

Selecting the Optimum Paratransit Service Delivery Model for Orange County



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Thesis

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Abstract

Paratransit costs are a significant concern for transportation agencies across the nation. The demand response nature of the specialized services required by the Americans with Disabilities Act (ADA) makes the services quite costly to provide. Paratransit vans and taxis are expensive pieces of equipment with relatively unique characteristics. A specific set of skills are required of paratransit drivers because the people they transport require very special attention. The intricate logistics of the nature of the service itself also adds to the cost because it is relatively inefficient by nature. Since the cost of providing services is such a significant concern, understanding how services are provided across the nation becomes a critical element of understanding areas through which costs could be reduced.

The research provided in this paper examines operating statistics for paratransit service providers throughout the nation, specifically those providers similar in nature to the Orange County Transportation Authority (OCTA). Service delivery methods, costs, customer satisfaction and a myriad of other operating parameters are taken into account to ultimately attempt to understand how paratransit operators deliver service and how those methodologies may be utilized and applied to the OCTA.

Acknowledgements

Throughout the course of any given day analysts in the transportation field may be inundated with requests for information. Frequently the requests for analyses or data are internal and are likely to be of an urgent nature. As an analyst and manager I understand how the work flow is managed and realize that at times, it can be difficult to address all requests in a timely manner. With the preceding in mind, I sincerely appreciate the efforts of my colleagues across the country who took the time from their busy day to collect the data I requested and respond to my questions in such a timely manner. Agencies all throughout the country provided timely and relevant data in a matter of days from the time I made my requests. Without their willingness to help, I could not have completed my research.

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Acronyms

Table 1

Acronym	
ADA	Americans with Disabilities Act
APTA	American Public Transportation Association
CNG	Compressed Natural Gas
FTIS	Florida Transit Information System
GAO	Government Accountability Office
INTDAS	Integrated National Transit Database Analysis System
LNG	Liquefied Natural Gas
MTC	Metropolitan Transportation Commission
NTD	National Transit Database
OCTA	Orange County Transportation Authority
TCRP	Transit Cooperative Research Program
TFLEX	Transportation Finance Learning Exchange

Executive Summary

Paratransit costs are a significant concern for transportation agencies across the nation. Elements of the Americans with Disabilities Act yield unfunded or partially funded mandates of monumental proportions. The cost to provide paratransit trips is approximately three and a half times as expensive as providing a fixed route trip.¹ The total cost to provide demand response services was approximately \$2.6 billion in 2011 according to National Transportation Database (NTD) data.² The demand response nature of the specialized services required by the Americans with Disabilities Act makes the services quite costly to provide. Capital and operating expenses for the services are significant because of the complicated logistical nature of the common service delivery model.

Transportation agencies across the nation were surveyed with the intention of understanding the composition of paratransit services offered and their subsequent operating statistics. Approximately 79 agencies across the United States were surveyed and data from 24 agencies was collected. Most of the data was fairly consistent with only a few outliers. The predominant method of service delivery was contracted paratransit bus. While the majority of respondents utilized paratransit buses as their sole method of service delivery, a significant quantity offered a more diverse array of options with the primary supplement being taxi provided services. Some agencies reported what has been classified as “other” Submodes. Other Submodes consist of community center agreements or similar arrangements where trips are subsidized by the transportation agency but actually provided by an external entity who is not a contractor. Comparatively speaking, few reported statistics across more than two Submodes of service delivery.

Table 2

Submode	Quantity Reported
Paratransit Bus Only	14
Paratransit Bus & Taxi	6
Paratransit Bus & Other	2
Paratransit Bus, Taxi & Other	2
Total	24

A core element of the research focused on understanding the relationship between the Submodes of service provided, costs, and customer satisfaction. A service may be cost effective but if the customer is not satisfied with the service provided then the service is not necessarily providing maximum utility to the rider or the tax payer. Ceteris paribus, utility could be maximized from both perspectives if the cost of the service provided is minimized while customer satisfaction is maximized. In order to attempt to quantify the relationship between the cost per trip and customer satisfaction an index was created by dividing the latter into the former, after adjusting the cost per trip by regional cost of living adjustments. The ratio calculated is referred to as the effectiveness ratio for the agency.

The results of the research and analysis spawned an innumerable series of ancillary questions but ultimately demonstrated that the population surveyed yielded an effectiveness ratio of 2.08 with a range of 4.28. The higher the effectiveness value, the lower the cost per trip and higher the customer satisfaction rate. The effectiveness rating of the OCTA fell 0.33 units below the average at 2.08. Despite the relatively low cost per trip, the quantity of complaints decreases the effectiveness ratio for OCTA. The results and findings are inspected in detail in the following research and analysis.

Introduction

The Orange County Transportation Authority (OCTA) offers a diverse collection of services to provide mandated complementary ADA demand response services in Orange County. OCTA partners with local community groups, contracts with taxi companies, and it utilizes standard paratransit bus dial-a-ride services. The intent of this research is to examine the service delivery models of other transportation agencies, their efficiency rates, costs, and customer satisfaction rates to help Orange County determine whether or not the service delivery model currently in use is optimal and if not, how it could be improved. The optimal model could be categorized as one that is highly efficient, cost effective, and has the highest customer satisfaction ratings. More people, more places, lowest cost, with the most satisfied customers.



Literature Review and Background

Some of the most vulnerable members of society are the disabled. People become disabled due to an infinite number of reasons ranging from injury to genetic anomaly. Degrees of disability vary from the mildly disabled to those with conditions so severe they are almost entirely resigned to living in the confines of their own home. Those who are confined to living in their own homes typically have severely debilitating disorders that significantly limit their mobility. When someone suffers from such a significant disability it seriously hinders their progress in all aspects of life and makes it very complicated to get to and from destinations outside the home. Paratransit services are specialized and have a high cost, and that cost is significantly higher than the cost of offering comparable fixed route public transportation services.

Americans with Disabilities Act³

The Americans with Disabilities Act (ADA) was passed in 1990 by the United States Congress.⁴ ADA is a comprehensive law that defines what constitutes a disability then outlines the protections afforded to those with disabilities. It is very expansive and is often compared to the Civil Rights Act of 1964 in terms of scope. The act consists of five primary titles: Employment, Public entities, Public accommodations, Telecommunications, and Miscellaneous provisions. Each title outlines the protections and specifications in each area it covers. The primary area of focus for transportation purposes is the Public entities title, title II.

Title II, Public entities is regulated by the U.S. Department of Transportation and requires transit operators to provide paratransit services if an entity operates fixed route bus services. There are many provisions required by Title II and the ADA and they outline what

services transit operators are required to provide and eligibility requirements for the disabled.⁵

In order for a person to qualify they must have an actual physical, visual, or mental functional limitation which causes him or her to be unable to use accessible fixed route transportation. A person is not simply eligible because of the diagnosis of a condition, the applicant must demonstrate that they meet the guidelines for eligibility as they pertain to paratransit services. Some of the factors required to be eligible include: the person's level of functional disability, accessibility to the fixed route system, architectural barriers, and environmental conditions.⁶

Operating Costs⁷

The elements of ADA and funding provisions can make it difficult for some operators to meet demand with the funding available because of the expense to operate paratransit

Figure 2



services. Paratransit services require specialized vehicles to accommodate a unique ridership base. The vehicles must have specialized lifts, securing devices and seating arrangements for the variety of conditions disabled persons may have.⁸ These

specialized requirements mean that most vehicles in a fleet can be relatively expensive at a cost of \$70,000 to \$100,000 each with a 5 to 10 year useful life. Capital costs can be significant but operating costs often eclipse capital costs.

Operating costs for paratransit services consist of: driver, maintenance, and administrative labor, fuel, maintenance parts, tires, and other general expenses. Many transit operators subcontract services due to the expense of operating services in house. Salaries can vary from location to location, but the percentage of salary required for benefits obligations can be very significant. On average, benefits can range from 40-70 percent of the salary costs for employees due to healthcare, pension, and other benefit obligations. Those costs can be reduced drastically with a contractor because contractors are typically poised to develop better negotiating positions than large public agencies.

As transit operators contract the paratransit services it has had an interesting impact on the work force as outlined in the Transportation Cooperative Research Program (TCRP) report, State of the Art of Paratransit. As the report cited, in addition to all the other requirements placed on drivers, such as securing wheelchairs and assisting passengers, paratransit drivers operating larger vehicles must possess a commercial driver's license. This requirement places paratransit companies in competition with trucking and delivery companies that pay higher wages. To be competitive, transit agencies will have to find ways to pay more or provide increased benefits to retain good paratransit personnel. The difficulty in hiring, training, and retaining qualified paratransit drivers will continue to be a problem in the paratransit industry until the industry finds way to compensate quality drivers. Taxicab drivers tend to be independent contractors. Finding people who have the entrepreneurial skills to be independent contractors and who meet all the requirements of a paratransit driver is an even more difficult task.⁹

Labor costs can be quite significant and typically consist of approximately 50-60 percent of the total operating costs. The second most expensive operating expense is fuel. Fuel is a truly uncontrollable cost for most transit operators. Many operators use a variety of fuels such as diesel, gasoline, LNG, CNG, and propane. While fossil fuels typically represent the largest potential expense, other fuel types can be almost as volatile on a per unit basis, and tend to correlate with the price of fossil fuels. Fuel sources utilized may vary by region of the country and variations are typically the result of air quality mandates at the state, local, or regional level.¹⁰ Unless a transit operator has a hedged position regarding fuel, they are subject to the relatively volatile market all consumers are subject to.

