7. PUBLIC TRANSPORTATION PLAN

This Draft Public Transportation Plan presents an analysis of demand for public transportation in the study area, and discusses options for future transit and multimodal services. A draft implementation plan and potential sources of funding are included.

SUMMARY OF FINDINGS AND RECOMMENDATIONS

- Six modes of transit have been identified as most likely for eventual implementation in the Study Area.

  - ✓ Dial-A-Ride and Paratransit Services
  - ✓ Regional Bus Service
  - ✓ Commuter Rail Service
  - ✓ Deviated Fixed Route Service
  - ✓ Regional Rail Service
  - ✓ Excursion Rail Service

- Due to population growth, needs of area transit-dependent citizens are changing quickly.
- Coolidge and Florence should consider setting aside appropriate spaces for community transit centers.
- Many residential developments within the study area are essentially automobile-oriented in design.
- Pinal Rides, a six-month pilot program to provide human services transportation on two routes in central Pinal County, is being operated from fall 2007 through spring 2008 by the Pinal-Gila Council for Senior Citizens.
- Transportation Demand Management can address the needs of those traveling long distances with rideshare options such as vanpools and carpools.
- By 2025, portions of Coolidge and Florence will exhibit combined population and employment densities that may warrant the operation of commuter rail service to Phoenix and Tucson as well as local bus services.
- A number of federal, state, and local funding sources and mechanisms exist for funding public transportation in the study area.

Recommended Next Steps

- The City of Coolidge and the Town of Florence should pro-actively support the Pinal Rides Pilot Program by participating on the Advisory Council and providing funding.
- The City of Coolidge and the Town of Florence should communicate and coordinate with organizations and agencies that are evaluating and/or advocating inter-regional transit service options affecting the County.

- The City of Coolidge and the Town of Florence should consider development of transit oriented design (TOD) overlays that could be implemented along identified future transit corridors.
- The City of Coolidge and the Town of Florence should continue to present short- and long-range plans to ADOT Public Transportation Division.
- The City of Coolidge should continue to evaluate the operation of the Cotton Express and plan for service expansion as population growth and development warrant.
- The Town of Florence should conduct a Transit Feasibility and Implementation Study to identify current and future public transportation needs within the town as well as demographic thresholds for implementing future services.
- The Town of Florence should hire a Transportation Coordinator, when needed.
- The Town of Florence should appoint a volunteer Transit Advisory Committee to assist the Town in identifying the desirable attributes of the coordinator position and to work with the coordinator after his or her selection.

POTENTIAL SERVICES AND FACILITIES

Different Types of Transit Service

Six modes of transit have been identified as most likely for eventual implementation in the study area. These are:

- Dial-A-Ride and Paratransit Services
- Deviated Fixed Route Service
- Regional Bus Service including service connecting Coolidge and Florence with one another and with other Pinal County communities as well as Commuter Bus Service connecting Coolidge and Florence with the Metropolitan Phoenix and Tucson areas
- Regional Rail Service
- Commuter Rail Service
- Excursion Rail Service

Depending upon the rate of population growth in the study area, and the density with which corridors develop, both light rail and modern streetcar service might also be considered for implementation.

The key characteristics of all these modes are compared in Figure 7-1.

FIGURE 7-1. DIFFERENT TYPES OF TRANSIT SERVICE

—City of Coolidge photo

"Dial-a-Ride" Service is a demand-response service. Vehicles do not operate on a fixed route or schedule, but pick-up patrons at their origins and deliver them directly to their destinations. Before the trip begins, and during the course of the trip, the driver receives information from a dispatcher concerning pick-up and drop-off requests.

This cutaway vehicle, comprising a minibus body constructed on a recreational vehicle chassis, is currently used by Cotton Express for both dial-a-ride and deviated fixed route service within the City of Coolidge.

—Flagstaff Mountain Line photo

Deviated Fixed Route Service, sometimes referred to as "checkpoint" service, is considered an intermediate step between dial-a-ride, which targets transit dependent riders, and fixed route service, which is more efficient in larger cities having significant volumes of transit ridership. A deviated fixed route stops at scheduled "time points"—or "checkpoints"—much as a fixed route service does. However, the route taken between points can vary from trip to trip. This mid-size transit coach is also used for fixed route service in smaller cities—as is being done in Flagstaff.

—Lima & Associates photo

Bus Rapid Transit service operates at higher speeds and makes fewer stops than local buses, resulting in trip times that are more competitive with those of trips made in a private automobile. Bus rapid transit routes typically operate on freeways, in high-occupancy vehicle lanes, in lanes designated for bus use only, or on dedicated bus ways. Valley Metro's new "Rapid" buses feature amenities that make longer trips more comfortable such as forward-facing, reclining seats, individual reading lights, and overhead storage. Such vehicles could also be used for express, limited stop, or regional services.

FIGURE 7-1. DIFFERENT TYPES OF TRANSIT SERVICE (Continued)

—Lima & Associates photo

Light Rail systems, such as Denver's shown here, have stations spaced at least one-half mile apart that can resemble commuter rail facilities, with platforms that match car door height for accessibility, ticket and other vending machines, park-and-ride lots, and other amenities. Trains operate in reserved rights-of-way, not shared with motor vehicles.

—Portland Development Commission photo

Modern Streetcar equipment is similar to that used in many light rail applications. However, streetcars operate more like a bus than a train, sharing travel lanes with motor vehicles and stopping frequently at "bus-like" stops.

FIGURE 7-1. DIFFERENT TYPES OF TRANSIT SERVICE (Continued)

—Metrolink photo

Commuter Rail Services such as the Los Angeles area Metrolink connect suburbs from neighboring counties with the center of a major metropolitan area. Metrolink operates 130 trains daily on 66 different routes in the LA area and carries an average of over 27,000 riders each day. Trains operate as far east as Riverside and San Bernardino.

Bi-level commuter rail cars carry between 100 and 130 persons each, are wheelchair accessible, and also have bike racks. Trains average 45 mph, including stops.

