

FEATURE



Counting Rides: How Hard Can it Be?

By Nate Vander Broek

Counting rides; it can't be that difficult—simply count passengers as they come into the vehicle, right? Well, it's not always that straightforward. Questions can arise about who to count and what to do under certain conditions. For instance, if a passenger is transferring from one bus to another, should she be counted again? If a passenger is dropped off somewhere,

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and then picked up again, is this considered one or two trips? Are personal care attendants and small children counted? This article will help transit managers understand the correct way to count riders. It will explore new and existing counting technologies and help you decide what method is right for your transit agency.

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What's New in Intercity Bus Services in Kansas?

By Nate Vander Broek

KDOT, with help from HDR Engineering, is conducting a new study on intercity bus service in Kansas. The study began in June of 2011 and is expected to be completed in June of 2012. This article will describe the goals of the study, the current state of intercity bus service in Kansas, and

information on how to participate in the study's survey.

The primary goal of the study is to learn more about the current state of the intercity bus system in Kansas to identify areas with potential unserved demand. Stephanie Watts, KDOT project

manager, said KDOT wants to provide Kansas residents with many different transportation options for traveling throughout the state. By learning more about existing gaps in service, KDOT hopes to be able to work with intercity

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Counting rides *Continued from page 1*

Why count rides?

Before discussing *how* to count rides, it's important to review *why* it's necessary to count rides.

Keeping an accurate measurement of ridership is necessary to assess performance over time. Examples of performance rates that require the knowledge of ridership include: ridership by route, ridership by trip, average travel time, average passenger trip length, operating costs per passenger trip, productivity, and complaint rate.

These performance measures can be used to show the community and transit staff what has been accomplished. It can show what has worked and can be built upon, and what hasn't worked and needs improvement. And finally, it can show local, state and federal leaders and policy makers that "rural transit is well-deserving of continued financial support" (TCRP Report 136). Categorizing riders, such as by age or disability, also helps the transit agency learn more about their passengers and make better planning decisions. For instance, if an increasing number of its riders are disabled, then the transit agency may want to consider purchasing better-equipped vehicles.

Unlinked passenger trips

The Section 5311 Formula Program, which provides funding to states for the purpose of supporting public transportation in rural areas, requires all recipients and beneficiaries to report passenger trips to the National Transportation Database (NTD) through their state Department of Transportation (DOT). The NTD requires rides to be counted as unlinked passenger trips, which means a passenger is counted each time he or she boards a vehicle, no matter how many vehicles are used to travel from origin to destination. Round trips, such as when a passenger goes to the doctor and then back home, count as two passenger trips.

Who to count as a passenger

Employees. Each rider boarding a vehicle is counted as a passenger trip *unless* the passenger is a transit employee and is "performing work duties that require traveling on the vehicles and [is] being paid while traveling" (TCRP Report 136). For example, an employee who is observing vehicle operations or serving as an on-board aid or assistant for one of the passengers should not be counted as a passenger. However, if the transit employee is traveling for personal reasons or is commuting to and from work, the employee must be counted as a passenger. The same counting rules applicable to employees also apply to volunteers who provide services for your agency.

Children and personal care attendants. If child or Personal Care Attendant (PCA) accompanies a rider, then they too must be counted as a passenger. This is true whether or not the child or companion pays a fare. However, as mentioned above, when a PCA or companion

is working for the transit agency, he or she should not be counted as a passenger when performing job duties.

Other riders. Any trip provided by taxicabs or other transportation services you contract should be counted as a passenger trip. A new change to the 2011 Monthly Reporting Manual states that demand-response service operated through taxicab drivers is now reportable as a separate mode—"demand response-taxi"—and is considered a "purchased transportation" type of service. Trips provided by volunteers should also be included in the total demand-response transit passenger trip count.

Passenger classifications

In addition to counting the number of riders, it's also necessary to classify the riders.

KDOT's Vehicle Ridership Form requires that passengers be divided into three categories: *elderly*, *disabled*, and *general public*. KDOT defines elderly passengers as those who are 60 and over. Disabled passengers include those with a temporary or permanent physical impairment that limits mobility for personal transportation. General public includes all the remaining riders who do not fit into the first two categories. The KDOT form also includes a check-box for indicating if a rider is using a wheelchair.