Fuel budgets for many operators can range from millions of dollars a year to tens of millions a year depending upon the size of the fleet and fuel type utilized. Fuel can be a significant expense and a volatile contributor to the significant total costs incurred by transit operators. As the Government Accountability Office (GAO) reported, in our survey, transit agencies reporting increases in total costs to provide ADA paratransit attributed rising ADA paratransit costs to several factors. About 71 percent of transit agencies reported that changes in costs to operate vehicles—such as fuel, insurance, and vehicle maintenance costs—have been a major contributor to overall cost increases. At least a third of transit agencies cited other reasons as being major contributors to rising costs, including changes in labor and benefit costs.¹¹

In terms of magnitude, after research with the operations division of OCTA it was determined that of a \$267M bus (fixed route and paratransit) operating budget, \$56.3M is

Figure 3



associated with paratransit services provided to residents of the county. On a percentage basis for the OCTA, paratransit expenses represent approximately 21 percent of the total operating costs for the operator. This is quite significant because of not only the cost, but the quantity of services provided for each type of service. The fixed route system in Orange County has approximately 52 million boardings a year while the paratransit services have approximately 1 million boardings. On a cost per boarding basis, this represents a cost of approximately \$4.05 for fixed route and \$43.30 for paratransit. The cost per boarding for paratransit services is more than ten times that of the fixed route system. Unfortunately cost containment can be difficult when it comes to a service that a transit operator has no ability to regulate demand for.

A review of historical contract rates with OCTA's operations division revealed that operating costs for paratransit services have escalated 3 to 6 percent, on average, on an annual basis. Over a period of five years contract rates have increased almost 30 percent to provide

these services. This represents a significant future expense when the magnitude of the dollars spent is now \$56.3 million. Operating costs can be controlled to a certain degree through effective negotiations and efficient management techniques. Unfortunately, demand for the service is virtually limitless and nearly uncontrollable to a certain extent. On average, demand for the service has grown 3 to 4 percent per year for the last five years, while demand for fixed route services has decreased.

Expense Growth

As the general population of the country ages at a significant rate it is likely that the paratransit eligible population will increase also because of debilitating conditions that can be associated with age. The paratransit services administrators at OCTA use an average growth rate of 3 percent for demand of paratransit services, as the population ages much more rapidly in the coming years the estimate could grow to more than 4 or 5 percent. In 2011 a Metropolitan Transportation Commission (MTC) report outlined three primary factors for expense growth, rising demand, rising costs and falling productivity.¹² Due to demand growth rates, cost growth rates, and changes in productivity, it could be very possible that total costs of providing the service will double or triple in less than 30 years. To highlight ridership changes, data from a GAO study indicates that ridership has grown in many facets from 2007 to 2010, approximately 73 percent of agencies they surveyed experienced in new registrations over the period.¹³

As time progresses, it becomes clear that paratransit services, which represent 21 percent of the costs and less than 2.5 percent of the ridership, could continue on a similar path and possibly become more disproportionate if cost increases outpace ridership increases. In

TCRP 74, similar statistics were reported for ridership in a nationwide survey and indicated that paratransit ridership accounted for approximately 1 percent of total ridership, but 9 percent of operating costs.¹⁴ A transit operator could eventually utilize 30 to 40 percent of their budget on less than 3 to 4 percent of the ridership. For the most part, funding could be perceived as a finite pie and as the percentage utilized for one service increases, the amount available for other services decreases.

Service Delivery Models

OCTA offers several different service delivery models for paratransit services. The services evolved as a result of growing demand coupled with increasing service delivery costs. Beginning in the early part of the decade demand for services increased at double digit growth rates. Over the same time period the cost of providing those services increased at a much more significant rate. A variety of corrective measures were taken to help curb demand and reduce costs.

During the initial period of increasing demand, the scope of services that were offered exceeded the ADA requirements. In order to reduce costs the evaluation criteria for eligibility was modified to adhere strictly to ADA guidelines. The service radius for demand response services was also reduced to adhere to ADA guidelines, rather than exceed them. The change in these policies was significant and it helped to mitigate the increasing costs of providing the services.

The first steps taken proved fruitful and ultimately reduced demand in the first year. In order to continue to advance a proactive cost reducing agenda staff explored possible changes

in service delivery models. Several service delivery model options emerged from the research and were gradually implemented over time. Throughout Orange County there are a variety of senior and disabled community centers that are staples in their respective communities. Those community centers proved to be vital partners in the years ahead.

A coordinated effort began to work with those community centers. Many of the centers offered transportation services to their clients but many of the clients used paratransit services to get to community centers and other destinations. In working with the community centers to assess the needs of their clients OCTA was able to determine that for many of the centers, providing a subsidy per trip to the center, on behalf of OCTA paratransit service was a much more cost effective service delivery model for OCTA than simply providing the service through standard paratransit bus services.

Along with the community centers OCTA coordinated with taxi service providers in the county. The taxi service providers are uniquely suited to meet client demands at a lower cost in many instances than traditional paratransit services. OCTA began working with taxi companies to provide trips on a subsidized basis also. The OCTA is certainly not alone in terms of implementing cost control measures for paratransit service delivery. The GAO study found Transit agencies have implemented a number of actions aimed at addressing the growing demand for ADA paratransit trips and reducing the costs of ADA paratransit services. Types of actions agencies are taking include coordinating efforts among various service providers, transitioning passengers from ADA paratransit to fixed-route service, improving the accessibility of fixed-route service, ensuring more accurate eligibility determinations, realigning paratransit

service with minimum ADA paratransit requirements, and improving technology for scheduling and dispatch.¹⁵

In TCRP Synthesis 31, Paratransit Contracting and Service Delivery Methods, the research noted that as early as 1998 paratransit service providers were actively pursuing new service delivery methods. The synthesis discussed changes at that point in time in the industry. Transit agencies continue to evolve their methods for paratransit delivery. As transit operators search for cost-cutting service delivery strategies, several have tried different methods. Approximately one-fourth (26 percent) of the respondent transit agencies have changed their paratransit services delivery method one or more times.¹⁶ The research from 1998 goes on to highlight the specific types of changes service providers were making, also citing an increase in contracting out service, contracting with community agencies, in-house scheduling and reservations, and thorough internal examinations of internal operations.

The GAO study highlighted an important set of tactics implemented to defer costs. Agencies have implemented those tactics, as has the OCTA. It can be difficult to assess and quantify the financial impact of the preceding tactics. As with many service delivery modifications, the ancillary strategies cited typically generate cost avoidance savings in lieu of tangible, measurable savings. The ability to quantify the savings makes it difficult to assess the true impact of the modifications to one agency, let alone compare and contrast savings across more than one transportation agency.

Hypothesis

Paratransit service delivery models vary significantly from transit agency to transit agency. The optimum model for one agency is not necessarily the optimum for another due to the diverse nature of transit agencies throughout the country. OCTA operates or subsidizes a diverse amalgam of paratransit services. Customer satisfaction rates are typically quite high, but the costs to provide services are relatively high as well. As demand grows and costs to provide the services increase, the financial strain on the agency increases drastically. The Orange County Transportation Authority paratransit service delivery model, although highly effective, may not be optimal because the underlying cost of the service relative to the quality of service provided may be too high.

Research Methodologies

Steps and Techniques

Through the Transportation Finance Learning Exchange (TFLEX) OCTA shares data and resources with transportation agencies throughout the country. The American Public Transportation Association (APTA) also retains a database of national contacts by agency, by position for those who elect to participate. A survey was developed and submitted to agencies throughout the county along with a request for descriptions for paratransit services the agency provides. Questions that arose regarding the survey were clarified with inquisitive respondents. The survey data was gathered and analyzed extensively while follow-up questions were asked of agencies, as needed, to ensure data sets were as complete as reasonably possible. Many of research tasks were completed concurrently so effective use of the time available could be

made. Gathering the data, conducting the analysis, and developing the outline of the document simultaneously allowed for document production over a longer period of time and allowed more revisionary opportunities to methods and analyses before the draft report was completed.

Agency Selection Process

In order to thoroughly address the topic, agencies comparable to OCTA and agencies of interest were surveyed. In order to understand the paratransit delivery model thoroughly it is important to not only examine agencies of a similar geographic and demographic composition but also examine agencies with contrasting characteristics. It is possible that the most effective models are not necessarily those implemented solely by similar agencies.

Selecting comparable agencies can be a difficult task because no two transit systems are exactly the same. Transit systems frequently provide a variety of modes of service and operate in different geographical regions. The quest for establishing guidelines to determine which agencies were comparable began by looking at the modes of service offered and the overall size of the agency. Other factors entered into the weighting such as population density, miles operated and geography when it was determined that the size and modes of service alone were insufficient.

