

Prepared by

**National Center  
for Transit Research**



# **Analysis of Contracting for Fixed Route Bus Service**

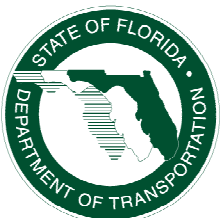
June 2011

Final Report



Funded by

**Florida Department  
of Transportation**



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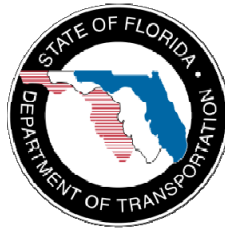
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# **Analysis of Contracting for Fixed Route Bus Service**

**Final Report**

*Prepared for*



**State of Florida Department of Transportation**

Public Transit Office  
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**June 2011**

**BDK85 TWO 977-23**

# METRIC/ENGLISH CONVERSION FACTORS

## ENGLISH TO METRIC

### LENGTH (APPROXIMATE)

1 inch (in) = 2.5 centimeters (cm)  
 1 foot (ft) = 30 centimeters (cm)  
 1 yard (yd) = 0.9 meter (m)  
 1 mile (mi) = 1.6 kilometers (km)

### AREA (APPROXIMATE)

1 square inch (sq in, in<sup>2</sup>) = 6.5 square centimeters (cm<sup>2</sup>)  
 1 square foot (sq ft, ft<sup>2</sup>) = 0.09 square meter (m<sup>2</sup>)  
 1 square yard (sq yd, yd<sup>2</sup>) = 0.8 square meter (m<sup>2</sup>)  
 1 square mile (sq mi, mi<sup>2</sup>) = 2.6 square kilometers (km<sup>2</sup>)  
 1 acre = 0.4 hectare (he) = 4,000 square meters (m<sup>2</sup>)

### MASS - WEIGHT (APPROXIMATE)

1 ounce (oz) = 28 grams (gm)  
 1 pound (lb) = 0.45 kilogram (kg)  
 1 short ton = 2,000 pounds (lb) = 0.9 tonne (t)

### VOLUME (APPROXIMATE)

1 teaspoon (tsp) = 5 milliliters (ml)  
 1 tablespoon (tbsp) = 15 milliliters (ml)  
 1 fluid ounce (fl oz) = 30 milliliters (ml)  
 1 cup (c) = 0.24 liter (l)  
 1 pint (pt) = 0.47 liter (l)  
 1 quart (qt) = 0.96 liter (l)  
 1 gallon (gal) = 3.8 liters (l)  
 1 cubic foot (cu ft, ft<sup>3</sup>) = 0.03 cubic meter (m<sup>3</sup>)  
 1 cubic yard (cu yd, yd<sup>3</sup>) = 0.76 cubic meter (m<sup>3</sup>)

### TEMPERATURE (EXACT)

$[(x-32)(5/9)]^{\circ}\text{F} = y^{\circ}\text{C}$

## METRIC TO ENGLISH

### LENGTH (APPROXIMATE)

1 millimeter (mm) = 0.04 inch (in)  
 1 centimeter (cm) = 0.4 inch (in)  
 1 meter (m) = 3.3 feet (ft)  
 1 meter (m) = 1.1 yards (yd)  
 1 kilometer (km) = 0.6 mile (mi)

### AREA (APPROXIMATE)

1 square centimeter (cm<sup>2</sup>) = 0.16 square inch (sq in, in<sup>2</sup>)  
 1 square meter (m<sup>2</sup>) = 1.2 square yards (sq yd, yd<sup>2</sup>)  
 1 square kilometer (km<sup>2</sup>) = 0.4 square mile (sq mi, mi<sup>2</sup>)  
 10,000 square meters (m<sup>2</sup>) = 1 hectare (ha) = 2.5 acres

### MASS - WEIGHT (APPROXIMATE)

1 gram (gm) = 0.036 ounce (oz)  
 1 kilogram (kg) = 2.2 pounds (lb)  
 1 tonne (t) = 1,000 kilograms (kg)  
 = 1.1 short tons

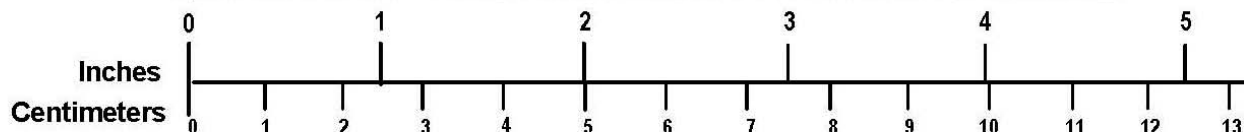
### VOLUME (APPROXIMATE)

1 milliliter (ml) = 0.03 fluid ounce (fl oz)  
 1 liter (l) = 2.1 pints (pt)  
 1 liter (l) = 1.06 quarts (qt)  
 1 liter (l) = 0.26 gallon (gal)  
 1 cubic meter (m<sup>3</sup>) = 36 cubic feet (cu ft, ft<sup>3</sup>)  
 1 cubic meter (m<sup>3</sup>) = 1.3 cubic yards (cu yd, yd<sup>3</sup>)

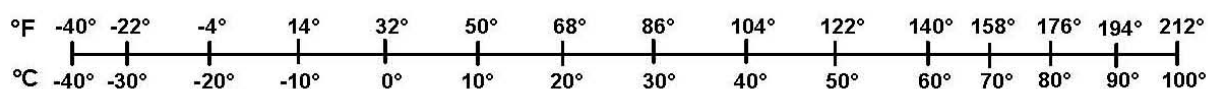
### TEMPERATURE (EXACT)

$[(9/5)y + 32]^{\circ}\text{C} = x^{\circ}\text{F}$

## QUICK INCH - CENTIMETER LENGTH CONVERSION



## QUICK FAHRENHEIT - CELSIUS TEMPERATURE CONVERSION



For more exact and or other conversion factors, see NIST Miscellaneous Publication 286, Units of Weights and Measures.  
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## **EXECUTIVE SUMMARY**

Elected officials, government executives and transportation officials are continually challenged to assess and explore methods for operating more efficiently. One method that has long been credited with increasing transit efficiency and reducing operating costs is contracting with the private sector for the provision of transit service. Previous experience with privatization of government functions has shown that the shift to the private sector can be most effective when there is a strong need for flexibility, the extent and level of service is easy to quantify, and the private sector has more expertise than a government entity in an area. On the other hand, privatization has been shown to be less than ideal in circumstances where potential cost savings are not easily calculable, effectiveness is overly sacrificed for efficiency, there is a lack of competition, too much of the appropriate government or regulatory control is yielded, and procurement arrangements are not transparent.

The Florida Department of Transportation (FDOT) expressed interest in examining the potential for and issues surrounding private sector participation in the provision of public transportation in the state and contracted with the Center for Urban Transportation Research (CUTR) at the University of South Florida (USF) to investigate, document, analyze, and synthesize previous privatization efforts for providing fixed route bus public transportation services in Florida and the United States (U.S.).

Researchers conducted a comprehensive review of past studies and reports on the topic of contracting for fixed route bus service in the U.S. Included in the review were trends and attitudes in the U.S. on the topic and best practices employed by agencies to evaluate contracting fixed route service. Additionally, the project was designed to identify potential considerations for use by policy makers in deciding the appropriateness of privatizing a public transportation function and to provide a comparative analysis of the cost effectiveness of agencies contracting for bus service and those that directly operate it.

Contracting for transit service appears to have become common practice in Florida, as 23 (79.3%) of the 29 Florida transit agencies that operated fixed route bus service during 2009 (Appendix A-1) purchased some type of transit service that included fixed route bus service, demand response service, vanpool service, or commuter rail transit service.

Furthermore, the recently completed National Transit Database (NTD) data analysis confirmed that purchase of fixed route bus service has increased at Florida transit agencies.

In 1998, not one of Florida's 19 transit agencies (Appendix A-2) contracted for all of the agency's fixed route bus service. In 2009, 7 of Florida's 29 transit agencies contracted for all fixed route bus service (24.1%) and operated 81 vehicles in maximum service (VOMS).

In the U.S., purchased VOMS increased from 7.4 percent of total VOMS in 1998 to 15.9 percent of total VOMS in 2009. The split between directly operated and purchased VOMS also changed over time in Florida (Table 1), although, to a lesser degree. Purchased VOMS in Florida increased from 2.1 percent of total VOMS in 1998 to 5.1 percent of total VOMS in 2009. Purchased VOMS as a percent of total VOMS increased in Florida; however, Florida's rate of purchased VOMS remained below the Southeast region and the nation.

**Table 1 – Florida Fixed Route Bus Contracting Summary\***

<b>Directly Operated Vehicles 1998</b>	<b>Directly Operated Vehicles 2009</b>	<b>Purchased Transportation Vehicles 1998</b>	<b>Purchased Transportation Vehicles 2009</b>
97.9%	94.9%	2.1%	5.1%

*\*Vehicles Operated in Maximum Service*

Florida's total operating cost per revenue hour for directly operated service exceeded Florida's purchased service operating cost, as was the case for the Southeast region and the U.S. (Table 2). Florida's operating cost per revenue hour was well below the operating cost of both the Southeast region and the U.S. for purchased service and below the U.S. for directly operated service. Florida's small, medium and large agencies reported higher operating costs per revenue hour for directly operated service compared to purchased service. Florida's operating costs per revenue hour were always less than U.S. costs, regardless of the type of service or the size of the agency.

**Table 2 – Operating Cost per Revenue Hour by Agency Size**

2008 Costs	Southeast		
	Florida	U.S.	U.S.
<b>All Agencies</b>			
Directly Operated \$ per Revenue Hour	\$98.10	\$92.19	\$119.61
Purchased Transportation \$ per Revenue Hour	\$54.27	\$74.47	\$88.92
<b>Small Agencies</b>			
Directly Operated \$ per Revenue Hour	\$71.59	\$61.87	\$76.87
Purchased Transportation \$ per Revenue Hour	\$61.15	\$60.17	\$75.61
<b>Medium-sized Agencies</b>			
Directly Operated \$ per Revenue Hour	\$77.48	\$85.74	\$96.50
Purchased Transportation \$ per Revenue Hour	\$52.98	\$79.44	\$92.36
<b>Large Agencies</b>			
Directly Operated \$ per Revenue Hour	\$104.98	\$100.01	\$129.58
Purchased Transportation \$ per Revenue Hour	\$40.43	\$44.20	\$90.25

Florida's operating cost per passenger mile for purchased service exceeded Florida's directly operated service cost and the purchased transportation service cost of both the Southeast region and the U.S. (Table 3). Florida's operating cost per passenger mile for directly operated service was well below the operating cost of both the Southeast region and the U.S. Operating costs per passenger mile for directly operated service at small and large agencies in Florida and in the Southeast region were significantly less than purchased service costs.

**Table 3 – Operating Cost per Passenger Mile by Agency Size**

2008 Costs	Southeast		
	Florida	U.S.	U.S.
<b>All Agencies</b>			
Directly Operated \$ per Passenger Mile	\$0.76	\$0.81	\$0.88
Purchased Transportation \$ per Passenger Mile	\$1.00	\$0.62	\$0.68
<b>Small Agencies</b>			
Directly Operated \$ per Passenger Mile	\$0.95	\$0.90	\$0.76
Purchased Transportation \$ per Passenger Mile	\$1.89	\$1.64	\$0.67
<b>Medium-sized Agencies</b>			
Directly Operated \$ per Passenger Mile	\$0.81	\$0.87	\$0.73
Purchased Transportation \$ per Passenger Mile	\$0.76	\$0.55	\$0.65
<b>Large Agencies</b>			
Directly Operated \$ per Passenger Mile	\$0.74	\$0.79	\$0.92
Purchased Transportation \$ per Passenger Mile	\$1.18	\$1.39	\$0.69



Florida's operating costs per revenue mile for directly operated service consistently exceeded purchased service costs in Florida, in the Southeast region and in the U.S. (Table 4). Operating costs per revenue mile for directly operated service at small agencies in Florida were equal to purchased service costs, while directly operated service costs at small agencies within the Southeast region and in the U.S. were less than purchased service costs.

**Table 4 – Operating Cost per Revenue Mile by Agency Size**

2008 Costs	Southeast		
	Florida	U.S.	U.S.
<b>All Agencies</b>			
Directly Operated \$ per Revenue Mile	\$7.22	\$6.93	\$9.79
Purchased Transportation \$ per Revenue Mile	\$4.00	\$5.26	\$6.25
<b>Small Agencies</b>			
Directly Operated \$ per Revenue Mile	\$4.64	\$4.27	\$5.31
Purchased Transportation \$ per Revenue Mile	\$4.64	\$6.18	\$5.45
<b>Medium-sized Agencies</b>			
Directly Operated \$ per Revenue Mile	\$5.67	\$6.58	\$6.96
Purchased Transportation \$ per Revenue Mile	\$3.75	\$5.16	\$5.79
<b>Large Agencies</b>			
Directly Operated \$ per Revenue Mile	\$7.79	\$7.55	\$11.19
Purchased Transportation \$ per Revenue Mile	\$3.50	\$3.55	\$6.67

Today, transit agencies have the flexibility to take full advantage of contracting based on specific agency needs. Contracting for service has become a recognized alternative to directly operated service in Florida, where the decision to contract service rests with the transit agency and the agency's governing body. Establishing a mandate for contracting might run counter to the best interests of transit agencies as it could serve to limit their flexibility in making organizational reforms or operational adjustments to improve cost efficiency.

While purchased transportation has been promoted based on the assurance of increased cost efficiency, previous studies as well as data analysis efforts undertaken during this project found that directly operated service is cost competitive with purchased service and can be cost effective depending on factors such as the size of the agency, the geographic location of the agency, and the type of services a transit agencies provides.

Generally, contracts for service should be bid on a fixed-price basis where the contractor is compensated on the basis of the amount of service provided, such as price per vehicle revenue hour. Performance metrics along with some type of penalty for failure to perform are routinely included in service contracts. An agency can further enhance competition by providing vehicles and facilities for transit service as the practice not only reduces the contractor's capital risk, but also allows the agency to retake and rebid the service if the contractor fails to perform.

Completion of an internal service cost analysis and establishing performance metrics would appear to be valuable, regardless of whether or not an agency planned to request bids for the provision of transit service. A thorough understanding of current service costs and operating efficiencies is required in order to identify what needs to be done to affect change.

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## **INTRODUCTION**

As the gap between transportation infrastructure and service needs and available resources continues to grow, elected officials, government executives and transportation officials are continually challenged to assess and explore methods for operating more efficiently. One method that has long been credited with increasing transit efficiency and reducing operating costs is contracting with the private sector for the provision of transit service. Previous experience with privatization of government functions has shown that the shift to the private sector can be most effective when there is a strong need for flexibility, the extent and level of service is easy to quantify, and the private sector has more expertise than a government entity in an area. On the other hand, privatization has been shown to be less than ideal in circumstances where potential cost savings are not easily calculable, effectiveness is overly sacrificed for efficiency, there is a lack of competition, too much of the appropriate government or regulatory control is yielded, and procurement arrangements are not transparent.

FDOT expressed interest in examining the potential for and issues surrounding private sector participation in the provision of public transportation in the state and contracted with the Center for Urban Transportation Research (CUTR) at the University of South Florida (USF) to investigate, document, analyze, and synthesize previous privatization efforts for providing fixed route bus public transportation services in Florida and the United States (U.S.). The project excluded the area of paratransit as not to duplicate the efforts already underway related to a report sponsored by the Florida Developmental Disabilities Council and the Able Trust.

Researchers were to conduct a comprehensive review of past studies and reports on the topic of contracting for fixed route bus service in the U.S., including the Transportation Research Board's (TRB) Special Report 258, "Contracting for Bus and Demand-Responsive Transit Services," published in 2001. TRB Special Report 258 provided a valuable historical view of data from 1998 along with extensive survey results from 2000. Included in the review were federal statutes and rules governing private transit operations; state regulations and laws pertaining to public transportation privatization; trends and attitudes in the U.S. on the topic; best practices employed by agencies considering contracting fixed route service; and,

particular attention to issues and implications associated with Section 13(c) of the Urban Mass Transit Act of 1964. The review of the literature included academic research, industry data and reports, and trade publication articles on the project topic. Researchers also conducted interviews with several Florida transit managers regarding their experience with directly operated and purchased service.

Additionally, the project was designed to identify considerations for use by policy makers in deciding the appropriateness of privatizing a public transportation function and provide a comparative analysis of the cost effectiveness of agencies contracting for bus service and those that directly operate it.

The report is structured to provide a comprehensive review of past studies and reports on the topic of contracting for fixed route bus service in the next section. Next is a review of U.S. transit agency data gleaned from the National Transit Database (NTD). An annual comparison of contracted fixed route transit service from 1998 through 2009 based on the number of agencies engaged in the practice and the number of vehicles operated in maximum service (VOMS) by those agencies is presented to identify trends that have occurred in the privatization of fixed route transit service in the past ten years. Also included is a detailed comparison of privatization in 2008 versus 1998 based on factors such as agency size, location, and the nature of the service contracted – agencies that directly operate all fixed-route service, those that directly operate and purchase service, and those that completely purchase the service.

A comparative analysis of the cost effectiveness of agencies contracting for fixed route bus service and those that directly operate service based on data as reported in the 1998 and 2008 NTD is provided.

Considerations that were identified in the course of the project and appear to have the potential to be used by policy makers and Florida transit agencies in deciding the appropriateness of privatizing a transportation function are presented in the next section. Conclusions are outlined in the final section of the report.

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## **REVIEW OF PAST STUDIES AND REPORTS**

Transit in the U.S. began as private enterprise. Early operators were often awarded exclusive agreements, commonly known as franchises. While franchises contained restrictions on fares and service parameters, including routes, they did afford operators with protection from competition from other transit providers. Due to a variety of factors, including the automobile, which allowed migration away from city centers, the demand for transit service began a decline in the 1920s that accelerated after World War II and, by the 1950s, left many transit systems in severe financial distress. As private transit operators faced mounting deficits in the face of crumbling infrastructure and service degradation, local governments stepped in and purchased transit service from private companies through the use of federal transit subsidies established under the 1964 Urban Mass Transportation Administration (UMTA) Act. The UMTA Act provided federal grants for capital investments that could be used to purchase private companies in their entirety or subsidize the private companies' capital costs. Section 8(e) of the UMTA Act permitted public agencies to contract for service with the stipulation that publicly employed workers be protected pursuant to Section 13(c) of the Act, which required that agencies receiving federal funding comply with the labor protection clause contained in the Act mandating that "no recipient of federal money can worsen the position of the transit worker." By the 1970s, most urban transit systems in the U.S. transitioned to public control and were either owned by state and local governments or planned and subsidized by the public sector. Public contracting with the private sector for fixed route bus service, which is a common form of privatization in the U.S., continued because it enabled public agencies to maintain control of transit fares, the quality of service provided, and significant policy decisions even though the transit service was provided by a private entity.

As public ownership of transit systems grew, many states passed or changed statutes that governed labor relations with public employees, which shifted authority from the federal National Labor Relations Act (NLRA) to state and local laws (Kim 2005). Within ten years after passage of the UMTA Act in 1964, 40 states had passed transit authority legislation, and 28 of the 40 states included employee protection clauses in the legislation to avoid conflicts with Section 13(c) (RL Jones 1985). Passage of the UMTA Act significantly impacted transit



statutes in terms of the guaranteed right to organize and bargaining rights for public transit employees; consequently, some states passed legislation to limit transit employees' rights. Massachusetts passed a Management Rights Act, which nullified key contract provisions between the Massachusetts Bay Transportation Authority (MBTA) and its union, prohibited automatic cost-of-living adjustments for wages, and authorized management to contract transit service and hire part-time employees (Black 1991). Public ownership and operation of transit service continued to grow with the assistance of federal funds for transit operating expenses authorized under the National Mass Transportation Act of 1974.

Beginning with the Reagan Administration, emphasis focused on two priorities: reducing federal funding for public transit and increasing involvement of the private sector through contracting. UMTA funded a series of studies that generally concluded that contracting to private providers for transit operations, vehicle maintenance, and administrative support could reduce unit operating costs from 10 to 50 percent (Teal et al. 1987).

In 1982, passage of the Surface Transportation Assistance Act expressly required federal grant recipients to develop their transit service programs in consultation with the private sector. In 1986, UMTA published new guidelines that required grant applicants for discretionary funds not only to actively encourage private-sector providers to participate in new and restructured local services, but also to document private sector participation in the planning and provision of transit service. Allocation of funding was contingent upon UMTA's approval of localities' levels of effort in this area until 1987, when Congress directed that the decision to privatize rested with local agencies (Teal 1985). As federal support was gradually withdrawn, state and local governments looked to privatization to contain their increasing costs. Several states, including California, New York, Texas, Massachusetts, and Connecticut adopted privatization-friendly legislation (McCullough 1997). During this period, many public transit agencies began contracting with private companies for transit service, a practice which was often opposed by organized labor (Black 1991).

In 1988, the state of Colorado passed a law that required the Denver Regional Transit District (RTD) to privatize a minimum of 20 percent of its bus service. The minimum percent of contracted bus service was later increased to 35 percent through subsequent legislation. Significant in the Colorado law were two requirements. Contrary to past practices, privatization was targeted at existing service rather than new or restructured service as specified in the UMTA Act, and RTD's fully allocated costs were to be compared with private operators' bids, i.e., the cost of the system versus the cost of an individual route.

### **Effects of Transit Contracting**

Contracting for fixed route bus service has drawn significant attention in academic and industry circles, and while many studies have been presented on this subject, a number of the studies lack the gravitas of a peer-review scholarly journal process. TRB Special Report 258 described the publication process as "dueling" studies of a single agency's contracting experience, as it often appeared that following the release of a study of a single transit operator's experience with contracting, a subsequent study that contradicted or nullified the original study's results was published. Given that the rationale for contracting was grounded on the premise that contracting transit service costs less than directly operated service, most studies focused on a comparison of transit service costs. Possible explanations for the glaring contradictions between the studies involved the lack of consensus on appropriate methodologies for measuring costs and a lack of consistency in identifying cost items to be included in the calculation. This resulted in a broad range of results produced from multiple studies despite the fact that similar agencies and similar groups of agencies were used in the analyses. Research into cost savings through transit contracting generated a great deal of criticism in cases where significant cost savings were projected without including the full transaction costs for such items as bid proposals, contract negotiations and the monitoring of contracts.

Other effects of contracting on transit performance were generally viewed as secondary reasons for contracting and received little attention in the literature. TRB Special Report 258 described some previous studies that examined other reasons for contracting as "audit-like

examinations of contractor records on vehicle accidents and breakdowns, on-time performance, vehicle inspections, and the like.”

