4. CIRCULATION ELEMENT

A. INTRODUCTION

The Circulation Element examines transportation networks within the city and in adjacent areas and establishes policies intended to help accomplish local objectives related to circulation and transportation. The element provides a conceptual framework to meet the projected transportation needs of the community; and a Street Classification Map that describes existing streets and indicates, in general, future corridors contemplated, including those prepared by regional groups and the Arizona Department of Transportation (ADOT). It also includes discussion of the key issues facing the community and related goals and objectives. Related goals and objectives act as guidelines for City Staff, the Planning and Zoning Commission and City Council when programming improvements to the city circulation system.

The City of Cottonwood desires a safe and efficient circulation system for all modes of transportation, including vehicles, transit, bicycles and pedestrians. The system must meet the needs of local residents and visitors, as well as regionally-generated traffic, which provides a significant contribution to the daily use of Cottonwood's transportation system.

B. LEGISLATIVE REQUIREMENTS

Arizona Revised Statutes (ARS §9-461.05.C.2) requires that the General Plan provide a circulation element consisting of the general location and extent of existing and proposed freeways, arterials and collector streets, bicycle routes and any other modes of transportation as may be appropriate, all correlated with the land use element of the plan.

C. KEY ISSUES

1. **Traffic Safety and Efficiency.**
   The Circulation Element supports the goals of mitigating traffic congestion by offloading high traffic corridors to alternate routes, identifying and resolving traffic safety issues, implementing "traffic calming" measures, and accommodating alternate modes of transportation, such as transit, pedestrian and bicycle use. Planning and constructing new roads to improve overall efficiency is also a part of the long-term strategy to provide alternate routes that relieve congested bottle-necks on major highways and respond to future growth and development trends.

2. **Providing Adequacy for Regional Needs.**
   The transportation and street circulation system in Cottonwood is designed to handle traffic loads not only for local residents but also for people going to and from places throughout the region and for many visitors and tourists. ADOT provides critical support by maintaining two major state highways through Cottonwood.

3. **Supporting Economic Development Goals.**
   The city's transportation system is there to serve the needs and interests of ensuring quality economic development, employment opportunities and the general interaction of life which allows people to engage in all types of activities. Streets are intended to accommodate traffic and infrastructure capable of supporting commerce and economic opportunity to its level of need.

4. **Enhancing the Overall Quality of the Street Environment.**
   The streetscape is not only defined by the pavement and sidewalks but also by quality and placement of buildings, structures, trees, landscaping, lighting, signage and everything else along the street corridor. Through coordinated planning of the street, adjacent land uses and economic development objectives it is possible to provide a more effective and attractive environment along street corridors for the benefit of all.

5. **Ensure Accessibility for All.**
   The Plan supports removing and mitigating physical and environmental barriers to movement and enhancing opportunities that support greater accessibility for all users, including persons with disabilities.

6. **Sustainable Transportation Planning.**
   Changing perspectives in transportation planning are based on providing a coordinated approach that integrates transportation goals with land use, open space, economic development and quality of life values. A long-term sustainable transportation system takes a 'whole system' approach when considering the inter-relationship of these various factors.

7. **Support for Innovation and Forward-Thinking Solutions.**
   The Plan supports innovative solutions that protect and enhance Cottonwood's small town atmosphere while at the same time recognizes that some level of population growth is likely to continue in the region in the coming years. In order to balance these interests, it is worthwhile to consider the best new practices in this field. It is important to stay up to date with knowledge of new innovative programs in transportation planning that may provide effective alternatives. Consideration of new technologies and new research related to innovative transportation solutions is recommended as a standard part of the circulation and transportation planning process.

D. REGIONAL PARTNERS

The City of Cottonwood is located in eastern Yavapai County, Arizona at the intersection of two state highways: State Route 260 and State Route 89A. SR 260 provides a primary connection between Cottonwood and Interstate 17 located approximately 15 miles south in Camp Verde. State Route 89A connects Cottonwood with the Prescott and Prescott Valley area through Jerome to the southwest, and to Sedona and Flagstaff to the north. Access to the Phoenix metropolitan region is from SR 260 and I-17, about 100 miles to the south. Regional traffic planning is significant for the City of Cottonwood since a major portion of local traffic is generated outside the City. The Arizona Department of Transportation administers traffic planning and improvements for Arizona's freeways and other highways, including those portions of highway within Cottonwood. The state highways carry the bulk of regional traffic in the Verde Valley and within the City of Cottonwood itself. Coordination with ADOT and other regional partners is essential for effective transportation planning.

Verde Valley Transportation Planning Organization (VVTPO)

The Verde Valley Transportation Planning Organization (VVTPO) is a committee of local elected officials and key staff representing Verde Valley communities in the review of regional traffic improvements and long-range transportation planning. Transportation planning in the Verde Valley region is conducted through VVTPO and the Northern Arizona Council of Governments (NACOG). Yavapai County also has a key role in coordinating its planning efforts with VVTPO, NACOG and the local jurisdictions.

NACOG

Northern Arizona Council of Governments (NACOG) coordinates with ADOT and the local governments through data collection, priority programming, liaison and coordination services. NACOG also provides technical assistance and regional funding opportunities for local construction projects and serves as a liaison between ADOT and local governments. Major activities include:

- Data Collection - NACOG provides information to ADOT on roadway mileage in the region. NACOG also works to ensure that local governments submit building permit data for developing population estimates and through participation in the State Population Technical Advisory Committee (POPTAC), represents the region in establishing population estimates and projections.
- Priority Programming - NACOG works with local jurisdictions to:
  - Identify state and federal funding sources for highway construction projects and to add routes to the appropriate Federal Aid System.
  - Prioritize project requests in the region for state and federally funded programs.
  - Monitor progress of project development.
- Liaison and Coordination/Technical Assistance - NACOG participates on advisory committees for small area transportation studies, attends meetings of area transportation planning organizations, and represents the region at meetings of ADOT's Priority Planning Committee and the State Transportation Board.

Yavapai County

A Transportation Study was prepared by Lima and Associates in May 2009 for Eastern Yavapai County, titled the *Verde Valley Multimodal Transportation Study*. This document identifies existing conditions, future improvement needs and assesses levels of service up to 2030. The transportation study area consists of about 600 square miles and includes the incorporated municipalities of Camp Verde, Clarkdale, Cottonwood, Jerome and Sedona as well as the Yavapai Apache Nation and unincorporated areas of northeast Yavapai County. Input and data were provided by cities and towns, as well as the Yavapai-Apache Nation and a Technical Advisory Committee comprised of major stakeholders from the public and private sectors who were also invited to share information and review draft documents.

The purpose of the *2009 Verde Valley Multimodal Transportation Study* was to develop a long-range, regional transportation plan to guide the implementation of transportation improvements on the roads of regional significance in the Verde Valley including I-17, State Routes and roads on the County Regional Road System. Both the Central Yavapai Metropolitan Planning Organization (CYMPO) which covers the Prescott/Quad Cities area and the Verde Valley Regional Transportation Study have taken into consideration the relationship between future regional road demands and projections on socioeconomic conditions such as population densities and locations of potential growth areas.

Arizona Department of Transportation (ADOT)

Transportation planning processes and plans developed at the local level by VVTPO and NACOG are continually coordinated with the State transportation plans developed by ADOT in accordance with the requirements in Title 23. Local plans are typically 5-year plans and become part of the statewide 5-year plans. On November 18, 2011, the Arizona State Transportation Board approved ADOT's Long-Range Transportation Plan, "What Moves You Arizona" for the time period of 2010 to 2035. The Long-Range Plan "defines visionary, yet pragmatic, investment choices Arizona will make over the next 25 years to maintain and improve its multimodal transportation system." The Plan "provides strategic direction to guide future investments in transportation." The Plan does not identify a specific list of projects for implementation, since that is done through the annual and 5-year plans. The ADOT Long-Range Plan also utilized the comprehensive land use and 2050 vision developed in the Building a Quality Arizona Study (bqAZ) as a framework for the State's desired future.

E. STREET CLASSIFICATION SYSTEM

Functional classification is the process by which streets and highways are grouped into classes or systems according to the character of service they are intended to provide. Most travel involves movement through a network of roads of varying scale and intensity. It becomes necessary then to determine how this travel can be channelized within the network in a logical and efficient manner. Functional classification defines the nature of this channelization process by providing a hierarchical network that allows movement throughout the system from the local neighborhood to the commercial and activity centers to the surrounding region, and so on.

FUNCTIONAL CLASSIFICATION

How the road functions within the overall hierarchical system defines the functional classification. In addition, road segments are also analyzed based on the number of lanes, the maximum desired level of service capacity, roadway geometrics, and existing or forecasted average daily traffic volume (ADT). The actual functional capacity of roadway facilities varies by the characteristics of each facility. Based on the Federal Highway Administration (FHWA) classification for "Small Urban" areas (5,000+ population,) roadways in Cottonwood have been categorized with the following classifications:

Principal Arterials: Provides the highest level of service at the greatest speed for the longest uninterrupted distance; carries the major portion of trips entering and leaving the city; provide routes through the city; has some degree of access control.

Arterials: Serves to accommodate moderate to longer trips within the community; provide routes through the city; serves to provide access to sub-areas within the city.

Collector Streets: Provides a less highly developed level of service at a lower speed for moderate distances by collecting traffic from local roads and providing access to major land uses and to arterials.

Local Streets: Consists of all roads not defined as arterials or collectors; primarily provides direct access to properties; not intended for through traffic.

ARTERIALS

Arterial streets are the major arteries carrying traffic within and through the city and region. The primary function is to carry through traffic. Direct access to individual properties is discouraged. The location of new driveways is often regulated by access management planning so as to ensure smooth, safe traffic flow. Cottonwood is presently served by two highway arterials, State Route 89A, a generally north/south highway which connects Prescott to Flagstaff via Jerome and Sedona, and State Route 260 which provides a connection to Camp Verde and Interstate 17 to the southeast. These arterials carry the highest volume of traffic at the highest speeds. The intersections of SR 89A and Main Street and SR 89A and SR 260 generally handle the largest daily traffic volume in Cottonwood. Most of the signalized intersections in Cottonwood are under ADOT management; only one intersection (Main & Mingus) is under City of Cottonwood management. Examples of Arterial Streets include the following:

Principal Arterials / Highways.

- State Route 89A
- State Route 260

Arterials.

- Main Street (SR 89A to Clarkdale boundary)
- West Mingus Avenue (SR 89A to Main St)

COLLECTOR STREETS

Collector streets are designed to carry moderate traffic volumes for limited distances. Collectors receive traffic from local streets and distribute it to arterials, and vice versa. Such streets provide access to existing major developments, as well as traffic circulation within commercial areas, industrial areas, and residential neighborhoods. Direct access to new residential or commercial lots is discouraged. Instead access from collectors should be channeled to local street systems or shared driveways with internal drive aisles or secondary access routes. Examples of Collector Streets include the following:

East-West Collector Street Examples

- West Mingus Avenue (Airport to SR 89A)
- East Mingus Avenue (Main St to Cornville Rd)
- Black Hills Drive (shared with Clarkdale)
- Fir Street (SR 260 to Monte Tesoro)
- Elm Street
- Rio Mesa Trail (SR 260 to Contention Lane)

North-South Collector Street Examples

- Willard Street (Main Street to SR 89A to Fir St.)
- 6th Street (Mingus Ave. to Fir St.)
- 10th St. (Main St. to Mingus Ave.)
- 12th Street (Main St to Fir)
- Camino Real (SR 89A to Rio Mesa Trail)
- Cove Parkway

