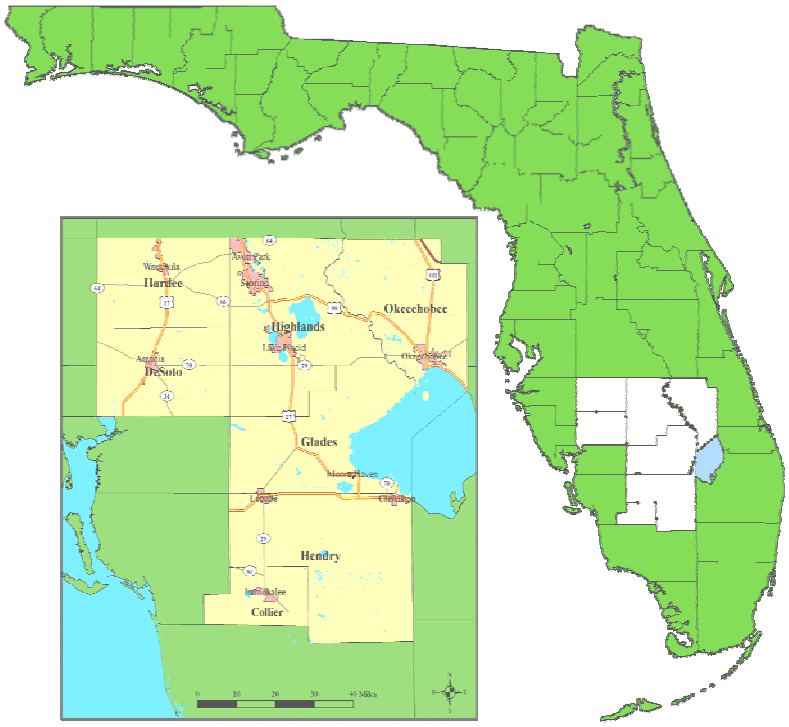
District 1 Planning and Marketing Assessment Initiative Final Report



Prepared for the
Florida Department of Transportation
District One Modal Development Office

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August 2005

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INTRODUCTION

Rural transportation planning has been less coordinated and regulated than transportation activities in urbanized areas. In Florida, the requirement for local government comprehensive plans has provided the impetus for greater activity in this area for the rural counties of the state, yet the efforts are still limited. In areas with less than 50,000 in population, a "traffic circulation element" is developed as a component of the multi-topic comprehensive plan. Section 163.3177, Florida Statutes provides that "…a traffic circulation element consisting of the types, locations, and extent of existing and proposed major thoroughfares and transportation routes, including bicycle and pedestrian ways…" shall be developed. The planning for public transportation is not required. In addition, local governments are only tasked to look within the boundaries of their own communities for which the local comprehensive plans are being prepared; a regional examination is generally not undertaken in rural areas.

In Florida, rural transportation providers who are Community Transportation Coordinators have the additional responsibility, along with the local planning agency of the area, to develop transportation service plans that address public transportation service needs and coordination activities. However, a comprehensive assessment that includes regional opportunities and opportunities for the non-transportation disadvantaged community is outside the scope of this effort.

The Florida Department of Transportation recognizes the importance of effective, comprehensive, transportation planning in rural communities and within regional boundaries. Specifically, they understand that the provision of public transportation services to meet the needs of both the transportation disadvantaged community and the general public is critical to the livelihood of these communities. They profoundly recognize the value in looking not only at the need for services within a local jurisdiction, but also the need for cross jurisdictional planning and service provision.

PURPOSE AND SCOPE

The Florida Department of Transportation, District 1 Office of Modal Development, contracted with the Center for Urban Transportation Research at the University of South Florida to conduct a rural transit planning and marketing study of the rural areas within the district. It is anticipated that through this effort a number of characteristics will be further defined, including the volume of the services needed to meet the needs of the communities served; opportunities for intercounty/cross jurisdictional service arrangements; identification of service enhancements that may enable local transportation service providers to better meet the needs of their service areas; and marketing efforts that will educate local

residents and visitors of the transportation options that are currently available and those that may be added as a result of this study.

In order to better understand the complexities of the area and better identify the need for public transportation, it is necessary to analyze the current demographics and socio-economic conditions of the area. The following section describes the study area and provides this data.

STUDY AREA DESCRIPTION AND DEMOGRAPHICS

Population

The study area for this project consists of rural south central Florida counties including Desoto, Glades, Hardee, Hendry, Highlands, and Okeechobee and the rural community of Immokalee in eastern Collier County. This area is shown in Figure 1. The study area encompasses over 5,500 square miles. The population of the area is provided in Table 1 below. Population data is provided by county and by city. The population of Immokalee, a “census designated place” (CDP), also is provided.

Figure 1 - Project Study Area

Table 1
Study Area Population
1990 - 2000

	2000 Census	1990 Census	% Change
Desoto County	32,209	23,865	25.91%
City of Arcadia	6,604		
Glades County	10,576	7,591	28.22%
City of Moore Haven	1,635		
Hardee County	26,938	19,499	27.62%
City of Bowling Green	2,892		
City of Wauchula	4,368		
City of Zolfo Springs	1,641		
Hendry County	36,210	25,773	28.82%
City of Clewiston	6,460		
Highlands County	87,366	68,432	21.67%
City of Avon Park	8,542	8,042	
City of Lake Placid	1,668	1,158	
City of Sebring	9,667	8,900	
Okeechobee County	35,910	29,627	17.50%
City of Okeechobee	5,376		
CDP Immokalee	19,763	14,120	28.55%
Total Area Population	248,972	188,907	24.13%

Source: *2000 Census of Population and Housing*, U. S. Department of Commerce, Bureau of the Census

Age

Table 2 shows the distribution of population for those persons who are less than 18 years of age and 65 years of age and greater within the study area. These groups are of primary interest for this study as there is a greater propensity for individuals within these groups to be transit dependent.

Table 2
Estimates of Age-Specific Transit Dependent Populations for the Study Area, by County and CDP 2000

Area	Age				
	>18	% of Total	65 +	% of Total	Total Population
Desoto County	7,310	22.7%	6,113	19.0%	32,209
Glades County	2,337	22.1%	1,990	18.8%	10,576
Hardee County	7,435	27.6%	3,750	13.9%	26,938
Hendry County	10,874	30.0%	3,641	10.1%	36,210
Highlands County	16,744	19.2%	28,833	33.0%	87,366
Immokalee CDP	6,905	34.9%	802	4.1%	19,763
Okeechobee	9,051	25.2%	5,864	16.3%	35,910
Study Area Total	60,656	24.4%	50,993	20.5%	248,972

Source: *2000 Census of Population and Housing*, U. S. Department of Commerce, Bureau of the Census

The data presented identify some interesting characteristics for the counties within the study area and the census designated place of Immokalee. We see a significant elderly population in Highlands County, with 33 percent of the total population 65 years of age and above. The data also show significantly younger population in the Immokalee CDP with almost 35 percent of the total population in the area under the age of 18.

As we discuss the need for transportation within these areas for each of the age groups represented, it is important to discuss transportation options for the elderly, specifically in Highlands County and for children in Hendry County and Immokalee. Elderly residents and visitors will need viable transportation options for medical appointments and life sustaining activities such as grocery shopping, adult day care, or trips to the pharmacy, as examples. In the *American Journal of Public Health*, Vol. 92, No. 8, the authors indicate that more than 600,000 people aged 70 and older stop driving each year, making them dependent on others for their transportation.

Table 3
Population Projections of Persons 65 Year of Age and Older
the Study Area, by County 2010 and 2025

Area	Year and Percentage of Total Population 65 Year of Age or Older			
	2010	% of Total	2025	% of Total
Desoto County	8,067	20.5%	12,902	26.4%
Glades County	2,596	21.3%	4,057	27.9%
Hardee County	4,639	15.3%	7,211	20.1%
Hendry County	4,732	11.0%	8,168	15.0%
Highlands County	35,432	35.2%	54,943	45.1%
Okeechobee	7,822	19.7%	12,643	27.9%
Study Area Total	65,298	24.6%	101,949	26.5%

*Note: shaded areas indicate percentage of total greater than that of the study area.
Source: Florida Statistical Abstract 2003, University of Florida, Bureau of Economic and Business Research

Those within the population who have dependents under the age of 18, particularly those who are below the poverty level (see discussion below), have their own unique transportation needs, such as after school programs and other social service activities.

Transportation services within the study area are provided primarily by the local Community Transportation Coordinator or by the local school board. It is expected that a significant number of trips for those children who are under the age of 18 are provided through programs such as Healthy Start, Early Start and Head Start. It appears that the transportation needs of these children are being met with the transportation services currently available, including those provided by the Community Transportation Coordinator, and family and friends.

Income

Income is also a determining factor in identifying transit dependent groups. Generally those who have limited income may not have their own vehicle and may not have access to transportation services, either through friends or relatives or by private carriers. Table 4 provides summary information on household income levels by county and for Immokalee. Table 5 identifies the percentage of persons within the study area who are below the federal poverty level.

Table 4

Household Income (1999)

Area	$0 - $14,999	$15,000 - $24,999	$25,000 - $34,999	$35,000 - $49,999	$50,000 & Over	Median Income
Desoto County	2,119	2,183	1,867	1,979	2,636	$30,714
Glades County	908	612	691	611	1,054	$30,774
Hardee County	1,861	1,482	1,369	1,392	2,091	$30,183
Hendry County	2,164	1,852	1,611	1,963	3,264	$33,592
Highlands County	7,956	7,346	6,494	6,793	8,916	$30,160
Immokalee CDP	1,495	881	704	717	847	$24,315
Okeechobee Co.	2,513	2,470	2,143	2,186	3,302	$30,456

Source: *2000 Census of Population and Housing*, U. S. Department of Commerce, Bureau of the Census

Table 5
Percentage of Individuals Below the Poverty Level and Percentage < 18 and 65 Years of Age and Older (2000)

Area	% of Population Below Poverty Level	% of Individuals in Poverty < 18	% of Individuals in Poverty 65 or Older
Desoto County	23.6%	31.5%	7.3%
Glades County	15.2%	18.2%	11.2%
Hardee County	24.6%	30.2%	16.1%
Hendry County	24.1%	29.9%	15.0%
Highlands County	15.2%	25.6%	7.4%
Immokalee CDP	39.8%	46.1%	26.9%
Okeechobee Co.	16.0%	19.9%	10.3%

Source: *2000 Census of Population and Housing*, U. S. Department of Commerce, Bureau of the Census

Table 5 indicates that a significant number of individuals within the study area are below the federal poverty level. In particular, almost 40 percent of the population within the Immokalee CDP is below the poverty level, with over 46 percent of those individuals children. In addition, Hardee, Hendry and Desoto counties have a substantial number of individuals who are below the poverty level.

What is of profound interest is the number of children who are living in poverty. With the exception of Glades and Okeechobee counties, each area of study has large concentrations of individuals who are under the age of 18 living in poverty. As mentioned previously, in the area of Immokalee, over 46 percent of those persons who are living in poverty are under the age of 18. When we consider the transportation

needs of these individuals, we must look at access to various children's services, including health care. It is important to determine how their current transportation needs are being met. As mentioned above, the role of Healthy Start, Early Start, and Head Start, and other community groups and access to transportation provided by family and friends are key factors in determining their needs and the degree to which transportation programs are established and/or expanded to meet these needs. From the data gathered and the discussions with community leaders, it appears these needs are being met.

Household Vehicle Availability

The lack of available personal transportation is a factor to be considered when evaluating the extent to which current transportation service needs are being addressed and met. Table 6 below identifies by county and Immokalee the number of vehicles available within each household.

Table 6
Vehicle Availability

Area	Number of Vehicles							
	None		1		2		3 +	
	#	% of Total	#	% of Total	#	% of Total	#	% of Total
Desoto County	884	8.2%	4,931	45.9%	3,738	34.8%	1,193	11.1%
Glades County	254	6.6%	1,597	41.5%	1,395	36.2%	606	15.7%
Hardee County	677	8.3%	3,182	39.0%	3,091	37.9%	1,216	14.9%
Hendry County	845	7.8%	4,165	38.4%	4,309	39.7%	1,531	14.1%
Highlands County	2,753	7.3%	18,856	50.3%	12,019	32.1%	3,843	10.3%
Immokalee CDP	955	20.5%	1,855	39.8%	1,245	26.7%	600	12.9%
Okeechobee Co.	988	7.8%	5,158	41.0%	5,062	40.2%	1,385	11.0%

Source: *2000 Census of Population and Housing*, U. S. Department of Commerce, Bureau of the Census

While we see a significant number of households within Highlands County that have more than one car, it is important to note that, in areas with significant concentrations of elderly persons, the existence of a vehicle in the driveway may not indicate that transportation is available to them. In Highlands County, the needs of elderly residents should not be overlooked due to the existence of a vehicle. Elderly residents who retire to Florida generally do so with their automobile. However, as they age, their ability to drive becomes compromised. Yet, with a vehicle in the driveway, while not of use to them, they are instilled

with a feeling of continued “independence.” It is also critical that we understand the complexities of their situation. They are in need of extended, continuing medical services; groceries; prescription drugs; and, to some degree, adult day care. They exist on limited incomes, often with only Social Security income. They moved away from family and friends and therefore have fewer transportation options available to them. It is important to note that this applies not only to elderly residents who have moved to Florida from other states; elderly Floridians are no different. For those elderly who have been residents of Florida, we often see their children grow and leave the area. The lack of transportation options is also problematic for these individuals because they may not have family members in close proximity to assist them. The needs of these elderly residents must be evaluated and discussed with viable options identified.

In the area of Immokalee, over 20 percent of the population have no vehicles available to them. In the discussions that follow, we find that many of these individuals have found transportation alternatives, including friends and family, carpools, vanpools, and public transportation.

Mode of Travel To Work/Mean Travel Time

The data in Table 7 provides work travel mode data and mean travel time for each county within the study area and Immokalee for 2000. What is encouraging in the Mode of Travel to Work data is the significant number of individuals who are currently carpooling. For example, in Immokalee, over 20 percent of the residents do not have a vehicle available to them. However, as indicated in Table 7, over 38 percent of residents carpool. We also see that over 18 percent use public transportation (defined as a bus or van) for work-related trips (the average use of public transportation for the state of Florida is only 1.9 percent). This may indicate that the need for work-related trips is not as high as one might assume when only data related to income and car availability are reviewed.

Table 7
Mode of Travel to Work (2000)

Area	Travel Mode by Percentage of Population (16 years of age and over)					
	Drive Alone	Carpool	Public Transit*	Other	Walk or Work at Home	Mean Travel Time
Desoto County	52.3%	33.1%	8.3%	2.2%	4.3%	27.9%
Glades County	67.9%	22.6%	2.6%	2.7%	4.2%	29.1%
Hardee County	64.5%	26.9%	1.3%	2.3%	5.0%	26.7%
Hendry County	63.7%	22.6%	8.0%	2.0%	3.7%	26.5%
Highlands County	74.1%	19.3%	1.2%	1.2%	4.3%	23.0%
Immokalee CDP	35.2%	38.4%	18.2%	0.7%	7.6%	34.0%
Okeechobee County	67.8%	22.9%	3.4%	2.0%	3.9%	27.7%
Study Area Average	**60.79%**	**26.54%**	**6.14%**	**1.87%**	**4.71%**	**27.84%**
Florida	**78.8%**	**12.9%**	**1.9%**	**1.7%**	**4.7%**	**26.2%**

*Note: Public Transit includes taxicabs and also includes vans and buses that may be used to transport agricultural workers.
Source: *2000 Census of Population and Housing*, U. S. Department of Commerce, Bureau of the Census

For the counties within the study area, the percentage of people who carpool is significantly greater than the average for the state of Florida. In addition, the average percentage of those who carpool is 26.54 percent of all workers, compared with only 12.9 percent for the state of Florida. This may indicate that, even though conventional public transportation is not available to them, they have found other options for work trips. It appears that, in this area, the transportation needs for work-related trips are being met.

Employment

Employment and adequate access to employment opportunities is an important aspect of planning for future improvements to a public transportation system. It is important to not only look at work transportation when identifying the transportation needs of a community, but also to look at unemployment and the likelihood that, for many, the lack of transportation may contribute to the inability to obtain and maintain employment. This discussion becomes even more critical when discussed in the context of access to jobs and welfare-to-work and the spatial mismatch that is often represented in rural areas, where a person's place of residence may not necessarily be his place of employment. This study area has extraordinarily high levels of unemployment. Table 8 below identifies unemployment by percent of total workforce and by actual number of unemployed individuals for the month of August 2004, as

reported by the Florida Research and Economic Database in October 2004. Also included is the number of job openings for the month and the number of applications received through local "One-Stop" offices (Note: The number of job openings listed does not reflect all available job openings in the county, only those openings reported to the One-Stop office).

Table 8
Unemployment Rates (August 2004)

County	Unemployment Rates: August 2004				
	% Rate	# of Unemployed	State Rank	Job Openings	Applicants
Desoto County	11.0%	931	4	42	296
Glades County	11.5%	425	2	18	58
Hardee County	11.2%	993	3	66	366
Hendry County	19.3%	3,059	1	24	174
Highlands County	7.2%	2,248	8	164	700
Okeechobee County	9.0%	1,569	6	86	538
Area Total		**9,225**		**400**	**2,132**
State of Florida	**4.8%**				

The lack of affordable transportation to job markets may be impacting the unemployment statistics within the region. As provided in Table 8, there were significant job applications within the study area but there were very few job openings reported to the One-Stop Office. This data could lead one to assume that transportation out of the study area to surrounding urbanized areas may be a critical missing link. For example, for those unemployed who live in Desoto, Glades, and Hendry counties, transportation to the west to the counties of Lee, Collier, and Charlotte may be necessary. For Hardee County, it may suggest that transportation to jobs in Polk, Hillsborough or Manatee counties be considered. For Glades, Hendry and Okeechobee counties, greater access to eastern job markets, such as in Palm Beach, Martin and St. Lucie counties may alleviate their unemployment status. It is important to note that having access to other job markets may not enable an unemployed individual to gain employment. It may, however, open the door for additional opportunities within their individual area of expertise or work experience.

Land Use and Transportation Mobility

Land use and the land development patterns of a community have a significant impact on the transportation networks within that community and in many ways dictate how a transportation system will evolve over time. As with many areas in Florida, development within the study area is in a linear pattern following major east/west and north/south routes. In addition, the density of development is certainly a consideration when evaluating the potential for traditional transit service implementation. The density of development within the study area is not conducive to traditional transit services, with limited examples. The area immediately adjacent to US 27 from Avon Park south to Sebring may be an area where

traditional transit services could be supported, serving Florida Hospital and the medical service offices between Avon Park and Sebring, Lakeshore Mall, and the activity centers in the general area, and the City of Sebring (see discussion below on the major trip generators in the area).

Major Trip Generators

Part of this evaluation will include reviewing the major trip generators in the area and determining if the current service delivery systems within the service area make various forms of public transportation a viable option for those who need access to these locations. Attractors such as employment, shopping centers, and medical offices make transit a viable option when they are conveniently located along a bus route or a particular service provider's service area. If there are enough of these generators located within close proximity to one another bus routes can be developed to provide access to these areas. The list that follows identifies the major trip generators in the service area, including vocational schools, One-Stop Centers, shopping areas, major employers, and medical service centers, including hospitals, clinics, and physician offices.

Largest Private Sector Employers (by County)

Desoto County

- Desoto Memorial Hospital
- Walmart Distribution Center
- Bethel Farms
- Walmart

Glades County

- United States Sugar Corporation (Clewiston – listed due to draw of Glades County residents to the employer)
- Moore Haven Correctional Facility
- Brighton Seminole Bingo and Gaming
- Glades Electric Cooperative

Hardee County

- Florida Institute/Neuroligical Rehabilitation
- Mancini Packing
- C.F. Mining
- Wauchula State Bank
- Winn-Dixie
- Walmart

Hendry County

- United States Sugar Corporation (Clewiston)
- Brighton Seminole Bingo and Gaming
- Duda and Sons, Inc.
- Southern Gardens Citrus Processing Corporation

Highlands County

- Florida Hospital – Heartland Health Care
- Highlands Regional Medical Center
- South Florida Community College
- Cross County Automotive Service
- Palms of Sebring
- Lake Placid Health Care Center
- Georgia Pacific
- Highlands Greenhouses
- Home Depot
- Lin Pac Plastics

Okeechobee County

- Raulerson Hospital
- Walpole, Inc.
- Larson Dairy, Inc.
- Walmart
- McArthur Farms, Inc.
- Publix Supermarket
- Winn-Dixie Supermarket

- Okeechobee Health Care Facility
- U-Save Supermarket

Largest Trip Generators

Desoto County

- Desoto Memorial Hospital
- Desoto County Courthouse
- Community Care Family Clinic
- Arcadia Family Health Care Center
- Walmart

Glades County

- Glades County Health Department (Moore Haven)
- Glades County Courthouse
- Moore Haven City Hall

Hardee County

- Hardee Memorial Hospital
- Hardee County Health Department
- Walmart Shopping Center

Hendry County

- Hendry Regional Medical Center (Clewiston)
- Hendry Public Health Center (LaBelle and Clewiston)
- Hendry County Courthouse
- Belmont Woods Medical Center

Highlands County

- South Florida Community College (Avon Park)
- Highlands Regional Medical Center
- Highlands County Health Department

Okeechobee County

- Lake Okeechobee (recreational)
- Indian River Community College
- Raulerson Hospital
- Okeechobee County Health Department
- Okeechobee County Courthouse

One-Stop Centers

Regional Workforce Investment Area 19 - Heartland Career Connection Systems
2730 US Highway 27 North
Sebring

850 North Mills Avenue
Arcadia

Regional Workforce Investment Area 20
Career and Service Center of Hendry/Glades Counties
215-B South Francisco Street
Clewiston

Regional Workforce Investment Area 24
Career and Service Center of Collier County/Immokalee
750 South 5th Street
Immokalee

These trip generators/attractors should be examined when analyzing the need for and defining specific routes or service locations for public transportation services. In addition, when working with employers to encourage the use of employer-subsidized vanpools or carpools, the major employers in the area identified above should be approached.

