

Optimizing Accessible Taxi Service to Augment Traditional Public Transit Services in Delaware

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Executive Summary

As one of the most rapidly “graying” states in the nation, Delaware soon will be faced with significant growth in the demand for public transportation services that meet the needs of an increasingly older population. This population, moreover, is more likely to require assistance due to one or more disabilities that may affect individuals’ ability to go outside their homes. Coupled with an ongoing shift of the state’s population from the more urban north to the more rural south and a growing desire among older adults to “age in place” if at all possible, the impact this “graying” phenomenon on the state’s already burdened paratransit bus system will become unmanageable unless programmatic changes are implemented. The purpose of this report is to explore the efficacy of raising Delaware’s taxi industry from its current balkanized status to a level of accessibility and performance that will permit it to augment the state’s traditional public transit services.

The report’s title employs the phrase “optimizing accessible taxi service” but, as quickly became clear in the process of inventorying the nature and extent of existing services, the term truly understates the magnitude of the change that is required. In Delaware, accessible taxi service really needs to be *created*, from the curb up. Change undoubtedly will not come easily, given the current characteristics of the state’s taxi fleet. One of the keys to taxi accessibility is the design of the vehicle involved. The traditional approach of modifying vans for the purpose of transporting wheelchair users yields a vehicle that is effective for that purpose but so highly specialized that it is of little use for anything else. The result is longer waiting times while particular specially purposed vehicles travel to their appointed locations, as well as higher operating costs for the service providers. The fact that Delaware’s 100-vehicle taxi fleet currently includes no such conveyances is on the one hand disappointing, but on the other hand a circumstance to be exploited. Current accessible taxi service may be a myth, but that also means no current investment strategies need to be abandoned. Accessible taxi service in Delaware truly is a blank slate.

In terms of vehicle choices, the time during which this report has been in production has seen more than one prospect appear to present a path forward, only to drift away. Clearly, the best path forward is to embrace the philosophy of Universal Design, in which the removal of barriers for one segment of society does not simultaneously raise barriers for another. An accessible taxi vehicle should be one that anyone can use, in as simple a manner as possible. Taking that path, however, requires more than theory—it requires available rolling stock. The new domestically constructed MV-1 is just such a vehicle. It is currently in production and available at a competitive cost. The question that arises is how to get the MV-1 off the dealership floor and onto the streets of Delaware in taxicab livery. Some possible strategies are suggested.

This report closes with a recommendation that Delaware adopt something like the “Santa Monica Model” of regulating taxi services through a process of franchising. The result would be to reverse the current trend of “a new taxi company every day” and replace it with a higher quality, more professional, and more consistent system that

would better meet the needs of all users: visitors as well as residents, employed as well as retired, individuals with or without disabilities. When it comes to taxi service, size does matter.

Introduction

The Delaware Department of Transportation (DelDOT) and DART First State have recognized that Delaware’s demographic trends, particularly the projected rise in its aging and “Baby Boomer” population, will impact the need to offer more mobility options and accessible transportation for residents. A Senior Citizen Affordable Taxi (SCAT) service, which offers a reduced fare to eligible seniors and disabled persons, has been available on a limited basis for many years. This report explores the possible implementation of universally accessible taxi-based transportation initiatives to augment traditional public transit services and expand mobility options for Delawareans at the most efficient cost.

The original proposal for this project suggested the exploration of a “possible expansion of accessible taxi-based transportation initiatives to augment traditional public transit services and expand mobility options for Delawareans at the most efficient cost” during FY 2009. The first step in the proposed study methodology was to establish “the current state of accessible taxi services in Delaware.” Upon determining that none of the vehicles comprising Delaware’s current taxi fleet are truly wheelchair accessible, the concept of expansion was replaced with that of creation, and the identification of an appropriate accessible taxi vehicle became a significant issue.

This report examines contemporary initiatives in other jurisdictions and discusses the conditions that would be required to make taxi service an important component to enhancing mobility in Delaware. Given the complete absence of currently accessible taxi service within the state, the challenges are significant. The conclusion of this report has, quite frankly, been a long time in coming. On multiple occasions, dating back to the spring of 2009 when an optimistic multimedia presentation was prepared for the annual Delaware Center for Transportation (DCT) Research Showcase, it appeared that a solution to the vehicular piece of the puzzle might have been found. One after another, however, vehicles offering the promise of universal accessibility were withdrawn from the U.S. market or encountered production delays. Finally, a taxi vehicle embodying the principles of Universal Design at a competitive price is now available, and the prospect for its continued presence in the market looks good.

The combined factors of the current availability of a domestically produced, purpose-built accessible taxicab vehicle and the extremely small size of Delaware’s statewide taxi fleet provide for some very promising policy options. The opportunity exists for the First State to truly become #1 in universally accessible transportation alternatives.

Accessible Taxi Services in Delaware

The research proposal that led to the preparation of this report posited the following:

Delaware's demographic trends, particularly the projected rise in its aging and "Baby Boomer" population, will impact the need to offer more mobility options and accessible transportation for residents. A Senior Citizen Affordable Taxi (SCAT) service, which offers a reduced fare to eligible seniors and disabled persons, is available on a limited basis. A possible **expansion** (*emphasis added*) of accessible taxi-based transportation initiatives to augment traditional public transit services and expand mobility options for Delawareans at the most efficient cost needs to be explored.

The presumed first step along this path would be to establish the current state of accessible taxi services in Delaware. As noted above, a reduced-fare Senior Citizen Affordable Taxi (SCAT) service currently does exist in Delaware. This program, which has been in place for many years, is regulated and funded by DART First State.

Upon certification of eligibility, Delaware's statewide SCAT program provides a 50% discount on taxi fares for senior citizens and persons with disabilities. To be eligible for the program, persons must be 65 years of age or older or have physical or mental disabilities that prevent them from operating a motor vehicle. Upon approval, a DART SCAT Photo ID card is issued to a certified applicant. DART SCAT Photo IDs can be obtained at DART's administrative offices at 900 Public Safety Boulevard in Dover or at 119 Lower Beech Street, Suite 100, in Wilmington. The application process is intended to be as barrier-free as possible. Persons who are unable to get to one of those two locations are asked to contact the DART office by phone so that individual arrangements can be made.¹ Persons who already are registered as DART paratransit customers do not need to fill out an additional application for SCAT.

SCAT tickets that are valued at \$10.00 each can be purchased for \$5.00. The tickets are used to pay metered taxi fares. SCAT tickets may be purchased through the mail, at the two DART administrative sites where the SCAT Photo ID cards are issued, and at as many as 50 additional locations throughout the state, including many senior centers, banks, and grocery stores.² Once tickets have been purchased, customers are directed to contact the nearest participating taxi company to schedule their trip, informing the company that they will be using SCAT tickets. A link to the current list of participating taxi companies is maintained on the DART webpage. Customers are reminded that while DART-issued SCAT tickets may be used as payment, taxi fares are set by the individual privately owned taxi companies. DART/Delaware Transit Corporation does not guarantee the wheelchair accessibility of any taxis. Individuals who use

¹ <http://www.dartfirststate.com/information/programs/scat/>

² http://www.dartfirststate.com/information/getting_there/dartcard/outlets.pdf?012110

wheelchairs are advised to inquire of the taxi company with which they are requesting service to determine the availability of wheelchair-accessible transportation.³

A reasonable next step was taken toward the goal of expanding accessible taxi-based transportation service in Delaware by contacting all of the firms listed as then-current participants in the SCAT program by telephone. Responses varied but, for the most part, the providers' taxi vehicles were initially described as being able to "transport a wheelchair." Only upon more detailed questioning did it become clear that those answers meant that folding wheelchairs would be collapsed and placed in the vehicle, typically in the trunk. To ride in a taxicab, a customer would have to be able to transfer to and from the regular vehicle seat. This was true for all of the vehicles that were being operated by every participating SCAT taxi service provider.

In the interest of completeness, and because it had been learned that DART's list of participating SCAT providers changed from time to time, the same question about being able to "transport a wheelchair" was posed by phone to the balance of the taxi firms that were licensed by DelDOT to provide taxi service in Delaware during the fall of 2008. After a significant number of call-backs to some of the smaller firms, it was conclusively determined that persons in wheelchairs were out of luck if they desired transportation by a taxi anywhere in the state of Delaware, no matter whether the method of payment was by subsidized SCAT ticket or cash for the full fare. With this information, the goal of this project morphed into something more consistent with one of the short-term strategies that had appeared among the action plan items recommended in the 2007 Institute for Public Administration (IPA) report, *Framing the Issues of Paratransit Services in Delaware*, specifically, to explore possible ways to "activate an accessible taxi service" in the state of Delaware.