It may be difficult to decide how to classify a passenger when he or she may be part of multiple categories. For instance, if a rider is over 60 and also disabled, which category should you assign to this passenger?

According to Connie Spencer, program consultant at KDOT, it is up to the transit agency to decide how to classify each passenger, as long as each person is assigned to only one category. Barbara Lilyhorn, director of Reno County Area Transportation (RCAT), said that RCAT uses the disabled classification instead of age when a passenger is over 60 years and older and disabled. Another agency may have a different policy to classify users who fall into multiple categories. It's important to assign each passenger to only one category and be consistent with whatever method you decide to use.

Revenue vs. nonrevenue passengers

Everyone who boards the vehicle, including those who do not pay (with the exception of actively working employees or volunteers) must be counted as a passenger. Some agencies or states may require that paying passengers be distinguished from non-paying passengers. The idea is to be able to track passengers in ways that can be matched-up with fare-box receipts. Many agencies calculate their passenger counts after adding up fares at the end of the day, along with the number of passes punched.

Leann Kroeger from ACCESS Transportation in Hays said they get their ridership numbers based on cash or

ticket sales. “All the passengers must pay by cash or have a ticket,” explained Kroeger. Receipts are totaled at the end of the day to get the number of riders.

Counting methods

Transit agencies count passengers using a variety of methods, from manual paper-and-pencil counting methods to more advanced Automatic Passenger Counts (APC) technologies. Each method has its own advantages and disadvantages. It is important to know which method makes the most sense for your transit agency before considering a switch to a different method or a newer technology.

Manual methods. Many agencies employ a manual method, such as using vehicle operator trip cards, traffic checkers using pencil and paper or hand-held units, and on-board surveys. Hand-held units provide an advantage over pencil and paper by automatically uploading data and eliminating the need for manual data input and

decreasing turnaround time.

While a manual method requires minimal or no capital investment and works well for straightforward, familiar and well-established routes, it has several potential problems: accuracy and consistency of the data; labor intensiveness; reliability of the traffic checkers; and cost and consequent limitations on data collection resources (TCRP Synthesis 29).

Jim Dockers, of the Pittsburg Area Community Transportation (PACT), uses a manual method to count riders. “We count people as they come onboard the bus,” Dockers explained. He said this method works well for PACT, and he sees no need for changing this method or using new automatic counting technologies. To manage the ridership data, PACT uses Excel.

Leann Kroeger from ACCESS Transportation in Hays said their drivers carry a manifest. They accept cash or

Continued on next page

Tips for Adopting a New Counting Technology

If your agency is considering a move to a newer counting technology, the Transit Cooperative Research Program (TCRP) Synthesis 29 has the following observations and best practices:

- 1. Procedures are more important than technology.** Establishing and adhering to data collection procedures that meet the agency’s needs is the most critical factor, regardless of the technology selected to count ridership.
- 2. Internal changes are necessary to ensure the success of new passenger counting technologies.** A significant investment in time and effort is needed in the early stages to update internal databases and analytical techniques, to ensure that the system receives the priority it needs, and to train staff in its maintenance and use.
- 3. Visit and learn from other agencies before deciding on a new passenger counting technology.** Instead of reinventing the wheel, a savvy agency can draw on the experiences of others in planning its own implementation of new technology.
- 4. Unnecessary customization should be avoided.** Attempts to redesign what is available on the market to make one’s own system unique or better almost always result in failure. Most installations require a fair degree of customization to match agency needs, but taken to extremes, this is a recipe for failure.
- 5. A strong commitment from senior management is required.** Support from the general manager raises the priority attached to passenger counting and ensures cooperation among the various departments involved.
- 6. Active management of the passenger counting system is critical to success.** Agencies that have successfully adopted new technologies generally have a mid-level person who assumes responsibility for the system and takes the necessary action to ensure its proper functioning.
- 7. Advanced passenger counting technologies offer several benefits.** Among benefits cited by the survey and case-study agencies are more frequent data collection, a reduction in turnaround time, the ability to analyze ridership data at finer levels of detail, greater timeliness and responsiveness, and lower cost.
- 8. There is no one perfect solution.** Agencies must consider their need for and uses of ridership data before deciding how best to proceed. Each ridership counting technology is appropriate to use for certain purposes, and there are successful examples of each in the case studies. Many agencies using manual techniques are satisfied with established data collection schedules and have been successful in meeting the needs of data users. One hundred percent accuracy does not exist with any technology. New passenger counting technologies have a break-in period of approximately 18 months during which start-up problems are identified and solved.