### **Cost Savings**

Due to the number of transit systems that had privatized service, many early studies of the effect of contracting on cost savings focused on transit systems in California. Teal (1985) examined California’s privatization efforts and noted differences in contracting based on the size of the agency. He found that most privately operated systems were small scale in nature, while virtually all large scale systems were directly operated. Teal (1985) cautioned against extrapolating California’s contracting practices elsewhere due to the fact that for California’s local systems, contracting was a routine practice used across a variety of sectors. In addition, local transportation funds in California could be used for highways once transit needs were met. Contracting a level of transit service to meet the minimum transit mandate provided a cost effective means for freeing excess funds for highway needs.

Teal (1985) identified the following benefits for small agencies that contracted for service: contracting enabled a small agency to save money, allowed the agency to delay creating or expanding the bureaucracy, offered the purchase of service that was affordable, made it possible for the small agency use savings from contracting elsewhere, and facilitated timely service delivery. Teal (1985) cautioned that while economic benefits were generally the rationale for contracting, the magnitude of cost savings was uncertain and could only be calculated when an entire public system was replaced with a private system.

Early UMTA-sponsored studies estimated that cost savings of 10 to 40 percent per contracted unit of service resulted from: (1) lower wages paid to operating personnel; (2) flexible use of labor, including part-time personnel, due to fewer work rules; (3) cost-effective vehicle maintenance procedures, such as management of parts inventory; and (4) efficient management and administration cost, with the caveat that competition was a factor in the contracting process.

Sclar, Schaeffer, and Brandwein (1989) suggested that under-bidding to gain access and/or a lack of understanding of the true cost of providing transit service on the part of contractors could be the basis for purported cost savings reported in early research.

In a critique of Colorado's privatization law, Sclar, Schaeffer, and Brandwein (1989) suggested that the competitive bidding model to contain costs not only failed to recognize political and economic realities in the desire to maintain market share, but also had a limited view of efficiency, i.e., the implication of bidding routes in terms of the goal of maximizing system efficiency. The competitive bidding model also raised service performance issues, such as dealing with more bureaucracy with no new resources, system efficiency and interlining, and the competence of the workforce. Sclar, Schaeffer, and Brandwein (1989) raised a series of questions that they postulated must be answered in order to implement a nationwide program of transit privatization.

***Is competition stable over the long-run?*** – Westchester County evolved from 16 individual private providers, with the largest provider accountable for 33 percent of the routes in 1975 to 8 individual private providers, with the largest provider responsible for 93 percent of the routes in 1985 – seriously eroding competition over time.

***Does politics play a role in contracting?*** – In 1988, UMTA forced a California transit agency to accept a bid from a private operator that was higher than a competitive bid provided by a California public operator.

***Can little fish ever eat big fish?*** – Most successful private players are large national, multi-product firms rather than small local operators.

***Is the customer always right?*** - With privatization, the contractor's customer is the agency rather than the transit users.

***Is a contract in theory the same as a contract in practice?*** - The actual price is the outcome of relative negotiating strength rather than actual cost.

They redirected focus away from use of the competitive cost model and offered three urban transportation policy recommendations designed to enhance the provision of transit service.

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1. Recognize the effect of public contracting and allow for local options – permit those charged with providing service to make decisions and hold them accountable for outcomes
2. Accept the fact that transportation always needs a subsidy – cost shifting through privatization fails to create a fair and efficient system of public finance
3. Maximize policy goals by allowing local officials, who are accountable to voters and riders, to decide what works – the goal is not public versus private service

Hilke (1993) updated and expanded a 1982 compilation of studies on the effect of competition on costs of government services. His concept of contracting was not limited to public agency contracting with a private provider, but was expanded to include in-house and intergovernmental contractual relationships. Hilke found that in-house and intergovernmental contractual arrangements could successfully compete with private providers in the provision of transit service.

The practice of comparing small single-mode systems and large multi-modal systems to draw conclusions about the cost savings from contracting and then extrapolating those findings to other systems came under scrutiny. Results of a 1998 study (McCullough et al. 1998) of the impact of contracting fixed route bus service found that bus services operated under contract were not always less costly than directly operated services. Based on a regression model, McCullough, Taylor and Wachs (1998) found that vehicle and labor utilization had more influence on cost efficiency than wages or contracting and determined that cost efficiency could be achieved in many different ways, depending upon local conditions, and contracting should not be assumed to be the most appropriate strategy in every situation.

TRB Special Report 258 reported that while early research focused on operating costs, there were some studies that looked at other effects of contracting on agency costs. At the heart of much of the controversy was the issue of transit agency overhead costs and how those costs should be addressed when projecting savings from contracting. Critics of early cost-saving studies charged that the studies often assumed that contracting would significantly reduce overhead costs, but failed to account for administrative and other costs incurred by contracting.

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Contract administration costs include administering contracts, monitoring contractor performance, and coordination of contractor to contractor and contractor to in-house services (Sclar and Watkins 1994). One study in California found administrative and monitoring costs of almost 14 percent of total contract costs (Teal 1991). McCullough, Taylor and Wachs (1998) reported that in another study of bus contracting in California, average administrative and monitoring costs were estimated at \$0.10 to \$0.25 per vehicle-mile. Additional study is needed in this area because many contract administrative costs can be difficult to isolate and quantify.

### **Service Quality and Safety Effects of Contracting**

Research on the service quality effects of contracting has not shown conclusively whether contracting provides a better or worse quality of service than publicly operated services. Part of the difficulty with measuring service quality is in finding criteria that are both measurable and relevant to the multiple dimensions of transit service as experienced by the rider.

Past studies evaluating quality of service have examined a variety of measures, such as records of on-time performance, customer complaints and commendations; driver wages and turnover; and vehicle accidents, vehicle mechanical breakdowns, and facility and vehicle inspection results. Individual criteria, such as driver wages and retention rates, may be relevant only indirectly, if at all, to the quality of the service. It is often difficult to understand how these proxies for service quality have been derived and whether they control adequately for exogenous factors, such as differences in the operating environment of contract and in-house services (e.g., varying levels of traffic congestion on routes).

Finally, many of the studies on service quality have been agency-specific, and the literature contains a great deal of anecdotal information, such as narratives on the failings of one contractor or another.

### **Section 13(c) Effects on Contracting**

In response to ongoing criticism that Section 13(c) of the UMTA Act served as an impediment to contracting due to the opposition of transit unions, Luger and Goldstein (1989) examined the effects of UMTA Section 13(c) on the decision to contract fixed-route and commuter express

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bus services, using data from a survey of transit managers, NTD, the U.S. Census, and a variety of other sources. They found that Section 13(c) did not appear to reduce the incidence of contracting, controlling for other factors, including transit service characteristics, demographics of served areas, area economic conditions, and characteristics of transit managers and unions.

Contrary to allegations that labor unions used Section 13(c) to delay or prevent transit projects, especially those designed to improve labor efficiencies, Kim (2005) reported that only three grant applications out of over 800 Section 13(c) cases filed with the U.S. Department of Transportation (USDOT) between 1964 and 1995, which involved transit projects perceived as being detrimental to labor, were denied.

### **Recent Studies**

Critics cautioned against using anecdotal evidence to reinforce preconceived ideas rather than providing objective information and charged that approaches were structured and used by proponents and opponents of contracting for political ends (Richmond 2001). A number of studies were introduced that recognized the complex nature of making the contracting decision and examined factors other than economic ones. The decision to contract was often made by officials, who were required not only to balance politics, such as the political consequences of opposing unions for the promise of potential economic benefits, but also to navigate legal and regulatory considerations that affected the feasibility of contracting service. The contracting decision was often highly complicated and based on more factors than simply economics.

Nicosia examined the issue of “transit as government responsibility” and found that traditional economic and social justifications for public provision of transportation include the benefits of cross-subsidization, economies of scale, and improved coordination. Nicosia postulated that in order to ensure universal service, cross-subsidization by the government from more profitable routes to less profitable ones would be needed as private firms would tend to neglect less profitable routes or areas. Since “these often coincide with the areas where low-income people reside, cross-subsidization also addresses some of the social welfare concern of making mass transit widely available.” (Nicosia 2001) Since transit infrastructure requires

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large fixed costs, it was flagged as a prime example of a natural monopoly, primarily because small private companies would be unable to take advantage of the economies of scale. In terms of coordination, the operation of multiple private firms could create ineffective duplication in densely populated areas in an attempt to exploit profitable routes and a lack of attention in other less profitable areas. Nicosia suggested that increased coordination across routes and service under a single provider would enhance service quality and postulated that cost savings due to contracting are expected to come from the following: competition among bidders or contractors, which is necessary to provide cost pressure; labor cost differences, since transit wages are positively correlated with agency size; factor substitution and efficiency derived from the ability to use smaller fuel efficient vehicles and a lower skill requirement for drivers; and, scale economies gained by reduced operating costs through contracting on the part of large firms. Nicosia found that contract bidding in a non-competitive environment offers few benefits, since costs are generally equivalent to those provided by existing public firms. Furthermore, where competitive contracting has been implemented, there was ambiguous evidence regarding cost savings. Nicosia referenced a Los Angeles cost study that showed 60 to 69 percent savings, while another study showed no savings. Cost-pressures of competitive contracting affect both private and public agencies, as evidenced by a California public transit agency's successful bids in the competitive contracting environment. Nicosia noted that cost savings may come at the expense of labor, as the decision to contract seems linked to efforts by transit firms to side-step internal unions in favor of less organized, cheaper private sector labor.

CUTR was asked to review the potential for privatization for the Central Florida Regional Transportation Authority's LYNX service (2002). Based on NTD data for 2000, LYNX had one of the lowest costs per vehicle revenue hour compared to 14 peers. The following contracted service best practices were identified.

<b>Contracted Service Best Practices</b>		
● Specific objectives	● Capital investment	● Section 13(c) protections
● Contract oversight	● Detailed scope of services	● Operating & capital monitoring
● Environmental justice	● System continuity & connectivity	● Local funding impacts



Researchers evaluated four LYNX-recommended candidate routes in terms of potential private sector costs, using LYNX direct costs without capital. In each case, direct operation was more cost effective than contracting. In addition, researchers concluded that a single provider could see higher operating costs due to the number of deadhead miles, while the use of multiple providers could increase LYNX contract administration costs. The following advantages and disadvantages of contracting were identified.

<b>Advantages of Contracting</b>	<b>Disadvantages of Contracting</b>
<ul style="list-style-type: none"><li>• Initiate or eliminate service to meet demand</li><li>• Eliminate up-front capital for vehicles</li><li>• Use private labor</li><li>• Lower wage scale for new service</li><li>• Improve quality of service</li><li>• Share administrative responsibilities</li><li>• Offer performance incentives/penalties</li></ul>	<ul style="list-style-type: none"><li>• Quality control issues: service, vehicles, skills, and training</li><li>• Agency control and oversight of funding</li><li>• Intensive contract administration</li><li>• Performance measurement costly and difficult</li><li>• Contractor pays fuel tax</li><li>• Contractor capital cost</li><li>• Section 13(c)</li><li>• Operable spares mandate</li><li>• Coordination with operations</li></ul>

In 2002, Savas and McMahon examined the New York City bus system (NYCDOT) and analyzed the potential cost savings of applying a competitive contracting approach to bus service (Savas and McMahon 2002). Due to federal reimbursement policies, the franchises ran vehicles owned by NYCDOT, but retained their own fare revenues, received reimbursement for Metrocard trips, and were paid a management fee. Total operating expenses were capped, but were adjusted annually for inflation. In addition, most franchises received a small payment for achieving performance standards. The operating subsidy equaled fare revenues minus capped costs. NYCDOT's hourly operating expense of \$90.54 ranked 5<sup>th</sup> and the combined franchise cost of \$86.18 ranked 8<sup>th</sup> among the nation's 30 largest transit systems in 2000. Labor costs were the key factor in the cost rankings. Based on a combined labor-adjusted cost, NYCDOT ranked 12<sup>th</sup>.

Savas and McMahon concluded that competitive contracting works best when the following elements are included:

**Required Elements of Competitive Contracting**

- Bid contract on a **fixed-price** basis, such as price per vehicle revenue hour
- Foster competition by creating **several contracts**, each one for a relatively small group of routes
- **Limit** contract duration to three years with two one-year renewal options
- **Monitor** the contractor's **performance and enforce** the specified penalty provisions of the contract
- **Provide** bus contractors with **vehicles** and consider providing service facilities as well

In 2005, Kim examined the effects of fixed route bus contracting on labor through a study of 12 operators that included private contractors, public operators who directly operated their service and public operators who contracted out some or all of their service from 1995 to 2001. Driver compensation was analyzed in four components using equivalent pay hours categorized as platform hours, hours spent due to work rules defined in labor contracts, paid absences, and fringe benefits. Kim found that private contractors paid bus operators \$6.00 to \$8.00 less per hour and provided benefits valued at 25 percent compared to 35 percent of hourly wages. The dollar equivalent of paid days off was 15 days versus 52 days. Private contractors spent more for overtime as drivers worked on average 100 to 200 more hours per year than public drivers along with higher driver training costs. A greater rate of driver turnover coupled with poor safety records caused higher costs for all types of insurance for private operators. Private contractors paid 52 percent less in driver compensation, while hourly operation costs were 43 percent less. Kim concluded that “cost savings from contracting were achieved at the expense of labor, but not necessarily with an increase in genuine productivity.” (Kim 2005)

Iseki, Ford, and Factor (2005) examined agency decisions about contracting at 13 California transit agencies. They attempted to determine why agencies chose to contract or forego contracting and to explore how agencies have used both contracting and other means to respond to financial pressure. Iseki, Ford, and Factor (2005) indicated that most studies completed in the 1980s and 1990s were quantitative and focused solely on cost savings. The few qualitative studies that were done concluded that the decision to contract was influenced by political, social, and institutional conditions as well as economic criteria. In 2002, 58 percent of the 65 transit agencies in California contracted-out at least some of their fixed route bus service. Iseki (2004) found that it was important to consider the level of contracting in terms of no contracting, partial contracting, or full contracting rather than simply looking at no

contracting versus some contracting. Iseki, Ford, and Factor (2005) found that agency size was also a significant factor in explaining the level of contracting an agency chooses. "The larger the agency is, the higher the likelihood that it contracts out only a portion of service. The smaller an agency is, the higher the likelihood that it contracts out all service."

Iseki, Ford, and Factor (2005) concluded that managers treat contracting as one strategy among several that they can use to improve productivity, just as they might consider hiring part-time labor or adjusting wage scales. Partial contracting agencies do not contract a portion of their entire service, but identify specific lines or specific types of service appropriate for contracting. Partial contracting is used to increase cost efficiency for specific lines or special service, such as peak-only service, shuttle-style connectors, to serve outlying areas, and also to preview the cost efficiency a potential new service by trying out new service.

The use of full contracting, typical in new, younger systems, is easier and faster than hiring in-house drivers, can be used to avoid labor disputes or union opposition, and can shorten administrative procedures. Full contracting focuses on service productivity and cost efficiency and is used when partial contracting is not considered to be a viable option.

Iseki, Ford, and Factor (2005) postulated that local and regional political climates, rather than board of director policy dictates have greater impact on the contracting decision. Economic concerns were more important than political concerns for those who do not contract and would only consider contracting if the financial situation required contracting to maintain an acceptable level of service. Union opposition to contracting is especially prominent at partial contracting agencies. While unions generally oppose contracting that threatens current jobs, they are often supportive of contracting new and specialized services, especially if the union has an option to bid on the contract. Nonetheless, unions do recognize that most contracting strategies have a negative impact on income and working conditions for bus drivers.

Iseki, Ford, and Factor (2005) cautioned that individual agencies should carefully assess service lines, evaluate various strategies for increasing cost efficiency, and maintain a

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cooperative relationship with its unions to tailor solutions to its particular operating environment. “Complexity also implies that state and federal legislation that either demands a certain level of contracted service or limits agencies’ abilities to use various cost-efficiency strategies may not be appropriate for many transit agencies.” (Iseki, Ford and Factor 2005)

DeShazo and Iseki (2006) examined the causes, consequences, and cost effectiveness of privatization in the case of public transit service in response to declining resources. They were interested in identifying what factors compel public agencies to contract fixed route bus service as well as the specific level of contracted service that is selected. They also wanted to answer the question, “Does privatizing lead to more cost-effective service provision in bus transit?”

DeShazo and Iseki (2006) conducted a statistical analysis of privatization based on 400 agencies using 1993 through 2000 NTD data and interviewed managers and directors at 13 California transit agencies. DeShazo and Iseki (2006) concurred with earlier findings regarding partial contracting versus full contracting. They found that large agencies were more likely to engage in partial contracting than small agencies, and their contract decision was based on managerial factors. They also found that small agencies were likely to contract all services. The effects of contracting on cost efficiency were found to vary by the peak-to-base ratio, agency size, the bus operator wage gap between bus operators in the public and private sectors, and agency type. DeShazo and Iseki (2006) concluded that large agencies do not necessarily gain direct cost savings through contracted service. Small agencies tended to contract all service to increase cost efficiency primarily by saving on labor costs. Services that agencies often contract are special services and services in outlying areas with low ridership, where agencies cannot achieve cost efficiency. In contrast to past studies on this topic, DeShazo and Iseki (2006) found that “a contracting strategy can be a viable option to improve cost efficiency in transit services, but only when a transit agency carefully chooses the service level to contract based on an adequate assessment of its conditions.” (DeShazo and Iseki 2006) DeShazo and Iseki (2006) detailed the following policy implications for state legislatures.

**DeShazo and Iseki's Policy Implications for State Legislatures**

1. Do not legislate a blanket policy requiring all transit agencies to contract-out a certain proportion of service.
2. Do not legislate a law that effectively prohibits transit agencies from making organizational reforms or operational adjustments to improve cost efficiency.
3. Set guidelines or requirements of performance indices, such as level of cost efficiency and cost effectiveness, and allow transit agencies to choose measures, including a contracting strategy, that best suits their operating conditions.
4. Arrange institutional settings that enhance careful assessment and planning for contracting, instead of allowing a hasty decision.
5. Set a standard for a minimum wage and fringe benefits for employees of contractors.
6. Examine, evaluate, and possibly reform work rules in labor contracts at public transit agencies.
7. Consider the distribution of costs and benefits of a contracting policy among different groups.

Lessons learned from DeShazo and Iseki's (2006) review of transit agencies in California included the following:

**Lessons Learned - California Transit Agencies**

- Transit agencies must assess the conditions, circumstances and characteristics of their transit service operation before contracting
- Agencies can increase efficiency through a variety of measures
- Transit agencies should be aware of economies and diseconomies of scale in transit service operation
- Transit agencies should seek a way to "corporate" with unions to increase cost efficiency, but not significantly disadvantage conditions for existing employees
- A lower wage rate is not necessarily better for transit service operation

Scholl (2006) reported results from his review of research and debates on privatization in the form of contracting, including its effects on cost efficiency, quality of transit provision and labor. Scholl found that while contracting appears to have the potential to substantially reduce costs, the tradeoffs involved may be considerable and the broader social objectives of transit need to be kept in mind. Scholl called for more research on possible ways to reduce the tradeoffs, such as better contract design, quality and safety standards, and contract monitoring. He also

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recommended that various alternatives to contracting, such as broader organizational changes or addressing larger transportation system inefficiencies, and their tradeoffs, should be weighed in a broader policy context. Furthermore, Scholl indicated that where contracting is utilized, it should be accompanied by appropriate and enforceable service quality standards and labor practices, which support those standards.

Zullo (2007) examined NTD data from 1993 through 2004 to analyze the effects of contracting on the cost efficiency and resource allocation of motor bus and demand response service. Zullo found no difference in cost between in-house and fully contracted operations for fixed route bus service, but did find a 20 percent savings for demand response. Zullo suggested that the most cost-efficient agencies either fully contract or provide full in-house service, transit agencies that contract with multiple motor bus providers pay a cost premium, and contracting does not affect the growth in cost for either fixed-route or demand response service. Zullo found no reduction in administrative expenses when agencies contracted services and only a partial reduction in non-operational maintenance expenses. Zullo concluded that, overall, the results call into question the efficacy of competitive contracting models of transit service delivery and the use of fully allocated costing methods in make-versus-buy decisions.

Peoples, Talley, and Wang (2008) used individual worker information from the Current Population Survey-Outgoing Rotation Group (CPS-ORG) files from 1999 to 2000 and municipal data from the Bureau of Economic Analysis (BEA) 1999 Census of Government to examine privatization's influence on public transit worker's earnings and employment. Through use of the unique data set, Peoples, Talley, and Wang measured the privatization rates at the municipal level to examine public transit labor earnings and employment patterns. Labor earning findings indicated that privatization was associated with union wage premium erosion in the public sector, while employment findings suggested that labor cost savings from privatization can be derived from the enhanced employment of relatively low wage nonunion workers in the public sector of public transit services.

The Cato Institute distributed a study authored by O'Toole, entitled *Fixing Transit: The Case for Privatization* in 2010, which recommended the privatization and self-financing of all transit

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services. O'Toole (2010) argued that public transit provides little economic, social, or environmental benefit and called for the elimination of the public agency's role in coordinating services and maintaining standards. O'Toole (2010) ignored the multiple roles that public transit plays in an efficient and equitable transport system and relied on examples that appeared to be somewhat extreme to suggest that transit employees are overcompensated. Litman (2010) provided a detailed review of the Cato Institute study and recommended several substantive actions for effective privatization of transit. Litman suggested that public agencies should maintain overall control of strategic planning and performance standards. He called for the integration of transit system routes, schedules, fare structures, and user information to maximize user convenience and system efficiency, and suggested that policies and quality service standards be established to minimize labor disruptions and reward attainment of service quality requirements. Litman also suggested that data collection and evaluation methods be designed and implemented to monitor performance.

### **The Decision to Contract in Light of Transaction Costs**

TRB Special Report 258 reported that both the literature and survey confirmed that savings in operating costs were the main reason to contract. Contractors have the ability to provide reduced labor costs by using wage rates below public sector wages. Contractors also offer public agencies the ability to use labor and assets more efficiently with part-time personnel and flexible scheduling of service throughout the day.

In addition to cost savings, contract service allows the agency to shift risks associated with new service that can be easily withdrawn or modified if it is shown to be unproductive or cost prohibitive. An agency can also contract rather than bear the burden of administrative costs, such as the time and expense associated with personnel management. Results of the survey indicated that for small agencies with limited administrative capabilities in particular, reduction of these costs can be a primary motivator for contracting.

On the other side of the ledger, a public transit agency must consider the expense of transaction costs associated with contracting. Time and other costs associated with obtaining the information necessary for the transaction must be factored into the cost of contracting.

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Administrative expenses are necessary to develop requests for proposals, solicit bids, qualify bidders, and assess and award contracts. Varying degrees of service disruptions at the start and end of a contract, or when a contract changes hands, represent another potential cost of contracting a service. The contracting agency must consider recurring costs associated with contracting, including contract oversight, monitoring contractor performance, coordinating contracted and in-house service, and resolving contract disputes.