³ <http://www.dartfirststate.com/information/programs/scat/>

The Research Background

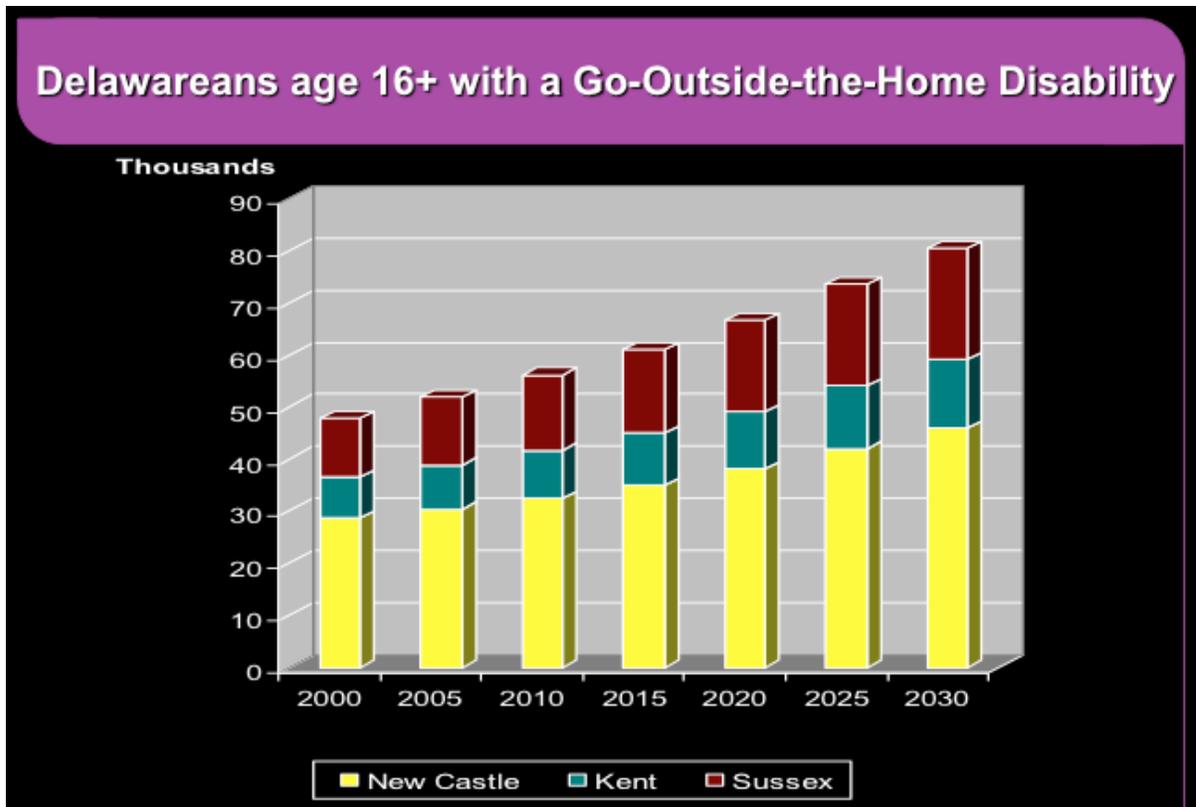
As was noted in the introduction to the 2007 IPA report, *Framing the Issues of Paratransit Services in Delaware*, “A fully accessible transit system that connects individuals to jobs, goods, educational institutions, services, and social opportunities is critical to the quality of life of the disabled population and economic development of Delaware.”⁴ The purpose of that research project was to examine the scope and character of Delaware’s statewide paratransit service in relation to Americans with Disabilities Act (ADA) mandates, identify trends and policies impacting service demands, and recommend options to address operational challenges. It was, essentially, an exploration of what the “right size” of Delaware’s paratransit system might be.

Interest in exploring alternatives to the status quo has been spurred by the fact that, in recent years, ridership and costs associated with DART First State’s paratransit service have increased considerably. At the same time, it has been established that there is a direct correlation between aging and disability. Sensory problems, physical capabilities, mental issues, lack of self-care, and difficulties leaving the home were the five categories of disabilities measured in the 2000 Census. Among these categories, physical disabilities were the most prevalent among people aged 65 and older. The percentage of the population who reported each type of disability increased with age.

The 2007 report was not IPA’s first examination of the nature of state-provided paratransit services in Delaware. As noted in the 2003 DCT report *DART First State Delaware Paratransit Services Study: A Review of Service Characteristics, Policy Implications and Options*, even though more variables than the presence of a go-outside-the-home disability are involved in the certification of an individual as eligible for ADA paratransit services, trends within this population demographic serve as a reasonable proxy for the growth that can be anticipated in DART First State’s potential paratransit customer base. The report included the following figure illustrating projections of the population of Delawareans over the age of 16 with a go-outside-the-home disability, by county, through 2030.⁵

⁴ <http://dspace.udel.edu:8080/dspace/handle/19716/3062>

⁵ http://www.ce.udel.edu/dct/publications_files/Rpt.%20151-Paratransit%20Services.pdf



Source: DART First State Delaware Paratransit Services Study: A Review of Service Characteristics, Policy Implications and Options

The projected future growth of Delaware’s senior population, and the corresponding increase in the population of persons with go-outside-the-home disabilities, will further stress the ability of DART First State to provide quality and cost-effective paratransit services in the future. Additional challenges to Delaware’s paratransit system have resulted from the unique geographic service area and the vehicle- and labor-intensive nature of services. Since current DART First State paratransit service characteristics exceed the ADA mandates and create a relatively unique category of “non-ADA” paratransit, it is important to briefly review the policy environment.

DART's Paratransit Service Policy

As noted in IPA's 2007 report, *Framing the Issues of Paratransit Services in Delaware*, DART First State classifies and tracks the usage of two distinct categories of paratransit services, defined based on what is mandated by the ADA. The following summaries are drawn from that report.

ADA Paratransit

Paratransit services that are provided to accommodate passengers with disabilities who are unable to use fixed-route service, and meet specific eligibility requirements, are called complementary paratransit services under the terms of ADA. DART refers to its complementary paratransit service, which is required by law, as ADA Paratransit. DART First State classifies ADA Paratransit trips as those for which both the client pick-up and destination are within the $\frac{3}{4}$ -mile proximity buffer associated with fixed-route bus service and that operate during the regular service days and hours of the fixed-route system. The U.S. Department of Transportation has clarified that complementary paratransit service for ADA paratransit eligible persons shall be "origin-to-destination" service. The Federal Transit Administration website explains that, "this term was deliberately chosen to avoid using either the term 'curb-to-curb' service or the term 'door-to-door' service and to emphasize the obligation of transit providers to ensure that eligible passengers are actually able to use paratransit service to get from their point of origin to their point of destination."⁶ In practice, "origin-to-destination" service is provided by DART as door-to-door service in all cases, without screening for individual need through the paratransit eligibility determination process. Door-to-door service is more costly, as it requires a higher level of driver training, greater customer service, and increased response time.

Non-ADA Paratransit

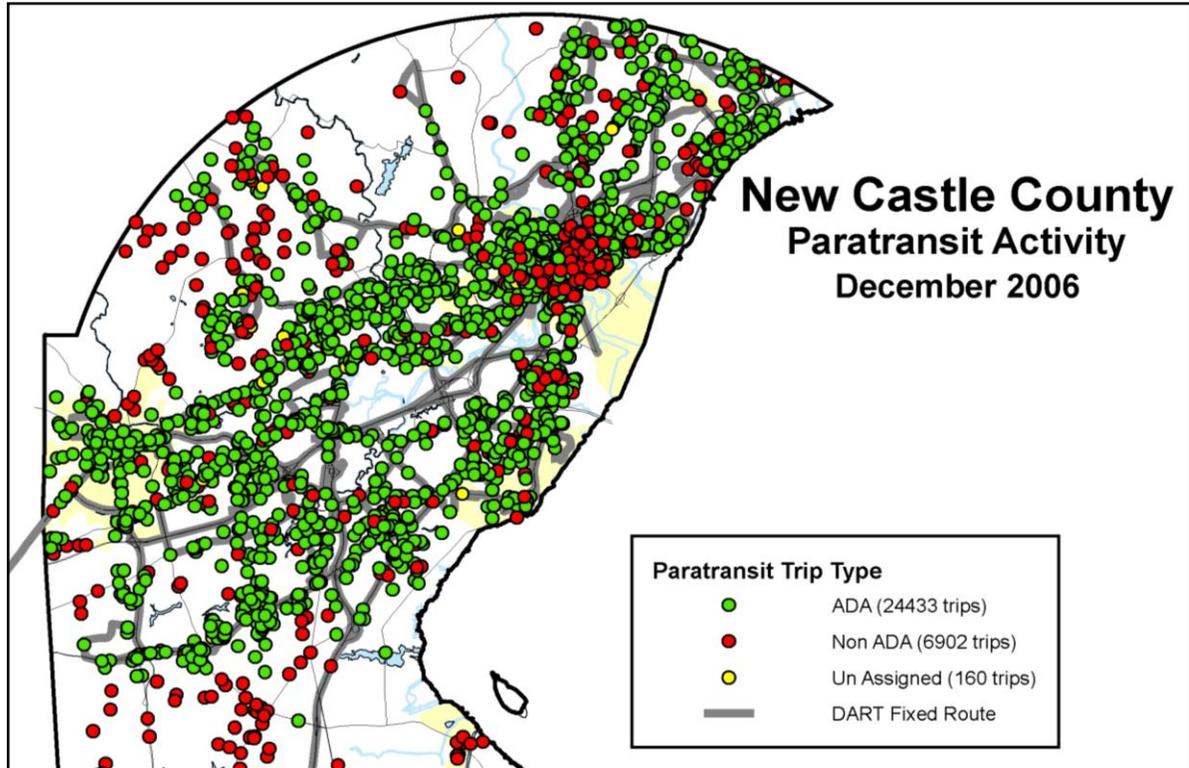
DART First State categorizes Non-ADA Paratransit as those trips that are not required by law and, therefore, are not subject to the restrictions imposed on complementary paratransit services. DART First State Non-ADA Paratransit services exceed what is required under the law as follows:

- It operates without regard to the customers' proximity to fixed-route bus service. This practice far exceeds the ADA mandate to address the transportation needs of disabled persons who are located within the $\frac{3}{4}$ -mile buffer of existing fixed-route bus service.
- It provides extended service outside of the regular fixed-route service schedule (service areas, hours, and/or days).

The typical DART First State paratransit customer is unaware of the differences between the two categories of paratransit services. Since DART First State

⁶ www.fta.dot.gov/civilrights/ada/civil_rights_3891.html

distinguishes between the two categories of services for administrative purposes only, many paratransit customers are oblivious as to the extent to which trips are scheduled beyond what is required legally. The distribution of origin and destination points for a typical month, as classified by the ADA-required or non-ADA nature of the specific trip, was illustrated by the following figure that appeared in the 2007 report [cropped in this instance to focus on northern New Castle County].



Source: *Framing the Issues of Paratransit Services in Delaware*

As a strategy to augment traditional public transit service, discussions of the provision of accessible taxi service in other jurisdictions have typically focused solely on ADA-eligible trips. This is simply because there is no current program to provide, nor consistent governmental effort to track, non-ADA trips in most settings. When the potential cost-effectiveness of transportation via accessible taxis in lieu of paratransit vehicles is considered, the potential market can be significantly understated by omitting the demand for non-ADA trips. As noted in the figure above, those non-ADA trips accounted for 22% of total paratransit activity in New Castle County over the course of the month of December 2006. In Kent and Sussex Counties, senior citizens are also afforded access to DART's paratransit vehicles, albeit on a space-available basis.

