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Foreword

The U.S. cutaway vehicle manufacturing industry provides the most widely available form of public transportation today. Generally associated with demand response, these small-to-medium-sized cutaway vehicles are used by thousands of U.S. transit agencies in addition to numerous private sector applications. By comparison, manufacturers of heavy-duty transit buses face greater challenges. As reported by HD/FKA in the Federal Transit Administration's (FTA) 2005 *Non-Rail Vehicle Market Viability Study*, no fewer than ten bus manufacturers have either reorganized or gone out-of-business. Outside of the cutaway bus market, the financial condition of most bus manufacturers is tenuous at best. The FTA sponsored this research, following the 2005 bus study, to provide an exploratory evaluation of the U.S. bus manufacturing industry as it relates to small-to-medium-sized cutaway transit buses. This study is available to all interested readers but includes information particularly salient to federal transportation officials, transit agency representatives, and bus manufacturing industry professionals.

The study includes a market overview and results/analysis of surveys, questionnaires, and interviews with representative U.S. transit agencies and U.S. cutaway bus manufacturers. The first chapter represents the market overview component of the report and provides the background and overview of the current U.S. cutaway bus industry as well as trends that affect the cutaway bus market. The second chapter presents key findings and perspectives provided by transit agency participants. The third and fourth chapters report on information gleaned from cutaway manufacturers based on interviews and surveys. The final section presents conclusions as well as observations regarding the competitive landscape faced by cutaway bus manufacturers in the United States.

The primary research — information provided by representative transit agencies and bus manufacturers — is an essential element of this report. It should be noted that commentary provided by transit agency survey respondents has not been attributed to specific individuals or agencies in order to comply with the non-disclosure statement that was printed on the survey instrument. Additionally, the financial data and other company information, as well as the verbatim commentary, provided by the bus manufacturers are summarized, analyzed and presented in such a way that the protection of proprietary data is assured.

Acknowledgements

This research would not have been possible without the support of the transit agencies and bus manufacturers that graciously participated in this study. All of the participating transit agency officials and bus company executives shared important perspectives, information, and experiences that were useful in analyzing the current state of the small-to-medium-sized cutaway vehicle market. In addition, the Federal Transit Administration —especially Helen Tann, Henry Nejako, Michael Malloy, Roy Chen and others — provided valuable advice.

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Glossary

Acronym or Abbreviation	Full Description
ADA	Americans with Disabilities Act
AFV	Alternative Fuel Vehicle
APTA	American Pubic Transportation Association
ASTM	American Society for Testing and Materials
ATTB	Advanced Technology Transit Bus
BD	Biodiesel
BF	Bunker Fuel
CAD	Computer Aided Dispatch
CCAM	Federal Interagency Coordinating Council on Access and Mobility
CL	Clean Diesel
CNG	Compressed Natural Gas
CO_2	Carbon Dioxide
CPPP	Cooperative Procurement Pilot Program
CPT-HSTP	Coordinated Public Transit-Human Service Transportation Plan
CTC	County Transportation Coordinator
DB	Diesel & Electric Battery
DEH	Diesel Electric Hybrid
USDOT or DOT	United States Department of Transportation
ECD	Emission Controlled Diesel
FTA	Federal Transit Administration
GA	Gasoline
GPS	Global Positioning System
GVW	Gross Vehicle Weight
HHS	United States Department of Health and Human Services
ISTEA	Intermodal Surface Transportation Efficiency Act
JARC	Job Access and Reverse Commute
LPG	Liquefied Petroleum Gas
MDT	Mobile Data Terminal
MSBMA	Mid-Sized Bus Manufacturers Association
NAFTA	North American Fee Trade Act
Nox	Nitrogen Oxide
NPRM	Notice of Proposed Rulemaking
NTB	National Transit Database
PG	Propane & Gasoline
PM	Particulate Matter
RIAS	Remote Infrared Audible Signs
SAFTEA-LU	Safe, Accountable, Flexible, Efficient Transportation Act – A Legacy for Users
SNPRM	Second Notice of Proposed Rulemaking
TCRP	Transportation Cooperative Research Program
TEA-21	Transportation Equity Act for the 21st Century
TRB	Transportation Research Board
ULSD	Ultra-low Sulfur Diesel

Executive Summary

Study Goals & Objectives

Small-to-medium-sized cutaway vehicles represent a significant segment of the bus market in the United States. Consisting of a bus-body attached to a small-to-medium-sized truck or van chassis, a cutaway vehicle is smaller than a conventional bus while providing more space, particularly for wheelchairs, compared to other small-to-medium-sized vehicle options. With regard to the public transit market, cutaway buses are critical components of paratransit service across the United States. Private sector transportation also represents a large market for cutaway buses.

The FTA *Non-Rail Vehicle Market Viability Study,* conducted in 2005, highlighted challenges that threaten the ability of manufacturers to provide the types and quantities of buses (in particular, heavy-duty buses) that are required by many public transit systems in the United States. In response to these findings, the *Evaluation of the Market for Small-to-Medium-Sized Cutaway Buses* employs primary and secondary research to examine issues relevant to small-to-medium-sized cutaway buses and features the insights of public transit agencies and vehicle manufacturers.

Primary research for this report entailed surveys of transit agencies and cutaway bus manufacturers as well as interviews with executives in the cutaway bus manufacturing industry. The secondary or exploratory research phase of the study included a review and analysis of an extensive array of resources including newspapers, industry trade journals, published reports, federal legislation, local transit agency data and various Internet resources. The American Public Transportation Association (APTA) 2007 *Transit Vehicle Database,* which provides the most comprehensive available information about vehicle models, manufacturers, transit agencies, and other vehicle characteristics, was among the key data sources employed for the study. (The *Introduction* of this report provides detail with regard to research background and methodology including any research limitations.)

This *Executive Summary* highlights key elements of each chapter of this report including Chapter 1: *Market Overview*; Chapter 2: *Transit Agency Survey Results & Analysis*; Chapter 3: *Cutaway Manufacturer Survey Results & Analysis*; Chapter 4: *Analysis of Interviews with Cutaway Manufacturers*; and Chapter 5: *Conclusions & Observations*. The first chapter, the *Market Overview*, is based on secondary research while Chapters 2, 3, and 4 represent the survey and interview components of this study. The final chapter provides analysis of the primary and secondary research in terms of observations and recommendations.

Highlights of the *Market Overview*

Principal Service for Cutaway Vehicles in Public Transit: Because cutaway vehicles can be modified for mobility accessibility, many public transportation agencies use these vehicles to provide paratransit (also called demand response or dial-a-ride) service. Paratransit service using cutaway vehicles may be provided in-house or outsourced to private operators. Some transit agencies outsource operations and may (or may not) own paratransit vehicles. Limited budgets and diminished service capacity, particularly in rural areas of the U.S., are among the challenges that public agencies face in providing paratransit and other services.

Cutaway Vehicle Fleet Size, Vehicle Length and Other Characteristics: Of the 288 agencies participating in APTA's 2007 *Transit Vehicle Database*, 208 agencies reported cutaway vehicles as part of their fleets and a total of 11,368 cutaway vehicles were identified. Of the cutaways identified, 82% are reported as demand response vehicles; 16% were reported in the "bus" service mode category, and 241 vehicles (2%) were listed in the "jitney" category. Ninety percent of the cutaway vehicles were identified as "active." Other cutaways were identified as "rehabilitated" or "needing rehabilitation." Roughly, 8% of the cutaways were reported as alternative fuel vehicles.

Cutaway buses generally are less than thirty feet long (although some may be as long as thirty-five feet long) and typically weigh less than 30,000 pounds (Gross Vehicle Weight [GVW]). Most cutaway buses have walk-in, front entry doors and a center aisle with an interior height that allows passengers to stand. Cutaway buses are manufactured with various wheelbases, designed to accommodate 16, 20, 24 or 28 ambulatory passengers, as well as a driver, and also can be configured to accommodate passengers requiring wheelchair accessibility.

Vehicle Costs: Average costs of cutaway buses vary depending on size, vehicle age, accessibility features, equipment and fuel and propulsion sources. Findings show that the average cost paid per new cutaway vehicle in 2006 was roughly $67,000; however, this average figure was somewhat inflated due to the disproportionately high cost of CNG vehicles in the database. While most cutaway vehicles reported in the database cost between $40,000 to $79,999, the least expensive cutaway vehicle reported — a 21-ft. 1999 El Dorado *Aerotech* — cost $7,111. The most expensive cutaway vehicle — a 32-ft. 2006 El Dorado *Aero Elite* with a CNG fuel system —was reported to cost $200,000.

Fuel & Propulsion Systems: Transit agencies across the nation are feeling the impact of state and community commitments, along with public demand, to address environmental concerns — particularly air quality issues. In addition, federal and state regulations encourage alternative fuel programs, particularly clean diesel for bus fleets, and mandate emission controls. For example, new EPA emissions standards were implemented in 2007, with even stricter levels becoming effective in 2010. Although biodiesel, particularly Biodiesel 5 [B5] (which is a 5% biodiesel mix), has widespread acceptance, and there is great interest in the potential of B20 (20% biodiesel), most medium-to-small-sized cutaway buses operating in the U.S. today still use gasoline or standard diesel fuel.

The success of hybrids in the U.S. automobile/SUV market and pilot programs involving hydrogen-fueled vehicles are encouraging — possible harbingers for the future with respect to the small-to-medium-sized cutaway bus market. However, inadequate infrastructure and lack of reliable fuel sources for many types of alternative fuels continue to be concerns now and in the foreseeable future.

Federal Funding and Relevant Legislation: The *Safe Accountable, Flexible, & Efficient Transportation Equity Act – A Legacy for Users (SAFETEA-LU)* authorizes $52.6 billion over a six-year period for public transit programs. Modifications to several *SAFETEA-LU* funding programs, including the Elderly Individuals & Individuals with Disabilities (§ 5310), Job Access and Reverse Commute (§ 5316) and New Freedom (§ 5317) may affect public transit agencies by requiring agencies that seek federal funds under these programs to develop Coordinated Public Transit-Human Service Transportation Plans (CPT-HSTP).

The Americans with Disabilities Act of 1990 is key legislation for public transportation because it mandates that all public transportation agencies must provide public transit services for all people with any type of disability. This Act continues to serve as a catalyst for paratransit services in public transit nationwide that, in turn, relates directly to the need for vehicles, such as cutaway buses, that can provide service to meet this operational requirement.

Representative Transit Agencies: The same nine transit agencies that were selected by the FTA to participate in the *2005 Non-Rail Vehicle Market Viability* study also participated in the *Evaluation of the Market for Small-to-Medium-Sized Cutaway Buses* for the purposes of continuity and comparison. Participants represented large, medium and small-sized agencies in diverse geographic locations including Phoenix Public Transit Department (AZ), Miami-Dade Transit (FL), Indianapolis Public Transportation Corp. (IN), Jackson Transit System (MS), Santa Fe Trails (NM), MTA New York City Transit (NY), Charlotte Area Transit System (NC), Chittenden County Transportation Authority (VT), and King County Department of Transportation (WA). (Two responses were received from King County representing the agency's "Metro Transit" services in addition to "Accessible Services" paratransit.)

Cutaway Manufacturer Highlights and Information: Small-to-medium-sized cutaway buses have evolved from several different types of vehicles including motor homes and recreational vehicles. Today's cutaway buses are designed and manufactured to meet the needs of various markets. Unlike the integrated construction of heavy-duty transit buses, the bodies of small-to-medium-sized cutaway buses are customized and mounted on purchased chassis. Due to the high demand for cutaway buses by public and private sector customers, the small-to-medium-sized cutaway bus market has a much broader range of products. Four bus manufacturers participated in the *Evaluation of the Market for Small-to-Medium-Sized Cutaway Buses* — Coach & Equipment Manufacturing Corp. and the Commercial Bus Division of Thor Industries, Inc., (El Dorado National-Kansas, Inc., Champion Bus, Inc. and Goshen Coach).

Key Findings Relevant to Participating Public Transit Agencies

Ownership & Operations, Cutaway Fleet Information and Types of Service: According to *Metro Magazine's* "2006 Paratransit Study," buses account for nearly 66% of public and private paratransit fleets. The smaller size and flexibility associated with cutaways buses, when combined with specialized *ADA* features, make these vehicles ideal for the individualized service that is characteristic of paratransit. The 2007 APTA *Public Transportation Fact Book* cites paratransit as the most widely used public transit service. As a result, 98% of the cutaway buses operated by public transit agencies are wheelchair accessible. In addition to using cutaway buses as part of their paratransit programs, three of the participating agencies in this study incorporate cutaways as part of their fixed route and circulator services.

Concerning in-house operations versus outsourcing to third party contractors, although seven of the participating agencies reported cutaway vehicle ownership, practices related to operations varied. Two participating agencies in this study reported that cutaway vehicles were operated in-house. Three other participating agencies outsource paratransit operations that involve cutaways. Two participating agencies reported operating some cutaways in-house as well outsourcing paratransit services to third parties that use cutaways. (King County Metro Transit operates cutaways in-house for local fixed route transit while King County Accessible Services provides paratransit through a third party.) Two participating agencies — Miami Dade Transit and Santa Fe Trails — reported that they neither own nor operate cutaway buses as part of their fleets or demand response operations; however, as required by law both agencies provide paratransit using other types of vehicles. In addition, secondary research indicates that Miami Dade Transit operates cutaway vehicles in a circulator route; however, the agency refers to the vehicles as minibuses.

The data sets used for the secondary research component of this study indicated that 25 feet is the most popular length for U.S. public transit cutaways. However, cutaway vehicle length among the nine participating agencies varied. Four participating agencies indicated that their cutaway fleets consisted solely of small-sized vehicles (under 25 ft. in length). Four other participating agencies reported utilizing medium-sized cutaway vehicles (25 ft. to 30 ft.). Only one agency reported operating both small-and medium-sized cutaway buses.

New Purchases & Delivery: Four participating agencies stated that small-sized cutaway buses would be crucial to meeting their future service demands. Three other participants observed that medium-sized cutaways would be vital to meeting future ridership needs. Based on these future needs, four agencies reported contracting for new cutaway buses in 2007. The per-unit costs associated with these new vehicles ranged from approximately $45,000 to nearly $75,000.

The reasons cited by the participants for procuring new cutaways were varied — new service routes, *ADA* compliance, retirement and/or replacement of old cutaway buses, and increased ridership. On the other hand, four of the participating agencies reported that

they had no new procurements of cutaways in 2007; three of these four respondents indicated that budget constraints were a factor in not procuring new cutaways. The fourth agency indicated that it did not purchase cutaways in 2007 because it was negotiating a purchase of thirty-five 27-ft. low-floor buses. One of the other four that did not purchase new cutaways in 2007 was planning to replace nine cutaways with 30-ft. buses in 2008, even though the respondent cited budgetary constraints as a challenge.

Federal Provisions, Procurement Issues and Funding: Although *SAFETEA-LU* provides historic funding levels for federal surface transportation programs from FY 2005 through FY 2009, most provisions started in FY 2006. Therefore, the survey results suggest that it may still take a few more years to see the actual impacts of *SAFETEA-LU* provisions on the cutaway bus market. Participating transit agencies were asked to report the current status of agencies' "Coordinated Public Transit Human Service Transportation Plans," which *SAFETEA-LU* requires of public and private transportation providers and non-profit organizations as a condition of receiving funding for the New Freedom, JARC, and the Elderly Individuals & Individuals with Disabilities programs. Five of the nine transit agencies surveyed — JATRAN, SFT, NYCT, CATS and CCTA — currently are in the process of developing initial plans, and two agencies — Phoenix PTD and IndyGo — already have developed initial plans, a condition of receiving funding for the related programs.

Most of the participating transit agencies reported that *Buy America* "somewhat" influences cutaway procurements and operations. The agencies' responses with respect to the *Buy America* question were similar to the responses provided by the same nine transit agencies to a similar question posed in the 2005 *Non-Rail Vehicle Market Viability* study.

None of the participating agencies indicated any experience with the U.S. DOT lending or credit assistance programs. Agencies' responses reflected minimal to no interest in using the programs for varied reasons including a lack of need, limitations in debt management, the availability of other reliable funding sources, or a lack of knowledge about the DOT programs.

Fuel Systems and New Technologies: Public transportation agencies are impacted by state and local commitments, along with public demand, to address environmental concerns — particularly air quality issues. In spite of these pressures, the transit agencies that participated in the survey primarily use gasoline or diesel to fuel their cutaway fleets, although biodiesel is gaining popularity among the participating agencies and used exclusively by one of the participating agencies. With regard to technological advancements, obstacle detection equipment and GPS devices rated highly as "must have" technologies over the next five to seven years by the majority of the transit agencies participating in the survey.

Key Findings Relevant to Cutaway Bus Manufacturers

Current State of the Cutaway Bus Market: Currently, fifteen U.S. manufacturers produce small-to-medium-sized buses. Of these fifteen, eleven companies manufacture most of the cutaway buses produced in the U.S. Four bus manufacturers participated in the *Evaluation of the Market for Small-to-Medium-Sized Cutaway Buses* — Coach & Equipment Manufacturing Corp. and the Commercial Bus Division of Thor Industries, Inc., (El Dorado National-Kansas, Inc., Champion Bus, Inc. and Goshen Coach). Together, these four manufacturers accounted for more than 70% of all cutaway buses reported in the APTA data sets from 2002 and 2006.

Annual sales of cutaway buses ranged from just over $531 million in 2002 to nearly $622 million in 2007. The average annual sales volume over the same period amounted to approximately $581 million. Annual sales volume for the four participating manufacturers ranged from a low of $236 million in 2004 to an estimated high of just over $460 million in 2007. Unlike their heavy-duty transit bus counterparts, cutaway manufacturers do not track annual vehicle sales by vehicle length because each order is essentially custom-made, and each chassis type and length can accept a variety of body types and configurations. For example, one participating cutaway manufacturer offers over sixty different body styles to its customers.

The four participating cutaway manufacturers, as well as other manufacturers that were not part of this study, manufacture cutaway buses ranging in length from under 20 ft. to more than 30 ft. APTA data indicates that the 25-ft. cutaway bus has been the most prevalent length for cutaway buses used by public transit agencies. The weighted average length of cutaway buses measures 23 ft. This figure reflects the combined production for public transit and commercial (retail) by the participating manufacturers.

Product and market diversity are critical elements of the sales strategies associated with cutaway buses. According to the participating cutaway manufacturers, sales to public transit agencies account for approximately 63% of annual revenue. Sales to public agencies provide the manufacturer with, at most, low single digit profits (0% to 4%). Cutaway sales to commercial (retail) customers are significantly more profitable. For example, one of the participants cited gross profits of nearly 10% on sales to commercial (retail) customers. By generating close to 40% of their revenue through commercial (retail) sales, the participating cutaway manufacturers have been able to improve profitability. These results differ greatly from the heavy-duty transit bus industry in which sales to public transit agencies account for more than 90% of annual revenues, and profitability is much more difficult to achieve.

Production Capacity, Materials and Components: Unlike the heavy-duty transit bus manufacturers, cutaway bus producers do not manufacture the vehicle chassis. Instead, cutaway bus manufacturers purchase chassis from one or more manufacturers in the automotive and truck sectors, manufacture the bus body and attach the bus body to the chassis. The automotive and truck sectors produce approximately 10,000 chassis per year for use in cutaway buses.

Procurement Issues: Despite the success of cutaways in recent years, the cutaway industry has its own challenges. The participating cutaway manufacturers articulated a number of concerns including low-bid procurements, the lack of uniform vehicle specifications, multiple-year contracts, buying power of large transit agencies, component vendor support, and warranties. Many of these issues are similar to those faced by the heavy-duty transit bus manufacturers.

Participating manufacturers in the *Evaluation of the Market for Small-to-Medium-Sized Cutaway Buses* indicated that since the chassis that each manufacturer purchases is built in the U.S. and represents a major component of a cutaway, meeting the *Buy America* domestic content requirement generally is not a problem with respect to procurement concerns.

Key Elements of *Observations & Conclusions*

Competitive Landscape for Small-to-Medium-sized Cutaway Bus Manufacturers: HD/FKA used Porter's *Five Forces Model* to evaluate the competitive landscape of the small-to-medium-sized cutaway bus market. Porter's model consists of five different forces that affect all markets. These forces are:

- Threat of new entrants
- Bargaining power of buyers
- Bargaining power of suppliers
- Threat of substitutes
- Competitive rivalry

While all five forces exert pressure on the manufacturers of small-to-medium-sized cutaway buses, the bargaining power of buyers and suppliers is the most significant. When transit agencies buy cutaway buses, their buying power is reflected through:

- Large volume purchases
- Low-bid or multiple-year procurements
- Contracting and warranty issues

The chassis is the most important component purchased by small-to-medium-sized cutaway bus manufacturers. Some of the largest and most formidable manufacturers in the U.S. automobile/truck industry manufacture these chassis. As a result, small-to-medium-sized cutaway bus manufacturers may be forced to deal with chassis shortages, large price increases and little or no pricing support for multiple year contracts.

Characteristics of Cutaway Manufacturers Versus Heavy-Duty Transit Bus Manufacturers: The cutaway industry features several unique practices that allow it to be more stable and, generally, more profitable than the heavy-duty transit industry.

Key differentiating factors include:

- Small-to-medium-sized cutaway manufacturers are body builders. Unlike heavy-duty transit bus manufacturers, cutaway bus builders purchase a complete chassis.

- Small-to-medium-sized cutaway manufacturers sell their buses through a network of bus dealers — both independent dealers as well as manufacturer-owned dealers.

- Cutaway manufacturers produce diversified products and serve multiple markets.

Summarized Market Trends: This study has examined a broad scope of factors that impact transit agencies and cutaway bus manufacturers. Summarized trends and findings include:

1. Vehicle and market diversity are the greatest strengths of the small-to-medium-sized cutaway bus manufacturers. Sales of specialized cutaway vehicles for commercial applications, such as low-floor, entertainment, senior-living and customized rental cutaways are key to market profitability.

2. Events or circumstances that negatively impact tourism for a prolonged length of time adversely impact the small-to-medium-sized cutaway bus market. A notable example was the impact following September 11 on sales of cutaways to the commercial (retail) sector. In the immediate aftermath of 9-11, commercial sales slowed significantly, which negatively affected profitability of the cutaway manufacturers. During this period, these manufacturers had to rely on less profitable sales to the public sector.

3. Discussions about public transit agency procurement and contracting methods underscore the frustration not only of cutaway bus manufacturers, but also of heavy-duty transit bus manufacturers with low-bid procurements.

4. While most cutaway vehicles today are powered by gasoline and diesel fuel sources, it is important to recognize the rapidly changing marketplace with regard to alternative fuels, especially biodiesel, and the increasing influence of alternative fuel vehicles in the small-to-medium-sized cutaway bus marketplace.

5. In general, transit agencies reported interest in employing new technologies to assist cutaway bus drivers in providing safe, efficient service; however, cost is a prohibitive factor not only as it relates to procuring the latest technologies, but also as it relates to new purchases in general.

6. As the U.S. population ages, the anticipated increase in paratransit ridership suggests that the demand for cutaway buses will be stable or may well increase over the next decade.

7. A lack of uniform cutaway bus specifications in the U.S. small-to-medium-sized cutaway bus market presents challenges for manufacturers. The cutaway manufacturers participating in the study cited examples of inconsistent or inappropriate vehicle specificiations in procurement documents, which posed problems for the companies.

8. There is a general consensus among bus manufacturers that the FTA needs to engage in more oversight when providing federal support to public agencies. Likewise, various transit agencies acknowledge minimal knowledge, interest in or experience with several key pieces of federal funding legislation.

Recommendations: In the context of the eight-month period of research and evaluation of the small-to-medium-sized cutaway bus market, HD/FKA identified four critical areas that merit additional review and consideration by the FTA and the transit industry:

- **Funding** — The impact of *SAFETEA-LU* and other federal funding mechanisms, as well as federal requirements inherent in the *SAFETEA-LU* bill on public transportation at the local level, is still evolving. Although numerous studies have been made about SAFETEA-LU, further analysis of SAFETEA-LU and related funding issues, with respect to both transit agencies and U.S. manufacturers, is warranted.

- **Role of the FTA** — It appears that some cutaway bus manufacturers lack understanding with respect to the FTA's role in U.S. public transit. Some of the manufacturers have only limited awareness of the function and operational limitations of the FTA. Thus, a series of roundtable discussions with the bus manufacturing industry might serve to update and clarify the role of FTA for the participants. In addition, this type of forum might serve to create an atmosphere of exchange that would serve to bolster the U.S. bus industry.

- **Alternative fuels/alternative fuel vehicles** — The subject of alternative fuels/alternative fuel vehicles is continuing to evolve as it relates not only to cutaway vehicles but also to the transportation industry in general. As new EPA regulations take effect and, as future requirements near, the subject of alternative fuels/alternative fuel vehicles, particularly with respect to transit buses, is expected to be a critical issue for the foreseeable future. Perceptions related to alternative fuel commonly differ from reality, and controversies abound. Additional analysis, beyond existing studies that have been produced by APTA and other organizations, could shed light on the views of industry as well as the perspectives of other related energy and environmental organizations, along with transit agencies and other public agencies that procure buses.

- **Innovative technologies** — New technologies, such as Computer Aided Dispatch (CAD) and Remote Infrared Audible Signage (RIAS), are being introduced increasingly to transit agencies. The impact of these and other new technologies on public transportation, specifically transit buses (including cutaway vehicles), is a subject that warrants additional review. In addition to cost-benefit studies of these technologies, further analysis of the operational value and related ease of training would benefit public transit.

Introduction

In March 2007, the American Public Transportation Association (APTA) reported that, in 2006, there were 10.1 billion trips on local public transportation. According to APTA, public transit use has increased 30 percent since 1995 — more than double the 12 percent growth rate of the U.S population and outnumbering domestic airline trips by fifteen to one.[1] Multiple variables impact the public and encourage people to use public transportation. These variables include rising gas prices, traffic congestion, expanding transit service options, along with individual circumstances such as impaired driving ability or other factors.[2] Cutaway buses represent a significant segment of the bus market in the United States — in particular, as it relates to demand response, or paratransit, services. As population demographics shift and various issues impact public transportation, it is essential to obtain current insights from transit agencies as well as from vehicle manufacturers with respect to this critical public transit market segment.

Research Background

In late 2005, the Federal Transit Administration (FTA) completed a review of the heavy-duty bus market through a research report, prepared by HD/FKA, entitled the *Non-Rail Vehicle Market Viability Study.* The 2005 report, predicated on extensive background research, as well as surveys and interviews with representative transit agencies and key manufacturers, highlighted challenges that threaten the manufacturers' ability to provide the types and quantities of buses (in particular, heavy-duty buses) that are required by many public transit systems in the United States. In response to these findings, the FTA determined that examining another aspect of the bus market, specifically small-to-medium-sized cutaway buses, will provide valuable insights for the future — not only as it relates to transit agencies, but also with respect to manufacturers.

Medium Duty Cutaway Vehicle

A medium-duty cab chassis prior to mounting a second stage manufacturer's body.

Source: Useful Life of Transit Buses and Vans. FTA. April 2007.

Small-to-medium-sized cutaway buses are used widely for demand response transit and paratransit services by transit agencies in the United States. This study highlights medium and light duty cutaway vehicles. Medium-duty cutaway vehicles utilize a front-engine cab chassis manufactured by medium- and heavy-duty truck manufacturers. (**A representative medium-duty cutaway vehicle chassis is pictured on the right.**) "Second stage" manufacturers mount custom bodies on the chassis in the production process to build a "complete vehicle." Cutaway vehicles in this category average roughly 25 to 35 feet in length and have a 16,000 to 26,000 pound gross

vehicle weight rating (GVWR), with a seating capacity ranging from 22 to 30 passengers.[3]

Light-Duty Cutaway Vehicle

A standard light-duty cab chassis for cutaway vehicles prior to attaching second stage manufacturer's body.

Source: U.S. DOE Office of Scientific & Technical Information

Domestic auto/truck manufacturers, such as Ford and General Motors, are the primary manufacturers of the chassis for U.S-built cutaway buses. As with medium duty vehicles, second stage manufacturers mount specialty-built bodies on the frame rails of an "incomplete vehicle" (**similar to the one depicted on the left**) and integrate the front cab section with the custom-made body. Small-sized cutaways typically range from 18 to 25 feet in length[4] and have a gross vehicle weight ranging from approximately 10,000 to 16,000 GVWR.[5]

Based on APTA's latest information, approximately 6,000 transit agencies in the country provide demand response services and utilize fleets consisting of taxis, vans and cutaway buses. Private sector transportation also represents a large market for cutaway vehicles. Hotels, rental car agencies, colleges and universities, faith-based groups, corporate and government campuses and other institutional organizations frequently operate fleets of small-to-medium-sized buses, including cutaways.

The *Evaluation of the Market for Small-to-Medium-Sized Cutaway Buses* aims to provide an exploratory evaluation of the U.S. bus manufacturing industry to meet the need for cutaway buses and to examine issues that impact transit agencies, with regard to cutaway buses, in order to provide demand-response services. The transit agencies participating in the survey component of this report provided representative qualitative and quantitative information — a view of the landscape of cutaway bus services throughout the country. The agencies reported varied experiences as well as common concerns related to cutaway vehicle procurement, technologies, fuel types, enabling legislation and other relevant topics. Likewise, the bus manufacturers that were surveyed and interviewed supplied key insights related to trends and challenges in the cutaway vehicle market. Key areas highlighted by the manufacturers include financial performance, trends in vehicle types (e.g. varying lengths, propulsion systems types, technologies and other factors), and challenges as well as positive impacts caused by outside forces in the marketplace.

The report is divided into a market overview section (Chapter 1) and a survey results and analysis component (Chapters 2, 3 and 4). All chapters include applicable information about the participating transit agencies and participating manufacturers. Conclusions and recommendations that reflect the research findings are provided in Chapter 5.

Research Methodology

In order to assess use and application of cutaway vehicles, it is necessary to qualify the vehicle category as well as to discuss the primary service areas in which transit agencies employ these vehicles. Inconsistencies observed in various resources in the descriptions and terms used to categorize this type of vehicle are among the challenges in assessing market perspectives.

Annually, APTA collects the most comprehensive data available as it relates to detailed information about transit vehicles, which serves as a critical resource to the transportation industry. As it relates to cutaway vehicles, although APTA collects information annually from its members regarding fleet vehicles, transit agency responses suggest confusion about vehicle models and types with regard to terminology. For example, some transit agencies list Ford or Chevy as the make and/or model of various cutaway vehicles. Although, this may be partially accurate in that the chassis may have been built either by Ford, General Motors (Chevy) or another chassis manufacturer, there is a lack of consistency in reporting. While the chassis manufacturers are readily apparent to anyone looking at the vehicle due to visible brand logos on the chassis cab, second stage manufacturers' logos are not as apparent (**as depicted in the image of the El Dorado *Aerolite* vehicle**).

The Chevy brand logo is highly visible on this El Dorado Aerolite cutaway vehicle.
Source: *Central States Bus Sales, Inc. Internet Website*

Most transit agencies reporting to APTA listed vehicle models in terms of the second stage manufacturer of the body, such as Champion or El Dorado; however, several agencies listed models and/or the manufacturers as "unknown." For purposes of this study, when a chassis is modified (in other words, "cut" "away"), the company (second stage manufacturer) completing the alteration is referred to as the manufacturer.[6]

APTA's *Public Transportation Fact Book* parameters for vehicle types may increase the ambiguity in terminology by using the term "van" to refer to some types of cutaway vehicles and not including cutaway medium duty "truck-type" vehicles.[7] APTA's 2007 *Fact Book*, for example, defines the following vehicles without specific reference to cutaway buses:

- Bus, double-deck (2 levels, one above the other)
- Bus, articulated (≥55')
- Bus, intercity (≥32'6", 1 door, luggage bays)
- Bus, trolley replica (any length, design imitates streetcar)
- Bus, suburban (≥27'6", 1 door, no luggage bays)
- Bus, transit (≥27'6", 2 doors)
- Small vehicle (<27'6", minibus, van, automobile, sport utility vehicle)

- Trolleybus, articulated (≥55', powered by overhead wires)
- Trolleybus, suburban (≥32'6", 1 door, powered by overhead wires, no luggage bays)
- Trolleybus, transit (≥32'6", 2 doors, powered by overhead wires)
- Tram tractor with trailer units

Because the market overview segment of this study features data derived from secondary sources, it is necessary to highlight research parameters used to develop the market overview component. Principal sources included electronic and published sources of information, specifically industry journals and publications, conference presentations, industry and government-sponsored reports, Internet website information, brochures, press releases, and newspaper articles. Among these, APTA's *2007 Transit Vehicle Database* was a key resource that was critical to this market overview. Some references, also, were included from North Dakota State University's *Small Transit Vehicle Industry Study.*

In order to analyze the data from the *2007 Transit Vehicle Database* (FY 2006) accurately with respect to the cutaway bus market, HD/FKA validated the database, with respect to cutaway buses, by removing unqualified services and vehicles (e.g., 40 ft. Nova Transit Bus). Additionally, vehicles labeled as "unknown" manufacturer and "unknown" vehicle model were removed from the data set. Furthermore, transit agencies in foreign countries and U.S. territories (Puerto Rico, U.S. Virgin Islands, Guam, Northern Mariana Islands and American Samoa) were not included in the data set used for this study although the original APTA data set includes Canada and Puerto Rico. In addition, in determining average costs, any vehicles listed without cost data were removed as well as a small number of vehicles with erroneous cost data.

In addition, several sections of the *Market Overview* rely on data from earlier APTA transit vehicle databases — from 2003 to 2006. In order to develop the annual sample frames for cutaway vehicles, the same qualifiers and adjustments were applied to other years as those used to qualify the 2007 data set.

It is critical to note that the applicable 2007 data set, which is included as **Appendix 1**, is only representative of the total cutaway vehicle marketplace and cannot be viewed as entirely comprehensive. While nearly 6,000 transit agencies operate demand response services only 288 transit agencies responded to the overall APTA survey. Furthermore, while APTA reports that 60% of <u>all</u> transit vehicles are represented in the APTA 2007 data set from the nearly 300 agencies that responded, only 181 of the participating agencies reported information on demand response. Out of a total of more than 6,000 transit agencies, 181 represents only about 3% of all transit agencies that provide demand response throughout the nation.[8] This is important to recognize while reviewing the quantitative information. (For a complete list of agencies that reported cutaways as part of their fleets, please see **Appendix 2**.)

As it relates to the survey and interview components of the report, ten responses were reviewed from a total of nine transit agencies — King County Department of

Transportation in Washington State submitted responses related to cutaway vehicles in its Metro Transit division as well as in the agency's Accessible Services section. A sample of the survey instrument delivered electronically to each participating transit agency is included as **Appendix 3**. As is indicated in the analytical component of this report related to information provided by transit agencies (Chapter 2), two of the nine surveyed agencies reported that they neither own nor operate any cutaway vehicles; however, as applicable, the agency officials responded to some of the survey questions. In addition, secondary research indicates that Miami Dade Transit operates cutaway vehicles in a circulator route; however, the agency refers to the vehicles as minibuses.[9] The information obtained from the transit agencies is anecdotal and should be used to understand fundamental issues that are common to various agencies rather than as an exhaustive account.

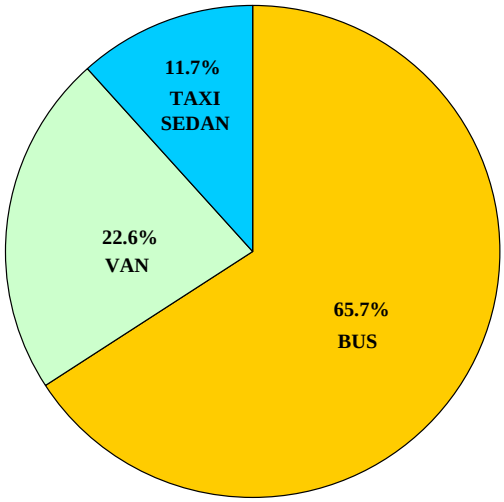
Five bus manufacturers were approached to participate in the study, although only four of the five provided responses to the written survey instrument. Three of the participating companies are subsidiaries of a common parent company that determined it preferred to respond to the survey in aggregate and conduct one face-to-face interview representing all three of its subsidiaries. The other two manufacturers participated independently in face-to-face interviews, and one of these two responded to the survey. Insights and information gathered from the participating manufacturers is detailed in Chapters 3 and 4. A sample copy of the survey instrument submitted to the participating manufacturers is included as **Appendix 4,** and a copy of the in-person interview questions is submitted as **Appendix 5.**

Chapter 1: Market Overview

1.1 Principal Service for Cutaway Vehicles in Public Transit

In 2006, *Metro Magazine* surveyed 36 random paratransit operators — a mix of public and private entities — to determine various factors impacting paratransit including a significant focus on vehicle types. As depicted in Figure 1, survey results indicated that buses comprise approximately 66% of the paratransit fleets among those surveyed while vans and taxis/sedans represented a smaller market segment for paratransit services. (The survey also found that nearly three-quarters of the buses used by responding transit agencies fall into the "small bus" category, which is comprised primarily of light-duty cutaway vehicles.)[10]

Figure 1: Percentage of Vehicles by Type



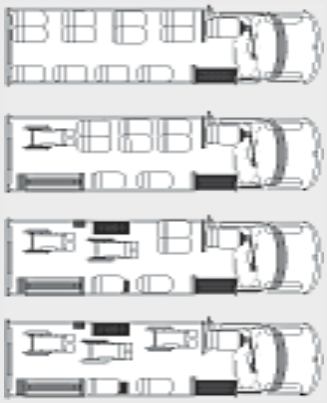
Source: "2006 Paratransit Study," *Metro Magazine*, August 2006.

Metro Magazine's "2006 Paratransit Study" highlights the need for paratransit services not only by people that are challenged by disabilities, but also by the rapidly aging population in the United States. According to a November 2005 Harris Interactive® survey featured by *Metro Magazine*:

> *More than four in five seniors believe public transportation is a better alternative to driving alone, especially at night…83% agree that public transit provides easy access to the things that older adults need in everyday life. The survey also found that two-thirds of seniors believe their communities need more public transportation service targeted specifically for older adults.* [11]

By removing seats to equip vehicles with a wheelchair lift and replacing additional seats for each wheelchair tiedown, cutaway vehicles can be modified for accessibility.[12] For example, the California Department of Transportation (CALTRANS) provides information about various cutaway options for transit agencies including a 27-ft. cutaway vehicle designed to accommodate 22 ambulatory riders that may be converted to a vehicle that can hold 16 ambulatory passengers, a wheelchair lift and one or two wheelchair tiedowns. Similarly, CALTRANS state contract information includes 29-ft. vehicles that normally would accommodate 26 ambulatory passengers and that may be modified to fit 20, or more, passengers plus two wheelchairs (or 32-ft. vehicles that can accommodate 24 passengers and two wheelchairs, which would otherwise fit 30 ambulatory passengers).[13]

Because cutaway vehicles can be modified for mobility accessibility, these vehicles play an important role in paratransit. Due to the nature of paratransit services, which typically carry a few passengers at a time, small-to-medium-sized vehicles are practical in terms of overall life cycle costs that include a vehicle's purchase price, operations and maintenance as well as fuel economy. As a result, most paratransit service vehicles are less than 30 feet in length.[14]



Manufacturers may offer floorplan options for varying numbers of wheelchairs. (This shows 4 options for Coach & Equipment's *Phoenix*.)

Source: Coach & Equipment Internet Website

Of the 11,368, cutaway vehicles reported by transit agencies in the *2007 Transit Vehicle Database,* 11,157 vehicles are wheelchair accessible. Among the reported vehicles about 98%, or 10,933 vehicles, are equipped with lifts while only about 2%, 216 vehicles, were reported as equipped with ramps.[15]

Between 2002 and 2006, manufacturers incorporated lifts in a substantial number (57.94%) of small-to-medium-sized bus designs in order to meet ADA requirements. Small-to-medium-sized low-floor buses produced during the same period of time accounted for only 2.64% of accessible buses. More than sixty percent of the small-to-medium-sized buses produced between 2002 and 2006 were ADA-compliant. Figure 2 indicates the trend towards lift-equipped vehicles in the small-to-medium-sized bus category as opposed to low-floor design by showing the percentages of small-to-medium-sized buses that were produced either as lift-equipped or as a low floor design in relation to non-accessible small-to-medium-sized vehicles.

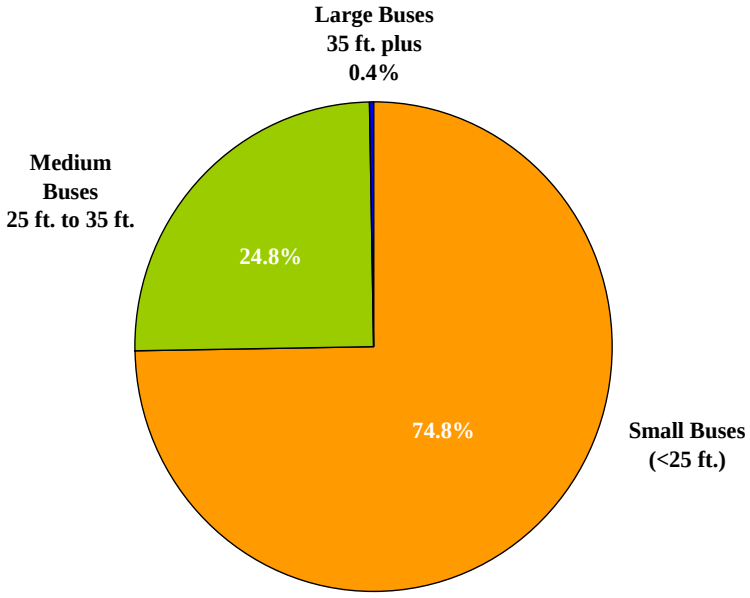
Figure 2: Percentages of Small-to-Medium-Sized Buses Produced

Description/Year	2002	2003	2004	2005	2006
Lift Equipped	60.91%	57.19%	57.73%	56.12%	55.50%
Low-Floor	3.56%	2.35%	4.03%	1.44%	1.85%
All Other (non-accessible)*	35.53%	40.46%	38.25%	42.44%	42.65%

Source: Mid Size Bus Manufacturers Association (MSBMA), *Annual Survey Compilation,* (2003-2006)

According to *Metro Magazine's* 2006 survey, light-duty cutaway buses represent the majority of the 74.8% small buses used for paratransit services. [16] This figure represents an increase of nearly 18.5% over the publication's "2005 Paratransit Study" in which small buses accounted for 61% of trips.[17] Mid-sized buses (25 ft. to 35 ft.) accounted for approximately 25% of these trips, while buses over 35 ft. length represented only 0.4% of the paratransit trips reported by participating survey respondents. Figure 3 provides a graphic representation of these figures.

Figure 3: Paratransit Buses by Length



Source: "2006 Paratransit Study," *Metro Magazine.* August 2006

Due to an increasing demand for paratransit services, a number of transit agencies have outsourced paratransit operations to private companies. The five largest private paratransit providers operate approximately 11,000 vehicles under contract. As Figure 4 demonstrates, Veolia Transportation, Inc. is the largest paratransit provider, operating almost 4,000 vehicles under contract.

Figure 4: Private Paratransit Providers

Company Name	Vehicles Under Contract
Veolia Transportation Inc.	3,892
MV Transportation Inc.	3,555
Laidlaw Transit Services	2,568
First Transit	635
McDonald Transit Associates	213
TOTAL:	**10,863**

Source: "2006 Paratransit Study," *Metro Magazine.* August 2006.

1.2 Fleet Size, Vehicle Length & Other Characteristics

Cutaway Vehicle Fleet Size

Although there are no definitive national statistics regarding the number of cutaway vehicles in transit agency fleets, data from various sources can provide a fair assessment of the number and importance of cutaway vehicles in U.S. transit fleets. As indicated in the *Introduction* of this report, APTA's *2007 Transit Vehicle Database* reports that nearly 6,000 transit agencies operate demand response services; however, only 288 transit agencies responded to the overall APTA survey. Although APTA reports that 60% of all transit vehicles, including ferries and trolleys, are represented in the APTA 2007 data set from the nearly 300 agencies that responded, only 181 of the participating agencies reported information on demand response (as seen in Figure 5). Out of a total of more than 6,000 transit agencies, 181 represents only about 3% of the transit agencies that are required by ADA legislation to provide paratransit. (Please see Appendix 2 for the list of the reporting agencies.)

Figure 5: Number of Agencies Reporting per Mode

Mode	No. of Agencies Reporting	Total No. of Vehicles Reported
Bus	262	65,430
Commuter rail	18	7,240
Commuter rail locomotive	17	761
Demand response	181	18,169
Ferryboat	8	68
Heavy rail	15	14,128
Jitney	1	315
Light rail	27	2,219
Other rail	10	193
Trolleybus	5	736
Vanpool	22	5,340

Source: *2007 Transit Vehicle Database.*

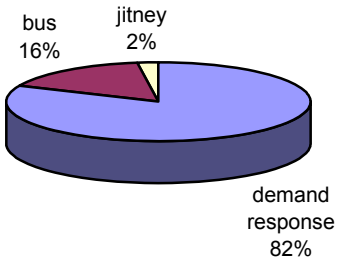
Although the percentage of reporting agencies is low, the percentage of vehicles represented is greater because the agencies with the largest-sized fleets are among the 181 reporting to APTA.[18] As highlighted in *Metro Magazine's* 2006 survey, the top ten largest paratransit fleets in the U.S. include the following agencies (listed alphabetically by state):[19]

- (CA) Access Services Inc. (Los Angeles)
- (CA) San Francisco Paratransit
- (IL) Chicago Transit Authority
- (IL) Pace Suburban Bus Division (Chicago)
- (MA) Massachusetts Bay Transportation
- (NY) MTA New York City Transit
- (PA) Access Transportation Systems Inc. (Pittsburgh)
- (TX) Metropolitan Transit Authority of Harris County (Houston)
- (WA) King County Department of Transportation
- (WI) Milwaukee County Transit System

Regarding the number of cutaway vehicles in U.S. transit systems, the available data figures are representative, rather than exhaustive. It should be noted also that this section of the report includes cutaway vehicles that are part of transit agency fleets, categorized by transit agencies not only as demand response vehicles but also under different modes

including "bus" and "jitney." While the exact percentage of cutaway vehicles in paratransit service in the U.S. cannot be determined, it should be noted that among the total of 18,169 vehicles cited in APTA's 2007 data as demand response vehicles more than 50% are cutaway vehicles.[20]

Figure 6: Cutaway Vehicles Per Service Mode Reported



Source: *2007 Transit Vehicle Database.*

Of the 288 U.S. transit agencies that participated in APTA's *2007 Transit Vehicle Database*, twenty-three agencies represent exclusively rail or ferry systems. Of the remaining 265 agencies, roughly 80% (208 agencies) specified that one or more of their fleet vehicles are cutaway vehicles used in various service modes although predominantly used in demand response (as depicted in Figure 6). Also, as noted in the *Research Methodology* section of this report, it was necessary to exclude some agencies from the data set for the *Market Overview* because some vehicles were listed as "unknown" vehicle types and/or "unknown" manufacturer; thus, these figures could not be included.

The percentages depicted in Figure 6 are from the representative pool of 208 agencies in which there are a total of 11,368 cutaway vehicles. Of this total, 9,270 vehicles were listed as demand response vehicles (82%); 1,857 vehicles (16%) were reported in the "bus" service mode category, and 241 vehicles (2%) were listed in the "jitney" category.

According to the 2007 data, of the total of 11,368 cutaway vehicles, 10,252 are listed as "active" vehicles; 45 vehicles were identified as "rehabilitated," and 28 were reported as "needing rehabilitation." In addition, 932 vehicles, or 8%, represent alternative fuel vehicles.[21]

Vehicle Length and Other Characteristics

Small-to-medium-sized cutaway buses represent a wide variety of vehicles types and lengths. Medium-duty cutaway vehicles utilize a front-engine cab chassis manufactured by medium- and heavy-duty truck manufacturers. Second stage manufacturers mount custom bodies on the "incomplete vehicles" or chassis in order to build complete vehicles. Cutaways in this category average roughly 25 to 35 feet in length and weigh 16,000 to 26,000 pounds (Gross Vehicle Weight [GVW]) with a seating capacity ranging from 22 to 30 passengers.[22]

Domestic auto manufacturers, such as Ford and General Motors manufacture light-duty cutaway bus chassis. As with medium-duty cutaway vehicles, second stage manufacturers mount specialty-built bodies on the frame rails and integrate the front cab

section with a custom made body. Light-duty cutaways typically range from 16 to 25 feet[23] in length and have a gross vehicle weight ranging from as low as 6,000 pounds for small-sized vehicles up to 16,000 pounds for mid-sized, light-duty cutaways.[24] Figure 7 highlights cutaway vehicle characteristics:

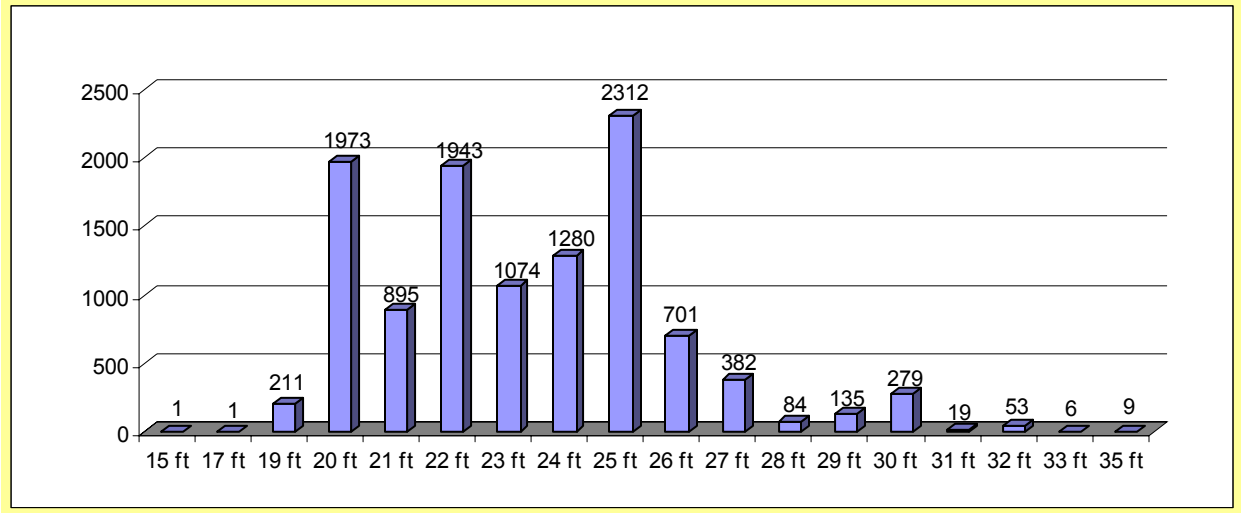
Figure 7: Medium- and Light-Duty Cutaway Vehicle Characteristics

Description	Vehicle Characteristics			
	Length	GVW	Seats♦	Average Cost
Medium-Duty, Purpose-Built, Cutaway Bus	<35 ft.	16,000 to 28,000	20-40	$75,000 to $175,000
Light-Duty, Mid-Sized Cutaway Bus	25-30 ft.	10,000 to 16,000	16-25	$50,000 to $65,000
Light-Duty, Small-Sized Cutaway Bus	16-28 ft.	6,000 to 14,000	1-22	$30,000 to $40,000

NOTE:** Seating count ***does not include the operator's seat and may reflect a purpose-built paratransit vehicle with only 1 passenger seat.
Source: Federal Transit Administration (*FTA Useful Life of Transit Buses & Vans*, April 2007.)

Data gleaned from available information in the 2007 *APTA Transit Vehicle Database* demonstrates that cutaway vehicles in U.S. transit agency fleets range from as small as a 15-ft.-long El Dorado *Aerotech* model at Southeast Area Transit in Zanesville, Ohio to as large as 35 feet — such as Glendale Transit's 2006 35-ft.-long *Aerotech* model in Phoenix, Arizona. In general, however, cutaway buses are less than thirty feet long and typically weigh less than 30,000 pounds (GVW) as Figures 7 and 8 illustrate.

Figure 8: Length of Cutaway Vehicles



Source: APTA *2007 Transit Vehicle Database*

Most cutaway vehicles have walk-in, front entry doors and a center aisle with an interior height that allows riders to stand.[25] Cutaway vehicles are manufactured with various wheelbases, designed to accommodate varying numbers of ambulatory passengers as well as varying numbers of wheelchairs. When equipped to transport 24 or more passengers, manufacturers install an additional rear axle, or "tag" axle.[26] As depicted in Figure 9,

according to a five-year review of cutaway vehicle length trends, the 22-ft., 20-ft. and 24-ft. cutaway buses, respectively, follow the 25-ft. vehicle in ranking order of prevalence.[27]

Figure 9: Percentages of Cutaway Vehicles by Length

Bus Length	2002	2003	2004	2005	2006	5 yr. Average
< 19 ft	2.39%	2.45%	1.98%	0.49%	0.02%	1.47%
19 ft	4.00%	5.18%	4.55%	2.57%	1.86%	3.63%
20 ft	**14.80%**	**15.84%**	**15.26%**	**16.27%**	**17.36%**	**15.90%**
21 ft	8.71%	9.10%	8.10%	7.68%	7.87%	8.29%
22 ft	**16.26%**	**15.27%**	**15.57%**	**18.17%**	**17.18%**	**16.49%**
23 ft	8.29%	8.68%	8.35%	8.16%	9.45%	8.59%
24 ft	**12.89%**	**10.23%**	**10.20%**	**10.23%**	**11.26%**	**10.96%**
25 ft	**19.13%**	**19.84%**	**20.15%**	**20.92%**	**20.34%**	**20.07%**
26 ft	5.16%	5.54%	6.47%	6.52%	6.17%	5.97%
27 ft	2.68%	3.62%	4.45%	4.20%	3.36%	3.66%
28 ft	1.40%	0.56%	0.70%	0.74%	0.74%	0.83%
29 ft	1.14%	1.17%	0.95%	1.14%	1.19%	1.12%
30 ft	2.13%	1.91%	2.35%	1.79%	2.45%	2.13%
30 ft plus	1.02%	0.61%	0.90%	1.12%	0.77%	0.88%

Source: APTA *Transit Vehicle Database*, 2003 — 2007

Service Life Requirements: The FTA requires a minimum service-life for each type of cutaway vehicle (as demonstrated in Figure 10). Service life is measured in years or miles. Under the *Code of Federal Regulations*, *Subpart B 665.11 Testing Requirements (5)(f)*, "…the use of a bus model in a service application higher than it has been tested for may make the bus subject to the bus testing requirements." While transit agencies may have their own guidelines for service life, a bus manufacturer may "self-select" the service life category in which its buses are tested.[28]

As it relates to federal funds, FTA funds may not be used to procure a bus in an application requiring a higher service life category than the highest service life category tested by the manufacturers on that particular bus. For example, if a manufacturer tests a bus in the 7-year category, it may be sold using FTA funds specified for the 7, 5, or 4-year categories; however, FTA funds will not apply for 10- or 12-year service life categories.[29] Failure, on the part of transit agencies, to meet these requirements will result in a financial penalty assessed by the FTA. The following figure outlines minimum service life categories based on cutaway vehicle characteristics.

Figure 10: Service Life Categories for Cutaway Buses

Description	Vehicle Length	Minimum life (Years)	Minimum life (Miles)
Medium-Duty, Purpose Built Cutaway Bus	<30 ft.	7	200,000
Light-Duty, Mid-Sized Cutaway Bus	25-30 ft.	5	150,000
Light-Duty, Small-Sized Cutaway Bus	16-28 ft.	4	100,000

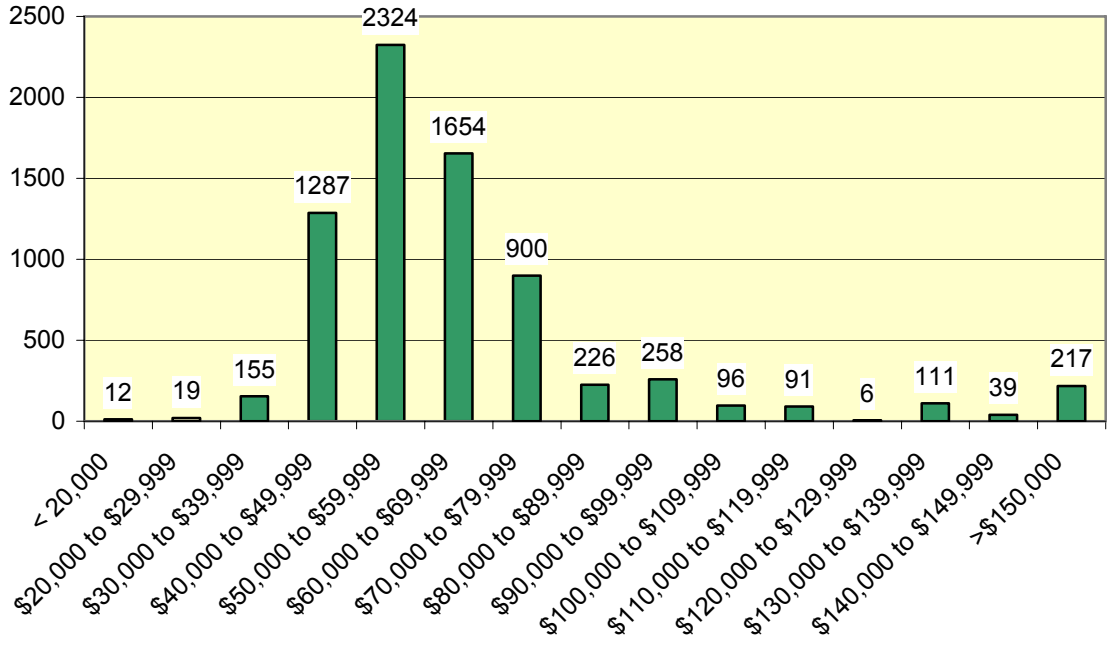
Source: Federal Transit Administration (*FTA Useful Life of Transit Buses & Vans*, April 2007.)

1.3 Vehicle Costs

Average new costs for cutaway vehicles vary, depending on size, accessibility features, fuel/propulsion sources and equipment. For example, Ohio Department of Transportation Capital Program data from August 2006 suggests that a typical medium-sized cutaway vehicle costs approximately $42,000, and a small-sized cutaway vehicle costs about $38,000. However, compared to figures that agencies reported to APTA in 2006, Ohio's figures are lower than average. Likewise, various transit agencies list the cost to retrofit these vehicles with wheelchair accessibility equipment as roughly $6,000; however, this figure may fluctuate depending on the nature and extent of the retrofit.[30]

Calculating cutaway vehicle cost, based on APTA's *2007 Transit Vehicle Database*, reveals that $67,333 was the average cost paid per vehicle. However, this cost figure is somewhat inflated due to the disproportionately high costs of CNG vehicles reported by Orange County Transit. Of the vehicles with cost data reported, fewer than 4% cited costs more than $150,000 per vehicle. Roughly a third of the cutaway buses in the dataset cost between $50,000 and $59,999, 22% of cutaway buses cost between $60,000 and $69,999 and 17% of the cutaways cost between $40,000 and $49,999. Figure 11 illustrates the number of vehicles reported to APTA that fall within the given cost ranges.

Figure 11: Cost Range of Cutaway Vehicles (2006 Data)



Source: APTA *2007 Transit Vehicle Database*

Of the cutaway vehicles examined for this market overview, the least expensive vehicles were reported by the Erie Metropolitan Transit Authority in Erie, Pennsylvania. The three vehicles, which are part of Erie's demand response service, are 21-ft 1999 El

Dorado *Aerotech* cutaway vehicles that can seat twelve passengers and cost $7,111 each (as seen in Figure 12 at the low end of the cost range for 21-ft. cutaway vehicles). Alternatively, twelve 2006 El Dorado *Aero Elite 320* cutaways (reported by the Orange County Transportation Authority in Los Angeles, California), which cost $200,000 per vehicle, are the most expensive cutaways reported in the 2007 transit database (as noted in Figure 12 at the high end of the cost range for vehicles greater than 30-ft.). These twelve cutaway vehicles, all of which run on compressed natural gas (CNG), are 32 feet long with 26 seats.[31]

Figure 12: Cutaway Vehicle Average Costs by Vehicle Length

Bus Length	Average Cost	Cost Range
< 19 ft	*$50,000	N/A
19 ft	$42,836	$37,900 to $46,788
20 ft	$47,016	$10,500 to $76,166
21 ft	$44,437	$7,111 to $64,305
22 ft	$58,128	$10,000 to $154,000
23 ft	$58,231	$13,990 to $106,584
24 ft	$64,120	$10,000 to $98,142
25 ft	$66,203	$19,500 to $153,878
26 ft	$67,382	$21,373 to $154,209
27 ft	$81,376	$48,000 to $166,667
28 ft	$81,761	$52,783 to $116,513
29 ft	$123,881	$76,160 to $189,307
30 ft	$118,381	$71,000 to $182,126
30 ft plus	$107,215	$61,956 to $200,000

***Note:** Vehicles listed without cost information, including several vehicles under 19-ft., could not be tallied. Also, anomalies that suggested incorrect responses/typos were not tallied.
Source: APTA *2007 Transit Vehicle Database*

As depicted in Figure 13, CNG and other alternative fuel systems impact the average vehicle cost; however, there is not a direct correlation between increased vehicle cost and various types of alternative fuel. For example, while CNG cutaway vehicles may cost more to procure than a standard diesel or gasoline cutaway, a CNG-diesel or diesel-electric battery cutaway vehicle falls well within the average vehicle cost range.

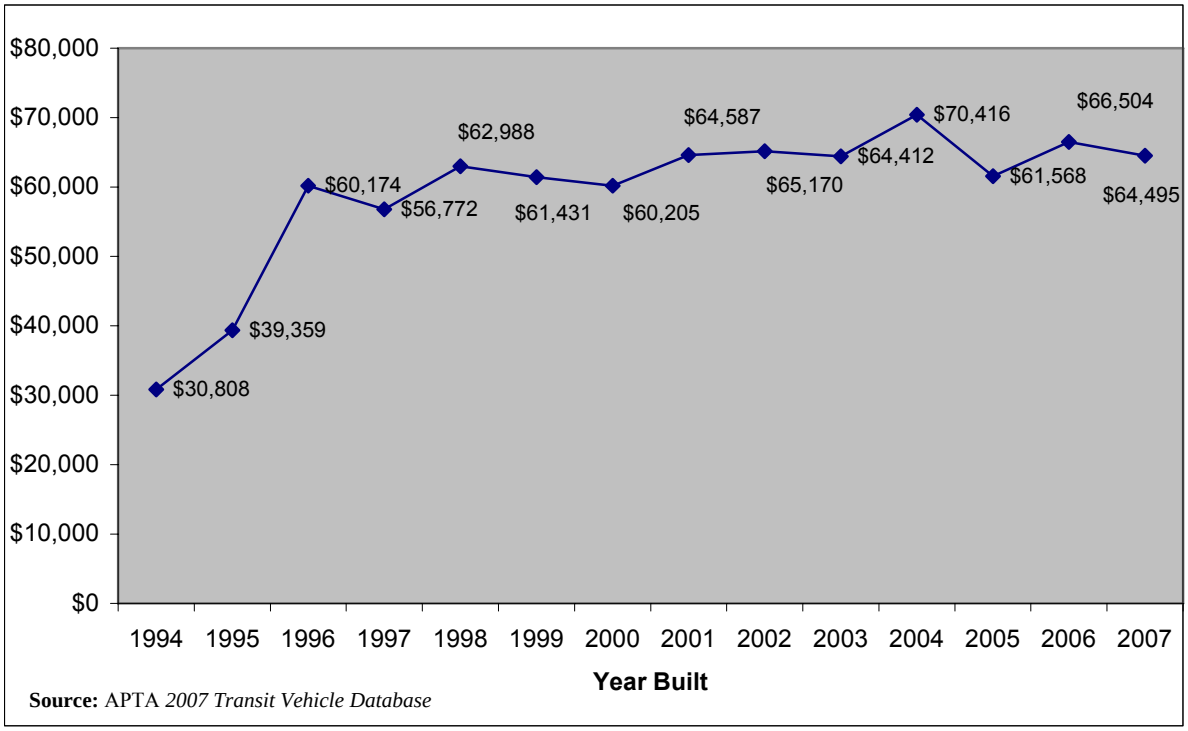
Figure 13: Cutaway Vehicle Average Costs by Fuel Type

Fuel Type	Average Cost	Weighted Average Cost	Minimum Cost Per Vehicle	Maximum Cost Per Vehicle
Gasoline	$50,711	$48,075	$7,111	$109,000
CNG & Diesel	$52,667	$52,800	$50,000	$55,000
Biodiesel	$64,671	$61,386	$38,689	$118,000
Clean Diesel	$62,558	$61,932	$52,164	$80,348
Diesel & Electric Battery	$63,797	$62,984	$62,454	$66,258
Propane & Gasoline	$64,350	$64,350	$64,350	$64,350
Propane	$69,058	$65,404	$53,855	$98,371
Diesel Fuel	$67,299	$65,730	$10,000	$189,307
CNG	$79,200	$88,880	$48,000	$200,000
Bunker Fuel	$83,884	$91,950	$69,767	$98,000

Source: APTA *2007 Transit Vehicle Database*

Vehicle age is another factor that influences vehicle cost. In general, as vehicles age the cost decreases; however, because other factors such as vehicle model and special features also influence cost, the data does not reveal a precise correlation between vehicle age and decreasing cost (as depicted in Figure 14).