—Marc Pearsall photo

Regional Rail services can use equipment similar to that used for commuter rail or can be equipped with reclining seats and other amenities designed to make longer trips more comfortable.

Amtrak normally operates this TALGO train between Portland and Seattle. In May 2000, a special round trip was operated between Phoenix and Tucson, including a stop in Coolidge, to demonstrate the potential for such service in the Phoenix-Tucson corridor. Due to the increased volume of rail freight service, additional tracks may be needed to operate passenger rail services.

—Lima & Associates photo

Excursion Rail operations such as the Grand Canyon Railway shown here can help boost tourism and attract economic development. The Grand Canyon Railway carries over 200,000 visitors to the Park each year. Trains are a practical means of enjoying ecologically sensitive areas such as the Verde River Canyon in Central Arizona, home to another popular rail excursion. Development of a similar operation through the Gila River Canyon east of Florence over the Copper Basin Railway has been considered.

Types of Bus Transit Vehicles

The vehicles used by a public transportation operation are the most tangible aspects of the service, and it is tempting to think of the service provided by a particular operation in terms of its vehicles. We all know what a "Greyhound Bus" looks like, for example. Technically speaking, however, any type of vehicle can be used for the operation of any type of service. On a lightly traveled route, for example, a 14-passenger van often functions as a scheduled intercity bus. At the other end of the scale, full size coaches, when chartered by groups, perform a function not unlike that of a taxi—except for the number of persons carried.

Five basic types of vehicles are used to provide public transportation:

- Automobiles
- Vans and customized vans
- Body-on-recreational-vehicle-chassis or cutaway vehicles
- School bus vehicles
- Purpose-built vehicles—intercity and transit coaches

Examples of the vehicle types most commonly associated with the different types of operation are shown in Figure 7-1. With the exception of automobiles, all vehicle types are routinely fitted with wheel chair lifts and other appliances designed to facilitate accessibility pursuant to the specifications of the Americans with Disabilities Act (ADA).

Types of Light Rail and Modern Streetcar Equipment

As the light rail and modern streetcar photos in Figure 7-1 suggest, the equipment used for both types of services is similar in appearance. Both are articulated, electrically-powered units that receive power from overhead wires and can be operated singly or joined together as trains staffed by a single operator in the cab of the lead car. Light rail cars vary in length and are usually between 8.5 and 10 feet in width. Light rail equipment is capable of speeds in excess of 60 mph. Modern streetcars have similar dimensions, but are designed to operate at slower maximum speeds.

Electrically-powered equipment has the capability of quick acceleration and braking, which can reduce the travel time needed between stops. In many cases passenger comfort and safety are the limiting factors with respect to the quickness of acceleration and braking.

Light rail systems are designed so that the height of the station platforms and the car floors are identical, enabling convenient wheelchair accessibility as well as bicycle loading. Unlike buses, where bicycles are loaded on the front of the bus, light rail vehicles have internal bicycle racks from which bicycles can be loaded more quickly and conveniently.

Types of Passenger Rail Equipment

The length and width of passenger rail cars are relatively standardized, with cars being between 10 and 10.5 feet wide and between 80 and 85 feet long. This standardization facilitates the planning and construction of station platforms and the placement of station "furniture" together with that of other trackside structures. Much modern rail passenger equipment is designed for use with "high-level" platforms, where the station platform, the entry door "vestibule" area, and the aisle between the seats within the cars are all at the same height above the rails. Such cars are commonly used in the Northeast, especially within the New York and Philadelphia metropolitan areas. Elsewhere, including the West Coast, the use of cars with entry doors designed for use with platforms eight inches above the top of the rails predominates.

Most commuter rail cars are double-decker; the cars operated in New Mexico's Railrunner service have ramps leading to the different seating levels within the cars, making many of the seats ADA accessible. Many commuter rail cars have internal bike racks similar to those in light rail cars. Commuter rail systems in Dallas, Los Angeles, and San Diego use similar cars. Equipment used for regional rail routes is designed for longer trips with wider, reclining seats and more legroom.

EVALUATION OF DEFICIENCIES AND NEEDS

This section summarizes the future needs of transit-dependent persons in the study area and discusses appropriate ways of addressing these needs. Demographic thresholds for implementing various types of transit service are explained.

Opportunities and Constraints

The area is growing so rapidly that the needs of its transit-dependent citizens are also changing quickly. A response identified as appropriate mitigation for current unmet needs may well be out-of-date by the time it is implemented. One way to meet this challenge would be to implement services flexible enough to evolve as the local jurisdictions grow.

Senior Center-Based Services

The first local transit service in communities not currently served by transit is often provided as part of the establishment of a local Senior Center. These centers typically obtain FTA Section 5310 funding for the purchase of one or more vehicles used to transport seniors to the center, as well as to provide "meals on wheels" services for those who are homebound. Section 5310 funds are for capital purchases such as vehicle acquisition and may not be used to subsidize operations. The local jurisdiction where the center is located would appropriate matching funds. If LTAF II funds are available, they can be used for this purpose.

Ride-sharing Program

One way to address the demand for travel by transit-dependent persons—other than medical emergency or senior travel—would be to establish a community ride-sharing program. Such a program could include carpools as well as vanpools. As vanpool ridership between Coolidge, Florence, and other urban areas and specific destinations or areas in metropolitan Phoenix or Tucson increases, some vanpools could evolve into commuter bus service.

Community Transit Centers

Coolidge and Florence should consider setting aside appropriate spaces for community transit centers. The centers should be located strategically on one of the regional arterials serving the area such as:

- Downtown Coolidge at the former passenger rail station site
- North of downtown Florence near the intersection of SR 79 and the Copper Basin Railway tracks as called for in the Town's General Plan Update
- North of Coolidge near the intersection of Hunt Highway and the Union Pacific tracks
- At Central Arizona College

Locating a center adjacent to the railroad—such as the Town of Gilbert in Maricopa County has done—would enable the use of the center as a future regional or commuter rail station. Possible elements of these transit centers could include transfer terminals for use by future intercity bus, shuttle, and rail services and future local area circulators as well as park-and-ride facilities for transit passengers as well as car pool and van pool participants.

