service are Lisa Street and Centerville Road.</p>



View of CAT bus stop

## Project Information Sheet T-3

<b>Project No.</b>	T-3
<b>Project Location</b>	Clarkdale to Jerome
<b>Project Description</b>	Feasibility study of shuttle service from Clarkdale to Jerome
<b>Project Justification</b>	This issue has been raised by stakeholders
<b>2010 Cost Estimate</b>	\$50,000
<b>Comments</b>	Study should consider locations for park and ride. One potential location is the planned new fire station in Clarkdale.



CLARKDALE TO JEROME



### Project Information Sheet T-4

<b>Project No.</b>	T-4
<b>Project Location</b>	<ul style="list-style-type: none"> <li>▪ Main Street and 13<sup>th</sup> Street</li> <li>▪ Main Street and Bonnaha Avenue</li> <li>▪ Avenida Centerville and SR 89A</li> <li>▪ Lisa Street and SR 89A</li> <li>▪ Broadway / Hollow Reed Lane</li> <li>▪ Black Hills Drive / Windy Street</li> </ul>
<b>Project Description</b>	Construct bus shelters
<b>Project Justification</b>	Sheltered bus stops encourage bus ridership by providing a place to wait that is protected from the elements.
<b>2010 Cost Estimate</b>	\$17,000 per shelter, or \$120,000 construction cost \$20,000 design and administration cost
<b>Comments</b>	Availability of right-of-way to place a stop needs to be determined. It may be possible to contract with an advertising company to reduce the cost of the shelters.



View of CAT bus stop on Main Street

## 5 EVALUATION CRITERIA AND PROJECT PRIORITIZATION

### 5.1 *Criteria for Prioritizing Roadway Improvements*

The roadway improvement projects that were identified in Chapter 3 will address critical needs over the next ten years. These projects were further prioritized into the following categories:

**Short-term, lower cost projects** – In general, short-term projects are those needed to address current needs and deficiencies. Short term projects also include currently programmed projects. The Project team coordinated with Town staff to identify realistic timeframes for the remaining projects, as summarized in the accompanying tables.

**Mid-term, higher cost projects** – These are higher cost projects that have higher priorities due to safety, connectivity, and affected jurisdiction concerns.

**Long-term, higher cost projects** – These are higher cost projects that may need additional lead time to obtain funding, and are not needed to address a specific safety concern.

To guide this implementation, project phasing was accomplished through a process which involved organizing projects into three planning horizons:

1. 0 to 5 Years (short-term)
2. 6 to 10 Years (mid-term)
3. 11 to 20 Years (long term)

### 5.2 *Project Phasing and Implementation – Short Term Projects*

Short term projects are those identified for implementation within the next five years. These projects are either already in the Town's Capital Improvement Program (CIP), or are lower cost and may reasonably be funded. **Table 5-1** summarizes the short term projects.





**Table 5-1 – Short Term (0-5 Years) Projects**

Reference Number	Street or Location	Segment	Description	Project Length (miles)	Construction Cost	Design and Administration Cost (or study cost where noted)	Total Cost <sup>1</sup>	Justification	Champion
<b>Roadway Projects</b>									
R-12	Roundabouts	Various	Public information campaign on safe driving in roundabouts	N/A	N/A	\$10,000 (campaign cost)	\$10,000	Education drivers to properly and safely navigate occur in roundabouts	Town of Clarkdale
R-15	Main Street / North Broadway Road	Intersection	Construct roundabout (currently programmed)	N/A	\$1,200,000	N/A (assumes cost includes design and administration costs )	\$1,200,000*	Improve traffic operations	Town of Clarkdale
<b>Bicycle Projects</b>									
B-2	Clarkdale Parkway	From SR 89A to 11th Street, then north on 11th Street to Main Street	Construct bike lanes (portion from SR 89A to 11th Street is currently programmed)	0.70	\$450,000	N/A (assumes cost includes design and administration costs )	\$450,000*	Safety	Town of Clarkdale
B-6	Tuzigoot National Monument Road	Broadway Road to Tuzigoot National Monument	Develop multimodal improvement plan to improve bicycle and pedestrian access to Tuzigoot National Monument.	N/A	N/A	\$100,000 (study cost)	\$100,000	Improved multimodal facilities	Town and National Park Service

<sup>1</sup> Projects denoted with an (\*) are currently programmed and funded



**Table 5-1 – Short Term (0-5 Years) Projects (continued)**

Reference Number	Street or Location	Segment	Description	Project Length (miles)	Construction Cost	Design and Administration Cost (or study cost where noted)	Total Cost <sup>1</sup>	Justification	Champion
<b>Pedestrian Projects (continued)</b>									
P-3	SR 89A	Cement Plant Road to Black Hills Drive in Cottonwood	Construct 6-foot sidewalks on the both sides (currently programmed)	2.17	\$1,300,000	N/A (assumes cost includes design and administration costs )	\$1,300,000*	Improved safety for pedestrians	ADOT
P-4	Clarkdale Parkway (11th Street)	SR 89A to First South Street	Construct 6 foot sidewalks along the south side of Clarkdale Parkway from SR 89A to First South Street, and 4 foot wide bike lanes (programmed project)	0.60	\$450,000	N/A (assumes cost includes design and administration costs )	\$450,000*	Improved safety for pedestrians and bicyclists	Town of Clarkdale

<sup>1</sup>An asterisk by the total cost indicates that funding has been approved.

### ***5.3 Project Phasing – Mid-Term Projects***

Mid-term projects are summarized in **Table 5-2**. Mid-term projects are those that may be implemented within the next ten years, but are not within the current Five-year Capital Improvement Program.