Counting rides *Continued from page 3*

tickets and total that up at the end of the day to get their ridership. “The money has to add up,” said Kroeger. She said they do not use clickers. She said the current system works well and she doesn’t know of any disadvantages using this method. When asked about using new technology to count rides, Kroeger said “investing in [new technology is] not cost effective to count rides.”

Anne Smith, director of Flint Hills Area Transportation, said their drivers record all rides and then a staff member later reconciles the ridership data with data from Trapeze Novus. Then they use Excel to keep track of ridership data. Flint Hills Area Transportation has used Trapeze Novus for over a year. She said it is a great tool for dispatching and scheduling, but the current version does not have built-in aggregated ridership counts. Smith said KDOT is working with a third party vendor to help with reporting.

“Trapeze Novus is not providing the information that KDOT needs—it has no way to track duplicated individuals” said Smith, and she noted that the information that is available is difficult to get out of the system. “If I want to get information on where riders are going, I have to go through 50 or 60 pages,” she said. However, Smith said that the Trapeze Novus is very helpful in batching, creating and printing the driver’s manifest. She said it’s amazing to watch Trapeze work and has become a necessity at their organization.

Smith is hoping that Flint Hills Transportation will be one of the first agencies in Kansas to use mobile data terminals (MDTs) because of its high number of paratransit riders (about 300 per day). MDTs are computerized devices that reside in the transit vehicle and allows for communication with a central dispatch office. They can also be used to display mapping and other relevant information. Smith has heard the MDT units have a touch screen to allow drivers to keep track of riders and automate the counting system. She is excited about the use of new technology. “Anytime we can introduce new technology, that’s fantastic,” she said.

Debbie Atkinson, Transportation Coordinator at OCCK Inc. in Salina, said their drivers currently carry a manifest and use tab counters to keep track of each passenger. But Atkinson said they’re also interested in using mobile data terminals as long as the test pilot in Hutchinson works

Trapeze Novus is a great tool for dispatching and scheduling, but it does not have built-in aggregated ridership counts. KDOT is working with a vendor to help with reporting using Novus.



out. Atkinson said she too has heard the MDT comes with a touch screen that drivers can use to help keep track of passengers and it would provide automatic record-keeping functions and send the data to the necessary office. Atkinson said that OCCK Inc. also uses Trapeze NOVUS scheduling and dispatching software provided by KDOT.

Barbara Lilyhorn at Reno County Area Transportation (RCAT) said the MDT test pilot in Hutchinson was launched in November but ran into some problems so it is not fully operational yet. Until it is, RCAT will continue to use paper and pencil to classify riders as they come onto the vehicle. Lilyhorn said all passengers must pay or use punch cards. That information is reconciled with data from the dispatch center at the end of the day in order to get ridership totals. Just like the other transit agencies, Lilyhorn hopes that the new MDTs will have a touch screen that will allow drivers to record ridership data and provide easy reporting tools.

Automated methods. While most rural agencies in Kansas use a manual method for counting and classifying riders, there are some high-tech devices available to help. The TCRP Synthesis 29 report provides examples of automated technologies including electronic fare boxes (ERF) and automatic passenger counts (APC).