A possible policy initiative proposed in the *Framing the Issues of Paratransit in Delaware* report as a means of engaging the taxi industry in helping to meet the state's mobility needs was to consider mandating, through legislation, that a certain

percentage of all Delaware taxis be accessible. The characteristics of the taxi fleet, therefore, are of paramount importance.

Delaware's Taxi Fleet

In 2011, a total of 101 taxicabs were being operated in Delaware by 40 firms. The number of unique operators had more than doubled since 2009, when only 19 taxi firms appeared on the Public Carrier list that is maintained online by DelDOT. In 2011, the three largest firms (Yellow Cab and Seacoast Cab located in Wilmington and City Cab located in Dover) operated a little more than one-third of the entire fleet [36 vehicles]. Of the total of 40 taxi firms, 18 operated just a single vehicle, while a total of 34 firms operated no more than three vehicles.⁷ None of the vehicles catalogued in Delaware's taxi fleet were capable of accommodating a motorized wheelchair.

Boarding a taxi in Delaware, assuming that one is able to do so without assistance, may not be quite the same trip down memory lane as one would experience in Havana, Cuba—but it's probably a close second. In 2010, the "median" Delaware taxi was a 1997 Ford Crown Victoria; the only taxi vehicle in service in Delaware that was fewer than five years old was a lone 2006 Mazda registered to "Fastest Kid on the Block." Only 8% of the fleet comprised 2002 models or newer. The oldest vehicles in the 2010 fleet were a pair of 1991s, and seven others were 1992 models. In effect, one out of every ten taxis on Delaware's roads in 2010 was old enough to vote.



Photo by Project ACTION

One year later, in 2011, the "median" age of Delaware's taxi fleet had improved to the 2000 model year, driven by the retirement of the '91s (the oldest-listed vehicles being a trio dating from 1992) and the addition of several vehicles that were constructed within the most recent decade. Four additional 2006 models had entered into service, and Yellow Cab had registered four 2007 models—the newest of any taxi vehicles in the

⁷ <http://deldot.gov/public.ejs?command=PublicCarrierList>

state's entire fleet. The number of Delaware taxis "of voting age" had been reduced to seven. Even so, it seems clear from a review of DelDOT's vehicle registration data that the operators' ongoing investment in the taxi fleet, overall, has been inadequate.

In September of 2001, the Atlanta City Council established a maximum age of eight years for a taxicab operating in that municipality.⁸ In New York City, only new vehicles may be "hacked-up" (outfitted) to be placed into service as taxicabs, and the maximum permitted service life of a standard taxi is five years. (New York Taxi & Limousine Commission rules were recently amended to include incentives adding up to an additional two years of service life to accessible taxis, minivan taxis, and low-emission or CNG-fueled taxi vehicles.)⁹ Revised DelDOT rules that became effective in January 2010 address the issue of public carrier vehicles that are in unsafe condition (as well as raising several fees), but there is still no maximum age or mileage limit for a taxicab in this state. Nor is there any requirement (as is the case in New York City) that taxi vehicles be adapted to that service when they are new. It could be expected that the adoption of statewide rules that require some reasonable level of fleet modernity would not only enhance the ridership experience for all Delaware taxi users, but would also help to make the acquisition of accessible vehicles relatively less cost-prohibitive.

A profile of Delaware's Taxi Companies and Fleet Size for the period 2008-2011 follows in Table 1. Firms with names that appear in italicized text are entities that were not listed as providing taxi service in Delaware as of 2011.¹⁰

⁸ <http://atlanta.bizjournals.com/atlanta/stories/2001/03/19daily48.html>

⁹ http://www.nyc.gov/html/tlc/downloads/pdf/2011rulebook_ch67.pdf

¹⁰ <http://deldot.gov/public.ejs?command=PublicCarrierList>

Table 1: Delaware’s Taxi Companies and Fleet Size: 2008-2011

	<u>2008</u>	<u>2009</u>	<u>2010</u>	<u>2011</u>
Number of Licensed Taxi Companies	22	19	30	40
Statewide Taxicab Total	98	84	95	101

New Castle County

1 st Choice Taxi (Hassan El Aossoug)	Newark	-*	-*	-*	1
302 Taxi Service (Mohamed Bourjal)	Newark	-*	-*	-*	1
<i>Adams Taxi (Jewel Parice)</i>	Newark	2	2	0	-*
<i>Alpha Trans-Cab</i>	Middletown		-*	-*	1
Always Ready Taxi (Sierra Transport)	New Castle	-*	-*	3	4
<i>American Taxi & Limousine</i>	Newark	1	1	1	-*
Apple Car (Shahid Bajwa)	Newark	1	1	1	1
Champion Transportation (A. Chebli)	Newark	-*	-*	-*	1
Charles Taxi	Newark	-*	-*	-*	1
Checker Transportation	Newark	-*	-*	-*	1
D & G Taxi	Warwick, Md.	-*	2	4	3
<i>Dan’s Taxi (A-1 Inc.)</i>	Claymont	1	1	1	-*
Del Taxi (Nizar Telahique)	Wilmington	1	1	-*	1
Delaware Concierge Taxi	Wilmington	-*	-*	0	1
Diamond State Taxi (Richard A. Delp)	New Castle	-*	-*	-*	1
Eagle Taxi	Newark	-*	-*	1	1
Eastern Coast (Sylla Ayouba)	Townsend	1	1	1	0
Elite Taxi Cab	Newark	6	6	5	3

* Not listed on the DelDOT Public Carrier website as a Taxi Company in this year.

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Emerald Taxi	Newark	-*	-*	1	3
Family Taxi	New Castle	-*	-*	2	5
Fastest Kid on the Block (O. McFarlane)	New Castle	1	1	1	1
<i>First Class Limousine**</i>	New Castle	3	-*	-*	-*
First State Taxi Service (Rami Khlif)	Wilmington	-*	-*	2	2
Galaxy Cab (Khalid Atita)	Newark	-*	-*	-*	0
Hope Taxi	New Castle	-*	-*	-*	3
Ivory Taxi	Bear	-*	-*	1	1
John's Cab Company (John F. LaManna)	Wilmington	-*	-*	-*	1
Maani Taxi Cab (Shehzad Bajwa)	Newark	-*	-*	-*	1
Nadal Taxi (Nahurm Dalmace)	New Castle	-*	-*	-*	0
Newark Express Taxi (John Owusu)	Newark	-*	-*	-*	1
Noni Taxi Cab	Newark	2	2	3	3
Old City Taxi (Hassan Yahiaoui)	Upper Darby, Pa.	-*	-*	-*	2
Quality Ride (El K Mouhoud)	Newark	-*	-*	1	2
<i>Rabii Taxi</i>	Newark	1	1	1	-*
SafeRide Taxi (Said Bibi)	Newark	-*	-*	1	2
Sam's Transportation Co. (S. Marah)	Claymont	-*	-*	-*	1
Seacoast Cab (United Transit)	Wilmington	17	17	13	9
The Date Taxi (Henry K. Dapaah)	Bear	-*	-*	-*	1
Willy Cab (Wael Ahmed)	Wilmington	-*	-*	1	1
Yellow Cab (Damoco Holding)***	Wilmington	12	12	17	16
Zizo Taxi (Mahmoud Abdou)***	Newark	3	3	3	3

** Currently licensed by DelDOT as a limousine company.

* Not listed on the DelDOT Public Carrier website as a Taxi Company in this year.

*** Current provider of DART Senior Citizen Affordable Taxi services.

Kent County

City Cab (Antoniou Enterprises)***	Dover	11	11	12	11
<i>Five Star Limousine**</i>	Dover	10	-*	-*	-*
George’s Car & Business Services***	Kenton	2	3	3	2
<i>My Father’s Business Too</i>	Houston	1	1	-*	-*
<i>Ultimate Choice Taxi</i>	Dover	-*	-*	4	-*
<i>Wadkin’s Garage</i>	Milford	1	1	-*	-*

Sussex County

<i>Coastal Resort**</i>	Ocean View	3	-*	-*	-*
Comfort Ride (Vincent Airport)	Lewes	17	17	7	5
Eastern Shore Transportation	Milton	-*	-*	2	2
<i>Jireh Taxi & Med.</i>	Laurel	1	-*	-*	-*
Shamrock Taxi Services	Lewes	-*	-*	2	3

*** Current provider of DART Senior Citizen Affordable Taxi services – City Cab is listed as operating statewide, from locations in each county.

** Currently licensed by DelDOT as a limousine company.

* Not listed on the DelDOT Public Carrier website as a Taxi Company in this year.