Such transit centers could also be part of larger community gateway facilities that also include:

- Tourist and Newcomer information centers staffed by local volunteers or Chamber of Commerce staff
- Economic development satellite offices
- Full service truck and RV stops
- Secure parking for bus and rail patrons
- Bicycle lockers and bicycle rental

Provision of such terminal facilities is a major stumbling block for private sector transit operators, many of whom are under capitalized and have committed available capital to the purchase of the vehicles themselves. Conceivably, the provision of such centers could be a catalyst for the entry of new private sector transit providers into the market place.

Auto-oriented Developments

Many residential developments within the study area are essentially automobile-oriented in design. Some developments are designed as discrete communities having internal circulations of loop roads or spines with cul-de-sac branches not designed to facilitate efficient pedestrian or bicycle travel between adjacent developments or between a residence within a development and an external commercial area. In these developments, the internal roadway system is linked to the external network by one or more "gateway" entrances from arterials.

The success of a transit system depends to a large extent on the likelihood that bus stops along the routes can be accessed by pedestrians without having to walk more than a quarter of a mile from their points of origin to a stop. Some existing developments are inadvertently designed to discourage transit usage. The lack of contiguous collector streets between the developments would result in higher walking distances from residences to bus stops than would otherwise be the case.

The logical sites for bus stops for a fixed route service serving developments designed in this manner would be stops or bus-pullouts located just downstream from the developments' "gateway" entrances. However, given the few alternatives available to motorists driving to or from development residences, these gateways will have significant traffic and turning movements and the presence of a stopped bus might represent unacceptable sight-distance issues. On the other hand, the lack of connectivity between the internal circulation networks of adjacent developments would preclude the efficient operation of neighborhood circulator or dial-a-ride services.

Rather than allowing auto-oriented developments to proceed to build out and deal with the resulting concerns "after the fact," Coolidge and Florence should stipulate through new or amended ordinances the inclusion of more transit-friendly elements in new developments. Such elements could include:

- Requiring that some parking spaces provided in a commercial development be placed on the side or in back of the building, reducing the acreage of asphalt that pedestrians and transit users must cross to reach the establishments
- Requiring residential developments to have sufficient entrances—preferably aligned with existing or future arterial or collector roadways—to facilitate inclusion of the roadways inside the development within the greater community roadway network. Note that this provision would also facilitate efficient postal delivery, waste management, and timely police and fire response.
- Requiring provision of adequate easements on major arterials—particularly those deemed to be of regional significance—for the future addition of diamond lanes or transit corridors. Major arterials should include sidewalks/shared use paths and either bicycle lanes or wide curb lanes.

- Requiring collector streets to include on-street bicycle lanes or wide curb lanes, or sidewalk/shared use paths separated from the street set-back enough to encourage pedestrian and bicycle usage.

Other amenities such as shade and landscaping along sidewalks and multi-use paths, as opposed to bare block or stucco walls that simply radiate more heat at pedestrians and bicyclists, together with bus benches and shelters in areas to be served by local circulators should be considered.

Pinal Rides Pilot Program

A six-month pilot program to provide human services transportation on two routes in central Pinal County is being operated from fall 2007 through spring 2008 by the Pinal-Gila Council for Senior Citizens. A "cutaway" nine-passenger minibus, reconfigured with seven seats and space for two wheelchairs, was purchased for the service. On Mondays, the bus operates three round trip loops between Casa Grande, Coolidge, and Florence. On Thursdays, the bus operates three round trip loops between Casa Grande, Maricopa, Toltec, Eloy, and Arizona City. The November 2007 timetable is shown in Table 7-1.

TABLE 7-1. PINAL RIDES PILOT PROGRAM NOVEMBER 2007 SCHEDULE

Casa Grande – Coolidge - Florence					
	Community	**Location***	**Mondays Only**		
Lv.	Casa Grande	Dorothy Powell Senior Adult Center	7:15 AM	10:45 AM	2:15 PM
Lv.	Casa Grande	Wal-Mart/Regional Medical Center	7:35 AM	11:05 AM	2:35 PM
Lv.	Coolidge	Coolidge Adult Center	8:10 AM	11:40 AM	3:10 PM
Lv.	Florence	Florence Gardens	8:45 AM	12:15 PM	3:45 PM
Lv.	Florence	Dorothy Nolan Senior Center	9:05 AM	12:35 PM	4:05 PM
Lv.	Coolidge	Coolidge Adult Center	9:35 AM	1:05 PM	4:35 PM
Ar.	Casa Grande	Pick up/Drop off	10:05 AM	1:35 PM	5:05 PM
Casa Grande – Maricopa – Toltec – Eloy – Arizona City					
	Community	**Location***	**Thursdays Only**		
Lv.	Casa Grande	Dorothy Powell Senior Adult Center	6:30 AM	10:15 AM	2:00 PM
Lv.	Maricopa	Sheriff's Office	7:10 AM	10:55 AM	2:40 PM
Lv.	Casa Grande	Dorothy Powell Senior Adult Center	8:10 AM	11:55 AM	3:40 PM
Lv.	Eloy	Adult Center	8:35 AM	12:20 PM	4:05 PM
Lv.	Eloy	Santa Cruz Village Apartments	9:05 AM	12:50 PM	4:35 PM
Lv.	Arizona City	Dollar General Store	9:20 AM	1:05 PM	4:50 PM
Ar.	Casa Grande	Pick up/Drop off	9:45 AM	1:30 PM	5:15 PM

Source: Pinal-Gila Council for Senior Citizens

*Ten-minute dwell times for loading and unloading are provided at each intermediate stop. At the end of each loop, passengers are picked up and dropped off within Casa Grande per reserved request.

One-way and round-trip fares range between $3.00 and $10.00 for persons between the ages of 18 and 59. Seniors 60 and over ride for a suggested donation of $3.00 per trip. Persons under 18 are not carried. Persons must pre-register for the service and must make reservations at least 24 hours in advance.

