

**ASTV Stakeholder Meeting Attendees**  
**May 4<sup>th</sup>, 2006**  
**Anaheim, CA**

<b>Name</b>	<b>Organization</b>	<b>E-mail</b>
Santo Grande	Delmarva Community Services	<a href="mailto:santo@dcsdct.org">santo@dcsdct.org</a>
Bryan Hickman	Coach and Equipment	<a href="mailto:Bryan.hickman@coach-equipment.com">Bryan.hickman@coach-equipment.com</a>
Dan Dalton	Project Action	<a href="mailto:ddalton@easterseals.com">ddalton@easterseals.com</a>
John Richardson	Daimler Chrysler Bus NA	<a href="mailto:John.richardson@dcbusna.com">John.richardson@dcbusna.com</a>
Bill Riley	Dallas Smith Corp	<a href="mailto:briley@dallassmithcorp.com">briley@dallassmithcorp.com</a>
Bob Thacker	Toronto Transit	<a href="mailto:Bob.thacker@ttc.ca">Bob.thacker@ttc.ca</a>
Paul Griffith	ATTI	<a href="mailto:Paul_griffith@verizon.net">Paul_griffith@verizon.net</a>
John Powell	ATTI	<a href="mailto:jpowell@atti-info.org">jpowell@atti-info.org</a>
Vic Kamhi	Ventura Co. Transit/Vista	<a href="mailto:vkamhi@goventura.org">vkamhi@goventura.org</a>
Douglas Alderton	Azure Dynamics Inc.	<a href="mailto:dalderton@azuredynamics.com">dalderton@azuredynamics.com</a>
Bryan Allen	Daimler Chrysler	<a href="mailto:Bryan.allen@dcbusna.com">Bryan.allen@dcbusna.com</a>
David Kantor	Calstart	<a href="mailto:dkantor@westart.org">dkantor@westart.org</a>
Dave Huber	UTA	<a href="mailto:dhuber@uta.coq.ut.us">dhuber@uta.coq.ut.us</a>
Gregg Kiely	Arizona DOT	<a href="mailto:gkiely@azdot.gov">gkiely@azdot.gov</a>
Kevin Harris	Hydrogenics	<a href="mailto:kharris@hydrogenics.com">kharris@hydrogenics.com</a>
Donna Carter	GNHTD	<a href="mailto:dcarter@gnhtd.org">dcarter@gnhtd.org</a>
Dale Hill	Mobile Energy Solutions	<a href="mailto:dale@mesbus.com">dale@mesbus.com</a>
Fred Gilliam	Capital Metro Transportation Authority	<a href="mailto:Fred.gilliam@capmetro.org">Fred.gilliam@capmetro.org</a>
Lurae Stuart	APTA	<a href="mailto:lstuart@apta.com">lstuart@apta.com</a>
Del Peterson	NDSU SURTC	<a href="mailto:Del.Peterson@ndsu.edu">Del.Peterson@ndsu.edu</a>
Walt Kulyk	FTA	<a href="mailto:Walter.kulyk@dot.gov">Walter.kulyk@dot.gov</a>
Mike Molloy	FTA	<a href="mailto:Michael.molloy@dot.gov">Michael.molloy@dot.gov</a>
John Bell	FTA	<a href="mailto:john.bell@dot.gov">john.bell@dot.gov</a>

## Meeting Notes

Walt Kulyk, FTA Director for the Office of Mobility and Innovation opened the meeting with an overview of his department along with an update of previous meetings regarding the Advanced Small Transit Vehicle (ASTV) study and its purpose. Mr. Kulyk stressed that this is only a study and input will be needed from stakeholders and industry representatives in order to determine a go/no go decision regarding the moving forward of the project beyond an initial market evaluation of an ASTV. He also highlighted that whether or not the federal government should get involved in the development of an ASTV would be a result of industry input and recommendations. A decision would be made regarding federal involvement with development sometime next year, 2007.