Transaction-cost analysis provides the agency with a framework for understanding the factors that influence the make-or-buy decision. Should transaction costs exceed operating savings and administrative savings from contracting, the transit agency would generally choose to operate the service in-house. On the other hand, should savings in operating and administrative costs from contracting exceed transaction costs, the agency would be expected to contract the service, if this option is available.

The contracting decision requires the agency to weigh costs associated with developing and administering the contract against the expected savings in operating costs and other benefits of contracting.



## **TRENDS IN FIXED ROUTE BUS CONTRACTING**

Using NTD data from 1998 through 2009, CUTR reviewed transit agencies in the U.S. and identified those that privatized part or all of their fixed route bus service to determine trends in the industry. CUTR then developed a national profile of those agencies providing fixed route bus service, using NTD data from 1998 and 2009 to examine any patterns that might exist relating to size, location, or other factors associated with U.S. transit agencies. The analysis was compared to the results from TRB Special Report 258, which was based on NTD data from 1998, and included agencies that directly operate all fixed-route service, those that provide service through both means, and those that completely purchase the service.

Researchers examined NTD data for years 1998 through 2009. Transit agencies were categorized based on three types of service – agencies that directly operated all fixed route bus service (DO), agencies that directly operated and purchased fixed route bus service (DO+PT), and agencies that purchased all fixed route bus service (PT). In 2007, the Federal Transit Administration (FTA) refined NTD reporting requirements regarding directly operated and purchased transportation. For purchased transportation service (PT) between two public NTD reporting agencies, the data must be reported as directly operated (DO) service regardless of whether the buyer or seller is reporting the data. As a result of this reporting change, beginning in 2007, all service reported as purchased transportation represents service purchased exclusively from a private provider. Public transit agencies that purchase service from another agency must report that “purchased” service as “directly operated” service.

### **Transit Agencies**

The number of transit agencies within the U.S. grew by 91 agencies (21.2%) during the time period from 1998 to 2009 (Table 5), with an average of 8 new agencies a year. The most significant growth occurred in 2009, when 23 new transit agencies instituted service. Annual growth during the twelve-year period averaged 1.8 percent. Growth occurred in all three types of U.S. transit systems. Transit systems that provided both directly operated and purchased fixed route bus service and transit systems that purchased all fixed route bus service showed the most growth. Growth rates from 1998 to 2009 for those types of service were 25.9 percent

and 62.0 percent, respectively. Transit systems that directly operated fixed-route service grew by 9.5 percent. Agencies that purchased all fixed route bus service represented almost 25 percent of the 520 agencies operating in 2009. The most significant growth (21.4%) occurred in transit systems that provided both directly operated and purchased fixed route bus service. The number of agencies that purchased all fixed route bus service remained stable throughout the period and represented 24.7 percent of the 497 agencies in 2007, 24.1 percent of the 497 agencies in 2008, and 24.6 percent of the 520 agencies operating in 2009.

**Table 5 – Growth in U.S. Transit Agencies by Type, 1998 – 2009**

Year	# of Agencies				Growth in # of Agencies				% Growth in # of Agencies			
	DO	DO+PT	PT	Total	DO	DO+PT	PT	Total	DO	DO+PT	PT	Total
1998	296	54	79	429								
1999	298	48	91	437	2	-6	12	8	0.7%	-11.1%	15.2%	1.9%
2000	289	52	91	432	-9	4	0	-5	-3.0%	8.3%	0.0%	-1.1%
2001	301	50	95	446	12	-2	4	14	4.2%	-3.8%	4.4%	3.2%
2002	308	50	92	450	7	0	-3	4	2.3%	0.0%	-3.2%	0.9%
2003	304	55	99	458	-4	5	7	8	-1.3%	10.0%	7.6%	1.8%
2004	314	53	101	468	10	-2	2	10	3.3%	-3.6%	2.0%	2.2%
2005	314	53	109	476	0	0	8	8	0.0%	0.0%	7.9%	1.7%
2006	321	51	121	493	7	-2	12	17	2.2%	-3.8%	11.0%	3.6%
2007*	318	56	123	497	-3	5	2	4	-0.9%	9.8%	1.7%	0.8%
2008	314	63	120	497	-4	7	-3	0	-1.3%	12.5%	-2.4%	0.0%
2009	324	68	128	520	10	5	8	23	3.2%	7.9%	6.7%	4.6%
09 vs 98					28	14	49	91	9.5%	25.9%	62.0%	21.2%

\*NTD reporting change

The number of Florida transit agencies grew by 10 agencies (52.6%) during the same time period (Table 6), with an average of one new agency a year. The most significant growth occurred in 2005 and 2007, when two new transit agencies instituted service. Annual growth during the twelve-year period averaged 4.0 percent.

While growth occurred in all three types of Florida transit systems (Table 5), the most significant growth occurred in transit systems that purchased all fixed route bus service. In 1998, there were no Florida transit agencies that purchased all fixed route bus service. In

2009, seven Florida transit agencies contracted for all fixed route bus service, representing 24.1 percent of the 29 agencies operating in Florida. Transit systems that directly operated all fixed-route bus service increased from 17 in 1998 to 19 in 2009 (a 9.5% increase).

**Table 6 – Growth in Florida Transit Agencies by Type, 1998 – 2009**

Year	# of Agencies				Growth in # of Agencies				% Growth in # of Agencies			
	DO	DO+PT	PT	Total	DO	DO+PT	PT	Total	DO	DO+PT	PT	Total
1998	17	2	0	19								
1999	16	3	1	20	-1	1	1	1	-5.9%	50.0%	100.0%	5.3%
2000	16	4	1	21	0	1	0	1	0.0%	33.3%	0.0%	5.0%
2001	16	4	2	22	0	0	1	1	0.0%	0.0%	100.0%	4.8%
2002	17	4	2	23	1	0	0	1	6.3%	0.0%	0.0%	4.5%
2003	17	4	2	23	0	0	0	0	0.0%	0.0%	0.0%	0.0%
2004	17	4	3	24	0	0	1	1	0.0%	0.0%	50.0%	4.3%
2005	16	5	5	26	-1	1	2	2	-5.9%	25.0%	66.7%	8.3%
2006	17	5	5	27	1	0	0	1	6.3%	0.0%	0.0%	3.8%
2007*	19	3	7	29	2	-2	2	2	11.8%	-40.0%	40.0%	7.4%
2008	19	4	6	29	0	1	-1	0	0.0%	33.3%	-14.3%	0.0%
2009	19	3	7	29	0	-1	1	0	0.0%	-25.0%	16.7%	0.0%
09 vs 98					2	1	7	10	11.8%	50.0%	100.0%	52.6%

\*NTD reporting change

### Impact of FTA's 2007 Revised Reporting Policy

While it is not possible within the scope of this study to measure the actual outcome of FTA's 2007 revised reporting policy, a cursory review of the change in the type of agencies from 2006 through 2009 does provide some context regarding the possible impact of the policy change. Based on FTA's change in policy, it was anticipated some agencies that reported purchased service in 2006, would report that same service as directly operated in 2007, resulting in a decline in DO+PT and PT agencies along with an increase in DO agencies. The data (Table 8) show that the number of DO agencies operating fixed route bus service in the U.S. actually declined in 2007 and 2008. The number of PT agencies operating fixed route bus service in the U.S. also fell in 2008, while the number of DO+PT agencies operating fixed route bus service grew in 2007 and in 2008. The data (Table 7) also illustrate that, in terms of the mix of agencies in 2007, 2008, and 2009, DO+PT agencies expanded their representative

percentage of total, while DO agencies reduced their representative percentage of total agencies, contrary to anticipated results of the FTA reporting change.

**Table 7 – U.S. Agencies Percent of Total by Type, 2006 – 2009**

Year	# of Agencies			Agencies %/Total by Type		
	DO	DO+PT	PT	DO	DO+PT	PT
2006	321	51	121	65.1%	10.3%	24.5%
2007*	318	56	123	64.0%	11.3%	24.7%
2008	314	63	120	63.2%	12.7%	24.1%
2009	324	68	128	62.3%	13.1%	24.6%

*\*NTD reporting change*

NTD data for Florida show little change in the three types of transit systems from 2007 through 2009 (Table 8). The number of Florida agencies by type remained relatively stable throughout the period, with the number of agencies that purchased all fixed route bus service representing 24.1 percent of the total in 2007, 20.7 percent in 2008, and 24.1 percent in 2009.

**Table 8 – Florida Agencies Percent of Total by Type, 2006 – 2009**

Year	# of Agencies			Agencies %/Total by Type		
	DO	DO+PT	PT	DO	DO+PT	PT
2006	17	5	5	63.0%	18.5%	18.5%
2007*	19	3	7	65.5%	10.3%	24.1%
2008	19	4	6	65.5%	13.8%	20.7%
2009	19	3	7	65.5%	10.3%	24.1%

*\*NTD reporting change*

### **Vehicles Operated in Maximum Service (VOMS)**

VOMS in the U.S. grew (Figure 1) from 45,435 vehicles in 1998 to 51,512 vehicles in 2009. Transit agencies operated 6,077 (13.4%) more vehicles in maximum service in 2009; although, total VOMS actually declined by 255 VOMS (-0.5%) in 2009 compared to 2008 (51,767 VOMS). Annual growth during the period averaged 1.2%.

From 1998 through 2009, Florida VOMS also grew (Figure 2). VOMS in Florida grew from 1,700 vehicles in 1998 to 2,398 vehicles in 2009. Florida transit agencies operated 698

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(41.1%) more vehicles in maximum service in 2009; although, as with VOMS in the U.S., total Florida VOMS declined by 148 VOMS (-5.8%) in 2009 compared to 2008 (2,546 VOMS). Annual growth during the period averaged 3.3%.

While growth in VOMS in the U.S. (Figure 3) occurred at all three types of transit systems, VOMS at agencies that directly operated all fixed route bus service showed only modest growth of 1.0 percent (291 additional VOMS). Agencies that purchased all fixed route service operated 3,650 additional VOMS (186.9% growth) and accounted for almost 11 percent of the total VOMS operating in 2009.

Growth in Florida VOMS (Figure 4) occurred at all three types of transit systems. VOMS at agencies that directly operated all fixed route bus service showed growth of 41.9 percent (578 additional VOMS). VOMS at agencies that directly operated and purchased fixed route service grew 12.1 percent (39 additional VOMS). In 2009, Florida agencies that purchased all service operated 81 VOMS (100.0% growth), compared to zero VOMS in 1998, and accounted for 3.4 percent of Florida's total VOMS and 1.4 percent of purchased VOMS operating nationally in 2009.

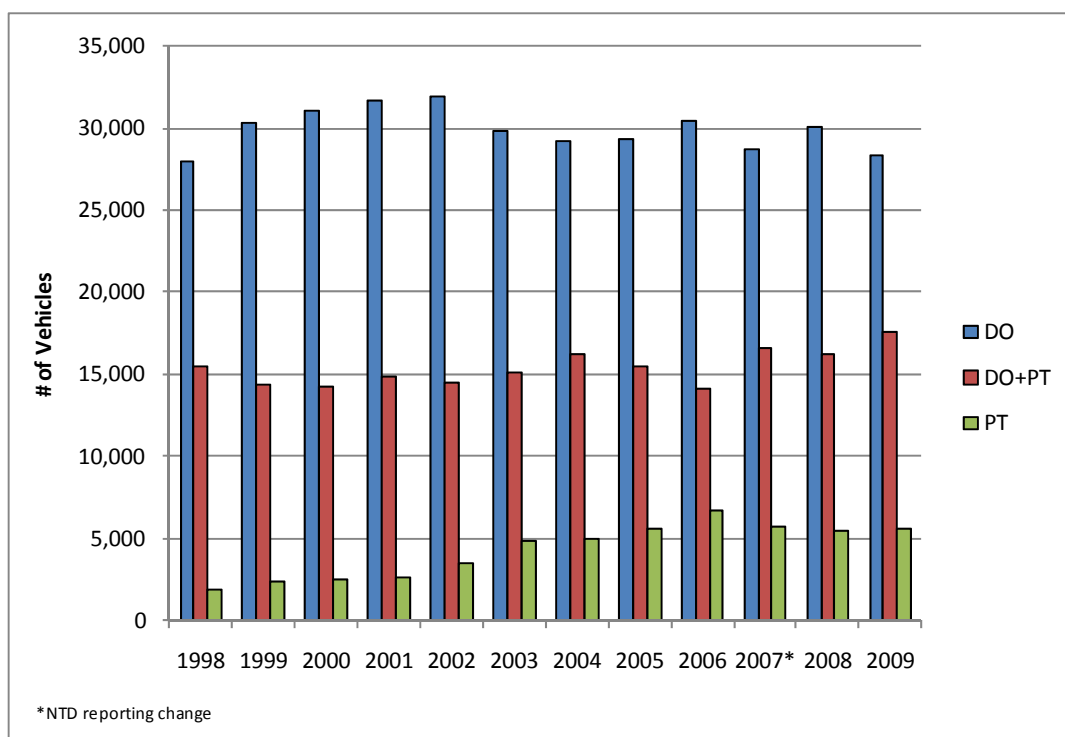


Figure 1 – U.S. VOMS by Type of Agency, 1998 – 2009

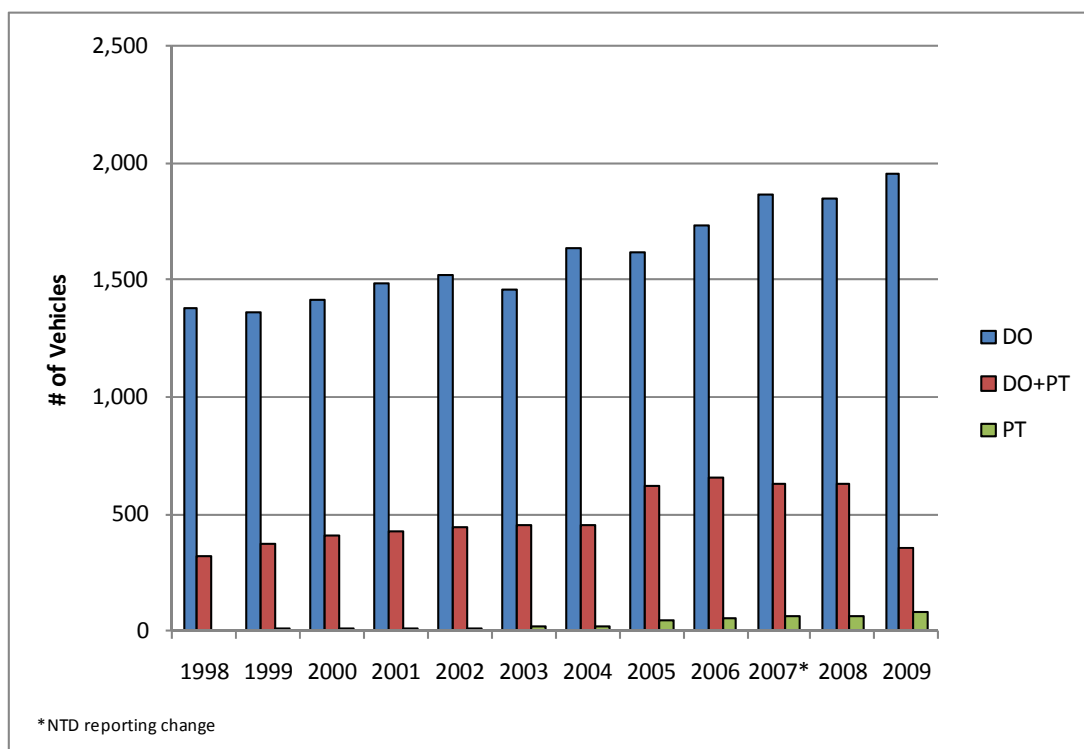
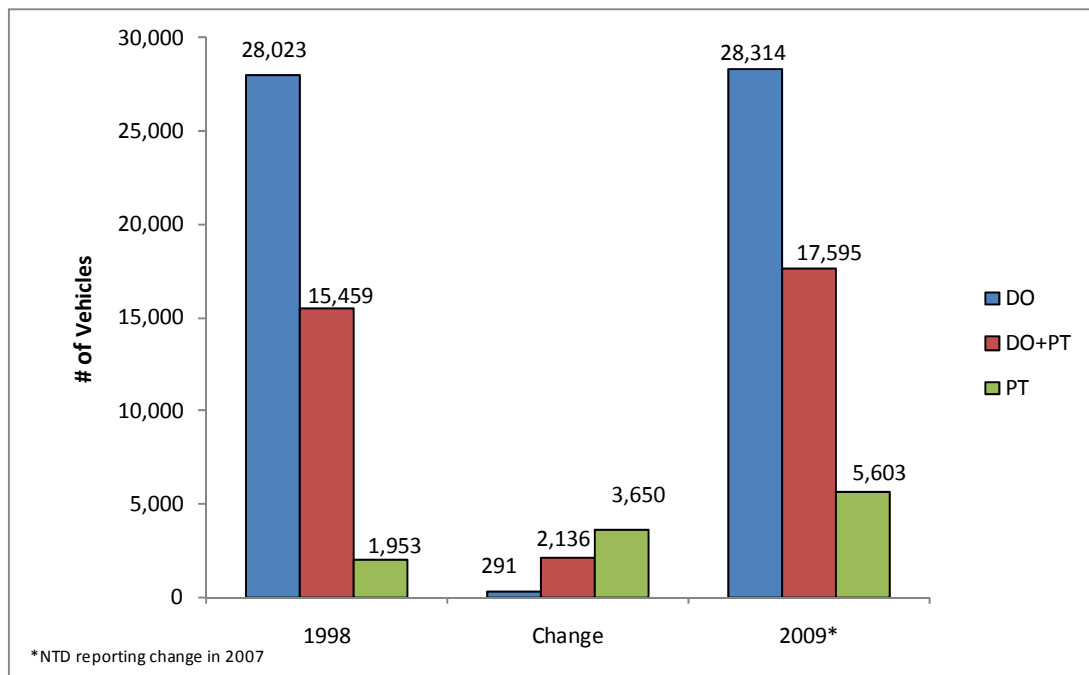
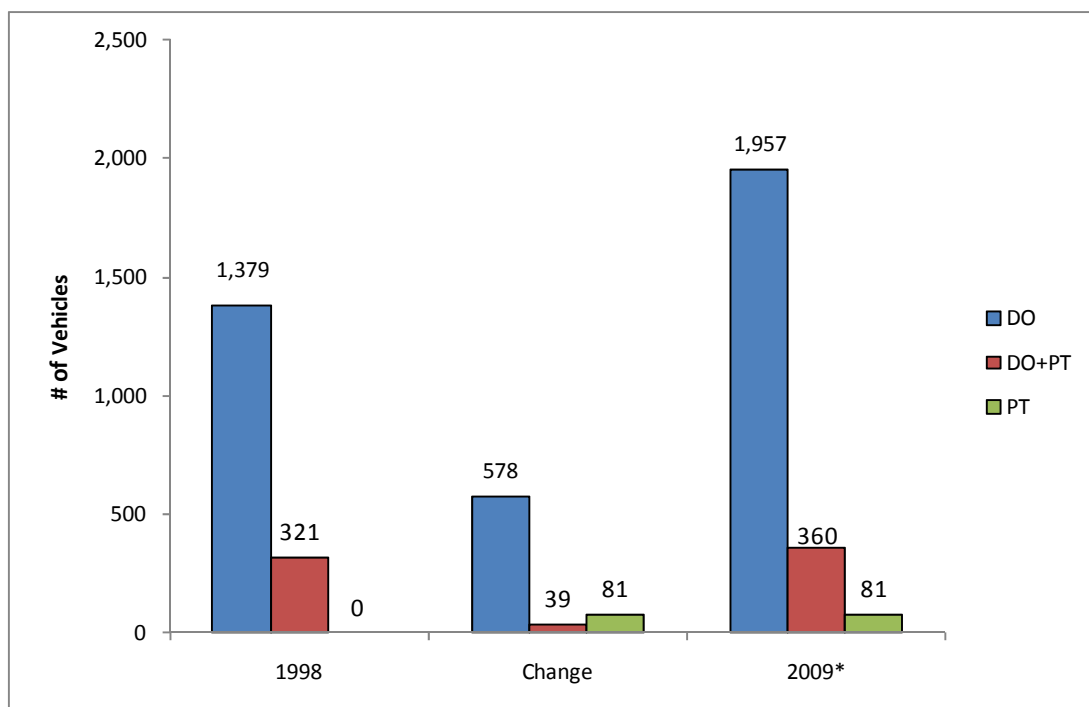


Figure 2 – Florida VOMS by Type of Agency, 1998 – 2009



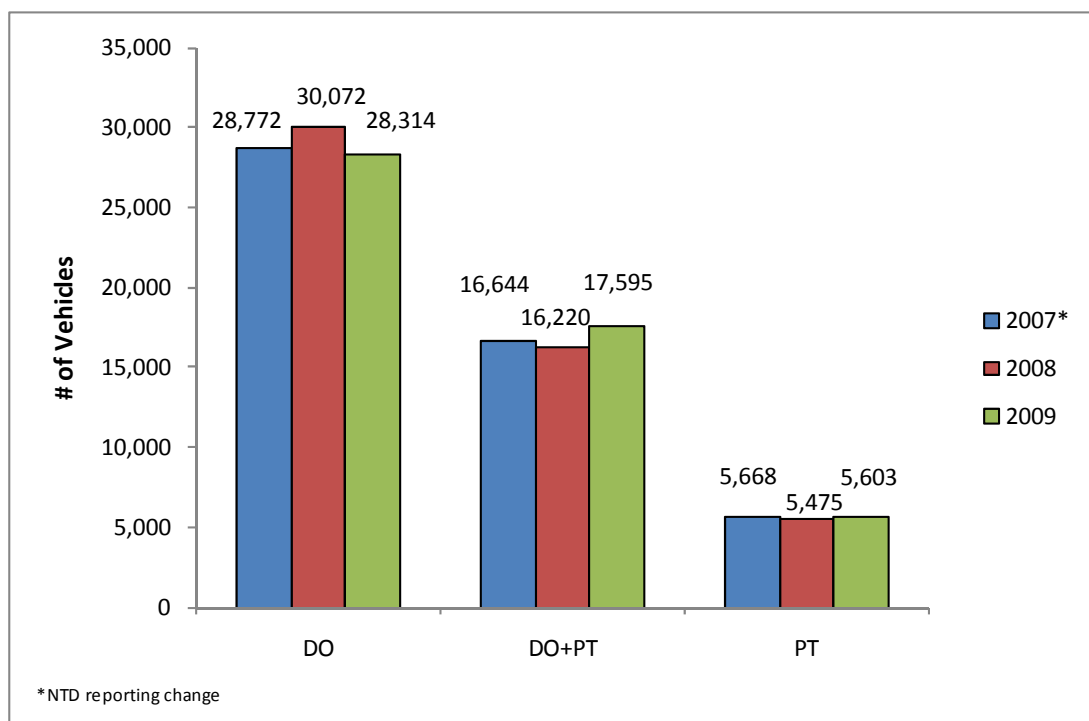
**Figure 3 – Change in U.S. VOMS by Type of Agency, 2009 versus 1998**



**Figure 4 – Change in Florida VOMS by Type of Agency, 2009 versus 1998**

U.S. VOMS following the reporting change for purchased transportation (Figure 5) illustrate a decline in directly operated VOMS that is consistent with in the review of data related to transit agencies (Table 8). Growth in total VOMS in 2009 versus 2007 occurred only in transit systems that directly operated and purchased fixed route bus service (growth of 5.7%).