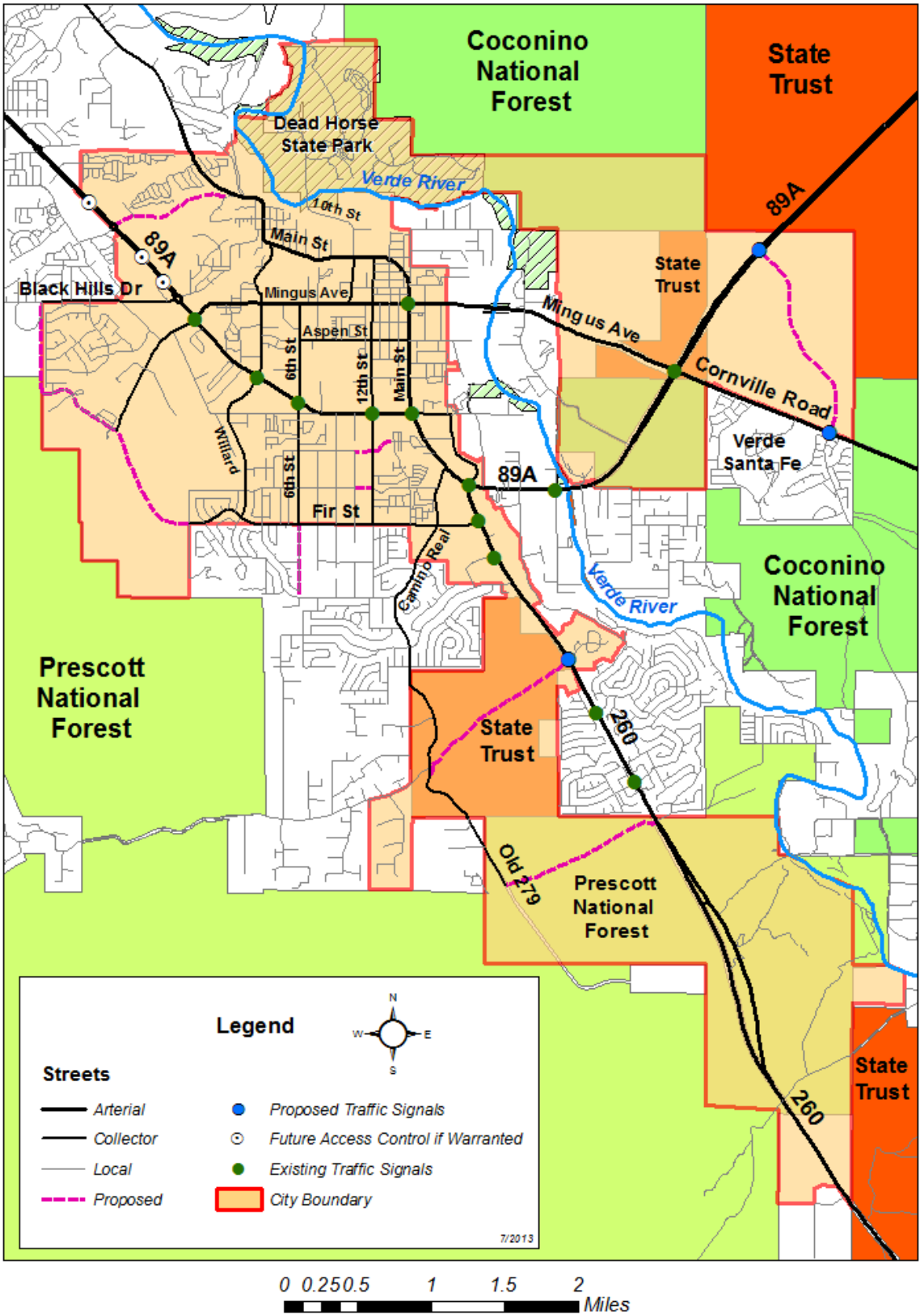
LOCAL STREETS

In general, it shall be the policy of the City of Cottonwood to support ongoing improvements, upgrades and maintenance to all City streets, including local neighborhood streets. All streets shall function with the highest regards for safety, efficiency and convenience for vehicles, pedestrians and bicycles. The classification of "Local Streets" in the street hierarchy system includes all streets not otherwise designated as the higher level arterial or collector streets. Local streets primarily serve to provide direct access to abutting properties and to provide access to the higher order systems. The majority of streets in Cottonwood are classified as local streets. The condition and needs of local streets cover a wide range of examples. Some local streets are developed with curbs, gutters and sidewalks, while others have an undeveloped edge with a generally more rural feel. The future plans and prioritization of local street improvements will be looked at on a case by case basis depending on the level of use, overall condition, identified needs and public input.

ALLEYS

Alleys are not traditionally part of the street classification system; however, they do provide a valuable part of the circulation system in some areas and are worth recognizing. Alleys can be described as secondary access intended for limited travel from a local road to parking areas, garages and delivery services usually at the rear of properties. Alleys are typically located through the middle of a block of properties. Alleyways were a common feature of traditional and historic neighborhood design in the past but fell out of fashion with larger lot suburban development in which attached garages were located facing the street. Alleys are a valued feature of several older Cottonwood neighborhoods and a design option for new planned developments where parking is located off of a rear alley and the front street area is designed to focus on sidewalks, front porches, reduced setbacks and places that are more inviting for people. Alleys can also be integrated into commercial areas as attractive, well-designed features where pedestrian access is linked to rear-located parking areas.

Street Circulation Map



F. TRAFFIC COUNTS

TRAFFIC COUNT METHODOLOGY

Traffic counters are installed at key locations to measure traffic over a period of time. The total is averaged to determine Average Daily Traffic (ADT.) This data provides useful comparative information for looking at circulation patterns on a city-wide basis. Traffic count information can serve as a baseline for future measurements to analyze impacts of growth and development on the street circulation system.

Average Daily Traffic (ADT).

ADT measures the average amount of 2-way traffic on a roadway over a period of 24 hours. Continuous measuring devices are located within the roadway with an average daily traffic determined for a location. Other useful information can be broken out from traffic counts, including calculations of "peak hour" flow to show times of day when larger volumes of traffic are encountered. The general type of vehicles on a road section can also be identified so as to better understand the percentage of large trucks in relation to passenger vehicles, buses or other types of vehicles.

Annual Average Daily Traffic (AADT).

ADOT determines daily traffic estimates based on a longer time frame for counting vehicles over a stretch of roadway. This method results in the AADT or Annual Average Daily Traffic.

Locations for Measuring Devices.

Major streets and key entry points to neighborhoods provide locations to develop an understanding of general patterns of traffic. Key control points are identified to determine baseline traffic volume. The following Traffic Counts were conducted on city streets in Cottonwood in 2012 and 2013:

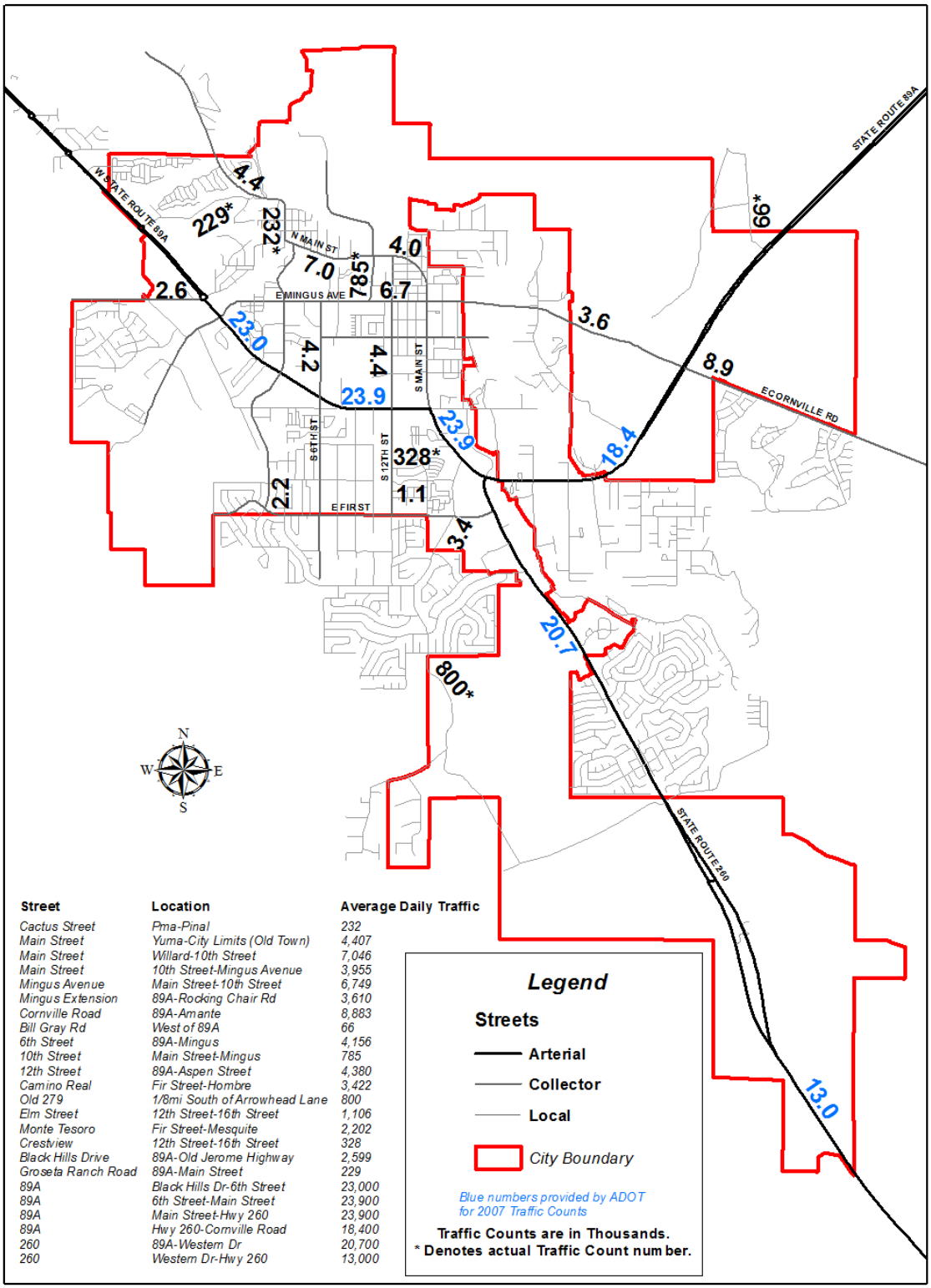
	Street	Location	ADT (Average Daily Traffic)
1.	Cactus Street:	Pima - Pinal	**232**
2.	Main Street:	Yuma - City Limits(Old Town)	**4,407**
3.	Main Street:	Willard - 10th St	**7,046**
4.	Main Street:	10th St - Mingus	**3,955**
5.	Mingus Avenue:	Main - 10th	**6,749**
6.	Mingus Extension:	SR 89A - Rocking Chair	**3,610**
7.	Cornville Road:	SR 89A - Amante Dr.	**8,883**
8.	Bill Gray Rd:	West of 89A	**66**
9.	6th Street:	SR 89A - Mingus	**4,156**
10.	10th Street:	Main - Mingus	**785**
11.	12th Street:	SR 89A - Aspen	**4,380**
12.	Camino Real:	Fir - Hombre	**3,422**
13.	Old 279:	1/8 m South of Arrowhead	**800**
14.	Elm:	12th - 16th	**1,106**
15.	Monte Tesoro:	Fir - Mesquite	**2,202**
16.	Crestview:	12th – 16th	**328**
17.	Black Hills Drive:	SR 89A - Old Jerome Hwy	**2,599**
18.	Groseta Ranch Rd:	SR 89A – Main Street	**229**

ADOT Traffic Counts – Cottonwood – Verde Valley
2006 – 2007 Annual Average Daily Traffic (AADT)

The latest traffic counts from ADOT on portions of state routes through and near Cottonwood indicate a slight drop in traffic levels between 2006 and 2007. The reduction in traffic levels in this period can be attributed to the down turn in the economy in 2007 and reduction in local business, including construction and home building activity. It is likely that traffic levels have and will continue to increase as business, construction and population in the area increases. ADOT Traffic Counts were conducted on State Route 89A and State Route 260 in 2006 and 2007, as follows:

	Street	Location	2006	2007
1.	SR 89A	Old Hwy 89A - Blackhills Dr	12,200	12,000
2.	SR 89A	Blackhills - 6th Street	22,200	23,000
3.	SR 89A	6th – Main St	26,100	23,900
4.	SR 89A	Main St – SR 260	26,100	23,900
5.	SR 89A	SR 260 – Cornville Rd	20,000	18,400
6.	SR 89A	Cornville Rd – Page Springs	13,100	13,600
7.	SR 260	SR 89A – Western Dr	23,500	20,700
8.	SR 260	Western Dr – Cherry Rd	14,000	13,000
9.	SR 260	Cherry Rd – I-17	14,300	13,600
10.	SR 260	I-17 – Finnie Flat	11,000	11,000

2012/2013 Daily Traffic Counts



Street	Location	Average Daily Traffic
Cactus Street	Pma-Pinal	232
Main Street	Yuma-City Limits (Old Town)	4,407
Main Street	Willard-10th Street	7,046
Main Street	10th Street-Mingus Avenue	3,955
Mingus Avenue	Main Street-10th Street	6,749
Mingus Extension	89A-Rocking Chair Rd	3,610
Cornville Road	89A-Amante	8,883
Bill Gray Rd	West of 89A	66
6th Street	89A-Mingus	4,156
10th Street	Main Street-Mingus	785
12th Street	89A-Aspen Street	4,380
Camino Real	Fir Street-Hombre	3,422
Old 279	1/8mi South of Arrowhead Lane	800
Elm Street	12th Street-16th Street	1,106
Monte Tesoro	Fir Street-Mesquite	2,202
Crestview	12th Street-16th Street	328
Black Hills Drive	89A-Old Jerome Highway	2,599
Groseta Ranch Road	89A-Main Street	229
89A	Black Hills Dr-6th Street	23,000
89A	6th Street-Main Street	23,900
89A	Main Street-Hwy 260	23,900
89A	Hwy 260-Cornville Road	18,400
260	89A-Western Dr	20,700
260	Western Dr-Hwy 260	13,000

G. SYSTEM PLANNING ISSUES

This section provides an introduction, general overview and background information regarding several existing and potential programs related to the City's circulation and transportation system:

1. Introduction
2. Regional Coordination
3. Corridor Planning
4. Complete Streets
5. Traffic Mitigation
6. Capacity Planning
7. Traffic Calming
8. Roundabouts
9. Access Management
10. ADA Planning

1. INTRODUCTION

The development of an effective circulation system for the city involves more than the design, installation and management of the physical infrastructure. The circulation system is intended to serve the full range of life activities, to allow people to seek economic opportunities, to facilitate social interaction and to generally improve the quality of life. As a starting point, the development of an effective transportation system requires a thorough and complete understanding of the physical characteristics and engineering of the system. Additionally, an effective circulation system requires an understanding of how people live and what kind of future they want for their community. The circulation system is intended to provide a means for people to engage in life's activities and pursuits.