**Table 5-2 – Mid Term (6-10 Years) Projects**

Reference Number	Street or Location	Segment	Description	Project Length (miles)	Construction Cost	Design and Administration Cost (or study cost where noted)	Total Cost <sup>1</sup>	Justification	Champion
<b>Roadway Projects</b>									
R-1	Mescal Spur Road	Minerich Road to Rhinos Place	Construct new 2-lane road	0.32 miles	\$515,000	\$100,000	\$615,000	Improved access and connectivity	Town of Clarkdale
R-2	Mescal Spur Road	Old Jerome Highway to SR 89A	Construct new 2-lane road	0.20 miles	\$320,000	\$65,000	\$385,000	Improved access and connectivity	Town of Clarkdale
R-3	Lincoln Drive	East terminus to Palisade Drive/Verde Street intersection	Construct new 2-lane roadway	0.31 miles	\$500,000	\$100,000	\$600,000	Improved access and connectivity	Town of Clarkdale
R-4	Minerich Road	Abbey Road North to Haskell Springs Road/Black Hills Drive	Construct new 2-lane road	0.37 miles	\$590,000	\$120,000	\$710,000	Improved access and connectivity	Town of Clarkdale
R-5	Minerich Road	Old Jerome Highway to Abby Road North	Reconstruct 2-lane road	0.62 miles	\$990,000	\$200,000	\$1,190,000	Improved access and connectivity	Town of Clarkdale
R-6	Centerville Road	SR 89A to existing west terminus	Construct new 2-lane road	0.23	\$370,000	\$75,000	\$445,000	Improved east – west access	Town of Clarkdale
R-7	Centerville Road	0.1 mile south of Randall Road to South Broadway Road	Construct new 2-lane road	0.17 miles	\$270,000	\$55,000	\$325,000	Improved access and connectivity	Town of Clarkdale
R-8	Calle Carillo	Southern terminus to Mingus Shadows Drive	Construct new 2-lane road	0.05	\$80,000	\$15,000	\$95,000	Improve connectivity	Town of Clarkdale

<sup>1</sup>An asterisk by the total cost indicates that funding has been approved.


**Table 5-2 – Mid Term (6-10 Years) Projects – (continued)**

Reference Number	Street or Location	Segment	Description	Project Length (miles)	Construction Cost	Design and Administration Cost (or study cost where noted)	Total Cost <sup>1</sup>	Justification	Champion
<b>Roadway Projects Continued</b>									
R-11	Bitter Creek Bridge	North Broadway Road	Provide improved traffic control, lighting, and ADA improvements	N/A	\$200,000	\$50,000	\$250,000	Safety	Town of Clarkdale
R-13	Private Industrial Road	Location to be determined (between Clarkdale Metals and Cement Plant Road)	Construct new 2-lane roadway (by others)	To be determined	To be determined	To be determined	To be determined	Provide infrastructure for planned development	Clarkdale Metals
<b>Bicycle Projects</b>									
B-1	South Broadway Road	Main Street to Clarkdale Town limits	Construct bike lanes	1.62	\$405,000	\$80,000	\$485,000	Improved safety for bicyclists	Town of Clarkdale
B-3	Centerville Road	SR 89A to South Broadway (portion near South Broadway is already out to bid)	Construct bike lanes as part of road construction	0.95	\$240,000	\$48,000	\$288,000	Improved safety for bicyclists	Town of Clarkdale
B-4	Main Street	Cement Plant Road to Broadway	Construct bike lanes	1	\$250,000	\$50,000	\$300,000	Improved safety for bicyclists	Town of Clarkdale

<sup>1</sup>An asterisk by the total cost indicates that funding has been approved.



**Table 5-2 – Mid Term (6-10 Years) Projects – (continued)**

Reference Number	Street or Location	Segment	Description	Project Length (miles)	Construction Cost	Design and Administration Cost (or study cost where noted)	Total Cost <sup>1</sup>	Justification	Champion
<b>Pedestrian Projects</b>									
P-1	Black Hills Drive	Haskell Springs Drive to connect to existing sidewalks located east of Sky Drive.	Construct sidewalks	0.46	\$120,000	\$24,000	\$144,000	Improved safety for pedestrians	Town of Clarkdale
P-2	Broadway Road	2nd North Street to Patio Park area	Construct sidewalks and lighting	0.62	\$355,000	\$70,000	\$ 425,000	Improved safety for pedestrians	Town of Clarkdale
P-5	Benatz Trail	3rd North Street to Broadway Road	Reconstruct the bridge and Benatz Trail	0.85	\$350,000	\$70,000	\$420,000	Enhance trail system in Clarkdale	Town of Clarkdale
<b>Transit Projects</b>									
T-4	Unsheltered bus stops in Clarkdale	<ul style="list-style-type: none"> <li>Main St and 13th St</li> <li>Main St and Bonnaha Ave</li> <li>Avenida Centerville and SR 89A</li> <li>Lisa St and SR 89A</li> <li>Broadway Rd / Hollow Reed Lane</li> <li>Black Hills Dr / Windy St</li> </ul>	Construct bus stop shelters	N/A	\$102,000	\$20,000	\$120,000	Bus stop shelters encourage transit ridership	Cottonwood Area Transit

<sup>1</sup>An asterisk by the total cost indicates that funding has been approved.

## ***5.4 Project Phasing – Long Term Projects***

Long-term projects are those that are recommended for implementation in the period from eleven years to beyond twenty years. Most of these require further study before implementation costs can be determined. These projects were determined to be beneficial to the Town and region as growth occurs, or will support other planned development. None of these projects currently have approved funding.

These projects include development of a connection road between the planned new Industrial Road (constructed by others) and 11th Street. It also includes development of a new access road from Haskell Springs Road/Black Hills Drive to Mesquite Hills Drive that can provide connectivity. Another project is the development of an alternative route to 89A to serve Clarkdale. These projects are summarized in **Table 5-3**.