Background

In February 2004, President George W. Bush issued an Executive Order establishing the "United We Ride" program to improve coordination in human services transportation. In response, Arizona governor Janet Napolitano established a Working Group to develop an Arizona framework for the program and, in July 2005, the "Arizona Rides" initiative was implemented. Pinal Rides is a support element of this initiative and consists of collaboration among agencies within central Pinal County that has resulted in the formation of a regional Coordination Council, driver training including Passenger Safety and Security (PASS) training, and operation of the pilot routes described above. Funding for Pinal Rides is provided by the Cities of Casa Grande, Eloy, and Maricopa, the Town of Florence, the ADOT 5310 Program, Pinal Gila Council for Senior Citizens, and the Pinal county United Way.

Ongoing Developments

On Wednesday, November 28, 2007, the consultant attended a meeting of the Coordination Advisory Committee that oversees the Pinal Rides operation. Participants included representatives from the Gila Council for Senior Citizens, ADOT, CAAG, the City of Maricopa, and other area human services stakeholders. The Pinal Rides Mobility Manager and bus operator were also present, and both overall program strategies and day-to-day operating issues were thoroughly assessed and discussed. While ridership to date has been disappointing, the Advisory Committee is strongly committed to the success of the program and is taking some proactive steps to enhance both the marketing and the operation of the service. Concepts discussed included:

- Operating the system as a deviated fixed route operation with door-to-door pick-ups and drop-offs available at intermediate communities in schedule in addition to the final stop in Casa Grande
- Increasing the days of operation to more than one per week on each route
- Operating one route more frequently in lieu of two routes only one day per week
- Serving the new mall
- Offering promotional free trips
- Coordinating with area agencies to utilize existing vans and provide additional service frequencies and connections
- Coordinating with Cotton Express in Coolidge, stopping at the Casa Grande Greyhound depot, and coordinating with the new Maricopa local and commuter services

- Conducting on-board surveys to gather data regarding passenger preferences and demographics
- Revising the brochure
- Investigating the possibility of including Pinal Rides information in area utility bill mailings for a broad distribution of information within the service area

The Advisory Council took actions to implement door-to-door service, seek additional funding, and revise the brochure.

TRANSIT IN ARIZONA CITIES

The National Transit Database contains data from urban systems receiving FTA Section 5307 funding. Transit systems such as Coolidge's Cotton Express that operate in Arizona cities with populations of less than 50,000 are funded through Section 5311. Data for Section 5311 operations is only available if obtainable from the cities themselves. Two of the Section 5311 Arizona cities, Kingman and Sierra Vista, provided the requested data on their transit systems. Table 7-2 shows the key fixed route transit characteristics of Arizona cities, and Table 7-3 shows key dial-a-ride characteristics. With the exception of Tucson, Kingman, and Sierra Vista, all of the cities shown participate in Valley Metro (RPTA) and the figures shown for these cities represent their contribution to the RPTA. Note that the data for Kingman and Sierra Vista is for 2003, not 2000.

TABLE 7-2. KEY FIXED ROUTE TRANSIT SERVICE CHARACTERISTICS OF ARIZONA CITIES

	Service Area Population	Service Area Sq. Mi.	Operating Expense	Passenger Miles	Unlinked Trips	Vehicle Revenue Hours	Peak Vehicles
Phoenix[1]	1,350,000	476	63,208,199	124,065,580	31,838,093	756,010	335
Tucson[1]	503,991	242	29,395,644	65,471,221	17,991,935	532,792	159
Mesa[1]	345,000	120	3,841,811	2,768,775	791,105	72,100	27
Scottsdale[1]	189,000	56	1,318,908	414,110	125,488	26,253	7
Tempe[1]	163,843	40	8,662,773	5,899,554	2,475,133	192,313	68
Kingman[2]	40,000	17	263,379	115,000	38,000	6,678	3
Sierra Vista[3]	37,000	138	546,244	238,683	115,902	14,221	7
Flagstaff[4]	57,050	26	485,873	469,102	360,848	352,606	7

Source: 1. 2000 National Transit Database
2. Kingman estimated from 10 months of operation through December 2003
3. Sierra Vista data from October 2002 through September 2003
4. Flagstaff data from 2004 Database—not available in 2000

Possible future characteristics of Coolidge or Florence can be anticipated by reviewing this current Arizona data. Note that both Kingman and Sierra Vista operate deviated fixed route systems where buses deviate from the route between checkpoints to provide curb-to-curb service in lieu of having a separate dial-a-ride system. As Table 7-3 shows, these small city systems cost less per vehicle hour to operate than their big city counterparts.

TABLE 7-3. KEY DIAL-A-RIDE SERVICE CHARACTERISTICS OF ARIZONA CITIES

	Service Area Population	Service Area Sq. Mi.	Operating Expense	Passenger Miles	Unlinked Trips	Vehicle Revenue Hours	Peak Vehicles
Phoenix	1,350,000	476	7,434,649	3,072,572	398,068	194,583	117
Maricopa County	996,166	416	1,715,614	1,786,829	140,471	56,405	56
Tucson	503,991	242	5,886,845	2,738,676	312,138	147,534	57
Glendale	208,000	59	1,517,514	469,751	69,081	21,174	12
Peoria	100,000	141	575,030	137,340	35,028	8,568	4
Sun City	65,899	28	497,853	191,716	59,777	18,838	14
Surprise	21,442	67	81,396	42,000	7,250	3,000	2
Flagstaff[1]	57,050	26	212,772	118,810	22,848	86,154	4

Source: 2000 National Transit Database
1. Flagstaff data from 2004 Database—not available in 2000

Phoenix, Mesa, Scottsdale, and Tempe had dedicated funding sources for transit in 2000, although the Phoenix mechanism was passed by the voters in March 14 of that year, in the middle of the reporting period. Kingman and Sierra Vista provide their local match from the general fund and also employ LTAF monies when available. Flagstaff also enacted a dedicated transit funding source during 2000, and Glendale in 2002.