Figure 14: Cutaway Vehicle Average Cost per Year Built



Source: APTA *2007 Transit Vehicle Database*

With regard to vehicle models, the most commonly reported cutaway vehicle model was the *Aerotech, which* is manufactured by El Dorado and available with more than 30 different floorplans.[32] Figure 15 depicts the ten most commonly reported cutaway vehicles and the average costs per vehicle, including the *Aerotech*, which accounts for approximately 20% of all cutaway vehicles reported to APTA in 2006.

Figure 15: Average Cutaway Vehicle Cost per Model

Vehicle make/model	Average cost	Length range	Number reported
1. El Dorado/Aerotech	$63,886	20-35ft	2,299
2. Goshen/GC II	$64,345	21-29ft	683
3. Champion/Challenger	$59,953	21-26ft	405
4. Coach & Equipment /Pegasus	$44,926	19-21ft	311
5. Coach & Equipment /Metro Lite	$46,987	19-21ft	252
6. Coach & Equipment/Phoenix	$55,310	19-32ft	240
7. El Dorado/Aero Elite	$105,181	22-32ft	218
8. El Dorado/Aero Lite	$61,207	20-30ft	179
9. Supreme/Senator	$49,751	20-25ft	142
10. Starcraft/Allstar	$55,081	23-25ft	118

Source: APTA *2007 Transit Vehicle Database*

While some transit agencies, particularly large, well-funded agencies, have the ability to procure new vehicles with the latest technological advancements, other transit agencies are facing numerous challenges related to costs. *Metro Magazine's* 2006 survey indicated that more than one-third of public and private paratransit providers responding **do not** plan to purchase new buses in 2007. Of those operations that reported plans to purchase vehicles, three out of ten expect to buy fewer than ten buses.[33]

Vehicle cost is among the challenges cited by many transit agencies in terms of meeting service capacity. For example, Coos County Area Transit Service provides demand response services for Coos County, Oregon, population roughly 63,000 — a substantial number of which are low-income, elderly or mobility-impaired residents. Coos County's transit system is comprised of eight cutaway vehicles and one minivan, all of which are wheelchair accessible. In an April 2007 report, Coos County Area Transit reported various challenges common to rural transit systems including:

- Due to limited resources, it cannot provide service late at night or weekends;
- Additional funding needed to add more accessible vehicles;
- Many rural residents cannot be served by public transit and remain isolated;
- Some passengers need a higher level of service than currently available;
- Low-income residents have difficulty affording the cost of public transportation, and health/social services organizations have insufficient transportation budgets; and
- Lack of round-the-clock service, in particular for medical transportation, leads to misuse of community ambulance and other emergency medical services.[34]

1.4 Fuel & Propulsion Systems

According to a June 9 front-page article in *The Washington Post*, a national poll released in April 2007 indicated that a third of the people polled regard global warming as the world's single largest environmental problem. The national survey, undertaken by *The Washington Post,* ABC News and Stanford University, demonstrates that environmental issues have become a "tipping point" culturally and politically in the United States.[35] The "U.S. Mayors Climate Protection Agreement," initiated in 2005 by Seattle's Mayor Greg Nickles, now includes 522 signatory mayors representing 65 million Americans. The mayors, who have signed the agreement, have pledged to cut greenhouse gas emissions 7% below 1990 levels by 2012.[36] A recent decision by New York Mayor Michael Bloomberg ordering all city taxis to operate on hybrid engines by 2012 underscores this growing environmental commitment as a significant aspect of decision-making with respect to transportation.[37]

States also have joined together in an effort to reduce greenhouse gas emissions. In early May 2007, thirty-one states that represent 70% of the nation's population announced a new Climate Registry, according to *Passenger Transit*. The registry will serve to measure, track, verify and report greenhouse gas emissions by major industries.[38] Across the country, transit agencies are feeling the impact of state and community commitments,

along with public demand, to address environmental concerns — particularly air quality issues. In addition, federal and state regulations encourage alternative fuel programs, particularly clean diesel for bus fleets, and mandate emission controls with specificity for the years 2007 and 2010.

The following table, Figure 16, based on a review of five years of APTA's *Transit Vehicle Database* information, shows the reported fuel systems for cutaway vehicles in terms of the number of vehicles reported with each type of fuel system as well as the percentage each fuel type represents from the total number of cutaway vehicles reported. The data indicates that, although alternative fuel types are on the market, the vast majority of cutaway vehicles continue to be powered by either standard diesel or gasoline.

Figure 16: Cutaway Bus Fuel Systems

Fuel	2002	2003	2004	2005	2006	5 yr. Average
Biodiesel (Count) (% of Total)	9 **0.09%**	43 **0.43%**	64 **0.60%**	91 **0.79%**	271 **2.38%**	96 **0.86%**
Electric Battery & Propane (Count) (% of Total)	0 **0.00%**	0 **0.00%**	0 **0.00%**	3 **0.03%**	0 **0.00%**	1 **0.01%**
Bunker Fuel (Count) (% of Total)	0 **0.00%**	0 **0.00%**	0 **0.00%**	0 **0.00%**	24 **0.21%**	 **0.04%**
CNG & Diesel (Count) (% of Total)	10 **0.10%**	0 **0.00%**	10 **0.09%**	17 **0.15%**	5 **0.04%**	8 **0.08%**
CNG & Gasoline (Count) (% of Total)	27 **0.27%**	22 **0.22%**	3 **0.03%**	16 **0.14%**	14 **0.12%**	16 **0.16%**
Clean Diesel (Count) (% of Total)	0 **0.00%**	0 **0.00%**	0 **0.00%**	178 **1.54%**	261 **2.30%**	88 **0.77%**
CNG (Count) (% of Total)	272 **2.70%**	270 **2.73%**	283 **2.65%**	288 **2.50%**	246 **2.16%**	272 **2.55%**
Diesel & Electric Battery (Count) (% of Total)	9 **0.09%**	6 **0.06%**	9 **0.08%**	26 **0.23%**	67 **0.59%**	23 **0.21%**
Diesel Fuel (Count) (% of Total)	**7,547 75.04%**	**7,392 74.67%**	**7,997 75.00%**	**8,531 73.96%**	**8,227 72.37%**	**7,939 74.21%**
Ethanol (Count) (% of Total)	0 **0.00%**	0 **0.00%**	0 **0.00%**	0 **0.00%**	11 **0.10%**	2 **0.02%**
Gasoline (Count) (% of Total)	**2,036 20.24%**	**2,007 20.27%**	**2,134 20.02%**	**2,228 19.32%**	**2,185 19.22%**	**2,118 19.81%**
Gasoline & Electric Battery (Count) (% of Total)	0 **0.00%**	0 **0.00%**	0 **0.00%**	1 **0.01%**	0 **0.00%**	0 **0.00%**
LNG (Count) LNG (% of Total)	8 **0.08%**	8 **0.08%**	8 **0.08%**	8 **0.07%**	0 **0.00%**	6 **0.06%**
Liquefied Petroleum Gas (Count) (% of Total)	139 **1.38%**	151 **1.53%**	154 **1.44%**	148 **1.28%**	57 **0.50%**	130 **1.23%**
Propane & Gasoline (Count) (% of Total)	0 **0.00%**	0 **0.00%**	0 **0.00%**	0 **0.00%**	1 **0.01%**	0 **0.00%**

Source: APTA *Transit Vehicle Database*, 2003-2007

Heightened concerns for the environment coupled with the increasing costs of gasoline as a fuel source, and the relatively high costs of diesel as well, have resulted in a burgeoning demand for alternative fuel vehicles (AFVs) — with emphasis on hybrid automobiles and sport utility vehicles (SUVs) — by American consumers. On June 7, 2007, a full-page

advertisement in *The Washington Post* featured Toyota Corporation's hybrid vehicles touting the company's sales record of one million hybrids, half of which were sold in the United States.[39] According to a May 17, 2007 ABC News report, Toyota executives consider the hybrid market to be strong now and even stronger in the future.

The success of hybrids in the U.S. automobile and SUV market, in terms of sales and demonstrated public interest, is a possible harbinger for the future of hybrids in the small and medium-sized bus market. However, inadequate infrastructure for many types of alternative fuel vehicles (AFVs) continues to be a concern now and in the foreseeable future. The current reality is that most U.S. transit buses, particularly cutaway buses, use gasoline or diesel fuel. In Fall 2006, the percentage of alternative-fueled vehicles in transit bus fleets overall in the United States stood at 12.5%.[40] According to APTA's 2007 *Transit Vehicle Database*, an estimated 6.7% percentage of the vehicles used for demand response are powered by alternative fuel sources. Thus, it is clear that most cutaway vehicles are still operating on diesel or gasoline.

Gasoline- and Diesel-Powered Vehicles

The latest APTA figures (2007 APTA *Transit Vehicle Database*), as highlighted in Figure 16, demonstrate that gas and diesel fuels are, by far, the common fuel sources for the cutaway bus sector of the market. Almost 73% of the cutaway vehicles operating in 2006 were diesel-powered vehicles, while close to 20% of cutaway vehicles were powered by gasoline (among those agencies participating in the APTA survey). Gasoline-powered vehicles and diesel-powered vehicles, including cutaway buses powered by gasoline or diesel, continue to be the least costly types of buses available for purchase in the United States.[41] Collectively, gasoline and diesel as fuel sources represent roughly 93% of the total with respect to cutaway vehicles, as reported in the latest APTA database. Thus, it is apparent that alternative fuel vehicles in the cutaway bus market are still an emerging, small segment of this market in the United States.

Alternative Fuel Technology/Alternative Fuel Vehicles

According to the U.S. Federal Highway Administration, the average on-the-road vehicle (car or light truck) today emits more than 600 pounds of air pollution each year. A cutaway bus powered by gasoline or standard diesel fuel would produce at least 600 pounds of air pollution or more on an annual basis. These pollutants (including carbon monoxide, nitrogen dioxide, sulfur dioxide and particulate matter) contribute to smog, acid rain and various health problems.[42]

U.S. Environmental Protection Agency (EPA) emission standards for 2007 and 2010 are serving as the catalysts for many transit agencies to move in the direction of alternative fuel vehicles. This shift is expected to result in higher costs not only for acquisitions but also for maintenance. During the discussion in the session about vehicle propulsion choices at the 2007 APTA Bus & Paratransit Conference, a panelist observed that the

onus is on the transit agencies to select an alternative fuel that best fits the respective agency's operating environment.[43]

As Paul Griffith (Advanced Transportation Technology Institute in Tennessee) noted in the context of his remarks at the 2007 APTA Bus & Paratransit Conference, the California Air Resources Board has regulated urban bus emissions standards aggressively since 1988 and is on track to achieve a 98% reduction in carbon monoxide, NOx, non-methane hydrocarbon and PM pollutants for model year 2010 as compared to 1988 standards. In large measure, California's strict requirements, coupled with EPA regulations for model year 2007 through 2010, have forced diesel engine manufacturers to reduce the emissions of their products on a continual basis.[44]

Published information about alternative fuel vehicles with respect to buses is focused more heavily on heavy-duty buses than on cutaway, or body-on-chassis, buses. Thus, the information that follows is representative, rather than exhaustive, with respect to the cutaway bus market. More specific information on the subject of fuel and propulsion systems with respect to cutaway transit buses will be featured in ensuing sections of the study that relate to the survey and interview data from the transit agencies and the manufacturers. Therefore, the information that follows in this section of the Market Overview highlights key elements of fuel technology or types of AFVs in general, and, as possible, provides relevant insights with respect to the cutaway bus market.

The following chart highlights alternative fuels and the environmental impacts of each fuel type listed.

Figure 17: Fuel Types and Environmental Impacts

Fuel Type	Environmental Impacts
Biodiesel (B20)	Reduces particulate matter and global warming gas emissions compared to conventional diesel; however, NOx emissions may be increased.
Compressed Natural Gas (CNG)	CNG vehicles can demonstrate a reduction in ozone-forming emissions compared to some conventional fuels; however, HC emissions may be increased.
Electricity	Electric Vehicles (EVs) have zero tailpipe emissions; however, some amount of emissions can be attributed to power generation.
Ethanol (E85)	E-85 vehicles can demonstrate a 25% reduction in ozone-forming emissions compared to reformulated gasoline. However, ethanol plants consume 4 liters of water to produce 1 liter of fuel. Also, it takes water to grow corn that is used in ethanol production, so this fuel source has a big environmental "footprint" in terms of water resources.[45]
Hydrogen	Zero regulated emissions for fuel cell-powered vehicles, only NOx emissions possible for internal combustion engines operating on hydrogen.
Liquefied Natural Gas (LNG)	LNG vehicles can demonstrate a reduction in ozone-forming emissions compared to some conventional fuels; however, HC emissions may be increased.
Liquefied Petroleum Gas (LPG)	LPG vehicles can demonstrate a 60% reduction in ozone-forming emissions compared to reformulated gasoline.

Source: "Air Pollution." U.S. Parks Service Internet Website. May 2007.

According to Jeffrey Rankin (Booz Allen Hamilton) in the context of his remarks at the 2007 APTA Bus & Paratransit Conference, agencies planning bus fleet procurements for 2010 and beyond have three primary choices for bus engine/propulsion technologies — emission controlled diesel (ECD), diesel-electric hybrid (DEH) and compressed natural gas (CNG). Rankin commented further that each of these technologies is undergoing changes driven increasingly by the stringent EPA regulations for 2007 and 2010.[46]

Emission Controlled Diesel/ Clean Diesel Fuel

Buses fueled with standard diesel fuel produce significant amounts of pollutant emissions — especially particulate matter (PM) and nitrogen oxides (NOx) — that negatively impact air quality with resulting adverse impacts on public health. In order to reduce these emissions, advanced diesel buses are being developed with various emission control technologies. The term "advanced diesel bus" refers to a bus that, at minimum, meets the 2004 US/2005 EU emission standards without the need of retrofitting. Emission controlled diesel, or advanced diesel, buses use advanced engine systems and after-treatment emission reduction devices, usually in conjunction with lower sulfur fuel.[47]

S15 or ultra-low sulfur diesel fuel (ULSD) is defined by the U.S. Environmental Protection Agency (EPA) as U.S. diesel fuel with a sulfur content not to exceed 15 ppm (parts per million). S15, S500, and S5000 are designations for diesel fuels that meet 15 ppm, 500 ppm, and 5,000 ppm maximum sulfur content, respectively, as defined in the American Society for Testing and Materials (ASTM) standard D975 Table 1. In other regions of the world, ULSD may refer to different maximum sulfur content values, but ULSD and S15 are often used interchangeably in North America (U.S. and Canada).[48] New EPA regulations that took effect in October 2006 require transit bus operators to use an ultra-low-sulfur diesel (ULSD) fuel that is roughly 97% cleaner than the fuel formulation that it replaces. Environmental advocates and industry authorities claim that the new fuel, combined with advanced engine technology, will reduce diesel tailpipe pollutants significantly. According to the Diesel Technology Forum and the Natural Resources Defense Council, ULSD will enable emission reductions of up to 95%.[49]

Biodiesel is a diesel alternative produced from oil seeds, and most biodiesel in the United States currently is derived from soybeans. While biodiesel fuel has potential as a fuel source for cutaway buses already operating on diesel fuel, there are varying opinions at this time concerning engine warranties with respect to biodiesel blends higher than 5%. International Truck and Engine Corporation (IC) issued a "Response to Special Request" statement in late 2006 stating that B5 was approved for use with its current and 2007 engines. IC commented further that the use of fuel with at least twenty (20) percent "bio," and 80% petroleum diesel, known as B20 fuel, would be approved for use in "…2007 engines once the industry comes up with a standard method of producing the fuel."[50] Ford Corporation is working with its researchers and partners to address the "…challenges [of] fuel composition, quality and storage and handling…" with respect to biodiesel, specifically B20.[51]

Diesel Hybrid and Hybrid Electric Vehicles

With respect to the issue of hybrid bus commercialization, the Hybrid Truck Users Forum's Fall 2006 newsletter reported, "…transit buses have been the first heavy-duty hybrid platforms to launch, and those trends continue."[52]

The newsletter further observed emerging applications are anticipated in the "…shuttle and cutaway/paratransit buses, using truck chassis and driveline synergies."[53]

Between 2007 and 2010, diesel-hybrids will provide a beneficial lowering of NOx levels compared to standard diesel propulsion. In addition, diesel-electric hybrids will have an emissions and fuel economy advantage over standard diesel propulsion systems, including an estimated 25- to 30-percent lower NOx emission.[54]

In 2006, IC Corporation introduced a mid-sized diesel-electric hybrid bus for commercial application. The bus is targeted to application by public transit agencies, universities, hotels, airports and other potential users. While the mid-sized bus described here is not a cutaway bus — the chassis and body of this model are integrated, nonetheless, the introduction of this bus is a step toward the cutaway market in terms of smaller, less costly buses for small urban and rural transit agencies. The company's new commercial bus products will include a new front-engine transit bus model (FC series) and a new rear-engine transit bus model (RC series), as well as a new low-floor bus for accessibility (LC series) — one or more of these models is expected to be relevant to the cutaway vehicle market.[55]

In 2005, UQM TECHNOLOGIES, INC., a developer of alternative energy technologies, announced the testing of a hybrid electric StarTrans Senator Series shuttle bus converted by Transportation Techniques, LLC ("TransTeq") and powered by a UQM® permanent magnet propulsion system and generator. The UQM® propulsion system has been integrated into the driveline on a Ford E450 chassis to enhance the vehicle's power delivery, performance and fuel efficiency.[56]

Compressed Natural Gas Vehicles

Readily available since the 1990s, heavy-duty transit buses, schools buses and vans are produced with engines that accommodate compressed natural gas (CNG). Ford produces a cutaway chassis for its E450 series for both Blue Bird and Collins Bus CNG vehicles. Ford's basis chassis-cab vehicle is available with various tank configurations (three, four or five tanks) to meet most range and body layout needs.[57] The Ford chassis cab comes from the factory capable of running on CNG. Transit vehicles, including cutaway buses, powered by CNG are more expensive than their standard diesel- or gasoline-powered counterparts.[58]

Although particulate matter (PM) emissions are expected to be equivalent, CNG engines are expected to have lower NOx emissions than emission-controlled diesel engines, in the case of new engines sold between 2007 and 2010. Technology changes introduced on CNG engines in 2007 are expected to allow them to meet the 2010 emissions requirements three years early. Although these changes are expected to reduce CNG engine reliability in the short run, the situation should be stabilized by 2010.[59] It is assumed that by 2010 CNG engines are likely to be as reliable, or more reliable, than current CNG engines, as well as current diesel engines. Between 2010 and 2013, it is assumed that new CNG buses will have greater reliability, also, than emission-controlled

diesel buses.[60] The greatest unknown is the impact of the new technologies on fuel efficiency.[61]
Fuel costs for CNG fuel currently are higher than historical levels and unlikely to return to the price levels experienced in 2000 – 2004. Therefore, the current cost of fuel must be factored into the decision-making process when considering purchase of CNG vehicles. It is assumed that CNG fuel costs will continue to track diesel fuel prices within a range of 75% to 80% through to 2022. [62]

Hydrogen Internal-Combustion/Fuel Cell Technology

In late May 2007, the State of Florida and Ford Motor Company announced that they are putting a fleet of eight hydrogen-fueled Ford E-450 cutaway buses into service. Orlando, Florida is the first city in the United States to take delivery of these vehicles — the Greater Orlando Airport Authority (GOAA) will use two of the vehicles as shuttle buses and the Orlando Convention Center will take delivery of two more of these ultra clean buses. The other four vehicles will be delivered later to customers elsewhere in Florida.[63] According to a Ford Motor Company vehicle cost summary document, a participation fee of $250,000 per vehicle is being charged which covers the cost to manufacture the vehicle.[64] While the "pioneers" for this technology in Florida are not transit agencies; nonetheless, the implementation of the technology by Orlando's airport authority and by other public and quasi-public entities in the state will, no doubt, result in Florida's transit agencies paying close attention to the initiative.

Powered by a 6.8-liter V-10 engine that has been supercharged and modified to run only on hydrogen fuel, these E-450 shuttle buses are part of Florida's broader plan to move toward expanded use of alternative fuels. According to Ford, the company anticipates delivering thirty hydrogen-fueled cutaway buses across North America by the end of 2007. In late 2006, Canada accepted delivery of five of the hydrogen-fueled Ford E-450s — three in Ottawa and two in Vancouver.[65]

The advantages of hydrogen-fueled internal combustion engines include:

- High efficiency, all-weather capability
- Near zero emissions of regulated pollutants and greenhouse gases (CO_2)
- Ability to be hybridized for added gains in fuel efficiency[66]

On May 23, 2007, Florida's first hydrogen fuel station opened in Orlando. Although Florida got its first hydrogen-powered bus two years ago, it has taken two years to build the fueling station. The Chevron hydrogen station in Orlando is the first in the Southeast U.S. According to Chevron Corporation, the company has five hydrogen-fueling centers nationwide.[67]

Governor Arnold Schwarzenegger's "Vision 2010" initiative calls for 150 to 200 hydrogen stations to be built in California by 2010. The California Hydrogen Highway Network envisioned in the governor's action plan calls for hydrogen stations ultimately to

be spaced out in the state at a maximum of every twenty miles.[68] Currently, there are 24 hydrogen stations in California and fifteen other hydrogen stations in various stages of planning or construction.[69]

In mid-February 2007, the Toledo Area Regional Paratransit Service (TARPS) participated in a sustained-speed test, part of a pilot project, testing the effectiveness of supplementing biodiesel fuels blended with hydrogen to improve engine performance. [70] A 2004 Goshen cutaway bus mounted on a Ford E450 chassis was used in the test runs performed to determine hydrogen's potential for enhancing biodiesel (in this case, B20 fuel) performance. The study is being funded by a federal grant that was issued to the Toledo, Ohio transit agency to study alternatives to traditional petroleum fuel. [71] H2Engine Systems designed and installed a tank and connections to introduce hydrogen to the propulsion system. A report on the test results is projected for delivery to the transit agencies' trustees later this year.[72]

In mid-October 2007, General Motors Corporation launched "Operation Driveway" that initiated its long-awaited program to provide fuel cell vehicles for average drivers in extended real-world road testing in the United States. Over 100 fuel cell-equipped Chevy Equinox sport utility vehicles will be tested in Los Angeles and New York. In this large-scale market test on both coasts, GM aims to introduce fuel cell technology that is often viewed as too expensive and difficult to use. According to GM, the problems are more perception than reality. Drivers selected for the 3 ½-year test program, which begins in January 2008, represent a broad demographic cross-section of the U.S. in terms of age, driving habits and location. GM estimates that at least 800 families will have a chance to use these vehicles, which are being provided free of charge (including the fuel and 24/7 roadside assistance).[73] Because GM's Chevy chassis is commonly used for cutaway transit vehicles, Chevy may soon join Ford in producing hydrogen-powered or fuel cell vehicles for the cutaway transit vehicle market, if "Operation Driveway" proves to be the success that GM anticipates.

In spite of the enthusiasm voiced by officials in California, Florida and elsewhere as well as by industry executives at GM and other organizations, the lack of infrastructure, e.g. hydrogen fueling stations, on a national scale and costs are problems that must be addressed if hydrogen-fueled and other alternative fuel vehicles (AFV), including AFV cutaway buses, are to become commercially viable in the near term in the United States.

1.5 Market Substitutions

Minivans, vans, and taxis are the predominant substitutions (as depicted in Figure 1 in Section 1.1) for small-to-medium-sized cutaway buses — depending on the needs and circumstances of the respective transit agency.[74] Of the vans, low-floor buses, cutaways, and other vehicles **35-feet or less** reported in the APTA *2007 Transit Vehicle Database*, cutaways accounted for approximately 50%.[75] There is some confusion with regard to specific terminology related to small-to-medium-sized vehicles.

Frequently, the term "minibus" is used to describe cutaways, minivans, conversion vans and small buses; however, each of these vehicle types is distinct as defined below:

- **Standard van:** A vehicle that is factory-built to accommodate 12- or 15-passengers (including the driver) — the dominant manufacturers include Ford Motor Company, General Motors and DaimlerChrysler.[76] The minimum cost for a standard van is about $20,000. Vans have side passenger doors and pose a boarding challenge for semi-ambulatory and non-ambulatory individuals because passengers must pull themselves up into the vehicle while also ducking down at the same time. Also, less space than other vehicle options, low ceiling height, and awkward last row entry (which requires passengers to step over a wheel well), make standard vans inappropriate for paratransit. Moreover, retrofitted standard vans with wheelchair lifts and extended roofs do not meet ADA requirements. The usual life expectancy of vans ranges from about 125,000 to 150,000 miles.[77]

- **Minivan:** A factory-built automobile, a minivan is designed for maximum interior room and is taller than a sedan, hatchback or station wagon. The Dodge Caravan and Chevy Astro are among the popular models utilized by transit agencies. Minivans hold seven passengers including the driver. Without retrofitting, minivans can be purchased for about $28,000. Retrofitting a minivan for a wheelchair entails extensive after-factory conversion. Retrofitters performing after-factory work on minivans raise the roofs and drop the floor about six inches, enabling short wheelchair ramps to be installed (as pictured above), rather than wheelchair lifts. Wheelchair-accessible minivans usually hold two wheelchairs and one ambulatory passenger, in addition to the driver. The cost of wheelchair-accessible minivans averages about $38,000.[78]

This Braun minivan is retrofitted with a wheelchair ramp.

Source: Central States Bus Sales, Inc. Website. 2007.

- **Conversion Van:** A standard factory-built van that has been altered or "converted" by a specialty retrofitter after leaving a first stage manufacturer's factory is referred to as a "conversion van." During the retrofit, not only are seats removed but also the top half of the van is removed.

This Braun conversion van is retrofitted with a wheelchair lift.

Source: Central States Bus Sales, Inc. Website.

An extended height roof, a specific wheelchair entry door, a front entry door with a low step intended for ambulatory passengers, and new seating with a center aisle (as pictured on the left) are among the features of a van conversion. Conversion vans have "three-across" seating — two-person seats on the driver's side and one-person seats on the other side. The usual configuration entails 8 ambulatory seats and one wheelchair tiedown. The average cost of a conversion van is approximately $34,000.[79]

- **Low-floor bus (35-ft and under):** Low floor buses are designed with a low floor from front to rear to accommodate easy boarding, especially for seniors, disabled persons, and wheelchairs. Boarding also is expedited in a low floor bus design because ambulatory passengers do not need to use steps and wheelchair-users do not require the use of a wheelchair lift. Modern low floor buses also offer "kneeling" suspension, which enables the floor to be lowered almost to road level. In some low floor buses, wheelchair ramps are needed to further facilitate access; however, ramps facilitate faster boarding and egress than wheelchair lifts. Several manufacturers design multiple low floor bus models in a range of lengths; however, in the 35-ft and under category, the most standard sizes are either 30-ft or 35-ft.[80]

According to a study entitled *Small Transit Vehicle Industry Study* by the Small Urban & Rural Transit Center, cutaways cost roughly three times less to purchase compared to small buses. However, cutaway vehicles on average cost about twice as much as vans.[81] Likewise, APTA's *2007 Transit Vehicle Database* illustrates that the most frequently purchased buses 35-ft and under are several times more expensive than the most frequently purchased cutaway vehicle models, while the most popular vans cost considerably less, as illustrated in Figure 18 that follows:

Figure 18: Average Cost Per Model of Non-cutaway Vehicle (≤35 ft)

	Vehicle make/model	Vehicle Type	Average cost	Length range	Number reported
1.	Gillig/Phantom	Bus	$237,876	30ft or 35ft	1,448
2.	General Motors/Chevy Astro	Van	$20,550	14-18ft	954
3.	Gillig/Low-Floor	Bus	$267,999	29ft or 30ft	894
4.	New Flyer/Low-Floor	Bus	$250,373	30ft or 35ft	598
5.	El Dorado/E-Z Rider	Bus	$270,527	30ft or 35ft	442
6.	El Dorado/Uplander	Van	$31,768	16ft	411
7.	Optima/Opus	Bus	$265,036	30ft or 35ft	343
8.	General Motors/Chevy Express	Van	$22,630	16-21ft	318
9.	El Dorado/Transmark	Bus	$206,681	28-32ft	317
10.	Orion/5 series	Bus	$298,974	30ft or 35ft	292

Source: APTA *2007 Transit Vehicle Database.*

Of the more than 19,000 reported non-cutaway vehicles 35-ft. and under, 5,239 of those vehicles were reported as demand response vehicles. While the average cost of all of the reported non-cutaway vehicles 35-ft. and under equals $54,426, this figure represents too great a range in vehicle types and costs to be considered a reliable figure. On the low

end, the Audubon Area Community Services, Inc. in Owensboro, Kentucky reported three Ford Escort paratransit vehicles that cost $11,365 each. The most expensive non-cutaway vehicles reported for paratransit in the "35-ft. and under" category of the data set — Erie Metropolitan Transit Authority's 29-ft. Gillig low floor buses — cost $254,198 each. The second most expensive non-cutaway paratransit vehicles — twelve Opus Low Floor buses owned by the Memphis Area Transit Authority — cost $253,375 each.[82]

As it relates to paratransit services and alternatives to cutaways, (as discussed in Section 1.1), private paratransit providers operate demand response services under contract for some U.S. transit agencies. Due to varying requirements, vehicles purchased by these private providers may not be required to be produced by U.S. manufacturers and, therefore, may represent competition for U.S. cutaway bus manufacturers. For example, Veolia Transportation Inc. operates nearly 4,000 paratransit vehicles in the United States. As a private company, Veolia is not required to comply with *Buy America* when it procures vehicles and, therefore, can purchase foreign-made vehicles if desired.[83]

In addition to the vehicular substitutions discussed in the previous paragraph, U.S. transit agencies encounter service-based substitutions from a number of other federally funded agencies such as the Department of Health & Human Services (HSS). The Federal Interagency Coordinating Council on Access and Mobility (CCAM) consists of eleven federal departments and coordinates sixty-two federal programs usable for transportation services. [84] Federal Executive Order 13330 on Human Service Transportation Coordination requires all federally funded transportation providers to develop Coordinated Regional Transportation Plans. The purposes of Coordinated Regional Transportation Plans is to reduce service duplication, increase efficient transportation service delivery, and expand transportation access for seniors, persons with disabilities, children and low-income persons and others who cannot afford to use automobile transportation.[85] Consequently, transit agencies providing services to the aforementioned groups are required to coordinate transportation services and assets (vehicles) with other federally funded transportation providers by 2008 in order to request funding through Sections 5310, 5316 and 5317 of *SAFETEA-LU*.

The evolving nature of public transportation in the context of a global marketplace is creating competition for the U.S. cutaway bus. Paratransit, dial-a-ride or demand response services were created as a "stop-gap" measure in order to help agencies comply with ADA and to meet the needs of the elderly and disabled communities. Additional insights regarding transit agencies' use of substitutions to cutaway vehicles may be found in Chapter 2 of this report, which includes highlights based on transit agency survey results regarding other small-to-medium-sized vehicles including minibuses and vans.

1.6 Federal Funding & Relevant Legislation

Program Requirements & Implications of *SAFETEA-LU*

Signed into law on August 10, 2005, the *Safe, Accountable, Flexible, & Efficient Transportation Equity Act—A Legacy for Users*, called *SAFETEA-LU*, provides a total of $286.4 billion in funding for federal surface transportation programs over six years from FY 2004 through FY 2009. For federal transit programs, the legislation authorizes $52.6 billion, a 46% increase over transit funding guaranteed in the preceding legislation — the Transportation Equity Act for the 21st Century (TEA-21).[86] In addition to historic funding levels, *SAFETEA-LU* created new programs, including *New Freedom*, as well as modifications of existing programs.

The following chart highlights federal transit programs under *SAFETEA-LU* that may impact the expansion of paratransit services provided by transit agencies and relevant funding levels:[87]

Figure 19: *SAFETEA-LU* Authorization Levels for FY 2004 to 2009

($ in millions)

Program	FY2004	FY2005	FY2006	FY2007	FY2008	FY2009	Total
Elderly & Individuals with Disabilities	90.7	94.5	112.0	117.0	127.0	133.5	674.7
JARC	125.0	124.0	138.0	144.0	156.0	164.5	851.5
New Freedom	—	—	78.0	81.0	87.5	92.5	339.0

Source: Federal Transit Administration. *SAFETEA-LU Authorization Levels for Fiscal Years 2005 through 2009*. 2007.

Elderly Individuals & Individuals with Disabilities (49 U.S.C. 5310): In order to improve mobility for older adults and people with disabilities, the program provides formula funding to states to support vehicle acquisitions and contracted services for non-profit organizations serving the target populations.[88] States may allocate funds to private non-profit organizations and to designated state agencies to provide coordinated service.[89] Established in 1975 as a discretionary capital assistance program, Elderly Individuals & Individuals with Disabilities became a formula-based program under the Intermodal Surface Transportation Efficiency Act of 1991 and was reauthorized by TEA-21. The program has been a vital source of funding for vehicles and equipment for human services and transportation agencies.[90]

Job Access and Reverse Commute (JARC) (49 U.S.C. 5316): JARC aims to increase access to employment and employment-related activities for welfare recipients and eligible low-income individuals.[91] Eligible projects funded by the program include new or expanded transportation services to employment centers from urban, rural and other suburban locations — including shuttles, vanpools, new bus routes, connectors to mass transit — for target populations.[92] *SAFETEA-LU* modified JARC from a competitive discretionary grant program to a formula-based program in which funding is distributed to states based on the relative number of low-income individuals and welfare recipients. This change significantly altered the allocation of program funding received by each state. For example, total funds available in Florida and Virginia increased by more than 1,200% from FY 2005 to 2006, while total funds available in Alaska and Vermont decreased by

more than 80%. (JARC funds are available for two years after the year of apportionment, meaning that FY 2006 funds are available through FY 2008.)[93]

New Freedom (49 U.S.C. 5317): This is a new program that provides formula funding for new transportation services and public transportation alternatives "beyond those required by the *Americans with Disabilities Act* (ADA)" to enhance transportation services for people with disabilities. Funds are made available to states and transit systems through a formula based on the disabled population in each respective state.[94] Eligible projects that meet the program definition — new transportation services that go "beyond those required by ADA" — include:[95]

- Expansion of paratransit service parameters beyond the three-fourths mile required by ADA;
- Expansion of current hours of operation for ADA paratransit services that are beyond those provided on fixed-route service;
- Incremental cost of providing same day paratransit service;
- Incremental cost of making door-to-door service available to all eligible ADA paratransit riders, but not as a reasonable modification for individual riders in an otherwise curb-to-curb system;
- Acquisition of vehicles and equipment designed to accommodate mobility aids; and
- New "feeder" service to rail and bus stations for which complementary paratransit service is not required under ADA.

SAFETEA-LU requires that projects funded by the Elderly Individuals & Individuals with Disabilities, JARC and New Freedom programs be derived from a locally developed, "coordinated public transit-human service transportation plan" through a process that includes representatives of public, private and non-profit transportation and human services providers and participation by the public.[96] This requirement is consistent with a recommendation made by the Federal Coordinating Council on Access and Mobility, an interdepartmental council created by *Executive Order 13330* to undertake departmental actions for maximizing the efficiency of federally funded human service transportation programs in February 2004. With regard to the development of a "coordinated public transit-human service transportation plan," *SAFETEA-LU* specified that an initial plan be created by 2007 as a condition of receiving funding for the programs. Complete plans, including coordination with the full range of existing human service transportation providers, are required by FY 2008.[97]

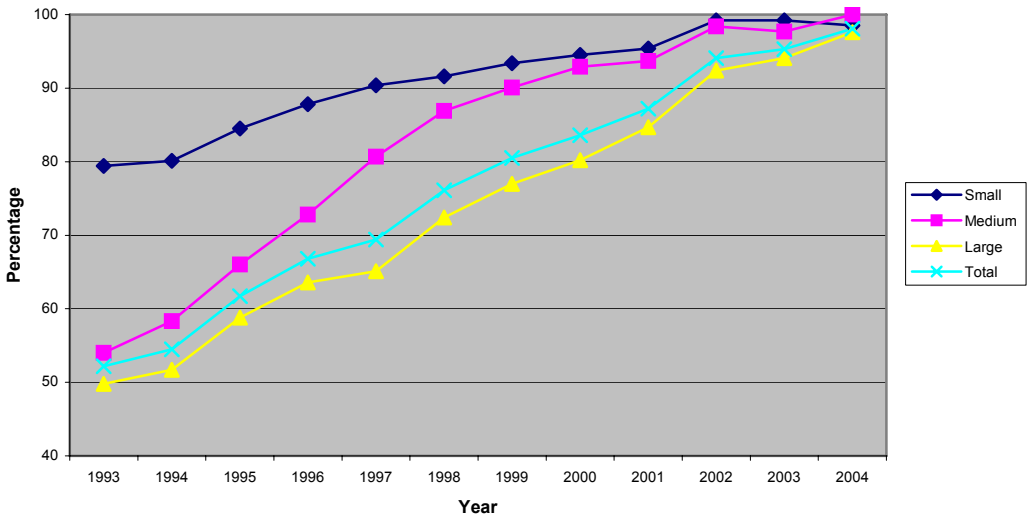
Americans with Disabilities Act of 1990

The *Americans with Disabilities Act of 1990* (ADA) mandates that services and facilities must be accessible to persons with physical and mental disabilities that substantially limit one or more major life activities.

The ADA outlines equal access to employment, public accommodations, government services and facilities, transportation and telecommunication for people with disabilities. ADA requirements related to transportation services, facilities and equipment include:[98]

- ❖ All new vehicles and newly acquired, used or leased vehicles must be accessible to persons with disability, including those using wheelchairs.
- ❖ Accessible vehicles purchased or leased must meet DOT vehicle accessibility standards, including door height and width of the wheelchair lift platform.
- ❖ Transportation facilities, including building entrances, ticket counters, rest rooms, public telephones and bus stops, must be accessible.
- ❖ All public entities that operate a fixed route system must provide complementary paratransit service to persons with disabilities who are not able to use the fixed-route system due to their disabilities.
- ❖ A public entity must ensure that a private entity contracting with the public entity to provide transit service will comply with all the regulations that apply to the public entity.

Figure 20: Percentage of ADA Lift- or Ramp-Equipped Transit Buses by Vehicle Size



Source: Bureau of Transportation Statistics, the U.S. Department of Transportation.

Figure 20 depicts percentages of transit buses equipped with ADA-compliant lifts or ramps by vehicle size from 1993 to 2004, according to the *National Transportation Statistics 2006*, published by the Bureau of Transportation Statistics. Since the passage of the ADA, transit bus accessibility has increased significantly. In total, the percentage of lift- or ramp-equipped transit buses across the nation rose from 52.2% in 1993 to 98.1% in 2004. According to vehicle type, 98.5% of small buses (with fewer than 25 seats) and 100% of medium buses (with 25-35 seats), both of which often are used for paratransit operations, were wheelchair accessible by 2004.[99]

As it relates to the ADA provision that public transit agencies must provide paratransit services to persons with disabilities, the requirement has a significant cost and service impact on public transit agencies and bus manufacturers because this type of service was not offered to any significant degree before the passage of the Act. In particular, transit agencies are affected financially because the mandate came without additional federal funding and costs of operating "a curb-to curb" transportation service is far greater than the fares that the agencies can actually collect from passengers. (Transit agencies may only charge a fare up to twice as much as that charged for a similar fixed route trip.)[100]

According to a report published in 2000 by the Transportation Research Board, paratransit demand will continue to grow as a result of ADA, urban sprawl, increased life activities by persons with disabilities, and the aging of the general population. The study predicted that outsourcing or contracted services would be the predominant future organizational form for municipal paratransit services. Also, the study found that larger transit agencies sometimes outsource operations to more than one contractor to establish competition throughout the contract term.[101]

In addition, transit agencies and bus manufacturers may be impacted substantially in the future by the revision of the *ADA Accessibility Guidelines for Transportation Vehicles*, codified at *36 CFR Part 1192* and the U.S. DOT's implementing regulations at *49 CFR Part 38*. Since 2006, the U.S. Access Board has been updating the guidelines so that new technology, vehicles and services introduced into public transportation over the years are reflected. (The guidelines have remained unchanged since enactment in 1991, except for supplemental provisions for over-the-road buses issued in 1994.)[102] As part of its effort to update the guidelines, the Board released *Draft Update of Guidelines for Buses and Vans* to request public comment in April 2007. The released draft includes updated provisions and additions based on the Board's review of the current guidelines and input from stakeholders, including transportation operators, vehicle manufacturers and disability groups. The issues related to buses being updated in the draft include:[103]

- Wheelchair and mobility aid space requirements
- Onboard accessible routes, including width, vertical clearances, and handrails and handholds
- Lift design loads
- Specifications for ramps and bridgeplates, including design load and slope
- Mobility aid securement spaces, specifically their size and location
- Signs and stop announcement systems
- Exterior lighting

Comments received on the draft are used to prepare a notice of proposed rulemaking (NPRM) to update the guidelines, which also will be made available for additional comments. The U.S. Access Board will issue a final rule after these comments are fully analyzed and reviewed.[104]

Buy America Requirements

Originally passed by the U.S. Congress in 1978 as part of the *Surface Transportation Assistance Act*, the legislation authorizing FTA's *Buy America* policy reflects an attempt by Congress to protect the U.S. labor force and heavy industry from foreign competition. The original legislation, which specified a *preference* for products produced, mined, or manufactured in the United States, subsequently has undergone several major amendments, including the *Surface Transportation Assistance Act of 1982*, which required that all steel and manufactured products used in FTA-funded projects be produced in the United States.[105] The 1982 amendment also included provisions for waivers to the *Buy America* policy, two of which specifically addressed the procurement of buses and other rolling stock in certain circumstances. These two factors that could result in a waiver being granted with regard to the *Buy America* policy for procurement of buses in situations in which: 1) the cost of components produced in the U.S. is more than 50% of the cost of all components of the vehicles or equipment, and 2) the inclusion of domestic material would increase the cost of the overall project contract by more than 10%.[106]

Ultimately, the percentages relative to waivers were increased from 50% to 60% and from 10% to 25% respectively — the thresholds used today, with the exception of purchases under $100,000. Subsequent to the amendments that were passed in the 1980s, additional revisions were included in the transportation legislation of the 1990s (the *Intermodal Surface Transportation Efficiency Act* [ISTEA] *of 1991* and the *Transportation Equity Act for the 21st Century* [TEA-21] *of 1998*), most notably in ISTEA legislation, the addition of iron and iron products to the steel and manufactured products that were already covered in the policy.[107] In addition to the waiver requirements, the act stipulated that final assembly of the vehicle be completed in the United States.[108]

Although the policy has been enforced for a long time, the nuances and complexity of *Buy America* often have been misunderstood by transit agencies, and it appears that *Buy America* may create challenges and confusion in the transit industry that sometimes result in costly and/or delayed procurements.[109] In addition, the legislative history of *Buy America* lends itself to confusion with other federal laws and trade agreements, such as the *1933 Buy American Act* and the *North American Free Trade Agreement* (NAFTA).[110] There are no statutory exceptions to *Buy America*, and all waivers are made on a case-by-case basis, unless codified as a general waiver.[111]

The *Safe, Accountable, Flexible, and Efficient Transportation Equity Act — A Legacy for Users* (*SAFETEA-LU*), enacted in August 2005, demanded more clarification of language included in *Buy America* and required the FTA to make certain changes to the *Buy America* requirements. In November 2005, FTA published the first Notice of Proposed Rulemaking (NPRM) to implement changes required by law and requested comments from the industry and general public. Due to the complexity of the issues addressed in the first NPRM and the divergence of opinion on key areas of revision, the agency issued a partial (final) rule on less controversial elements of the policy in March 2006.

The issues addressed in the partial (final) rule included administrative review; definitions of "negotiated procurement" and "contractor;" certification under negotiated procurements; and pre-and post-award review of rolling stock purchases. [112] Subsequently, FTA published the Second Notice of Proposed Rulemaking (SNPRM) to address key elements of the policy in November 2006 and requested comments from transit agencies, bus manufacturers and industry trade organizations.[113] Additionally, FTA held public meetings in Washington, D.C. to include public feedback, extending the comment period until the end of February 2007.

In September 2007, FTA published the final rule on *Buy America* that includes the following:[114]

- Creation of a new publication process for public interest waivers to provide an opportunity for public comment;
- Clarification of *Buy America* requirements with respect to microprocessor waivers;
- Issuance of new provisions to permit post-award waivers;
- Clarifications in the definition of "end products" with respect to components; subcomponents and major systems, and providing a representative list of "end products;" and
- Clarification of the requirements for final assembly of rolling stock and providing representative examples of rolling stock components.

Furthermore, concerning major systems procurements, SAFETEA-LU required that "the procurement of systems" be addressed "to ensure that major systems procurements are not used to circumvent the *Buy America* requirements." Retaining the definition of a "system" indicated in the *Second Notice of Proposed Rulemaking,* FTA added the term "system" to the definition of "end product" in the final rule.[115] APTA issued a statement that the final rule adopted many of its recommendations, including the "non-shift" method of defining "end products" and an accelerated public interest waiver process. However, APTA also expressed concern about FTA's decision to include "systems" to the representative list of "end products."[116]

1.7 Ride Solution –- Putnam County, Florida

As presented earlier in Sections 1.6 and 1.7, public transit agencies requesting federal funds under SAFETEA-LU Sections 5310, 5316 and 5317 are required to develop and implement a Coordinated Public Transit-Human Resources Transportation Plan.[117] As an example, Ride Solution in Palatka, Florida (Putnam County) has developed and implemented the required plan.

In Putnam County Florida, ARC Transit, Inc. a subsidiary of the ARC of Putnam County, operates a flexible service called "Ride Solution." In addition, Ride Solution is a paratransit service contractor to Jacksonville Transit Authority and Duval County.

Putnam County is located in northeast Florida approximately fifty miles south of Jacksonville. According to the U.S. Census Bureau, *2005 American Community Survey Data Profile*, Putnam County has a population of 72,148 with approximately 11,000 people living in the City of Palatka. Median household income for the county in 2005 was just over $31,000; average median income in 2005 for the State of Florida was close to $43,000. The disabled population of the Putnam County is approximately 23% of the total population, representing 15,715 individuals over the age of five years.[118]

Ride Solution is the designated County Transportation Coordinator (CTC) for Putnam County. As such, Ride Solution plans, coordinates and evaluates all transportation services within the county Department of Human Services, including services supporting the elderly, persons with disabilities, persons participating in economic assistance and work programs, and persons receiving children, youth and families-oriented services. According to a 2004 market analysis performed for the Transportation Cooperative Research Program (TCRP), Ride Solution's flexible service consists of three (3) components:[119]

1) Subscription service for human service agencies, 70%;
2) Individual reservation trips for Medicaid recipients, 20%; and
3) General public service in the form of walk-ons at bus stops, 10%.

Ride Solution currently operates six routes designed to meet the needs of the human services agencies. However, because the routes are open to the general public, the vehicles can be boarded at a bus stop without a reservation. According to the TCRP report, Ride Solution service is provided in Putnam County by a staff of 31 full-time and part-time drivers, and 42 vehicles are in service for this program. The vehicles range from vans to cutaways. [120]

1.8 Representative Transit Agencies

In order to focus on a qualitative review of representative transit agencies, the FTA selected nine transit agencies to highlight demand response/paratransit vehicles, ridership and trends. These nine organizations represent a diverse range of transit agencies with a variety of modal characteristics. The transit agencies were selected for comparative purposes and to preserve continuity in that the same nine agencies participated in the FTA's 2005 *Non-Rail Vehicle Market Viability* study.

Details regarding the nine agencies' survey responses relevant to cutaway vehicles are reviewed in Chapter 2 that features the transit agency survey results and analysis component of this study. The information in this section (1.8) presents a brief overview of available information regarding each of the nine agencies' demand response capabilities and provides highlights of published information regarding agencies' cutaway vehicles. It should be noted that, in some instances, the information provided by agency officials in the survey component of this report conflicts with data available through other sources.

Additionally, it should be noted that the paratransit information provided in this section provides a synopsis of the market conditions as they relate to this service with regard to cutaway vehicles. Two of the agencies selected responded that they do not own or operate any cutaway vehicles. However, secondary research indicates that Miami Dade Transit operates cutaway vehicles in a circulator route although the agency refers to the vehicles as minibuses.[121] It should also be recognized that some of the agencies selected for this study contract with private entities to provide demand response capabilities and, therefore, available published data also may reflect this as "zero" demand response. However, in all of the nine cases, paratransit or demand response exists in the respective service areas, even though this function may be outsourced under contract. (Continue to Chapter 2 of this report to read the results and analysis of the survey of the participating transit agencies.)

Arizona — City of Phoenix Public Transit Department (Phoenix PTD)

The Phoenix Public Transit Department offers "dial-a-ride" services to elderly and disabled individuals at a charge of $2.40 per ride. Phoenix, like numerous transit agencies in the country provides demand response through "purchased transportation" services operated by public transit agencies or private carriers who provide public mass transportation services under contract to recipients of Urbanized Area Formula funds.[122] With 130 vehicles operated in maximum service and 157 vehicles available, Phoenix PTD's total operating expenses are $16,118,429. The following table reflects operating expenses for demand response with regard to service efficiency, cost effectiveness and service effectiveness.

Figure 21: Phoenix PDT Demand Response Operating Expenses & Trip Revenue

Operating Expenses per Vehicle Revenue Mile	Operating Expenses per Vehicle Revenue Hour	Operating Expenses per Passenger Mile	Operating Expenses per Unlinked Passenger Trip	Unlinked Passenger Trips per Vehicle Revenue Mile	Unlinked Passenger Trips per Vehicle Revenue Hour
$3.50	$50.15	$4.14	$31.38	$0.11	$1.60

Currently, Phoenix PTD has 56 cutaway vehicles. Thirty of the vehicles are *Candidate* models and 26 are *Senator* model vehicles, both of which are manufactured by StarTrans/Supreme. Prior to acquiring the new vehicles at a cost of $76,220 each for *Senator* models and $54,170 each for *Candidate* models, PTD had owned only eight cutaways. Seven of the eight vehicles were the wheelchair accessible 2004 models that had cost $54,075 and were 23 ft. long with nineteen (19) seats. The other older vehicle was a 23-ft 2002 model that cost $52,225 and that accommodated sixteen (16) seats.[123]

Florida — Miami-Dade Transit (MDT)

Miami-Dade Transit (MDT) is the 14th largest public transit system in the U.S., and the largest transit agency in the state of Florida.

Although current National Transit Database information lists all demand response statistics for MDT as zero, available information on the MDT website illustrates that all demand response services, called *special transportation services (STS)*, are provided by a contractor. Established in 1976, Miami offers STS services for "people with an intellectual, mental, or physical disability who cannot ride Metrobus, Metrorail, or Metromover." MDT's demand response services cost $2.50 and operate 24-hours-a-day, seven days a week. The paratransit fleet consists of air-conditioned minivans, small buses, lift-equipped vans, and sedans.[124]

Figure 22: Demand Response Data for Miami-Dade Transit (MDT)*

Ridership	Total one-way trips for FY 2005: Non-ambulatory customer trips — 441,930; ambulatory customer trips — 1,018,371; FY 2005 average daily boardings — 4,000.
Budget	Operating budget for FY 2006 was $43,269,000.
Revenues	Total budgeted for FY 2006 was $5,781,000

Note: NTD data not available on Miami demand response.
Source: *Miami-Dade Internet Website.*

As discussed in the survey summary and analysis section of Chapter 2, Miami-Dade Transit reports that the agency does not currently own or operate any cutaway vehicles and does not foresee that the agency will purchase any cutaways in the near future. However, secondary research indicates that Miami Dade Transit operates cutaway vehicles in a circulator route as part of bus rapid transit although the agency refers to the vehicles as minibuses.[125]

Indiana — Indianapolis Public Transportation Corporation (IndyGo)

Indianapolis Public Transportation Corp. (IndyGo) operates "Open Door," the agency's curb-to-curb paratransit services for persons with disablities, directly and through contractors. Although ADA requires transit agencies to provide paratransit services within ¾ miles of their fixed routes, "Open Door" operates throughout Marion County seven days a week.[126] According to the agency's Internet website, IndyGo provides an average of 1,100 paratransit trips per day, and its paratransit vehicles include fully accessible cutaway buses as in the picture on the right.

With 76 vehicles operated in maximum service and 85 vehicles available, IndyGo's total operating expenses for demand response in 2004 were $8,797,084. The following figure reflects IndyGo's operating expenses for demand response with regard to service efficiency, cost effectiveness and service effectiveness.[127]

Figure 23: IndyGo Demand Response Operating Expenses & Trip Revenue

Operating Expenses per Vehicle Revenue Mile	Operating Expenses per Vehicle Revenue Hour	Operating Expenses per Passenger Mile	Operating Expenses per Unlinked Passenger Trip	Unlinked Passenger Trips per Vehicle Revenue Mile	Unlinked Passenger Trips per Vehicle Revenue Hour
$3.19	$55.57	$2.69	$27.14	0.12	2.05

IndyGo's cutaway vehicles for both fixed route and paratransit services include 84 *StarTrans* vehicles manufactured by StarTrans/Supreme Corporation. (It should be noted that the 2007 APTA data set differs slightly from the data provided by IndyGo that is reported in Section 3. As it relates to fleet data, IndyGo reported that the agency has 79 cutaway vehicles and one *Sprinter* model vehicle by Dodge; it should also be noted that the agency listed that between one and five vehicles had been removed from the fleet. This information accounts for the discrepancy.)[128]

Mississippi — City of Jackson Transit System (JATRAN)

In addition to the thirteen (13) fixed route services, the City of Jackson Transit System provides "Handlift," an ADA paratransit service for persons with disabilities. "Handlift" currently operates twelve (12) paratransit vehicles and serves approximately 34,600 passengers annually.[129]

According to FTA's *2005 National Transit Database*, JATRAN operated eight vehicles during maximum service and had fifteen vehicles available for demand response. JATRAN's total operating expenses for demand response in 2004 were $1,258,842. Figure 24 reflects JATRAN'S operating expenses for demand response with regard to service efficiency, cost effectiveness and service effectiveness.[130]

Figure 24: JATRAN Demand Response Operating Expenses & Trip Revenue

Operating Expenses per Vehicle Revenue Mile	Operating Expenses per Vehicle Revenue Hour	Operating Expenses per Passenger Mile	Operating Expenses per Unlinked Passenger Trip	Unlinked Passenger Trips per Vehicle Revenue Mile	Unlinked Passenger Trips per Vehicle Revenue Hour
$4.22	$53.30	$4.22	$37.85	0.11	1.41

As it relates to the make, model and cost of JATRAN's cutaway vehicles, this information was not available in APTA's *2007 Transit Vehicle Database* to be reported in this chapter; however, this information is available in Chapter 2.

New Mexico — Santa Fe Trails — City of Santa Fe (SFT)

The Santa Fe "Ride Paratransit Program" provides accessible curb-to-curb transportation service within the Santa Fe City limits to persons with disabilities. Senior citizens (aged 60 or older) who live in the city also are eligible for the service.

Although Santa Fe Trails' outsourced demand response services entirely in the past, since July 2006 the agency has provided the service directly during the week from 7:00 a.m. to 7:00 p.m.; however, SFT contracts services after 7:00 p.m. on weekdays and during the weekend.[131]

With seventeen (17) vehicles operated in maximum service and 38 vehicles available, Santa Fe Trails' total operating expenses for demand response in 2004 were $1,177,668.

Figure 25 reflects Santa Fe Trails' operating expenses for demand response with regard to service efficiency, cost effectiveness and service effectiveness.[132]

Figure 25: SFT Demand Response Operating Expenses & Trip Revenue

Operating Expenses per Vehicle Revenue Mile	Operating Expenses per Vehicle Revenue Hour	Operating Expenses per Passenger Mile	Operating Expenses per Unlinked Passenger Trip	Unlinked Passenger Trips per Vehicle Revenue Mile	Unlinked Passenger Trips per Vehicle Revenue Hour
$4.46	$54.93	$4.61	$17.75	0.25	3.10

According to APTA's *2007 Transit Vehicle Database,* Santa Fe Trail Transit operates eight ADA lift vans, 2004 Ford E-350 Supreme model vans, for its fixed route services, which cost $30,539 each.[133]

New York — MTA New York City Transit (NYCT)

MTA New York City Transit offers "Access-A-Ride" services for people with disabilities. "Access-A-Ride" serves the city's five boroughs and is available 24-hours-a-day, seven days a week. Private carriers (under contract to NYCT) provide the service.[134]

With 619 vehicles operated in maximum service and 701 vehicles available, NYCT's total operating expenses for demand response in 2004 were $99,758,954. (These numbers vary from the Survey Section due to vehicle procurements made in 2007.) The following figure reflects NYCT's operating expenses for demand response with regard to service efficiency, cost effectiveness and service effectiveness.[135]

Figure 26: NYCT Demand Response Operating Expenses & Trip Revenue

Operating Expenses per Vehicle Revenue Mile	Operating Expenses per Vehicle Revenue Hour	Operating Expenses per Passenger Mile	Operating Expenses per Unlinked Passenger Trip	Unlinked Passenger Trips per Vehicle Revenue Mile	Unlinked Passenger Trips per Vehicle Revenue Hour
$5.01	$60.36	$4.55	$55.41	0.09	1.09

According to APTA's *2007 Transit Vehicle Database,* NYC Transit operates more than 1,300 cutaway vehicles for its fixed route services, including more than 1,200 *Phoenix III* models manufactured by Coach and Equipment from 2001 to 2006, and nearly 100 *StarLite* vehicle models manufactured by Starcraft in 2001 and 2002.[136] (As stated above, these numbers vary from Chapter 2 due to the 2007 vehicle procurements reported in the survey component of this study.)

North Carolina — Charlotte Area Transit System (CATS)

Charlotte Area Transit System (CATS) provides "Special Transportation Service (STS)," door-to-door paratransit services seven days a week within Charlotte's city limits (in Mecklenburg County) for persons with disabilities.[137]

STS operates cutaway buses, equipped with ramps or electric lifts to accommodate wheelchairs.[138] CATS recently expanded its paratransit capabilities. It now operates "Special Transportation Service II" (STSII), which serves extended geographical areas beyond the ADA requirements. (STSII has limited hours of operation and a higher fare than regular STS service.)[139] CATS operates a total of 115 cutaway vehicles, *GCII* models manufactured by Goshen, for its paratransit and fixed route services.[140]

With 75 vehicles operated in maximum service and 111 vehicles available, CATS' total operating expenses for demand response in 2004 were $7,723,037. The following table reflects CATS' operating expenses for demand response with regard to service efficiency, cost effectiveness and service effectiveness.[141]

Figure 27: CATS Demand Response Operating Expenses & Trip Revenue

Operating Expenses per Vehicle Revenue Mile	Operating Expenses per Vehicle Revenue Hour	Operating Expenses per Passenger Mile	Operating Expenses per Unlinked Passenger Trip	Unlinked Passenger Trips per Vehicle Revenue Mile	Unlinked Passenger Trips per Vehicle Revenue Hour
$3.58	$50.98	$2.99	$26.84	0.13	1.90

Vermont — Chittenden County Transportation Authority (CCTA)

Through a contract with the Special Services Transportation Agency, a private non-profit organization operating in the State of Vermont, Chittenden County Transportation Authority (CCTA) provides curb-to-curb transportation service for people with disabilities.[142] With thirteen (13) vehicles operated in maximum service and fifteen (15) vehicles available, CCTA's total operating expenses for demand response in 2004 were $655,109. Figure 28 reflects CCTA's operating expenses for demand response with regard to service efficiency, cost effectiveness and service effectiveness.[143]

Figure 28: CCTA Demand Response Operating Expenses & Trip Revenue

Operating Expenses per Vehicle Revenue Mile	Operating Expenses per Vehicle Revenue Hour	Operating Expenses per Passenger Mile	Operating Expenses per Unlinked Passenger Trip	Unlinked Passenger Trips per Vehicle Revenue Mile	Unlinked Passenger Trips per Vehicle Revenue Hour
$2.24	$31.58	$3.24	$20.23	0.11	1.56

According to APTA's *2007 Transit Vehicle Database,* CCTA's cutaway vehicles include seven *Phoenix* buses manufactured by Coach and Equipment in 2005 and 2006, which range in cost from $40,000 to $41,500.[144]

Washington — King County DOT Metro Transit/Accessible Services

Designed to meet the service criteria established by FTA, the King County Department of Transportation Metro Transit through its Accessible Services division has an ADA compliant "Paratransit Program" that provides "Access Transportation."

Provided by third-party contractors, Access Transportation is a door-to-door shared-ride transportation service available within most of King County. King County DOT Metro and six other transit agencies in the Puget Sound area have a joint paratransit eligibility agreement, and persons certified as eligible by one of these agencies can use paratransit services offered by the other agencies.[145]

With 471 vehicles operated in maximum service and 475 vehicles available, King County Metro's total operating expenses for demand response in 2004 were $47,914,047. The following table, Figure 29, reflects King County Metro's operating expenses for demand response with regard to service efficiency, cost effectiveness and service effectiveness.[146]

Figure 29: KC DOT Demand Response Operating Expenses & Trip Revenue

Operating Expenses per Vehicle Revenue Mile	Operating Expenses per Vehicle Revenue Hour	Operating Expenses per Passenger Mile	Operating Expenses per Unlinked Passenger Trip	Unlinked Passenger Trips per Vehicle Revenue Mile	Unlinked Passenger Trips per Vehicle Revenue Hour
$4.91	$69.33	$3.66	$26.16	0.19	2.65

According to APTA's *2007 Transit Vehicle Database*, King County Metro's cutaway buses include 175 vehicles manufactured by Supreme Corporation; 150 *Challenger*s and eight *Crusader*s by Champion; and two *Phoenix* model vehicles by Coach and Equipment.[147] In addition, in its effort to promote sustainability, King County Metro plans to have all of its fleet operating on 20% biodiesel fuel by the end of 2007.[148]

1.9 Cutaway Manufacturer Highlights and Information

Background on Second Stage Manufacturers

Small-to-medium-sized cutaway buses have evolved from several different vehicle types. For example, Coach & Equipment Manufacturing Corporation started producing buses in the late 1890s as Whitfield Body Builders. In 1928, the company became Penn Yan Bodies (named after the city in which the company is located, Penn Yan, New York). In support of the U.S. war effort during World War II, the company switched production to cargo bodies. After the war, in 1948, the president of Penn Yan Bodies established Coach & Equipment Manufacturing Corporation to focus on small-to-medium-sized cutaway buses.[149]

Source: *Coach & Equipment Manufacturing Internet Website*

Some small-to-medium-sized cutaway bus manufacturers started business as motor home or recreational vehicle manufacturers — still others started as manufacturers of farm equipment, boats, limousines, school buses, trucks and bus bodies or as van converters.

Today's small-to-medium-sized cutaway buses are designed and manufactured to meet various needs of multiple markets. Due to the high demand for small-to-medium-sized buses by public and private sector customers, the cutaway bus market represents a much broader range of products and a highly competitive landscape compared to the heavy-duty bus market.

Source: *Starcraft Bus Internet Website*

Cutaway manufacturers in the United States, include:

- Champion Bus Inc.
- Coach & Equipment Manufacturing
- Diamond Coach Corp.
- El Dorado National-Kansas, Inc.
- Federal Coach
- Glaval Bus
- Goshen Coach
- Krystal Enterprises
- Starcraft Bus & Mobility
- Supreme Corporation (StarTrans)
- Turtle Top Inc.