Above all, the system needs to be safe, efficient and cost-effective. This section describes a number of the key components and concepts for helping Cottonwood achieve the goal of ensuring a safe, effective, multi-purpose circulation system.

As the primary market and service center in the Verde Valley, a significant amount of regional traffic converges on Cottonwood on a daily basis. It could be expected that as growth and development continues in the surrounding region, there will be a corresponding increase of traffic on city streets. The General Plan encourages a pattern of land use which distributes traffic to the extent possible, is sensitive to the impacts of traffic on adjacent land uses and allows flexibility for the development of secondary routes necessary to offload congestion.

2. REGIONAL COORDINATION

Cottonwood developed historically as the primary market center for the area supplying a range of agricultural products, hard goods and services, especially for the growing mining communities in Jerome and Clemenceau. Today, Cottonwood continues to function as a key center for the surrounding area providing shopping, personal and business services, medical services, recreation and entertainment venues, affordable housing and government services. Regional coordination of planning and development of circulation facilities and programs is recommended to accommodate the needs and interests of the larger surrounding community.

Transportation studies have recommended that new regional highways be constructed as limited or controlled access highways and necessary rights-of-way be acquired in order to guarantee the most efficient alignment of those corridors. Continuing a regional land use planning process is also recommended as a means of better coordinating traffic planning and improvements. In addition, federal and state funding formulas typically favor working through partnerships with multiple agencies in a manner that demonstrates local planning and cooperation.

3. CORRIDOR PLANNING

Corridor planning integrates land use, transportation, economic development, aesthetics and quality of life concerns into a coordinated approach for development and revitalization of identified portions of street corridors. When combined with a sub-area planning approach, corridor planning provides a public planning technique that can coordinate private development revitalization in an area with public infrastructure and street improvements. A comprehensive approach can be especially helpful for coordinating improvements within established areas with multiple property owners and unique conditions.

A review of several definable street corridors in Cottonwood indicates that the majority of properties in each section were developed in roughly same time period. Each of these corridors has some amount of variation; however, the general age of the buildings, scale of development, lot sizes, relationship to the street, landscaping and general condition of properties have some similarities along a number of identifiable street corridors. In a few cases the streets have a wide range of building styles and ages. Each of these conditions provides both challenges and opportunities for coordinated improvements.

One of the objectives of corridor planning is to provide consistent and unified quality, upgrades and improvements to a section of the street corridor for the purpose of revitalization and economic benefit. This may include coordinated driveway and access improvements, continuous sidewalks, bike routes and transit stops, street trees and landscaping, signage improvements, street lighting, and façade upgrades to buildings. The land use aspect of corridor planning can also provide an evaluation of existing and proposed options for preferred uses, incentives to treat vacant properties, and methods to combine these objectives with transportation planning.

Potential Corridor Planning Projects:

- Main Street north of State Route 89A to Old Town.
- Main Street (SR 89A) from Cottonwood Street to SR 260.
- West Mingus Avenue from Main Street to SR 89A.
- SR 89A – west side from Clarkdale to Main Street.
- SR 89A – east side from Bill Grey Rd to Verde River.

4. COMPLETE STREETS

Complete Streets are streets designed for all modes of travel. They are designed and operated to enable safe access for all users, including pedestrians, bicyclists, motorists, and public transportation users. Creating complete streets involves changing the approach used to evaluate, design and construct new streets and improve existing streets. By adopting a Complete Streets policy, communities direct their transportation planners and engineers to routinely design and operate the entire right-of-way to enable safe access for all users, regardless of age, ability or mode of transportation. This means that every transportation project will make the street network better and safer for drivers, transit users, pedestrians and bicyclists.

Detailed information about Complete Streets can be found at: **www.completestreets.org**

ADOT's *Statewide Bicycle and Pedestrian Plan Update, Draft Final Report*, January 2013, supports development of an ADOT "Complete Streets" Policy.

There is no singular design prescription for Complete Streets; each one is unique and responds to its community context. A complete street may include: sidewalks, bike lanes (or wide paved shoulders), comfortable and accessible public transportation stops that include bus pull outs and shaded bus stop shelters, safe street crossing opportunities, median islands, accessible pedestrian signals, curb extensions at crossings, narrower travel lanes in neighborhoods to slow traffic, roundabouts, and more. A complete street in a rural area will look quite different from a complete street in an urban area, but both are designed to balance safety and convenience for everyone using the road.

Incomplete streets are those designed with only cars in mind. They limit transportation choices by making walking, bicycling and public transportation inconvenient, unattractive and too often dangerous. Changing policy so that our transportation system routinely includes the needs of people on foot, public transportation and bicycles as a standard component of the street design means that walking, riding bikes, and riding buses will be safer and easier. People of all ages and abilities will have more options when traveling to work, to school, to the grocery store, to visit family and for all types of activities.

Making these travel choices more convenient, attractive and safe means people do not need to rely solely on automobiles. They can replace trips in their cars with short walks, bicycle trips or bus rides. Complete Streets improve the efficiency and capacity of existing roads by moving more people in the same amount of space as previously used by automobiles. Getting more productivity out of the existing road and public transportation systems can reduce congestion and offer greater choices for transportation options.

- **Land Use Connection.** To understand the concept of complete streets it is essential to recognize that walking and bicycling are legitimate, healthy, cost-effective forms of transportation. Studies consistently indicate that more people would walk and bicycle for transportation purposes, within certain distances, if there were more convenient, safe and interconnected facilities. The effectiveness of walking and bicycling is therefore significantly increased by land use development patterns that integrate residential areas with nearby commercial, institutional, recreational and other uses. Many areas of Cottonwood already have this mix of uses in relative proximity to one and other. A Complete Streets Policy should recognize existing opportunities for redevelopment and set a direction for new development.

- **Benefits of Complete Streets.** Complete Streets are particularly prudent when communities are tightening their budgets and looking to ensure long-term benefits from investments. A well-balanced transportation budget can incorporate Complete Streets projects with little to no additional funding, accomplished through re-prioritizing projects and allocating funds to projects that improve overall mobility. Many of the ways to create more complete roadways are low cost, fast to implement and high impact. Building more sidewalks and striping bike lanes has been shown to create more jobs than traditional car-focused transportation projects by allowing more people to participate in the economy. Complete streets can offer many benefits.

- **Complete Streets improve safety.** A Federal Highway Administration (FHWA) safety review found that streets designed with sidewalks, raised medians, better bus stop placement, traffic-calming measures and treatments for disabled travelers improve pedestrian safety. Some features, such as medians, improve safety for all users: they enable pedestrians to cross busy roads in two stages, reduce left-turning motorist crashes and improve bicycle safety where adequate lane width is provided.

- **Complete Streets encourage walking & bicycling for health.** The Centers for Disease Control and Prevention recently named adoption of Complete Streets policies as a recommended strategy to prevent obesity. One study found that 43% of people with safe places to walk within 10 minutes of home met recommended activity levels; among individuals without safe places to walk, just 27% were active enough. Easy access to transit can also contribute to healthy physical activity: nearly one third of transit users meet the Surgeon General's recommendations for minimum daily exercise through their daily travels.

- **Complete Streets can lower transportation costs for households.** Americans spend an average of 18 cents of every dollar on transportation, with the poorest 20% of households spending more than double that figure. In fact, studies indicate that most families spend more on transportation than on food. When residents have the opportunity to walk, bike, or take transit, they have more control over their expenses by replacing car trips with these inexpensive options. Taking public transportation, for example, can save substantial costs on an annual basis with reduced expenses for fuel and auto maintenance.

- **Complete Streets foster strong communities.** Complete streets play an important role in livable communities, where all people, regardless of age, ability or mode of transportation, feel safe and welcome on the streets. A safe walking and bicycling environment is an essential part of improving public transportation and creating friendly, walkable communities. A recent study found that people who live in walkable communities are more likely to be socially engaged and trusting than residents of less walkable or non-walkable neighborhoods. Additionally, they reported being in better health and happier more often.

5. TRAFFIC MITIGATION TECHNIQUES

The ideal condition for the circulation system is one in which traffic generally moves through the system in a smooth, efficient and flowing manner with limited delays, bottlenecks or congestion. In practice, even the best designed system will periodically experience congestion at certain times due to unique circumstances. Where a system experiences ongoing or regular bottlenecks resulting in excessive congestion, delays, accidents or similar difficulties, then it is necessary to enact changes to mitigate such traffic problems. Unfortunately, adding more lanes does not always solve the problem - sometimes that only adds more congestion. A combination of management practices, as well as engineering solutions can provide better results for maintaining an efficient circulation system.

Some of the key means by which traffic impacts may be improved include:

- Comprehensive planning at both the local and regional level, including small area planning and corridor planning.
- Continued development of alternate modes transportation facilities on a city-wide basis, including bicycles, walking and public transit, so as to allow more options for local movement.
- Support and promote efficient, compact, mixed-use, town center-type development to reduce vehicular traffic needs and infrastructure requirements.
- Develop secondary routes to offload the most congested traffic areas. Improve efficiency of automobile routes through the street classification system.
- Restrict large trucks from certain routes through neighborhoods.
- Integrate "traffic calming" techniques in neighborhood settings, such as street chokers, street medians and islands, and shorter block lengths.
- Apply access management techniques to certain roadways regulating access points, driveways and intersections on the busiest arterial and collector streets.
- Coordinated traffic signalization and timing of traffic signals so that traffic is moved most efficiently.

6. ROADWAY AND SYSTEM CAPACITY PLANNING ISSUES

Roadway capacity deficiencies begin to occur as traffic volumes approach the design capacity of a roadway. System deficiencies refer to deficiencies which impact system wide continuity and traffic. While the capacity deficiency refers to the volume of vehicular traffic within a segment, a system deficiency refers to the ease of movement between two points. Examples of current system deficiencies due to interruptions in continuity or inability of traffic to flow smoothly include:

- East - West movement across the Verde River.
- North – South arterial road options are mainly limited to SR 260, SR 89A and Main Street.
- Heavy reliance on a few arterial streets serving as the primary transportation system for travel through the city creates bottle-necks and back-ups.
- Excessive access driveways to commercial properties along older sections of SR 89A and Main Street.
- Absence of road shoulders and sidewalk facilities to support alternative modes, such as bicycling and pedestrian movement throughout most of the system.

7. TRAFFIC CALMING

Over the past decade many communities in Arizona and across the country have been rethinking the design of neighborhood streets. The result of applying this new perspective to street design has been a departure from previous policy considerations. The intent of the transportation system is to serve a broad range of public policy objectives, including maintaining neighborhood integrity, improving the quality of life and supporting economic opportunities. In this sense, the street is not merely a utility tool for moving people and goods from one place to another but it is an integrated component of a comprehensive environment that defines and serves the broad needs of society.

Cottonwood has several examples of traffic calming features. 12th Street has an island installed near Cherry Street to define where traffic is entering the residential area. Cottonwood Ranch has islands to slow traffic at intersections. Many cities in Arizona have successfully implemented traffic calming programs, including Phoenix, Tucson, Scottsdale, Tempe and Chandler to name a few. There is extensive data available from professional engineering and planning organizations, the federal government and various cities around the country to indicate the success and popularity of these programs.

The volume and speed of automobiles traveling through residential areas is an ongoing concern to the safety and well-being of the residents of the city. This condition degrades the total experience of the neighborhood and erodes the quality of life of the community. Fortunately there are a range of techniques and programs that can be applied to the design of streets to address the concerns of protecting and enhancing community and property values, while also allowing safe, convenient travel on roads.

The techniques and tools of traffic calming can be used to retrofit existing streets and neighborhoods or they can be planned and built within new developments at the time of initial construction. The cost of reconstruction can be a major issue. Public acceptance is another concern. Education and experimentation are two valuable concepts that should be considered.

It is critical that the design and installation of any traffic calming device within a street environment is done with professional guidance and thorough understanding of the engineering consequences. If done according to professional standards, the outcome can provide a successful addition to the street resulting in a friendlier, safer, more attractive neighborhood environment. If traffic calming features are installed in a random or disconnected manner, the result can be increased safety problems, intermittent speeding and a more dangerous condition.

12th Street

Cottonwood Ranch

Traffic Calming Program Elements

Traffic Calming is a term used to describe programs that include both physical and behavioral aspects intended to reduce negative effects of vehicles, alter driver behavior, and improve the environment for pedestrians and bicyclists. A comprehensive program to modify the behavior of vehicular traffic may include some of the following concepts:

1. **Passive.** Psychological effects include visual narrowing and shortening of the street view through use of landscaping along street edge and careful placement of physical features to frame in the view. Also, painted edge stripes, designated on-street parking spaces to narrow travel lanes, bike lanes and sidewalks can create a visual narrowing of the street corridor. Informational and educational resources are also part of the passive approach.