SUMMARY OF QUALITATIVE RESEARCH

Stakeholder Interviews

A key task used in the preparation of a planning document is to gain input from community leaders or "stakeholders" through an interview process. Community leaders not only provide guidance in determining the direction of public transportation, but can also be advocates for public transportation. The community's beliefs concerning the transit system and public transportation in general provide insight in determining whether the existing public transportation service levels match the expectations of the community. In addition, the way in which public transportation is viewed by local elected officials and other community leaders can significantly influence the priority that is given to public transportation services and other related transportation issues.

To begin this process, CUTR collaborated with the project advisory committee and identified key project stakeholders from each county within the study area and the area of Immokalee. These stakeholders, representing public and private sector interests, were interviewed by CUTR personnel to help:

- Identify the level of public transit needs within the study area.
- Assess degree of public transportation awareness by key stakeholders.
- Identify specific geographic areas where pubic transportation is insufficient.
- Identify specific market segments that may benefit from additional public transportation.

The results of these interviews provide valuable illustrations of the transportation issues facing residents of the study area. The following is a summary of the findings generated during the stakeholder interviews, as well as an analysis of how this input can be incorporated into the final plan.

1. Findings concerning the NEED for public transit include:

- While numerous stakeholders *believed* a need existed for public transit service, there are no data to support their beliefs.
- There are specific populations where the need for public transit service is critical. There is significant variation in the need for public transit service among residents of the study area.
- Public transit should be part of a county's comprehensive planning process.
- Health care and work trips are most critical.

2. Findings concerning GEOGRAPHIC AREAS where public transit is needed include:

- Service from LaBelle to Fort Myers, with an emphasis placed on medical and shopping trips and service to the airport. Although a similar service had been operated previously by Good Wheels, respondents indicated that smaller vehicles and increased service promotion might improve utilization.
- Service in and around LaBelle to satisfy medical needs.
- Service from Okeechobee County to St. Lucie County for employment trips.
- Service from Okeechobee to Miami for medical trips.
- Service in and around Okeechobee County with an emphasis on medical and shopping trips.
- Service in Desoto County and to adjacent counties for employment and medical-related trips for low income residents and seniors.

3. Findings concerning TARGET MARKETS for public transit include:

- Low income residents
- Elderly
- Employees

4. Findings regarding public transit PROBLEMS include:

- The lack of awareness regarding public transit within the study area is prevalent and is based, perhaps, on the lack of such service in the study area.
- No forum exists for agencies, organizations, businesses, or individuals to convene and discuss transportation issues and challenges.
- While private taxi service exists in certain communities, many of the companies fail to train drivers and fail to conduct vehicle safety inspections.
- Any interest in public transit throughout the study area comes from public or private, non-profit organizations. There appears to be no interest in rural public transit among the private sector.
- Since few counties have public transit “champions” - individuals who passionately support and advocate for public transit - the likelihood of implementing new services is limited.
- Concerns about personal financial liability preclude many from actively serving as transportation volunteers. Several volunteer-based programs are interested in providing transportation but refrain from doing so because of liability insurance concerns.

5. Findings regarding possible public transit SOLUTIONS/IDEAS include:

- The traditional public transit model will not succeed in this part of Florida. An organized volunteer program could serve as a solution.
- Venues should be established to discuss, plan, and implement service ideas.
- Utilization of AMTRAK and intercity bus should be assessed to satisfy mobility needs.
- Increased utilization of TD service by the general public should be encouraged.

Stakeholder Interviews - Analysis and Conclusions

Overall, rural public transportation is a term unfamiliar to most within the study area. For some, public transportation suggests big buses, subways, or bullet trains. For others, public transportation suggests specialized services that are available only to a certain segment of the population. When asked more detailed questions, most key stakeholders within the study area indicated awareness of the service provided by their respective Community Transportation Coordinator but believed that these services were only available to a certain segment of the population. In this rural part of Florida, people seldom, if ever, think of public transportation as a service that is available to all residents. Yet, the need for transportation service within the study area is paramount. Lack of rural public transportation prevents some rural Floridians, particularly those of lower incomes, from accessing the necessities of life like sustenance trips, employment, and medical care.

Given the geographic size and the low population density of the study area and the operational costs of traditional fixed-route and paratransit service, new and innovative methods of solving mobility problems for study area residents must be implemented. Institutional barriers that prevent organizations from working together should be eliminated and incentives to encourage collaboration should be implemented. Liability insurance is a serious impediment to volunteer transportation services within the study area, but volunteerism is perhaps the greatest opportunity available. Additional research should be conducted to better understand the “informal” transportation systems that exist within the study area’s lower-income communities, and creative solutions (i.e., fuel vouchers, user-side subsidies) must be identified and implemented.

UNMET SERVICE NEEDS/DEMAND ESTIMATION

One particular task in the development of this plan includes the identification of unmet transportation service needs, the preparation of estimates of demand for public transit, and a brief evaluation of alternate methods for increasing mobility through transportation system improvements. This section summarizes the results of this effort and leads into the final task of this effort, the identification and evaluation of various service alternatives and general recommendations.

Various methods of estimating demand for transit service and assessing unmet mobility needs are presented and discussed in this section. The demand estimation techniques utilize data and findings from all previous tasks as well as operating data collected from other sources. The recommendations provided in the "stakeholder" interviews and the existing levels and perceptions of service also are considered in assessing the need for improved service.

A need assessment also is included, which summarizes relevant information concerning unmet demand in the service area, service span and frequency, and types of service available that may contribute to improved transportation service and mobility for the residents of the study area. In the discussion of unmet need, information will be drawn from the most recent Annual Operating Reports submitted to the Commission for the Transportation Disadvantaged by each of the counties in the study area in September 2004.

Census Tract Analysis/Transit Dependency

Information from the U.S. Census can be used to determine characteristics that are highly correlated with a person's or household's need for transit. This type of analysis is useful for determining census tracts with high transit-dependent characteristics. Demographic characteristics that are generally used to indicate transit dependence included the distribution of youth (under 18 years of age), elderly persons (over 65 years of age), low-income households (125% of poverty level), and zero-vehicle households. (A description of the process utilized to define transit dependent locations is provided in Appendix A). It is important to note that a census tract analysis alone will not accurately and effectively define the mobility needs for an area. It is critical that interviews and other "non-quantitative" methods be used to identify mobility needs.

The following analysis was conducted at the Block Group level, providing a further level of detail to the analysis. Each county's transit dependent analysis is graphically represented with a county-wide map of those areas that have transit dependent characteristics. Please note that these maps were generated through the utilization of data extracted from the US Census Bureau. In subsequent communication with area representatives, as well as a field review, the areas identified as "transit dependent" are not

necessarily an area that would generate requests for public transportation. While the percentage of the population within those areas demonstrates transit dependence, the actual number of individuals within those areas may be limited and may not support public transportation.

In the following section, the results of each County's transit dependency analysis are summarized. With the exception of Collier County, none of the rural counties provide a fixed-route service to residents. The analysis provided for the remaining counties serves an informational purpose to identify those block groups that are highly correlated with a household's need for transit service, based only on Census data.

Collier County

Collier Area Transit (CAT) provides transit services to areas throughout Collier County. There are currently eight routes providing service coverage in Collier County, including an Express route that runs twice a day between Immokalee and Marco Island. As noted in Table 9, Tracts 112.04 and 112.05 are identified as the most transit-dependent tracts in the county. In fact, six of the ten primary transit-dependent block groups are located within these two census tracts. These tracts are located in the Immokalee area. Both the Blue Route and the Marco Express Route provides service to this area. The four other primary transit-dependent block groups are located at the Collier/Lee County line just west of US 41, two block groups along the east side of Goodlette-Frank Road between Pine Ridge Road and and US 41, and a small block group located on the south side of Rattlesnake Hammock Road, just east of US 41. Figure 2 provides a visual depiction of the transit dependent Census Block Groups in Collier County.

Table 9
Collier County – Transit-Dependent Census Block Groups
(only blocks within the Immokalee Area are shown)

Block	Route(s) Serving Block	Comments
PRIMARY BLOCKS (significantly above average)		
112.05 BG 2	Blue, Marco Express	Service Available
112.05 BG 1	Blue, Marco Express	Service Available
112.05 BG 3	Blue, Marco Express	Service Available
112.04 BG 3	Blue, Marco Express	Service Available
112.04 BG 1	Blue, Marco Express	Service Available
112.04 BG 2	Blue, Marco Express	Service Available

Collier County
Transit Dependency
Census 2000

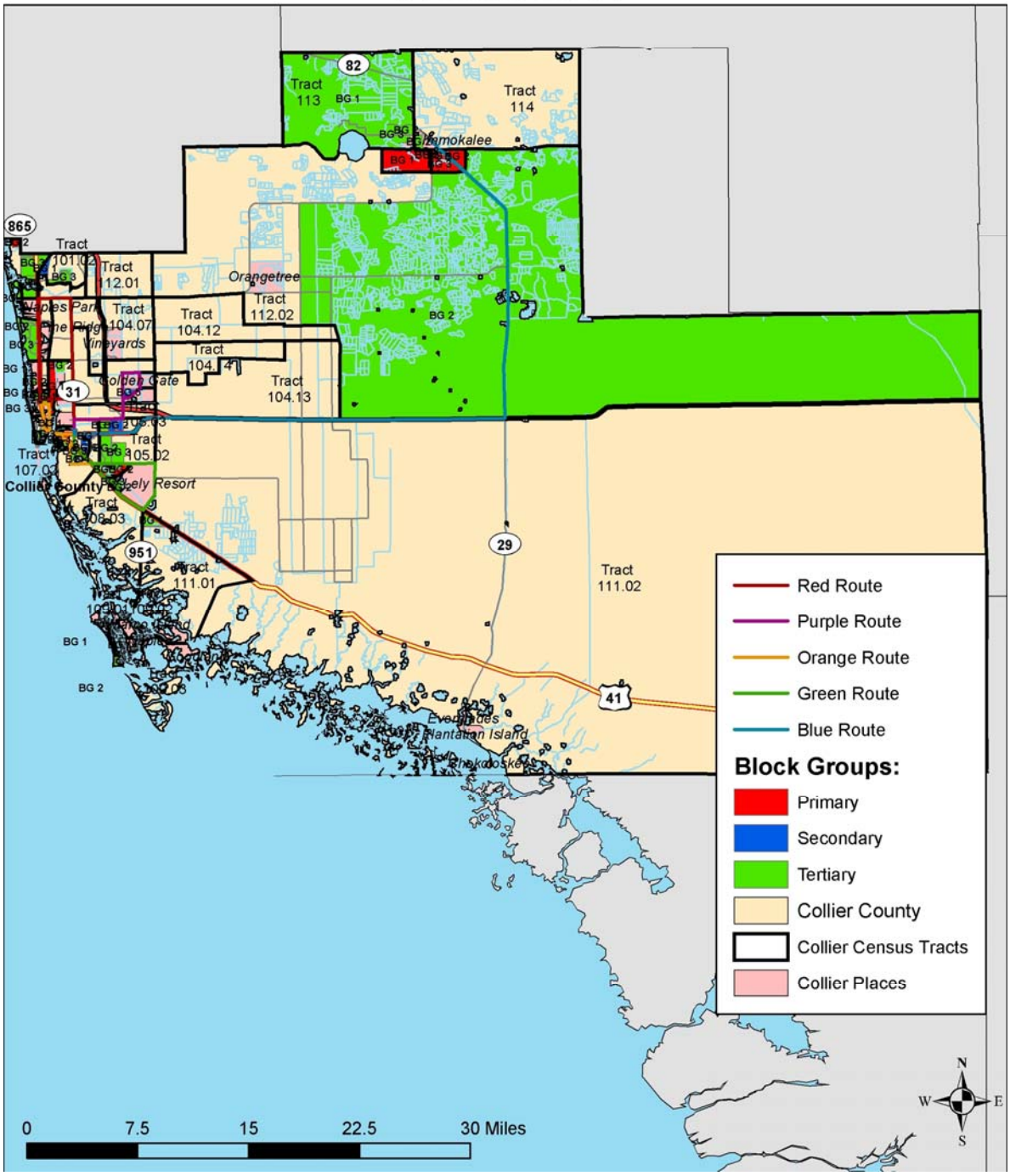

Figure 2

Regarding secondary transit-dependent groups, many of the block groups making the list are along the coastal areas. It should be noted that, sometimes, census blocks in typically affluent coastal communities are characterized by a large enough percentage of elderly so as to have a high enough composite score from this analysis to be considered transit-dependent. This is likely the case for Collier County. There are no secondary transit-dependent groups in the Immokalee area.

With a few exceptions, transit service is provided to most of the transit-dependent block groups identified in this analysis. The main areas identified as being transit-dependent and not being served are located in the northern areas of the county by the Lee County line along US 41. Also, some block groups located along the gulf front are not considered to be served because of their distance from US 41. Those areas within Collier County that are within the study area, and the area of Immokalee specifically, do have transportation services available to them.

DeSoto County

At the current time, DeSoto County does not provide fixed-route transit service to its residents. Transportation services are provided in the county through the Transportation Disadvantaged Program by ATC Paratransit for those residents who meet the eligibility standards of the program.

As noted in Table 10, the transit dependency analysis identified just one block group as a primary transit dependent block group. Block Group 9803.00 BG 3 is located at the southwest corner of the intersection of US 17 and SR 70 in Arcadia. Nearly 34 percent of residents in this block group are under the age of 18, over 14 percent are over the age of 65 and over 10 percent of all households do not have access to an automobile. One secondary transit dependent block group is in the same general area as the primary transit dependent group, on the south side of SR 70 just west of US 17. The remaining secondary transit dependent block group is located to the East of Arcadia, along SR 70. In this block group, 9801.00 BG 2, over 35 percent of its residents are over the age of 65. Figure 3 provides a visual description of where the transit dependent block groups in DeSoto County are located.

Table 10
DeSoto County – Transit-Dependent Census Block Groups

Block	Route(s) Serving Block	Comments
PRIMARY BLOCKS (significantly above average)		
9803.00 BG 3	--	Not served
SECONDARY BLOCKS (far above average)		
9801.00 BG 2	--	Not served
9803.00 BG 1	--	Not served

DeSoto County
Transit Dependency
Census 2000

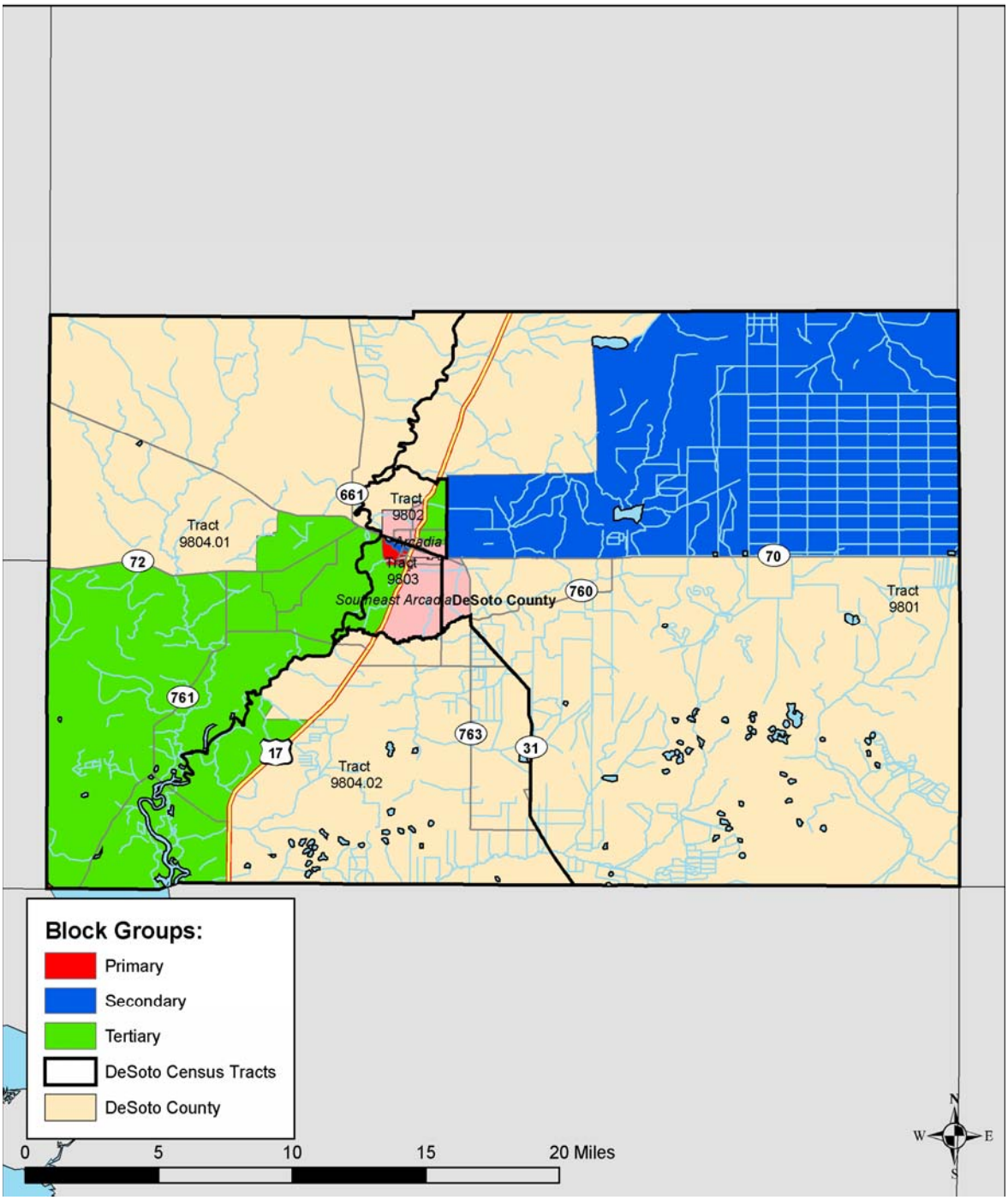

Figure 3

Glades County

As mentioned previously, Good Wheels, the Community Transportation Coordinator for Hendry and Glades counties, recently began a new transportation service for this area. In addition to providing service to transportation disadvantaged residents, a new limited dial-a-ride service for the general public began in January 2005. The service area includes the LaBelle municipal area and the Moore Haven/Clewiston area. The present system provides circulation within each community, one day per week. It is anticipated that this service will expand to bring services more than one day per week and to provide those services from community to community.

The transit dependent analysis for Glades County identified no Census Block Groups as primarily dependent. However, three block groups were identified as secondary transit dependent. A listing of all the secondary transit dependent block groups in Glades County can be found in Table 11. Two block groups appear in the area of Buckhead Ridge, slightly southwest of Okeechobee, along the western shore of Lake Okeechobee. One of these block groups, 1.00 BG 2, has almost 50 percent of its population over the age of 65. Likewise, the one remaining secondary transit dependent block group is located in the Moore Haven area and reports that over 35 percent of its population is under the age of 18.

Table 11
Glades County – Transit-Dependent Census Block Groups

Block	Route(s) Serving Block	Comments
PRIMARY BLOCKS (significantly above average)		
None	--	--
SECONDARY BLOCKS (far above average)		
1.00 BG 2	--	Not served
2.00 BG 4	Good Wheels Dial-a-Ride	Service Available
1.00 BG 1	--	Not served

Glades County
Transit Dependency
Census 2000

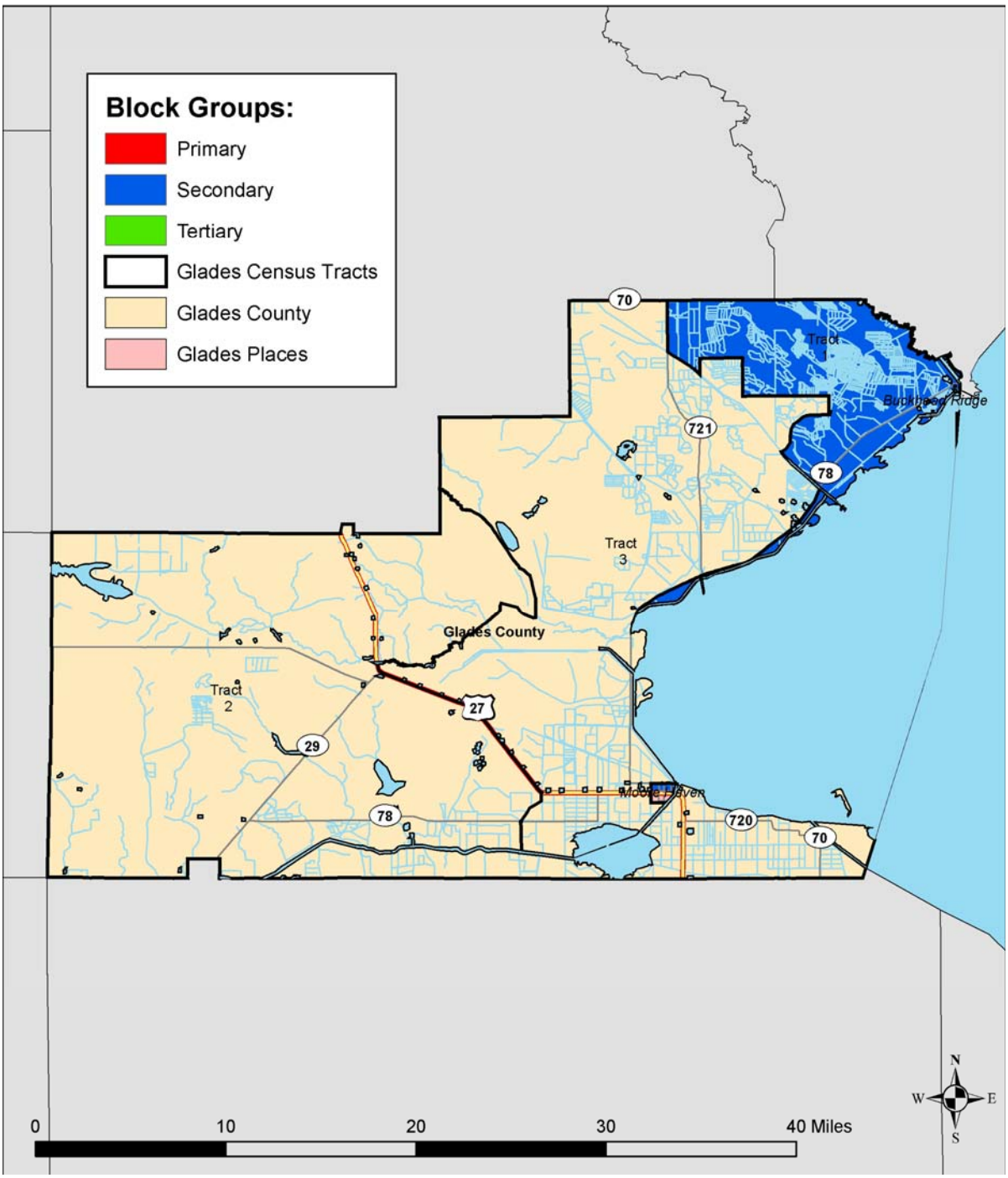

Figure 4

Hardee County

At the current time, there are no fixed route transit services provided in Hardee County. Transportation services are provided in the county through the Transportation Disadvantaged Program by ATC/Vancom for those residents who meet the eligibility standards of the program.

