

Transit Element of the 2030 Regional Transportation Plan

PHASE 1: INVENTORY AND ANALYSIS OF TRANSIT SERVICES AND FACILITIES



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1. Executive Summary

This technical memorandum documents key results of Phase 1 for the Transit Element of the Pima Association of Government's (PAG) 2030 Regional Transportation Plan. The Transit Element of the RTP will identify public transportation improvements that will be needed to meet future mobility needs of the Tucson region. This Executive Summary describes the components of the Transit Element effort. It also provides an overview of this technical memorandum, and summarizes major results of task activities carried out under Phase 1 of the Transit Element.

Transit Element Components

The Transit Element of the 2030 RTP will encompass three major phases. Phase 1, which is the focus of this technical memorandum, provides an inventory of existing transit services and facilities in the Tucson region. It identifies major features and recent trends relating to transit development while providing a context for potential recommendations. Phase 2 will identify areas in the region that exhibit potential for transit growth. These areas will include major corridors that are expected to experience significant growth during the 30-year horizon of the RTP. Phase 3 of the Transit Element will identify major transit improvements – service, facilities, and supporting actions – that will meet mobility needs of the region.

Overview of Technical Memorandum

Following this Executive Summary, Section 2 provides an overview of the transit setting in the PAG region. This overview includes an examination of historic and projected population growth for the region. Section 3 describes transit services operating in the region along with recent historic trends and comparisons with peer transit systems. Key trends include passengers, service hours, and costs for various public transportation operators. Section 4 presents information on transit service vehicles/facilities in the PAG region, including transit centers and capacity/demand at park-and-ride lots. In Section 5 of the technical memorandum comparisons are provided between transit services/facilities and characteristics of key markets. Geographic based information maps prepared for the project support information in this section. Section 6 looks at the level of current system coordination among various transit providers in the Tucson region. Section 7 presents a description of planned improvements that have been called out by local transit operators while Section 8 provides a summary of public attitudes toward public transit. These attitudes were identified through PAG's community outreach process for the 2030 RTP. The technical memorandum concludes with a listing of key findings and direction for other remaining phases of the Transit Element.

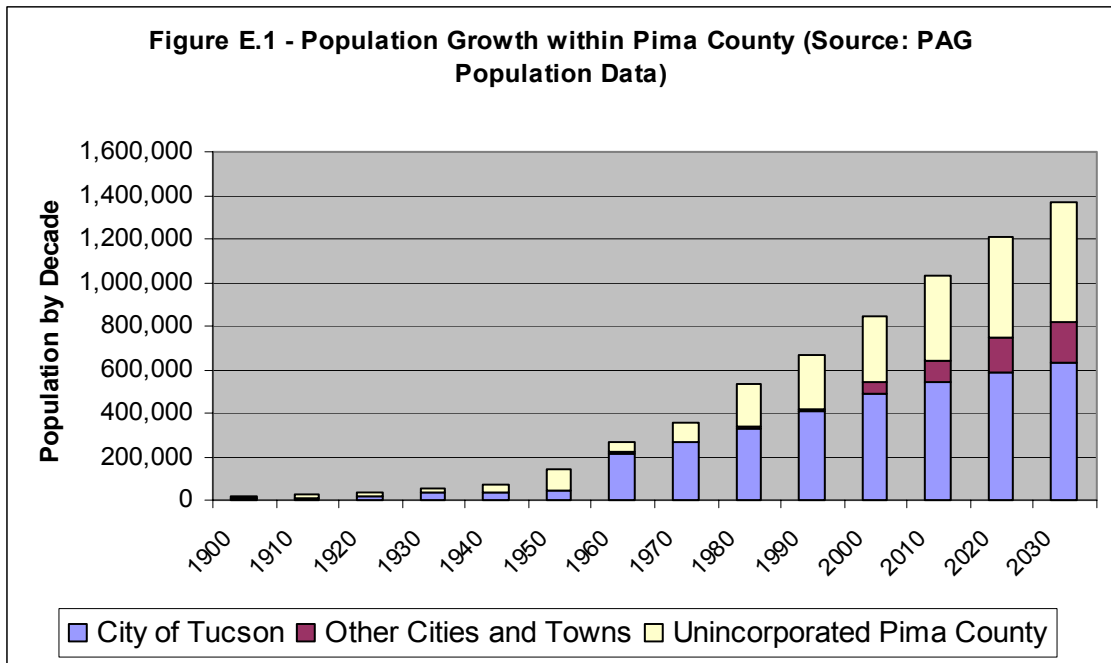
Key Task Results

Sections 2 through 7 of this Technical Memorandum provide detailed information on existing transit services and facilities in the Tucson region. The following sections present a summary of results.

Recent Growth Trends

Figure E.1 shows population growth in the Tucson region, both historic and projected. While the historic growth of the region's total population is significant, the rate of growth outside Tucson is higher than what has occurred within Tucson. In looking at estimated

future growth, the rate of growth for communities outside of Tucson will be at an even higher level versus Tucson's growth.



These growth characteristics have implications for public transportation's ability to meet future travel needs of Pima County residents. While Oro Valley and Pima County have provided service to fast-growing communities, the overwhelming majority of public transportation services are still focused within Tucson's city limits. These services dominate in terms of such key public transportation features as area coverage, frequency, span of service, park-and-ride lots, and off-street transfer facilities.

Transit Service Characteristics

Within the Tucson region, several systems currently provide transit services. These systems include Sun Tran, Van Tran, Pima County Rural Services, Pima County Paratransit, Oro Valley (Coyote Run), T.I.C.E.T, Old Pueblo Trolley, and the University of Arizona (CatTran). Because Sun Tran constitutes such a large part of the region's transit service mix, its operating results tend to drive overall transit characteristics in the Tucson region.

Figure E.2 shows existing fixed route, peak period service in the Tucson region, effective fall of 2002. The figure also identifies bus service frequencies along corridors in the region. Within Tucson, the University of Arizona's CatTran service provides a small network of fixed routes to the campus. T.I.C.E.T provides a local shuttle service that offers internal circulation in downtown Tucson and connections to parking lots on the fringes of downtown. Oro Valley and Pima County provide local access within their respective service areas.

Currently, only a few corridors in the urban core of Tucson have buses operating every 15 minutes or less. Examples include 5th and 6th Streets and 6th Avenue. In outlying areas, overall coverage is limited. Even within Tucson, areas located in the southeast sector (e.g., Rita Ranch) have no coverage. South of Tucson there is no service in Sahuarita and the Green Valley of unincorporated Pima County.

Figure E.2 – Map of Routes (GIS)

One key service characteristic not currently included in the mix of transit services is a *System* of park-and-ride lots and associated express bus services. While some park-and-ride lots exist, most are both small and lack extensive direct express bus connections to major destinations. Growing areas of the region lack direct transit connections as well as opportunities to access service through park-and-ride lots. Travel pairs that lack direct transit connections include:

- Oro Valley/Raytheon employment area
- Oro Valley/University of Arizona
- Rita Ranch/downtown Tucson
- Rita Ranch/University of Arizona
- Marana/University of Arizona
- Marana/Raytheon employment area
- Sahuarita/Green Valley/Downtown Tucson

Major Transit Facilities

Figure E.3 shows the location of major transit facilities in the Tucson region. Existing major transit facilities for the Tucson region include three off-street transit centers located in Tucson (Ronstadt, Laos, and Tohono Tadaí). There are 23 park-and-ride lots in the Tucson area. Sun Tran serves 20 of these lots while the University of Arizona's CatTran shuttle routes serve three lots. However, most park-and-ride lots (16 of 23) have less than 50 stalls. Few lots have amenities such as bike lockers. In addition, as noted above under *Transit Service Characteristics*, there is lack of major express bus connections at most of the park-and-ride lots. Sun Tran express routes 102, 105, 162, 180, and 186 serve park-and-ride lots; however, none of these lots has capacity greater than 50 stalls.

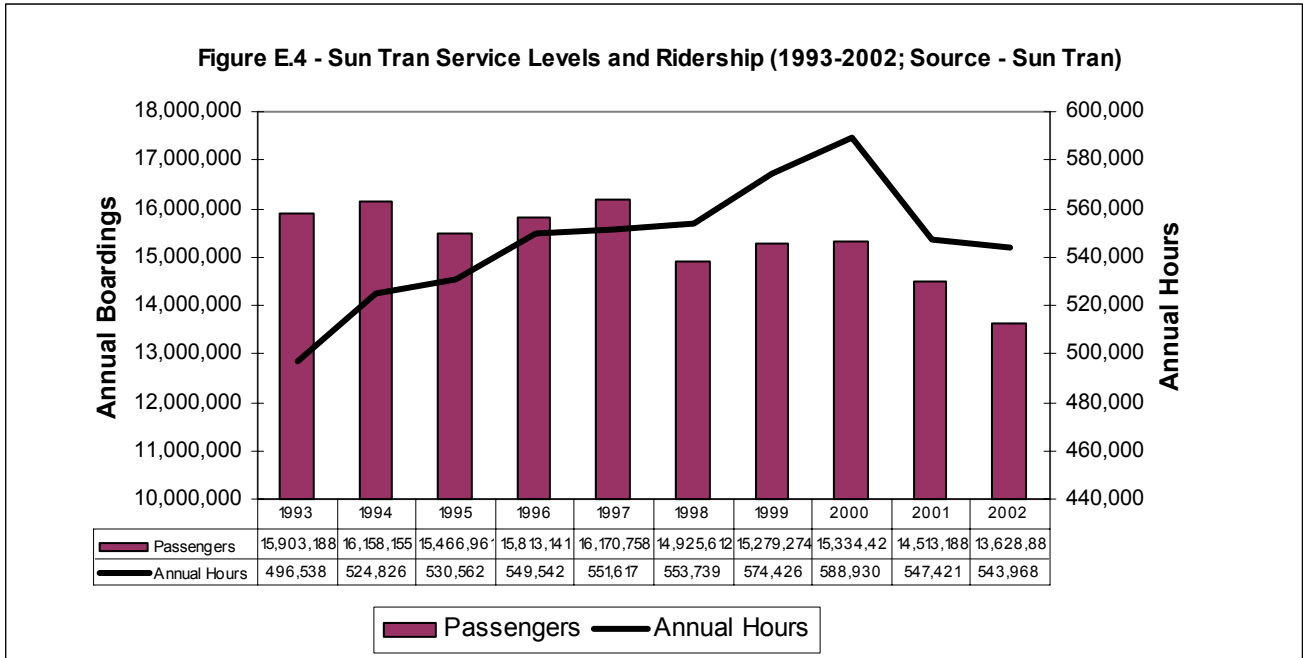
Use of the park-and-ride lots vary substantially by location based on a one-day survey of capacity and demand undertaken in January 2003. For example, there is no activity at the La Cholla/San Marcos 22nd Street/Randolph lots; however, full use of capacity is occurring at the Greasewood/Anklam and Drexel/Calle Santa Cruz lots. Section 4 of this memorandum provides further information on park-and-ride lot capacity.

A review of the Capital Improvement Programs (CIP) identified by operators in the Tucson region indicated that no plans are underway for major park-and-ride development. However, the City of Tucson's CIP has called out a *Transit Alternatives Analysis* study to determine the feasibility of various high capacity transit services along major corridors. This study could identify opportunities for future park-and-ride development in the region. Other major facilities called out in Tucson's CIP include the development of the Downtown Intermodal Center/Union Station Depot and a new Sun Tran bus storage and maintenance facility.

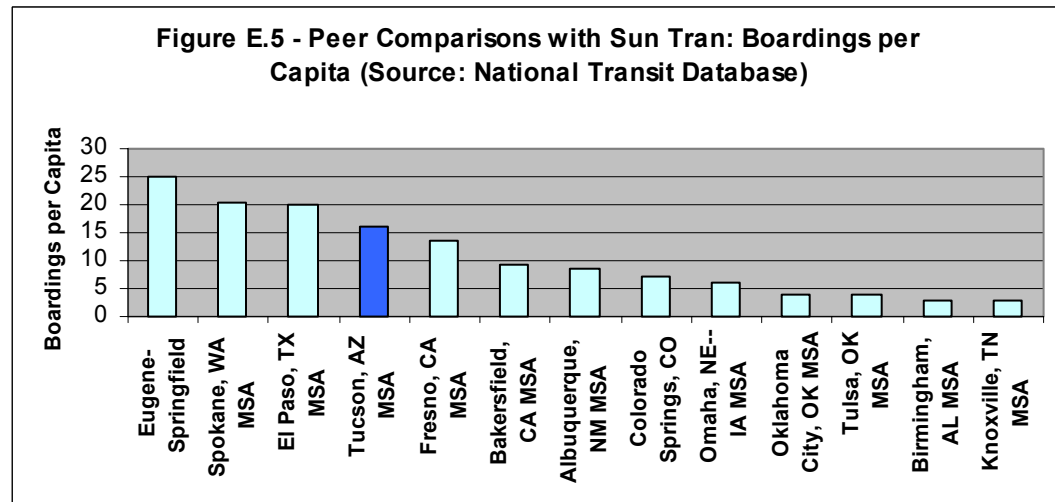
Figure E.3 – Transit Facilities

Trends Relating to Transit Service and Ridership

Sun Tran, the dominant transit system in the Tucson region, experienced a steady increase in ridership during the 1970s and 1980s. More recently, the system has undergone a decline in ridership, expressed in terms of total annual boardings. Figure E.4 shows annual revenue hours and annual passengers between FY 1993 and 2002. *Annual Revenue Hours* include in-service hours as well as the time buses operate between the Sun Tran operations base and the start of routes. *Annual Ridership* involves total passenger boarding's on Sun Tran routes that occurred within a fiscal year (July through June). Ridership in FY 2002 was more than 2.0 million less than what occurred in FY 1993. Annual revenue hours had been increasing in the 1990's but decreased in FY 2001 and FY 2002.



Despite recent losses in ridership, Sun Tran does compare favorably with its peers. Annual boardings per capita were one of the key characteristics reviewed. This information provides an indication of how well the system does in the context of total population of its service area. Figure E.5 identifies boardings per capita for Sun Tran and 12 peer operators. At about 16 boardings per capita, Sun Tran ranks relatively high among its peers.



Ridership Distribution

Ridership demand is distributed throughout the region; however, the major concentrations are in the urban areas of Tucson, reflecting both land use activities and the level of transit service. Figure E.6 identifies the daily boardings (in 2002) for the busiest 200 bus stops. These locations do not include the three major transit centers in Tucson: Ronstadt, Laos, and Tohono Tadaí. Both Speedway and Broadway experience strong passenger activities throughout their length. Other streets such as Campbell, Alvernon, and the Oracle Road/6th Avenue corridor have several stops with strong passenger activity.

Transit Funding

Transit funding for systems in the Tucson region is currently provided through a variety of sources including general fund support, fare box revenues, state Local Transportation Assistance Funds (LTAF), and federal grants. No local dedicated funding for public transit is currently available for transit operators. In the case of Sun Tran, for example, transit funding by the City of Tucson has to compete with other city programs such as public safety.

Transit Service/Facilities and Current Markets

Phase 2 of the Transit Element will identify and assess areas such as major corridors that indicate potential markets for transit services. Demographics as well as travel demand patterns will be examined as part of this effort. Under Phase 1, an initial assessment was made of key demographic features in order to allow comparisons with existing service patterns. Residential density is one key demographic feature that indicates a propensity to use transit. Figure E.7 identifies the relative level of residential densities in the Tucson region, expressed in terms of persons per square mile.

