

# An Analysis and Leconmendations for Rural Public Transportation Systems in Alabama

By Jay K. Lindly and W. Brent Tubbs

Department of Civil & Environmental Engineering The University of Alabama Tuscaloosa, Alabama

UTCA Theme: Management and Safety of Transportation Systems

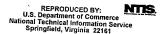
Prepared by

# **UTCA**

# **University Transportation Center for Alabama**

The University of Alabama, The University of Alabama at Birmingham, and The University of Alabama in Huntsville

UTCA Report 99104 February 1, 2001



# **University Transportation Center for Alabama**

About UTCA The University Transportation Center for Alabama (UTCA) is designated as a "university transportation center" by the US Department of Transportation. UTCA serves a unique role as a joint effort of the three campuses of the University of Alabama System. It is headquartered at the University of Alabama (UA) with branch offices at the University of Alabama at Birmingham (UAB) and the University of Alabama in Huntsville (UAH). Interdisciplinary faculty members from the three campuses (individually or operating in teams) perform research, education, and technology transfer projects using funds provided by UTCA and external sponsors. The projects are guided by the UTCA Annual Research Plan. The plan is prepared by the Advisory Board to address transportation issues of great importance to Alabama and the region.

Mission Statement and Strategic Plan The mission of UTCA is "to advance the technology and expertise in the multiple disciplines that comprises transportation through the mechanisms of education, research, and technology transfer while serving as a university-based center of excellence."

The UTCA strategic plan contains six goals that support this mission, as listed below:

- Education conduct a multidisciplinary program of coursework and experiential learning that reinforces the theme of transportation;
- Human Resources increase the number of students, faculty and staff who are attracted to and substantively involved in the undergraduate, graduate, and professional programs of UTCA;
- Diversity develop students, faculty and staff who reflect the growing diversity of the US workforce and are substantively involved in the undergraduate, graduate, and professional programs of UTCA;
- Research Selection utilize an objective process for selecting and reviewing research that balances the multiple objectives of the program;
- Research Performance conduct an ongoing program of basic and applied research, the products
  of which are judged by peers or other experts in the field to advance the body of knowledge in
  transportation; and
- Technology Transfer ensure the availability of research results to potential users in a form that can be directly implemented, utilized or otherwise applied.

Theme The UTCA theme is "MANAGEMENT AND SAFETY OF TRANSPORTATION SYSTEMS." The majority of UTCA's total effort each year is in direct support of the theme; however, some projects are conducted in other topic areas, especially when identified as high priority by the Advisory Board. UTCA concentrates upon the highway and mass transit modes, but also conducts projects featuring rail, waterway, air, and other transportation modes as well as intermodal issues.

#### Disclaimer

The project associated with this report was funded wholly or in part by the University Transportation Center for Alabama (UTCA). The contents of this project report reflect the views of the authors, who are solely responsible for the facts and the accuracy of the information presented herein. This document is disseminated under the sponsorship of the U.S. Department of Transportation, University Transportation Centers Program, in the interest of information exchange. The U.S. Government, UTCA, and the three universities comprising UTCA assume no liability for the contents or use thereof.

# An Analysis and Recommendations for Rural Public Transportation Systems in Alabama

# $\mathbf{B}\mathbf{y}$

Jay K. Lindly and W. Brent Tubbs
Department of Civil and Environmental Engineering
The University of Alabama
Tuscaloosa, Alabama

**UTCA Report Number 99-04** 

A Publication of the University Transportation Center for Alabama Tuscaloosa, Alabama

1 December 1					
1. Report No FHWA/CA/OR-		2. Government Accession	ı No.	3. Recipie	nt Catalog No.
4. Title and Subtitle An Analysis and Recommendation Systems in Alabama	is for Rural	Public Transportation	5. Report Date 1 February 2001		
		6. Performing Organization Code			
7. Authors Jay K. Lindly and W. Brent Tubbs		8. Performing Organization Report No. UTCA Report 99104			
9. Performing Organization Name and Address Department of Civil and Environmental Engineering The University of Alabama		10. Work Unit No.			
Box 870205 Tuscaloosa, AL 35487			11. Contract or Grant No. DTRS98-G-0028		
12. Sponsoring Agency Name and Addres			13. Type of Report and Per	riod Covered	•
University Transportation Center Box 870205, 271 H M Comer Mine			Final Report/ July 1, 1	999 – Dece	mber 31, 2000
Tuscaloosa, AL 35487			14. Sponsoring Agency Code USDOT		
15. Supplementary Notes					
16 11.4					
16. Abstract  The objective of "5311 rural transi employment, public services and rechanges to the system to provide bainterviews with Alabama Department of 27 providers, and a search of Alabama	ecreation". T asic, high-qu ent of Transi	This report presents a s ality rural transit to all portation (DOT) persoi	napshot of the Alabama   areas of Alabama. Rese	system dur earch meth	s to health care, shopping, education. ing the year 2000 and recommends ods included a literature search, rvey, follow-up interviews with 20
The search found that only 50 of th providers are not providing comple change is to add state financial sup second step is for the state to use th between transit providers, and con- and promoting Section 5311 transit	ete service in port to help le resulting in solidation or	their areas. Rural tra modernize the system, ncrease in control to in breakup of inefficient	nsit in Alabama would b drive service expansion, fluence such areas as inc providers. The third ste	enefit grea and provid reased dem n involves	tly from three changes. The first le additional reliable funding. The
The Conclusions section of the repo	ort lists 11 sp	ecific recommendation	s where further progress	could be n	nade.
17. Key Words Transit, rural, Alabama, public		18. Distribution Statement			
19. Security Classif (of this report) Unclassified	20. Security C Unclassified	Classif. (of this page)	21. No. of Pages		22. Price

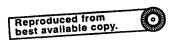
# Contents

Contents	iii
List of Tables	iv
Executive Summary	v
1.0 Introduction	1
2.0 Background	2
Who is Eligible for Section 5311 Funding?	2
What Services and Service Areas Are Eligible for Funding?	3
The Role of the State of Alabama	3
Costs Eligible for Section 5311 Funding	4
Section 5309 – Capital Program	5
Local Match	5
Amount of Funding in Alabama	6
Service Provided	8
Demand Response Service (General Public Transportation)	8
Contract Routes	10
Operations	11
Staff	12
Literature Review	13
3.0 Methodology	16
The Survey	16
Financial Data Acquisition	19
UAH Vehicle Inventory	19
State Needs Assessment	20
New Technologies	20
4.0 Analysis of Findings	24
5.0 Conclusions	27
5.0 References	20

# **List of Tables**

Numbe	er en	Page
2-1	ALDOT Public Transit Section Organizational Chart	4
2-2 2-3	1999 Rural Transit Providers Section 5311 Funding and County Populations 1999 Budgets and Ridership	7 9

PROTECTED UNDER INTERNATIONAL COPYRIGHT ALL RIGHTS RESERVED NATIONAL TECHNICAL INFORMATION SERVICE U.S. DEPARTMENT OF COMMERCE



# **Executive Summary**

The objective of "5311 rural transit programs" (named after the Section in the Transportation Equity Act for the 21<sup>st</sup> Century that funds the programs) is to "enhance the access of people in nonurbanized areas to health care, shopping, education, employment, public services and recreation". The "Rural Transit in Alabama" project took place between August 1999 and December 2000. This report presents a snapshot of the Alabama system during that time period and recommends changes to the system to provide basic, high-quality rural transit to all areas of Alabama. A variety of methods were used to obtain the data for the project:

- The Alabama Department of Transportation (ALDOT) was interviewed to learn its functions as the designated oversight agency for Federal Transit Administration (FTA) funds in Alabama.
- Site visits were made to six transit providers.
- 23 of 27 providers in Alabama responded to a survey.
- Follow-up interviews were made with 20 of the 27 providers.
- Federal regulations and publications of state and national organizations were reviewed.
- ALDOT databases were searched to understand funding patterns and ridership statistics.
- A previous study of the rural transit vehicle fleet was reviewed.