The methodology was discussed with a colleague and he recommended a reference tool created by the Florida Transit Information System (FTIS)¹⁷. The FTIS created an application entitled the Integrated National Transit Database Analysis System (INTDAS). The application retrieves data from the National Transit Database (NTD) and makes it available through interactive queries via a web based application. Within the INTDAS they provide a peer analysis

tool that allows transit agencies to identify agency peers based upon preferred criteria. The model uses Transit Cooperative Research Program (TCRP) Project G-11, “A Methodology for Performance Measurement and Peer Comparison in the Public Transportation Industry,” to select peer agencies. Table 3 on the following page details the Total Likeness score of survey responds in descending order.



Table 3

Agency Name	Location	State	Total Likeness Score
OCTA	Orange	CA	0
City of Phoenix	Phoenix	AZ	0.99
SMART Bus	Detroit	MI	1.14
King County Metro	Seattle	WA	1.14
Plam Tran Connection	West Palm Beach	FL	1.19
Metropolitan Council	St. Paul	MN	1.26
Westchester	Mount Vernon	NY	1.26
Omnitrans	San Bernardino	CA	1.3
Community Transit	Everett	WA	1.34
Riverside Transit Agency	Riverside	CA	1.35
Metrolift	Detroit	MI	1.38
VIA Metropolitan Transit	San Antonio	TX	1.4
The T	Fort Worth	TX	1.5
Hampton Roads Transit	Hampton	VA	1.85
IndyGo	Indianapolis	IN	2.05
Sun Van	Tucson	AZ	2.26
Valley Transportation Authority	San Jose	CA	2.26
RTD-Denver	Denver	CO	2.48
Nashville MTA	Nashville	TN	2.49
Dallas Area Rapid Transit	Dallas	TX	2.52
Tri-Met	Portland	OR	2.58
Sound Transit	Seattle	WA	2.73
NJ Transit	Newark	NJ	2.75
Fresno Area Express (FAX)	Fresno	CA	2.86

The base parameters of the model were used as the key inputs for the OCTA peer analysis and the model yielded 602 results with Total Likeness scores ranging from 0 to 526.49. In order to have an ample pool of comparable candidates to draw from, agencies that had a score of 3 or lower were surveyed. Approximately 79 agencies received scores lower than 3. The methodology outlined in TCRP Project G-11 and very effectively implemented by FTIS via the INTDAS yielded a viable candidate pool of comparable transit agencies for examination.

Survey Parameters

Identifying unique parameters for the survey was paramount for the analysis and research. Within the transportation industry there are a variety of relatively standard metrics that are frequently utilized. Most of the statistics focus on service delivery, operating, and capital expenses. While there are a variety of statistics available in the NTD database, it seemed imperative to focus on statistics that are less frequently reported, such as statistics and metrics that focus on customer satisfaction and detailed paratransit data.

The following statistics were included in the survey:

Table 4

#	Statistic
1	SubMode
2	Agency Name
3	Website (URL)
4	Service Area (Sq. Miles)
5	Cost per Trip
6	Cost per Service Hour
7	Total annual Operating Expenses
8	Annual # of Trips
9	Annual # of Service Hours
10	Annual # of Total Hours
11	Annual # of Service Miles
12	Annual # of Total Miles
13	Annual # of Boardings (Unlinked Pass. Trips)
14	Total # of Eligible Paratransit Customers
15	On Time Performance (%)
16	Annual # of Customer Complaints
17	Total # of Buses
18	Average Trip Distance
19	Customer Complaints per 1,000 Trips
20	Passenger Fare Revenues

The preceding parameters were selected because through preliminary research it was determined that several agencies reported very similar statistics in a very similar fashion. Ensuring that relatively standard parameters are surveyed was critical because oftentimes nomenclature is nonstandard in the industry. Subtle variations in verbiage may create confusion in survey responses, delay response times, and ultimately compromise the integrity of the research and analysis.

Analysis and Findings

Agency Profiles

Through the course of the research over 79 agencies were examined and contacted. The agencies profiled and discussed in the research are only the agencies that responded with information regarding their operating statistics and descriptions of their paratransit services. At the end of the survey response period 24 agencies had responded with the requisite data. Statistics cited within each agency description were received from the agency's survey response unless otherwise noted. Table 5 on the following page enumerates each of the agencies that responded, the region they operate in, and the state in which they are located.

Following Table 5 is a brief description of each respondent. Data provided by surveyed agencies was extensive and included more than 940 data points, not accounting for derivative calculations developed through the analysis, which if included, would increase the quantity to at least 1,000. Due to the expansive nature of the dataset the profiles discuss the agency briefly and highlight a few statistics. Detailed data is provided in graphical form after the descriptions and in expansive tabular detail in the Appendix.

Table 5

#	Agency	Region	State
1	Community Transit	Snohomish County	WA
2	DART	Dallas	TX
3	RTA	Riverside	CA
4	RTD	Denver	CO
5	King County Metro	King County	WA
6	The T	Dallas / Fort Worth	TX
7	Omnitrans	San Bernardino	CA
8	OCTA	Orange County	CA
9	VIA Metro	San Antonio	TX
10	Bee-Line	Westchester	NY
11	VTA	San Jose	CA
12	City of Phoenix	Phoenix	AZ
13	FAX- Handy Ride	Fresno	CA
14	SMART	Detroit	MI
15	SunTran	Tucson	AZ
16	MTA	Nashville	TN
17	IndyGo	Indianapolis	IN
18	Sound Transit	Seattle	WA
19	Palm Tran Connection	Palm Beach	FL
20	New Jersey Transit	New Jersey	NJ
21	Hamptons Roads Transit	Hamptons	NJ
22	Trimet	Portland	OR
23	Metropolitan Council	St. Paul	MN
24	MetroLift	Detroit	MI

Community Transit

Community Transit serves towns and cities in the northern part of Washington State with a service area of approximately 1,400 square miles. The Dial-A-Ride (DART) paratransit services provided to the 4,658 eligible passengers in the service area are coordinated by the Senior Services of Snohomish County, a nonprofit organization. When customers request services that extend beyond the normal service area DART coordinates with adjacent

communities to ensure the customer's needs are met.¹⁸ This agency provides 194,862 trips per year at a cost of \$34.01 per trip. The primary service delivery model is curb-to-curb paratransit bus service.

DART – Dallas Area Rapid Transit

Annual trips within the DART service area of 700 square miles were 736,709 for FY 12. DART serves the Dallas area in Texas and provides paratransit services to 11,576 eligible customers. DART utilizes buses and taxi cabs appropriate for the specific needs of the customer to provide curb-to-curb transportation services within a service area spanning 13 cities.¹⁹ Door-to-door service is available but must be requested at the time of reservation. The cost per trip for paratransit services provided by DART average approximately \$47.52 for FY 12.

RTA – Riverside Transit Agency

Two general types of services are provided by the RTA through a Dial-A-Ride program in Southern California. The agency provides priority ADA service and senior/disabled services within their 2,500 square mile service area. The primary distinction between the services is certification is required for ADA priority services.²⁰ The current cost per trip for providing these services averages approximately \$60.82 and 5,553 clients are eligible. RTA works with a standard paratransit delivery service and a taxi service to deliver trips in their area with standard paratransit trips costing \$25.54 per trip.

RTD – Regional Transportation District

Denver is the home base for RTD's operation of Access-a-Ride services. The curbside and door-to-door services encompass a 2,400 square mile area within Colorado. RTD offers other services similar to Access-a-Ride. Call-n-Ride is a demand response service that operates within

selected regions and is available to the general public. The Call-n-Ride services RTD provides span 24 designated areas in the Denver region.²¹ SeniorRide provides group transportation to seniors in the region. Paratransit services run at an average cost per trip of \$49.22 with a 96 percent on time performance record.

King County Metro

Washington State is home to King County Metro and their variety of transit programs. Within the 708 square mile area served by King County Metro, paratransit curb-to-curb, shared ride, community transportation, shuttle, and taxi programs are all available.²² The approximate aggregate cost per trip for the paratransit services provided is \$52.16. The service options provided by King County are quite diverse. Each service has different operating parameters and rider requirements that are tailored to suit a diverse set of needs and offer transportation options to customers beyond standard demand response.

The T- Texas

Mobility-Impaired Transportation Service (MITS) is the curb-to-curb paratransit service that operates in Fort Worth, Richland Hills and Blue Mound²³, a 329 mile area in Texas. Within the service area MITS has 8,307 eligible paratransit clients. MITS contracts with several private companies in the service area to supplement as needed. Relative to the other agencies, the MITS has a significant number of eligible paratransit customers in the region. The cost per trip for the services provided currently approach \$34.24.

OmniTrans

In San Bernardino CA OmniTrans is the service provider for a 459 square mile area. OmniTrans offers curb-to-curb paratransit service²⁴ to the 7,791 eligible customers in the service area. At a rate of \$28.41 per trip, the cost to operate services provided by OmniTrans is near the less expensive side of the spectrum. With an on-time performance metric approaching 93.66 percent the agency has exceeded the required performance standards.

OCTA – Orange County Transportation Authority

Thirty four cities are served by the OCTA. Within those cities reside 29,856 eligible paratransit customers. Taxi services and community transportation options are offered through the OCTA and partner agencies in addition to curb-to-curb demand response paratransit services. Door-to-door paratransit services are also offered to customers that request the services.²⁵ The aggregate cost per trip within the 465 square mile service area of the OCTA is \$36.71.

