Florida Five-Year Transportation Disadvantaged Plan - 1992-1996: Technical Memoranda Nos. 3 and 4 Population and Demand Forecasts and Cost and Funding - Executive Summary

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FLORIDA FIVE-YEAR
TRANSPORTATION DISADVANTAGED PLAN
1992 - 1996

Technical Memoranda Nos. 3 and 4
Population and Demand Forecasts
and
Cost and Funding

EXECUTIVE SUMMARY

Prepared for the
Florida Transportation Disadvantaged Commission
and the
Florida Department of Transportation

by the

Center for Urban Transportation Research
College of Engineering
University of South Florida

June 1992
PREFACE

This is the executive summary for the third and fourth of five technical memoranda to be produced by the Center for Urban Transportation Research (CUTR) for the Transportation Disadvantaged Commission and the Florida Department of Transportation. These memoranda, along with a final report, will comprise the Florida Five-Year Transportation Disadvantaged Plan that is mandated by Chapter 427.013 (14), Florida Statutes.

Technical Memorandum No. 1 provided an introduction and historical perspective to transportation disadvantaged services in Florida. Technical Memorandum No. 2 reported on statewide operating data, on results of an attitudinal and needs survey, and on an evaluation of the existing transportation disadvantaged system in Florida. Technical Memorandum No. 3 presents demand forecasts for transportation disadvantaged transportation services over the next five years. Technical Memorandum No. 4 provides estimates of the cost of meeting the demand and explores the ability of current funding resources to meet that cost. Technical Memorandum No. 5 will discuss policy issues, goals and objectives, and implementation strategies.

The preparation of this report has been financed in part through a grant from the U.S. Department of Transportation, Federal Transit Administration (formerly the Urban Mass Transportation Administration), under the Federal Transit Act
FLORIDA FIVE-YEAR TRANSPORTATION DISADVANTAGED PLAN
Technical Memoranda Nos. 3 and 4

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The technical memoranda that are summarized here present several forecasts for Florida's transportation disadvantaged (TD) system for the five-year period from 1992 through 1996. This summary presents forecasts of: (1) the transportation disadvantaged population, (2) demand for specialized TD transportation services, (3) the number of TD trips that will be supplied, (4) the funding required to supply these trips, (5) unmet demand, and (6) the number and cost of additional and replacement vehicles required during the five-year period.

The coordinated TD system provides two categories of trips to two categories of TD persons.

TD transportation services provide trips to agency programs and trips to general, or non-program-related destinations. 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, and job training facilities. 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 difference between these two trips are important because these trips are provided to two categories of TD persons.

Agencies that purchase TD transportation services to transport clients to programs typically serve persons who can be classified into one or more of three demographic groups: the disabled, the elderly, and the low-income. These agency programs are open to all persons within the specific demographic groups served (subject to available funding), regardless of their need for TD transportation services. In addition to the trips that these agencies subsidize
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for transportation to programs, agencies also subsidize general trips. Most general trips currently made, however, are subsidized with TD Trust Fund monies. The eligibility guidelines 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, some persons who use TD transportation services for program trips may not be eligible for TD Trust Fund subsidies for general trips under the Chapter 427 guidelines.

Because of these differences in eligibility, the state's coordinated TD system serves two population groups. The first group includes disabled, elderly, and low-income persons, and children who are "high-risk" or "at-risk". These persons are eligible to receive governmental and social service agency subsidies for program trips and general trips, and are referred to in this report as the TD Category I population. The second population group includes those persons who are transportation disadvantaged according to the eligibility guidelines in Chapter 427 (i.e., they are unable to transport themselves or to purchase transportation). These persons 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. They are referred to as the TD Category II population. This population is a subset of the Category I population. (It should be noted, however, that it also is commission policy to provide service, subject to available capacity, to persons who are not eligible for funding as long as those persons pay for their trips.)

In 1992, 5.3 million disabled, elderly, and low-income persons (i.e., the TD Category I population) will be living in the state.

Florida's estimated 1992 TD Category I population, made up of disabled, elderly, and low-income persons, is shown in Figure ES-1. The total number of these persons is estimated to be 5.3 million in 1992. The Category I population is forecasted to increase from 5.3 million persons in 1992 to 5.7 million persons in 1996. The Florida Department of Health and Rehabilitative Services estimates that approximately 28 percent of Florida's children under the age of five are "high-risk" or "at-risk". Forecasts based on the 1990 Census indicate that there are approximately 903,000 children under
the age of 5 in the state in 1992; 28 percent of these children is 253,000. Most of these children are disabled and/or are members of low-income families, and, therefore, are included in the population forecasts of Florida's disabled and low-income persons. If the number of "high-risk" or "at-risk" children increases at the same rate as the projected growth in the state's population of preschool children, the number of these children will increase from 253,000 in 1992 to 281,000 in 1996.