What is the state of transit in Alabama? In a nutshell, only 50 of the 67 counties in Alabama are served by a 5311 rural transit system. Several of the 27 existing transit providers are not providing complete service in their areas. As a whole, the system lacks a central driving force to help steer it toward uniform improvement. The Alabama DOT Multimodal Transportation Bureau is the logical group to provide the driving force. It currently monitors transit providers' use of federal funds but can't set other policies because the state provides no rural transit funding itself. Shortness of funding forces some providers to survive by any means necessary, and lack of staffing at the Multimodal Bureau stretches them so thin that individual provider attention is often not possible.

Rural transit in Alabama would benefit greatly from three changes. The first change is to add state financial support to help modernize the system, drive service expansion, and provide additional reliable funding. The second step is for the state to use the resulting increase in control to influence such areas as increased demand response service, coordination between transit providers, and consolidation or breakup of inefficient providers. The third step is a natural consequence of the first two steps: the State of Alabama recognizing and promoting Section 5311 transit services as an indispensable and credible transportation option.

The Conclusions section of the report lists 11 specific recommendations where further progress could be made.

		·	
		,	

#### 1.0 Introduction

The objectives of this study were to provide an understanding of the current rural transit system in Alabama and offer recommendations to improve the quality and efficiency of the service. Personnel of the Multimodal Transportation Bureau of the Alabama Department of Transportation (ALDOT) were contacted to learn their functions as the designated oversight agency for Federal Transit Administration (FTA) funds in Alabama. Site visits were made to six transit providers, and all 27 providers in Alabama were surveyed to learn how each system works, whom it serves, and from where it obtains funds to run the systems. Federal regulations and publications of state and national organizations were reviewed to learn the innovations they are bringing to rural transit.

After the initial review, the researchers searched ALDOT databases to understand funding patterns and ridership statistics. Dr. Michael Anderson of the University of Alabama in Huntsville (UAH) was consulted to gain an understanding of the condition of the rural transit vehicle fleet. Midway through this University Transportation Center for Alabama (UTCA) study, the researchers were asked by ALDOT to perform an "Alabama Public Transportation Needs Assessment Study" that, when completed and approved by ALDOT, will apply cost figures to the major recommendations made in this study.

The results of the work are listed in the next four sections. Section 2 is background information that describes the service providers, the types of services they provide, the sources of rural transit funding, and basic statistics describing the budget, vehicles, and riders in each of the 27 transit providers. Section 3 describes the methods used to uncover the information presented in this report and presents the results of the survey, Dr. Anderson's fleet inventory, and a description of new technologies that can be applied to rural transit. Section 4 analyzes some of the data and ideas presented in earlier sections, and Section 5 provides the conclusions and recommendations of the report.

The researchers hope that this study will help promote rural transit to the general public and state administrators as a crucial mode of transportation within the state. The study provides ideas to transit providers and state administrators to improve the efficiency and quality of rural transit service in Alabama.

# 2.0 Background: Rural Transit in Alabama

Currently, 27 transit service providers offer federally funded "5311" rural public transportation services in 50 counties within Alabama. That means 17 counties are currently without rural public transportation services. Service agencies such as the Department of Human Resources, the Council on Aging, or Medicaid may operate separate rural transit services. However, those organizations serve their clients only, not the general public.

Funding for rural transit in Alabama comes from three main sources: federal funds, local funds, and contract service generated funds. (Contract income occurs when a service agency contracts with a 5311 provider to supply transportation for their clients.) The state of Alabama does not provide state funding for transit. The federal funds come to the Governor of Alabama via the Federal Transit Administration from the Transportation Equity Act of the 21<sup>st</sup> Century (TEA-21). The Governor of each state has the authority to designate any state agency the administrator of Transit Funds. The Governor of Alabama has designated ALDOT Multimodal Bureau to administer all Federal transit funding.

The authority to assist rural transit systems is given by 49 U.S.C. Section 5311 of TEA-21. The funds available to the state from Section 5311 are based solely on the rural population of the state. Section 5311 funds are used for statewide bus purchases, and for individual operator's administrative and operating expenses.

Section 5309 of TEA-21 provides funding for capital improvement projects and is distributed solely at the discretion of Congress. These Section 5309 funds are used mainly to buy buses and equipment associated with operating the system (radios, computers, etc.)

Another source of funding from TEA-21 is the Rural Transportation Assistance Program (RTAP). RTAP funds are supplied to the state to help provide technical assistance and training to rural transit providers in Alabama. The stated goal of the TEA-21 Act is to "enhance the access of people in nonurbanized areas to health care, shopping, education, employment, public services and recreation". TEA-21 provides for the highest amount of funding for rural public transportation ever in the United States.

# Who is Eligible for Section 5311 Funding?

Groups or organizations that are eligible for 5311 funding include State agencies, local public agencies, private nonprofit organizations, and operators of public transportation services. "Private for-profit operators of transit operators participate in the program as third party contractors for grantees or eligible subrecipients, rather than as subrecipients". (Circular 9040.1E Chapter 3 Part 2)

# What Services and Service Areas Are Eligible for Funding?

Funds can be used for public transportation and intercity bus service in areas that are classified as nonurbanized. A nonurbanized area is any area outside of an urbanized area, which is defined as an "area that consists of a core area and the surrounding densely populated area with a total population of 50,000 or more, with boundaries fixed by the Bureau of the Census or extended by the state and local officials".

#### The Role of the State of Alabama

The Governor of each state will designate a state agency, which will have the "authority and responsibility for administering Section 5311 program" funds and which well oversee provider certification (Circular 9040.1E Chapter 3 Part 1). In the State of Alabama, the Governor of Alabama has designated the Department of Transportation's Multimodal Bureau as the agency that will administer program funds, certify providers, "ensure there is fair and equitable distribution of program funds within the state, and offer technical assistance to the certified providers." The Multimodal Bureau receives RTAP funds from the Federal Transit Authority to hold training seminars, distribute training material (videos, handbooks), and help providers understand new rules and regulations.

"Specifically, the role of the state agency includes: documenting the state's procedures in a state management plan; notifying eligible local entities of the availability of the program; soliciting applications; developing project selection criteria; reviewing and selecting projects for approval; forwarding an annual program of projects and grant applications to FTA; certifying eligibility of applicants and project activities; ensuring compliance with Federal requirements by all subrecipients; monitoring local project activity; and overseeing project audit and closeout. The state must exercise adequate oversight to ensure that only eligible activities receive Federal assistance and that subrecipients meet Federal requirements". (Circular 9040.1E Chapter 1 Part 3)

As part of its administrative duties, the State of Alabama (as per FTA) requires each provider to submit a yearly budget to project costs and estimate eligible funding amounts for Section 5311 Funds to ensure proper distribution among providers. The providers also submit a monthly billing statement outlining that month's costs broken down into Administrative and Operating Cost plus monthly revenue, in kind match, local match, and eligible costs. Each quarter, the providers submit a report that includes information on passenger trips provided, passenger service hours, vehicle hours, vehicle miles, passenger service miles, percent of population served, administrative and operating expenses, fare box and contract revenue, local match amount and source, and eligible federal funding amounts.

The Multimodal Transportation Bureau Public Transportation Section organization is broken down into Program Management, Program Development, and a support staff. Each group has

three members. An organizational chart of the current configuration of the Public Transit Section is provided in Table 2-1.

Table 2-1. ALDOT Public Transit Section Organizational Chart

Program Management	Support Staff	Program Development
Transit Planner III	Three Support Staff members	Transit Planner III
Civil Engineer V		Transit Planner II
Civil Engineer		Transit Planner II
Transit Planner II (vacan	t)	Transit Planner II (vacant)

# Costs Eligible for Section 5311 Funding

What portion of a provider's costs is eligible for Section 5311 funding? The federal share for project administrative cost is 80%, with the remaining 20% coming from local sources or generated program revenue. Administrative costs are defined as those costs that are "nonoperating". Examples of these costs include expenses such as salaries, advertising, office supplies, insurance payments, and building and equipment rental.