Vehicle Chassis Suppliers

The eleven principal cutaway manufacturers produce bus bodies that are assembled onto a vehicle chassis. All of the eleven cited companies procure vehicle chassis from one or more of the following companies:

Figure 30: Chassis Suppliers and Models

Chassis Supplier	Chassis Model
Ford Motor Company	E-350 E-450
Freightliner LLC, a DaimlerChysler Company	Custom Chassis Shuttle Bus
International Truck & Engine Corporation	International 3200
General Motors Corp. (GMC Division)	GM-3500 GM-4500 GM-5500
General Motors Corp. (Chevrolet Division)	610 3500 4500 5500

In addition to the companies outlined in the preceding chart, an Indiana-based manufacturer produces the Workhorse LF72 low-floor chassis. According to the Mid-Size Bus Manufacturers Association (MSBMA), approximately 10,000 chassis for cutaway buses are manufactured each year. Ford Motor Company and General Motors produce nearly 90% of the chassis supplied annually to manufacturers of small-to-medium-sized cutaway buses in the United States. Freightliner and International produce most of the remaining ten-percent. [150]

Production & Sales

In 2006, the aforementioned eleven manufacturers produced most of the cutaway buses manufactured in the United States. Total production by these manufacturers resulted in a 2006 sales volume of approximately $622 million and a production volume of 13,500 vehicles. As illustrated in Figures 31 and 32, cutaway vehicle manufacturers have experienced the second consecutive increase in sales volume (up 4.29% from the previous year) and the fourth consecutive increase in vehicle production (up 9.16% from the previous year).[151] As indicated in Figure 31, while the market for conversion vans has seen greater shift in terms of sales volume, the overall sales volume remains higher than the sales volume for cutaways. However, as it relates to production, production of standard cutaways (as opposed to low-floor cutaways) far exceeds that of rail chassis buses (as seen in Figure 32).

Figure 31: Annual Sales Volume ($ dollars)

Description/Year	2002	2003	2004	2005	2006
Van Conversions	$329,402,371	$399,914,774	$366,618,359	$368,876,113	$426,683,607
Cutaways	$202,129,181	$187,149,890	$202,780,372	$226,313,589	$195,152,951
TOTAL	**$531,531,552**	**$587,064,664**	**$569,398,731**	**$595,189,702**	**$621,836,558**
PERCENTAGE CHANGE		**9.46%**	**-3.10%**	**4.33%**	**4.29%**

Source*:* Mid Size Bus Manufacturers Association (MSBMA), *Annual Survey Compilation,* (2003-2006)

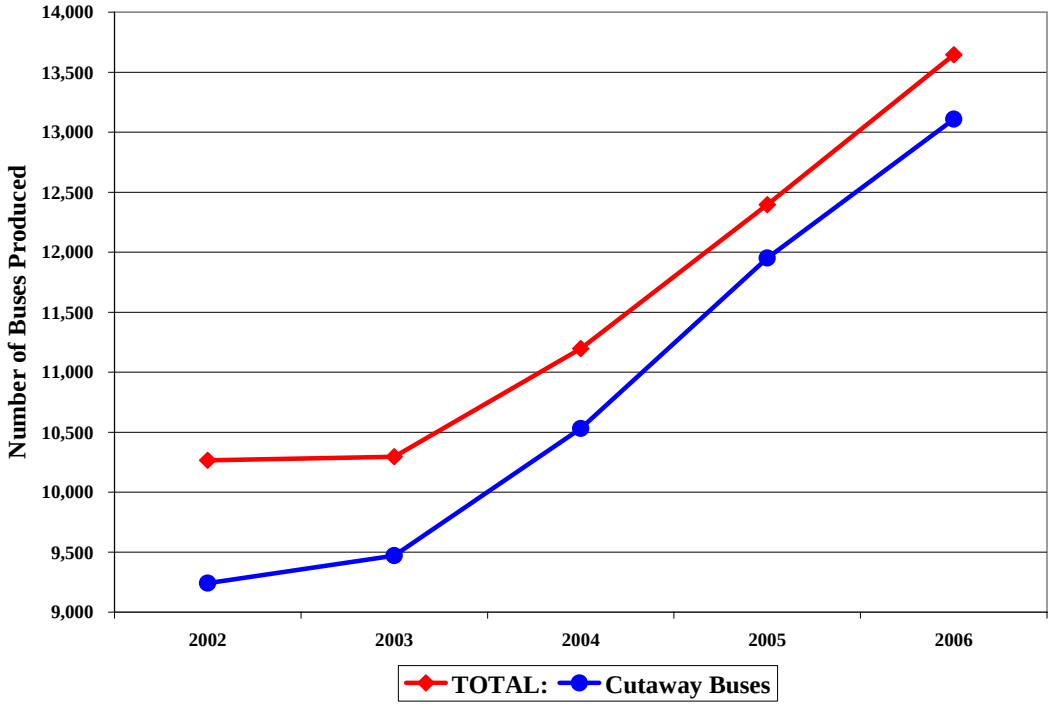
Figure 32: Annual Bus Production (units shipped)

Description/Year	2002	2003	2004	2005	2006
Cutaway Buses	9,242	9,471	10,531	11,952	13,109
Rail Chassis Buses	705	580	448	265	311
Low-Floor Cutaway Buses	319	244	217	178	225
TOTAL	**10,266**	**10,295**	**11,196**	**12,395**	**13,645**
PERCENTAGE CHANGE		**0.28%**	**8.05%**	**9.67%**	**9.16%**

Source: Mid Size Bus Manufacturers Association (MSBMA), *Annual Survey Compilation,* (2003-2006)

Figure 33 illustrates the overall growth of the small-to-medium-sized bus market and the impact that cutaway buses have on industry.

Figure 33: Annual Bus Production (units shipped)



NOTE: Figure 33 represents the combined production of cutaway vehicles for the public, private and export markets.
Source: Mid Size Bus Manufacturers Association (MSBMA), *Annual Survey Compilation,* (2003-2006)

The eleven cutaway manufacturers produce cutaway buses for the public and private sectors, as well as for the export market. While the production of cutaway buses for the public sector has been relatively constant over the last five years, the number of vehicles produced for the private sector has continued to increase. As the FTA's *Non-Rail Vehicle Market Viability Study* identified in 2005, the opportunity to export heavy-duty buses manufactured in the United States is negligible.[152]

However, the export market for mid-sized buses showed some improvement in 2003. Even so, the percentage of the mid-sized bus production market for exports is minimal. While not exclusive to cutaway buses, Figures 34 and 35, which follow, demonstrate mid-sized bus production rates, by market, from 2002 through 2006.

Figure 34: Annual Bus Production (units shipped)

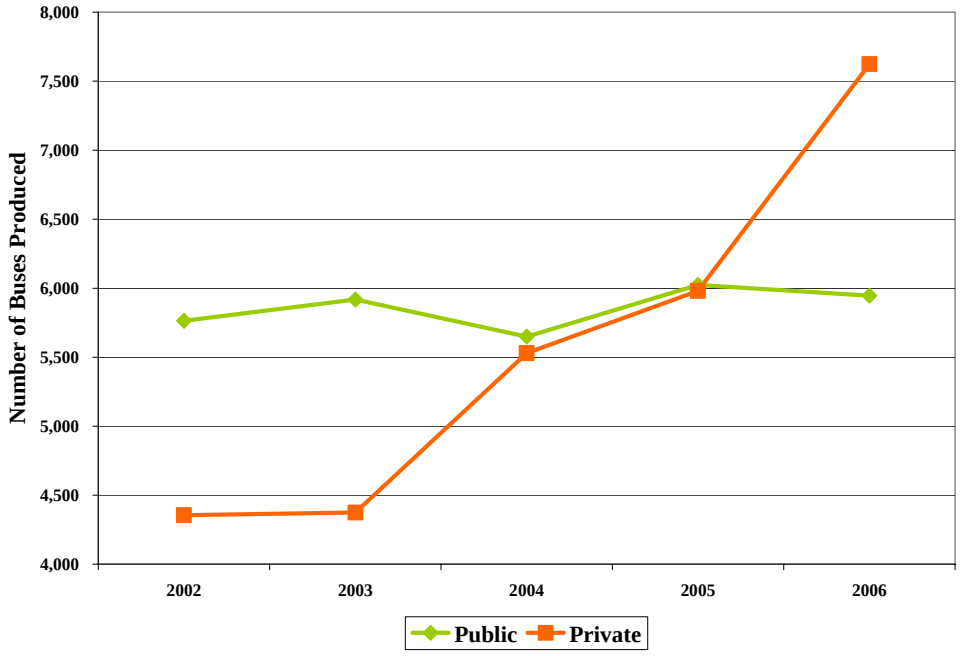
Description/Year	2002	2003	2004	2005	2006
Public	5,764	5,918	5,649	6,024	5,946
Private	4,356	4,375	5,530	5,980	7,624
Export	146	2	17	391	75
TOTAL	**10,266**	**10,295**	**11,196**	**12,395**	**13,645**

Source: Mid Size Bus Manufacturers Association (MSBMA), *Annual Survey Compilation,* (2003-2006)

Figures 34 and 35 illustrate the increase in production of small- to medium-sized vehicles for the private market over the last five years. However, according to the 2006 Mid-Size Bus Manufacturers Association survey, the public sector has not seen the same growth as the private sector, as indicated in Figure 35.

While these figures are not specific to cutaway buses, the eleven cutaway manufacturers are impacted and influenced by these trends.

Figure 35: Annual Small- to Medium-Sized Vehicle Production (units shipped)



Source: Mid Size Bus Manufacturers Association (MSBMA), *Annual Survey Compilation*, (2003-2006)

Manufacturer Ownership and Profitability

As previously discussed, eleven companies represent the primary manufacturers of small-to-medium-sized cutaway vehicles. Some of the eleven cutaway bus manufacturers outlined in this section are privately held companies, while some are subsidiaries of publicly traded companies. Figure 36 highlights the current ownership structure of each company.

Figure 36: Corporate Ownership of Cutaway Bus Manufacturers

Company	Private	Subsidiary	Parent
Champion Bus Inc.		X	Thor Industries, Inc.
Coach & Equipment Manufacturing Corporation	X		
Diamond Coach Corp.	X		
El Dorado National-Kansas, Inc.		X	Thor Industries, Inc.
Federal Coach	X		
Goshen Coach		X	Thor Industries, Inc.
Glaval Bus		X	Forest River, Inc. / Berkshire Hathaway
Krystal Coach		X	Krystal Enterprises
Starcraft Bus & Mobility		X	Forest River, Inc./ Berkshire Hathaway
Supreme Corporation (StarTrans)		X	Supreme Corporation
Turtle Top Inc.	X	X	Independent Protection Company

Thor Industries, Inc. *2006 Annual Report* indicates that its commercial bus division generated approximately 10% of its total revenue or $316 million in net sales. The commercial bus division, consisting of Champion Bus, El Dorado National, and Goshen Coach, produced a gross profit of approximately $25 million or 7.9% of net sales.[153]

Featured Manufacturers—El Dorado, Champion, Goshen Coach, Coach & Equipment

This section of the study will highlight four leading cutaway vehicle manufacturers including three Thor Industry subsidiaries — El Dorado, Champion Bus, and Goshen Coach — as well as independent manufacturer, Coach & Equipment Manufacturing Corporation. These manufacturers are included in the survey and interview components, which follow in Chapters 3 and 4.

The products of the four featured manufacturers, highlighted in Figure 37, accounted for more than 70% of the cutaway buses reported in the APTA transit agency fleet data for the period 2002 — 2006.

Figure 37: Percentage of Cutaway Fleet Market by Representative Manufacturers

Manufacturer	2002	2003	2004	2005	2006	5 yr. Average
El Dorado National-Kansas, Inc.	33.58%	33.58%	34.58%	32.08%	32.56%	**33.28%**
Coach & Equipment Manufacturing Corp.	11.15%	12.99%	14.57%	16.76%	21.16%	**15.33%**
Champion Bus, Inc.	10.52%	10.46%	8.02%	7.42%	6.48%	**8.58%**
Goshen Coach	20.84%	18.62%	17.52%	17.03%	12.79%	**17.36%**
TOTALS:	**76.09%**	**75.64%**	**74.69%**	**73.29%**	**72.99%**	**74.54%**

Source: APTA *Transit Vehicle Database*, 2003—2007

According to the *Small Transit Vehicle Industry Study*, "…cutaways encompass a large range in length, falling between 19- and 27-feet…." while most small buses range "…by only a couple of feet in length, averaging 27-feet."[154] All eleven manufacturers produce a wide assortment of cutaway buses ranging from less than 20-ft.-long to more than 30-ft. in length. The weighted average length of cutaway buses measures 23-feet.

APTA's 2002 — 2006 transit databases demonstrate that the 25-ft. cutaway bus has been the most prevalent length for cutaways used by public transit agencies reporting to APTA during the five-year period. From 2002 through 2006, 25-ft. cutaways accounted for about 20% of the U.S. transit agency fleets. Figure 38 provides a breakdown of vehicles purchased by transit agencies in 2006 and produced by the following representative manufacturers:

Figure 38: Vehicle Lengths for Cutaways by Representative Manufacturers

Bus Length	El Dorado National	Coach & Equipment	Champion Bus	Goshen Coach
< 19 ft	1	0	0	0
19 ft	0	197	0	0
20 ft	177	1,367	2	99
21 ft	142	366	18	143
22 ft	412	172	192	253
23 ft	536	98	84	171
24 ft	881	26	7	89
25 ft	**1,058**	**134**	**112**	**566**
26 ft	255	13	72	69
27 ft	83	0	87	16
28 ft	33	0	8	21
29 ft	34	0	76	3
30 ft	56	21	68	21
30 ft plus	33	12	11	3
TOTAL	**3,701**	**2,406**	**737**	**1,454**

Source: APTA *2007 Transit Vehicle Database*

Manufacturing Trends in Fuel & Propulsion Systems

As discussed previously in Sections 1.3 and 1.4, unlike heavy-duty transit, buses that run on a wide variety of fuel and propulsion systems (e.g. diesel, compressed natural gas, diesel hybrid, etc.), small-to-medium-sized cutaway buses typically run on diesel or gasoline. According to the APTA *2007 Transit Vehicle Database*, diesel- and gasoline-powered vehicles represent a major portion of vehicles in service and in production. For example, nearly 80% of cutaway vehicles produced by El Dorado, Coach & Equipment and Champion Bus are powered by diesel fuel with gasoline powered-vehicles representing the majority of the remainder. Goshen's diesel powered vehicles represent close to 70% of their cutaways with more than 25% of Goshen's cutaways powered by gasoline.[155]

As illustrated in Figure 39, diesel- and gasoline-powered vehicles represent the largest number of cutaways produced by the four representative manufacturers, according to transit agencies that participated in APTA surveys over the past five years. As it relates to alternative fuels, CNG vehicles represent the most common alternative fuel system with the four highlighted manufacturers (as depicted in Figure 39 located on the following page).

Figure 39: Fuel Systems for Cutaways by Representative Manufacturers

Fuel/Manufacturer	El Dorado National	Coach & Equipment	Champion Bus	Goshen Coach
Biodiesel	52	0	36	7
Propane & Electric Battery	0	0	0	0
Bunker Fuel	0	0	3	0
Compressed Natural Gas & Diesel	4	0	0	0
Compressed Natural Gas & Gasoline	0	0	0	0
Clean Diesel	0	20	0	0
Compressed Natural Gas	84	0	39	41
Diesel & Electric Battery	0	0	0	0
Diesel Fuel	**2,946**	**1,958**	**621**	**996**
Ethanol	0	0	0	0
Gasoline	**599**	**422**	**27**	**389**
Gasoline & Electric Battery	0	0	0	0
Liquefied Natural Gas	0	0	0	0
Propane	16	5	11	21
Propane & Gasoline	0	1	0	0
TOTAL	**3,701**	**2,406**	**737**	**1,454**

Source: APTA Transit Vehicle Database, 2003 – 2007

This concludes the market overview component of this study. While this chapter has provided highlights of available research and statistics relative to manufacturers, Chapters 3 and 4 of this report provide analysis of survey and interviews with executives in the cutaway manufacturing industry. Furthermore, Chapter 5 provides information with regard to the competitive landscape for manufacturers as well discussion regarding characteristics of the cutaway industry versus the heavy-duty bus industry. The following section of this report, Chapter 2, focuses on the public sector through analysis of the results of surveys with representative transit agencies.

Chapter 2: Transit Agency Survey Results & Analysis

The perspectives of U.S. transit agencies with varying cutaway fleet sizes and characteristics, as well as demographic differences, are integral elements of this study. In 2005, the FTA selected three large, three medium-sized, and three small transit agencies — operating in various geographic areas of the United States — to be included in a bus market study, entitled the *Non-Rail Vehicle Market Viability Study*. The same nine agencies, listed below in Figure 38, participated in a subsequent survey conducted during the summer of 2007. These nine transit agencies were selected for the purpose of comparison with the 2005 study so that the FTA could obtain related insights about the current market for small and medium-sized cutaway vehicles. The nine agencies highlighted in Figure 40 are listed in descending order based on urbanized area population figures.

Figure 40: Representative Agencies in Descending Order by Population

Transit Agency	City and State	FTA Region (Geographic Region)	Urbanized Area Population[156]
MTA New York City Transit (NYCT)	New York, New York	Region 2 (Northeast)	17,799,861
Miami-Dade Transit (MDT)	Miami, Florida	Region 4 (Southeast)	4,919,036
City of Phoenix Public Transit Department (PTD)	Phoenix, Arizona	Region 9 (Southwest)	2,907,049
King County Dept. of Transportation (KC Metro Transit)	Seattle, Washington	Region 10 (West)	2,712,205
Indianapolis Public Transportation Corp. (IndyGo)	Indianapolis, Indiana	Region 5 (Central)	1,218,919
Charlotte Area Transit System (CATS)	Charlotte, North Carolina	Region 4 (Southeast)	758,927
City of Jackson Transit System (JATRAN)	Jackson, Mississippi	Region 4 (South)	292,637
Chittenden County Transportation Authority (CCTA)	Burlington, Vermont	Region 1 (Northeast)	105,365
Santa Fe Trails – City of Santa Fe (SFT)	Santa Fe, New Mexico	Region 6 (Southwest)	80,337

Source: *2005 National Transit Database*

Among the representative transit agencies selected for this study, New York's Metropolitan Transit Agency is by far the largest transit system in the country. Serving the largest population, MTA naturally possesses the largest fleet of vehicles. The same can be said of the NYCT cutaway vehicle fleet that is used to provide demand response service.

The information presented in this section of the study represents an analysis of 2007 survey results combined with available information regarding each of the nine agencies' demand response capabilities (highlighted in Section 1.8 of this study). All of the nine transit agencies, as required by federal law, provide paratransit or demand response services, although in some cases this function may be outsourced, under contract, to a third party. Cutaway vehicles are used by many transit agencies throughout the country to provide paratransit services due to the vehicle design adaptability, including various interior options that allow for more room for wheelchairs. In addition to cutaway vehicles, transit agencies also utilize other types of vehicles, such as vans, to provide demand response.

The 2007 survey instrument focused on the nine agencies' cutaway bus operations and procurements, including:

- Ownership & operations
- Fleet information
- Types of service
- New purchases & delivery
- Federal Provisions, procurement issues & funding
- Fuel systems & new technologies

In 2005, the FTA surveyed the selected transit agencies for information related to overall fleet information highlighting:

- Bus fleet size & type
- New purchases & delivery
- Bus services & needs
- New technology
- Procurement issues

The following analysis summarizes key survey responses submitted by the nine transit agencies that participated in the 2007 survey on cutaway vehicles and includes relevant references to the 2005 survey for comparative purposes. It should be noted that the King County Department of Transportation submitted two separate survey responses — one response for Metro Transit services and another for Accessible Services.

2.1 Ownership & Operations

As it relates to cutaway vehicle fleets, two of the nine agencies surveyed do not own or operate any cutaway vehicles as part of their fleets or for demand response operations. Miami Dade Transit (MDT) and Santa Fe Trails officials reported that their agencies do not have any cutaway vehicles and do not foresee the purchase or addition of cutaway vehicles in the near future. As reported in 2005, Santa Fe's fleet consists only of 30-ft. transit buses; however, the agency has 12 other vehicles (none of which is a cutaway vehicle), including vans and station wagons, for demand response operations.

As noted previously in this report, secondary research indicates that Miami Dade Transit operates cutaway vehicles in a circulator route; however, the agency refers to the vehicles as minibuses.

As it relates to ownership of fleet vehicles in Miami Dade, MDT transit officials reported that the agency owns all of its transit vehicles while operations related to demand response are contracted to a third party. All of the other survey participants stated that their transit agencies owned cutaway vehicles; however, practices regarding cutaway vehicle services and operations varied among the agencies.

The following chart, Figure 41, indicates survey responses regarding ownership and operation among the participating agencies that have cutaway vehicles in their fleets.

Figure 41: Ownership and Operation of Cutaway Vehicles

Transit Agency (arranged alphabetically by state)	Ownership	Operations
City of Phoenix Public Transit Department (PTD)	Owns	Contracts with a third party
Miami-Dade Transit (MDT)	N/A	N/A
Indianapolis Public Transportation Corporation (IndyGo)	Owns	In-house & Contracts with a third party
City of Jackson Transit System (JATRAN)	Owns	In-house
Santa Fe Trails - City of Santa Fe (SFT)	N/A	N/A
MTA New York City Transit (NYCT)	Owns	Leases paratransit vehicles to a third party
Charlotte Area Transit System (CATS)	Owns	In-house
Chittenden County Transportation Authority (CCTA)	Owns	Contracts with a third party
King County Dept. of Transportation (KC) Metro Transit	Owns	In-house
King County Dept. of Transportation (KC) Accessible Services	Owns	Contracts with a third party

Three of the agencies conduct all cutaway vehicle operations in-house while three outsource operations and two agencies, New York City Transit (NYCT) and the Indianapolis Public Transportation Corporation have in-house, as well as third party, operations responsibilities. NYCT specified that the agency, "…purchases and owns the vehicles and leases, for a nominal fee, the vehicles to private carriers under contract to provide paratransit services."

2.2 Cutaway Fleet Information

Small-sized Cutaways

With regard to cutaway vehicles and the 2007 research results, four of the participating agencies' cutaway fleets only consist of small-sized vehicles (defined as vehicles under 25-ft.). The Charlotte Area Transit System (CATS) is the only agency among the nine, which employs both small and mid-sized cutaways. Surveyed agencies operating small cutaways include:

Figure 42: Respondent Agencies with Small Cutaway Vehicles

Transit Agency	Vehicle Make/Model	Number of Vehicles per Model	Total Number of Vehicles
City of Phoenix Public Transit Department (PTD)	StarTrans Candidate StarTrans Senator	30 26	56
City of Jackson Transit System (JATRAN)	Ford E-450 Champion International 3400	9 3	12
MTA New York City Transit (NYCT)	Coach & Equipment Phoenix III	1,440	1,440
Charlotte Area Transit System (CATS)	Goshen Ford Diesel	85	85
King County DOT (KC) Accessible Services	Champion Challenger StarTrans Candidate StarTrans Senator Goshen Pacer	99 21 125 25	270

Note: JATRAN cited 9 Ford E-450 models, which indicates the chassis manufacturer; the body manufacturer was not cited.

Among the small cutaway vehicles used by five of the nine agencies, four manufacturers were cited including Coach & Equipment Manufacturing Corporation, StarTrans by Supreme Corporation, Champion Bus, Inc. and Goshen. Two of the agencies, NYCT and CATS, have procured one make and model vehicle exclusively (as indicated in Figure 42).

Medium-sized Cutaways

As depicted in Figure 43 that follows, four of the surveyed transit agencies are utilizing mid-sized cutaway vehicles. As it relates to manufacturers of mid-sized cutaway vehicles, three manufacturers were cited by the four agencies — Champion Bus, Inc., Goshen and Coach & Equipment Manufacturing Corporation. (Ford is the chassis manufacturer of the E-350 model; in the case of IndyGo, the body manufacturer was not cited.)

Figure 43: Respondent Agencies with Medium-Sized Cutaway Vehicles

Transit Agency	Vehicle Make/Model	Number of Vehicles
Indianapolis Public Transportation Corp. (IndyGo)	Ford E-350/StarTrans	79
Charlotte Area Transit System	Goshen Ford Diesel	9
Chittenden County Transportation Authority	Coach & Equipment Phoenix	11
King County DOT (KC) Metro Transit	Champion Challenger	34

Note: IndyGo cited 79 Ford E-350 models, which indicates the chassis manufacturer; the body model was not cited. APTA's 2007 *Transit Vehicle Database* cites that IndyGo's vehicles are StarTrans cutaways; however, the model is unknown.

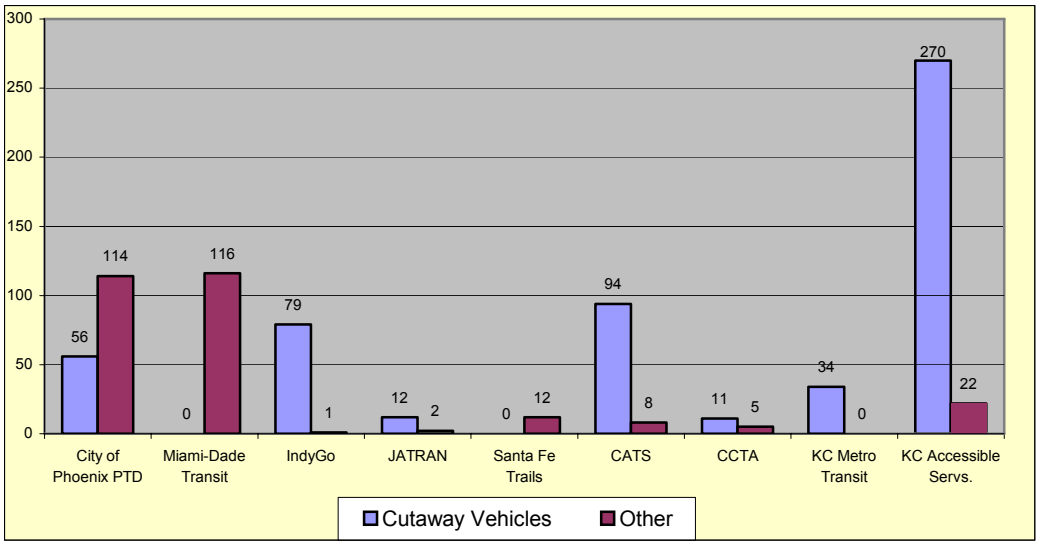
Other Vehicles

Other small-to-medium-sized vehicles being used by the participating agencies for general and/or paratransit services included:

- Braun paratransit van (Phoenix PTD)
- Braun "Entervan" (Phoenix PTD and King County Accessible Services)
- Bluebird minibuses (Miami MDT) *Secondary research indicates that some of these vehicles are cutaway buses.*
- Chevy Ventura van (JATRAN and Santa Fe Trails)
- Dodge Caravan (Santa Fe Trails)
- Dodge Ram (Chittenden County)
- Dodge Sprinter (IndyGo)
- Ford Econoline-250 van (JATRAN)
- Ford Taurus station wagon (Santa Fe Trails)
- Ricon Corp. lowered-floor minivan (King County Accessible Services)

Two agencies —MTA New York City Transit (NYCT) and King County DOT Metro Transit — indicated that their agencies do not have minibuses, vans or other small vehicles in their fleets. With the exception of Miami Dade Transit and Santa Fe Trails, which reported that they do not own any cutaway vehicles, and Phoenix PTD, which has fewer cutaway vehicles than vans, the other agencies all utilized significantly more cutaway vehicles than other types of small vehicles. Figure 41 depicts the number of cutaway vehicles per agency (excluding NYCT) in comparison to other vehicles. (NYCT is not depicted in Figure 44 because the significant difference in vehicle numbers makes it difficult to read the figures for other agencies.)

Figure 44: Comparison between the Number of Cutaway Vehicles & Other Small Vehicles (Minibuses, Vans & Other Small Vehicles



Note: NYCT has 1,440 small-sized cutaway vehicles; it reported no minibuses, vans or other small vehicles.

Removal of Cutaway Vehicles from Transit Fleets

Among the participating agencies that own cutaway vehicles, more than half of the transit agencies have removed vehicles from their fleets since the beginning of this year (2007). As depicted in Figure 45 that follows, three agencies did not remove any cutaway vehicles — JATRAN, CATS, and CCTA — in 2007.

Figure 45: Removal of Cutaway Vehicles in 2007

Transit Agency (arranged alphabetically by state)	None removed	Number of Vehicles Removed
City of Phoenix Public Transit Department (PTD)	-	6 to 15
Miami-Dade Transit (MDT)	N/A	N/A
Indianapolis Public Transportation Corp. (IndyGo)	-	1 to 5
City of Jackson Transit System (JATRAN)	√	-
Santa Fe Trails - City of Santa Fe (SFT)	N/A	N/A
MTA New York City Transit (NYCT)	-	More than 25
Charlotte Area Transit System (CATS)	√	-
Chittenden County Transportation Authority (CCTA)	√	-
King County Dept. of Transportation (KC) Metro Transit	-	1 to 5
King County Dept. of Transportation (KC) Accessible Services	-	6 to 15

The respondent from the City of Jackson Transit System (JATRAN) observed that existing cutaway vehicles could not be removed because there were no other vehicles with which to continue providing services. Similarly, the CATS representative observed that there was "insufficient capital" to remove any cutaways from the existing fleet. In contrast, the CCTA respondent observed that vehicles did not need to be replaced because the cutaways are "still in good operating condition" and "have useful life remaining." In addition, some of CCTA's vehicles were purchased as "expansion vehicles."

Aging vehicles and the concomitant increase in maintenance costs, along with vehicle damage and/or destruction, are key reasons that cause transit agencies throughout the U.S. to remove vehicles from service and to seek replacement. As it relates to the removal of cutaway buses, the top reasons that were cited by the four agencies, (listed in order of prevalence), included:

- **Age of vehicle/mileage** (Phoenix PTD, IndyGo, NYCT, KC Metro Transit and KC Accessible Services)
- **Excessive maintenance costs** (Phoenix PTD, IndyGo)

- **Damaged or destroyed vehicles** (NYCT, KC Metro Transit)
- **Vehicle obsolescence** (KC Accessible Services)

2.3 Types of Service

While various transit agencies throughout the country may use cutaway vehicles in everyday fleet operations, demand response (which is also called dial-a-ride or paratransit) is the most common application for cutaways. Smaller size and flexible configuration, along with special features that are ADA compliant, make cutaways ideal for the individualized nature of demand response services.

As depicted in Figure 43, three of the agencies — City of Phoenix PTD, CATS, and KC Metro Transit — employ cutaway vehicles outside of a demand response function. While KC Metro Transit and CATS utilize cutaway vehicles on fixed routes; Phoenix PTD's cutaway vehicles provide circulator services representative of almost half, (31,000 rides per month), of the total number of rides per month (64,000) provided by PTD's cutaways. In addition, Figure 46 illustrates the number of demand response rides provided monthly **only by cutaway vehicles**, in descending order from the greatest number of rides per month to the fewest.

Figure 46: Cutaway Vehicle Types of Service

Transit Agency (sorted from most to least no. of rides/month)	Demand Response No. of rides/month	Other Types of Service/ Number of rides/month
MTA New York City Transit (NYCT)	5,201,569	-
King County Dept. of Transportation (KC) Accessible Services	1,010,966	-
King County Dept. of Transportation— KC Metro Transit	-	Local (fixed route) of 21 routes and 699,000 rides/month
Charlotte Area Transit System (CATS)	228,911	Local (fixed route) of 4 routes and 136,620 rides/month
Indianapolis Public Transportation Corporation (IndyGo)	340,000	-
Chittenden County Transportation Authority (CCTA)	37,400*	-
City of Jackson Transit System (JATRAN)	35,141	-
City of Phoenix Public Transit Department (PTD)	33,000	Neighborhood Circulators with 31,000 rides/month
Miami-Dade Transit (MDT)	N/A	N/A
Santa Fe Trails - City of Santa Fe (SFT)	N/A	N/A

*Chittenden County Transportation Authority reported that the agency has 27,074 (ADA) rides per month and 10, 326 (Elderly and Disabled) rides per month for a total of 37,400.

With a population of more than 17 million, New York City Transit's demand response service provides the greatest number of rides per month. However, Chittenden's CCTA has more demand response rides per month than some larger cities, e.g. Phoenix, Arizona.

In order to meet new service demands, transit agencies participating in the study were asked to specify which vehicles — medium cutaways (25-ft. to 30-ft.), small cutaways (<25ft.), or other vehicles — would be "crucial" to the agencies over the next five to seven years.

Three agencies — CATS, CCTA, and KC Metro Transit — observed that medium-sized cutaway vehicles would be crucial, while four agencies — Phoenix PTD, JATRAN, NYCT and KC Accessible Services — stated that small cutaways would be crucial. The respondent for IndyGo observed that the agency's fleet expansion requirements include "…25-ft. to 30-ft. integral body vehicles capable of ADA support with more safety than a fiberglass shell."

Service Elimination

As it relates to service expansion or reduction, none of the participating agencies plans to **eliminate** routes related to any of the following types of service over the course of the next five to seven years:

- Local (fixed route)
- Express (shuttle)
- Limited-stop (suburban)
- Demand response
- Paratransit
- Vanpool
- Other

Service Expansion

Although the elimination of service is not anticipated by any of the participating agencies, several agencies are not planning to expand services. Among the study participants, five transit agencies — IndyGo, JATRAN, CATS, CCTA, and KC Metro Transit — do not foresee expansion of routes in any of the aforementioned service types over the course of the next five to seven years. Reasons cited by the agencies for not expanding services included financial constraints (IndyGo), as well as the expectation that service requirements would not change (JATRAN and KC Metro Transit). King County Metro Transit noted "…the existing fleet of thirty-four Champion Challenger cutaway vehicles will be replaced in 2008 with thirty-five 27-ft. low-floor buses."

While lack of budget and lack of anticipated growth were cited as the primary reasons for not expanding services, conversely, available budget and increased growth were cited as the reasons for service expansion. Four agencies listed various types of planned service expansions as depicted below in Figure 47.

The four agencies that anticipated expansion cited various reasons — funding allocation, infrastructure development, and growth/need-based expansion — for service expansion plans.

Figure 47: Cutaway Vehicle Service Expansion Plans

Transit Agency	Service Expansion Plan	Reason for Service Expansion
City of Phoenix Public Transit Department (PTD)	6 neighborhood circulator routes	**Funding:** City Council funding authorization for 2007/2008
Santa Fe Trails - City of Santa Fe (SFT)	2 local fixed routes 1 limited stop route	**Infrastructure:** 1. Local fixed route structure is being realigned to interface with commuter rail service, (currently in the planning stage). 2. Taking over a limited-stop suburban pilot program currently operated by the Regional Transit District
MTA New York City Transit (NYCT)	2,280 paratransit routes	**Growth:** Projected 15% annual growth in trip demand over the next five to seven years
King County Dept. of Transportation— KC Accessible Service	10 to 20 demand response routes (a 10% increase in service)	**Growth:** Expects increase in service demand to "rise slowly due to increased ridership"

2.4 New Purchases & Delivery

As it relates to procurement of cutaway vehicles, participating agencies were asked to respond whether or not each respective agency purchased or contracted for new cutaway buses in 2007. Four agencies (Phoenix PTD, NYCT, CCTA, and KC Accessible Services) affirmed that they had contracted for new cutaway vehicles while the remaining four had not (IndyGo, JATRAN, CATS and KC Metro Transit). (Santa Fe and MDT responded that the question was not applicable).

The following chart, Figure 48, details the types of cutaway purchases made by the four agencies including vehicle make/model, quantity of vehicles purchased, cost of vehicles and the scheduled delivery date for the new vehicles.

Figure 48: Types of New Cutaway Vehicle Purchases in 2007

Transit Agency	Vehicle Type	Make/Model	Quantity	Cost	Delivery Date
Phoenix PTD	Small-sized cutaway	StarTrans Senator	26	$76,220.00	May 2007
	Small-sized cutaway	StarTrans Candidate	30	$54,170.00	June 2007
New York City Transit (NYCT)	Small-sized cutaway	Coach & Equip. Phoenix	174	$50,519.97	____2007
Chittenden County Transportation Authority (CCTA)	Mid-sized cutaway	Coach & Equip. Phoenix	4	$44,559.00	July 2007
	Mid-sized cutaway	Coach & Equip. Phoenix	3	$44,559.00	Oct. 2007
KC DOT/ Accessible Services	Small-sized cutaway	StarTrans Senator Supreme	28	$55,388.00	Sept. 2007

Agencies cited several reasons for selecting various vehicle makes and models including price, bidding requirements, and vehicle characteristics. Phoenix PTD procured twenty-six 19-passenger StarTrans Senator models for the agency's neighborhood circulator routes due to "…its ability to maneuver into neighborhoods without creating excessive noise or obtrusion." Phoenix PTD purchased the smaller StarTrans Candidate models for demand response services due to the increased room and interior ADA maneuverability, in comparison to previous Braun paratransit vans. Both types of vehicles were procured as a component of a competitive RFP.

NYCT listed the following reasons for procuring 174 small-sized cutaway Phoenix models from Coach & Equipment including:

1. Fleet uniformity
2. Vehicle reliability
3. Parts availability
4. Service, warranty support by area Ford dealerships
5. Previous fleet experience in New York was an element of the specifications presented to the current contracted vehicle manufacturer

CCTA cited that its seven new mid-sized Coach & Equipment Phoenix cutaway models fit within the cost parameters specified by the State of Vermont, in addition to meeting state compliance regulations. Also, the purchased vehicles met FTA contracting guidelines with regard to vendor compliance.

Similarly, Washington State requirements, along with federal bidding requirements, impacted King County's purchase of cutaway vehicles. The agency followed public bidding process guidelines and awarded the bid to the lowest responsive and responsible bidder. Also, King County's respondent observed that the new Senator Supreme models (with a 159"WB Chevy chassis) best met KC DOT's service requirements.
In response to an inquiry regarding the reason for demand for new cutaway vehicles, the agencies responded in a variety of ways highlighting **additional routes**, **increased service demand**, and **vehicle replacement**.

Figure 49 highlights factors cited by specific transit agencies.

Figure 49: Reasons Cited for New Cutaway Vehicle Procurements in 2007

Transit Agencies	Reasons Cited for New Procurement of Cutaways
Phoenix PTD	**1.** New circulator routes increased demand for vehicles. (Each route will employ between 6 to 8 StarTrans Senator cutaway models.) **2.** ADA requirements have increased the demand for StarTrans Candidate cutaway models and Braun vans
NYCT	**1.** Increase in service demand **2.** Retirement of older fleet vehicles
CCTA	**1.** Providing replacement vehicles for ADA and *Vermont Elders and Persons with Disabilities* services
KC Accessible Services	**1.** Need-based procurement based on increased ridership **2.** Retirement of older fleet vehicles (the agency annually replaces vehicles that have reached the end of useful service life)

The following chart, Figure 50, highlights reasons that four agencies cited for not purchasing or awarding contracts for new cutaway vehicles in 2007:

Figure 50: Reasons Cited for No New Cutaway Vehicle Procurements in 2007

Transit Agencies	Reasons Cited for No New Procurement of Cutaways
Indianapolis Public Transportation Corporation (IndyGo)	**1.** Existing available dependability of cutaways offered through State Quantity Purchase Agreement **2.** Budgetary constraints
City of Jackson Transit System (JATRAN)	**1.** Insufficient budget
Charlotte Area Transit System	**1.** Insufficient capital **2.** Nine cutaways are being replaced in FY 2008 with 30-ft. buses
King County DOT Metro Transit	**1.** Alternative procurement (the agency is negotiating a contract for thirty-five 27-ft. low -floor buses)

2.5 Federal Provisions, Procurement Issues and Funding

Participating transit agencies were questioned about the impacts of federal provisions, including *SAFETEA-LU*, *Americans with Disabilities Act of 1990* (ADA), and *Buy America* provisions. In addition, transit agencies responded to questions about procurement and funding issues, including pooled procurement initiatives and the U.S. Department of Transportation's lending and credit assistance programs. (Similar questions related to *Buy America* policy and pooled procurement were posed in the 2005 *Non-Rail Vehicle Market Viability Study*.)

Experiences reported by the agencies in response to questions regarding federal provision, in general, were similar in many respects, regardless of geographic location or agency

size. (The survey questions are not applicable to Miami Dade Transit or Santa Fe Trail because these agencies reported that they do not own cutaway vehicles.)

SAFETEA-LU Provisions: Impact of Elderly Individuals & Individuals with Disabilities, Job Access & Reverse Commute (JARC), and New Freedom

Participating transit agencies rated on a scale of 1 to 5 — 1) not at all, 2) not much, 3) somewhat, 4) too much and 5) far too much — the impact of the various SAFETEA-LU transportation programs on cutaway bus services.

As Figure 51 indicates, all of the participating agencies cited that the JARC program's impact on cutaway vehicle service as nonexistent (rating it "1" out of five). Likewise, only one agency indicated that new Freedom had any impact. The Elderly Individuals & Individuals with Disabilities program received the most affirming responses, with three agencies reporting that the program "somewhat" impacts cutaway bus operations.

Figure 51: Impact of Key *SAFETEA-LU* Programs on Cutaway Bus Operations

Transit Agencies	*Elderly Individuals & Individuals with Disabilities*	*Job Access and Reverse Commute* (JARC)	*New Freedom*
Phoenix Public Transit Department (PTD)	N/A	Not at all	Not at all
Miami-Dade Transit	N/A	N/A	N/A
Indianapolis Public Transportation Corp. (IndyGo)	Not at all	Not at all	Not at all
City of Jackson Transit System (JATRAN)	Not at all	Not at all	Not at all
Santa Fe Trails — City of Santa Fe	N/A	N/A	N/A
MTA New York City Transit (NYCT)	Somewhat	Not much	Not much
Charlotte Area Transit System (CATS)	Somewhat	Not at all	Somewhat
Chittenden County Transportation Authority (CCTA)	Somewhat	Not at all	"Unknown"
King County DOT Accessible Services (KC Accessible Services)	Not at all	Not at all	Not at all
King County DOT Metro Transit (KC Metro Transit)	"Unknown"	"Unknown"	"Unknown"

Despite the fact that *SAFETEA-LU*'s *Elderly Individuals & Individuals with Disabilities* program has been a primary source of funding for vehicles and equipment for human services organizations and transportation agencies, participating transit agencies do not

cite a significant impact of this program on cutaway bus services. Three agencies — MTA New York City Transit (NYCT), Charlotte Area Transit System (CATS), Chittenden County Transportation Authority (CCTA) — rated that this program "somewhat" impacts cutaway bus service; however, three other agencies — Indianapolis Public Transportation Corp. (IndyGo), City of Jackson Transit System (JATRAN), and King County DOT (KC) Accessible Services — indicated no impact.

Similarly, six agencies — Phoenix PTD, IndyGo, JATRAN, CATS, CCTA, and KC Accessible Services — indicated that *Job Access and Reverse Commute* (JARC) had no impact on cutaway buses. With respect to *New Freedom*, a new program created by *SAFETEA-LU* that provides formula funding based on the disabled population in a state, four agencies — Phoenix PTD, IndyGo, JATRAN, and KC Accessible Services — observed that the impact of the new program is negligible. All four agencies checked "not at all" in terms of *New Freedom*'s impact on cutaway vehicles. NYCT rated the impact of *New Freedom* as "not much," while CATS rated the impact as "somewhat."

The implementation of *SAFETEA-LU* changed the JARC program from a competitive discretionary grant program to a formula program, under which funding is allocated to states based on ratios involving the number of low-income residents and welfare recipients in each urbanized area.[157] NYCT, which serves a major metropolitan population, observed that this change might help the agency expand resources and fleet vehicles. The NYCT survey respondent also anticipates that *New Freedom* may provide additional funding to the agency in the future.

With respect to the *New Freedom* program, *SAFETEA-LU* contains language mandating coordination of transportation services with other federal human service programs. As it relates to the requirement, Chittenden County Transportation Authority (CCTA), which serves a rural population, observed that the program requires significant levels of planning, reporting and administrative effort compared to the level of actual funding that the agency receives. The agency respondent expressed the opinion that "…it may be more cost effective if more [funding for *Elderly Individuals & Individuals with Disabilities*] were provided in lieu of *New Freedom*."

Although *SAFETEA-LU* provides historic funding levels for federal surface transportation programs from FY 2004 through FY 2009, most provisions started in FY 2006. Therefore, the survey results suggest that it may still take a few more years to see the actual impacts of *SAFETEA-LU* provisions on the cutaway bus market.

Status of "Coordinated Public Transit Human Service Transportation Plans"

Participating transit agencies were asked to report the current status of agencies' "Coordinated Public Transit Human Service Transportation Plans," which *SAFETEA-LU* requires of public and private transportation providers and non-profit organizations as a condition of receiving funding for the *New Freedom*, JARC, and the *Elderly Individuals & Individuals with Disabilities* programs. *SAFETEA-LU* specifies that an initial plan be developed by 2007 as a condition of receiving funding for the programs. Complete plans

that include coordination with the full range of existing human service transportation providers are required by FY 2008.[158]

Five out of the eight transit agencies — JATRAN, SFT, NYCT, CATS and CCTA — currently are in the process of developing initial plans, and two agencies — Phoenix PTD and IndyGo — already have developed initial plans, a condition of receiving funding for the related programs. KC Accessible Services responded that the agency is not planning to develop an initial plan, while KC Metro Transit provided no response.

Participating transit agencies also were asked about the development of a complete "Coordinated Public Transit Human Service Transportation Plan," which includes coordination with local or regional human service providers. Currently none of the agencies has developed a complete "Coordinated Public Transit Human Service Transportation Plan." Six agencies — IndyGo, JATRAN, SFT, NYCT, CATS and CCTA — are in the process of developing complete plans. Phoenix PTD responded that the agency is not participating in the planning of a complete plan because the City of Phoenix does not directly operate services funded through JARC or *New Freedom* programs; funds are passed through to sub-recipients.

Americans with Disabilities Act of 1990 (ADA) & *Buy America* Provisions

Participating transit agencies provided ratings on a scale of 1 to 5 — (1) not at all, (2) not much, (3) somewhat, (4) too much and (5) far too much — reflecting the impact of *Americans with Disabilities Act of 1990* (ADA) and *Buy America* requirements on cutaway bus services as follows:

Figure 52: Reported Impact of ADA and *Buy America*

Transit Agencies	ADA	*Buy America*
Phoenix Public Transit Department (PTD)	Somewhat	Somewhat
Miami-Dade Transit	N/A	N/A
Indianapolis Public Transportation Corp. (IndyGo)	Not at all	Far too much
City of Jackson Transit System (JATRAN)	Not at all	Not at all
Santa Fe Trails — City of Santa Fe	N/A	N/A
MTA New York City Transit (NYCT)	Somewhat	Somewhat

Figure 52: Reported Impact of ADA and *Buy America* (continued)

Transit Agencies	ADA	*Buy America*
Charlotte Area Transit System (CATS)	Somewhat	Somewhat
Chittenden County Transportation Authority (CCTA)	Somewhat	Somewhat
King County DOT (KC) Accessible Services	Somewhat	Not at all
King County DOT (KC) Metro Transit	Somewhat	Somewhat

Americans with Disabilities Act of 1990 (ADA): As the survey results demonstrate, six agencies — Phoenix PTD, NYCT, CATS, CCTA, KC Metro Transit and KC Accessible Services — foresee that current on-going revisions of ADA guidelines might "somewhat" impact the agencies' cutaway bus operations. The Phoenix PTD respondent anticipates that ADA revisions may affect vehicle configuration and costs in the future. KC Metro's respondent foresees that revisions will improve ramp angle, which may require changes in the agency's vehicle specifications. Charlotte Area Transit System's (CATS) respondent indicated that the agency may need to "retrofit all lifts" to accommodate wheelchairs. Concerning fundamental issues related to ADA guidelines and standards, NYCT's respondent pointed out that the "lack of standard[s] for 'common wheelchair dimensions' presents problems with vehicle design and production costs."

Buy America

With respect *to Buy America* provisions, the survey results are similar to the 2005 survey findings for fixed route and larger buses. As demonstrated by the table on the previous page, five transit agencies — Phoenix PTD, NYCT, CATS, CCTA and KC Metro Transit — responded that *Buy America* "somewhat" impacts the agencies' cutaway bus operations. However, comments varied with regard to the level of the impact of Buy America. For example, Phoenix PTD responded that *Buy America* stipulations "… [have] not been an issue with cutaway vehicles." NYCT responded that *Buy America* has "…no impact" on the agency's cutaway bus operations, but commented that "…we are concerned about [the] dwindling base of manufacturers" as a result of *Buy America* compliance. IndyGo's respondent rated the impact of the *Buy America* mandate as "far too much." Commenting further, the IndyGo participant commented that the policy "…restricts the present selection of models making safety, maintenance cost, dependability and operations costs extremely constrictive factors in the day-to-day operation of services for [the] ADA community."

Pooled Procurements

Five out of the nine agencies surveyed do not participate in any pooled procurement initiatives. Three medium-to-small-sized transit agencies — IndyGo, JATRAN and

CCTA — participate in pooled procurement initiatives through state DOT contracts. Phoenix PTD participates in third party pooled purchases. Compared with the 2005 survey, in which only Phoenix PTD and JATRAN were participating in pooled procurement initiatives, more of the surveyed transit agencies are participating currently in pooled procurements.

U.S. DOT Lending and Credit Assistance Programs

The two tables that follow highlight each of the participating agencies' knowledge of, and interest in, U.S. DOT lending and credit assistance programs to finance cutaway bus purchases or service that utilizes cutaway buses.

Figure 53: Participating Agencies' Knowledge of DOT Lending and Credit Assistance Programs

None	• Indianapolis Public Transportation Corp. (IndyGo) • King County Metro Transit (KC Metro Transit) • King County DOT Accessible Services (KC Accessible Services) • Charlotte Area Transit System (CATS)
A little	• None
Some	• Phoenix PTD • City of Jackson Transit System (JATRAN) • MTA New York City Transit (NYCT) • Chittenden County Transportation Authority
A lot	• None

Note: N/A — Miami, Santa Fe Trails

As the preceding table demonstrates, four agencies' respondents indicated that they have no knowledge of the U.S DOT lending or credit assistance programs, while four other agencies' representatives reported that they have some knowledge of the programs.

Figure 54: Participating Agencies' Interest in DOT Lending and Credit Assistance Programs

None	• Phoenix PTD • IndyGo • NYCT • KC Metro Transit • CATS • CCTA
A little	• KC Accessible Services
Some	• JATRAN
A lot	• KC Accessible Services

Note: N/A — Miami, Santa Fe Trails

Participating transit agencies were asked to indicate levels of interest in utilizing U.S. DOT lending and credit assistance programs. Although four respondents reported that they have some knowledge of the programs, six out of the eight participating agencies' responses reflected no interest in using the programs.

In response to the question about the reason(s) for not using these programs, four agencies provided the following answers:

- "Agency charter limits methods of indebtedness assumption." (IndyGo)
- "Local budget constraints" (JATRAN)
- "Liability and debt service management is at maximum level." (NYCT)
- "We prefer to pay as we go." (CCTA)

Three respondents indicated that they have no need, other available funding sources or alternative approaches to federal funds:

- "The city has not had a need to use credit assistance or loan programs." (Phoenix PTD)
- "KC Metro uses federal grants to buy buses." (KC Metro Transit)
- "Have a dedicated funding [source]." (CATS)

In addition, KC Accessible Services responded that the agency is "unaware of the programs."

None of the agencies indicated experience with U.S. DOT lending programs or credit assistance in the past, and none expressed an opinion about how to improve the programs. Chittenden County Transportation Authority's respondent expressed concerns about cost issues associated with participating in the programs: "…Based on our small volume of purchase, we can't afford the transaction costs for a handful of buses a year. We do buy larger buses with bonds and more complex transactions due to the cost and high level of need for replacement…" One participant observed that "…[the programs] would have more value for statewide purchases and larger organizations…"

2.6 Fuel Systems & New Technologies

Fuel & Propulsion Systems: Participating transit agencies were surveyed with respect to the future of fuel systems and "must have" new technologies for cutaway bus operations. Compared to the 2005 *Non-Rail Vehicle Market Viability Study*, which found that ultra-low sulfur diesel (i.e. "clean" diesel) was the most commonly used power source for operations of "fixed route" buses, the 2007 survey revealed that five out of eight responding agencies use either gasoline or diesel to operate cutaway buses.

With respect to alternative power sources, KC Metro Transit uses biodiesel for all fleet vehicles, and IndyGo and KC Accessible Services use biodiesel as well as gasoline or gasoline/diesel. NYCT responded that it anticipates using biodiesel in the next five to seven years.

As Figure 55 depicts, the participating agencies provided information about types of fuel that are used today for cutaway vehicles as well as fuel applications that are anticipated over the next five to seven years:

Figure 55: Current and Future Fuel Types Used in Cutaway Vehicles

Transit Agencies	Now	Future (within the next 5-7 yrs)
Phoenix PTD	Gasoline	Gasoline and Diesel
Indianapolis Public Transportation Corp. (IndyGo)	Gasoline and Biodiesel	**No response**
City of Jackson Transit System (JATRAN)	Diesel	Diesel
MTA New York City Transit (NYCT)	Diesel	Biodiesel
King County DOT Metro Transit (KC Metro Transit)	Biodiesel	Biodiesel and Diesel hybrid
King County DOT Accessible Services (KC Accessible Services)	Gasoline, diesel, and biodiesel	Diesel and biodiesel
Charlotte Area Transit System (CATS)	Diesel	Diesel
Chittenden County Transportation Authority (CCTA)	Diesel	**No response**

Note: N/A — Miami, Santa Fe Trails

New Technologies

As it relates to innovative technologies, transit agencies are interested in enhancing the convenience, efficiency, accessibility and safety of public transportation. In the 2005 *Non-Rail Vehicle Market Viability Study*, which focused on buses used for "fixed route" operations, "must have" technologies reported by the participating transit agencies included customer/demand-oriented technology (i.e. automated payment, electronic stop announcements and destination signs, and real-time transit information systems) as well as operation-oriented types.

Compared to the 2005 results for larger buses, 2007 survey responses concerning cutaway buses (as depicted in Figure 56) demonstrated that new technology requirements for these vehicles are more operation-oriented, rather than customer/passenger-oriented – – generally focused on assisting cutaway bus drivers in providing safe, efficient paratransit service. Seven agencies indicated interest in one or more safety devices, including obstacle detection devices and surveillance camera/video systems. NYCT's respondent indicated that the agency is interested in equipping its cutaway vehicles with cameras or on-board video systems to prevent collisions or other incidents. Similarly, CTTA's respondent expressed an interest in installing "…four cameras per bus with digital recorders to monitor backing-up." Four of the participating transit agencies are interested in global positioning systems (GPS) and mobile data terminals (MDT) for scheduling and/or monitoring vehicle locations.

Figure 56 highlights survey respondents' "must have" technologies for cutaway buses over the next five to seven years (if costs were not an issue).

Figure 56: "Must Have" Cutaway Bus Technologies

Types	New Technologies	Transit Agencies
Safety	Obstacle detection devices	IndyGo, NYCT, CATS, CCTA and KC Accessible Services
	Cameras, video surveillance	Phoenix PTD, JATRAN, NYCT and CTTA
	Active suspension system (to prevent vehicles from swaying and/or rolling)	Phoenix PTD
	High-mounted deceleration alert system	Phoenix PTD
Scheduling and vehicle Locations monitoring	Global positioning system	IndyGo, JATRAN, NYCT, and CTTA
	Mobile data terminals	CCTA
General operations-related	High intensity discharge (HID) forward lighting system	Phoenix PTD
	Air suspension devices	Phoenix PTD
	Signal priority system	IndyGo

Note: N/A — Miami, Santa Fe Trails

Chapter 3: Cutaway Manufacturer Survey Results & Analysis

As reported by HD/FKA in the FTA's 2005 *Non-Rail Vehicle Market Viability Study*, the U.S. bus manufacturing industry is one of the least profitable industries in the country. Although manufacturers of cutaway buses generally are more profitable then their associates that manufacture heavy-duty transit buses, they also face challenges. As listed in Section 1.9 *Cutaway Manufacturer Highlights and Information*, there are currently fifteen small bus manufacturers in the United States. Of those fifteen, eleven (11) manufacturers produce cutaway buses. Of the eleven manufacturers, only four (4) companies are independent. The remaining seven (7) manufacturers are subsidiaries of larger, more diversified parent companies.

In an effort to provide a better understanding of the best practices and challenges faced by cutaway bus manufacturers, HD/FKA developed two analytical tools:

- A financial performance evaluation questionnaire, which was sent to four (4) selected cutaway bus manufacturers in late June and,
- Comprehensive, face-to-face interviews carried out with company executives from the selected manufacturers

The following analysis highlights key results of the questionnaire and interview findings based on the information provided by the selected cutaway manufacturers that participated in this study.

3.1 Financial Performance

Annual Sales Volume — Sales volumes of the selected manufacturers over the same period ranged from a low of nearly $236 million in 2004 to an estimated high of just over $460 million for 2007. The average sales volume between 2002 and 2007 (estimated) was approximately $310 million (for the cutaway manufacturers participating in the study).

Annual Sales Volume by Vehicle Type ($) — Unlike the heavy-duty transit bus manufacturers, cutaway bus manufacturers do not track sales volume by vehicle type. However, as noted in Section 1.9 *Cutaway Manufacturer Highlights and Information* of the *Market Overview*, the four selected manufacturers accounted for nearly 74% of cutaway buses in public transit fleets. These manufacturers reported that they do not track sales volume by vehicle type because each order is essentially custom-made, and each chassis type and length can accommodate a variety of body types.

Annual Sales Volume by Market Sector ($) — According to the cutaway manufacturers that participated in the study, public transit accounts for the majority of their cumulative sales — 62.5%. Participants attributed the balance of their sales volumes — slightly less than 40% —to retail or commercial sales.

The participating manufacturers' cumulative sales to public transportation agencies ranged from a low of just over $156 million in 2004 to an estimated high of nearly $300 million for 2007. Average sales to this market segment between 2002 and 2007 (estimated) were approximately $202 million.

The participating manufacturers' cumulative sales to retail or commercial customers ranged from just over $80 million in 2004 to an estimated $163 million for 2007, while the participants' average cumulative sales to the retail or commercial segment were approximately $105 million. While sales to the public sector account for the majority of sales volume, profitability is higher in the commercial sector (please see Section 4.4 for additional insights on sales).

Average Number of Days Sales Outstanding (DSO) per year — This measurement evaluates the average number of days it takes a company to receive payments on its accounts receivable. A high number (of days) indicates difficulty with collections. A lower number (of days) is desirable because it indicates that the company's customers are remitting payments on, or close to, the terms of sale.

Based on the data collected, average DSO ranged from an actual low of 13.30 days (for the participating manufacturers) in 2002 to a high of 16.35 days for the survey participants in 2004. The cumulative average DSO anticipated by participating manufacturers for 2007 is estimated at 12.70 days. As reported in the *Non-Rail Vehicle Market Viability Study*, heavy-duty transit bus manufacturers experienced an average DSO of 49 days.

As a result, cutaway manufacturers collect on invoices between 2.81 times (low end) and 3.85 times (high end) faster than their heavy-duty transit bus counterparts do. The primary reason behind these results is the use of dealers in the cutaway market.

Annual Capital Expenditures ($) — The cutaway manufacturers participating in the study cumulatively invested an average of roughly $4.3 million in capital investments between 2002 and 2006. These same participating manufacturers cumulatively invested a five-year high of nearly $10.5 million in 2004, but this cumulative figure dropped to a low of $970,000 in 2005.

Average Days of Working Capital per Year — This measurement evaluates the number of days required to convert working capital into revenue. A lower number is preferred because less working capital is required to generate the same level of sales volume.

Average days of working capital vary significantly between small and large cutaway bus manufacturers. Small manufacturers tend to be regional suppliers and, thus, appear able to convert working capital into revenue more quickly then their larger counterparts. Average days of working capital for small participating manufacturers ranged from a low of approximately 20 days to a high of approximately 40 days.

The small manufacturers participating in the study averaged 33 days of working capital between 2002 and 2006, while during the same period large manufacturers participating in the study averaged approximately 85 days of working capital. Given the amount of sales volume and diversity of product lines, large cutaway manufacturers require more days of working capital to generate revenue.

Average Long-Term Debt to Working Capital — This measurement demonstrates the level to which a company is relying upon long-term debt to fund its operations. Two of the selected manufacturers answered this question with one averaging less than 1.0% of long-term debt to working capital and the other requiring no debt (0.0%) to fund its working capital.

Average Return on Net Assets Employed (RONAE) — This metric measures profit as a percentage of net operating assets and indicates the strength of a company's ability to manage and allocate its resources. Unlike the heavy-duty transit bus industry, both small and large manufacturers of cutaway buses experienced positive RONAE between 2002 and 2006.

The cumulative average RONAE for the participating cutaway manufacturers was approximately 23% between 2002 and 2006. During that period, the participants' RONAE ranged from a cumulative high of 53.50% in 2002 to a cumulative low of 13.25% 2005.

As reported in the *Non-Rail Vehicle Market Viability Study*, most of the heavy-duty transit bus manufacturing companies that participated in the 2005 study consistently experienced negative RONAE between 2002 and 2006 (2006 was reflected in estimated figures).

3.2 Production Capacity

Number of Production Facilities — Thor Industries, Commercial Bus Division operates more than one manufacturing facility through its subsidiaries — El Dorado National-Kansas, Inc.; Champion Bus, Inc.; and Goshen Coach.

Location of Production Facilities — The production facilities of the manufacturers participating in this study are in the following locations:

- Penn Yan, NY — Coach and Equipment
- Salina, KS — El Dorado
- Riverside, CA — El Dorado
- Imlay City, MI — Champion Bus
- Elkhart, IN — Goshen Coach

Numbers of Production Lines — Participating manufacturers operate between one (1) to seven (7) production lines. All participants have the ability to add production lines as demand increases.

Annual Production Volume (Units) — As discussed in Section 1.9 of the *Market Overview,* annual cutaway bus production increased between 2002 and 2006. Total cutaway bus production figures for this period were:

Figure 57: Annual Production Volume

Year	Number of Units
2002	9,561
2003	9,715
2004	10,748
2005	12,130
2006	13,334

Source*:* Mid Size Bus Manufacturers Association (MSBMA), *Annual Survey Compilation,* (2003-2006)

The annual cutaway production reported by the participating manufacturers ranged from a cumulative low of just over 4,300 buses in 2002 to an estimated cumulative high of approximately 6,500 buses for 2007. As reported earlier in the *Market Overview* component of this report, cutaway sales of 25-ft. cutaway buses indicate that manufacturers produce this size vehicle in greater number than any other size — accounting for an average of approximately 1,750 25-ft. cutaway buses produced annually between 2002 and 2006.

3.3 Production Materials and Components

Average Number of Raw Material and Component Suppliers — The participating cutaway bus manufacturers reported procuring raw materials and components from an average of 600 suppliers. One participant reported a high of 1,200 suppliers, while another participant reported a low of 130 suppliers.

Average Raw Materials & Component Costs as Percentage of Cost of Goods Sold (COGS) — Total cost of goods sold (COGS) contains three elements – raw materials and components, labor and overhead. The measurement used in this section estimates the materials and components portion of COGS. Between 2002 and 2007 (estimated), the participants reported a cumulative average of 71% with respect to the relationship between materials and components costs compared to costs of cutaways sold. The participating manufacturers also reported a cumulative high of 75% in 2002 with respect to the relationship between the costs of materials and components compared to costs of cutaways sold and a cumulative low of approximately 68% in 2005. For comparison, heavy-duty transit bus manufacturers participating in the 2005 study reported cumulative average COGS of 79% between 2002 and 2006 (estimated).

3.4 Labor Factors

Union versus Non-Union — One of the participating manufacturers operates a union facility; all others operate non-union facilities.

Numbers of Full-Time Manufacturing Employees — The four participating cutaway manufacturers collectively employ nearly 1,300 full-time employees a sit relates to cutaway bus manufacturing.

Production, Direct and Indirect Employees — The following table lists the number of production, direct and indirect staff employed collectively in cutaway manufacturing by the participating manufacturers:

Figure 58: Total Production, Direct & Indirect Employees♦

Total Number of Employees	Number of Production Employees	Number of Direct Employees	Number of Indirect Employees
2,378	1,193	956	229
% of Total	50%	40%	10%

Direct Labor as a Percentage of COGS — This percentage represents the cost of direct labor as an aspect of the cost of goods sold. Between 2002 and 2007 (estimated), participating manufacturers reported direct labor as a percentage of COGS in a cumulative range of 8.00% to 8.85%. The participating manufacturers also reported a cumulative average of 8.43% during the same six-year period — reflecting direct labor as a percentage of COGS.