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 guidelines imply that physical or mental disability or income status,
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regardless of age, are the criteria that determine eligibility for TD Trust Fund subsidies.

The number of person with disabilities that prevent them from transporting themselves was estimated using data from the National Survey of Transportation Handicapped People, conducted by the Federal Transit Administration (formerly the Urban Mass Transportation Administration) in 1977. The survey suggests that 2.7 percent of persons aged 0 to 59 are transportation handicapped and 19.0 percent of persons aged 60 and over are transportation handicapped. The number of persons who are unable to transport themselves because of income status was estimated from income data from the U.S. Census and national statistics on automobile ownership by income level. For the purpose of this report low-income persons are considered to be unable to transport themselves if they do not have an automobile available in the household and if they lack access to public transit. Table ES-1 shows forecasts of Florida’s Category II population. This


<table>
<thead>
<tr>
<th>Market Segment</th>
<th>Category II Population by Market Segment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transportation Handicapped, Non-Elderly, Low Income</td>
<td>37,777</td>
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<tr>
<td>Transportation Handicapped, Non-Elderly, Non-Low Income</td>
<td>236,203</td>
</tr>
<tr>
<td>Transportation Handicapped, Elderly, Low Income</td>
<td>71,283</td>
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<tr>
<td>Transportation Handicapped, Elderly, Non-Low Income</td>
<td>534,385</td>
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<tr>
<td>Non-Transportation Handicapped, Low Income, No Auto, No Public Transit</td>
<td>165,601</td>
</tr>
<tr>
<td>TD Category II Population</td>
<td>1,046,231</td>
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</tbody>
</table>
population is estimated to be 1.0 million persons in 1992 and is forecasted to increase to 1.1 million persons in 1996.

As shown in Figure ES-2, the total demand for transportation disadvantaged trips is forecasted to be 26.6 million trips in 1992 and to increase to 28.9 million trips in 1996. This total demand consists of demand for both program trips and general trips by persons in TD Categories I and II.

Total demand for general trips was forecasted by applying per capita trip rates to the Category II population. These trip rates were developed from seven paratransit systems around the U.S. 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 seven systems are meeting most or all of the trip demand in
their service areas. The demand for general trips is forecasted to be 13.5 million trips in 1992 and to increase to 14.7 million trips in 1996.

The demand for program trips is dependent upon the existence of the programs to which transportation disadvantaged persons are transported. 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. Assuming that agency programs increase at the same growth rate as the Category I population, program trip demand is forecasted to be 13.1 million trips in 1992 and to increase to 14.2 million trips in 1996. This implies that social service programs will grow to meet new demand and that budgets for new and expanded programs will include sufficient funds to cover necessary transportation costs. The commission has, on a limited basis, provided subsidies for transportation to agency programs when program funds have run out. However, the commission is making efforts to ensure that the various governmental and social service programs maintain sufficient funds to accommodate the transportation needs of their program clients. (Whether or not the need for social service programs is being met is, of course, a different issue.)

The total supply of TD trips is forecasted to be 15.9 million trips in 1992 and to increase to 17.0 million trips in 1996, as shown in Figure ES-3. As suggested in the previous section, the demand for program trips is assumed to be equal to the supply of program trips. This assumes that program planners should—and will—budget adequately for all program expenses. That is, that they will not increase the scope of a program without increasing the capacity of the program to transport the additional clients. Therefore, both the demand for and the supply of program trips are forecasted to be 13.1 million in 1992 and to increase to 14.2 million in 1996. The supply of general trips is forecasted to be 2.8 million in both 1992 and 1996.

Forecasts of trips supplied by operators in the coordinated system include general trips subsidized with the TD Trust Fund and general and program trips
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subsidized with governmental and social service agency funds. The supply of general and program trips funded by governmental and social service agencies is forecasted to increase at the same rate as the Category I population. General trips supplied with TD Trust Fund monies were forecasted based on projections of the TD Trust Fund and future trip costs.

The supply of trips in the coordinated system is forecasted to be 8.6 million trips in 1992 and to increase to 9.1 million trips in 1996. A significant number of trips will also be supplied outside of the coordinated system. TD funds that are expected to be spent outside the coordinated system could supply an additional 7.3 million trips in 1992 and 7.9 million trips in 1996.

As shown in Figure ES-4, to supply the number of forecasted trips in the coordinated system, funding from the various TD sources is forecasted to increase from $66.3 million to $81.6 million.
million during the five-year period. Approximately 90 percent of these funds will be provided by governmental and social service agencies, while the remainder will be Florida TD Trust Fund monies.

FIGURE ES-4. Operating funds available through the coordinated system.