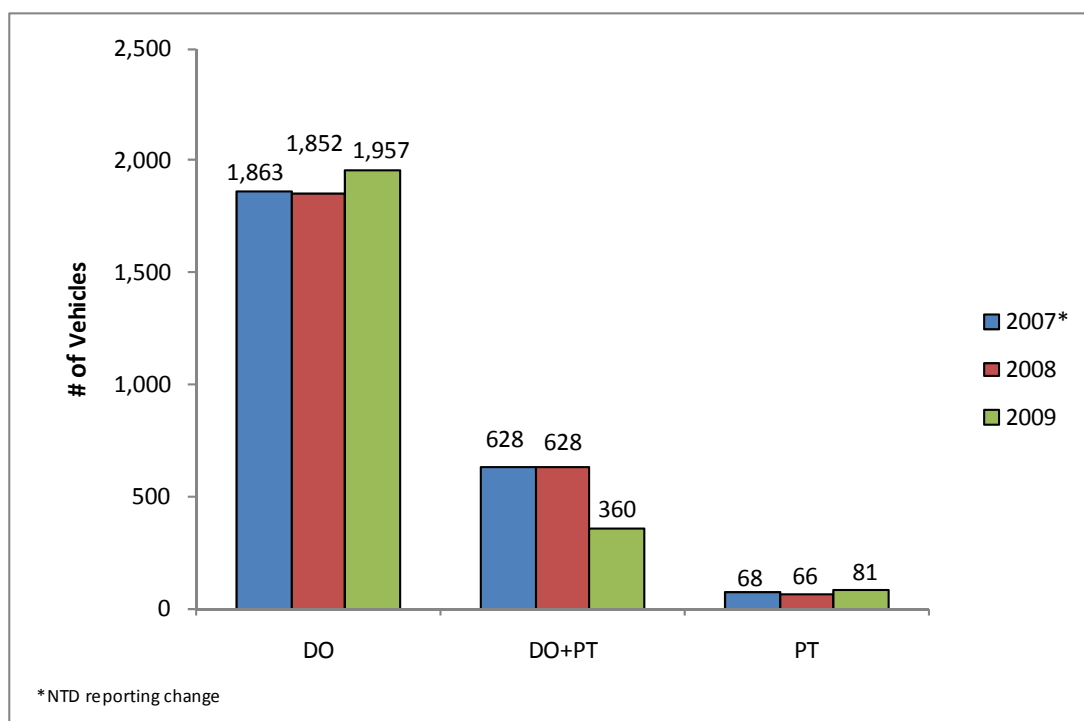
Nationally, directly operated VOMS, as a percent of total VOMS, declined from 56.3 percent to 55.0 percent, while purchased VOMS fell from 11.1 to 10.9 percent of total VOMS.



**Figure 5 – U.S. VOMS by Type of Agency, 2007 – 2009**

Florida VOMS following the reporting change for purchased transportation (Figure 6) were consistent with data related to Florida transit agencies (Table 6). Growth in total VOMS in 2009 versus 2007 occurred in Florida transit systems that directly operated all service (growth of 5.0%) and those that purchased all fixed route bus service (growth of 19.1%). A decline of 42.7 percent in VOMS was noted at agencies that provided both types of service.



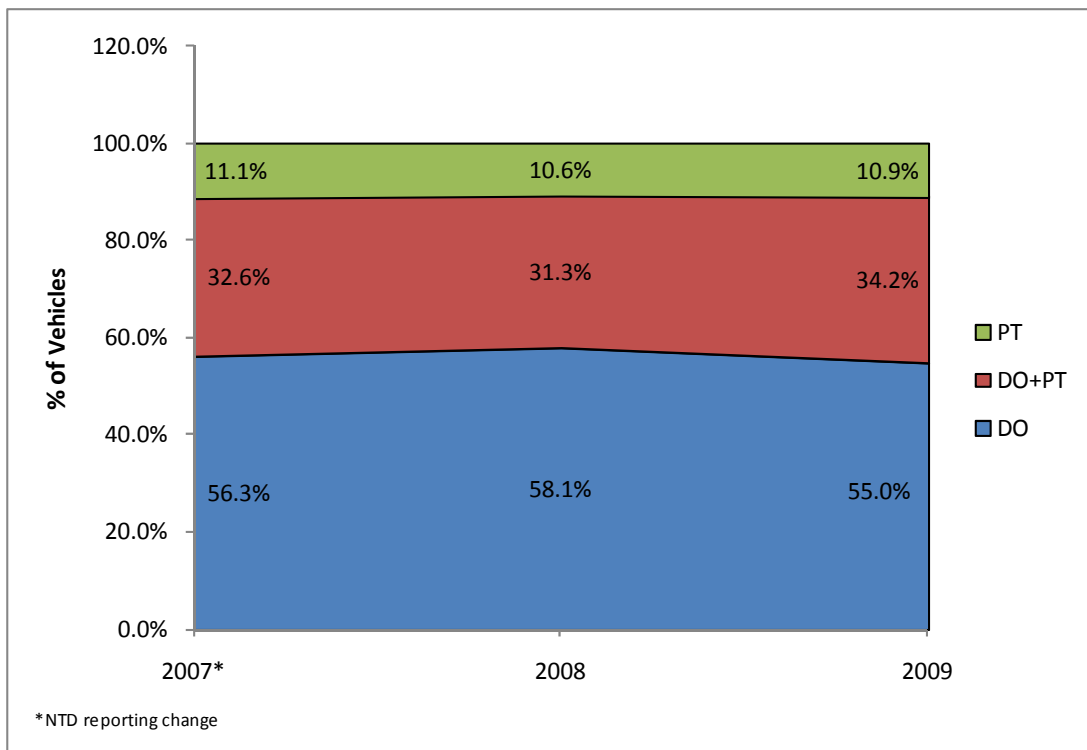


**Figure 6 – Florida VOMS by Type of Agency, 2007 – 2009**

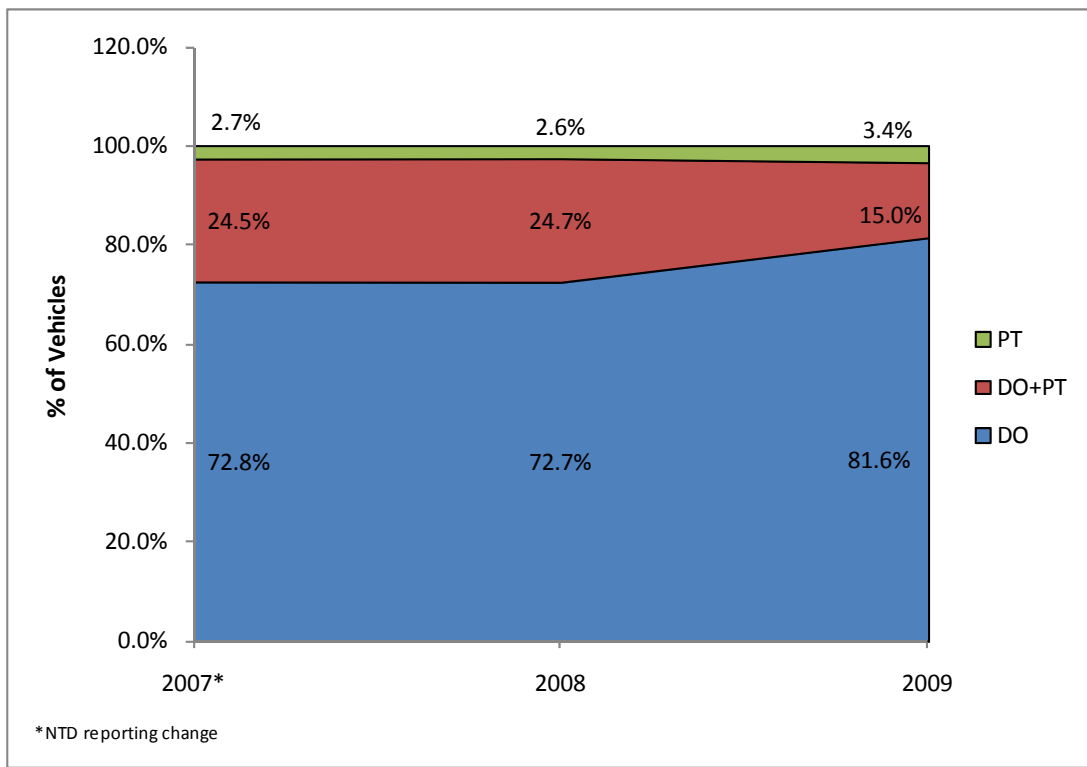
In Florida, from 2007 through 2009, directly operated VOMS as a percent of total VOMS grew from 72.8 percent to 81.6 percent, while VOMS at agencies providing directly operated and purchased fixed route bus service fell from 24.5 to 15.0 percent of total VOMS. Purchased VOMS as a percent of total VOMS grew from 2.7 to 3.4 percent.

It is possible that the shifts noted in U.S. data for 2008 versus 2007 (Figure 7) resulted from the reporting change instituted in 2007. The rise of directly operated VOMS and fall of purchased VOMS in 2008 is an expected consequence of the new reporting requirements, which would shift interagency purchased VOMS from the “purchased” transportation column to the “directly operated” designation. By 2009, however, those shifts were reversed.

The shift in Florida during the same period (Figure 8) differed from the change noted in the U.S. (Figure 7). Given the small sample size of Florida data, change at a single agency of significant size could be the source of the differences noted.



**Figure 7 – Percent of U.S. VOMS by Type of Agency, 2007 – 2009**

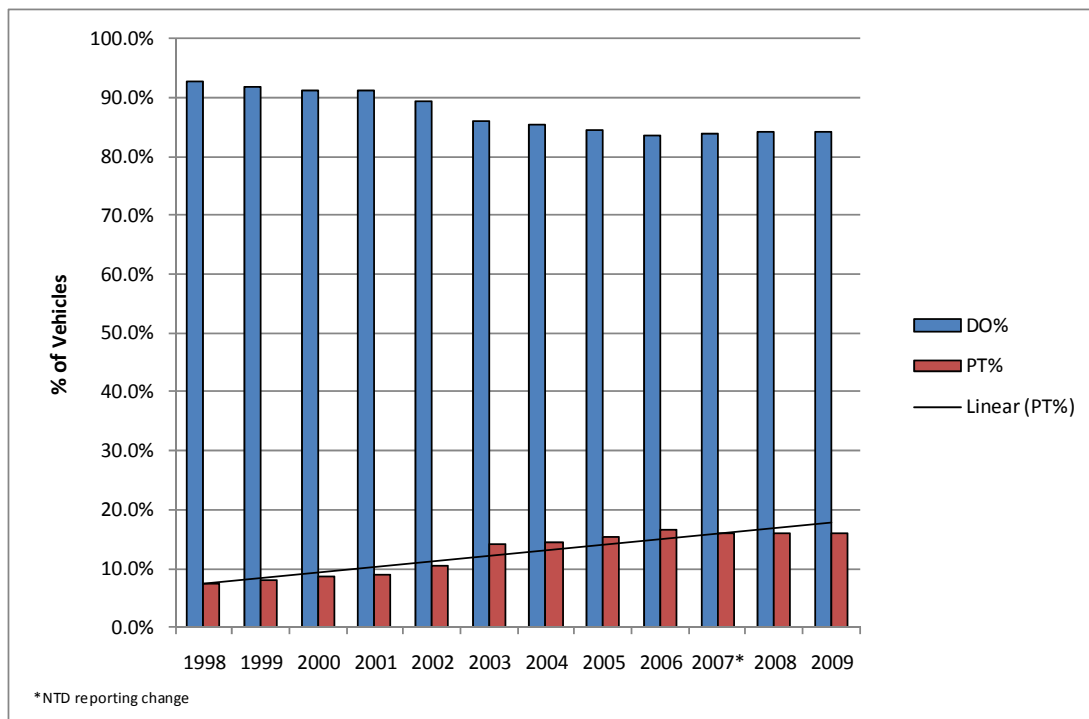


**Figure 8 – Percent of Florida VOMS by Type of Agency, 2007 – 2009**

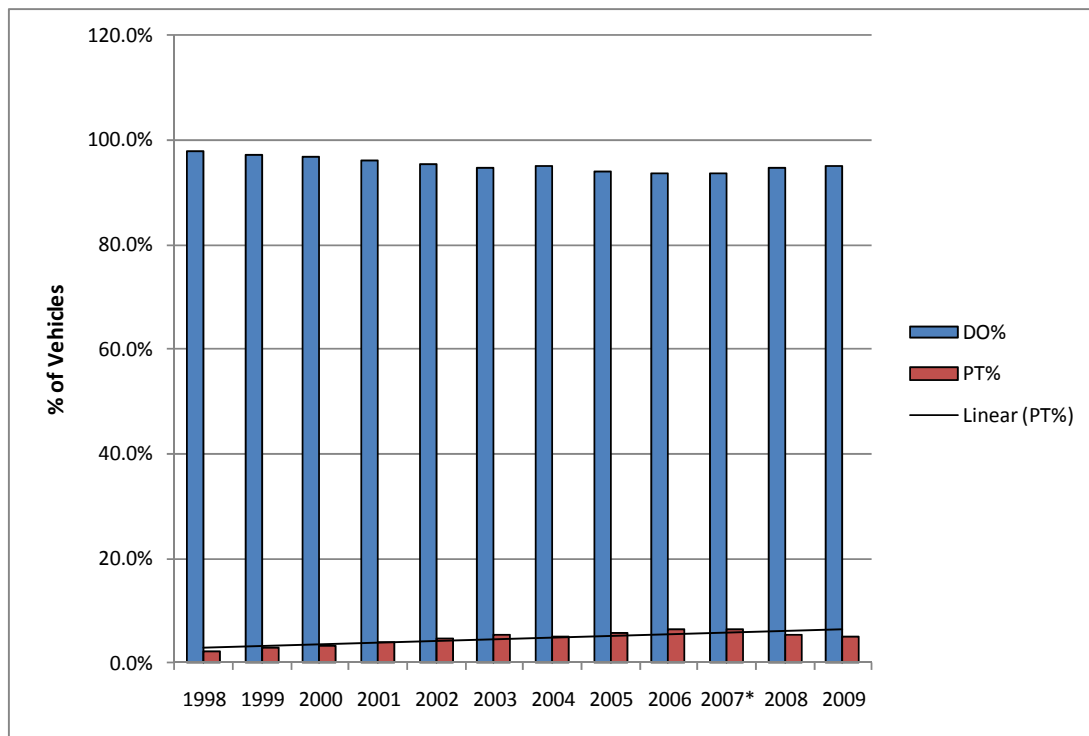
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The split between directly operated and purchased VOMS in the U.S. changed over time (Figure 9). Directly operated VOMS declined from 92.6 percent of total VOMS in 1998 to 84.1 percent of total VOMS in 2009. Purchased VOMS increased from 7.4 percent of total VOMS in 1998 to 15.9 percent of total VOMS in 2009.

The split between directly operated and purchased VOMS also changed in Florida over time (Figure 10), although, to a lesser degree. Directly operated VOMS declined from 97.9 percent of total VOMS in 1998 to 94.9 percent of total VOMS in 2009. Purchased VOMS increased from 2.1 percent of total VOMS in 1998 to 5.1 percent of total VOMS in 2009.



**Figure 9 – VOMS Percent of U.S. Total by Type of Service, 1998 – 2009**



**Figure 10 – Florida VOMS Percent of Total by Type of Service, 1998 – 2009**

Purchased U.S. VOMS peaked at 16.5 percent of total U.S. VOMS in 2006 (Figure 11). The decline in purchased VOMS to 16.0 percent of total VOMS in 2007 and the further decline to 15.8 percent of total VOMS in 2008 could be the result of the reporting change that was enacted in the 2007 NTD, requiring that interagency purchased service be reported as directly operated.

Similar to the trends noted for the U.S., purchased Florida VOMS peaked at 6.5 percent of total Florida VOMS in 2006 and 2007 (Figure 12). The decline in purchased VOMS to 5.3 percent of total VOMS in 2008 and the further decline to 5.1 percent of total VOMS in 2009 could also be the result of the reporting change that was enacted in the 2007 NTD, requiring that interagency purchased service be reported as directly operated.

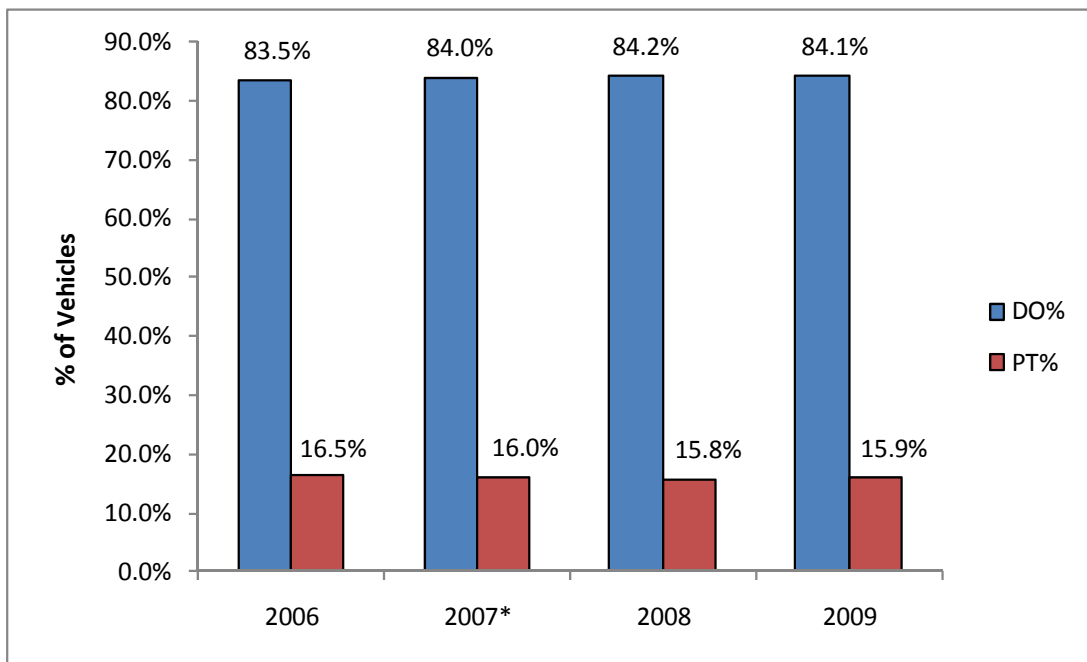


Figure 11 – Change in U.S. VOMS Percent of Total by Type of Service, 2006 – 2009

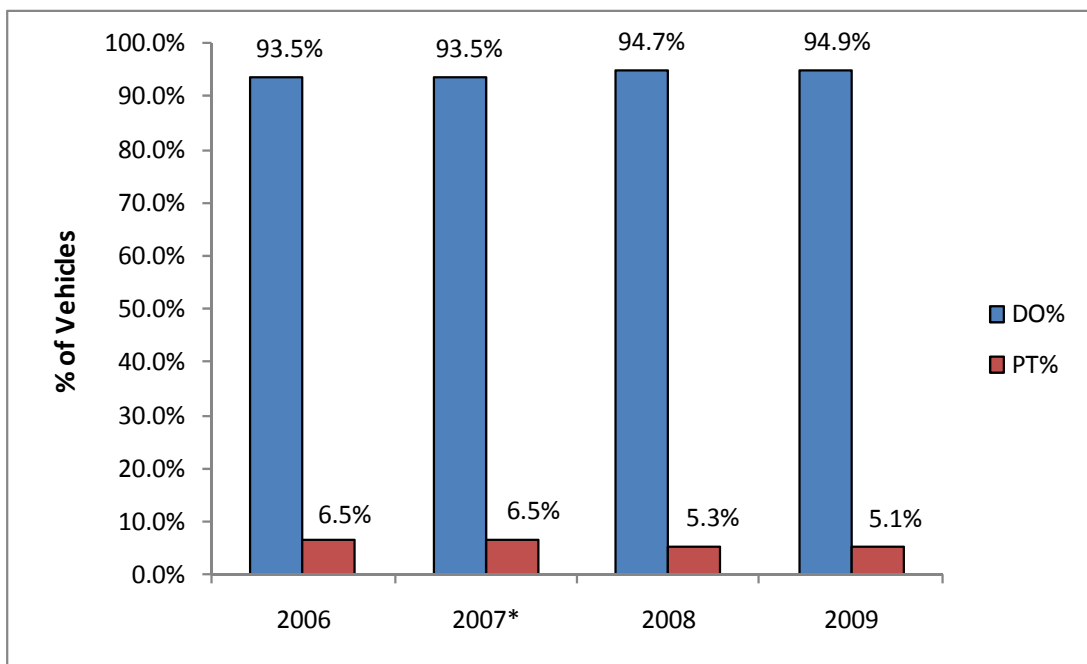


Figure 12 – Change in Florida VOMS Percent of Total by Type of Service, 2006 – 2009

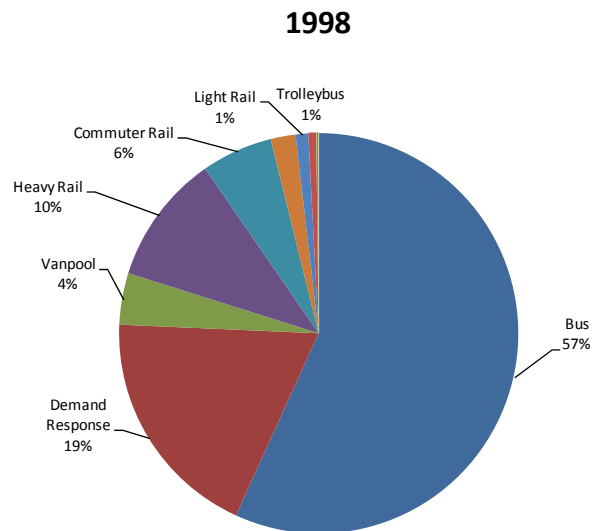
## **TRANSIT AGENCY PROFILE – 1998 / 2008**

A national profile of agencies was developed to understand fully the extent of privately operated bus service. Agencies used for data analysis in the TRB Special Report 258 included a significant number of U.S. transit agencies contained in the 1998 NTD as well as a number of small agencies that typically do not report NTD data. Since it was not possible to replicate the participant pool of TRB Special Report 258, researchers assembled data based on all agencies that provided fixed route bus service as reported in the 1998 NTD. Those data were then studied in comparison to all agencies that reported fixed route bus service in the 2008 NTD. The following factors were determined for each agency.