**Table 5-3 – Long Term (11-20 Years) Projects**

Reference Number	Street or Location	Segment	Description	Project Length (miles)	Construction Cost	Study Cost	Total Cost	Justification	Champion
<b>Roadway Projects</b>									
R-10	Access road from Haskell Springs Road / Black Hills Drive to Mesquite Hills Drive	To be determined (to serve future Cottonwood West Loop)	Design Concept Study for new two-lane roadway	To be determined	To be determined	\$500,000	To be determined	Provide more connectivity between Clarkdale and Cottonwood	Town of Clarkdale
R-14	Connection road between new Industrial Road and 11th Street	To be determined	Construct new two-lane roadway	To be determined	To be determined	\$500,000	To be determined	This connection could provide additional access between planned development, and industrial development and the Town	Town of Clarkdale
R-16	89A Alternative Connection Study	To Be Determined	Construction of an alternative route to 89A	To be determined	To be determined	\$250,000	To be determined	Provide travel alternatives to 89A	Town of Clarkdale



## 5.5 Project Phasing – Studies

Project studies are summarized in **Table 5-1**. The phasing for these studies is variable, and depends on funding availability.

**Table 5-1 – Studies**

Reference Number	Study Description	Segment	Description	Study Cost	Justification	Champion
R-9	Clarkdale Sustainability Park Alignment Study / Design Concept Report	Access Road (location to be determined )	Alignment Study / Design Concept	\$100,000	Provide access to Sustainability Park Site	Developer
R-10	Design Concept Study for new road from Haskell Springs Road / Black Hills Drive to Mesquite Hills Drive	To be determined (to serve future Cottonwood West Loop)	Design Concept Study for new two-lane roadway	\$500,000	Provide more connectivity between Clarkdale and Cottonwood	Town of Clarkdale
R-16	89A Alternative Connection Study	To be determined	89A Alternative Connection Study	\$200,000	To provide travel alternatives to 89A	Town of Clarkdale, in collaboration with Yavapai County and ADOT
P-6	ADA Intersection compliance study	To be determined	ADA compliance study	\$15,000	Improve accessibility for pedestrians	Town of Clarkdale
T-1	Sustainable revenue generation evaluation study for Cottonwood Area Transit	N/A	Sustainable revenue generation evaluation study for Cottonwood Area Transit	\$50,000	Recent funding cuts to transit service	Cottonwood Area Transit
T-2	CAT Route extension study	Clarkdale neighborhoods	Route extension study	\$50,000	Potentially Increase transit ridership	Cottonwood Area Transit
T-3	Shuttle Service Feasibility Study	Shuttle service from Clarkdale to Jerome	Feasibility study	\$50,000	Provide multimodal commuter options	Cottonwood Area Transit



## 6 REVENUE SOURCES

### 6.1 Highway User Revenue Funds (HURF)

The State of Arizona taxes motor fuels and collects a variety of fees and charges relating to the registration and operation of motor vehicles on the public highways of the state. These collections include gasoline and use fuel taxes, motor carrier taxes, vehicle license taxes, motor vehicle registration fees, and other miscellaneous fees. These revenues are deposited in the Arizona Highway User Revenue Fund (HURF) and are then distributed to the cities, towns and counties and to the State Highway Fund. These taxes represent the primary source of revenues available to the state for highway construction and improvements and other related expenses.

In Fiscal Year 2010 the HURF distribution to Clarkdale was \$274,435. According to the *ADOT Highway User Revenue Fund, June 2010 Monthly Revenue Report*, FY 2010 HURF revenues totaled \$1,194.4 million, a decrease of 4.3 percent from FY 2009. The report said that this marks the third consecutive year of negative year-over-year growth and places HURF revenues back at FY 2004 revenue levels.

### 6.2 Federal Aid Funding

According to the Local Governments Projects Manual (2004), Surface Transportation Program (STP) funds are allocated by the federal government to the state for construction, reconstruction, rehabilitation, resurfacing, restoration and operation improvements. Ten percent (10%) of STP funds are set-a-side for safety construction activities related to hazard elimination and rail-highway crossings, ten percent (10%) is set-a-side for transportation enhancements, fifty percent (50%, which is equal to 62.5% of the remaining 80%) of STP funds are allocated to urbanized areas over 200,000 in population and remaining areas of the state, and the remaining thirty percent (30% which is equal to 37.5% of the remaining 80%) can be used in any area of the state. More detail about some of the set-aside funding programs mentioned above that apply to Clarkdale are described in the following sections.

Local government projects using STP funds must be located on a roadway that meets federal functional classification requirements and is included in an approved list of routes for the appropriate MPO/COG. Each MPO/COG has a list of approved roadways that are eligible for federal funds participation. STP funded local government projects are eligible for funding at 94.3% maximum federal share and 5.7% minimum local share.

#### 6.2.1 Highway Bridge Replacement and Rehabilitation Program (BR)

Highway Bridge Replacement and Rehabilitation Program (BR) funds are used for replacement of structurally deficient or functionally obsolete highway bridges or to rehabilitate the structural integrity of a bridge. An amount not less than 15% or greater than 35% of the total Bridge Replacement and Rehabilitation (BR) funds apportioned to Arizona are made available to local governments through a statewide “first come, first served” basis each federal fiscal year.

Any bridge in the state that is included in the Statewide Inventory of Bridges maintained by ADOT and is inspected on a regular interval either by ADOT or the local jurisdiction, and has a sufficiency rating below 50, is eligible for bridge replacement funds.

Bridges with a sufficiency rating above 50 and below 80 qualify for bridge rehabilitation funds. Bridges with a sufficiency rating above 50 which are considered for replacement may be





considered if the life-cycle analysis documents that it is more cost-effective to replace the bridge than rehabilitate it. In Clarkdale, the Bitter Creek Bridge, built in 1917, is classified as a functionally obsolete bridge with a sufficiency rating of 69 (source: <http://www.azdot.gov/Highways/bridge/Preservation/HBRRLList.asp>, accessed 9/23/2010).