Mike Molloy, FTA Engineer, presented background information on the ASTV project. A survey has been prepared for distribution and will be circulated through CTAA membership later this month to gain transit agency feedback regarding their needs for a more cost effective small transit vehicle. Issues with current small transit vehicles that were mentioned included poor fuel economy, accessibility, and safety issues. FTA's goal to assist the industry in moving forward towards a more reliable and efficient small transit vehicle was Mike's main objective. He mentioned the ASTV market study would involve heavy cost/benefit analysis of a proposed vehicle to determine its feasibility within the industry. Possible vehicle solutions presented included the Daimler Chrysler Sprinter van, which currently does not meet Buy America standards, the Gruau Microbus, which is a diesel electric hybrid bus developed in Belgium for suburban Paris with a low floor and a ramp at the rear of the bus, and the Brevi Bus developed in Florida which has five prototypes in development which also has a low floor design. The main goal of this meeting was to quantify interest in an ASTV.

Del Peterson, Associate Research Fellow with the Small Urban & Rural Transit Center (SURTC) at North Dakota State University, gave an overview of the ASTV Issues Paper. He highlighted a sample of the current inventory of small transit vehicles in the U.S. by manufacturer, model year, and length of vehicles. A Hemily and King (2002) survey table emphasizing issues and concerns with current small transit vehicles was discussed. This generated a lot of discussion regarding various small transit vehicle concerns.

The general discussion included many quality points. It was mentioned that three markets exist with less than 30 foot buses. These include the less than 30 foot transit bus, the cutaway bus and the transit van. The reliability issues with cutaway buses result from small transit agencies relying on outside sources for maintenance and if you have a vehicle under warranty, you are dependent on getting that vehicle to the specific location to fix the problem which can cause long wait times when the bus may be out to service. There is often a lot of conflict as to which manufacturer should be responsible for fixing a problem while a small vehicle is under warranty as well.

A good point was also made that cutaway buses are usually made for the lowest cost possible as they are designed to be sold in a low bid type market. Quality then suffers as cost overrides the effectiveness of the vehicle.

The statistical effect of having a small transit fleet was also mentioned. A respective transit agency may only have 10 vehicles to service their area and when one is in the shop their service level falls and this is perceived by the customers and gets back to management. Whereas, if an agency had a larger fleet of 100 buses losing even a handful of buses would not be as large of a concern and probably go unnoticed by the customer base. The point is that larger transit agencies have an easier time covering their bus breakdowns than smaller ones and probably have maintenance staff employed to fix the problems as well.

The unreliability of wheelchair lifts was also mentioned. Without a working wheelchair lift on the vehicle, it is almost useless to provide services to senior citizen groups. A low flow solution was expressed as needed giving the ability of transit agencies to retire vehicles with lifts. The main problem with current low floor bus models are the high prices. Most have been priced between \$100,000 and \$150,000 where current cutaway buses sell for roughly \$40,000 in total cost.

Small cutaway buses are wearing out faster than advertised. Many cutaways are lasting only 4-6 years and were advertised as either a 10 or 12 year bus. Drive train and electronics problems are prevalent when vehicles get to the 3-5 year old mark with 150,000 plus miles.

Fuel efficiency of small transit vehicles was then discussed. Various technologies were presented as potential alternatives (gasoline/electric hybrid, compressed natural gas, biodiesel, electric, etc..). The point was also made that this small vehicle market will not create its own vehicle. Manufacturers are unwilling to create a platform specifically for the small transit vehicle and specifically the cutaway market, so a cross-over analysis is needed into the commercial truck market or something similar.

Poor ride quality was expressed as a problem for cutaway buses. Wheelchair passengers do not want to be tied down in the back of the bus over the wheel wells as the ride is rough and would rather be tied down closer to the front of the bus to receive a smoother ride. Electronics are also an issue. Smartcards, etc. take up a lot of space on a small transit bus and once all of the electronics are installed there is very limited room for the driver to operate comfortably within the vehicle.