No dominant *corridor* showing high residential densities is indicated by the information shown in Figure E.7. However, some concentrations of relatively high densities are evident for the general north-south corridor involving 12th Avenue/6th Avenue/downtown Tucson/Oracle Road/Stone Avenue. There are also concentrations near Campbell/Irvington and along Speedway between Camino Seco and the University of Arizona campus.

Transit Coordination

Eight transit systems operated by four jurisdictions and one non-profit organization currently serve the Tucson region. While operated as separate systems, coordination of services can present a positive overall image to the public. A review of the services, including schedules at transit centers, public information, and planning activities indicates that some limited coordination takes place between some operators. However, there are currently several gaps relating to potential coordination among the seven transit systems. The following items summarize examples of current gaps relating to service coordination among transit operators in the Tucson region.

- Sun Tran and the Pima County system share transfer points at the Laos Transit Center and at Ina/Thornsdale. However, Sun Tran schedules are not coordinated with those for Pima Rural Transit at the Laos Transit Center or in the Northwest area. Most transfer connections appear to be random.

Figure E.6 – Boarding Activities – Major Locations

Figure E.7 – Population Densities

- CatTran's Red and Blue lines do not compete with Sun Tran. While Sun Tran focuses on getting people to the university campus, the Red and Blue routes focus on getting them around once they are on the campus. However, there is substantial overlap between Sun Tran's route structure and CatTran's Yellow, Green, and USA routes. All operate for a significant portion of their route along streets also served by Sun Tran.
- There is no coordination of marketing efforts among transit operators. Each system develops its own marketing materials and distributes them through its own channels.
- Transit managers from each of the operating systems meet to discuss issues of common concern at irregular intervals, as they find it necessary.
- Each system plans its services independently. There is no conscious effort to develop a unified route and service structure.

Planned Improvements

Some transit operators have called out plans for capital and service items. For example, Oro Valley's Transit Development Plan for FY 2003-2012 calls for a mix of services including paratransit, expanded fixed route commuter service on Oracle Road, and implementation of neighborhood shuttle services.

However, no major expansion of service has been identified by the City of Tucson. Two major items included in the City's capital projects are the development of the Intermodal Center at the Union Pacific Depot and a new bus base and maintenance facility. The lack of major planning efforts for expanded service is likely due in large part to uncertainties relating to funding support for public transit systems in Pima County.

Public Attitudes Toward Transit Service

In the fall of 2002, Pima Association of Governments launched the first phase of a three-year effort to develop the 2030 Regional Transportation Plan (RTP). This effort began with a comprehensive regional public involvement program called the Program for Active Community Engagement (PACE). The PACE provides multiple forums for early, ongoing and meaningful input in each stage of the transportation decision-making process.

The fundamental goal in Phase I of the PACE was to assess public perceptions of transportation needs and solutions from the perspective of quality-of-life values. The vision, needs, goals, and strategies identified in Phase I will be considered by the Regional Transportation Plan Task Force and subsequently integrated into the development of alternative transportation solutions and funding options.

Below is a summary of key transit-related issues identified in the PACE effort.

Common 'Barriers' (219 Mentions)

- Limited multi-modal transportation options
- Limited scheduling and coverage area
- Inefficient/slow cross-town mobility (in general)
- Insufficient transit service

- Lack of transit shelters
- Poor growth planning

‘Works Well’ (39 Mentions)

- Scheduling
- Accessibility
- Transit around downtown
- Routes 4 and 8

Major Themes and Solutions (187 Mentions)

- Provide light rail system, monorail, or metro subway
- Make public transit more efficient
- Expand transit service: more buses, hours and coverage areas
- Reduce costs for low-income groups
- Provide downtown trolley system

Key Findings and Direction for Follow-up Tasks

The following summarize key findings of Phase 1 for the Transit Element as well as direction for subsequent phases.

Major Findings

- Substantial population growth has occurred in the PAG region, particularly outside of Tucson’s city limits; however, the greatest concentration of public transit service is within the Tucson city limits.
- Despite population growth, recent trends indicate a decline in total transit ridership in the region; this decline is likely attributable to a variety of reasons, including reduced service hours that took place in the last two years, impacts from a labor strike in 2000, construction of new parking facilities at the University of Arizona, elimination of student fares, and lack of funding for marketing and public education programs.
- Several small systems operate in the region; however, large parts of unincorporated Pima County, Marana, Oro Valley, and even Tucson lack transit coverage.
- While there has been a general decline in transit demand, there are some exceptions:
 - Coyote Run in Oro Valley has experienced major growth in demand even though service operates in a low-density area of the region;
 - Ridership on Pima County’s Rural Transit routes increased in FY 2002 over the previous years; and,
 - CatTran ridership growth can be attributable in part to the availability of park-and-ride capacity and direct access to the University of Arizona campus.
- Information on the location of major boardings indicates that some corridors have continuous passenger demand along their lengths.

- There is currently lack of coordination among transit systems in certain areas such as schedule coordination, information sharing, and planning.
- There has been growth in regional travel demand, but there is lack of direct transit connections between several areas.
- There is a lack of a system involving major park-and-ride lots and complementary express bus service.
- The lack of local dedicated funding for transit is limiting the extent of planning for expanded services and supporting facilities.

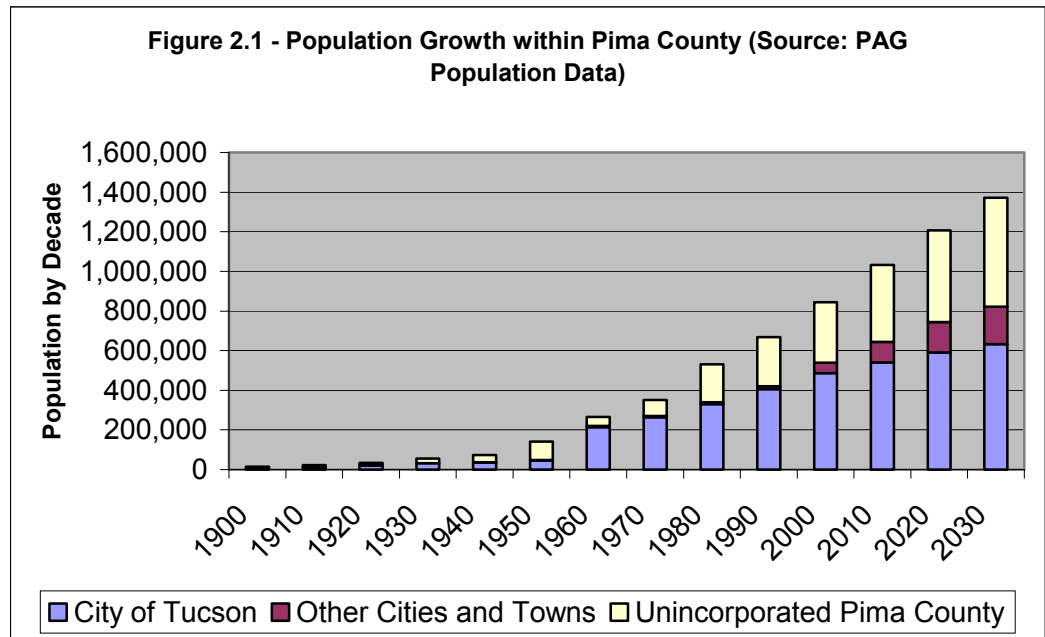
Direction for Next Phases of the Transit Element

Phase 2 of the Transit Element will provide further definition of potential transit markets in the Tucson region. The review in Phase 1 of existing transit service and facilities indicates that the following areas should be given particular emphasis.

- More definition of regional travel patterns, including growth along key corridors and between major origins/destinations.
- More definition of characteristics at existing as well as future major travel generators; examples include the University of Arizona campus, Rio Nuevo, and employment areas near Tucson International Airport.
- Examples of best practices relating to the following:
 - Park-and-ride/express service systems; and
 - Coordination efforts among transit operators in a region.
- Key factors that affect transit ridership in growing regions with relatively low population and employment densities.

2. Pima County Growth Trends

This section of the Technical Memorandum provides an overview of the regional setting for public transportation services in Pima County. Figure 2.1 identifies the growth in the county's population between 1900 and 2040. Pima County's population has steadily grown since the early part of the last century. Initially, the City of Tucson provided the majority of that growth; however, in the last three decades, unincorporated Pima County and other cities and towns have grown to the point that, by 2000, there was a generally balanced distribution between Tucson's population and the rest of the county. Per PAG's growth forecast, this trend is expected to continue through 2030.



In looking at growth rates for individual cities, substantially high levels of population growth are expected. Per PAG's Population Estimates, for example, Projections, and Growth Rates, the town of Marana is estimated to grow from approximately 13,500 in 2000 to about 46,100 in 2010. Oro Valley's population is expected to grow from 29,700 in 2000 to about 44,200 in 2010.

In assessing existing transit services and facilities in the Tucson region, it will be important to keep in mind recent and projected trends relating to the population distribution in Pima County. Transit service is provided in communities like Oro Valley and Marana as well as in unincorporated areas such as San Xavier, Tucson Estates, and Ajo. However, the dominant service levels are still within the Tucson city limits. Assessing existing transit service as well as identifying future transit markets (under Phase 2 of the Transit Element) will need to keep in mind local mobility needs within various communities as well as connections between these communities and major activity centers.

3. Local Transit Service in the Tucson Region

While Sun Tran is Pima County's largest service provider, several municipalities, as well as the University of Arizona provide public transportation services. Together, they transport nearly 14.5 million riders per year, with operating costs in excess of \$40 million. Table 3.1 provides an overview provided by each major operator of services, costs, and key ratios such as passengers per hour for fiscal year 2001-2002. In addition, several social service agencies, supplemented by private for-profit operators, provide public transportation services. They are identified later in this section.

Table 3.1

Summary Information for Local Public Transportation Services (2001-2002)

	Sun Tran ¹	Van Tran ²	Cat Tran ³	Pima Rural Transit ⁴	Pima County Paratransit ⁵	T.I.C.E.T. ⁶	Coyote Run ⁷	Total
Annual Revenue Hours ⁸	544	155	16	14	47	15	8	798
Annual Revenue Miles ⁸	7,590	2,033	196	279	559	113	179	10,949
Annual Boarding Passengers ⁸	13,594	314	392	56	64	123	14	14,557
Farebox Revenues ⁸	\$6,710	\$500	\$0	\$52	\$52	\$0	\$32	\$7,346
Operating Expenses	\$30,786	\$6,451	\$528	\$459	\$1,440	\$408	\$293	\$40,366
Fleet	194	64	14	11	15	7	8	313
Peak Vehicles	148	57	10	6	27	6 vans	6	254
Passengers per Hour	25.0	2.1	24	3.5	1.4	1.1	1.8	18.2
Passengers per Mile	1.79	0.15	2.00	0.20	0.11	n/a	0.08	1.33
Cost per Passenger	\$2.26	\$20.55	\$1.35	\$8.20	\$22.51	\$3.32	\$20.93	\$2.77
Farebox Ratio	22%	8%	0%	11%	-	0%	11%	18%

1. From Sun Tran FY 01-02 financial summary. Data differs from information presented in the National Transit Database.

2. From Van Tran internal reports. Because of differences in sampling methodology, these differ from the National Transit Database.

3. Provided by University of Arizona staff.

4. From Pima County Operational Reports.

5. Based upon data provided by Pima County staff. Reported ridership varies slightly from annual totals reported Table 3-13; Handi Car, the contractor for the service has a pool of 15 vehicles available for paratransit service. Cost per passenger includes capital; other systems such as Van Tran do not include capital costs in this measure.

6. Provided by City of Tucson staff; for calendar year 2002, ridership levels are estimated at 14.5 million (per City of Tucson staff)

7. Provided by Oro Valley staff.

8. In thousands.

Table 3.1 also identifies Annual Hours for existing transit systems. For Sun Tran these hours are defined as service plus the time to operate between the operations base. For other systems, the hours involve time operating the service.

Historically, Sun Tran has transported more than 90 percent of Pima County's transit patrons. However, ridership for smaller service providers such as T.I.C.E.T and the University of Arizona's Cat Tran increased dramatically in recent years, as shown in Table 3.2. It should be noted that for calendar year 2002, Sun Tran ridership is approximately 14.5 million (per City of Tucson staff).

Old Pueblo Trolley (OPT) is the only public transit system in the Tucson region owned and operated by a private non-profit organization. Between 1997 and 2002, OPT operated an average of 1,144 service hours service per year. The hours and system ridership resulted in an average of 19.8 passengers per hour. In 2002, OPT carried 22.5 passengers per hour.

Table 3.2

Number of Annual Boardings (Thousands)¹				
Service Provider	1998-1999	1999-2000	2000-2001	2001-2002
Oro Valley	7	8	11	14
Pima Co. Paratransit	74	70	69	64
Van Tran	316	318	310	314
Univ. of Arizona	0	255	319	392
T.I.C.E.T.	0	0	82	123
Old Pueblo Trolley	23	25	22	26
Pima Co. Fixed Route	54	53	52	56
Sun Tran	15,279	15,334	14,513	13,594
Total	15,753	16,063	15,378	14,557

1. Source: Ridership summaries from individual agencies.

Figure 3.1 illustrates fixed route transit services operating in the peak periods. These services were in effect as of fall 2002. The following is a summary of the public transportation services that provided by each of the region's public transportation providers.

Sun Tran

General System Description

Sun Tran is Pima County's largest public transportation provider. Operating a fleet of 203 full-sized buses, Sun Tran serves the urbanized parts of Tucson and South Tucson, plus some areas within unincorporated Pima County.

Sun Tran operates a network of 37 local and express bus routes. Sun Tran is operated by the City of Tucson's Department of Transportation. All services operating outside the city limits are provided through intergovernmental agreements (IGAs) with the affected jurisdictions. Operations are funded through a combination of farebox revenues, state lottery funds, federal capital grants, and city general fund revenues. Tucson does not provide a dedicated funding source for transit. Table 3.3 summarizes Sun Tran's revenue sources during the past five years.

Figure 3.1 – Peak Hour Bus Service/Headways (GIS)

Table 3.3**Sun Tran Funding Sources for Operations¹**

	1997-98 Actual ²	1998-99 Actual	1999-00 Actual	2000-01 Actual ³	2001-02 Actual ⁴	2002-03 Adopted Budget
Federal Grants (80%)	\$764,000	\$1,577,000	\$1,843,032	\$1,843,032	\$1,843,032	\$1,843,032
General Funds	13,111,368	14,540,129	15,827,157	15,731,107	16,927,143	18,674,495
LTAf	2,993,000	3,000,000	2,511,416	2,811,393	2,762,686	2,762,686
State LTAf II	0	606,500	874,000	889,440	47,440	0
State Commerce Grant (CNG)	0	0	0	70,000	0	0
Passenger Fares	6,074,031	6,105,923	6,262,261	7,169,504	6,709,958	7,130,000
Intergovernmental Agreements	1,602,822	1,493,448	1,816,133	2,003,183	2,126,247	2,328,287
Misc. Revenue	117,779	n/a	85,001	211,376	288,335	177,700
Sponsorships	0	—	0	74,965	106,159	201,800
Total Revenues	\$24,663,000	\$27,323,000	\$29,219,000	\$30,804,000	\$30,811,000	\$33,118,000

1. Source: Sun Tran Staff.
2. Bargaining Unit Strike — 6½ days.
3. Fare Increase In July 2000.
4. Bargaining Unit Strike — 12 days.