2. **Physical.** Integrating traffic calming techniques into the initial design of the street is the best approach but existing streets can be retrofitted with various physical features to control and moderate traffic behavior. These are further defined as vertical or horizontal features, which can be used separately of combined. Examples include:
   Vertical Deflection: speed humps, raised cross walks, raised intersections.
   Horizontal Deflection: narrow points, chicanes, chokers, bulb-outs or curb-extensions.

3. **Route Modification.** Controlling cut-through traffic in a neighborhood and redirecting drivers to nearby collector or arterial streets can help reduce volume and speed. Techniques include: turn restrictions, diverters, road closure, dead-end streets with cul-de-sacs or hammerheads, and directional signage.

Traffic Calming Techniques

The first step is to identify and document problem locations. Where streets are shown to have a high level of speeding and/or cut-through traffic, the next step is to look for standard solutions to mitigate conditions. The first level of response could include installing speed limit signs or changing traffic control at intersections to shorten main runs. Where a location could benefit from a more intensive response, there are a number of traffic calming techniques that can be considered:

Chokers and Neckdowns.

- Typically mid-block swellings to restrict the travel width.
- Bicycle travel needs to be carefully considered due to tight geometrics.
- Pedestrian crosswalks improved due to shorter roadway crossing distance between side extensions.

Bulb-Outs and Curb Extensions.

- Usually associated with intersections but can be used mid-block.
- The wider sidewalk that "bulbs out" at the intersection reduces the width of the travel lane and shortens the distance for the crosswalk resulting in slower traffic and a safer pedestrian facility.
- The wider sidewalk area can be treated with landscaping, decorative pavement and other details to enhance the pedestrian environment.
- Need to coordinate with emergency services to ensure vehicle radius can navigate corners.

Speed Humps.

- Speed humps typically have a 3 feet cross-section. Speed bumps, which are narrow raised obstructions are typically found in parking lots and should not be used on streets.
- Spacing is critical – Typically 300 feet maximum. Studies indicate cars will speed up to make up for perceived lost time depending on the spacing. Exact spacing for effective results is based on a number of factors.
- Limit use to 2-lane streets. 25 mph or less maximum speed street locations. Typically used on local streets only with low maximum vehicle trips per day indicated.
- Usually not located on bus routes or primary emergency response routes.
- Resident support is essential. Usually installed as last resort to speeding traffic.

Speed Tables.

Speed tables are similar to speed humps but they have a wider profile across the top. They are typically integrated with raised crosswalks but can be used as separate features.

- Various profiles and widths. Typically minimum 22' –24' cross section in travel direction.
- Can be integrated with raised crosswalk design.
- Can be integrated with choker or bulb-out features on sides.

Raised Intersection.

- Similar to the speed table configuration but where the entire intersection has a higher profile than the connecting streets.
- Often used in association with decorative paving treatments or painted designs on the side ramps; has been shown to result in an overall slower speed interval for cross traffic.
- The height of the raised level is typically 4 – 6 inches to be effective.

Center Islands and Pedestrian Refuge.

- Mid-block center island medians to narrow and focus the travel lanes.
- Pedestrian refuge at cross walks can be integrated within the island.
- Forced turn channelization (right turn only) is an optional technique.
- Center median islands provide a good gateway treatment to a neighborhood or district.

Chicanes. (mid-block projections)

- Landscaped bump outs on one side of road or on alternating sides of roads.
- Vehicles slow down to negotiate a series of diversions and turns within the path of the street.

Diverters.

- Side street diverters placed diagonally at intersections restrict through traffic on local streets by directing traffic to collector streets.

Short Street Segments.

- New local residential streets should be designed to avoid long uninterrupted straight segments that encourage speeding.
- Longer street sections can be designed or retrofitted with curves or jogs to create visually shorter segments from the driver's perspective.

8. ROUNDABOUTS

"Modern roundabouts" have become a standard roadway feature throughout much of the United States due to a number of beneficial aspects, including improved safety and lower cost. These four points are what differentiate a modern roundabout from other similar or related traffic control features.

1. A compact one-way, circular intersection in which traffic flows counterclockwise around a center island. Other styles (i.e. rotaries, traffic circles) are typically much larger than the modern roundabout. This compactness helps keep speeds low and makes it easier for drivers to stay oriented.
2. Entering traffic yields to traffic already in the roundabout or in the inside lane.
3. Traffic lane approaches are channelized with engineered splitter islands to deflect traffic into the flow. Other styles do not use channelization or deflection techniques.
4. Designed to slow the speed of vehicles through deflection of the vehicle path.

Introduction.

- Public education is needed on the use and safety benefits of roundabouts. A great deal of research and data is available regarding the safety benefits of roundabouts for vehicles and pedestrians.
- The narrow entry lane for roundabouts is defined by a splitter island that results in a slowing of vehicles as they enter the center. The design characteristics of the splitter island and approach lanes are a key part of what defines the behavior of traffic.
- Pedestrian routes are connected to a refuge spot in the splitter island. The pedestrian crossings are broken into shorter segments with the refuge island thereby creating a safer pedestrian route.
- The circle can be a focus point on a street axis or a gateway feature or transitional element for a neighborhood or district.
- Roundabouts located on high speed, high volume, multi-lane regional highways have one kind of effect. Roundabouts integrated into 2-lane neighborhood and local city streets provide other kinds of benefits based on their unique characteristics. Before making a decision regarding installation of a roundabout, it is essential to understand the different effects related to design and location.

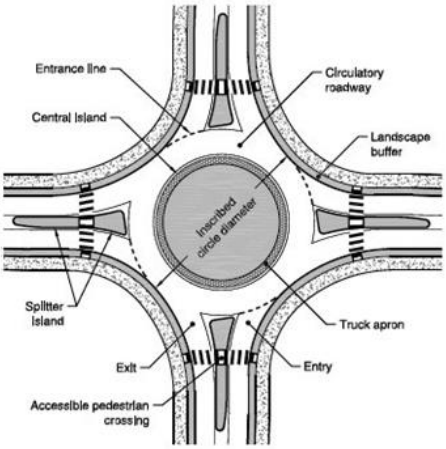
Benefits of Roundabouts.

Roundabouts have become popular throughout the United States because of their improved safety and operational efficiency. Roundabouts are not always feasible in every location and do not always provide the optimal solution for every situation but where they do meet the criteria, they can provide outstanding benefits. Each case needs to be evaluated on its own merit. The benefits of roundabouts and some constraining factors are described below.

Traffic Safety.

Numerous studies from around the country have shown significant safety improvements at intersections converted from conventional forms to roundabouts. The physical shape of roundabouts eliminates the cross turning conflicts that are present at conventional intersections, thus reducing the total number of potential conflict points and the most severe of those conflict points. One recent national study showed overall reductions of 35 percent in total crashes and 76 percent in injury crashes. Severe, incapacitating injuries and fatalities are rare, with one study reporting 89-percent reduction in these types of serious crashes. Due to slower speeds, the incidence of fatalities drops significantly with roundabouts.

ROUNDABOUTS:



Operational Performance.

When operating within their capacity, roundabouts typically have lower overall delay than signalized and all-way stop-controlled intersections. The delay reduction is often most significant during non-peak traffic periods. These performance benefits can often result in reduced lane requirements between intersections. However, as yield-controlled intersections, roundabouts do not provide any priority ranking to specific users, such as emergency vehicles, since the facility typically needs to empty out or drain before any user can negotiate through.

Ongoing Operations and Maintenance.

A roundabout typically has lower operating and maintenance costs than a traffic signal due to the lack of technical hardware, signal timing equipment and electrical needs. Roundabouts also provide substantial cost savings to society due to the reduction in crashes, particularly fatal and injury crashes, over their service life. As a result, the overall life-cycle costs of a roundabout can be significantly less than that of a signalized intersection in the same location.

Environmental Factors.

Roundabouts can provide environmental benefits by reducing vehicle delay and the number and duration of stops compared with signalized or all-way stop-controlled alternatives. Even when there are heavy volumes, vehicles continue to advance slowly in moving queues rather than coming to a complete stop. This can reduce noise and air quality impacts and fuel consumption significantly by reducing the number of acceleration/deceleration cycles and the time spent idling.

Traffic Calming.

Roundabouts can have a traffic calming effect by reducing vehicle speeds using geometric design rather than relying solely on traffic control devices. In particular, the use of roundabouts on two-lane collector roads in a neighborhood street setting can provide a safer intersection for all users by slowing down vehicles due to the manner in which the splitter islands funnel vehicles into and around the roundabout.

9. ACCESS MANAGEMENT

Access management is the regulation of vehicular access to public roadways from adjoining property. Access management is typically applied to major arterials and highways to improve safety and mitigate traffic congestion along busy, high-speed roads. Access management needs to balance the interests of business owners who want convenient access to their properties with the need to ensure safety for everyone where there are potentially dangerous conditions on heavily traveled busy roads.

Programs to control and manage access to and from major streets to adjacent properties should be considered through a coordinated and consistent approach or the benefit becomes less effective. In particular, left turns from properties onto busy high-speed streets crossing several lanes pose significant risk of collision. A comprehensive access management plan can use appropriate techniques to minimize or eliminate such risk. Potential techniques include the following:

1. **Driveway Consolidation and Spacing.** Driveways are shared or consolidated between adjoining uses to limit the number of driveways per mile along a road and provide adequate spacing between driveways in order to reduce the number of conflicts.
2. **Corner Clearance.** Eliminate or relocate driveway entrances away from intersections. Ingress and egress maneuvering at driveways close to intersections results in congestion and conflict where vehicles are stacked and queued in the main travel lanes and turn lanes. Driveway access can be relocated from a primary street to a side street if available.
3. **Left Turn Lanes.** A dedicated left-turn lane is provided in the center of the street to separate left-turning traffic from through traffic. Paint markings can be used to indicate turn location; however, raised medians provide the most effective means to control turning movements.
4. **Alternative Access Ways.** (Frontage and Backage Roads) Access is provided to sites adjoining the main road by either frontage or backage roads. Local access traffic is directed from the busy street to a secondary street with slower speeds and less volume to provide access to properties.
5. **Raised Medians at Intersections.** Raised medians at intersections with built-in left turn lanes provide a center barrier near intersections to prevent cross-conflict turning movements with driveways near the intersection. This reduces turning conflicts near the intersection.
6. **Full Raised Medians.** Full raised medians are barriers the full length of the main roadway that prevent both left turns and cross traffic. Full raised medians eliminate conflict points along the stretch of the median where traffic volumes are high. Cuts in the median can be placed at mid-block or specific locations to control turning access to major driveways or access roads.

10. ADA PLANNING

Title II (1990) of the Americans with Disabilities Act (ADA) applies to local government. Title II prohibits discrimination on basis of disability related to public facilities (state and local). Title III (1994) prohibits discrimination on basis of disability in "places of public accommodation." Title III includes certain types of transportation related facilities.

Attention needs to be given to access to government buildings and facilities, bus stops and other transportation services, places of public accommodation, and business districts, as well as walkways serving residential areas. There is no "grandfather" clause from having to comply with the requirements of the ADA. Small municipalities are not exempt from complying with ADA because of their size. Cities must provide program access and make modifications to policies, practices, and procedures that are required by law. New facilities must be designed to accommodate persons with disabilities under the Americans with Disabilities Act. Additionally, existing facilities must be retrofitted and reconstructed to meet ADA standards. Such programs need to be ongoing.

However, the law is flexible. City governments must comply with Title II of the ADA, and must provide program access for people with disabilities to the whole range of city services and programs. There is some flexibility in that city governments are not required to take any action that would result in a fundamental alteration to the nature of the service, program, or activity in question or that would result in undue financial and administrative burdens. This determination can only be made by the head of the public entity or a designee and must be accompanied by a written statement of the reasons for reaching that conclusion. The determination that undue burden would result must be based on all resources available for use in a program. If an action would result in such an alteration or such burdens, a city government must take any other action that it can to ensure that people with disabilities receive the benefits and services of the program or activity.

Policy considerations related to improving accessibility cover a range of issues and needs. The law is intended to allow all Americans the opportunity to participate and function in society without unnecessary barriers, whether physical or operational. Persons with disabilities include not only persons using wheelchairs but also other forms of mobility impairments, blindness and other challenges.

Transition Plan for Implementation of the American Disabilities Act (ADA)

An ADA transition plan for public streets and facilities that identifies and integrates system needs:

- Identify physical obstacles on pedestrian facilities that limit the accessibility for activities to individuals with disabilities.
- Describe in detail the methods that will be used to make the facilities accessible.
- Specify a schedule for taking the steps necessary to upgrade pedestrian access to meet ADA requirements.
- Indicate the department and official responsible for implementation of the plan.

H. MULTI-MODAL TRANSPORTATION

An effective transportation system provides multiple options for travel within the same corridor or area. Automobiles and trucks are one part of the transportation system. Walking, bicycling and public transit are also important components of a cost-effective, efficient transportation system that supports a healthy, prosperous community. The best way to incorporate non-motorized transportation facilities into a planned city-wide system is to include sidewalks and bike lanes or adequate lane width for bicycles in the initial design and construction of the street. It is always going to cost more per project to come back after the street is built to install sidewalks or additional pavement width to accommodate bicycle routes.