## 6.2.2 Highway Safety Improvement Program (HSIP)

The Highway Safety Improvement Program (HSIP) is a federal-aid program whose purpose is to achieve a significant reduction in traffic fatalities and serious injuries on all public roads. The Arizona Department of Transportation is responsible for administering the HSIP in Arizona. This is accomplished through the development and implementation of the Strategic Highway Safety Plan (SHSP) which is a statewide-coordinated safety plan.

Improvements to virtually any type of public surface transportation facility, including bicycle and pedestrian facilities, may be approved for the use of HSIP funding, provided that the project is consistent with the State SHSP that corrects or improves a road location or feature, or addresses a highway safety concern. Federal safety funding is also available for the upgrade of existing substandard roadway features to conform to national standards or guidelines. Further information about the program and the Arizona SHSP is available at:

<http://azdot.gov/highways/traffic/9620.asp>

## 6.2.3 Transportation Enhancement (TE) Grant Funding

All projects must be related to surface transportation. Although anyone can apply, interested applicants must be sponsored by a federal, state, tribal or local government. All local projects require a minimum of 5.7% hard cash match. Projects are selected through a competitive process. Recommended projects must qualify at least on one of the following activities eligible for transportation enhancement funding:

- Provision of facilities for pedestrians and bicycles.
- Provision of safety and educational activities for pedestrians and bicyclists.
- Development of scenic or historic highway programs.
- Development of landscaping and other scenic beautification.
- Work on historic preservation which has a strong surface transportation link and results in a project that retains its National Register of Historic Places eligibility.
- Rehabilitation of historic transportation buildings, structures, or facilities.
- Preservation of abandoned railway corridors, including the conversion to pedestrian or bicycle trails.
- Control and removal of outdoor advertising.
- Planning and archeological research related to surface transportation routes.
- Environmental mitigation to address water pollution due to highway runoff or reduce vehicle-caused wildlife mortality while maintaining habitat connectivity.
- Establishment of transportation museums.

Further information about the transportation enhancement grant program is available at: [http://www.azdot.gov/highways/SWProjMgmt/enhancement\\_scenic/enhancement/Index.asp](http://www.azdot.gov/highways/SWProjMgmt/enhancement_scenic/enhancement/Index.asp)



## 6.2.4 Safe Routes to School Program

The Safe Routes to School (SRTS) program was created by the U.S. Congress to address the growing epidemic of childhood obesity and diabetes. The program provides reimbursable funds for elementary/middle schools to implement projects to encourage children to walk and bicycle to school.

Interested applicants for SRTS funding are required to submit a project application. Separate applications are required for each of the SRTS funding sources:

- Infrastructure Projects
- Non-Infrastructure Projects
- Materials and Regional Support Program
- Planning Assistance Program

No matching funds are allowed or permitted by the SRTS programs. Further information about the program is provided at:

[http://www.azdot.gov/Highways/swprojmgmt/Enhancement\\_Scenic/saferoutes/AboutIndex.asp](http://www.azdot.gov/Highways/swprojmgmt/Enhancement_Scenic/saferoutes/AboutIndex.asp)

## 6.3 Community Development Block Grant Programs

The Community Development Block Grant (CDBG) is a United States Housing and Urban Development (HUD) program providing funds for housing and community development activities. CDBG funds are allocated to local and state governments on a formula basis. Incorporated cities and towns with a population fewer than 50,000 and counties with an unincorporated population under 200,000 are considered "non-entitlement" and the CDBG funds are administered by the state. For Clarkdale, the Northern Arizona Council of Governments (NACOG) oversees the planning of annual allocations and provides technical assistance for application as well as project success. Community applications for CDBG funds must meet one of the three "National Objectives" established by Congress:

- At least 51% of persons benefiting from the project must be low to moderate income;
- The project must aid in the prevention of slums or blight; or
- The project must solve an urgent need health hazard.

Further information about the program is available at:

<http://www.nacog.org/commdevelop/default.htm>

## 6.4 Other Sources Consistent with the General Plan

Other transportation funding sources consistent with the General Plan are:

- General Fund Revenues – These revenues include local sales tax and property tax, state-shared revenues, and various grant sources can be used to pay for all or part of service expansions. General fund revenues can be used where a cash match is required for grant requests and funds can be set aside over a number of years to build up revenues.
- Transaction Privilege (Sales) Tax - Sales of products and services to the end user are subject to retail sales tax. Sales tax includes state and local portions.



- Specialty Industry Tax (Restaurants, Bars, Hotels) – This is a tax on certain types of specialty uses, such as restaurants, bars and hotels. This tax would require voter approval.
- Revenue Bonds – Revenue Bonds are funds borrowed to finance public service expansion that are paid back through future revenues pledged to the bond issuer. This is generally from sales tax and Highway User Revenue Funds (HURF) distributed to the town from state fuel taxes; and the bonds must be approved by public vote.
- General Obligation Bonds – General Obligation Bonds are funds borrowed to finance public service expansion, such as sewer, water and parks. The bonds are paid back through future property tax revenues. Typically, the town could borrow for up to 20 percent of its secondary assessed valuation with an additional 6 percent available for special projects. These must be approved by public vote.
- Improvement District Bonds - Improvement District Bonds can be used to fund street improvements. This type of funding requires at least 51% of property owner approval of the affected area through a petition process. An assessment is determined for each parcel in the district based on the share of benefit to be derived. Assessments may be paid by property owners up front in cash or financed through issuance of bonds.
- Community Facility District Bonds – Community Facility District Bonds allow financing of a range of public infrastructure projects through general obligation bonds, revenue bonds or assessment bonds within an improvement district. The property owners in the district and not the Town bear liability if default should occur. Street improvements can be financed through issuance of Community Facility District Bonds.
- Development (Impact) Fees - Municipalities may impose development fees on landowners in a benefit area to pay for a proportionate share of the public facilities required to serve a development. However, House Bill 2478- Development fees; moratorium, redefines the start of the freeze on development fee rates as September 1, 2009, and extends the freeze until June 30, 2012.
- Grant Sources – Grant sources typically are awarded through a competitive application process. Examples of grant sources are the Transportation Enhancement Grants and Safe Routes to School Grants that are described earlier on this chapter. Grants may require matching funds through cash match or from in kind sources.