Historic Ridership Trends

Overall, Sun Tran carries about 25 boarding passengers per total service hour. During FY 2001-02, 13.6 total million boardings took place on Sun Tran's network of fixed route services.

The Transit Element of the RTP will address a 2030 planning horizon. It is therefore appropriate to examine how transit ridership has evolved during the past 30 years. As illustrated in Figure 3.2, Sun Tran ridership had been increasing at a generally steady rate between 1972 and the early 1990s. However, in the last 10 years, ridership has leveled off and since FY 1996-97 has been declining. In FY 1996-97, Sun Tran recorded about 16.2 million boardings. In FY 2001-02, boardings had fallen to 13.6 million boardings¹. This is a 15 percent drop in five years. During the 1997-98 fiscal year alone, system ridership declined by more than 7 percent from the previous year.

Figure 3.3 illustrates annual passenger boardings and annual hours for Sun Tran during the last ten years. For most of this time, there was a gradual increase in annual revenue hours. However, annual ridership declined during this period. Since 2000, service hours have declined as has ridership. Part of the reason for the decline in ridership occurring at the same time as service increases could relate to the types of areas being served by new routes or route extension. In the 1990s, Sun Tran implemented through IGAs new service in low-density, non-urban areas outside the Tucson city limits. Meanwhile, at the same time, service hours were being reduced on routes operating in the urban area.

¹ For calendar year 2002, Sun Tran's annual boardings were estimated at 14.5 million (source City of Tucson staff).

Figure 3.2 – Annual Sun Tran Ridership² (Source: Sun Tran)

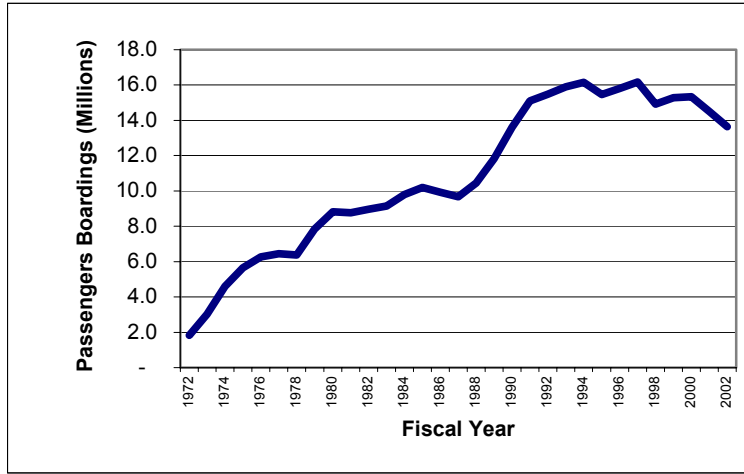
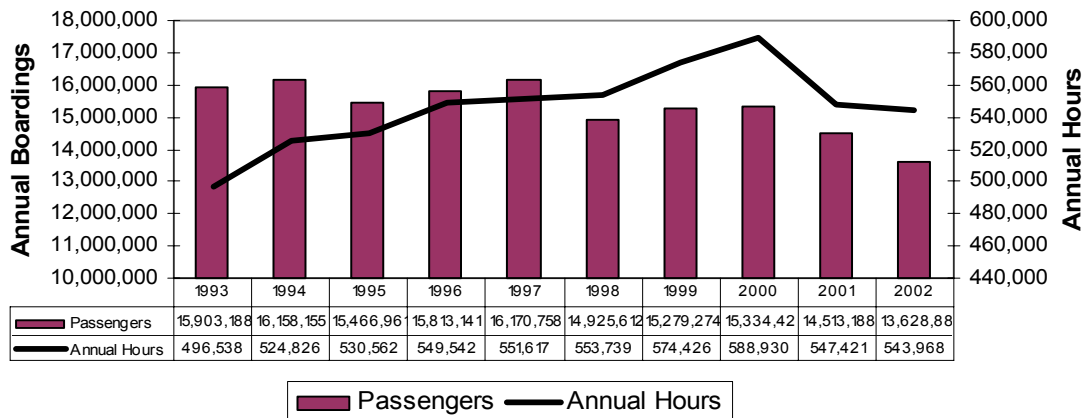
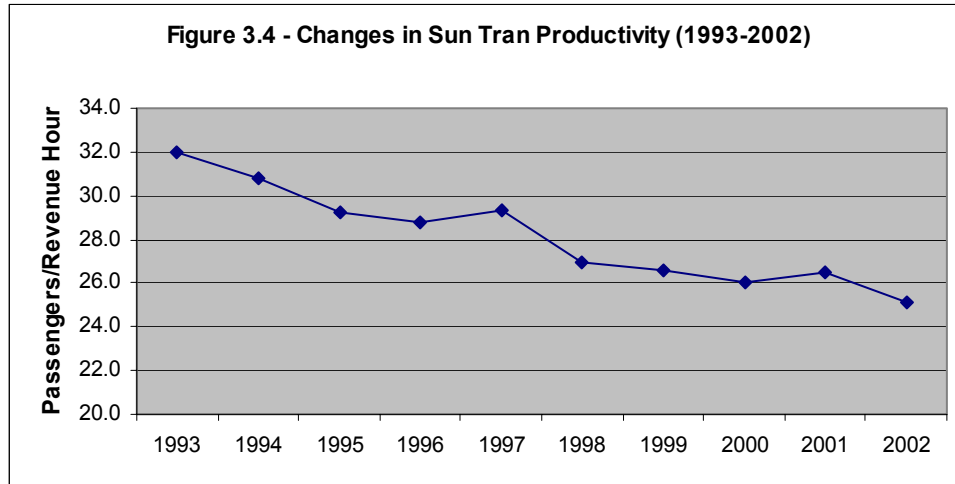


Figure 3.3 - Sun Tran Service Levels and Ridership (1993-2002)



With the decline in ridership exceeding the rate of decline in service hours, a significant loss in overall productivity has resulted for the Sun Tran system. As noted in Figure 3.4, productivity has declined from 32 passengers per revenue hour in 1993 to less than 26 passengers per hour in 2002.

² Source: Sun Tran Annual Ridership Summaries.



This decline in Sun Tran ridership could be attributed to a number of factors, including:

- For ridership declines occurring since 2000, reduction in hours is one factor. Total hours declined from 574,000 operated in FY1999 to 544,000 in FY2002. This represents a 5.5-percent reduction in service hours. Most significantly, Sun Tran has been unable to respond to community growth.
- The lasting impacts of the strike by represented Sun Tran employees during 2001.
- Reductions in express services to major employers, especially Raytheon.
- Elimination of Student and other Youth cash fares and Medium Income monthly passes in July 2000.
- Construction of new parking facilities at the University of Arizona, which have the effect of making public transportation less competitive with private autos.
- A lack of funding for marketing and public education programs. This has led to a lessened awareness of Sun Tran services in the community, as well as a declining public image for transit services.

At the same time, costs per unit of service operated have increased more rapidly than inflation. Much of this can be attributed to wage inflation among bargaining unit employees. Table 3.4 illustrates the growth in Sun Tran operating costs during the past seven years.

Table 3.4

Sun Tran Operating Cost Structure (Source: Sun Tran)							
	Actual FY 95-96	Actual FY 96-97	Actual FY 97-98 ¹	Actual FY 98-99 ²	Actual FY 99-00 ³	Actual FY 00-01	Actual FY 01-02 ⁴
Service Miles	7,911,170	7,979,051	7,820,235	7,991,102	8,021,791	7,771,459	7,590,767
Expenditures	\$22,723,934	\$23,392,349	\$24,633,354	\$27,323,068	\$29,219,579	\$30,760,320	\$30,785,816
Total Bargaining Unit Wages	\$13,022,701	\$13,301,081	\$13,690,339	\$15,855,270	\$16,942,480	\$17,790,404	\$17,993,933
Total Administrative Wages	\$2,556,660	\$2,731,583	\$2,883,406	\$3,252,754	\$3,507,789	\$3,759,486	\$3,786,290
Combined Salary & Wage Costs	\$15,579,361	\$16,032,664	\$16,573,745	\$19,108,025	\$20,450,269	\$21,549,890	\$21,780,223
Percent of Total Expenditures	69%	69%	67%	70%	70%	70%	71%
Diesel Fuel	\$1,679,570	\$1,786,960	\$1,381,708	\$1,127,096	\$1,562,872	\$1,812,574	\$1,018,105
CNG	\$195,852	\$213,799	\$525,311	\$673,782	\$674,658	\$935,338	\$1,007,334
Total Combined Fuel Costs	\$1,875,422	\$2,000,759	\$1,907,019	\$1,800,878	\$2,237,530	\$2,747,912	\$2,025,439
Bus Parts	\$1,741,456	\$1,856,334	\$1,871,681	\$2,117,986	\$2,158,349	\$1,882,178	\$1,909,865
Tires/Wheels	\$421,068	\$380,000	\$380,000	\$365,000	\$376,753	\$365,000	\$299,516
Lubricants	\$59,933	\$82,581	\$76,574	\$87,695	\$86,828	\$86,027	\$72,360
Total Maintenance	\$2,222,457	\$2,318,915	\$2,328,255	\$2,570,681	\$2,621,930	\$2,333,205	\$2,281,741
Facility Maintenance	\$1,229,172	\$1,466,989	\$1,422,361	\$1,544,911	\$1,636,796	\$1,738,039	\$2,113,865
Other Costs	\$1,805,935	\$1,566,782	\$2,391,429	\$2,276,789	\$2,273,054	\$2,391,274	\$2,584,548

1. B.U. Contract 6½-day strike service reduction.
2. Admin. Comp. implemented B.U. Contract.
3. HB 2565 Staff (8) PT to FT.
4. Twelve-day strike.

Sun Tran has implemented four fare increases since 1990, with the most recent occurring in July 2000. Table 3.5 summarizes the fare structure following each fare increase since 1980.

Fixed Route Services

Seven routes – 3, 4, 6, 8, 9, 11, and 16 – account for about 60 percent of all boardings on the Sun Tran system. Figure 3.5 illustrates the overwhelming impact these services have on Sun Tran's reported ridership. Tables 3.6 through 3.8 summarize the operational characteristics and service change history of each Sun Tran route.

Table 3.5

Sun Tran Fare Increase History (Source: Sun Tran)

	Prior Years	June 1980	July 1985	July 1992	July 1994	January 1997	July 2000
Cash Fare Categories							
Adult/Full Fare	\$0.35	\$0.50	\$0.60	\$0.75	\$0.75	\$0.85	\$1.00
Student Fare	0.20	0.30	0.40	0.50	0.50	0.60	Eliminated
Reduced Income/Economy Fare	0.15	0.20	0.25	0.25	0.30	0.35	0.40
Routes 180/186 - Aero Park Express Surcharge	—	—	—	—	0.25	0.25	2.00
Monthly Passes							
Adult/Full	\$12.00	\$17.00	\$20.00	\$20.00	\$22.00	\$24.00	\$28.00
Student/Medium Income	8.00	12.00	14.00	14.00	14.75	16.00	Eliminated
Reduced Income/Economy	4.00	5.00	8.50	8.50	9.50	10.50	12.00
Twenty-Ride							
Adult/Full	—	—	\$12.00	\$10.00	\$12.00	\$14.00	Replaced by Stored Value Pass
Student/Medium Income	—	—	—	7.00	8.00	9.50	
Reduced Income/Economy	—	—	—	4.00	5.00	6.00	

Figure 3.5 Summary Breakdown of Sun Tran Ridership in FY 2002 by Route (Source: Sun Tran)