VIA- Metropolitan Transit

San Antonio Texas is where paratransit services are provided by VIA Metropolitan Transit. The cost to provided curb-to-curb paratransit services²⁶ is approximately \$31.28 in aggregate. Within the 1,200 square mile service region of this Texas agency approximately 12,000 eligible paratransit clients are served.

Bee-Line

The 5,330 eligible clients of Bee-Line paratransit services cost the County of Westchester New York approximately \$37.72 per trip taken. Approximately 20 miles North of New York City center is the 460 square mile service area Bee-Line paratransit serves. The County offers both

curb-to-curb and taxi provided paratransit services to their customers. The taxi services are relatively new and are available within the cities of White Plains and Peekskill.²⁷

VTA- Valley Transportation Authority

Outreach, a non-profit social service agency is the contractor VTA uses to manage their curb-to-curb paratransit services. Northern California is host to the 346 square mile service area of the VTA. Within VTA's service area reside 9,988 eligible paratransit clients who receive the benefit of a 97 percent on-time performance record. At a cost per trip of \$22.72 the cost to provide services to clients is on the lower side of the spectrum.

City of Phoenix

The City of Phoenix paratransit service area expands to almost 400 square miles in Arizona. The city provides dial-a-ride, reserve-a-ride, and taxi services to the 4,000 clients in their region²⁸. Reserve-a-ride services provide group transportation options to qualified individuals to and from community centers. The cost per trip for the services provided is approximately \$47.13.

FAX- Handy Ride

With approximately 4,000 clients, the City of Fresno serves clients at a cost per trip of \$33.86. The city serves a region spanning 133 square miles in central California. Curb-to-curb services are provided within the city's service area²⁹. The on-time performance record for FAX was 92.83 percent in FY 12.

SMART- Suburban Mobility Authority for Regional Transportation

SMART operates bus service within a 926 square mile of Detroit Michigan. SMART bus offers curb-to-curb paratransit services in their coverage area³⁰ with a 83 percent on-time

performance rate. In addition to the ADA services, SMART provides Connector services which are curb-to-curb reservation services available Monday through Friday from 6 A.M. to 6 P.M. in pre-defined geographic coverage areas.

Sun Tran

Sun Tran is the primary transportation services provider for the Tucson area of Arizona. The paratransit services provided by Sun Tran operate under the Sun Van name. Sun Van serves an area of 286 square miles in Southern Arizona. The areas served by Sun Van include Tucson, Tohono O’Odham Nation, Paqua Yaqui Tribe, South Tucson, and parts of Pima County.³¹ Within the service area 9,380 eligible clients reside. The cost per trip to provide services to customers is approximately \$27.75.

MTA- Nashville Metropolitan Transit Authority

The Nashville MTA utilizes specialized vans and taxis to provide paratransit services to the 12,500 eligible customers in their service area by way of a program entitled AccessRide.³² At an approximate aggregate cost of \$28.71 per trip the MTA works to ensure ADA eligible clients get to their destinations in the 504 square mile area MTA operates in.

IndyGo

The Indianapolis region of Indiana is served by IndyGo and their paratransit service, Open Door.³³ The Open Door service utilizes both vans and private taxis to satisfy the needs of the 4,103 eligible clients in the 396 square mile service area. Eligible Central Indiana residents utilize the Open Door services that operate with an on-time performance record of 97 percent. The cost per trip to provide those services is \$32.00 per trip.

Sound Transit

In the Northwest region of Washington state Sound Transit operates demand response paratransit services³⁴ at a cost \$24.06 per trip. The service area is relatively small and provides approximately 62,920 trips per year to eligible clients in the region.

Palm Tran Connection

The sunny beach community of Palm Beach is home to transportation services provided by Palm Transit. Paratransit services are provided to a 1,974 square mile area by way of the Palm Transit paratransit organization, Connection. Connection operates throughout Palm Beach County from Jupiter to Boca Raton and Palm Beach to South Bay.³⁵ Door-to-door paratransit services are available along with the Division of Senior Services Program (DOSS) that provide group services to and from senior centers. There are 32,000 eligible clients in the Connection service area. The cost per trip to provide services to those clients is approximately \$27.21.

New Jersey Transit

Access Link is the service New Jersey Transit uses to provide customers in the 5,327 square mile service with curb-to-curb paratransit trips. New Jersey Transit also provides Community Paratransit services through a variety of community transportation options.³⁶ Approximately 28 agencies or counties participate in the community transportation program. The service area is home to 9,037 eligible customers where services are provided at a cost of \$49.08 per trip.

Hampton Roads Transit

Hampton Roads Transit uses both taxi services and paratransit vans to provide demand response paratransit services to the 3,850 eligible clients in their 527 square mile service area.

Located on the Eastern side of Virginia, Hampton Roads Transit serves the cities of Chesapeake, Hampton, Newport News, Norfolk, Portsmouth and Virginia Beach.³⁷ The cost per trip of the paratransit services is approximately \$32.66 per trip.

TriMet

The Portland Metropolitan area is the operating center for TriMet, an Oregon based transportation agency spanning 570 square miles. TriMet is responsible for providing services to 24,928 eligible clients. Small buses, minivans and taxi cabs are used to provided services to customers in the region at an aggregate approximate cost of \$32.83 per trip. Door-to-door and curb-to-curb services are available through the provided demand response system.³⁸

Metropolitan Council

Approximately 22,000 eligible paratransit customers rely upon The Metropolitan Council's Metro Mobility program for demand response paratransit services in the 2,975 square mile service area encompassing Minneapolis Minnesota.³⁹ With an on-time performance rating of 97.41 percent the Metropolitan Council exceeds the minimum standard for on-time performance.

MetroLift

Since 2009 the City of Detroit has modified the service delivery model for paratransit services in the 144 square mile area it serves. The city now uses multiple contractors for paratransit bus services and utilizes taxi cab services also.⁴⁰ A byproduct of the change in service delivery model has been a reduced quantity of shared-ride trips for passengers and ultimately reduced travel time. The approximate aggregate cost per trip the services provided by MetroLift is \$21.60.

Profile Notes

On the page below and in the ensuing page are graphical depictions of data points discussed in each profile. On each chart the first data point depicted is the average of that specific data set. The average has been included where applicable to offer an additional element of understanding as it applies to the presented agencies. It is interesting to note that New Jersey Transit has the most expansive service area but Sound Transit has more eligible riders.

Figure 5

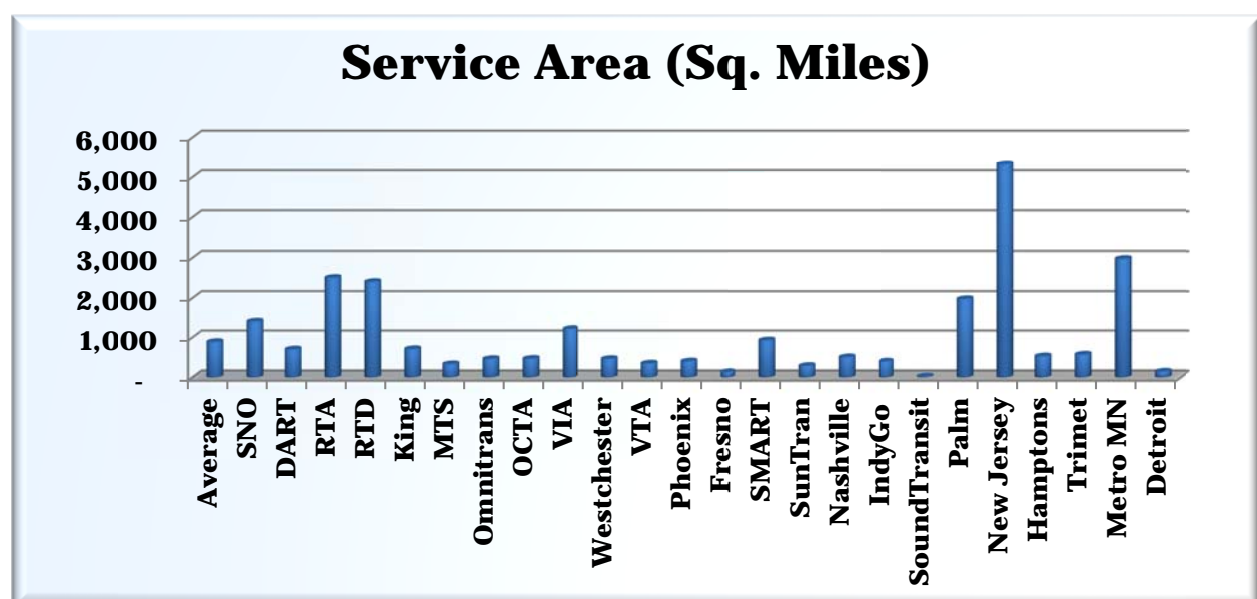
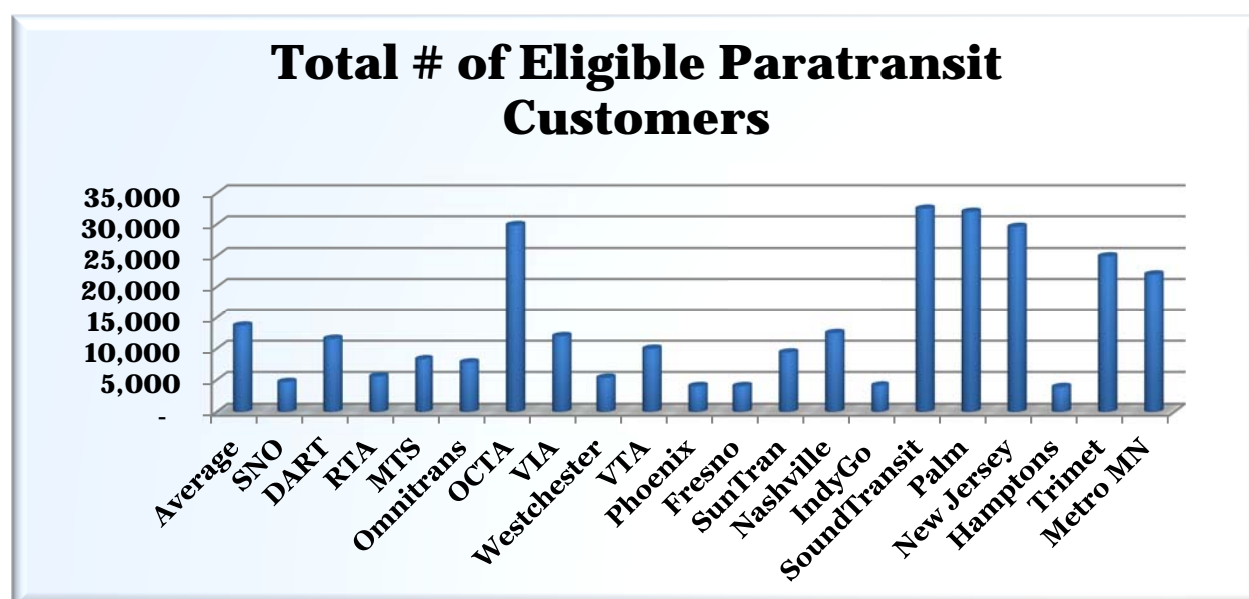