1. BICYCLE PLANNING

To address issues associated with transportation, recreation and community health, the General Plan encourages the development of a comprehensive bicycle system in the City of Cottonwood. The Plan encourages, "the development of a bicycle and pedestrian plan for the City to consider in the review of new development and to guide city street improvements. The system should address trip generation and destination points, potential hazards and barriers, recommend necessary facilities, opportunities to coordinate with the bus system, regional connections, safety features and education, encourage compliance with AASHTO standards, special traffic detection devices where necessary and standard signage. The plan should also provide for related promotion and public education; and coordination with ADOT to ensure implementation along State highways."

Cottonwood Bicycle Plan
Approved by the Cottonwood City Council, October 6, 2009

A summary of key points of the Cottonwood Bicycle Plan is included herein. The complete copy is available on the City website or from the Development Services Department.

At the direction of the City Council, the City's planning staff began the development of a bicycle plan in the Fall of 2007, as well as the immediate placement of "Share the Road" signs along the city's primary collector streets. The Council asked staff to develop an inexpensive, on-street system which addressed largely the city's collector streets. Staff worked with representatives of the Verde Valley Cyclists Coalition and other interested residents to develop the proposal.

In February of 2009, the initial draft was assembled for preliminary review by the Planning and Zoning Commission and City Council, prior to initiating a formal public review process. The City of Cottonwood circulated the proposal for review and comment by the public, other departments and jurisdictions, regarding the designated route system, facilities, regulations and educational components.

Cottonwood Bicycle Plan 2009 Goals and Objectives:

The following goals are offered to guide the development of a bicycle plan for the City of Cottonwood as an affordable amenity that also addresses the community's needs for recreation and alternative transportation modes:

1. Increase the percentage of all trips made by bicycle in the City of Cottonwood.
2. Work with advocacy groups, such as the Verde Valley Cyclists Coalition and stakeholders to develop a Complete Streets Program for the city.
3. Establish and maintain an integrated system of bikeways that enables safe and convenient bicycling. Promote bicycling as a means of achieving cleaner air, less traffic congestion, better health and preserving the natural, rural environment that surrounds the city.
4. Develop a network of bike routes to link neighborhoods and commercial areas throughout the city.

5. Link bicycling to economic development and tourism. Bicycling is seen by many as an important indicator of the quality of life of an area.

PROPOSED BICYCLE FACILITY ROUTES AND LINKS

The following is a summary of the proposed bicycle facility route system. The criteria for selection includes serviceability, deficiencies (barriers / hazards), and potential improvements. The proposed bicycle facilities include some sections with striped lanes and some as shared routes with the final selection to be determined through a separate process. Some of the proposed routes already include some facility improvements but are listed here as the complete route may need additional work. The individual links are listed alphabetically for reference:

Airpark Road / Airport Road to Old Jerome Hwy – Route from Willard Street extension to Mingus Avenue through Airport industrial area to Black Hills Drive. Could continue north into Clarkdale.

Aspen Street - Connects community facilities area on 6th Street with the commercial corridor on South Main Street.

Camino Real - Old 279 - Connects commercial areas along SR 89A with residential areas and Mingus High School.

Cornville Road – Verde Santa Fe - Bill Gray – Bike lanes along Cornville Road would connect to existing Verde Santa Fe development and future development and extension of Bill Gray Road to north.

Cottonwood Street - West Section: Link from Airpark Road to SR 89A. East Section: Provide bike lanes from Main Street/SR 89A past shopping plaza to Cove Parkway.

Cove Parkway - Includes half-mile link between Cottonwood Street and 89A.

Del Rio - Connects Old 279 to Verde Village through future development of State Trust Land property. Could continue across SR 260 through Verde Village to connect with Verde River route.

Elm Street - Proposed route between Willard Street and retail plaza areas adjacent to the SR 260 / 89A intersection. Gaps need to be identified.

Fir Street - Two miles from residential areas to SR 260. This is a fully improved corridor with striped bike lanes.

Groseta Ranch Road - Three-quarter mile connection between SR 89A and North Main Street in Old Town associated with future development of Groseta Ranch project.

North Main Street - Essential corridor from Old Town to Mingus Avenue. Includes restriping lanes from Mingus to N. 10th Street to include two travel lanes, a center turn lane, and bicycle lanes each side.

South Main Street - Main corridor bicycle route includes shared route signage.

Mingus Avenue - Entire length of Mingus Avenue from section adjacent to the Prescott National Forest through central Cottonwood to Cornville Road intersection with SR 89A..

Monte Tesoro - Rancho Vista – Peila – Connects Willard Extension to Monte Tesoro to County residential area to the south.

Rodeo Drive – UVX Road - Access between Verde Village to the west and Bridgeport to the east with connection to retail areas along SR 260. Associated with future development along SR 260 and extension of Rodeo Drive through area.

Verde River Trail - Proposed natural surface trail from Dead Horse State Park and /or River Front Park, 4-5 miles along the Verde River to Verde Village as part of Verde River Greenway State Natural Area.

West Loop - Bike lanes/route with proposed roadway located to the west of Cottonwood/Verde Village.

Willard Extension - Signed bicycle route with bike lanes from SR 89A to Monte Tesoro.

6th Street - From Mingus Avenue to SR 89A and continuing south to Fir Street.

10th Street - From Mingus Avenue to North Main Street and continuing into Riverfront Park to Dead Horse State Park.

12th Street - Complete corridor from North Main Street to Mingus Avenue then south to SR 89A and continuing to Fir Street. Includes sections with and without designated bike lanes

16th Street - Route extends north from Fir Street to the rear portion of the Food City Shopping Plaza.

BIKEWAY CLASSIFICATION SYSTEM

Standard bikeway classifications as described by the *AASHTO Guide for the Development of Bicycle Facilities* include four types of facilities: 1) Shared Use Path; 2) Bike Lane; 3) Bike Route; and, 4) Shared Roadway.

1. **Shared Use Path -** A multi-use, non-motorized pathway physically separated from motorized vehicular traffic by an open space or barrier and either within the highway right-of-way or within an independent right-of-way. Multi-use pathways are typically located along uninterrupted corridors with very minimal or no crossings of driveways or side streets, such as undeveloped public open space, wash corridors, flood plain areas, etc. Separated paths that cross driveways and streets can be unsafe and are not recommended. Appropriately placed shared use paths may be used by bicycles, pedestrians, skaters, wheelchair users, joggers and other non-motorized users.
2. **Bike Lane -** A portion of a roadway which has been designated by striping, signing and pavement markings for the preferential or exclusive use of bicyclists.
3. **Bike Route -** A shared roadway which has been designated by signing as a preferred route for bicycle use.
4. **Shared Roadway -** A roadway which is open to both bicycle and motor vehicle travel. This may be an existing roadway, street with wide curb lanes, or road with paved shoulders.

COMPREHENSIVE BICYCLE PLANNING PROGRAM: The Five E's Program

Planning for bicycling involves more than just developing the bicycle facilities. Facilities alone do not address the full range of bicycling concerns. A more comprehensive "Five E's" approach, combining engineering and planning with enforcement, education, encouragement and evaluation is nationally recognized for the success of such programs. An explanation of the importance of the Five E's follows:

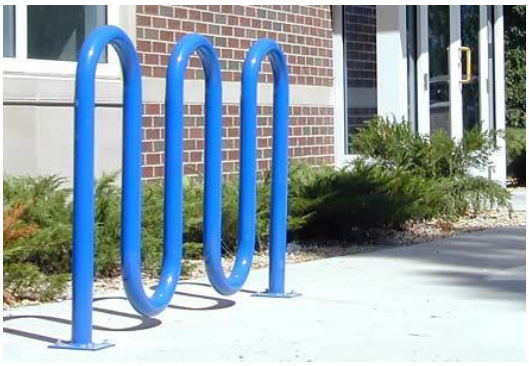
Engineering.

Engineering is the most visible part of the bicycle planning process. Important functions of the engineering component include determining locations of routes, types of facilities, surveys of existing and preferred uses, and locations and types of bicycle parking facilities. The layout of the system should take into consideration the geography of bicycle trip generation and destination associated with the needs of commuters, recreation and tourism. New roadway development and major reconstruction projects should be evaluated to consider including bike lanes or shared roadways, where appropriate. Factors for bicycle routes should highlight rider safety, convenience, and overall traffic volume. Safety issues include the quantity of motor vehicles along the route, the posted speed limit, the road shoulder width, and the frequency of parked cars.

Convenience criteria includes the number of destination points served by the route, the number of traffic control devices along the route, the surface of the road, and the amount of debris typically found along the route.

The Manual on Uniform Traffic Control Devices (MUTCD) (Section IX) recommends consistent marking of bicycle facilities to identify bicycle lanes and routes, raise motorist awareness of bicycling, and provide warning signs alerting bicyclists to potential hazards and conflicts. It is recommended to create a coherent, effective and affordable bicycle sign policy that supports the goals of the Bicycle Plan.

Bicycling parking facilities are an important component of an effective bicycle program. The City should develop a bicycle parking policy for its facilities, as well as new commercial development. Generally, effective bicycle parking facilities are placed in locations as close as possible to the destination, such as next to the building entrance. Locations that allow ongoing visual surveillance from inside the building are preferred. Locations tucked away out of site or in random locations along a street are prone to theft and will usually get little to no use.



Enforcement.

Bicycles are treated by law as vehicles in all 50 states. Bicyclists are granted all of the rights and are subject to all of the duties applicable to the driver of a vehicle (ARS 28-812). Bicyclists must therefore also accept similar responsibilities. Consistent enforcement programs help to encourage lawful behavior for bicyclists and motorists. Improved behavior leads to better safety statistics and builds greater acceptance of bicycles as a legitimate user of the roadway.

Education.

Education programs are key ingredients to building a successful bicycle transportation system and fostering the growth of bicycle use in a community. Education programs can help to encourage courteous and lawful behavior among motorists and bicyclists of all ages, and enhance the skill level of bicyclists and motorists, thus leading to safety improvements. Bicycle safety education programs have been shown to reduce accident rates for adults, as well as children. Public education events and proactive safety training can help to publicize the bike system and rules of the road. In December, 2008, Cottonwood was selected by ADOT as part of their "Safe Routes to School" program. The project included designation of primary (bicycle and pedestrian) routes for children, related safety improvements and education.

Encouragement.

For relatively short trips, bicycles have been shown to provide a safe, convenient, cost-effective, and environmentally friendly form of local transportation. Programs to encourage people to ride bicycles have been shown to help increase the level of ridership in communities. Factors which can encourage bicycling include convenience, comfort and security. Numerous studies have indicated that the availability of safe routes, including designated bike lanes and wide roadways, is one of the most important factors influencing the decision to use a bicycle for transportation by the majority of people. Additionally, convenient and secure bicycle parking facilities, lighting, availability of route maps and directory signage, shade, and bike racks on buses are also important considerations for many potential bicycle riders.

Evaluation and Planning.

Monitoring and documenting outcomes, attitudes and trends through the collection of data before and after installation of improvements needs to be ongoing. Evaluation of such data is key to determining the scope and the success of the bicycle program. Data is used to track the amount of bicycling taking place in the community, the crash and fatality rates, and ways that the community works to improve these numbers. Implementation of goals and objectives outlined in the bike plan should be tracked with an annual report to the City Council, including how much of it has been implemented and what the next steps for improvement are. Evaluation should include bicycle traffic counts, community surveys and bike crash analysis investigations.

2. PEDESTRIAN PLANNING

Pedestrians are an integral part of any transportation system. At some point drivers of cars, bus riders and bicyclists will shift to pedestrian mode. (Wheelchairs are considered pedestrian mode.) Drivers become pedestrians when they park their cars and walk to a building; bus riders become pedestrians once they get off the bus; same with bicyclists when they park their bike and walk somewhere. Pedestrian planning needs to be incorporated as standard part of the design of the city environment.

Walking should be promoted in the design of neighborhoods and new developments as a valued part of the circulation system. Having the option to walk reduces our reliance on the automobile, saves money, contributes to personal health, reduces air pollution, encourages interaction between neighbors and strengthens community. In order for walking to be seen as a viable option for transportation purposes, several things need to be considered.

PRINCIPLES OF PEDESTRIAN PLANNING.

Pedestrian routes need to be safe, continuous, inter-connected and convenient. Additional principles of pedestrian planning include the following:

- For the majority of people, distance is a critical factor in determining whether to walk. A good percentage of people will choose to walk for trips up to 5-10 minutes (1/4 mile or less to destination) and sometimes longer up to 15 minutes (1/2 mile) if the route is interesting, safe, convenient and comfortable. The number of people who will choose to walk tends to drop off quickly if the distance is considered too far or the route is challenging or uncomfortable.
- Walking is more likely to be chosen as an option if destinations are closely spaced and building entrances are close to the route. The mix of land uses and the density of such development influences whether people walk.
- Pedestrians seek the most direct route; the lack of a direct route or any challenging obstacles or difficult street crossings may determine whether people chose to walk or not if they have the option.
- Avoid excessively meandering sidewalks. Gradual shifting may be acceptable but sidewalks that meander unnecessarily or for some perceived aesthetic benefit are less pedestrian friendly, especially for the disabled and elderly. Pedestrians prefer to take the most direct route. Gentle, wide curves are okay.
- Pedestrian-friendly intersections and street crossings are essential components of an effective pedestrian system.
- Site planning for development needs to consider on-site pedestrian facilities, including routes through parking lots and from adjacent streets to the buildings.

