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The Americans with Disabilities Act of 1990 (ADA) paratransit cost issues and solutions: Case of Greater Richmond Transit Company (GRTC)

Di Fei, Xueming Chen*

Virginia Commonwealth University, Richmond, VA, United States

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ABSTRACT

The Americans with Disabilities Act of 1990 (ADA) stipulates the provision of complementary paratransit to people unable to use regular public transportation. Even though paratransit service is one of the most efficient ways to help move people with disabilities and the elderly, it is also the most expensive and the most difficult one to coordinate and operate. The purpose of this paper is to expound major paratransit cost issues, describe the existing conditions of paratransit in Richmond, Virginia, and make policy and strategy recommendations for the Greater Richmond Transit Company (GRTC) based on a comparative analysis of fifteen case studies of paratransit agencies in the country.

1. Introduction

Paratransit is a mode of passenger transportation that does not follow fixed routes or fixed schedules (Fei, 2014). The Americans with Disabilities Act of 1990 (ADA) stipulates the provision of complementary paratransit to people who cannot use regular fixed-route public transportation due to their disability status. However, implementation of this provision is both expensive and difficult to coordinate and operate. Because of these reasons, cities, counties, states and other transportation agencies that provide or purchase paratransit services are continually pursuing various methods to contain, control or reduce paratransit costs (Florida Department of Transportation Research Center and Center for Urban Transportation Research University of South Florida, 2008).

In addition to costs, social equity is also an issue that cannot be neglected. Fujiwara and Zhang (2013) point out that equity in the context of transportation is generally classified into two perspectives – social and spatial – "Social equity basically refers to difference in income or social welfare between individuals or certain population groups." According to the American Community Survey (2008–2012), the median household income nationwide was $53,046, whereas the median household income for people with disabilities was only $36,800 in 2010. It indicates that the majority of people with disabilities have lower income than the nation as a whole. Therefore how to make the costs less regressive in using ADA complementary paratransit service is an essential topic. This is certainly true for Richmond, Virginia, which is experiencing both poverty and transit crises.

The Greater Richmond Transit Company (GRTC), locally known as GRTC Transit System, is a local government-owned public service company which operates urban-suburban bus lines in portions of the Richmond metropolitan area (including Richmond City, parts of Henrico County, parts of Chesterfield County, and others).

Pursuant to the legal mandates of ADA, GRTC Transit System's Community Assisted Ride Enterprise (CARE) service, which is the predominant type of specialized transportation services, provides curb-to-curb paratransit services to citizens in its service area. However, GRTC has a significant operating deficit in providing its CARE services like other U.S. transit agencies. For example, GRTC's paratransit service costed $28.31 per trip in 2012, which was seven times the cost per trip of the fixed-route service ($3.93). In the same year, the CARE fare was $2.50 per one-way trip whereas the fixed-route fare ranged from $1.50-$2.00 per one-way trip. According to Senior Connections (2012), the number of older adults in the Richmond area will increase from 171,664 in 2010 to 299,294 in 2030. The rising paratransit costs and fast-growing paratransit service demand has made it increasingly challenging to

* Corresponding author at: 917 West Franklin Street, Room 304, Richmond, VA, 23284, United States.
E-mail address: xchen2@vcu.edu (X. Chen).

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expand GRTC's specialized transportation services to fully meet the demand.

The purpose of this paper is to describe and analyze GRTC's paratransit cost issues, examine its causes, and make policy recommendations on the possible solutions, based on a comparative analysis with other peer agencies in the country.

2. GRTC and its paratransit services

GRTC currently provides fixed-route bus services and specialized transportation services including its key components: Community Assisted Ride Enterprise (CARE), Central Virginia Area Network System (C-VAN), and Ridefinders. C-VAN provides transportation assistance for participants of the Virginia Initiative for Employment not Welfare (VIEW). RideFinders serves the function of matching carpools. Since this paper only examines the ADA complementary paratransit cost issues, CARE, which is the most important part of specialized transportation services, is introduced below.

2.1. CARE: GRTC's ADA complementary paratransit services

As shown in Table 1, GRTC strictly abides and even exceeds ADA's requirements in providing CARE paratransit service.

CARE's annual ridership has consistently grown from 2003 to 2007 aside from a slight drop in 2005. This was followed by a dramatic increase in ridership as well as demand response annual unlinked trips from 2007 to 2011, excluding a minor decline in 2010 due to its service expansion in 2007. See Fig. 1 for details.