SCAT (Senior Citizens Affordable Taxi)

As discussed on pages 2-3 of this report, a reduced-fare Senior Citizen Affordable Taxi (SCAT) service currently exists in Delaware. As of February 17, 2011, DART identified the following taxicab providers as being the only ones, among the 40 firms listed in the preceding table, to accept SCAT coupons¹¹:

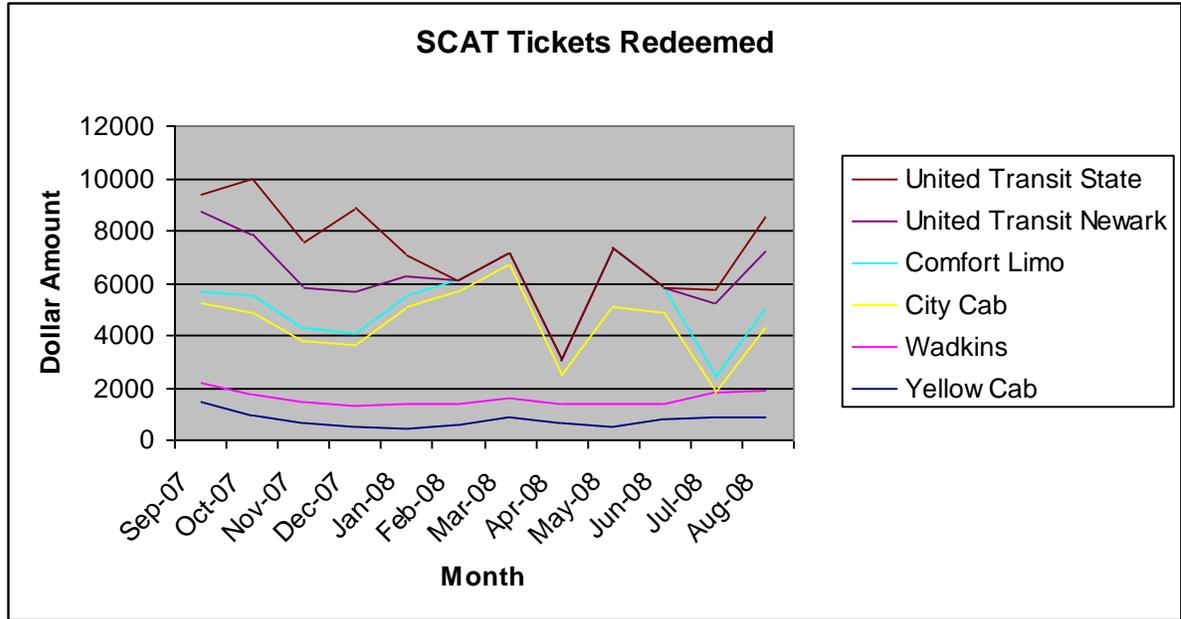
- City Cab Co. (listed as operating statewide, from locations in each county)
- George's Car & Business Services – Clayton (or perhaps Kenton? per DelDOT list)
- Yellow Cab – Wilmington
- Zizo's Taxi Cab Company – Newark

The list of taxi providers participating in the SCAT program has been in somewhat of a state of flux throughout the course of this project, including among its membership as many as seven providers in 2008 and 2009 (six of whom were consistent across those two years). The four current SCAT providers (all of whom have been consistent participants since 2008) collectively operate a total of 32 vehicles, thus making approximately one-third of the state's taxi fleet theoretically available to seniors and persons with disabilities, at half price. That subset of the fleet is quite representative of Delaware taxi service equipment overall, ranging from the oldest to newest vehicles currently in service, consisting mostly of Ford Crown Victoria sedans, and including no taxis that are wheelchair accessible. (Recall that DART "does not guarantee wheelchair accessibility of the taxis. Users of wheelchairs must inquire of the taxi service with which they are requesting service.")¹²

An interesting anomaly identified during the preparation of this report is that while Delaware's population is growing older and the number of potential SCAT customers is therefore increasing (without even considering the positive relationship between age and go-outside-the-home disabilities), SCAT ridership generally has been in decline. Shortly after the inception of this project, SCAT system utilization data was requested from DART First State. DART measures utilization in terms of the numbers of SCAT ride tickets that are redeemed monthly by the participating taxi companies. Since payment is not issued to providers until the used tickets are submitted, the redemption of ride tickets reasonably would be expected to occur shortly after the services had been rendered. However, the general feeling within the DART office was that such is not always the case. It is not, therefore, possible to produce a plot of actual trips taken by month. SCAT ticket redemption data is presented in the following figure for the period September 2007-August 2008. A request for an additional 12 months of data was declined by DART in December 2009, with the observation that there had been no change in trends through December 2009, and that the 2007-08 data was, therefore, still adequately representative.

¹¹ http://dartfirststate.com/pdfs/SCAT_Providers_021811.pdf

¹² <http://dartfirststate.com/information/programs/scat/index.shtml#instructions>



Source: DART First State

Aside from the above data, anecdotal evidence from all who were consulted confirmed that the level of ridership in the SCAT program had been flat or in slight decline for a period of several years. A number of circumstances were judged to have been contributing factors, but most related in some way to the paper coupon/ticket system.

The flow of SCAT tickets and cash is as follows:

- Tickets are sold by DART at 50% of face value, either directly to an authorized rider (through the mail or in person) or to a ticket-outlet entity.
- Tickets purchased by outlet entities are subsequently re-sold to authorized riders at cost (whereby the ticket outlet recovers its outlay).
- Authorized riders use their purchased tickets at full face value to pay for their taxi trips.
- Taxi drivers submit the tickets to their management.
- Taxi firms submit the tickets to DART for reimbursement at face value.

It was observed that at some time in the recent past there had been a flaw in the operation of the program, whereby reimbursements were being issued for tickets that had never been sold by DART. That was one cause of turnover among the participating taxi companies. In other cases, there had been problems associated with program participation that did not rise to the level of fraud, but nonetheless resulted in participant turnover. The uncertainty due to this turnover among providers was noted in an anonymous survey of senior center directors as one of the factors negatively affecting SCAT ticket sales at their sites.

In January 2009, a survey was distributed to senior center directors in Delaware, asking them to respond anonymously to a series of questions designed to evaluate the effectiveness of the Senior Citizen Affordable Taxi program. A total of twenty-one

responses to the survey were received, equating to a response rate of 50%. All but one of the respondents from Delaware's senior centers said that they were familiar with the SCAT program. Seven respondents reported that their senior centers were outlets for the purchase of SCAT coupon books, and five of those seven reported that they routinely sold tickets to members who utilize the service.

Of the twenty-one respondents to the survey, three directors reported that their centers had previously served as remote sites for DART representatives to take photos for SCAT Photo ID cards. Of the eighteen respondents who reported that their centers had not served as remote sites for SCAT Photo ID cards in the past, seven directors indicated that that they would be interested in having DART come to their centers and take photos for SCAT Photo ID cards in the future.

At the end of the survey, center directors were asked to comment on their overall experience with SCAT. The most frequent observations about the program were:

- The SCAT program was not widely publicized.
- SCAT trips are a low priority for taxi companies because the seniors don't tip very well.
- There has been confusion about which taxi companies to call, as some have been dropped from the program.
- Riders have reported that drivers don't know how to get them to their intended destinations.
- It is hard to get taxis to respond in rural areas.
- Taxi drivers delay pick-ups for SCAT riders.
- For our members with disabilities, riding in a cab is simply not an option.
- There has been confusion about how to sign up and get approved for the service.

Delaware is not the only jurisdiction to have experienced coupon or voucher fraud. In San Francisco, California, which operates a program very similar to SCAT, a small number of users and drivers were cashing in coupons that had never been used. To combat this, the city implemented an electronic payment system that is capable of accepting payments from debit cards, credit cards, and Clipper (formerly known as TransLink) "smart cards"—the same pre-paid cards that already were being used by San Francisco's paratransit service, Bay Area Rapid Transit (BART), and AC (Alameda-Contra Costa) Transit. This type of system eliminates the need for cash payments and paper handling. Instead, payments come directly from taxi-meter readings. Senior discount rates are built in.

Clipper allows riders to pay fares with a single, re-loadable smart card, eliminating the need for exact change, paper passes, tickets, or ride books. Passengers simply "tag" their cards by touching them to the Clipper logo on the card reader as they board a bus or enter a transit station. The correct fare is automatically deducted from the Clipper card and any discounts that apply—including transfers—for each trip are deducted at

the same time. The Clipper website contains an AutoLoad feature that allows Clipper customers to add value to their cards automatically from a bank account or credit card.

Clipper “smart cards” allow customers to do the following:

- Stop carrying multiple forms of payment (exact change, tickets, or passes).
- Automatically add value when balance is low via the TransLink website using AutoLoad.
- Replace registered cards and restore a card's balance for a small fee in the event of card loss, theft, or damage.
- More quickly board a bus, taxi, train.

Customers can order Clipper cards—and add value to them—online, by phone, or by mail, or pick up a card at participating retail locations and transit agency ticket offices. Customers also can add value at self-serve Add Value Machines located in transit stations or through an employee transit benefit program (such as Commuter Check®).¹³

The replacement of Delaware’s SCAT ticket “paper chase” system with a debit card system is something that should be given serious consideration. Under the current model, taxi companies don’t get paid for their SCAT trips until long after the fact, when they receive their reimbursement checks from DART. With a debit card system, the financial transaction is immediate. It also is much easier to deal with precise fare charges than with the current fixed-denomination SCAT tickets. Since Delaware is the nation’s “bankcard capital,” this would seem to be a natural transition.

¹³ <https://www.clippercard.com/ClipperWeb/useTranslinkTutorial.do?CSRT=2611169473956290678>

Accessible Taxis for Business Travel

Given that the impetus for this report was developed largely out of previous studies' focus on paratransit services, whose clientele tend to be exclusively Delaware residents, it is important not to lose sight of the critical role that accessible taxi services could play in augmenting business travel. Taxi-service quality was among a range of issues addressed in a 2009 IPA working paper titled, *Scoping Out Delaware's Role in Facilitating Business Travel as it Relates to the Wilmington Redevelopment Area, Wilmington Train Station, and New Castle County Airport*. Relevant survey responses included the following:

- Since all cabs wait near the train station, it is difficult to get a cab in the downtown area.
- The current taxi service creates the wrong perception of Wilmington—the taxi vehicles are not clean, there is no general uniformity of vehicle appearances, and taxi drivers look shady and often are on their cell phones throughout the trips.
- The state of Delaware should create either a statewide taxi dispatch or statewide regulations with an overlay specific to Wilmington.
- The current poor taxi service in Wilmington has forced not only hotels but also businesses in the area to offer shuttles for their guests.
- Sometimes if you call for a taxi, it can be a two-hour wait.
- Someone recently requested a taxi to take them to Trolley Square, but was refused. The individual had to walk instead.
- Harry's Seafood Grill can't get taxis to cross Market Street.
- Currently, it can cost \$50-75 to travel by taxi from Wilmington to Newark.
- Why is cab service available only at certain signs?
- There is also substandard cab service at the airport; many of the corporations that use the airport have their own shuttle cars.
- Two taxi companies own most of the existing medallions.¹⁴

To this list should be added the conundrum that a person with a disability, traveling for either business or pleasure, could arrive in Wilmington from great distances by train but, without having made prior private arrangements, would have no way to get from the Wilmington Station to his or her final destination.