Electronic fare boxes are most commonly used when transit agencies are interested in automating the revenue process, but passenger counts are possible through this technology. Some issues with EFRs include: mechanical problems, such as currency jams

Sources

- TCRP Report 136 - Guidebook for Rural Demand-Response Transportation: Measuring, Assessing, and Improving Performance.
- TCRP Synthesis 29 - Passenger Counting Technologies And Procedures.
- National Transit Database – Unlinked Passenger Trips.
<http://www.ntdprogram.gov/ntdprogram/pubs/MonthlyRidership/2010/html/ridership.htm#MR20>
- Kansas Department of Transportation Public Transportation <http://www.ksdot.org/burTransPlan/pubtrans/index.asp>

and difficulty reading swipe-cards; lack of operator with proper procedures for entering information using the keypad—leading to useless or inaccurate data; and software problems such as difficulties with generating reports at the route level. The Report said this technology takes an average of 18 months for employees to become familiar with the new equipment and for start-up problems to be addressed.

Automatic Passenger Count devices can tally passengers when they board and disembark the vehicle, as well as record times at each stop. This technology counts passengers in two ways: the first method uses infrared beams that cross the stairwells and keeps track of passengers entering and leaving the bus; the other method uses treadle mats which are mounted to the vehicle steps and contain switches that open and close when people step on the mats. APCs require the knowledge of stop location. This is done through the use or combination of signposts

that calibrate the location along a route, and a global positioning system (GPS) that locates the bus via satellite.

As with the electronic fare boxes, the Report said APCs require a long time for debugging and adjustment to a new technology—about 17 months on average. Software and hardware issues are reported most often.

In summary

It is important to keep a consistent and accurate method of counting passengers. This information is useful in assessing performance over time—showing the community and your staff what has been accomplished, learning what works well and what hasn't, and convincing local, state and federal leaders that rural transit needs continued financial support. While a simple manual method of counting passengers is often all that is necessary, it doesn't hurt to review new technologies to see how they may benefit your transit agency. ●

FEATURE

What's new in intercity bus service *Continued from page 1*

bus providers and local transit agencies to help fill in those gaps. Other goals include developing strategies to enhance service over short and long terms, and creating partnerships among transit providers and other stakeholders.

Intercity bus service in Kansas

Intercity buses are chiefly known for carrying passengers long distances between major cities. In Kansas, there are 21 cities with intercity bus stops, and the system covers a total of 1400 route-miles. Intercity bus service in Kansas is provided primarily by three bus companies: Greyhound, Jefferson Lines, and Prestige Bus Lines. See page 6 for a map of current intercity bus stops and routes in Kansas.

Survey

Part of the data-gathering process includes an online survey. KDOT recently posted their Intercity Bus System Survey on the KDOT website, available at <http://heartlandmarketresearch.com/surveys/kdottbr.htm>. The survey asks respondents to answer questions related to their experience and satisfaction with intercity buses, and provide suggestions for improving intercity bus travel. The survey will be online until the end of January.

KDOT is interested in having transit

agencies, as well as their riders, complete the online survey. If you have questions about the study, if you are aware of major gaps in transit service, or just want to provide feedback concerning how you can help coordinate with the intercity bus study in Kansas, please send an email to Stephanie Watts at swatts@ksdot.org.

Meetings and focus groups

Other data-gathering efforts in the study include: 1) meeting with transit providers throughout the state to learn how their services may tie-in with existing or proposed intercity bus service, as well as learning about barriers and opportunities for coordination; and 2) hosting focus groups of representatives or actual members of the target ridership populations. The focus groups will be used to obtain detailed information on factors influencing the decision to travel using intercity bus, and also look into ways to improve service.

Who rides intercity buses in Kansas?