Figure 6



Data Analysis

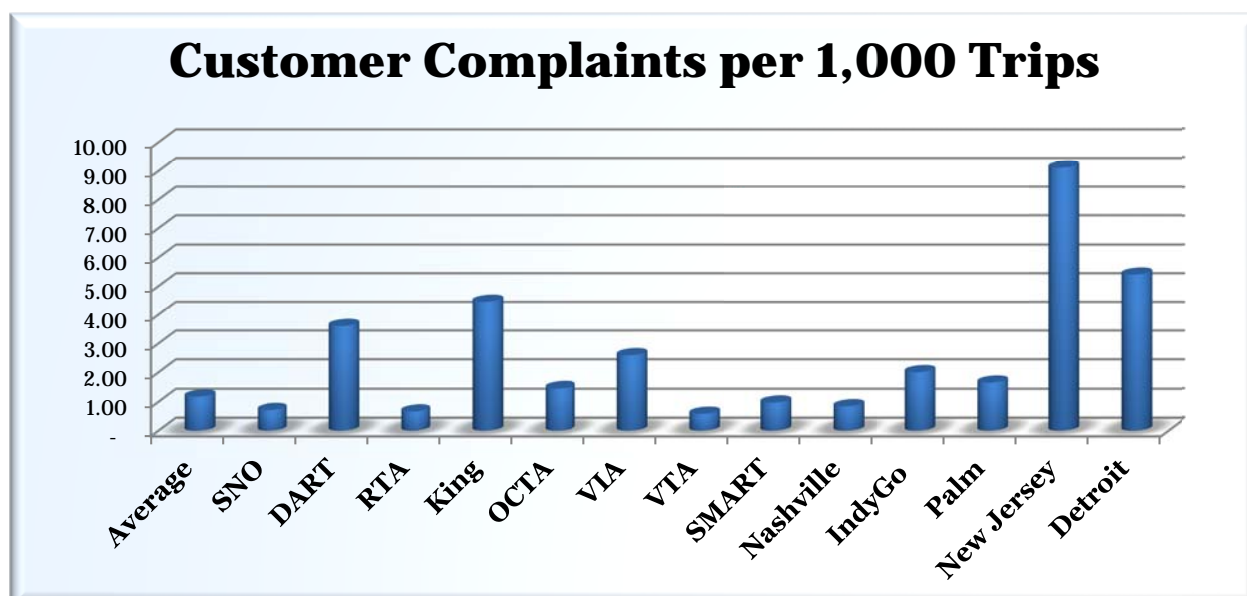
Survey responses provided by participants were quite thorough. Given the breadth of the dataset, there were relatively few anomalies or outliers. As needed, clarification was sought for incomplete data or possible errors. Survey statistics were standardized, but outliers arose in a few instances because interpretation of the meaning of the statistic may have varied from agency to agency. Many respondents provided additional levels of detail not requested that added significant value to the research and insight into their operating structure. Detailed descriptions of the service offered insight that was not readily available and some of those details were shared in the agency profiles on the preceding pages. As highlighted earlier, the primary service delivery model for respondents was paratransit bus only, the standard form of service delivery. The table on the following page shows the composition of the responses provided by the surveyed agencies.

Table 6

Submode	Quantity Reported
Paratransit Bus Only	14
Paratransit Bus & Taxi	6
Paratransit Bus & Other	2
Paratransit Bus, Taxi & Other	2
Total	24

A core element of the research and subsequent analysis was utilizing the data to understand whether or not offering a diverse variety of service delivery models is optimal and how the findings relate to the Orange County Transportation Authority. In order to determine the most effective means of measuring optimal service delivery it seemed prudent to consider both costs and customer satisfaction. A service may be cost effective but if the customer is not satisfied with the service provided then the service is not necessarily providing maximum utility to the rider or the tax payer. Ceteris paribus, utility could be maximized from both perspectives if the cost of the service provided is minimized while customer satisfaction is maximized. In order to attempt to quantify the relationship between the cost per trip and customer satisfaction an index was created by dividing the latter into the former, after adjusting the cost per trip by regional cost of living adjustments. The statistic used for assessing customer satisfaction was the quantity of customer complaints per 1,000 trips. The ratio calculated is referred to as the effectiveness ratio for the agency.

Figure 7



After adjusting the cost per trip to account for cost of living by region of the country, the range of the cost per trip among the respondents appeared considerable. The cost of living adjustment was made by applying 2010 data provided by Council for Community and Economic Research (C2ER).⁴¹ In order to ensure the data is as directly comparable as possible and all external factors are accounted for, an additional adjustment was made. The cost per trip for some agencies was considerably higher than the cost per trip for others and in many instances the increase in cost was a direct result of the distance of the trip. In order to adjust for this variable the cost per trip was divided by the average trip distance. After the mileage adjustment was made the range of the cost per trip decreased significantly and the dataset started to fit a normal distribution. The graphs on the following page show the cost per trip prior to the cost of living adjustment and after. The graphs indicate a significant change for some agencies.