¹⁴ <http://dspace.udel.edu:8080/dspace/handle/19716/4708>

Miami-Dade County, Florida

Miami-Dade County, Florida, while perhaps not among the first locations one might think of as a comparative jurisdiction to the state, has almost exactly the same land area as Delaware and its population density is very similar to that of New Castle County. It also provides an interesting case study of the manner in which the effectiveness of a legislative mandate that a minimum percentage of a taxi operator’s fleet consist of wheelchair-accessible vehicles can be skewed by the presence of a single, major generator of taxi trips. In Delaware, that single major generator [and the primary locus of taxicab availability] is Wilmington Station. In Miami-Dade County, it is Miami International Airport.

<u>How we compare:</u> ¹⁵	<u>Miami-Dade Co.</u>	<u>Delaware</u>
Same land area	1,898 Sq. Miles	1,949 Sq. Miles
About 3x the population (2010)	2,496,435	897,934
Same pop. density as New Castle Co.	1,315/Sq. Mile	1,263/Sq. Mile
One-seventh as many persons per taxi	1,246/taxi	8,890/taxi
Total size of taxi fleet is 20:1	2,004	101
Percent of taxi fleet that is accessible ¹⁶	3.8% (77 taxis)	0%

A 2006 study of taxicab ridership in Miami-Dade County noted the county’s encouragement of an increased supply of wheelchair-accessible taxicabs by providing for the sale of additional taxi permits at a discounted price. A goal of 3% wheelchair-accessible cabs had been established by ordinance in 2003. New Miami-Dade taxi medallions are sold by lottery, with the winners paying \$25,000 for a “regular” taxi permit, but only \$15,000 for a permit to operate a wheelchair-accessible taxicab. These would seem to be bargain prices, given that a driver may sell his permit on the open market after having used it for at least five years and the going price (in 2006) was reported to be in excess of \$200,000.¹⁷

The Miami-Dade taxi ridership study determined that approximately half [54%] of all wheelchair-accessible taxis then in service in the county were found to be concentrated at Miami International Airport, where they averaged slightly more trips than regular

¹⁵ <http://quickfacts.census.gov>

¹⁶ http://www.miami-dade.gov/csd/wac_service.asp

¹⁷ <http://www.miamidade.gov/csd/Licensing/Business/taxicab.asp#5>

cabs due to their larger capacity, often being called to the head of the taxi line to handle parties with greater amounts of luggage. Airport curb personnel reported that they rarely, if ever, had seen those cabs used to transport passengers in wheelchairs. Meanwhile, riders with disabilities, countywide, were reporting difficulty in having their service needs met.¹⁸

A significant recommendation of the Miami-Dade taxi ridership study report was that all wheelchair-accessible taxis in the county should be dispatched from a single call center. Only through this methodology, it was believed, could the existing system fragmentation be addressed and the true level of demand for accessible taxi transportation determined.

¹⁸ Ibid.

New York City

In 2007, an unrestricted NYC taxicab medallion was estimated to be worth \$500,000. The implications of that are truly significant, given that there are over 13,000 NYC taxis in service. On May 2, 2008, The New York Taxi & Limousine Commission [TLC] auctioned 86 new accessible taxi medallions in lots of two. The minimum bid was set at \$350,000 per medallion, and the lowest winning bid was in excess of \$600,000 per medallion.¹⁹ In such a market, the economics associated with a limited, regulated supply of a highly desired item [the taxi medallion], can be harnessed to facilitate change. Even so, accessible taxis remain hard to find on the streets of the Big Apple.

Currently, wheelchair and scooter users in the New York City metropolitan area can call 311 to request a wheelchair-accessible taxi via the new Accessible Dispatch Program. This system links passengers who use wheelchairs with accessible vehicles through a central dispatcher. Residents and visitors to NYC can call 311 for a pre-arranged service. A call to 311 connects a passenger to a dispatcher who collects the passenger's pick-up location and communicates electronically with participating drivers. In theory, the closest-available driver accepts the dispatch and picks up the passenger. The fare for an accessible cab trip is the same as the metered rates for all New York City yellow taxis. The Accessible Dispatch System is for passengers who use wheelchairs or scooters only.²⁰ As part of this program, the New York City Taxi & Limousine Commission selected United Spinal Association to train taxi drivers in proper use of wheelchair-securement devices and disability etiquette.²¹

The New York City Taxi of Tomorrow

The Department of Citywide Administrative Services (DCAS), on behalf of the New York Taxi & Limousine Commission, has undertaken a major initiative to upgrade its existing taxi fleet, described as the "Taxi of Tomorrow" Project. The Commission sought an Original Equipment Manufacturer (OEM), or a team that included an OEM, to provide an innovative vehicle that was developed or modified for use in the New York City taxi market. Among the qualities originally envisioned for the Taxi of Tomorrow were:

- Highest safety standards.
- Superior passenger experience.
- Superior driver comfort and amenities.

¹⁹ <http://www.nyc.gov/html/tlc/medallion/html/home/home.shtml>

²⁰ http://caradvice.askpatty.com/ask_patty_/2009/01/accessible-taxi-service-for-wheelchair-users-in-new-york-city.html

²¹ <http://www.unitedspinal.org/2008/12/10/use-those-nyc-accessible-taxis/>

- Appropriate purchase price and on-going maintenance and repair costs.
- Sustainability (minimized environmental impact throughout the vehicle's life cycle).
- Minimal physical footprint (with more useable interior room).
- Universal accessibility for all users with a goal of meeting ADA guidelines (wheelchair accessible).
- Iconic design that will identify the new taxi with New York City.

Proposals were due on May 14, 2010.²²

The public got its first look at the preliminary interior design of the "Taxi of Tomorrow" near Madison Square Park on November 1, 2011. At the free exhibit, visitors were invited to sit in the simulated back seat of the soon-to-be Nissan NV200, a new design that already has been plagued by controversy because it is not handicap accessible. In response to the proposed disparity in taxi access, several disability rights organizations have filed suit against the city, claiming that its current policy of not requiring all cabs to be handicap accessible violates the Americans with Disabilities Act.²³ On November 3, advocates in wheelchairs, wearing buttons stating "Separate is NOT equal," began protesting at the exhibit.²⁴

On December 23, 2011, U.S. District Court Judge George Daniels ruled that the city's taxi system discriminates against the disabled, saying that the Taxi & Limousine Commission is in violation of the Americans with Disabilities Act because the city has just 232 wheelchair-accessible cabs out of a fleet of 13,237 vehicles. He ordered the city to develop a comprehensive, long-term plan to provide "meaningful access" to taxis that are accessible to disabled customers.²⁵

On January 10, 2012, disability-rights advocates returned to Madison Square to test out the VPG MV-1, a new vehicle option that had been approved by the New York City Taxi & Limousine Commission in October 2011 for use as a New York City taxicab. Fred Drasner, chairman and CEO of VPG, indicated that a few of the vehicles that already had been sold to New York taxi medallion holders would start to enter service in about four weeks and was quoted as saying that the MV-1 was "... built for the taxi duty cycle, and

²² nyc.gov/html/tlc/html/home/home.shtml

²³ <http://www.dnainfo.com/20111101/murray-hill-gramercy/taxi-of-tomorrow-design-debuts-public>

²⁴ <http://www.dnainfo.com/20111103/murray-hill-gramercy/wheelchair-users-stage-rollin-protest-against-taxi-of-tomorrow>

²⁵ http://articles.nydailynews.com/2011-12-23/news/30552807_1_assemblyman-micah-kellner-wheelchair-accessible-cabs-wheelchair-accessible-vehicles

whether you're on two legs or four wheels, it won't leave anyone at the curb."²⁶ The VPG MV-1 also was approved by the Philadelphia Parking Authority's Taxicab & Limousine Division for use as a Philadelphia taxicab during the month of October 2011.²⁷

The failure of the Taxi of Tomorrow program to yield an accessible vehicle as its selection would appear to perpetuate the distinction between vehicles for persons with disabilities and "the rest of us." As noted so effectively by proponents of the United We Ride initiative:

- If all new taxis were accessible, in every community, eventually the word "taxi" would mean "accessible taxi."
- Purpose-built vehicles would be the norm and conversion expenses for minivans to be used in taxi service would be eliminated.
- A secondary market would develop for purchasing used accessible taxis, so that even the most rural communities would be served by accessible taxis.
- Spontaneous travel by riders who would otherwise use demand-response paratransit vehicles (Dial-A-Ride type services) would be possible. This would reduce demand for publicly operated paratransit, saving money and increasing trip capacity.
- More significantly, however, taxis could be used as the workhorse of the publicly operated system.
- Taxi rides are cheaper than paratransit rides. New York City's paratransit costs approach \$65 a ride. (The rider only pays \$2.25, the mass transit fare.) Taxi fares would be less than half that, even for an expensive trip. Paratransit-eligible riders could be given a swipeable credit card for paratransit trips.²⁸

²⁶ <http://www.dnainfo.com/20120110/manhattan/taxi-drivers-offered-new-handicapaccessible-option-model-cab>

²⁷ <http://www.vpgautos.com/mobility-vehicle-media/news-and-events/press-inquiry-detail/15>

²⁸ <http://www.uwrdialogue.org/ideas/accessible-taxis>

London, England

The United Kingdom provides the most sweeping example of how a legislative mandate can re-shape not only the availability of wheelchair-accessible taxi service, but the taxi-manufacturing industry itself. The primary legislation concerned is the Disability Discrimination Act passed in 1995. This act requires all taxis operating in the UK to be wheelchair accessible by phases, with full compliance by 2020. London's taxis have been wheelchair accessible starting from the first phase launched in January 2000. The London government has issued a booklet titled "Getting it Right" with an accompanying DVD that address ways taxi drivers can assist disabled persons in using taxi services. The London government has not, however, provided any financial incentive to assist operators in converting taxis to allow wheelchair accessibility.