\*\*\*BREAK\*\*\*

Walt reconvened the meeting and asked Santo Grande to lead the discussion through the topic areas of technical, market and transit provider issues. Santo began by reminding the group of the June meeting at the CTAA Expo and asking for continued input. All attendees were encouraged to participate in conference calls and the project steering committee. Santo then asked what some of the concerns and questions of transit providers are regarding small transit vehicles. Moving toward low-floor vehicles was once again highlighted as an important issue. An important paradigm change is needed in small transit agencies in terms of their financial status. Generally small transit agencies are interested in advancing their equipment, but do not have the budget for new technologies. The cost differential of choosing advanced vehicles would have a much larger impact on small agencies than on larger, urban providers. The price difference between a hybrid and diesel bus could pay for a significant amount of a small agency's annual

operating costs. This was confirmed by ATTI, which has performed some research into the rural transportation industry including surveys and interviews of transit agencies. They are planning to hold educational sessions on advanced transportation technologies during the CTAA Expo in June. The overall sense is that transit agencies are interested in new technologies, but lack the funding to adopt them.

Maintenance is another major issue for transit providers. Some agencies share city facility yards and maintenance personnel and their vehicles lose priority to emergency response vehicles and other city equipment. Many small fleet operators cannot perform all the recommended preventative maintenance. If there are not enough backup vehicles available, service would be greatly impacted by removing vehicles for maintenance.

One reason small vehicles, especially those used for paratransit, are less advanced is the purchasing process. A guess was made that 60% of paratransit vehicles, under 5310 funding, are purchased off a state contract. This prevents the agency that will be operating the vehicles from having a say in the final procurement specifications. The agencies are forced to accept whatever vehicles the state has ordered, even if the capacity is not appropriate for the route the vehicle will run. Additionally, under SAFETEA-LU, six states are allowing the use of 5310 funds for operating expenses. This is a pilot program that may be expanded in future years. There are concerns this will decrease the availability of funding and will make it more difficult to keep vehicles on the road. Also, under SAFETEA-LU, any vehicle component, or associated infrastructure, that meets ADA or CAAA requirements will receive a 90% federal share. This is included as a formula adjustment when the compliant components are priced separately. The additional federal share will not have a major impact on an agency's capital budget. State support will be needed to help offset higher vehicle costs. Human services funding will also be a major issue in the future. As coordination efforts continue to grow, policies and requirements may not adjust to provide the same support for transportation as when the programs are separate. Transit providers need United We Ride and others to supply the tools necessary for coordination efforts. Under current regulations, an elderly Medicaid recipient needing to go to a medical appointment and make a second stop would have to schedule two separate trips with two different transportation providers, even when the locations are adjacent. Texas has mandated that all agencies have a coordination plan by September 30<sup>th</sup>, with a goal of improving transportation efficiency. Due to state control of purchases, there may not be an improvement in vehicles. Metropolitan areas do not receive funding through the state; that is a requirement only for cities and rural areas with populations under 200,000. United We Ride is also involved in vehicle sharing efforts. There may be a benefit to looking at 5310 not as capital or equipment, but as a mark. Instead of looking at it as a capital budget, it may help to consider it a level to be reached.

Capital Metro (Austin, Texas) has had good experience with cutaway vehicles. There are concerns over useful life of converted vehicles. It was expressed that low-floor vehicles will be available eventually, and that there is not motivation to pay a cost difference just to avoid using a lift. Again, due to state purchases, agencies do not get the equipment and features they want. This is only further complicated by the low bid process of procurement contracts. An example of the problems caused is that an agency in Virginia that operates 60 vehicles has 27 different vehicle models. This obviously makes maintenance and inventory extremely difficult to manage. As a result, maintenance issues can be forced on manufacturers, causing them problems.