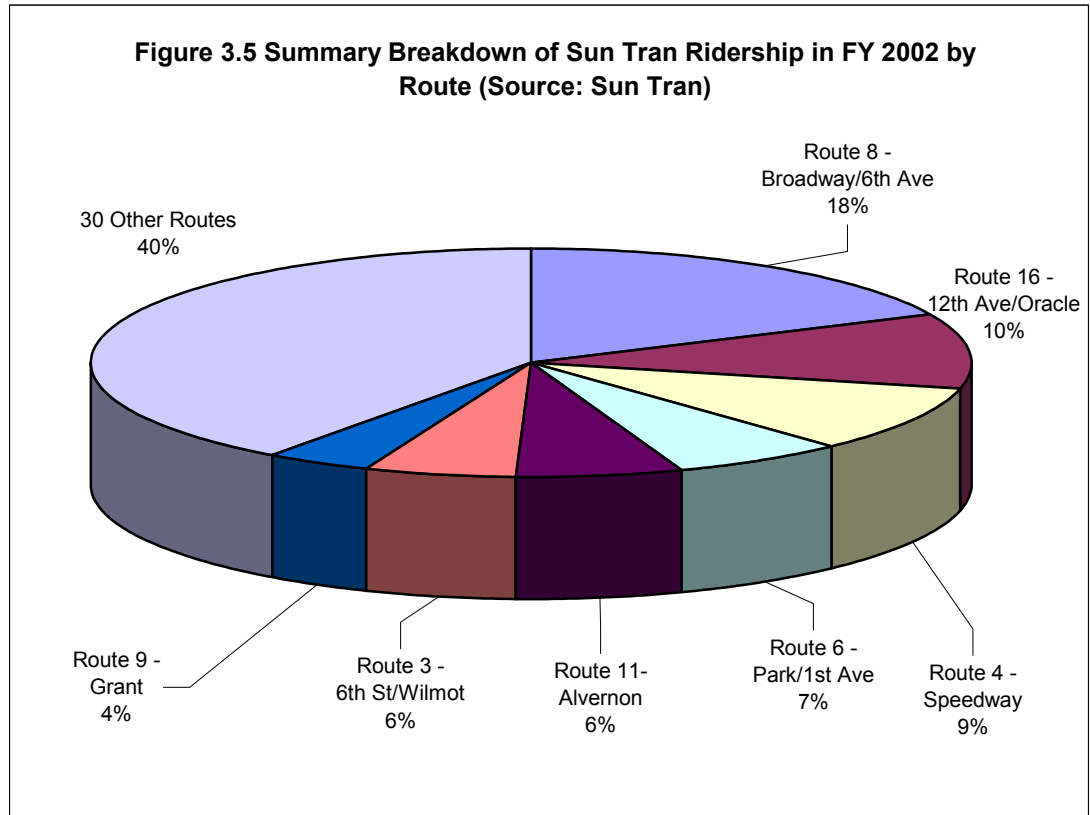


Table 3.6

Sun Tran Span of Service and Headways

		Headways					Weekdays		Saturdays		Sundays	
		Peak	Mid	Night (after 8:30)	Sat	Sun	First	Last	First	Last	First	Last
1	Glenn/Swan	30	30	30	60	60	5:59	21:55	6:05	18:51	8:05	17:55
2	Cherrybell/Country Club	30	30	—	60	60	5:12	20:25	7:05	18:55	8:14	18:55
3	6 th St/Wilmot	15/30	30	60	60	60	4:58	22:50	5:04	20:55	7:46	19:14
4	Speedway	10/20	15/30	30/60	30/60	30/60	5:03	22:41	7:05	19:25	8:05	19:25
5	Pima St/W Speedway	30	30	—	60	60	5:30	19:34	5:19	19:26	6:19	19:26
6	S Park/N 1 st Ave	15/30	30	—	30/60	60	4:37	20:36	6:39	19:50	6:20	19:36
7	22 nd St	30	30	60	60	60	6:00	22:15	7:07	18:55	7:07	18:48
8	Broadway/6 th Ave	10/20	10/20	30	15/30	30	4:33	23:48	5:39	21:07	6:09	20:37
9	Grant	30	30	60	60	60	4:45	21:44	6:08	19:36	7:00	18:50
10	Flowing Wells	30	30	60	60	60	5:19	23:04	7:00	19:55	7:17	19:55
11	Alvernon	15/30	15/30	60	30/60	30/60	5:15	22:10	6:00	20:13	8:00	20:13
15	Campbell	15/30	15/30	30	60	60	5:34	22:07	6:38	19:18	9:38	19:17
16	12 th Ave/Oracle	15	15/30	30	30/60	30	5:04	22:50	5:37	21:28	5:37	20:23
17	Country Club/29 th St	30	30	—	60	60	5:24	19:44	6:28	19:39	8:15	19:39
19	Stone	30	30	30	30	60	5:59	21:19	7:32	19:21	7:32	20:21
20	Grant/Ironwood Hills	30	30	—	—	—	6:30	18:24	—	—	—	—
21	Congress/Silverbell	30	30	—	30	30	6:05	18:56	6:05	19:20	6:58	19:20
22	Grande	30	30	—	60	60	5:33	19:25	8:00	18:55	7:18	18:18
23	Mission Rd	30	30	30	60	60	5:20	21:03	7:20	19:32	8:00	18:55
24	12 th Avenue	30	30	30	60	60	4:50	21:35	7:43	21:13	7:52	20:52
26	Benson Hwy	30	30	—	60	60	5:00	20:22	6:30	19:30	8:00	19:59
27	Midvale Park Rd	30	30	—	60	60	5:27	21:10	6:29	19:45	7:50	19:01
29	Valencia	30	30	60	60	60	5:40	21:16	6:12	21:22	8:05	18:20
34	Craycroft	30	30	—	60	60	5:44	19:23	7:14	19:05	8:32	18:05
37	Pantano Rd	30	30	—	—	—	5:34	19:35	—	—	—	—
50	Ajo Way	30	30	60	30	30	5:02	21:09	6:47	20:12	7:47	17:57
61	La Cholla	30	30	—	60	60	5:36	19:31	6:07	19:00	6:07	18:00
162	Oro Valley Express	30	—	—	—	—	5:50	19:10	—	—	—	—
81	Tanque Verde Express	30	—	—	—	—	6:38	17:49	—	—	—	—
82	Broadway Express	10	—	—	—	—	6:50	17:55	—	—	—	—
83	Golf Links Express	1 trip	—	—	—	—	6:58	17:41	—	—	—	—
102	Ina Rd Express	20	—	—	—	—	6:34	17:55	—	—	—	—
103	Oldfather Express	30	—	—	—	—	6:32	17:54	—	—	—	—
105	Sunrise Express	1 trip	—	—	—	—	6:21	18:33	—	—	—	—
106	Swan Express	1 trip	—	—	—	—	7:07	17:54	—	—	—	—
180	AeroPark Speedway Exp	15/60	—	—	—	—	5:40	17:49	—	—	—	—
186	AeroPark Ina Express	60	—	—	—	—	5:33	18:41	—	—	—	—

Source: Sun Tran schedules effective fall 2002

Table 3.7

Sun Tran Route Operating Statistics										
		Annual Boardings	Annual Service Hours	Annual Service Miles	Annual Operating Expense	Annual Operating Revenues	Pass. per Hour	Pass. per Mile	Cost per Pass.	Rev./ Cost
1	Glenn/Swan	345,895	17,291	235,361	\$983,667	\$187,507	20.0	1.47	\$2.84	19.1%
2	Cherrybell/Country Club	262,615	14,956	207,705	\$846,268	\$124,525	17.6	1.26	\$3.22	14.7%
3	6 th St/Wilmot	759,998	33,245	469,515	\$1,879,232	\$405,207	22.9	1.62	\$2.47	21.6%
4	Speedway	1,266,689	41,850	569,377	\$2,332,304	\$635,728	30.3	2.22	\$1.84	27.3%
5	Pima St/W Speedway	272,425	18,597	246,541	\$1,033,405	\$148,043	14.6	1.10	\$3.79	14.3%
6	S Park/N 1 st Ave	889,200	32,409	428,816	\$1,810,546	\$444,535	27.4	2.07	\$2.04	24.6%
7	22 nd Street	522,832	17,801	251,788	\$1,012,510	\$263,966	29.4	2.08	\$1.94	26.1%
8	Broadway/6 th Ave	2,472,131	66,781	844,587	\$3,616,792	\$1,125,221	37.0	2.93	\$1.46	31.1%
9	Grant	530,942	19,736	248,920	\$1,074,000	\$265,445	26.9	2.13	\$2.02	24.7%
10	Flowing Wells	362,105	16,256	187,216	\$864,717	\$170,617	22.3	1.93	\$2.39	19.7%
11	Alvernon	828,098	34,375	468,960	\$1,928,716	\$392,008	24.1	1.77	\$2.33	20.3%
15	Campbell	447,799	18,874	242,710	\$1,044,420	\$230,096	23.7	1.84	\$2.33	22.0%
16	12 th Ave/Oracle	1,424,180	50,116	650,709	\$2,733,790	\$702,422	28.4	2.19	\$1.92	25.7%
17	Country Club/29 th St	447,933	22,087	342,346	\$1,340,991	\$245,345	20.3	1.31	\$2.99	18.3%
19	Stone	336,570	10,351	111,632	\$539,563	\$165,623	32.5	3.01	\$1.60	30.7%
20	Grant/Ironwood Hills	81,414	5,548	73,770	\$308,141	\$41,255	14.7	1.10	\$3.78	13.4%
21	Congress/Silverbell	137,180	7,991	84,589	\$432,762	\$58,478	17.2	1.62	\$3.15	13.5%
22	Grande	161,057	7,973	85,249	\$414,950	\$75,027	20.2	1.89	\$2.58	18.1%
23	Mission Rd	346,348	13,733	219,039	\$813,032	\$173,540	25.2	1.58	\$2.35	21.3%
24	12 th Avenue	200,790	6,508	90,227	\$367,602	\$94,038	30.9	2.23	\$1.83	25.6%
26	Benson Hwy	200,376	7,005	107,280	\$573,029	\$94,240	28.6	1.87	\$2.86	16.4%
27	Midvale Park Rd	137,887	10,464	155,309	\$603,792	\$64,794	13.2	0.89	\$4.38	10.7%
29	Valencia	295,333	10,704	171,569	\$633,833	\$146,377	27.6	1.72	\$2.15	23.1%
34	Craycroft	384,654	17,683	254,766	\$1,010,726	\$196,539	21.8	1.51	\$2.63	19.4%
37	Pantano Rd	94,282	8,129	138,978	\$495,414	\$50,301	11.6	0.68	\$5.25	10.2%
50	Ajo Way	115,611	6,952	67,606	\$336,473	\$47,053	16.6	1.71	\$2.91	14.0%
61	La Cholla	65,615	5,053	123,424	\$455,034	\$27,155	13.0	0.53	\$6.93	6.0%
162	Oro Valley Express	11,999	1,812	53,988	\$173,519	\$8,999	6.6	0.22	\$14.46	5.2%
81	Tanque Verde Express	14,533	1,251	30,143	\$87,901	\$7,636	11.6	0.48	\$6.05	8.7%
82	Broadway Express	26,730	1,145	38,801	\$122,411	\$11,490	23.3	0.69	\$4.58	9.4%
83	Golf Links Express	10,407	1,022	11,953	\$35,595	\$4,653	10.2	0.87	\$3.42	13.1%
102	Ina Rd Express	29,079	2,278	62,176	\$185,238	\$15,118	12.8	0.47	\$6.37	8.2%
103	Oldfather Express	11,624	1,216	35,696	\$105,511	\$6,805	9.6	0.33	\$9.08	6.4%
105	Sunrise Express	3,103	518	10,284	\$33,699	\$1,553	6.0	0.30	\$10.86	4.6%
106	Swan Express	2,494	756	6,834	\$24,330	\$963	3.3	0.36	\$9.75	4.0%
180	AeroPark Speedway Exp	22,133	2,039	41,760	\$126,636	\$39,801	10.9	0.53	\$5.72	31.4%
186	AeroPark Ina Express	30,579	2,558	68,986	\$189,747	\$57,946	12.0	0.44	\$6.21	30.5%
	Discontinued Routes	41,623	6,908	99,144	\$142,382	\$20,117	6.0	0.42	\$3.42	14.1%
	Totals	13,594,265	543,968	7,537,754	\$30,712,679	\$6,750,167	25.0	1.80	\$2.26	22.0%

Source: Sun Tran operations FY 2001-2002

Table 3.8

Sun Tran Ridership Changes FY 1999 to FY 2002 Comparison of the First Seven Months of Each Fiscal Year					
Route	Route Name	Fiscal Year 1998-99	Fiscal Year 2002-03	1999 vs. 2002% Change	Comments
1	University	228,047	250,565	9.9%	Loss of UA family housing at Christopher City - Route 1 combined with Route 30 - Service frequency along Swan increased to operate every 30 minutes.
2	Cherrybell	122,717	176,622	43.9%	Route extended to Laos TC
3	6 th St/Wilmot	564,246	471,083	-16.5%	Increase in charter schools - loss of Student fares.
4	Speedway	839,872	770,376	-8.3%	Route truncated at Golf Links Rd
5	Pima/West Speedway	142,705	201,723	41.4%	Route restructured to operate along Speedway to Pima College West, bypassing Downtown Tucson. Route extended to Park Place.
6	South Park/North 1 st	495,507	603,621	21.8%	Route extended to Laos TC & Airport
7	22 nd St	305,852	338,936	10.8%	No changes.
8	Broadway	1,639,873	1,527,998	-6.8%	Tanque Verde branch added to Route 5. Route extended to Harrison
9	Grant	396,740	327,117	-17.5%	Cloud Road and Wrightstown legs eliminated. Service rerouted off 9th Street onto 6 th Street. Peak service frequency reduced from 15 to 30.
10	Romero	201,008	227,595	13.2%	Service rerouted to provide two-way service on Flowing Wells between Wetmore and Roger.
11	Alvernon	550,340	504,349	-8.4%	No changes.
12	Anita	70,145	0	-100.0%	Route eliminated and replaced with bi-directional operation of Routes 21 and 22.
14	29 th /Golf Links	163,744	0	-100.0%	Route eliminated. Service east of Country Club combined with Route 17. Stella deviation eliminated.
15	Campbell	304,853	294,598	-3.4%	No changes.
16	12 th Ave/Oracle	907,625	853,899	-5.9%	Service south of the Laos Transit Center replaced by Route 24. Magee Road extension eliminated.
17	Country Club	153,596	310,769	102.3%	Route 17 combined with Route 14. Route removed from Hearthstone and extended to Harrison along 29 th Street.
19	Stone	257,158	222,620	-13.4%	No changes.
20	W Grant/Ironwood Hills	38,839	65,370	68.3%	Service extended to Sterling University Villa and frequency increased to operated every 30 minutes.

Table 3.8 Continued

Sun Tran Ridership Changes FY 1999 to FY 2002 Comparison of the First Seven Months of Each Fiscal Year					
Route	Route Name	Fiscal Year 1998-99	Fiscal Year 2002-03	1999 vs. 2002% Change	Comments
21	Congress	39,606	92,767	134.2%	Route restructured to operate a bi-directional alignment along Grande and Silverbell Rd.
22	Grande	127,261	105,567	-17.0%	No changes.
23	Santa Clara/Midvale	265,998	225,056	-15.4%	Service rerouted to operate along Irvington instead of Ajo Way.
24	12 th Avenue	180,836	123,108	-31.9%	Service rerouted to operate along S 12 th Ave instead of Nogales Hwy.
25	E Bilby	36,480	0	-100.0%	Route eliminated. Portions are now served by Route 6.
26	Benson Hwy.	163,885	124,341	-24.1%	No changes.
27	Midvale Park Rd	63,386	107,065	68.9%	Service rerouted to operate along Santa Clara and S 12 th , serving PCC Desert Vista Campus.
28	West Speedway	23,949	0	-100.0%	Route eliminated. West Speedway now served by Route 5.
29	Valencia	136,414	214,048	56.9%	No changes.
30	Swan	57,329	0	-100.0%	Route 30 combined with Route 1.
34	Craycroft	237,663	258,375	8.7%	No changes.
37	Pantano Rd	8,353	83,589	900.7%	Route extended along Pantano to Pima College East and frequency increased to operate every 30 minutes.
50	Ajo/Mission	72,469	72,078	-0.5%	No changes.
61	La Cholla	0	54,846	n/a	New route linking Foothills Mall with Tohono Tadaí TC via La Cholla and Wetmore.
81	Tanque Verde Express	0	9,263	n/a	New route operating limited stop express service previously included in Route 9.
82	Broadway Express	0	10,076	n/a	New route operating limited stop express service previously included in Route 8.
83	Golf Links Express	0	19,708	n/a	New route operating limited stop express service previously included in Route 14.
102	Ina Road Express	0	7,416	n/a	Service extended to University Hospital.
103	Oldfather Express	17,396	16,367	-5.9%	No changes.
105	Sunrise Express	9,297	6,736	-27.5%	One AM and one PM trip eliminated.
106	Swan Express	4,525	1,645	-63.6%	New route linking Swan/Sunrise with Downtown Tucson.
162	Oro Valley Express	0	2,148	n/a	New route operating limited stop express service previously included in Route 16.

Table 3.8 Continued

Sun Tran Ridership Changes FY 1999 to FY 2002 Comparison of the First Seven Months of Each Fiscal Year					
Route	Route Name	Fiscal Year 1998-99	Fiscal Year 2002-03	1999 vs. 2002% Change	Comments
180	Aero Park Speedway Express	0	9,484	n/a	Three of the four City "Raytheon" routes combined to make one - paid by Raytheon
186	Aero Park Ina Express	37,153	18,475	-50.3%	97 reflects total ridership for all four "Raytheon" Express Routes - 2002 one Route
200	Downtown	5,661	0	-100.0%	Route eliminated.
250	Prince Limited	7,957	0	-100.0%	Route eliminated.
Total		8,878,485	8,709,399	-1.9%	

Source: Sun Tran Staff

Peer Systems Comparison

Generally, Sun Tran services compare favorably with those offered in other communities of similar size and demographic makeup. Tables 3.9A and 3.9B compare Sun Tran operations with the fixed route services offered in 12 peer communities. Communities were included that are roughly the same size as Pima County, relatively removed from major urban centers and developed after the advent of automobiles. Eugene, Oregon was included because it also includes a major public university. In each case, service levels throughout the entire metropolitan area, whether or not that entire area is served by public transit services, were compared.