The challenge of creating a universally accessible fleet of London taxicabs by the year 2000 was accepted by London Taxis International of Coventry, and the result was the TX1 London Taxi vehicle. Jevon Thorpe, the designer behind the TX1 and Managing Director of London Taxis International, explains his motivation as follows: "Personal experience has made me interested in Design for All. I was born into it, so to speak. My father suffers from paraplegia and is a wheelchair user. I have seen all the obstacles presented to wheelchair users by the transportation sector—by cars, buses, trains, and planes alike... [The Taxi] must be a car fit for its purpose. It must not look like a vehicle for disabled people. It must be capable of picking up passengers from everywhere in town, and it is important that it has access from the side and not from behind. It was extremely important to integrate access and fit it into the overall design of the cab."²⁹



Photo from Design for All Europe

²⁹ http://www.designforalleurope.org/Design-for-All/Articles/Article_archive/Law-inspires-Design-for-All-Solution/

Not only wheelchair users, but individuals with any sort of walking impairment, appreciate this most accessible of taxis with its pull-out under-floor ramp. Tourists, as well, are fond of the London cab [also known as the Black Cab] because there is plenty of space inside to stretch out. The great thing about it is that the experience is standard; every one of the 19,500 taxicabs in London is accessible.³⁰

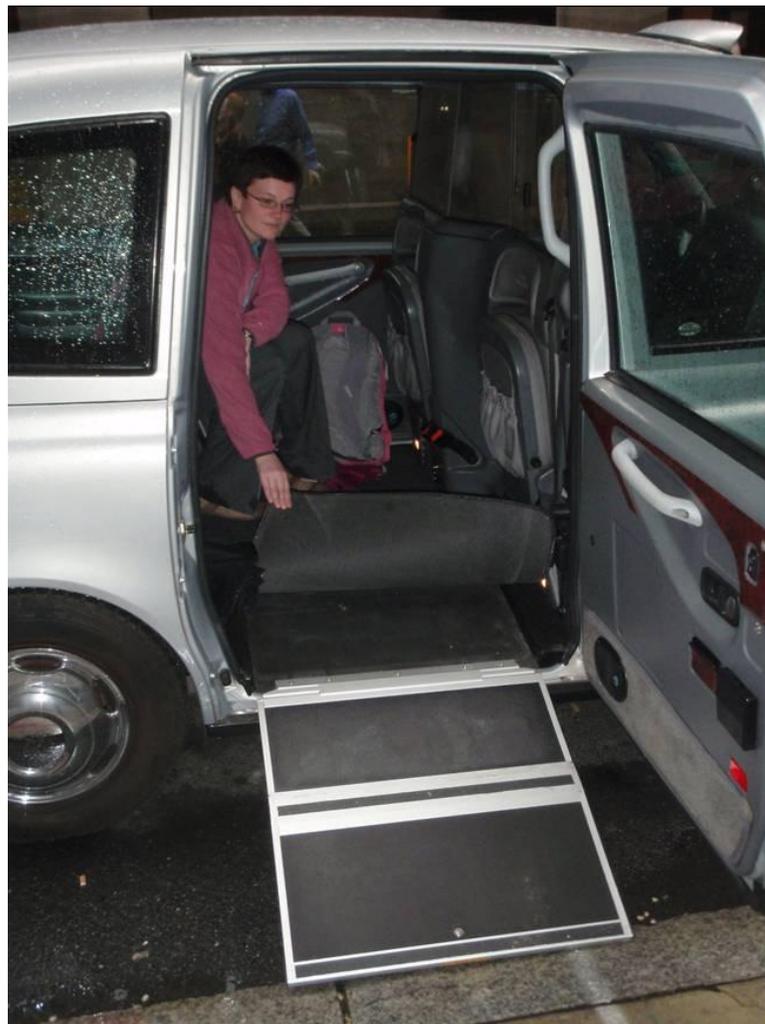
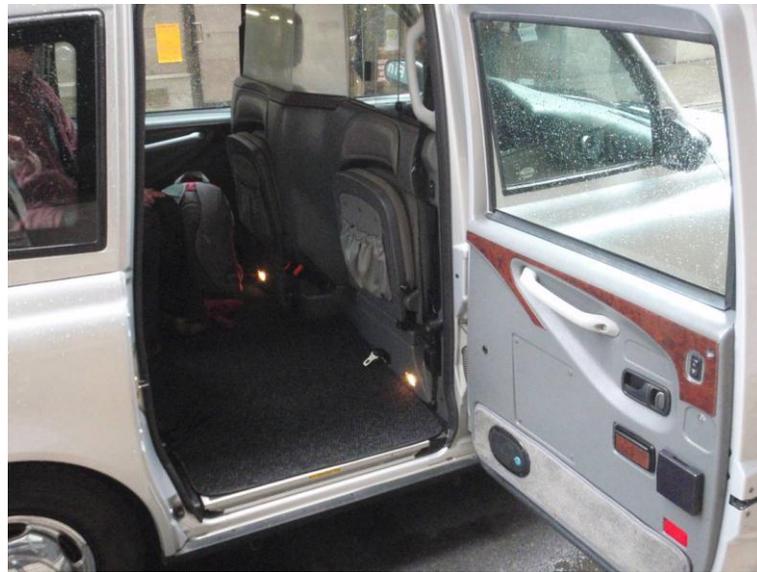
Early in the course of framing this report, it appeared that the London Taxi might offer a solution to Delaware's dearth of wheelchair-accessible taxi vehicles. Left-hand-drive versions of the new model of the London Taxi, the TX4, were being imported to the United States by London Taxis of North America. The report authors arranged for a demonstration ride on the streets of Philadelphia in the spring of 2009 and were very impressed with the London Taxi TX4 as a vehicle that was fully accessible while remaining entirely usable by ambulatory passengers. Purpose-built for taxi service, it features a rear door 34.7" wide that opens 90 degrees, interior height of 55", a flat floor with a built-in ramp that folds out, and economical diesel power. It was anticipated that this report would recommend a demonstration project involving the deployment of multiple London Taxis in the state of Delaware as a "next step." Unfortunately, London Taxis of North America shut down the importation of the vehicles indefinitely on August 1, 2009.³¹



Photo by D. Tuttle

³⁰ Ibid.

³¹ <http://www.london-fleet.com/>



Photos by D. Tuttle

Universal Design

One of the most appealing attributes of the London Taxi vehicle is its embodiment of the principles of Universal Design (described by its designer as “Design for All”). The concept of Universal Design, as defined by the Center for Universal Design of North Carolina State University, is that products and environments should be usable by all people, to the greatest extent possible, without the need for adaptation or specialized design.³² Specific guidelines concerning the application Universal Design principles that are relevant to the taxicab, as a universal mode of transportation, are:

- Provide the same means of use for all users: identical whenever possible, equivalent when not.
- Avoid segregating or stigmatizing any users.
- Ensure provisions for privacy, security, and safety are equally available to all users.
- Make the design appealing to all users.
- Provide choice in methods of use.
- Eliminate unnecessary complexity.
- Allow the user to maintain a neutral body position.
- Minimize sustained physical effort.
- Provide adequate space for the use of assistive devices or personal assistance.

The typical rear-entry van conversion for wheelchair accessibility certainly does not provide an identical means of use, and one might question its true degree of equivalence.

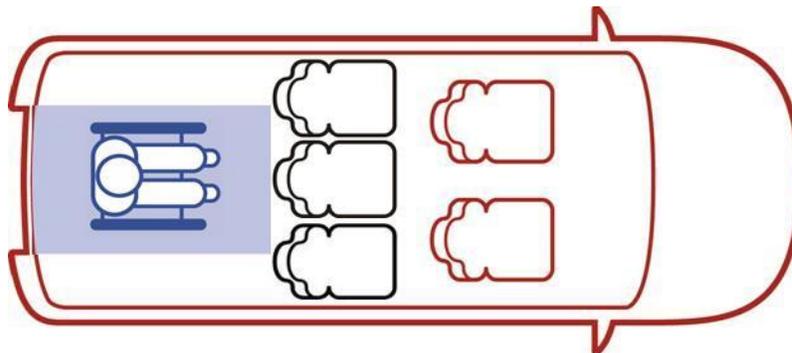


Diagram by Project ACTION

³² See Appendix 1 for the full statement of the principles of Universal Design.

Rear-Access Conversion Vans Versus the London Taxi

Rear-access conversion van taxis that cannot be boarded directly from the curb (requiring that they be parked close to a curb cut on city streets) certainly have a more complex loading methodology than a vehicle such as the London Taxi, which has side-access and a flat interior floor. Unlike vans that have been converted for rear wheelchair accessibility, the London Taxi is equally accessible to all customers, including those who have some degree of mobility limitation but are not wheelchair users.



Photo by Miami Dade County



Photo by London Taxis of North America

Side-Access Conversion Vans

Side-access conversion vans, which require significant lowering of the vehicle floor, are available at prices [new] exceeding \$50,000.^{33,34}



Photos by United Access

Although they offer more convenient curbside loading for wheelchairs, possible drawbacks (in addition to their higher cost) to the use of side-loading conversion vans as accessible taxi vehicles include:

- Ramps that fold and store vertically block entry/exit by ambulatory passengers on the curb side of the vehicle unless they are fully deployed (see photo above).
- Sliding door mechanisms can become less reliable over time because the tracks have to be modified and weight is added to the sliding doors.
- Ground clearance may pose a problem since the clearance on a side-entry van is typically two to three inches less than the clearance on a rear-access van.³⁵

³³ <http://www.unitedaccess.com/view-detail.php?productid=14870>

³⁴ <http://www.wheelchair-van.com/wheelchair-vans/new-wheelchair-vehicles/new-vehicle-inventory/>

³⁵ <http://www.wheelchairvans.ca/vehicle-conversion/rear-accessible-vs-side-accessible-vans>

The MetroKing Taxi

In January 2009, following a ten-year period of development, MetroKing Motors of Poughkeepsie, New York, sold its first three purpose-built wheelchair-accessible taxi vehicles to a local taxi and medical transportation provider.³⁶ The MetroKing was based on a standard pickup truck chassis. In March 2010 plans were announced to offer a “mild hybrid” or “idle-stop” system that automatically shut off the engine when the vehicle was not moving and restarted the engine as soon as the driver pressed the gas pedal. Tests had shown that the system could potentially cut fuel use by up to 20% in urban driving, achieving much of the operational economic benefit of a full hybrid-electric system at a fraction of the cost.³⁷ Although close to the purchase cost of a side-access conversion van at its reported price of \$49,500,³⁸ the MetroKing vehicle met the goal of Universal Design and was included in an earlier draft of this report as a potentially promising alternative for taxicab deployment in Delaware. Unfortunately, MetroKing Motors’ bid to have its vehicles approved for taxicab use by the New York City Taxi & Limousine Commission met with disappointment in May 2011 and, having been shut out of that market, the firm closed its doors three months later.³⁹