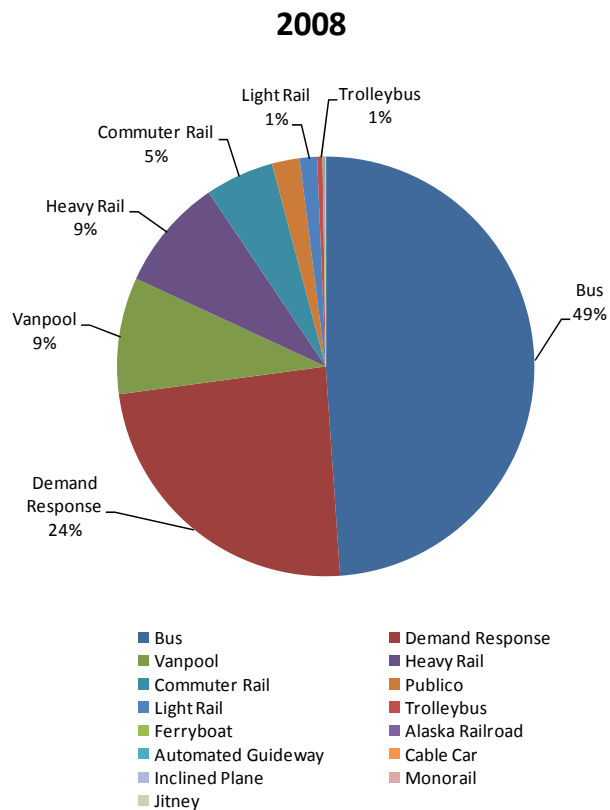
### **Factors Used in Analysis**

- |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"><li>• State</li><li>• Agency Name</li><li>• Year – 1998 / 2008</li><li>• Agency ID</li><li>• Mode – MB</li><li>• Type of Service – DO / PT</li><li>• Agency Service Types<ul style="list-style-type: none"><li>• 100% Directly Operated (DO)</li><li>• 100% Purchased (PT)</li><li>• Both DO and PT (DO+PT)</li></ul></li><li>• Size – Agency Total VOMS for all Modes<ul style="list-style-type: none"><li>• Small &lt;50 VOMS</li><li>• Medium 50-249 VOMS</li><li>• Large <math>\geq</math>250 VOMS</li></ul></li><li>• Total Operating Expenses (\$000s)</li><li>• Service Consumed (000s)<ul style="list-style-type: none"><li>• Unlinked Passenger Trips (000s)</li><li>• Passenger Miles (000s)</li></ul></li></ul> | <ul style="list-style-type: none"><li>• FTA Regions<ul style="list-style-type: none"><li>• Pacific Northwest – WA, OR, ID, AK</li><li>• New England – RI, NH, MA, ME, CT, VT</li><li>• New York-New Jersey – NY, NJ</li><li>• Mid-Atlantic – PA, WV, VA, DC, MD, DE</li><li>• Southeast – TN, NC, MS, KY, GA, FL, AL, SC, PR</li><li>• Great Lakes – WI, OH, MN, MI, IN, IL</li><li>• Southwest – TX, OK, NM, LA, AR</li><li>• Plains – NE, MO, IA, KS</li><li>• Mountain - UT, SD, MT, CO, ND, WY</li><li>• Pacific Southwest – NV, HI, CA, AZ</li></ul></li><li>• State of Florida Transit Agencies</li><li>• Service Supplied (000s)<ul style="list-style-type: none"><li>• Vehicle Miles (000s)</li><li>• VehicleRevenue Miles (000s)</li><li>• Vehicle Hours (000s)</li><li>• Vehicle Revenue Miles (000s)</li></ul></li></ul> |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

Fixed route bus service accounted for 56.8 percent of VOMS operated by all modes of transportation in 1998 (Figure 13). Despite growth of 13.9 percent, fixed route bus service fell to 49.0 percent of all VOMS operated in 2008 (Figure 14) due to growth in other modes. Modes that experienced significant growth since 1998 included vanpool (185.5% growth), light rail (72.5% growth), and demand response (67.7% growth).

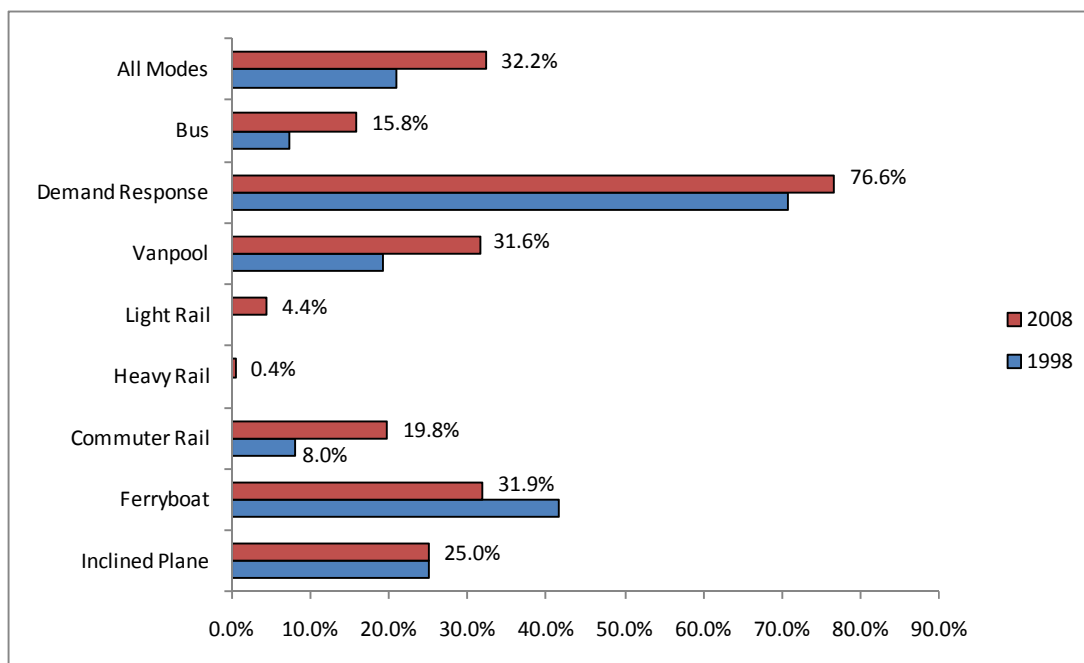


**Figure 13 – Vehicles Operated in Maximum Service,  
Percent of Total, 1998 All Modes**



**Figure 14 – Vehicles Operated in Maximum Service,  
Percent of Total, 2008 All Modes**

The percentage of purchased fixed route bus service has slightly more than doubled since 1998 in the U.S., but remains below the rate of all modes (Figure 15). Demand response continued to expand purchased service, and increases in purchased service are notable in all sectors of rail transit.



**Figure 15 – Purchased VOMS Percent of Total VOMS by Mode, 2008 versus 1998**

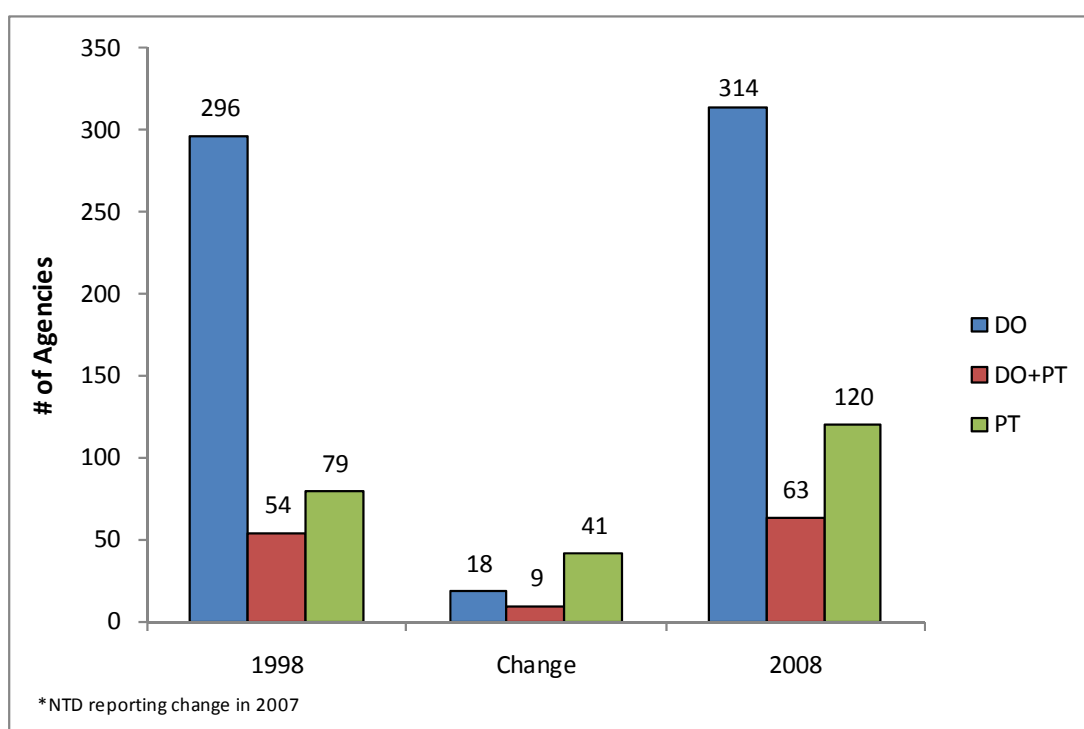
To gain an understanding of current contracting practices, transit agencies were categorized based on three types of service – agencies that directly operated all fixed route bus service (DO), agencies that directly operated and purchased fixed route bus service (DO+PT), and agencies that purchased all fixed route bus service (PT).

### Fixed Route Bus Transit Agencies by Type of Service

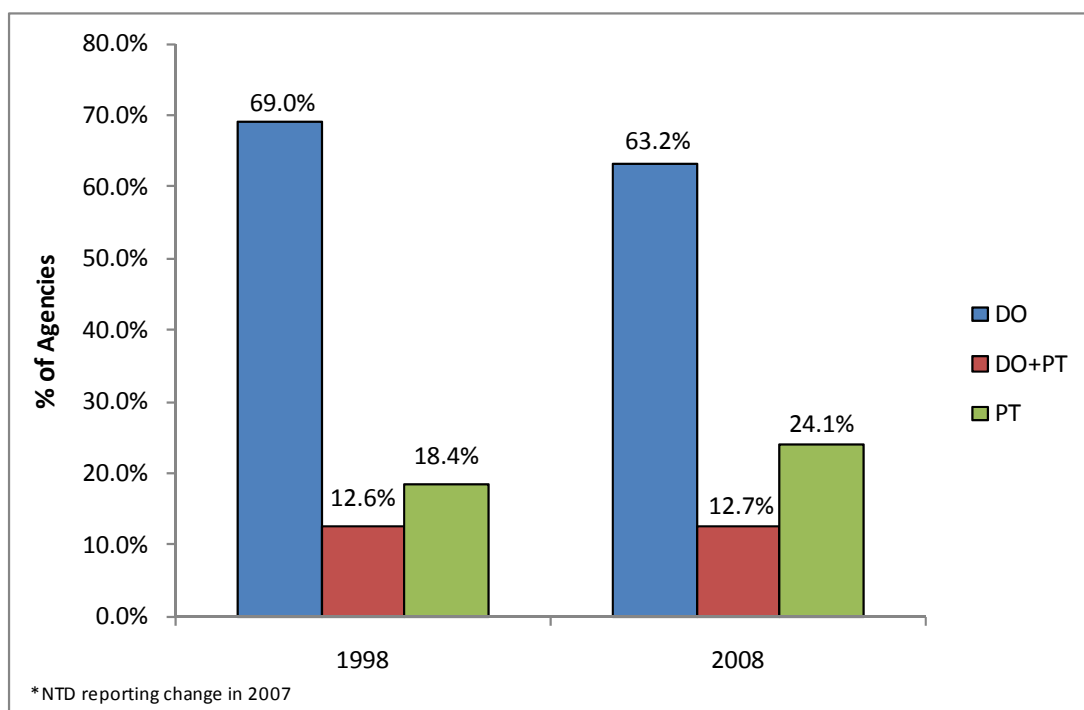
The number of transit agencies grew by 68 (15.9 percent) from 1998 to 2008 (Figure 16), and 41 of the 68 new agencies provided fixed route bus service pursuant to a contract with a private provider nationally.



While agencies that directly operated all service continued to represent the majority of all transit agencies, a greater percent of agencies that purchased all service emerged in 2008 (Figure 17). In the U.S., agencies that purchased all service grew from 18.4 percent of total agencies in 1998 to 24.1 percent of total agencies in 2008. The number of agencies that directly operated and purchased services as a percent of total agencies remained relatively constant, while agencies that directly operated fell from 69.0 percent to 63.2 percent of total agencies.



**Figure 16 – U.S. Transit Agencies by Type of Service, 2008 versus 1998**

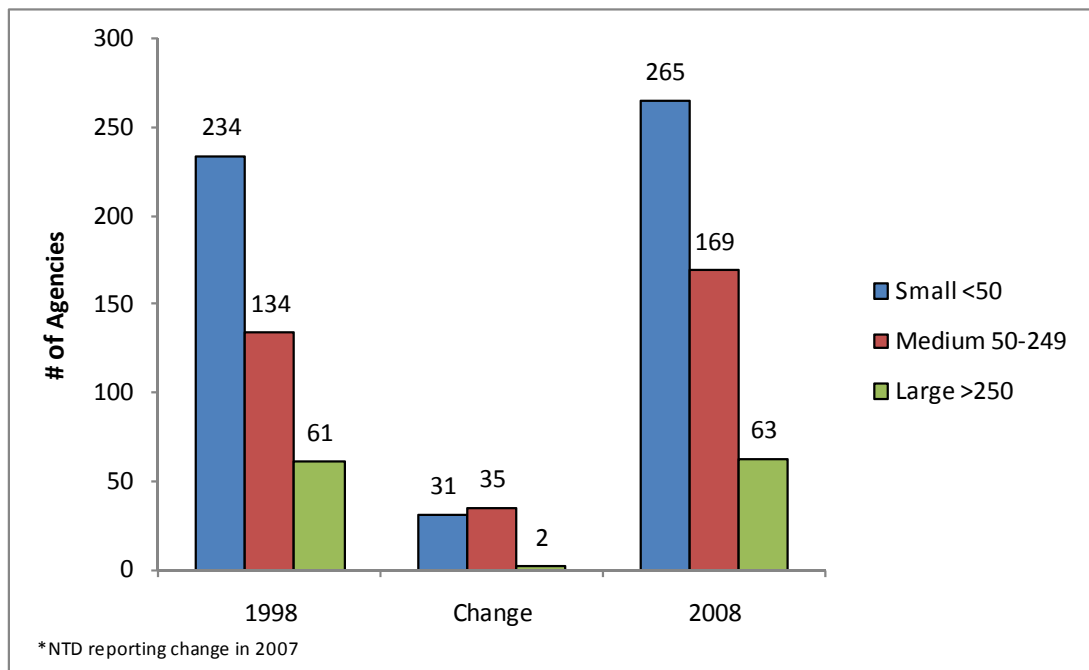


**Figure 17 – U.S. Transit Agencies Percent of Total by Type of Service, 2008 versus 1998**

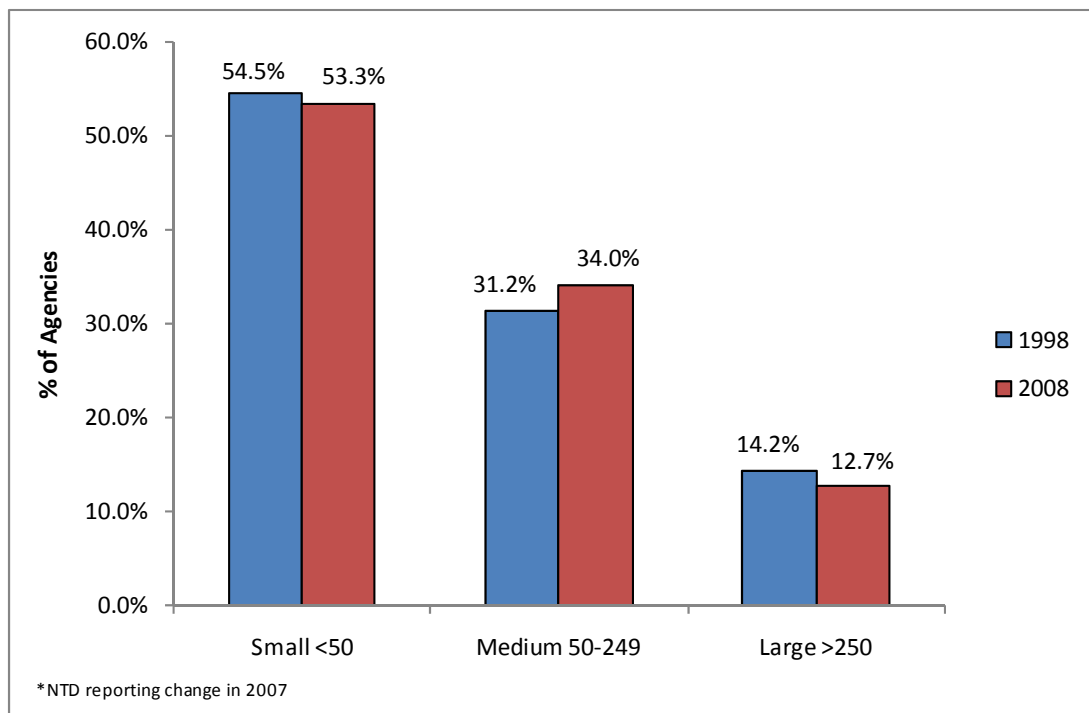
### **Fixed Route Bus Transit Agencies by Size**

Transit agencies were ranked by size using VOMS operated by the transit agency for all modes. Small agencies were defined as those agencies that operated fewer than 50 VOMS; medium agencies operated between 50 and 249 VOMS; and, large agencies operated 250 or more VOMS. The number of small transit agencies grew by 31 (13.2 percent), and the number of medium agencies grew by 35 (26.1%) from 1998 to 2008 (Figure 18). Only two large agencies were added in 2008 (3.3%).

While small agencies continued to represent the majority of all transit agencies, a greater percent of medium-sized agencies emerged in 2008 (Figure 19). Small agencies as a percent of total agencies fell from 54.5 percent in 1998 to 53.3 percent in 2008. Large agencies also declined in percent of total from 14.2 percent in 1998 to 12.7 percent in 2008. Growth was noted only in medium-sized agencies from 31.2 percent of total agencies in 1998 to 34.0 percent in 2008.



**Figure 18 – U.S. Transit Agencies by Size, 2008 versus 1998**

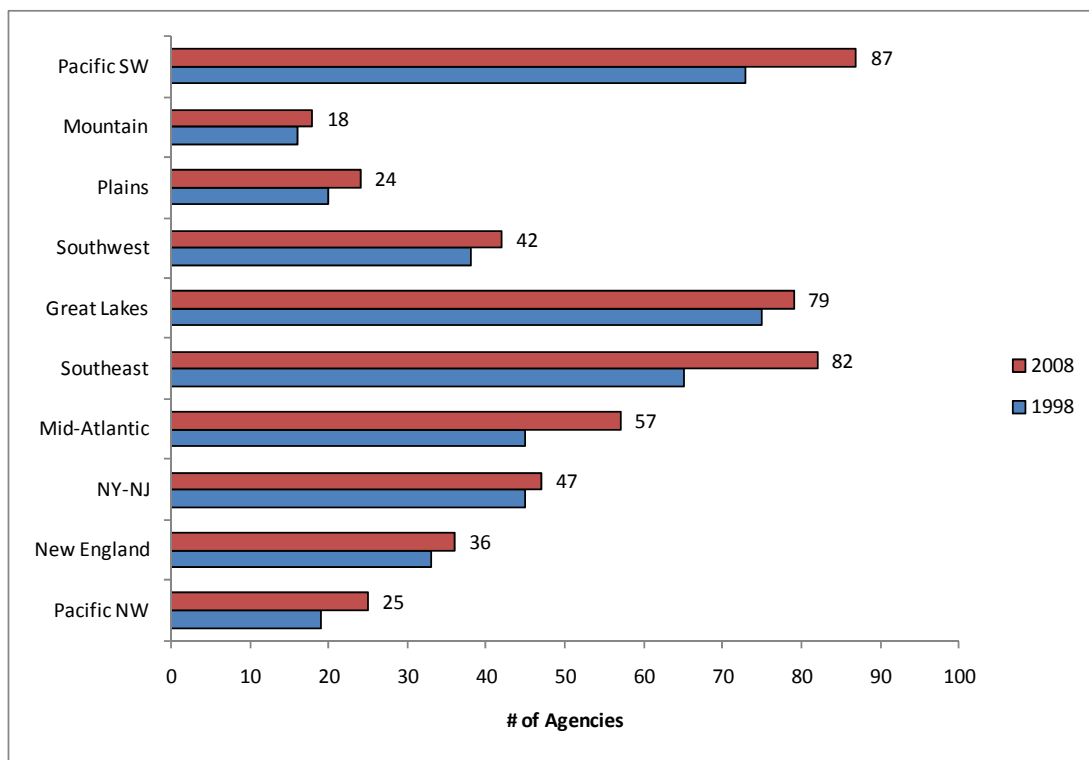


**Figure 19 – U.S. Transit Agencies Percent of Total by Size, 2008 versus 1998**

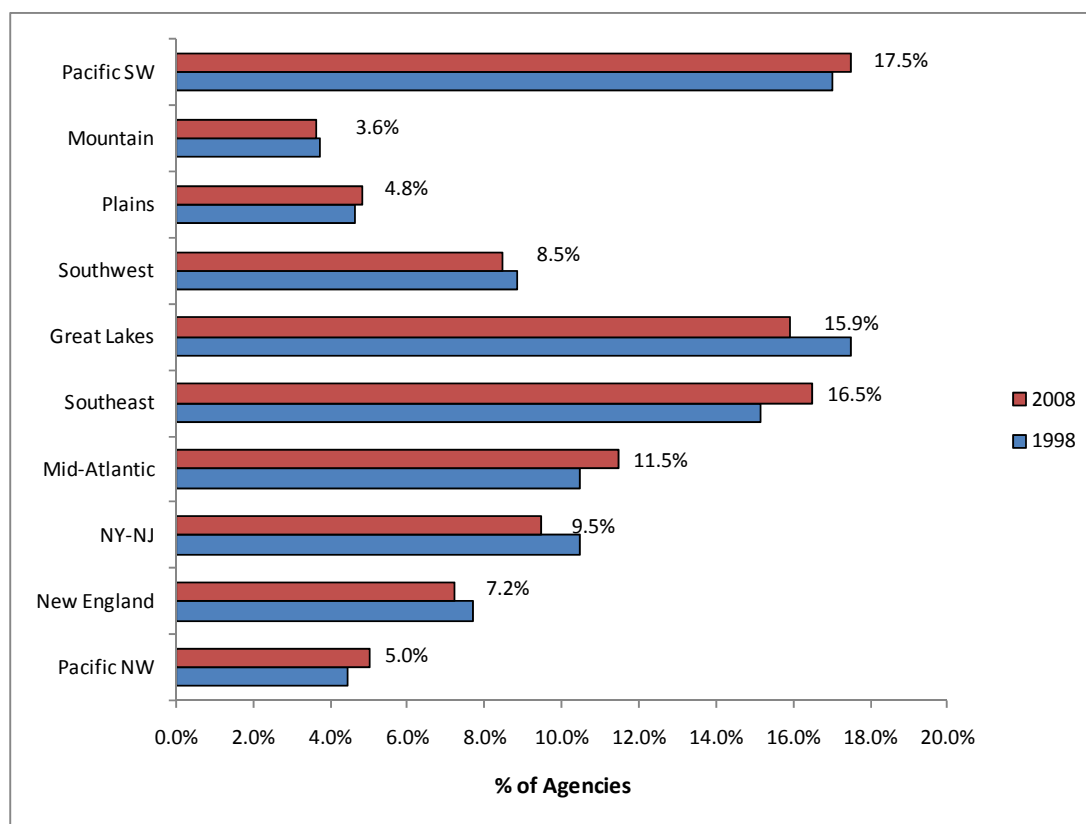
### **Fixed Route Bus Transit Agencies by Region**

Transit agencies were assembled by region using FTA's ten regional designations. The Southeast and Pacific Southwest regions reported the largest numbers of new agencies in 2008 versus 1998 (Figure 20), with 17 agencies and 14 agencies, respectively. With six new agencies, the Pacific Northwest region reported the highest rate of growth (31.6%), followed by the Mid-Atlantic region (26.7%), and the Southeast region (26.2%).