## 7 PUBLIC INVOLVEMENT

Public involvement was an important aspect of the project. Public involvement involved three elements:

- Public Open Houses
- Stakeholder Interviews
- Technical Advisory Committee Meetings

### 7.1 Public Open Houses

Two public open houses were held for the project. The first public meeting for the Town of Clarkdale Transportation Study was held on Thursday, August 26, 2010, from 4:30 p.m. to 6:30 p.m. at the Men's Lounge, Clark Memorial Clubhouse, 19 N. Ninth St., Clarkdale AZ 86324. There was a presentation about the project at 5:00 p.m. The purpose of the meeting was to present information on the study progress to date, information on current and future conditions, and needs and deficiencies. Eighteen members of the public attended. Comments relating to needs and deficiencies were provided and were used in the development of needs.

The second public meeting for the Town of Clarkdale Transportation Study was held on December 9, 2010.

Public Open House summaries are included in the final project documentation CD.

### 7.2 Stakeholder Interviews

Stakeholder interviews were conducted on March 25, 2010 and July 14, 2010. The purpose of the stakeholder meetings was to:

- Make stakeholders aware of the study.
- Identify transportation needs and deficiencies.

An environmental stakeholder's webinar was scheduled on August 5, 2010, but was cancelled due to lack of participation.

Stakeholder meeting summaries are included in Appendix A. Representatives of following agencies and organizations were interviewed:

Agency / Organization	Name
Town of Clarkdale	<ul style="list-style-type: none"> <li>▪ Town of Clarkdale Public Works</li> <li>▪ Town of Clarkdale Community Development</li> <li>▪ Clarkdale Police Department</li> <li>▪ Clarkdale Fire District</li> </ul>
State and National Parks	<ul style="list-style-type: none"> <li>▪ U.S. Forest Service, Prescott</li> <li>▪ Arizona State Parks</li> </ul>
Transit	<ul style="list-style-type: none"> <li>▪ Cottonwood Area Transit</li> </ul>
Yavapai-Apache Nation	<ul style="list-style-type: none"> <li>▪ Yavapai –Apache Nation Public Works Department</li> <li>▪ H2O Solutions, planning consultant for the Nation</li> </ul>
Bicycle	<ul style="list-style-type: none"> <li>▪ Verde Valley Cyclist Coalition</li> </ul>
Business	<ul style="list-style-type: none"> <li>▪ Salt River Materials Group</li> </ul>



## **7.3 Technical Advisory Committee**

Technical Advisory Committee meetings were held during the course of the project. The technical Advisory Committee was comprised of members from the following agencies:

- ADOT Communication and Community Partnerships Division
- ADOT Multimodal Planning Division
- ADOT Multimodal Planning Division - Transit
- ADOT Prescott District Traffic Engineer
- Arizona State Parks
- Clarkdale-Jerome Elementary School District
- Cottonwood Area Transit
- National Park Service
- Northern Arizona Council of Governments
- Town of Clarkdale Community Development Department
- Town of Clarkdale Fire Department
- Town of Clarkdale Police Department
- Town of Clarkdale Public Works Department
- Town of Cottonwood
- US Forest Service Prescott
- Yavapai County
- Yavapai-Apache Tribe





## APPENDIX A – STAKEHOLDER INTERVIEWS



**Town of Clarkdale Area Transportation Study  
MPD Task Assignment 15-10  
PG TD0440  
Contract # TO8-49-U0001**

## **Stakeholder Meetings**

**Date: Thursday, March 25, 2010; afternoon**

### **USFS Prescott**

**Interviewee: Sally Hess-Samuelson**

- It is important to contact Mr. Coder of the Yavapai Apache. The tribe is especially interested in possible impacts on culturally sensitive sites.
- Perhaps Dianne Kresich could attend a Yavapai County CTLU meeting.
- Linda Jackson is the USFS Prescott recreational strategy person.

### **Cottonwood Area Transit (CAT)**

**Interviewee: Shirley Scott**

- For as long as the economy stays low, even the seasonal increase in gas prices will be enough to have people shift to the bus. Then, CAT hopes to retain some of those riders as the economy recovers.
- 16% of the total CAT boardings are on the Clarkdale route, which is known as the CAT Route 3/Red Route.
- #7 on the Red Route, CAT bus route map, is the turnaround point, which is at the Lisa St. roundabout.
- The Clarkdale route does not go to the Verde Canyon Railroad, as the demand is not there. Most passengers arrive via tour bus.
- The Black Hills Drive (Yavapai College) section of Clarkdale is served by the CAT Route 2/Green Route. Yavapai College is the Green Route's northwest end and turnaround point, and Green Route travelers may transfer to the Red Route or other CAT routes at the Garrison Park transfer center.
- CAT cannot rent out its buses because it is under the "5311" program. As of 3-10, the LTAF funds are at \$0. There will be a meeting on 4-10-10 where service cuts



will be considered. The background is that fixed route transit service makes money, however the ADA service loses money. The options are to have less frequent service, to have ADA only in some places (if there is fixed-route, CAT is required to have ADA in the same service area).