As noted in Table 12 below, 2000 Census data shows Hardee County has one primary transit dependent block group, 9702.00 BG 1. This block group is located on the East side of US 17, just south of the Hardee/Polk County line. This is in the general area of Bowling Green. The two secondary transit dependent block groups are located nearby, with 9702.00 BG 3 located just to the West of US 17 in the Bowling Green area, and 9703.00 BG 1 just to the East of US 17 spanning the area between Bowling Green and Wauchula. In 9702.00 BG 3, 34 percent of the population is under the age of 18. All of the transit dependent census block groups can be found in Figure 5. It is important to note that this data and the associated figures should serve as a guide in determining where further study may be necessary. The block groups indicated below cover a significant amount of land area and contain a mix of socio-economic groups who may or may not utilize public transportation if it were available to them. Further study may indicate that these individuals have found and are using alternative forms of transportation.

Table 12
Hardee County – Transit-Dependent Census Block Groups

Block	Route(s) Serving Block	Comments
PRIMARY BLOCKS (significantly above average)		
9702.00 BG 1	--	Not served
SECONDARY BLOCKS (far above average)		
9703.00 BG 1	--	Not served
9702.00 BG 3	--	Not served

Hardee County
Transit Dependency
Census 2000

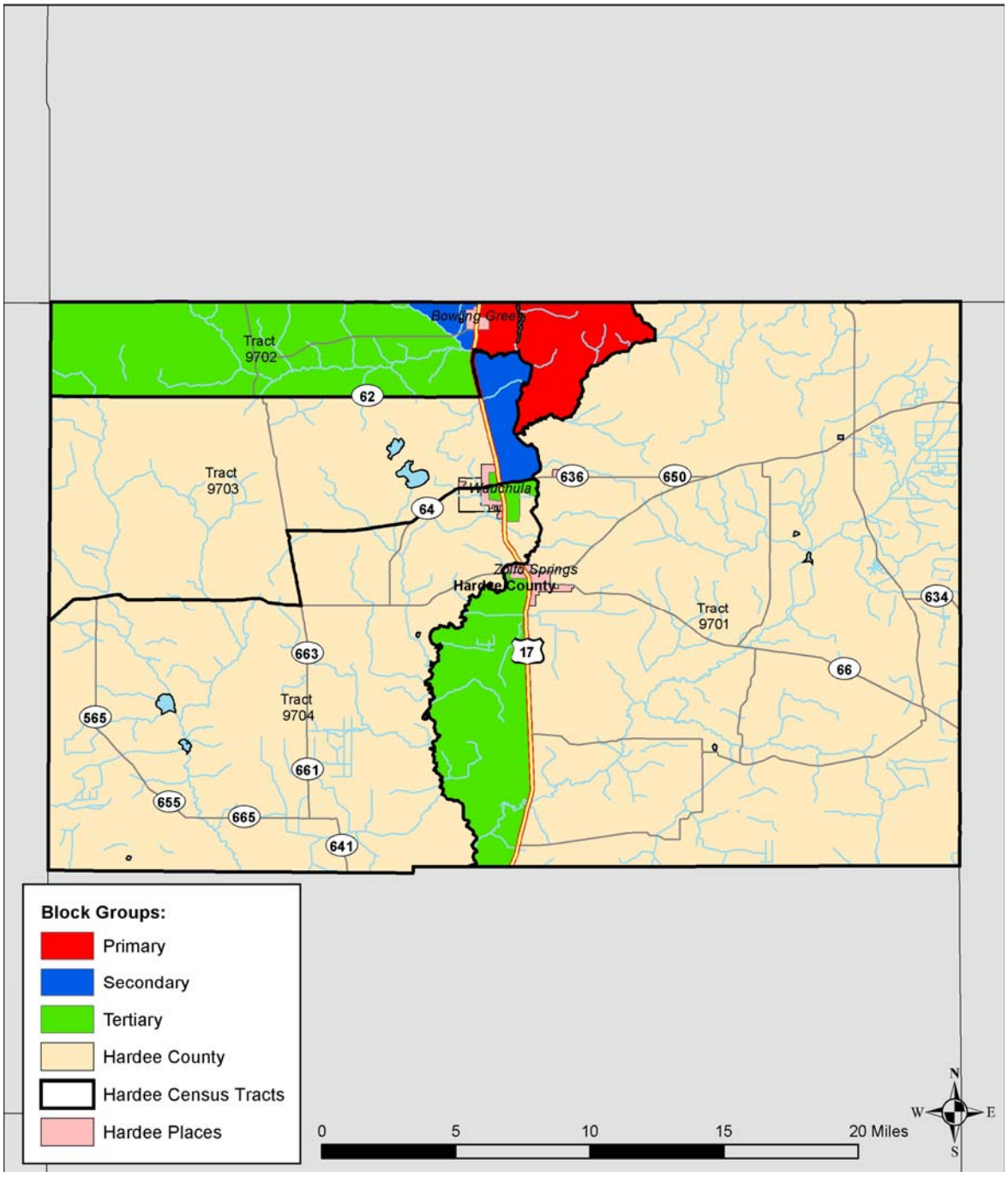

Figure 5

Hendry County

As noted in the previous discussion, Good Wheels, the Transportation Disadvantaged Coordinator for Hendry and Glades counties recently began a new transportation service for area residents. In addition to providing service to transportation disadvantaged residents, a new dial-a-ride service for the general public began in January 2005. The service area includes the LaBelle municipal area and the Moore Haven/Clewiston area.

The one primary transit dependent block group in Hendry County is located just south of Clewiston. This block group has a significantly high number of residents under the age of 18, over one-third of the population meets this criteria for transit dependency. The one secondary transit dependent group is located in the LaBelle area, with over 40 percent of those residents being over the age of 65. According to the transit dependency analysis, all block groups except for 9401.00 BG 1, are located in and around the LaBelle and Clewiston areas. A listing of these block groups can be found in Table 13 and Figure 6 provides a visual description of the location of these block groups.

Table 13
Hendry County – Transit-Dependent Census Block Groups

Block	Route(s) Serving Block	Comments
PRIMARY BLOCKS (significantly above average)		
2.00 BG 4	Good Wheels Dial-a-Ride	Service Available
SECONDARY BLOCKS (far above average)		
4.00 BG 4	Good Wheels Dial-a-Ride	Service Available
TERTIARY BLOCKS (above average)		
2.00 BG 3	Good Wheels Dial-a-Ride	Service Available
9401.00 BG 1	--	Not served
1.00 BG 5	Good Wheels Dial-a-Ride	Service Available
4.00 BG 3	Good Wheels Dial-a-Ride	Service Available
4.00 BG 5	Good Wheels Dial-a-Ride	Service Available

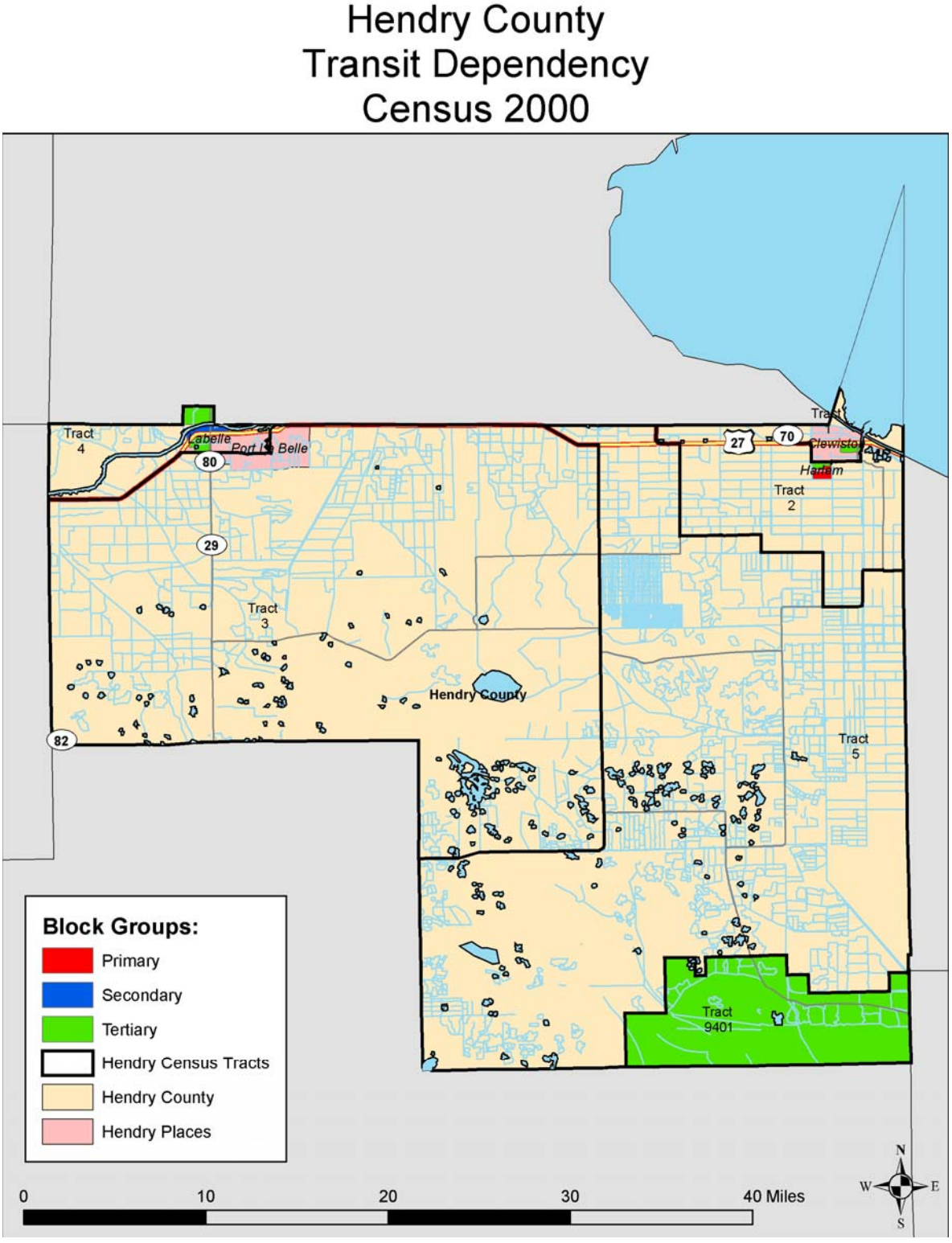
Hendry County
Transit Dependency
Census 2000
Tract 4
Labelle
Port La Belle
80
27
70
Clewiston
Harlem
Tract 2
29
Tract 3
Hendry County
82
Tract 5
Tract 9401
Block Groups:
Primary
Secondary
Tertiary
Hendry Census Tracts
Hendry County
Hendry Places
0
10
20
30
40 Miles
N
W
E
S

Figure 6

Highlands County

At the current time, there are no fixed route transit services provided in Highlands County. Transportation services are provided in the county through the Transportation Disadvantaged Program by ATC/Vancom for those residents who meet the eligibility standards of the program. However, in August 2002, a transit feasibility study was completed by the University of South Florida Center for Urban Transportation Research. The study recommended the initiation of a deviated fixed-route service for the Avon Park – Sebring area of the county. It is important to note that the proposed deviated fixed-route for Highlands County developed in that study would have directly served four of the five primary dependent census block groups identified in the transit-dependent analysis. Along with the deviated fixed-route, a feeder service to the Lake Placid area, also referenced in the transit feasibility study, would have serviced the fifth primary dependent block group, 9615.00 BG 4. Many of the secondary transit dependent block groups would also have been served by the proposed deviated fixed-route service. Table 14 and Figure 7 provide a further description of the transit dependent block groups in Highlands County.

Table 14
Highlands County – Transit-Dependent Census Block Groups

Block	Route(s) Serving Block	Comments
PRIMARY BLOCKS (significantly above average)		
9615.00 BG 4	--	Not served
9611.00 BG 4	--	Not served
9611.00 BG 3	--	Not served
9609.00 BG 3	--	Not served
9603.00 BG 5	--	Not served
SECONDARY BLOCKS (far above average)		
9601.00 BG 3	--	Not served
9609.00 BG 2	--	Not served
9617.00 BG 4	--	Not served
9603.00 BG 3	--	Not served
9615.00 BG 1	--	Not served
9612.00 BG 1	--	Not served

Highlands County
Transit Dependency
Census 2000

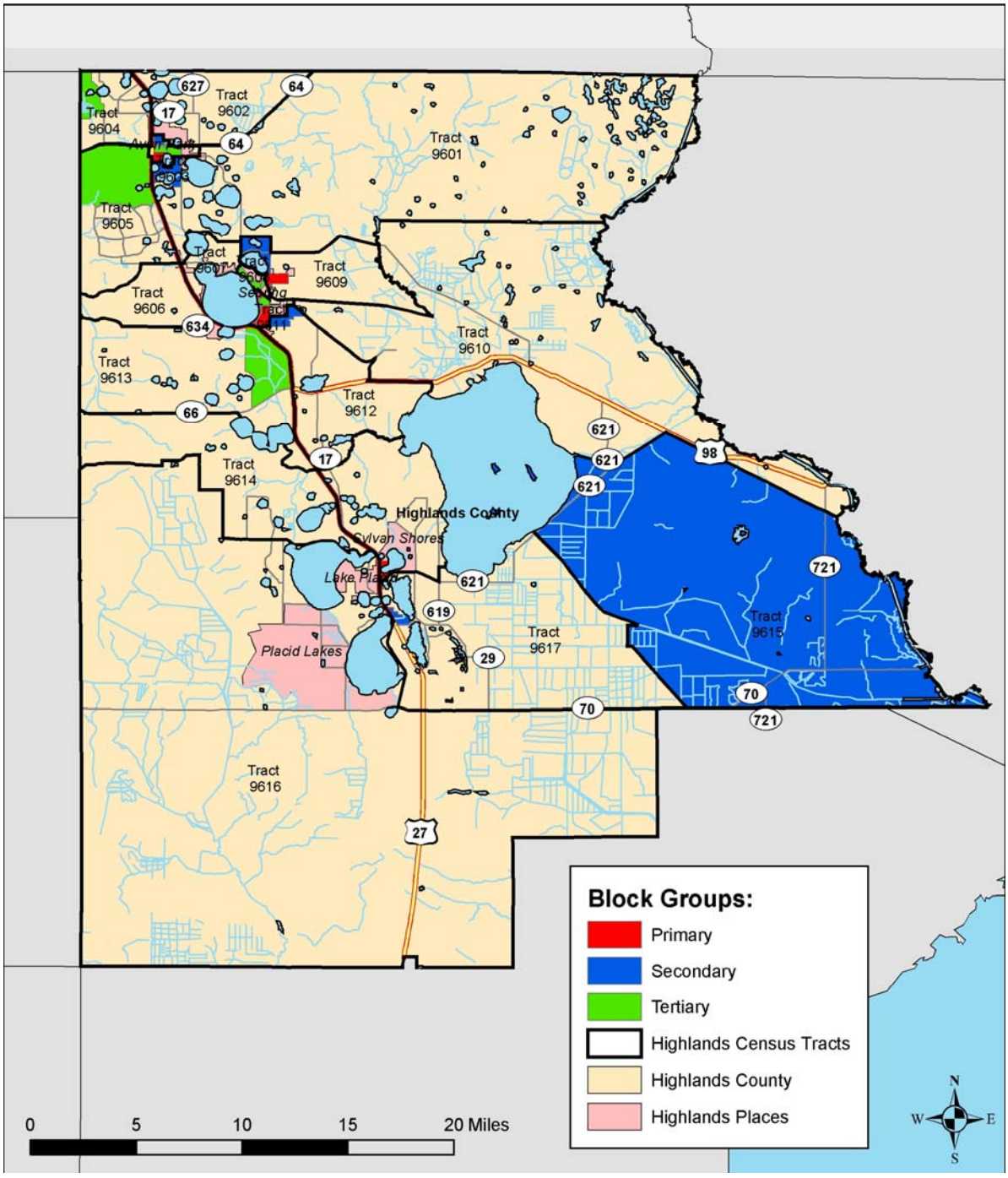

Figure 7

Okeechobee County

At the current time, there is no fixed route transit service provided in Okeechobee County. Transportation services are provided in the county through the Transportation Disadvantaged Program by ATC/Vancom for those residents who meet the eligibility standards of the program.

While an exceptionally rural area, the block groups identified in the transit dependency analysis for Okeechobee County all appear in a compact area of the county. All of the block groups with the exception of 9901.00 BG 2, a secondary transit dependent block group, cluster around the intersections of Routes US 441 and SR 70. These groups lie just north of Lake Okeechobee, including the areas abutting the Lake along US 98 and SR 78. Some of these block groups include exceptionally high numbers of residents over the age of 65, some with nearly 50 percent of all residents meeting this characteristic. Table 15 and Figure 8 provide a further description of these transit dependent block groups in Okeechobee County.

Table 15
Okeechobee County – Transit-Dependent Census Block Groups

Block	Route(s) Serving Block	Comments
PRIMARY BLOCKS (significantly above average)		
9903.00 BG 1	--	Not served
9905.00 BG 3	--	Not served
SECONDARY BLOCKS (far above average)		
9901.00 BG 2	--	Not served
9905.00 BG 2	--	Not served

Okeechobee County
Transit Dependency
Census 2000

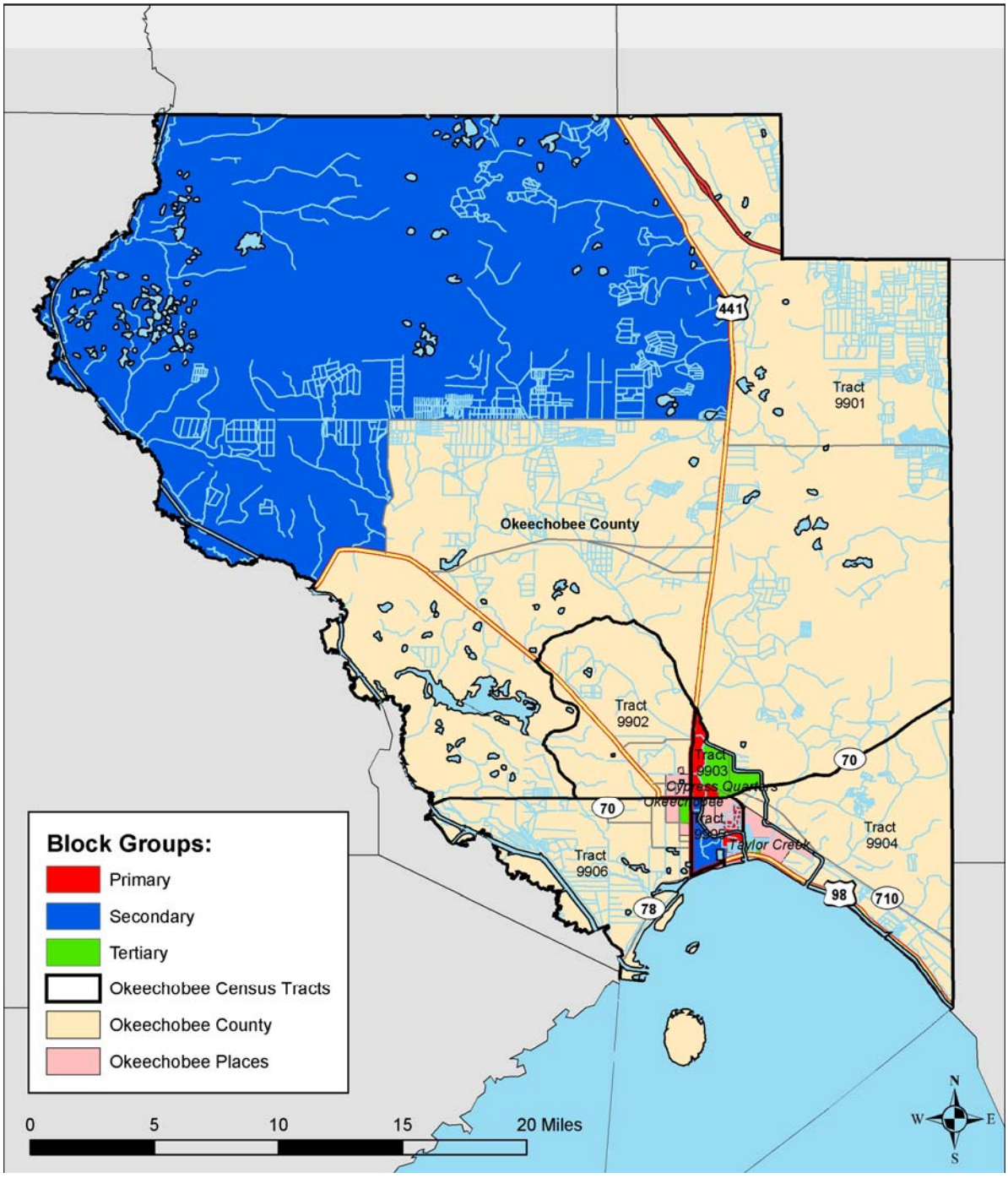

Figure 8

Conclusions

Based on the block group analysis, there are opportunities to review and identify areas in which transit dependent characteristics have been identified. In the case of Collier County, the establishment of fixed-route permanent transit service certainly meets the majority of the block groups identified as being transit-dependent. In the case of Glades and Hendry counties, the newly established “dial-a-ride” service certainly operates in the areas identified as transit-dependent. In the other areas identified as transit-dependent in the remaining counties for this report, further study is necessary. However, the establishment of services, such as those provided by Good Wheels in Glades and Hendry counties, may be of great value to the residents in those areas not afforded public transit options at the current time.