Operating expenses are those expenses that are a direct result of operating the transit service, such as fuel costs and drivers' salaries. The federal share for operating expenses is 50% of eligible costs (see next paragraph), with the remainder coming from local sources. Local funds generally come from revenue generated from general ridership, contract routes (Council on Aging, Mental Health, etc.) or donations from local municipalities, county commissions, or nonprofit groups (e.g., The United Way). "Income from contracts to provide human service transportation may be used either to reduce the net project cost or to provide local match for Section 5311 assistance." (49 U.S.C. Section 5311 (g) (1))

Federal funds pay for 50% of eligible operating expenses, and those eligible expenses are called the "net operating deficit". Net operating deficit is calculated by subtracting 20% from overall operating costs. That 20% must come from the provider's general public fare box revenue or a combination of that revenue and contract services. Federal funds can then pay for 50% of the net operating deficit, and local funds pay for the other 50%.

As described earlier, sometimes a human service provider such as Medicaid or the Department of Human Resources contracts with a 5311 transit provider. If the human service provider is paying for that contract expense with federal funds (which normally do not qualify as a "local match"), 49CFR Section 5311 (g)(1) states that "funds received by subrecipients pursuant to service

agreements with a state or local social service agency or a private social service organization may be treated as local rather than federal funds, even though the original source of such funds may have been another Federal program". In addition, certain federal programs specifically permit the use of federal funds appropriated for those programs to be treated as local funds for the purposes of matching share for other federal programs. Because contract revenue is so valuable, some 5311 transit providers devote significantly more resources to fulfilling these contracts than to providing general ridership.

The state cannot forbid the use of contract revenue for local match or for reduction of operating expenses. However, by 49 U.S.C. Section 5311 (e)(2), the State can use the fact that large amounts of contract revenue are not being used to reduce operating expenses as a "rating factor in its discretionary allocation decisions".

#### Section 5309 - Capital Program

Section 5309 funds are made available for capital assistance to rural service providers. The State may apply on the behalf of providers to receive funds to purchase vehicles or construct facilities. In fiscal year 1999, the State of Alabama received \$2.4 million in Section 5309 funds for statewide rural bus needs. In addition, several providers received special appropriations under Section 5309 by allocation from Congress. Distribution of capital program funds is often determined by Congress, but FTA encourages states to be the applicant on behalf of rural service providers. There must be a 20% local match for 5309 funds.

#### Local Match

All federal funds received by rural providers in Alabama must be matched by local funds. For Section 5311 providers, 50% of eligible operating costs, 20% of administrative costs, and 20% of capital costs must be provided as match. These local match funds come from various sources within the communities served such as county commissions, local donations, and contract revenue. According to the Alabama Constitution, the State gas tax cannot be used to fund transit systems within the State of Alabama. No other State source of funds is currently being provided for operating, administration, capital, or match cost for the running of rural transit services in Alabama. Other states such as Arizona and North Carolina used federal laws concerning "flexible funds" to create state transit funds that provide local matching funds for rural providers in their state.

"TEA-21 maintained the flexible funding provisions of ISTEA, which established the Surface Transportation Program (STP) as a source of flexible funding for both highway and transit projects. At the state's discretion, funds allocated under the STP for highways and transit in rural areas may be used for any capital transit project eligible for assistance under 49 U.S.C. Chapter 53, including vehicles and facilities, whether publicly or privately owned, that are used to provide intercity passenger service by bus.

Certain other program funds, for example, Congestion Management and Air Quality (CMAQ), may also be used for either highway or transit projects. These flexible funding sources may be used to supplement the nonurbanized formula program (Section 5311). When the state decides to use flexible funds for rural public transit, the funds are transferred and managed within the Section 5311 program of projects." 49 U.S.C. Section 5311 (5)(f)

"With respect to operating expenses, 49 U.S.C. Section 5311(g)(2) provides that the federal share shall not exceed 50% of the net operating deficit included in the project. Of the remainder of the deficit, 50% must be financed from sources other than federal funds or revenues of the system (i.e., half of the local match must come from local funds). This restriction does not apply to the other half of the local share." The operating deficit is the total operating expenses minus the total amount of fare box revenue and any contract revenue that is not generated by providing service to human service agencies.

"The Federal share of eligible capital and project administrative expenses may not exceed 80% of the net cost of the project." The 80% match for capital projects has three exceptions. The federal share can be increased to 90% "for those capital projects used to provide access for bicycles to transit facilities, or to install racks or other equipment for transporting bicycles on transit vehicles". Vehicle related equipment required by the Americans with Disabilities Act of 1990 is the third exception. (Circular 9040.1E Chapter 3 Part 6(a))

# Amount of Funding in Alabama

The total Section 5311 Rural Transit Funds provided for Alabama in 1999 was \$4.2 million. The ALDOT Multimodal Bureau received 15% of the Section 5311 Funds for administration of the funds and certification of the programs. The State received approximately \$99,000 (in addition to the \$4.2 million for transit services) for the Rural Transportation Assistance Program (RTAP) to provide training seminars and instruction on new guidelines for transit operators within Alabama.

Under TEA-21 legislation, Section 5311 Funds increase by 10% annually. The total apportionment for the state in fiscal year 2000 will be \$4.6 million. The state will also receive \$2.45 million for statewide bus needs from Section 5309. Table 2-2 presents a breakdown of funding received in Fiscal Year 1999 by transit provider name and the counties' estimated 1998 populations from the U.S. Census Bureau.

Table 2-2. 1999 Rural Transit Providers Section 5311 Funding and County Populations

Provider	County	Section 5311 Funds	County Population
Autauga Rural Transportation Baldwin Rural Area Transit System	Autauga Baldwin	\$59,500 \$180,000	42,095 132,828
Community Services of West Alabama	Bibb	\$51,700	18,926
Blount County Commission	Blount	\$86,000	46,266
East Alabama Planning Commission	Calhoun Cherokee Clay Coosa Cleburne Talladega	\$193,150	117,018 21,833 13,970 11,658 14,308 76,633
Chilton County Transit	Chilton	\$62,000	36,918
Northwest Alabama Council of Local Governments	Colbert Franklin Lauderdale Marion	\$137,500	52,946 29,682 84,325 30,986
Alabama Tombigbee Regional Comm.	Clarke Conecuh Monroe	\$263,000	28,499 13,976 23,965
Covington Area Transit System	Covington	\$83,000	37,402
Cullman County Commission	Cullman	\$148,000	74,994
Dekalb County Commission	Dekalb	\$122,250	58,454
Escambia County Area Transit System	Escambia	\$86,000	36,740
Etowah County Area Transit System	Etowah	\$60,000	103,975
Northwest Alabama Mental Health Foundation, Inc.	Fayette Lamar Walker Winston	\$246,000	18,133 15,731 71,027 24,157
West Alabama Public Transportation	Choctaw Dallas Green Hale Lowndes Marengo Perry Sumter	\$436,000	15,917 46,768 9,880 16,744 12,984 23,378 12,667 15,766
Wiregrass Transit	Houston	\$90,000	85,877
Jackson County Council on Aging	Jackson	\$101,250	51,329
Birmingham Regional Paratransit	Jefferson Shelby	\$166,000	659,524 140,715
Lawrence County Rural Transit	Lawrence	\$136,450	33,447
Macon Russell CAA	Macon	\$86,000	22,951
TRAM of Madison County	Madison	\$98,000	278,187
Guntersville Parks and Recreation	Marshall	\$58,400	80,346

Table 2-2 (continued)

Provider	County	Section 5311 Funds	County Population
Help, Inc	Pickens	\$143,250	21,089
Lee-Russell Co.	Lee Russell	\$129,550	100,444 50,387
ARISE	Tallapoosa	\$65,500	40,606
Exceptional Children Program	Washington	\$71,500	17,677
Total		\$3,479,060	3,083,517

As stated earlier, 27 providers within the state of Alabama have been certified by the ALDOT Multimodal Bureau to act as public transit providers and receive federal funding from Section 5311. Of the 27 providers, 20 are single county providers, with the remaining seven being multiple county providers. West Alabama Public Transportation serves the most counties at nine, and it receives the largest amount of Section 5311 funding (see Table 2-2). In 1999, these 27 agencies traveled more than 7.1 million vehicle miles and provided 3.3 million passenger trips with 558 total vehicles statewide (Anderson, 2000).