- So far, CAT has kept its fixed route in Clarkdale on major roads and out of the neighborhoods. The noise of the diesel buses is the main concern keeping the buses off neighborhood streets. Town government supported the idea of a fixed route through some neighborhoods, but the Town would have to find the funding for it, which they have not as of yet.
- The roundabouts are not designed ideally for buses. Shirley Scott might have preferred that there would be fewer roundabouts. It is unclear what the problem is—should each roundabout have been designed differently, and if so, for the operation of the bus or the convenience/comfort of riders at the stops?
- Sedona hotels own some of the Clarkdale apartments. Those hotels may either financially support CATS or subsidize individual riders.
- ADOT and NAIPTA just obtained the funding for a park-n-ride with a shelter, on the east side of South Broadway, about 0.25-0.5 miles south of Tuzigoot Rd.
- There will be a new bus shelter at the elementary school.
- There is an existing shelter at Town Hall, and there are 2 shelters at Yavapai College, one at the front of the administration building, the other at the back by the library.
- Verde Links: CAT funds 3 of the Verde Links buses and NAIPTA funds 5 of them.
- Jim Waggoner would be the contact to find out how many Verde Links riders load from the Clarkdale route, at the Garrison Park transfer center.



## Arizona State Parks:

### Interviewee: Max Castillo

- Max Castillo believes that the apt name for the sustainability park would be “industrial park.”
- The most urgent issue in Town transportation is the cement trucks on SR 89A.
- Max Castillo’s issue of most interest is the interconnection of trails. Brent Crowther noted the abandoned rail that Mr. Castillo favors for “rails to trails,” on the “markup map.” That trail is part of the new Yavapai County trails plan. The trails plan started as a joint Yavapai and Coconino Resource Conservation area project; Yavapai County finished its portion in-house. The plan also includes a 6-mile paddle trail on the Verde River.
- The northern part of the rail trail is the Dorothy Benatz trail and the southern part is not yet a designated trail. A trail would go west from Dorothy Benatz along Bitter Creek, all the way to the Burro Trail, which then goes to Jerome. Hikers and bikers would be on adjacent streets part of the way, while equestrians would stay along the creek. The old tracks went all the way to the Clemenceau Smelter in Cottonwood.
- Dead Horse State Park is not threatened with closure because of the recession.
- Tuzigoot Bridge was built in 1967, and Max Castillo and Arizona State Parks want that bridge maintained for walking and biking at low speeds. If the sustainability park is put on the Freeport McMoRan Land, there must be an additional, new bridge.
- It was noted that beaver activity has caused some significant change in the river.
- Max Castillo estimated that SR 89A replaced old SR 89A in about 1968 or 1969.
- Brent Crowther indicated that if the Town wishes to have a significant shift in transportation modes, one approach would be a bike lane on the shoulder of old SR 89A and a bike trail off-road, such as on the old rail line.



## Fire District

### Interviewee: Joe Moore

- In the Highlands, there is poor access to Minerich Road. The map is marked up with the new Mescal Spur Road west of SR 89A that will improve the access. Note, final work on the Highlands wastewater connection stopped, with the recession. Since then the Town is approving septic, with the stipulation that the affected properties will be connected to sewer as soon as it is available.
- Mountain Gate is responsible to complete Centerville Road.
- There are still access problems between Mingus Shadows Drive and Palisade Drive because of a wash with no crossing.
- Brent Crowther put the following on the markup map: the site for a new fire station to the south of the right-angle turn in SR 89A. At the north end of the site (just south of the convenience store) there is a pre-plan for a park-n-ride, possibly to be used for people to take a shuttle bus to Jerome. Later during the Planning interview, Joe Moore showed us Steve Burroughs's site plan. The group agreed that the shuttle bus to Sabino Canyon might be similar enough to be a reference point if the possibility of a shuttle to Jerome is analyzed later in the Clarkdale study.

## Town of Clarkdale

### Interviewees: Public Works Director Steve Burroughs and Planning Director Sherry Bailey.

Sherry Bailey will send Kimley-Horn:

- A shapefile with the correct Town boundary; the version we had incorrectly excluded some USFS Prescott land on the south end that has been in the Town for about 10 years.
- The general plan "walkability plan" document.
- Railroad: The Town requested the Salt River Materials Group (SRMG) rail study from SRMG and will send it to Kimley-Horn when received. More on the railroad, below.

Other items from Steve Burroughs and Sherry Bailey:

- **Railroad:** The study asked "would rail to Drake be the best transport method (with rail transport continuing from Drake to Phoenix and to points E/W along I-40). Sherry Bailey understands that the study's answer was "yes." The Arizona Central Railroad (AZCR) study, Sherry Bailey has been told, says the AZCR would make a \$300M





investment, and the study probably indicates whether that would include an unloading facility in Phoenix.

- **Industrial Road:** Recently Salt River Materials Group and Clarkdale Metals have begun active discussion, including possible timing, about Industrial Road, which would be built by Clarkdale Metals over some SRMG land.
- **Zoning:** The Town may change the SR 89A corridor toward Jerome to commercial zoning, from Residential zoning.
- **Southwest of Old SR 89A:** the area that recently got water and sewer will be rezoned commercial.
- **Old SR 89A:** It generally has a 200 foot ROW. The Town wants Kimley-Horn to make access management recommendations, with a focus on old SR 89A. The town intends a form-based zoning code on that corridor.
- **Mountain Gate** is bankrupt so the Town has worked with the court using bond money and is completing Centerville Road.
- **Clarkdale Metals:** At the end of the metals reclamation phase, if the sustainability park is not put on the Clarkdale Metals property, 400 of the 700 acres will be in mixed-use development. Clarkdale Metals would use some toxic chemicals and is dealing with prevention of impacts on the Verde River. Issues that have been largely worked out are flood evacuation and air impacts (the airshed impacts are minor since Clarkdale Metals is at a lower elevation where little blows toward the remainder of Town).
- **Building codes:** The Town is making them “greener.”
- **Birding (relationship to plan).** The number of bird species is one of the highest in Arizona, and birding brings revenue to the Town. Tavasci Marsh is especially important.
- **Bike network.** Brent Crowther and Steve Burroughs further explored the possibility of a mode shift, and Steve indicated that he foresees both a bike lane on the shoulder of old SR 89A and a bike trail off-road, such as on the old rail line.