Transportation Disadvantaged Population Estimates

The Florida Transportation Disadvantaged Program serves two population groups. The first group, Potential TD population (also known as Category I), includes persons who are disabled, elderly, low-income, and children who are "high-risk" or "at-risk." These Potential TD persons are eligible for trips that are sponsored by social services or other governmental agencies. Examples include Medicaid trips, trips to congregate meal sites, and trips to occupational training facilities.

The second group, the Transportation Disadvantaged (TD) population (also known as Category II), is a subset of the Potential TD population. This group includes those persons who are unable to transport themselves or to purchase transportation. Individuals within this group are generally eligible to receive subsidized trips for specific purposes and are included in the Category I population. This group also is eligible for trips sponsored by the Transportation Disadvantaged Trust Fund, as funding permits. (The method used to develop TD Category I and Category II population estimates is provided in Appendix B). For the purpose of this report, the population estimates for individuals and specific segments within Category II are provided. In addition, because it has been established through the Census discussion that there are significant elderly and low-income individuals within the study area, two additional population segments are included in the discussion. Data are provided for the following segments: Non-Disabled, Elderly, Low Income and the Non-Disabled, Non-Elderly, Low Income. It is assumed that these groups, as well as other segments within the Category II population, will need alternative mobility solutions.

The following section provides, by county, the "Adjusted" Transportation Disadvantaged Category II population estimates; estimates of "Population Segments" for 2004 (total county population estimates for 2004 were obtained from the University of Florida's Bureau of Economic and Business Research [BEBR]) and projections through the year 2010; and the demand for "general purpose" trips. Please note the area of Immokalee is not addressed in this section of the analysis. The data for Category I and II populations are available only by county and is not available for individual communities.

Desoto County

Table 16 presents the 2004 estimates for persons who are included in the Category I, Category II, and the Adjusted Category II populations. Approximately 3,759 persons (11.7 % of the county's population) are estimated to be included in the Category II population or the "TD Population." In addition, those persons who fall within the Non-Disabled, Low Income population segments (referred to as the Adjusted Category II or ACII are added), the total ACII is 7,456, representing 23.1 percent of Desoto County's population. (This ACII will more accurately reflect the need for "general purpose" trips and will be the reference point for our discussions in the following sections).

Table 16
Transportation Disadvantaged Populations
Desoto County 2004

TD Population Categories	TD Population Estimates	*% of County Population
Category I - Potential TD Population	14,709	45.7%
Category II – TD Population	3,759	11.7%
Adjusted Category II Population	7,456	23.1%

Source: Estimates obtained by CUTR using the methodology described in *Methodology Guidelines for Forecasting TD Transportation Demand at the County Level, May 1993.*
*Bureau of Economic and Business Research, University of Florida, 2005

Table 17 shows the categorization or "population segments" of the 2004 population estimates for the Adjusted Category II population. The largest subgroup of the estimated 7,456 persons in this population is that which consists of the Non-Disabled, Non-Elderly, Low Income group which represents 61.5 percent of our total Adjusted Category II.

Individuals within this segment will have significant need for employment trips, trips to medical facilities, and sustenance trips. Vanpools/carpools could certainly be a viable option for the employment trips for these individuals. We learned earlier that there are a number of agricultural producers and growers who are significant employers. Likewise, there are also institutional employers that should be encouraged to look into subsidizing transportation for their employees.

Table 17
TD Population Segments – Adjusted Category II
Desoto County 2004

Population Segments	Population Estimates	% of TD Population Category II – Adjusted
Transportation Disabled, Non-Elderly, Low Income	216	2.9%
Transportation Disabled, Non-Elderly, Non-Low Income	752	10.1%
Transportation Disabled, Elderly, Low Income	143	1.9%
Transportation Disabled, Elderly, Non-Low Income	1,220	16.4%
Non-Disabled, Elderly, Low Income	537	7.2%
Non-Disabled, Non-Elderly, Low Income	4,588	61.5%
Total Transportation Disadvantaged – Category II + Non-Disabled, Elderly Segments and Non-Disabled, Low Income	7,456	100.0%

Source: Estimates obtained by CUTR using the methodology described in *Methodology Guidelines for Forecasting TD Transportation Demand at the County Level, May 1993.*

Many of these individuals are likely to be eligible for Medicaid transportation services. Increased coordination with local Agency for Health Care Administration (AHCA) offices is necessary to ensure that those who need transportation services are receiving them. Sustenance trips may be addressed through the use of fixed route services that are limited in the number of hours operated per day or the number of operating days per week.

Table 18, below provides the projections for each population segment through the year 2010. As discussed above, our projections conclude that the primary population segment in our Adjusted Category II population is the Non-Disabled, Non-Elderly, Low-Income segment.

Table 18
TD Population Segment Projections – Adjusted Category II
Desoto County 2006 - 2010

Population Segments	2006	2007	2008	2009	2010
Transportation Disabled, Non-Elderly, Low Income	218	220	221	223	225
Transportation Disabled, Non-Elderly, Non-Low Income	758	764	772	778	785
Transportation Disabled, Elderly, Low Income	147	151	155	159	164
Transportation Disabled, Elderly, Non-Low Income	1,253	1,287	1,322	1,358	1,395
Non-Disabled, Elderly, Low Income	552	566	582	598	614
Non-Disabled, Non-Elderly, Low Income	4,627	4,668	4,707	4,747	4,788
Total Adjusted Transportation Disadvantaged	7,555	7,656	7,759	7,863	7,971

Source: Estimates obtained by CUTR using the methodology described in *Methodology Guidelines for Forecasting TD Transportation Demand at the County Level, May 1993.*

Demand for General Purpose Trips

General purpose trips are trips made by Transportation Disadvantaged persons (Adjusted Category II) to destinations of their choice (not agency programs). Examples of general trips are employment trips, grocery trips, and non-Medicaid supported medical trips. The methodology utilized to forecast the demand for general purpose trips involves the use of trip rates derived in a study of paratransit demand conducted in 1990 by the San Francisco Bay Area Metropolitan Transportation Commission (see *San Francisco Bay Area Regional Paratransit Plan: Final Report).* The trip rates were developed based on the actual experiences of paratransit systems around the United States that were meeting most of all of the trip demand in their service areas. The use of this methodology has been recommended by the Federal Transit Administration to estimate demand for complementary paratransit services.

The total demand for general trips established below is the Adjusted Category II (ACII) TD population multiplied by the trip rate (14.4 trips per person). The ACII population was used to forecast demand because this is the established pool of persons eligible for general purpose trips funded by the state. Table 19 provides the forecasts of ACII TD population for Desoto County and the corresponding demand for general purpose trips for 2006 through 2010.

Table 19
Forecasts of Adjusted Category II TD Population and Demand for General Purpose Trips
Desoto County 2006 - 2010

Year	TD Population Adjusted Category II	Demand for General Purpose Trips
2006	7,555	108,792
2007	7,656	110,246
2008	7,759	111,730
2009	7,863	113,227
2010	7,971	114,782

Source: Estimates obtained by CUTR using the methodology described in *Methodology Guidelines for Forecasting TD Transportation Demand at the County Level, May 1993.*

Glades County

Table 20 presents the 2004 estimates for persons who are included in the Category I, Category II and the Adjusted Category II populations. Approximately 1,822 persons (17.2% of the county's population) are estimated to be included in the Adjusted Category II population and should be considered when examining the need for general purpose trips in Glades County.

Table 20
Transportation Disadvantaged Populations
Glades County 2004

Population Segments	Population Estimates	% of County Population
Category I - Potential TD Population	4,565	43.2%
Category II – TD Population	807	7.6%
Adjusted Category II Population	1,822	17.2

Source: Estimates obtained by CUTR using the methodology described in *Methodology Guidelines for Forecasting TD Transportation Demand at the County Level, May 1993.*

Table 21 shows the categorization or "population segments" of the 2004 population estimates for the Adjusted Category II population in Glades County. The largest subgroup of the estimated 1,822 persons in this population is that which consists of the Non-Disabled, Non-Elderly, Low Income group which represents 60.8 percent of our total Adjusted Category II.

Table 21
TD Population Segments – Adjusted Category II
Glades County 2004

Population Segments	Population Estimates	% of TD Population Category II
Transportation Disabled, Non-Elderly, Low Income	46	2.5%
Transportation Disabled, Non-Elderly, Non-Low Income	237	13.0%
Transportation Disabled, Elderly, Low Income	25	1.4%
Transportation Disabled, Elderly, Non-Low Income	275	15.1%
Non-Disabled, Elderly, Low Income	131	7.2%
Non-Disabled, Non-Elderly, Low Income	1,108	60.8%
Total Adjusted Transportation Disadvantaged	1,822	100.0%

Source: Estimates obtained by CUTR using the methodology described in *Methodology Guidelines for Forecasting TD Transportation Demand at the County Level, May 1993.*

As with the discussion of Desoto County above, individuals within this segment will have significant need for employment trips, trips to medical facilities, and sustenance trips. Vanpools/carpools could certainly be a viable option for the employment trips for these individuals. We learned earlier that there are a number of agricultural producers and growers who are significant employers. Likewise there also are institutional employers that should be encouraged to look into subsidizing transportation for their employees.

Table 22, provides the projections for each population segment through the year 2010. As discussed above, our projections conclude that the primary population segment in our Adjusted Category II population is the Non-Disabled, Non-Elderly, Low-Income segment.

Table 22
TD Population Segment Projections – Adjusted Category II
Glades County 2006 - 2010

Population Segments	2006	2007	2008	2009	2010
Transportation Disabled, Non-Elderly, Low Income	47	47	48	49	50
Transportation Disabled, Non-Elderly, Non-Low Income	240	245	249	252	256
Transportation Disabled, Elderly, Low Income	25	26	26	27	28
Transportation Disabled, Elderly, Non-Low Income	281	286	293	299	305
Non-Disabled, Elderly, Low Income	134	137	140	143	147
Non-Disabled, Non-Elderly, Low Income	1,126	1,143	1,161	1,179	1,197
Total Adjusted Transportation Disadvantaged	1,853	1,884	1,917	1,949	1,983

Source: Estimates obtained by CUTR using the methodology described in *Methodology Guidelines for Forecasting TD Transportation Demand at the County Level, May 1993.*

Demand for General Purpose Trips

As discussed above, the total demand for general purpose trips is the Adjusted Category II TD population multiplied by the trip rate. Table 23 provides the forecasts of the ACII TD population for Glades County and the corresponding demand for general purpose trips for 2006 through 2010.

Table 23
Forecasts of Adjusted Category II TD Population and
Demand for General Purpose Trips
Glades County 2006 - 2010

Year	TD Population Adjusted Category II	Demand for General Purpose Trips
2006	1,853	26,683
2007	1,884	27,130
2008	1,917	27,605
2009	1,949	28,066
2010	1,983	28,555

Source: Estimates obtained by CUTR using the methodology described in *Methodology Guidelines for Forecasting TD Transportation Demand at the County Level, May 1993.*

Hardee County

Table 24 presents the 2004 estimates for persons who are included in the Category I, Category II and Adjusted Category II populations. Approximately 6,173 persons (22.9% of the county's population) are estimated to be included in the Adjusted Category II population and should be considered when examining the need for general purpose trips in Hardee County.

Table 24
Transportation Disadvantaged Populations
Hardee County 2004

Population Estimates	Population Estimates	% of County Population
Category I - Potential TD Population	10,202	37.9%
Category II – TD Population	2,435	9.0%
Adjusted Category II Population	6,173	22.9%

Source: Estimates obtained by CUTR using the methodology described in *Methodology Guidelines for Forecasting TD Transportation Demand at the County Level, May 1993.*

Table 25 shows the categorization or "population segments" of the 2004 estimates for the Adjusted Category II population. The largest subgroup of the estimated 6,173 persons in the Adjusted TD population is that which consists of non-disabled, non-elderly, and low income persons.

The needs for transportation services within Hardee County are similar to those described in the narrative on Desoto and Glades Counties. The mobility constraints that must be addressed for this area are for those persons who have no options for employment and sustenance trips and those whose non-emergency medical transportation needs are not funded by the Medicaid program.

Table 25
TD Population Segments – Adjusted Category II
Hardee County 2004

Population Segments	Population Estimates	% of TD Population Category II
Transportation Disabled, Non-Elderly, Low Income	131	2.1%
Transportation Disabled, Non-Elderly, Non-Low Income	418	6.8%
Transportation Disabled, Elderly, Low Income	161	2.6%
Transportation Disabled, Elderly, Non-Low Income	693	11.2%
Non-Disabled, Elderly, Low Income	500	8.1%
Non-Disabled, Non-Elderly, Low Income	4,270	69.2%
Total Transportation Disadvantaged	6,173	100.0%

Source: Estimates obtained by CUTR using the methodology described in *Methodology Guidelines for Forecasting TD Transportation Demand at the County Level, May 1993.*

Table 26 below provides the projections for each population segment through the year 2010. In 2010, it is projected that there will be 6,349 persons within our Adjusted Category II. The projections for general trips follow.

Table 26
TD Population Segment Projections – Adjusted Category II
Hardee County 2006 - 2010

Population Segments	2006	2007	2008	2009	2010
Transportation Disabled, Non-Elderly, Low Income	132	133	134	134	135
Transportation Disabled, Non-Elderly, Non-Low Income	420	422	425	429	431
Transportation Disabled, Elderly, Low Income	162	163	163	164	164
Transportation Disabled, Elderly, Non-Low Income	695	697	700	702	704
Non-Disabled, Elderly, Low Income	502	504	505	507	508
Non-Disabled, Non-Elderly, Low Income	4,297	4,325	4,352	4,379	4,407
Total Transportation Disadvantaged	6,208	6,244	6,279	6,315	6,349

Source: Estimates obtained by CUTR using the methodology described in *Methodology Guidelines for Forecasting TD Transportation Demand at the County Level, May 1993.*

Demand for General Purpose Trips

Table 27 provides the forecasts of Adjusted Category II (ACII) TD population for Hardee County and the corresponding demand for general purpose trips for 2006 through 2010.

Table 27
Forecasts of Adjusted Category II TD Population and Demand for General Purpose Trips
Hardee County 2006 - 2010

Year	TD Population Category II	Demand for General Purpose Trips
2006	6,208	89,395
2007	6,244	89,914
2008	6,279	90,418
2009	6,315	90,936
2010	6,349	91,426

Source: Estimates obtained by CUTR using the methodology described in *Methodology Guidelines for Forecasting TD Transportation Demand at the County Level, May 1993.*

Hendry County

Table 28 presents the 2004 estimates for persons who are included in the Category I, Category II and Adjusted Category II populations. Approximately 7,586 persons (21.0 percent of the county's population) are estimated to be included in the Adjusted Category II population and should be considered when examining the need for general purpose trips in Hendry County.

Table 28
Transportation Disadvantaged Populations
Hendry County 2004

Population Segments	Population Estimates	% of County Population
Category I - Potential TD Population	13,333	36.8%
Category II – TD Population	3,276	9.0%
Adjusted Category II Population	7,586	21.0%

Source: Estimates obtained by CUTR using the methodology described in *Methodology Guidelines for Forecasting TD Transportation Demand at the County Level, May 1993.*

Table 29 shows the categorization or "population segments" of the 2004 population estimates for the Adjusted Category II population in Hendry County. The largest subgroup of the estimated 7,586 persons

in this population is that which consists of the Non-Disabled, Non-Elderly, Low Income group, which represents 69.4 percent of our total Adjusted Category II.

Table 29
TD Population Segments – Adjusted Category II
Hendry County 2004

Population Segments	Population Estimates	% of TD Population Category II
Transportation Disabled, Non-Elderly, Low Income	155	2.0%
Transportation Disabled, Non-Elderly, Non-Low Income	650	8.6%
Transportation Disabled, Elderly, Low Income	152	2.0%
Transportation Disabled, Elderly, Non-Low Income	729	9.6%
Non-Disabled, Elderly, Low Income	633	8.3%
Non-Disabled, Non-Elderly, Low Income	5,267	69.4%
Total Transportation Disadvantaged	7,586	100.0%

Source: Estimates obtained by CUTR using the methodology described in *Methodology Guidelines for Forecasting TD Transportation Demand at the County Level, May 1993.*

As indicated above, individuals within this segment will have significant need for employment trips, trips to medical facilities, and sustenance trips. Vanpools/carpools would certainly be a viable option for many of these employment trips.

Table 30 provides the projections for each population segment through the year 2010. As discussed above, our projections conclude that the primary population segment in our Adjusted Category II population is the Non-Disabled, Non-Elderly, Low-Income segment.

Table 30
TD Population Segment Projections – Adjusted Category II
Hendry County 2006 - 2010

Population Segments	2006	2007	2008	2009	2010
Transportation Disabled, Non-Elderly, Low Income	157	159	161	163	165
Transportation Disabled, Non-Elderly, Non-Low Income	659	667	676	685	694
Transportation Disabled, Elderly, Low Income	157	162	167	172	177
Transportation Disabled, Elderly, Non-Low Income	750	773	796	820	845
Non-Disabled, Elderly, Low Income	653	672	692	713	735
Non-Disabled, Non-Elderly, Low Income	5,335	5,405	5,475	5,547	5,618
Total Transportation Disadvantaged	7,711	7,838	7,967	8,100	8,234

Source: Estimates obtained by CUTR using the methodology described in *Methodology Guidelines for Forecasting TD Transportation Demand at the County Level, May 1993.*

Demand for General Purpose Trips

The total demand for general purpose trips is the Adjusted Category II TD population multiplied by the trip rate. Table 31 provides the forecasts of ACII TD population for Hendry County and the corresponding demand for general purpose trips for 2006 through 2010.

Table 31
Forecasts of Adjusted Category II TD Population and
Demand for General Purpose Trips
Hendry County 2006 - 2010

Year	TD Population Category II	Demand for General Purpose Trips
2006	7,711	111,038
2007	7,838	112,867
2008	7,967	114,725
2009	8,100	116,640
2010	8,234	118,570

Source: Estimates obtained by CUTR using the methodology described in *Methodology Guidelines for Forecasting TD Transportation Demand at the County Level, May 1993.*

Highlands County

Table 32 presents the 2004 estimates for persons who are included in the Category I, Category II and Adjusted Category II populations. Approximately 19,347 persons (22.1 percent of the county's population) are estimated to be included in the Adjusted Category II population and should be considered when examining the need for general purpose trips in Highlands County.

Table 32
Transportation Disadvantaged Populations
Highlands County 2004

Population Segments	Population Estimates	% of County Population
Category I - Potential TD Population	51,072	58.5
Category II – TD Population	9,170	10.5
Adjusted Category II Population	19,347	22.1%

Source: Estimates obtained by CUTR using the methodology described in *Methodology Guidelines for Forecasting TD Transportation Demand at the County Level, May 1993.*

Table 33 shows the categorization of the 2004 population estimates for the Adjusted Category II population in Highlands County. The largest subgroup of the estimated 19,347 persons in the ACII TD population is that which consists of the Non-Disabled, Non-Elderly, Low-Income group, representing 51.0 percent of our total.

Table 33
TD Population Segments – Adjusted Category II
Highlands County 2004

Population Segments	Population Estimates	% of TD Population Category II
Transportation Disabled, Non-Elderly, Low Income	289	1.5%
Transportation Disabled, Non-Elderly, Non-Low Income	1,254	6.5%
Transportation Disabled, Elderly, Low Income	535	2.8%
Transportation Disabled, Elderly, Non-Low Income	4,662	24.1%
Non-Disabled, Elderly, Low Income	2,733	14.1%
Non-Disabled, Non-Elderly, Low Income	9,874	51.0%
Total Transportation Disadvantaged	19,347	100.0%

Source: Estimates obtained by CUTR using the methodology described in *Methodology Guidelines for Forecasting TD Transportation Demand at the County Level, May 1993.*

Table 34 provides the projections for each population segment through the year 2010. As discussed above, the largest population segment is the Non-Disabled, Non-Elderly, Low-Income segment. It is estimated that by the year 2010, 10,566 individuals will be within this segment.