Indirect Labor as a Percentage of COGS — This metric analyzes the cost of indirect employees (e.g. forklift operators, maintenance, etc.) as a percentage of the cost of goods sold. A lower percentage of indirect labor costs reflects a more efficient operation. The participating cutaway manufacturers' responses analyzed collectively reflect that 5.00% was the average amount of indirect labor as a percentage of COGS between 2002 and 2007 (estimated). In this context, in 2005 the participating manufacturers collectively experienced the highest indirect labor as a percentage of COGS amounting to 5.45% and the lowest rate in 2004 at 4.50%.

Number of Technical Employees — The cutaway bus industry is essentially a custom manufacturing industry. Each cutaway bus is virtually custom-made. Participating manufacturers' collectively reported 57 technical employees dedicated to cutaway production.

♦ In the *Non-Rail Vehicle Market Viability* study, participating transit bus manufacturers reported production employee headcount by facility. In the *Evaluation of the Market for Small-to-Medium-Sized Cutaway Buses*, one participating manufacturer, the Commercial Bus Division of Thor Industries reported production employee headcount associated with its three small-to-medium-sized bus subsidiaries in aggregate rather than by individual production facility. As a result, the production headcounts shown in Figure 58 are presented in the aggregate representing Thor Industries' three subsidiaries as well as Coach and Equipment figures.

One of the participating cutaway manufacturers employs a technical staff of six people while the largest manufacturer reported a technical staff of 51 people focused on cutaways.

Annual Healthcare Costs ($) — Annual healthcare costs had a significant financial impact on the participating cutaway manufacturers between 2002 and 2007 (estimated). Total healthcare expenses for the participating manufacturers (presented cumulatively) ranged from $2.1 million (in 2003) to $4.3 million (estimated for 2007). Over the same period, healthcare expenses averaged $3.3 million collectively for the participants.

3.5 Sales, General and Administrative Expenses

Sales, General and Administrative Expenses (SG&A) expenses generally are defined as costs not associated with production, such as office wages, advertising, travel, tradeshows, and other expenses. Companies generally measure SG&A costs as a percentage of revenue. Between 2002 and 2007 (estimated) cumulative SG&A expenses as a percentage of revenue of the participants ranged from an estimated low of approximately 4% for 2007 to a high of 5.61% in 2004. The cutaway manufacturers that participated in this study collectively estimate they will spend approximately $18.5 million on SG&A during 2007.

Annual SG&A Headcount — This measures the number of non-production employees (e.g., sales, marketing, customer service, etc.) required by the participating manufacturers to generate annual revenue. Between 2002 and 2006, the four manufacturers participating in this study collectively employed 111 SG&A employees. The following table illustrates the participating manufacturers' aggregate number of SG&A employees by year and department:

Figure 59: Cumulative Annual SG&A Headcount by Department

Year	Sales	Marketing	Customer Service	Administrative	Clerical
2002	23	2	18	33	10
2003	24	2	19	33	11
2004	26	2	19	35	11
2005	35	2	24	46	14
2006	31	2	23	43	12
2007 est.	35	2	26	44	11

Note: Sales headcount does not include dealer sales force

Tradeshows — The cutaway bus manufacturers that participated in this study attended between one to 43 tradeshows between 2002 and 2006.

Annual Legal Fees — Manufacturers encounter legal fees for a variety of reasons ranging from contract negotiations to customer issues. Between 2002 and 2006, the four manufacturers participating in this study collectively spent approximately $3.1 million on legal fees.

The following table illustrates the total annual legal expenses incurred collectively by the participating manufacturing companies during the most recent six-year period:

Figure 60: Cumulative Annual Legal Expenses

Year	Total Legal Expenses
2002	$422,955
2003	$573,848
2004	$462,334
2005	$848,289
2006	$857,302
2007 est.	$246,960

Percentage of Legal Fees Spent on Customer Issues — The participating cutaway manufacturers were asked to separate legal fees associated with customer issues from total legal fees. These legal fees covered a range of issues from contract review to litigation. Between 2002 and 2006, participating cutaway manufacturers collectively spent approximately $3.3 million on customer issues. The participating manufacturers' collective average amount of legal fees incurred as a result of customer issues was nearly $550,000 during the same period.

3.6 Warranty Issues

Annual Number of Warranty Claims — This element measured the number of warranty claims made by customers against the participating cutaway manufacturers. During the period between 2002 and 2007 (estimated), approximately 39,000 warranty claims were filed against the four participating cutaway manufacturers. The largest number of claims occurred in 2002 — a cumulative total of 8,975. Manufacturers participating in the survey estimate that they will have the fewest number of claims in 2007 — cumulatively about 8,150. The cumulative average number of warranty claims among the participating manufacturers between 2002 and 2007 (estimated) stands at 6,535 claims per year.

Annual Number of Component (Supplier) Warranty Claims – This measures the number of warranty claims attributable to a component or sub-assembly manufactured by, or purchased from, a vendor. The following table lists the cumulative total number of claims reported by the participating cutaway manufacturers:

Figure 61: Cumulative Annual Number of Component Warranty Claims

Year	Total Warranty Claims	Total Component Claims	Component % of Total Claims
2002	8,975	894	10%
2003	6,752	629	9%
2004	5,158	391	8%
2005	4,361	605	14%
2006	5,814	239	4%
2007 est.	8,150	261	3%

Average Warranty Claim (s) per Year ($) – The measurement assesses the cumulative costs incurred by the participating cutaway manufacturers on an average warranty claim. For the period between 2002 and 2007 (estimated), the cumulative average warranty claim reported by the participants amounted to just over $530.00. The highest cumulative annual average occurred in 2006 and amounted to $655.00, while the lowest cumulative annual average — $485.00 — occurred in 2002, according to the participating manufacturers. The lowest annual average reported by one of the participating manufacturers amounted to approximately $100.00 in 2004.

Chapter 4: Analysis of Interviews with Cutaway Manufacturers

The second research component related to the manufacturers focused upon face-to-face interviews with executives from the participating cutaway bus manufacturers. The interviews covered a wide range of topics and lasted two to four hours, depending on the manufacturer and depth of the dialogue. In addition to the interview questions vetted and approved by the FTA project team, each interview contained a number of "probes" designed to delve further into specific topics. The following summary provides an analysis of the findings.

4.1 Current State of the Cutaway Bus Market

Four factors have had and/or continue to have a significant impact on the state of the small-to-medium-sized cutaway bus market: 1) the residual impact of September 11, 2001, 2) product diversification, 3) developments that have resulted in a positive impact on the industry, and 4) key industry challenges.

Impact of September 11, 2001 on the U.S. Cutaway Market

September 11, 2001 was one of the most catastrophic days in United States history. In addition to the loss of life and property, the attacks profoundly affected industries across the county, including the small-to-medium-sized cutaway bus industry. One of the participating manufacturers observed, "Small-to-medium [cutaway] bus manufacturers survived almost four years with little or no retail [commercial] business…there was a reduced need for our buses. September 11, 2001 completely shut down our retail [commercial] business."

Due to limited retail sales following 9-11, manufacturers of cutaway buses relied upon public transportation procurements in order to survive financially. One cutaway manufacturer asserted, "Instead of running at 50/50 or 60/40 [public transit/retail], public transportation procurements became 85% of our business."

Following this downturn in sales and profitability, cutaway manufacturing came full circle — the demand for cutaway buses stabilized and is now on the increase. According to one participating manufacturer, "Public and private sector bidding began to increase in late 2005, and contracts began to appear in late 2006. The pent-up demand will materialize as reasonable volume for the industry in 2007."

Product Diversity

Product diversity has been a key profitability factor for cutaway bus manufacturers. It is universally recognized among small-to-medium-sized bus manufacturers that the cutaway bus has become a commodity. Therefore, it is almost impossible to generate a profit if a company produces cutaway buses exclusively.

Consequently, manufacturers have diversified their product offerings over the last several years. As one executive stated, "Our company is different from some of our competitors. We build everything from seven passenger vans to 40 passenger buses. We build vans, cutaways, heavy-duty cutaways, rail chassis buses, trolleys and trams."

Transit agencies' increased demand for shorter buses is another factor driving diversity within the cutaway bus market. A number of transit agencies are moving away from 40 ft. and 45 ft. transit buses and towards 32 ft. to 35 ft. buses. According to one participating manufacturer, "…transit agencies seem to be running more feeder routes and using small-and-medium-sized buses for those routes."

Finally, small-to-medium-sized cutaway bus manufacturers are diversifying their product offerings in order to develop steady and balanced flows of products rather than erratic production levels caused by outside market forces over the last several years.

Developments that Impacted the Industry Positively

The manufacturers that participated in the interviews generally were optimistic about the cutaway bus market. Participant manufacturers were asked to discuss two issues or factors that, in their opinions, had produced the most positive impact on the cutaway bus industry. According to the participating manufacturers, the two most prevalent factors contributing to a positive outlook for the cutaway bus market include:

- **ADA Legislation:** No single piece of legislation has influenced the small-to-medium-sized cutaway bus market more significantly than the *Americans with Disabilities Act of 1990*. All 6,000-plus transit agencies in the U.S. are required to provide, either through direct operation or contract operation, transportation services for persons with disabilities. The Zero Deniability clause in the ADA has caused public transit agencies, as well as commercial entities, to expand the number of paratransit vehicles, including cutaway buses, in their respective fleets. According to one executive, "ADA legislation is a real benefit for our company —…a large portion of our [cutaway] business comes from …paratransit."

- **Specialized Commercial Vehicles:** Sales of specialized cutaway vehicles, such as low-floor, entertainment, senior-living and rental car are increasing in the small-to-medium-sized bus market. One participant observed, "As far as vehicle models are concerned, over time we have consciously expanded our business into every segment of the market." Specialized vehicles have much more profit potential than basic cutaway buses. Another executive commented, "If we had to rely on Ford and Chevy chassis cutaways [for local public transit agencies and state departments of transportation] to achieve our growth targets, we would never reach those targets."

Industry Challenges

The participating cutaway manufacturers were asked to identify two of the most challenging issues currently affecting the cutaway industry. Similar issues challenge both the cutaway bus manufacturers and the heavy-duty transit bus manufacturers, including:

- **Low-Bid Procurements:** The participating manufacturers observed that the profit margins associated with sales of cutaway buses (to transit agencies) are extremely small (0% to 5%), and one factor driving these low margins is low-bid procurement. Most local transit and state transportation agencies award contracts based on low-bid versus "best value" or quality-based selection (in the case of goods or products). One participant contended that, "…transit agencies drive the price of a cutaway right to the bottom." Heavy-duty transit bus manufacturers that took part in Non-*Rail Vehicle Market Viability Study* in 2005 commented that there was no room for error in pricing heavy-duty buses. The same holds true in the cutaway market.

  According to one of the cutaway manufacturers, "…the language of Requests for Proposals and low-bid [contracting] is sometimes ambiguous, and bidders are disadvantaged as a result." Another manufacturer observed, "Specification writers … create $30,000 of add-ons and turn a $50,000 bus into an $80,000 bus. However, if a manufacturer bid[s] that bus at $80,100 and a competitor bids $80,000, the procurement department must choose the low-bid." He added that, "…a specification writer and procurement officer can make the decision to add $30,000, but they are not allowed to make a $100 decision to purchase the right bus for the agency."

- **Multiple Year Contracts:** The participating cutaway manufacturers are of the same opinion that while multiple year contracts help the manufacturer plan for the future, the same multiple year contracts can also present problems for the bus manufacturers, especially under fluctuating market conditions. The major concern regarding multiple year contracts centers on the fact that states seem to have individual interpretations of the contract conditions. In addition, according to the manufacturers, states often do not follow FTA rules or guidance regarding multiple year contracts. According to one participating manufacturer, "I think all small-to-medium-sized cutaway bus manufacturers would grow if FTA ruling[s] were equally applied by [local] transit and state agencies in all 50 states."

  Another concern regarding multiple year contracts centers on the contract period of duration. None of the four manufacturers expressed any concerns about contracts in which the period of duration is two to three years. However, contracts that cover four to five years can pose problems. Many agencies require fixed prices for the length of the contract while others require several years of fixed pricing follow by a review. One participant observed, "We were recently asked by an existing customer to bid a four year contract. The contract required fixed pricing for years one and two followed by a pricing

review for years three and four. The agency in question required these pricing arrangements because of its poor financial condition. We chose not to bid this contract." This manufacturer asserted that it would have been unwise to be at risk due to the financial constraints of the customer.

An example of the challenges associated with multiple year contracts occurred this year when Ford increased the price of its 2008 chassis by $2,000, with no advance warning. Based on the comments provided by the manufacturers participating in the interviews, cutaway manufacturers face extreme challenges in terms of financial recovery under this type of unanticipated increase.

4.2 Factors Related to Public Transportation & the FTA

The second portion of the manufacturer interviews relates to factors associated with U.S. transit agencies and the Federal Transit Administration.

Manufacturers' Perspectives on Public Transportation

The participating cutaway manufacturers expressed a similar view that public transit ridership is increasing primarily due to increased fuel costs. According to one participant, "…research indicates that gasoline may exceed $6.00 per gallon by 2015. While that may not impact rural communities whose residents have no choice but to drive an automobile, I think [that] it will substantially increase public transit ridership in the large metropolitan areas such as New York City." (Despite this manufacturer's assertion, various rural communities have concerns with regard to operations costs that impact service as reported in Section 1.3.)

Manufacturers participating in the study also commented on the replacement of "pop-top" vans with cutaway buses. A pop-top or conversion van, as previously defined in Section 1.5, *Market Substitutions*, of this report, is a standard multiple passenger vehicle that has been converted to include an additional roof section for increased headroom. The increased height of these vans alters the vehicle's center of gravity, thereby posing a greater risk of tipping over when rounding a sharp corner. Insurance providers are considering this risk and, in some cases, raising the insurance premiums associated with these vehicles. According to one participating manufacturer, this circumstance has increased operating costs for the transit agencies and, as a result, a number of agencies have started to replace pop-top vans with small cutaway buses.

Another comment provided by a participating manufacturer related to the use of rail chassis buses. This type of bus features a chassis similar to that used to build a school bus.

Generally, a front engine vehicle, the chassis consists of two (2) long rails running from the front of the vehicle to just beyond the rear axle. In the past, a rail chassis provided

the manufacturer with a longer platform on which to mount the body giving the vehicle more seating capacity. Recently, the automotive manufacturers that currently supply chassis to the cutaway market have developed larger (length and width) chassis with higher Gross Vehicle Weight Ratings (GVWR). These chassis will allow cutaway manufacturers to replace the rail chassis currently offered with a more effective and cost efficient chassis.

Uniform Vehicle Specifications

The desire for uniform vehicle specifications is a major issue for small-to-medium sized bus manufacturers. Like their counterparts in the heavy-duty transit industry, small-to-medium-sized bus manufacturers are convinced that no uniform vehicle specifications exist and that every transit agency develops its own set of specifications. One of the participating executives commented, "There are no standard specifications; …often, transit agencies include transit bus specifications that contain all types of components, some of which are not relevant to a cutaway bus." Another participating manufacturer provided an example of a circumstance in which a transit agency specified a certain type of brake lines that it required for its cutaway procurement. "Our buses consist of building a body onto a purchased chassis. There is no way our company or any other cutaway manufacturer would [substitute a third party product to] replace the break lines [that] Ford includes in its chassis." Clearly, no cutaway manufacturer would want to be in a position of causing Ford's warranties to be voided or would want to assume the potential liability inherent in such a change.

Another example of the difficulties that cutaway bus manufacturers face with respect to procurement specifications is reflected by other anecdotal information reported by a cutaway manufacturer with regard to delay. The cutaway manufacturer articulated frustration with a certain transit agency due to its failure to provide valid specifications for a "current procurement." According to this manufacturer, the transit agency's procurement manager position has been vacant for several years. As a result, the agency has issued a set of vehicle specifications filled with errors. After the agency invalidated the first series of bus specifications, the agency engaged a "global strategy and technology consulting firm" to develop a second set of specifications. "This was the first time I have ever seen bus specifications from such a firm," contended the manufacturer participating in the interview phase of this study. (Whether or not any of the participating cutaway manufacturers plan to bid for this procurement was uncertain at the time of this report.)

Each of the participating cutaway manufacturers asserted the opinion that some type of uniform vehicle specification is needed in the small-to-medium-sized cutaway bus industry. The participating manufacturers contend that since the FTA provides funding for the procurement of small-to-medium-sized buses including cutaways, the FTA should participate in and oversee the development of a uniform set of specifications for these vehicles.

Prescriptive or Performance Standards

The participating manufacturers held mixed opinions regarding the use of prescriptive or performance based standards. Concerning prescriptive standards, one manufacturer expressed preference for this type of standard because all bidders have to meet the same standard and voiced the concern that performance standards may be preferential or biased in favor of one manufacturer's product.

The other participating manufacturers preferred performance standards and contended that they are better for the transit agency. One cutaway manufacturer insisted that, "…a performance standard tells the manufacturer what level of performance is required for a certain component or the entire vehicle. If the bus we build fails to meet that requirement, then we (the manufacturer) will stand behind [or ensure the performance of] the bus."

Multiple-Year Contracts

As discussed earlier, the participating cutaway bus manufacturers favor multiple-year contracts, with certain reservations. Cutaway manufacturers favor these contracts for the following reasons:

- Multiple-year contracts allow local transit and state transportation agencies to plan for the future
- Multiple-year contracts save transit agencies from having to develop annual contracts
- Multiple-year contracts play an important role in the intermediate and long range planning of the bus manufacturers.

Despite these reasons favoring multiple-year contracts, the participating manufacturers also voiced a number of concerns about multi-year contracts. The most critical concern centered on the length of the multiple-year contract. The manufacturers indicated that there are few or minimal problems with a two- to three-year contract. However, contracts with durations of four or five years pose problems. Major problems with the longer-term contracts are two-fold: pricing support and length of warranties.

Vendors generally do not guarantee component pricing for more than two years. As reported, the negative impact of Ford's price increase for its 2008 chassis has yet to be seen. In the past, Ford's price increases were low, single-digit increases; however, the 2008 chassis has a double-digit increase. Industry manufacturers did not anticipate this drastic cost increase when bidding a multiple-year project in 2006 and, as a result, have experienced problems.

Warranty support from component vendors is another critical issue cited by the participating manufacturers. Through marketing efforts similar to the heavy-duty transit bus industry, (cutaway bus) component vendors actively promote their products to transit agencies.

According to the cutaway manufacturers, specification writers often include untested and unknown components in procurement specifications. The warranties supporting these untested components almost never match the required warranty from the transit agency. As a result, despite submitting *Approved Equal Request* documentation, bus manufacturers are forced to include the untested component in the buses being delivered in order to avoid liquidated damages. According to one of the participating manufacturers, "…three months later, the brand "X" component fails on 40 to 50 buses, and the bus manufacturer is faced with a fleet defect claim from the transit agency — often [with] no support from the component vendor." Regardless of these challenges, the participating manufacturers observed that multiple-year contracts would continue to be an industry reality and that they will continue to participate in them.

"Assignment Rights" or "Piggybacking"

Terminology related to the concept of "assignment rights" has included varied forms of jargon over the years, including terms such as *tag-ons*, *add-ons*, and *piggybacking*. The concept of *piggybacking* allows an agency to assign a portion of its bus contract to another agency or agencies.

The cutaway bus market differs from the heavy-duty bus market as it relates to assignment rights. In the cutaway market, in-state dealers hold the local transit and state transportation agencies contracts — not the bus manufacturer. Therefore, dealers can control the inventory of cutaway buses in their respective markets. The participating bus manufacturers questioned whether the FTA understands the cutaway bus market and the way in which it differs from the heavy-duty transit bus market.

The participating manufacturers regard *assignment rights* or *piggybacking* favorably citing the following reasons:

- *Piggybacking* allows smaller transit agencies to acquire cutaway vehicles from larger agencies without having to develop specifications or procurement bids.
- *Piggybacking* allows an agency to sell off future options that it may not require or does not have funding to support.

One of the executives participating in the study observed, "We are asked almost daily to help agencies find buses."

Federal (FTA) Funding

The participating bus manufacturers asserted that federally funded procurements have a critical role in their business models. The U.S. bus industry would differ markedly, noted one of the participants, "… if the United States government decided to follow the Europeans and eliminate government funding support for public transit." As described earlier, the participating bus manufacturers relied heavily on federally funded

procurements for several years after September 11, 2001. Currently, cutaway manufacturers generate about 60% of their revenue from federally funded procurements, even though the federal process has its own set of challenges. One such challenge, according to participating manufacturers, is that not every local transit and state transportation agency follows the FTA procurement guidelines. The issue of progress payments and deposits were among the challenges discussed by the participating manufacturers. They expressed concern with regard to whether or not the FTA has ruled definitively on the issue of progress payments and deposits.

One participating manufacturer observed, "I have no problem with transit agencies providing deposits or issuing progress payments. However, I do not think [that] a transit agency should award a low-bid contract to a manufacturer that requires a deposit and progress payments because they are financially weak and perhaps unable to deliver the order without these financial supports." Moreover, the participating manufacturers commented that the FTA should provide more oversight.

SAFETEA-LU

HD/FKA asked the participating manufacturers for their opinions regarding the modifications to Sections 5310, 5316 and 5317 of *SAFTEA-LU*. They responded by pointing out that the cutaway bus industry is completely different from the heavy-duty transit bus industry in that dealers handle virtually all cutaway bus sales. According to participating manufacturers, dealers typically hold the local transit and state transportation agency contracts; therefore, the modifications to *SAFETEA-LU* are issues for dealers to address — not for cutaway manufacturers. The participating manufacturers asserted that dealers are most likely aware of the changes to *SAFETEA-LU* and are dealing with the new requirements.

4.3 Procurement Issues

***Buy America* Legislation**

The participating small-to-medium-sized bus manufacturers agree that *Buy America* legislation is vitally important and that it affects the entire U.S. bus industry. The manufacturers view *Buy America* favorably for the following reasons:

- The U.S. needs to focus on keeping manufacturing jobs in this country.
- Buses are procured by public transit agencies with taxpayer revenue.

None of the participating manufacturers has trouble reaching or exceeding the domestic content values required by *Buy America*. Ford, GM and International produce vehicle chassis domestically — the chassis represents the single largest (most costly) component of the bus. Furthermore, the participating manufacturers purchase all additional components from either U.S.-based or local suppliers.

Regarding *Buy America* waivers and protests, only one participating manufacturer acknowledged filing a protest against the State of Florida's attempt to procure the Sprinter (DaimlerChrysler Commercial Buses, NA) using FTA funds. The protest was successful; the state was prohibited from using FTA funds to procure the bus. The participating bus manufacturer observed that *Buy America* is full of loopholes and that transit agencies will continue to use those loopholes in order to procure foreign made buses with FTA funds.

Finally, the participating manufacturers acknowledged that if *Buy America* were reversed, the reversal would not only damage their companies, but also would damage the entire U.S bus manufacturing industry. According to the participating manufacturers, the *Buy America* regulations should be more stringent.

Pooled Purchase Contracts

The Cooperative Procurement Pilot Program (CPPP) was introduced to the bus industry in 2004. The FTA was directed to select five pilot projects for which Congress changed the matching share from 80% to 90%. By 2006, FTA had selected all five pilot projects. Ultimately, RFPs were not issued for two of the pilot projects, but FTA has collected information ("lessons learned") that has relevance to both projects. A contract was awarded for one of projects, and one of the projects is in the process of being awarded (at the time of this study). An RFP is in the process of being developed for the fifth project. The FTA will prepare reports to Congress on each of the five pilot projects.

Only one of the participating manufacturers attempted to participate in a pooled purchase agreement. This company submitted two different pilot bids; however, neither contract was awarded to the company.

Consortium Contracts

Two of the participating manufacturers are active in consortium contracts. Consortium contracts are most often associated with retail or commercial customers. These contracts typically are charactertistic of the hotel, rental car, and healthcare industries.

Occasionally, a group of transit agencies will band together to form a consortium for procurement. In that case, a large agency will act as the lead agency and generate the procurement specifications. According to one of the participating executives in the study, "Smaller individual agencies like consortium procurements because they reduce the workload of creating separate procurement documents."

State Contracts

The participating bus manufacturers are all involved in multiple state contracts. As discussed earlier, dealers affiliated with the manufacturers generally hold the contracts. For the smaller cutaway manufacturers, state contracts often account for most of their revenues.

In the past, state contracts were "winner takes all" contracts in which one manufacturer would become the state's sole source for buses. Today, many states have several vehicle categories. As a result, bus manufacturers can choose which vehicle category to bid. Once bids are opened, the state typically selects the three lowest bidders, and the individual agencies select bus manufacturers for that list. This type of procurement generally was acceptable to all of the participating manufacturers. Furthermore, the manufacturers participating in the interviews indicated that they would be pleased if more states would adopt this procurement method.

The participating manufacturers observed that it would be desirable if states adhered to a uniform set of specifications when procuring small-to-medium-sized cutaway buses. Additionally, the manufacturers indicated that they would be comfortable with a limited number of options for each vehicle category.

Benefits and Difficulties of Commercial Compared to Public Agency Procurements

The participating manufacturers generally focus on the commercial (retail) and public agency markets through a network of dealers in the United States and Canada. While some of the participating manufacturers indicated that they sell directly to certain large national accounts (such as major rental car companies and hotel chains), the manufacturers primarily market and sell cutaways to their commercial and public sector markets through dealers.[159] The following table illustrates the benefits and difficulties associated with these two markets:

Figure 62: Commercial (Retail) versus Public Agency Procurements (Benefits & Difficulties)

Entity	Benefits	Difficulties
Commercial (Retail)	➢ Pricing is generally higher ➢ Much more profitable ➢ Procurements are generally smaller ➢ Helps diversify business models ➢ Retail customers are open to discussion and creating contracts that are best for both parties	➢ Retail procurements can be competitive ➢ Retail customers are very particular. They are trying create and maintain an image (e.g. Ritz Carlton Hotels) ➢ These buses are often very different from what bus manufacturers usually build
Public Transit Agencies	➢ Relatively consistent buying cycles ➢ It is a continuous business ➢ Transit agencies identify the % of purchases associated with small-to-medium-sized buses ➢ FTA funding ➢ If a manufacturer focuses on this market and keep the agencies happy, they will likely specify that manufacturer's bus ➢ Demographic shifts (e.g., increasing elderly population) benefit transit agencies	➢ Low-bid — a reality ➢ Little or no profit margin ➢ Forced to bid long-term contracts with little or no "escalator" factor ➢ Much greater potential for significant financial losses ➢ Constrained public funds (state & local match sometimes difficult) ➢ Large procurements ➢ Agencies often hold back payments well beyond standard terms ➢ Fleet defects

As discussed, the participating manufacturers all have dealer networks. These dealers not only manage local transit and state transportation agency contracts, but also non-profit, human service and educational institutions' contracts.

It should be noted that in certain cases when procurement is beyond the financial resources of adealer, cutaway bus manufacturers may become involved and assist with fulfilling the contract.

4.4 Sales & Marketing, Labor, Materials, Warranty Issues, R & D

Sales & Marketing

The sales and marketing practices of the bus manufacturers are different from the heavy-duty transit bus manufacturers. In heavy-duty transit, public agencies buy directly from the manufacturer by way of its national sales force. In the cutaway bus market, public agencies and retail customers alike buy their buses from dealers. As a result, the participating manufacturers indicated that they either rely on their dealers to market the cutaway buses or, in most cases, combine resources to market the buses together.

Trade shows represent the single largest marketing expense for the participating manufacturers. To quote one executive, "I firmly believe in spending [most] of our marketing dollars on major trade shows and not on advertising. At a trade show we can actually show …our bus." The participating manufacturers' attendance at trade shows varies depending on their marketing budgets and the markets they serve. In addition to public transit expositions and industry events, the hotel, rental car and healthcare markets each host annual trade shows, which the participating manufacturers attend.

Manufacturer Profitability — Sales to public agencies provide the manufacturer with, at most, low single digit profits (0% to 4%). Cutaway sales to commercial (retail) customers are significantly more profitable. For example, one of the participants cited gross profits of nearly 10% on sales to commercial (retail) customers. By generating close to 40% of their revenues through commercial (retail) sales, the participating cutaway manufacturers have been able to improve profitability.

The participating manufacturers indicated that cutaways built for public transit agencies generate little to no profit. The manufacturers generally build these vehicles in order to cover overhead and contribute to covering variable costs. The participating manufacturers do not evaluate profitability by market segment. Instead, they evaluate the overall profitability of their bus business. According to one executive, "If I had my way, [we] would build retail (commercial) buses every day."

Dealer Networks — The participating manufacturers use a network of dealers to sell their buses. Dealer networks are either independent or company-owned. The number of dealers reported by the participating manufactures ranged from two to seventy. Most dealers are independent and are responsible for the customer contracts.

These dealers account for approximately 80% of the revenue generated by the participating manufacturers. Direct salespeople (employees of the manufacturer) account for the remaining 20%.

Many dealers have been with the participating manufacturers for substantial periods of time. According to one participating executive, "Most of our dealers have been with the company for 25 years or more." Due to the longevity of the dealer/manufacturer relationship, none of the participating manufacturers anticipates any significant changes to their dealer networks in the future.

Small-to Medium Sized Cutaway Bus Selling Cycle — The selling cycle used by the participating manufacturers is virtually the same among them. The dealers' sales forces and/or specialty representatives from the manufacturers call on transit agencies and retail customers. Bids are then processed through the dealers. The bus manufacturers receive the orders and obtain the required number of chassis. The body is built on the chassis, and the bus or buses are shipped to the dealer(s) for delivery to the customer(s). The dealer either pays the manufacturer, or sells the bus to a finance company, and then pays the manufacturer. Finally, the dealer delivers the bus to the agency or customer. The entire process takes several months to a year, or more, depending on the customer.

Labor — Finding and retaining a qualified workforce is the greatest challenge faced by the participating manufacturers. As one participating executive mentioned, "The county in which our factory is located has an unemployment rate of 2.5% to 3.0% which is almost full employment. There is a tremendous demand for qualified and, frankly, unqualified labor, and employees will leave for 25¢ an hour more in pay."

Cutaway buses are labor-intensive vehicles. Each bus is essentially custom-made. As a result, there is very little automation in the factories of the participating manufacturers. In fact, the only automation is generally the paint booth.

Materials — Each of the participating manufacturers reported concerns about materials and component costs. In addition to Ford's double-digit price increase on its 2008 chassis, steel and stainless steel costs have increased significantly. In addition, manufacturers are being hit with unexpected fuel surcharges. According to one executive, "Our company procured seats from 'XYZ' at a mutually agreed price. We included those seats, at the agreed price, as part of a fixed-price bid. After we submitted the bid, 'XYZ' informed us that the agreed price did not include their fuel surcharge. The agency awarded us the contract, and we had to absorb the fuel surcharge."

Having completed the 2007 EPA nitrogen oxide (NOx) emission changeover, the participating manufacturers already are addressing the 2010 emissions control requirements.[160] Fortunately for the participating manufacturers, most of this changeover is the responsibility of the chassis suppliers. Unfortunately, the costs involved with meeting the 2010 emissions requirement will shift to the cutaway bus manufacturers as a price increase on the chassis.

Warranty Issues — None of the participating manufacturers has concerns regarding the warranties required by the FTA. The manufacturers' dealers generally resolve warranty issues. However, the participating manufacturers are concerned when transit agencies decide to require completely different warranties. Based on the perspectives of the participating manufacturers, it appears that transit agencies are beginning to require five and six year warranties even for light-duty cutaway buses. The FTA service life on a light-duty cutaway bus is four years. The participating manufacturers are fully capable of building a body that last six years and beyond; however, the bus manufacturers do not build the chassis. As reported in the *Market Overview*, cutaway bus manufacturers purchase chassis from Ford, GM or International. The chassis manufacturers dictate warranty terms of the chassis. One of the participating cutaway manufacturers observed, "What good is a 50,000 or 100,000 mile warranty on a cutaway bus body when you have a 12,000 mile warranty on the chassis?"

Another warranty issue for the participating manufacturers relates to untested components. As discussed earlier, transit agencies often specify new and untested components in their small-to-medium-sized cutaway bus procurements. Transit agencies require a complete warranty from the bus manufacturer regardless of whether specified components are tested or untested. According to one of the participants in the study, "[Most] component suppliers only offer a 12 month warranty. An agency may require a five-year warranty on the entire bus. As a bus manufacturer you have, no idea what the performance of an untested component is, or will be, in the future. Yet, you are forced by the agency to warrantee components for five years, or lose the contract."

Altoona Bus Research and Testing Center (BRTC) — Altoona Test

The participating manufacturers accept the Altoona Test requirement as factor of doing business. One of the participating manufacturers asserted that he considers the BRTC tests to be valid and refuses to ship a bus without testing at BRTC. The participating executive observed, "We are responsible for the [people] riding in our bus, and I do not think we should leave testing solely [to] the manufacturer."

Other manufacturers expressed concerns about the Altoona Test for various reasons including the following:

- The Altoona Test does not provide a "pass or fail" grade. The data from all BRTC tests are compiled into a report and made available to the cutaway bus manufacturer in order to provide the manufacturer with information during the procurement procedure. Therefore, if the manufacturer or the customer does not read the results, they will not know what is wrong with the bus or how serious an issue they face.

- Both manufacturers and transit agencies are "guilty" of bending the FTA's rules regarding the Altoona Test. The FTA rules state that the agency will not allocate funds until an Altoona Test occurs. Transit agencies "bend" this rule

by requiring a seven-year test on a five-year cutaway bus in order to proceed with the procurement. If a manufacturer plans to participate in that procurement, it must send its bus to Altoona and pay for a seven-year test.

- The BRTC is very slow to answer manufacturers' questions or requests for clarification. One participating manufacturer claimed that the company waited more than four months for a written response clarifying the test results associated with the manufacturer's cutaway bus.

According to another participating cutaway manufacturer, retail (commercial) customers are beginning to require vehicle testing that strongly resembles elements of the BRTC tests. In addition, retail (commercial) customers generally require additional or more stringent testing than that performed at the Altoona Bus Research and Testing Center. For example, a senior citizen tour operator may require a more stringent Structural Distortion Test because of the liability associated with accidents resulting in a vehicle rollover.

Research and Development (R&D)

The participating manufacturers agree that staying ahead of the competition and the marketplace are the most important drivers of research and development. Innovation can be influenced by reviews of service and warranty claims, according to the manufacturers participating in this study.

According to the participating manufacturers, cutaway bus dealers are a valuable source for new ideas and innovation. According to one participant, "Several times a year we meet with our top dealers to discuss where both parties see possibilities for future innovations."

Alternative fuel innovation does not play a major role in research and development with the participating manufacturers. As previously discussed in this report, cutaway manufacturers are "body builders" not engine and chassis manufacturers. In the past, each participating manufacturer took part in the demand surge associated with CNG vehicles. With the exception of California, CNG cutaway buses are not operated nationwide. In addition, CNG cutaway vehicles have a very short travel range. As one of the participating manufacturers explained, "Ford developed a CNG chassis with two fuel tanks. The bus could only cover a distance of 125 miles without refueling. As a result, Ford requested that we install a third CNG tank in order to increase the travel range of the bus. Ford suggested locating the third tank in the passenger compartment," which would have created significant liability issues for the cutaway bus manufacturer.

As hybrid small-to-medium-sized cutaway buses become more popular — particularly in large metropolitan areas — cutaway bus manufacturers are beginning to work more closely with chassis suppliers. Presently, Azure and Ford are working together on the development of hybrid E-350 and E-450 cutaway chassis. These companies anticipate bringing these chassis to market in the next twelve to eighteen months.

The participating manufacturers also voiced concerns over the pricing associated with alternative fuel cutaway buses particularly as it relates to emerging technologies such as the fuel cell. As discussed previously in this report, a standard low-sulfur diesel-fueled cutaway bus costs between $50,000 to $65,000, depending on vehicle length. According to one participating manufacturer, "…the price of a hydrogen fuel cell cutaway bus could start at approximately $1 million." (Although the participant indicated this cost perception, the Ford E-350 cutaway shuttle buses currently being operated in Orlando, Florida —and discussed in section 1.4 of this study — reportedly cost $250,000 each.)

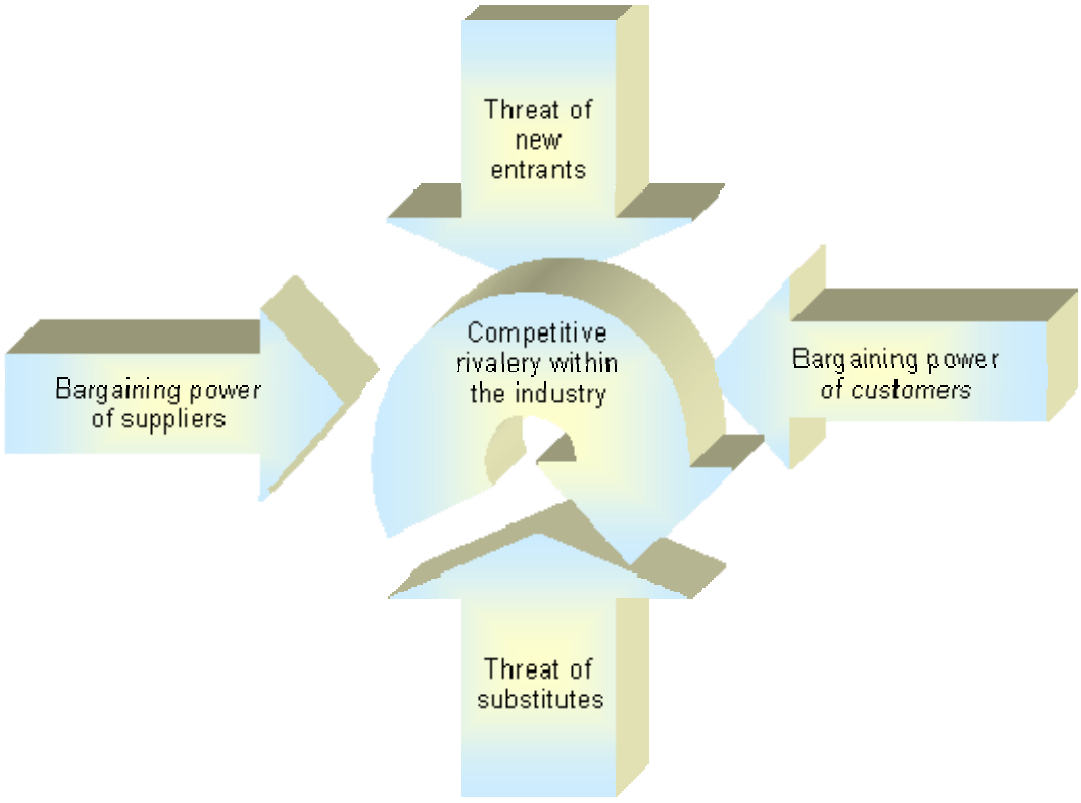
Finally, the participating manufacturers reported that they perceive little or no benefit to FTA funding research and development. Each participating manufacturer cited concerns regarding the ability of the FTA to manage research and development. As an example of this concern, participating manufacturers cited disappointments with regard to the Advanced Technology Transit Bus (ATTB) project and the substantial expense associated with the initiative. In general, the participating manufacturers expressed a strong preference in supporting their own innovations and not seeking assistance from the FTA.

Chapter 5: Conclusions & Observations

5.1 Competitive Landscape for Cutaway Manufacturers

Eleven small-to-medium-sized bus manufacturers dominate the cutaway bus marketplace in terms of production and sales. Competition among these manufacturers not only exists, it influences these companies daily. As part of the *Non-Rail Vehicle Market Viability* study, HD/FKA used a widely known competitive industry analysis tool, the "Five Competitive Forces" model developed by Michael Porter of Harvard Business School in 1980, to evaluate the competitive landscape relevant to the heavy-duty transit bus industry. In order to provide a comparable analysis, it is appropriate to employ the same model with respect to the cutaway bus market. As illustrated below, Porter's model consists of five forces — each of which has an effect on cutaway bus manufacturers.

Figure 63: Porter's Five Competitive Forces



Source: Dagmar Recklies. "Porter's Five Forces." *The Manager* Internet Website. 2001.

New Entrants to the Bus Market

New entrants to the small-to-medium-sized cutaway bus market are a potential threat to existing manufacturers. Cutaway bus manufacturers build bus bodies and attach the bodies to purchased chassis.

According to Porter, "New entrants into an industry bring new capacity, a desire to gain market share and potentially substantial resources."[161] Also, new entrants often drive prices down in order to secure market share. Cutaway manufacturers currently realize very little profit when selling to public transit agencies. Further profit pressure from new entrants might cause some current manufacturers to exit the public market sector. The level of threat posed by new entrants depends on the barriers to entry established by, or associated with, an industry.

Of the barriers to entry cited in the Porter model, the most significant ones associated with the U.S. cutaway bus market are the following:

- **Access to Distribution Channels**: Cutaway bus manufacturers rely on bus dealers to sell their buses. Many of these dealers have been associated with a particular manufacturer for years and/or often for decades. A new entrant could have a very difficult time luring a successful dealer away from a small-to-medium-sized cutaway bus manufacturer.

- **Government Policy:** Government policy may limit new product entries, particularly those from other countries. The *Buy America* policy discourages importation of foreign products to the domestic transit market, but to an extent encourages foreign direct investment in the form of establishing a manufacturing presence in the United States. In addition, environmental regulations also pose significant barriers. In 2007, bus manufacturers implemented the first of two EPA-mandated nitrogen oxide (NOx) reduction programs.[162] The EPA will increase emissions requirements again in 2010. Furthermore, the *Americans with Disabilities Act* and its corresponding "Technical Standards" represent other barriers to entry as well as challenges for existing U.S. bus manufacturers. (For more information, see Section 1.6, *Federal Funding & Relevant Legislation*). Most foreign countries do not require, for example, securement positions for mobility devices. All U.S. paratransit buses are required to have lifts and securement positions.

Bargaining Power of Buyers

Buyers of virtually all products and services demand lower prices while simultaneously requiring high quality and service. Buyers accomplish this by pitting competitors against each other, which results in potentially lower profits in an industry.

Despite efforts to diversify sales and relative success in terms of sales to private sector customers (and greater profitability in private [retail] sales), small-to-medium-sized

cutaway bus manufacturers sell roughly sixty percent of their cutaways to public transit agencies. Therefore, local transit agencies and state transportation departments have the ability to impact revenues of small-to-medium-sized cutaway bus manufacturers.

Transit agency bargaining power is reflected in the following ways.

- **Large Volume Purchases**: According to APTA's 2007 *Transit Vehicle Database*, 208 transit agencies reported cutaway vehicles as part of their fleet with a total of 11,368 cutaway vehicles. MTA New York City has more than 1,440 cutaway buses as part of its fleet (for more information, see Section 3.2). Bidding to large public transit agencies poses a substantial risk of financial loss to cutaway manufacturers. According to one executive participating in the study, "If you don't win the big procurements you may become willing to accept any opportunity and that may be even worse." When agencies purchase large numbers of vehicles at one time, typically these agencies expect price considerations that severely limit the manufacturer's profit.

- **Low-Bid Procurement**: All of the participating manufacturers asserted that the profit margins associated with cutaway buses sales to public transit are extremely small (0% to 5%). Low-bid procurements inherently limit profitability. Most public transportation agencies award procurement contracts based on low-bid versus "best value" or quality-based selection (in the case of goods or products). One of the participating manufacturers observed, "When public transit agencies consistently buy the cheapest cutaway bus available and seem not to care about the manufacturer's credentials, it becomes very difficult for [the] manufacturer to make any profit on those cutaways." According to transit agencies, low-bid procurements are necessary in order to maintain a "level playing field" for all bidders. As a result, the bus manufacturers are forced to bid to the specifications, even though this approach may not provide the transit agency with the best product or solution. Low-bid procurements are challenging for bus manufacturers and sometimes disadvantageous to the transit agencies.

- **Contracting and Warranty Issues**: The bargaining power of U.S. transit agencies enables these agencies to develop and require cutaway manufacturers frequently to accept long-term, multiple-year contracts. Despite the potential benefits associated with multiple-year contracts, small-to-medium-sized cutaway bus manufacturers are concerned about the length of these contracts. Manufacturers rarely encounter problems with two to three year contracts; however, contracts with durations of four to five years pose problems. Two problems with a long-term contract include vendor pricing supports and warranties.

Vendor price supports are a critical issue for cutaway manufacturers. The problem for cutaway bus manufacturers is that vendors rarely, if ever, provide these bus manufacturers with price supports for the duration of a multiple-year

contract. One of the participating manufacturers contended that "…the transit agency literally 'holds the bidder's feet to fire' and requires fixed pricing for the entire duration of the multiple-year contract. The manufacturer receives pricing support from his vendors for the current year and the following year. The bus manufacturer bids the multiple-year contract and takes a chance that the contract will be problem free."

Component warranties are another problem faced by small-to-medium-sized bus manufacturers. Cutaway manufacturers purchase chassis and other components from vendors. The chassis is the most expensive component in a cutaway bus. Small-to-medium-sized cutaway bus manufacturers purchase the chassis from automotive and truck manufacturers. The chassis is a "purpose-built" van and truck component and not specifically built to meet the demands of public transit. As a result, the chassis manufacturer provides the small-to-medium-sized bus manufacturer with a standard van or truck warranty. Transit agencies, however, often require a complete vehicle warranty longer in duration than the chassis warranty. One participating manufacturer asserted, "…chassis suppliers do not supply bus manufacturers with long-term warranties; [some] transit agency customers [require] twelve-year warranties on seven-year buses. The chassis supplier will not issue a twelve-year warranty; therefore; we [bus manufacturers] are forced to support the long-term warranty."

Bargaining Power of Suppliers

As presented in the *Non-Rail Vehicle Market Viability Study* (2005), powerful suppliers can exert pressure on manufacturers through various methods. These methods include such tactics as raising prices, reducing product availability, reducing production output, and increasing product lead times. As a result, powerful suppliers can literally squeeze profitability out of an industry, such as that of transit bus manufacturing, in which recovery of cost increases is not always possible.

Purchased chassis are essential components for the cutaway bus industry. Without a consistent supply of competitively priced chassis, cutaway manufacturers would likely go out of business. Three automotive sector manufacturers control the supply of chassis to the cutaway industry — Ford Motor Company, General Motors and International Truck & Engine Corporation. Ford Motor Company supplies the largest number of chassis to the cutaway bus industry. Over the last five years, annual price increases from the chassis suppliers consistently ranged from 2% to 3%. In the past, cutaway manufacturers and their dealers worked together to offset price increases. In 2007, however, Ford stunned cutaway manufacturers by announcing a $2,000 per chassis price increase on all 2008 models, which is an increase of 7.5% to 10% over Ford's 2007 chassis.

Each of the participating small-to-medium-sized bus manufacturers asserted that the cutaway industry is not able to afford that level of price increase. As a result, small-to-medium-sized cutaway bus manufacturers will have to absorb Ford's price increase, which will affect profitability.

Threats of Substitutes

Based on Porter's definition of "substitute," a substitute in the small-to-medium-sized cutaway bus industry would be any vehicle that could perform the same service as that delivered by the cutaway bus manufacturers. Vans, taxis, SUVs and automobiles are all potential substitutes for cutaway buses depending on the needs and circumstances of the respective agency or customer. Compared to the other market forces, however, the threat from substitutes plays a relatively minor role in the cutaway bus market due to the diverse product offerings of the small-to-medium-sized bus manufacturers. The "commoditization" of cutaways, particularly in the public transit market, required small-to-medium-sized bus manufacturers to diversify vehicle models and market sectors. As a result of vehicle model and market diversification, many small-to-medium-sized cutaway bus manufacturers have experienced double-digit growth in recent years.

Competitive Rivalry

The fifth factor in Porter's *Five Forces Model* is competitive rivalry among the transit bus manufacturers. As mentioned in the *Market Overview*, there are fifteen small-to-medium-sized bus manufacturers in the U.S. Of these fifteen manufacturers, eleven produce cutaway buses. The annual revenues associated with these eleven manufacturers range from under $30 million to more than $400 million. The four small-to-medium-sized bus manufacturers that participated in the study accounted for approximately 73% of the cutaway buses represented in the APTA data sets of 2002 to 2006.

In terms of the transit marketplace, competition among various cutaway manufacturers generally takes place on a regional basis among those manufacturers serving a specific area of the country. The most intense competition, however, among small-to-medium-sized cutaway bus manufacturers occurs in the commercial (retail) market. Even though the commercial (retail) market generates a lower overall sales volume than the public transit market, commercial (retail) sales are more profitable. As a result, virtually every cutaway manufacturer pursues business with commercial (retail) customers.

Cutaway bus manufacturers have high fixed costs. Each cutaway bus plant is a custom-shop requiring an assortment of machines and a large full-time workforce. On average, direct production employees represent 40% of a cutaway bus manufacturer's labor force while indirect production employees represent another 10%. The demand for qualified labor in, and around, most cutaway manufacturing facilities is intense. As a result, small-to-medium-sized bus manufacturers must offer highly competitive wage and benefit packages to retain qualified employees.

As discussed earlier, cutaway buses (particularly those built for public transit agencies) are considered to be "commodity" products by the small-to-medium-sized bus manufacturers. As a result, cutaway manufacturers typically use the production of public transit cutaways to cover overhead costs while commercial (retail) buses generate the cutaway manufacturers' profits. Vehicle and market diversification are critical if the

small-to-medium-sized cutaway bus manufacturers plan to continue increasing growth and profitability.

5.2 Characteristics of Cutaway Manufacturers Versus Heavy-Duty Transit Bus Manufacturers

Product and market diversity are critical elements of the sales strategies associated with cutaway buses. According to the participating cutaway manufacturers, sales and profitability have increased over the last six years, and those trends are expected to continue in the future. These results differ greatly from the heavy-duty transit bus industry in which sales to public transit agencies account for more than 90% of annual revenues, and profitability is much more difficult to achieve.

Unlike the heavy-duty transit bus manufacturers, cutaway bus producers do not manufacture the vehicle's chassis. Instead, cutaway bus manufacturers purchase chassis from one or more manufacturers in the automotive and truck sectors, manufacture bus bodies, which are customized and mounted on chassis. Automotive and truck manufacturers produce approximately 10,000 chassis per year for use in cutaway buses. Participating manufacturers in the *Evaluation of the Market for Small-to-Medium-Sized Cutaway Buses* reported that meeting the *Buy America* domestic content requirement generally is not a problem for them because the chassis that each manufacturer purchases is built in the U.S. The chassis is the most significant component of a cutaway.

Despite the success of the cutaways in recent years, the cutaway industry has its own challenges including low-bid procurements, the lack of uniform vehicle specifications, multiple-year contracts, the buying power of large transit agencies, component vendor support, and warranties. Many of these issues are similar to those faced by the heavy-duty transit bus manufacturers.

The cutaway industry features several unique practices that allow it to be more stable and, generally, more profitable than the heavy-duty transit industry. Key differentiating factors include:

- Small-to-medium-sized cutaway manufacturers are body builders. Unlike heavy-duty transit bus manufacturers, cutaway bus builders purchase a complete chassis from one of five automotive sector manufacturers. The engine, drive train, suspension system, electronics, and other components are included in the chassis purchase. Heavy-duty transit bus manufacturers build their own chassis and must purchase transit agency-specified components to complete each bus.

- Small-to-medium-sized cutaway manufacturers sell their buses through a network of bus dealers. Heavy-duty transit bus customers procure buses directly from the factory. In the small-to-medium-sized cutaway market, each manufacturer generally is represented by nearby bus dealers that manage the

bid process and hold awarded contracts. Transit bus manufacturers are responsible for the entire procurement process from bid to award and post-award. Generally, cutaway bus manufacturers receive payment for buses upon delivery to a dealer. Heavy-duty transit bus manufacturers receive payment from the procuring transit agency.

- Cutaway manufacturers have diversified the products and markets that they serve. In the cutaway industry, manufacturers supply vehicles to the hospitality, healthcare, auto rental, senior living, tourism, and education markets — to name a few. Members of the heavy-duty transit industry focus almost entirely on providing vehicles to public transportation agencies.

Generally costing roughly three times less than small-to-medium-sized buses, cutaway vehicles provide public and private sector transportation providers with a smaller, cheaper more accessible vehicles that can be affordably retrofitted to meet federal regulations and requirements.

Primary and secondary data provided by public transit providers participating in this study illuminates key factors that influence purchasing decisions and impact the cutaway bus market. The representative transit agencies surveyed for this report supplied a valuable baseline of information with which to view the landscape of cutaway bus services throughout the country. The nine agencies reported varied experiences as well as common issues related to cutaway vehicle procurement, technology and fuel and other topics.

Of the 11,000-plus cutaways reported, APTA data lists the majority (82%) of the cutaway vehicles as demand response vehicles with 16% reported in the "bus" service mode category and 2% listed in the "jitney" category. Although the APTA data sets used for this study, along with the information fromsurveyed agencies, provide only representative data, this information on the transit agency market landscape for cutaway vehicles is useful for manufacturers not only with regard to service types but also as it relates to associated procurement trends and deciding factors.

5.3 Summarized Market Trends

This study has examined a broad scope of factors that impact transit agencies and cutaway bus manufacturers. Key trends and findings revealed in this study include:

1. Vehicle and market diversity are the greatest strengths of the small-to-medium-sized cutaway bus manufacturers. Sales of specialized cutaway vehicles, such as low-floor, entertainment, senior-living and customized rental cutaways are increasing in the small-to-medium-sized cutaway market. One of the participating cutaway manufacturers attested that "…as far as vehicle models are concerned, over time we have consciously expanded our business into every segment of the market." Specialized vehicles have much more profit potential

than standard cutaway buses. Also, the participants expressed the collective opinion that commercial, specialized vehicles provide far greater profit margins.

2. The cutaway bus market experienced a downturn during the four years following the September 11, 2001 attacks. Any event or circumstance that negatively affects tourism for a prolonged length of time adversely impacts the small-to-medium-sized cutaway bus market. As an example, travel and tourism fell dramatically in the aftermath of September 11, 2001, and the ratio of cutaways sold to public agencies compared to commercial (retail) sales shifted from 60% (public) versus 40% (commercial) to 85% public and 15% commercial. This post-disaster shift negatively affected profitability of the cutaway manufacturers. Although the downturn in the market has reversed and sales of small-to-medium-sized buses (including cutaways) are growing, it is important to recognize the potential for another market depression and to formulate effective strategies to mitigate risk.

3. While the small-to-medium-sized cutaway manufacturers reduced their dependence on public transit procurements from an 85/15 ratio (public transit/retail) in the aftermath of 9-11 to a 60/40 ratio today, the heavy-duty transit bus manufacturers continue to be heavily dependant on public transit procurements for survival. However, heavy-duty transit bus and small-to-medium-sized cutaway bus manufacturers both consider procurement and contracting as contentious issues. Discussions about public transit agency procurements and contracting methods underscore the frustration of cutaway and heavy-duty transit bus manufacturers with low-bid procurements. The small-to-medium-sized cutaway bus manufacturers participating in this study also expressed concerns about poorly developed procurement specifications and component vendors that sell untested components to the transit agencies. While multiple-year contracts allow manufacturers to plan, these contracts also represent a potential for significant financial loss.

4. The bus manufacturer and transit agency data presented in this report, along with the latest APTA figures, demonstrated that gas and diesel fuels are the current predominant fuel sources for the cutaway bus sector of the market. Almost 73% of the cutaway vehicles operating in 2006 (as reported by agencies participating in the APTA survey) were diesel-powered, while close to 20% of the cutaway vehicles were powered by gasoline. Collectively, gasoline and diesel as fuel sources represent roughly 93% of cutaway vehicles, as reported in the latest APTA database. Even so, it is important to consider the rapidly changing marketplace with regard to alternative fuels, especially biodiesel, and the increasing influence of alternative fuel vehicles in the small-to-medium-sized cutaway bus marketplace.

   It is still too early to determine if ethanol will become a major alternative fuel source for the cutaway market; however, the environmental implications of ethanol are worthy of debate for this and other transit market vehicle segments.[163]

5. In general, transit agencies reported interest in employing new technologies to assist cutaway bus drivers in providing safe, efficient service. Advancements in video surveillance technologies, obstacle detection devices, deceleration alert devices, global positioning systems as well as lighting, signal priority and air suspension are among the reported technologies that transit agencies are seeking for cutaway vehicles. However, with various transit agencies concerns related to budget limitations, extra spending on innovative technologies is not feasible across the board.

6. While the aging U.S. population is expected to cause a general upswing in public transportation ridership, in particular, it is assumed that this population shift will significantly impact paratransit or demand response services. This anticipated increase in paratransit ridership suggests that the demand for cutaway buses will be stable or may well increase over the next decade.

7. No uniform cutaway bus specifications currently exist in the U.S. small-to-medium-sized cutaway bus market. Each local public transit agency or state agency develops individual specifications for cutaway procurements. As a result, manufacturers sometimes encounter inconsistent or inappropriate specifications that have been based on a variety of other types of agency procurements.

8. If the federal government ceased its funding support, that action would have a significant negative impact on manufacturers of small-to-medium-sized cutaway buses. Most bus manufacturers — both small-to-medium-sized cutaway builders and heavy-duty transit vehicle manufacturers — are concerned that federal funds sometimes are misused or not spent wisely by public agencies. There is a general consensus among bus manufacturers that the FTA needs to engage in more oversight when providing taxpayer-funded, federal support to public agencies. Furthermore, while some transit agencies are actively participating in federal programs that relate to funding, various transit agencies report minimal knowledge, interest in or experience with several key pieces of funding legislation.

5.4 Recommendations

Despite interest in applying some of the cutaway bus practices or "lessons learned" to the heavy-duty transit industry, the two industries are too disparate for effective implementation of many of the cutaway industry practices in the heavy-duty bus market. For example, no third party chassis manufacturers supply chassis to heavy-duty bus manufacturers. Also, transit agencies prefer to procure heavy-duty transit buses directly from the manufacturers whereas cutaways typically are procured from dealers.

Furthermore, in contrast to the small-to-medium-sized cutaway market, there is little room for comparison as it relates to product diversification in the heavy-duty bus industry.

As reported in the *2005 Non-Rail Vehicle Market Viability* study, only one heavy-duty transit bus manufacturer has diversified the markets it serves successfully.

Key areas that apply to both the heavy-duty bus industry as well as the cutaway bus industry relate to broader subject areas including funding initiatives, alternative fuels and innovative technologies.

In the context of the eight-month period of research and analysis of the small-to-medium-sized cutaway bus market, HD/FKA identified four critical areas that merit further review and additional consideration by the FTA and the transit industry:

- **Funding** — The availability of federal funding support for agency purchases of small-to-medium-sized cutaway buses is very important. Cutaway manufacturers currently sell approximately 60% of their annual production to public agencies that rely on federal funding in order to purchase cutaway vehicles for inclusion in their fleets. Private and public sector transportation officials would benefit from additional research and information on the impact of *SAFETEA-LU* and other federal funding mechanisms, as well as federal requirements inherent in the *SAFETEA-LU* bill, on public transportation at the local level. In addition to APTA's research on this subject, HD/FKA recommends separate research to provide a comprehensive assessment of transit industry experiences and insights regarding the effectiveness of the various funding programs included in *SAFETEA-LU*.

- **Role of FTA** — In some instances, cutaway bus manufacturers do not fully understand the FTA's role with respect to public transit in the United States. Some of the manufacturers have only limited awareness of the function and operational limitations of the FTA. Therefore, cutaway bus manufacturers generally would benefit by becoming more knowledgeable about the FTA. A series of roundtable discussions with the cutaway bus industry and other bus manufacturers (in several locations across the country) would serve to update industry on the role of the FTA and its relationship with public agencies, as well as with bus manufacturers.

- **Alternative fuels/alternative fuel vehicles** — Although influencing U.S. public transportation, as well as the U.S. automotive industry, the subject of alternative fuels/alternative fuel vehicles (with respect to transit buses of all types) is evolving. As the EPA regulations of 2007 take effect and, as the requirements of 2010 loom on the horizon, the subject of alternative fuels/alternative fuel vehicles, particularly with respect to transit buses, is expected to be a subject of significance — one that certainly merits further investigation. Misconceptions with regard to availability and cost of alternative fuel vehicles (as it relates not only to transit agency officials but also to bus manufacturers) have led to inaccurate assumptions.

For example, the participating manufacturer that estimated that a cutaway fuel cell vehicle might cost approximately one million dollars may be unaware of the Ford E-450 hydrogen fuel cell vehicles operating in Orlando that cost one-quarter of the perceived cost. Reality and assumptions vary because technology is advancing, legislation is changing and costs may be further reduced when it comes to alternative fuel vehicles over the next five to seven years.

Existing reports and information related to alternative fuel initiatives highlight pilot projects and initiatives whereas a thorough examination of the perceptions versus reality in the public and private sector with regard to alternative fuel vehicles would provide the transit industry with a valuable tool to move forward towards superior fuel and propulsion options and alternatives to diesel and gasoline.

- **Innovative Technologies** — New technologies, such as Computer Aided Dispatch (CAD) and Remote Infrared Audible Signage (RIAS), are being introduced increasingly to transit agencies. The impact of these and other new technologies on public transportation, specifically transit buses (including cutaway vehicles), is a subject that warrants additional review. However, in many instances, the costs of new technologies may overburden already strained budgets. It would be useful for the transit industry to gather comprehensive insights, as well as quantitative information, with regard to realistic opportunities for implementation of the latest technologies and current applications of existing innovative technologies.