Five factors were considered in this evaluation:

- Boardings per Hour
- Service Hours per Capita
- Boardings per Capita
- Cost per Hour
- Cost per Boarding

Each of these factors is a commonly accepted measure of transit system performance. Passengers per hour and cost per hour are normally used to measure systems' ability to deliver cost effective service and to use that service to generate ridership. Service hours per capita measures the amount of service provided relative to a community's size while boardings per capita measures public acceptance of the transit system

Table 3.9A

Peer System Comparison - Key Service Characteristics ¹						
	Population ²	Operating Expense	Passenger Miles	Unlinked Trips	Vehicle Revenue Hours	Peak Vehicles
Oklahoma City, OK MSA	1,083,346	11,273,911	16,519,234	4,331,245	177,035	60
Fresno, CA MSA	922,516	21,927,659	42,308,345	12,419,412	295,265	84
Birmingham, AL MSA	921,106	9,462,718	13,076,651	2,640,505	139,860	64
Tucson, AZ MSA³	843,746	29,395,644	65,471,221	13,594,265	532,792	148
Tulsa, OK MSA	803,235	9,827,050	16,923,784	3,086,690	195,690	70
Omaha, NE--IA MSA	716,998	14,198,402	15,735,093	4,275,553	281,276	104
Albuquerque, NM MSA	712,738	17,124,862	20,366,592	6,224,264	242,474	104
Knoxville, TN MSA	687,249	7,687,766	5,245,532	1,908,750	168,350	60
El Paso, TX MSA	679,622	24,173,993	60,432,872	13,574,440	514,530	119
Bakersfield, CA MSA	661,645	11,015,959	26,824,565	6,238,271	215,681	60
Colorado Springs, CO MSA	516,929	7,023,773	14,643,498	3,668,889	139,522	43
Spokane, WA MSA	417,939	24,931,229	35,088,446	8,512,225	356,977	115
Eugene-Springfield OR	322,959	20,097,039	34,792,386	8,076,448	274,939	93

1 Peer systems statistics from 2000 National Transit Database reports.
2. Population statistics based upon the 2000 census for urban areas.
3. Sun Tran ridership statistics from agency reports. Other data from 2000 National Transit Database reports.

Table 3.9B

Peer System Comparison - Key Performance Items											
	Passengers per Revenue Hour	Rank	Service Hours per Capita	Rank	Boardings per Capita	Rank	Cost per Hour	Rank	Cost per Boarding	Rank	Overall Rank
El Paso, TX MSA	26.4	4	0.76	3	20.0	3	\$46.98	2	\$1.78	3	1
Eugene-Springfield OR	29.4	2	0.85	2	25.0	1	\$73.10	12	\$2.49	6	2
Bakersfield, CA MSA	28.9	3	0.33	7	9.4	6	\$51.08	6	\$1.77	2	3
Fresno, CA MSA	42.1	1	0.32	8	13.5	5	\$74.26	13	\$1.77	1	4
Tucson, AZ MSA	25.5	7	0.63	4	16.1	4	\$55.17	7	\$2.16	5	5
Colorado Springs, CO MSA	26.3	5	0.27	9	7.1	8	\$50.34	4	\$1.91	4	6
Spokane, WA MSA	23.8	9	0.85	1	20.4	2	\$69.84	10	\$2.93	9	7
Albuquerque, NM MSA	25.7	6	0.34	6	8.7	7	\$70.63	11	\$2.75	8	8
Omaha, NE--IA MSA	15.2	12	0.39	5	6.0	9	\$50.48	5	\$3.32	11	9
Oklahoma City, OK MSA	24.5	8	0.16	12	4.0	10	\$63.68	8	\$2.60	7	10
Tulsa, OK MSA	15.8	11	0.24	11	3.8	11	\$50.22	3	\$3.18	10	11
Knoxville, TN MSA	11.3	13	0.24	10	2.8	13	\$45.67	1	\$4.03	13	12
Birmingham, AL MSA	18.9	10	0.15	13	2.9	12	\$67.66	9	\$3.58	12	13
Average of Peer Systems	25.0		0.4		10.3		\$60.75		\$2.63		

Overall, Sun Tran exceeded the average performance of its peers for every performance measure but one – passengers per hour. In looking at overall rankings (average of the measures), this placed Sun Tran fifth among the 13 systems that were compared. In addition, transit systems in the Tucson area provide 50 percent more service hours per capita than the average of its peer communities. This contrasts with the popular perception that

Tucson's public transportation system is significantly smaller than most communities of its size.

Passenger Boarding Activities

Passenger boarding activity is dispersed throughout the Sun Tran system, with highest levels focused on the region's urbanized core. Apart from the transit centers, the University of



Arizona Mall records the largest number of average weekday boardings of any Sun Tran stop. Throughout their length, the Speedway and Broadway corridors experience strong passenger activity. Other streets, most notably Campbell, Oracle, 6th Avenue, and Alvernon, have multiple stops with strong passenger activity.

The top 200 boarding locations are depicted on Figure 3.6. Table 3.10 summarizes passenger activity at the 40 stop locations with the highest number of boarding passengers.

While the many low income individuals live south of 22nd Street or west of the I-10 freeway, only two (Kino Hospital and 6th/Veterans) of the 40 most active stops are located in the south side. Pima College West Campus is the single high activity stop located west of the freeway. The other 37 stops are all on the north or east side of Tucson.

Transfer Activity

Transfer activity was last reviewed during a 1997 system wide performance evaluation. The largest transfer movements occurred between Route 8 and Routes 4, 11, and 16.

Van Tran

Van Tran provides complementary ADA paratransit service within the Tucson city limits and in portions of Pima County. Service is offered through a contract with a private provider who operates out of a facility that is owned by the City. Table 3.11 summarizes recent Van Tran operating and cost trends. As noted by the table, ridership has increased at moderate levels within the six-year reporting period. In addition, peak vehicles available for the service have remained flat at 57 during this period. However, Van Tran will be expanding service. This expansion is discussed further in Section 7 of this Technical Memorandum.

Figure 3.6 – Major Boardings (GIS map)

Table 3.10

**Major Sun Tran Boarding Locations
(Source Sun Tran Ridership Data for
FY 2001-2002)¹**

Rank	Location	Ons	Offs
1	U of A Mall	260	297
2	Alvernon/Grant	209	65
3	Stone/Speedway	195	176
4	Pima College West Campus	187	91
5	6 th St/Tucson High B	187	64
6	Speedway/Alvernon	181	135
7	Speedway/Olive Underpass	160	35
8	Speedway/Alvernon	152	171
9	Campbell/Speedway	149	36
10	Campbell/Prince	137	35
11	Speedway/Campbell - WB	134	152
12	Speedway/Campbell - EB	132	96
13	Stone/Speedway	131	74
14	Wilmot/Broadway	130	25
15	Kino Hospital	129	119
16	Alvernon/Broadway	124	133
17	Speedway/Swan	123	62
18	Alvernon/Broadway	122	128
19	Campbell/Ft. Lowell	121	28
20	Speedway/6th Avenue	119	29
21	1 st Ave/Ft. Lowell	118	30
22	6 th Ave/Veterans	116	26
23	Alvernon/Speedway	116	76
24	Church/Pennington	116	45
25	Broadway/Alvernon	115	107
26	22 nd St/Craycroft	114	48
27	1 st Ave/Grant	113	65
28	Alvernon/Speedway	111	120
29	Broadway/Alvernon	109	58
30	Speedway/Craycroft	109	44
31	Grant/Alvernon	108	152
32	Irvington/Campbell	104	34
33	Broadway/Wilmot	96	37
34	Speedway/Kolb	95	30
35	Oracle/Glenn	95	86
36	Oracle/Glenn	94	66
37	Wilmot/Broadway	94	119
38	Broadway/Campbell	90	43
39	Oracle/Roger	90	34
40	22 nd St/Kolb	89	20
1. Excludes Transit Centers			

Table 3.11

Van Tran Operating History ¹						
	1997	1998	1999	2000	2001	2002
Operating Expense	\$4,930,844	\$4,808,463	\$5,239,104	\$5,886,854	\$6,174,186	\$6,450,628
Annual Boardings	293,745	295,940	316,201	317,490	309,848	313,876
Annual Revenue Hours	144,256	143,942	148,383	147,534	148,889	154,668
Peak Vehicles	57	57	57	57	57	57

1. Sources: Van Tran staff – interview at offices. Data is for fiscal years; will differ from information reported in NTD

T.I.C.E.T. (Tucson Inner City Express Transit)

The T.I.C.E.T. circulator is one element of the City of Tucson's Transportation Enterprise Area Management (TEAM) initiative. TEAM is charged with, "Managing parking and transportation to enhance the business, residential and government components within the City Center." In this capacity, TEAM manages a number of parking transportation projects including on and off street parking programs, as well as the T.I.C.E.T. circulator.

T.I.C.E.T. is designed to move people easily between many different downtown destinations and linking long-term parking facilities on the fringes of the downtown with major employment and cultural attractions. Service is funded through parking revenues including meters, citations, off-street parking charges, and on-street parking permit sales.

T.I.C.E.T. operates three routes, transporting nearly 600 daily riders, in and around the downtown. All T.I.C.E.T. services are offered at no charge to riders. All T.I.C.E.T. routes serve the Ronstadt Transit Center.

The Yellow Route serves the north and west sides of the downtown including the Federal Courthouse, City Hall, Pima County Administration Building, and the Tucson Museum of Art. Average weekday ridership during September 2002 was about 265 riders.

The Blue Route serves the east side of the downtown including the YMCA, Tucson Convention Center, Temple of Music and Art, the Children's Museum, Armory Park, and the Congress Street Retail Area. Average weekday ridership during September 2002 was about 163 riders.

The Red Route serves neighborhoods west of the Downtown that are not served by Sun Tran. It links Bonita Avenue and the Community Resource Center with downtown, and destinations along Congress Street. Average weekday ridership during September 2002 was about 165 riders.

Most routes operate every 15 to 20 minutes, weekdays only. There is an express shuttle on the yellow routes every morning between 7 and 9 a.m. and every afternoon between 4 and 6 p.m.

Table 3.12 summarizes ridership trends since the service began operation in 2000.

Table 3.12

T.I.C.E.T. Ridership Trends (In Calendar Years)			
	2000	2001	2002 Jan-Sept
Annual Boardings	18,739	126,903	92,839

Pima Rural Transit

Fixed Route Services

Pima County's public transportation services were the outgrowth of a limited transit system that was provided by Project PPEP. It has grown into a network of four routes that serve communities outside the city limits of Tucson. Each of these routes is illustrated on the regional system map.

- **Ajo Services** link the Town of Ajo with Tucson. This route operates one trip in each direction on Mondays, Wednesdays, and Fridays. Daily service is also provided between Ajo and Why.
- **San Xavier Services** link the San Xavier Mission and clinic with the Laos Transit Center via Mission Road. Service operates approximately every one hour, Monday through Saturday.
- **Tucson Estates Services** link neighborhoods surrounding Tucson Estates with the Laos Transit Center, operating via Irvington Road. Service runs about every 65 minutes, weekdays only.
- **Marana Services** link Ina Road with Marana and surrounding neighborhoods, including Green Acres and Rillito. Service generally operates as a fixed-route community circulator. Route deviations are provided to elderly persons and persons with disabilities on a next-day reservation basis. Services connect with, but are not coordinated with Sun Tran services at Ina/Thornsdale. Four trips per day operate in each direction, Monday through Friday only.

Table 3.13 summarizes recent service delivery and ridership trends on each of the Pima County services. No information on boarding activity by bus stop location is available.

Table 3.13**Rural Fixed Routes Operated by Pima County (2001-2002)**

	Annual Boardings	Annual Revenue Hours	Annual Revenue Miles	Annual Operating Expense	Annual Operating Revenues	Pass. per Hour	Pass. per Mile	Cost per Pass.	Rev. to Cost
Ajo to Tucson	4,241	1,013	41,080	\$54,086	\$21,195	4.2	0.10	\$12.75	39%
Ajo Dial-A-Ride	23,003	4,286	40,200	\$149,991	\$13,477	5.4	0.57	\$6.52	9%
Marana	9,252	3,060	85,375	\$99,266	\$6,121	3.0	0.11	\$10.73	6%
Tucson Estates	8,000	2,380	50,800	\$68,901	\$3,860	3.4	0.16	\$8.61	6%
San Xavier	11,551	3,070	61,400	\$87,157	\$7,369	3.8	0.19	\$7.55	8%
Total Pima County Services	56,047	13,809	278,855	\$459,401	\$52,022	4.1	0.20	\$8.20	11%

Based upon data provided by Pima County authorities. The sum of reported ridership on individual Pima Rural Transit routes varies slightly from the fiscal year total reported in Table 3-1.

Special Needs Transportation

Pima County provides complementary ADA paratransit services for its Ajo, San Xavier, and Tucson Estates routes. In addition, paratransit services are available in some parts of unincorporated Pima County that surround the Tucson City limits. In 2001, 68,761 trips were provided at a cost of approximately \$1.47 million³.

Pima County also reimburses the City of Tucson for ADA paratransit trips outside Tucson's city limits that are provided by Van Tran. Most often, these trips are provided to or from locations in unincorporated Pima County that are within ¾ mile of a Sun Tran bus route. Reimbursements total about \$267,500 per year for FY 2001-2002.⁴

University of Arizona**CatTran**

CatTran is a fare-free/University-run shuttle that offers both on-campus and express service to off-campus lots (those that require University of Arizona parking permits). While operating on-campus the service is available to anyone. Service off-campus is available only to those affiliated with the University (students, faculty, and staff). Figure 3.7 identifies CatTran ridership during a three-year period.

A key component of the CatTran service is the network of three park-and-ride lots that provide access to the routes serving the campus. Use of these lots is restricted to those holding parking passes issued by the University.

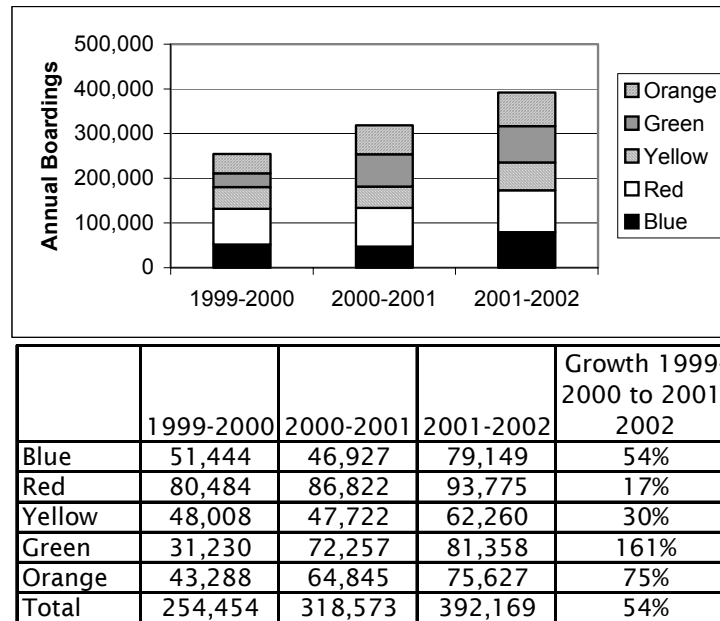
Six routes operate during the school year.

- The **Orange Route** links Prince Road with the Main Campus, operating along Mountain Avenue. It serves two park-and-ride lots. One (named the 9004 Lot) is located near the intersection of Prince and Vine streets. The second (named the 9005 Lot) is located near Mountain and Adelaide. Service runs approximately every 20 minutes. The first morning trip departs the 9004 Lot at 6:45 a.m. The last trip departs the campus at 6:34 p.m.

³ Source: Pima County Special Needs service summary for 2000 and 2001.

⁴ Source: Pima County (March 2003).