- If people do not feel personally secure or safe, even if the pedestrian route is protected from traffic, then they are less likely to choose to walk. Issues may include the character of the pedestrian corridor, level of exposure or visibility from surrounding areas, adequacy of night time lighting, proximity to vehicle traffic and general condition of the environment.
- Pedestrian facilities need to be designed to accommodate persons in wheelchairs. The surface needs to be smooth with very minimal vertical shift; the width needs to be adequate; curb cuts and grade transitions need to be designed properly; and signalized intersections need to include accessible controls. In most cases pedestrian facilities should be designed better than ADA minimums. Make improvements to existing facilities and ensure all new development meets standards for accessibility.
- Develop Pedestrian Plans for sub-areas. Pedestrian facility design guidelines can help provide a uniform approach.

PEDESTRIAN IMPROVEMENT RECOMMENDATIONS:

- **Intersections.** Review and modify intersection crossings where necessary to allow safe, pedestrian-friendly crossings.
- **Signal Timing.** Ensure traffic signal timing is adequate to allow safe, convenient pedestrian use at signalized intersections. Consider Pedestrian Countdown Signals at major intersections.
- **Continuity.** Close gaps in the sidewalk network to ensure continuous routes.
- **Reduce Road Width.** Identify streets that are excessively wide and are candidates for "road diets" (narrowing the vehicle road lanes to provide more space for pedestrians and bicyclists.)
- **Transit Connections.** Improve pedestrian and bicycle access to transit stops.
- **Project Coordination.** Review all proposed road projects including new streets and reconstruction projects to ensure pedestrian and bicycle facilities are included where appropriate.
- **Walkability Audits.** Conduct pedestrian and bicycle audits in selected areas to evaluate system effectiveness and deficiencies. Use results to help prioritize improvements. This typically includes mapping, map analysis and most importantly, on-site, step-by-step field analysis by people representing differing perspectives so as to identify needed modifications and improvements. An effective method for walkability audits allows people to survey pedestrian routes with a tiered grading system that indicates excellent, good, fair, poor and failing sections and features.
- **"No Right Turn on Red."** Install "No Right Turn on Red" signs to improve pedestrian crossing safety at busy intersection crosswalks where pedestrian use is indicated.
- **Lighting.** Ensure adequate and safe night time lighting on sidewalks, pathways and crossings.
- **Curb Radii Reduction**. Reconstruct the curb returns at intersections and driveways with reduced curb radius so as to slow down vehicles making right turns across key pedestrian routes.
- **Pedestrian Refuge Islands and Raised Medians.** Install pedestrian refuge islands at crosswalks on multi-lane roadways. Where integrated with raised medians, such refuge islands can also help provide a visual identifier that will slow traffic and provide greater awareness of pedestrians. Raised medians can also include attractive low-water use landscaping for aesthetic benefits.
- **Curb Ramps**. Ensure curb ramps are installed at all intersections to allow safe use for persons with mobility impairments, including wheelchairs, as well as people with walking challenges.

SAFE ROUTES TO SCHOOL PROGRAM.

The Safe Routes to Schools program is a national program that is optional for states. This program is intended to improve pedestrian and bicycle infrastructure routes to schools. The purpose is to enable and encourage children, including those with disabilities, to walk and bicycle to school; to make walking and bicycling to school safe and more appealing; and to facilitate the planning, development and implementation of projects that will improve safety, and reduce traffic, fuel consumption, and air pollution in the vicinity of schools. Funds are administered by ADOT to provide financial assistance to state, local, and regional agencies, including non-profit organizations that demonstrate the ability to meet the requirements of the program. Eligible projects include sidewalk improvements, traffic calming and speed reduction improvements, pedestrian and bicycle crossing improvements, on-street bicycle facilities, off-street bicycle and pedestrian facilities, secure bike parking, and traffic diversion improvements in the vicinity of schools (within approximately 2 miles). Availability of program funds should be monitored.

Ten Reasons to Support Walking

From the Pedestrian and Bicycle Information Center (PBIC) www.walkinginfo.org

1. **We're all pedestrians** - Whether for recreation or practical purposes, most people make several trips a day on foot, even if it's only a block or so from a parked car to the entrance of a building.
2. **It will make the road safer** - Making streets safer for pedestrians, the most vulnerable road user, usually makes the roads safer for everyone, including bicyclists and drivers.
3. **Many cannot or choose not to drive** - Non-drivers include people who choose not to drive; children; adolescents; people with physical, visual, and mental disabilities; people with financial constraints; people who are temporarily disabled; and many older adults.
4. **It's cheaper to walk** - There are many costs associated with driving (e.g., cost of vehicle, gas, insurance, annual inspection and registration, maintenance, parking fees, traffic violation fees, etc.), but virtually none with walking. Additionally, walking can save money by improving health and reducing health care costs.
5. **It's good for business** - Providing pedestrian access to retailers and commercial centers provides economic benefits and can promote tourism and further economic development.
6. **Other modes depend on walking** - To get from places to their cars, bicycles, buses, or trains, people need to be able to walk.
7. **Walking is good for the environment** - Walking does not contribute to air, noise, or water pollution.
8. **Walking can reduce the demand for existing and new roadways** - Many streets carry more traffic than they were designed to handle, resulting in gridlock, wasted time and energy, and pollution. Providing opportunities to walk can help get more people out of frustrating traffic congestion.
9. **Walking can improve people's health** - Regular walking can aid in weight loss; lower blood pressure; improve cholesterol, blood sugar, immune system function, and insulin dynamics; prevent bone-loss; reduce the risk of coronary heart disease, stroke, and other chronic diseases; and improve mood and mental performance.
10. **Walking improves the quality of our lives** - Walking provides intangible personal benefits (such as a sense of independence and freedom of choice), as well as social benefits (such as opportunities to interact with others and build community closeness and trust) that enrich the lives of children, families, and neighbors.

3. PUBLIC TRANSIT

Using public transportation is a relatively economical way to travel, it reduces carbon emissions, and diminishes America's dependence on foreign oil. Public transit also allows people who do not own personal vehicles or who are unable to drive to participate in more aspects of civic life.

CAT BUS SYSTEM

Cottonwood Area Transit (CAT) is one of the oldest and most successful small transit systems in Arizona. CAT now has two (2) fixed bus routes serving the communities of Cottonwood, Clarkdale and Verde Village. Routes connect on the hour at Garrison Park where riders can transfer from one bus route to another without waiting. Buses run from 7:00 AM - 6:00 PM Monday thru Friday and serve signed bus stops located all along the routes. The system also provides contract services to several specific organizations in addition to a dial-a-ride service. The vehicles are "disabled-accessible" with a wheelchair lift. Both routes meet on the hour at the Cottonwood Library, where riders can also transfer to Verde Lynx.

CAT Fares Effective July 1, 2012

2014 Cash Fare:	$1.25
All Day Pass:	$3.00
20-Trip Pass:	$25.00
Paratransit:	$2.25

CAT PARATRANSIT

Curb-to-Curb Transportation for Persons with Disabilities

CAT PARATRANSIT provides curb-to-curb transportation services for persons with disabilities who are unable to use CAT fixed route transit system. The services are shared-ride and require a 24-hour advance reservation. Vans pick riders up at the curb by their home and drop them at the curb by their destination. CAT PARATRANSIT services are available to persons who are eligible under the Americans with Disabilities Act (ADA). This means that they are unable, as a result of a physical, sensory or mental impairment, to board, ride or disembark from transit buses

Curb-to-Curb Transportation Service Area

CAT's ADA paratransit service area includes origins and destinations that are within 3/4 mile from an existing CAT bus route. Within this area, riders who are ADA eligible are guaranteed a trip. CAT also provides curb-to-curb service in an extended area which includes locations outside the ¾ of a mile zone. However, these services (referred to as Dial-a- Ride) are provided on a space available basis and are not guaranteed under the Americans with Disabilities Act. In order to use CAT Paratransit services you must complete an eligibility application. An interview with CAT Paratransit staff and testing for functional abilities may also be required.

Service Hours and Fares ADA Trips:

CAT Paratransit, for trips within 3/4 of a mile of a fixed route bus stop, operates:
Monday through Friday
7:00 a.m. to 6:00 p.m.
Paratransit Fare: $2.25 per one-way trip.

VERDE LYNX

Verde Lynx is CAT's sister service that provides direct bus service between Cottonwood and Sedona, seven (7) days-a-week. Verde Lynx buses run from the Cottonwood Library to Poco Diablo resort located off of SR 179 in Sedona and the Municipal Parking Lot in Uptown Sedona. All Verde Lynx stops are marked with a distinctive bus stop sign. Free Park & Ride facilities are provided at Garrison Park in Cottonwood and the Sedona Municipal Lot. Riders can also use local transit services in Cottonwood and Sedona to connect to Verde Lynx.

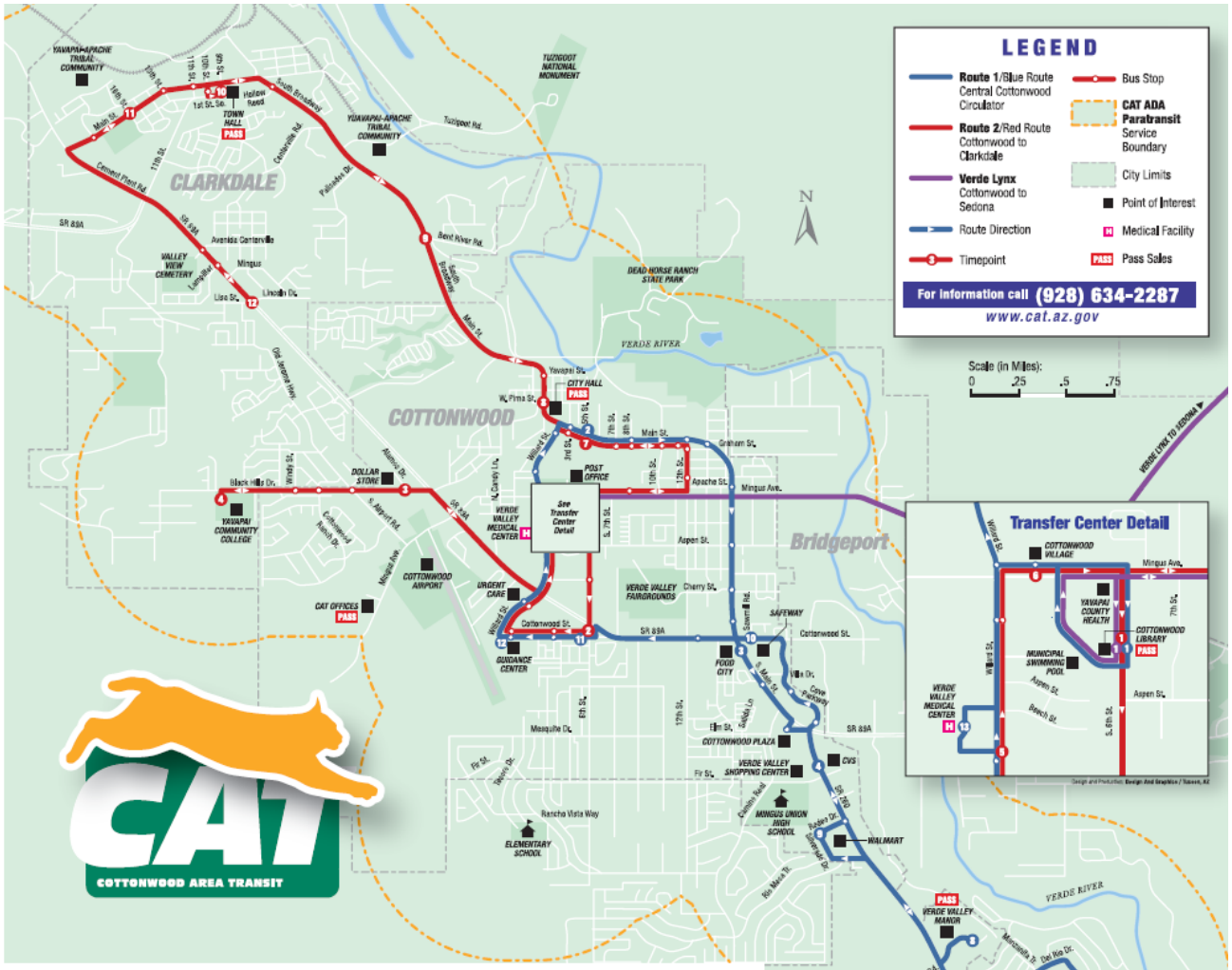
Verde Lynx Fares 2014

Per ride:	$2.00
Monthly Pass:	$40.00
20-Trip Pass:	$40.00

Features include:

- Expanded commuter service between Cottonwood and Sedona.
  - Verde Lynx Sunday service provides 6 round trips.
  - Weekday service will operates an hour earlier and later than Sundays.
- Free Park & Ride facilities at Garrison Park in Cottonwood and the Sedona Municipal Lot in Sedona.
- Verde Lynx riders can transfer to CAT in Cottonwood to connect to locations in Cottonwood, Clarkdale and Verde Village.