Total statewide funds for TD transportation, including those passing through the coordinated system and those expended outside the coordinated system, are estimated to increase from $122.3 million in 1992 to $152.6 million in 1996 if growth in total funding matches the growth in the Category I population. If at some point the funds spent outside the coordinated system begin to pass through the coordinated system, the system's trip and funding data will be more representative of the total TD transportation services being provided in the state.

Unmet trip demand is forecasted to be 10.6 million trips in 1992.

There is a significant gap between forecasted trip demand and the forecasted supply of trips. Figure ES-5 shows that unmet demand for TD transportation services is forecasted to total 10.6 million trips in 1992 and 11.8 million trips in 1996.
The level of unmet demand for TD transportation services is due to a number of factors. One important factor is trip subsidization. Nearly every TD trip provided in Florida is partially or fully subsidized. The disparity between the true cost of a trip and the price paid by the passenger after subsidy creates a situation where the person generally will demand more trips than the subsidizing organization is willing or able to provide.

Surveys on the trip purposes of general trips by transportation disadvantaged persons in other U.S. paratransit systems indicate that approximately 35 percent of the trips taken are medical trips, 20 percent are work or educational trips, 10 percent are shopping trips, and 35 percent are social, recreational, and other trips. There is no reason to suspect that in Florida the distribution of demand by these trip purposes would be any different. If the general trips made serve these purposes in approximately the same proportion, then the unmet demand by trip purpose will also be in these same proportions. This suggests that the unmet demand for medical trips will be on the order of 3.7 million trips in 1992. The unmet demand by other trip purposes is calculated to be 2.1 million trips for education and work trips, 1.1
million trips for shopping trips, and 3.7 million for social, recreational, and other trips.

The operating cost of meeting all of the unmet demand is substantial compared to the size of the current coordinated TD system. The cost of providing additional service to meet this demand would total $471.5 million over the five-year period, or $94.3 million per year. The annual cost of unmet demand by trip purpose is shown in Figure ES-6. Of the annual need, $33.0 million would be required to meet all of the estimated unmet demand for medical trips, $18.9 million to provide work and educational trips, $9.4 million to provide shopping trips, and $33.0 million to provide social, recreation, and other trips. Given the scarcity of financial resources, the commission obviously must consider ways of regulating the amount of this demand, as well as increasing the supply of trips, if unmet demand is to be substantially reduced.
The number and cost of additional vehicles required during the five-year period to handle both the expected supply of trips and the remaining unmet demand for trips are shown in Table ES-2. These forecasts include new vehicles for increased service and those required to replace old vehicles. It is assumed that average trip lengths and service effectiveness will remain constant through the forecast period and that there is minimal or no excess vehicle capacity. To provide the forecasted supply of trips, 324 additional vehicles will be required each year as replacements and for service expansion at a cost of $10.0 million. To meet all of the demand for service (i.e., the expected supply plus the remaining unmet demand), a total of 830 additional vehicles would be required each year at an annual cost of $25.7 million. These forecasts do not include additional vehicles that may be added by TD operators to provide ADA complementary paratransit services on behalf of fixed-route transit operators.


<table>
<thead>
<tr>
<th>Forecast Type</th>
<th>TD Vehicle Needs</th>
<th>Five-Year</th>
<th>Average</th>
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<tbody>
<tr>
<td></td>
<td></td>
<td>Total</td>
<td>Annual</td>
</tr>
<tr>
<td><strong>Forecasted Supply</strong></td>
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<td></td>
</tr>
<tr>
<td>Number of Vehicles</td>
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<td></td>
</tr>
<tr>
<td>Cost of Vehicles</td>
<td>$50,189,000</td>
<td>$10,037,800</td>
<td></td>
</tr>
<tr>
<td><strong>Unmet Demand</strong></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Number of Vehicles</td>
<td>2,532</td>
<td>506</td>
<td></td>
</tr>
<tr>
<td>Cost of Vehicles</td>
<td>$78,492,000</td>
<td>$15,698,400</td>
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</tr>
<tr>
<td><strong>Total Demand</strong></td>
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<td></td>
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<tr>
<td>Number of Vehicles</td>
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<td>Cost of Vehicles</td>
<td>$128,681,000</td>
<td>$25,736,200</td>
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</table>
Florida's coordinated TD system serves two population groups. The first group, the TD Category I population, is composed of disabled, elderly, and low-income persons who are eligible for agency programs that serve these demographic groups. These persons use TD transportation services for travel to programs sponsored by these agencies. The second group, the TD Category II population, meets the "unable to transport themselves" criterion in Chapter 427 and, consequently, is eligible for TD Trust Fund subsidies for general trips.

Demand for TD transportation services is expected to be significantly greater than the forecasted supply of trips, resulting in unmet demand for services. The next technical memorandum addresses a variety of issues raised by the above forecasts. It discusses, in particular, means of reducing the unmet demand through the use of both supply-side and demand-side polices.