The total estimated population of Alabama based on the 1998 Census Bureau statistics was 4,351,999. Table 2-2 shows that only 3,083,517 of the population live in counties that have access to Section 5311 rural transit services. This means that almost 1.3 million Alabama residents do not have access to rural public transit services. Three counties without rural transit providers - Mobile, Tuscaloosa, and Montgomery counties - account for 61% of the population without access.

#### Service Provided

The goal of rural transportation systems is to provide mobility and access to people in rural areas. The 27 transit groups provide a variety of transportation services that include demand response (general public), contract route, deviated fixed route, medical transportation, employment transportation, vanpooling, fixed route, semifixed route, and recreational transportation. The majority of these services are offered within the scope of two categories: demand response or contract routes.

# **Demand Response Services (General Public Transportation)**

In the majority of areas, the demand response service requires that a passenger make a reservation at least 24 hours in advance. Demand response passengers provide pickup and drop off destinations and times to a scheduler/dispatcher who uses his or her intimate knowledge of the area and the driver's daily routes to plug passengers into the appropriate driver's schedule. Two-way radios are invaluable in keeping track of buses and directing drivers to pickups and

deliveries. The downside to demand response is the inability to consistently respond to people needing a ride immediately without a 24-hour notice during the day. Not all providers have radios for every bus, which further limits their ability to handle these call-ups.

The demand response service charges one-way trip fares, and it is these fares that are applied to operating cost to arrive at the amount of operating funds that are eligible for 5311 funding. The demand response service is the main service used by the general public riders.

One trend within the State of Alabama is that many providers are "light" on demand response passenger trips and "heavy" on contract trips. This is understandable, due to the fact that low fare box numbers mean more operating expenses will be eligible for federal funds, and contract funds can be used for local match. In that situation, the provider has less pressure to acquire local funds from county commissions, municipalities, and donations. However, being contract "heavy" means more resources (buses and drivers) are maintaining designated fixed time, fixed route contracts, and less attention is being given to general public transportation.

While contract revenue is the lifeblood of many of the systems in the state and no one can argue their ultimate value to the entire system, equity in distribution of resources should be maintained. A review of the 27 systems shows that the ratio of demand response trips to contract trips is disproportionate in several systems across the State. (See Table 2-3.)

The solution to this problem is not necessarily to punish providers by reducing federal funding amounts; an alternative is to inject State funding into the system for matching funds to offset the impact that contract revenue has on a program's ability to match federal funds.

Provider	Operation	A desiminate at 1 - 1	<b>N</b>	N 1 15	ļ	
	Operating Budget	Administration Budget	Number of Buses	Number of Demand Response Trips	Number of Contract Trips	Total Trips
Autauga Rural Transportation	\$95,986.00	\$32,064.00	12	4,471	16,250	20,721
Baldwin Rural Area Transit System			52	350,000	350,000	700,000
Community Services of West Alabama			4	840	2,160	3,000
Blount County Commission	\$234,542.22	\$58,890.81	11	14,400	41,340	55,740
East Alabama Planning Commission	\$216,051.67	\$38,000.97	23	32,000	4,586	36,586
Chilton County Transit	\$70,616.40	\$28,915.54	3	2,199	5,018	7,217
Northwest Alabama Council of Local Governments	\$186,285.47	\$63,458.44	57	7,713	69,412	77,125
Alabama Tombigbee Regional Commission	\$174,557.00	\$186,904.00	17	576	41,800	42,376
Covington Area Transit System	\$95,602.22	\$46,079.26	7	7,384	19,229	26,613

Cullman County Commission	\$392,111.64	\$100,102.79	27	106,800	13,200	120,000
Dekalb County Commission			11	6,676	37,052	43,728
Escambia County Area Transit System	\$92,110.72	\$54,243.45	6	37,532	11,700	49,232
Etowah County Area Transit System	\$87,661.50	\$39,022.64	8	n/a	n/a	31,183
Northwest Alabama Mental Health Foundations Inc.	\$780,206.84	\$177,874.27	77	17,520	8,480	26,000
West Alabama Public Transportation			133	177,400	266,100	443,500
Wiregrass Transit	\$176,821.47	\$64,248.61	21	69,655	85,134	154,789
Jackson County Council on Aging	\$139,708.45	\$59,945.42	12	8,800	10,100	18,900
Birmingham Regional Paratransit Consortium	\$186,978.69	\$16,705.57	40	12,000	190,839	202,839
Lawrence County Rural Transit	\$274,595.16	\$64,554.98	26	n/a	n/a	26,978
Macon Russell Community Action Agency	\$82,534.67	\$33,321.35	8	600	8,500	9,100
TRAM of Madison County	\$141,025.20	\$51,142.90	16	41,689	4,309	45,998
Guntersville Parks and Recreation	\$82,712.45	\$52,275.47	7	10,480	16,700	27,180
Morgan County Area Transportation System	\$145,048.18	\$48,916.07	11	n/a	n/a	62,949
Help, Inc.	\$236,755.68	\$93,197.64	13	n/a	n/a	107,365
Lee-Russell County	\$227,251.22	\$26,324.66	10	71,736	58,944	130,680
Arise, Inc.			5	4	8,869	8,873
Exceptional Children Program	\$136,486.10	\$23,510.17	12	n/a	n/a	21,110

#### **Contract Routes**

Contract routes are fixed schedule, fixed route trips that have a dedicated bus and driver for predetermined days of the week and predetermined times of the day. Contract prices are negotiated based on the provider's cost allocation amounts (the amount it will cost the provider to operate the bus over the mileage of the contract route and the costs associated with the hours the bus will be in service for the contract). Contract routes offer an efficiency that demand response cannot because the client list for contract routes is known well in advance of the trip, and the number of passengers, pickup points, and destinations remain reasonably constant over the length of the contract. For example, if a provider is servicing a contract to a human service agency, the agency will generate the client list, times for pickup, pickup points, destinations, and time of return. A medical contract will most likely run on the same days every week, with the same passengers all going to the same medical facility.

One problem with operating human service contracts is lack of driver training in handling special needs passengers, and understanding driver liability in transporting those passengers. Also, some State agencies reportedly do not demonstrate the levels of cooperation intended by federally funded programs in coordinating services with other federally funded programs. That is, there are redundancies with human service agencies purchasing and operating transportation fleets of their own when a federally funded 5311 transit system already exists in their area. This seems to contradict the Mandate for Coordination within the TEA-21 legislation that calls for federally funded programs to coordinate within federal funded transit providers.

Coordination Mandate. "TEA-21 includes a new requirement for local governmental agencies and nonprofit organizations that receive assistance from Federal sources other than the FTA for nonemergency transportation services. To the extent feasible these agencies are now required to participate and coordinate with recipients of assistance from FTA in the design and delivery of transportation services. They must be included in the planning for those services". (Circular 9040.1E Chapter 1 Part 6 (b))

# **Operations**

Most demand response services require an advanced notice for service of 24 hours. For passengers who call with less notice, it is possible that a driver in the area can be deviated by way of radio contact from the dispatcher. For this to be possible, drivers must keep good communications with their dispatchers throughout the day.

With 24-hour advance notice, a dispatcher will use the information gained from the clients to fill out a passenger log for the next day. The information on the passenger log will be used to determine which driver and bus will be assigned which passengers. The drivers' logs will then be filled out and made available for the drivers. Each driver will arrive early in the morning and (frequent hours of operation are 6:00 A.M. to 5:00 P.M.) use the pretrip sheet to inspect the vehicle, and record mileage before the day's service begins. The driver will use the passenger log to pick up passengers and deliver them to their destinations.