Ride quality issues are another concern. Higher cutaway vehicles tend to sway more. It is understood that they are higher to avoid changes in the vehicle floor due to the wheel wells, but a compromise is desired. Overall, the vehicle purchase process needs guidance. It is currently too limited and inherently forces agencies to pay higher prices. 5310 purchase decisions are kept separate from transit decisions, as the departments are often kept completely separate. It is recommended that there should be an effort to standardize the industry. The purchase process, vehicle specifications, RFP's, etc. should all follow a set of standards. Lurae Stuart of APTA is working on a widespread bus standards program. These should cover multiple sizes of vehicles, although the standards will likely be about the same. There will always be a need for different vehicles, driven by capacity requirements. A good cutoff might be CDL regulations – 14 passengers and under. Providers that want to stay under this limit will be forced to limit the size of vehicles they can operate. Also, weight and capacity currently determine how a vehicle is manufactured, and affect quality and durability. There is no “white book” available for small vehicle procurement. Styling needs to be included as it is very important to the success of transit. With coordination efforts however, styling may be limited by strict Federal Motor Vehicle Safety Standard (FMVSS) regulations of school buses. The MultiFunction School Activity Bus (MFSAB) allowed for Head Start program transportation must meet all these requirements except for color and traffic control devices. The crash worthiness, joint strength and rollover requirements must be met by any vehicle used to transport Head Start children starting December 2006. States also have requirements for school buses, including a new law in California requiring seatbelts on all school transportation vehicles.

Emissions standards also greatly affect vehicle technology. The California Air Resources Board (CARB) had removed diesel as an option for new vehicle purchases, including school buses. Most agencies feel alternative fuel capital costs must be justified by life cycle analysis. There would be justification in meeting emissions standards, especially from a public relations point of view, in urban areas. In addition to life cycle, increased reliability in fuel costs, availability and vehicle performance can also justify alternative fuels and drive technologies. Capital Metro purchased several Prius hybrids and has had a continuous waiting list for them. There have been minimal maintenance costs keeping them working. The hybrid buses in Texas have not achieved the doubled gas mileage advertised, but are averaging 1 – 1.5 mpg better than the diesel buses.

GM/Allison is in the process of developing a smaller hybrid drive system that may be useful in small transit vehicles. The industry is not ready to afford the cost of a hybrid over a traditional engine, which can be almost twice as much. Capital Metro would prefer an affordable hybrid vehicle to one with a low floor, but ideally would like both features. Azure has entered the market in producing hybrid light duty trucks and heavy duty chassis. They are using Workhorse chassis and estimate within three years the cost differential to a traditional chassis will be about \$20,000. Workhorse has been purchased by International, and adding a cab to the Workhorse chassis has created Azure's interest in the transit market. Their products have shown about a 30% decrease in fuel consumption, but has been as high as 50%. In order for low floor hybrid vehicles to be affordable, Azure estimates the need for a market of 200-300 vehicles per year, and Daimler-Chrysler estimates 400-600.

The reason cutaway vehicles are successful as shuttle buses is because they follow the truck market, which keeps development costs down. Since there are no low floor trucks being

produced, or requested, there is no volume for small, low floor vehicles. Workhorse does have a low floor chassis available. Given the market demand for technologies such as low floor and hybrid drive, the manufacturers would be able to determine if there they would be able to create a product. Development could be sped up by coordinating with light trucks. Delivery companies may also benefit from low floor vehicles. The small transit vehicle industry is interested in adopting new technologies, but may need to coordinate with other industries, such as delivery companies, to develop advanced vehicles. The higher cost of new vehicles may be offset by service improvement, decreased dwell times and increased ridership.

Since market and industry issues had already been covered, Santo asked if there were any questions or comments on technical issues. The one concern that was raised was the amount of physical room for new technologies, especially ITS components. In the smaller vehicles, adding a fare box, GPS, and other features leave the driver with little room. Capital Metro stopped collecting fares onboard due to cost. ITS components should be designed in by the bus manufacturers, and they should complete the wiring to optimize the benefits. A major problem throughout bus manufacturing is the custom orders and placements of components. This problem is as significant in small vehicles, but was identified as a major reason large bus manufacturers are forced to leave the market. Standardization could mitigate this as well.

Santo thanked everyone for their input and asked Walt to close the meeting. Walt thanked Santo for being the industry lead on the project. The minutes from this meeting will be written up and distributed to the attendees. Further input is welcomed, whether at the next meeting, or in writing at any time. A broader audience, including more transit agencies, is expected at the CTAA stakeholder meeting. Following that session, the initial data collection will be concluded, and NDSU will start the market study. Around spring 2007 a decision point will be reached on federal involvement in advancing small vehicle technology. Walt thanked everyone for participating in the meeting.