Index of Appendices

Appendix 1: Dataset

Transit Agency Name	Urbanized Area Metropolitan Area Urban Place	Mode Code	Year Built	Status	MFG. Code	Model	Vehicle Type	Wheelchair Accessible	Vehicle Floor Height	On-vehicle Accessibility Equipment	Platform Height	Platform Accessibility Equipment	No. of Seats	Length in Feet	Width in Inches	Power Type Code	Cost per Vehicle	Total No. of Vehicles	No. of Alternative-power Vehicles
Access Services	Los Angeles, CA	DR	2000	A	EDN	AEROTECH 220	Sveh	Y	High	Lift	None	None	8	21	94	GA		12	0
Access Services	Los Angeles, CA	DR	2001	A	EDN	AEROTECH 220	Sveh	Y	High	Lift	None	None	8	21	94	GA	$44,280	19	0
Access Services	Los Angeles, CA	DR	2000	A	EDN	AEROTECH 240	Sveh	Y	High	Lift	None	None	11	25	94	GA		3	0
Access Services	Los Angeles, CA	DR	2007	O	STR	STARCRAFT T-II	Sveh	Y	High	Lift	None	None	7	21	94	GA	$48,724	9	0
Access Services	Los Angeles, CA	DR	2007	O	STR	STARCRAFT T-III	Sveh	Y	High	Lift	None	None	12	25	94	GA	$63,901	2	0
Alameda-Contra Costa Transit District	San Francisco, CA	DR	2001	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	14	22	96	DF	$57,800	36	0
Altoona Metro Transit	Altoona, PA	MB	2004	A	CEQ	26 SEAT BODY	Bust	Y	High	Lift	None	None	26	30	96	DF		2	0
Altoona Metro Transit	Altoona, PA	DR	1999	A	CEQ	PHOENIX	Sveh	Y	High	Lift	None	None	18	23	96	DF	$68,055	2	0
Altoona Metro Transit	Altoona, PA	MB	1999	A	CEQ	PHOENIX	Sveh	Y	High	Lift	None	None	18	26	96	DF		2	0
Ames Transit Agency	Ames, IA	MB	1997	A	EDN	HAWK	Sveh	Y	High	Lift	None	None	13	22	96	DF	$47,943	2	0
Ames Transit Agency	Ames, IA	MB	1995	A	EDN	HAWK	Sveh	Y	High	Lift	None	None	14	25	96	DF		1	0
Ames Transit Agency	Ames, IA	MB	2003	A	SPC	STARTRANS	Sveh	Y	High	Lift	None	None	17	24	96	DF	$49,111	2	0
Ames Transit Agency	Ames, IA	MB	2002	A	SPC	STARTRANS	Sveh	Y	High	Lift	None	None	17	24	96	DF	$55,558	2	0
Ann Arbor Transportation Authority	Ann Arbor, MI	DR	2005	A	STR	ELF125HD	Sveh	Y	Low	Ramp	Low	Ramp	18	25	96	DF	$153,878	6	0
Ann Arbor Transportation Authority	Ann Arbor, MI	MB	2005	A	STR	ELF125HD	Sveh	Y	Low	Ramp	None	None	18	25	96	DF	$153,878	6	0
Anoka County Transit	Minneapolis, MN	DR	2001	A	CMC	CRUSADER	Sveh	Y	High	Lift	None	None	8	22	84	DF	$47,642	1	0
Anoka County Transit	Minneapolis, MN	DR	2001	A	SPC	STARTRANS	Sveh	Y	High	Lift	None	None	8	23	96	DF		3	0
Anoka County Transit	Minneapolis, MN	DR	2006	A	GLV	UNIVERSAL	Sveh	Y	High	Lift	None	None	14	24	96	DF	$52,226	7	0
Antelope Valley Transit Authority	Lancaster, CA	DR	2000	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	13	22	96	GA		2	0
Antelope Valley Transit Authority	Lancaster, CA	DR	2003	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	18	23	96	DF	$65,050	9	0
Antelope Valley Transit Authority	Lancaster, CA	DR	2001	A	CMD	CUTAWAY	Sveh	Y	High	Lift	None	None	13	22	96	GA		3	0
Antelope Valley Transit Authority	Lancaster, CA	DR	2002	A	CMD	CUTAWAY	Sveh	Y	High	Lift	None	None	13	22	96	GA		3	0
Antelope Valley Transit Authority	Lancaster, CA	MB	2004	A	OCC	ELF	Sveh	Y	Low	Ramp	None	None	18	25	96	DF	$150,000	2	0
AppalCART	Boone, NC	MB	2003	A	GCC	GCII	Sveh	Y	High	Lift	None	None	18	25	96	GA	$53,000	3	0
Area Transportation Authority of North Cent PA	Johnsonburg, PA	MB	2006	A	CEQ	BOC	Sveh	Y	High	Lift	None	None	14	22	96	DF	$65,351	10	0
Area Transportation Authority of North Central PA	Johnsonburg, PA	MB	2003	A	STR	BOC	Sveh	Y	High	Lift	None	None	14	22	96	DF	$52,500	6	0
Arlington County Department of Public Works	Washington, DC	MB	2004	A	SPC	AMBASSADOR	Buss	Y	High	Lift	None	None	26	31	96	CN		4	4
Arlington County Department of Public Works	Washington, DC	MB	2003	A	SPC	AMBASSADOR	Buss	Y	High	Lift	None	None	26	31	96	CN		3	3
Arlington County Department of Public Works	Washington, DC	MB	2001	A	DIA	DC 3100	Bust	Y	High	Lift	None	None	26	31	96	CN		2	2
Arlington County Department of Public Works	Washington, DC	MB	2006	A	SPC	SENATOR	Sveh	Y	High	Lift	None	None	18	20	72	BD		5	5
Arlington County Department of Public Works	Washington, DC	MB	2003	A	SPC	SENATOR	Sveh	Y	High	Lift	None	None	14	20	72	CN		7	7

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Arlington County Department of Public Works	Washington, DC	MB	1999	A	SPC	SENATOR	Sveh	Y	High	Lift	None	None	17	20	72	DF		2	0
Arlington County Department of Public Works	Washington, DC	MB	2002	A	SPC	SENATOR	Sveh	Y	High	Lift	None	None	14	20	72	CN		3	3
Audubon Area Community Services, Inc.	Owensboro, KY	DR	2000	A	SPC	3500	Sveh	Y	High	Lift	None	None	12	23	96	GA	$39,180	6	0
Audubon Area Community Services, Inc.	Owensboro, KY	DR	2004	A	GCC	E-350	Sveh	Y	High	Lift	None	None	10	21	83	GA	$35,000	3	0
Audubon Area Community Services, Inc.	Owensboro, KY	DR	2005	A	SPC	E-350	Sveh	Y	High	Lift	None	None	10	21	83	GA	$35,948	2	0
Audubon Area Community Services, Inc.	Owensboro, KY	DR	2005	A	SPC	E-350	Sveh	Y	High	Lift	None	None	12	23	96	GA	$41,496	3	0
Audubon Area Community Services, Inc.	Owensboro, KY	DR	2005	A	SPC	E-350	Sveh	Y	High	Lift	None	None	12	23	96	GA	$39,972	2	0
Audubon Area Community Services, Inc.	Owensboro, KY	DR	2004	A	TTT	E-350	Sveh	N	High	None	None	None	14	21	83	GA	$35,830	1	0
Audubon Area Community Services, Inc.	Owensboro, KY	DR	2004	A	GCC	E-450	Sveh	N	High	None	None	None	21	24	96	GA	$43,059	1	0
Battle Creek Transit	Battle Creek, MI	DR	2001	A	DIA	VIP 2200	Sveh	Y	High	Lift	None	None	10	20	84	GA	$53,000	4	0
Battle Creek Transit	Battle Creek, MI	DR	2002	A	DIA	VIP SERIES	Sveh	Y	High	Lift	None	None	10	20	84	DF	$56,000	3	0
Battle Creek Transit	Battle Creek, MI	DR	1999	A	DIA	VIP SERIES	Sveh	Y	High	Lift	None	None	10	20	84	GA	$50,000	2	0
Beaver County Transit Authority	Rochester, PA	MB	2001	A	CEQ	CONDOR	Buss	Y	High	Lift	None	None	28	32	94	DF	$95,543	2	0
Beaver County Transit Authority	Rochester, PA	MB	2000	A	CEQ	CONDOR	Buss	Y	High	Lift	None	None	28	32	94	DF	$91,890	6	0
Beaver County Transit Authority	Rochester, PA	DR	1997	A	GCC	GCII	Sveh	Y	High	Lift	None	None	16	25	96	DF	$33,500	1	0
Beaver County Transit Authority	Rochester, PA	DR	2003	A	CEQ	PHOENIX	Sveh	Y	High	Lift	None	None	12	23	96	DF	$54,759	6	0
Beaver County Transit Authority	Rochester, PA	DR	2000	A	CEQ	PHOENIX	Sveh	Y	High	Lift	None	None	16	25	96	DF	$57,852	5	0
Beaver County Transit Authority	Rochester, PA	DR	2003	A	CEQ	PHOENIX	Sveh	Y	High	Lift	None	None	16	25	96	DF	$56,988	3	0
Beaver County Transit Authority	Rochester, PA	DR	2002	A	CEQ	PHOENIX	Sveh	Y	High	Lift	None	None	16	25	96	DF	$50,696	1	0
Beaver County Transit Authority	Rochester, PA	DR	2001	A	CEQ	PHOENIX	Sveh	Y	High	Lift	None	None	16	25	96	DF	$62,625	7	0
Belle Urban System	Racine, WI	MB	1999	A	CMC	FORD E-460	Sveh	Y	High	Lift	None	None	11	24	96	DF	$10,000	5	0
Belle Urban System	Racine, WI	MB	2000	A	CMC	FORD E-460	Sveh	Y	High	Lift	None	None	8	24	96	GA	$11,000	2	0
Ben Franklin Transit	Kennewick, WA	DR	2002	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	16	26	96	DF	$69,557	2	0
Ben Franklin Transit	Kennewick, WA	DR	1998	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	14	26	96	DF	$72,594	3	0
Ben Franklin Transit	Kennewick, WA	DR	2005	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	14	26	96	GA	$70,206	15	0
Ben Franklin Transit	Kennewick, WA	DR	2006	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	14	26	96	GA	$75,074	14	0
Ben Franklin Transit	Kennewick, WA	DR	2001	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	16	26	96	DF	$75,131	3	0
Ben Franklin Transit	Kennewick, WA	DR	2003	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	16	26	96	DF	$78,579	16	0
Ben Franklin Transit	Kennewick, WA	DR	1999	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	15	26	96	DF	$76,443	13	0
Ben Franklin Transit	Kennewick, WA	DR	1994	A	EDN	AEROTECH	Sveh	N	High	None	None	None	29	24	92	DF	$45,515	1	0
Ben Franklin Transit	Kennewick, WA	DR	1993	A	EDN	HAWK	Sveh	Y	High	Lift	None	None	15	24	96	DF	$68,115	8	0

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Ben Franklin Transit	Kennewick, WA	DR	1999	A	EDN	HAWK	Sveh	Y	High	Lift	None	None	14	26	96	DF	$21,373	4	0
Ben Franklin Transit	Kennewick, WA	DR	1993	A	EDN	HAWK	Sveh	Y	High	Lift	None	None	15	24	96	DF	$68,115	1	0
Berks Area Reading Transportation Authority	Reading, PA	DR	2004	A	CEQ	CONDOR	Sveh	Y	High	Lift	None	None	18	25	95	DF	$94,493	6	0
Berks Area Reading Transportation Authority	Reading, PA	DR	2003	A	CEQ	CONDOR	Sveh	Y	High	Lift	None	None	18	25	95	DF	$94,493	9	0
Berks Area Reading Transportation Authority	Reading, PA	DR	2006	A	CEQ	FORD E456	Sveh	Y	High	Lift	None	None	12	24	95	DF	$71,692	17	0
Birmingham-Jefferson County Transit Authority	Birmingham, AL	DR	2001	A	GCC	GCII	Sveh	Y	High	Lift	None	None	16	24	96	DF		13	0
Birmingham-Jefferson County Transit Authority	Birmingham, AL	DR	2002	A	GCC	GCII	Sveh	Y	High	Lift	None	None	16	24	96	DF	$60,007	7	0
Birmingham-Jefferson County Transit Authority	Birmingham, AL	DR	2005	A	STR	ST2932C	Sveh	Y	High	Lift	None	None	13	24	96	DF	$51,000	24	0
Bi-State Development Agency	Saint Louis, MO	DR	2000	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	14	24	96	DF	$63,074	2	0
Bi-State Development Agency	Saint Louis, MO	DR	2001	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	14	24	96	DF	$65,000	22	0
Bi-State Development Agency	Saint Louis, MO	DR	2002	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	14	24	96	DF	$66,000	19	0
Bi-State Development Agency	Saint Louis, MO	DR	2003	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	14	24	96	DF	$68,000	38	0
Bi-State Development Agency	Saint Louis, MO	DR	2005	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	14	24	96	DF	$73,200	5	0
Bi-State Development Agency	Saint Louis, MO	DR	2006	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	14	24	96	DF	$73,226	12	0
Bi-State Development Agency	Saint Louis, MO	DR	2004	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	14	24	96	DF	$63,782	21	0
Bi-State Development Agency	Saint Louis, MO	MB	2000	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	14	20	96	DF	$63,000	5	0
Black Hawk Transportation Authority	Black Hawk, CO	MB	2002	A	FRD	E-450	Sveh	Y	High	Lift	Both	None	12	23	96	DF	$60,955	1	0
Blacksburg Transit	Blacksburg, VA	DR	2002	A	SPC	BSSN20	Sveh	Y	High	Lift	None	None	10	20	96	DF		3	0
Blacksburg Transit	Blacksburg, VA	DR	1999	A	SPC	BSSN22	Sveh	Y	High	Lift	None	None	13	22	96	DF		1	0
Blacksburg Transit	Blacksburg, VA	MB	1999	A	SPC	BSSN25	Sveh	Y	High	Lift	None	None	15	25	96	DF		2	0
Blacksburg Transit	Blacksburg, VA	DR	1998	A	SPC	STARTRANS SENATOR	Sveh	Y	High	Lift	None	None	10	25	96	DF		1	0
Bloomington Public Transportation Corporation	Bloomington, IN	MB	2006	A	SPC	STARTRANS	Sveh	Y	High	Lift	None	None	20	22	96	BD	$60,000	1	1
Bloomington Public Transportation Corporation	Bloomington, IN	MB	2002	A	SPC	STARTRANS	Sveh	Y	High	Lift	None	None	20	22	96	BD		1	1
Bloomington Public Transportation Corporation	Bloomington, IN	MB	2001	A	SPC	STARTRANS	Sveh	Y	High	Lift	None	None	20	25	96	BD		1	1
Blue Water Area Transportation Commission	Port Huron, MI	DR	2004	A	GCC	GCII	Sveh	Y	High	Lift	None	None	18	25	96	DF	$80,191	6	0
Blue Water Area Transportation Commission	Port Huron, MI	MB	2004	A	GCC	GCII	Sveh	Y	High	Lift	None	None	15	24	96	CN	$98,142	8	8
Broward County Division of Mass Transit	Miami, FL	MB	2000	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	18	22	96	DF		1	0
Broward County Division of Mass Transit	Miami, FL	MB	2001	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	18	22	96	DF		3	0
Broward County Division of Mass Transit	Miami, FL	MB	2005	A	TTT	TERRA TRANSIT	Sveh	Y	High	Lift	None	None	19	25	96	DF		20	0
Broward County Division of Mass Transit	Miami, FL	MB	2003	A	TTT	TERRA TRANSIT	Sveh	Y	High	Lift	None	None	19	25	96	DF		20	0
Broward County Division of Mass Transit	Miami, FL	MB	2002	A	TTT	TERRA TRANSIT	Sveh	Y	High	Lift	None	None	19	25	96	DF	$59,490	9	0

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Broward County Division of Mass Transit	Miami, FL	MB	2006	A	TTT	TERRA TRANSIT	Sveh	Y	High	Lift	None	None	19	25	96	DF		10	0
Broward County Division of Mass Transit	Miami, FL	MB	2006	O	TTT	TERRA TRANSIT	Sveh	Y	High	Lift	None	None	19	25	96	DF		10	0
Bullhead Area Transit System	Bullhead City, AZ	DR	2005	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	14	23	96	GA	$48,868	3	0
Bullhead Area Transit System	Bullhead City, AZ	DR	2006	O	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	14	23	96	GA	$52,560	1	0
Bullhead Area Transit System	Bullhead City, AZ	DR	2001	A	STR	CUTAWAY	Sveh	Y	High	Lift	None	None	13	23	96	DF	$52,542	2	0
Bullhead Area Transit System	Bullhead City, AZ	MB	2004	A	FRC	GOSHEN	Buss	Y	Low	Ramp	None	None	30	35	102	DF	$136,500	1	0
Butler County Regional Transit Authority	Hamilton, OH	DR	2000	A	SPC	STARTRANS	Sveh	Y	High	Lift	None	None	10	23	72	DF	$45,204	9	0
Cambria County Transit Authority	Johnstown, PA	DR	1998	A	CMC	CHALLENGER	Sveh	Y	High	Lift	None	None	18	26	96	DF	$66,000	3	0
Cambria County Transit Authority	Johnstown, PA	DR	2005	A	CMC	CHALLENGER	Sveh	Y	High	Lift	None	None	18	26	96	DF	$62,258	7	0
Cambria County Transit Authority	Johnstown, PA	DR	2004	A	CMC	CHALLENGER	Sveh	Y	High	Lift	None	None	18	26	96	DF	$60,750	3	0
Cambria County Transit Authority	Johnstown, PA	DR	2003	A	GLV	CONCORDE	Buss	Y	High	Lift	None	None	18	30	96	DF	$97,747	2	0
Cambria County Transit Authority	Johnstown, PA	MB	1997	A	CMC	CONTENDER	Bust	Y	High	Lift	None	None	28	30	96	DF	$148,000	3	0
Cambria County Transit Authority	Johnstown, PA	DR	1993	A	CBC	DIPLOMAT	Sveh	Y	High	Lift	None	None	18	25	96	DF	$63,000	1	0
Cambria County Transit Authority	Johnstown, PA	DR	1997	A	GCC	GCII	Sveh	Y	High	Lift	None	None	18	24	96	DF	$66,000	3	0
Cambria County Transit Authority	Johnstown, PA	DR	2000	A	CEQ	PHOENIX	Sveh	Y	High	Lift	None	None	18	26	96	DF	$65,117	2	0
Cambria County Transit Authority	Johnstown, PA	DR	2001	A	GLV	UNIVERSAL	Sveh	Y	High	Lift	None	None	18	26	96	DF	$68,000	4	0
Canby Area Transit-City of Canby	Canby, OR	MB	2006	A	CMC	CTS	Bust	Y	High	Lift	Both	Both	35	35	102	DF	$175,000	3	0
Canby Area Transit-City of Canby	Canby, OR	MB	2003	A	GIR	CUTAWAY	Sveh	Y	High	Both	Both	Both	21	27	96	DF	$48,000	7	0
Cape Fear Public Transportation Authority	Wilmington, NC	MB	2003	A	GCC	GCII	Sveh	Y	High	Lift	None	None	16	22	96	GA	$52,000	1	0
Cape Fear Public Transportation Authority	Wilmington, NC	MB	2002	A	GCC	GCII	Sveh	Y	High	Lift	None	None	16	22	96	GA	$52,000	1	0
Cape Fear Public Transportation Authority	Wilmington, NC	MB	1999	A	GCC	GCII	Sveh	Y	High	Lift	None	None	19	24	96	DF	$52,000	3	0
Cape Fear Public Transportation Authority	Wilmington, NC	MB	2006	A	GCC	GCII	Bust	Y	High	Lift	None	None	22	28	96	DF	$76,822	3	0
Cape Fear Public Transportation Authority	Wilmington, NC	MB	2003	A	GCC	GCII	Bust	Y	High	Lift	None	None	22	28	96	DF	$52,783	5	0
Cape Fear Public Transportation Authority	Wilmington, NC	MB	2002	A	GCC	GCII	Bust	Y	High	Lift	None	None	17	28	96	DF	$52,783	1	0
Capital Area Transit System	Baton Rouge, LA	DR	2005	A	FDC	SPIRIT II	Sveh	Y	High	Lift	None	None	15	24	113	DF	$57,900	10	0
Capital Area Transit System	Baton Rouge, LA	MB	2005	A	FDC	SPIRIT II	Sveh	Y	High	Lift	None	None	19	24	113	DF	$82,787	12	0
Capital Area Transportation Authority	Lansing, MI	DR	2000	A	CMC	CHALLENGER	Sveh	N	High	None	None	None	15	21	93	DF	$50,552	3	0
Capital Area Transportation Authority	Lansing, MI	DR	2006	A	CMC	CHALLENGER	Sveh	Y	High	Lift	None	None	11	25	93	DF	$64,383	2	0
Capital Area Transportation Authority	Lansing, MI	DR	2001	A	CMC	CHALLENGER	Sveh	Y	High	Lift	None	None	11	25	93	DF	$61,011	1	0
Capital Area Transportation Authority	Lansing, MI	DR	2000	A	CMC	CHALLENGER	Sveh	Y	High	Lift	None	None	19	25	93	DF	$58,953	2	0
Capital Area Transportation Authority	Lansing, MI	DR	2003	A	CMC	CHALLENGER	Sveh	Y	High	Lift	None	None	19	25	93	DF	$59,135	1	0

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Capital Area Transportation Authority	Lansing, MI	DR	2001	A	CMC	CHALLENGER	Sveh	Y	High	Lift	None	None	5	25	93	DF	$60,748	1	0
Capital Area Transportation Authority	Lansing, MI	DR	2005	A	CMC	CHALLENGER	Sveh	Y	High	Lift	None	None	5	25	93	DF	$61,213	3	0
Capital Area Transportation Authority	Lansing, MI	DR	2005	A	CMC	CHALLENGER	Sveh	Y	High	Lift	None	None	19	25	93	DF	$62,466	7	0
Capital Area Transportation Authority	Lansing, MI	DR	2003	A	CMC	CHALLENGER	Sveh	Y	High	Lift	None	None	5	25	93	DF	$63,734	2	0
Capital Area Transportation Authority	Lansing, MI	DR	2006	A	CMC	CHALLENGER	Sveh	Y	High	Lift	None	None	5	25	93	DF	$63,807	12	0
Capital Area Transportation Authority	Lansing, MI	DR	2002	A	CMC	CHALLENGER	Sveh	Y	High	Lift	None	None	11	25	93	DF	$64,110	3	0
Capital Area Transportation Authority	Lansing, MI	DR	2006	A	CMC	CHALLENGER	Sveh	Y	High	Lift	None	None	17	25	93	DF	$64,162	7	0
Capital Area Transportation Authority	Lansing, MI	DR	2002	A	CMC	CHALLENGER	Sveh	Y	High	Lift	None	None	5	25	93	DF	$62,901	3	0
Capital Area Transportation Authority	Lansing, MI	DR	2002	A	CMC	CHALLENGER	Sveh	Y	High	Lift	None	None	19	25	93	DF	$59,901	4	0
Capital Area Transportation Authority	Lansing, MI	DR	2005	A	CMC	CHALLENGER	Sveh	Y	High	Lift	None	None	11	25	93	DF	$61,777	2	0
Capital Area Transportation Authority	Lansing, MI	DR	2007	O	CMC	CHALLENGER	Sveh	Y	High	Lift	None	None	5	25	93	DF	$64,000	6	0
Capital District Transportation Authority	Albany, NY	MB	1999	A	FRD	E-450	Sveh	Y	High	Lift	None	None	18	22	96	DF		1	0
Capital District Transportation Authority	Albany, NY	DR	2003	A	FRD	E-450	Sveh	Y	High	Lift	None	None	18	22	96	DF		3	0
Capital District Transportation Authority	Albany, NY	DR	1999	A	FRD	E-450	Sveh	Y	High	Lift	None	None	18	22	96	DF	$57,000	2	0
Capital District Transportation Authority	Albany, NY	MB	2001	A	FRD	E-450	Sveh	Y	High	Lift	None	None	12	22	96	DF	$57,000	4	0
Capital District Transportation Authority	Albany, NY	MB	2003	A	FRD	E-450	Sveh	Y	High	Lift	None	None	12	25	96	DF		2	0
Capital District Transportation Authority	Albany, NY	MB	2002	A	FRD	E-450 LANDBUG	Bust	Y	High	Lift	None	None	18	32	96	DF		1	0
Capital District Transportation Authority	Albany, NY	MB	2003	A	FRD	E-450 PHOENIX	Bust	Y	High	Lift	None	None	18	31	96	DF		2	0
Capital District Transportation Authority	Albany, NY	MB	2000	A	FRD	E-450 PHOENIX	Bust	Y	High	Lift	None	None	26	32	96	DF		2	0
Capital District Transportation Authority	Albany, NY	MB	2002	A	FRD	E-450 PHOENIX	Bust	Y	High	Lift	None	None	18	32	96	DF		6	0
Capital District Transportation Authority	Albany, NY	DR	2003	A	OCC	ELF	Sveh	Y	Low	Ramp	None	None	12	22	96	DF	$136,231	2	0
Capital District Transportation Authority	Albany, NY	MB	2003	A	FRD	ELF 122 HD	Sveh	Y	Low	Ramp	None	None	12	22	96	DF		2	0
Capital District Transportation Authority	Albany, NY	MB	2005	A	FRD	FORD/SUPREME	Sveh	Y	Low	Ramp	None	None	16	25	96	DF		13	0
Capital District Transportation Authority	Albany, NY	MB	2004	A	INT	INTER 3200	Bust	Y	High	Lift	None	None	24	30	96	DF		3	0
Capital District Transportation Authority	Albany, NY	MB	2002	A	INT	INTERNATIONAL 3400	Buss	Y	High	Lift	None	None	26	31	96	DF		2	0
Capital District Transportation Authority	Albany, NY	DR	2002	A	CEQ	PHOENIX	Sveh	Y	High	Lift	None	None	12	22	96	DF	$67,323	4	0
Capital District Transportation Authority	Albany, NY	DR	2002	A	CEQ	PHOENIX	Sveh	Y	High	Lift	None	None	15	22	96	DF	$57,000	2	0
Capital District Transportation Authority	Albany, NY	DR	2002	A	CEQ	PHOENIX	Buss	Y	High	Lift	None	None	16	32	96	DF	$57,000	4	0
Capital Metropolitan Transportation Authority	Austin, TX	DR	1999	A	CMC	DEFENDER	Sveh	Y	High	Lift	None	None	13	27	96	DF	$90,755	47	0
Capital Metropolitan Transportation Authority	Austin, TX	MB	1999	A	CMC	DEFENDER	Sveh	Y	High	Lift	None	None	13	27	96	DF	$90,755	3	0
Central Arkansas Transit Authority	Little Rock, AR	DR	1999	A	EDN	AEROTECH 240	Sveh	Y	High	Lift	None	None	14	24	96	DF	$44,853	1	0

Transit Agency Name	Urbanized Area Metropolitan Area Urban Place	Mode Code	Year Built	Status	MFG. Code	Model	Vehicle Type	Wheelchair Accessible	Vehicle Floor Height	On-vehicle Accessibility Equipment	Platform Height	Platform Accessibility Equipment	No. of Seats	Length in Feet	Width in Inches	Power Type Code	Cost per Vehicle	Total No. of Vehicles	No. of Alternative-power Vehicles
Central Arkansas Transit Authority	Little Rock, AR	DR	2001	A	EDN	AEROTECH 240	Sveh	Y	High	Lift	None	None	8	24	96	DF	$48,035	3	0
Central Arkansas Transit Authority	Little Rock, AR	DR	1996	A	EDN	AEROTECH 240	Sveh	Y	High	Lift	None	None	18	24	96	DF	$55,748	9	0
Central Arkansas Transit Authority	Little Rock, AR	DR	2000	A	FRD	E-350	Sveh	Y	High	Lift	None	None	8	24	96	DF	$29,552	4	0
Central Ohio Transit Authority	Columbus, OH	DR	2004	A	FRD	E-450	Sveh	Y	High	Lift	None	None	6	24	96	DF		15	0
Central Ohio Transit Authority	Columbus, OH	DR	2002	A	FRD	F-450	Sveh	Y	High	Lift	None	None	6	24	96	DF	$49,971	17	0
Central Ohio Transit Authority	Columbus, OH	DR	2003	A	FRD	F-450	Sveh	Y	High	Lift	None	None	6	24	96	DF		12	0
Central Ohio Transit Authority	Columbus, OH	DR	1999	A	CEQ	PHOENIX	Sveh	Y	High	Lift	None	None	6	24	96	DF		3	0
Central Oklahoma Transportation and Parking Authority	Oklahoma City, OK	DR	2004	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	12	20	96	DF	$51,939	8	0
Central Oklahoma Transportation and Parking Authority	Oklahoma City, OK	DR	2002	A	GCC	GCII	Sveh	Y	High	Lift	None	None	12	21	96	DF	$52,767	13	0
Champaign-Urbana Mass Transit District	Champaign, IL	DR	2004	A	FRD	E-350	Sveh	Y	High	Lift	None	None	12	20	96	GA		2	0
Charleston Area Regional Transportation Authority	Charleston, SC	DR	1998	A	GCC	PACER II	Sveh	Y	High	Lift	None	None	6	22	95	DF	$46,940	3	0
Charleston Area Regional Transportation Authority	Charleston, SC	DR	1997	A	GCC	PACER II	Sveh	Y	High	Lift	None	None	8	22	95	DF	$45,915	4	0
Charleston Area Regional Transportation Authority	Charleston, SC	DR	2001	A	GCC	PACER II	Sveh	Y	High	Lift	None	None	9	22	95	DF	$47,170	5	0
Charleston Area Regional Transportation Authority	Charleston, SC	DR	1999	A	GCC	PACER II	Sveh	Y	High	Lift	None	None	9	22	95	DF	$47,055	4	0
Charleston Area Regional Transportation Authority	Charleston, SC	MB	1999	A	GCC	PACER II	Sveh	Y	Low	Ramp	None	None	9	22	95	DF	$59,258	1	0
Charleston Area Regional Transportation Authority	Charleston, SC	MB	2005	A	GCC	PACER II	Sveh	Y	Low	Ramp	None	None	9	22	95	DF	$68,789	7	0
Charlotte Area Transit System	Charlotte, NC	DR	2001	A	GCC	GCII	Sveh	Y	High	Lift	None	None	13	25	96	DF	$54,451	7	0
Charlotte Area Transit System	Charlotte, NC	DR	2005	A	GCC	GCII	Sveh	Y	High	Lift	None	None	13	25	96	DF		10	0
Charlotte Area Transit System	Charlotte, NC	DR	2003	A	GCC	GCII	Sveh	Y	High	Lift	None	None	13	25	96	DF		12	0
Charlotte Area Transit System	Charlotte, NC	DR	2004	A	GCC	GCII	Sveh	Y	High	Lift	None	None	12	25	96	DF		12	0
Charlotte Area Transit System	Charlotte, NC	DR	2002	A	GCC	GCII	Sveh	Y	High	Lift	None	None	13	25	96	DF		16	0
Charlotte Area Transit System	Charlotte, NC	DR	2006	A	GCC	GCII	Sveh	Y	High	Lift	None	None	12	25	96	DF		28	0
Charlotte Area Transit System	Charlotte, NC	MB	2002	A	GCC	GCII	Sveh	Y	High	Lift	None	None	20	25	96	DF	$68,000	9	0
Chatham Area Transit Authority	Savannah, GA	DR	1999	A	CMC	CMC	Buss	Y	High	Lift	None	None	9	28	84	DF		2	0
Chatham Area Transit Authority	Savannah, GA	DR	2000	A	CMC	DEFENDER	Buss	Y	High	Lift	None	None	9	28	84	DF		6	0
Chatham Area Transit Authority	Savannah, GA	MB	2005	A	GCC	GOSHEN COACH	Sveh	Y	High	Lift	None	None	20	25	70	DF		3	0
Chatham Area Transit Authority	Savannah, GA	DR	1998	A	GCC	PACER	Sveh	Y	High	Lift	None	None	6	21	84	DF		8	0
Chattanooga Area Regional Transportation Authority	Chattanooga, TN	DR	2001	A	CMC	CHALLENGER	Sveh	Y	High	Lift	None	None	12	23	96	DF	$56,828	1	0
Chattanooga Area Regional Transportation Authority	Chattanooga, TN	DR	2000	A	CMC	CHALLENGER	Sveh	Y	High	Lift	None	None	12	23	96	DF	$55,950	5	0
Chattanooga Area Regional Transportation Authority	Chattanooga, TN	DR	2002	A	CMC	CHALLENGER	Sveh	Y	High	Lift	None	None	12	23	96	DF	$48,308	5	0
Chattanooga Area Regional Transportation Authority	Chattanooga, TN	DR	2000	A	CMC	DEFENDER	Sveh	Y	High	Lift	None	None	12	25	96	DF	$75,199	5	0

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Chelan-Douglas Public Transportation Benefit Area	Wenatchee, WA	DR	2002	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	10	22	96	DF	$78,000	1	0
Chelan-Douglas Public Transportation Benefit Area	Wenatchee, WA	MB	2000	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	16	24	96	DF	$78,000	2	0
Chelan-Douglas Public Transportation Benefit Area	Wenatchee, WA	MB	2002	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	16	24	96	DF	$78,000	3	0
Chelan-Douglas Public Transportation Benefit Area	Wenatchee, WA	DR	1998	A	CBC	DIPLOMAT	Sveh	Y	High	Lift	None	None	16	24	96	DF	$60,000	3	0
Chelan-Douglas Public Transportation Benefit Area	Wenatchee, WA	DR	1999	A	GCC	GCII	Sveh	Y	High	Lift	None	None	16	24	96	DF	$62,000	2	0
Chelan-Douglas Public Transportation Benefit Area	Wenatchee, WA	MB	1999	A	GCC	GCII	Sveh	Y	High	Lift	None	None	16	24	96	DF	$62,000	2	0
Chittenden County Transportation Authority	Burlington, VT	DR	2006	A	CEQ	PHOENIX	Sveh	Y	High	Lift	None	None	10	19	80	GA	$41,459	3	0
Chittenden County Transportation Authority	Burlington, VT	DR	2005	A	CEQ	PHOENIX	Sveh	Y	High	Lift	None	None	10	19	80	GA	$40,034	4	0
Citibus	Lubbock, TX	DR	1998	A	EDN	ELF	Sveh	Y	Low	Ramp	None	None	8	23	96	DF	$89,987	3	0
Citibus	Lubbock, TX	DR	1998	A	EDN	ELF	Sveh	Y	Low	Ramp	None	None	16	25	96	DF	$89,987	1	0
Citibus	Lubbock, TX	DR	2006	A	INT	LO-TRAN	Bust	Y	Low	Ramp	None	None	11	28	102	DF	$112,000	16	0
Citibus	Lubbock, TX	DR	2000	A	EDN	LO-TRANS	Sveh	Y	Low	Ramp	None	None	8	23	96	DF	$106,584	3	0
Citibus	Lubbock, TX	DR	2001	A	EDN	LO-TRANS	Sveh	Y	Low	Ramp	None	None	8	23	96	DF	$106,584	5	0
City & County of Honolulu Dept. of Transportation Services	Honolulu, HI	DR	2004	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	18	26	96	DF	$85,198	9	0
City & County of Honolulu Dept. of Transportation Services	Honolulu, HI	DR	2006	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	10	26	96	DF	$98,279	32	0
City & County of Honolulu Dept. of Transportation Services	Honolulu, HI	DR	2007	O	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	10	26	96	DF	$97,635	20	0
City & County of Honolulu Dept. of Transportation Services	Honolulu, HI	DR	2001	A	EDN	AEROTECH 240	Sveh	Y	High	Lift	None	None	18	26	96	DF	$71,579	39	0
City & County of Honolulu Dept. of Transportation Services	Honolulu, HI	DR	2002	A	EDN	AEROTECH 240	Sveh	Y	High	Lift	None	None	18	26	96	DF	$72,759	26	0
City of Benicia/Finance Department/Transit Services Division	Benicia, CA	MB	2007	A	STR	ALLSTAR	Sveh	Y	High	Lift	Both	Both	18	24	96	BD	$65,615	1	1
City of Benicia/Finance Dept./Transit Services Division	Benicia, CA	MB	2006	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	12	22	96	CD	$53,000	3	3
City of Benicia/Finance Dept./Transit Services Division	Benicia, CA	MB	2001	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	16	25	96	CD	$55,000	1	1
City of Benicia/Finance Dept./Transit Services Division	Benicia, CA	MB	1997	A	SPC	SUPERME	Sveh	Y	High	Lift	None	None	8	17	72	CD	$50,000	1	1
City of Elk Grove Transit	Elk Grove, CA	MB	2006	A	EDN	AERO ELITE	Bust	Y	High	Lift	Both	Both	30	32	96	DF	$68,000	3	0
City of Elk Grove Transit	Elk Grove, CA	MB	2004	A	EDN	AEROTECH	Sveh	Y	High	Lift	Both	Both	18	22	96	DF	$77,000	3	0
City of Elk Grove Transit	Elk Grove, CA	MB	1995	A	TTT	TERRA TRANSIT	Sveh	Y	High	Lift	Both	Both	8	22	96	DF	$10,000	3	0
City of Gadsden Transportation Services	Gadsden, AL	DR	2004	A	CMC	E-450	Sveh	Y	Low	Ramp	None	None	21	26	95	DF	$63,757	2	0
City of Gadsden Transportation Services	Gadsden, AL	MB	2002	A	SVM	FRC	Sveh	Y	High	Lift	None	None	16	26	95	DF	$154,209	4	0
City of Gadsden Transportation Services	Gadsden, AL	DR	1996	A	GCC	GCII	Sveh	Y	High	Lift	None	None	21	21	95	GA	$39,339	2	0
City of Galveston Island Transit	Galveston, TX	MB	1997	A	GCC	CUTAWAY	Buss	Y	High	Lift	High	Lift	22	31	96	DF	$61,956	1	0
City of Galveston Island Transit	Galveston, TX	MB	2002	A	GCC	CUTAWAY	Bust	Y	High	Lift	None	None	29	30	92	DF	$79,521	3	0
City of Galveston Island Transit	Galveston, TX	DR	2004	A	CEQ	PHOENIX	Sveh	Y	High	Lift	None	None	16	25	91	LP	$62,150	1	1

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City of Galveston Island Transit	Galveston, TX	DR	2006	A	CEQ	PHOENIX	Sveh	Y	High	Lift	High	Lift	16	25	91	PG	$64,250	1	1
City of Galveston Island Transit	Galveston, TX	DR	2003	A	CEQ	PHOENIX	Sveh	Y	High	Lift	None	None	17	25	91	LP	$63,121	3	3
City of Galveston Island Transit	Galveston, TX	DR	2006	A	CEQ	PHOENIX	Sveh	Y	High	Lift	High	Lift	18	25	91	LP	$64,250	1	1
City of Galveston Island Transit	Galveston, TX	DR	2002	A	CEQ	PHOENIX	Sveh	Y	High	Lift	None	None	17	25	91	DF	$61,956	1	0
City of Las Cruces-Roadrunner Transit	Las Cruces, NM	MB	1998	A	FRD	E-350	Sveh	Y	High	Lift	None	None	14	20	90	DF	$31,899	3	0
City of Las Cruces-Roadrunner Transit	Las Cruces, NM	MB	1994	A	FRD	E-350	Sveh	Y	High	Lift	None	None	8	20	90	GA	$32,100	1	0
City of Las Cruces-Roadrunner Transit	Las Cruces, NM	MB	2004	A	GCC	E-350	Sveh	Y	High	Lift	None	None	6	20	90	DF	$55,000	3	0
City of Las Cruces-Roadrunner Transit	Las Cruces, NM	MB	2004	A	GCC	E-350	Sveh	Y	High	Lift	None	None	14	20	90	DF	$55,000	3	0
City of Las Cruces-Roadrunner Transit	Las Cruces, NM	MB	1999	A	MTC	E-350	Sveh	Y	High	Lift	None	None	14	20	90	DF	$37,899	1	0
City of Las Cruces-Roadrunner Transit	Las Cruces, NM	MB	2000	A	GCC	E-450	Sveh	Y	High	Lift	None	None	14	24	90	DF	$54,852	2	0
City of Las Cruces-Roadrunner Transit	Las Cruces, NM	MB	2000	A	GCC	E-450	Sveh	Y	High	Lift	None	None	6	24	90	DF	$54,852	2	0
City of Las Cruces-Roadrunner Transit	Las Cruces, NM	MB	2006	A	STR	E-450	Sveh	Y	High	Lift	None	None	6	20	90	DF	$55,000	2	0
City of Las Cruces-Roadrunner Transit	Las Cruces, NM	MB	2006	A	STR	E-450	Sveh	Y	High	Lift	None	None	6	20	90	CN	$55,000	1	1
City of Las Cruces-Roadrunner Transit	Las Cruces, NM	MB	2006	A	STR	E-450	Sveh	Y	High	Lift	None	None	14	20	90	DF	$55,000	3	0
City of Phoenix Public Transit Department	Phoenix, AZ	DR	2007	O	STR	CANDIDATE	Sveh	Y	High	Lift	None	None	8	20	96	GA	$53,000	30	0
City of Phoenix Public Transit Department	Phoenix, AZ	MB	2002	A	SPC	SENATOR	Sveh	Y	High	Lift	None	None	16	23	96	DF	$52,225	1	0
City of Phoenix Public Transit Department	Phoenix, AZ	MB	2004	A	SPC	SENATOR	Sveh	Y	High	Lift	None	None	19	23	96	GA	$54,075	7	0
City of Phoenix Public Transit Department	Phoenix, AZ	MB	2007	O	SPC	SENATOR	Sveh	Y	High	Lift	None	None	19	23	96	GA	$56,000	26	0
City of Redondo Beach	Redondo Beach, CA	MB	1998	A	FRD	EL DORADO	Sveh	Y	High	Lift	High	Lift	20	20	60	CG		14	14
City of Tempe Transportation Division	Phoenix, AZ	MB	2003	A	SPC	SENATOR	Sveh	Y	High	Lift	None	None	18	24	96	GA	$56,724	9	0
City of Tucson Mass Transit System	Tucson, AZ	DR	2003	A	STR	ALL STAR	Sveh	Y	High	Lift	None	None	12	23	96	BD	$45,693	42	42
City of Tucson Mass Transit System	Tucson, AZ	DR	2007	O	STR	ALL STAR	Sveh	Y	High	Lift	None	None	12	25	96	BD	$69,136	36	36
City of Tucson Mass Transit System	Tucson, AZ	DR	2002	A	CMC	CHALLENGER	Sveh	Y	High	Lift	None	None	12	23	96	BD	$50,159	36	36
City of Tucson Mass Transit System	Tucson, AZ	DR	2000	A	GCC	GCII	Sveh	Y	High	Lift	None	None	10	22	96	BD		5	5
City of Tucson Mass Transit System	Tucson, AZ	DR	2005	A	SPC	STAR TRAN SUPREME	Sveh	Y	High	Lift	None	None	12	25	96	BD	$73,419	32	32
CityLink	Abilene, TX	DR	1996	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	12	22	98	DF		5	0
CityLink	Abilene, TX	DR	2005	A	EDN	E-450	Sveh	Y	High	Lift	None	None	10	25	98	DF	$58,079	12	0
CityLink	Abilene, TX	DR	1996	A	FRD	ELF	Sveh	Y	Low	Ramp	None	None	17	24	98	DF		1	0
CityLink	Abilene, TX	DR	2002	A	GLV	UNIVERSAL	Sveh	Y	High	Lift	None	None	10	24	96	DF		5	0
Clallam Transit System	Port Angeles, WA	MB	2005	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	14	23	96	DF	$50,272	4	0
Clallam Transit System	Port Angeles, WA	MB	2006	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	14	23	96	DF		2	0

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Clallam Transit System	Port Angeles, WA	MB	2002	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	14	23	96	DF	$51,597	4	0
Clark County Public Transportation Benefit Area Authority	Portland, OR	DR	1997	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	16	25	96	DF	$73,838	15	0
Clark County Public Transportation Benefit Area Authority	Portland, OR	DR	1996	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	16	25	96	DF	$75,015	15	0
Clark County Public Transportation Benefit Area Authority	Portland, OR	DR	2004	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	16	25	96	DF	$70,447	11	0
Clark County Public Transportation Benefit Area Authority	Portland, OR	DR	1994	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	16	25	80	DF		3	0
Clark County Public Transportation Benefit Area Authority	Portland, OR	MB	1999	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	16	25	96	DF	$81,991	2	0
Clark County Public Transportation Benefit Area Authority	Portland, OR	MB	1997	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	Ramp	16	25	96	DF	$73,838	2	0
CNY Centro	Syracuse, NY	DR	2005	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	18	24	96	DF	$71,470	9	0
CNY Centro	Syracuse, NY	DR	2003	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	18	24	96	DF	$68,000	9	0
CNY Centro	Syracuse, NY	DR	2004	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	18	24	96	DF	$70,094	6	0
CNY Centro	Syracuse, NY	DR	2002	A	CEQ	PHOENIX	Sveh	Y	High	Lift	None	None	18	24	96	DF		4	0
Community Action of Southern Kentucky	Bowling Green, KY	MB	2003	A	STR	ALL STAR	Sveh	Y	High	Lift	None	None	12	21	98	DF		2	0
Community Action of Southern Kentucky	Bowling Green, KY	MB	2003	A	STR	ALL STAR	Sveh	Y	High	Lift	None	None	12	22	96	GA		4	0
Community Action of Southern Kentucky	Bowling Green, KY	MB	2001	A	STR	ALL STAR	Sveh	Y	High	Lift	None	None	14	23	98	GA		1	0
Community Action of Southern Kentucky	Bowling Green, KY	MB	2001	A	STR	ALL STAR	Sveh	Y	High	Lift	None	None	20	25	97	DF		1	0
Community Action of Southern Kentucky	Bowling Green, KY	MB	2006	A	GCC	ECON CUTAWAY	Sveh	Y	High	Lift	None	None	20	27	98	DF	$60,566	2	0
County of Lebanon Transit Authority	Lebanon, PA	DR	2000	A	CMD	3500 SERIES	Sveh	Y	High	Lift	None	None	14	22	80	GA		2	0
County of Lebanon Transit Authority	Lebanon, PA	DR	2006	A	FRD	E-350	Sveh	Y	High	Lift	None	None	9	22	80	GA		1	0
County of Lebanon Transit Authority	Lebanon, PA	DR	2004	A	FRD	E-350	Sveh	Y	High	Lift	None	None	14	22	80	GA		1	0
County of Lebanon Transit Authority	Lebanon, PA	DR	1996	A	FRD	E-350	Sveh	Y	High	Lift	None	None	9	22	80	GA		1	0
County of Lebanon Transit Authority	Lebanon, PA	DR	1998	A	FRD	E-350	Sveh	Y	High	Lift	None	None	14	22	80	GA		1	0
County of Lebanon Transit Authority	Lebanon, PA	DR	2006	A	FRD	E-450	Sveh	Y	High	Lift	None	None	14	22	80	GA		4	0
County of Lebanon Transit Authority	Lebanon, PA	DR	2001	A	FRD	E-450	Sveh	Y	High	Lift	None	None	14	22	80	GA		2	0
County of Lebanon Transit Authority	Lebanon, PA	DR	1999	A	FRD	E-450	Sveh	Y	High	Lift	None	None	14	22	80	GA		1	0
County of Lebanon Transit Authority	Lebanon, PA	DR	2007	O	FRD	E-450	Sveh	Y	High	Lift	None	None	14	22	88	GA		2	0
County of Lebanon Transit Authority	Lebanon, PA	DR	1995	A	FRD	UNKNWN	Sveh	Y	High	Lift	None	None	9	22	80	GA		1	0
Cumberland-Dauphin-Harrisburg Transit Authority	Harrisburg, PA	DR	1996	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	18	22	96	GA		3	0
Cumberland-Dauphin-Harrisburg Transit Authority	Harrisburg, PA	DR	2005	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	14	23	96	DF	$52,431	7	0
Cumberland-Dauphin-Harrisburg Transit Authority	Harrisburg, PA	DR	1996	A	EDN	AEROTECH	Sveh	N	High	None	None	None	25	25	96	GA		1	0
Cumberland-Dauphin-Harrisburg Transit Authority	Harrisburg, PA	DR	1999	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	14	25	96	GA	$48,053	2	0
Cumberland-Dauphin-Harrisburg Transit Authority	Harrisburg, PA	DR	2000	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	14	25	96	GA	$49,917	2	0

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Cumberland-Dauphin-Harrisburg Transit Authority	Harrisburg, PA	DR	2001	A	CMC	CHALLENGER	Sveh	Y	High	Lift	None	None	12	23	96	GA	$44,607	4	0
Cumberland-Dauphin-Harrisburg Transit Authority	Harrisburg, PA	DR	2001	A	CMC	CHALLENGER	Sveh	Y	High	Lift	None	None	16	25	96	GA	$49,417	4	0
Cumberland-Dauphin-Harrisburg Transit Authority	Harrisburg, PA	DR	2006	O	CMC	CHALLENGER	Sveh	Y	High	Lift	None	None	14	23	96	GA	$54,140	6	0
Cumberland-Dauphin-Harrisburg Transit Authority	Harrisburg, PA	DR	1996	A	CEQ	METRO LITE	Sveh	Y	High	Lift	None	None	9	22	96	DF		3	0
Cumberland-Dauphin-Harrisburg Transit Authority	Harrisburg, PA	DR	2006	A	CEQ	PHOENIX	Sveh	Y	High	Lift	None	None	12	23	96	DF	$61,990	2	0
Cumberland-Dauphin-Harrisburg Transit Authority	Harrisburg, PA	DR	2006	A	CEQ	PHOENIX	Sveh	Y	High	Lift	None	None	12	23	96	GA	$57,186	2	0
Cumberland-Dauphin-Harrisburg Transit Authority	Harrisburg, PA	DR	2002	A	CEQ	PHOENIX	Sveh	Y	High	Lift	None	None	10	23	96	DF	$49,064	5	0
Cumberland-Dauphin-Harrisburg Transit Authority	Harrisburg, PA	DR	2002	A	STR	STARTRANS	Sveh	Y	High	Lift	None	None	16	25	96	DF	$52,176	3	0
Dallas Area Rapid Transit	Dallas, TX	DR	2001	A	EDN	AERO ELITE	Sveh	Y	High	Lift	None	None	8	25	81	DF	$84,602	98	0
Dallas Area Rapid Transit	Dallas, TX	DR	2005	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	8	25	81	DF		2	0
Dallas Area Rapid Transit	Dallas, TX	DR	2001	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	8	25	81	DF	$66,167	1	0
Dallas Area Rapid Transit	Dallas, TX	DR	2003	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	8	25	81	DF	$66,167	4	0
Dallas Area Rapid Transit	Dallas, TX	DR	2007	O	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	8	25	81	DF		203	0
Dallas Area Rapid Transit	Dallas, TX	MB	2001	A	CMC	CT-310	Bust	Y	High	Lift	None	None	24	29	96	DF	$181,709	21	0
Dallas Area Rapid Transit	Dallas, TX	MB	2001	A	CMC	CT-310	Bust	Y	High	Lift	None	None	24	29	96	DF	$189,307	55	0
Delaware Area Transit Agency	Delaware, OH	DR	2000	A	SPC	DWC	Sveh	Y	High	Lift	None	None	10	22	101	DF		2	0
Delaware Area Transit Agency	Delaware, OH	DR	2001	A	SPC	DWC	Sveh	Y	High	Lift	None	None	10	22	101	DF		2	0
Delaware Area Transit Agency	Delaware, OH	DR	2005	A	GCC	LTN	Sveh	Y	High	Lift	Both	Both	8	22	101	GA	$45,740	2	0
Delaware Area Transit Agency	Delaware, OH	DR	2006	A	GCC	LTN	Sveh	Y	High	Lift	Both	Both	8	22	101	GA	$45,740	4	0
Delaware Area Transit Agency	Delaware, OH	DR	2001	A	SPC	LTV	Sveh	Y	High	Lift	None	None	16	25	101	DF		1	0
Delaware Area Transit Agency	Delaware, OH	DR	2002	A	SPC	LTV	Sveh	Y	High	Lift	None	None	16	25	101	DF		1	0
Delaware Transit Corporation	Philadelphia, PA	MB	2000	A	CMC	CONTENDER	Bust	Y	High	Lift	None	None	26	30	96	DF	$177,801	22	0
Delaware Transit Corporation	Philadelphia, PA	MB	1999	A	CMC	CONTENDER	Bust	Y	High	Lift	None	None	26	30	96	DF	$182,126	14	0
Delaware Transit Corporation	Philadelphia, PA	DR	2006	A	GCC	GCII	Sveh	Y	High	Lift	None	None	16	25	96	DF	$71,767	9	0
Delaware Transit Corporation	Philadelphia, PA	DR	2003	A	GCC	GCII	Sveh	Y	High	Lift	None	None	16	25	96	DF	$69,309	32	0
Delaware Transit Corporation	Philadelphia, PA	DR	2002	A	GCC	GCII	Sveh	Y	High	Lift	None	None	16	25	96	DF	$69,122	61	0
Delaware Transit Corporation	Philadelphia, PA	DR	2005	A	GCC	GCII	Sveh	Y	High	Lift	None	None	16	25	96	DF	$67,943	30	0
Delaware Transit Corporation	Philadelphia, PA	DR	2004	A	GCC	GCII	Sveh	Y	High	Lift	None	None	16	25	96	DF	$64,854	34	0
Delaware Transit Corporation	Philadelphia, PA	MB	2005	A	GCC	GCII	Sveh	Y	High	Lift	None	None	16	25	96	DF	$91,549	2	0
Delaware Transit Corporation	Philadelphia, PA	MB	2002	A	GCC	GCII	Sveh	Y	High	Lift	None	None	16	25	96	DF	$90,883	3	0
Delaware Transit Corporation	Philadelphia, PA	MB	2004	A	GCC	GCII	Sveh	Y	High	Lift	None	None	16	25	96	DF	$87,356	5	0

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Delaware Transit Corporation	Philadelphia, PA	DR	2006	O	GCC	GCII	Sveh	Y	High	Lift	None	None	16	25	96	DF		59	0
Delaware Transit Corporation	Philadelphia, PA	DR	2003	A	GCC	PACER II	Sveh	Y	High	Lift	None	None	10	22	87	DF	$55,599	35	0
Denton County Transportation Authority	Lewisville, TX	DR	2005	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	16	25	102	DF		6	0
Denton County Transportation Authority	Lewisville, TX	DR	2006	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	16	25	102	DF		5	0
Denton County Transportation Authority	Lewisville, TX	DR	2001	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	16	25	102	DF		2	0
Denton County Transportation Authority	Lewisville, TX	MB	2006	A	EDN	AEROTECH	Bust	Y	High	Lift	None	None	16	30	102	DF		7	0
Denton County Transportation Authority	Lewisville, TX	MB	2001	A	CMC	BU	Bust	Y	High	Lift	None	None	25	30	98	DF	$174,332	15	0
Denton County Transportation Authority	Lewisville, TX	DR	2003	A	GCC	GCII	Sveh	Y	High	Lift	None	None	16	25	102	DF		2	0
Denton County Transportation Authority	Lewisville, TX	DR	2001	A	GCC	GCII	Sveh	Y	High	Lift	None	None	16	25	102	LP		2	2
Denton County Transportation Authority	Lewisville, TX	MB	2003	A	GCC	SENTRY	Bust	Y	High	Lift	None	None	27	30	98	DF		12	0
Denton County Transportation Authority	Lewisville, TX	DR	2001	A	DIA	UNKNWN	Sveh	Y	High	Lift	None	None	8	25	92	DF		1	0
Denton County Transportation Authority	Lewisville, TX	DR	1998	A	EDN	UNKNWN	Sveh	Y	High	Lift	None	None	16	25	102	DF		1	0
Denton County Transportation Authority	Lewisville, TX	MB	2001	A	GCC	UNKNWN	Bust	Y	High	Lift	None	None	27	30	102	BD		2	2
Denton County Transportation Authority	Lewisville, TX	DR	1999	A	SPC	UNKNWN	Sveh	Y	High	Lift	None	None	16	25	102	DF		1	0
Denton County Transportation Authority	Lewisville, TX	DR	2003	A	SPC	UNKNWN	Sveh	Y	High	Lift	None	None	16	25	102	CN		1	1
Des Moines Area Regional Transit Authority	Des Moines, IA	MB	2002	A	OCC	ELF	Bust	Y	Low	Ramp	None	None	23	28	96	DF	$116,513	4	0
Des Moines Area Regional Transit Authority	Des Moines, IA	DR	2001	A	SPC	SENATOR	Sveh	Y	High	Lift	None	None	8	20	96	DF	$10,500	2	0
Des Moines Area Regional Transit Authority	Des Moines, IA	DR	2002	A	SPC	STARTRANS	Sveh	Y	High	Lift	None	None	19	25	96	DF	$70,510	3	0
Des Moines Area Regional Transit Authority	Des Moines, IA	MB	2004	A	SPC	STARTRANS	Sveh	Y	High	Lift	None	None	25	25	96	DF	$76,836	3	0
Des Moines Area Regional Transit Authority	Des Moines, IA	MB	2001	A	SPC	STARTRANS	Sveh	Y	High	Lift	None	None	19	25	96	DF	$66,241	2	0
Des Moines Area Regional Transit Authority	Des Moines, IA	DR	2006	O	SPC	STARTRANS	Sveh	Y	High	Lift	None	None	14	25	96	DF	$66,528	2	0
Des Moines Area Regional Transit Authority	Des Moines, IA	MB	2006	O	SPC	STARTRANS	Sveh	Y	High	Lift	None	None	19	25	96	DF	$68,482	1	0
Duluth Transit Authority	Duluth, MN	DR	2001	A	FRD	BUS	Sveh	Y	Low	Ramp	None	None	12	23	84	DF	$57,716	6	0
Duluth Transit Authority	Duluth, MN	DR	2006	O	SPC	BUS	Bust	Y	High	Lift	None	None	10	29	73	DF		4	0
East Chicago Transit	Chicago, IL	DR	2005	A	FRD	BS / E350	Sveh	Y	High	Lift	None	None	15	19	114	BD	$38,699	1	1
East Chicago Transit	Chicago, IL	DR	2002	A	FRD	BS / F450	Sveh	Y	High	Lift	None	None	15	19	114	BD	$45,604	1	1
Erie Metropolitan Transit Authority	Erie, PA	DR	1999	A	EDN	AEROTECH	Sveh	Y	High	Lift	High	Lift	12	21	94	GA	$7,111	3	0
Erie Metropolitan Transit Authority	Erie, PA	DR	2006	A	CEQ	FORD	Sveh	Y	High	Lift	High	Lift	14	22	94	GA	$56,277	7	0
Erie Metropolitan Transit Authority	Erie, PA	DR	2001	A	CEQ	FORD	Sveh	Y	High	Lift	High	Lift	14	22	94	DF	$54,790	5	0
Erie Metropolitan Transit Authority	Erie, PA	DR	2000	A	CEQ	FORD	Sveh	Y	High	Lift	High	Lift	14	22	94	DF	$49,457	8	0
Erie Metropolitan Transit Authority	Erie, PA	DR	2002	A	CEQ	FORD	Sveh	Y	High	Lift	High	Lift	14	22	94	DF	$49,577	5	0

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Erie Metropolitan Transit Authority	Erie, PA	DR	2006	A	CEQ	FORD	Sveh	Y	High	Lift	High	Lift	14	22	94	GA	$52,957	3	0
Erie Metropolitan Transit Authority	Erie, PA	DR	1999	A	CEQ	FORD	Sveh	Y	High	Lift	High	Lift	12	22	94	DF	$51,500	6	0
Erie Metropolitan Transit Authority	Erie, PA	DR	2004	A	GCC	FORD	Sveh	Y	High	Lift	High	Lift	12	21	94	DF	$50,816	2	0
Erie Metropolitan Transit Authority	Erie, PA	DR	1999	A	GCC	FORD	Sveh	Y	High	Lift	High	Lift	12	21	94	DF	$48,502	2	0
Erie Metropolitan Transit Authority	Erie, PA	DR	2003	A	GCC	FORD	Sveh	Y	High	Lift	High	Lift	12	21	94	DF	$51,794	2	0
Erie Metropolitan Transit Authority	Erie, PA	DR	2004	A	GCC	FORD	Sveh	Y	High	Lift	High	Lift	16	24	94	DF	$56,497	3	0
Erie Metropolitan Transit Authority	Erie, PA	DR	2003	A	GCC	FORD	Sveh	Y	High	Lift	High	Lift	16	24	94	DF	$55,555	4	0
Erie Metropolitan Transit Authority	Erie, PA	DR	2000	A	STR	FORD	Sveh	Y	High	Lift	High	Lift	14	22	94	DF	$49,956	5	0
Erie Metropolitan Transit Authority	Erie, PA	DR	2007	O	CEQ	FORD	Sveh	Y	High	Lift	High	Lift	14	22	94	GA		4	0
Erie Metropolitan Transit Authority	Erie, PA	DR	2007	O	CEQ	FORD	Sveh	Y	High	Lift	High	Lift	16	24	94	GA		2	0
Erie Metropolitan Transit Authority	Erie, PA	DR	2000	A	INT	INTERNATIONAL	Buss	Y	High	Lift	High	Lift	28	31	96	DF	$79,375	2	0
Everett Transit System	Seattle, WA	DR	1999	A	EDN	AEROTECH 240	Sveh	Y	High	Lift	None	None	11	24	96	GA	$80,011	9	0
Everett Transit System	Seattle, WA	DR	1996	A	GCC	GCII	Sveh	Y	High	Lift	None	None	14	25	96	GA	$66,445	3	0
Fairfax County Department of Transportation	Washington, DC	MB	2003	A	CMC	DEFENDER	Sveh	Y	High	Lift	None	None	21	27	84	DF	$81,041	3	0
Fairfax County Department of Transportation	Washington, DC	MB	2006	O	EDN	NATIONAL AERO ELITE	Bust	Y	High	Lift	None	None	26	32	96	DF	$144,635	10	0
Fairfield/Suisun Transit System	Fairfield, CA	DR	1992	A	CBC	DIPLOMAT	Sveh	Y	High	Lift	None	None	16	21	96	DF		2	0
Fairfield/Suisun Transit System	Fairfield, CA	DR	2002	A	CBC	DIPLOMAT	Sveh	Y	High	Lift	None	None	16	22	96	DF		3	0
Fargo Metropolitan Area Transit System	Fargo, ND	DR	2003	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	19	24	96	DF	$57,250	3	0
Fargo Metropolitan Area Transit System	Fargo, ND	DR	2002	A	EDN	AEROTECH 240	Sveh	Y	High	Lift	None	None	19	24	96	DF	$57,250	3	0
Fargo Metropolitan Area Transit System	Fargo, ND	MB	2001	A	EDN	AEROTECH 240	Sveh	Y	High	Lift	None	None	19	24	96	DF	$67,546	4	0
Fort Wayne Public Transportation Corporation	Fort Wayne, IN	DR	2003	A	SPC	STARTRANS	Sveh	Y	High	Lift	None	None	12	24	96	BD	$59,370	5	5
Fort Wayne Public Transportation Corporation	Fort Wayne, IN	MB	1998	A	SPC	STARTRANS	Sveh	Y	High	Lift	None	None	14	22	96	BD	$56,730	2	2
Fort Wayne Public Transportation Corporation	Fort Wayne, IN	MB	2007	O	SPC	STARTRANS	Sveh	Y	High	Lift	None	None	12	24	96	BD	$87,741	1	1
Fort Wayne Public Transportation Corporation	Fort Wayne, IN	DR	2005	A	GLV	UNIVERSAL	Sveh	Y	High	Lift	None	None	10	24	96	BD	$61,625	8	8
Fort Wayne Public Transportation Corporation	Fort Wayne, IN	MB	2005	A	GLV	UNIVERSAL	Sveh	Y	High	Lift	None	None	14	25	96	BD	$59,276	4	4
Four County Transit	Cedar Bluff, VA	MB	2005	A	GCC	GCII MODEL 848	Sveh	Y	High	Lift	None	None	12	20	102	GA	$36,252	5	0
Four County Transit	Cedar Bluff, VA	MB	2005	A	SPC	SENATOR 20PT	Sveh	Y	High	Lift	None	None	14	23	102	GA	$33,493	1	0
Four County Transit	Cedar Bluff, VA	MB	1993	A	SPC	SENATOR 20S	Sveh	N	High	None	None	None	20	23	102	GA	$38,000	1	0
Four County Transit	Cedar Bluff, VA	MB	2003	A	SPC	SENATOR 20S	Sveh	N	High	None	None	None	16	23	102	GA	$40,562	2	0
Four County Transit	Cedar Bluff, VA	MB	2006	A	SPC	SENATOR SN20PT	Sveh	Y	High	Lift	None	None	14	20	102	GA	$38,971	10	0
Four County Transit	Cedar Bluff, VA	MB	2002	A	SPC	SENATOR SN20PT	Sveh	Y	High	Lift	None	None	14	20	102	GA	$42,822	1	0