For Kansas residents who do not have access to a car or who are unable to drive, traveling from one city to another can be a daunting task. This is especially true for those people living in rural areas or small towns who need access to health care

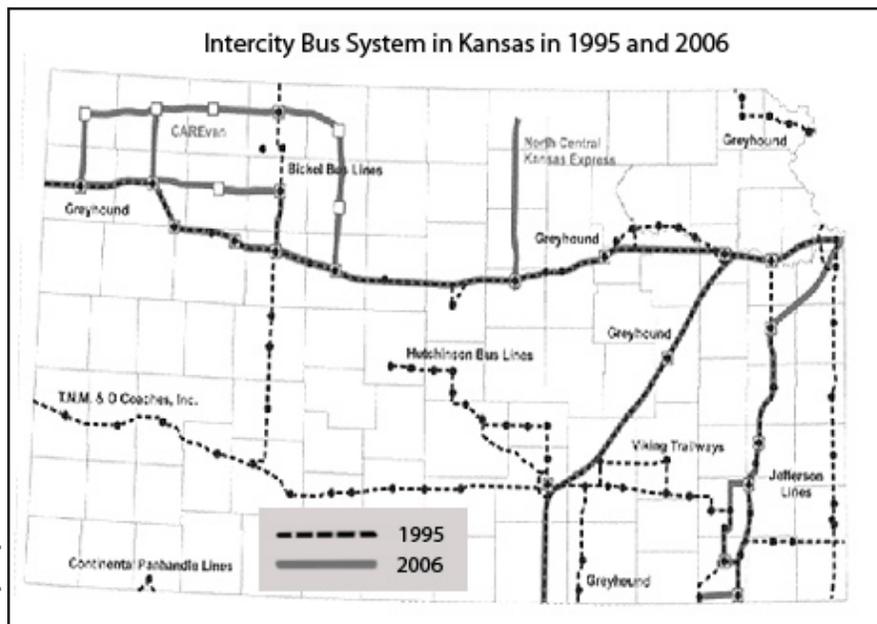
services available only in distant urban areas. When plane or train service is not available, intercity bus service may be the only option for these residents.

Current conditions

Intercity bus service is typically infrequent and only provides one stop per city or town. In many small towns, intercity stops are located at gas stations that may not provide adequate seating or amenities for those waiting for a bus. Also, because of the nature of intercity travel, stops in rural areas between large cities often happen during off-peak times, such as the middle of the night. When this happens, it is often difficult for people without access to automobiles to get to the intercity bus stops because local transit service is closed for the day. When access is available, many people feel uncomfortable and unsafe waiting for the bus during the middle of the night. For some citizens living in rural areas, especially those areas away from major highways or interstates, service is not available at all.

Christopher Kinzel, consultant at HDR Engineering, is interested in developing a plan that addresses these issues by coordinating services and making better connections between local and intercity *continued on next page*

What's new in intercity bus service *Continued from page 5*



Then and now:

At left, intercity bus service declined significantly in Kansas between 1995 and 2006.

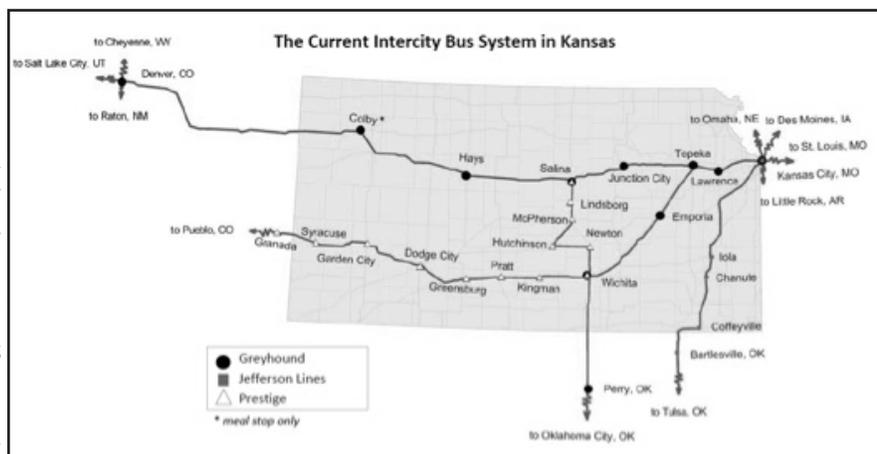
Below left, this current map of interstate bus service map in Kansas shows additional decrease in service over the past five years, especially in western Kansas.

transit providers, as well as improving existing facilities. Kinzel noted that intercity bus services includes more than services like Greyhound. It can include a city-to-city provider, serving a much smaller area, if the provider meets FTA's definition of an intercity provider under Section 5311(f). The vehicle does not have to be a large bus. The full definition is at <http://www.fta.dot.gov/4126.html#chapter7>.