Sun City, an unincorporated area whose system is privately funded, had the lowest cost per hour of any of the dial-a-ride systems as well as the lowest cost per boarding. A retirement community with an above average percentage of mobility-limited seniors, Sun City also had the highest boardings per capita. Glendale and Peoria had the highest number of passengers per revenue hour and the highest costs per hour. One significant reason for Sun City's lower operating costs may be the comparatively small size of its service area.

TRANSPORTATION DEMAND MANAGEMENT

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

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

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

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

- **www.ridester.com/ - Arizona Rideshare** - Ridester is the first intercity rideshare service for traveling between cities in the USA. The site is primarily used by interstate travelers.
- **www.capitolrideshare.com/** - This site has information about ridesharing, as well as bicycling and pedestrian information.
- **phoenix.craigslist.org/rid/** - Rideshare matching page on the Phoenix site of Craigslist.

Two common forms of ridesharing are carpools and vanpools.

Carpool participation is higher than the national average in rural Arizona, suggesting that a potential for developing additional carpools in the area exists. Strategies for formalizing and increasing carpooling in Gila County follow:

- The carpooling that is already established needs to be quantified and documented. This process could be an employer-based registration system that provides an incentive for filling out an information/registration card. Incentives might be as simple as a chance to be entered in a drawing for dinner for two at a popular restaurant. Periodic updates and opportunities for future carpooling incentives would be an option for carpoolers.
- A benefit of registering carpools is that the informal carpools might be able to serve another commuter who works the same shift, or an additional participant in the same periodic activity. The baseline data forms the beginning of destination-driven ride matching.
- Once the baseline data quantifies a level of carpool usage, goals for increasing participation and incentives to attract more new carpools can be identified and implemented.

Vanpools are also an alternative to be considered for area commuting. The methodology described above for carpools is one way to begin building a database for informal vanpools. By asking vehicle capacity on the registration card, the information helps organizers build an "excess capacity" database.

This type of vanpool is very informal and maintains its schedule based on employee needs. Matching commuters from the same or other businesses is the growth potential. Again, the object is to quantify and document existing vanpool commuters and build the program where possible.

Another option is to provide businesses with an incentive to let the vehicle be used for a formal vanpool program with a wider group of employees. If the vehicle becomes a part of a formal program, maintenance, insurance and vehicle upkeep can be offered as an incentive. Such a fleet of vanpool vehicles can be used as "guaranteed ride home" vehicles for bus/rideshare commuters who have an unscheduled midday need to get home.

There are a few issues that arise with shared-use vehicles as described above. If the driver of the vanpool is an employee who is also commuting to work, the type of insurance needed is different than if the driver is paid or if the vehicles are used for other service during the day. As with any formal bus service, vanpools need back-up vehicles or a plan for alternate service.

FUTURE TRANSIT NEEDS AND SERVICE THRESHOLDS

Within any urban area, the origin and destination of most trips—and of the percentage of trips that will be made by use of public transportation—is related to where residents of the area live and where they work. Concentrations of population within an area suggest where commute trips are likely to originate during the morning peak travel period, and concentrations of employment function as "attractors" where such trips are likely to terminate. In the afternoon, the roles are reversed: Trips originate in areas where employment is concentrated and terminate in residential areas. As Coolidge and Florence develop and increase in total population and in population density, significant areas in each community will likely meet or exceed demographic thresholds empirically determined to warrant the introduction or enhancement of transit service.

Transit Service Threshold Methodology

Traditionally, transit thresholds are based on residential densities alone. However, the application of such thresholds to residential densities shown on a Traffic Analysis Zone (TAZ) level fails to consider the variations in density within the TAZ itself. To compensate for this observation, the consultant decided to apply the thresholds to the sum of the residential and employment densities within a TAZ rather than to the residential densities alone. A threshold scenario was developed for application to the TAZ array. The threshold levels for the different types of transit service were calculated from data presented in the MAG *High Capacity Transit Study*.

Table 7-4 presents the threshold levels, and Figure 7-2 depicts the application of these levels using the forecasted 2025 combined population and employment for each TAZ in the study area.