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Four County Transit	Cedar Bluff, VA	MB	2002	A	SPC	SENATOR SN20S	Sveh	N	High	None	None	None	14	20	102	GA	$35,993	1	0
Four County Transit	Cedar Bluff, VA	MB	2003	A	SPC	SENATOR SN22PT	Sveh	Y	High	Lift	None	None	16	20	102	GA	$40,565	1	0
Four County Transit	Cedar Bluff, VA	MB	2004	A	SPC	SENATOR SN25S	Sveh	N	High	None	None	None	25	24	102	GA	$41,637	2	0
Four County Transit	Cedar Bluff, VA	MB	2000	A	CMD	SUPREME	Sveh	Y	High	Lift	None	None	12	23	102	GA	$42,700	1	0
Fresno Area Express	Fresno, CA	DR	2001	A	EDN	AEROTECH 220	Sveh	Y	High	Lift	None	None	10	22	82	GA	$64,000	3	0
Fresno Area Express	Fresno, CA	DR	1998	A	EDN	AEROTECH 220	Sveh	Y	High	Lift	None	None	10	22	82	GA	$52,403	5	0
Fresno Area Express	Fresno, CA	DR	2005	A	EDN	AEROTECH 220	Sveh	Y	High	Lift	None	None	12	23	96	GA	$64,000	8	0
Fresno Area Express	Fresno, CA	DR	2004	A	EDN	AEROTECH 220	Sveh	Y	High	Lift	None	None	17	23	96	GA		14	0
Fresno Area Express	Fresno, CA	DR	1997	A	SPC	SENATOR	Sveh	Y	High	Lift	None	None	10	22	82	GA	$48,523	4	0
Fresno Area Express	Fresno, CA	MB	2000	A	EDN	UNKNWN	Sveh	Y	Low	Ramp	None	None	28	26	102	GA		4	0
Glendale Transit	Phoenix, AZ	DR	2006	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	12	22	96	BD	$62,860	3	3
Glendale Transit	Phoenix, AZ	DR	1995	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	12	22	96	LP		1	1
Glendale Transit	Phoenix, AZ	DR	2005	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	12	22	96	BD	$56,499	3	3
Glendale Transit	Phoenix, AZ	DR	1996	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	12	22	96	LP	$53,855	3	3
Glendale Transit	Phoenix, AZ	DR	2003	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	12	22	96	BD	$53,150	5	5
Glendale Transit	Phoenix, AZ	DR	1999	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	12	22	96	GA	$66,000	2	0
Glendale Transit	Phoenix, AZ	DR	1999	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	14	24	96	GA	$66,000	1	0
Glendale Transit	Phoenix, AZ	MB	1995	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	12	22	96	GA		1	0
Glendale Transit	Phoenix, AZ	MB	2005	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	16	24	96	BD	$59,988	1	1
Glendale Transit	Phoenix, AZ	MB	2003	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	16	24	96	BD	$55,959	2	2
Glendale Transit	Phoenix, AZ	MB	2006	A	EDN	AEROTECH	Buss	Y	High	Lift	None	None	33	35	96	BD	$118,000	2	2
Glendale Transit	Phoenix, AZ	MB	2003	A	SPC	AMBASSADOR	Buss	Y	High	Lift	None	None	25	28	96	BD	$92,498	2	2
Glendale Transit	Phoenix, AZ	DR	2000	A	SPC	STARTRANS	Sveh	Y	High	Lift	None	None	12	22	96	GA	$55,230	3	0
Glendale Transit	Phoenix, AZ	MB	2000	A	SPC	STARTRANS	Sveh	Y	High	Lift	None	None	12	22	96	GA	$55,230	1	0
Go West Transit	Macomb, IL	MB	2005	A	MDI	ADULT TRANSPORTER	Sveh	Y	High	Lift	None	None	25	25	96	BD	$90,000	2	2
Go West Transit	Macomb, IL	MB	2006	A	STR	ALLSTAR	Sveh	Y	High	Lift	None	None	22	25	96	BD	$0	3	3
Go West Transit	Macomb, IL	MB	1996	A	FRD	CHALLENGER	Sveh	Y	High	Lift	None	None	20	25	102	BD		1	1
Golden Empire Transit District	Bakersfield, CA	DR	2002	A	CMC	CHALLENGER	Sveh	Y	High	Lift	None	None	8	22	96	CN	$74,481	9	9
Golden Empire Transit District	Bakersfield, CA	DR	2003	A	CMC	CHALLENGER	Sveh	Y	High	Lift	None	None	8	22	96	CN	$74,891	5	5
Grand Valley Transit	Grand Junction, CO	DR	2000	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	12	21	96	GA	$36,000	5	0
Grand Valley Transit	Grand Junction, CO	MB	2000	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	12	21	96	GA	$36,000	4	0

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Grand Valley Transit	Grand Junction, CO	MB	2003	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	17	25	96	DF	$68,333	1	0
Grand Valley Transit	Grand Junction, CO	MB	1997	A	SPC	STARTRANS	Sveh	Y	High	Lift	None	None	12	21	96	GA	$27,000	1	0
Grand Valley Transit	Grand Junction, CO	MB	1999	A	SPC	STARTRANS	Sveh	Y	High	Lift	None	None	12	21	96	GA	$27,000	8	0
Grand Valley Transit	Grand Junction, CO	MB	2005	A	SPC	STARTRANS	Sveh	Y	High	Lift	None	None	19	25	96	GA	$58,000	1	0
Greater Bridgeport Transit Authority	Bridgeport, CT	DR	2006	A	SPC	E-350	Sveh	Y	High	Lift	None	None	10	21	96	DF	$48,553	20	0
Greater Bridgeport Transit Authority	Bridgeport, CT	DR	2006	A	SPC	SENATOR II	Sveh	Y	High	Lift	None	None	18	25	96	DF	$64,428	4	0
Greater Cleveland Regional Transit Authority	Cleveland, OH	DR	2005	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	16	25	96	DF	$49,806	49	0
Greater Cleveland Regional Transit Authority	Cleveland, OH	DR	2002	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	16	25	96	DF	$52,756	8	0
Greater Cleveland Regional Transit Authority	Cleveland, OH	DR	1999	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	16	25	96	DF	$53,450	20	0
Greater Dayton Regional Transit Authority	Dayton, OH	DR	2004	A	OCC	ELF	Sveh	Y	Low	Ramp	None	None	8	22	96	DF	$154,000	24	0
Greater Hartford Transit District	Hartford, CT	DR	2005	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	10	27	60	DF	$49,862	2	0
Greater Hartford Transit District	Hartford, CT	DR	1991	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	30	27	60	DF		1	0
Greater Hartford Transit District	Hartford, CT	DR	1996	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	8	27	60	DF		1	0
Greater Hartford Transit District	Hartford, CT	DR	1998	A	FRD	E-350	Sveh	Y	High	Lift	None	None	20	27	60	DF		1	0
Greater Hartford Transit District	Hartford, CT	DR	1999	A	FRD	E-350	Sveh	Y	High	Lift	None	None	30	27	60	DF		1	0
Greater Hartford Transit District	Hartford, CT	DR	1998	A	FRD	E-350	Sveh	Y	High	Lift	None	None	16	27	60	DF		2	0
Greater Hartford Transit District	Hartford, CT	DR	2005	A	FRD	E-350	Sveh	Y	High	Lift	None	None	12	27	60	DF	$49,461	27	0
Greater Hartford Transit District	Hartford, CT	DR	1999	A	FRD	E-350	Sveh	Y	High	Lift	None	None	12	27	60	DF		1	0
Greater Hartford Transit District	Hartford, CT	DR	1997	A	FRD	E-350	Sveh	Y	High	Lift	None	None	16	27	60	DF		4	0
Greater Hartford Transit District	Hartford, CT	DR	2003	A	FRD	E-350	Sveh	Y	High	Lift	None	None	10	27	60	DF		2	0
Greater Hartford Transit District	Hartford, CT	DR	1999	A	FRD	E-350	Sveh	Y	High	Lift	None	None	16	27	60	DF		4	0
Greater Hartford Transit District	Hartford, CT	DR	2002	A	FRD	E-350	Sveh	Y	High	Lift	None	None	20	27	60	DF		2	0
Greater Hartford Transit District	Hartford, CT	DR	2002	A	FRD	E-350	Sveh	Y	High	Lift	None	None	15	27	60	DF		2	0
Greater Hartford Transit District	Hartford, CT	DR	2003	A	FRD	E-350	Sveh	Y	High	Lift	None	None	20	27	60	DF		4	0
Greater Hartford Transit District	Hartford, CT	DR	2001	A	FRD	E-350	Sveh	Y	High	Lift	None	None	20	27	60	DF		4	0
Greater Hartford Transit District	Hartford, CT	DR	2000	A	FRD	E-350	Sveh	Y	High	Lift	None	None	10	27	60	DF		7	0
Greater Hartford Transit District	Hartford, CT	DR	2003	A	FRD	E-350	Sveh	Y	High	Lift	None	None	12	27	60	DF		11	0
Greater Hartford Transit District	Hartford, CT	DR	1999	A	FRD	E-350	Sveh	Y	High	Lift	None	None	10	27	60	DF		13	0
Greater Hartford Transit District	Hartford, CT	DR	1998	A	FRD	E-350	Sveh	Y	High	Lift	None	None	10	27	60	DF		17	0
Greater Hartford Transit District	Hartford, CT	DR	2002	A	FRD	E-350	Sveh	Y	High	Lift	None	None	12	27	60	DF		17	0
Greater Hartford Transit District	Hartford, CT	DR	1997	A	FRD	E-350	Sveh	Y	High	Lift	None	None	10	27	60	DF		2	0

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Greater Hartford Transit District	Hartford, CT	DR	1999	A	FRD	E-350	Sveh	Y	High	Lift	None	None	14	27	60	DF		3	0
Greater Hartford Transit District	Hartford, CT	DR	2005	A	FRD	E-E50	Sveh	Y	High	Lift	None	None	16	27	60	DF	$48,088	2	0
Greater Hartford Transit District	Hartford, CT	DR	2001	A	FRD	FORD	Sveh	Y	High	Lift	None	None	12	27	60	DF		1	0
Greater Hartford Transit District	Hartford, CT	DR	1998	A	FRD	FORD	Sveh	Y	High	Lift	None	None	12	27	60	DF		1	0
Greater Hartford Transit District	Hartford, CT	DR	1997	A	FRD	FORD	Sveh	Y	High	Lift	None	None	13	27	60	DF		1	0
Greater Hartford Transit District	Hartford, CT	DR	1996	A	FRD	FORD	Sveh	Y	High	Lift	None	None	20	27	60	DF		1	0
Greater Hartford Transit District	Hartford, CT	DR	1996	A	FRD	FORD	Sveh	Y	High	Lift	None	None	14	27	60	DF		1	0
Greater Hartford Transit District	Hartford, CT	DR	1998	A	FRD	FORD	Sveh	Y	High	Lift	None	None	14	27	60	DF		1	0
Greater Hartford Transit District	Hartford, CT	DR	2000	A	FRD	FORD	Sveh	Y	High	Lift	None	None	12	27	60	DF		4	0
Greater Hartford Transit District	Hartford, CT	DR	1998	A	FRD	FORD	Sveh	Y	High	Lift	None	None	13	27	60	DF		2	0
Greater Hartford Transit District	Hartford, CT	DR	1997	A	FRD	FORD	Sveh	Y	High	Lift	None	None	14	27	60	DF		1	0
Greater Hartford Transit District	Hartford, CT	DR	2000	A	FRD	FORD	Sveh	Y	High	Lift	None	None	13	27	60	DF		3	0
Greater Hartford Transit District	Hartford, CT	DR	2001	A	FRD	FORD	Sveh	Y	High	Lift	None	None	15	27	60	DF		4	0
Greater Hartford Transit District	Hartford, CT	DR	1993	A	FRD	FORD/COLLINS	Sveh	Y	High	Lift	None	None	10	27	60	DF		2	0
Greater Hartford Transit District	Hartford, CT	DR	1996	A	FRD	FORD/GOSHEN	Sveh	Y	High	Lift	None	None	12	27	60	DF		3	0
Greater Hartford Transit District	Hartford, CT	DR	1996	A	FRD	FORD/GOSHEN	Sveh	Y	High	Lift	None	None	13	27	60	DF		2	0
Greater Lafayette Public Transportation Corporation	Lafayette, IN	DR	1999	A	SPC	STARTRANS	Sveh	Y	High	Lift	None	None	16	26	96	DF	$52,169	1	0
Greater Lafayette Public Transportation Corporation	Lafayette, IN	DR	2005	A	SPC	STARTRANS	Sveh	Y	High	Lift	None	None	16	26	96	DF	$53,105	3	0
Greater Lafayette Public Transportation Corporation	Lafayette, IN	DR	2003	A	SPC	STARTRANS	Sveh	Y	High	Lift	None	None	12	26	96	DF	$53,375	2	0
Greater Lafayette Public Transportation Corporation	Lafayette, IN	MB	2003	A	SPC	STARTRANS	Sveh	Y	High	Lift	None	None	20	26	96	DF	$53,062	1	0
Greater Lynchburg Transit Company	Lynchburg, VA	DR	2001	A	SPC	STARTRANS	Sveh	Y	High	Lift	None	None	13	20	92	DF	$56,000	1	0
Greater Lynchburg Transit Company	Lynchburg, VA	DR	2002	A	SPC	STARTRANS	Sveh	Y	High	Lift	None	None	13	20	92	DF	$56,000	3	0
Greater New Haven Transit District	Hamden, CT	MB	1999	A	GCC	E-350	Sveh	Y	High	Lift	High	Lift	12	22	96	GA	$42,508	1	0
Greater New Haven Transit District	Hamden, CT	MB	2002	A	SPC	E-350	Sveh	Y	High	Lift	High	Lift	12	22	96	GA	$40,842	5	0
Greater New Haven Transit District	Hamden, CT	MB	2005	A	SPC	E-350	Sveh	Y	High	Lift	High	Lift	12	22	96	GA	$53,453	5	0
Greater New Haven Transit District	Hamden, CT	MB	2003	A	SPC	E-350	Sveh	Y	High	Lift	High	Lift	12	22	96	GA	$51,925	13	0
Greater New Haven Transit District	Hamden, CT	MB	2006	O	SPC	E-350	Sveh	Y	High	Lift	High	Lift	12	22	96	GA	$56,442	12	0
Greater New Haven Transit District	Hamden, CT	MB	2002	A	SPC	E-350 A	Sveh	Y	High	Lift	High	Lift	12	22	96	GA	$50,737	3	0
Greater New Haven Transit District	Hamden, CT	MB	2000	A	GCC	E-450	Sveh	Y	High	Lift	High	Lift	18	25	96	GA	$44,644	1	0
Greater New Haven Transit District	Hamden, CT	MB	2004	A	SPC	E-450	Sveh	Y	High	Lift	High	Lift	18	25	96	GA	$55,987	2	0
Greater New Haven Transit District	Hamden, CT	MB	2003	A	SPC	E-450	Sveh	Y	High	Lift	High	Lift	18	25	96	GA	$54,373	1	0

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Greater New Haven Transit District	Hamden, CT	MB	2006	O	SPC	E-450	Sveh	Y	High	Lift	High	Lift	20	25	96	GA	$58,411	2	0
Greater New Haven Transit District	Hamden, CT	MB	2003	A	SPC	E-450A	Sveh	Y	High	Lift	High	Lift	18	25	96	GA	$53,373	1	0
Greater New Haven Transit District	Hamden, CT	MB	2006	O	SPC	E-450A	Sveh	Y	High	Lift	High	Lift	23	25	96	GA	$57,231	1	0
Greater Richmond Transit Company	Richmond, VA	DR	2001	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	12	21	92	DF	$44,021	22	0
Greater Richmond Transit Company	Richmond, VA	DR	2002	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	21	25	92	DF	$61,998	3	0
Greater Richmond Transit Company	Richmond, VA	DR	2001	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	21	25	92	DF	$59,620	16	0
Greater Richmond Transit Company	Richmond, VA	DR	2007	O	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	20	25	92	DF	$68,059	7	0
Greensboro Transit Authority	Greensboro, NC	DR	2003	A	FRD	E-450	Sveh	Y	High	Lift	None	None	16	22	97	DF		16	0
Greensboro Transit Authority	Greensboro, NC	DR	2002	A	FRD	E-450	Sveh	Y	High	Lift	None	None	14	22	97	DF		9	0
Greensboro Transit Authority	Greensboro, NC	DR	2000	A	FRD	E-450	Sveh	Y	High	Lift	None	None	14	23	97	DF		7	0
Greensboro Transit Authority	Greensboro, NC	DR	2006	A	GCC	E-450	Sveh	Y	High	Lift	None	None	16	22	97	DF		2	0
Gwinnett County Transit	Atlanta, GA	MB	2002	A	GCC	GCII	Sveh	Y	High	Lift	None	None	11	24	91	GA	$66,650	8	0
Hall Area Transit	Gainesville, GA	DR	2002	A	GCC	UNKNWN	Sveh	Y	High	Lift	None	None	10	21	86	GA	$40,000	1	0
Hall Area Transit	Gainesville, GA	DR	2001	A	GCC	UNKNWN	Sveh	Y	High	Lift	None	None	10	21	86	GA	$36,333	1	0
Hall Area Transit	Gainesville, GA	DR	2003	A	GCC	UNKNWN	Sveh	Y	High	Lift	None	None	12	21	86	GA	$38,500	1	0
Hall Area Transit	Gainesville, GA	DR	2006	A	GCC	UNKNWN	Sveh	Y	High	Lift	None	None	12	21	86	GA	$38,000	4	0
Hall Area Transit	Gainesville, GA	MB	2002	A	GCC	UNKNWN	Sveh	Y	High	Lift	None	None	24	22	96	DF		3	0
Hall Area Transit	Gainesville, GA	MB	2000	A	GCC	UNKNWN	Sveh	Y	High	Lift	None	None	24	22	96	DF	$75,000	2	0
Hazleton Public Transit	Hazleton, PA	MB	2005	A	FRD	CUTAWAY	Sveh	Y	High	Lift	Both	Both	18	25	96	DF	$58,000	2	0
Hillsborough Area Regional Transit Authority	Tampa, FL	MB	2006	A	CMC	CHALLENGER	Sveh	Y	High	Lift	None	None	18	27	96	DF		4	0
Hillsborough Area Regional Transit Authority	Tampa, FL	DR	2007	O	CMC	CHEVY 3500	Sveh	Y	High	Lift	None	None	10	21	96	DF		7	0
Hillsborough Area Regional Transit Authority	Tampa, FL	MB	2007	O	CMC	CHEVY 4500	Sveh	Y	High	Lift	None	None	12	23	96	DF		9	0
Hillsborough Area Regional Transit Authority	Tampa, FL	DR	2003	A	SPC	FORD	Sveh	Y	High	Lift	None	None	14	22	96	DF		3	0
Hillsborough Area Regional Transit Authority	Tampa, FL	DR	2003	A	SPC	FORD E-SERIES	Sveh	Y	High	Lift	None	None	9	22	96	DF		1	0
Indianapolis Public Transportation Corporation	Indianapolis, IN	DR	2004	A	SPC	STARTRANS	Sveh	Y	High	Lift	None	None	14	22	96	DF	$56,800	34	0
Indianapolis Public Transportation Corporation	Indianapolis, IN	DR	2005	A	SPC	STARTRANS	Sveh	Y	High	Lift	None	None	14	22	96	DF	$56,800	34	0
Indianapolis Public Transportation Corporation	Indianapolis, IN	DR	2001	A	SPC	STARTRANS	Sveh	Y	High	Lift	None	None	14	22	96	DF	$52,000	3	0
Indianapolis Public Transportation Corporation	Indianapolis, IN	DR	2003	A	SPC	STARTRANS	Sveh	Y	High	Lift	None	None	14	22	96	DF	$56,800	13	0
Intercity Transit	Olympia, WA	DR	2002	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	9	25	96	BD	$63,243	9	9
Intercity Transit	Olympia, WA	DR	2004	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	9	25	96	BD	$65,339	12	12
Intercity Transit	Olympia, WA	DR	2000	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	9	25	96	BD	$69,793	4	4

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Intercity Transit	Olympia, WA	DR	2006	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	9	25	96	BD		2	2
Intercity Transit	Olympia, WA	MB	2001	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	18	25	96	BD	$72,884	8	8
Interurban Transit Partnership	Grand Rapids, MI	DR	2000	A	DIA	INTERNATIONAL	Sveh	Y	High	Lift	None	None	10	21	90	DF		2	0
Interurban Transit Partnership	Grand Rapids, MI	DR	2004	A	EDN	UNKNWN	Sveh	Y	High	Lift	None	None	7	21	90	DF		13	0
Interurban Transit Partnership	Grand Rapids, MI	DR	2006	A	EDN	UNKNWN	Sveh	Y	High	Lift	None	None	7	21	90	DF		2	0
Interurban Transit Partnership	Grand Rapids, MI	DR	2005	A	EDN	UNKNWN	Sveh	Y	High	Lift	None	None	7	21	90	DF	$51,119	9	0
Interurban Transit Partnership	Grand Rapids, MI	DR	2003	A	EDN	UNKNWN	Sveh	Y	High	Lift	None	None	7	21	90	DF		25	0
Kansas City Area Transportation Authority	Kansas City, MO	MB	2005	A	EDN	AEROLITE	Bust	Y	High	Lift	None	None	23	29	96	DF	$115,423	6	0
Kansas City Area Transportation Authority	Kansas City, MO	DR	2004	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	12	22	96	DF	$65,083	25	0
Kansas City Area Transportation Authority	Kansas City, MO	DR	1999	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	12	22	96	DF	$51,985	8	0
Kansas City Area Transportation Authority	Kansas City, MO	DR	2000	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	12	22	96	DF	$51,985	8	0
Kansas City Area Transportation Authority	Kansas City, MO	DR	1998	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	12	22	96	DF	$50,845	4	0
King County Department of Transportation	Seattle, WA	DR	1998	A	CMC	CHALLENGER	Sveh	Y	High	Lift	None	None	10	22	96	DF	$63,058	12	0
King County Department of Transportation	Seattle, WA	DR	2002	A	CMC	CHALLENGER	Sveh	Y	High	Lift	None	None	15	22	96	DF	$51,000	59	0
King County Department of Transportation	Seattle, WA	DR	2001	A	CMC	CHALLENGER	Sveh	Y	High	Lift	None	None	12	22	96	DF	$49,460	40	0
King County Department of Transportation	Seattle, WA	DR	1999	A	CMC	CHALLENGER	Sveh	Y	High	Lift	None	None	10	22	96	DF		1	0
King County Department of Transportation	Seattle, WA	DR	1996	A	CMC	CHALLENGER	Sveh	Y	High	Lift	None	None	10	25	96	DF		2	0
King County Department of Transportation	Seattle, WA	DR	1997	A	CMC	CHALLENGER	Sveh	Y	High	Lift	None	None	10	25	96	GA		1	0
King County Department of Transportation	Seattle, WA	MB	2002	A	CMC	CHALLENGER	Sveh	Y	High	Lift	None	None	18	26	96	DF	$71,724	35	0
King County Department of Transportation	Seattle, WA	DR	1994	A	CMC	CRUSADER	Sveh	Y	High	Lift	None	None	8	21	96	GA		5	0
King County Department of Transportation	Seattle, WA	DR	1995	A	CMC	CRUSADER	Sveh	Y	High	Lift	None	None	8	21	96	GA		3	0
King County Department of Transportation	Seattle, WA	DR	1996	A	GCC	PACER	Sveh	Y	High	Lift	None	None	8	21	96	GA		5	0
King County Department of Transportation	Seattle, WA	DR	1995	A	GCC	PACER	Sveh	Y	High	Lift	None	None	8	21	96	GA		22	0
King County Department of Transportation	Seattle, WA	DR	1993	A	GCC	PACER	Sveh	Y	High	Lift	None	None	8	21	72	GA		1	0
King County Department of Transportation	Seattle, WA	DR	1997	A	CEQ	PHOENIX	Sveh	Y	High	Lift	None	None	10	22	96	GA	$50,425	2	0
King County Department of Transportation	Seattle, WA	DR	2006	A	SPC	SUPREME	Sveh	Y	High	Lift	None	None	11	21	88	GA	$43,900	21	0
King County Department of Transportation	Seattle, WA	DR	2003	A	SPC	SUPREME	Sveh	Y	High	Lift	None	None	12	22	96	DF	$46,103	38	0
King County Department of Transportation	Seattle, WA	DR	2005	A	SPC	SUPREME	Sveh	Y	High	Lift	None	None	14	22	96	DF	$54,505	13	0
King County Department of Transportation	Seattle, WA	DR	2006	A	SPC	SUPREME	Sveh	Y	High	Lift	None	None	14	22	96	DF	$53,631	14	0
King County Department of Transportation	Seattle, WA	DR	2004	A	SPC	SUPREME	Sveh	Y	High	Lift	None	None	14	22	96	DF	$52,555	32	0
King County Department of Transportation	Seattle, WA	DR	1999	A	SPC	SUPREME	Sveh	Y	High	Lift	None	None	12	22	96	DF	$52,221	57	0

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Kitsap Transit	Bremerton, WA	MB	2000	A	EDN	AERO ELITE	Sveh	Y	High	Lift	None	None	25	27	96	DF	$105,000	23	0
Kitsap Transit	Bremerton, WA	DR	2002	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	10	22	96	DF	$70,000	15	0
Kitsap Transit	Bremerton, WA	DR	2003	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	21	24	96	DF	$91,000	2	0
Kitsap Transit	Bremerton, WA	MB	2002	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	16	24	96	DF	$80,000	4	0
Kitsap Transit	Bremerton, WA	MB	2003	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	21	24	96	DF	$98,000	2	0
Kitsap Transit	Bremerton, WA	DR	1999	A	EDN	AEROTECH 240	Sveh	Y	High	Lift	None	None	13	24	96	DF	$77,000	30	0
Kitsap Transit	Bremerton, WA	DR	2002	A	COT	CRUISER	Sveh	Y	High	Lift	None	None	6	20	84	DF	$50,000	12	0
Knoxville Area Transit	Knoxville, TN	DR	2003	A	GCC	GCII	Sveh	Y	High	Lift	None	None	12	24	96	LP	$61,750	4	4
Knoxville Area Transit	Knoxville, TN	MB	2005	A	GCC	GCII	Bust	Y	High	Lift	None	None	20	30	102	DF		3	0
Knoxville Area Transit	Knoxville, TN	MB	2004	A	GCC	PACER	Sveh	Y	High	Lift	None	None	20	25	102	LP	$70,000	4	4
Knoxville Area Transit	Knoxville, TN	MB	2003	A	GCC	PACER	Sveh	Y	High	Lift	None	None	12	23	102	LP	$60,750	7	7
Knoxville Area Transit	Knoxville, TN	DR	2004	A	GCC	PACER II	Sveh	Y	High	Lift	None	None	12	20	102	GA		4	0
Knoxville Area Transit	Knoxville, TN	DR	2005	A	GCC	PACER II	Sveh	Y	High	Lift	None	None	12	20	102	DF		5	0
Knoxville Area Transit	Knoxville, TN	MB	2003	A	GCC	UNKNWN	Sveh	Y	High	Lift	None	None	12	23	102	LP	$60,750	4	4
LADOT (City of Los Angeles, Dept of Transportation)	Los Angeles, CA	MB	1997	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	18	22	96	GA	$50,000	1	0
LADOT (City of Los Angeles, Dept of Transportation)	Los Angeles, CA	MB	1997	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	18	22	96	DF	$52,000	3	0
LADOT (City of Los Angeles, Dept of Transportation)	Los Angeles, CA	DR	2004	A	EDN	E-350	Sveh	Y	High	Lift	None	Lift	13	22	96	GA	$64,246	58	0
LADOT (City of Los Angeles, Dept of Transportation)	Los Angeles, CA	DR	2001	A	EDN	E-450	Sveh	Y	High	Lift	None	Lift	10	22	96	GA	$55,000	15	0
Lake Erie Transportation Commission	Monroe, MI	MB	2004	A	EDN	AERO ELITE	Sveh	Y	High	Lift	None	None	20	26	96	DF	$91,500	10	0
Lake Erie Transportation Commission	Monroe, MI	MB	2005	A	EDN	AERO ELITE	Buss	Y	High	Lift	None	None	22	29	96	DF	$91,500	4	0
Lake Erie Transportation Commission	Monroe, MI	MB	2006	A	EDN	AERO ELITE	Sveh	Y	High	Lift	None	None	20	26	96	DF	$91,500	3	0
LAKETRAN	Cleveland, OH	DR	2006	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	16	23	96	DF	$72,500	3	0
LAKETRAN	Cleveland, OH	DR	2006	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	12	23	96	DF	$65,555	18	0
LAKETRAN	Cleveland, OH	DR	2005	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	12	23	96	DF	$63,700	18	0
LAKETRAN	Cleveland, OH	DR	2003	A	EDN	AEROTECH 240	Sveh	Y	High	Lift	None	None	12	23	96	DF	$61,552	20	0
LAKETRAN	Cleveland, OH	DR	2004	A	EDN	AEROTECH 240	Sveh	Y	High	Lift	None	None	12	23	96	DF	$59,188	18	0
Laredo Municipal Transit System	Laredo, TX	DR	2002	A	EDN	AEROLITE	Sveh	Y	High	Lift	None	None	8	21	96	DF	$55,694	18	0
Lawton Area Transit System	Lawton, OK	MB	2002	A	EDN	AERO ACCESS	Buss	Y	Low	Ramp	None	None	21	28	102	DF	$100,715	14	0
Lawton Area Transit System	Lawton, OK	MB	2005	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	13	25	96	DF	$53,292	1	0
Livermore/Amador Valley Transit Authority	Livermore, CA	DR	2006	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	12	22	96	DF	$76,832	9	0
Livermore/Amador Valley Transit Authority	Livermore, CA	DR	2003	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	13	24	96	DF	$75,000	3	0

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Livermore/Amador Valley Transit Authority	Livermore, CA	DR	1999	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	13	25	96	DF	$79,528	3	0
Livermore/Amador Valley Transit Authority	Livermore, CA	DR	2000	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	13	25	96	DF	$80,995	3	0
Livermore/Amador Valley Transit Authority	Livermore, CA	DR	1997	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	15	25	96	DF		9	0
Logan Transit District	Logan, UT	DR	2005	A	EDN	AEROLITE	Sveh	Y	High	Lift	None	None	5	22	96	DF	$54,000	3	0
Logan Transit District	Logan, UT	DR	2001	A	EDN	AEROLITE	Sveh	Y	High	Lift	None	None	5	22	96	DF	$51,000	2	0
Logan Transit District	Logan, UT	DR	2002	A	EDN	AEROLITE	Sveh	Y	High	Lift	None	None	5	22	96	DF	$51,000	1	0
Logan Transit District	Logan, UT	MB	2005	A	EDN	AEROLITE	Sveh	Y	High	Lift	None	None	14	24	96	DF	$57,000	2	0
Madison County Transit District	Saint Louis, IL	DR	2005	A	TTT	TURTLE-TOP	Sveh	Y	High	Lift	None	None	14	24	96	DF	$66,975	5	0
Madison County Transit District	Saint Louis, IL	DR	2004	A	TTT	TURTLE-TOP	Sveh	Y	High	Lift	None	None	14	25	96	DF	$61,446	26	0
Madison County Transit District	Saint Louis, IL	MB	2005	A	TTT	TURTLE-TOP	Sveh	Y	High	Lift	None	None	14	24	96	DF	$78,426	2	0
Madison County Transit District	Saint Louis, IL	MB	2004	A	TTT	TURTLE-TOP	Sveh	Y	High	Lift	None	None	17	26	96	DF	$71,791	15	0
Madison Metro Transit System	Madison, WI	DR	2004	A	OCC	ELF	Sveh	Y	Low	Ramp	None	None	12	25	96	DF	$149,726	3	0
Madison Metro Transit System	Madison, WI	DR	2006	A	STR	STARTRANS	Sveh	Y	High	Lift	None	None	12	25	96	DF	$54,384	8	0
Madison Metro Transit System	Madison, WI	DR	2007	A	STR	STARTRANS	Sveh	Y	High	Lift	None	None	12	25	96	DF	$54,384	8	0
Manatee County Area Transit	Sarasota, FL	DR	2001	A	CMD	STARTRANS	Sveh	Y	High	Lift	None	None	12	22	96	DF	$52,418	3	0
Manatee County Area Transit	Sarasota, FL	DR	2004	A	FRD	STARTRANS	Sveh	Y	High	Lift	None	None	10	20	96	DF		4	0
Manatee County Area Transit	Sarasota, FL	DR	2001	A	SPC	STARTRANS	Sveh	Y	High	Lift	None	None	12	22	96	DF	$51,364	6	0
Manatee County Area Transit	Sarasota, FL	DR	1998	A	SPC	STARTRANS	Sveh	Y	High	Lift	None	None	12	22	96	DF	$52,825	6	0
Maryland Transit Administration	Baltimore, MD	MB	2001	A	CEQ	176	Sveh	Y	High	Lift	None	None	8	23	96	DF	$58,900	5	0
Maryland Transit Administration	Baltimore, MD	MB	2000	A	CEQ	176	Sveh	Y	High	Lift	None	None	8	23	96	DF	$57,300	3	0
Maryland Transit Administration	Baltimore, MD	MB	2002	A	CEQ	176	Sveh	Y	High	Lift	None	None	8	23	96	DF	$63,500	5	0
Maryland Transit Administration	Baltimore, MD	MB	2004	A	CEQ	176	Sveh	Y	High	Lift	None	None	8	23	96	DF	$69,200	37	0
Maryland Transit Administration	Baltimore, MD	DR	1998	A	SPC	BS SN22	Sveh	Y	High	Lift	None	None	4	23	96	DF		6	0
Maryland Transit Administration	Baltimore, MD	DR	1999	A	GCC	GCII	Sveh	Y	High	Lift	None	None	4	23	96	DF		3	0
Maryland Transit Administration	Baltimore, MD	DR	1996	A	EDN	PA22O	Sveh	Y	High	Lift	None	None	6	23	96	DF		6	0
Mass Transportation Authority	Flint, MI	DR	1995	A	FRD	1FDNB80C	Sveh	N	High	None	None	None	18	23	79	DF		1	0
Mass Transportation Authority	Flint, MI	DR	1995	A	FRD	1FDNB80C	Sveh	Y	High	Lift	None	None	19	26	79	DF		1	0
Mass Transportation Authority	Flint, MI	MB	1999	A	INT	1HVBEABM	Buss	Y	High	Lift	None	None	32	32	96	DF		2	0
Memphis Area Transit Authority	Memphis, TN	MB	1999	A	CMC	SOLO	Bust	Y	Low	Ramp	None	None	23	30	96	DF	$181,184	13	0
Memphis Area Transit Authority	Memphis, TN	MB	2003	A	CMC	SOLO	Bust	Y	Low	Ramp	None	None	23	30	96	DF		1	0
Merced County Transit (The Bus)	Merced, CA	MB	2006	A	EDN	AERO ELITE	Buss	Y	High	Lift	None	None	24	28	96	GA	$109,000	11	0

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Merced County Transit (The Bus)	Merced, CA	DR	2002	A	EDN	AEROTECH	Sveh	Y	High	Lift	Low	Lift	20	27	96	DF	$74,000	5	0
Merced County Transit (The Bus)	Merced, CA	DR	2001	A	EDN	AEROTECH	Sveh	Y	High	Lift	Low	Lift	20	27	96	DF	$73,000	4	0
Merced County Transit (The Bus)	Merced, CA	DR	2000	A	EDN	AEROTECH	Sveh	Y	High	Lift	Low	Lift	20	27	96	DF	$72,000	7	0
Merced County Transit (The Bus)	Merced, CA	DR	1998	A	GCC	GCII	Sveh	Y	High	Lift	High	Lift	16	27	96	DF	$62,500	6	0
Merced County Transit (The Bus)	Merced, CA	DR	1998	A	GCC	GCII	Sveh	Y	High	Lift	Low	Lift	20	27	96	DF	$62,500	1	0
Metropolitan Atlanta Rapid Transit Authority	Atlanta, GA	DR	2004	A	GCC	GCII	Sveh	Y	High	Lift	None	None	9	23	96	DF	$58,000	36	0
Metropolitan Atlanta Rapid Transit Authority	Atlanta, GA	DR	2002	A	GCC	GCII	Sveh	Y	High	Lift	None	None	9	23	96	DF	$57,463	50	0
Metropolitan Atlanta Rapid Transit Authority	Atlanta, GA	DR	2005	A	GCC	GCII	Sveh	Y	High	Lift	None	None	9	23	96	DF	$58,000	36	0
Metropolitan Atlanta Rapid Transit Authority	Atlanta, GA	DR	2001	A	GCC	GCII	Sveh	Y	High	Lift	None	None	9	23	96	DF	$56,000	3	0
Metropolitan Atlanta Rapid Transit Authority	Atlanta, GA	MB	2001	A	GCC	GCII	Sveh	Y	High	Lift	None	None	9	23	96	DF	$57,463	15	0
Metropolitan Transit Authority	Nashville, TN	DR	2003	A	EDN	AEROTECH	Sveh	N	High	None	None	None	24	25	96	GA		1	0
Metropolitan Transit Authority	Nashville, TN	DR	1998	A	GCC	GOSHEN COACH	Sveh	Y	High	Lift	None	None	16	24	96	DF	$53,913	9	0
Metropolitan Transit Authority	Nashville, TN	DR	2001	A	SPC	STARTRANS	Sveh	Y	High	Lift	None	None	16	25	96	DF	$54,000	16	0
Metropolitan Transit Authority	Nashville, TN	DR	2001	A	SPC	STARTRANS	Sveh	Y	High	Lift	None	None	16	25	96	DF		1	0
Metropolitan Transit Authority	Nashville, TN	DR	2006	A	SPC	STARTRANS	Sveh	Y	High	Lift	None	None	16	25	96	DF	$72,308	6	0
Metropolitan Transit Authority	Nashville, TN	DR	2003	A	SPC	STARTRANS	Sveh	Y	High	Lift	None	None	16	25	96	DF	$56,861	12	0
Metropolitan Transit Authority	Nashville, TN	DR	2005	A	SPC	STARTRANS	Sveh	Y	High	Lift	None	None	16	25	96	DF	$67,900	12	0
Metropolitan Transit Authority	Nashville, TN	DR	2007	O	SPC	STARTRANS	Sveh	Y	High	Lift	None	None	16	24	96	DF	$73,948	14	0
Metropolitan Tulsa Transit Authority	Tulsa, OK	MB	2007	O	EDN	END	Bust	Y	Low	Ramp	Low	Ramp	30	30	102	DF	$235,000	2	0
Mid Mon Valley Transit Authority	Monessen, PA	DR	2004	A	EDN	EL DORADO	Sveh	Y	High	Lift	None	None	14	21	88	DF	$55,530	2	0
Mid Mon Valley Transit Authority	Monessen, PA	MB	2000	A	INT	MEDIUM	Sveh	Y	High	Lift	None	None	20	20	96	DF	$28,400	1	0
Mid Mon Valley Transit Authority	Monessen, PA	MB	1998	A	FRD	MEDIUM CONDOR	Sveh	Y	High	Lift	None	None	19	20	96	DF	$272,877	1	0
Mid Mon Valley Transit Authority	Monessen, PA	MB	1999	A	INT	MEDIUM CONDOR	Sveh	Y	High	Lift	None	None	20	20	96	DF	$76,166	5	0
Mid Mon Valley Transit Authority	Monessen, PA	MB	2007	O	INT	MEDIUM CONDOR	Sveh	Y	High	Lift	None	None	20	20	96	DF		5	0
Mid-Ohio Valley Transit Authority	Parkersburg, WV	MB	2001	A	CMC	BRIGADIRE	Bust	Y	High	Lift	None	None	18	32	96	DF	$88,448	3	0
Mid-Ohio Valley Transit Authority	Parkersburg, WV	MB	2005	A	FRC	BUS	Bust	Y	High	Lift	None	None	16	30	96	DF		4	0
Mid-Ohio Valley Transit Authority	Parkersburg, WV	MB	1997	A	GCC	CUTAWAY	Bust	Y	High	Lift	None	None	16	28	94	DF		2	0
Mid-Ohio Valley Transit Authority	Parkersburg, WV	MB	1999	A	GCC	CUTAWAY	Bust	Y	High	Lift	None	None	16	28	94	DF	$80,139	1	0
Mid-Ohio Valley Transit Authority	Parkersburg, WV	MB	1998	A	GCC	CUTAWAY	Bust	Y	High	Lift	None	None	16	28	94	DF		1	0
Mid-Ohio Valley Transit Authority	Parkersburg, WV	MB	1996	A	GCC	CUTAWAY	Bust	Y	High	Lift	None	None	18	28	94	DF		2	0
Mid-Ohio Valley Transit Authority	Parkersburg, WV	MB	2001	A	GCC	CUTAWAY	Bust	Y	High	Lift	None	None	16	32	96	DF		2	0

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Minnesota Valley Transit Authority	Minneapolis, MN	MB	2000	A	FDC	CUTAWAY	Sveh	Y	High	Lift	None	None	21	27	96	BD	$84,450	3	3
Minnesota Valley Transit Authority	Minneapolis, MN	MB	2006	A	SPC	SENATOR	Sveh	Y	High	Lift	None	None	20	25	96	BD	$71,400	4	4
Minnesota Valley Transit Authority	Minneapolis, MN	MB	2002	A	SPC	SENATOR	Sveh	Y	High	Lift	None	None	20	25	96	BD	$59,000	2	2
Minnesota Valley Transit Authority	Minneapolis, MN	MB	2001	A	SPC	SENATOR	Sveh	Y	High	Lift	None	None	20	25	96	BD	$58,169	1	1
Minnesota Valley Transit Authority	Minneapolis, MN	MB	2006	A	GLV	UNIVERSAL	Sveh	Y	High	Lift	None	None	20	25	96	BD	$67,500	3	3
Modoc Transportation Agency	Alturas, CA	MB	2003	A	GCC	FORD E450	Bust	Y	Low	Ramp	None	None	17	28	119	DF	$72,732	3	0
Modoc Transportation Agency	Alturas, CA	MB	2005	A	GCC	FORD E450	Bust	Y	Low	Ramp	None	None	14	28	119	DF	$58,955	2	0
Modoc Transportation Agency	Alturas, CA	MB	2003	A	GCC	FORD E450	Bust	Y	Low	Ramp	None	None	14	28	119	DF	$56,191	1	0
Montebello Bus Lines	Los Angeles, CA	DR	2000	A	EDN	AEROLITE (TYPE 2)	Sveh	Y	High	Lift	None	None	12	22	93	DF	$60,661	2	0
Montebello Bus Lines	Los Angeles, CA	DR	2000	A	GCC	PACER	Sveh	Y	High	Lift	None	None	8	20	81	GA	$50,412	1	0
Montebello Bus Lines	Los Angeles, CA	DR	2003	A	GCC	PACER	Sveh	Y	High	Lift	None	None	8	20	81	GA	$57,390	2	0
Monterey-Salinas Transit	Seaside, CA	DR	2001	A	EDN	AEROTECH 220	Sveh	Y	High	Lift	None	None	8	22	84	GA		2	0
Monterey-Salinas Transit	Seaside, CA	DR	2005	A	EDN	CUTAWAY	Sveh	Y	High	Lift	None	None	12	20	96	GA		5	0
Monterey-Salinas Transit	Seaside, CA	DR	2001	A	EDN	CUTAWAY	Sveh	Y	High	Lift	None	None	6	20	96	GA		3	0
Monterey-Salinas Transit	Seaside, CA	DR	2003	A	EDN	CUTAWAY	Sveh	Y	High	Lift	None	None	8	20	88	GA		1	0
Monterey-Salinas Transit	Seaside, CA	DR	1999	A	EDN	CUTAWAY	Sveh	Y	High	Lift	None	None	17	23	96	GA		1	0
Monterey-Salinas Transit	Seaside, CA	MB	1999	A	EDN	CUTAWAY	Sveh	Y	High	Lift	None	None	17	22	96	GA	$78,233	6	0
Monterey-Salinas Transit	Seaside, CA	MB	2002	A	EDN	CUTAWAY	Sveh	Y	High	Lift	None	None	17	22	96	DF	$77,291	9	0
Mountain Metropolitan Transit	CO Springs, CO	MB	2002	A	FRD	E-350	Sveh	Y	High	Lift	None	None	12	22	96	DF	$42,000	2	0
MTA Long Island Bus	New York, NY	DR	2004	A	CEQ	3200	Sveh	Y	High	Lift	None	None	10	23	96	DF	$72,133	22	0
MTA Long Island Bus	New York, NY	DR	2004	A	CEQ	3200	Sveh	Y	High	Lift	None	None	14	25	96	DF	$75,424	4	0
MTA Long Island Bus	New York, NY	DR	2000	A	CEQ	3400	Sveh	Y	High	Lift	None	None	10	22	96	DF	$77,398	25	0
MTA Long Island Bus	New York, NY	DR	2001	A	CEQ	3400	Sveh	Y	High	Lift	None	None	10	22	96	DF	$72,619	24	0
MTA Long Island Bus	New York, NY	DR	2002	A	CEQ	3400	Sveh	Y	High	Lift	None	None	10	22	96	DF	$72,619	8	0
MTA Long Island Bus	New York, NY	DR	1999	A	CEQ	3400	Sveh	Y	High	Lift	None	None	10	22	96	DF	$71,898	3	0
MTA Long Island Bus	New York, NY	DR	2000	A	CEQ	3400	Sveh	Y	High	Lift	None	None	18	25	96	DF	$77,267	2	0
MTA Long Island Bus	New York, NY	MB	1999	A	INT	CONDOR	Sveh	Y	High	Lift	None	None	10	22	96	DF	$71,898	1	0
MTA Long Island Bus	New York, NY	MB	2002	A	CEQ	PHOENIX	Sveh	Y	High	Lift	None	None	18	25	96	DF	$56,778	2	0
MTA New York City Transit	New York, NY	DR	2003	A	CMC	CHAMPION	Sveh	Y	High	Lift	None	None	5	20	85	DF		2	0
MTA New York City Transit	New York, NY	DR	2003	A	GLV	GLAVAL	Sveh	Y	High	Lift	None	None	5	20	85	DF		2	0
MTA New York City Transit	New York, NY	DR	2003	A	CEQ	PHOENIX III	Sveh	Y	High	Lift	None	None	5	20	85	DF		302	0

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MTA New York City Transit	New York, NY	DR	2004	A	CEQ	PHOENIX III	Sveh	Y	High	Lift	None	None	5	20	85	DF		222	0
MTA New York City Transit	New York, NY	DR	2005	A	CEQ	PHOENIX III	Sveh	Y	High	Lift	None	None	5	20	85	DF		164	0
MTA New York City Transit	New York, NY	DR	2001	A	CEQ	PHOENIX III	Sveh	Y	High	Lift	None	None	5	20	85	DF		109	0
MTA New York City Transit	New York, NY	DR	2002	A	CEQ	PHOENIX III	Sveh	Y	High	Lift	None	None	5	20	85	DF		89	0
MTA New York City Transit	New York, NY	DR	2006	A	CEQ	PHOENIX III	Sveh	Y	High	Lift	None	None	5	20	85	DF		333	0
MTA New York City Transit	New York, NY	DR	2002	A	STR	STARLITE	Sveh	Y	High	Lift	None	None	5	20	85	DF		39	0
MTA New York City Transit	New York, NY	DR	2001	A	STR	STARLITE	Sveh	Y	High	Lift	None	None	5	20	85	DF		58	0
Muncie Public Transportation Corporation	Muncie, IN	DR	2002	A	SPC	BS 22508783	Sveh	Y	High	Lift	None	None	15	23	96	BD	$61,955	4	4
Muncie Public Transportation Corporation	Muncie, IN	DR	2000	A	SPC	BS 22508783	Sveh	Y	High	Lift	None	None	15	23	96	BD	$61,507	4	4
Muncie Public Transportation Corporation	Muncie, IN	DR	2000	A	SPC	BS 22508783	Sveh	Y	High	Lift	None	None	15	23	96	BD	$54,299	4	4
Muncie Public Transportation Corporation	Muncie, IN	DR	2000	A	SPC	BS 22508783	Sveh	Y	High	Lift	None	None	15	23	96	BD	$53,799	2	2
Muskegon Area Transit System	Muskegon, MI	DR	2002	A	GCC	GCII	Sveh	Y	High	Lift	None	None	10	22	96	CN	$63,500	5	5
Muskegon Area Transit System	Muskegon, MI	DR	2007	O	GCC	GCII	Sveh	Y	High	Lift	None	None	15	23	96	DF	$60,000	1	0
Muskegon Area Transit System	Muskegon, MI	MB	2005	A	GCC	GCII-5500	Bust	Y	High	Lift	None	None	23	29	92	DF	$76,160	3	0
New Jersey Transit Corporation	New York, NY	DR	1998	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	5	20	87	DF		6	0
New Jersey Transit Corporation	New York, NY	DR	1999	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	5	20	87	DF		12	0
New Jersey Transit Corporation	New York, NY	DR	2000	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	16	25	96	DF		29	0
New Jersey Transit Corporation	New York, NY	DR	2001	A	CMC	CHALLENGER	Sveh	Y	High	Lift	None	None	9	22	96	DF	$48,571	38	0
New Jersey Transit Corporation	New York, NY	DR	2001	A	CMC	CHALLENGER	Sveh	Y	High	Lift	None	None	13	25	96	DF	$51,337	20	0
New Jersey Transit Corporation	New York, NY	DR	1998	A	MTC	CLASSIC	Sveh	Y	High	Lift	None	None	12	21	96	DF		3	0
New Jersey Transit Corporation	New York, NY	DR	1998	A	MTC	CLASSIC	Sveh	Y	High	Lift	None	None	10	21	87	DF		16	0
New Jersey Transit Corporation	New York, NY	DR	1999	A	MTC	CLASSIC	Sveh	Y	High	Lift	None	None	3	25	96	DF		1	0
New Jersey Transit Corporation	New York, NY	DR	1998	A	MTC	CLASSIC	Sveh	Y	High	Lift	None	None	16	25	96	DF		32	0
New Jersey Transit Corporation	New York, NY	DR	1994	A	GCC	CUTAWAY	Sveh	Y	High	Lift	None	None	7	21	96	DF		11	0
New Jersey Transit Corporation	New York, NY	DR	2001	A	GCC	GCII	Sveh	Y	High	Lift	None	None	12	21	96	DF	$52,090	46	0
New Jersey Transit Corporation	New York, NY	JT	1994	A	GCC	GCII	Sveh	Y	High	Lift	None	None	20	25	96	DF		13	0
New Jersey Transit Corporation	New York, NY	JT	1999	A	GCC	GCII	Sveh	Y	High	Lift	None	None	20	25	96	DF		9	0
New Jersey Transit Corporation	New York, NY	JT	1995	A	GCC	GCII	Sveh	Y	High	Lift	None	None	20	25	96	DF		6	0
New Jersey Transit Corporation	New York, NY	JT	1998	A	GCC	GCII	Sveh	Y	High	Lift	None	None	20	25	96	DF		5	0
New Jersey Transit Corporation	New York, NY	JT	1997	A	GMC	JITNEY	Sveh	Y	High	Lift	None	None	13	22	85	GA		139	0
New Jersey Transit Corporation	New York, NY	JT	1998	A	GMC	JITNEY	Sveh	Y	High	Lift	None	None	13	22	85	GA		51	0

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New Jersey Transit Corporation	New York, NY	DR	1996	A	GCC	PACER	Sveh	Y	High	Lift	None	None	9	20	87	DF		1	0
New Jersey Transit Corporation	New York, NY	DR	2001	A	GCC	PACER	Sveh	Y	High	Lift	None	None	8	20	87	DF	$48,066	7	0
New Jersey Transit Corporation	New York, NY	DR	2001	A	GCC	PACER	Sveh	Y	High	Lift	None	None	10	21	87	DF	$47,722	11	0
New Jersey Transit Corporation	New York, NY	DR	1997	A	CEQ	PHOENIX	Sveh	Y	High	Lift	None	None	7	21	96	DF		45	0
New Jersey Transit Corporation	New York, NY	DR	1996	A	CEQ	PHOENIX	Sveh	Y	High	Lift	None	None	14	21	96	DF		12	0
New Jersey Transit Corporation	New York, NY	DR	1997	A	CEQ	PHOENIX	Sveh	Y	High	Lift	None	None	5	21	90	DF		10	0
New Jersey Transit Corporation	New York, NY	DR	1999	A	SPC	SENATOR	Sveh	Y	High	Lift	None	None	12	21	96	DF		4	0
New Jersey Transit Corporation	New York, NY	DR	1998	A	SPC	SENATOR	Sveh	Y	High	Lift	None	None	11	21	96	DF		25	0
New Jersey Transit Corporation	New York, NY	DR	1994	A	SPC	STARTRANS	Sveh	Y	High	Lift	None	None	5	21	90	DF		9	0
New Jersey Transit Corporation	New York, NY	DR	1993	A	SPC	STARTRANS	Sveh	Y	High	Lift	None	None	11	25	96	DF		1	0
New Jersey Transit Corporation	New York, NY	JT	1999	A	SPC	STARTRANS	Bust	Y	High	Lift	None	None	26	29	96	DF		18	0
Niagara Frontier Transportation Authority	Buffalo, NY	DR	1996	A	GCC	GCII	Sveh	Y	High	Lift	None	None	18	25	96	DF		2	0
Niagara Frontier Transportation Authority	Buffalo, NY	DR	1994	A	CEQ	PHOENIX (FORD 35C)	Sveh	Y	High	Lift	None	None	8	22	96	DF		1	0
Niagara Frontier Transportation Authority	Buffalo, NY	DR	2001	A	CEQ	PHOENIX (FORD 4DC)	Sveh	Y	High	Lift	None	None	8	22	96	DF		5	0
Niagara Frontier Transportation Authority	Buffalo, NY	DR	2000	A	CEQ	PHOENIX (FORD 4DC)	Sveh	Y	High	Lift	None	None	8	22	96	DF		3	0
Niagara Frontier Transportation Authority	Buffalo, NY	DR	2004	A	CEQ	PHOENIX (FORD 4DC)	Sveh	Y	High	Lift	None	None	17	25	96	DF		4	0
Niagara Frontier Transportation Authority	Buffalo, NY	DR	2002	A	CEQ	PHOENIX (FORD 4DC)	Sveh	Y	High	Lift	None	None	18	25	96	DF		10	0
Niagara Frontier Transportation Authority	Buffalo, NY	DR	2005	A	CEQ	PHOENIX (FORD 4DC)	Sveh	Y	High	Lift	None	None	18	25	96	DF		10	0
Niagara Frontier Transportation Authority	Buffalo, NY	DR	2000	A	CEQ	PHOENIX (FORD RVC)	Sveh	Y	High	Lift	None	None	8	22	96	DF		5	0
Niagara Frontier Transportation Authority	Buffalo, NY	DR	1998	A	CEQ	PHOENIX (FORD RVC)	Sveh	Y	High	Lift	None	None	8	23	96	DF		9	0
North County Transit District	San Diego, CA	MB	2002	A	CMC	CHALLENGER	Sveh	Y	High	Lift	None	None	18	25	96	DF	$68,012	10	0
Norwalk Transit District	Bridgeport, CT	DR	2004	A	GCC	E-350	Sveh	Y	High	Lift	None	None	8	20	96	DF	$50,325	17	0
Norwalk Transit District	Bridgeport, CT	DR	2004	A	GCC	E-350	Sveh	Y	High	Lift	None	None	12	22	96	DF	$51,305	4	0
Norwalk Transit District	Bridgeport, CT	MB	2004	A	GCC	E-450	Sveh	Y	High	Lift	None	None	16	25	96	DF	$63,205	4	0
Norwalk Transit District	Bridgeport, CT	DR	2000	A	GCC	GCII	Sveh	Y	High	Lift	None	None	8	21	91	GA	$38,661	2	0
Norwalk Transit District	Bridgeport, CT	DR	2002	A	GCC	GCII	Sveh	Y	High	Lift	None	None	16	25	96	DF	$62,071	4	0
Norwalk Transit System	Los Angeles, CA	DR	2006	A	EDN	AEROTECH	Sveh	Y	Low	Ramp	None	None	18	24	96	GA	$50,000	1	0
Norwalk Transit System	Los Angeles, CA	DR	1994	A	FRD	AEROTECH	Sveh	Y	High	Lift	None	None	9	21	80	GA		3	0
Norwalk Transit System	Los Angeles, CA	DR	2005	A	EDN	CHEVY AEROLITE	Bust	Y	High	Lift	None	None	26	29	96	GA	$89,192	4	0
Norwalk Transit System	Los Angeles, CA	DR	2000	A	EDN	EL DORADO AEROTECH	Sveh	Y	High	Lift	None	None	24	25	96	GA		4	0
Norwalk Transit System	Los Angeles, CA	DR	1996	A	GCC	E-SUPER DUTY	Sveh	Y	High	Lift	None	None	13	24	96	GA		1	0

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Norwalk Transit System	Los Angeles, CA	DR	2000	A	EDN	FORD AEROTECH	Sveh	Y	High	Lift	None	None	20	24	96	DF		4	0
Norwalk Transit System	Los Angeles, CA	DR	1998	A	GCC	GCII	Sveh	Y	High	Lift	None	None	24	25	96	GA		6	0
OMNITRANS	Riverside, CA	DR	2004	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	18	23	95	GA		10	0
OMNITRANS	Riverside, CA	DR	2006	A	EDN	AREOTECH	Sveh	Y	High	Lift	None	None	18	23	95	GA		25	0
OMNITRANS	Riverside, CA	DR	2000	A	GCC	GCII	Sveh	Y	High	Lift	None	None	16	20	96	GA		51	0
OMNITRANS	Riverside, CA	DR	2000	A	GCC	GCII	Sveh	Y	High	Lift	None	None	20	25	96	GA		41	0
Orange County Transportation Authority	Los Angeles, CA	MB	2006	A	EDN	AERO ELITE 320	Bust	Y	High	Lift	None	None	26	32	96	CN	$200,000	12	12
Orange County Transportation Authority	Los Angeles, CA	DR	2002	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	16	25	96	DF	$63,785	39	0
Orange County Transportation Authority	Los Angeles, CA	DR	1999	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	16	25	96	DF	$58,691	7	0
Orange County Transportation Authority	Los Angeles, CA	DR	2001	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	16	25	96	DF	$64,102	54	0
Orange County Transportation Authority	Los Angeles, CA	DR	2004	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	16	25	96	DF	$76,139	96	0
Orange County Transportation Authority	Los Angeles, CA	DR	2003	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	16	25	96	DF	$76,650	67	0
Orange County Transportation Authority	Los Angeles, CA	DR	2007	O	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	16	25	96	GA	$70,000	32	0
Pace Suburban Bus	Chicago, IL	DR	2004	A	EDN	AEROLITE	Sveh	Y	High	Lift	None	None	11	20	96	DF	$55,327	8	0
Pace Suburban Bus	Chicago, IL	DR	2002	A	EDN	AEROLITE	Sveh	Y	High	Lift	None	None	11	20	96	DF	$52,999	18	0
Pace Suburban Bus	Chicago, IL	DR	2001	A	EDN	AEROLITE	Sveh	Y	High	Lift	None	None	11	20	96	DF	$48,463	85	0
Pace Suburban Bus	Chicago, IL	DR	1996	A	EDN	AEROLITE	Sveh	Y	High	Lift	None	None	10	20	83	DF		3	0
Pace Suburban Bus	Chicago, IL	DR	2003	A	EDN	AEROLITE	Sveh	Y	High	Lift	None	None	11	23	96	DF	$54,186	15	0
Pace Suburban Bus	Chicago, IL	DR	1996	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	15	23	96	DF		1	0
Pace Suburban Bus	Chicago, IL	DR	2001	A	EDN	AEROTECH/2	Sveh	Y	High	Lift	None	None	15	23	96	DF	$54,808	33	0
Pace Suburban Bus	Chicago, IL	DR	2004	A	EDN	AEROTECH/2	Sveh	Y	High	Lift	None	None	15	23	96	DF	$61,341	21	0
Pace Suburban Bus	Chicago, IL	DR	2003	A	EDN	AEROTECH/2	Sveh	Y	High	Lift	None	None	15	23	96	DF	$59,979	15	0
Pace Suburban Bus	Chicago, IL	DR	2001	A	EDN	AEROTECH/2	Sveh	Y	High	Lift	None	None	15	23	96	DF	$58,797	66	0
Pace Suburban Bus	Chicago, IL	DR	2002	A	EDN	AEROTECH/2	Sveh	Y	High	Lift	None	None	15	23	96	DF	$58,797	8	0
Pace Suburban Bus	Chicago, IL	DR	2001	A	EDN	AEROTECH/4	Sveh	Y	High	Lift	None	None	15	23	96	DF	$59,371	22	0
Pace Suburban Bus	Chicago, IL	DR	2003	A	EDN	AEROTECH/4	Sveh	Y	High	Lift	None	None	15	23	96	DF	$60,644	16	0
Pace Suburban Bus	Chicago, IL	DR	2004	A	EDN	AEROTECH/4	Sveh	Y	High	Lift	None	None	15	23	96	DF	$61,961	15	0
Pace Suburban Bus	Chicago, IL	DR	2002	A	EDN	AEROTECH/4	Sveh	Y	High	Lift	None	None	15	23	96	DF	$59,371	8	0
Pace Suburban Bus	Chicago, IL	DR	2001	A	EDN	AEROTECH/4	Sveh	Y	High	Lift	None	None	15	23	96	DF	$54,808	30	0
Park City Transit	Park City, UT	DR	2000	A	EDN	AEROLITE	Sveh	Y	High	Lift	None	None	13	21	92	DF	$64,305	2	0
Park City Transit	Park City, UT	DR	2000	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	15	21	92	DF	$57,840	1	0

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Park City Transit	Park City, UT	DR	2001	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	20	24	92	DF	$59,333	2	0
Pee Dee Regional Transportation Authority	Florence, SC	MB	2005	A	GCC	CUTAWAY	Sveh	Y	High	Lift	None	None	18	25	96	GA	$48,575	12	0
Pee Dee Regional Transportation Authority	Florence, SC	MB	2004	A	GCC	CUTAWAY	Sveh	Y	High	Lift	None	None	18	25	96	GA	$46,647	2	0
Pee Dee Regional Transportation Authority	Florence, SC	MB	2004	A	GCC	CUTAWAY	Sveh	Y	High	Lift	None	None	18	25	96	GA	$47,400	2	0
Pee Dee Regional Transportation Authority	Florence, SC	MB	2005	A	GCC	CUTAWAY	Sveh	Y	High	Lift	None	None	18	25	96	GA	$48,575	8	0
Pee Dee Regional Transportation Authority	Florence, SC	MB	2000	A	GCC	CUTAWAY	Sveh	Y	High	Lift	None	None	22	25	96	DF	$51,371	3	0
Pee Dee Regional Transportation Authority	Florence, SC	MB	2005	A	GCC	CUTAWAY	Sveh	Y	High	Lift	None	None	20	26	96	GA	$48,575	5	0
Pee Dee Regional Transportation Authority	Florence, SC	DR	2003	A	GCC	GCII	Sveh	Y	High	Lift	None	None	14	25	96	GA	$52,551	8	0
Pee Dee Regional Transportation Authority	Florence, SC	MB	2005	A	GCC	MINI BUS	Sveh	Y	High	Lift	None	None	18	25	96	GA	$48,575	12	0
Pee Dee Regional Transportation Authority	Florence, SC	MB	2004	A	GCC	MINI BUS	Sveh	Y	High	Lift	None	None	18	25	96	GA	$46,647	2	0
Pee Dee Regional Transportation Authority	Florence, SC	MB	2004	A	GCC	MINI BUS	Sveh	Y	High	Lift	None	None	18	25	96	GA	$47,400	2	0
Pee Dee Regional Transportation Authority	Florence, SC	MB	2005	A	GCC	MINI BUS	Sveh	Y	High	Lift	None	None	18	25	96	GA	$48,575	8	0
Pee Dee Regional Transportation Authority	Florence, SC	MB	2000	A	GCC	MINI BUS	Sveh	Y	High	Lift	None	None	22	25	96	DF	$51,371	3	0
Pee Dee Regional Transportation Authority	Florence, SC	MB	2005	A	GCC	MINI BUS	Sveh	Y	High	Lift	None	None	20	26	96	GA	$48,575	5	0
Pima County Department of Transportation	Tucson, AZ	MB	2006	A	EDN	AERO ELITE	Sveh	Y	High	Lift	None	None	22	22	96	GA	$70,000	2	0
Pima County Department of Transportation	Tucson, AZ	MB	2005	A	EDN	AERO ELITE	Buss	Y	High	Lift	None	None	28	30	96	DF	$71,000	1	0
Plymouth Metrolink and Dial-A-Ride	Plymouth, MN	DR	1997	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	24	25	96	DF		1	0
Plymouth Metrolink and Dial-A-Ride	Plymouth, MN	DR	2001	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	24	25	96	DF		6	0
Plymouth Metrolink and Dial-A-Ride	Plymouth, MN	DR	2002	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	24	25	96	DF		3	0
Port Arthur Transit	Port Arthur, TX	DR	2003	A	FRD	E-450	Sveh	Y	High	Lift	None	None	18	27	96	LP	$95,585	2	2
Port Arthur Transit	Port Arthur, TX	DR	2005	A	FRD	E-450	Sveh	Y	High	Lift	None	None	18	27	96	LP	$98,371	1	1
Port Arthur Transit	Port Arthur, TX	DR	2002	A	GCC	GCII	Sveh	Y	High	Lift	None	None	18	27	96	DF	$85,000	3	0
Port Authority of Allegheny County	Pittsburgh, PA	MB	2002	A	MDI	AT	Bust	Y	High	Lift	None	None	20	30	96	DF	$136,329	10	0
Port Authority of Allegheny County	Pittsburgh, PA	MB	2003	A	MDI	AT	Bust	Y	High	Lift	None	None	24	30	96	DF	$141,782	20	0
Port Authority of Allegheny County	Pittsburgh, PA	MB	2004	A	MDI	AT	Bust	Y	High	Lift	None	None	24	30	96	DF	$136,330	45	0
Portage Area Regional Transportation Authority	Akron, OH	DR	1999	A	EDN	E45 CUTAWAY	Sveh	Y	High	Lift	None	None	11	22	96	DF	$46,000	1	0
Portage Area Regional Transportation Authority	Akron, OH	DR	2003	A	EDN	E45 CUTAWAY	Sveh	Y	High	Lift	None	None	11	22	96	DF	$48,938	6	0
Portage Area Regional Transportation Authority	Akron, OH	DR	1998	A	EDN	E45 CUTAWAY	Sveh	Y	High	Lift	None	None	4	22	96	GA	$46,000	1	0
Portage Area Regional Transportation Authority	Akron, OH	DR	2002	A	EDN	E45 CUTAWAY	Sveh	Y	High	Lift	None	None	16	26	96	DF	$55,700	7	0
Portage Area Regional Transportation Authority	Akron, OH	DR	2000	A	EDN	E45 CUTAWAY	Sveh	Y	High	Lift	None	None	18	26	96	DF	$57,000	2	0
Portage Area Regional Transportation Authority	Akron, OH	DR	2001	A	EDN	E-450 CUTAWAY	Sveh	Y	High	Lift	None	None	10	23	96	DF	$46,000	4	0