Table 34
TD Population Segment Projections – Adjusted Category II
Highlands County 2006 - 2010

Population Segments	2006	2007	2008	2009	2010
Transportation Disabled, Non-Elderly, Low Income	292	296	301	305	309
Transportation Disabled, Non-Elderly, Non-Low Income	1,272	1,289	1,306	1,324	1,342
Transportation Disabled, Elderly, Low Income	547	560	573	586	599
Transportation Disabled, Elderly, Non-Low Income	4,768	4,876	4,987	5,101	5,217
Non-Disabled, Elderly, Low Income	2,796	2,859	2,925	2,991	3,059
Non-Disabled, Non-Elderly, Low Income	10,009	10,146	10,284	10,425	10,566
Total Transportation Disadvantaged	19,684	20,026	20,376	20,732	21,092

Source: Estimates obtained by CUTR using the methodology described in *Methodology Guidelines for Forecasting TD Transportation Demand at the County Level, May 1993.*

Demand for General Purpose Trips

Table 35 provides the forecasts of TD population for Highlands County and the corresponding demand for general purpose trips for 2006 through 2010.

Table 35
Forecasts of Adjusted Category II TD Population and
Demand for General Purpose Trips
Highlands County 2006 - 2010

Year	TD Population Category II	Demand for General Purpose Trips
2006	19,684	283,450
2007	20,026	288,374
2008	20,376	293,414
2009	20,732	298,541
2010	21,092	303,725

Source: Estimates obtained by CUTR using the methodology described in *Methodology Guidelines for Forecasting TD Transportation Demand at the County Level, May 1993.*

Okeechobee County

Table 36 presents the 2004 estimates for persons who are included in the Category I, Category II, and Adjusted Category II populations. Approximately 9,802 persons (27.3 percent of the county's population) are included in the Adjusted Category II population and should be considered when examining the need for general purpose trips in Okeechobee County.

Table 36
Transportation Disadvantaged Populations
Okeechobee County 2004

Population Segments	Population Estimates	% of County Population
Category I - Potential TD Population	18,801	52.4
Category II – TD Population	4,114	11.5
Adjusted Category II Population	9,802	27.3

Source: Estimates obtained by CUTR using the methodology described in *Methodology Guidelines for Forecasting TD Transportation Demand at the County Level, May 1993.*

Table 37 shows the categorization of the 2004 population estimates for the Adjusted Category II TD population. The largest subgroup of the estimated 9,802 persons in this population is that which consists of Non-Disabled, Non-Elderly, Low-Income persons with 6,061 individuals or 61.8% of the total.

Table 37
TD Population Segments – Adjusted Category II
Okeechobee County 2004

Population Segments	Population Estimates	% of TD Population Category II
Transportation Disabled, Non-Elderly, Low Income	208	2.1%
Transportation Disabled, Non-Elderly, Non-Low Income	755	7.7%
Transportation Disabled, Elderly, Low Income	335	3.4%
Transportation Disabled, Elderly, Non-Low Income	1,534	15.7%
Non-Disabled, Elderly, Low Income	909	9.3%
Non-Disabled, Non-Elderly, Low Income	6,061	61.8%
Total Transportation Disadvantaged	9,802	100.0%

Source: Estimates obtained by CUTR using the methodology described in *Methodology Guidelines for Forecasting TD Transportation Demand at the County Level, May 1993.*

Table 38 provides the projections for each population segment through the year 2010.

Table 38
TD Population Segment Projections – Adjusted Category II
Okeechobee County 2006 - 2010

Population Segments	2006	2007	2008	2009	2010
Transportation Disabled, Non-Elderly, Low Income	211	214	218	221	224
Transportation Disabled, Non-Elderly, Non-Low Income	767	779	790	802	814
Transportation Disabled, Elderly, Low Income	343	352	362	371	381
Transportation Disabled, Elderly, Non-Low Income	1,575	1,616	1,658	1,701	1,746
Non-Disabled, Elderly, Low Income	933	957	982	1,007	1,033
Non-Disabled, Non-Elderly, Low Income	6,153	6,246	6,340	6,436	6,533
Total Transportation Disadvantaged	9,982	10,164	10,350	10,538	10,731

Source: Estimates obtained by CUTR using the methodology described in *Methodology Guidelines for Forecasting TD Transportation Demand at the County Level, May 1993.*

Demand for General Purpose Trips

As discussed above, the total demand for general purpose trips is estimated using the total Adjusted Category II population projections through the year 2010 above, multiplied by a standard trip factor. Table 39 provides the forecasts of the Adjusted Category II TD population for Okeechobee County and the corresponding demand for general purpose trips for 2006 through 2010.

Table 39
Forecasts of Adjusted Category II TD Population and
Demand for General Purpose Trips
Okeechobee County 2006 - 2010

Year	TD Population Category II	Demand for General Purpose Trips
2006	9,982	143,741
2007	10,164	146,362
2008	10,350	149,040
2009	10,538	151,747
2010	10,731	154,526

Source: Estimates obtained by CUTR using the methodology described in *Methodology Guidelines for Forecasting TD Transportation Demand at the County Level, May 1993.*

Service Area – Adjusted Category II and General Purpose Trip Estimates/Projections

Table 40 presents the 2004 estimates for persons who are included in the Category I, Category II and Adjusted Category II populations. Approximately 52,186 persons (22.8 percent of the study area's population) fall within the estimated population for the Adjusted Category II. Again, the ACII will more accurately reflect the need for general purpose trips.

Table 40
Transportation Disdvantaged Populations
Rural Initiative Study Area 2004

TD Population Categories	TD Population Estimates	% of Study Area Population
Category I - Potential TD Population	112,682	49.16
Category II – TD Population	23,561	10.28
Adjusted Category II Population	52,186	22.77

Source: Estimates obtained by CUTR using the methodology described in *Methodology Guidelines for Forecasting TD Transportation Demand at the County Level, May 1993.*

Table 41 shows the population segments of the 2004 population estimates for the Adjusted Category II population for the study area. The largest subgroup of the estimated 52,186 persons in this population is that which consists of the Non-Disabled, Non-Elderly, Low Income group which represents 59.7 percent of our total Adjusted Category II population.

Table 41
TD Population Segments – Adjusted Category II
Rural Initiative Study Area 2004

Population Segments	Population Estimates	% of TD Population Category II – Adjusted
Transportation Disabled, Non-Elderly, Low Income	1,045	2.00%
Transportation Disabled, Non-Elderly, Non-Low Income	4,066	7.79%
Transportation Disabled, Elderly, Low Income	1,351	2.59%
Transportation Disabled, Elderly, Non-Low Income	9,113	17.46%
Non-Disabled, Elderly, Low Income	5,443	10.43%
Non-Disabled, Non-Elderly, Low Income	31,168	59.72%
Total Transportation Disadvantaged – Category II + Non-Disabled, Elderly Segments and Non-Disabled, Low Income	52,186	100%

Source: Estimates obtained by CUTR using the methodology described in *Methodology Guidelines for Forecasting TD Transportation Demand at the County Level, May 1993.*

Table 42 provides the projections for each population segment through the year 2010. The projections conclude that the primary population segment in our Adjusted Category II population is the Non-Disabled, Non-Elderly, Low Income group.

Table 42
TD Population Segment Projections – Adjusted Category II
Rural Initiative Study Area 2006 - 2010

Population Segments	2006	2007	2008	2009	2010
Transportation Disabled, Non-Elderly, Low Income	1,057	1,069	1,083	1,095	1,108
Transportation Disabled, Non-Elderly, Non-Low Income	4,116	4,166	4,218	4,270	4,322
Transportation Disabled, Elderly, Low Income	1,381	1,414	1,446	1,479	1,513
Transportation Disabled, Elderly, Non-Low Income	9,322	9,535	9,756	9,981	10,212
Non-Disabled, Elderly, Low Income	5,570	5,695	5,826	5,959	6,096
Non-Disabled, Non-Elderly, Low Income	31,547	31,933	32,319	32,713	33,109
Total Adjusted Transportation Disadvantaged	52,993	53,812	54,648	55,497	56,360

Source: Estimates obtained by CUTR using the methodology described in *Methodology Guidelines for Forecasting TD Transportation Demand at the County Level, May 1993.*

Demand for General Purpose Trips

The total estimated demand for general purpose trips is the Adjusted Category II TD population multiplied by the standard trip rate. Table 43 provides the forecasts of the Adjusted Category II TD population for the study area and the corresponding demand for general purpose trips for 2006 through 2010.

Table 43
Forecasts of Adjusted Category II TD Population and Demand for General Purpose Trips
Rural Initiative Study Area 2006 - 2010

Year	TD Population Adjusted Category II	Demand for General Purpose Trips
2006	52,993	763,099
2007	53,812	774,893
2008	54,648	786,931
2009	55,497	799,157
2010	56,360	811,584

Source: Estimates obtained by CUTR using the methodology described in *Methodology Guidelines for Forecasting TD Transportation Demand at the County Level, May 1993.*

Adjusted Category II and General Purpose Trip Summary

The analysis provided above describes a significant need for general purpose trips within the study area and within each of the counties within the study area. Clearly, the greatest need for these trips will be within the population segment characterized as "non-disabled, non-elderly, low-income." This group will have significant need for mobility options and will need affordable transportation. For employment-related trips, a variety of options should be examined. The most notable option that should be examined is the use of carpools/vanpools, especially those that are employer sponsored or subsidized. For sustenance and entertainment trips (and, to a limited degree, employment and education trips), regular-scheduled circulators or "fixed-routes" could be considered and established. For medical trips, many of the individuals within this segment group are eligible for Medicaid and would therefore have those trips subsidized. However, they will still need transportation to and from medical-related services that are not covered by the Medicaid program, such as trips to the pharmacy.

Close coordination with social service agencies, local Workforce Boards, employers, and service providers will be critical identify specific mobility needs and ensure that those needs are met in a cost effective and efficient manner.

The Missing Segment – Non-Disabled, Elderly, Non-Low Income

The analysis above does not include the non-disabled, elderly, non-low income segment of the population who are consider part of the "potential" TD population for an area. In this particular discussion, we need to consider these individuals when discussing mobility options and when conducting mobility planning for an area, as they are a significant component of the population. Table 44 illustrates the relative

importance of this segment when we compare the number of non-disabled, elderly, non-low income persons within the study area to the total Adjusted Category II population estimates for the area. As a point of clarification, the ACII population estimates below do not include the estimates for the Non-Disabled, Elderly, Non-Low Income segment.

Table 44
Forecasts of Adjusted Category II TD Population and for
The Non-Disabled, Elderly, Non- Low Income Segment
Rural Initiative Study Area 2006 - 2010

Year	TD Population Adjusted Category II	Non-Disabled, Elderly, Non-Low Income Segment
2006	52,993	40,078
2007	53,812	41,009
2008	54,648	41,959
2009	55,497	42,934
2010	56,360	43,929

For many of these seniors, mobility options other than typical fixed route service will need to be examined. While they may not require subsidized public transportation (or they find it inconvenient or feel it may not address their transportation needs), they may need assistance through the development of volunteer programs or they may benefit through taxi voucher programs that would reduced their out-of-pocket travel expenses. They may be able to afford mobility options that others within the Adjusted Category II population may not. They may also benefit from programs that delay driving cessation. As provided in *Enhancing Mobility Options for Older Americans – A Five Year National Action Agenda* (American Association of Retired Persons (AARP), January 2005), policy makers, local governments, interest groups and others will need to make broad efforts to increase and enhance mobility options. The study noted that consideration should be given to extending driving lives through training and other programs and to expanding other options such as walking, public transportation and ride-sharing. They concluded that implementing transportation improvements that address America's changing demographic profile will require new levels of coordination between policy makers, human service agencies, transportation planners, advocates, engineers, transit agencies, road builders, and other stakeholders. AARP's Five Year Action Agenda includes the following priorities:

"1. Individuals can drive safely as long as possible with lessened concern about lack of mobility options when they cease driving.
2. Transportation options are expanded by integrating paratransit and human services transportation in all transportation planning.
3. Federal, state and local policies provide for expanded and enhanced mobility options.
4. An increased number of communities offers a wide range of transportation options.

5. The public is better informed and more engaged in understanding and acting on the need for increased and enhanced mobility options."

For our study area, getting all the players "to the table" will certainly be a step in the right direction, not only in addressing the mobility needs of our elderly but also those low income individuals who may not be able to obtain transportation for sustenance, employment or recreational trips, including the low income elderly.

Transportation Service Needs Identified in Other Planning Documents

***Desoto County Transportation Disadvantaged Service Plan* (May 2004)**

The following represent a few of the "Action Objectives" identified in the TDSP for Desoto County:

1. Establish and active planning process involving the [Local Coordinating] Board, staff and appropriate community representatives.
2. Improve the efficiency and effectiveness of marketing efforts by preparing a comprehensive plan and comprehensive data collection process.
3. Increase public awareness and create a positive community image and increase general public utilization of services by attracting a reasonable percentage of residents of the region who are part of the latent transportation demand category.
4. Advertise through public service announcements and newspaper articles the public transportation system in Desoto County. Have Local Coordinating Board members advise their constituents of the service available and encourage the use of the system.

***Glades/Hendry Counties Transit Development Project Report for Good Wheels, Inc.* (June 2003)**

This report was developed by the Community Transportation Association of America (CTAA) for Good Wheels, Inc. through CTAA's Rural Passenger Transportation Technical Assistance Program, funded by the U.S. Department of Agriculture. It was completed in June 2003. The study provided seven options for responding to the transportation needs identified in Glades and Hendry counties. Each option identified route and stop information, hours of service, the costs of providing the services and suggestions on the fare structures for the service.

Option 1 would provide a single fixed-route which would originate in Clewiston and serve Moore Haven and LaBelle with a stop in Lehigh Acres and a transfer point that would allow connections to Lee Tran. The headways of this service option were estimated to be four hours at an annual operating cost of $105,000.

Option 2 would provide two vehicles on the same fixed-route as Option 1, reducing the headways to two hours. The annual operating cost of this option was estimated to be $210,000.

Option 3 would operate a single vehicle in fixed-route service, alternating trip ends between Clewiston and Moore Haven. This option would allow Clewiston passengers with a direct trip to either LaBelle or Ft. Myers. The headways would range between one and four hours.

Option 4 would provide one vehicle on each of the Clewiston and Moore Haven routes, reducing the headways on the outer portion of the loop to two hours. Headways on the central route would be as low as hourly.

Option 5 would utilize shuttle service from Moore Haven to the intersection of US Highway 27 and US Highway 80 to meet fixed-route service traveling from Clewiston to Ft. Myers. Option 5 requires two vehicles, but the second "shuttle" bus could be used for other local work between assignments.

Option 6 would be demand responsive service operating from 6:00 a.m. to 6:00 p.m., Monday through Saturday. The service would require two vehicles and would be dispatched from Good Wheels operating facility in Ft. Myers. The annual operating cost was estimated to be $210,000.

Option 7 was "Do Nothing."

In response to the recommendations made in the study, on January 3, 2005, Good Wheels instituted a new "Hendry and Glades Dial-A-Ride Transportation Service for the General Public." The service area for this program is the LaBelle municipal area and the Moore Haven/Clewiston area. Presently, limited service is provided during the week with no weekend services available. Reservations must be in advance. The fare is $1.00 per one-way trip. FTA Section 5311 funds are being used to provide this service.

Hardee, Highlands, and Okeechobee Counties Transportation Disadvantaged Service Plan **(August 2004)**

The following represent a few of the "Objectives" identified in the TDSP for the three-county area:

1. Survey unmet needs of social service agencies.
2. Document trips denied and/or provided at the requested time.
3. Document demand for the type of trips needed.
4. Seek match funds (example: from local governments)
5. Seek donations from the general public/encourage financial contributions into the system.
6. Investigate the feasibility of public/private partnerships
7. Investigate the use of coordinated services, such as group procurement of gasoline or insurance

Hendry/Glades TDSP

The Hendry/Glades TDSP references those needs that were identified in the CTAA study as mentioned above.

***Highlands County Transit Development Plan* (July 2002)**

The Highlands County TDP was completed in July 2002. This study indicated that transit was a feasible option for Highlands County. It further established that a deviated point-to-point fixed-route transit service be implemented serving the areas of Avon Park and Sebring with feeder service available between Lake Placid and Sebring. It suggested hourly service on weekdays and limited two hour service on Saturdays. The deviated routes serving Lake Placid and Sebring would have two hour frequencies. Proposed route/bus stop placement and rolling stock needs were also developed.

It was further recommended that the provision of transit services fall under the jurisdiction of Highlands County who would subcontract the operation of the system to a transit management company.

RURAL TRANSPORTATION PLANNING AND MARKETING RECOMMENDATIONS

Focus/Issue Areas Summary

- **Provide mobility options for low income residents**
- **Focus on senior transportation**
- **Consider intercounty work, sustenance and medical trips**
- **Access to services and jobs is critical to those with low incomes**
- **Vehicle access/ownership impedes the ability to receive training and gain/retain employment.**
- **Access to services is critical to those who do not drive – especially the elderly.**
- **Densities and development patterns preclude traditional transit options.**
- **Mobility coordination and management options should be addressed (mobility could include van/carpool coordination with the private sector and other employers, volunteer transportation services, etc.)**

Issue Background – Mobility Options for Low Income Residents

As provided in the discussion of the Transportation Disadvantaged populations, the greatest need for general purpose trips in the service area will be within the population segment characterized as "non-disabled, non-elderly, low-income." This group will have significant need for mobility options and will need affordable transportation. They will need employment, education, sustenance, medical related trips, and trips to entertainment venues. There are a variety of different mobility options that should be considered and researched further such as: the use of carpools/vanpools, the establishment of volunteer programs, the use of taxi vouchers, the establishment of regularly scheduled circulators or "fixed-routes," or the establishment of a mix of services or "menu" of options.

Close coordination with social service agencies, local Workforce Boards, employers, and service providers will be critical identify specific mobility needs and ensure that those needs are met in a cost effective and efficient manner.

<u>Recommendations</u>

Recommendations provided in the following sections.

Issue Background – Mobility Options for Seniors

Nationwide, 21 percent of those individuals who are 65 years of age and above do not drive. Of those individuals, over 50 percent stay at home on any given day due to the lack of transportation options. In the study area, the elderly population is significant. Projections of elderly population in the year 2025 indicated that over 45 percent of the residents of Highlands County will be over the age of 65; over 28 percent in Glades/Okeechobee counties; over 26 percent in Desoto County; and over 20 percent in Hardee County. There is concern that these projections based upon Census data do not accurately predict the elderly populations that will exist in these counties and in Florida. The impacts of in-migration, particularly of the aging Baby Boomer population, are difficult to predict.

In addition, when the elderly retire to this area, they often arrive as a couple, with the husband as the primary driver of the household. In many instances, the wife does not drive – either they have never driven or have not driven in many years. Their mobility options become problematic when a spouse becomes unable to drive or when they die. Often we see frail, elderly females become completely primarily dependent upon friends to take them to medical appointments, shopping, and other sustenance trips – an option that may not always be available.

In addition, there is a group of elderly in this area who are lifelong residents. Their families have grown and moved away. Now, they do not have family members in the area that can provide transportation for them. Friends may or may not provide be a transportation option.

Isolation and the inability to obtain critical life sustaining services become prevalent. Viable transportation options for the elderly must be identified, evaluated, and implemented.

<u>Recommendations</u>

- A study should be undertaken to identify the specific transportation needs (both current and horizon) of elderly residents within the study area. Focus should be placed on the needs of those living along the US Highway 27; State Road 80; and US Highway 17 corridors.

- Intercounty transportation options should be identified, evaluated, and implemented to provide elderly residents greater access to medical facilities, shopping, sustenance, and socialization venues. (Example: transportation for Hardee County residents to access medical services and shopping opportunities in Highlands County). An option to pool financial and capital resources and services to more effectively supply regional/intercounty mobility options should be discussed and considered.

- Discussions with Highlands County should be reinitiated, encouraging them to implement the recommendations contained in the Highlands County Transit Development Plan, dated July 2002.

- A multi-county volunteer transportation program should be established and should include coordination with local Retired Senior Volunteer Programs (if available) or other existing volunteer programs. The coordinator of this program should collaborate with the Florida Department of Financial Services to establish procedures to address liability related issues.

- Flexible "sliding scale" fare structures, use of taxi vouchers, and other alternatives should be considered for those elderly who are not classified as low income or disabled. There are elderly residents who may be willing and capable of paying more for their transportation.

Issue Background – Mobility Options for Employment and Other Needs

The study area has extremely high levels of unemployment. Counties within the study area ranked 1st through 4th and 6th statewide in the percentage of the workforce who are unemployed. The lack of affordable transportation to job markets may be impacting the unemployment statistics within the region. The data provided in the analysis above could to the assumption that transportation out of the study area to surrounding urbanized areas may be a critical missing link. For example, for those unemployed who live in Desoto, Glades, and Hendry counties, transportation to the west to the counties of Lee, Collier, and Charlotte may be necessary. For Hardee County, it may suggest that transportation to jobs in Polk, Hillsborough or Manatee counties be considered. For Glades, Hendry and Okeechobee counties, greater access to eastern job markets, such as Palm Beach, Martin and St. Lucie counties may be necessary. It is important to note that having access to other job markets may not enable an unemployed individual to gain employment. It may, however, open the door for additional opportunities within their individual area of expertise or work experience.

Through the interviews of local stakeholders it was also established that there is a need for lower income residents to have access to educational opportunities and other public services. The need is for transportation to these services not only within their county of residence but across jurisdictional boundaries.