Kinzel noted major gaps in intercity service running north and south in western Kansas. The purpose of improving service is not to compete with intercity bus providers; it's about coordinating with them, and filling service gaps where needed to provide more people with better transportation options. "Intercity bus providers are very eager to coordinate, in order to make sure their constituents are being served," noted Watts.

Service reduction is a trend

At a national level, intercity bus service is experiencing a trend towards fewer routes and access points, particularly in rural areas. Many intercity bus



Sources

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- FDOT, Florida Intercity Bus Service Needs Assessment and Action Plan, October 2009, <http://www.dot.state.fl.us/transit/pages/FloridaIntercityBusBaselineConditions.pdf>
- IDOT, Indiana Intercity Bus Study, January 16, 2009 <http://scopt.transportation.org/Documents/Final%20INDOT%20Intercity%20Bus%20Study.pdf>
- KDOT, Intercity Bus Service Study, Scope of Services: HDR Engineering, June 10, 2011
- KDOT Intercity Bus Study – Fact Sheet, http://www.ksdot.org/pdf_files/KDOT-Intercity-Bus-Project.pdf
- MnDOT, Minnesota Intercity Bus Network Study, April 2010, <http://www.dot.state.mn.us/transit/reports/intercity-bus-study/index.html>
- MoDOT, Impact of Declining Intercity Bus Service in Missouri, May 2006 <http://scopt.transportation.org/Documents/2006MoDOTStudyonImpactofDecliningIntercityBusServiceinMissouri.pdf>
- UDOT, Utah Department of Transportation Statewide Intercity Bus Study, February 2010, <http://www.udot.utah.gov/main/uconowner.gf?n=3497031346116062>

carriers have been abandoning their less financially-feasible routes, thereby reducing the number of access points available to bus riders.

During the 1970s, intercity bus service peaked at the national level with over 17,000 communities served and about 130 million passengers. By 2006, only about 5,000 communities received intercity bus service, providing service to about 40 million passengers (Florida DOT). This has hit some states particularly hard.

Here in Kansas, there were 16 intercity bus stops along I-70 in 1995. By 2006, that number dropped to 10. Today, only five intercity bus stops remain on I-70. Routes have also completely disappeared, such as the north-south route from Dodge City to I-70, leaving a major service gap in western Kansas. (See maps on page 6 for changes in service from 1995 to 2011.)

Other states have experienced similar reductions in service. Missouri's intercity bus study found that the state had

50 intercity bus stops in 2003. But by 2005, after Greyhound streamlined its operations, that number dropped to 39, a decrease of 22 percent in just two years (MoDOT).

Florida's study found that intercity bus service had its highest growth rate in 40 years in 2008, yet, like in Kansas, severe cuts in service have left many Florida areas disconnected from the national system (Florida DOT).

Besides Missouri and Florida, many other states, such as Minnesota, Indiana, Utah and California have recently conducted their own statewide intercity bus studies. Generally, these states have identified increased demand in areas of unmet service, such as in locations away from major interstates or population centers. For instance, Indiana's study found that while 96 percent of its rural population is within 25 miles of an intercity bus stop, much of the state, from a geographical perspective, has no access

to intercity bus service. Minnesota's study projects increased demand due to a 75 percent increase in its population for residents aged 65 and older from 2005 to 2025. And finally, Utah's report cites coordination with existing providers as a way to improve intercity bus service.

In summary

KDOT's new intercity bus study seeks to learn more about the existing conditions of intercity bus service in Kansas with the goal of identifying areas with potential unserved demand and improving service in the future.

Please help by completing the survey (by the end of January) at <http://heartlandmarketresearch.com/surveys/kdottbr.htm>.