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Portage Area Regional Transportation Authority	Akron, OH	DR	2006	A	EDN	E-450 CUTAWAY	Sveh	Y	High	Lift	None	None	10	23	96	DF	$60,000	10	0
Portage Area Regional Transportation Authority	Akron, OH	DR	2006	A	EDN	E-450 CUTAWAY	Sveh	Y	High	Lift	None	None	16	25	96	DF	$63,621	1	0
Portage Area Regional Transportation Authority	Akron, OH	DR	2004	A	STR	STARTRANS	Sveh	Y	High	Lift	None	None	15	25	96	DF		9	0
Prince George's County Department of Public Works & Transportation	Washington, DC	MB	2001	A	SPC	AMBASSADOR	Bust	Y	High	Lift	None	None	28	30	96	DF	$99,959	9	0
Prince George's County Dept. of Public Works & Transportation	Washington, DC	DR	1998	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	14	25	80	DF	$46,590	9	0
Prince George's County Dept. of Public Works & Transportation	Washington, DC	DR	2003	A	TBB	CL100	Sveh	Y	High	Lift	None	None	14	20	96	DF	$51,794	1	0
Prince George's County Dept. of Public Works & Transportation	Washington, DC	DR	2003	A	TBB	CL100	Sveh	Y	High	Lift	None	None	18	25	96	DF	$58,668	1	0
Prince George's County Dept. of Public Works & Transportation	Washington, DC	DR	2005	A	TBB	CL100	Sveh	Y	High	Lift	None	None	18	25	96	DF	$59,792	1	0
Prince George's County Dept. of Public Works & Transportation	Washington, DC	DR	2004	A	TBB	CL100	Sveh	Y	High	Lift	None	None	18	25	96	DF	$59,792	12	0
Prince George's County Dept. of Public Works & Transportation	Washington, DC	DR	2001	A	TBB	CL124	Sveh	Y	High	Lift	None	None	10	25	80	DF	$58,667	1	0
Prince George's County Dept. of Public Works & Transportation	Washington, DC	DR	2006	A	TBB	CL124	Sveh	Y	High	Lift	None	None	18	25	96	DF	$64,481	4	0
Prince George's County Dept. of Public Works & Transportation	Washington, DC	DR	2007	O	TBB	CL124	Sveh	Y	High	Lift	None	None	18	25	96	DF	$62,498	5	0
Prince George's County Dept. of Public Works & Transportation	Washington, DC	DR	2006	A	TBB	CL124	Sveh	Y	High	Lift	None	None	18	25	96	DF	$61,448	8	0
Prince George's County Dept. of Public Works & Transportation	Washington, DC	DR	2003	A	TBB	CL124	Sveh	Y	High	Lift	None	None	18	25	96	DF	$59,792	4	0
Prince George's County Dept. of Public Works & Transportation	Washington, DC	DR	2001	A	TBB	CL124	Sveh	Y	High	Lift	None	None	10	25	96	DF	$58,668	1	0
Prince George's County Dept. of Public Works & Transportation	Washington, DC	DR	2007	O	TBB	CL124	Sveh	Y	High	Lift	None	None	14	20	96	DF	$54,383	2	0
Prince George's County Dept. of Public Works & Transportation	Washington, DC	DR	2006	A	TBB	CL124	Sveh	Y	High	Lift	None	None	14	20	96	DF	$54,383	1	0
Prince George's County Dept. of Public Works & Transportation	Washington, DC	MB	1996	A	CMC	CONTENDER	Bust	Y	High	Lift	None	None	27	31	96	DF	$145,242	3	0
Prince George's County Dept. of Public Works & Transportation	Washington, DC	DR	1995	A	GCC	GCII	Sveh	Y	High	Lift	None	None	20	25	91	DF	$61,250	2	0
Prince George's County Dept. of Public Works & Transportation	Washington, DC	DR	2000	A	SPC	STARTRANS	Sveh	Y	High	Lift	None	None	10	20	91	DF	$42,107	1	0
Prince George's County Dept. of Public Works & Transportation	Washington, DC	DR	1999	A	SPC	STARTRANS	Sveh	Y	High	Lift	None	None	10	20	91	DF	$42,975	2	0
Prince George's County Dept. of Public Works & Transportation	Washington, DC	DR	2000	A	SPC	STARTRANS	Sveh	Y	High	Lift	None	None	10	20	91	DF	$43,654	1	0
Prince George's County Dept. of Public Works & Transportation	Washington, DC	MB	2001	A	SPC	STARTRANS	Bust	Y	High	Lift	None	None	26	30	96	DF	$103,478	15	0
Pueblo Transit	Pueblo, CO	DR	2004	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	10	21	84	DF	$44,591	1	0
Pueblo Transit	Pueblo, CO	DR	2001	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	8	21	84	DF	$44,591	4	0
Pueblo Transit	Pueblo, CO	DR	1995	A	SPC	STARTRANS	Sveh	Y	High	Lift	None	None	6	20	84	GA	$35,811	3	0
Pueblo Transit	Pueblo, CO	DR	2005	A	SPC	STARTRANS	Sveh	Y	High	Lift	None	None	10	21	84	DF	$44,000	3	0
Red Rose Transit Authority	Lancaster, PA	DR	1998	A	GCC	GCII	Sveh	Y	High	Lift	None	None	14	22	96	GA		1	0
Red Rose Transit Authority	Lancaster, PA	DR	2002	A	CEQ	PHOENIX	Sveh	Y	High	Lift	None	None	14	22	96	GA	$45,973	2	0
Red Rose Transit Authority	Lancaster, PA	DR	2004	A	CEQ	PHOENIX	Sveh	Y	High	Lift	None	None	14	22	96	GA	$46,532	8	0
Red Rose Transit Authority	Lancaster, PA	DR	2001	A	CEQ	PHOENIX	Sveh	Y	High	Lift	None	None	14	22	96	GA	$47,575	10	0

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Red Rose Transit Authority	Lancaster, PA	DR	2003	A	CEQ	PHOENIX	Sveh	Y	High	Lift	None	None	14	22	96	GA	$43,972	8	0
Red Rose Transit Authority	Lancaster, PA	DR	2006	A	CEQ	PHOENIX	Sveh	Y	High	Lift	None	None	14	22	96	GA	$51,977	8	0
Red Rose Transit Authority	Lancaster, PA	DR	2000	A	CEQ	PHOENIX	Sveh	Y	High	Lift	None	None	14	22	96	GA	$45,585	3	0
Redding Area Bus Authority	Redding, CA	DR	2001	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	16	23	96	DF	$62,000	11	0
Redding Area Bus Authority	Redding, CA	DR	2003	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	16	23	96	DF	$62,000	1	0
Redding Area Bus Authority	Redding, CA	MB	2001	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	16	26	96	DF	$64,000	2	0
Redding Area Bus Authority	Redding, CA	MB	1994	A	CBC	DIPLOMAT	Sveh	Y	High	Lift	None	None	16	25	96	GA		1	0
Regional Public Transportation Authority	Phoenix, AZ	DR	2004	A	SPC	SENATOR	Sveh	Y	High	Lift	None	None	11	24	98	DB	$62,454	18	18
Regional Public Transportation Authority	Phoenix, AZ	DR	2006	A	SPC	SENATOR	Sveh	Y	High	Lift	None	None	11	24	98	DB	$66,258	6	6
Regional Public Transportation Authority	Phoenix, AZ	DR	2002	A	SPC	SENATOR	Sveh	Y	High	Lift	None	None	10	24	98	GA	$60,036	6	0
Regional Public Transportation Authority	Phoenix, AZ	DR	2005	A	SPC	SENATOR	Sveh	Y	High	Lift	None	None	11	24	98	DB	$62,678	33	33
Regional Transit Authority	New Orleans, LA	DR	2007	A	EDN	AEROLITE	Sveh	Y	High	Lift	None	None	6	20	96	DF	$53,975	12	0
Regional Transit Authority	New Orleans, LA	DR	2001	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	12	22	96	DF		11	0
Regional Transportation Commission of Southern Nevada	Las Vegas, NV	DR	2007	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	12	24	96	DF	$67,437	39	0
Regional Transportation Commission of Southern Nevada	Las Vegas, NV	DR	2005	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	12	24	96	DF	$54,954	93	0
Regional Transportation Commission of Southern Nevada	Las Vegas, NV	DR	2007	O	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	12	24	96	DF	$68,836	60	0
Regional Transportation Commission of Southern Nevada	Las Vegas, NV	DR	2005	A	STR	ALL STAR	Sveh	Y	High	Lift	None	None	12	24	96	DF	$46,738	15	0
Regional Transportation Commission of Southern Nevada	Las Vegas, NV	DR	2003	A	SPC	AMBASSADOR	Sveh	Y	High	Lift	None	None	8	26	96	CN	$139,486	51	51
Regional Transportation Commission of Washoe County	Reno, NV	DR	2000	A	EDN	AEROTECH 200	Sveh	Y	High	Lift	None	None	8	22	96	CN	$77,000	2	2
Regional Transportation Commission of Washoe County	Reno, NV	DR	2001	A	CMC	CHALLENGER	Sveh	Y	High	Lift	None	None	10	22	96	CN	$76,000	9	9
Regional Transportation Commission of Washoe County	Reno, NV	DR	2002	A	CMC	CHALLENGER	Sveh	Y	High	Lift	None	None	10	22	96	CN	$79,000	13	13
Regional Transportation Commission of Washoe County	Reno, NV	DR	2005	A	EDN	FORD/ELDORADO	Sveh	Y	High	Lift	None	None	8	22	96	CN		15	15
Regional Transportation Commission of Washoe County	Reno, NV	DR	2004	A	GCC	GCII	Sveh	Y	High	Lift	None	None	10	23	96	CN	$80,000	15	15
Regional Transportation District	Denver, CO	DR	2005	A	SPC	E-456	Sveh	Y	High	Lift	None	None	11	22	84	GA		132	0
Regional Transportation District	Denver, CO	DR	2004	A	SPC	E-456	Sveh	Y	High	Lift	None	None	11	22	84	GA		20	0
Regional Transportation District	Denver, CO	DR	2006	O	SPC	E-456	Sveh	Y	High	Lift	None	None	11	22	84	GA		20	0
Regional Transportation District	Denver, CO	DR	2001	A	GCC	GCII	Sveh	Y	High	Lift	None	None	12	22	84	GA	$46,875	41	0
Regional Transportation District	Denver, CO	DR	2003	A	GCC	GCII	Sveh	Y	High	Lift	None	None	12	22	84	GA		70	0
Regional Transportation District	Denver, CO	MB	2003	A	GCC	GCII	Sveh	Y	High	Lift	None	None	16	22	102	DF	$56,600	14	0
Rhode Island Public Transit Authority	Providence, RI	MB	2000	A	TTT	E-450	Sveh	Y	High	Lift	None	None	16	26	96	CL	$65,000	4	4
Rhode Island Public Transit Authority	Providence, RI	MB	1999	A	TTT	E-450	Sveh	Y	High	Lift	None	None	20	26	96	CL	$61,000	6	6

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Rhode Island Public Transit Authority	Providence, RI	MB	2002	A	TTT	E-450	Sveh	Y	High	Lift	None	None	16	26	96	CL	$65,000	5	5
Rhode Island Public Transit Authority	Providence, RI	MB	2004	A	TTT	E-450	Sveh	Y	High	Lift	None	None	17	26	96	CL	$70,000	2	2
Rhode Island Public Transit Authority	Providence, RI	MB	2001	A	TTT	E-450	Sveh	Y	High	Lift	None	None	16	26	96	CL	$65,000	6	6
Rhode Island Public Transit Authority	Providence, RI	DR	1999	A	TTT	TERRA TRANSIT	Sveh	Y	High	Lift	None	None	8	22	87	CL	$55,000	1	1
Rhode Island Public Transit Authority	Providence, RI	DR	1999	A	TTT	TERRA TRANSIT	Sveh	Y	High	Lift	None	None	10	22	87	CL	$55,000	19	19
Rhode Island Public Transit Authority	Providence, RI	DR	2001	A	TTT	TERRA TRANSIT	Sveh	Y	High	Lift	None	None	10	22	87	CL	$60,000	24	24
Rhode Island Public Transit Authority	Providence, RI	DR	2001	A	TTT	TERRA TRANSIT	Sveh	Y	High	Lift	None	None	16	26	96	CL	$65,000	11	11
Rhode Island Public Transit Authority	Providence, RI	DR	2006	A	TTT	TERRA TRANSIT	Sveh	Y	High	Lift	None	None	19	26	96	CL		14	14
Rhode Island Public Transit Authority	Providence, RI	DR	2002	A	TTT	TERRA TRANSIT	Sveh	Y	High	Lift	None	None	17	26	96	CL	$65,000	12	12
Rhode Island Public Transit Authority	Providence, RI	DR	2004	A	TTT	TERRA TRANSIT	Sveh	Y	High	Lift	None	None	17	26	96	CL	$70,000	36	36
Rhode Island Public Transit Authority	Providence, RI	DR	1999	A	TTT	TERRA TRANSIT	Sveh	Y	High	Lift	None	None	16	26	96	CL	$61,000	6	6
Rhode Island Public Transit Authority	Providence, RI	DR	2002	A	TTT	TERRA TRANSIT	Sveh	Y	High	Lift	None	None	16	26	96	CL	$65,000	12	12
Riverside Transit Agency	Riverside, CA	MB	2007	O	EDN	AERO ELITE 270	Sveh	Y	High	Lift	None	None	26	27	96	GA	$93,252	4	0
Riverside Transit Agency	Riverside, CA	DR	2005	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	12	22	94	GA	$50,059	4	0
Riverside Transit Agency	Riverside, CA	MB	2006	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	12	22	94	GA	$51,265	12	0
Riverside Transit Agency	Riverside, CA	MB	2005	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	12	22	94	GA	$50,059	8	0
Riverside Transit Agency	Riverside, CA	MB	2000	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	12	22	94	GA	$48,769	7	0
Riverside Transit Agency	Riverside, CA	MB	2002	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	12	22	94	GA	$46,940	22	0
Riverside Transit Agency	Riverside, CA	DR	2002	A	EDN	AEROTECH 220	Sveh	Y	High	Lift	None	None	12	22	94	GA	$46,940	6	0
Riverside Transit Agency	Riverside, CA	DR	2004	A	EDN	AEROTECH 220	Sveh	Y	High	Lift	None	None	12	22	94	GA	$48,730	10	0
Riverside Transit Agency	Riverside, CA	DR	2000	A	EDN	AEROTECH 220	Sveh	Y	High	Lift	None	None	12	22	94	GA	$48,769	9	0
Riverside Transit Agency	Riverside, CA	DR	2001	A	EDN	AEROTECH 220	Sveh	Y	High	Lift	None	None	12	22	94	GA	$48,769	9	0
Riverside Transit Agency	Riverside, CA	MB	1998	A	EDN	AEROTECH 240	Sveh	Y	High	Lift	None	None	12	24	94	GA	$0	1	0
Riverside Transit Agency	Riverside, CA	MB	2007	O	STR	ALLSTAR 22	Sveh	Y	High	Lift	None	None	12	22	96	GA	$53,804	23	0
Riverside Transit Agency	Riverside, CA	MB	2000	A	GCC	GCII	Sveh	Y	High	Lift	None	None	16	23	94	GA	$52,389	1	0
Roaring Fork Transportation Authority	Aspen, CO	MB	2002	A	EDN	AEROTECH	Sveh	Y	High	Lift	Both	None	15	23	90	GA	$50,976	3	0
Roaring Fork Transportation Authority	Aspen, CO	MB	2006	A	EDN	AEROTECH	Sveh	Y	High	Lift	Both	None	15	23	92	GA	$56,933	2	0
Roaring Fork Transportation Authority	Aspen, CO	MB	2003	A	EDN	AEROTECH	Sveh	Y	High	Lift	Both	None	15	23	90	GA	$51,266	2	0
Roaring Fork Transportation Authority	Aspen, CO	MB	2001	A	EDN	AEROTECH	Sveh	Y	High	Lift	Both	None	18	26	96	GA	$63,448	1	0
Roaring Fork Transportation Authority	Aspen, CO	MB	2005	A	STR	ALLSTAR	Sveh	Y	High	Lift	Both	None	15	23	92	GA	$49,500	1	0
Roaring Fork Transportation Authority	Aspen, CO	MB	1998	A	SPC	CANDIDATE	Sveh	Y	High	Lift	Both	None	13	21	90	GA	$50,784	2	0

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Roaring Fork Transportation Authority	Aspen, CO	MB	1998	A	EDN	ELF	Sveh	Y	Low	Ramp	Both	None	19	25	96	GA	$108,933	1	0
Rochester-Genessee Regional Transportation Authority	Rochester, NY	DR	2003	A	CEQ	CONDOR	Bust	Y	High	Lift	None	None	24	30	96	DF	$77,023	4	0
Rochester-Genessee Regional Transportation Authority	Rochester, NY	DR	2006	A	CEQ	CONDOR	Bust	Y	High	Lift	None	None	24	30	96	DF	$91,840	9	0
Rochester-Genessee Regional Transportation Authority	Rochester, NY	DR	1998	A	GCC	CUTAWAY	Bust	Y	High	Lift	None	None	26	30	96	DF		1	0
Rochester-Genessee Regional Transportation Authority	Rochester, NY	DR	2004	A	OCC	ELF	Sveh	Y	Low	Ramp	None	None	14	22	96	DF	$132,935	2	0
Rochester-Genessee Regional Transportation Authority	Rochester, NY	DR	1998	A	GCC	GCII	Sveh	Y	High	Lift	None	None	16	25	96	GA		2	0
Rochester-Genessee Regional Transportation Authority	Rochester, NY	DR	2002	A	GCC	GCII	Sveh	Y	High	Lift	None	None	24	26	96	DF	$100,678	16	0
Rochester-Genessee Regional Transportation Authority	Rochester, NY	DR	2004	A	CEQ	PHOENIX	Sveh	Y	High	Lift	None	None	10	20	96	DF	$49,485	10	0
Rochester-Genessee Regional Transportation Authority	Rochester, NY	DR	2002	A	CEQ	PHOENIX	Sveh	Y	High	Lift	None	None	10	20	96	DF	$46,899	4	0
Rochester-Genessee Regional Transportation Authority	Rochester, NY	DR	2003	A	CEQ	PHOENIX	Sveh	Y	High	Lift	None	None	10	20	96	DF	$48,113	16	0
Rochester-Genessee Regional Transportation Authority	Rochester, NY	DR	2005	A	CEQ	PHOENIX	Sveh	Y	High	Lift	None	None	10	20	96	DF	$54,172	30	0
Rochester-Genessee Regional Transportation Authority	Rochester, NY	DR	2006	A	CEQ	PHOENIX	Sveh	Y	High	Lift	None	None	10	20	96	DF	$50,293	14	0
Rochester-Genessee Regional Transportation Authority	Rochester, NY	DR	2005	A	CEQ	PHOENIX	Sveh	Y	High	Lift	None	None	16	25	96	DF	$56,715	22	0
Rochester-Genessee Regional Transportation Authority	Rochester, NY	DR	2006	A	CEQ	PHOENIX	Sveh	Y	High	Lift	None	None	14	25	96	DF	$55,736	4	0
Rochester-Genessee Regional Transportation Authority	Rochester, NY	DR	2003	A	CEQ	PHOENIX	Sveh	Y	High	Lift	None	None	16	25	96	DF	$50,933	13	0
Rock Island County Metropolitan Mass Transit District	Davenport, IA	DR	2006	A	EDN	AEROTECH	Sveh	Y	Low	Ramp	None	None	14	25	102	DF	$80,807	1	0
Rock Island County Metropolitan Mass Transit District	Davenport, IA	DR	1994	A	FRD	E-350	Sveh	Y	High	Lift	None	None	12	23	96	DF		1	0
Rock Island County Metropolitan Mass Transit District	Davenport, IA	DR	1998	A	FRD	E-350	Sveh	Y	High	Lift	None	None	12	23	96	DF	$13,990	2	0
Rock Island County Metropolitan Mass Transit District	Davenport, IA	DR	1996	A	FRD	ELF 122	Sveh	Y	Low	Ramp	None	None	15	23	96	GA	$70,995	2	0
Rockford Mass Transit District	Rockford, IL	DR	1994	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	14	23	96	DF		1	0
Rockford Mass Transit District	Rockford, IL	DR	1997	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	14	23	96	DF	$52,657	3	0
Rockford Mass Transit District	Rockford, IL	DR	1999	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	14	24	96	DF	$55,165	6	0
Rockford Mass Transit District	Rockford, IL	DR	1996	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	14	24	96	DF		4	0
Rockford Mass Transit District	Rockford, IL	DR	2003	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	14	24	96	DF		1	0
Rockford Mass Transit District	Rockford, IL	DR	2006	O	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	14	24	96	DF	$85,000	4	0
Saginaw Transit System Authority	Saginaw, MI	DR	1999	A	EDN	AEROTECH 240	Sveh	Y	High	Lift	None	None	12	23	96	DF		4	0
Saginaw Transit System Authority	Saginaw, MI	DR	2002	A	DIA	VIP SERIES	Sveh	Y	High	Lift	None	None	12	23	96	DF		4	0
Saginaw Transit System Authority	Saginaw, MI	DR	2001	A	DIA	VIP SERIES	Sveh	Y	High	Lift	None	None	12	23	96	DF		7	0
San Diego Metropolitan Transit System	San Diego, CA	MB	1999	A	EDN	AERO ELITE	Buss	Y	High	Lift	None	None	26	30	96	DF		5	0
San Diego Metropolitan Transit System	San Diego, CA	DR	2000	A	EDN	AEROLITE	Sveh	Y	High	Lift	None	None	6	20	96	GA	$39,000	2	0
San Diego Metropolitan Transit System	San Diego, CA	DR	2000	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	16	25	96	DF	$56,667	32	0

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San Diego Metropolitan Transit System	San Diego, CA	DR	2006	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	16	25	96	GA	$61,848	70	0
San Diego Metropolitan Transit System	San Diego, CA	DR	2000	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	21	27	96	DF	$63,929	7	0
San Diego Metropolitan Transit System	San Diego, CA	MB	2000	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	21	27	96	DF	$63,929	9	0
San Diego Metropolitan Transit System	San Diego, CA	MB	2001	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	21	27	96	DF	$71,000	3	0
San Diego Metropolitan Transit System	San Diego, CA	MB	2004	A	EDN	AEROTECH 220	Sveh	Y	High	Lift	None	None	17	25	96	DF	$95,000	2	0
San Diego Metropolitan Transit System	San Diego, CA	MB	2003	A	EDN	AEROTECH 220	Sveh	Y	High	Lift	None	None	17	25	96	DF	$95,000	6	0
San Diego Metropolitan Transit System	San Diego, CA	DR	2005	A	EDN	AEROTECH II	Sveh	N	High	None	None	None	21	23	96	LP		9	9
San Diego Metropolitan Transit System	San Diego, CA	DR	2005	A	EDN	AEROTECH II	Sveh	Y	High	Lift	None	None	16	23	96	LP		3	3
San Diego Metropolitan Transit System	San Diego, CA	DR	2003	A	GCC	GCII	Sveh	Y	High	Lift	None	None	16	27	96	DF	$72,000	1	0
San Diego Metropolitan Transit System	San Diego, CA	DR	2004	A	GCC	GCII	Sveh	Y	High	Lift	None	None	16	27	96	DF	$72,000	2	0
San Diego Metropolitan Transit System	San Diego, CA	MB	2003	A	GCC	GCII	Sveh	Y	High	Lift	None	None	18	27	96	DF	$73,000	1	0
San Joaquin Regional Transit District	Stockton, CA	DR	2003	A	EDN	AEROTECH 220	Sveh	Y	High	Lift	None	None	14	24	93	DF	$91,832	16	0
San Joaquin Regional Transit District	Stockton, CA	DR	2001	A	CMC	CRUSADER	Sveh	Y	High	Lift	None	None	14	22	96	CN	$73,403	3	3
San Joaquin Regional Transit District	Stockton, CA	DR	2001	A	CMC	CRUSADER	Sveh	Y	High	Lift	None	None	14	22	96	GA	$73,403	2	0
San Joaquin Regional Transit District	Stockton, CA	DR	1997	A	EDN	ELF	Sveh	Y	Low	Ramp	None	None	20	26	97	DF		19	0
San Mateo County Transit District	San Francisco, CA	DR	2005	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	11	24	96	DF		10	0
San Mateo County Transit District	San Francisco, CA	DR	2001	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	11	24	96	DF		10	0
San Mateo County Transit District	San Francisco, CA	DR	1999	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	11	24	96	DF	$73,980	19	0
San Mateo County Transit District	San Francisco, CA	MB	2003	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	18	22	102	DF	$79,000	3	0
San Mateo County Transit District	San Francisco, CA	DR	2006	O	EDN	AEROTECH	Sveh	Y	Low	Ramp	None	None	11	24	96	DF		19	0
Santa Clara Valley Transportation Authority	San Jose, CA	MB	2005	A	EDN	AERO ELITE	Sveh	Y	High	Lift	None	None	25	27	96	GA	$101,496	5	0
Santa Clara Valley Transportation Authority	San Jose, CA	MB	2007	O	EDN	AERO ELITE	Buss	Y	High	Lift	None	None	25	29	96	GA		20	0
Santa Clarita Transit	Santa Clarita, CA	DR	2002	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	14	24	96	GA		14	0
Santa Clarita Transit	Santa Clarita, CA	DR	2007	O	EDN	AEROTECH 220	Sveh	Y	High	Lift	None	None	12	24	96	GA		4	0
Santa Cruz Metropolitan Transit District	Santa Cruz, CA	DR	2006	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	7	22	96	BD	$58,130	1	1
Santa Cruz Metropolitan Transit District	Santa Cruz, CA	DR	2003	A	GCC	GCII	Sveh	Y	High	Lift	None	None	17	25	96	GA	$64,207	2	0
Santa Cruz Metropolitan Transit District	Santa Cruz, CA	DR	2003	A	GCC	GCII	Sveh	Y	High	Lift	None	None	4	25	96	GA	$64,207	2	0
Santa Cruz Metropolitan Transit District	Santa Cruz, CA	MB	2003	A	GCC	GCII	Sveh	Y	High	Lift	None	None	17	25	96	GA	$89,642	2	0
Sarasota County Area Transit	Sarasota, FL	DR	2002	A	EDN	AERO ELITE	Sveh	Y	High	Lift	None	None	22	25	96	DF	$127,521	2	0
Sarasota County Area Transit	Sarasota, FL	DR	2002	A	EDN	AERO ELITE	Sveh	Y	High	Lift	None	None	12	25	96	DF	$118,644	4	0
Sarasota County Area Transit	Sarasota, FL	DR	2002	A	EDN	AERO ELITE	Sveh	Y	High	Lift	None	None	22	25	96	DF	$118,644	1	0

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Sarasota County Area Transit	Sarasota, FL	DR	2002	A	EDN	AERO ELITE	Sveh	Y	High	Lift	None	None	22	25	96	DF	$125,173	4	0
Sarasota County Area Transit	Sarasota, FL	DR	2000	A	EDN	AERO ELITE	Sveh	Y	High	Lift	None	None	28	27	96	DF	$99,546	1	0
Sarasota County Area Transit	Sarasota, FL	DR	2001	A	EDN	AERO ELITE	Sveh	Y	High	Lift	None	None	20	27	96	DF	$118,081	10	0
Sarasota County Area Transit	Sarasota, FL	DR	2002	A	SPC	STARTRANS	Sveh	Y	High	Lift	None	None	16	22	96	DF	$55,064	3	0
Sarasota County Area Transit	Sarasota, FL	DR	2002	A	SPC	STARTRANS	Sveh	Y	High	Lift	None	None	16	22	96	DF	$56,034	2	0
Sarasota County Area Transit	Sarasota, FL	DR	1995	A	SPC	STARTRANS	Sveh	Y	High	Lift	None	None	12	25	96	DF	$40,655	6	0
Sarasota County Area Transit	Sarasota, FL	DR	1996	A	SPC	STARTRANS	Sveh	Y	High	Lift	None	None	12	25	96	GA	$45,230	1	0
Sarasota County Area Transit	Sarasota, FL	DR	1996	A	SPC	STARTRANS	Sveh	Y	High	Lift	None	None	12	25	96	DF	$41,665	2	0
Sarasota County Area Transit	Sarasota, FL	DR	1998	A	SPC	SUPREME	Sveh	Y	High	Lift	None	None	12	22	96	DF	$43,572	1	0
Sarasota County Area Transit	Sarasota, FL	DR	1997	A	SPC	SUPREME	Sveh	Y	High	Lift	None	None	12	22	96	DF	$41,544	2	0
Sarasota County Area Transit	Sarasota, FL	DR	1997	A	SPC	SUPREME	Sveh	Y	High	Lift	None	None	16	22	96	GA	$42,757	1	0
Sarasota County Area Transit	Sarasota, FL	DR	1999	A	SPC	SUPREME	Sveh	Y	High	Lift	None	None	16	22	96	DF	$48,625	1	0
Sarasota County Area Transit	Sarasota, FL	DR	2000	A	SPC	SUPREME	Sveh	Y	High	Lift	None	None	16	22	96	DF	$50,663	1	0
Sarasota County Area Transit	Sarasota, FL	MB	2006	O	CMD	UNKNWN	Sveh	Y	Low	Ramp	None	None	24	27	96	BF	$98,000	11	0
Shore Transit	Snow Hill, MD	MB	2006	A	FRD	STARTRANS	Sveh	Y	High	Lift	Both	Both	4	24	96	DB		1	1
Shore Transit	Snow Hill, MD	MB	2002	A	FRD	STARTRANS	Sveh	Y	High	Lift	Both	Both	16	24	96	DF		11	0
Shore Transit	Snow Hill, MD	MB	2000	A	FRD	STARTRANS	Sveh	Y	High	Lift	Both	Both	16	24	96	DF		1	0
Shore Transit	Snow Hill, MD	MB	2005	A	FRD	STARTRANS	Sveh	Y	High	Lift	Both	Both	16	24	96	DF		5	0
Shore Transit	Snow Hill, MD	MB	2004	A	FRD	STARTRANS	Sveh	Y	High	Lift	Both	Both	12	24	96	DB		4	4
Shore Transit	Snow Hill, MD	MB	2003	A	FRD	STARTRANS	Sveh	Y	High	Lift	Both	Both	16	24	96	BF		10	0
Shore Transit	Snow Hill, MD	MB	2001	A	INT	STARTRANS	Bust	Y	High	Lift	Both	Both	26	30	96	DB		5	5
Shuttle-UM Transit System	Washington, DC	DR	1996	A	FRD	BUS	Sveh	Y	High	Lift	None	None	12	22	96	DF		3	0
Shuttle-UM Transit System	Washington, DC	DR	2002	A	FRD	BUS	Sveh	N	High	None	None	None	13	22	96	DF		6	0
Shuttle-UM Transit System	Washington, DC	DR	2002	A	FRD	BUS	Sveh	Y	High	Lift	None	None	12	23	96	DF		5	0
Shuttle-UM Transit System	Washington, DC	DR	2002	A	FRD	BUS	Sveh	Y	High	Lift	None	None	21	27	96	DF		1	0
Simi Valley Transit	Simi Valley, CA	DR	2004	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	20	24	96	CN	$79,000	3	3
Simi Valley Transit	Simi Valley, CA	DR	2006	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	20	24	96	CN	$82,547	3	3
Simi Valley Transit	Simi Valley, CA	DR	2002	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	20	24	96	CN	$81,868	5	5
Simi Valley Transit	Simi Valley, CA	DR	2003	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	20	24	96	CN	$82,517	1	1
Snohomish County Public Transportation Benefit Area Corporation	Seattle, WA	DR	2006	A	EDN	AEROTECH 240	Sveh	Y	High	Lift	None	None	14	24	96	GA		13	0
Snohomish County Public Transportation Benefit Area Corporation	Seattle, WA	DR	2003	A	EDN	AEROTECH 24FA	Sveh	Y	High	Lift	None	None	14	24	96	GA		41	0

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Snohomish County Public Transportation Benefit Area Corporation	Seattle, WA	DR	2001	A	EDN	AEROTECH 24FA	Sveh	Y	High	Lift	None	None	14	24	96	GA		8	0
South Bend Public Transporation Corporation	South Bend, IN	DR	2006	A	CEQ	E-450	Sveh	Y	High	Lift	None	None	11	26	96	DF	$54,000	4	0
South Bend Public Transporation Corporation	South Bend, IN	DR	2005	A	CEQ	E-450	Sveh	Y	High	Lift	None	None	11	26	96	DF	$51,000	5	0
South Coast Area Transit	Oxnard, CA	MB	2004	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	15	23	99	CN	$68,752	2	2
South Coast Area Transit	Oxnard, CA	DR	2004	A	EDN	AEROTECH II	Sveh	Y	High	Lift	None	None	15	23	99	CN	$67,852	2	2
South Coast Area Transit	Oxnard, CA	DR	2005	A	EDN	AEROTECH II	Sveh	Y	High	Lift	None	None	15	23	99	CN	$67,000	1	1
South Coast Area Transit	Oxnard, CA	DR	2003	A	EDN	AEROTECH II	Sveh	Y	High	Lift	None	None	15	23	99	CN	$66,548	9	9
South East Area Transit	Zanesville, OH	MB	1997	A	EDN	AERO ELITE	Busi	N	High	None	None	None	33	33	102	DF		1	0
South East Area Transit	Zanesville, OH	MB	1999	A	EDN	AERO ELITE	Busi	Y	High	Lift	High	Lift	29	33	102	DF		1	0
South East Area Transit	Zanesville, OH	MB	1996	A	EDN	AEROTECH	Sveh	Y	High	Lift	High	Lift	16	15	96	DF		1	0
South East Area Transit	Zanesville, OH	MB	2001	A	EDN	AEROTECH	Sveh	Y	High	Lift	High	Lift	18	25	96	DF	$57,384	5	0
South East Area Transit	Zanesville, OH	MB	1995	A	EDN	AEROTECH	Sveh	Y	High	Lift	High	Lift	18	25	96	DF	$49,080	3	0
South East Area Transit	Zanesville, OH	MB	1998	A	EDN	AEROTECH	Sveh	Y	High	Lift	High	Lift	20	25	96	DF		3	0
South East Area Transit	Zanesville, OH	MB	1999	A	EDN	AEROTECH	Sveh	Y	High	Lift	High	Lift	18	25	96	DF		1	0
South East Area Transit	Zanesville, OH	MB	2002	A	EDN	AEROTECH	Sveh	Y	High	Lift	High	Lift	18	25	96	DF		2	0
South East Area Transit	Zanesville, OH	MB	2004	A	EDN	AEROTECH	Sveh	Y	High	Lift	High	Lift	21	26	96	DF		2	0
South East Area Transit	Zanesville, OH	MB	2006	A	EDN	AEROTECH	Sveh	Y	High	Lift	High	Lift	18	26	96	DF	$64,892	3	0
South East Area Transit	Zanesville, OH	MB	2005	A	EDN	AEROTECH	Sveh	Y	High	Lift	High	Lift	18	26	96	DF	$63,942	3	0
South East Area Transit	Zanesville, OH	MB	2003	A	GCC	GOSHEN	Sveh	Y	High	Lift	High	Lift	18	25	96	DF		2	0
South Metro Area Rapid Transit	Portland, OR	DR	2003	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	21	25	96	DF	$58,000	2	0
South Metro Area Rapid Transit	Portland, OR	DR	1997	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	19	26	96	DF	$56,000	1	0
South Metro Area Rapid Transit	Portland, OR	MB	2002	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	21	25	96	DF	$58,000	4	0
South Metro Area Rapid Transit	Portland, OR	MB	2004	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	21	26	96	DF	$58,000	1	0
South Metro Area Rapid Transit	Portland, OR	MB	2003	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	20	26	96	DF	$58,000	1	0
South Metro Area Rapid Transit	Portland, OR	MB	2005	A	CMC	CHALLENGER	Sveh	Y	High	Lift	None	None	21	26	96	DF	$62,000	4	0
South Metro Area Rapid Transit	Portland, OR	DR	2003	A	FRD	COMTRANS	Sveh	Y	High	Lift	None	None	12	20	72	DF	$56,000	1	0
South Metro Area Rapid Transit	Portland, OR	MB	2006	A	CMC	CTS	Bust	Y	High	Lift	None	None	35	35	102	DF	$175,000	2	0
Southeastern Pennsylvania Transportation Authority	Philadelphia, PA	DR	2004	A	CMC	CHALLENGER	Sveh	Y	High	Lift	None	None	14	26	90	DF	$45,300	10	0
Southeastern Pennsylvania Transportation Authority	Philadelphia, PA	DR	2003	A	CMC	CHALLENGER	Sveh	Y	High	Lift	None	None	14	26	90	DF	$52,000	8	0
Southeastern Pennsylvania Transportation Authority	Philadelphia, PA	MB	2004	A	CMC	CHAMP27	Sveh	Y	High	Lift	None	None	25	27	96	DF	$115,207	28	0
Southeastern Pennsylvania Transportation Authority	Philadelphia, PA	DR	2006	A	CEQ	METRO LITE	Sveh	N	High	None	None	None	12	19	81	GA	$39,600	25	0

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Southeastern Pennsylvania Transportation Authority	Philadelphia, PA	DR	2006	A	CEQ	METRO LITE	Sveh	Y	High	Lift	None	None	7	21	81	GA	$44,900	42	0
Southeastern Pennsylvania Transportation Authority	Philadelphia, PA	DR	2008	O	CEQ	METRO LITE	Sveh	N	High	None	None	None	12	19	81	GA	$46,788	40	0
Southeastern Pennsylvania Transportation Authority	Philadelphia, PA	DR	2007	O	CEQ	METRO LITE	Sveh	N	High	None	None	None	12	19	81	GA	$46,788	30	0
Southeastern Pennsylvania Transportation Authority	Philadelphia, PA	DR	2009	O	CEQ	METRO LITE	Sveh	Y	High	Lift	None	None	7	21	81	GA	$50,277	60	0
Southeastern Pennsylvania Transportation Authority	Philadelphia, PA	DR	2008	O	CEQ	METRO LITE	Sveh	Y	High	Lift	None	None	7	21	81	GA	$50,277	20	0
Southeastern Pennsylvania Transportation Authority	Philadelphia, PA	DR	2007	O	CEQ	METRO LITE	Sveh	Y	High	Lift	None	None	7	21	81	GA	$50,277	35	0
Southeastern Pennsylvania Transportation Authority	Philadelphia, PA	DR	2001	A	CEQ	PEGASUS	Sveh	N	High	None	None	None	12	19	81	DF	$45,747	48	0
Southeastern Pennsylvania Transportation Authority	Philadelphia, PA	DR	2002	A	CEQ	PEGASUS	Sveh	Y	High	Lift	None	None	12	19	81	DF	$45,747	17	0
Southeastern Pennsylvania Transportation Authority	Philadelphia, PA	DR	2004	A	CEQ	PEGASUS	Sveh	Y	High	Lift	None	None	12	19	81	GA	$37,900	30	0
Southeastern Pennsylvania Transportation Authority	Philadelphia, PA	DR	2005	A	CEQ	PEGASUS	Sveh	N	High	None	None	None	12	20	81	GA	$37,900	37	0
Southeastern Pennsylvania Transportation Authority	Philadelphia, PA	DR	2005	A	CEQ	PEGASUS	Sveh	Y	High	Lift	None	None	7	20	81	GA	$46,900	37	0
Southeastern Pennsylvania Transportation Authority	Philadelphia, PA	DR	2004	A	CEQ	PEGASUS	Sveh	Y	High	Lift	None	None	7	21	81	DF	$46,900	32	0
Southeastern Pennsylvania Transportation Authority	Philadelphia, PA	DR	2002	A	CEQ	PEGASUS	Sveh	Y	High	Lift	None	None	7	21	81	DF	$47,747	11	0
Southeastern Pennsylvania Transportation Authority	Philadelphia, PA	DR	2001	A	CEQ	PEGASUS	Sveh	Y	High	Lift	None	None	7	21	81	DF	$47,747	47	0
Southeastern Pennsylvania Transportation Authority	Philadelphia, PA	DR	2003	A	CEQ	PEGASUS	Sveh	Y	High	Lift	None	None	7	21	81	DF	$47,747	52	0
Southeastern Pennsylvania Transportation Authority	Philadelphia, PA	MB	1999	A	CEQ	PHOENIX	Sveh	Y	High	Lift	None	None	20	25	93	DF	$57,409	5	0
Southern Nevada Transit Coalition	Laughlin, NV	MB	1997	A	TTT	BUS	Buss	Y	High	Lift	High	Lift	25	35	100	DF		1	0
Southern Nevada Transit Coalition	Laughlin, NV	MB	2003	A	FRD	CUTAWAY	Sveh	Y	High	Lift	High	Lift	22	25	100	DF		3	0
Southern Nevada Transit Coalition	Laughlin, NV	MB	1996	A	FRD	CUTAWAY	Sveh	Y	High	Lift	High	Lift	20	25	100	DF		2	0
Southern Nevada Transit Coalition	Laughlin, NV	MB	2003	A	FRD	CUTAWAY	Sveh	Y	High	Lift	High	Lift	19	25	100	DF		1	0
Southern Nevada Transit Coalition	Laughlin, NV	MB	2000	A	FRD	CUTAWAY	Sveh	Y	High	Lift	High	Lift	8	25	100	DF		1	0
Southern Nevada Transit Coalition	Laughlin, NV	MB	1998	A	FRD	CUTAWAY	Sveh	Y	High	Lift	High	Lift	20	25	100	DF		1	0
Southern Nevada Transit Coalition	Laughlin, NV	MB	1997	A	FRD	CUTAWAY	Sveh	Y	High	Lift	High	Lift	20	25	100	DF		1	0
Southern Nevada Transit Coalition	Laughlin, NV	MB	1996	A	FRD	CUTAWAY	Sveh	Y	High	Lift	High	Lift	12	25	100	DF		1	0
Southern Nevada Transit Coalition	Laughlin, NV	MB	2000	A	STR	CUTAWAY	Sveh	Y	High	Lift	High	Lift	15	25	100	DF		1	0
Southwest Metro Transit	Eden Prairie, MN	MB	2001	A	CMC	CHALLENGER	Sveh	Y	High	Lift	None	None	13	23	96	DF		5	0
Southwest Metro Transit	Eden Prairie, MN	MB	2003	A	CMC	CHALLENGER	Sveh	Y	High	Lift	None	None	18	27	96	DF		2	0
Southwest Metro Transit	Eden Prairie, MN	MB	2000	A	FED	FEDERAL	Sveh	Y	High	Lift	None	None	21	24	96	DF		2	0
Southwest Ohio Regional Transit Authority	Cincinnati, OH	DR	2001	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	10	24	96	DF	$56,180	41	0
Southwest Ohio Regional Transit Authority	Cincinnati, OH	DR	2000	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	10	24	96	DF	$55,320	2	0
Southwest Ohio Regional Transit Authority	Cincinnati, OH	DR	2005	A	EDN	ELDORADO	Sveh	Y	High	Lift	None	None	10	24	96	DF		3	0

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Spokane Transit Authority	Spokane, WA	MB	2005	A	FRD	CUTAWAY	Sveh	Y	Low	Ramp	None	None	15	21	96	DF		5	0
Spokane Transit Authority	Spokane, WA	DR	2001	A	FRD	CUTAWAY E450	Sveh	Y	High	Lift	None	None	15	19	78	GA		12	0
Spokane Transit Authority	Spokane, WA	DR	2004	A	FRD	CUTAWAY E450	Sveh	Y	High	Lift	None	None	15	22	96	DF		24	0
Spokane Transit Authority	Spokane, WA	DR	2005	A	FRD	CUTAWAY E450	Sveh	Y	High	Lift	None	None	15	22	96	DF		26	0
Springfield Mass Transit District	Springfield, IL	DR	1997	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	15	23	96	DF		2	0
Springfield Mass Transit District	Springfield, IL	DR	2003	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	14	23	96	DF		4	0
Springfield Mass Transit District	Springfield, IL	DR	1999	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	14	23	96	DF		4	0
Springfield Mass Transit District	Springfield, IL	DR	2001	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	14	23	96	DF		3	0
Springfield Mass Transit District	Springfield, IL	DR	1998	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	15	23	96	DF		2	0
Springfield Mass Transit District	Springfield, IL	MB	2005	A	EDN	EL/NAT	Bust	Y	Low	Ramp	None	None	31	30	96	CN	$314,800	3	3
Stanford University Parking & Transportation Dept	San Jose, CA	MB	2003	A	EDN	AERO TECH	Sveh	Y	High	Lift	None	None	20	27	96	DF	$65,000	1	0
Stanford University Parking & Transportation Dept	San Jose, CA	MB	2005	A	EDN	AEROTECH 320	Buss	Y	High	Lift	None	None	28	30	96	DF	$90,000	4	0
Stanford University Parking & Transportation Dept	San Jose, CA	MB	2004	A	EDN	AEROTECH 320	Buss	Y	High	Lift	None	None	30	30	96	DF	$90,000	6	0
Stark Area Regional Transit Authority	Canton, OH	MB	2005	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	16	22	96	DF	$69,303	14	0
Stark Area Regional Transit Authority	Canton, OH	MB	2007	O	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	16	22	96	DF		10	0
Stark Area Regional Transit Authority	Canton, OH	MB	2001	A	GCC	GCII	Sveh	Y	High	Lift	None	None	14	22	96	DF	$68,771	2	0
Stark Area Regional Transit Authority	Canton, OH	MB	2003	A	GCC	GCII	Sveh	Y	High	Lift	None	None	14	22	96	DF	$67,147	5	0
Stark Area Regional Transit Authority	Canton, OH	MB	2003	A	GCC	GCII	Sveh	Y	High	Lift	None	None	14	22	96	DF	$62,462	8	0
Stark Area Regional Transit Authority	Canton, OH	MB	1999	A	GCC	GCII	Sveh	Y	High	Lift	None	None	16	24	96	DF	$62,265	4	0
Stark Area Regional Transit Authority	Canton, OH	MB	2000	A	GCC	GCII	Sveh	Y	High	Lift	None	None	14	26	96	DF	$64,093	8	0
StarMetro - City of Tallahassee	Tallahassee, FL	DR	2002	A	CMC	CHALLENGER	Sveh	Y	High	Lift	None	None	14	23	96	DF		13	0
StarMetro - City of Tallahassee	Tallahassee, FL	DR	2000	A	SPC	SENATOR	Sveh	Y	High	Lift	None	None	14	23	96	GA		4	0
SunLine Transit Agency	Indio, CA	DR	2004	A	EDN	AEROTECH 220	Sveh	Y	High	Lift	None	None	12	23	96	CN		9	9
SunLine Transit Agency	Indio, CA	DR	2002	A	EDN	AEROTECH 220	Sveh	Y	High	Lift	None	None	12	23	96	CN		11	11
The Transit Authority	Huntington, WV	DR	2006	A	GCC	GCII	Sveh	Y	High	Lift	None	None	14	24	96	DF	$68,404	3	0
The Transit Authority	Huntington, WV	DR	2006	A	GCC	PACER II	Sveh	Y	High	Lift	None	None	11	22	96	GA	$49,386	3	0
The Wave Transit System	Mobile, AL	DR	2005	A	GCC	E-450	Sveh	Y	High	Lift	None	None	10	21	99	GA	$40,539	6	0
The Wave Transit System	Mobile, AL	MB	2003	A	GCC	E-450	Sveh	Y	High	Lift	None	None	21	25	102	DF	$62,609	6	0
The Wave Transit System	Mobile, AL	DR	2002	A	GCC	GCII	Sveh	Y	High	Lift	None	None	14	25	101	CN	$73,644	8	8
The Wave Transit System	Mobile, AL	DR	2002	A	GCC	GCII	Sveh	Y	High	Lift	None	None	14	25	101	CN	$65,744	5	5
Toledo Area Regional Transit Authority	Toledo, OH	DR	1993	A	SPC	35C	Sveh	Y	High	Lift	None	None	9	21	96	DF		3	0

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Toledo Area Regional Transit Authority	Toledo, OH	DR	2002	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	9	20	96	DF	$52,959	9	0
Toledo Area Regional Transit Authority	Toledo, OH	DR	1999	A	EDN	AEROTECH	Sveh	Y	Low	Ramp	None	None	9	24	96	DF		3	0
Toledo Area Regional Transit Authority	Toledo, OH	DR	2005	A	GCC	CUTAWAY	Sveh	Y	High	Lift	None	None	9	22	81	DF	$54,346	15	0
Toledo Area Regional Transit Authority	Toledo, OH	MB	2006	A	GCC	CUTAWAY	Sveh	Y	High	Lift	None	None	19	22	81	DF	$97,000	5	0
Toledo Area Regional Transit Authority	Toledo, OH	DR	2002	A	GCC	GCII	Sveh	Y	High	Lift	None	None	9	25	96	DF	$68,173	4	0
Toledo Area Regional Transit Authority	Toledo, OH	MB	2004	A	GCC	GCII	Sveh	Y	High	Lift	None	None	24	24	96	DF	$91,894	10	0
Tompkins Consolidated Area Transit (TCAT)	Ithaca, NY	MB	2006	A	FRD	E-450	Sveh	Y	High	Lift	None	None	16	23	93	DF	$59,805	2	0
Topeka Metropolitan Transit Authority	Topeka, KS	DR	2006	A	GCC	GCII	Sveh	Y	High	Lift	None	None	9	25	96	GA	$56,400	15	0
Transfort	Fort Collins, CO	DR	2003	A	FRD	E-450	Sveh	Y	High	Lift	None	None	12	23	96	CN		2	2
Transfort	Fort Collins, CO	DR	1999	A	FRD	E-450	Sveh	Y	High	Lift	None	None	10	23	96	ET		5	5
Transfort	Fort Collins, CO	DR	2001	A	FRD	E-450	Sveh	Y	High	Lift	None	None	12	23	96	ET		6	6
Transfort	Fort Collins, CO	DR	2006	O	FRD	E-450	Sveh	Y	High	Lift	None	None	12	23	96	CN	$51,072	2	2
Transit Authority of Lexington-Fayette Urban County Gov't.	Lexington, KY	MB	2006	A	SPC	CUTAWAY	Sveh	Y	High	Lift	None	None	19	26	96	DF	$68,280	4	0
Transit Authority of Northern Kentucky	Cincinnati, OH	DR	2004	A	GCC	STARTRANS	Sveh	Y	High	Lift	None	None	16	26	98	DF		5	0
Transit Authority of Northern Kentucky	Cincinnati, OH	DR	2006	A	GCC	STARTRANS	Sveh	Y	High	Lift	High	Lift	16	26	98	DF		6	0
Transit Authority of Northern Kentucky	Cincinnati, OH	DR	2005	A	GCC	STARTRANS	Sveh	Y	High	Lift	None	None	16	26	98	DF		7	0
Transit Authority of Northern Kentucky	Cincinnati, OH	DR	2002	A	SPC	STARTRANS	Sveh	Y	High	Lift	None	None	16	26	96	DF		1	0
Transit Authority of Northern Kentucky	Cincinnati, OH	DR	2000	A	SPC	STARTRANS	Sveh	Y	High	Lift	None	None	16	26	96	DF		3	0
Transit Authority of Northern Kentucky	Cincinnati, OH	DR	2007	O	GCC	STARTRANS	Sveh	Y	High	Lift	High	Lift	16	26	98	DF		6	0
Transit Authority of River City	Louisville, KY	MB	2006	A	FRD	E-350	Sveh	Y	High	Lift	None	None	9	20	90	CL	$52,164	31	31
Transit Authority of River City	Louisville, KY	MB	2003	A	FRD	E-350	Sveh	Y	High	Lift	None	None	9	20	90	CL	$52,164	29	29
Transit Authority of River City	Louisville, KY	MB	2006	A	FRD	E-450	Sveh	Y	High	Lift	None	None	9	20	90	CL	$57,312	23	23
Transportation District Commission of Hampton Roads	Virginia Beach, VA	DR	2001	A	SPC	STARTRANS	Sveh	Y	High	Lift	None	None	12	21	96	GA		4	0
Transportation District Commission of Hampton Roads	Virginia Beach, VA	DR	2001	A	SPC	STARTRANS	Sveh	Y	High	Lift	None	None	12	21	96	GA	$42,227	9	0
Transportation District Commission of Hampton Roads	Virginia Beach, VA	DR	2003	A	SPC	STARTRANS	Sveh	Y	High	Lift	None	None	10	21	96	GA	$49,700	20	0
Transportation District Commission of Hampton Roads	Virginia Beach, VA	DR	2005	A	SPC	STARTRANS	Sveh	Y	High	Lift	None	None	10	21	96	GA		19	0
Transportation District Commission of Hampton Roads	Virginia Beach, VA	DR	2000	A	SPC	STARTRANS	Sveh	Y	High	Lift	None	None	10	21	96	GA	$47,319	33	0
Triangle Transit Authority	Raleigh, NC	MB	2001	A	EDN	AERO ELITE	Bust	Y	High	Lift	None	None	24	30	96	DF	$113,984	20	0
Tri-County Metropolitan Transportation District of Oregon	Portland, OR	MB	1998	A	CBC	300 RE-185	Sveh	Y	High	Lift	None	None	20	27	96	DF	$166,667	18	0
Tri-County Metropolitan Transportation District of Oregon	Portland, OR	DR	2004	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	13	24	96	DF		8	0
Tri-County Metropolitan Transportation District of Oregon	Portland, OR	DR	1997	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	13	24	96	DF		22	0

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Tri-County Metropolitan Transportation District of Oregon	Portland, OR	DR	1998	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	13	24	96	DF	$60,000	50	0
Tri-County Metropolitan Transportation District of Oregon	Portland, OR	DR	1999	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	13	24	96	DF	$64,333	29	0
Tri-County Metropolitan Transportation District of Oregon	Portland, OR	DR	2001	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	13	24	96	DF	$66,970	47	0
Tri-County Metropolitan Transportation District of Oregon	Portland, OR	DR	2000	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	13	24	96	DF	$67,640	33	0
Tri-County Metropolitan Transportation District of Oregon	Portland, OR	DR	1996	A	EDN	AEROTECH 240	Sveh	Y	High	Lift	None	None	13	24	96	DF		24	0
University of New Hampshire Wildcat Transit	Durham, NH	MB	2003	A	FRD	E-450	Sveh	Y	High	Lift	None	None	16	25	90	CN	$48,000	4	4
University of New Hampshire Wildcat Transit	Durham, NH	MB	2003	A	FRD	E-450	Sveh	Y	High	Lift	None	None	12	25	90	CN	$48,000	2	2
University of New Hampshire Wildcat Transit	Durham, NH	MB	1999	A	SPC	STARTRANS	Sveh	Y	High	Lift	None	None	14	25	90	GA		2	0
University Transport System	Davis, CA	MB	1999	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	20	22	96	DF	$50,000	1	0
University Transport System	Davis, CA	MB	2004	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	20	22	96	CN	$75,745	1	1
University Transport System	Davis, CA	MB	2002	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	20	22	96	DF	$50,000	1	0
University Transportation and Parking Services	Sacramento, CA	MB	1992	A	CBC	BU	Sveh	Y	High	Lift	High	Lift	22	26	92	DF		1	0
University Transportation and Parking Services	Sacramento, CA	MB	1989	A	FRD	CY	Sveh	Y	High	Lift	High	Lift	22	22	92	DF		2	0
University Transportation and Parking Services	Sacramento, CA	MB	2005	A	FRD	E-350	Sveh	Y	High	None	High	None	15	20	78	GA	$25,000	1	0
Utah Transit Authority	Salt Lake City, UT	DR	1999	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	10	25	96	DF	$50,666	5	0
Utah Transit Authority	Salt Lake City, UT	DR	2005	A	GCC	GCII PARATRANSIT	Sveh	Y	High	Lift	None	None	10	26	96	DF	$52,000	10	0
Utah Transit Authority	Salt Lake City, UT	DR	2002	A	GLV	PARATRANSIT	Sveh	Y	High	Lift	None	None	10	26	96	DF	$52,000	21	0
Utah Transit Authority	Salt Lake City, UT	DR	2003	A	GLV	PARATRANSIT	Sveh	Y	High	Lift	None	None	10	26	96	DF	$55,000	64	0
Utah Transit Authority	Salt Lake City, UT	DR	2002	A	GLV	PARATRANSIT	Sveh	Y	High	Lift	None	None	10	26	96	GA	$49,000	2	0
Utah Transit Authority	Salt Lake City, UT	DR	1994	A	SPC	SENATOR	Sveh	Y	High	Lift	None	None	8	24	96	DF		3	0
Utah Transit Authority	Salt Lake City, UT	DR	1996	A	SPC	SENATOR	Sveh	Y	High	Lift	None	None	6	24	96	DF		1	0
Utah Transit Authority	Salt Lake City, UT	DR	1997	A	SPC	SENATOR	Sveh	Y	High	Lift	None	None	10	25	96	DF		1	0
Valley Regional Transit	Boise City, ID	MB	2005	A	EDN	C5500	Bust	Y	High	Lift	None	None	24	33	96	DF		4	0
Valley Regional Transit	Boise City, ID	DR	2005	A	EDN	E-450	Sveh	Y	High	Lift	None	None	12	23	96	GA		2	0
Valley Regional Transit	Boise City, ID	MB	2005	A	EDN	E-450	Bust	Y	High	Lift	None	None	20	28	96	DF		8	0
Valley Regional Transit	Boise City, ID	DR	1999	A	STR	STARTRANS	Sveh	Y	High	Lift	None	None	16	25	96	DF	$19,500	2	0
Valley Regional Transit	Boise City, ID	DR	2003	A	STR	STARTRANS	Sveh	Y	High	Lift	None	None	16	25	96	DF	$58,000	7	0
VIA Metropolitan Transit	San Antonio, TX	DR	1994	A	CMC	COMMANDER	Sveh	Y	High	Lift	None	None	5	25	96	LP		11	11
Visalia City Coach	Visalia, CA	MB	2002	A	EDN	AEROTECH 240	Bust	Y	High	Lift	None	None	14	30	94	CN	$89,208	5	5
Waco Transit System	Waco, TX	DR	1999	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	8	25	96	DF	$60,994	2	0
Waco Transit System	Waco, TX	DR	2006	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	8	25	96	DF	$57,593	4	0

Transit Agency Name	Urbanized Area Metropolitan Area Urban Place	Mode Code	Year Built	Status	MFG. Code	Model	Vehicle Type	Wheelchair Accessible	Vehicle Floor Height	On-vehicle Accessibility Equipment	Platform Height	Platform Accessibility Equipment	No. of Seats	Length in Feet	Width in Inches	Power Type Code	Cost per Vehicle	Total No. of Vehicles	No. of Alternative-power Vehicles
Waco Transit System	Waco, TX	DR	2005	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	8	25	96	DF	$57,593	4	0
Waco Transit System	Waco, TX	MB	2000	A	EDN	AEROTECH	Sveh	Y	High	Lift	None	None	15	25	96	DF	$67,509	3	0
Waco Transit System	Waco, TX	MB	1996	A	EDN	ELF	Sveh	Y	Low	Ramp	None	None	18	24	96	DF	$93,274	1	0
Waco Transit System	Waco, TX	DR	2000	A	GCC	GCII	Sveh	Y	High	Lift	None	None	8	25	96	DF	$57,554	2	0
Waco Transit System	Waco, TX	MB	2001	A	GCC	GCII	Sveh	Y	High	Lift	None	None	22	26	96	DF	$286,194	1	0
Washington Metropolitan Area Transit Authority	Washington, DC	MB	2001	A	FRD	CUTAWAY	Sveh	Y	High	Lift	None	None	22	25	96	DF		4	0
Westchester County Department of Transportation	New York, NY	MB	2004	A	CEQ	PHOENIX	Sveh	Y	High	Lift	None	None	18	25	84	CL	$80,348		20
Westmoreland County Transit Authority	Pittsburgh, PA	MB	2005	A	EDN	AEROLITE	Buss	Y	High	Lift	None	None	28	30	96	DF	$105,074	3	0
Westmoreland County Transit Authority	Pittsburgh, PA	MB	2003	A	CEQ	CONDOR	Buss	Y	High	Lift	None	None	28	30	96	DF	$99,300	6	0
Winston-Salem Transit Authority	Winston-Salem, NC	DR	2006	A	CMC	E-450	Sveh	Y	High	Lift	High	Lift	16	25	96	BF	$69,767	3	0
Winston-Salem Transit Authority	Winston-Salem, NC	DR	2003	A	GCC	GCII	Sveh	Y	High	Lift	None	None	16	25	96	DF	$63,484	8	0
																	0	**11,368**	**932**

Source: APTA *2007 Transit Vehicle Database*

***Note:** Please note that several columns from APTA's original dataset are removed from this Appendix in order to allow the dataset to fit this format. The following columns are not included in this dataset (member ID, city, state, country, engine manufacturer code, number of rehabilitated vehicles, number of vehicles to be rehabilitated, number of wheelchair accessible vehicles).

Mode Codes
DR= Demand Response
JT = Jitney
MB = Bus

Status
A = Available
O = Confirmed Order

Vehicle Type
Sveh = Small Vehicle
Busi = Bus (Intercity)
Buss = Bus (Suburban)
Bust = Bus (Transit)

Power Type Code
See Glossary (page v.)

Manufacturer Codes
CBC = Collins Bus Corporation
CEQ = Coach and Equipment Manufacturing Corp.
CMC = Champion Motor Coach (Thor Commercial Bus)
CMD = Chevrolet Motor Division (General Motors Corp.)
COT = CommTrans
DIA = Diamond Coach Corporation
EDN = ElDorado National (Thor Commercial Bus)
FDC = Federal Coach
FED = Federal Motors
GCC = Goshen Coach (Thor Commercial Bus)
GIR = Girardin Corporation
GLV = Glaval Industries
GMC = General Motors Corporation
INT = International Truck & Engine Corp.
KKI = Krystal Koach
MDI = Mid Bus
MTC = Metrotrans Corporation
OCC = Overland Custom Coach
SPC = Supreme Corporation (Startrans)
STR = Starcraft Automotive Group
SVM = Specialty Vehicles Manufacturing Corp.
TTB = Thomas Built Buses
TTT = Turtle Top

Appendix 2: List of U.S. Transit Agencies Reporting Cutaway Vehicles

(BASED ON APTA's *2007 TRANSIT VEHICLE DATABASE* of 288 transit agencies)
*Agencies participating in this report are highlighted in yellow in this Appendix.