Fig. 2 illustrates GRTC's service area. The 1/4 mile buffer zone shows the fixed-route service area, whereas the 3/4 mile buffer zone shows the area covered by CARE paratransit service.

Fig. 3 demonstrates the density distribution of population aged 65 years and older. The northern and western part of the city are concentrated with seniors. Especially in the west, the senior population density ranges from 797 to 1318. That the west part of the City still falls short of paratransit service is thus a deficiency that needs to be fixed soon.

The southern part of the city also has a high density of senior population. On the contrary, downtown and the eastern part of the city are less populated with seniors.

Fig. 4 shows that the low-income seniors are concentrated in the central and eastern part of the city, whereas the high-income senior population is located in the west.

Fig. 5 depicts that the disabled elderly are concentrated in the western and north-eastern parts of the city. Downtown and the southern part of the city have relatively younger disabled population.

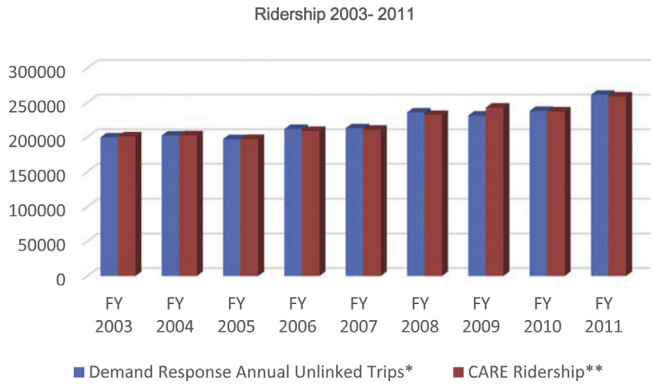

Fig. 1. CARE ridership from 2003 to 2011 [*National Transit Database, 2014; **Greater Richmond Transit Company (GRTC), 2011].

Figs. 6 and 7 illustrate CARE's ridership distribution by pickup and drop-off zip codes in 2012. Richmond and Henrico County have higher ridership than Chesterfield County. The ridership frequency by pickup zip codes and drop-off zip codes are almost identical. According to Chen et al. (2013), "if the CARE trips are symmetrical, the pickup zones from outgoing direction should be the drop-off zones from returning direction." However, if passengers only take one way CARE trips, they won't be symmetrical. Hence, the number of passengers by pickup zip codes are not exactly the same as that by drop-off zip codes. The top five ridership for both pickup and drop-off zip codes are: 23,223 (East End and surrounding areas), 23,227 (North Side and surrounding areas), 23,225 (Southwest portion of the city and beyond), 23,220 (Fan District), and 23,231 (Southeast portion of the city and beyond). These areas have major attractions in the city.

Table 2 shows the frequency of pickup passengers sorted in a descending order. The frequency of drop-off passengers is very consistent with that of pickup passengers. Zip codes 23,223 (East End and surrounding areas), 23,227 (North Side and surrounding areas) and 23,225 (Southwest portion of the city and beyond) are three hot spots with the highest pickup and drop-off frequency.

Table 3 shows the CARE trips among major zip codes. It indicates that most CARE trips are intrazonal trips (bolded) which took place in the same zip code. Chen et al. (2013) think it is because each zip code has a large geographic coverage.

Table 1
Greater Richmond Transit Company (GRTC) ADA compliance.

ADA compliance guidelines	ADA mandate	GRTC
Service area	Provide next-day paratransit service to origins and destinations within 3/4 mile of the fixed-route system	Provide complementary curb-to-curb paratransit service within 3/4 mile buffer of the fixed route system, serving Richmond City, Henrico and Chesterfield County patrons
Response time	Provide reservation services during normal business hours for next-day services within a one hour time span of the requested service	Reservations are made 1 day in advance, service response within 15 min, before or after
Fares	Charge no more than twice the comparable fixed-route fare	Fixed-route: $1.50 CARE: $2.50
Trip purpose	Prevent prioritization or restrictions of paratransit trips based on trip purpose	No restrictions
Service hours and days	Provide paratransit service during the same operating hours and days as the fixed-route service	Fixed-route: 5:00–1:00 am CARE: 4:30–12:30 am
Capacity	Prevent transit agencies from limiting the availability of service by constraints such as trip limitations, waiting lists, or restrictive operating practices	No limitations of service by constraints on trip limitations or waiting lists

Source: Chen et ?al. (2013).