In 2008 (Figure 21), the Pacific Southwest region reported the highest percent of total agencies (17.5%). The Pacific Southwest region was followed by the Southeast region (16.5% of total agencies), and the Great Lakes region (15.9% of total agencies).



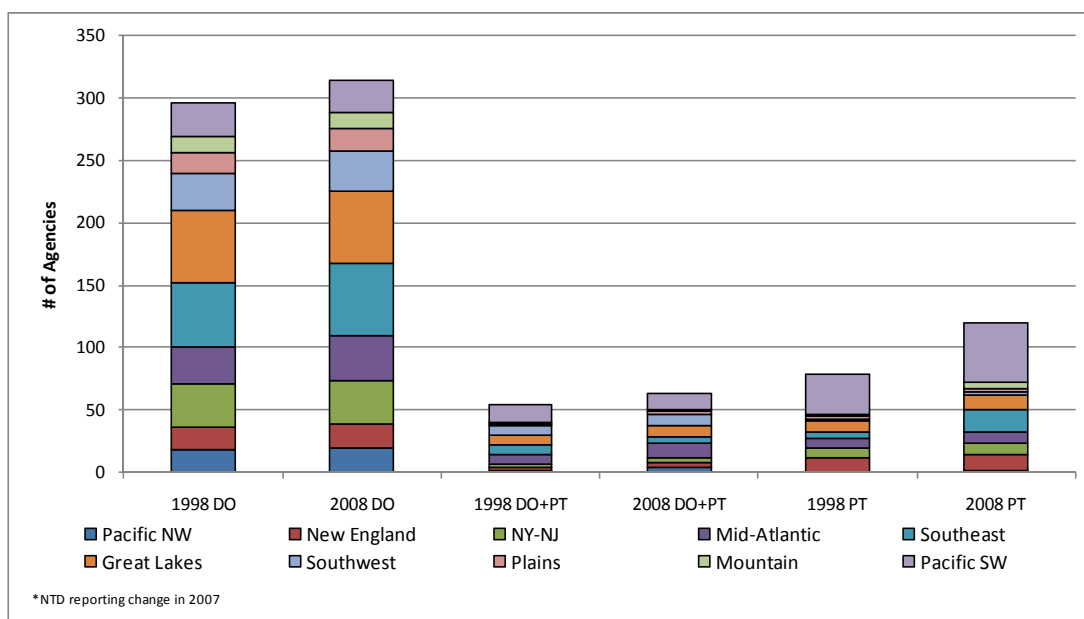
**Figure 20 – U.S. Transit Agencies by Region, 2008 versus 1998**



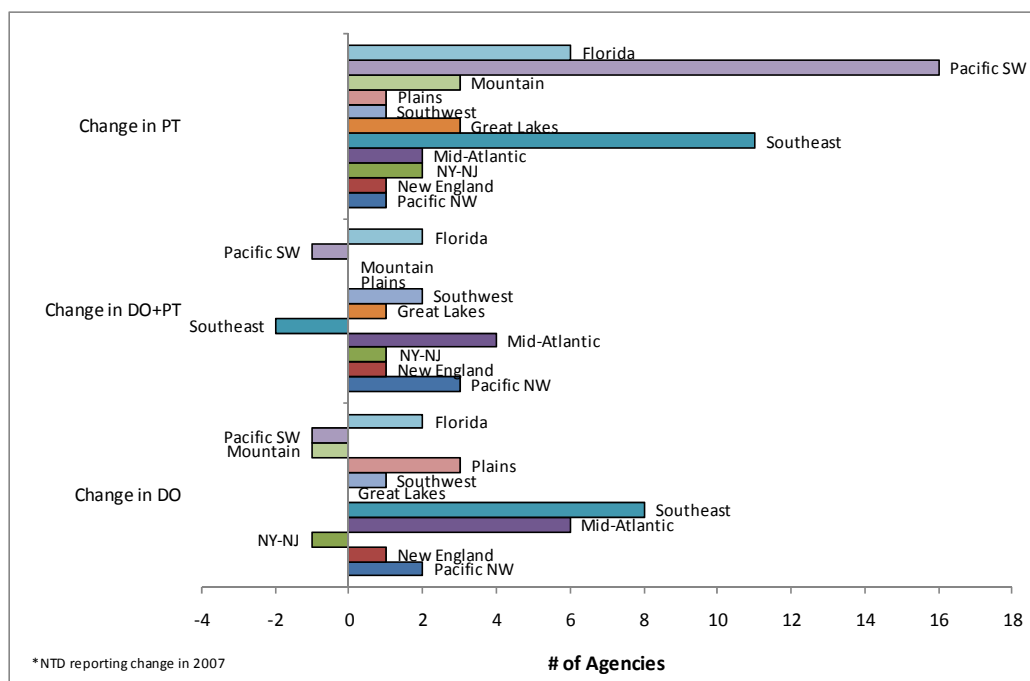
**Figure 21 – U.S. Transit Agencies Percent of Total by Region, 2008 versus 1998**

Growth by type of service within each region (Figure 22) illustrates that the Mid-Atlantic region added six new directly operated systems for the highest rate of growth (20.0%) for that type of service, the Pacific Northwest region added three new combined service systems for the highest rate of growth (300.0%) of that type of service, and the Southwest added 11 new purchased systems for the highest rate of growth (183.3%) for that type of service.

The actual changes in the number of transit systems by type and by region are presented (Figure 23) graphically to illustrate regional and Florida growth in 2008 versus 1998. The number of all three types of transit systems in Florida grew, with the most growth noted in the number of agencies (6 new agencies) that purchase all service. Listings of Florida transit agencies that operated fixed route bus service in 1998 (A-2) and 2008 (A-3) are provided in Appendix A.



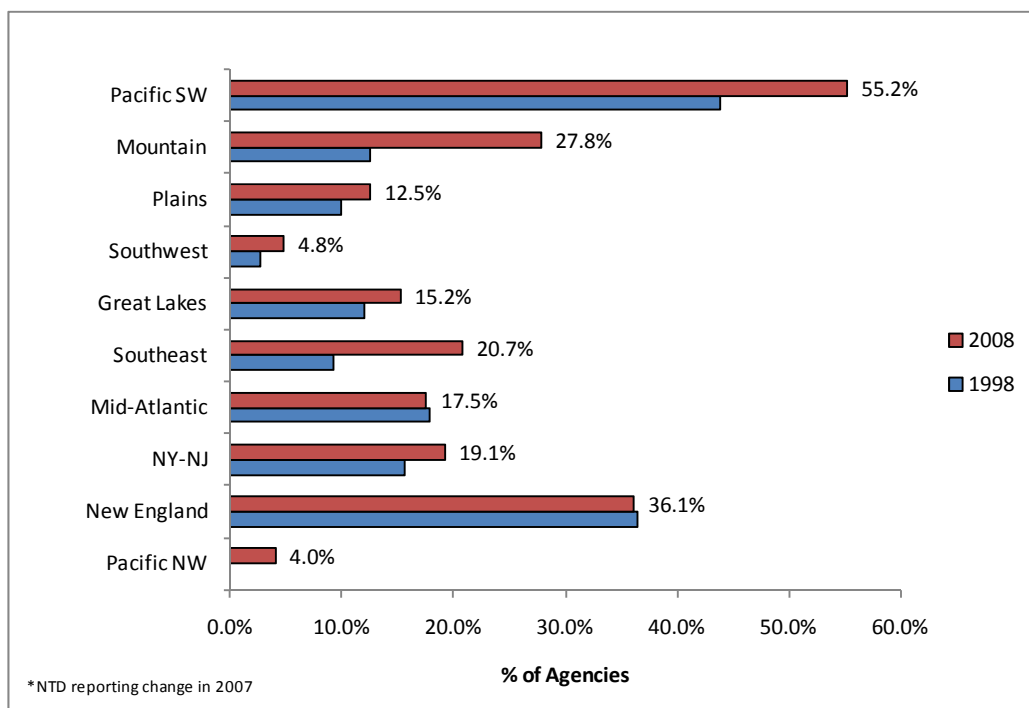
**Figure 22 – U.S. Agencies by Region by Type of Service, 2008 versus 1998**



**Figure 23 – Change in the Number of U.S. Agencies by Region by Type of Service, 2008 versus 1998**

The number of agencies as a percent of total agencies that purchased all service (Figure 24) increased in all regions with the exception of the New England region. The Pacific Southwest

region reported the highest percentage of agencies that purchased all service (55.2%), followed by the New England region (36.1%), and the Mountain region (27.8%).



**Figure 24 – Percent of U.S. Agencies by Region – Contract All Service, 2008 versus 1998**

### **Fixed Route Bus VOMS by Region**

Purchased VOMS increased in all regions in 2008 compared to 1998, while directly operated VOMS grew in six regions and declined in four regions (Figure 25). The Southeast region reported highest rate of growth (23.6%) for directly operated service. Directly operated VOMS declined in the Southwest, Plains, Mountain, and Pacific Southwest regions. The Mountain region reported the highest rate of growth (540.0%) for purchased service.

The actual changes in the number of VOMS by type and by region are presented (Figure 26) graphically to illustrate regional and Florida growth in 2008 versus 1998. Florida directly operated and purchased VOMS grew by 747 VOMS (44.9%) and 99 VOMS (275%), respectively.

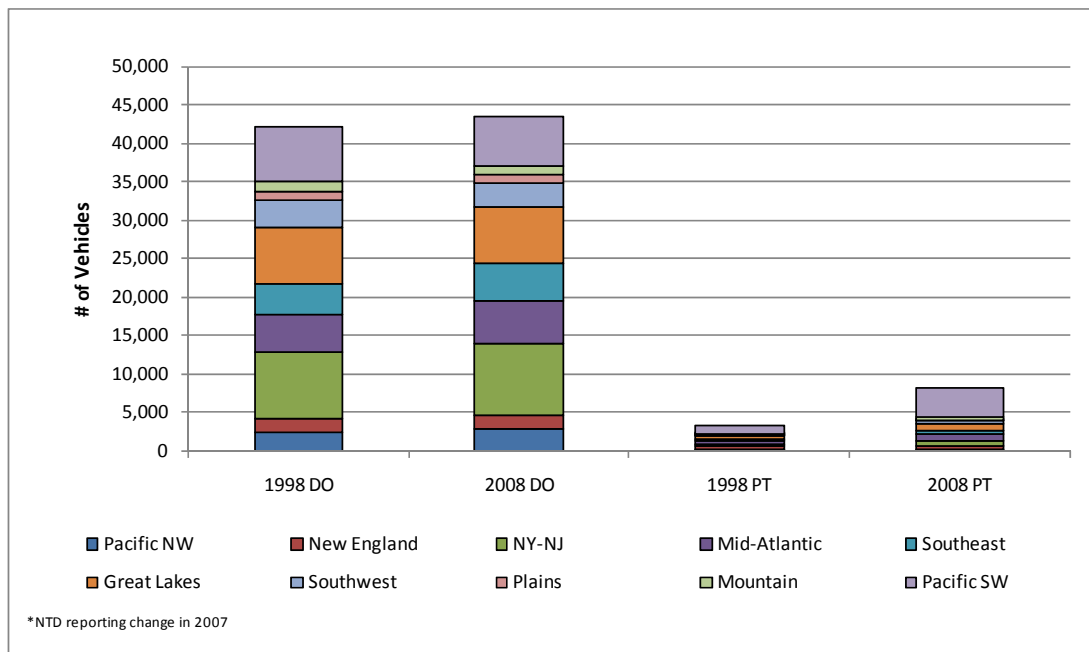


Figure 25 – VOMS by Region by Type of Service, 2008 versus 1998

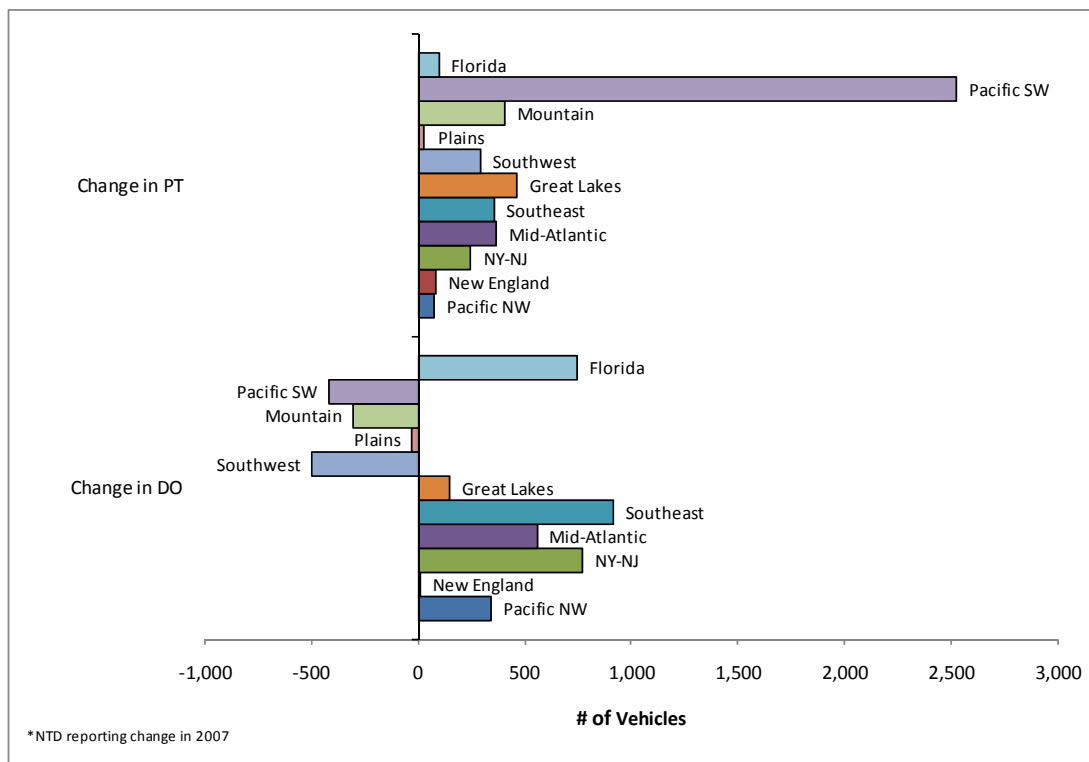
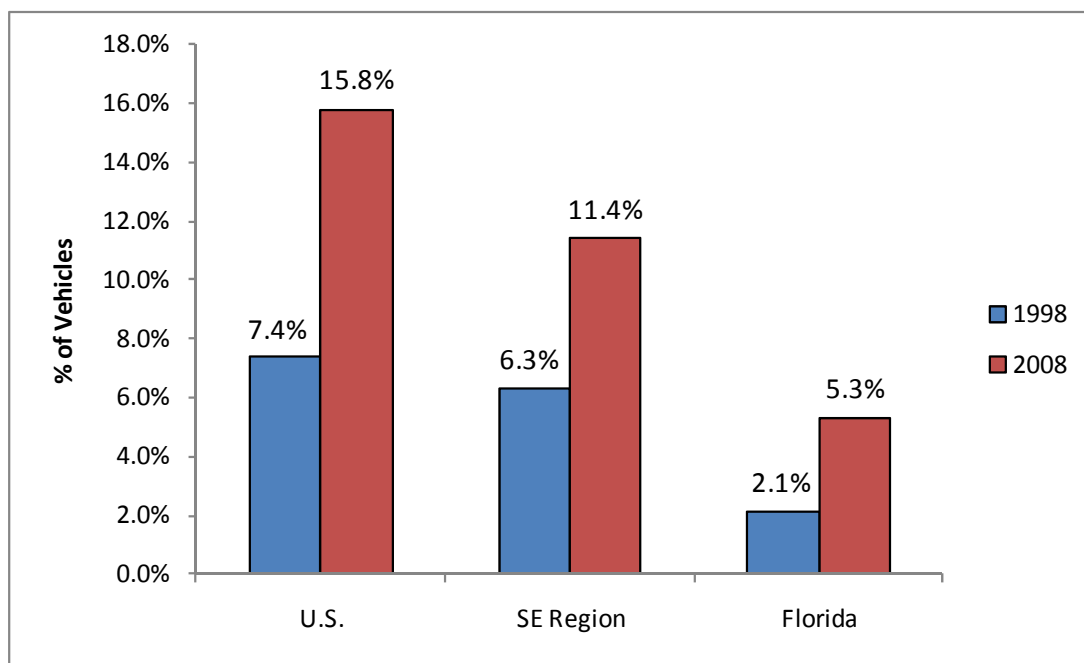


Figure 26 – Change in VOMS by Type of Service, 2008 versus 1998



Purchased VOMS as a percent of total VOMS (Figure 27) increased in Florida, the Southeast region as well as in the U.S.; however, Florida's rate of purchased VOMS remained below the region and nation.

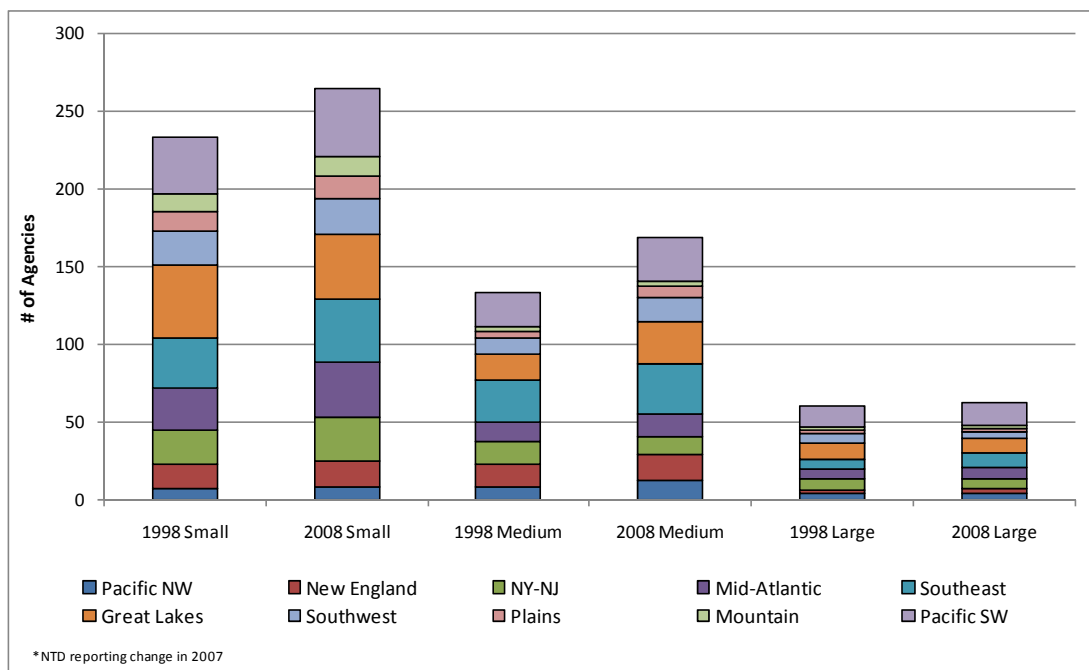


**Figure 27 – Percent of Purchased VOMS by Florida, SE Region and All Regions, 2008 versus 1998**

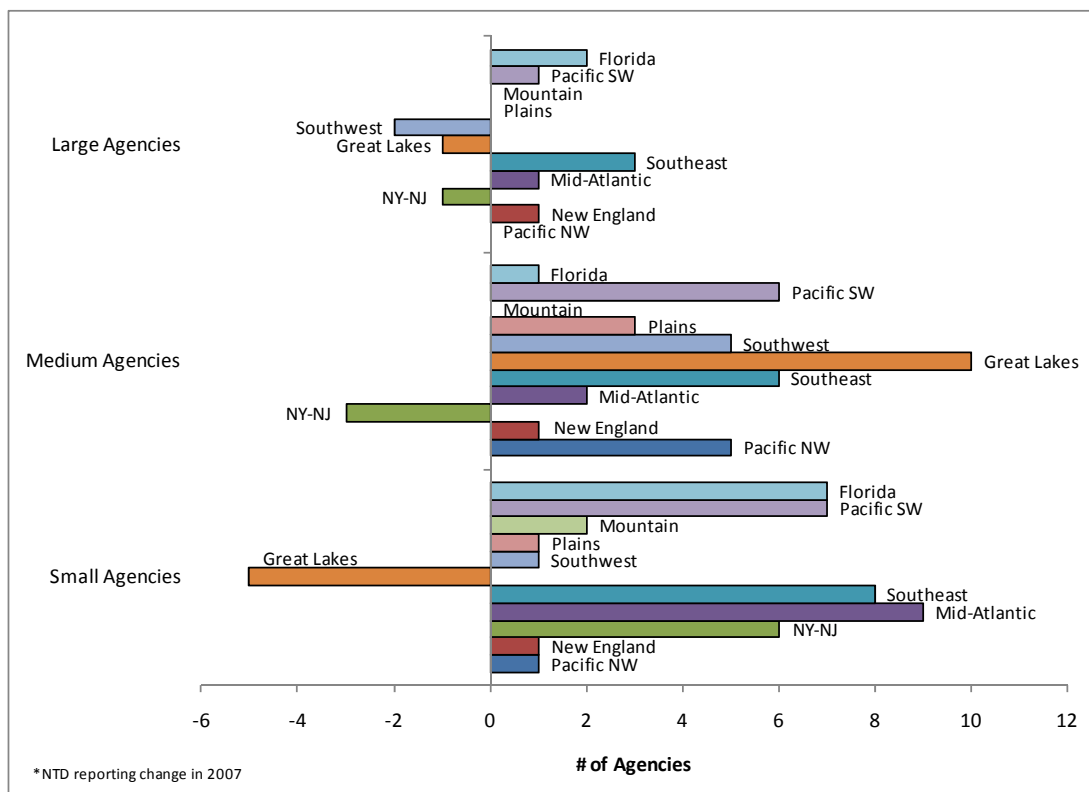
### **Fixed Route Bus Transit Agencies by Region and Size**

The Mid-Atlantic region added nine new small agencies (33.3%), the Great Lakes region added 10 new medium agencies (58.8%), and both the New England and Southeast regions increased large agencies by 50 percent (Figure 28).