Photos by MetroKing Motors

³⁶ <http://www.metroking.net/poughkeepsiestory.html>

³⁷ http://www.nyserda.ny.gov/Page-Sections/Research-and-Development/Transportation/Transportation-Research/Commercial-Hybrid-Vehicles.aspx?sc_database=web

³⁸ <http://www.metroking.net/poughkeepsiestory.html>

³⁹ <http://pqasb.pqarchiver.com/poughkeepsiejournal/results.html?st=basic&QryTxt=metroking>

The Vehicle Production Group MV-1



Photo by VPG Autos

The Vehicle Production Group's MV-1 was identified during the course of this project as a promising domestically built interpretation of the London Taxi approach to Universal Design. Incorporating the flat floor and curbside integrated ramp (powered, in this case) of the British transportation mainstay, the VPG broke new ground by locating the primary wheelchair passenger position in the right front of the vehicle, adjacent to the driver. Treatment afforded by the new MV-1 is clearly "first class," as wheelchair and scooter users are not left feeling consigned to "coach." Meanwhile, ambulatory passengers will find that they barely need to duck while walking into the vehicle and that the rear seat will actually accommodate three adults without cutting off anyone's circulation. Gone is the claustrophobia of a sinking seat in the rear of an old Ford sedan. The MV-1's riding position is upright and the view is great. For wheelchair users, the inconvenience of having to find a way off the curb and into the street in order to ascend a rear-entry ramp is a thing of the past.

In conjunction with this project, contact was initiated with VPG Autos in March 2010, and a touring prototype of the MV-1 subsequently made two stops in Delaware for stakeholder inspection: at the University of Delaware in Newark in May and at the DART First State offices at Lower Beech Street in Wilmington in June.



Photos by D. Tuttle

Currently in production at the AM General plant in Mishawaka, Indiana, the MV-1 meets the "Buy America Act" requirements for domestic content for funding by the Federal Transit Administration.⁴⁰ Its selling price is currently described as being in the \$40,000 range. Detailed information regarding the VPG Autos and the MV-1 is available at <http://www.vpgautos.com/>.

Having (finally), a genuine universally accessible option available for purchase, the question now shifts to, "How could Delaware's taxi operators be persuaded to invest in such a vehicle when there is no requirement to do so and there are plenty of used sedans on the market for a fraction of its cost?" Another question might be, "What percentage of Delaware's taxi fleet would need to be accessible in order to effectively provide the desired augmentation to traditional public transit?" Given that the current number of accessible Delaware taxis is zero, any addition would be an improvement. On the other hand, with a fleet of only 100 taxis distributed across our nearly 2,000 square miles of land area, having the right vehicle in the right place at the right time would always be a matter of chance. The situation might be ameliorated somewhat if those 100 taxis were centrally dispatched, but unless the current medallion system is changed to curtail the growth in single vehicle cab companies, integration of services will be a significant challenge.

⁴⁰ <http://www.vpgautos.com/vpg-company/about-us>

Use of Advertising Wraps

Business policy alternatives will be addressed in the closing section of this report, but for the moment it is important to reconsider the question of how the acquisition cost of the MV-1 might be offset. One option might be to borrow a strategy from the erstwhile London Taxis of North America playbook. The company's plan was to encourage operators to capitalize on the uniquely distinctive appearance of the London Taxi (in America) and put the vehicle to work, via a "wrap," as a rolling billboard. A few examples, based on the London Taxi vehicle appear below.





Photos by London Taxis of North America

This use of a transport vehicle to garner advertising revenue is being practiced already by DART First State with some of their full-size transit buses. Certainly the practice could be scaled down to the MV-1, which is (at least for the near term) as unique in appearance as the London Taxi and even larger in scale. Should new MV-1 vehicles be purchased in quantity by the state, and then made available to Delaware taxi operators via lease-purchase arrangements, with the DART-brokered advertising revenue from their “wraps” being applied to the cost of the lease payments? At \$40,000 per unit, the state’s entire taxi fleet could be replaced with state-of-the-art accessible vehicles for \$4 million, taking Delaware from among the worst in availability of accessible cabs in the nation to #1 with 100% availability.

However the deal is structured financially, operationally it should be a high priority. Accessible taxis need to be on the road in numbers sufficient to meet the transportation requirements of Delaware’s aging, dispersed population. In terms of a tool, the MV-1 is an available, affordable example of Universal Design. In terms of taxi regulation policy, change can occur within the current medallion/“Lone Ranger” model or within an alternative structure, such as franchising.

Taxi Franchising

In New York City, demand for new taxi medallions is such that additional requirements (such as accessibility or alternative fuels) are met willingly by operators wishing to put new vehicles into service. Even nearby Ocean City, Maryland, which implemented its medallion system two years ago to rein in the number of taxis cruising its streets, has a thriving market. One of their 175 annual medallions for 2012, which was purchased in January for \$1,500, had already appeared on Craigslist before the month was over, priced at \$2,000. Delaware's existing taxi medallion system is simply not working. More medallions are currently in force in Delaware than there are taxis registered in service, so selling new medallions as a strategy to expand the fleet with accessible vehicles is a non-starter.

Under a franchise system, physical requirements such as minimum fleet size, maximum vehicle age, and minimum percentage of accessible taxi vehicles could be specified up front. Service quality could be dramatically improved by requiring the availability of 24-hour dispatch and universal participation in the SCAT discounted fare program. If Delaware's SCAT payment model was updated to a debit card system, universal acceptance of those cards could also be made a franchise requirement.

The City of Santa Monica, California, implemented a new taxi franchise system on March 1, 2011. The stated goals of the taxi franchise system were to ensure a consistently high level of taxi service in Santa Monica, improve environmental conditions, and **reduce** the overall number of taxis available to serve Santa Monica's 8.3 square miles.⁴¹ Santa Monica's City Council had approved the implementation of the taxicab franchise system in November 2010, with the result that the number of taxi companies operating in the city was cut from 44 to 5. Under the new system, only taxis from the five franchised companies would be permitted to pick up customers in Santa Monica. Collectively, those five companies would be permitted to operate a total of 300 taxicabs.⁴²

The process in Santa Monica has not been without its share of legal rancor, but the issues being addressed do, in one aspect, relate directly to the current situation in Delaware. On its face, the goal of reducing the number of taxis cruising the streets of Santa Monica sounds like a solution to a problem that every prospective taxi customer in Delaware would love to have—more taxi choices than are needed. In fact, that's exactly the current situation in Delaware. The difference is that because half of Delaware's taxi companies operate only a single cab, and the vast majority of them operate no more than three, we are not awash in unengaged taxis. Instead, we are awash in taxi companies.

⁴¹ <http://downtownsm.com/visitors/taxicabs.html>

⁴² <http://www.smmirror.com/#mode=single&view=31576>

A transition to taxi franchising should be considered in Delaware. Franchises could be awarded to partnerships or consortia, as well as individual enterprises, so none of the current providers would necessarily be excluded, but successful franchise applicants could be required to field a minimum number of vehicles, utilize (all or a percentage of) accessible vehicles, participate in a SCAT smart-card debit system, and have 24-hour centralized dispatching. Through consortia, partnering or consolidation, the number of unique providers would be significantly reduced, streamlining the regulatory process and providing taxi customers with a much more comprehensible set of transportation options.

Conclusion

The optimization of accessible taxi service to augment traditional public transit services in Delaware will need to begin with the *creation* of an accessible taxi fleet, at least in part, if not in its entirety. The first step along that path should be a consideration of the merits of Universal Design, as opposed to specialization. Focusing solely on meeting the needs of persons who use wheelchairs overlooks a significant population who may have less obvious mobility impairments but still find it difficult to ride comfortably in the back seat of an old sedan. Universal Design results in the removal of access barriers for transient business and leisure travel passengers as well as for residents, making it possible to offer a reduced-fare, repeat-customer option within the framework of a mobility service that requires no pre-planning. The outcome of requiring universal, or at least reasonably available, taxi accessibility should be an expansion of the market that will provide more business for all.

True optimization of accessible taxi service in Delaware would require a new service model, as well as new vehicles. Increased utilization of the SCAT reduced-fare program by senior citizens and persons with disabilities will be dependent upon program changes that are beneficial to both taxi operators and the public. Moving from paper tickets to debit cards would simplify and improve the experience for all parties. Requiring the participation of all taxi operators should be considered an aspect of universal access, thereby further eliminating barriers.

The same concept should apply to centralized dispatch capabilities. For accessible taxi services to be an augmentation of traditional transit services, they must be studied from the perspective of the potential user. Simplicity should be the goal, avoiding excessive complexity whenever possible. Information should be clear and publicly available. Users should not have to guess which taxicab operator will be able to meet their needs. Underpinning the development of a new regulatory framework should be the goal of providing every user with a superior passenger experience. The achievement of that goal will result in easy, universal taxi accessibility for all Delaware's residents and visitors alike.

Appendix 1

THE PRINCIPLES OF UNIVERSAL DESIGN

Version 2.0 – 4/1/97

Compiled by advocates of Universal Design, listed in alphabetical order: Bettye Rose Connell, Mike Jones, Ron Mace, Jim Mueller, Abir Mullick, Elaine Ostroff, Jon Sanford, Ed Steinfeld, Molly Story, and Gregg Vanderheiden. Major funding provided by the National Institute on Disability and Rehabilitation Research, U.S. Department of Education.

UNIVERSAL DESIGN:

The design of products and environments to be usable by all people, to the greatest extent possible, without the need for adaptation or specialized design.