Figure 8

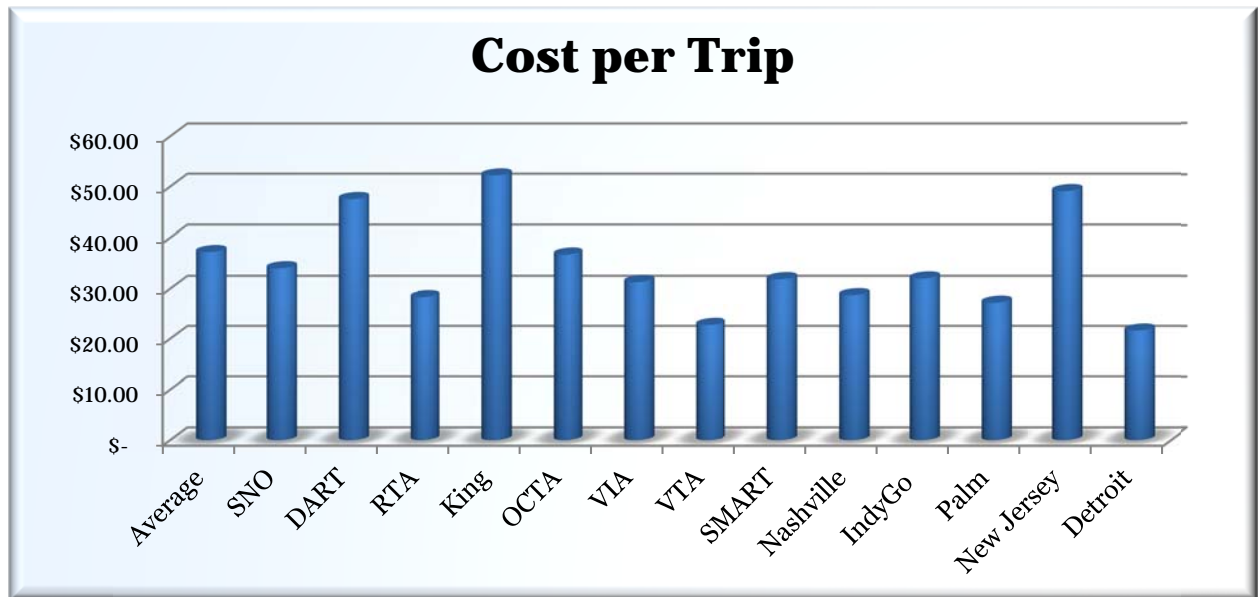


Figure 9

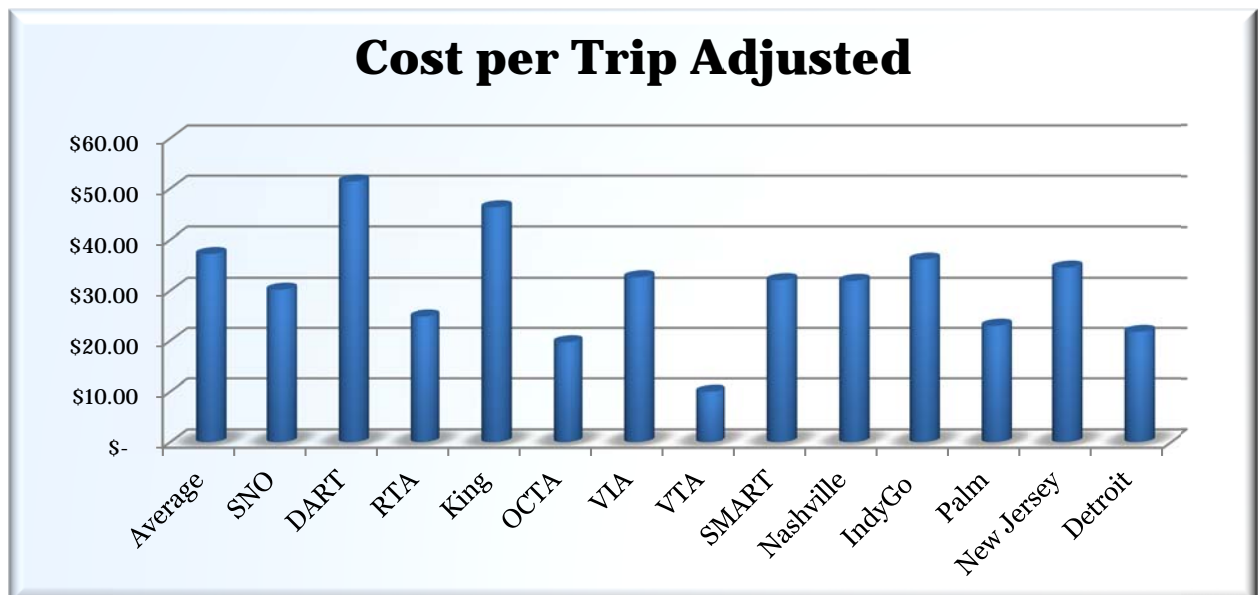
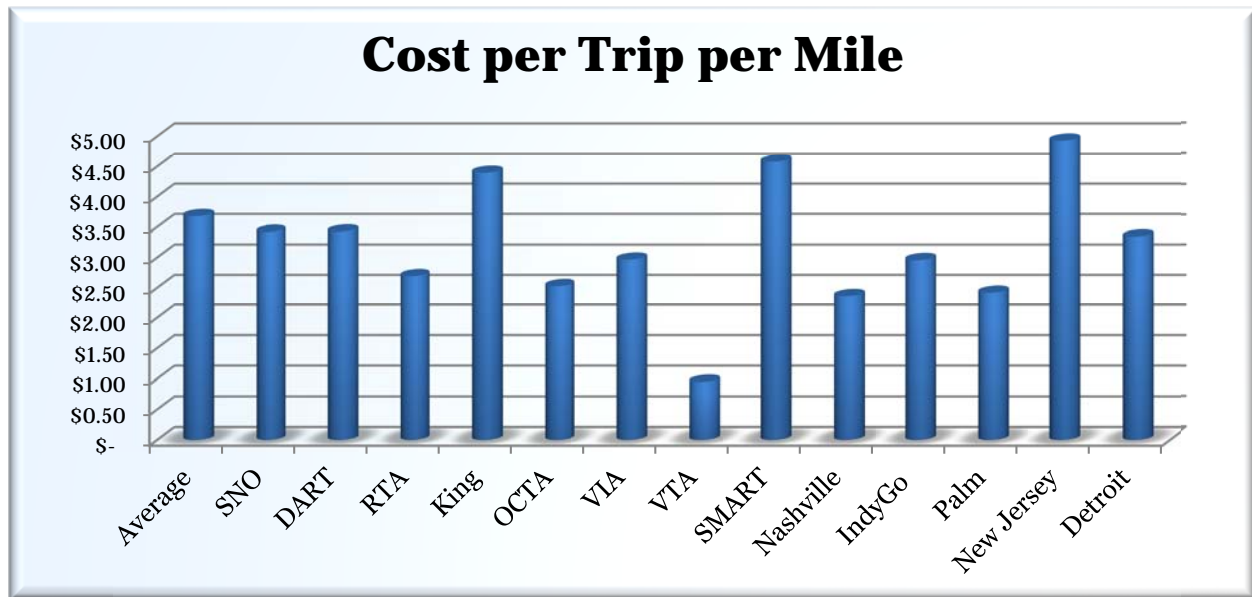
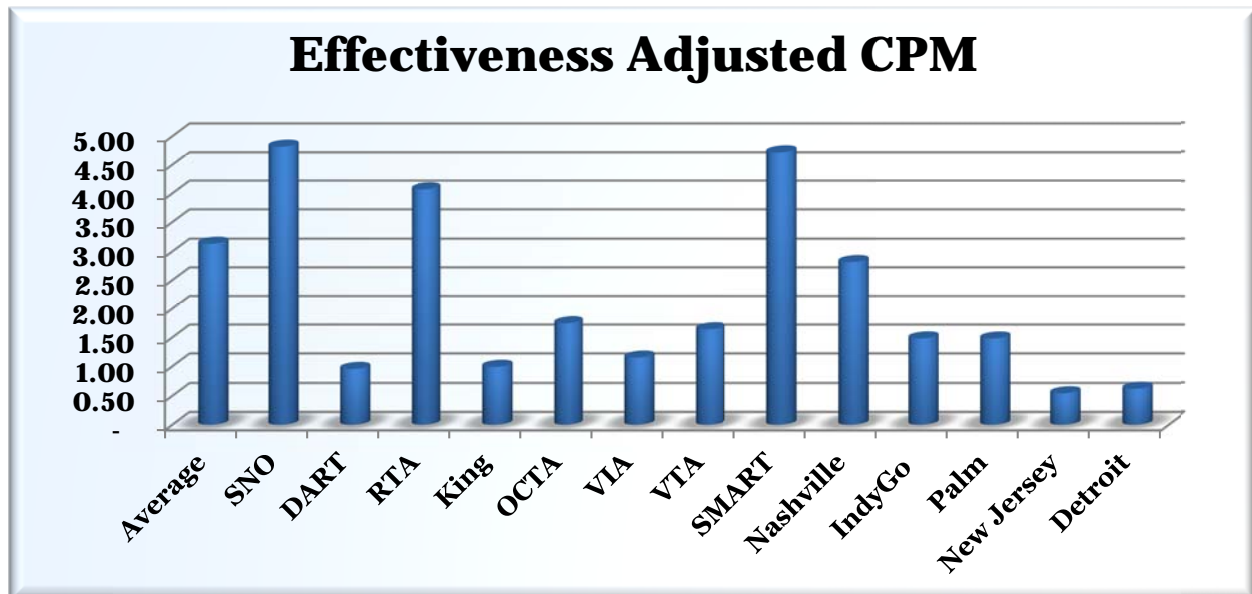


Figure 10



When the final effectiveness ratio was calculated thirteen of the respondents were included in the analysis. Several agencies were excluded because some parameters fell outside a reasonable range for the population data. The primary driver for exclusion was a very low customer complaint rate, which significantly distorted the effectiveness ratio. At the onset of the analysis the quantity of respondents appeared to be too vast, but as the statistics were analyzed and datasets refined, it proved valuable to have such a significant data set to start with. The average effectiveness ratio calculated after all adjustments was 2.08 with a range of 4.28 spanning from 0.54 to 4.82. The following graph depicts the data points for the effectiveness ratio as adjusted for cost of living by region and average trip distance.

Figure 11



Conclusion and Recommendations

Paratransit service delivery is intricate and complex. Mandates that highlight the need for paratransit service have been explored at length. Many of the factors that influence transit operators were discussed at length. A thorough understanding of the nuances of operating costs and how they can be mitigated was shared as those costs related to both the OCTA and transit agencies throughout the country. Once the costs were detailed, the factors affecting their growth were outlined. The various service delivery models available were pooled along with cost mitigating measures implemented by agencies across the country. The background and research surrounding the need for the research was then rolled into the hypothesis and impetus for the research and analysis, is the network of services OCTA provides optimal?

After the background and need for the research was explored, the methodologies for the research were surveyed. The steps and techniques for how the research would be gathered

were conferred. Details of the agency selection process and survey parameters were enumerated and the rationale for the candidates and selection processes were underscored. A profile of the agencies was presented along with an analysis of the data collected through the survey respondents.