Recommendations

- The Florida Department of Transportation should collaborate with the Florida Department of Children and Families to encourage all workforce development boards with the study area to utilize available funding and implement a variation of the Citrus Cars program.

- The Florida DOT and the Commission for Transportation Disadvantaged should evaluate the benefits of appropriating grant funds to Workforce Boards in Regions 19, 20, and 24 to underwrite the cost of fuel vouchers for targeted low income workers within Hendry, Glades, Hardee, DeSoto, Highlands, and/or Okeechobee Counties.

- Transportation options should be identified, evaluated, and implemented to provide greater access to employment opportunities that may exist in neighboring counties – both in the study area and those counties adjacent to the study area.

- Workforce Development Boards should be encouraged to educate private employers on the benefits of employer subsidized vanpools and carpools, specifically US Sugar Corporation and Walmart Distribution Center in southern Desoto County; large agricultural employers; and other major employers within the study area. This may require the development of a program to coordinate such services.

- Discussions should be reinitiated with Highlands County, encouraging them to implement the recommendations contained in the Highlands County Transit Development Plan, dated July 2002.

Issue Background – Mobility Planning

Transit planning in rural Florida is currently conducted primarily for the transportation disadvantaged segment of the population. In the study area, the Florida Commission for the Transportation Disadvantaged provides financial support to the state's regional planning agencies to:

- Monitor and manage interactions between local Community Transportation Coordinators and Local Coordinating Boards;
- Serve as professional support to Local Coordinating Boards;
- Develop, in collaboration with the Community Transportation Coordinator and the local coordinating board, a Transportation Disadvantaged Service Plan;
- Compile annual operating expenditures and report the information to the Commission for the Transportation Disadvantaged; and

- Provide technical assistance and training to the local coordinating board.

There has been no forum for interested stakeholders to convene and share information, generate ideas, and establish the base for collaborative solutions on general mobility needs. There is no process that establishes goals for the delivery of transit services to non-TD residents.

Recommendations

- The FDOT and the Florida Commission for the Transportation Disadvantaged should convene a rural public transit summit within District 1 to discuss transportation needs, available resources, coordination opportunities and identify specific ways to more efficiently and effectively serve non-transportation disadvantaged residents.

- Consideration should be given to the development and implementation of a rural public transportation planning demonstration project in District 1 which complements and enhances current TD-specific transit planning. The demonstration should involve a multi-county region (Glades, Hardee, Hendry, DeSoto, Okeechobee, and Highlands counties). The plans should focus on identifying non-traditional means of solving mobility problems within the targeted area. In addition, this process should investigate new and creative funding sources for implementing new services.

- Additional financial resources should be pursued to support the rural public transit planning process. These funds should support, not supplant, planning funds currently provided by the Florida Commission for the Transportation Disadvantaged.

- The establishment of a rural transit planning advisory committee should be pursued. The primary purpose of this committee would be identifying and discussing transportation issues of common interest. Membership on this committee would include representatives from community schools, higher education, public health, workforce development boards, chambers of commerce, economic developers, and agencies that support transportation disadvantaged services.

Issue Background - Marketing

The agencies that provide transit service in the study area conduct minimal marketing activities. Public service announcements for radio and television, public presentations, and brochure distribution are conducted to increase awareness of the service, with TD residents as the target.

The vast majority of transit service in the study area is provided to members of the TD population. These services are paid for by either by state agency-sponsors or from funds in local "non-sponsored" accounts. In either case, non TD residents of the study area do not have access to transit services because the operating entity's focus is elsewhere.

Because the amount of transit service that can be provided is constrained by the amount of money available to pay for the service, there is minimal value in promoting transit. In fact, efforts to increase awareness of transit service may actually be counter-productive because the result may be increased expectations by those who currently do not use the service and an inability by the operating agency to provide service to satisfy those expectations.

Recommendations

- A promotion campaign should be undertaken in the study area that is designed to make non-transportation disadvantaged residents aware of public transportation services available and provide residents with information on how to access such services. The campaign should target employers, employees, social service agency providers, and health care providers.

Issue Background – Land Use and Development Patterns/Planning

Many of the mobility challenges facing rural residents of the study area are a function of land use and development patterns. Land prices encourage residential growth in more rural areas of the region while employment opportunities become more concentrated in urban centers. Most developments focus on a single purpose (residential, commercial, etc.) which eliminates walking as a viable means of accessing necessary services. Low density residential development policies make traditional public transit service impractical.

Recommendations

- The Florida Department of Community Affairs should be approached to discuss implementing a statutory amendment that would require rural county/city local government comprehensive plans to contain a discussion of mobility options, including public transportation.

- Implement a public information program in the study area to promote the benefits of building transit friendly communities. This should be a collaborative effort between the FDOT, the Florida Homebuilders Association and the Florida Department of Community Affairs, at a minimum.

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Appendix A

Transit Dependent Analysis Process

The first step in a transit dependent analysis process is to identify the census tracts that have persons or households with the greatest propensity for transit use. This involves the calculation of the percent distributions of the four demographic characteristics for each tract. Results from this process are put into a table of values indicating the percent of youth, elderly persons, low-income households, and zero-vehicle households for each of the area's census tracts. The census tracts are then sorted for each characteristic in descending order of percent distribution so that the tracts with higher percentages for each characteristic would appear at the top of their respective ranges.

From the percentage ranges, an average percent value and a standard deviation value are calculated for each characteristic. Each of the three characteristic ranges are then stratified into four segments. Thus, the census tracts fall into one of the following four categories for each characteristic: below average, above average but below one standard deviation (above average), between one and two standard deviations above average (far above average), and more than two standard deviations above average (significantly above average).

The next step involves the assignment of discrete numerical scores to each of the four categories established for each demographic characteristic. These scores serve two basic purposes: to provide uniform ranking to all of the tracts within a particular category and to numerically differentiate among the four categories for each characteristic. A comparative probability estimation method is utilized to develop the scores. First, the probability that a tract would be part of a specific category for a given characteristic is calculated for each category. For example, if two of Collier County's 52 census tracts were part of the "significantly above average" category for the elderly characteristic, this means that there is a 3.8 percent probability (# tracts in category ÷ # total tracts × 100%) that one of county's tracts would fall within the range established for that particular category for the elderly characteristic.

After the probabilities are calculated for each characteristic, they are then used to estimate the categories' scores. That is, the probability percentage for each category is divided into the probability percentage for the "below average" category. This numerator was selected so that, for each characteristic, the census tracts in the "below average" category would receive a score of one (1).

Finally, composite scores are calculated for the census tracts by summing individual category scores for each demographic characteristic. The census tracts are then ranked by composite score and stratified into four levels, using the same method that was utilized to develop characteristic categories. The census tracts that fell into the "significantly above average" category were defined as primary transit-dependent tracts, i.e., census tracts with the greatest propensity for transit based on the tracts' percentages of youth, elderly persons, low-income households, and zero-vehicle households. Secondary transit-dependent

tracts included those that fell into the "far above average" category; tertiary transit-dependent tracts included those tracts in the "above average" category.

Appendix B

METHODOLOGY GUIDELINES FOR FORECASTING TD TRANSPORTATION DEMAND AT THE COUNTY LEVEL

INTRODUCTION

This report provides a methodology for county-level forecasts of the demand for TD transportation services. The methodology is consistent with the one developed for the *Florida Five-Year Transportation Disadvantaged Plan*, but provides sufficient flexibility to permit refinements given the availability of local data. **When it is clear that local data obtained through surveys or other methods more accurately reflect local conditions, that local data should be used in the steps that provide the option of using locally-developed data in place of the standard data sources**. In general, the methodology presented will result in conservative estimates. A conservative approach is appropriate because of the many assumptions required in a task of this type.

The report consists of four sections following this introduction. The first section is an outline of the methodology. If each of the steps in the outline is followed, the resulting estimates will be consistent across the state. **If you would like to better understand the process before following the outline, read the second, third, and fourth sections before performing the calculations recommended in the first section**. The second section provides background information, including definitions and explanations of key terms and concepts. The third section provides details on the methodology outlined in the first section for forecasting the TD population. The fourth and final section provides details on the methodology outlined in the first section for forecasting the demand for TD transportation services once the number of persons demanding service is forecasted.

OUTLINE OF METHODOLOGY TO FORECAST DEMAND

The demand for TD transportation services can be forecasted using the steps outlined in this section for each of the years for which estimates are needed. Table 1 provides sample data from the fictional Florida county of Calusa, which is used in examples following each step in the outline to illustrate the calculation required. **Detailed explanations of the recommended methodology (and the fixed percentages) are presented in the subsequent sections**. The processes for estimating Category I and Category II TD populations are summarized in Tables A-2 and A-3, respectively, of the appendix. Even more detailed explanations are available in Technical Memorandum No. 3 of the *Florida Five-Year Transportation Disadvantaged Plan.*

TABLE 1. Sample "Calusa County" Data for Examples in Outline of Methodology.

Data Type	Data Source	Sample Data		
		Non-Elderly	Elderly	Total
Calusa County population forecasts from the Bureau of Economics and Business Research (BEBR) at the University of Florida in Gainesville.	BEBR	50,000	10,000	60,000
Percent of Calusa County population "with a mobility or self-care limitation" from the 1990 Census (i.e., Category I disabled persons).	Table A-1	12.5%	35.5%	n/a
Percent of Calusa County population "with a 1989 income below the federal poverty level" from the 1990 Census (i.e., low-income persons).	Table A-1	14.7%	19.5%	n/a
Percent of Calusa County population "with a public transportation disability" from the 1980 Census (i.e., Category II transportation disabled persons).	Table A-1	2.5%	22.5%	n/a
Percent of Calusa County population within the service area of the Section 9 public transit operator.	Section 9 Public Transit Operator	n/a	n/a	54.5%
Number of program trips provided within the coordinated system in Calusa County during the most recent annual reporting period.	CTC	n/a	n/a	90,000
Number of general trips provided within the coordinated system in Calusa County through sources other than TD Trust Fund subsidies during the most recent annual reporting period.	CTC	n/a	n/a	10,000
Number of general trips provided in Calusa County through TD Trust Fund subsidies during the most recent annual reporting period.	CTC	n/a	n/a	12,000
Average cost per trip for coordinated TD service in Calusa County.	AOR	n/a	n/a	$6.70
Total operating expense of Calusa County CTC.	AOR	n/a	n/a	$750,000
Most recent Annual Budget Estimate of total operating funds for TD transportation service in Calusa County.	TDC	n/a	n/a	$1,000,000

n/a = Not applicable.

I. Estimate Category I TD Population.

Includes disabled, elderly, and low-income persons, and children who are "high-risk" or "at-risk".

A. Identify non-elderly and elderly populations.

1. Request midrange forecasts of persons aged 0 to 59 (i.e., non-elderly) and persons aged 60 and over (i.e., elderly) for your county from the Bureau of Economics and Business Research (BEBR) at the University of Florida in Gainesville, (904) 392-0171. BEBR forecasts are available for five-year intervals (e.g., for the years 1995, 2000, and 2005).

Example Year 0 non-elderly persons: 50,000
Year 5 non-elderly persons: 56,294
Year 0 elderly persons: 10,000
Year 5 elderly persons: 11,260

2. Calculate the growth index for non-elderly and elderly populations for the interim years. The standard formula for calculating a future number when the growth rate is known is ($Pop_{(Year\ 5)} = Pop_{(Year\ 0)} \times (1 + r)^{n-1}$), where n = number of years and r = growth rate. When solving for r (as in this case), the equation becomes ($((Pop_{(Year\ 5)} \div Pop_{(Year\ 0)})^{1/(n-1)}) - 1 = r$). To convert the growth rate to a growth index simply eliminate the "– 1" from the formula. Thus, the **final formula** is ($((Pop_{(Year\ 5)} \div Pop_{(Year\ 0)})^{1/(n-1)}) = i$), where i = growth index.

   Example Index for non-elderly persons: $((56{,}294 \div 50{,}000)^{0.2}) = 1.024$
   Index for elderly persons: $((11{,}260 \div 10{,}000)^{0.2}) = 1.024$

3. Calculate non-elderly and elderly populations for the interim years.

   Example Calculate interim year populations by multiplying the previous year's population by the growth indexes calculated in I.A.2. Thus, Calusa County non-elderly populations for the interim years total 51,200, 52,429, 53,687, and 54,975, and elderly populations for the interim years total 10,240, 10,486, 10,738, and 10,996

B. Estimate disabled population.

Apply 1990 Census data on percents of persons "with a mobility or self-care limitation" for your county (see Table A-1 of the appendix) to forecasts from BEBR (see I.A.) to estimate number of non-elderly disabled persons and elderly disabled persons.

Example Non-elderly disabled persons: 50,000 × 12.5% = 6,250
Elderly disabled persons: 10,000 × 35.5% = 3,550

C. Estimate low-income population.

Apply 1990 Census data on percent of persons "with a 1989 income below the federal poverty level" for your county (see Table A-1 of the appendix) to forecasts from BEBR (see I.A.) to estimate number of non-elderly low-income persons and elderly low-income persons.

Example Non-elderly low-income persons: 50,000 × 14.7% = 7,350
Elderly low-income persons: 10,000 × 19.5% = 1,950

D. Estimate population of children who are "high-risk" or "at-risk".

Assume that most of the children who are "high-risk" or "at-risk" are by definition already included in the disabled and/or low-income populations. The use of this assumption will not provide an estimate of the number of these children, but for estimating the total number of persons in the Category I TD population it is not necessary to know that number. Although there will be

some "high-risk" or "at-risk" children not included (e.g., children of high- or middle-income parents undergoing substance-abuse treatment), the number of these children should be small. Assuming that most of these children are already included helps to keep the overall state estimates at a conservative level. If local data to estimate the number of these children are available, that data should be used.

Example "High-risk" and "at-risk" children are already included in the disabled and/or low-income populations

E. Eliminate double-counting of elderly, disabled, and low-income persons. (See Figure 1 on page 13.)

1. Estimate how many non-elderly disabled persons are also low income as follows: **Divide** non-elderly low-income persons (see I.C.) **by** non-elderly persons (see I.A.) and **multiply the result** by non-elderly disabled persons (see I.B.).

   Example $(7{,}350 \div 50{,}000) \times 6{,}250 = 919$

2. Estimate how many non-elderly disabled persons are not low income as follows: **Subtract** non-elderly disabled low-income persons (see I.E.1.) **from** non-elderly disabled persons (see I.B.).

   Example $6{,}250 - 919 = 5{,}331$

3. Estimate how many elderly disabled persons are also low income as follows: **Divide** elderly low-income persons (see I.C.) **by** elderly persons (see I.A.) and **multiply the result** by elderly disabled persons (see I.B.).

   Example $(1{,}950 \div 10{,}000) \times 3{,}550 = 692$

4. Estimate how many elderly disabled persons are not low income as follows: **Subtract** elderly disabled low-income persons (see I.E.3.) **from** elderly disabled persons (see I.B.).

   Example $3{,}550 - 692 = 2{,}858$

5. Estimate how many elderly non-disabled persons are also low income as follows: **Subtract** elderly disabled low-income persons (see I.E.3.) **from** elderly low-income persons (see I.C.).

   Example $1{,}950 - 692 = 1{,}258$

6. Estimate how many elderly non-disabled persons are not low income as follows: **Subtract** total of elderly disabled low-income persons (see I.E.3.), elderly disabled non-low-income persons (see I.E.4.), and elderly non-disabled low-income persons (see I.E.5.) **from** elderly persons (see I.A.).

   Example $10{,}000 - (692 + 2{,}858 + 1{,}258) = 5{,}192$

7. Estimate how many low income persons are neither elderly nor disabled as follows: **Subtract** non-elderly disabled low-income persons (see I.E.1.) **from** non-elderly low-income persons (see I.C.).

   Example $7{,}350 - 919 = 6{,}431$

F. Estimate total Category I TD population.

Add I.E.1. through I.E.7. for an estimate of the total Category I TD population.

Example 919 + 5,331 + 692 + 2,858 + 1,258 + 5,192 + 6,431 = 22,681

G. Repeat I.A. through I.F. for each year of the forecast period.

Example Assume that "Calusa County" Category I TD populations for years one through five of the forecast period total 23,225, 23,784, 24,354, 24,939, and 25,538

H. Calculate the growth index of the TD Category I population using the same formula as used in I.A.2.

Example $(25{,}538 \div 22{,}681)^{0.2} = 1.024$

II. Estimate Category II TD Population.

Includes transportation-disabled persons (i.e., persons with disabilities that prevent them from transporting themselves) and low-income transportation disadvantaged persons (i.e., non-transportation-disabled low-income persons with no access to an automobile and no access to fixed-route public transit).

A. Estimate transportation-disabled population.

Apply 1980 Census data on percents of persons "with a public transportation disability" for your county (see Table A-1 of the appendix) to forecasts from BEBR (see I.A.) to estimate number of non-elderly transportation-disabled persons and elderly transportation-disabled persons. (Data on "public transportation disability" was not collected in the 1990 Census.) The transportation-disabled population is a subset of the disabled population estimated for the Category I population. Alternatively, locally-developed data may be used if more accurate data is available from a local survey or other source.

Example Non-elderly transportation-disabled persons: 50,000 × 2.5% = 1,250
Elderly transportation-disabled persons: 10,000 × 22.5% = 2,250

B. Allocate transportation-disabled persons to only one of four TD market segments.

1. Estimate how many non-elderly transportation-disabled persons are also low income as follows: **Divide** non-elderly low-income persons (see I.C.) **by** non-elderly persons (see I.A.) and **multiply the result** by non-elderly transportation-disabled persons (see II.A.).

   Example $(7{,}350 \div 50{,}000) \times 1{,}250 = 184$

2. Estimate how many non-elderly transportation-disabled persons are not low income as follows: **Subtract** non-elderly transportation-disabled low-income

persons (see II.B.1.) **from** non-elderly transportation disabled persons (see II.A.).

Example 1,250 − 184 = 1,066

3. Estimate how many elderly transportation-disabled persons are also low income as follows: **Divide** elderly low-income persons (see I.C.) **by** elderly persons (see I.A.) and **multiply the result** by elderly transportation-disabled persons (see II.A.).

   Example (1,950 ÷ 10,000) × 2,250 = 439

4. Estimate how many elderly transportation-disabled persons are not low income as follows: **Subtract** elderly transportation-disabled low-income persons (see II.B.3.) **from** elderly transportation-disabled persons (see II.A.).

   Example 2,250 − 439 = 1,811

C. Estimate low-income transportation disadvantaged population (see Figure 2 on page 15).

1. Estimate total low-income population (see I.C.).

   Example Total low-income persons: 7,350 + 1,950 = 9,300

2. Estimate how many non-transportation-disabled low-income persons (i.e., "other low-income persons") lack access to an automobile. If local data on automobile ownership is available, that local data may be substituted for the process outlined below. County-level 1990 Census data concerning the number of vehicles available in low-income households should be available during the summer of 1993.

   a. **Multiply** total low-income persons (see II.C.1.) by 40 percent. (See "Forecasts of TD Populations" section of this report for an explanation of the fixed percent.)

   Example 9,300 × 40% = 3,720

   b. **Multiply** transportation-disabled low-income persons (total of II.B.1. and II.B.3.) by 70 percent. (See "Forecasts of TD Populations" section of this report for an explanation of the fixed percent.)

   Example (184 + 439) × 70% = 436

   c. **Subtract** the result of II.C.2.b. **from** the result of II.C.2.a.

   Example 3,720 − 436 = 3,284

   d. The result of II.C.2.c. is the number of other low-income persons who lack access to an automobile.

   Example Other low-income persons who lack access to an automobile = 3,284

3. Estimate how many of these other low-income persons who lack access to an automobile also lack access to public transit.

   a. If no Section 9 fixed-route transit service is available in the county, **all** of the other low-income persons who lack access to an automobile also lack access to public transit.

   Example Fixed-route transit service is available in "Calusa County"

   b. If Section 9 fixed-route transit service is available in some of the county, ask the Section 9 operator what percent of the population lives within its service area (i.e., within 1/4 mile of a bus route). Assume that the same percent of other low-income persons who lack access to an automobile live within its service area. If the Section 9 operator cannot provide this percent, use the best method available locally. One alternate method is to mark the bus routes on a census-tract map and determine what percent of the county is within the Section 9 operator's service area.

   Example Percent of "Calusa County" population within the service area of the Section 9 public transit operator (i.e., with access to fixed-route transit), as shown in Table 1, is 54.5%

   c. **Subtract** from other low-income persons who lack access to an automobile (see II.C.2.d.) those persons with access to fixed-route transit (using the percentage calculated in II.C.3.b.) .

   Example $3,284 - (3,284 \times 54.5\%) = 1,494$

4. The result of II.C.3.c. is the number of non-transportation-disabled low-income transportation disadvantaged persons.

   Example Low-income transportation disadvantaged persons = 1,494

D. Estimate total Category II TD population.

   Add II.B.1., II.B.2., II.B.3., II.B.4., and II.C.4. for an estimate of the total Category II TD population.

   Example 184 + 1,066 + 439 + 1,811 + 1,494 = 4,994

E. Repeat II.A. through II.D. for each year of the forecast period.

   Example Assume that "Calusa County" Category II TD populations for years one through five of the forecast period total 5,114, 5,237, 5,363, 5,491, and 5,623

F. Calculate the growth index of the TD Category II population using the same formula as used in I.A.2.

   Example $(5,623 \div 4,994)^{0.2} = 1.024$

III. Estimate Demand for TD Transportation Services.

A. Estimate demand for program trips. (See "Background Information" for definition and examples of program trips.)

1. Determine number of program trips provided within the coordinated system during the most recent annual reporting period. If this number is unknown, assume that 90 percent of all trips (except trips provided through TD Trust Fund subsidies) are program trips and that none of the trips provided through TD Trust Fund subsidies are program trips.