TABLE 7-4. MINIMUM CONSOLIDATED RESIDENTIAL AND EMPLOYMENT DENSITIES FOR VARIOUS TYPES OF TRANSIT SERVICES

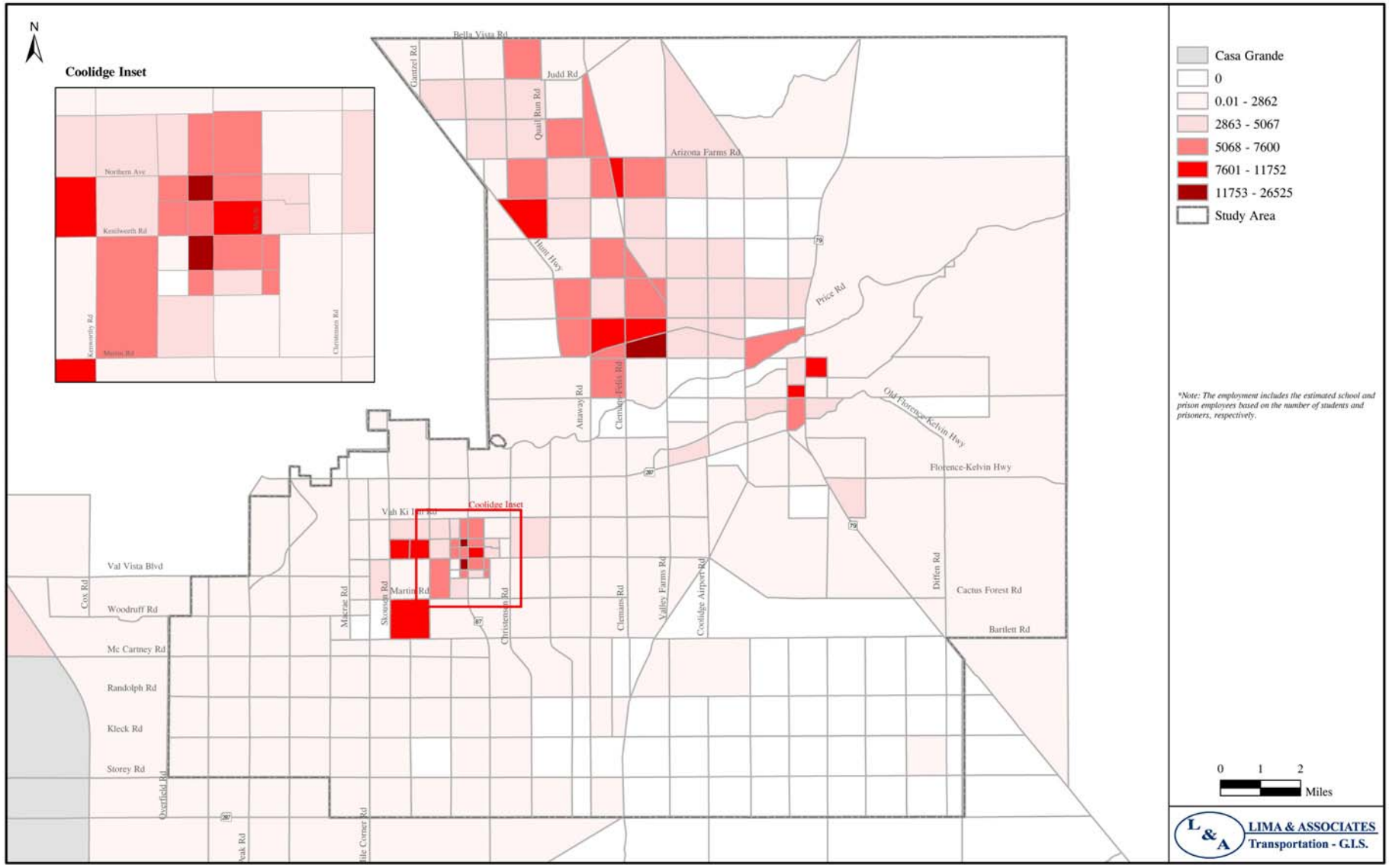
Transit Service Type	Persons/Sq Mile*
Bus–minimum service	4,500
Bus–intermediate service	7,780
Bus–frequent service	16,670
Light rail	10,000
Commuter Rail	3,328

*Calculated from Maricopa Association of Governments *High Capacity Transit Study*, 2003
Bus minimum service = 1/2 mi between routes, 20 buses/day
Bus intermediate service = 1/2 mi between routes, 40 buses/day
Bus frequent service = 1/2 mi between routes, 120 buses/day
Commuter rail = 20 Trains/day on existing track
Light rail = 5 min. peak headways

The value ranges for the "Persons per Square Mile" shown in Figure 7-2 approximately coincide with density thresholds for implementing various types of transit services as shown in Table 7-4. These threshold numbers have been used in a number of transit studies nationwide including the *High Capacity Transit Study* conducted in 2003 for the Maricopa Association of Governments. Note that the "bus-minimum service" category refers to standard fixed route bus services mostly operated in larger metropolitan areas. Deviated fixed route services and dial-a-ride services, such as the Cotton Express currently operated by the City of Coolidge, sometimes operate in areas that do not meet the minimum density threshold of 4,500 persons per square mile, as do peak-hour commuter bus or van operations. Brief summaries of the different types of transit services and vehicles will be given in the following section.

Analysis of Figure 7-2 shows that, by 2025, portions of Coolidge and Florence will exhibit significant combined population and employment densities. Just one-half square mile of Florence south of Hunt Highway and west of downtown and two quarter square mile areas of central Coolidge are forecasted to have combined densities of more than 11,752 persons per square mile. However areas distributed throughout the study area totaling approximately four square miles are projected to have densities of 7,601 persons per square mile or more. A total of over twelve square miles are forecasted to have combined densities of 5,068 or more persons per square mile. Much of the remainder of the portions of the study area forecasted to be urbanized by 2025 will have densities of more than 2,863 persons per square mile.

FIGURE 7-2. COMBINED POPULATION AND EMPLOYMENT DENSITY IN STUDY AREA



BUS AND RAIL TRANSIT ALTERNATIVES

The combined densities depicted in Figure 7-2 were compared with the transit service density thresholds listed in Table 7-4. Draft 2025 transit service options suggested by this analysis are shown in Figure 7-3. The two types of transit service suggested by the forecasted densities are minimum bus service and commuter rail. The existence throughout the future urbanized portions of the study area of regions with densities of 2,863 persons per square mile or more is close enough to the commuter rail threshold of 3,328 persons per square mile that implementation of commuter rail in the region by 2025 would be warranted, assuming that sufficient concentrations of employment within rail-served areas such as Central Phoenix, Central Tucson, and the Phoenix-Mesa Gateway area will exist.

Comparison of Figures 7-2 and 7-3 will show that portions of Figure 7-3 where densities suggest local minimum bus service are highlighted in yellow. Such service could begin as an expansion of the existing Cotton Express service in Coolidge and the implementation of a similar service in Florence. As demand warrants, a network of fixed-route services, with complementary paratransit services, could be developed in these areas.