The primary goal of this research and analysis was to provide additional insight into paratransit service delivery models throughout the country and specifically, how they relate to the Orange County Transportation Authority's paratransit service delivery model. The analysis detailed the trends in cost per trip, customer complaints per thousand trips and ultimately the effectiveness ratio of comparable respondents. The effectiveness ratio demonstrated that it was a unique and operative way of assessing each agency's ability to maximize the ratio by delivering services at a low cost relative to high customer satisfaction rates. The effectiveness ratio appears to be one of many tools that could be utilized when considering a variety of measures or factors, but not a single tool. Even though cost of living by region was taken into account along with other detailed factors, the ranges of the data still proved to illicit significant questions.

The scope of the research was significant and the survey responses were quite comprehensive. The data and analysis revealed a lot of detail about transit agencies across the country but more analysis and research is needed to truly determine the optimal service delivery model, or basket of models for paratransit service delivery. In order to make costs comparable across agencies a case study by agency of the final agencies included in the effectiveness ratio analysis would be prudent. Examining each agency's expenses at a line item

level would help to explain the significant variations in the cost per trip by agency. As the analysis indicated, agencies that provided a diverse basket of services may have had significantly different unit cost results. Without a line item analysis of expenses, it makes it difficult to determine true cause and effect relationships that impact costs by agency.

The research attempted to quantify the expenses associated with each service delivery model but many agencies do not report expenses incurred by subsidized partnerships. This is another factor that can make it difficult to determine how cost effective an agency is when just looking at cost per trip or cost per hour statistics. In order to analyze the breadth of costs and potential savings, understanding cost avoidance benefits of diverting services or changing management techniques must be integrated and those factors may not materialize in a cost per unit analysis explicitly. Future analysis should examine costs at a low level of detail to refine comparability across regions and uniform methodologies should be developed to understand and quantify the cost avoidance strategies associated with service delivery models or management techniques that may be amortized or may not be recorded in the expenses of an agency.

The research and analysis added significant insight into paratransit service delivery models and operating statistics of agencies across the country. Although expansive, the research revealed that a lot more details are required to ultimately understand how effective the OCTA service delivery models are and how they relate to models operated by other agencies. Of the data gathered, research conducted, and analysis provided, OCTA did appear comparable to other agencies with an effectiveness ratio of 1.74 compared to an average of

2.08. Three other agencies had effectiveness ratios that were approximately double that of the average. While OCTA's ratio was not the highest, it was on par with comparable agencies across the country. Given the breadth of services provided and management techniques implemented by the OCTA it seems prudent to conclude that if the preceding tactics were not utilized, the cost per trip would be higher and the effectiveness ratio would be lower. As new management techniques emerge and service delivery models develop, it would be in the best interests of the Orange County Transportation Agency to continually implement new cost control measures and optimal service delivery practices in order to maximize the effectiveness ratio of the agency.

Appendix X – Survey Results

Raw Data											
Fiscal Year 2011-12 Paratransit Operating Statistics											
#	Statistic	SNO	DART	RTA	RTA Taxi	RTA Total	RTD	King	King	King	King
#	Agency #	1	2	3	3	3	4	5	5	5	5
1	SubMode	Para	Para	Para	Taxi	Total	Para	Para	Taxi	Other	Total
2	Agency Name	Community Transit	Dallas Area Rapid T	Riverside Transit A	Riverside Transit A	Riverside Transit A	Regional Transport	King County Metro	King County Metro	King County Metro	King County Metro
3	Website (URL)	www.communitytransit.org	www.dart.org	www.riversidetran.org	www.riversidetran.org	www.riversidetran.org	rtd-denver.com	http://metro.kingcounty.gov	http://metro.kingcounty.gov	http://metro.kingcounty.gov	http://metro.kingcounty.gov
4	Service Area (Sq. Miles)	1,400	700	2,500	2,500	2,500	2,400	708	708	708	708
5	Cost per Trip	\$ 34.01	\$ 47.52	\$ 25.54	\$ 53.50	\$ 28.30	\$ 49.22	\$ 44.59	\$ 9.92	\$ 5.02	\$ 52.16
6	Cost per Service Hour	\$ 77.64	\$ 37.45	\$ 60.06	\$ 86.22	\$ 60.82	NA	\$ 75.66			
7	Total annual Operating Expenses	\$ 6,626,469	\$ 34,353,848	\$ 9,588,340	\$ 411,374	\$ 9,999,714	\$ 33,000,000	\$ 52,140,446	\$ 309,813	\$ 1,569,712	\$ 54,019,971
8	Annual # of Trips	194,862	736,709	346,387	6,987	353,374	694,664	1,035,590			1,035,590
9	Annual # of Service Hours	35,353	466,228	159,636	4,771	164,407	558,229	686,658			686,658
10	Annual # of Total Hours	35,799	466,940	216,285	4,771	221,056	764,640				
11	Annual # of Service Miles	1,587,283	8,234,014	3,114,808	134,051	3,248,859	9,044,788	11,600,450			11,600,450
12	Annual # of Total Miles	1,870,388	10,398,444	3,766,556	134,051	3,900,607	11,287,911	11,831,466			11,831,466
13	Annual # of Boardings (Unlinked)	194,862	800,992	372,322	7,648	379,970	694,664	1,164,935	31,228	312,795	1,508,958
14	Total # of Eligible Paratransit Cus	4,658	11,576	5,553	5,553	5,553	84,000	1,035,590			1,035,590
15	On Time Performance (%)	90.44%	86.90%	93.00%	94.00%	93.50%	96.00%	89.70%			89.70%
16	Annual # of Customer Complaints	139	3,401	216	18	234	540	5,182			5,182
17	Total # of Buses	54	184	83	9	92	324	314			314
18	Average Trip Distance	8.82	15.00	8.99	19.19	9.19	12.55	10.53			10.53
19	Customer Complaints per 1,000 Trips	0.71	3.60	0.62	2.58	0.66	0.00	4.45			4.45
20	Passenger Fare Revenues	\$ 199,000	\$ 2,281,805	\$ 1,274,565	\$ 32,701	\$ 1,307,266	NA	\$ 453,823			\$ 453,823

Raw Data											
Fiscal Year 2011-12 Paratransit Operating Statistics											
#	Statistic	MTS	Omnitrans	OCTA	OCTA	OCTA	OCTA	OCTA	VIA	VIA	VIA
#	Agency #	6	7	8	8	8	8	8	9	9	9
1	SubMode	Para	Para	Para	Para	Taxi	Other	Total	Para	Other	Total
2	Agency Name	MTS - FORT WORTH	Omnitrans	Orange County Tra	Orange County Tra	Orange County Tra	Orange County Tra	Orange County Tra	VIA Metropolitan T	VIA Metropolitan T	VIA Metropolitan T
3	Website (URL)	WWW.THE-T.COM	www.omnitrans.org	www.octa.net	www.octa.net	www.octa.net	www.octa.net	www.octa.net	http://www.viainf.net	http://www.viainf.net	http://www.viainf.net
4	Service Area (Sq. Miles)	329	459	465	465	465	465	465	1,213	1,213	1,213
5	Cost per Trip	\$ 34.24	\$ 28.41	\$ 40.89	\$ 42.22	\$ 9.13	\$ 14.47	\$ 36.71	\$ 40.00	\$ 23.19	\$ 31.28
6	Cost per Service Hour	\$ 69.39	\$ 76.41	\$ 77.15	\$ 77.15	\$ 51.03	\$ 4.18	\$ 75.36	\$ 83.32	\$ 48.76	\$ 65.46
7	Total annual Operating Expenses	\$ 9,101,000	\$ 12,301,326	\$ 39,009,373	\$ 9,149,767	\$ 291,996	\$ 2,796,485	\$ 51,247,621	\$ 20,216,036	\$ 12,651,130	\$ 32,867,166
8	Annual # of Trips	370,822	433,013	953,928	216,724	31,978	193,272	1,395,902			
9	Annual # of Service Hours	79,167	176,825	510,547	118,052	5,688	45,744	680,031	242,643	259,454	502,097
10	Annual # of Total Hours		218,032	585,141	118,052	5,688	45,744	754,625	280,767	302,249	583,016
11	Annual # of Service Miles	1,298,459	2,844,935	7,558,234	2,559,586	76,545	670,021	10,864,386	4,305,282	4,986,966	9,292,248
12	Annual # of Total Miles		3,345,873	9,211,577	2,559,586	76,545	670,021	12,517,729	5,082,978	5,814,494	10,897,472
13	Annual # of Boardings (Unlinked Pass. Trips)		456,346	1,071,735	263,080	42,254	193,272	1,570,341	505,341	545,519	1,050,860
14	Total # of Eligible Paratransit Cus	8,307	7,791	29,856	29,856	29,856	29,856	29,856	12,000	12,000	12,000
15	On Time Performance (%)	86.00%	93.66%	93.53%	93.53%	93.53%	93.53%	93.53%	86.00%	86.00%	86.00%
16	Annual # of Customer Complaints	86	17	2,025	2,025	2,025	2,025	2,025			2,717
17	Total # of Buses	35	90	232	183	44	92	551	104	126	230
18	Average Trip Distance	8.00	10.26	7.92	11.81	2.39	3.47	7.78	11.00	11.00	11.00
19	Customer Complaints per 1,000 Trips		0.39	1.45	1.45	1.45	1.45	1.45	2.59	2.59	2.59
20	Passenger Fare Revenues	\$ 898,560	\$ 1,532,128	\$ 4,032,140	\$ 916,067	\$ -	\$ -	\$ 4,948,207	\$ 786,255	\$ 895,380	\$ 1,681,635