Depending on the operation or the schedule the same driver may return to take the clients home, or another driver and bus in the area may return them home. Coordination skills of the dispatcher are most useful here. Contract routes are much the same, except less coordination is needed because these routes are usually regularly scheduled services.

The process of scheduling and routing is dependent on the dispatcher having a complete knowledge of the service area and the routines of repeat users to ensure efficient scheduling and routing. The information collected from service requests and the information on vehicles from pretrip sheets is usually placed in filing cabinets. This paper filing makes it difficult to compile information or sort it in helpful ways for service improvement. Also, information needed for filling out budgets and grants is tedious to retrieve, making the grant process more of a strain.

Maintenance schedules are kept the same way, which may not hinder timely maintenance but makes it hard to evaluate the efficiency of the maintenance program. The use of software for dispatch, scheduling, routing, and maintenance in combination with the operator's intimate knowledge of procedures and equipment could lead to more efficient procedures.

#### Staff

While the dispatchers and drivers handle most of the daily operations, the administrative duties are handled by the transit director, with help from the dispatchers or other administrative personnel. The administrative personnel are responsible for applying for grants, completing necessary information requests (ALDOT Quarterly Reports), and following State and federal requirements concerning federally funded programs. There is no standard arrangement for office personnel or maintenance personnel, and the staff is contingent on funds available.

#### Director

The director is the head of the transit operation. The duties are varied, including administering daily operations, employee training, grant writing, and interfacing with State and local governments concerning federal and local funds.

Employee training is also a focus of the director, along with understanding federal requirements for drivers, and the rights and needs of passengers. Implementation of drug testing for drivers, and maintaining a drug free workplace falls to the director. The director is held accountable by a board of directors or by the county commission. The director must have a complete knowledge of the operation to run the program as efficiently as possible and to stay in compliance with federal requirements for vehicle procurement, special needs services, and administrative and operational spending.

#### Assistant Director

In large operations, it may be financially possible to maintain an assistant director to share the operational or administrative concerns of the director. This allows the director to concentrate on services, compliance, and funding. The assistant director must know all the duties of the director in case the director is called away from the operation for an extended amount of time.

#### Dispatcher

The dispatcher is responsible for taking reservations and scheduling pickup and delivery. Driver assignments are given out in the morning by the dispatcher, and if a client needs service while buses are in route, the dispatcher relays the information to the drivers via radio.

#### Drivers/Part-time Drivers

Drivers must take drug tests and adhere to a federal drug policy. Drivers go through safety training and supervisory training if in a supervisor's position (federal requirements for Section 5311). Also, some providers give drivers training in cardiopulmonary resuscitation (CPR) in case of emergency while on route. In addition, buses larger than 15 passengers require that drivers possess a valid Commercial Drivers License (CDL). Part-time drivers are personnel that are available on a daily basis to fill in for drivers who may be ill or unable to work a particular day or time of day.

# Administrative Assistant/Bookkeeper

An administrative assistant may be used to relieve the dispatcher from any administrative duties that would interfere with the ability to properly schedule, route, or communicate with the drivers. Bookkeeping is an area where an administrative assistant is usually most helpful. Someone with accounting or bookkeeping skills offers help in tracking expenses and constructing the yearly budget.

#### Maintenance/Mechanic

The responsibility of the maintenance personnel is the upkeep of vehicles. Some operations use local oil express shops to perform regular maintenance, while others use county personnel or have someone in their vehicle yard handle simple maintenance and repair. Larger problems having to do with transmissions or wheelchair lift mechanisms may be done at local repair shops or by a certified mechanic at the vehicle yard. If the problem requires special equipment, the vehicle will likely be taken to a local garage.

#### Literature Review

The information for this report was gathered from various sources. The Internet was a very helpful source of information, as were certain publications and individuals within the rural transit system.

#### The Internet

The first place to look on the Internet to find specific information about rural transit in Alabama is the State of Alabama's Rural Assistance Program web site. The address for this web site is <a href="https://www.alrtap.org">www.alrtap.org</a>. Among other information, the site lists the Alabama RTAP (ALRTAP) Video Library. The contents in the library are training videos that are made available to the transit providers so that they can review training sessions at their own facilities with their staff. The following are some of the videos available to the rural transit providers:

Risk Management for Rural Transit Systems, Federal Transit Administration

- FTA's Rural Transit Assistance Program, Federal Transit Administration
- Teleconference on Tort Liability, PA Local Roads, Penn State
- Evacuating Passengers During a Fire
- Drug & Alcohol Testing
- Hiring Practices
- Your Ticket to Safety: Bloodborne Pathogens, Iowa RTAP and Iowa DOT
- Reasonable Suspicion: Training for Supervisors, Federal Transit Administration

There are also videotapes available to help drivers prepare for and obtain their Commercial Drivers License.

The ALRTAP web site links to the Federal Transit Administration, a calendar of upcoming training opportunities, a list of service providers in Alabama, and the Community Transportation Association of America, California RTAP, Indiana RTAP, New York RTAP, Oklahoma RTAP, and Texas RTAP.

The Community Transportation Association of America (CTAA) at <a href="www.ctaa.org">www.ctaa.org</a> is a monthly magazine concerned with providing ideas and assistance to community transportation organizations. This web site is very helpful in giving general information about rural transit in America and the current trends in transit management and funding. The CTAA also provides information toolkits such as the "Employment Transportation Toolkit". This document is a "how-to" booklet on starting employment transportation and the grants available for that type of service. It also provides strategies to include community leaders and local business in the planning and funding of employment transportation.

The Federal Transit Administration website <a href="www.fta.dot.gov">www.fta.dot.gov</a> is an excellent source of current legislation and guidelines that govern the funding and certification of rural transit providers. This site also provides a complete list of rural transit funds made available to each state and the Section 5309 special apportionments from Congress.

The Arizona Department of Transportation has a web site specifically concerning the Arizona Rural Transit Program. The address is <a href="www.dot.state.az.us/about/transit/index.htm">www.dot.state.az.us/about/transit/index.htm</a>. Large amounts of information about rural transit programs in Arizona can be found on this site, including the Arizona Department of Transportations Section 5311 Guidelines and Applications packet. This packet gives a detailed view of the Section 5311 program, state and federal eligibility requirements, application review process, state and regional contacts, and the project application.

The implementation of Intelligent Transportation Systems (ITS) into rural transit operations is a fairly new idea, but the Rural COATS project is a good source of information. Rural COATS is a cooperative effort between the states of California and Oregon to recognize the need for ITS systems in rural transit and to define how and when those systems will be implemented. The web address is <a href="https://www.ruralits.org">www.ruralits.org</a>.

To review case studies on the use of ITS in small urban and rural transit systems go to <a href="https://www.its.dot.gov/cyberdocs/edldocs/10885/Sec3.html">www.its.dot.gov/cyberdocs/edldocs/10885/Sec3.html</a>.

To better understand the benefits and cost of public transportation, review the report by Todd Litman of the *Victoria Transport Policy Institute* at <a href="www.vtpi.org/tranben.htm">www.vtpi.org/tranben.htm</a>. This report is very detailed and outlines and defines how it calculates estimated benefits and costs to users.

To view government statistics for all modes of travel (highway, Amtrak, transit, navigable channels, etc) go to <a href="https://www.bts.gov/ntda/nts/NTS99/data">www.bts.gov/ntda/nts/NTS99/data</a>. This site has information ranging from system mileage to average transportation related salaries.

To learn about transportation enhancement activities and funding go to <a href="https://www.enhancements.org/enhancements.html">www.enhancements.org/enhancements.html</a>.

# 3.0 Methodology

Background information for this report was gathered through a combination of site visits, personnel interviews, e-mail correspondence, and survey questions. In the first three months of the program, the Internet was used to review rural service provider operations in other states to gain a feel for the types of service available. Also, information on federal regulations was gathered from the Internet and through telephone conversations with the ALDOT Multimodal Bureau.