The following services would address future population growth and levels of travel demand within the Coolidge and Florence areas and between these communities and the metropolitan Phoenix and Tucson areas. These alternatives include:

- Expansion of the Cotton Express local dial-a-ride and deviated fixed route service areas within the City of Coolidge
- Introduction of a service similar to the Cotton Express within the Town of Florence
- Regional bus service connecting Coolidge, Florence, Coolidge Municipal Airport, Central Arizona College, Casa Grande, and Eloy
- Limited Stop commuter bus serving Coolidge, Florence, Queen Creek, Gilbert, and Mesa
- Limited Stop commuter bus serving Florence, Coolidge, Chandler, Tempe, and Phoenix
- Limited Stop commuter bus serving Coolidge, Florence, Oro Valley, and Tucson
- Limited Stop commuter bus serving Florence, Coolidge, Randolph, Eloy, Marana, and Tucson
- Commuter rail serving Coolidge, Queen Creek, Gilbert, Mesa, Tempe, and Phoenix
- Commuter rail serving Florence, Queen Creek, Gilbert, Mesa, Tempe, and Phoenix
- Regional rail service between Phoenix, Tempe, Mesa, Queen Creek, Coolidge, Picacho (Eloy), Marana, and Tucson
- An excursion rail operation on the Copper Basin Railway from Florence east through the scenic Gila Canyon area

FIGURE 7-3. 2025 DRAFT TRANSIT OPTIONS

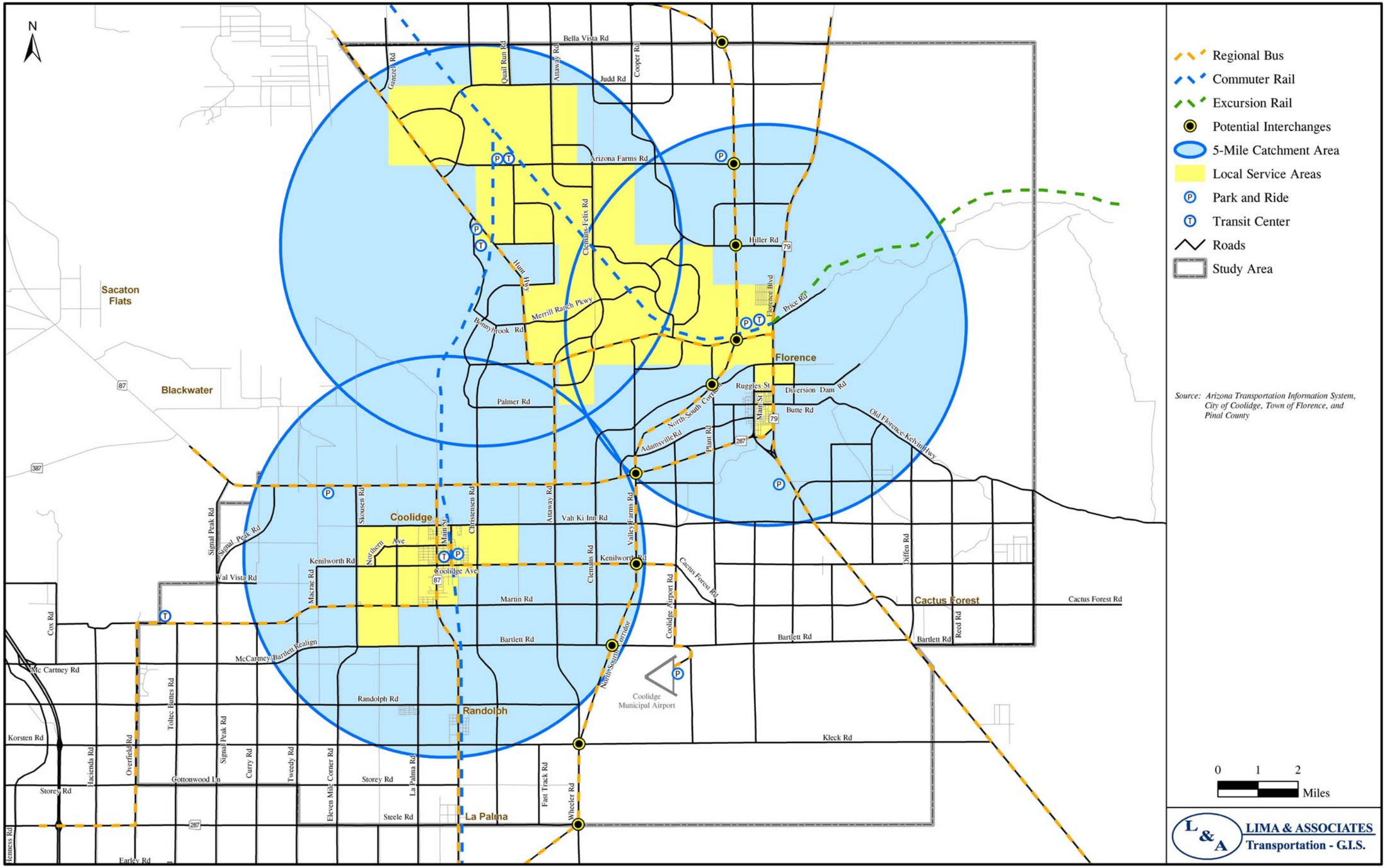


Figure 7-3 also recommends the locations for transit centers and park-and-ride locations. The 10-mile diameter circles depict the "catchment areas" for the commuter rail service. These are intended to incorporate the areas from where a commuting motorist could reach the rail station at the transit center in the center of the circle within 10 minutes. Locations of transit centers and park-and-ride facilities include:

- A combination transit center and park-and-ride facility at the intersection of the Union Pacific Railroad and Hunt Highway for both commuter bus and commuter rail patrons
- A combination transit center and park-and-ride facility north of downtown Florence at the intersection of SR 79 and the Copper Basin Railway for patrons of commuter bus, commuter rail, and excursion rail services
- A transit center at Central Arizona College
- Park-and Ride facilities at the following locations:
  - ✓ Coolidge Municipal Airport
  - ✓ The Corner of Skousen Road and SR 287
  - ✓ The Corner of Florence-Kelvin Highway and SR 79
  - ✓ At Randolph Road, SR 87, and the Union Pacific

The timing of the extension of local service—e.g., the Cotton Express in Coolidge—to these areas will depend upon the rate of buildout of the various developments that comprise the new service areas. Expansion may also depend upon the degree of transit orientation of the subdivisions. Extending service sooner to areas that are more conducive to transit service, both with regard to the demographics of the particular development and the layout of the development's internal street network, will result in service that can be managed more efficiently and maintains a higher farebox recovery ratio.