Figure 3.7 - CatTran Ridership Trends



- The **Red and Blue Routes** are loop routes connecting major facilities on the north side of the campus. The Red Route operates in a general clockwise direction while the Blue Route serves counterclockwise travel. Service on each route operates about every 15 minutes, with the first trip departing at 6:35 a.m. and the last trip ending at about 6:30 p.m.
- The **Green Route** links the Student Recreation Center, and adjacent parking lot, with University facilities located along 4th Street, the University Street Business District, and 8th Street. It operates as an extended loop, operating in a counterclockwise direction. Service runs about every 20 minutes from 6:30 a.m. until 6:28 p.m.
- The **Yellow Route** links the University's 9002 Park-and-Ride Lot, which is located at the Catalina United Methodist Church, with the CCIT and schools of nursing and education. It operates along Speedway, Mountain, 2nd Street, Cherry, Helen, Mabel, and Campbell. Service runs every 20 minutes between 6:40 a.m. and 6:30 p.m.
- The **USA Express Route** links the USA Building, West of Stone Avenue, with the Main Campus. It operates every 35 minutes between 7 a.m. and 6:05 p.m.

Routes, vehicles, and shuttle stop signs have been color-coded and letter designated for easier identification and route selection. CatTran has experienced strong ridership growth, with 54-percent overall growth in boarding riders during the past three years. This growth is most apparent on the Green Route, which operates on the south side of the University campus, but is apparent on all routes. Information on service hours is available through brochures provided on CatTran vehicles and the campus. The University of Arizona web site also identifies service information.

Boarding and disembarking ridership is dispersed throughout the University area. According to survey data, the School of Education records the highest number of boardings, with about

450 daily boardings distributed among the four routes that serve this facility. Yuma Hall also attracts significant ridership, with about 115 daily boardings on two routes.⁵

Daytime Disability Cart

The University also provides special cart services for permanent or temporarily disabled individuals who are unable to ride the CatTran services to specific campus locations. Four carts operate Monday through Friday from 7:30 a.m. until 5:45 p.m. Designated pickup points are distributed throughout the campus area.

The cart service has proven popular. During the 2001-02 school year, 9,865 rides were provided. Preliminary estimates suggest that ridership will increase by about 8 percent during the current school year.

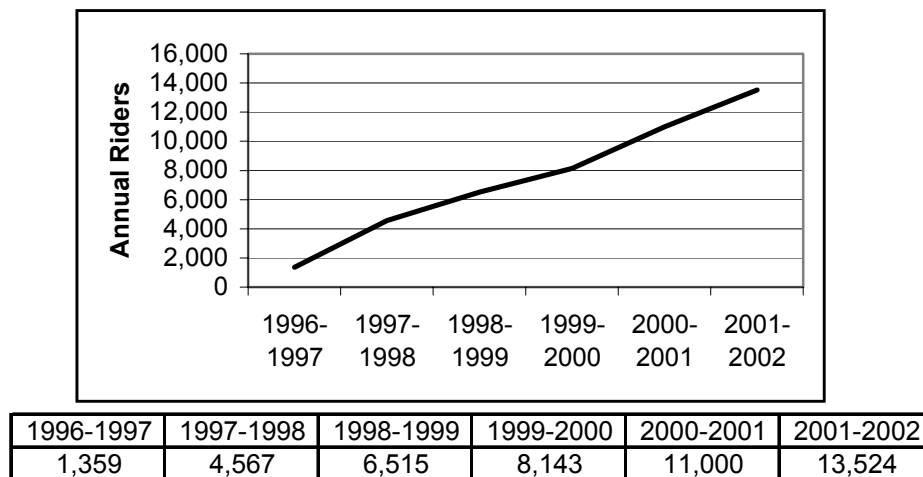
Oro Valley

Coyote Run is owned and operated by the Town of Oro Valley. It provides transportation for Oro Valley residents 62 years of age and older who are transportation dependent and/or eligible under the Americans with Disabilities Act (ADA). Having begun in 1996 as an all-volunteer service, Coyote Run now has a paid staff consisting of a Transit Services Administrator, one lead driver/dispatcher, three full-time drivers, and four part-time drivers.

Coyote Run utilizes a fleet of eight vehicles, with a maximum of six in service at any time. Its hours of operation are from 8 a.m. to 5 p.m. Monday through Friday, excluding Holidays. Riders must call two working days in advance to schedule a ride request. The service operates within three concentric zones, with outer limits on Zone 3. Each zone has a specific fare rate ranging from \$2 to \$6 per round trip.

The majority of all Coyote Run trips are for medical appointments and trips to major malls. Ridership, as illustrated in Figure 3.8, has steadily increased during the past six years due to a high number of elderly residents who are eligible for the service.

Figure 3.8 – Coyote Run Ridership Trends⁶



⁵ Source: PTS Shuttle Data Survey by Stop for 11/5/95 – 11/9/01.

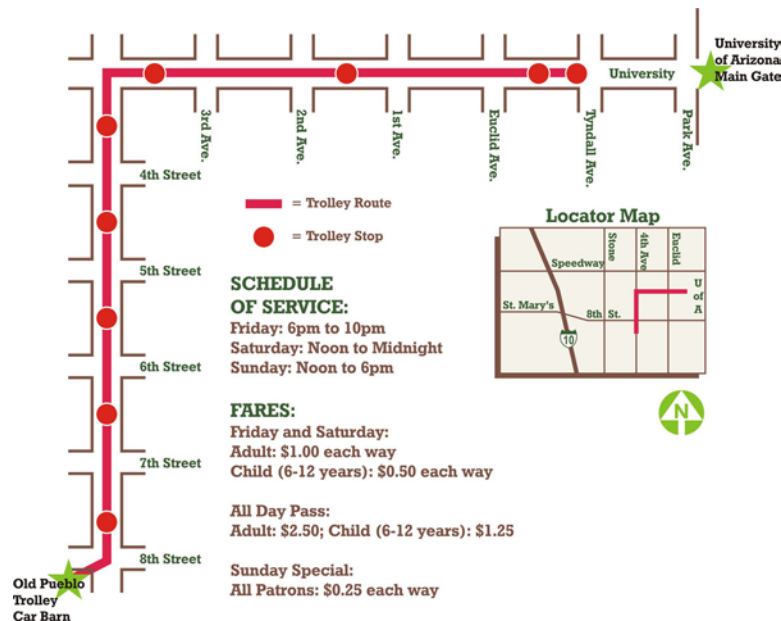
⁶ Source: Coyote Run Staff.

The Coyote Run service is funded using a combination of local, State, and Federal funding sources. Operating expenditures include employee salaries, vehicle fuel, and maintenance services. The operating expenditures are funded in part by the Town’s state-shared revenue portion of the State of Arizona’s Local Transportation Assistance Funds (LTAF). The remaining funding source to operate Coyote Run is appropriated through the Town’s General Fund.

Old Pueblo Trolley

Old Pueblo Trolley emerged from the 1985 University of Arizona Centennial celebration when a group was founded to revive trolley service in Downtown Tucson. Old Pueblo Trolley now operates as a nonprofit organization that includes a transit museum and historic trolley service from the Fourth Avenue Business District to the main gate of the University of Arizona. Service operates on Friday nights, Saturdays, and Sundays. The trolley route, schedule and fares are listed in Figure 3.9.

Figure 3.9 – Old Pueblo Trolley Route and Fares



Other Providers

Greyhound

Greyhound Line serves Tucson, with a bus terminal located between Broadway and Congress streets at the eastern edge of the downtown. Direct service is provided to Phoenix, El Paso, and Nogales with nationwide connections from those locations. At present, about 36 buses per day serve the Tucson area. Table 3.14 illustrates current departure times from the Downtown Tucson Greyhound Depot.

Amtrak

Intercity passenger rail service is available at the Union Pacific depot located in Downtown Tucson. Amtrak provides three trains per week in each direction. On Tuesdays, Thursdays and Saturdays westbound service is scheduled to leave Tucson at 9:57 p.m. The westbound trains serve Maricopa (near Phoenix), Yuma, Palm Springs, Ontario, Pomona, and Los Angeles (Union Station). On Mondays, Thursdays, and Saturdays, eastbound service leaves

Tucson at 9:40 a.m. Major cities served by eastbound trains include El Paso, San Antonio, Houston, New Orleans, Mobile, Tallahassee, Jacksonville, and Orlando.

Table 3.14

Scheduled Greyhound Arrivals and Departures (Effective January 2003)					
Departures			Arrivals		
Phoenix	El Paso	Nogales	Phoenix	El Paso	Nogales
1:25 a.m.	2:05 a.m.	12:01 a.m.	1:15 a.m.	1:50 p.m.	1:15 a.m.
2:05	2:55	2:00	1:55	2:30	4:00
2:45	4:40	5:00	2:40	4:15	4:30
4:10	9:05	8:35	4:30	5:30	5:15
4:25	10:40	10:00	5:30	9:55	7:00
4:40	1:40 p.m.	12:00 p.m.	8:50	2:30 p.m.	8:30
5:25	7:45	2:30	10:25	7:10	11:30
7:10	9:00	6:00	1:25 p.m.	10:30	2:30 p.m.
8:40	11:35	7:00	4:50		7:00
8:55		10:00	6:50		9:00
10:10			7:30		
11:40			9:40		
2:40 p.m.			11:20		
4:10					
7:10					
7:25					
9:10					
11:00					

Private Operators

Several private for-profit enterprises, offer general public transportation to Tucson and Phoenix's Sky Harbor International Airports. For example, the Tucson-Phoenix Shuttle provides several trips a day between Tucson and Sky Harbor Airport.

Section 5310 Providers

The federal Section 5310 Elderly and Persons with Disabilities Transportation Program (formerly called Section 16) assists non-profit agencies in acquiring vehicles to transport elderly and disabled clients. Under this program, agencies can receive up to 80 percent of the cost of a vehicle that will be used for client transportation.

Program requirements for 5310 include the following:

- Private nonprofit corporations with IRS 501(c)(3) status are eligible for program assistance. Indian Nations and Districts within Indian Nations also are eligible applicants.

- Applicants must provide a 20-percent cash match and an additional 2.5-percent match to help fund administrative costs of the Arizona Department of Transportation, which operates this program.
- Applicants must pay all operating and maintenance costs for the vehicle.
- The primary use of the vehicle must be for transportation of the elderly and persons with disabilities.
- The vehicle is titled to the recipient agency, but the Arizona Department of Transportation holds a lien on it.
- Applicants must offer accessible transportation to their clients. In practice, this means that applicant agencies must have at least one vehicle that is accessible, i.e., equipped with a raised roof and wheelchair lift.

Table 3.15 details the agencies that have received Section 5310 funds since 1995. It illustrates the variety of community organizations that have benefited from this program. All supplement the services provided by Pima County's other transportation providers.

Regional Connections

One key service feature that is not currently included in the mix of transit services is a *System* of park-and-ride lots and associated express bus services. As further discussed in the next section, some park-and-ride lots exist, most are both small and lack express bus connections to major destination. Growing areas of the region lack direct transit connections as well as opportunities to access service through park-and-ride lots. Travel pairs that lack direct transit connections include:

- Oro Valley/Raytheon employment area
- Oro Valley/University of Arizona
- Rita Ranch/downtown Tucson
- Rita Ranch/University of Arizona
- Marana/University of Arizona
- Marana/Raytheon employment area
- Sahuarita/Green Valley/Downtown Tucson

Table 3.15

Pima County Agencies Receiving Section 5310 Assistance	
2002	
	Marana Health Center (one van)
	Intermountain Centers for Human Development (two vans)
	The Centers for Habitation (two vans)
2001	
	Blake Foundation
	Compass Health Care
	El Rio Health Center (two mini-vans)
	Handmaker Jewish Services for the Aging
	La Frontera Center
	Pisinemo District (of the Tohono O'odham Nation)
	San Xavier District
	TETRA Corporation
	The Centers for Habilitation (two vans)
	Tucson Association for the Blind
2000	
	Casa de Esperanza (in Green Valley) (two vans)
	Community Living Program
	San Xavier District
	The Centers for Habilitation (2 vans)
	Tucson Urban League
	Community Outreach Program for the Deaf
	Blake Foundation
	COPE Behavioral Services
1999	
	St. Luke's Home
	Compass Health Care
	Handmaker Jewish Services for the Aging
	Pascua Yaqui Tribe
	Town of Oro Valley (van #1)
1998	
	Tohono O'odham Nation (for nutrition program)
	Handmaker Jewish Services for the Aging
	Town of Oro Valley
	Beacon Foundation
1997	
	Tohono O'odham Nation (for nutrition program)
	Town of Oro Valley
	Catholic Community Services (Division of Disabled Persons)
	La Frontera Center

4. Transit Vehicles and Facilities

This section describes existing vehicles and facilities for transit systems in the Tucson region.

Passenger Service Vehicles

With the exception of Pima County, each of the region's public transportation providers owns a fleet of revenue service vehicles. The following discussion summarizes each operator's current fleet.

Sun Tran currently operates a fleet of 194 vehicles. In addition, Sun Tran maintains a five-bus contingency fleet. All are 40-foot buses that are 102 inches wide and accessible for individuals confined to a wheelchair. Sun Tran has been a leader in the use of compressed natural gas as a fuel for passenger transit vehicles. More than 70 percent of the Sun Tran fleet is fueled by compressed natural gas. Eighty-nine buses use only CNG, while 47 are dual fuel vehicles using a combination of diesel and CNG.



Table 4.1 summarizes the Sun Tran fleet by vehicle series⁷.

Table 4.1

Sun Tran Fleet Composition			
Year Manufactured	Number of Buses	Manufacturer	Fuel
1989	36	RTS	Diesel
1991	22	Neoplan	Diesel
1991	3	Neoplan	Dual
1993	15	Neoplan	Dual
1994	29	Neoplan	Dual
1996	19	New Flyer	CNG
1997	25	New Flyer	CNG
2001	45	Nova	CNG
Total	194		

- **Van Tran** currently operates a fleet of 62 'cutaway' type vans. Each employs a passenger cab that is mounted on a truck chassis. Vans have a three-year life; with one-third of the Van Tran fleet replaced every year.
- **T.I.C.E.T.** operates a fleet of seven vans. Six are needed to operate scheduled services. The seventh is a spare. Since its inception, T.I.C.E.T. has used paratransit vans that have reached the end of their life expectancy at Van Tran. This practice, which allowed service to begin rapidly and minimize capital costs, has also affected maintenance costs and fleet reliability.

⁷ Does not include five buses for Sun Tran's contingency fleet.

- **CatTran** and the **Disability Cart** service both utilize vehicles that are owned and operated by the University of Arizona. CatTran employs a fleet of 14 vans while the Disability Cart Service utilizes four carts.
- **Pima County's** private contractors provide vehicles used for its public transportation services. For the Rural Transit service, 11 vehicles of varying age and manufacturer are available. Only one is owned by the state; none of the others were purchased using federal or state funds and all but two are lift equipped. Generally, the operators list the condition of their vehicles as being adequate or better. Six of these vehicles are in service for the four rural routes. Twenty-seven vehicles are available for Pima County's paratransit service.
- **Coyote Run** utilizes a fleet of eight vehicles, with a maximum of six in service at any time.⁸ The system attempts to purchase one new vehicle each year.
- **Old Pueblo Trolley** has four streetcars in its "collection." The restored vehicles are from Canada, Belgium, Japan, and the US (Los Angeles).