**Town of Clarkdale Area Transportation Study**  
**MPD Task Assignment 15-10**  
**PG TD0440**  
**Contract # TO8-49-U0001**

## **Stakeholder Meetings**

**Date: Wednesday, July 14, 2010; afternoon**

### **Yavapai – Apache Nation**

#### **Interviewees:**

David “Sonny” Jackson and Debbie Wathogoma, Yavapai-Apache Nation Public Works, Dimas Bejarano , consultant (H2O Solutions, L.L.C.)

- There are 54 homes with 200+ residents, all of whom are tribal members, on the portion of the Nation that is in Clarkdale.
- There are 3,000 trucks per month to and from the Cement Plant
- There is a 20-Year Transportation Plan for the Nation, completed with the assistance of H2O Solutions that is updated each year as required by the Bureau of Indian Affairs (BIA).
- Attorney General Robert Hunter is the Nation official with the authority to release the report to the project team.
- ADOT is aware of the Nation’s transportation plan. Mr. Jackson described, in general, the existence of Memoranda of Understanding between the state and tribes that clarify certain matters of roadway right-of-way ownership and responsibility for maintenance and construction.
- Most of the Nation’s interests are in the I-17 area, with few improvements planned in the Town.
- Kwail Heights is a proposed development with its only entrance from Hawk Hollow Road, to the west off of Cement Plant Road. Kwail Heights is slated to have 118 homes and an auditorium by 2030. There will also be sporting facilities such as ballfields and a basketball court to house regional tournaments.
- At the intersection of 89A / Main Street the Tribe owns 4 acres, planned to be commercial.
- Kimley-Horn received a map that indicates tribal parcels, some of which are owned fee simple, others that are Indian trust land, and the location of a prospective land purchase. If the additional land were purchased, various parcels owned by the Nation northwest of the SR 89A Cement Plant Road intersection would become contiguous. That circumstance would permit the fee simple lands to become part of the Indian trust, benefiting the Nation.
- Jesse Alvey is the Nation’s Police Chief, and he could comment on the Nation’s use of Clarkdale Town streets.
- The Nation hopes for the continuation and growth of Cottonwood Area Transit, as tribal members use both the demand response and the fixed-route buses.



- The Nation has its own small van transport system used largely for health care transport.
- Sometime within the planning horizon, they would like to see sidewalks along Cement Plant Road and continuing south on SR 89A.

## **Verde Valley Cyclists Coalition (VVCC)**

### **Interviewee:**

Randy Victory, Cottonwood Coordinator (VVCC Board); Consultant to the Cottonwood Bicycle Advisory Committee

- There have been discussions of a shared use pathway offset from US 89A and that would be an expensive retrofit.
- For an SR 89 A on-road facility, Randy Victory prefers a shared-use lane (where cyclists could ride 2 or 3 abreast), rather than a striped bike lane. That is because motorists tend to give a wider berth when there is no marked lane.
- A possible bicycle facility on the steep hill on SR 89A between Jerome and Clarkdale could be limited to a wide shoulder in the uphill direction. In the downhill direction, cyclists could ride on the road, since they are able to travel downhill at speeds similar to those of the motor vehicle traffic.
- On SR 89A, Broadway, and collectors (where needed if they are warranted by volumes/speeds), his preference is for wide outside lanes and a shoulder where cyclists may pull off the road.
- There is a need for various signage indicating that bikes will be present. Such signs should communicate the message that it is legal for cycling to occur at the location.
- Residential neighborhoods have such low traffic counts and low vehicle speeds that no special bicycle facilities are needed; on-street bicycle travel is fine.
- The facility needs for cyclists are different from the facility needs for pedestrians. Still, there are times when shared-use (also known as multi-use) paths may be warranted. It is difficult to design shared-use paths safely at intersections with roads or other paths.
- A prospective shared-use path in Cottonwood near SR 260 from Fir St. to Western Dr. would likely be of great benefit to path users, but once it exists, motorists are likely to object to some cyclists remaining on the road, even though they have the right to be on-road.
- Higher gasoline prices in the future will make biking and walking more attractive, so facilities should be added to accommodate those modes.
- Neighborhood design should include sidewalks on all collectors and much connectivity with few or no cul-de-sacs.
- People feel unsafe walking when there is insufficient roadway width.
- Resources that should be reviewed as part of this study are:
  - Verde Valley website, a proposal for the bicycle facilities needed on SR 179 (Sedona south to I-17).



- Latest ADOT design guideline that specifies wide paved shoulders are to be used by bicycles and pedestrians, but are not to be marked as a bicycle facility.
- Any segregated facility should not diminish the rights of cyclists.