While the demographic thresholds evaluated in the previous section will govern the timing for prioritizing and implementing the recommended services, the operation of many of these services may be contingent on necessary infrastructure improvements. For example, additional freeway capacity will greatly enhance the efficiency of the limited stop commuter bus services. A bus commuter experiencing peak hour traffic delays on Hunt Highway can put the time to productive use in ways that would be impractical or unsafe for a motorist to do, such as reading, making phone calls, or working on a laptop computer. However, the new freeways may include high-occupancy vehicle (HOV) lanes for the use of buses, vanpools, or carpools, making these alternative ways of commuting time-competitive with single-occupancy vehicles.

Significant improvements in the rail infrastructure such as lengthened sidings and sections of double track will be needed before regional or commuter rail service could be implemented on a regular or frequent basis.

RECOMMENDED NEXT STEPS

The Consultant recommends that the City of Coolidge and the Town of Florence take the following steps, as appropriate, to implement and expand public transportation services:

- **The City of Coolidge and the Town of Florence should pro-actively support the Pinal Rides Pilot Program by participating on the Advisory Council and providing funding.** The City of Coolidge, in particular, should share lessons learned in the implementation and operation of the Cotton Express and work with Pinal Rides to explore coordination, operational, and marketing opportunities between the two services.
- **The City of Coolidge and the Town of Florence should communicate and coordinate with organizations and agencies** that are evaluating and/or advocating inter-regional transit service options affecting the County including ADOT Public Transportation Division, MAG, PAG, CAAG, Valley Metro, Pima County DOT, the Pima RTA, the Arizona Transit Association, and the Southwest Rail Corridor Coalition.
- **The City of Coolidge and the Town of Florence should consider development of transit oriented design (TOD) overlays** that could be implemented along identified future transit corridors to ensure that commercial and residential development provide enhanced accessibility to and from transit.
- **The City of Coolidge and the Town of Florence should continue to present short- and long-range plans to ADOT Public Transportation Division** that were developed or refined by the Feasibility and Implementation Study including plans for local circulator services, additional dial-a-ride services, regional bus services, and commuter and excursion rail services. Demographic thresholds for the implementation of each should be identified and the demographics tracked periodically accordingly.
- **The City of Coolidge should continue to evaluate the operation of the Cotton Express and plan for service expansion as population growth and development warrant.**
- **The Town of Florence should conduct a Transit Feasibility and Implementation Study to identify current and future public transportation needs within the town as well as demographic thresholds for implementing future services.**
- **The Town of Florence should hire a Transportation Coordinator, when needed,** to develop a rideshare program, serve as a clearing house for local and regional public transportation information, and manage the implementation and operation of transit services.
- **The Town of Florence should appoint a volunteer Transit Advisory Committee** to assist the Town in identifying the desirable attributes of the coordinator position and to work with the coordinator after his or her selection. The Transit Advisory Committee could act as a liaison for transit issues between the County, local jurisdictions, and the business community, with respect to transit issues, and could also provide input for

mode choice, equipment selection, route selections and additions, and transit center concept and site selection.

Implementation Options

Table 7-5 presents a suggested implementation schedule for transit improvements. The schedule is based on the "Next Steps" recommended in the previous section and assumes a logical progression of events following the evaluation of the Cotton Express operation by the City of Coolidge and the completion of the recommended Town of Florence Transit Feasibility and Implementation Study.

The actual costs of both implementing and funding transit services will depend upon a number of variables, including the following:

- Which mode, or modes, of transit service are recommended for implementation?
- What type of vehicles will be used and how many will be purchased?
- Will transit centers be built initially? Or will they be programmed for later fiscal years?
- What new maintenance facilities will be needed? Can existing facilities belonging to either the County or local jurisdictions be used initially for starting or expanding bus systems? Or is contracting the maintenance out to another agency or a private sector provider practicable?
- When will rail services be introduced? What additional track construction or upgrading will be needed? How much right-of-way will need to be acquired?
- What bus stop furniture will be provided? Will shelters be constructed at stops?

Public Transportation Funding

Potential sources of funding for public transportation are presented and discussed in Chapter 9.

TABLE 7-5. SUGGESTED PUBLIC TRANSPORTATION IMPLEMENTATION SCHEDULE

Action	Responsibility	Time Frame
Proactively support and coordinate with the Pinal Rides Program	City of Coolidge and Town of Florence Transit Advisory Boards	Near Term
Contract for Transit Feasibility and Implementation Study	Florence Town Council with input from Transit Advisory Board and ADOT Public Transportation Division	Near Term
Appoint Transit Advisory Board	Florence Town Council	Near Term
Select initial funding sources and set budgets	Florence Public Works Department	Near Term
Present short, long-range plans in partnership with the ADOT Public Transportation Division	Transportation Coordinators for the City of Coolidge and the Town of Florence	Near Term
Begin Ridesharing Program Development	Transportation Coordinators for the City of Coolidge and the Town of Florence with input from Transit Advisory Boards	Mid Term
Discuss transit service options with prospective service providers	Transportation Coordinators and Public Works Departments with input from Transit Advisory Boards	Mid Term
Recommend transit service types and implementation thresholds	Transportation Coordinators with input from Transit Advisory Board, ADOT, and Railroads	Mid Term
Obtain funding approval from ADOT	Agency Councils and Public Works Departments	Mid Term
Request Design Concept Proposals for Transit Centers	Agency Public Works Departments	Mid Term
Request proposals for equipment, guideway, and transit center construction	Agency Public Works Departments	Mid Term
Develop Transit Service Marketing concepts	Agency Transportation Coordinators with input from Transit Advisory Boards	Long Term
Implement Marketing Campaign	Agency Transportation Coordinators	Long Term
Order equipment and begin construction	Agency Public Works Departments with input from Transportation Coordinators and Transit Advisory Boards	Long Term
Equipment arrives, Transit Centers open, and service starts	Agency Transportation Coordinators with input from Transit Advisory Boards	Long Term