The actual changes in the number of agencies by type and by region are presented (Figure 29) graphically to illustrate regional and Florida growth in 2008 versus 1998. Florida added seven small agencies, one medium agency, and two large agencies.



**Figure 28 – U.S. Agencies by Region by Size, 2008 versus 1998**



**Figure 29 – Change in the Number of U.S. Agencies by Size, 2008 versus 1998**

**Purchased VOMS by Agency Size**

Purchased VOMS as a percent of total VOMS (Figure 30) are presented by agency size for Florida, the Southeast region, and the U.S. Regional minimum VOMS and maximum VOMS are also included.

Over time, Florida agencies purchased more VOMS as a percent of total VOMS at small and medium agencies, which is consistent not only with growth patterns based on agency size, but also with previous studies in this area.

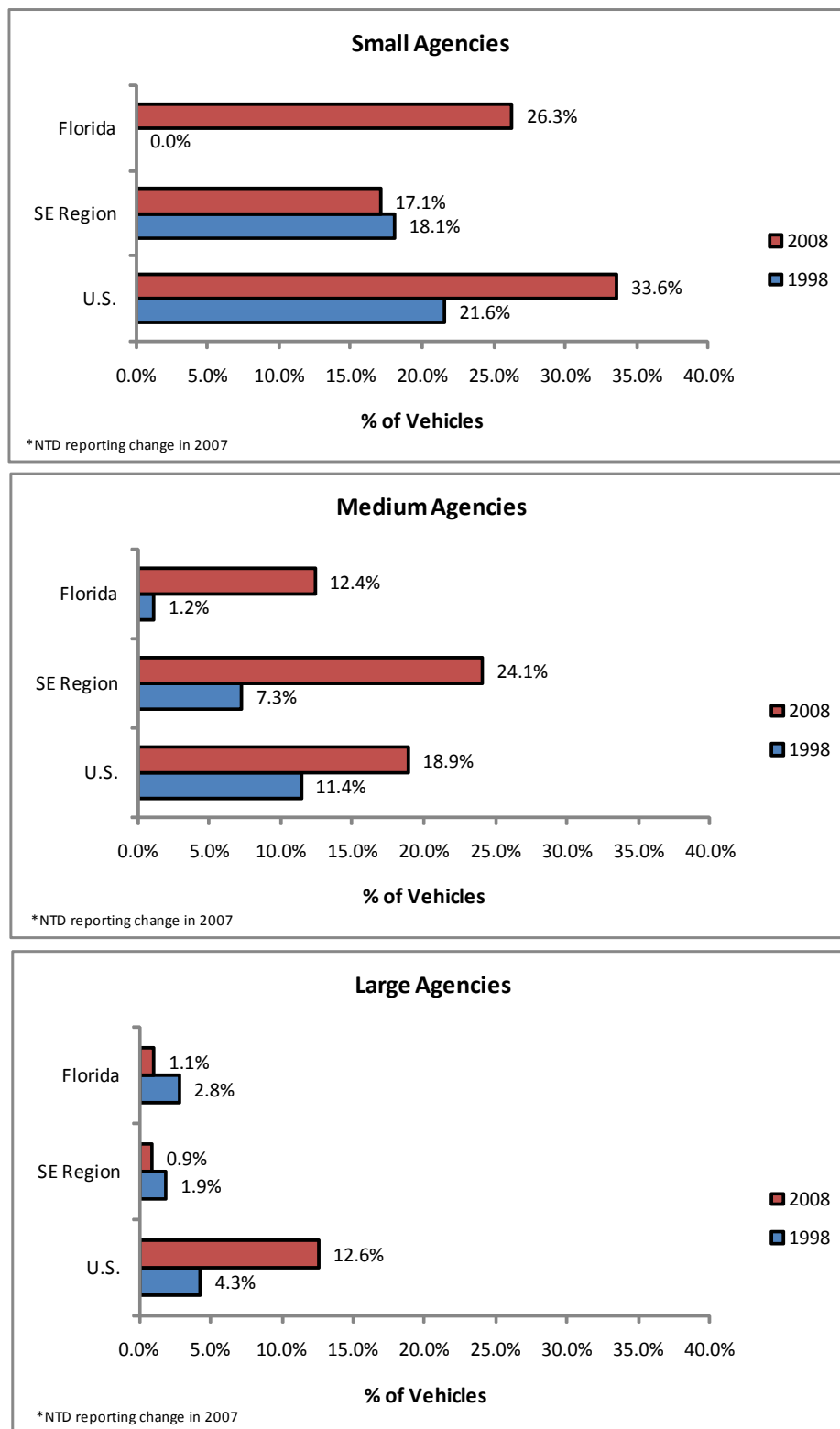


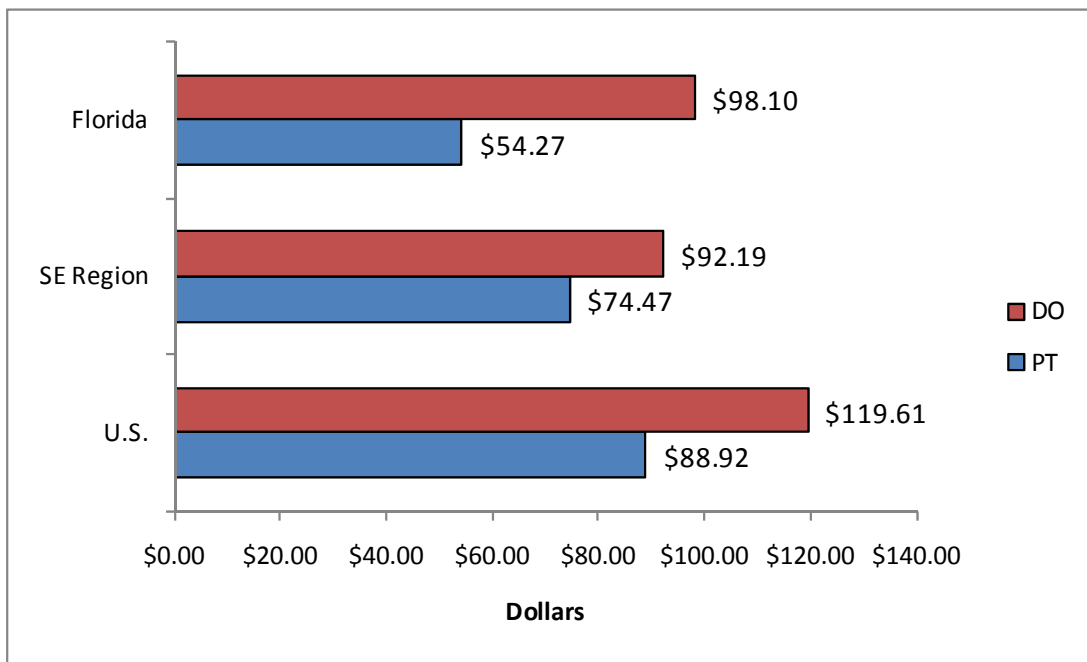
Figure 30 – Percent of Purchased VOMS by Agency Size

## **COMPARATIVE ANALYSIS OF COST EFFECTIVENESS**

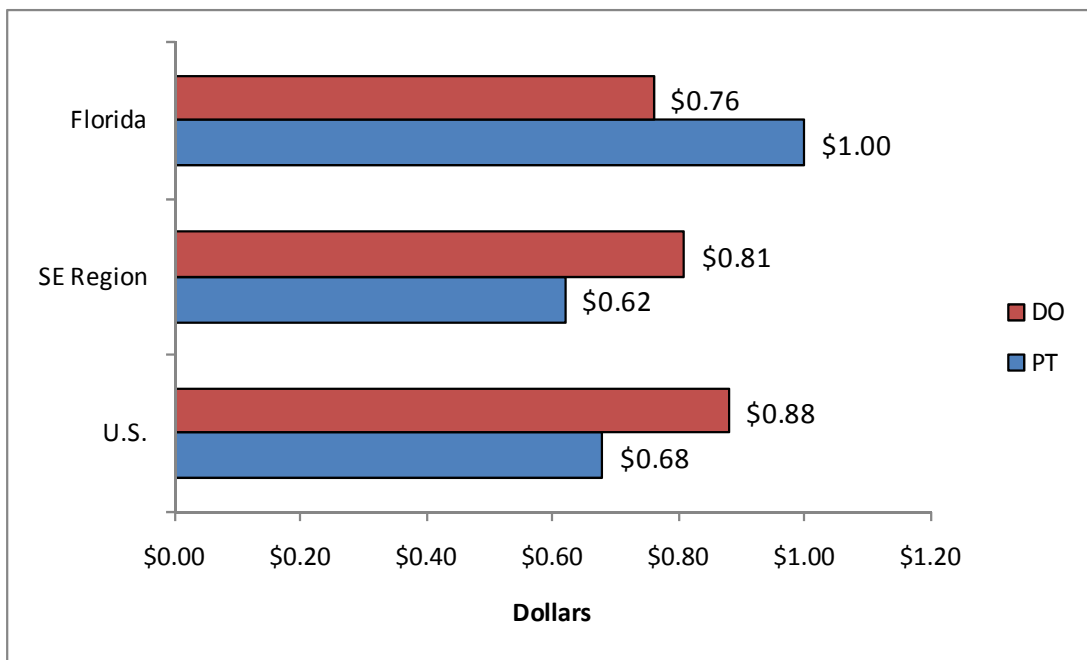
Operating costs and service levels were assembled for all transit agencies using the 1998 and 2008 NTD databases. Agencies that failed to report operating costs and/or complete service levels were excluded from the analysis to ensure that transaction costs were robust. Data were organized in such a way to enable the calculation of a regional, U.S., and Florida transaction cost per revenue hour, passenger mile, and revenue mile. Evaluation of the relationship between operating expenses and revenue miles or hours provides a measure of general cost efficiency over time. Evaluation of the relationship between operating expenses and passenger miles provides a measure of general cost efficiency of the service provided. Operating expense per revenue hour is commonly used as the metric on which contracts for service are bid.

For each of the selected metrics, operating costs for directly operated and purchased service are presented for Florida, the Southeast region, and the U.S.

Florida's operating cost per revenue hour for directly operated service (Figure 31) exceeded Florida's purchased service operating cost, as was the case for the Southeast region and the U.S. Florida's operating cost per revenue hour was well below the operating cost as compared to both the Southeast region and the U.S. for purchased service and as compared to the U.S. for directly operated service.



**Figure 31 – Operating Cost per Revenue Hour, 2008**

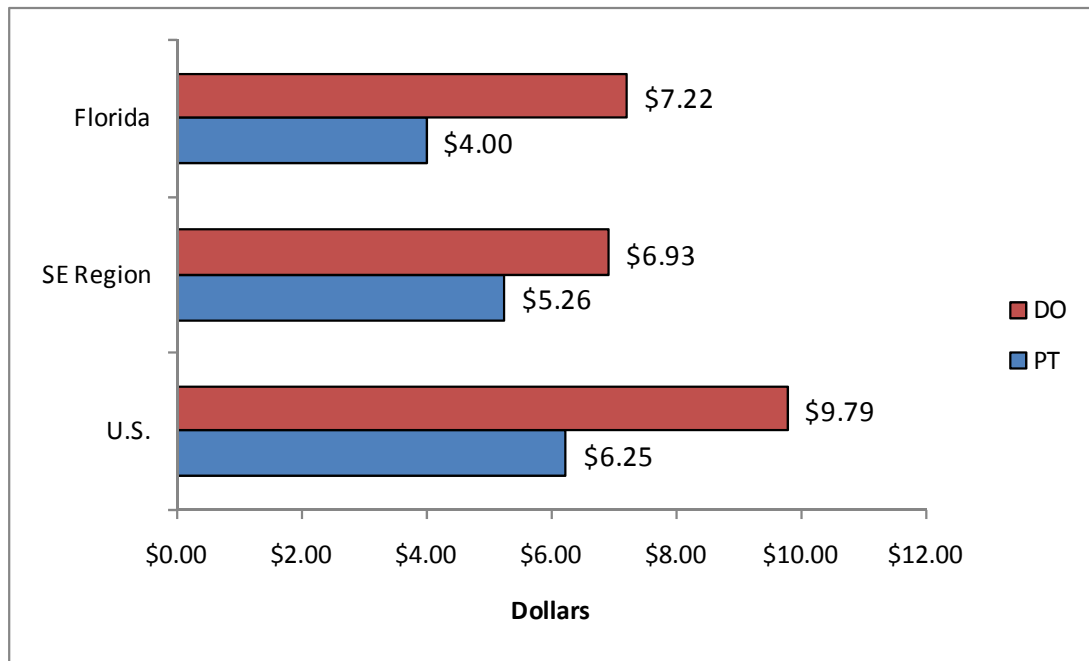


**Figure 32 – Operating Cost per Passenger Mile, 2008**

Florida's operating cost per passenger mile for purchased service (Figure 32) exceeded Florida's directly operated service operating cost and the purchased transportation service cost

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of both the Southeast region and the U.S. Florida's operating cost per passenger mile for directly operated service was well below the operating cost of both the Southeast region and the U.S.



**Figure 33 – Operating Cost per Revenue Mile, 2008**

Florida's operating cost per revenue hour for directly operated service (Figure 33) exceeded Florida's purchased service operating cost, as was the case for the Southeast region and the U.S. Florida's operating cost per revenue mile was well below the operating cost compared to both the Southeast region and the U.S. for purchased service and compared to the U.S. for directly operated service.

### **Operating Costs Based on Agency Size**

Notable differences were identified in operating costs when the size of the agency was introduced into the assessment.

### ***Operating Cost per Revenue Hour***

A review of operating costs per revenue hour based on agency size (Figure 34) illustrates differences in transaction costs. Large agencies generally reported higher operating costs per

revenue hour for directly operated and purchased service, while small agencies generally reported lower operating costs.

Nonetheless, operating costs per revenue mile for directly operated service consistently exceeded purchased service costs in Florida, in the Southeast region and in the U.S. Florida's operating costs per revenue hour were always less than U.S. costs, regardless of the type of service or the size of the agency.

***Operating Cost per Passenger Mile***

A review of operating costs per passenger mile based on agency size (Figure 35) illustrates differences in transaction costs for directly operated and purchased service. Operating costs per passenger mile for directly operated service at small and large agencies were significantly less than purchased service costs for Florida and the Southeast region.

Medium agencies reported higher operating costs per passenger mile for directly operated service.

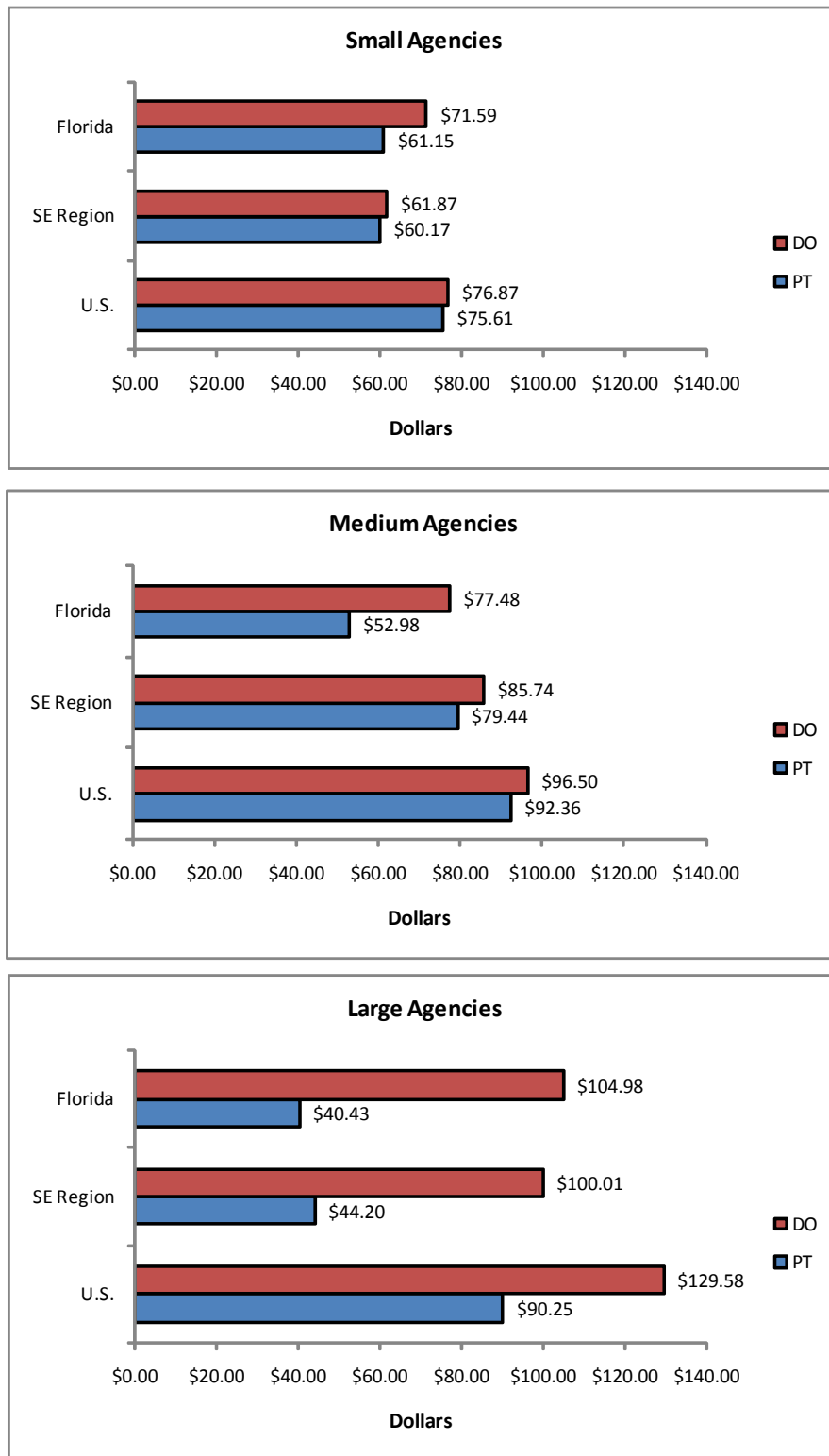
***Operating Cost per Revenue Mile***

A review of operating costs per revenue hour based by agency size (Figure 36) illustrates differences in transaction costs for directly operated and purchased service specific to small agencies. Operating costs per revenue mile for directly operated service at small agencies were less than purchased service costs for Florida, the Southeast region, and the U.S. Florida's operating costs per revenue mile for purchased service at small agencies were less than operating costs in the Southeast region and the U.S.

Medium and large agencies reported higher operating costs per revenue hour for directly operated service compared to purchased service.

Florida's operating costs per revenue hour were always less than U.S. costs, regardless of the type of service or the size of the agency.