Transit Facilities



Figure 4.1 identifies major transit facilities in the Tucson region. These include park-and-ride lots, transit center, and maintenance/operations facilities. The following further describes these facilities.

Transit Centers

The Sun Tran route system is built around three major transit centers, located in the downtown, north side near Tucson Mall, and on the south side. Table 4.2

summarizes passenger activity at each location. Figure

4.1 identifies the location of maintenance facilities, park-and-ride lots, and the three Sun Tran transit centers. The Laos and Tohono Tadaí transit centers both operate a modified timed transfer with many routes arriving and departing within a common transfer window.

Table 4.2

Transit Center Passenger Activity				
Name	Location	Bus Bays	Ons	Offs
Tohono Tadaí Transit Center	Stone near Wetmore	12	1,177	1,177
Roy Laos Transit Center	Irvington near 6 th Ave	13	2,633	2,501
Ronstadt Transit Center	6 th Ave at Congress	18	6,364	4,339

1. Source: Sun Tran operational reports, Fall 2002.

⁸ *Transit Development Plan – FY 2003 to 2012* (City of Oro Valley, November 2002).

Figure 4.1 – Transit Facilities

Sun Tran has considered the construction of three additional transit centers:

- A **Udall Park** facility would serve a terminus for Route 9 (Grant Road), providing transfer opportunities for passengers continuing to neighborhoods around Sabino Canyon, Tanque Verde Road, and Pantano Road;
- Transit center facilities near **Park Place Mall** would provide a terminus for Route 5 (Pima) and would provide mid-route station facilities for Route 3 (5th/6th Street) and Route 8 (Broadway); and
- Pima **College East** attracts significant student ridership and is the terminus for Route 3 (5th/6th Street) and Route 37 (Pantano).

While Sun Tran staff believe that each location would facilitate the expansion of fixed route services into new neighborhoods, they only plan to move forward with a small facility at Udall Park until finances allow service levels to increase. None of the region's other transit providers operates transit centers.

Park-and-Ride Lots

Together, the region's public transportation providers serve 23 park-and-ride lots that are distributed along bus routes throughout the community. Sun Tran serves twenty lots while the University of Arizona's CatTran shuttle routes serve the other three. Most of these facilities are privately owned lots, where the owner provides free parking for transit patrons.

Table 4.3 summarizes the location of each lot, the sponsoring agency, usage, facilities, and its ownership. Use of the park-and-ride lots vary substantially by location based on a one-day survey of capacity and demand undertaken in January 2003. For example, there is no use of the lots at La Cholla/San Marcos and 22nd Street/Randolph; however, full use of capacity is occurring at the Greasewood/Anklam and Drexel/Calle Santa Cruz lots. The lack of available capacity at these lots indicates that some patrons are likely being discouraged from using the facility.

As noted above, three park-and-ride lots are available to those using the University of Arizona's CatTran service. However, those parking at these lots are required to have parking permits issued by the University.

Most of these lots (16 of 24) have less than 50 stalls. In addition, there is lack of extensive express bus connections at most of the park-and-ride lots. Sun Tran Express Routes 102, 105, 162, 180, and 186 serve park-and-ride lots; however, none of these lots have capacity greater than 50 stalls. Only 2 of the 24 lots have more than 100 parking spaces. Patronage also tends to be light.

Table 4.3

Capacity and Demand at Park-and-Ride Lots in Pima County¹

Park-and-Ride Stop	Routes Served	Approx location	Parking Spots Available	Parking Spots Used	% of Spaces Used	Bike Lockers Available	Shelters	Benches
Sun Tran Park-and-Ride Lots								
Ina/Thornydale	16	Pima Center near Super K-Mart	16	13	81	N	Y	Y
Ina/Via Pointe	16	SW corner, near Ina/Oracle	16	14	88	N	Y	Y
Ina/La Cholla	61	South side of Ina near Foothills Mall	49	10	20	N	N	Y
Oracle/Orange Grove	16, 162	SE Corner	20	2	10	N	N	Y
Ruthrauff/Plane	17	Victory Assembly of God Church	22	16	73	N	N	n/a
I-10/Ruthrauff	17, 186	NE corner of NB frontage road	30	3	10	N	N	N
6 th Ave/Irvington	2,6,8,11,16, 23,24,26, 27,29, 50	Laos Transit Center	39	8	21	Y	Y	Y
La Cholla/San Marcos	23	Archer Neighborhood Center near S La Cholla	18	0	0	N	Y	Y
Greasewood/Anklam	5	P.C.C. West	Approx 68	Full	100	N	N	Y
Drexel/Calle Santa Cruz	27	P.C.C. Desert Vista (South)	Approx 107	Full	100	N	Y	Y
1 st Street/Forgeus	4	1 st /Speedway (Himmel Park)	22	10	45	N	N	N
22 nd Street/Randolph	7	Reid Park	37	0	0	N	Y	Y
Craycroft/Glenn	34	Ft. Lowell Park	60	3	5	N	N	Y
Park/Copper	1	Coronado Baptist Church	n/a	n/a	n/a	N	N	1 block away
Pantano/Irvington	3, 37	P.C.C. East	n/a	n/a	n/a	N	N	N
Golf Links/Kolb	4,17,83	SE Corner	75	3	4	Y	Y	Y
Broadway/Camino Seco	8, 82	Safeway	Unlimited	n/a	n/a	N	N	Y
Speedway/Harrison	4, 8, 180	SW corner	50	32	64	Y	Y	Y
Tanque Verde/ Catalina Hwy	81	NW corner/Bear Plaza	25+	2	8	N	N	Y
Stone/Wetmore	6, 10, 15, 16, 19, 34, 61, 162, 105	Tohono Tadaï Transit Center	18/20	28/5	81	Y	Y	Y
CatTran Park-and-Ride Lots								
Orange Route lot 9004	Orange	Prince and Vine (SW Corner)	74	28	38	N	N	N
Orange Route lot 9005	Orange	Mountain and Adelaide (SE Corner)	56	41	73	N	N	N
Yellow Route lot 9002	Yellow	Tucson Blvd 1 block south of Speedway (Church Parking Lot)	198	86	43	N	N	

1. Based on one-day field survey conducted in January 2003.

Administrative and Maintenance Facilities

Sun Tran's maintenance and administrative facilities are located at 4220 South Park Avenue. This location provides adequate facilities for the maintenance, fueling, and storage of a fleet of about 200 buses. Additional storage and maintenance facilities are not available at this time.

Coyote Run's administration and dispatch office is housed at the Town's Public Works facility located at 680 W Calle Concordia. Outside vendors perform all vehicle repair and maintenance for the Town's Transit Service. This includes but is not limited to preventative maintenance, major repairs, and vehicle washing.

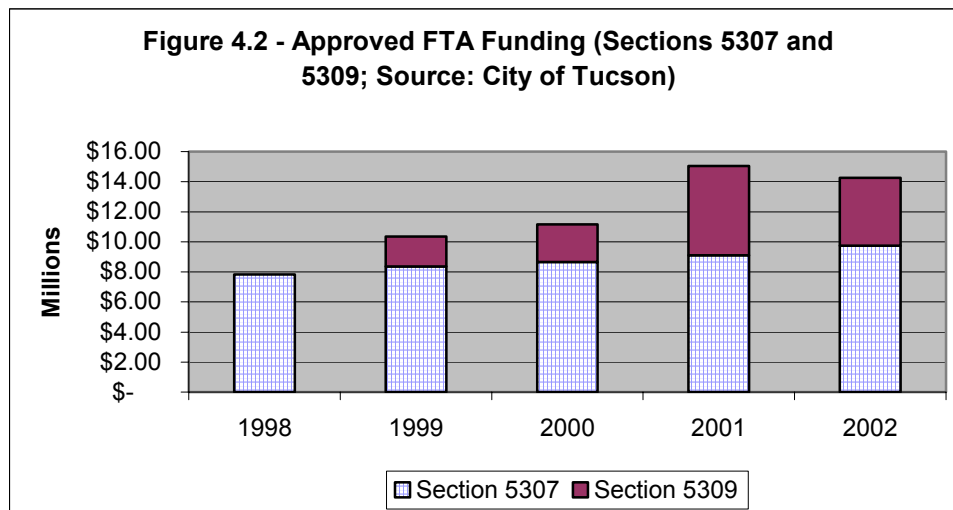
Old Pueblo Trolley Track

Old Pueblo Trolley operates its rail service on an L-shaped, single-track alignment that is 10 blocks in length. The track is located on 4th Avenue between University Boulevard and 8th Street and on University Boulevard between 4th Avenue and Tyndall Avenue. At the south end of the alignment, vehicles are stored in the OPT Trolley Barn located near the southwest corner of 4th Avenue and 8th Street.

Federal Funding Trends for Capital Facilities

Federal funds, primarily through Sections 5307 and 5309, are available for transit capital items. Currently, the City of Tucson is the only designated recipient of these federal funds in the Tucson region. Figure 4.2 identifies funding levels since 1998 from FTA 5307 and 5309 sources. Over the past five years, there has been a steady increase in 5307 funding. This is a formula-driven fund source and the increase in approved grant amounts reflects a steady growth in the Tucson region's population.

Section 5309 funds rely on annual appropriations by the US Congress. The level of approved funding from 5309 can therefore vary substantially year-to-year. These funds have been used mostly for new Sun Tran buses and the renovation of the historic passenger rail depot in Downtown Tucson.



5. Comparison of Transit Services/Facilities and Market Characteristics

Phase 2 of the Transit Element will identify and assess areas such as major corridors that indicated potential markets for transit services. Demographics as well as travel demand patterns will be examined as part of this effort. Under Phase 1, an initial assessment was made using GIS of key demographic features in order to allow comparisons with that existing service patterns.

Demographic Features

One key demographic feature that can indicate a propensity to use transit is residential densities. Figure 5.1 identifies the relative level of residential densities in the Tucson region, expressed in terms of person per square mile.

The information in Figure 5.1 indicates that no *corridor* dominates in terms of high residential densities. However, some concentrations of relatively high densities are evident for the general north-south corridor involving 12th Avenue/6th Avenue/downtown Tucson/Oracle Road/Stone Avenue. There are also concentrations near Campbell/Irvington and along Speedway between Camino Seco and the University of Arizona campus.

In addition, as part of the Transit Element development, other demographic information that will be analyzed include the following:

- Population over 65
- Population under 17
- Housing with 0 autos
- Employment densities

Sahuarita and Green Valley Areas

Phase 1 of the RTP Transit Element focused on a review and assessment of existing public transit system in Pima County. However, the Transit Element also will need to recognize that several large areas of the county, including well populated and growing areas to the south of Tucson that do not have any form of public transportation services.

The Town of Sahuarita is located on Interstate 19. Its northern boundary (Pima Mine Road) is about 10 miles south of the Tucson city limits. Per PAG's population estimates, Sahuarita's population is estimated to grow from about 3,200 in 2000 to 14,300 in 2030. The Town has no immediate plans to initiate public transportation services.

Green Valley is located in an area of unincorporated Pima County immediately south of the Town of Sahuarita. Pima County has developed a draft transit plan for the community; however, no commitments have been made regarding initiation of transit service in the area. The draft plan is further discussed in this memorandum under Section 7 – Planned Improvements.

Figure 5.1 – Population Densities

6. System Coordination

Within the Tucson region seven publicly owned systems are operated by four jurisdictions while one (Old Pueblo Trolley) is operated by a non-profit organization. The numbers of transit systems make coordination of services both necessary and complex. As a rule, public transportation works best when local operators coordinate their services and public outreach in order to present a coherent, unified, and seamless image to the public. This section identifies the amount of system coordination that currently exists within Pima County and highlights specific instances where such measures are lacking.

Previous Review of System Coordination

A previous study conducted by PAG highlighted a number of areas where local communities benefit from the coordination and integration of individual public transportation services⁹. That earlier list included the following:

- Common bilingual “Ride Guide”
- Regional system map
- Similar location for destination signs
- Regional route numbering system
- Common route designation system and common destination sign reading format
- Common route type classification system
- Common bus stop signs yet retaining the identification of the provider
- Common bus stop placement standards
- Common fare categories and identical pass types
- A single fare or pass good on any system
- Similar fare boxes
- Consistent transfer policies
- Common pass sales outlets
- One address for passes by mail
- A single phone number and email address for transit information and trip planning
- Use of transit centers and stations by all regional providers
- Common set of rider safety/courtesy rules
- Common list of park-and-ride lots
- As much as possible, common procedures for accessible service
- Bike racks on all vehicles
- Common policies and procedures for bikes on buses
- Observance of the same holidays and holiday schedules
- Common livery with allowance for individual operator identification

⁹ *Intermediate Range Regional Transit Plan: Draft Technical Memorandum No. 2 - Service and Organizational Strategies* (Parsons Brinckerhoff, May 2000).

With only minor exceptions, Pima County's public transportation operators do not coordinate their products in any of these ways. The following section discusses the integration of system's route structures and administrative structure in greater detail.

Fare Coordination

Existing fare integration measures:

- Sun Tran and Van Tran have a unified fare structure that is consistent with the requirements of the Americans with Disabilities Act.

Instances where fare integration is lacking:

- Sun Tran, the Pima County system, and Coyote Run have each adopted separate fare structures.
- Only Sun Tran offers monthly passes and transfers.
- None of the systems honors the others' fare instruments.
- The technology involving new fareboxes acquired by Sun Tran is not compatible with the issuance/acceptance of transfers by Pima County's Rural Transit routes.

Service Integration

Existing service integration measures:

- Sun Tran and the Pima County system share transfer points at the Laos Transit Center and at Ina and Thorneydale. Otherwise, the two systems largely serve different markets without significant overlap. Pima County officials believe there is substantial movement between the Sun Tran and Pima County systems at the Laos Transit Center. However, no count of actual transfer activity has ever been undertaken. There is likely a smaller amount of intersystem transfer activity at Ina/Thorneydale. Oro Valley officials doubt that significant intersystem transfer activity now takes place between Coyote Run and Sun Tran or the Pima County system.
- Pima County, Marana, and Oro Valley have entered into contractual relationships with Sun Tran for the operation of mainline transit services outside Tucson's City limits. Both have only assumed direct responsibility for rural transportation and paratransit services. This has allowed residents who live in some outlying neighborhoods to access urban transit services without changing service providers at the city limits.
- CatTran's Red and Blue lines do not compete with Sun Tran. While Sun Tran focuses on getting people to the university campus, the Red and Blue routes focus on getting them around once they are on the campus.

Instances where service integration is lacking:

- There is substantial overlap between Sun Tran's route structure and CatTran's Yellow, Green, and USA routes. All operate for a significant portion of their route along streets also served by Sun Tran. As a rule, CatTran does provide more direct service to destinations of importance to the university than is offered by Sun Tran. In addition, the Yellow Route duplicates Sun Tran services operating along Speedway. It may be that some ridership losses that Sun Tran has experienced during the past five years are due to competition from the university's student-oriented services.

- Most T.I.C.E.T. services operate along streets also served by Sun Tran. The major exception is Bonita Avenue, which is not included in Sun Tran's route structure. T.I.C.E.T. has built a market by designing routes that are geared to the needs of short-hop riders in and around the downtown. Even when the same routing is served by Sun Tran, T.I.C.E.T. holds appeal because it does not charge a fare.
- T.I.C.E.T.'s planned extension towards the university would likely directly compete with both CatTran and Sun Tran
- Sun Tran schedules are not coordinated with those for Pima Rural Transit at the Laos Transit Center or on the Northwest Side. Most transfer connections appear to be random.