The second phase of data gathering started with six site visits to rural transit providers. Those trips gave the opportunity to observe how the transit system actually operated and to talk one-on-one with service providers about how they ran their systems and what their major concerns were. From these initial site visits, researchers learned the basics of rural transit systems. Using this basic knowledge, a survey questionnaire was developed to expand knowledge concerning all Section 5311 rural transit operations in Alabama. Of the 27 providers, 23 responded to the questions. After reviewing questionnaire results, 20 one-on-one interviews were conducted to help shape a picture of transit in Alabama.

Later, ALDOT opened its files so that the researchers could learn about the budgets, vehicle numbers, and ridership associated with each provider. Summaries of the information are provided in Tables 2-1 and 2-2. In the middle of the project, ALDOT asked the researchers to perform an "Alabama Public Transportation Needs Assessment" study to estimate costs to implement the major recommendations of this study. The "Needs Assessment" study has not yet been completed and accepted by ALDOT, but, when it is published, it will provide a useful addition to this report.

# The Survey

All 27 rural 5311 providers were asked to complete and return a survey. The survey consisted of 18 questions asking about service area, ridership, contracts, source of funds, personnel, length of operation, types of services, needs and concerns, and general comments.

Of the 23 respondents, 17 receive at least some of their local matching funds from county commissions in their service area. Of the remaining six providers, two receive local matching funds from municipalities within their service area, and four are provided funds for local match from private donations, local service organizations, or groups such as the United Way. All of the respondents receive Section 5311 rural transit funding, with seven providers also receiving Section 5307 urban transit funding. (These seven providers combine rural and urban transit systems within an organization.)

Each provider was asked about the future of its operation if funding levels did not increase or increased only slightly over the next five to ten years. The overwhelming response was that

providers would have to reduce current levels of service by cutting hours or operations, reducing vehicles and drivers, or cutting administrative staff.

When asked if they possessed the ability to match more federal funds if additional grants could be found to fund rural transit, three providers indicated finding additional local match would not be possible. Seven responded it would be very difficult, but 13 believed they could get more local support if more federal funds were available. Providers said the problem with alternate grants is the time necessary to find these grants and to apply for them. Most service providers do not have the personnel to run their daily operations, fill out the Section 5311 paperwork, search for alternate federal funds, and determine the eligibility requirements.

Providers were asked the role they felt the State should play in developing the rural transit system in Alabama. Nineteen providers responded that the State of Alabama should provide some sort of annual funding to rural transit. Three providers thought State funds should be used as part of their local match for federal funds; two providers suggested the funds be awarded on merit; and the remaining providers just wanted funds of any kind from the State. In addition to funding, three providers requested that the State take a role in educating the general public on the benefits of transit and the areas that are currently served.

Two providers suggested the formation of a State transit planning commission with members of the transit community, transit system users, and local and state officials. One response mentioned the need to fund a statewide strategic plan for transit. In regard to RTAP training, a large majority of providers were happy with the Multimodal Bureau's performance and noted the improvement in training opportunities and quality over the past few years.

In regard to planning, 13 providers indicated they interact with local officials, customers, and human service agencies in planning transit services for their area. Ten providers were not involved with members of service agencies, county officials, or customers in planning for transit. Of those ten, seven listed lack of interest from potential planning members as the reason for no community planning. Of that seven, three providers' service areas had steering committees that disbanded due to lack of interest and ideas. The other three providers that did not have planning committees conveyed an interest in starting a committee.

On the question of providing employment transportation services, eight providers indicated they were not involved in work related transportation. Of those eight, two were taking steps to get involved, and one related that the economic state of his service area made transportation services nonapplicable.

Four providers either have or are in the process of implementing some kind of scheduling software. Of the 19 providers not using scheduling software, eight indicated it would be helpful to their systems, but cost was a major concern. The 11 providers not interested indicated that scheduling software would not be beneficial for them due to the small size of their operation.

Below is a list of services, equipment, and personnel that providers would like to add if additional funding where available. Numbers in parenthesis indicate that multiple providers listed those issues.

#### **Services**

- Park and Ride
- Paratransit
- Welfare to Work
- Expanded Routes (6)
- Work Routes
- Out of County Medical Services (2)
- Weekend Service

#### Equipment

- Vehicles (12)
- Computers
- Scheduling/Dispatch Software (3)
- Talking Bus System for Tours
- Two-Way Communication Systems (2)
- TV and VCR

#### Personnel

- Full-Time Mechanic (2)
- Administrative Clerk (6)
- Drivers (12)
- Upgrade Salaries (2)
- Full-Time Dispatcher (2)

The responses above indicate that the most desired service addition is expanded routes. The most desired equipment are buses; and the most desired personnel are drivers and office assistants.

The transit providers gave the following responses when asked for their most pressing training needs:

- Driver Safety
- Vehicle Operations (wheelchair lift, etc)
- Transit Operations
- Scheduling and Reporting
- Computer Software Training (3) (Excel, Internet, E-mail)

- Ford Training for Mechanics on the New Electronics on Vehicle Engines and Transmissions
- Annual Update Training Drug and Alcohol Program, Especially Reasonable Suspicion (2)
- Management Skills in Dealing with Drivers
- Driver Training in Dealing with Difficult Passengers (6)
- Driver Training in Dealing with Rides and Minor Medical Problems (nose bleeds, seizures, etc.)
- Driver Training Lifts and Tie-downs
- Dispatcher Training
- Passenger Education in Terms of Fire or Major Accident
- Defensive Driving (2)
- CPR
- Weekly Discussion on Problems and Solutions, Shared Information
- CD-ROM Training Manual Covering Multiple Subjects
- Advanced Safety
- Passenger Assistance (2)
- Risk Management
- Federal Regulations
- Diversity Training
- CDL Preparation

# Financial Data Acquisition

After sending out the survey to providers, researchers requested a review of the Multimodal Bureau records concerning individual provider cost and Section 5311 grant amounts. ALDOT kindly provided the information, much of which is included in Tables 2-1 and 2-2.

# **UAH Vehicle Inventory**

Dr. Michael D. Anderson of the University of Alabama in Huntsville completed a Section 5311 Vehicle Inventory Database earlier this year and provided his database and a report on vehicle replacement to the researchers for informational purposes. The Inventory Database provides information on average vehicle age, average mileage, titleholder, and a rating based on the vehicle's condition [Anderson, 2000].

Dr. Anderson's report shows that there are 558 vehicles in the Section 5311 rural transit system in 2000. Agencies in the Northeast portion of the State have 72 vehicles with an average odometer reading of 99,641 miles and an average age of 5.5 years. The agencies in the Northwest portion of the State account for 236 vehicles, with an average mileage of 104,724 miles and average age of 6.2 years. The Southeast portion of Alabama (where the largest concentration of un-served counties is located) has 56 vehicles with an average mileage of

134,857 and an average age of six years. The Southwest section of the State (where the largest providers are located) accounts for 194 vehicles with an average of 139,191 miles and an average age of 6.5 years.

The vehicles that received the worst condition rating by Dr. Anderson where located in the Southwest section and the vehicles rated highest in terms of condition where found in the Northwest section of the state. Dr. Anderson determined that by spending \$4.5 million a year and procuring 111 vehicles a year that in five years the State rural fleet would be upgraded in terms of age and mileage.

#### State Needs Assessment

The Alabama Department of Transportation (ALDOT) recognized the shortcomings of the existing rural transit system and identified three crucial actions needed to improve it:

- Serve the 17 currently unserved counties
- Increase service in the 50 counties already being served
- Provide funds to upgrade the existing rural transit vehicle fleet

Senior management at ALDOT learned of UTCA's study of rural transit and asked the researchers to perform a second study using ALDOT funds. The goal of the second study was to assess the needs in the three areas and quantify the funds needed to implement them. The study is ongoing, but its results will provide key data to quantify the resources needed to improve rural transit in Alabama.