CAT BUS ROUTE SYSTEM



RED ROUTE Monday – Friday 7:00 a.m. – 5:51 p.m.

Bus Stop	Bus	First Service	Hourly Bus Service	Last Bus
COTTONWOOD				
1	Depart Cottonwood Library	7:00	:00	**5:00**
2	Cottonwood St. at 6th Street.	7:02	:02	**5:02**
3	Black Hills Dr. at Alamos Drive (Dollar Store)	7:07	:07	**5:07**
4	Yavapai College	7:09	:09	**5:09**
5	Willard St. at Tres Tiegres (Medical Center)	7:14	:14	**5:14**
6	Mingus at Willard (Cottonwood Village)	7:16	:16	**5:16**
7	N. Main St. at 5th St.	7:20	:20	**5:20**
8	N. Main St. at W. Pima (City Hall)	7:22	:22	**5:22**
CLARKDALE				
9	So. Broadway at Bent River	7:25	:25	**5:25**
10	Main St. at 9th St. (Clarkdale City Hall)	7:27	:27	**5:27**
11	Main St. at 16th St. (Oovahs)	7:30	:30	**5:30**
12	SR 89 A at Lisa St.	7:34	:34	**5:34**
10	9th St. (Clarkdale Post Office)	7:41	:41	**5:41**
9	So. Broadway at Bent River	7:43	:43	**5:43**
COTTONWOOD				
7	N. Main St. at 5th St. (Catholic Services)	7:46	:46	**5:46**
1	Arrive at Cottonwood Library	7:51	:51	**5:51**

The schedules show only major stops. The buses serve all bus stops shown on the route map.

AM times are shown in regular type. **PM** times are shown in **boldface type.** Times are approximate and may vary due to weather and traffic conditions.

Verde Lynx schedule is on reverse side of guide.

Fixed route trip planning (Powered by Google Transit) is available on *www.cat.az.gov*

BLUE ROUTE Monday – Friday 7:00 a.m. – 5:50 p.m.

Bus Stop	Bus	First Service	Hourly Bus Service	Last Bus
1	Depart Cottowood Library	7:00	:00	**5:00**
2	N. Main St. & 5th St.	7:03	:03	**5:03**
3	S. Main St. (Food City/Safeway)	7:09	:09	**5:09**
4	Hwy. 260 at Fir St. (Frys)	7:11	:11	**5:11**
5	Del Rio Dr. at Warriors Run	7:17	:17	**5:17**
6	Western Dr. at Village Dr.	7:22	:22	**5:22**
7	Del Rio Dr. at Puma Circle	7:27	:27	**5:27**
8	Verde Valley Manor	7:30	:30	**5:30**
9	Wal Mart at Rodeo Dr.	7:34	:34	**5:34**
10	Cottonwood St. (Safeway)	7:38	:38	**5:38**
11	Cottonwood St. at 6th St.	7:42	:42	**5:42**
12	Cottonwood St. (Guidance Clinic)	7:44	:44	**5:44**
13	Verde Valley Medical Center (Main Entrance)	7:46	:46	**5:46**
1	Arrive at Cottonwood Library	7:50	:50	**5:50**

FARES / TARIFAS

CAT Fixed Route Buses

Cash Fare	$1.25
All Day Pass	$3.00
20-Trip Pass	$25.00

Verde Lynx

Per Ride	$2.00
Monthly Pass	$40.00
20-Ride Pass	$40.00

PASS SALES OUTLETS

Cottonwood

CAT Office	340 Happy Jack Way
Public Library	100 S. 6th St.
City Finance Dept.	816 N Main Street
Verde Valley Manor	3400 Godard Rd.

Clarkdale

City of Clarkdale	39 North Ninth Street

I. PROPOSED CIRCULATION PROJECTS

CRITERIA FOR SELECTING TRANSPORTATION PROJECTS

Transportation improvement projects indicated in the *Cottonwood General Plan 2025* have been identified through a number of local and regional sources, including the multi-agency *Verde Valley Multimodal Transportation Study, 2009,* as well as the City Council's Annual Strategic Planning and Capital Improvements Planning process, ADOT's long-range planning program, and ongoing input from the public. Criteria for evaluation includes the following:

- **Travel Demand.** New and improved roadways are planned to accommodate population growth. A key factor in selecting new projects is the need to provide adequate capacity for current or anticipated demand.
- **Local Benefit.** Proposed transportation projects are not only evaluated in terms of the specific benefit to immediately surrounding properties but also in terms of the benefit to the city-wide transportation system. A bypass road in one area, for example, may provide significant reduction in traffic congestion at a particular bottleneck in another area. The overall local benefit needs to be considered.
- **Regional Benefit.** The city's circulation system is interconnected with a wider surrounding network that functions as a complete system. Projects need to be evaluated in terms of their relationship to the overall regional system.
- **Public Input.** Input from public meetings, spoken comments, written comments, e-mailed and mailed comments are all considered. Input is considered from residents, agencies and organizations.
- **Environmental Impact.** Projects that use Federal funding are subject to environmental review through the National Environmental Policy Act (NEPA) and other Federal overlay legislation. All new projects need to consider impacts on water resources, air quality, wildlife habitat and travel corridors, and other environmental concerns.
- **Project Cost.** Project costs can vary widely depending on land availability, terrain and slope, drainage factors, engineering constraints and various unique issues. The review process to prioritize projects needs to consider the needs and desires of a particular project weighed against the overall effectiveness in terms of funding availability.
- **Time Frame.** Projects are organized as short - medium term in the 1-5 year range; long term projects greater than 5 years, including other proposed circulation and transportation projects where the timeframe may be ongoing or undetermined.

SHORT - MEDIUM TERM 1-5 years

PROPOSED STREET IMPROVEMENT PROJECTS: The following section includes specific street improvement and circulation projects that have been proposed. Additional study and analysis would be expected prior to implementation to consider changes in conditions and additional input.

a. State Route 260 Regional Improvements.
Improvements resulting in a four-lane controlled access highway between Cottonwood and I-17 are planned. Portions of these improvements have been completed; however, it is in the interest of all the communities to ensure the eventual outcome of this work is to ensure the completed project protects the primary role of the highway as a direct transportation link between the communities.

b. S. 12th Street.

South 12th street was originally developed to serve local traffic from the Palisades neighborhood. As development continued in the surrounding area, 12th Street between SR 89A and Fir Street became a collector street serving traffic cutting through the neighborhood. Improvements are necessary to serve the increased volume of traffic on this street; however, the character of the street should continue to respect the residential nature of the neighborhood.

c. North Main Street Corridor Improvements.

N. Main Street from the intersection with Mingus Avenue heading north to the vicinity of N. 10th Street where the road tapers into two lanes going into Old Town: A detailed analysis would include reconfiguring the four-lane street section to two travel lanes with a center turn lane and bike lanes on each side. With a dedicated center turn lane, traffic should flow more smoothly and safely. Bicycle traffic would have designated bike lanes. Pedestrian crossings along this section of Main Street could also be improved since there would be less distance of travel lanes to cross and center medians or similar pedestrian improvements could also be included at strategic locations.

d. N. Main Street and N. 10th Street Intersection Improvement.

The existing intersection is dangerous and difficult for vehicles, pedestrians and bicycles. A roundabout or modified roundabout would provide improved safety and traffic flow for all types of traffic. The location is a major gateway to Old Town and includes the main entrance to Dead Horse Ranch State Park and Cottonwood Riverfront Park. The existing offset intersection between the north and south legs of N. 10th Street results in a dangerous cross turn conflict. A roundabout would provide a safer setting for vehicle and pedestrian use due to the single narrow entry lane and the tapered medians with built-in pedestrian crossings.

LONG TERM 5 years or more.

e. Groseta Ranch Road.

Groseta Ranch Road from SR 89A to N. Main Street was envisioned as a collector street and access point for future development of the Groseta Ranch property along SR 89A. The route would provide a connection from the roundabout on SR 89A to N. Main Street at Old Town. The development of this road would be completed in connection with future residential and commercial development in this area. A new intersection at N. Main Street may need to be considered.

f. Cornville Road Improvements.

With development of Verde Santa Fe North – Phase II, Cornville Road between Tissaw Road and SR 89A will need to accommodate higher levels of traffic. Upgrades to the road should eventually include additional travel lanes, turn lanes, sidewalks, bike lanes, crosswalks, signalized intersections (and/or roundabouts) and other safety improvements to accommodate increased traffic.

g. Verde Santa Fe North Connector.

The approved site plan for the Verde Santa Fe North (Phase II) project includes a new collector road between Cornville Road (at Tissaw Road) and SR 89A (at Bill Gray Road.) This road would be constructed as part of the approved development project. The plan calls for a signalized intersection at Bill Gray Road, which would be necessary to accommodate the new commercial development approved for this area, as well as new residential development. An improved intersection at Cornville Road and Tissaw Road may also be necessary in association with the VSF North Phase II development.

h. Godard Road.

Connect Old 279 to SR 260 at Godard Road intersection with new 2-lane road with bike lanes. Project should be planned and constructed in association with future development of the State Trust Land. At the time the State Trust Land property to the west of SR 260 is proposed for development, it will be necessary to consider a circulation plan for the entire sub-area. This could include new road connections through this area to Del Rio and Western Drive as well.

i. Fir Street and Rodeo Dive Commercial Loop.

E. Fir Street would extend past CVS Drug Store and loop south to Mongini Drive and Rodeo Drive. This proposal would need to be coordinated with all the property owners to be effective. Coordination of land use development and utility extension along with an effective internal circulation system connected to common highway access points would provide mutual benefits for the property owners along the east side of SR 260.

j. West Loop – Phased Connector Road

Various regional transportation plans, general plans and other long range studies have proposed the development of a "west loop" roadway to be located to the west of Verde Village and Cottonwood. The west loop has been envisioned as local secondary access to those developed areas so as to relieve congestion on SR 89A and SR 260, the main north-south travel route through the city. The West Loop is not intended as a regional bypass highway but as a relief roadway for local residents to avoid contributing to congestion on the main arterial roads and to accommodate local travel options. It would also provide improved public safety access to adjacent neighborhoods. The proposed route through Cottonwood could be developed in phases, as follows:

1) West Loop – Black Hills Drive to W Mingus

The Mesquite Hills development off of West Mingus Avenue includes a portion of the West Loop project shown as the main collector road through the subdivision. Completion of this link to Black Hills Drive would require approval of short section through a corner of the Prescott National Forest and support from Yavapai College for completion of the roadway along the east boundary of the Yavapai College Verde campus.

2) West Loop – W Mingus to W Fir St

This segment would depend on the future development plans of those properties in the immediate area. A new roadway would connect West Mingus Avenue from the Mesquite Hills development south to the west terminus of Fir Street south of the airport. This proposed route covering a distance of less than one mile would be constructed in association with future development of the private lands in that area.

3) West Loop – W Fir Street to SR 260

There are a number of technical challenges with the south segment of the west loop roadway. However, if development of the private lands to the north occurs and the State Trust Land property to the west of SR 260 is developed, there could be an increase of traffic on the local roads in the surrounding area. Interest in the lower west loop roadway option could change with future development of the west side properties and the State Trust Land west of SR 260. The lower connector loop is described due to the potential for future development of private and State Land in the area but it is not considered a priority at this time.

CITY-WIDE GENERAL CIRCULATION IMPROVEMENTS: The following programs could be applied to existing streets and rights-of-way throughout the city. New projects should integrate multi-modal transportation and access management as part of the initial design; Existing streets can be retrofitted where determined as appropriate. Specific projects within any of these categories should be considered as part of a coordinated city-wide program.

1. **Bicycle and Pedestrian Facility Improvements.**
   Efforts to improve both bicycle and pedestrian transportation facilities are ongoing. Proposed improvements include system wide and corridor scale improvements, as well as individual projects where opportunities are presented. Comprehensive program evaluation is recommended as a part of the capital improvement planning program. Short and long term project selection should be based on prioritization criteria developed to guide such decisions. Implementation of bicycle improvements should be based on priorities indicated in the Cottonwood Bicycle Plan. A Pedestrian Master Plan could be developed to prioritize pedestrian improvements.

2. **Neighborhood Traffic Calming Program.**
   A comprehensive traffic calming program applied to existing neighborhoods should be designed to redirect cut through traffic and generally slow down existing vehicular traffic. Analysis of existing patterns should be conducted to identify problem areas. This type of program works best by identifying a hierarchical system of local and collector streets feeding the nearby arterials. Redirecting circulation patterns and adding appropriate traffic calming features will help to provide safer, people-friendly street system in residential neighborhoods.

3. **Street Medians and Access Management.**
   Center island street medians are used to control turning movements and improve safety on busy streets. In older developed areas with an abundance of individual commercial driveways, the center medians restrict left turns along those dangerous sections. Breaks in the medians can allow left turn lanes at strategic locations that are adequately spaced and that meet safety standards. The use of landscaping in the median can add to the overall street beautification. Also, medians can provide a safer street crossing for pedestrians at intersections crossings by providing a half-way refuge point.