Marketing

No coordination of marketing efforts exists. Each system develops its own marketing materials and distributes them through its own channels. There is no common 'look and feel' to printed materials and printed materials do not identify possible transfer opportunities to other systems. However, Pima Rural Transit schedules do call out transfer opportunities with Sun Tran.

Planning

Existing planning coordination measures:

- Transit managers from each of the operating systems meet to discuss issues of common concern at irregular intervals, as they find it necessary. Depending on the circumstances, PAG personnel sometime facilitate these meetings.

Instances where planning integration is lacking:

- Each system plans its services independently. There is no conscious effort to develop a unified route and service structure. However, PAG has made a concerted effort to bring transit operators together in order to stimulate more coordination and information sharing.

7. Planned Improvements

This section describes any planned capital improvement identified by various transit operators in the Tucson region. Where available, information is provided on planned service- and facilities-related improvements.

City of Tucson – Sun Tran Service

Planned Service Improvements

Sun Tran's last published Short Range Transit Plan covered the years from FY 1997-98 through FY 2001-02. Since that time, the system has reacted, as best it could, to a continuing series of budgetary shortfalls. No new comprehensive service plans have been developed. PAG is currently developing a transit *report* with the City that may call out specific improvements.

Planned Capital Improvements

The City of Tucson's Capital Improvement Program identifies 15 capital projects that will be undertaken within the next five years. They employ a wide range of funding sources including federal grants, state grants, highway bond monies, general obligation bonds, and local tax revenues. While a majority of these projects is intended to address Sun Tran's needs, others benefit Van Tran or general program administration. Together, these projects will cost nearly \$132 million before 2008. While funding sources are identified for a majority of these capital projects, some do retain some unfunded elements.

Table 7.1 summarizes each project that is included in the Five Year Capital Improvement Program. A review of the CIP indicates that no plans are underway for major park-and-ride development. However, the City of Tucson's CIP has called out a *Transit Alternatives Analysis* study to determine the feasibility of various high capacity transit services along major corridors. This study could identify opportunities for future park-and-ride development in the region.

City of Tucson – Van Tran

Service expansion plans for Van Tran as well as related vehicle acquisitions will be focused on reducing the extent of service denials to those eligible for paratransit service. Both a performance audit of Van Tran conducted by the City of Tucson and a subsequent Federal Transit Administration Triennial Review identified the presence of capacity constraints relevant to Van Tran operations. Under the Americans with Disabilities Act, a system is considered to be capacity constrained when it has a pattern or practice of denying trips to passengers who are eligible to utilize the paratransit system. Additionally, the performance audit noted Van Tran budgets were being established based on available funding rather than demand or community need.

Table 7.1

City of Tucson Five Year Capital Improvement Program			
Project Title/Description	Funding	Total Cost (Thousands \$)	Completion Date
<i>Americans With Disabilities Act Pedestrian Access</i> - Construct ADA pedestrian access walkways.	<ul style="list-style-type: none"> Section 5307 2000 Streets & Highways Bond Local Match 	\$425.0	06/08
<i>AVL Location System Kiosks</i> - Design and construct electronic kiosks at transit centers to display bus arrival information.	<ul style="list-style-type: none"> Section 5307 Grant Local Match 	\$549.5	06/08
<i>Broadway Boulevard Transit Improvements</i> - Engineer and design passenger improvements at El Con Mall and along Broadway. Construction is not included.	<ul style="list-style-type: none"> Section 5307 Grant 2000 Streets & Highways Bond 	\$125.0	06/04
<i>CNG Facility Improvements</i> - Rehabilitate and renovate Sun Tran's CNG facility.	<ul style="list-style-type: none"> Section 5307 Grant Local Match 	\$1,100.0	06/08
<i>Downtown Intermodal Center/Union Pacific Depot</i> - Design and reconstruct the Union Pacific Depot; demolish old City Hall Annex.	<ul style="list-style-type: none"> Section 5303 Grant Section 5307 Grant Local Match 	\$15,193.5	06/07
<i>Van Tran Expansion Vans</i> - Purchase 13 vans	<ul style="list-style-type: none"> Section 5307 Grant Local Match 	\$984.0	06/05
<i>Pima Community College Transit Projects</i> - Design and construct improvements at bus stops and exit roads located at Pima College's eastside and Westside campuses.	<ul style="list-style-type: none"> Capital Agreement Fund Section 14 Highway User Funds Section 5307 2000 Streets & Highways Bond Local Match 	\$1,376.8	06/04
<i>Replacement Buses (Section 5303)</i> - 7 buses in FY 2004 and 10 buses each in FY 2005-08.	<ul style="list-style-type: none"> Section 5303 Grant Local Match \$1.28 million unfunded 	\$19,829.0	Annual
<i>Replacement Buses (Section 5307)</i> - 6 buses in FY 2004; 32 buses in FY 2005; 25 buses in FY 2006; 34 buses in FY 2007; 34 buses in FY 2008.	<ul style="list-style-type: none"> Section 5307 Grant Local Match \$27.01 million unfunded 	\$48,697.0	Annual
<i>Replacement Vans</i> - 26 vans in FY 2004; 12 vans in FY 2005; 30 vans in FY 2006; 26 vans in FY 2007; 17 vans in FY 2008	<ul style="list-style-type: none"> Section 9 Grant Local Match 	\$10,297.0	Annual
<i>Sun Tran Bus Storage and Maintenance Facility</i> - Acquire land, design and construct a new Sun Trans maintenance facility.	<ul style="list-style-type: none"> Section 5303 Grant Section 5307 Grant 1994 General Obligation Bonds Series B & D \$4.19 million unfunded 	\$27,685.7	06/07
<i>Transit Alternatives Analysis</i> - Perform an alternatives analysis to determine the feasibility of light rail, BRT or other transit services along major corridors/	<ul style="list-style-type: none"> Section 5307 Grant Local Match 	\$2,000.0	06/04
<i>Transit Enhancements</i> - Design and construct transit enhancements.	<ul style="list-style-type: none"> Capital Agreement Fund: PAG Section 5307 Grant STP Funds Local Match 	\$756.0	Annual
<i>Transit Headquarters Improvements</i> - Design and construct improvements to the transit headquarters at 149 N Stone.	<ul style="list-style-type: none"> STP Funds 	\$2,217.0	06/08
<i>Udall Center Transit Facility</i> - Design and construct a transit facility adjacent to the Udall Center	<ul style="list-style-type: none"> Section 5307 Grant 2000 Streets & Highways Bond Local Match 	\$530.0	06/04

It is anticipated that Van Tran will require a 20- to 25-percent increase in funding to accommodate both the active and latent demand within the community to reach compliance with ADA regulations and to abate the pattern and practice of trip denials. An annual ridership level of approximately 400,000 would provide service levels necessary to eliminate the pattern and practice of denying passenger trips.

City of Tucson - T.I.C.E.T

T.I.C.E.T staff plans to focus future service improvements on providing improved linkages between outlying parking lots and the Central Business District. Additionally, they believe there is a need for improved public transportation services that link the Central Business District with the University of Arizona.

Pima County

Pima County has adopted a Three-Year Transit Plan (2003 to 2005) for its Rural Service. Key items called out during each year of the Plan are as follows:

2003

- Expand service hours for Ajo Dial-a-Ride
- Add additional day of service for Ajo/Tucson

2004

- Revise service to Ajo area based on ridership/funding levels
- Revise service to Marana area based on population/activity center
- Request 5311 funds for vehicle for rural Tucson service

2005

- Revise service to Ajo area based on ridership/funding levels
- Revise service to Marana area based on population/activity center
- Request 5311 funds for vehicle for rural Tucson service

Over the past several months, Pima County transportation officials have met with members of the Green Valley Coordinating Council to discuss future transit service. Green Valley residents are very interested in having transit service to major destinations in the Tucson metro area. However, no service will be implemented until appropriate funding is identified.

CatTran Service

CatTran planning efforts will in large part be associated with the update of the Comprehensive Campus Plan currently underway by the University of Arizona. When implemented, the Plan will result in an increase in the campus' population from 50,000 (Fall 2000) to almost 70,000 by 2010. Of particular importance to CatTran and other transit service providers in the region is that the draft Campus Plan does not call for major increases in on-campus parking supply to meet growing demand. While some additional parking capacity will be provided, the Campus Plan will rely on alternative transportation modes to meet mobility needs.

Oro Valley

The Town of Oro Valley's Transit Development Plan, adopted in November 2002, guides transit planning for Oro Valley for the FY 2003-2012 adopted. Working with a community Transit Task Force, several Plan alternatives were considered by Town officials.

Recommended Plan D calls for a mix of services including paratransit transit services for elderly and people with disabilities, expanded fixed route commuter service on Oracle Road, and implementation of neighborhood shuttle services connecting major activity centers.

The TDP states that the recommendations should be supported by a variety of fund sources including farebox revenues, impact fees, private sector contributions, and advertising. The Plan also stated that a local sales tax would provide a dedicated funding source not only for transit but also for road, bicycle, and pedestrian improvements. State and federal funding sources will also be sought to support the TDP recommendations.

The majority of capital expenditures associated with Coyote Run are funded with Federal Transit Administration (FTA) Program 5307 funds. Capital expenditures include new vehicles, replacement parts, and computer and office equipment.

8. Public Attitudes Towards Transit

In fall 2002, Pima Association of Governments launched the first phase of a three-year effort to develop the 2030 Regional Transportation Plan (RTP). This effort began with a comprehensive regional public involvement program called the Program for Active Community Engagement (PACE). The PACE provides multiple forums for early, ongoing, and meaningful input in each stage of the transportation decision-making process.

The fundamental goal in Phase I of the PACE was to assess public perceptions of transportation needs and solutions from the perspective of quality-of-life values. The vision, needs, goals, and strategies identified in Phase I will be considered by the Regional Transportation Plan Task Force and subsequently integrated into the development of alternative transportation solutions and funding options.

The following information provides highlights of the Phase I PACE result, focusing mainly on public attitudes towards transit. Complete details and results of this effort can be found in the “PACE Phase I- Data Analysis and Report” provided by PAG. The full report is available on-line at www.pagnet.org.

Process Employed

Phase I of the PACE consisted of three venues for gathering public comments:

- A statistically valid telephone survey of adults in the eastern Pima County region;
- A questionnaire distributed through a speakers bureau, on-line and by mail; and
- A series of community roundtables held throughout the planning region and utilizing a standardized series of exercises.

Overall, nearly 1,700 people participated in the Phase I public involvement processes representing a broad cross-section of the community.

Roundtable Results

Transit-related issues were mentioned several times throughout the roundtable discussions, which drew 797 participants. As part of the series of exercises, people were asked to rank their top-priority ‘barrier needs’ based on a scoring system. “Lack of transit options, service and accessibility” received the highest score overall, followed by improved “cross-town mobility” and “safety for bicyclists, pedestrians and vehicles.”

A closer look at the results reveals that transit was mentioned as the highest priority barrier need among transportation advocacy groups, elderly and disabled groups, youth groups, and low income and minority groups. Below is a summary of key transit-related issues.

Common ‘Barriers’ (219 Mentions)

- Limited multi-modal transportation options
- Limited scheduling and coverage area
- Inefficient/slow cross-town mobility (in general)
- Insufficient transit service

- Lack of transit shelters
- Poor growth planning

'Works Well' (39 Mentions)

- Scheduling
- Accessibility
- Transit around downtown
- Routes 4 and 8

Major Themes and Solutions (187 Mentions)

- Provide light rail system, monorail or metro subway
- Make public transit more efficient
- Expand transit service: more buses, hours and coverage areas
- Reduce costs for low-income groups
- Provide downtown trolley system

Survey and Questionnaire Results

In contrast to the roundtable needs exercise which was open-ended, survey and questionnaire participants were asked to rank quality of life needs based on a constrained list of issues. Responses included 605 phone surveys and 271 questionnaires received from throughout the region. Surprisingly, 'availability of good bus or public transit system' was ranked low with scores of 3.0 and 3.3 on a 5.0-point scale. Top-ranked needs included "safety for bicyclists, pedestrians, and vehicles" and "a healthy environment in terms of air land and water." Transit-related highlights from the survey are provided below:

- Twenty-six percent satisfied with bus routes
- South region residents were only residents more satisfied than dissatisfied with routes
- East region residents felt transit service was not as important as others
- Twenty-eight percent of those surveyed felt transit service was 'very important'
- Four of ten recommended transit improvements (especially South zip code residents)
- Specific recommended improvements generally correspond with barriers above

Other Key Issues

It is important to emphasize sub-categories of public attitudes towards transit that stand out. Listed below are other issues that will be closely analyzed throughout the development of the 2030 RTP:

- **Elderly and Disabled Needs.** Improved public transit was by far the top-ranking barrier need among elderly and disabled groups. It is necessary to investigate these results further to identify more specific, transit-related improvements.

- **Low Income and Minority Needs.** Improved transit was listed as the top need with low income and minority groups, mainly due to a strong dependence on public transit for daily transportation.
- **Public Needs by Geographic Area.** In taking a closer look at the roundtable and survey results, it is apparent that residents in particular geographic areas show a stronger need for public transit improvements than residents in other areas.
- **Measures of Efficiency.** Several participants mentioned ‘inefficient transit’ as a major barrier. It is important to further analyze what people mean by ‘inefficient’ and seek solutions to achieve efficiency.

9. Key Findings and Direction for Future Transit Element Phases

The following summarize key findings of Phase 1 for the Transit Element as well as directions for subsequent phases of the Element.

Major Findings

- Substantial population growth has occurred throughout the PAG region; however, the greatest concentration of public transit service is within the Tucson city limits.
- Despite population growth, recent trends indicate a decline in total transit ridership in the region; this decline is likely attributable in large part to cuts in Sun Tran's annual service hours.
- Several small systems operate in the region; however, large parts of unincorporated Pima County, Marana, Oro Valley, and even Tucson lack transit coverage.
- While there has been a general decline in transit demand there are some exceptions:
 - Coyote Run in Oro Valley has experienced major growth in demand even though service operates in a low-density area of the region; and
 - CatTran ridership growth can be attributable in part to the availability of park-and-ride capacity and direct access to the University of Arizona campus.
- Information on the location of major boardings indicates that some corridors have continuous passenger demand.
- There is currently lack of coordination among transit systems in certain areas such as schedule coordination, information sharing, and planning.
- There is has been growth in regional travel demand but there is lack of direct transit connections for several areas.
- There is a lack of a system involving major park-and-ride lots and complementary express bus service.
- The lack of dedicated funding is limiting the extent of planning for expanded services and supporting facilities.

Direction for Next Phases of the Transit Element

Phase 2 of the Transit Element will provide further definition of potential transit markets in the Tucson region. The review in Phase 1 of existing transit service and facilities indicates that the following areas should be given particular emphasis

- More definition of regional travel patterns, including growth along key corridors and between major origins/destinations.
- More definition of characteristics at existing as well as future major travel generators; examples include the University of Arizona campus, Rio Nuevo, and the employment areas in the area of Tucson International Airport.
- Examples of best practices relating to the following:
 - Park-and-ride/express service systems; and
 - Coordination effort among transit operators in a region.
- Key factors that affect transit ridership in growing regions with relatively low population and employment densities.