## **Salt River Materials Group**

### **Interviewees: Lew Dodendorf, Energy Manager**

- Lew Dodendorf noted that he currently serves on the Town's General Plan committee.
- The cement plant that is now the Salt River Materials Group was commissioned in 1959, to supply cement to the Glen Canyon Dam, and later provided cement for the construction of I-17. The active SRMG quarry is off of Perkinsville Road.
- In 2002, there was plant modernization and a doubling of capacity – to about 1.2 million tons of cement annually. There are plans for another doubling of capacity. 90% of the product is bulk and 10% is sacked.
- SRMG uses trucks to transport 1,200 – 2,000 tons per day, with an emphasis on early morning hours. Trucks transport outgoing cement and incoming gypsum that is mined in Camp Verde.
- There are up to 200 trucks per day and with a plant expansion the number would increase to 400 trucks per day.
- Improving the Clarkdale Arizona Central Railroad for transporting the cement is neither feasible now nor when the plant expands. It is easiest to truck the cement. Rail transport is used for most of the coal that fuels the plant and for the bauxite.
- A solar project is now underway at the top of the hill. It would be for the plant's internal use, to provide up to 5% of its energy needs.
- Clarkdale Metals is the owner of the entire Cement Plant Road (from its start at SR 89A); SRMG has a perpetual easement on the road and pays for its maintenance. The road is not wide enough to meet Town specifications.
- There is not yet a commitment to construction of the Industrial Road. Temporarily SRMG is letting Clarkdale Metals use the old rail alignment between Clarkdale Metals and SRMP as a dirt haul road.
- Lew Dodendorf considers the Pecks Lake and Clarkdale Metals sites to have potential for development of the sustainability park. An additional site, on the west side of SR 89A just south of the SRMG plant could be good for recycling solid waste.



## **APPENDIX B – CRASH SUMMARY OF INJURY AND POSSIBLE INJURY CRASHES, 2004-2008**





Incident Date Time	Incident On road	Incident Crossing Feature	Incident Injury Severity	Incident First Harmful Description	Incident Collision Manner	Incident Light Condition	Incident Weather Description	Incident Surface Condition	Incident Junction Relation	Unit Body Style	Unit Travel Direction	Unit Action	Person Violation	Person Physical Description
5/13/2004 14:57	Main St	Balboa St	Non Incapacitating Injury	Motor Vehicle In Transport	Other	Daylight	Clear	Dry	Intersection Related	Passenger Sedan	North	Going Straight Ahead	Drove Rode In Opposing Traffic Lane	Fell Asleep Fatigued
8/1/2004 13:15	Crestview Dr	12th St	Non Incapacitating Injury	Other Fixed Object	Single Vehicle	Daylight	Clear	Dry	Intersection Related	Passenger Sedan	West	Going Straight Ahead	Exceeded Lawful Speed	Alcohol
8/8/2004 12:20	89a	Lisa St	Non Incapacitating Injury	Other Non Collision	Single Vehicle	Daylight	Clear	Unknown	Intersection Related	Motorcycle	North	Going Straight Ahead	No Improper Action	No Apparent Influence
7/16/2005 22:10	89a	Lisa St	Non Incapacitating Injury	Motor Vehicle In Transport	Angle Opposite Direction	Dark-Unknown Lighting	Clear	Unknown	Intersection Related	Passenger Sedan	West	Making Left Turn	Failed To Yield Right Of Way	No Apparent Influence
10/7/2006 0:13	Main St	10th St	Non Incapacitating Injury	Curb	Single Vehicle	Dark-Unknown Lighting	Clear	Dry	Not Junction Related	Motorcycle	North	Unknown	Unknown	Alcohol
5/12/2007 11:27	89a	Groseta Ranch Rd	Non Incapacitating Injury	Overturn Rollover	Other	Daylight	Clear	Dry	Not Junction Related	Motorcycle	Northwest	Going Straight Ahead	Speed To Fast For Conditions	
6/18/2008 18:41	89a	Milepost 348	Non Incapacitating Injury	Overturn Rollover	Single Vehicle	Daylight	Clear	Dry	Unknown	Passenger Sedan	West	Avoiding Vehicle Object Pedestrian	Other	No Apparent Influence
10/23/2008 13:20	Main St	10th St	Non Incapacitating Injury	Motor Vehicle In Transport	Angle Opposite Direction	Daylight	Clear	Dry	Intersection Related	Passenger Sedan	North	Making Left Turn	Failed To Yield Right Of Way	No Apparent Influence
12/6/2008 12:00	Main St	12th St	Non Incapacitating Injury	Pedestrian	Single Vehicle	Daylight	Clear	Dry	Not Junction Related	Passenger Pickup	West	Going Straight Ahead	No Improper Action	No Apparent Influence
1/4/2005 16:06	89a	Milepost 349	Possible Injury	Motor Vehicle In Transport	Rear End	Daylight	Cloudy	Wet	Not Junction Related	Passenger Pickup	West	Going Straight Ahead	Speed To Fast For Conditions	No Apparent Influence
11/22/2005 11:43	89a	Milepost 350	Possible Injury	Motor Vehicle In Transport	Angle Opposite Direction	Daylight	Clear	Slush	Driveway	Passenger Sedan	North	Making Left Turn	Failed To Yield Right Of Way	No Apparent Influence
4/7/2006 17:05	Main St	14th St	Possible Injury	Motor Vehicle In Transport	Rear End	Daylight	Cloudy	Dry	Not Junction Related	Passenger Sedan	Northeast	Going Straight Ahead	Inattention Distraction	No Apparent Influence
6/12/2006 10:07	Main St	10th St	Possible Injury	Motor Vehicle In Transport	Rear End	Daylight	Clear	Dry	Intersection Related	Passenger Sedan	West	Going Straight Ahead	Inattention Distraction	No Apparent Influence
9/5/2006 18:07	Main St	14th St	Possible Injury	Motor Vehicle In Transport	Rear End	Daylight	Clear	Dry	Not Junction Related	Passenger Pickup	North	Going Straight Ahead	Inattention Distraction	No Apparent Influence
10/29/2006 16:56	Main St	10th St	Possible Injury	Motor Vehicle In Transport	Angle Right Angle	Daylight	Clear	Dry	Intersection Related	Passenger Sedan	Northwest	Making Left Turn	Failed To Yield Right Of Way	No Apparent Influence
6/15/2008 17:42	Old Hwy 89a	Main St	Possible Injury	Motor Vehicle In Transport	Rear End	Daylight	Clear	Dry	Intersection Related	Passenger Sedan	East	Going Straight Ahead	Inattention Distraction	