Raw Data											
Fiscal Year 2011-12 Paratransit Operating Statistics											
#	Statistic	Westchester	Westchester	Westchester	VTA	Phoenix	Fresno	SMART	Suntran	Nashville	Nashville
#	Agency #	10	10	10	11	12	13	14	15	16	16
1	SubMode	Para	Taxi	Total	Para	Para	Para	Para	Para	Para	Taxi
2	Agency Name	County of Westche	County of Westche	County of Westche	Valley Transportati	City of Phoenix	FAX - Handy Ride	SMART	Sun Van	Nashville MTA	Nashville MTA
3	Website (URL)	http://transportati	http://transportati	http://transportati	http://transportati	http://phoenix.gov	http://www.fresno	www.smartbus.org	www.sunvan.com	Nashvillemta.org	Nashvillemta.org
4	Service Area (Sq. Miles)	450	10	460	346	400	133	926	286	504	504
5	Cost per Trip	\$ 38.15	\$ 6.16	\$ 37.72	\$ 22.72	\$ 47.13	\$ 33.86	\$ 31.85	\$ 27.75	\$ 29.07	\$ 27.48
6	Cost per Service Hour	\$ 51.21		\$ 54.08	\$ 58.55	\$ 57.49	\$ 64.18	\$ 30.92	N/A	\$ 54.92	
7	Total annual Operating Expenses	\$ 8,400,000	\$ 18,36	\$ 8,418,396	\$ 20,524,549	\$ 14,780,328	\$ 6,015,311	\$ 12,918,703	\$ 13,606,230	\$ 8,436,500	\$ 2,362,300
8	Annual # of Trips	220,169	2,965	223,154	775,553	313,630	177,659	405,671	485,858	290,240	85,957
9	Annual # of Service Hours	155,678		155,678	300,964	257,077	93,727	172,452	312,694	130,581	
10	Annual # of Total Hours	174,691		174,691	348,001	325,460	116,619	174,341	269,901	153,624	
11	Annual # of Service Miles	2,715,737		2,715,737	5,947,906	3,485,699	1,123,877	3,030,172	3,486,428	1,989,959	
12	Annual # of Total Miles	3,192,181		3,192,181	6,867,078	4,203,907	1,400,057	3,501,532	4,188,045	2,341,128	
13	Annual # of Boardings (Unlinked	226,000		226,000	775,553	337,182	209,473	394,925	520,320	290,240	85,957
14	Total # of Eligible Paratransit Cus	5,330		5,330	9,988	4,000	4,000		9,380	12,500	
15	On Time Performance (%)	91.00%			97.00%	91.11%	92.83%	83.00%	96.68%	95.00%	
16	Annual # of Customer Complaints		10	10	447	207	31	395	356	221	95
17	Total # of Buses	90	19	129	228	125	54	111	125	67	
18	Average Trip Distance	8.79		8.79	10.50	11.11	7.88	7.00	7.17	13.50	
19	Customer Complaints per 1,000 Trips				0.58	0.66	0.17	0.97	0.73	0.76	1.10
20	Passenger Fare Revenues	\$ 222,670	\$ 11,940	\$ 234,610	\$ 2,902,385	\$ 981,233	\$ 267,557	\$ 688,800	\$ 704,661	\$ 794,416	\$ 292,253

Raw Data											
Fiscal Year 2011-12 Paratransit Operating Statistics											
#	Statistic	Nashville	IndyGo	SoundTransit	Palm	New Jersey	Hamptons	Hamptons	Hamptons	TriMet	TriMet
#	Agency #	16	17	18	19	20	21	21	21	22	22
1	SubMode	Total	Para	Para	Para	Para	Para	Taxi	Total	Para	Taxi
2	Agency Name	Nashville MTA	IndyGo	Sound Transit	Palm Tran Connect	NJ TRANSIT / ADA P	Hampton Roads Tr	Hampton Roads Tr	Hampton Roads Tr	Trimet	Trimet
3	Website (URL)	Nashvillemta.org	http://www.indygo	www.soundtransit	http://www.co.pal	www.njtransit.com	goHRT.com	goHRT.com	goHRT.com	www.trimet.org	www.trimet.org
4	Service Area (Sq. Miles)	Service Area (Sq. Mile	396	21	1,974	5,325	527	527	527	570	570
5	Cost per Trip	\$ 0.88	\$ 32.40	\$ 24.08	\$ 27.21	\$ 49.08	\$ 32.66			\$ 32.97	\$ 31.68
6	Cost per Service Hour	\$ 0.78	\$ 48.16	\$ 40.76	\$ 48.01		\$ 46.06			\$ 65.95	\$ 99.97
7	Total annual Operating Expenses	\$ 7	\$ 8,172,463	\$ 1,515,084	\$ 23,471,170	\$ 53,966,732	\$ 8,943,607		\$ 8,943,607	\$ 31,194,438	\$ 3,702,483
8	Annual # of Trips	8	256,211	62,920	861,262	991,959	216,775	57,078	273,853	946,005	116,868
9	Annual # of Service Hours	9	169,351	37,171	488,685		150,559	43,625	194,184	472,968	37,035
10	Annual # of Total Hours	10	190,650		542,713	775,911	170,885	43,625	214,510	540,495	NA
11	Annual # of Service Miles	11	2,853,310	627,564	8,799,162		2,258,883	777,619	3,036,502	6,574,706	960,505
12	Annual # of Total Miles	12	3,433,276		9,797,492	13,966,865	2,742,695	777,619	3,520,314	7,803,053	NA
13	Annual # of Boardings (Unlinked	13	266,615	62,920	861,262	1,099,441	290,262	59,904	350,166	946,005	117,424
14	Total # of Eligible Paratransit Cus	14	4,113	32,500	32,000	29,572	3,850		3,850	24,928	24,928
15	On Time Performance (%)	1500.00%	97.00%		95.25%	96.20%	96.03%	87.30%	91.67%	93.40%	90.40%
16	Annual # of Customer Complaint	16	673	275	1,315	9,037	126	79	205	1,237	372
17	Total # of Buses	17	74		201	363	83	75	158	267	50
18	Average Trip Distance	18.00	12.20		9.49	7.00	11.35	14.10	12.73	8.25	10.00
19	Customer Complaints per 1,000 T	2,000.00	2.40	4.37	1.64	9.11	0.58	1.39	0.99	1.21	3.18
20	Passenger Fare Revenues	\$ 20	\$ 933,216	\$ -	\$ 2,198,032	\$ 2,175,058	\$ 790,184		\$ 790,184	\$ 4,192,994	\$ 517,941

Raw Data								
Fiscal Year 2011-12 Paratransit Operating Statistics								
#	Statistic	TriMet	Metro MN	Metro MN	Metro MN	Detroit	Detroit	Detroit
#	Agency #	22	23	23	23	24	24	24
1	SubMode	Total	Para	Other	Total	Para	Taxi	Total
2	Agency Name	Trimet	Metropolitan Coun	Metropolitan Coun	Metropolitan Coun	Metrolift	Metrolift	Metrolift
3	Website (URL)	www.trimet.org	www.metromobile.com	www.transitlinktc.com	www.metromobile.com	www.ridedetroittr.com	www.ridedetroittr.com	www.ridedetroittr.com
4	Service Area (Sq. Miles)	570	1,111	2,975	2,975	144	144	144
5	Cost per Trip	\$ 0.88	\$ 28.01	\$ 20.12	\$ 27.73	\$ 19.59	\$ 19.18	\$ 21.60
6	Cost per Service Hour	\$ 0.78	\$ 58.09	\$ 60.99	\$ 58.43	\$ 26.53	\$ 7.42	\$ 7.56
7	Total annual Operating Expenses	\$ 7	\$ 45,599,682	\$ 6,288,996	\$ 51,888,678	\$ 125,950	\$ 5,071,800	\$ 5,197,750
8	Annual # of Trips	8	1,628,451	243,030	1,871,081	234,860	5,800	240,660
9	Annual # of Service Hours	9	784,170	103,112	888,082	683,577	3,920	687,497
10	Annual # of Total Hours	10	925,641	145,412	1,071,053	684,423	4,749	689,172
11	Annual # of Service Miles	11	13,065,402	1,639,143	14,704,545	1,776,491	31,299	1,807,790
12	Annual # of Total Miles	12	15,878,165	2,376,784	18,255,349	1,788,252	43,605	1,831,857
13	Annual # of Boardings (Unlinked)	13	1,628,451	312,639	1,940,690	264,473	6,431	270,904
14	Total # of Eligible Paratransit Customers	Eligible Paratransit Customers	22,400		22,000			
15	On Time Performance (%)	1500.00%	97.81%	97.00%	97.41%	93.56%	98.09%	95.83%
16	Annual # of Customer Complaints	16	703	35	738	3,079	166	3,245
17	Total # of Buses	17	199	78	477	225	2	227
18	Average Trip Distance	18.00	10.32	7.40	8.86	5.40	7.60	6.50
19	Customer Complaints per 1,000 Trips	19.00	0.43	0.11	0.27	5.40	0.00	5.40
20	Passenger Fare Revenues	\$ 20	\$ 5,712,188	\$ 474,975	\$ 6,187,963	\$ 584,506	\$ 14,818	\$ 599,324

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