The "Needs Assessment" study will allow UTCA to complete one of the main goals of the project, which is to assess the rural transit needs in the State and to quantify the required funds. An added benefit is that the study results will be transmitted directly to senior management at ALDOT.

#### **New Technologies**

Many rural transit providers in other states are integrating Intelligent Transportation Systems (ITS) into their transit services to help improve service, efficiency, and safety. The types of technologies available and in use in other states include dispatch software, Geographic Information Systems, Smart Cards, Vehicle Locators, Information Kiosks, and Cellular Communications.

# Dispatch Software

Dispatching software is used to schedule passengers and to coordinate routes and vehicles. Dispatch software can register passengers, create booking, schedule passengers to vehicles,

dispatch vehicles and drivers, record trip events, code locations, and determine eligibility for special federal grants such as welfare to work. The most important function of the dispatch software is the ability to monitor vehicle trips and adjust service by responding to call up passengers.

In Alabama, a number of providers indicated that due to the size of their operation, dispatching software might not be the most efficient way for them to invest any new funds. However, some of the larger systems like Baldwin Area Rural Transit, West Alabama Public Transit, and the Northwest Council of Governments could benefit greatly from this software due to the large number of passengers they transport and the extensive routes they cover.

The State of Alabama has been contacted by several dispatching software vendors and has invited those vendors to present their products. The State is also looking at the Route Match System that was implemented in Georgia. Currently, that system is in the debugging process and is not fully operational.

# Geographic Information Systems

"A geographic information system (GIS) is a special type of computerized database management system in which geographic databases are related to one another via a common set of locational coordinates." (FTA, 1998)

GIS used in combination with vehicle locators allows schedulers and dispatchers to know at all times the location of their vehicles and their exact distance from the next pickup or drop off point. This knowledge allows dispatchers to better manage call up passengers and direct the nearest vehicle to that location. This ability helps increase the system's trips per hour, total daily passengers, and overall service efficiency.

At this time, GIS is being used more in urban applications than in rural, but several rural ITS initiatives are studying the effectiveness of GIS and other ITS applications to rural transit. One such group is the Rural COATS group that is a consortium of providers in Northern California and Southern Oregon.

#### Electronic Fare Payment

Automated fare payment systems are new technologies that take advantage of computer technology and the convenience of prepay applications. With the advance of electronic communications, data processing, and data storage, the process of fare collection can be simplified and made more efficient. This "smart card" technology allows passengers to prepay for service and then simply swipe their magnetic strip card when entering the bus. The system removes the inconvenience of money handling for the driver and the passenger.

The hardware device that reads the smart card can store that data on that card and download that data at the end of the day. Operational information about the vehicle, such as miles traveled, fuel

used, total passengers, total daily fares, and maintenance information, can also be read and stored in the hardware device and downloaded into a report at the end of the day. Automated fare technology is being tested in several cities and areas at this time, and with further advances, cost may be reduced. The main advantages of automated fare payments are the reduced costs associated with money handling and the convenience to passengers and drivers.

#### Vehicle Locators

Vehicle location systems are used by transit systems, trucking fleets, police vehicles, and ambulance services. The vehicle location systems use dynamic global positioning technology to identify location. Potential advantages include increased dispatching and operating efficiency, better response to service disruption, inputs to passenger information systems like kiosks, inputs to traffic signals that give preference to transit or emergency vehicles, and notice of mechanical problems with vehicles.

Position information is stored in the vehicle for a short time and then relayed to the dispatch center. The most common method of transmission is polling. The central computer at the dispatch office contacts each bus in turn and requests their locations. A drawback to this method is limited amounts of radio frequencies in urban areas. This would not be a drawback in rural applications.

The advancement of Global Positioning Systems has led to an overall reduction in cost for this type of technology and may make it cost efficient for systems within Alabama.

#### Traveler Information Systems

"Traveler information systems provide travelers with information on one or more modes of transportation to facilitate decision making before their trip (pre-trip) as well as during their trip (en route). Information can be provided to trip makers at home, work, transportation centers, wayside stops, or onboard vehicles. With links to automatic vehicle location systems, traveler information systems are beginning to provide real-time transit information, such as arrival times, departure times, incidents, and delays. Travelers can access this information through a variety of media." (FTA, 1998)

Several rural transit providers in the state have expressed interest in having a passenger information system implemented on a local and statewide level. The use of vehicle location systems in conjunction with information kiosks at wayside passenger stations would allow passengers to identify the location of the bus and when it will be coming, and exactly what route that bus is following. On a state level, providers would like to see an information campaign that promotes public transit as a viable and reliable alternative to personal vehicle travel. A public campaign along with a 1-800 dial a ride program that would connect potential passengers with providers could give transit providers the credibility they need for their services.

While it may not be feasible for every provider to implement complete passenger information

systems on a local level some systems such as the Baldwin Area Rural Transit System with its heavy tourist traffic from its beach trolley system would benefit from a system that includes information kiosks and vehicle locators.

ALDOT has contracted with The University of Alabama in Huntsville to perform a study in this area. The "Mobility Information Management Study" (MIMS) will implement a pilot project, web-based information system for a four-county area in Alabama. The objective is to test how well the information system can help coordinate public transportation with rail service, intercity bus service, regional airports, and other needed services for rural residents. The project is to be completed in 2001 and will provide insight into how well this type of service will work in Alabama.

#### Cellular Communications

Many providers have indicated that their current method of communication with their vehicles and drivers is dated and less than reliable at times. The solution to this problem could be a system wide adoption of cellular two-way radiophones. These phones, manufactured and distributed by such companies as Southern Link, Nokia, and Bellsouth, utilize cellular technology in a closed network application. These phones are connected to a central base and to every other phone that is connected to that base, and allows for free communication between drivers and dispatchers. The phones do not have dial capacity, so the phones only have access to the dispatch center and the other drivers. In case of emergency, the driver can alert the dispatcher immediately, who can contact emergency personnel. The implementation of this type of technology would update the current communication system and increase the safety and efficiency of the transit system.

# 4.0 Analysis of Findings

#### ALDOT Remains as Section 5311 Funds Administrator

As indicated earlier in this report, the Governor of each state has the authority to choose any state agency he deems proper to administer the Section 5311 Rural Transit funds. During the course of this study the researchers inquired whether another agency might better suited to administer the funds than the ALDOT Multimodal Bureau. The answer to that question was "no", but the Multimodal Bureau could be improved with more staffing for monitoring programs, providing training, and reviewing new technologies and transit trends. Its effectiveness could markedly increase if it provided some of the funds for rural transit and thus could exert leverage over more policies.

#### Transit Planner in Each Division Office

A good model for state transit agencies is North Carolina, where each division office has a transit consultant who works with the transit providers and transit users on a daily basis to address the needs and problems of transit in his or her district. This ability to learn the intimate needs of an area and its transit system allows for more direct access to solutions. While it might not be economically feasible to put a transit planner in each ALDOT District Office it might be feasible to put a transit planner in each Division office.

# **State Support**

If rural transit is to become a truly seamless statewide service that all Alabamians can rely upon, State financial support is absolutely necessary. Expansion into unserved counties will probably require support on the State level.

Where will the money come from? Recently, Governor Siegelman called for the interest generated by the Oil and Gas Trust Fund to be used for capital projects within the State. This money could be used for capital match funds to buy buses and other essential equipment. Also, the State will be receiving a share of the national settlement with tobacco companies, of which a small percentage could be set aside for a transit fund that would help with local match for operating expenses or benefit upgrades.

Currently several states in the Southeast are providing some sort of state support to transit.

 In North Carolina a transit trust fund was created by making discretionary transfers from the State Highway Trust Fund. Other sources of funds are motor fuel taxes, vehicle taxes, and vehicle title fees. Allocations from the Highway fund equaling \$0.50 times the total

- number of registered vehicles in the state is allocated to transit.
- The State of Florida has created the Transportation Disadvantaged Trust Fund. The sources of funds for the Trust Fund are 15% of the state's public transit block grant and a \$1.50 fee on all annual vehicle registrations.
- The Empower Kentucky Transportation Team is a group that advances transit in the State of Kentucky. The group consists of four members of the State governmental cabinet. The State of Kentucky provides \$815,900 from general funds for transit.