**Figure 34 – Operating Cost per Revenue Hour by Agency Size, 2008**

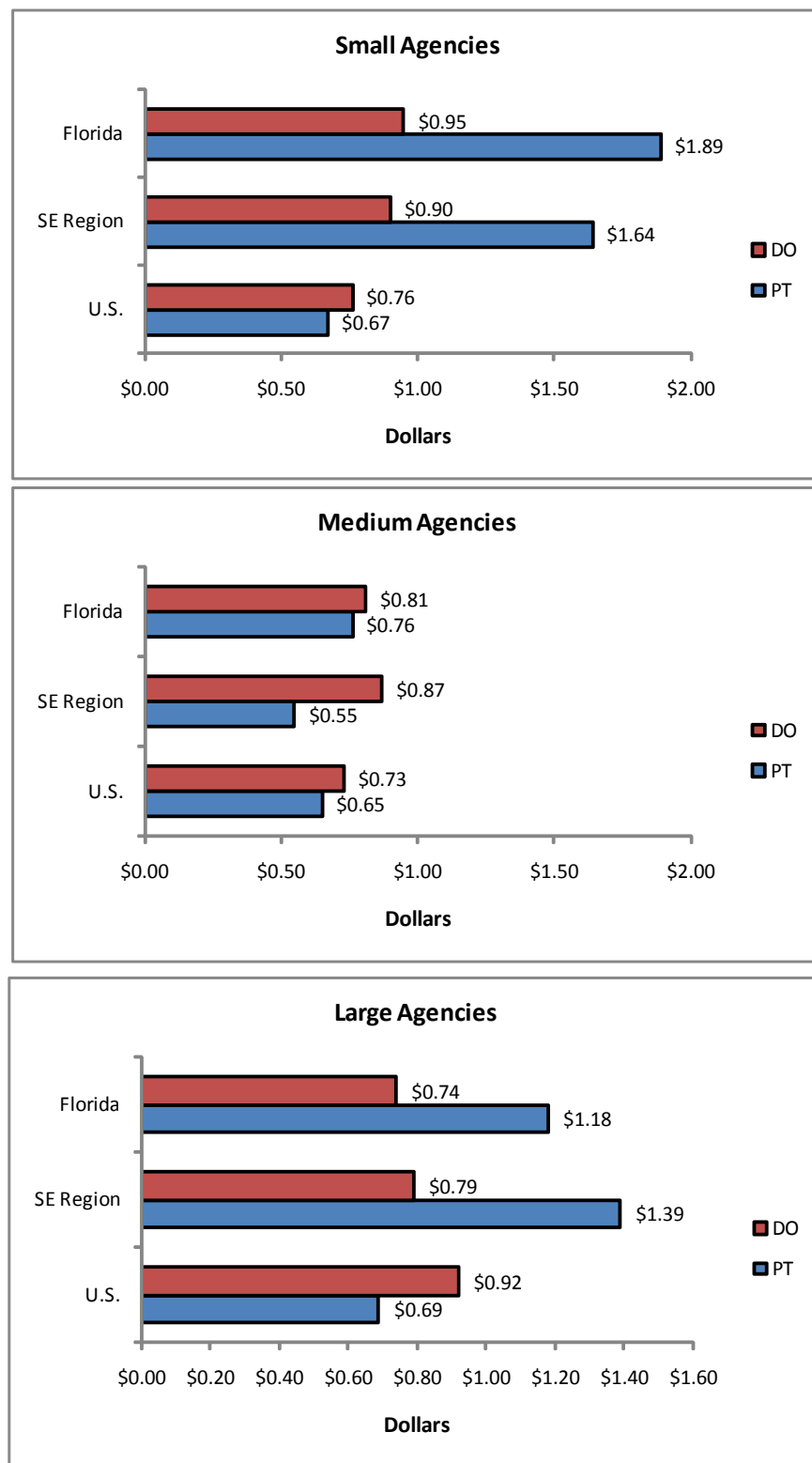


Figure 35 – Operating Cost per Passenger Mile by Agency Size, 2008

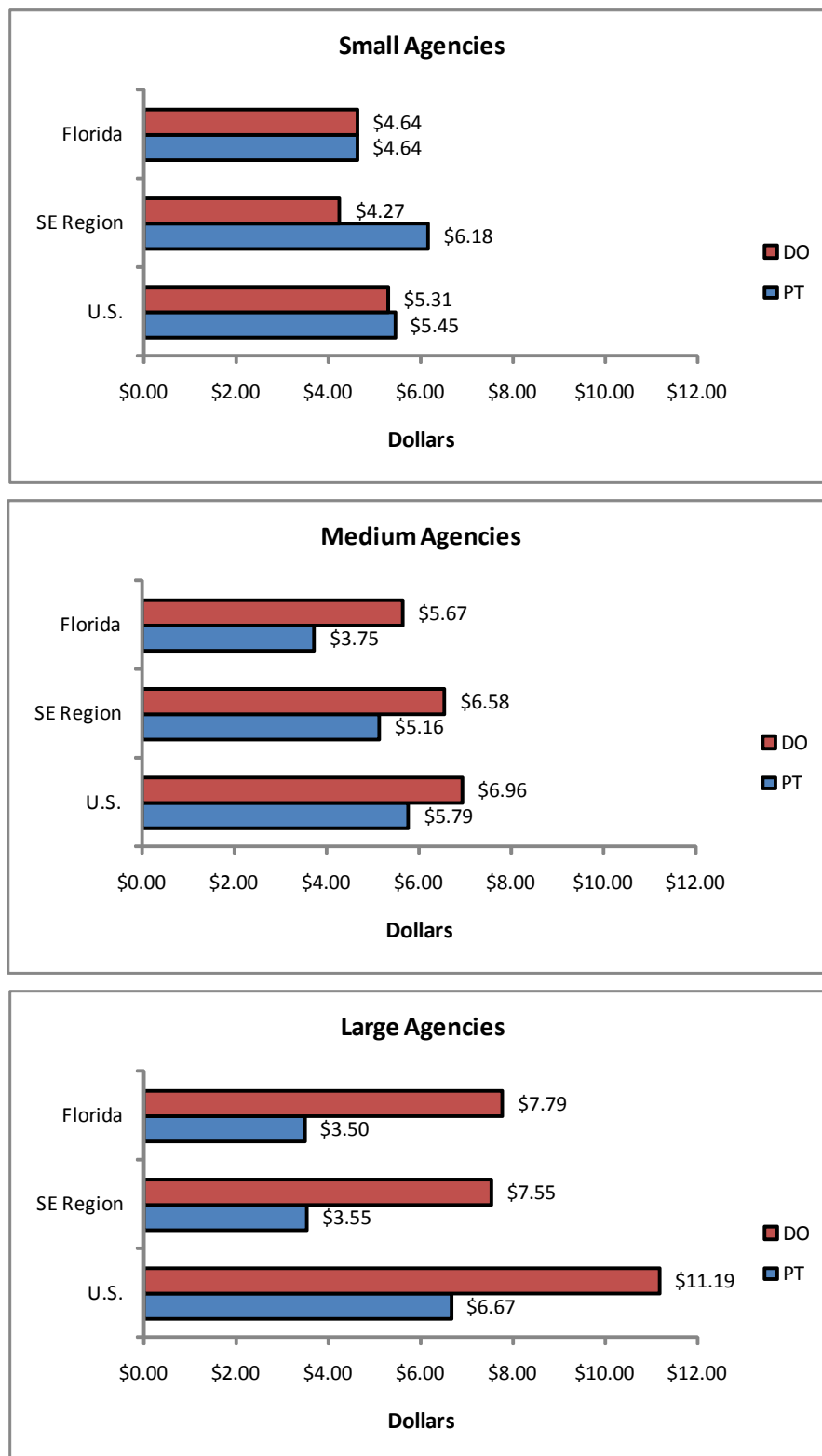


Figure 36 – Operating Cost per Revenue Mile by Agency Size, 2008

## **STUDY FINDINGS**

Results of the literature review and TRB Special Report 258 illustrate that the decision to contract is a complex one requiring consideration of a variety of factors. Contracting can be viewed as one tool that transit managers can use to reduce costs, enhance operating efficiencies, and minimize risks associated with new or special service. However, the actual practice of contracting does not, in and of itself, guarantee that benefits will result simply by contracting with the private sector for service.

### **Contracting in Practice**

Transit managers, who responded to the survey portion of TRB Special Report 258, identified the following reasons for contracting: to start new service, to reduce operating costs, and to improve service cost efficiency. State and federal laws were rarely identified as important reasons for contracting. Reasons for not contracting included the need to maintain control over operations, the perception that savings would be minimal, and the absence of a rationale for changing the current practice. Almost 80 percent of the respondents who contracted at the time of the survey would do so again, while 70 percent of the respondents who did not contract were not interested in contracting in the future. Common negative consequences of contracting reported by respondents that had engaged in contracting were the loss of operational control, questionable service quality, and problems with customer service. The most frequently reported problems of contracting included workforce retention, employee turnover, and customer service.

Almost all respondents that contracted at the time of the survey reported reductions in operating costs. Small agencies reported additional benefits were derived from contracting supervisory and administrative functions. Comparative advantages of contracting and direct service can be affected by changing transit agency needs and conditions over time. Results of the survey suggested that contracting can result in a tradeoff between cost savings and service quality. Managers should expect contract costs to increase when more focus is placed on service quality and stricter performance measures are instituted.

Transit managers offered the following advice on contracting:

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- Expect advantages and disadvantages of contracting, and set realistic expectations
- Create a competitive procurement process that “invites high-quality proposals and screens out unrealistic proposals and unqualified contractors”
- Complete an internal service cost analysis for use as a baseline for bid comparison
- Delineate contractor responsibilities, closely monitor performance, and keep communication lines open

Researchers were critical of contracting services in cases where significant cost savings were projected without including the full transaction costs for such items as bid proposals, contract negotiations and the monitoring of contracts. Other effects of contracting on transit performance were generally viewed as secondary reasons for contracting and received little attention in the literature.

Many of the lessons learned about contracting were derived from the operating experience of California transit agencies, due to the history and breadth of their experience (DeShazo and Iseki 2006). Prior to making the decision to contract service, transit agencies must evaluate their current situations and assess a variety of aspects of their service operations. Not only does this allow an agency to determine the potential value that could result from a decision to contract, but also can assist the agency in developing a thorough understanding of the actual cost of existing service and any enhancements to service that are indicated. Awareness of economies and diseconomies of scale in transit service operations must be factored into cost-benefit calculations to maximize robustness of cost comparisons. In addition, sensitivity to labor unions in terms of the existing employee base and wage rates is integral to successful transition to future transit operations, whether provided in-house or contracted to a private provider.

Managers treated contracting as one strategy among several that they could use to improve productivity, just as they might have considered hiring part-time labor or adjusting wage scales. Partial contracting agencies did not contract a portion of their entire service, but identified specific lines or specific types of service appropriate for contracting. Partial contracting was

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used to increase cost efficiency for specific lines or special service, such as peak-only service, shuttle-style connectors, to serve outlying areas, and also to preview the cost efficiency of a potential new service by trying out new service.

The use of full contracting, typical in new, younger systems, was easier and faster than hiring in-house drivers, could be used to avoid labor disputes or union opposition, and could shorten administrative procedures. Full contracting focused on service productivity and cost efficiency and was used when partial contracting was not considered to be a viable option.

Contracting is used to start new service, to reduce operating costs, and to improve service cost efficiency. Reasons for not contracting included the need to maintain control over operations, the perception that savings would be minimal, and the absence of a rationale for changing the current practice. Savings in operating costs, increased cost efficiency, and the ability to expand service are benefits of contracting. Common negative consequences of contracting are the loss of operational control, questionable service quality, and problems with customer service. The most frequently reported problems of contracting included workforce retention, employee turnover, and customer service.

Comparative advantages of contracting and direct service can be affected by changing transit agency needs and conditions over time. Managers should expect contract costs to increase when more focus is placed on service quality and stricter performance measures are instituted.

Prior to making the decision to contract service, transit agencies must evaluate their current situations and assess a variety of aspects of their service operations not only to determine the potential value that could result from a decision to contract and but also to assist the agency in developing a thorough understanding of the actual cost of existing service and any enhancements to service that are indicated.

Individual agencies should carefully assess service lines, evaluate various strategies for increasing cost efficiency, and maintain a cooperative relationship with unions to tailor solutions to its particular operating environment.

### **Contract Provisions**

Service contracts must contain clearly defined elements that encourage the contractor to control costs and focus on the quality of the transit service provided. Contracts should, generally, be bid on a fixed-price basis where the contractor is compensated on the basis of the amount of service provided, such as price per vehicle revenue hour. Contractors are rarely compensated for costs they incur in supplying service. To foster competition, a traditional three year contract with two 1-year renewals appears to be long enough to avoid repeated transaction costs that occur with frequent rebidding, yet short enough to ensure that contractor complacency does not develop.

Performance metrics along with some type of penalty for failure to perform are routinely included in service contracts. The agency is required to monitor contractor performance and enforce the terms dictated in the contract. The agency can further enhance competition by providing vehicles and facilities for transit service, as the practice not only reduces the contractor's capital risk, but also allows the agency to retake and rebid the service if the contractor fails to perform.

### **Implications for Policy Makers**

Contracting fixed route bus service has proven to be beneficial to a number of transit agencies in the provision of fixed route bus service. Cost savings, risk reduction in new service, and operating efficiency are a few of the identified benefits. On the other hand, some agencies have experienced problems with contracting, such as loss of operational control, workforce retention, employee turnover, and inconsistent service quality. Large agencies are impacted by contracting differently than are small agencies. Cost savings, which have been difficult to determine across agencies and regions, vary significantly and are challenging to document.

Today, transit agencies have the flexibility to take full advantage of contracting based on the specific needs of the agency. Establishing a mandate for contracting may run counter to the best interests of transit agencies as it could serve to limit their flexibility in making organizational reforms or operational adjustments to improve cost efficiency. As an alternative, performance metrics, such as cost efficiency or cost effectiveness, with target objectives could be established. The agency would be tasked with selecting measures and an operating strategy to achieve performance measures tailored to the specific operational needs of the agency.

### **Implications for Florida Transit Agencies**

In the U.S., purchased VOMS increased, and the split between directly operated and purchased VOMS also changed in Florida over time, although, to a lesser degree. Purchased VOMS as a percent of total VOMS increased in Florida; however, Florida's rate of purchased VOMS remained below the Southeast region and the nation.

In 1998, not one of Florida's 19 transit agencies contracted for all of the agency's fixed route bus service. In 2009, 7 of Florida's 29 agencies contracted for all fixed route bus service and operated a total of 81 VOMS.

Contracting for transit service appears to be common practice in Florida, as 23 (79.3%) of the 29 Florida transit agencies that operated fixed route bus service during 2009 purchased some type of transit service, including fixed route bus service, demand response service, vanpool service, or commuter rail transit service. Furthermore, the recently completed NTD data analysis confirmed that purchase of fixed route bus service has increased at Florida transit agencies. In fact, many new Florida transit agencies contracted for all fixed route bus service when they initiated service. Contracting for service has become a recognized alternative to directly operated service in Florida, where the decision to contract service rests with the transit agency and the agency's governing body.

Transit managers would benefit from advice offered by respondents in TRB Special Report 258, who encouraged transit managers to complete an internal service cost analysis to use as

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a baseline for bid comparison and to monitor contractor performance through the use of established metrics. Completion of an internal service cost analysis and establishing performance metrics would appear to be valuable, regardless of whether or not an agency planned to request bids for the provision of transit service. A thorough understanding of current service costs and operating efficiencies is required in order to identify what needs to be done to affect change and enhance cost efficiency. Monitoring and oversight of select Florida transit authorities is currently the responsibility of the Florida Transportation Commission (FTC) and could provide a roadmap for development of metrics and strategies for other transit agencies in Florida.

### **Florida's Operating Costs**

Florida's operating cost per revenue hour for directly operated service (\$98.10) exceeded Florida's purchased service operating cost (\$54.27). Florida's operating cost per revenue hour was well below the operating cost of both the Southeast region (\$74.47) and the U.S. (\$88.92) for purchased service and below the U.S. (\$119.61) for directly operated service. Florida's small, medium, and large agencies reported higher operating costs per revenue hour for directly operated service (\$71.59, \$77.48, and \$104.98, respectively) compared to purchased service (\$61.15, \$52.98, and \$40.43, respectively). Florida's operating costs per revenue hour were always less than U.S. costs, regardless of the type of service or the size of the agency.

Florida's operating cost per passenger mile for purchased service (\$1.00) exceeded Florida's directly operated service cost (\$0.76) and the purchased transportation service cost of both the Southeast region (\$0.62) and the U.S (\$0.68). Florida's operating cost per passenger mile for directly operated service (\$0.76) was well below the operating cost of both the Southeast region (\$0.81) and the U.S. (\$0.88). Operating costs per passenger mile for directly operated service at Florida's small and large agencies (\$0.95 and \$0.74, respectively) were significantly less than purchased service costs per passenger mile for small and large agencies in Florida (\$1.89 and \$1.18, respectively). Operating costs per passenger mile for directly operated service at small and large agencies in the Southeast region (\$0.90 and \$0.79, respectively)

were also significantly less than purchased service costs per passenger mile for small and large agencies in the Southeast region (\$1.64 and \$1.39, respectively).

Florida's operating costs per revenue mile for directly operated service (\$7.22) consistently exceeded purchased service costs in Florida (\$4.00), in the Southeast region (\$5.26) and in the U.S. (\$6.25). Operating costs per revenue mile for directly operated service at small agencies in Florida (\$4.64) were equal to purchased service costs (\$4.64), while directly operated service costs per revenue mile at small agencies within the Southeast region (\$4.27) and in the U.S. (\$5.31) were less than purchased service costs of \$6.18 and \$5.45 per revenue hour, respectively.

## **CONCLUSIONS**

Elected officials, government executives and transportation officials are continually challenged to assess and explore methods for operating more efficiently. One method that has long been credited with increasing transit efficiency and reducing operating costs is contracting with the private sector for the provision of transit service.

Contracting for service has become a recognized alternative to directly operated service in Florida, where the decision to contract service rests with the transit agency and the agency's governing body. During 2009, 23 of Florida's 29 transit agencies that operated fixed route bus service purchased some type of transit service that included fixed route bus service, demand response service, vanpool service, or commuter rail service, and 7 Florida transit agencies contracted all fixed route bus service. Growth in purchased VOMS grew in Florida, although at a slower rate than growth in the U.S.

While purchased transportation has been promoted based on the assurance of increased cost efficiency, previous studies as well as data analysis efforts undertaken during this project found that directly operated service is cost competitive with purchased service and can be cost effective depending on factors such as the size of the agency, the geographic location of the agency, and the type of services a transit agencies provides. Several of Florida's operating costs for directly operated service at both small and large agencies were less than operating costs for purchased service. In addition, Florida's overall operating costs were often less than operating costs of both the Southeast region and the U.S. Establishing a mandate for contracting might run counter to the best interests of transit agencies as it could serve to limit their flexibility in making organizational reforms or operational adjustments to improve cost efficiency.

Generally, contracts for service should be bid on a fixed-price basis where the contractor is compensated on the basis of the amount of service provided, such as price per vehicle revenue hour. Performance metrics along with some type of penalty for failure to perform are

routinely included in service contracts. An agency can further enhance competition by providing vehicles and facilities for transit service as the practice not only reduces the contractor's capital risk, but also allows the agency to retake and rebid the service if the contractor fails to perform.

Completion of an internal service cost analysis and establishing performance metrics would appear to be valuable, regardless of whether or not an agency planned to request bids for the provision of transit service. A thorough understanding of current service costs and operating efficiencies is required in order to identify what needs to be done to affect change.

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## APPENDIX A

### A-1 – Florida Transit Agencies that Provided Fixed Route Bus Service in 2009

<b><i>Florida Transit Agencies: National Transit Database - 2009<sup>1</sup></i></b>	<b><i>ID</i></b>
1 Manatee County Area Transit(MCAT)	4026
2 Pinellas Suncoast Transit Authority(PSTA)	4027
3 Lee County Transit(LeeTran)	4028
4 Broward County Transportation Department(BCT)	4029
5 Gainesville Regional Transit System(RTS)	4030
6 Lakeland Area Mass Transit District (Citrus Connection)	4031
7 County of Volusia, dba: VOTRAN(Votran)	4032
8 Miami-Dade Transit(MDT)	4034
9 Central Florida Regional Transportation Authority(LYNX)	4035
10 City of Tallahassee(StarMetro )	4036
11 Board of County Commissioners, Palm Beach County, PalmTran, Inc.(PalmTran)	4037
12 Escambia County Area Transit(ECAT)	4038
13 Jacksonville Transportation Authority(JTA)	4040
14 Hillsborough Area Regional Transit Authority(HART)	4041
15 Sarasota County Area Transit(SCAT)	4046
16 Space Coast Area Transit(SCAT)	4063
17 Pasco County Public Transportation(PCPT)	4074
18 Senior Resource Association, Inc.(SRA)	4104
19 South Florida Regional Transportation Authority(TRI-Rail)	4077
20 Council on Aging of St. Lucie, Inc.(CT)	4097
21 Council on Aging of Martin County, Inc.(COAMC \ CC - MCBOCC)	4113
22 Polk County Transit Services Division - Polk County Board of County Commissioners(PCTS)	4127
23 Okaloosa County Board of County Commissioners	4128
24 Collier Area Transit(CAT)	4140
25 Hernando County Board of County Commissioners(The Bus)	4146
26 St Johns County, Florida, Board of County Commissioners(St Johns County)	4155
27 Lake County Board of County Commissioners(LCBOCC)	4158
28 Broward County Community Bus Service(BCT)	4179
29 Bay County Transportation Planning Organization (BTT)	4185

<sup>1</sup>Data obtained from Table 12: Transit Operating Expenses by Mode, Type of Service and Function, 2009 National Transit Database.

**A-2 – Florida Transit Agencies that Provided Fixed Route Bus Service in 1998**

<b><i>Florida Transit Agencies: National Transit Database - 1998<sup>1</sup></i></b>	<b><i>ID</i></b>
1 Sarasota-Manatee County	4026
2 St. Petersburg-PSTA	4027
3 Ft. Myers-Lee County	4028
4 Ft Lauderdale-Broward MTD	4029
5 Gainesville Regional TS	4030
6 Lakeland-Citrus Connect	4031
7 Daytona Beach-VOTRAN	4032
8 Miami-Dade Transit Agency	4034
9 Orlando-Central FL-Lynx	4035
10 Tallahassee-TALTRAN	4036
11 West Palm Beach-Palm Tran	4037
12 Pensacola-Escambia County	4038
13 Jacksonville-JTA	4040
14 Tampa-Hillsborough RTA	4041
15 Sarasota County TA	4046
16 Melbourne-SCAT	4063
17 Clearwater-Pasco Shuttle	4074
18 Panama City-Bay Council	4085
19 Vero Beach-Indian River	4104

<sup>1</sup> Data obtained from Table 11: Transit Operating Expenses by Mode and Function: Details by Transit Agency, 1998 National Transit Database.



### A-3 – Florida Transit Agencies that Provided Fixed Route Bus Service in 2008

<b>Florida Transit Agencies: National Transit Database - 2008<sup>1</sup></b>	<b>ID</b>
1 Manatee County Area Transit(MCAT)	4026
2 Pinellas Suncoast Transit Authority(PSTA)	4027
3 Lee County Transit(LeeTran)	4028
4 Broward County Transportation Department(BCT)	4029
5 Gainesville Regional Transit System(RTS)	4030
6 Lakeland Area Mass Transit District (Citrus Connection)	4031
7 County of Volusia, dba: VOTRAN(Votran)	4032
8 Miami-Dade Transit(MDT)	4034
9 Central Florida Regional Transportation Authority(LYNX)	4035
10 City of Tallahassee(StarMetro )	4036
11 Board of County Commissioners, Palm Beach County, PalmTran, Inc.(PalmTran)	4037
12 Escambia County Area Transit(ECAT)	4038
13 Jacksonville Transportation Authority(JTA)	4040
14 Hillsborough Area Regional Transit Authority(HART)	4041
15 Sarasota County Area Transit(SCAT)	4046
16 Space Coast Area Transit(SCAT)	4063
17 Pasco County Public Transportation(PCPT)	4074
18 Bay County Council On Aging Bay Coordinated Transportation(BCCOA)	4085
19 Senior Resource Association, Inc.(SRA)	4104
20 South Florida Regional Transportation Authority(TRI-Rail)	4077
21 Council on Aging of St. Lucie, Inc.(CT)	4097
22 Council on Aging of Martin County, Inc.(COAMC \ CC - MCBOCC)	4113
23 Polk County Transit Services Division - Polk County Board of County Commissioners(PCTS)	4127
24 Okaloosa County Board of County Commissioners	4128
25 Collier Area Transit(CAT)	4140
26 Hernando County Board of County Commissioners(The Bus)	4146
27 St Johns County, Florida, Board of County Commissioners(St Johns County)	4155
28 Lake County Board of County Commissioners(LCBOCC)	4158
29 Broward County Community Bus Service(BCT)	4179

<sup>1</sup>Data obtained from Table 12: Transit Operating Expenses by Mode, Type of Service and Function, 2008 National Transit Database.