Transit Agency Name	City/State
1. Access Services	Los Angeles, CA
2. Alameda-Contra Costa Transit District	San Francisco, CA
3. Altoona Metro Transit	Altoona, PA
4. Ames Transit Agency	Ames, IA
5. Ann Arbor Transportation Authority	Ann Arbor, MI
6. Anoka County Transit	Minneapolis, MN
7. Antelope Valley Transit Authority	Lancaster, CA
8. AppalCART	Boone, NC
9. Area Transportation Authority of North Central Pennsylvania	Johnsonburg, PA
10. Arlington County Department of Public Works	Washington, DC
11. Audubon Area Community Services, Inc.	Owensboro, KY
12. Battle Creek Transit	Battle Creek, MI
13. Beaver County Transit Authority	Rochester, PA
14. Belle Urban System	Racine, WI
15. Ben Franklin Transit	Kennewick, WA
16. Berks Area Reading Transportation Authority	Reading, PA
17. Birmingham-Jefferson County Transit Authority	Birmingham, AL
18. Bi-State Development Agency	Saint Louis, MO
19. Black Hawk Transportation Authority	Black Hawk, CO
20. Blacksburg Transit	Blacksburg, VA
21. Bloomington Public Transportation Corporation	Bloomington, IN
22. Blue Water Area Transportation Commission	Port Huron, MI
23. Broward County Division of Mass Transit	Miami, FL
24. Bullhead Area Transit System	Bullhead City, AZ
25. Butler County Regional Transit Authority	Hamilton, OH
26. Cambria County Transit Authority	Johnstown, PA
27. Canby Area Transit-City of Canby	Canby, OR
28. Cape Fear Public Transportation Authority	Wilmington, NC
29. Capital Area Transit System	Baton Rouge, LA
30. Capital Area Transportation Authority	Lansing, MI
31. Capital District Transportation Authority	Albany, NY
32. Capital Metropolitan Transportation Authority	Austin, TX
33. Central Arkansas Transit Authority	Little Rock, AR
34. Central Ohio Transit Authority	Columbus, OH
35. Central Oklahoma Transportation and Parking Authority	Oklahoma City, OK
36. Champaign-Urbana Mass Transit District	Champaign, IL
37. Charleston Area Regional Transportation Authority	Charleston, SC
38. Charlotte Area Transit System	Charlotte, NC
39. Chatham Area Transit Authority	Savannah, GA
40. Chattanooga Area Regional Transportation Authority	Chattanooga, TN
41. Chelan-Douglas Public Transportation Benefit Area	Wenatchee, WA

Transit Agency Name	City/State
42. Chittenden County Transportation Authority	Burlington, VT
43. Citibus	Lubbock, TX
44. City & County of Honolulu Dept. of Transportation Services	Honolulu, HI
45. City of Benicia/Finance Department/Transit Services Division	Benicia, CA
46. City of Elk Grove Transit	Elk Grove, CA
47. City of Gadsden Transportation Services	Gadsden, AL
48. City of Galveston Island Transit	Galveston, TX
49. City of Las Cruces-RoadRUNNER Transit	Las Cruces, NM
50. City of Phoenix Public Transit Department	Phoenix, AZ
51. City of Redondo Beach	Redondo Beach, CA
52. City of Tempe Transportation Division	Phoenix, AZ
53. City of Tucson Mass Transit System	Tucson, AZ
54. CityLink	Abilene, TX
55. Clallam Transit System	Port Angeles, WA
56. Clark County Public Transportation Benefit Area Authority	Portland, OR
57. CNY Centro	Syracuse, NY
58. Community Action of Southern Kentucky	Bowling Green, KY
59. County of Lebanon Transit Authority	Lebanon, PA
60. County of Lebanon Transit Authority	Lebanon, PA
61. Cumberland-Dauphin-Harrisburg Transit Authority	Harrisburg, PA
62. Dallas Area Rapid Transit	Dallas, TX
63. Delaware Area Transit Agency	Delaware, OH
64. Delaware Transit Corporation	Philadelphia, PA
65. Denton County Transportation Authority	Lewisville, TX
66. Des Moines Area Regional Transit Authority	Des Moines, IA
67. Duluth Transit Authority	Duluth, MN
68. East Chicago Transit	Chicago, IL
69. Erie Metropolitan Transit Authority	Erie, PA
70. Everett Transit System	Seattle, WA
71. Fairfax County Department of Transportation	Washington, DC
72. Fairfield/Suisun Transit System	Fairfield, CA
73. Fargo Metropolitan Area Transit System	Fargo, ND
74. Fort Wayne Public Transportation Corporation	Fort Wayne, IN
75. Four County Transit	Cedar Bluff, VA
76. Fresno Area Express	Fresno, CA
77. Glendale Transit	Phoenix, AZ
78. Go West Transit	Macomb, IL
79. Golden Empire Transit District	Bakersfield, CA
80. Grand Valley Transit	Grand Junction, CO
81. Greater Bridgeport Transit Authority	Bridgeport, CT
82. Greater Cleveland Regional Transit Authority	Cleveland, OH
83. Greater Dayton Regional Transit Authority	Dayton, OH
84. Greater Hartford Transit District	Hartford, CT
85. Greater Lafayette Public Transportation Corporation	Lafayette, IN
86. Greater Lynchburg Transit Company	Lynchburg, VA
87. Greater New Haven Transit District	Hamden, CT
88. Greater Richmond Transit Company	Richmond, VA

Transit Agency Name	City/State
89. Greensboro Transit Authority	Greensboro, NC
90. Gwinnett County Transit	Atlanta, GA
91. Hall Area Transit	Gainesville, GA
92. Hazleton Public Transit	Hazleton, PA
93. Indianapolis Public Transportation Corporation	Indianapolis, IN
94. Intercity Transit	Olympia, WA
95. Interurban Transit Partnership	Grand Rapids, MI
96. Kansas City Area Transportation Authority	Kansas City, MO
97. King County Department of Transportation	Seattle, WA
98. Kitsap Transit	Bremerton, WA
99. Knoxville Area Transit	Knoxville, TN
100. LADOT (City of Los Angeles, Dept of Transportation)	Los Angeles, CA
101. Lake Erie Transportation Commission	Monroe, MI
102. LAKETRAN	Cleveland, OH
103. Laredo Municipal Transit System	Laredo, TX
104. Lawton Area Transit System	Lawton, OK
105. Livermore/Amador Valley Transit Authority	Livermore, CA
106. Logan Transit District	Logan, UT
107. Madison County Transit District	Saint Louis, IL
108. Madison Metro Transit System	Madison, WI
109. Manatee County Area Transit	Sarasota, FL
110. Maryland Transit Administration	Baltimore, MD
111. Mass Transportation Authority	Flint, MI
112. Memphis Area Transit Authority	Memphis, TN
113. Merced County Transit (The Bus)	Merced, CA
114. Metropolitan Atlanta Rapid Transit Authority	Atlanta, GA
115. Metropolitan Transit Authority	Nashville, TN
116. Metropolitan Tulsa Transit Authority	Tulsa, OK
117. Mid Mon Valley Transit Authority	Monessen, PA
118. Mid-Ohio Valley Transit Authority	Parkersburg, WV
119. Minnesota Valley Transit Authority	Minneapolis, MN
120. Modoc Transportation Agency	Alturas, CA
121. Montebello Bus Lines	Los Angeles, CA
122. Monterey-Salinas Transit	Seaside, CA
123. Mountain Metropolitan Transit	CO Springs, CO
124. MTA Long Island Bus	New York, NY
125. MTA New York City Transit	New York, NY
126. Muncie Public Transportation Corporation	Muncie, IN
127. Muskegon Area Transit System	Muskegon, MI
128. New Jersey Transit Corporation	New York, NY
129. Niagara Frontier Transportation Authority	Buffalo, NY
130. North County Transit District	San Diego, CA
131. Norwalk Transit District	Bridgeport, CT
132. OMNITRANS	Riverside, CA
133. Orange County Transportation Authority	Los Angeles, CA
134. Pace Suburban Bus	Chicago, IL
135. Park City Transit	Park City, UT
136. Pee Dee Regional Transportation Authority	Florence, SC

Transit Agency Name	City/State
137. Pima County Department of Transportation	Tucson, AZ
138. Plymouth Metrolink and Dial-A-Ride	Plymouth, MN
139. Port Arthur Transit	Port Arthur, TX
140. Port Authority of Allegheny County	Pittsburgh, PA
141. Portage Area Regional Transportation Authority	Akron, OH
142. Prince George's County Department of Public Works & Transportation	Washington, DC
143. Pueblo Transit	Pueblo, CO
144. Red Rose Transit Authority	Lancaster, PA
145. Redding Area Bus Authority	Redding, CA
146. Regional Public Transportation Authority	Phoenix, AZ
147. Regional Transit Authority	New Orleans, LA
148. Regional Transportation Commission of Southern Nevada	Las Vegas, NV
149. Regional Transportation Commission of Washoe County	Reno, NV
150. Regional Transportation District	Denver, CO
151. Rhode Island Public Transit Authority	Providence, RI
152. Riverside Transit Agency	Riverside, CA
153. Roaring Fork Transportation Authority	Aspen, CO
154. Rochester-Genessee Regional Transportation Authority	Rochester, NY
155. Rock Island County Metropolitan Mass Transit District	Davenport, IA
156. Rockford Mass Transit District	Rockford, IL
157. Saginaw Transit System Authority	Saginaw, MI
158. San Diego Metropolitan Transit System	San Diego, CA
159. San Joaquin Regional Transit District	Stockton, CA
160. San Mateo County Transit District	San Francisco, CA
161. Santa Clara Valley Transportation Authority	San Jose, CA
162. Santa Clarita Transit	Santa Clarita, CA
163. Santa Cruz Metropolitan Transit District	Santa Cruz, CA
164. Sarasota County Area Transit	Sarasota, FL
165. Shore Transit	Snow Hill, MD
166. Shuttle-UM Transit System	Washington, DC
167. Simi Valley Transit	Simi Valley, CA
168. Snohomish County Public Transportation Benefit Area Corporation	Seattle, WA
169. South Bend Public Transporation Corporation	South Bend, IN
170. South Coast Area Transit	Oxnard, CA
171. South East Area Transit	Zanesville, OH
172. South Metro Area Rapid Transit	Portland, OR
173. Southeastern Pennsylvania Transportation Authority	Philadelphia, PA
174. Southern Nevada Transit Coalition	Laughlin, NV
175. Southwest Metro Transit	Eden Prairie, MN
176. Southwest Ohio Regional Transit Authority	Cincinnati, OH
177. Spokane Transit Authority	Spokane, WA
178. Springfield Mass Transit District	Springfield, IL
179. Stanford University Parking & Transportation Dept	San Jose, CA
180. Stark Area Regional Transit Authority	Canton, OH
181. StarMetro - City of Tallahassee	Tallahassee, FL
182. SunLine Transit Agency	Indio, CA
183. The Transit Authority	Huntington, WV
184. The Wave Transit System	Mobile, AL
185. Toledo Area Regional Transit Authority	Toledo, OH

Transit Agency Name	City/State
186. Tompkins Consolidated Area Transit (TCAT)	Ithaca, NY
187. Topeka Metropolitan Transit Authority	Topeka, KS
188. Transfort	Fort Collins, CO
189. Transit Authority of Lexington-Fayette Urban County Gov't.	Lexington, KY
190. Transit Authority of Northern Kentucky	Cincinnati, OH
191. Transit Authority of River City	Louisville, KY
192. Transportation District Commission of Hampton Roads	Virginia Beach, VA
193. Triangle Transit Authority	Raleigh, NC
194. Tri-County Metropolitan Transportation District of Oregon	Portland, OR
195. University of New Hampshire Wildcat Transit	Durham, NH
196. University of New Hampshire Wildcat Transit	Durham, NH
197. University of New Hampshire Wildcat Transit	Durham, NH
198. University Transport System	Davis, CA
199. University Transportation and Parking Services	Sacramento, CA
200. Utah Transit Authority	Salt Lake City, UT
201. Valley Regional Transit	Boise City, ID
202. VIA Metropolitan Transit	San Antonio, TX
203. Visalia City Coach	Visalia, CA
204. Waco Transit System	Waco, TX
205. Washington Metropolitan Area Transit Authority	Washington, DC
206. Westchester County Department of Transportation	New York, NY
207. Westmoreland County Transit Authority	Pittsburgh, PA
208. Winston-Salem Transit Authority	Winston-Salem, NC

Appendix 3: Transit Agency Survey Instrument

FTA SURVEY ON BODY-ON-CHASSIS/CUTAWAY VEHICLES

—— Survey Instrument for Transit Agencies ——

Transit Agency:

_____

Name & Title:

_____

Date (mm/dd/yy):

_____

Please complete this survey and send it to fka@fkassociates.com or by fax to 703-838-9079. Please note that individual responses will be kept confidential and will be used solely for the purpose of the Federal Transit Administration's study. If you have questions about the survey, please contact Katrina Kernodle-Walsh at FKA, Inc. at 703-519-3950. For questions about the FTA project, please contact Ms. Helen Tann at Helen.Tann@fta.dot.gov. Thank you for your support and participation.

The survey that follows is focused on "body-on-chassis" buses, also known as "cutaway" buses. So that all participants are using the same terminology, please review the following definition: A cutaway is a vehicle with a bus body that is made specifically for placement on a truck or van chassis. The backside of the cabin is "cut away" to allow access to, and from, the bus body. Cutaway buses are generally less than thirty 30)-feet long and weigh less than 30,000 pounds (Gross Vehicle Weight [GVW]).

OWNERSHIP & OPERATIONS

1) Please check the response, or provide the information, that best describes your agency's **ownership** with respect to cutaway buses **ONLY**. (Multiple answers/checks are possible.)

□ Own (Continue to Question 2)

□ Lease (Continue to Question 2)

□ Contract (third party) (Skip to Question 3)

Name & contact information for 3rd Party Contractor, as applicable:

Organization: _____

Contact Name:_____

Contact's Phone# & E-mail:_____

□ Other (please specify) (Continue to Question 2)

2) Please check the response or provide information that highlights your agency's cutaway bus **operations**:

□ Operate in-house

□ Contract (third party)

Name and contact information for 3rd Party Contractor, as applicable:

Organization:_____

Contact Name:_____

Contact's Phone# & E-mail:_____

□ Other (please specify)

FLEET INFORMATION

3) Please indicate the name of makes/models for each type of vehicle that your agency operates, and to the right of the make/model that you list, please indicate the number of that make/model of vehicle in your agency's fleet.

Vehicle Type	Vehicle Makes/Models	Number
□ Minibuses – A passenger bus, small in both size & capacity, with the engine in the front	Make/Model: _____ Make/Model: _____ Make/Model: _____	_____ _____ _____
□ Medium-sized Cutaways (defined as 25-30 ft)	Make/Model: _____ Make/Model: _____ Make/Model:_____	_____ _____ _____
□ Small-sized Cutaways (defined as <25 ft)	Make/Model: _____ Make/Model: _____ Make/Model:_____	_____ _____ _____
□ Vans – A vehicle classified by the manufacturer as a "van" having a typical seating capacity of 5 –15 passengers. May or may not be accessible.	Make/Model: _____ Make/Model: _____ Make/Model:_____	_____ _____ _____
□ Other Small Vehicles (Please specify to the right)	Make/Model: _____ Make/Model: _____ Make/Model:_____	_____ _____ _____

4) Please check the box of the number that best reflects how many **cutaway** buses have been removed from your fleet in 2007?

□	None	(Continue to question 4a)
□	1 – 5	(Skip to question 4b)
□	6 -15	(Skip to question 4b)
□	16 -25	(Skip to question 4b)
□	More than 25	(Skip to question 4b)

a. Why were **cutaway** buses not removed from your fleet? Please explain.

b. Please list the top 1 or 2 reasons for removing these **cutaway** buses from your fleet. (e.g. service demand, age of vehicle[s], maintenance, etc)

#1_____

#2_____

TYPES OF SERVICE

5) Please note the number of routes, if any, your transit agency currently offers using **cutaway** buses only.

Type of Service	Number of Routes
□ Local (fixed route)	
□ Express (shuttle)	
□ Limited-stop (suburban)	
□ Demand response/Dial-a-Ride/Paratransit	
□ Vanpool	
□ Other (please specify)	

6) To meet new service demands, which (if any) of the following are crucial to your transit agency over the next 5 to 7 years? Please check the box that applies and write out an answer if you respond to "Others." (Multiple answers apply.)

□ Medium cutaways (25 ft. – 30ft.)
□ Small cutaways (<25 ft.)
□ Others (Please specify): _____

7) Regarding your agency's plans for the next 5 to 7 years, please fill in the chart to indicate plans to add service (not offered now), expand a particular service (add additional routes or services) or eliminate a service. Please answer by filling in numbers in the three spaces that correspond to the type of service listed:

Type of Service	Addition (number of routes)	Plan to Expand (number of routes)	Plan to Eliminate (number of routes)
Local (fixed route)			
Express (shuttle)			
Limited-stop (suburban)			
Demand response			
Paratransit			
Vanpool			
Other (please list)			

8) Please explain the reasons for the plans indicated in the chart above (and please cite the specific type of service that you are explaining, if more than one is listed).

NEW PURCHASES & DELIVERY

The questions that follow relate to procurement and vehicle deliveries of cutaway vehicles. The focus is on deliveries within calendar year 2007 only.

9) As it relates to **orders**, has your agency purchased or contracted for new **cutaway** buses this year (2007)?

□ Yes (Skip to Question 10)

□ No (Continue)

What are the top 1 or 2 reasons that your agency has not purchased or awarded a contract for new **cutaways** in 2007?

#1._____

#2._____

(If you answered "no" to question 9, skip to Question 11)

10) For the following chart, please write in information indicating the number of cutaway buses purchased, or ordered by your agency during 2007, as well as the makes/models, price of each bus, and delivery date (or anticipated delivery date):

Type of Bus	Makes/Models	Number of Buses	Price per Bus	Delivery Date or Anticipated Delivery Date
Medium-sized Cutaways (defined as 25-30 ft)	Make/Model: _____ Make/Model: _____ Make/Model:_____	_____ _____ _____	_____ _____ _____	_____ _____ _____
Small-sized Cutaways (defined as <25 ft)	Make/Model: _____ Make/Model: _____ Make/Model:_____	_____ _____ _____	_____ _____ _____	_____ _____ _____
Other cutaways	Make/Model: _____ Make/Model: _____ Make/Model:_____	_____ _____ _____	_____ _____ _____	_____ _____ _____

a. What is creating the demand for these new cutaways? Please explain.

b. Why did you choose the make(s) and model(s) you cited? Please explain. (If you are discussing more than one make or model, please write down the make/model name in the context of your answer.)

FEDERAL PROVISIONS, PROCUREMENT ISSUES and FUNDING

11) With regard to the following federal funding provisions and programs, please rate — on the following scale of 1 to 5 — the impact on **cutaway** bus service provided by your agency:

1 not at all **2** not much **3** somewhat **4** too much **5** far too much

Applicable Number Scale 1- 5

_____ADA
_____Buy America
_____Elderly Individuals & Individuals with Disabilities (SAFETEA-LU, Sec. 5310)
_____Job Access and Reverse Commute (*SAFETEA-LU* Sec. 5316)
_____New Freedom (*SAFETEA-LU* Sec.5317)
_____Other, please specify _____

12) Based on your responses to Question #11, please explain briefly how current on-going revisions of ADA guidelines may, or may not, impact your agency, how the *Buy America* stipulations impact your agency, and how the cited SAFETEA-LU provisions impact your agency' (or will impact it over the next 3-5 years) with regard to **cutaway** buses.

ADA: _____

Buy America: _____

Elderly Individuals & Individuals with Disabilities (SAFETEA-LU):

_____

Job Access and Reverse Commute (SAFETEA-LU):

_____

New Freedom (SAFETEA-LU):

_____

13) Please check the statement that best describes your transit agency's current status concerning the development of a "**coordinated public transit human service transportation plan**" that SAFETEA-LU requires of public and private transportation providers and non-profit organizations as a condition of receiving funding for transportation programs focused on the elderly, persons with disabilities and low-income individuals.

Initial Plan (requirement to receive funding)	**Complete Plan** (including coordination w/ human service transportation providers)
□ Not planning to develop or participate in the planning	□ Not planning to develop or participate in the planning
□ In the process of developing	□ In the process of developing
□ Developed	□ Developed

14) Does your agency participate in any **pooled procurement** initiatives?

□ Yes (specify) (Please put a check by the term[s] that apply below.)

___Consortiums

___State DOT contracts

___Third party pooled purchases

□ No

15) Please rate your agency's **knowledge of, and interest in, the U.S. DOT's lending and credit assistance** programs with respect to financing **cutaway** bus purchases or service that utilizes **cutaway** buses transit projects:

Knowledge	Interest
□ None	□ None
□ A little interest	□ A little interest
□ Some	□ Some
□ A lot	□ A lot

16) Has your agency participated in FTA lending programs and/or received credit assistance to finance transit projects that relate to cutaway buses? Please check below. If Yes, please provide name(s) of the federal assistance program in which your agency participated, type(s) of assistance, and your agency's project/initiative that received a loan or credit assistance.

___Yes FTA Program _____
Form of Assistance _____
(e.g. loans, bond issuance, loan guarantee)

Awarded project/Initiative _____

___No

17) Based on your response to Q16, please explain the reason(s) for using, or not using, U.S. DOT's credit assistance or loan programs.

18) a. Please briefly explain your agency's perspective on FTA lending programs and/or credit assistance with respect to financing **cutaway** bus purchases or service that utilizes **cutaway** buses.

b. What would improve the FTA's loan or credit assistance programs?

FUEL SYSTEMS & NEW TECHNOLOGIES

19) Currently, what fuel(s) does your agency use specifically for **cutaways**? Please check those fuels that apply today as well as those fuels that you anticipate using in the future — over the next 5 to 7 years; please check all that apply to your agency.

Fuel	Now	Future
Gasoline	□	□
Diesel	□	□
Diesel Hybrid	□	□
Gasoline Hybrid	□	□
CNG	□	□
LNG	□	□
Propane	□	□
Electric	□	□
Biodiesel	□	□
Ethanol	□	□
Methanol	□	□
Other (Please specify):	□	□

20) Please list any specific technologies including fuel technologies that would impact purchasing decisions for cutaway vehicles.

On behalf of the FTA, thank you for the time and effort that you have expended in participating in this survey. The survey is an essential and integral part of an on-going FTA Study that will be published on the FTA website.

Appendix 4: Manufacturer Survey Instrument

FTA Small and Medium Bus Market Evaluation
Bus Manufacturer Survey Instrument

Manufacturer: _____

Name & Title: _____

Date (dd/mm/yy): _____

Please complete this survey and return it using the attached self-addressed stamped envelope to Hidalgo & DeVries or fax the completed survey to (616) 493-5001. Please note that all responses will be kept confidential and will be used solely for the purposes of the Federal Transit Administration. If you have any questions regarding this survey, please contact Scott Kearney at Hidalgo DeVries at (616) 493-5000 ext. 16. For questions about this FTA project, please contact Ms. Helen Tann at Helen.Tann@fta.dot.gov*. Thank you for your support and cooperation.*

FINANCIAL PERFORMANCE

Please provide the following information:

1. Annual Sales Volume ($)

Year	Annual Sales Volume
2002	
2003	
2004	
2005	
2006	
2007 (est.)	

2. Annual Sales Volume by Vehicle Type ($)

Length/ Year	2002	2003	2004	2005	2006	2007 (est.)
<19 ft:						
19 ft:						
20 ft:						
21 ft:						
22 ft:						
23 ft:						
24 ft:						

Question 2: ***Continued***

Length/ Year	2002	2003	2004	2005	2006	2007 (est.)
25 ft:						
26 ft:						
27 ft:						
28 ft:						
29 ft:						
30 ft:						
30 ft. plus:						
TOTALS:						

3. Annual Sales Volume by Market Sector ($)

Year	Public Transit Agency	Commercial Operators	Non-Profit Organizations	Human Services	Education
2002					
2003					
2004					
2005					
2006					
2007 (est.)					

4. Average number of Days Sales Outstanding (DSO) per year

2002	2003	2004	2005	2006	2007 (est.)

5. Annual Capital Expenditures ($)

2002	2003	2004	2005	2006	2007 (est.)

6. Average Days of Working Capital per year

2002	2003	2004	2005	2006	2007 (est.)

7. Average Long-term Debt to Working Capital per year

2002	2003	2004	2005	2006	2007 (est.)

8. Average Return on Net Assets Employ(RONAE) per year

2002	2003	2004	2005	2006	2007 (est.)

PRODUCTION CAPACITY

Please provide the following information:

1. Number of production facilities: _____

2. Location of production facilities (please list below)

Facility	Location
1	
2	
3	

3. Number of production lines per facility (please list below)

Location	Number of Production Lines

4. Annual Production Volume by facility (units)

Location	2002	2003	2004	2005	2006	2007 (est.)

5. Annual Production Volume by Vehicle Type (units)

Length/ Year	2002	2003	2004	2005	2006	2007 (est.)
<19 ft:						
19 ft:						
20 ft:						
21 ft:						
22 ft:						
23 ft:						
24 ft:						
25 ft:						

Question 5: ***Continued***

Length/ Year	2002	2003	2004	2005	2006	2007 (est.)
26 ft:						
27 ft:						
28 ft:						
29 ft:						
30 ft:						
30 ft. plus:						
TOTALS:						

PRODUCTION MATERIALS

Please provide the following information:

1. On average, from how many suppliers does your company procure raw material annually?

2. On average, from how many suppliers does your company procure components or sub-assemblies annually?

3. Annual Raw Material Cost as a Percentage of Cost of Goods Sold (e.g., steel)

2002	2003	2004	2005	2006	2007 (est.)

4. Annual Component / Sub-Assembly Cost as a Percentage of Cost of Goods Sold (e.g., seats)

2002	2003	2004	2005	2006	2007 (est.)

LABOR

Please provide the following information:

1. Please ***check*** the status of your production facility (s):

Facility	Union	Non Union
1		
2		
3		

2. How many full-time employees work for your company?

3. How many full-time production employees ***currently*** work in each facility?

Facility	Total Number of Production Employees	Number of Direct Employees	Number of Indirect Employees
1			
2			
3			

4. Direct Labor Cost as a Percentage of Cost of Goods Sold

2002	2003	2004	2005	2006	2007 (est.)

5. Indirect Labor as a Percentage of Cost of Goods Sold

2002	2003	2004	2005	2006	2007 (est.)

6. How many technical employees (e.g., engineers, draftsman, etc.) work for your company? _____

7. Annual Healthcare Cost ($)

2002	2003	2004	2005	2006	2007 (est.)

SALES, GENERAL AND ADMINISTRATIVE (SG&A)

1. Annual SG&A Expenses

2002	2003	2004	2005	2006	2007 (est.)

2. Annual SG&A Headcount by Department

Year	Sales	Marketing	Customer Service	Administrative	Clerical
2002					
2003					
2004					
2005					
2006					
2007 (est.)					

3. How many trade shows, exhibits, conferences, etc. does the company attend/exhibit at per year?

2002	2003	2004	2005	2006	2007 (est.)

4. Annual legal fees ($)

2002	2003	2004	2005	2006	2007 (est.)

5. Percentage of annual legal fees spent on ***customer issues***

2002	2003	2004	2005	2006	2007 (est.)

RESEARCH & DEVELOPMENT

1. Roughly what percentage of annual sales does your company spend on R&D? _____

WARRANTY ISSUES

2. Annual number of warranty claims

2002	2003	2004	2005	2006	2007 (est.)

3. Annual number of component (supplier) warranty claims

2002	2003	2004	2005	2006	2007 (est.)

4. Average value of warranty claim (s) per year ($)

2002	2003	2004	2005	2006	2007 (est.)

Appendix 5: Manufacturer Interview Questionnaire

Federal Transit Administration
Small and Medium Bus Market Evaluation
Bus Manufacturer – Interview Worksheet

Company: _____

Name: _____Title:_____

Interview Date: _____ Location: _____

I. Greetings

Hello, my name is Scott Kearney; I am a Principal Consultant with Hidalgo & DeVries, Inc. My associate is Fran Kernodle, President of Frances Kernodle Associates, Inc. Our two companies wish to express our thanks, on behalf of the FTA for your participation in this survey. The project is an initiative of the FTA's Technology, Research & Innovation branch. HD is the prime contractor, and FKA is the subcontractor for the project.

Our two firms provide more than 30 years of collective experience in our respective practice areas. Both companies have extensive experience relevant to market research and public transportation. Each of the two firms is a member of APTA, and both principals sit on several APTA committees.

II. Introduction

The purpose of the research study is to provide an exploratory evaluation of the viability of the U.S. bus manufacturing industry to meet U.S. demand for demand response, paratransit and shuttle services. The research analysis will focus on the types of buses available and the characteristics of buses and bus service that drive local decisions to purchase buses, including vehicle type, dimensions, floor height, type of propulsion unit, the ability to support such technology as automated vehicle location, signal priority, cashless fares and other infrastructure.

Our purpose for this interview, and the corresponding survey sent to you earlier, is to assess trends, financial performance, production capacity, production utilization, and investment in innovative or new technologies. The survey of the bus builders also will investigate the impact of federal provisions, such as the "Buy America" provision SAFETEA-LU and pooled procurements. Your firm and other manufacturers participating in the survey were selected by FTA as representative of the U.S. bus manufacturing market.

The results of this interview will be anonymous. We respectfully request your approval to record this interview in order to accurately construct our final report.

III. Opening Questions

1. **How would you describe the current state of the small-to-medium size cutaway bus market?**

2. **First, tell me the two most positive industry issues for your firm right now?** *Probe 2 xs: What other highlights would you like to mention?) (Specific probe as needed)*

3. **What are the greatest industry challenges your firm is currently dealing with?** *(Probe 2 xs: What other challenges is your firm currently dealing with?) (Specific probe as needed)*

IV. Factors related to Transit Agencies and the FTA

The first portion of our interview relates to factors associated with U.S. transit agencies and the Federal Transit Administration.

TRANSIT AGENCIES

4. **What trends do you see emerging in public transit regarding cutaway buses?**

UNIFORM VEHICLE SPECIFICATIONS

5. **In your experience, do any uniform vehicle specifications (e.g., SBPG) exist for cutaway buses in the U.S.?**

6. **Do the public transit agencies across the country use or follow a set of uniform vehicle specifications?** *(Specific probe unless needed)*

7. **Regarding vehicle specifications do you prefer, "prescriptive standards" or "performance standards'?**

MULTI-YEAR CONTRACTS

8. **What is your opinion of the multiple-year contracts that the transit agencies are currently awarding?**

9. **What impact do these multiple-year contracts have on your current operations?**

10. **Thinking ahead, what impact do you think these multiple-year contracts will have on your future operations?**

ASSIGNMENT RIGHTS

11. **Do assignment rights affect your company, and if so how is your company affected?** *(Probe 1x: In what other ways do assignment rights affect your company?)*

FEDERAL TRANSIT ADMINISTRATION

Next, we'll be discussing your thoughts on a few specific FTA-related issues…

FUNDING

12. **Overall, what is the impact of FTA funding on your business? Please explain.** *(Specific Probe as needed)*

13. **Specifically, what are the main issues your organization has to deal with when it comes to FTA-funding?**

SAFETEA-LU

14. **Sections 5310, 5316 and 5317 (Elderly and Disabled, New Freedom, and Job Access and Reverse Commuting) of SAFETEA-LU require agencies to develop and enact Coordinated Public Transit-Human Services Transportation Plans in order to be eligible for Federal funding under these sections. What impact, if any, do you think this will have on your company?** *(Probe 1x: How else would it affect your business?)*

V. External

Next, we'd like to gather your views on other external forces that may be affecting the industry, such as "Buy America", "Pooled Purchases", Private Entity or Commercial procurements vs. Public Agency procurements, and "Export Opportunities."

"BUY AMERICA"

IMPACT

15. **What impact, if any, does the "Buy America" provision have on your organization?** *(Probe 1x: How else has "Buy America" affected your organization? Test for: materials/components selection & procurement; Specific probe as needed)*

PROCUREMENTS

16. **Roughly, what percentage of your company's total U.S. cutaway procurements is impacted by the "Buy America" provision?**

17. **What are your opinions regarding current "Buy America" procurement practices?**

COMPONENTS

18. **Given the current "Buy America" requirements regarding cutaway bus procurements, are there any specific components or materials issues relative to your organization?**

"BUY AMERICA" WAIVERS

19. **Please tell me about your experiences with Buy America "waivers."** *(Test for: opinion, process, usage, problems encountered, and successes)*

"BUY AMERICA" PROTESTS

20. **Please tell us about your experiences with Buy America "protests"…** *(Test for: How many filed, outcome, process problems)*

DECISION REVERSAL

21. **Hypothetically speaking, in your opinion, what would happen to the U.S. cutaway bus market if "Buy America" were reversed or abolished?**
(Probe 1x: What other thoughts would you have about the potential of rescinding the "Buy America" provision?)

22. **Given our discussion on "Buy America," what is it that you would like to see changed with the Buy America program?**

POOLED / CONSORTIUM / STATE PURCHASING

Switching topics, we would like to get your insight on Pooled, Consortium or State Contracts.

23. **Does your company currently participate in any "pooled", consortium or state contracts?**

A. Pooled Procurement (FTA)

- ☐ **Yes (why?)**
- ☐ **No (why?)**

B. Consortium Procurements

- ☐ **Yes (why?)**
- ☐ **No (why?)**

C. State Contract Procurements

- ☐ **Yes (why?)**
- ☐ **No (why?)**

24. **Specifically, what type of impact has pooled purchases, consortium or state contracts had on your organization?**

    A. Pooled Procurement (FTA)

    B. Consortium Procurements

    C. State Contract Procurements

25. **Do you think that pooled purchases, consortium or state contracts skew the market in any way? Please explain.**

26. **What are your views about the future pooled purchases, consortium or state contracts?**

27. **Do you believe that pooled purchases, consortium or state contracts should comply or adhere to uniform vehicle specification? Please explain.**

COMMERCIAL / PUBLIC AGENCY / NON-PROFIT PROCUREMENTS

28. **Evaluating commercial, public agency and non-profit procurements**

Entity	Benefits	Difficulties
Commercial		
Public Transit Agency		
Non-Profit		
Human Services		
Education		

29. **Please estimate your company's profitability in each market segment.**

Segment	Profitability (%)
Commercial	
Public Transit	
Non-Profit	
Human Services	
Education	

30. **With which entity, commercial, public transit agency, non-profit organization, human services or education do you prefer to work?** *(Probe: Why?)*

VI. Internal

And finally, we would like to focus attention on some of the potential internal issues that may be affecting your organization's ability to compete, including your company's sales and marketing, labor issues, materials issues and warranty policies…

SALES & MARKETING

31. **Tell me what marketing activities you are involved in. What else do you do to generate business?**

32. **Does this differ for the target market (commercial / public transit / non-profit)?** *(Probe 1x: If so, how?)*

33. **Which of those are most valuable/least valuable? Do you measure ROI?** *(Probe: ROI measurement tool)*

34. **What sales & marketing challenges do you currently face?** *(Probe: Employee turnover, brand awareness, end-user reach, etc.)*

35. **How much sales volume (%) does each of the following generate for your company?**

    A. **Direct Sales Force (employees):** _____

    B. **Company-owned Dealers:** _____

    C. **Independent Dealers:** _____

    D. **Other Sales Representatives:** _____

36. **How are your relationships with your current dealer network?**

37. **Do you envision any changes in your dealer relationships in the future?**

- **Yes (why?)**
- **No (why?)**

38. **Please tell us a little bit about your current selling cycle….please walk us through the process?** *(Probe: Direct Sales Force, Company-Owned Dealers, Independent Dealers & Other Sales Representatives)*

39. **What vehicles do you consider "substitutes" for cutaway buses?** *(Probe: How do these substitutes impact your company? What percentages of your company's sales are lost to substitutes?)*

MANUFACTURING / ASSEMBLY OPERATIONS

40. **What issues do you currently face regarding the manufacturing and/or assembly of your company's cutaway buses?** *(Probe: human resources, energy costs, materials, etc.)*

41. **What future issues do you anticipate regarding the manufacturing and/or assembly of your company's cutaway buses?** *(Probe: human resources, energy costs, materials, etc.)*

WARRANTY ISSUES

42. **What are your views on the FTA service life requirements?**

A. Light-Duty Small Cutaway: 4 years/100,000 miles

B. Light-Duty Mid-Size Cutaway: 5 years/150,000 miles

C. Medium-Duty Cutaway: 7 years/200,000 miles

43. **What is your perspective on the current FTA bus-testing program (Altoona Test)? In your view, is it a valid requirement?**

44. **Do your commercial customers require the same service life and testing requirements as the FTA?**

    - **Yes (why?)**

    - **No (why?)**

45. **What vendor or third party component warranty issues, if any, does your company currently face?**

46. **What processes does your company currently have in place if a component legitimately fails and a warranty claim is made…how exactly is this handled? Please explain.**

47. **Has your company ever experienced a voluntary or mandatory recall associated with your cutaway buses?**

    - **Yes (when/why?)**

    - **No**

RESEARCH & DEVELOPMENT

48. **How does your company innovate?**

    A. What drives innovation at your company?

    B. How is R&D structured at their company? Why is it that way?

49. **What technologies, if any, are driving your company's R&D efforts?**

50. **What role do you see alternative fuels playing in the small-to-medium cutaway bus market?**

51. **With respect to the Federal government (FTA) what type (s) of R&D support would best benefit the industry?**

VII. Closing Question

52. **Lastly, other than what we've discussed here today, what else can you tell us about the health of the cutaway bus industry that would be valuable information to share with the FTA?** *(Probe 1X: What other concerns would you like share with the FTA about the bus industry?)*

VIII. Final Statement

Thank you for your time and for your insights. HD/FKA will complete this project on or before December 2007. An executive summary of this project will be sent to you during the first quarter of 2008. In the interim, if you would like to share any additional thoughts, please feel free to contact me (Scott Kearney) at (616) 560-0251 or via email at skearney@hidalgodevries.com.

Bibliography

"About Open Door." Indianapolis Public Transportation Corporation Internet Website. June 2007.

"At King County Metro, Variety Is the Spice and Foundation of Sustainable Transportation." *Passenger Transport*. Vol. 65, No. 22. May 28, 2007.

"Access-A-Ride: Paratransit Service User's Guide." MTA New York City Transit Internet Website. June 2007.

"Air Pollution." U.S. Parks Service Internet Website. May 2007.

American Public Transportation Association. *President's Letter*. September 21, 2007.

American Public Transportation Association. *Testimony of William W. Millar, President of the American Public Transportation Association, Before the Subcommittee on Housing and Transportation of the Senate Committee on Banking, Housing, and Urban Affairs on the Implementation of SAFETEA-LU on June 27, 2006*.

American Public Transportation Association. *Washington Report*. August 2005.

"Americans Take More Than 10 Billion Trips on Public Transportation for the First Time in Almost Fifty Years." American Public Transportation Association Internet Website. March 12, 2007.

"Biodiesel Technology," Ford Corp. Website, August 21, 2007.

"Board Releases Draft Update of Guidelines for Buses and Vans." The U.S. Access Board Internet Website. April 11, 2007.

Bureau of Transportation Statistics, the U.S. Department of Transportation. *National Transportation Statistics 2006*. December 2006.

"Bus Testing Requirements." Federal Transit Administration Internet Website. 2007.

"Buy America: Frequently Asked Questions." FTA Internet Website. 2007.

California Fuel Cell Partnership Internet Website. May 2007.

"CCTA: Special Services — ADA and Paratransit Services." Chittenden County Transportation Authority Internet Website. June 2007.

City of Jackson. *Request for Proposals for the Transportation Management and Operations of Public Mass Transit and Paratransit Services in the City of Jackson, Mississippi Service Area of City of Jackson Mississippi's JATRAN Transit System*. "Background." March 2007.

Clean Air Initiative Website. World Bank. May 2007.

Clean Cities: *Niche Market Report*. U.S. Department of Energy, Energy Efficiency and Renewable Energy (EERE). April 2004.

Code of Federal Regulations, *Subpart B 665.11 Testing Requirements (5) (f*)

Colorado Department of Transportation. *Overview of ADA Impact on Transit System*. 2007.

"Coordinated Human Services Transportation Plan." Coos County Area Transit Service District. April 2007.

"Demand Response Vehicles." ODOT Internet Website. August 2006.

"Diesel Fuels: S15 Regulations." Chevron Internet Website. May 2007.

Environmental Protection Agency, *Highway Diesel Progress Review*, June 2007.

"Does It Go? – Vehicle Propulsion Choices." (Q & A Session) APTA 2007 Bus & Paratransit Conference. May 2007.

Easter Seals Disability Services. *Summary Report: Transportation Services for People with Disabilities in Rural and Small Urban Communities*. August 2006.

"Ethanol's Water Addition." *Wall Street Journal,* October 17, 2007.

"Facts." Miami-Dade Transit Internet Website." 2007.

Faiola, Anthony and Robin Shulman. "Cities Take Lead on Environment as Debate Drags at Federal Level." *The Washington Post.* June 9, 2007. p. A1.

Federal Interagency Coordinating Council on Access and Mobility. *Coordinated Human Service Transportation Planning: Final Policy Statement*. October 1, 2006.

Federal Register. Vol. 71, No. 230. November 30, 2006.

Federal Register. Vol. 71, No. 54. March 21, 2006.

Federal Register. Vol. 70, No.227. November 28, 2005.

Federal Transit Administration. *Circular: Elderly Individuals and Individuals with Disabilities Program Guidance and Application Instruction*. May 1, 2007. p. I-4.

Federal Transit Administration. *Circular: New Freedom Program Guidance and Application Instructions*. May 2007.

Federal Transit Administration. *FTA Authorization Fact Sheet: Formula Program for Elderly Persons and Persons with Disabilities*. September 2005.

Federal Transit Administration. *FTA SAFETEA-LU: Major Public Transportation Provisions*. March 30, 2006.

Federal Transit Administration, National Transit Database, *2003 Transit Profiles, Top 50 Agencies*, Washington, D.C. December 2004.

Federal Transit Administration. *Non-Rail Vehicle Market Viability Study Final Report*. February 2006.

Federal Transit Administration. *SAFETEA-LU Implementation: Elderly Individuals & Individuals with Disabilities, JARC and New Freedom*. (PowerPoint Presentation presented at the Coordinated Planning & "United We Ride" Workshop in Huntsville, Alabama on February 27, 2007.)

Federal Transit Administration. *SAFETEA-LU Authorization Levels for Fiscal Years 2005 through 2009*. 2007.

Federal Transit Administration. *2005 National Transit Database*. December 12, 2006.

"Florida's Hydrogen Station Puts New Fuel on the Road" *Washington Times* Internet Website. May 24, 2007.

Ford Motor Company Press Release. May 23, 2007.

49 CFR Part 661, "Buy America Requirements; End Product Analysis and waiver Procedures." September 20, 2007.

"Frequently Asked Questions: What is STS II?" Charlottes Area Transit System Internet Website. June 2007.

"FTA Issues Second Buy America Proposed Rulemaking." *Passenger Transport*. Volume 64, No. 49. December 11, 2007.

"GM Begins Tests With 100 Hydrogen-Powered Vehicles in N.Y., L.A. *Japan Times.* (reprinted from the *Los Angeles Times),* October 21, 2007.

"Governor Arnold Schwarzenegger's California Hydrogen Highway Network Action Plan." Press Release. State of California. 2004.

"Grant Applications." Minnesota Department of Transportation. 2008

Griffith, Paul. "Plain Talk about Alternative Fuels and Transit." Advanced Transportation Technologies Institute. 2006.

Griffith, Paul. "Status of Alternative Fuels in Public Transportation Applications." 2007 APTA Bus & Paratransit Conference. May 2007.

Hagenbaugh, Barbara. "Riders Crowd Public Transit Systems." *USA Today*. March 12, 2007.

"History." Coach and Equipment Manufacturing Internet Website. June 2007.

Hybrid Dialog, Hybrid Truck Users Forum (HTUF) Newsletter. October 2006.

"IC Corporation Launches Hybrid Commercial Bus Line." Press Release. Navistar Internet Website. October 2006.

"Miami-Bus Rapid Transit." Federal Transit Administration Internet Website. 2007.

Mid Size Bus Manufacturers Association, *2006 Annual Survey Compilation*, February 2007.

"Modified Minibus Gives Biofuel Spiked with Hydrogen a Test Ride." *Toledo Blade,* September 17, 2007.

Neighbor, Dale. International Truck & Engine Corp., "Response to Special Request," November 8, 2006.

"Our History." Veolia Transportation Inc. Internet Website, June 7, 2007

"Overview of Transit Vehicles." Colorado Department of Transportation Internet Website. 2007.

"Phoenix Dial-A-Ride." Phoenix PTD. Internet Website. 2007.

Pierce, Neal. "Global Warming: A State and Local Rescue?" *Passenger Transport.* June 4, 2007.

Porter, Michael E. *Competitive Strategy: Techniques for Analyzing Industries and Competitors.* New York: The Free Press, A Division of Simon & Schuster Inc., 1980.

Procurement Handbook for Transit System General Managers and Senior Executives. National Transit Institute. May 2005.

Rankin, Jeffrey. "Selecting a 2010 Bus Engine/Propulsion Technology." 2007 APTA Bus & Paratransit Conference. May 2007.

Santa Fe Trails Transit System. *Santa Fe Ride Program*. 2007.

Schultheis, Kurt. "Lynx Taking Hydrogen-Fueled Vehicles for a test Spin." *Orlando Business Journal.* March 24, 2006.

Servetah, Stacie and Adam Cataldo. "Mayor Bloomberg Orders Taxi Cabs to Be Hybrid by 2012." *Bloomberg.com* Internet Website. May 22, 2007.

Small Transit Vehicle Industry Study. Small Urban & Rural Transit Center, Upper Great Plains Transportation Institute, North Dakota State University. April 2007.

Special Service In Charlotte Changes People's Lives." *Passenger Transport*. Vol. 64, No. 18. May 1, 2006.

"Special Transportation Service (STS)."Charlotte Area Transit System Internet Website. June 2007.

Starnic, Janna. "2006 Paratransit Survey." *Metro Magazine*. August 2006.

"State Contract—Type 7." California Department of Transportation Internet Website. 2007.

Thor Industries, Inc. *2006 Annual Report*. July 2006.

Toledo Area Regional Paratransit Service Maintenance Department. Telephone Interview. December 12, 2007.

Toledo Area Regional Paratransit Service Website. December 2007.

Toyota (full-page) Advertisement. *The Washington Post.* June 7, 2007, p. A17.

Transit Cooperative Research Program. "Guide to Federal Buy America Requirements." *Legal Research Digest.* September 2001. p. 8.

Transportation Cooperative Research Program, *Synthesis 53 Operational Experiences with Flexible Transit Services*, Washington, DC, 2004, p. 35.

Transit Vehicle Database (2003-2007). American Public Transportation Association

Transportation Research Board. *State of the Art of Paratransit*. 2000. p. 2.

Trapeze Software Group Press Releases, *Ride Solution, Inc. Selects Trapeze*, September 12, 2003.

"Travel Options: Metro's ADA Paratransit Program." "Metro Access Transportation Service." King County Metro Internet Website. June 2007.

2007 Transit Vehicle Database. American Public Transportation Association. 2007.

2006 Public Transportation Factbook. American Public Transportation Association. 2006.

United We Ride, Federal Interagency Coordinating Council on Access and Mobility, *Final Policy Statement*, October 1, 2006.

"UQM Technologies Announces Hybrid Electric Shuttle Bus." Press Release. UQM Internet Website. June 2003.

U.S. Census Bureau, *2005 American Community Survey Data Profile*, American FactFinder Website, June 2007.

The U.S. Access Board. *Draft Revisions to the ADA Accessibility Guidelines for Buses and Vans*. "Discussion of Revisions." April 11, 2007.

The U.S. Government Accountability Office. *Federal Transit Administration: Progress Made in Implementing Changes to the Job Access Program, but Evaluation and Oversight Processes Need Improvement* (GAO-07-43). November 2006. p.4.

Useful Life of Transit Buses and Vans. Federal Transit Administration. April 2007.

Veolia Transportation, Internet Website. *Veolia Transportation Facts,* June 2007.

Whitt, Flora. "Emissions Reductions and Fuel Savings Spur Changes in Bus Products." APTA *Passenger Transport.* November 20, 2006.

Endnotes

[1] "Americans Take More Than 10 Billion Trips on Public Transportation for the First Time in Almost Fifty Years." American Public Transportation Association Internet Website. March 12, 2007.
[2] Barbara Hagenbaugh. "Riders Crowd Public Transit Systems." *USA Today*. March 12, 2007.
[3] *Useful Life of Transit Buses and Vans.* Federal Transit Administration. April 2007.
[4] *Ibid.*
[5] "Grant Applications." Minnesota Department of Transportation. 2008.
[6] *2007 Transit Vehicle Database.* American Public Transportation Association. 2007.
[7] *2006 Public Transportation Factbook.* American Public Transportation Association. 2006.
[8] *Ibid.*
[9] "Miami-Bus Rapid Transit." Federal Transit Administration Internet Website. 2007.
[10] Janna Starnic. "2006 Paratransit Survey." *Metro Magazine*. August 2006.
[11] *Ibid.*
[12] "Demand Response Vehicles." ODOT Internet Website. August 2006.
[13] "State Contract—Type 7." California Department of Transportation Internet Website. 2007.
[14] *2006 Public Transportation Factbook.* American Public Transportation Association. 2006.
[15] *2007 Transit Vehicle Database.* American Public Transportation Association.
[16] Janna Starcic. "2006 Paratransit Survey," *Metro Magazine,* August 2006, p.29.
[17] *Ibid.*
[18] *2007 Transit Vehicle Database.* American Public Transportation Association.
[19] Janna Starnic. "2006 Paratransit Survey." *Metro Magazine*. August 2006.
[20] *2007 Transit Vehicle Database.* American Public Transportation Association.
[21] *2007 Transit Vehicle Database.* American Public Transportation Association.
[22] *Useful Life of Transit Buses and Vans.* Federal Transit Administration. April 2007.
[23] *Ibid.*
[24] "Grant Applications." Minnesota Department of Transportation. 2008.
[25] "Demand Response Vehicles." ODOT Internet Website. August 2006.
[26] *Ibid*.
[27] *Transit Vehicle Database* (2003-2007). American Public Transportation Association.
[28] *Code of Federal Regulations*, *Subpart B 665.11 Testing Requirements (5)(f)*
[29] "Bus Testing Requirements." Federal Transit Administration Internet Website. 2007.
[30] "Demand Response Vehicles." ODOT Internet Website. August 2006. "Overview of Transit Vehicles." Colorado Department of Transportation Internet Website. 2007.
[31] *2007 Transit Vehicle Database.* American Public Transportation Association.
[32] "Aerotech Floorplans." El Dorado National Internet Website. 2007.
[33] Janna Starnic. "2006 Paratransit Survey." *Metro Magazine*. August 2006.
[34] "Coordinated Human Services Transportation Plan." Coos County Area Transit Service District. April 2007.
[35] Anthony Faiola and Robin Shulman. "Cities Take Lead on Environment as Debate Drags at Federal Level." *The Washington Post.* June 9, 2007. p. A1.
[36] *Ibid.*
[37] Stacie Servetah and Adam Cataldo. "Mayor Bloomberg Orders Taxi Cabs to Be Hybrid by 2012." *Bloomberg.com* Internet Website. May 22, 2007.
[38] Neal Pierce. "Global Warming: A State and Local Rescue?" *Passenger Transport.* June 4, 2007. p. 4.
[39] Toyota (full-page) Advertisement. *The Washington Post.* June 7, 2007, p. A17.
[40] Paul Griffith. "Plain Talk about Alternative Fuels and Transit." Advanced Transportation Technologies Institute. 2006.
[41] *Small Transit Vehicle Industry Study.* Small Urban & Rural Transit Center, Upper Great Plains Transportation Institute, North Dakota State University. April 2007. p. 24.
[42] "Air Pollution." U.S. Parks Service Internet Website. May 2007.

[43] "Does It Go? – Vehicle Propulsion Choices." (Q & A Session) APTA 2007 Bus & Paratransit Conference. May 2007.
[44] Paul Griffith. "Status of Alternative Fuels in Public Transportation Applications." 2007 APTA Bus & Paratransit Conference. May 2007.
[45] "Ethanol's Water Addition." *Wall Street Journal,* October 17, 2007.
[46] Jeffrey Rankin. "Selecting a 2010 Bus Engine/Propulsion Technology." 2007 APTA Bus & Paratransit Conference. May 2007.
[47] Clean Air Initiative Website. World Bank. May 2007
[48] "Diesel Fuels: S15 Regulations." Chevron Internet Website. May 2007.
[49] Flora Whitt. "Emissions Reductions and Fuel Savings Spur Changes in Bus Products." APTA *Passenger Transport.* November 20, 2006.
[50] Dale Neighbor. International Truck & Engine Corp., "Response to Special Request," November 8, 2006.
[51] "Biodiesel Technology," Ford Corp. Website, August 21, 2007.
[52] *Hybrid Dialog,* Hybrid Truck Users Forum (HTUF) Newsletter. October 2006.
[53] *Ibid.*
[54] Jeffrey Rankin. "Selecting a 2010 Bus Engine/Propulsion Technology." 2007 APTA Bus & Paratransit Conference. May 2007.
[55] "IC Corporation Launches Hybrid Commercial Bus Line." Press Release. Navistar Internet Website. October 2006.
[56] "UQM Technologies Announces Hybrid Electric Shuttle Bus." Press Release. UQM Internet Website. June 2003.
[57] *Clean Cities*: *Niche Market Report*. U.S. Department of Energy, Energy Efficiency and Renewable Energy (EERE). April 2004.
[58] *Small Transit Vehicle Industry Study.* Small Urban & Rural Transit Center, Upper Great Plains Transportation Institute, North Dakota State University. April 2007. p. 24.
[59] Jeffrey Rankin. "Selecting a 2010 Bus Engine/Propulsion Technology." 2007 APTA Bus & Paratransit Conference. May 2007.
[60] *Ibid.*
[61] *Ibid.*
[62] *Ibid.*
[63] Ford Motor Company Press Release. May 23, 2007.
[64] Kurt Schultheis. "Lynx Taking Hydrogen-Fueled Vehicles for a test Spin." *Orlando Business Journal.* March 24, 2006.
[65] Ford Motor Company Press Release. May 23, 2007.
[66] *Ibid.*
[67] "Florida's Hydrogen Station Puts New Fuel on the Road" *Washington Times* Internet Website. May 24, 2007.
[68] "Governor Arnold Schwarzenegger's California Hydrogen Highway Network Action Plan." Press Release. State of California. 2004.
[69] California Fuel Cell Partnership Internet Website. May 2007.
[70] "Modified Minibus Gives Biofuel Spiked with Hydrogen a Test Ride." *Toledo Blade,* September 17, 2007.
[71] Toledo Area Regional Paratransit Service Maintenance Department. Telephone Interview. December 12, 2007.
[72] Toledo Area Regional Paratransit Service Website. December 2007.
[73] "GM Begins Tests With 100 Hydrogen-Powered Vehicles in N.Y., L.A. *Japan Times.* (reprinted from the *Los Angeles Times),* October 21, 2007.
[74] Janna Starnic. "2006 Paratransit Survey." *Metro Magazine*. August 2006.
[75] *2007 Transit Vehicle Database.* American Public Transportation Association.
[76] Federal Transit Administration. *Useful Life of Transit Buses and Vans.* April 2007.
[77] "Overview of Transit Vehicles." Colorado Department of Transportation Internet Website. 2007.
[78] "Overview of Transit Vehicles." Colorado Department of Transportation Internet Website. 2007.
[79] "Overview of Transit Vehicles." Colorado Department of Transportation Internet Website. 2007.
[80] "Low Floor Bus." Used Bus Sales internet Website. 2007.

[81] *Small Transit Vehicle Industry Study.* Small Urban & Rural Transit Center, Upper Great Plains Transportation Institute, North Dakota State University. April 2007. p. ii.
[82] APTA *2007 Transit Vehicle Database.*
[83] Veolia Transportation, Internet Website. *Veolia Transportation Facts,* June 2007.
[84] *Ibid.*
[85] United We Ride, Federal Interagency Coordinating Council on Access and Mobility, *Final Policy Statement*, October 1, 2006.
[86] American Public Transportation Association. *Washington Report*. August 2005.
[87] Federal Transit Administration. *SAFETEA-LU Authorization Levels for Fiscal Years 2005 through 2009*. 2007.
[88] Federal Transit Administration. *SAFETEA-LU Implementation: Elderly Individuals & Individuals with Disabilities, JARC and New Freedom*. (PowerPoint Presentation presented at the Coordinated Planning & "United We Ride" Workshop in Huntsville, Alabama on February 27, 2007. Federal Transit Administration. *FTA SAFETEA-LU: Major Public Transportation Provisions*. March 30, 2006.
[89] Federal Transit Administration. *FTA Authorization Fact Sheet: Formula Program for Elderly Persons and Persons with Disabilities*. September 2005.
[90] Federal Transit Administration. *Circular: Elderly Individuals and Individuals with Disabilities Program Guidance and Application Instruction.* May 1, 2007. p. I-4. Easter Seals Disability Services. *Summary Report: Transportation Services for People with Disabilities in Rural and Small Urban Communities*. August 2006. p. 6.
[91] Federal Transit Administration. *SAFETEA-LU Implementation: Elderly Individuals & Individuals with Disabilities, JARC and New Freedom*. (A PowerPoint Presentation presented at the Coordinated Planning & United We Ride Workshop in Huntsville, Alabama on February 27, 2007.
[92] American Public Transportation Association. *Washington Report*. August 2005.
[93] The U.S. Government Accountability Office. *Federal Transit Administration: Progress Made in Implementing Changes to the Job Access Program, but Evaluation and Oversight Processes Need Improvement* (GAO-07-43). November 2006. p.4.
[94] Federal Transit Administration. *FTA SAFETEA-LU: Major Public Transportation Provisions*. March 30, 2006.
[95] Federal Transit Administration. *Circular: New Freedom Program Guidance and Application Instructions*. May 2007.
[96] Federal Transit Administration. *FTA SAFETEA-LU: Major Public Transportation Provisions*. March 30, 2006.
[97] Federal Transit Administration. *Circular: New Freedom Program Guidance and Application Instructions*. May 2007. Federal Interagency Coordinating Council on Access and Mobility. *Coordinated Human Service Transportation Planning: Final Policy Statement.* October 1, 2006.
[98] Colorado Department of Transportation. *Overview of ADA Impact on Transit System*. 2007.
[99] Bureau of Transportation Statistics, the U.S. Department of Transportation. *National Transportation Statistics 2006*. December 2006.
[100] Colorado Department of Transportation. *Overview of ADA Impact on Transit System*. 2007.
[101] Transportation Research Board. *State of the Art of Paratransit*. 2000. p. 2.
[102] The U.S. Access Board. *Draft Revisions to the ADA Accessibility Guidelines for Buses and Vans*. "Discussion of Revisions." April 11, 2007.
[103] "Board Releases Draft Update of Guidelines for Buses and Vans." The U.S. Access Board Internet Website. April 11, 2007.
[104] "Board Releases Draft Update of Guidelines for Buses and Vans." The U.S. Access Board Internet Website. October 17, 2007.
[105] Transit Cooperative Research Program. "Guide to Federal Buy America Requirements." *Legal Research Digest.* September 2001. p. 8.
[106] Federal Transit Administration. *Non-Rail Vehicle Market Viability Study Final Report*. February 2006. page 42.
[107] *Ibid.*
[108] "Buy America: Frequently Asked Questions." FTA Internet Website. 2007.
[109] Transit Cooperative Research Program. "Guide to Federal Buy America Requirements." *Legal Research Digest.* September 2001. p. 3.

[110] *Ibid.* p. 9-10.
[111] *Procurement Handbook for Transit System General Managers and Senior Executives*. National Transit Institute. May 2005. p. 10.
[112] "FTA Issues Second Buy America Proposed Rulemaking." *Passenger Transport*. Volume 64, No. 49. December 11, 2007. p. 3.
[113] *Federal Register*. Vol. 71, No. 230. November 30, 2006. *Federal Register*. Vol. 71, No. 54. March 21, 2006. *Federal Register*. Vol. 70, No.227. November 28, 2005. American Public Transportation Association. *Testimony of William W. Millar, President of the American Public Transportation Association, Before the Subcommittee on Housing and Transportation of the Senate Committee on Banking, Housing, and Urban Affairs on the Implementation of SAFETEA-LU on June 27, 2006*.
[114] *49 CFR Part 661*, "Buy America Requirements; End Product Analysis and waiver Procedures." September 20, 2007.
[115] *49 CFR Part 661*, "Buy America Requirements; End Product Analysis and waiver Procedures." September 20, 2007.
[116] American Public Transportation Association. *President's Letter*. September 21, 2007.
[117] Transportation Cooperative Research Program, *Synthesis 53 Operational Experiences with Flexible Transit Services*, Washington, DC, 2004, p. 35.
[118] U.S. Census Bureau, *2005 American Community Survey Data Profile*, American FactFinder Website, June 2007.
[119] Transportation Cooperative Research Program, *Synthesis 53 Operational Experiences with Flexible Transit Services*, Washington, DC, 2004, p. 35.
[120] Trapeze Software Group Press Releases, *Ride Solution, Inc. Selects Trapeze*, September 12, 2003.
[121] "Miami-Bus Rapid Transit." Federal Transit Administration Internet Website. 2007.
[122] "Phoenix Dial-A-Ride." Phoenix PTD. Internet Website. 2007.
[123] *2007 Transit Vehicle Database.* American Public Transportation Association.
[124] "Facts." Miami-Dade Transit Internet Website." 2007.
[125] "Miami-Bus Rapid Transit." Federal Transit Administration Internet Website. 2007.
[126] "About Open Door." Indianapolis Public Transportation Corporation Internet Website. June 2007.
[127] Federal Transit Administration. *2005 National Transit Database*. December 12, 2006.
[128] *2007 Transit Vehicle Database.* American Public Transportation Association. June 2007.
[129] City of Jackson. *Request for Proposals for the Transportation Management and Operations of Public Mass Transit and Paratransit Services in the City of Jackson, Mississippi Service Area of City of Jackson Mississippi's JATRAN Transit System*. "Background." March 2007. p. 6.
[130] Federal Transit Administration. *2005 National Transit Database*. December 12, 2006.
[131] Santa Fe Trails Transit System. *Santa Fe Ride Program*. 2007.
[132] Federal Transit Administration. *2005 National Transit Database*. December 12, 2006.
[133] *2007 Transit Vehicle Database.* American Public Transportation Association. June 2007.
[134] "Access-A-Ride: Paratransit Service User's Guide." MTA New York City Transit Internet Website. June 2007.
[135] Federal Transit Administration. *2005 National Transit Database*. December 12, 2006.
[136] *2007 Transit Vehicle Database.* American Public Transportation Association. June 2007.
[137] Special Service In Charlotte Changes People's Lives." *Passenger Transport*. Vol. 64, No. 18. May 1, 2006.
[138] "Special Transportation Service (STS)."Charlotte Area Transit System Internet Website. June 2007.
[139] "Frequently Asked Questions: What is STS II?" Charlottes Area Transit System Internet Website. June 2007.
[140] *2007 Transit Vehicle Database.* American Public Transportation Association. June 2007.
[141] Federal Transit Administration. *2005 National Transit Database*. December 12, 2006.
[142] "CCTA: Special Services — ADA and Paratransit Services." Chittenden County Transportation Authority Internet Website. June 2007.
[143] Federal Transit Administration. *2005 National Transit Database*. December 12, 2006.
[144] *2007 Transit Vehicle Database.* American Public Transportation Association. June 2007.
[145] "Travel Options: Metro's ADA Paratransit Program." "Metro Access Transportation Service." King County Metro Internet Website. June 2007.
[146] Federal Transit Administration. *2005 National Transit Database*. December 12, 2006.

[147] *2007 Transit Vehicle Database.* American Public Transportation Association. June 2007.
[148] "At King County Metro, Variety Is the Spice and Foundation of Sustainable Transportation." *Passenger Transport*. Vol. 65, No. 22. May 28, 2007.
[149] "History." Coach and Equipment Manufacturing Internet Website. June 2007.
[150] Mid Size Bus Manufacturers Association, *2006 Annual Survey Compilation*, February 2007.
[151] *Ibid.*
[152] Federal Transit Administration. *Non-Rail Vehicle Market Viability Study.* December 2005, p. 63
[153] Thor Industries, Inc. *2006 Annual Report*, July 2006, pp. 16 & 17.
[154] *Small Transit Vehicle Industry Study.* Small Urban & Rural Transit Center, Upper Great Plains Transportation Institute, North Dakota State University. April 2007. p. ii.
[155] *2007 Transit Vehicle Database.* American Public Transportation Association. June 2007.
[156] Federal Transit Administration, National Transit Database, *2003 Transit Profiles, Top 50 Agencies*, Washington, D.C. December 2004.
[157] The U.S. Government Accountability Office. *Federal Transit Administration: Progress Made in Implementing Changes to the Job Access Program, but Evaluation and Oversight Processes Need Improvement* (GAO-07-43). November 2006. p. 4.
[158] Federal Transit Administration. *Circular: New Freedom Program Guidance and Application Instructions*. May 2007. Federal Interagency Coordinating Council on Access and Mobility. *Coordinated Human Service Transportation Planning: Final Policy Statement.* October 1, 2006.
[159] Thor Industries, Inc. *2006 Annual Report*. July 2006.
[160] Environmental Protection Agency, *Highway Diesel Progress Review*, June 2007, p.3.
[161] Michael E. Porter, *Competitive Strategy: Techniques for Analyzing Industries and Competitors.* New York: The Free Press, A Division of Simon & Schuster Inc., 1980. p.5.
[162] Environmental Protection Agency, *Highway Diesel Progress Review*, June 2007, p.3.
[163] "Ethanol's Water Addition." *Wall Street Journal,* October 17, 2007.