#### **Revive Alabama Transit Association**

At one time, Alabama transit providers had an organization called the Alabama Transit Association (ATA), but that organization was disbanded. The providers in Alabama need a single strong voice to bring their needs and concerns to state government. The ATA could be the vehicle to accomplish this goal. A strong unified organization could be very useful in informing the general public in the viability and quality of transit services and also as a resource for new providers to tap years of experience and management skill to help them improve their own transit system. The association could also provide cost savings in terms of group vehicle insurance and group communications services.

# Increase State's Ability to Influence Services

The trend in relying on contracts to provide local match funding has already been discussed in this report. What can be done to increase the ratio of general ridership to contract routes offered by providers? The State has little regulatory power in this matter. While the amount of contract funds can be used as a factor when determining funding for a system, the State cannot force the system to dedicate resources to general ridership, and providers can show that the resources dedicated to contract revenue is the lifeblood of their operation. By relieving the stress to generate contract revenue by providing State funds for match, more effort can be put into general ridership and the spirit of TEA-21 can be restored. If or when State funding is put toward transit projects, a condition of that funding should be equitable distribution of resources between general ridership and contract passengers.

# **Increased Training to Understand Federal Regulations**

The regulations concerning Section 5311 Rural Transit funds are not easy to understand. The TEA-21 legislation outlining the programs for transit funding in America and the 9040 Circular defining the rules and regulations concerning the eligible use of those funds can be confusing and hard to follow. This situation could lead to providers operating outside of the regulations and possibly endangering their eligibility for funding. A monthly newsletter outlining changes to the regulations and a quarterly seminar on the regulations might help ensure that all providers are educated regarding the laws under which they operate. This may help some providers by

showing them opportunities of which they were not aware or which they thought were restricted by the federal government.

# **Regional Planning Commissions**

A new model being proposed for the rural transit systems in Alabama would take the loosely associated transit providers and absorb them into the Regional Planning Commissions. Instead of 27 or more organizations independently operating within the State, there would be 12 transit groups within the 12 regional planning groups. One benefit would be the added coordination opportunities that would be available when the transit systems become more uniform and receive administration support from the regional planning commission staff. This administration support could lead to better and more varied record keeping, more opportunities to search for alternate grants, and perhaps regional dispatch centers to coordinate service over a large region and passenger handoff between regions.

One of the main drawbacks to this plan is that some of the systems stretch across wide regions. Would they be allowed to continue to operate independently or would they be broken up and their resource split between the regions? Further study is needed to answer these and similar questions before such a concept can be implemented.

# 5.0 Project Conclusions and Recommendations

What is the state of transit in Alabama? As a whole, the system lacks a central driving force to help steer it toward uniform improvement. The Alabama DOT Multimodal Transportation Bureau is the logical group to provide the driving force. It currently monitors transit providers' use of federal funds but can't set other policies because the State provides no rural transit funding itself. Shortness of funding forces some providers to survive by any means necessary, and lack of staffing at the Multimodal Bureau stretches them so thin that individual provider attention is often not possible.

Rural transit in Alabama would benefit greatly from three changes. The first change is to add State financial support to help modernize the system, drive service expansion, and provide additional reliable funding. The second step is for the State to use the resulting increase in control to influence such areas as increased demand response service, coordination between transit providers, and consolidation or breakup of inefficient providers. The third step is a natural consequence of the first two steps: the State of Alabama recognizing and promoting Section 5311 transit services as an indispensable and credible transportation option.

The following bulleted list contains recommendations to improve rural 5311 transit in Alabama. To implement the recommendations, the injection of State funds to rural transit through the ALDOT Bureau of Multimodal Transportation is assumed. Costs are not provided with each item in the list, but few of these recommendations can be completed without additional funding. When completed and accepted by ALDOT, estimated costs for the major items will be contained in a companion study by the researchers titled "Alabama Public Transportation Needs Assessment", which is being funded entirely by ALDOT.

- Provide service to the 17 counties in Alabama that do not currently have 5311 rural transit service.
- Improve the quality of the vehicles now in service; the current fleet averages odometer readings of approximately 120,000 miles. Anderson reports that improvement will cost approximately \$4.5M per year.
- Expand routes in the 50 counties that currently have service. A transit provider "wish list" of expanded services will be included in the "Alabama Public Transportation Needs Assessment" study mentioned in the previous paragraph.
- Convince existing providers to provide a higher ratio of demand response to contract services.
- Improve technology used by transit providers. The two most immediately useful technologies appear to be dispatch software and telecommunications equipment.
- Focus on training providers in their interest areas, such as:
  - Dealing with difficult passengers
  - o Computer software skills
  - o Lifts and tie-downs

- Continue to improve on ALDOT's recent emphasis on computerized record keeping.
- Consider reviving the Alabama Transit Association (or similar organization) to provide a
  planning unit, potential savings on insurance and communications, and a consistent voice
  to the Alabama Legislature.
- Increase local ALDOT transit personnel (a representative in every ALDOT Division Office has been suggested).
- Coordinate a statewide publicity campaign to inform potential riders of the rural transit choices available to them.
- Provide aid to transit providers in the form of a "grant writer" who writes the yearly FTA applications for the providers as well as applications for Block Grants, etc.

The list above includes actions to provide high-quality, basic rural transit service to all areas in Alabama and will take a minimum of five years to complete. A second set of goals become attainable when the initial goal is accomplished. Those second goals are not enumerated here but involve linking the individual providers into a transit system where all rural citizens can be connected with rail service, other public transportation, regional medical centers, private transportation such as intercity bus service, and regional airports. The infrastructure for such a system will probably grow out of such work as the MIMS study described earlier and the establishment of a series of multimodal terminals around the state. The final recommendation of this study is to begin to plan now for this second series of improvements to rural transit service in Alabama.

#### 6.0 References

Anderson, Michael, "Vehicle Inventory of Alabama's 5311 Rural Transit Fleet", University of Alabama in Huntsville, Huntsville, AL, May 2000.

Community Transportation Association of America, "Employment Transportation Toolkit", U.S. Department of Labor, Washington, D.C., July 1999.

Federal Transit Administration, Circular 9040.1E, Washington, D.C., 1999.

Federal Transit Administration, "Advanced Public Transportation Systems: The State of the Art Update '98", FTA-MA-26-7007-98-1, DOT-VNTSC-FTA-97-9, Washington, D.C., 1998.

# University Transportation Center for Alabama

#### 1999-2000 ADVISORY BOARD

Mr. Donald Vaughn, Chair Assistant Chief Engineer Alabama Department of Transportation

Mr. Tommy Brown, General Manager Huntsville Transit

Mr. Randy Cole, Shelby County Engineer Shelby County Highway Department

Mr. Larry Lockett, Materials & Tests Engineer Alabama Department of Transportation

Mr. Billy Norrell, Executive Director Alabama Road Builders Association

Mr. David Norris, Senior Transportation Planner West Alabama Planning & Development Council

Mr. James Suttles, Suttles Truck Leasing President, Alabama Trucking Association

Mr. Joe D. Wilkerson, Division Administrator Federal Highway Administration

#### **EXECUTIVE COMMITTEE**

Director

Dr. Daniel S. Turner University of Alabama

**Associate Directors** 

Dr. Jay U. Sterling University of Alabama

Dr. Fouad H. Fouad University of Alabama at Birmingham

Dr. Houssam Toutanji University of Alabama in Huntsville

#### **CONTACT INFORMATION**

University Transportation Center for Alabama
271 H M Comer Mineral Industries Building
PO Box 870205
University of Alabama
Tuscaloosa, AL 35487-0205
(205) 348-9925
(205) 348-0783 fax
utca@coe.eng.ua.edu
http://bama.ua.edu/~utca/