   Example Program trips provided within the coordinated system in "Calusa County": 90,000

2. Estimate number of program trips provided outside the coordinated system during the most recent annual reporting period.

   a. **Subtract** total operating revenue of CTC **from** TD Commission's Annual Budget Estimate of total operating funds for TD transportation service in the county and **divide** the result by the average cost per passenger trip for coordinated service in the county. The result is an estimate of all TD passenger trips provided outside of the coordinated system.

   Example ($1,000,000 − $750,000) ÷ $6.70 = 37,313

   b. Assume that ninety percent of all trips provided outside of the coordinated system (see III.A.2.a.) are program trips.

   Example Program trips provided outside the coordinated system in "Calusa County": 37,313 × 90% = 33,582

3. **Add** number of program trips provided through the coordinated system (see III.A.1.) **to** number of program trips provided outside the coordinated system (see III.A.2.b.) for an estimate of total program trips provided during the most recent annual reporting period.

   Example Program trips provided: 90,000 + 33,582 = 123,582

4. Assume that the supply of (and, thus, the demand for) program trips will increase at a rate sufficient to continue to provide the current level of service to the Category I population. Therefore, increase the number of program trips provided during the most recent annual reporting period using the Category I TD population growth index (see I.H.).

   Example For first year of forecast period: 123,582 × 1.024 = 126,548

5. Check with local social service and governmental agencies to see if major changes are anticipated in the scope of any programs that require TD transportation service, and increase or decrease the estimate in III.A.4. by the same rate as anticipated change (if any) in the scope of programs.

   Example No major changes are anticipated in "Calusa County"; therefore, the first year forecast of program trip demand remains 126,548

B. Estimate demand for general trips. (See "Background Information" for definition and examples of general trips.)

1. Use percent calculated in II.C.3.b. to estimate how many Category II persons (see II.D.) have access to fixed-route public transit.

   Example Category II population with access: 4,994 × 54.5% = 2,722
   Category II population without access: 4,994 − 2,722 = 2,272

2. Assume that each member of the Category II TD population will demand 1.0 general TD trip per month (or 12.0 trips per year) if the person has access to fixed-route public transit, and 1.2 general TD trips per month (or 14.4 trips per year) if the person does not have access to fixed-route public transit. (See "Forecasts of Demand for TD Transportation Services" for explanation of trip rates.) Multiply Category II TD population by 12.0 or 14.4 trips per year.

   Example General trips demanded: (2,722 × 12.0) + (2,272 × 14.4) = 65,381

3. Repeat III.B.1. and III.B.2. for first year of the forecast period.

   Example For first year of forecast period: 66,952 general trips demanded

C. Add demand for program trips (see III.A.5.) to demand for general trips (see III.B.3.) for an estimate of total demand for first year of forecast period.

   Example Total demand: 126,548 + 66,952 = 193,500

D. Repeat III.A. through III.C. for each year of the forecast period.

IV. Estimate Unmet Demand for TD Transportation Services.

A. Check with agencies for estimates of current unmet demand for program trips.

1. If agencies have estimates of unmet demand, assume that this unmet demand will increase at the same rate as the Category I TD population.

   Example No estimates of unmet demand for program trips in "Calusa County"

2. If local agencies do not have estimates of unmet demand, assume that the supply of program trips will equal the demand for program trips, and, thus, that there is no unmet demand for program trips.

   Example No unmet demand for program trips in "Calusa County"

B. Estimate unmet demand for general TD trips

1. Determine number of general TD trips provided through the coordinated system during the most recent annual reporting period. If this number is unknown, assume that ten percent of all trips (except those provided through TD Trust Fund subsidies) are general trips and that all of the trips provided through TD Trust Fund subsidies are general trips.

Example General trips provided in "Calusa County" through sources other than TD Trust Fund subsidies: 10,000
General trips provided in "Calusa County" through TD Trust Fund subsidies: 12,000

2. Estimate number of general TD trips provided outside the coordinated system during the most recent reporting period. Assume that ten percent of all trips provided outside of the coordinated system (see III.A.2.a.) are general trips.

   Example General trips provided outside the coordinated system in "Calusa County": 37,313 × 10% = 3,731

3. Assume that general trips provided through funding sources other than the TD Trust Fund will increase at a rate sufficient to continue to provide the current level of service to the Category I TD population. Therefore, increase the number of general trips provided through funding sources other than the TD Trust Fund during the most recent annual reporting period using the Category I TD population growth index (see I.H.).

   Example For first year of forecast period: (10,000 + 3,731) × 1.024 = 14,061

4. Assume that general trips provided through TD Trust Fund subsidies will increase at a rate sufficient to continue to provide the current level of service to the Category II TD population. Therefore, increase the number of general trips provided through TD Trust Fund subsidies during the most recent annual reporting period using the Category II TD population growth index (see II.F.).

   Example For first year of forecast period: 12,000 × 1.024 = 12,288

5. Add estimates of general trips provided through funding sources other than the TD Trust Fund (see IV.B.3.) to estimates of general trips provided through TD Trust Fund subsidies (see IV.B.4.) for an estimate of supply of general trips.

   Example For first year of forecast period: 14,061 + 12,288 = 26,349

6. Subtract supply of general trips (see IV.B.5.) from demand for general trips (see III.B.3.) for an estimate of unmet demand for general trips.

   Example For first year of forecast period: 66,952 − 26,349 = 40,603

C. Add unmet demand for program trips (see IV.A.), if any, to unmet demand for general trips (see IV.B.6.) for an estimate of total unmet demand.

   Example In "Calusa County" there is no unmet demand for program trips, so total unmet demand is the same as unmet demand for general trips

D. Repeat IV.A. through IV.C. for each year of the forecast period.

V. Estimates of TD Population and Demand for TD Transportation Service.

If each step outlined above is followed, the result will be estimates of Category I and Category II TD populations and of total demand and unmet demand for TD transportation service.

BACKGROUND INFORMATION

TD transportation services provide two types of trips, referred to as program trips and general trips. A program trip is one made by a client of a government or social service agency for the purpose of participating in a program of that agency. Examples of program trips are trips to congregate dining facilities, sheltered workshops, job training facilities, and Medicaid services. A general trip is one made by a transportation disadvantaged person to a destination of his or her choice, not to an agency program. Examples of general trips are trips to work, grocery stores, and recreational areas. The differences between program trips and general trips are important because these trips are provided to two categories of TD persons.

Agencies that purchase program trips to transport their clients typically serve persons who can be classified into one or more of three demographic groups: the disabled, the elderly, and the low-income. These persons are eligible to receive governmental and social service agency subsidies for program trips regardless of their need for TD transportation services, and are referred to in this report as the Category I TD population.

The methodology recommended in this report forecasts demand for program trips assuming that social service programs will grow at a rate sufficient to keep pace with growth in the Category I TD population. If local data suggests a different growth rate, it may be appropriate to use the local data. The demand by the Category I population for program trips is dependent upon the existence of the programs. If there is no program, program-related transportation is not demanded. For example, demand for transportation service to a sheltered workshop exists because there is a sheltered workshop program and capacity in the program for persons who will demand trips. If social service programs grow to meet new demand, and if budgets for new and expanded programs include sufficient funds to cover necessary transportation costs, the demand for program trips will equal the supply of trips. The TD Commission is making efforts to ensure that the various governmental and social service programs maintain sufficient funds to accommodate the transportation needs of their clients. Whether or not the demand for social service programs is being met is, of course, a different issue.

The eligibility definitions contained in Chapter 427, Florida Statutes require that disabled, elderly, and low-income persons be unable to transport themselves or to purchase transportation. As a result, under the Chapter 427 definition, persons who use TD transportation services for program trips funded by governmental and social service agencies are not necessarily eligible for TD Trust Fund subsidies for general trips. Those persons who are eligible for TD Trust Fund

subsidies for general trips are referred to as the Category II TD population. Members of this population, a subset of the Category I population, are eligible to receive the same subsidies as Category I persons plus they are eligible to receive TD Trust Fund monies for non-sponsored general trips. (The actual disbursement of TD Trust Fund monies for TD trips is a function of funding levels and local priorities.)

FORECASTS OF TD POPULATIONS

A necessary step in forecasting demand for TD transportation services is forecasting the number of persons who are eligible to use the services. As discussed earlier in this report, there are two categories of TD population pertinent to forecasts of demand for TD transportation services in Florida: the Category I and Category II TD populations.

TD Category I Forecasts

The Category I population includes all disabled, elderly, and low-income persons, and children who are "high-risk" or "at-risk". Most "high-risk" or "at-risk" children are by definition already included in the disabled and/or low-income populations. There is overlap among disabled, elderly, and low-income persons, as illustrated in Figure 1. The methodology described in the "Outline of Methodology to Forecast Demand" at the beginning of this report (and summarized in Table A-2 of the appendix) will eliminate double and triple counting of these persons.

For the *Florida Five-Year Transportation Disadvantaged Plan*, national disability rates from *Current Estimates From the National Health Interview Survey, 1990* were used to estimate the number of disabled persons in the Category I population. Since the time the five-year plan was finished, county-level 1990 Census data on persons with a mobility or self-care limitation has been released. (The 1990 Census defined "mobility limitation" as a health condition which had lasted for six or more months and which made it difficult to go outside the home alone, and defined "self-care limitation" as a health condition which had lasted for six or more months and which made it difficult to take care of personal needs, such as dressing, bathing, or getting around inside the house. For both definitions, "health condition" referred to both physical and mental conditions.) It is generally preferable to use county-specific data when it is clear that the county-specific data more accurately reflect local conditions. Thus, for forecasting the Category I population, it is recommended that "disabled" include all persons with a mobility or self-care

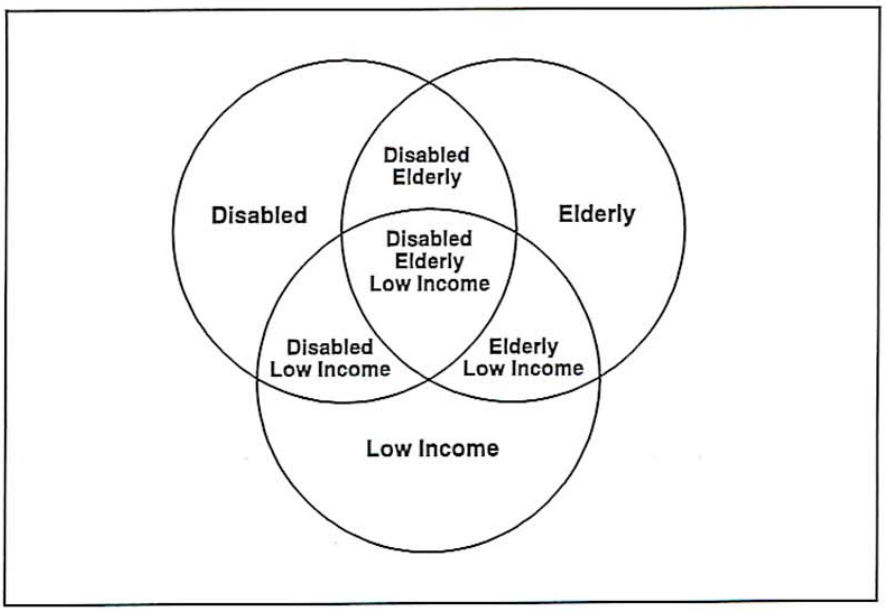

FIGURE 1. Overlap among disabled, elderly, and low-income persons.

limitation, as defined in the 1990 Census. It is further recommended that "low income" include all persons with an income below the federal poverty level, as defined in the 1990 Census. (In the census, the income of non-working persons is determined based on the income of the person's family.) Finally, it is recommended that "elderly" include all persons aged 60 or over. Forecasts of elderly and non-elderly populations should be obtained from the Bureau of Economic and Business Research (BEBR) at the University of Florida, as suggested in the preceding outline.

Census data on the percent of persons with a mobility or self-care limitation (i.e., Category I disabled persons) is available for persons aged 16 to 64 and aged 65 and over. It was assumed that the percent of persons aged 16 to 64 with a mobility or self-care limitation was applicable to the population aged 0 to 59. (Data on the percent of persons aged 0 to 16 with a mobility or self-care limitation are not available. It was assumed that the percent of persons aged 60 to 64 with a mobility or self-care limitation is similar to the percent of persons aged 16 to 64 with a mobility or self-care limitation.) To estimate the percent of persons aged 60 and over with a mobility or self-care limitation, for each county the number of persons aged 60 to 64 with a mobility or self-care limitation was calculated and the number of persons aged 65 and over with a mobility or self-care limitation was calculated. These two numbers (representing all persons aged 60 and over with a mobility or self-care limitation) were added together and compared to the total number of persons aged 60 and over to calculate the percent of persons aged 60 and over with a mobility or self-care limitation. Data from the 1990 Census on percent of persons with a 1989 income below the federal poverty level (i.e., low-income persons) are available for

persons aged 0 to 59 and aged 60 and over. Therefore, it was not necessary to adjust the 1990 Census low-income data.

TD Category II Forecasts

The TD Category II population is composed of persons who, because of disability, income status, or age, are unable to transport themselves. Disability refers to physical or mental limitations that may prevent a person from transporting him or herself, while income status refers to the financial capability of a person to purchase transportation. The reasons associated with age are not as apparent. Age alone should not affect a person's ability to transport him or herself. It may, however, relate to other factors that are associated with the aging process or to demographic characteristics of the elderly population; namely, the higher incidence of disability and poverty among the elderly. Therefore, the Chapter 427 definition implies that disability and income status, regardless of age, are the criteria that determine a person's ability to transport him or herself, and, thus, the number of persons in the Category II population.

For the *Florida Five-Year Transportation Disadvantaged Plan*, the number of persons with disabilities that prevent them from transporting themselves (i.e., transportation disabled persons) was estimated using data from the *National Survey of Transportation Handicapped People* (NSTHP), conducted by the Federal Transit Administration in 1977. For local population forecasts, it is recommended that "transportation disabled" include all persons with a public transportation disability as defined in the 1980 Census. (This data was not collected in the 1990 Census.) When estimating at the statewide level, the national data is the appropriate data source. The population identified in the NSTHP is very similar to the population eligible for general trips provided through TD Trust Fund subsidies in Florida. However, for county-level estimates it is appropriate to use the percentages from the 1980 Census to reflect differences between counties. Using standard percentages from the NSTHP would not take into account these differences between counties. Alternatively, locally-developed data may be used if more accurate data is available from a local survey or other source.

Data from the 1980 Census on percent of persons with a public transportation disability are available for persons aged 16 to 64 and aged 65 and over. A methodology similar to that explained earlier in this report for adjusting 1990 Census data on percent of persons with a mobility or self-care limitation was followed to adjust these data.

Forecasting the number of persons who are unable to transport themselves because of income status (i.e., low-income transportation disadvantaged persons) requires multiple steps. The first step is to forecast the number of persons below the federal poverty line (i.e., the Category I low-income population). However, since many low-income persons may own automobiles and be able to afford to use them or may have access to and be able to afford to use public transit, the poverty line threshold may not provide an accurate assessment of the ability of low-income persons to transport themselves. Therefore, two additional steps are recommended to determine the number of low-income persons who are unable to transport themselves because of income status. These steps are, first, determining how many low-income persons lack an available automobile in the household, and, second, determining how many of those low-income persons with no automobile available also lack access to public transit.

The process developed for the statewide five-year plan to estimate the number of low-income transportation disadvantaged persons is illustrated in Figure 2. Although the figure illustrates the process used for estimating the 1992 statewide population of these persons, the same process can be used locally. As shown in the figure, the forecast of the 1992 low-income population was 1,799,947 persons. Of these persons, 109,057 were also transportation disabled and, thus, were already included in the Category II population. The remaining 1,690,890 were other low-income persons who were not transportation disabled. The number of these "other low-income persons" who did not have an automobile available was estimated by making inferences from national statistics. (If local data on automobile ownership is available, the local data may be substituted for the process discussed in the following text. If local data is not available, the national statistics should be used. County-level 1990 Census data concerning the number of vehicles available in low-income households should be available during the summer of 1993.) The national statistics suggest that approximately 40 percent of low-income households do not own an automobile. It was assumed that household size is constant across income levels. Thus, 40 percent of low-income persons do not have an automobile available in the household. It was further assumed that low-income persons who are also transportation disabled are less likely to have an automobile than other low-income persons. Thus, a maximum of 100 percent and a minimum of 40 percent of low-income persons who are also transportation disabled do not have an automobile available. The midrange percentage, 70 percent, was assumed to be the percent of low-income transportation-disabled persons who do not have an automobile available. Using these assumptions, it was estimated that of the "other low-income persons", 1,047,251 had an automobile available and, therefore, they were not included in the Category II population.

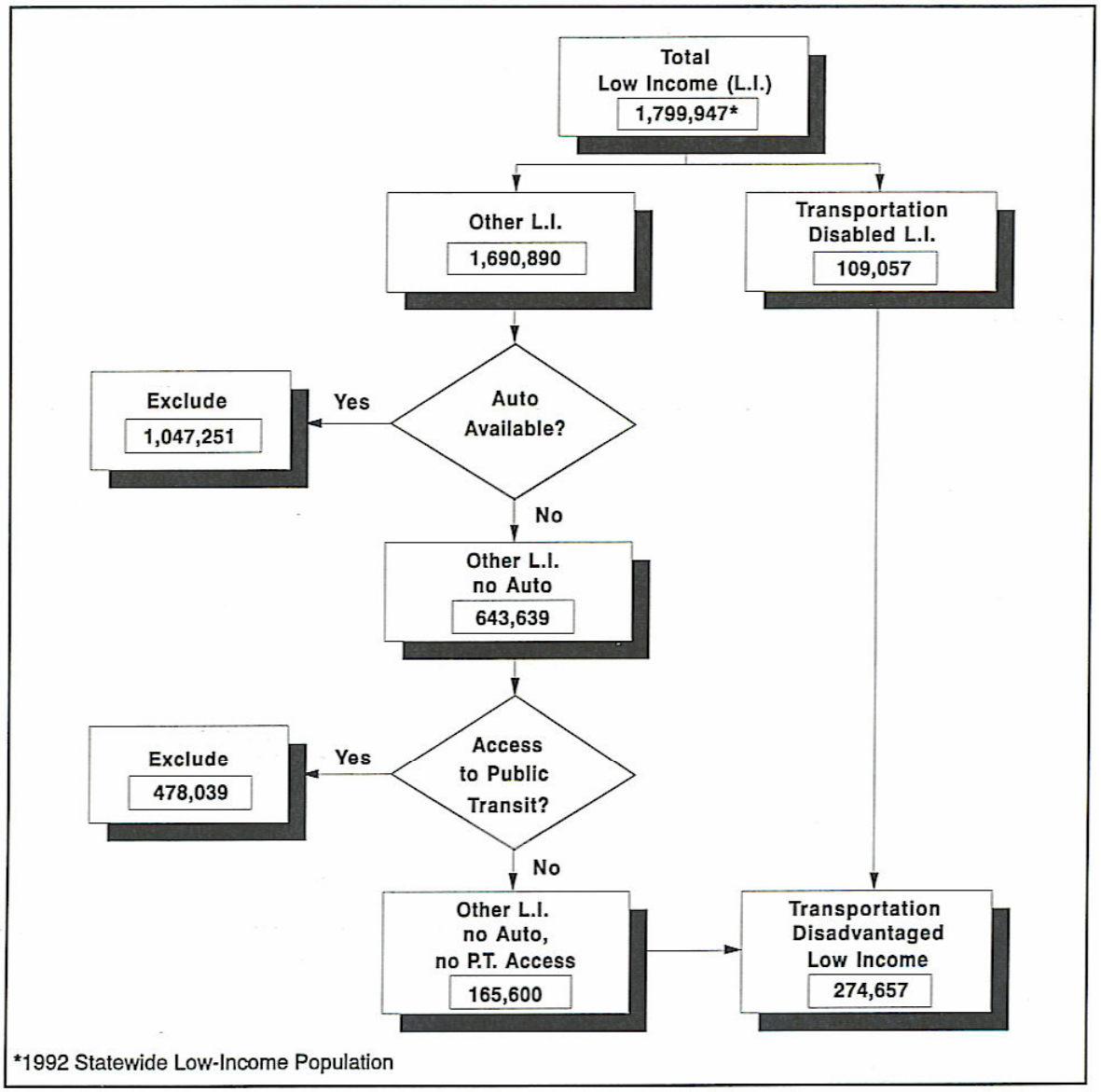

FIGURE 2. Process to calculate the number of low-income persons who are transportation disadvantaged.

As shown in the figure, of the 643,639 other low-income persons who did not have an automobile available in 1992, 478,039 lived in a county with a Section 9 fixed-route transit operator. For the five-year plan, it was assumed that these 478,039 persons all lived within the service area of the fixed-route transit operator and, thus, had access to the service. Consequently, all "other low-income persons" who lived in counties with public transit operators were not included in the Category II population. This helps to keep the overall state estimates at a conservative level, but in the case of individual counties this approach may result in estimates that

are too conservative. Therefore, for local areas the following steps are recommended: 1) ask the Section 9 operator what percent of the population lives within its service area (i.e., within 1/4 mile of a bus route); and 2) assume that the same percent of other low-income persons who lack access to an automobile live within its service area. If the Section 9 operator cannot provide this percentage, use the best method available locally. One alternate method is to mark the bus routes on a census-tract map and determine what percent of the county is within the Section 9 operator's service area.

The remaining persons are other low-income persons who do not have an automobile available and who lack access to public transit. The total number of these persons statewide was estimated to be 165,600 in 1992. These other low-income persons, as well as those low-income persons who are transportation disabled, are included in the Category II population. Thus, the total number of low-income persons who were included in the statewide Category II population in 1992 was 274,657.