The authors, a working group of architects, product designers, engineers, and environmental design researchers, collaborated to establish the following Universal Design principles to guide a wide range of design disciplines including environments, products, and communications. These seven principles may be applied to evaluate existing designs, guide the design process, and educate both designers and consumers about the characteristics of more usable products and environments. The principles of Universal Design are presented here, in the following format: name of the principle, intended to be a concise and easily remembered statement of the key concept embodied in the principle; definition of the principle, a brief description of the principle's primary directive for design; and guidelines, a list of the key elements that should be present in a design that adheres to the principle. (Note: Not all guidelines will be relevant to all designs.)

PRINCIPLE ONE: Equitable Use

The design is useful and marketable to people with diverse abilities.

Guidelines:

- 1a. Provide the same means of use for all users: identical whenever possible, equivalent when not.
- 1b. Avoid segregating or stigmatizing any users.
- 1c. Ensure that provisions for privacy, security, and safety are equally available to all users.
- 1d. Make the design appealing to all users.

PRINCIPLE TWO: Flexibility in Use

The design accommodates a wide range of individual preferences and abilities.

Guidelines:

- 2a. Provide choice in methods of use.
- 2b. Accommodate right- or left-handed access and use.
- 2c. Facilitate the user's accuracy and precision.
- 2d. Provide adaptability to the user's pace.

PRINCIPLE THREE: Simple and Intuitive Use

Use of the design is easy to understand, regardless of the user's experience, knowledge, language skills, or current concentration level.

Guidelines:

- 3a. Eliminate unnecessary complexity.
- 3b. Be consistent with user expectations and intuition.
- 3c. Accommodate a wide range of literacy and language skills.
- 3d. Arrange information consistent with its importance.
- 3e. Provide effective prompting and feedback during and after task completion.

PRINCIPLE FOUR: Perceptible Information

The design communicates necessary information effectively to the user, regardless of ambient conditions or the user's sensory abilities.

Guidelines:

- 4a. Use different modes (pictorial, verbal, tactile) for redundant presentation of essential information.
- 4b. Provide adequate contrast between essential information and its surroundings.
- 4c. Maximize "legibility" of essential information.
- 4d. Differentiate elements in ways that can be described (i.e., make it easy to give instructions or directions).

4e. Provide compatibility with a variety of techniques or devices used by people with sensory limitations.

PRINCIPLE FIVE: Tolerance for Error

The design minimizes hazards and the adverse consequences of accidental or unintended actions.

Guidelines:

5a. Arrange elements to minimize hazards and errors: most-used elements should be most accessible; hazardous elements should be eliminated, isolated, or shielded.

5b. Provide warnings of hazards and errors.

5c. Provide fail safe features.

5d. Discourage unconscious action in tasks that require vigilance.

PRINCIPLE SIX: Low Physical Effort

The design can be used efficiently and comfortably and with a minimum of fatigue.

Guidelines:

6a. Allow the user to maintain a neutral body position.

6b. Use reasonable operating forces.

6c. Minimize repetitive actions.

6d. Minimize sustained physical effort.

PRINCIPLE SEVEN: Size and Space for Approach and Use

Appropriate size and space is provided for approach, reach, manipulation, and use regardless of the user's body size, posture, or mobility.

Guidelines:

7a. Provide a clear line of sight to important elements for any seated or standing user.

7b. Make reach to all components comfortable for any seated or standing user.

7c. Accommodate variations in hand and grip size.

7d. Provide adequate space for the use of assistive devices or personal assistance.

Please note that the principles of Universal Design address only universally usable design, while the practice of design involves other considerations such as economic, engineering, cultural, gender, and environmental concerns. These principles offer guidance to designers to better integrate features that meet the needs of as many users as possible.

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Appendix 2



MV-1 | Introducing the new 2011 MV-1.

A **Taxi** For All: accessible, durable, and **green**. The New **2011 MV-1**.

The Vehicle Production Group LLC (VPG) is proud to introduce the new 2011 MV-1. The MV-1 is the first vehicle designed from the ground up for wheelchair accessibility. The MV-1 meets or exceeds Americans with Disabilities Act (ADA) vehicle guidelines direct from the factory. There is no aftermarket conversion. With its incredibly durable body-on-frame vehicle architecture, the MV-1 is built like a truck: strong and dependable. We designed the vehicle with input from fleet owners and drivers, and then road tested it relentlessly. Featuring an integrated access ramp and a spacious interior that accommodates up to five passengers and their luggage, the MV-1 is a perfect solution for taxi fleets.

In addition, the MV-1 is the only vehicle in its class with an available Original Equipment Manufacturer (OEM) engineered and assembled Compressed Natural Gas (CNG) fuel system option. Because it's factory-installed, the MV-1 with the CNG option ensures the same durability, reliability, and quality that fleets demand from gasoline-powered vehicles, while reducing operating expenses since CNG is significantly less expensive than gasoline. With a 290-mile CNG range, the MV-1 is good for the environment and good for America. Now, everyone can breathe easier.

Durability & Performance.

- Body-on-frame design: the MV-1's frame mounts to the body to create a rigid structure that supports the drivetrain.
- Fully boxed and tubed supportive cross members provide additional frame stiffness and durability.
- Built like a truck, yet rides like a car:
 - A de Dion rear suspension with steel-leaf springs and air shocks to deliver an extremely comfortable ride for all passengers.
 - Front Short Long Arm (SLA) suspension provides a tight turning radius and a rack and pinion steering.
- Four wheel disc brakes designed with large rotors for improved lining life and the ability to handle the best-in-class gross vehicle weight (GVW) of 6,600 lbs.
- Anti-lock Brake System (ABS) and traction control come standard.
- Electronic Stability Control (ESC) including anti-roll functions, which provide increased safety are a standard feature.
- All-season tires are a standard feature.
- Ford 4.6L V8 Engine.
- Ford Electronic 4-Speed Automatic Transmission with Overdrive.
- The frame is coated with a rust inhibitor to increase longevity of the vehicle.



To build your MV-1 today visit
vpgautos.com

The MV-1: **Thoughtfully engineered.**

- Comfortable commercial driver’s seat to reduce driver fatigue.
- Power windows, power mirrors, and other convenient options come standard.
- 24-gallon gasoline tank provides the MV-1 with an estimated 350-mile range.
- The optional power ramp deploys at different aspect ratios to address various vehicle entry and exit scenarios.
- The integrated access ramp has a shallow angle, a weight capacity of 1,200 lbs., an anti-slip surface, and is stored under the floor of the vehicle so you don’t lose any interior space.
- 36" by 56" doorway featuring low step-in that allows easy entry for all passengers.
- Meets or exceeds the Americans with Disabilities Act (ADA) vehicle guidelines.
- Best-in-class interior room, seating up to 5 passengers comfortably.
- Best-in-class luggage capacity of 36.4 ft³.
- Optional rear-facing jumpseat to allow for the maximum amount of passengers per trip.
- Passengers in wheelchairs or scooters can easily enter and turn effortlessly, so they can sit next to the driver.
- Q'Straint® compatible wheelchair restraint track system integrated into floor.
- Large rear bench seat provides a perfect fit for everyone.



Have the option to **go green.**

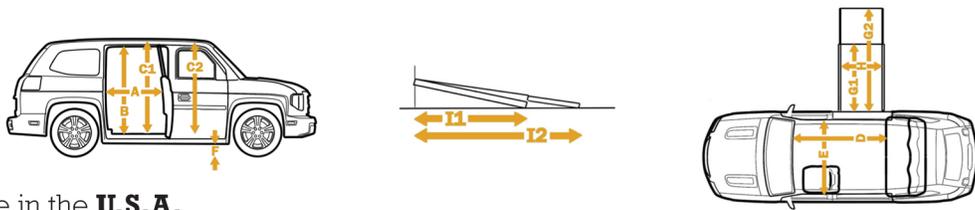
- Unique Compressed Natural Gas (CNG) fuel system option and factory-installed, not an aftermarket conversion.
- Estimated 290-mile CNG range (which includes a 40-mile low level indicator).
- Three Type-3 CNG tanks integrated seamlessly into the vehicle design and factory-installed.
- Best-in-class luggage capacity (29.1 cubic feet).
- 21.1 Gasoline Gallon Equivalent (GGE).



MV-1 Vehicle Specifications

Dimensions	English	Metric
Wheelbase	122.0 in	3,099 mm
Length	205.0 in	5,207 mm
Height	75 in	1,905 mm
Width	79.4 in	2,017 mm
Curb Weight	4,985 lbs	2,261 kg
GVWR	6,600 lbs	2,994 kg
Turning Circle	36 ft	10,973 mm
Cargo Volume Index–Gasoline	36.4 ft ³	1,031 L
Cargo Volume Index–CNG	29.1 ft ³	824 L
Access Door Opening Usable Width	A 36 in	914 mm
Access Door Opening Usable Height	B 56 in	1,422 mm

Dimensions	English	Metric
Interior Height at Rear Wheelchair Position	C1 59.5 in	1,151 mm
Interior Height at Forward Wheelchair Position	C2 58.3 in	1,481 mm
Overall Interior Floor Length	D 81.5 in	2,070 mm
Interior Width at B-Pillars	E 64.5 in	1,638 mm
Vehicle Ground Clearance (minimum)	F 6 in	152 mm
Ramp extension–short deployment	G1 52.5 in	1,334 mm
Ramp extension–long deployment	G2 87 in	2,210 mm
Usable Ramp Width	H 30 in	762 mm
Ramp angle–Short Deployment (manual)	I1 4:1.1 ratio	-
Ramp angle–Short Deployment (power)	I1 4:4.1 ratio	-
Ramp angle–Long Deployment (power)	I2 6:1 ratio	-



Made in the **U.S.A.**

The MV-1 is assembled by AM General LLC in their high-quality assembly facility in Mishawaka, Indiana, and meets the "Buy America Act" requirements for domestic content required for funding by the Federal Transit Administration. The MV-1 is a unique mobility solution for the 21st century built right here in the U.S.A.

To build your MV-1 today, visit **vpgautos.com.**

Corporate Headquarters: Vehicle Production Group | 1395 Brickell Avenue, Suite 630 | Miami, FL 33131
 Contact Us: 877-MV1-FORU (877-681-3678) or Email Us: info@vpgautos.com

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