4. **Neighborhood Street Improvement Program.**
   The City of Cottonwood is committed to ongoing improvements to the existing street system, including maintenance of street pavement and installation of new sidewalks, curbs and drainage features where warranted. Each year, based on life cycle schedules and inspections, a number of streets receive chip seal to protect and maintain the pavement. There are also ongoing efforts to install new sidewalks and drainage facilities in locations throughout the city so as to better serve the residents.

SUMMARY OF PROPOSED IMPROVEMENT PROJECTS

Funding availability typically requires prioritization of transportation improvement projects. To assist in establishing priorities, projects are evaluated based on five criteria. The five evaluation criteria are: traffic safety, congestion reduction, cost-effectiveness, design standard conformity, and economic development impact. Some improvements target a specific deficiency. Others are listed as "additional" projects which contribute more generally to the efficiency of the respective network (short-mid-long range). Costs and funding sources would need to be determined.

	STREET	SEGMENT	IMPROVEMENT	RANGE
1.	**SR 89A E**	260 INTERSECTION	ADD SECOND EAST BOUND RIGHT TURN LANE. UNDER CONSTRUCTION 2013 -2014	SHORT
2.	**6TH ST S**	MINGUS TO 89A	REHAB PAVEMT, BIKE LANES	MID
	6TH ST S	89A TO FIR ST	REHAB PAVEMT, BIKE LANES	MID LONG
3.	**12TH ST S**	89A SOUTH TO FIR.	RECONSTR 2-LN URBAN SECTION BIKE LANES	SHORT
4.	**16TH ST S**	SKYLINE TO 89A	CONNECTION TO 89A	MID
5.	**ALAMO DR**	BLACK HILLS TO SCENIC DR	2-LN URBAN SECTION. BIKE ROUTE SIGNS FROM BLACK HILLS DR TO SCENIC DRIVE	MID
6.	**FIR ST W**	WEST CITY LIMITS TO WEST LOOP	NEW CONNECTION SUBJECT TO FUTURE DEVELOPMENT OF WESTSIDE PRIVATE LANDS	LONG
7.	**FIR ST W**	CAMINO REAL INTERSECTION	RECONSTRUCT INTERSECTION. LEFT TURN LANES AND POSSIBLE SIGNALIZATION	LONG
8.	**RODEO DR**	COMMERCIAL LOOP	NEW LOOP ROAD FROM SIGNALIZED INTERSECTION OF RODEO DR TO E FIR ST	LONG
9.	**GROSETA RANCH RD**	N. MAIN ST TO 89A	NEW 2-LN ROAD WITH BIKE LANES WITH PLANNED AREA DEV.	LONG
10.	**MINGUS W**	WILLARD TO 10th ST	RECONSTRUCTION, ADD SIDEWALKS, BIKE LANES	SHORT MID
11.	**MINGUS W**	10th ST TO MAIN ST	RECONSTRUCTION, ADD SIDEWALKS, BIKE LANES	SHORT MID
12.	**WEST LOOP -1**	BLACK HILLS DR TO WEST MINGUS AVE	COMPLETE 2-LN RD WITH BIKE LANES YAVAPAI COLLEGE THROUGH MESQUITE HILLS	MID LONG
13.	**WEST LOOP - 2**	W MINGUS AV TO FIR ST	COMPLETE 2-LN RD WITH BIKE LANES WITH PLANNED DEVELOPMENT.	LONG
15	**GODARD RD**	OLD 279 TO SR 260	NEW 2-LN ROAD WITH BIKE LNS WITH PLANNED AREA DEVELOPMENT	LONG

J. GOALS AND OBJECTIVES - Circulation

GOAL 4-1 PROVIDE FOR A COMPREHENSIVE, INTEGRATED TRANSPORTATION SYSTEM THAT SERVES THE COMMUNITY IN A SAFE, EFFICIENT, COST EFFECTIVE AND AESTHETICALLY PLEASING MANNER.

Objective 4-1. A Maintain system of functional classifications for the city street system, including arterial, collector and local streets, to ensure that the city-wide circulation system functions in a safe, efficient and practical manner.

Objective 4-1. B Conduct periodic traffic volume studies on city streets to evaluate growth trends and projected needs.

Objective 4-1. C Require development projects, including new subdivisions, commercial developments, and planned area developments to address the adequacy of access and circulation according to the functional classification system and overall interconnection with the city circulation system.

Objective 4-1. D Establish guidelines for when traffic studies are required in the review of new development (pertaining to significant change in land use, new streets, expanded arterial access, overall traffic increase, etc.).

Objective 4-1. E Discourage direct single-family residential driveway access to collector and arterial streets.

Objective 4-1. F Ensure that commercial and industrial developments provide primary access to collector streets and arterial streets and not local streets.

Objective 4-1. G Encourage commercial developments to coordinate shared driveway access.

Objective 4-1. H Conduct a city-wide study to identify and categorize street and transportation safety issues and to prioritize improvements necessary for safety.

Objective 4-1. I Consider development of a comprehensive city-wide neighborhood traffic safety improvement program that includes traffic calming techniques and protects neighborhood streets from high-speed, cut-through traffic.

Objective 4-1. J Conduct annual reviews of the city circulation system to identify and prioritize facilities which may need further study, including areas where traffic may need to be rerouted, new streets developed or other measures taken to improve the effectiveness of the system.

GOAL 4-2 SUPPORT REGIONAL, MULTI-JURISDICTIONAL TRANSPORTATION PLANNING.

Objective 4-2. A Continue involvement with the Verde Valley Transportation Planning Organization (VVTPO), ADOT, NACOG, Yavapai County, neighboring jurisdictions and others regarding regional transportation planning.

Objective 4-2. B Support regional transportation studies and project identification, prioritization and coordination between jurisdictions.

Objective 4-2. C Support regional efforts to coordinate and improve multi-modal systems, including bicycle routes, public transit and pedestrian routes.

GOAL 4-3 IMPROVE OPPORTUNITIES FOR ALTERNATE MODES OF TRANSPORTATION, INCLUDING BICYCLING, WALKING AND TRANSIT.

Objective 4-3. A Provide a safe, convenient and interconnected system of pedestrian and bicycle facilities throughout the City.

Objective 4-3. B Develop sidewalk engineering standards and design criteria for new development and for upgrades to existing streets.

Objective 4-3. C Update design standards for intersections to ensure safe bicycle and pedestrian access.

Objective 4-3. D Identify and implement programs to address improvements for persons with disabilities along sidewalks and other access ways, including access ramps, intersection improvements and tread improvements.

Objective 4-3. E Support school child safety as a priority on all streets through the Safe Routes to Schools Program and through the City's Capital Improvement Planning process..

Objective 4-3. F Support innovative transit programs, such as door-to-door, dial-a-ride services for special needs populations, including elderly, sick or disabled persons, and for the general public in dispersed areas.

Objective 4-3. G Establish and maintain working relationship with all regional transit providers so as to coordinate linkages where feasible.

Objective 4-3. H Provide attractive and safe bus passenger shelters, pull out bays and informational signs for transit routes so as to encourage increased ridership.

GOAL 4-4 SUPPORT DEVELOPMENT OF A COMPREHENSIVE BICYCLE PROGRAM.

Objective 4-4. A Improve opportunities for bicycling for people of various ages, skill levels and interests. Establish a comprehensive bicycle program that includes physical improvements to streets, bicycle parking facilities, signed route systems, and education programs.

Objective 4-4. B Provide bicycle access to mixed-use corridors, neighborhood districts, community centers and various types of activity centers and key destinations throughout the city.

Objective 4-4. C Encourage ADOT to include adequate width and/or designated bicycle lanes on all state highways to allow safe bicycle travel, as per accepted state and national design standards.

Objective 4-4. D Establish a city-wide bicycle route plan that provides safe, convenient connectivity throughout the city**.**

Objective 4-4. E Work with neighboring communities for bike route connections where feasible. Support a regional bicycle planning process.

Objective 4-4. F Support 4-E bicycle improvement program, including engineering, education, enforcement and encouragement.

Objective 4-4. G Integrate bicycle improvements into the city's five-year capital improvements plan based on the approved bicycle plan and proposed route system..

GOAL 4-5 DEVELOP AND IMPROVE PEDESTRIAN AND BICYCLE ROUTES FROM COMMERCIAL AREAS, SCHOOLS AND ACTIVITY CENTERS TO NEARBY NEIGHBORHOODS AND RESIDENTIAL AREAS.

Objective 4-5. A Identify and develop improved pedestrian and bicycle routes connecting the Old Town Cottonwood area with nearby neighborhoods, including Verde Heights, On The Greens, Clemenceau and Mingus Avenue.

Objective 4-5. B Evaluate and provide improvements where necessary to ensure safe continuous pedestrian and bicycle routes from commercial shopping areas along arterial and collector streets to nearby residential neighborhoods.

Objective 4-5. C Consider pedestrian and bicycle linkages within existing right-of-way corridors, as well as securing easements for new routes that provide direct connections outside of right-of-way where safety standards are adequately addressed.

Objective 4-5. D Support "walkability audit" and "bike-ability audit" programs to review, analyze and make recommendations regarding the pedestrian and bicycling qualities of various areas, including continuity, safety, and aesthetic qualities for sidewalks, bicycle routes, intersections and connecting routes.

Objective 4-5. E Consider the advantages of walkable and bikeable neighborhoods in lowering vehicle use, improving public health and reducing harmful pollutants from automobiles.

GOAL 4-6 RELIEVE CONGESTION FROM HIGHWAYS AND COMMERCIAL AREAS.

Objective 4-6. A Make better use of the City's collector street system in providing alternate routes which relieve traffic from congested areas; support use of major collector streets for business and visitor traffic; and improve local street connections so residents can get to nearby locations without the need to use arterial streets or state highways for short and mid-length trips.

Objective 4-6. B Identify areas around the City which may have special traffic problems and conduct sub-area and corridor planning to establish better opportunities for relief of congestion.

Objective 4-6. C Conduct a study to identify appropriate truck routes within the City and develop a comprehensive truck route policy.

Objective 4-6. D Regularly monitor traffic movement through the City and calibrate traffic signals so that traffic movement is most efficient.

Objective 4-6. E Adopt engineering guidelines for commercial driveways to include criteria for size, spacing, design and location.

Objective 4-6. F Support appropriate access management programs for state highways and other major City streets.

GOAL 4-7 ENSURE ADEQUATE FUNDING AND IMPLEMENTATION MECHANISMS TO ADDRESS SHORT AND LONG TERM CIRCULATION NEEDS.

Objective 4-7. A Evaluate circulation impacts and roadway maintenance costs associated with new development and identify short and long term funding sources, ways that adequate fees can be assessed, and "fair share" contributions from various sources.

Objective 4-7. B Support the use of facility improvement districts to provide street improvements within specific areas to meet area needs.

Objective 4-7. C Continue to prioritize and implement necessary traffic improvement projects and right-of-way acquisition in coordination with the Capital Improvements Plan.

Objective 4-7. D Maximize the use of available state and federal transportation funding through match monies, grants, in-kind contributions, other leveraging strategies and inclusion of special projects providing additional benefits.

Objective 4-7. E Support funding and partnership opportunities that focus on maintenance and repair to existing roadways and circulation facilities.

GOAL 4-8 IMPROVE THE VISUAL AND AESTHETIC COMPONENTS OF CITY STREETS, STREET CORRIDORS AND OTHER PUBLIC AREAS.

Objective 4-8. A Develop standards for streetscape design, including landscaping, signage and lighting, which acknowledges the importance of the public realm and supports the goals of maintaining small town character and quality.

Objective 4-8. B Encourage the planting of appropriate, drought-tolerant street trees and plants along streets so as to provide shade and attractive character.

Objective 4-8. C Use sub-area and corridor planning process to develop character studies that define unique streetscape design standards in those areas.

GOAL 4-9 SUPPORT AND IMPLEMENT COMPLETE STREETS DESIGN CRITERIA FOR NEW STREETS AND CORRIDOR REVITALIZATION.

Objective 4-9. A Develop comprehensive street corridor design standards that incorporate vehicles, transit, walking and bicycles in a functional yet attractive environment.

Objective 4-9. B Develop a street improvement and maintenance plan which addresses bus stops, bike facilities, trails, sidewalks, street trees and otherwise encourages use by bicyclists and pedestrians.

Objective 4-9. C Encourage concentrated housing and "transit-oriented design" near bus routes and transit stops to support the viability of the transit system.

Objective 4-9. D Adopt design guidelines for new streets and roadway improvements which protect neighborhoods from high-speed, cut-through traffic, do not exacerbate traffic speeds or street capacity, and better accommodate pedestrians, bicycles and buses.

Objective 4-9. E Consider installation of medians where useful, necessary and desired on major street corridors to control turning movements in busy, high traffic areas.

GOAL 4-10 INTEGRATE ACCESSIBILITY STANDARDS WITH ALL CIRCULATION PROJECTS.

Objective 4-10. A Develop an ongoing program to identify barriers to movement in the City and prioritize project implementation to improve accessibility based on established criteria, including safety, use and public input.

Objective 4-10. B Ensure street intersections throughout the city are designed to allow safe convenient use by persons using wheelchairs and others persons with mobility disabilities, including accessible ramps, crosswalks, refuge islands and signal control devices.