FORECASTS OF DEMAND FOR TD TRANSPORTATION SERVICES

The demand for program trips is forecasted differently from the demand for general trips. The demand for program trips is a "derived demand", that is, the demand for these trips is dependent upon the existence of the program to which transportation disadvantaged persons are transported. For example, as discussed earlier in this report, demand for trips to sheltered workshops exists only because there are sheltered workshop programs and facilities. Thus, the demand for program trips is equal to the number of trips required to take advantage of the service offered by the programs. It is recommended that the demand for program trips be forecasted based on the assumption that social service programs will grow at a rate sufficient to keep pace with growth in the Category I TD population. That is, the number of program trips currently provided per Category I capita will remain the same. Check with local social service and governmental agencies to see if major changes are anticipated in the scope of any programs that require TD transportation service and, if so, adjust estimates up or down accordingly.

The approach recommended in this report to forecast demand for general trips involves the use of trip rates derived in a study of paratransit demand in San Francisco. This approach was chosen because the trip rates are based on actual experiences of paratransit systems that are meeting most or all of the trip demand in their service areas. Further, this approach has been recommended by the Federal Transit Administration for use in estimating demand for ADA

complementary paratransit services. In the San Francisco study, trip rates were developed from an evaluation of seven paratransit systems that were considered to provide high levels of service (e.g., minimal or no restrictions on the number of trips a person can take, minimal or no waiting list, and minimal or no denial of trip requests). These trip rates, 1.0 and 1.2 trips per month in urban and rural areas, respectively, represent the demand for general trips. Total demand for general trips is simply the Category II population multiplied by the trip rates. The rate of 1.0 trip per month should be used for Category II persons with access to fixed-route transit and the rate of 1.2 trips per month should be used for Category II persons without access to fixed-route transit. The Category II population should be used because most general trips are currently subsidized with TD Trust Fund monies and eligibility for these funds is determined based on the definition of transportation disadvantaged persons contained in Chapter 427. The demand for general trips can then be added to the demand for program trips for an estimate of total demand for TD transportation service.

After estimating total demand for TD transportation service, the next step is to estimate the supply and the unmet demand for these services. As stated earlier in this report, the demand and the supply of program trips are usually the same. However, if local agencies have estimates of unmet demand for program trips this unmet demand should be included in your estimates.

The supply of general trips should be calculated using the assumptions that all trips provided through TD Trust Fund subsidies are general trips and that ten percent of all other trips are general trips. If locally-developed data on the supply of general trips is available, the local data should be used. The supply of general trips should be subtracted from the demand for general trips to calculate the unmet demand for general trips.

The use of this methodology to estimate Category I and Category II TD populations and total demand and unmet demand for TD transportation service will ensure consistency with other counties in the state. This data consistency will assist the TD Commission and local planning agencies to plan more efficiently for the delivery of TD services.

Appendix C
Transportation Delivery Options

There are many transportation service options that may be considered when addressing the need for services within a community or across community boundaries. These options are not exclusive to typical public transportation alternatives. Options related to churches and other service organizations and the use of private sector providers and vanpool arrangements must also be considered and evaluated. In addition, it is important to determine the extent to which the role of friends and family should be considered.

Fixed-Route Service

Traditional fixed-route bus service is the most prevalent mode of public transportation in the United States. Fixed-route services are provided along specific routes with scheduled arrival/departure times at predetermined bus stops. One variation for low-density or more rural areas is periodic scheduling, where buses serve different areas on different days of the week.

Fixed-route systems are generally effective in meeting travel demand for intra-urban and suburban-urban trips, but tend to fall short in generating suburban-suburban and rural trips, as well as trips for the elderly and persons with disabilities. The basic advantages of fixed-route transit are that no reservations are required to access the service, little or no passenger screening or registration is needed (except for discounted fares to certain population segments), and large numbers of people can be transported at one time in a single vehicle. Disadvantages include system access being limited due to predetermined stops and schedules, difficult access for seniors and patrons with disabilities, and large buses are often perceived to be aesthetically displeasing, especially in suburban or rural areas.

It is important to remember that in determining the type and level of public transportation service, community goals must be heavily weighed. There are many smaller communities (especially in Florida) that operate fixed-route transit services. Sometimes, a certain measure of cost-effectiveness or ridership is not as important to a community as the goals of providing mobility to those who truly need it.

Deviated Fixed Route

In a fixed-route system with route deviation, a vehicle operates along a fixed route, making scheduled stops along the way. Upon request, vehicles will deviate one to two blocks or more from the route to pick up and drop off passengers. After deviating from the fixed route, a vehicle immediately returns to the fixed route at the point at which it departed to accommodate the request for deviation. This procedure ensures that the vehicle does not skip any portion of the fixed route. In the event that no requests for deviation are received, the vehicle would operate along a fixed-route. Typically, route deviation service requires smaller vehicles than those used for traditional fixed-route service, due to the need to travel on residential streets.

Fixed-route service with route deviation is generally more cost effective in smaller urban and rural communities. The service is usually operated with minibuses or vans. To achieve greater geographic coverage, routes may vary by day of the week. Some systems, usually in more rural areas, allow riders to access the service anywhere along the fixed-route by flagging the driver. The level of information provided to the passengers must be high to avoid any confusion about the deviated routes.

Although the cost per revenue mile of service is often higher for route-deviated systems, the cost per passenger trip is normally less, due to higher ridership on the deviated routes. Cost savings are also realized because it eliminates the necessity for complementary paratransit service. General public route deviation systems are considered demand responsive, and meet the requirements for provision of service under Americans with Disabilities Act of 1990 (ADA). It must be decided which passengers will be allowed to request deviations. Deviations may be available to the general public or may only be allowed by specific populations, such as ADA-eligible individuals. The amount of deviation allowed must also be determined. A factor in this determination is whether the system allows for general public deviation or deviations for specific populations. Vehicles typically deviate from two blocks to ¾ mile from the fixed route. If deviation service is only available for ADA-eligible individuals, vehicles must deviate at least ¾ mile on either side of the fixed route.

Route deviation service seems to work best in suburban and rural areas, and may also be appropriate on lengthy routes with long headways and low ridership. Route deviation may also work well in areas where most origins and destinations are concentrated around a corridor.

Fixed Route With Point Deviation

Vehicles in point deviation systems serve designated stops, or time points on a fixed schedule, but the route that the vehicle takes between time points is determined by the deviation schedule. Point deviation service is similar to general demand response service, in that vehicles pick up and drop off passengers at

their desired locations. However, point deviation vehicles also service specific time points on a fixed schedule to provide passengers with the structure of service that operates on a fixed schedule. Point deviation service usually requires smaller vehicles than those used on traditional fixed-routes, due to the need to travel on residential streets.

Requests for deviation are made to a system reservationist and/or scheduler. Typically, a limit is set for the number of deviations that can be accommodated within the time point schedule, filled on a first-come, first-served basis.

Point deviation service works best in rural or suburban areas. In more urban areas, point deviation may be implemented to provide access to fixed routes utilizing a time transfer system. Like general public deviated fixed-route, point deviation systems are considered to be demand-responsive by the United States Department of Transportation (USDOT) and are not required to provide complementary paratransit service.

Demand Responsive

"Paratransit" is defined quite broadly by some as any means of shared-ride transportation other than fixed-route service. Primarily, paratransit services are considered to be supplemental to fixed-route in order to accommodate those persons who are unable to utilize conventional fixed-route bus service. Such services are usually operated as advance reservation, door-to-door or curb-to-curb.

More specifically, paratransit service is characterized by higher levels of personalization and flexibility than fixed-route service. Paratransit can be used as a feeder to a fixed-route bus system, or can be used where fixed-route ridership or cost effectiveness would be low. Demand response service can be provided by taxis, vans or minibuses. In addition, service can be supplied through contracts with various providers including non-profit agencies, for-profit transportation companies, volunteer organizations, and transit agencies. Demand-responsive service can be operated on "call and demand" or with advance reservations, usually a minimum of 24 hours.

Advantages of demand-response include door-to-door (or curb-to-curb) service; larger geographic area of coverage; route flexibility; smaller, more comfortable vehicles; and the fact that special needs are more easily accommodated. The disadvantages include shared use of the vehicles; no direct travel between individual passenger origin and destination; a high degree of dispatch coordination; increased expenses and higher fares; and longer travel and wait times.

Dial-A-Ride

Dial-A-Ride (DAR) refers to demand-responsive, door-to-door or curb-to-curb service that is provided to the general public without regard to functional abilities of passengers. Customers request a trip in advance and are picked up at their origin and dropped off at their destination. General public DAR is the most personal alternative to fixed-route service, but also the most expensive. DAR meets the requirements for provision for service under ADA.

DAR service may work well in low-density areas where it may be more practical than fixed-route or to serve as feeder service to fixed routes.

Feeder Service

Feeder service involves picking up passengers at their origin point (usually home) and transporting them for the first leg of their journey to a bus stop. Vans or small buses are typically used for feeder services. One segment of the trip, either the portion from home to the stop or the fixed-route portion, is generally fare free. That is, passengers are either charged a fare for the demand response portion of their trip and use a free transfer to the fixed-route system or vice versa. Upon arrival at the stop or station, the passenger disembarks and, after a short wait or immediately upon leaving the feeder vehicle, boards the fixed-route vehicle. The passenger then travels on the bus to a stop closest to their final destination. A third leg requiring feeder service may also be necessary to reach the final destination. Because point-to-point service is provided, careful scheduling is required to minimize wait items at transfer points.

When feeder service is used to provide ADA paratransit service to feed into the fixed-route system, it is important to understand that feeder service is really not very cost-effective for short trips. The longer the trip, the greater the cost-savings that may result from substituting a portion of the paratransit trip with fixed-route service. Therefore, suburban to urban or rural to urban trips are typically better candidates for feeder service than intra-urban trips.

Jitney Service

Jittney services usually consist of privately-operated vans carrying up to 15 passengers, operating on semi-fixed routes on a fairly-regular basis. Most often, they operate on major thoroughfares, picking up passengers anywhere along a route. For an extra charge, they may deviate from the thoroughfare to deliver passengers to their homes. Jitneys usually do not follow a set schedule, but tend to access stops more frequently and stop less often than vehicles on conventional bus routes.

Jitney services can serve several functions. In major urbanized areas, jitney systems operate to relieve overcrowding. In this capacity, jitneys can attract many passengers from the fixed-route public bus system who have been left at the bus stop due to overcrowding. Another role for jitneys is to provide services in low-density areas where existing bus operations do not exist or fall below acceptable minimum standards. In both of these cases, service is usually bid competitively by the transportation operator.

Jitneys also can work in concert with the existing public transportation system by serving as feeders. In this case, jitneys pick up passengers in residential areas and deliver them at the main line of the bus system. Another way jitneys can function is as the primary providers of community-based transit. In this scenario, jitneys connect residents of low-income neighborhoods to medical centers, shopping centers, community activity centers, and other nearby destinations. Finally, jitneys may act as activity center connectors, traveling in and around areas of major commercial activity, such as employment centers and tourist attractions.

Volunteer Transportation Programs

Typically, volunteer transportation programs try to match requests for transportation with the geographic area in which the volunteer driver or vehicle is available. This type of program can be effective for trips that are difficult to provide by any other mode. A volunteer organization also can help in providing an escort service to citizens who live within the service area of a fixed-route or paratransit system, but need assistance in utilizing the service. The retired community is a good resource for volunteers. Volunteers gain personal satisfaction from helping others with restricted mobility. The primary drawback to this type of service, however, is the issue of insurance and liability, as well as the need to locate and retain a pool of reliable volunteers.

Successful volunteer programs are not free. They require an investment of time, resources, and energy. Although there are costs involved with starting and maintaining a successful volunteer program, they are minimal in comparison to relying solely on paid employees. It is important to note that the costs associated with volunteer programs and volunteer labors are not limited to actual dollars, but also include the investment of time and energy. Critical components of successful volunteer transportation programs include, but are not limited to, organization, recruitment, screening, training, recognition, and possible reimbursement for mileage and/or meals.

In the current climate of federal and state funding cuts in transportation and many social service programs, the use of volunteers within community transportation may prove to be a very viable and cost-efficient transportation alternative that helps to further stretch transportation dollars in Florida. This situation may become critical in the future, as the demand for transportation by those who are transit dependent is expected to continue to grow.

Ridesharing

Ridesharing is the shared use of a vehicle by two or more persons for the purpose of traveling to work, school or other trip locations. Vehicles used for ridesharing include privately-owned automobiles or vans or publicly-owned vans or buses (carpools, vanpools, or buspools). Trip origins and destinations of riders may vary. Passengers may share fuel, toll, and parking expenses and driving may be a rotated duty. Although ridesharers most commonly are people from the same household or neighbors, a ridematching service operated by employers, a regional commuter assistance program or transportation agency can facilitate ridesharing arrangements.

Ridesharing success is increased when:

- Travelers find others with similar schedules and points of origin and destination
- Parking is unavailable
- Parking is expensive
- A guaranteed ride home program is offered
- Employers subsidize the cost of ridesharing
- Preferential parking and flexible work schedules for ridesharers are offered by employers

One of the ways state and local governments can support ridesharing is by providing funds for van or bus purchases, program planning, and regional commuter assistance programs.

Employers such as U.S. Sugar Corporation and other large agricultural product employers should be approached to discuss these benefits and encourage the implementation of transportation programs for their employees.

Carpools

Carpooling may be defined as two or more persons sharing rides in a private vehicle. Census data show that, next to driving alone, it is most prevalent commute alternative in the United States. Carpooling was first encouraged in this country during World War II, due to petroleum and rubber conservation measures. It has been promoted since the 1970's in response to energy crises and as an air quality transportation control measure.

The matching processes for carpoolers range from very sophisticated computerized systems to informal arrangements. More effective matching systems usually include information on specific origins and destinations, schedules, travel routes, and passenger preferences (such as smoking). A sufficiently large pool of potential commuters is important for securing good matches. Overall, it has been found that organized carpools targeting commuters at the work site seem to be more effective than those focusing on residential areas.

A major advantage of carpooling is that it allows the convenience of a private automobile. In addition, responsibilities for driving are shared among the carpoolers. However, there are some disadvantages when compared to driving alone. These include the necessity for set schedules, the constrained ability for individuals to run errands, and increased commute time (due to picking up additional passengers). In addition, some commuters feel that carpooling deprives them of their private time.

The most promising market for carpooling is commuters traveling to and from work during peak periods of the day. The size of this market can determine the feasibility of a carpooling program in a given area. For work trips, carpooling is best suited to suburban employment markets. For the suburban-suburban commute, carpooling seems to be the most likely alternative to driving alone, due to the higher densities necessary for transit (and even vanpooling, discussed in the next section). Length of work trip also can determine carpool success. Commutes ranging from 15 to 25 miles seem to attract the largest proportion of carpools. An additional market is educational and recreational trips. Students typically carpool because of lower private vehicle availability and increased parking constraints. Many colleges and universities have commuter alternatives that are marketed toward students.

Commuter Vanpools

Vanpools are an additional alternative to driving alone. The levels of carrying capacity, flexibility, costs, and convenience are in between those of transit and carpools. A vanpool typically consists of 7 to 15 people traveling together in a passenger van. The commuter vanpool concept typically works best for long-distance commuters (at least 20 miles). Vanpools are particularly effective in situations that include outlying work destinations with little or no public transit service. Therefore, commuter vanpools can be an

effective alternative for workers with similar trip patterns and schedules. Vanpools may also be effective for employment sites that need workers on shifts that fall outside of a fixed-route's service parameters.

The three major types of vanpool organizations are owner-operator vans, employer-sponsored vanpools, and third-party vanpools. A third-party vanpool is where an organization, such as a non-profit corporation, a private vendor, or a transportation agency, acquires the vans and makes them available to employers or individual users. The vans are generally leased to the users at a rate based on the cost of the vehicle, maintenance, fuel and insurance. Sometimes, administration costs incurred by the third party are included in the fees. A third-party vanpool arrangement that acquires the vans and contracts with a private service vendor fir maintenance and insurance reduces the participant costs of vanpooling. This type of arrangement has been successful applied in Polk and Brevard County, where the transit agency contracts with VPSI for administrative, maintenance and insurance services.

Although the vanpool arrangement described above serves to reduce participant costs, these costs are often still too high for members of the transit-dependent population. Because many of the worker transportation needs identified are those of the transit-dependent population, the possibility of providing vanpool subsidies could be explored. Possible sources of subsidy funding include the local WAGES coalition to develop vanpools for WAGES participants, County subsidies for a County-operated vanpool program, and/or subsidies provided by private donations and/or foundations for lower income commuters.

Agency Vanpools

Many agencies, groups, and organizations would probably like to provide transportation to their clients and/or members. For many of these agencies, even if fixed-route transportation were available, clients or members would not be able to use that transportation due to physical or cognitive limitations. In the past, these agencies have attempted to acquire vehicles (usually vans) to meet their own transportation needs. When successful in attempts to acquire vehicles, these groups must then contend with the challenge of finding qualified drivers, covering operating costs, ensuring the safety of vehicles through regular maintenance services, etc. A more effective and cost-efficient method of meeting the needs of these agencies are government-sponsored agency vanpool programs open to non-profit agencies. If a local government is able to provide the capital (vehicles) for the program and contracts with a private company for the administration, maintenance, and insurance needs, the agency cost of providing transportation services can be reduced. In addition, the agency is relieved of many of the administrative problems associated with the acquisition and upkeep of vehicles.

Guaranteed Ride Home Programs

A guaranteed/emergency ride home program (GRH) is generally considered crucial to success of ridesharing. Many people are reluctant to rideshare for fear of being stranded at work without transportation during an emergency. GRH reduces anxiety over ridesharing by guaranteeing participants a convenient and reliable mode of transportation to their home in the event of a personal emergency or in the event an employee must work overtime. The guaranteed ride can be provided by taxi, short-term auto rental, company-owned car, shuttle service or public transportation. An employer, a regional commuter assistance program, a transportation management organization, or transportation agency can administer such a program.

Subscription Bus Service

Subscription bus service generally takes the form of prearranged service that is designed to meet specific group or individual needs. This type of service can be provided using regular fixed-route buses, and works best when there are specific needs for group trips to one or two destinations. During off-peak hours, idle buses may be used; during peak hours, spare buses can be used.

Some examples of subscription bus services might include a consortium of agencies that need transportation to provide after-school activities for children, or seniors in adult communities that need to get to nutrition programs or go shopping.

Community Bus Service

Community bus service is similar to jitneys. However, while jitneys are generally subject to some form of regulation, community bus service refers to an informal network of private cars and vans that provide transportation to and from major destinations in and around residential neighborhoods. These networks typically thrive in low-income areas where auto ownership is minimal and public transportation is difficult to obtain. In these situations, enterprising residents with cars or vans fill this transportation gap for community residents. Providers of this type of service offer prompt, reliable transportation to grocery stores, medical facilities, shopping centers, and other major destinations within and nearby the community for a modest fee. These vehicles are not regulated and are typically underinsured, and possibly uninsured, but provide a vital function in the community.

Subsidized Transportation

Subsidized transportation involves grants or stipends, most commonly provided by a government agency, that makes up all or part of the difference between the cost of providing a transportation service and the revenues generated by that service.

User-Side Subsidy

The distinguishing feature of the user-side subsidies is that the providers of the service receive the subsidy in amounts proportional to the number of people utilizing the service. Its main advantage is that it promotes the efficient allocation of transportation resources. Specifically, transportation providers must successfully attract passengers to receive the subsidy; therefore, an incentive exists to offer high quality, low cost transportation. The mechanism of consumer choice fosters a competitive environment, and the providers that offer the best service will tend to attract most users.

The user-side subsidy service concept has been identified as a potential method of serving primarily low-income citizens or seniors with a need for personal mobility. In a user-side subsidy program, patrons are charged a portion of the fare associated with a demand response trip and the remainder of the cost for the trip is subsidized by the program's implementing agency. Taxicab companies typically provide the trips delivered through user-side subsidy programs. These programs have a high potential for effectiveness in areas with low demand or low density, or at specific times of the day (late evening service), or specific days of the week (Sunday service). Taxi-based user-side subsidy programs are currently operating in many large cities in the United States, such as Houston, Los Angeles, San Francisco, Oklahoma City, and Seattle.

Although each program is designed according to each area's unique mobility needs, some general parameters can be applied to taxi-based user-side subsidy programs. Customers are typically sold taxi vouchers worth a certain dollar amount toward a cab ride (e.g. $10.00) at a reduced cost. The amount of subsidy passed on to consumers varies from 40 percent to 90 percent. For example, in a program with a 50 percent subsidy, the consumer would be charged $5.00 for a $10.00 taxi voucher. The customer then makes a trip with a designated taxi company and is responsible for any portion of the total fare that exceeds the total value of the voucher.

Employer-Provided Subsidies

The Transportation Commuter Benefit Program is a provision of the Internal Revenue Code, Section 132(f), which permits employers to subsidize their employees' cost of commuting to work by transit and vanpools up to $100 per month. Up to $175 per month can be provided by employers to employees for

parking at or near an employer's work site, or at a facility from which an employee commutes via transit, vanpool, or carpool. These expenses are tax deductible to the employer and cost the employer less than providing the same amount in gross income. Employers also can take advantage of a provision in the tax code that allows employees to use pre-tax income to pay for qualified fringe benefits such as transit passes, vanpool fares, and qualified parking. As a result, employees take home more of their paycheck and employers benefit form this by saving on payroll taxes (at least 7.65% savings) and other salary-based benefits such as pension contributions defined as a percent of salary. Employers can offer both the commute benefit and the pre-tax option up to statutory limits.