If you are interested in talking directly to KDOT about how you can help coordinate services with intercity providers to fill in the gaps, contact Stephanie Watts at swatts@ksdot.org. ●

MANAGEMENT

Emergency Preparedness Guide for Small Agencies

By Anne Lowder

The Transit Bus Safety and Security Program provides practical technical assistance and resources to rural (5311) and small urban (5307) transit bus providers. The program's mission is to achieve the highest levels of safety, security and emergency preparedness for transit passengers and employees. The program lays out effective principles in the guide *Transit Bus Safety, Security and Emergency Preparedness Excellence – A Roadmap to Excellence*. The guide covers six operational areas in transit related to safety and security:

Management

- Defining the mission and commitment
- Building a safe and secure culture
- Planning strategically

Human Resources

- Employee involvement
- Recruiting
- Training

Equipment and Systems

- Maintenance records
- Safety and security
- Checklist, plans and procedures

Safety Activities

- Safety program protocols and evaluations
- Data collection to determine better decision-making
- Hazard management

Security Activities

- Determining vulnerabilities
- Coordinating with the local police
- Simulations

Emergency Management

- Drill, drill, drill
- Coordinating with local agencies (fire, police, EMS and public works)
- Communications protocols (such as NIMS training)

The starting point of the program is the completion of the self-assessment tool that evaluates your transit agency's strengths and weaknesses. The self-assessment is an educational tool for achievement of safety, security and emergency preparedness excellence. The self-assessment has technical resources mapped to questions that can be bookmarked for later retrieval from the program's "Dashboard."

Secondly, the Federal Transit Administration, which hosts the program, continuously updates its collection of transit industry safety and security best practices including policies, procedures, protocols, forms, handbooks, lesson plans, and other technical assistance materials that can be used to fill individual agency gaps based on identified needs.

Transit Bus Safety, Security and Emergency Preparedness Excellence – A Roadmap to Excellence, can be viewed at <http://bussafety.fta.dot.gov>. ●

Measure and Report Your Impacts ...

.. and put a human face on those dry numbers.

By Matt Baker



It's a challenge transit providers face constantly with today's economy: stagnant or, even, declining funding. According to Ed Redfern, of Drinker Biddle in Washington, D.C., who lobbies for transit providers, Kansas has become a "donor" state, subsidizing places like New York and Los Angeles. Every time Kansans fill up their cars at the pump, they pay more money into the Federal Transit Administration's Transit Trust Fund than the state is receiving back in grants. Redfern says Kansas "has to do a better job of getting our dollars back. We should not have to subsidize people in New York and Los Angeles and their transit systems. Transit is just as important in Kansas." Moreover, in this economic downturn, transit becomes even more important. Many times, transit is the only means of transportation for individuals in Kansas communities. And, as gas prices continue to climb, Redfern is adamant that there will be a spike in ridership.

All of this means transit providers need funding. To meet this funding challenge, transit providers need to find a way to convince local, state, and federal lawmakers that they do, in fact, deserve increased funding in these tight times. How can providers accomplish this feat? A National Rural Transit Assistance Program technical brief, titled *Measure and Report Your Impacts: How to Assess Your Impact and Tell Your Story*, suggests you tell stories about your community rather than just report table after table of dry and unexciting facts.

This is not a suggestion to do away with facts, but rather to animate those facts. Show how you make a positive impact on the people in your community.

Why report impacts? They:

- Demonstrate positive return on historic investment in your transit services;
- Make a compelling case for continued investment into the future;
- Demonstrate your culture of accountability and transparency;
- Help build greater awareness and understanding of your transit system;
- Organize key messages for your supporters and advocates.

Here's how to emphasize people and stories—not numbers:

Step 1: Establish impact criteria that will impress stakeholders. Just what do your stakeholders (and taxpayers) care about? This is what you need to determine. Local taxpayers want to know that you are providing great service at a reasonable price. The business community wants to know that you're getting their employees to work in a timely manner. Social service agencies want to know that you're providing access to their services on an equitable basis. And every stakeholder has a particular concern when it comes to your services. Don't think of it as a hindrance. After all, what would it mean if no one worried about your services?

Go out and get in touch with these stakeholders. Remember, they're often paying for your services (and paycheck). Find out what they care about. Just showing that you care about what they care about is a good first step to building a positive image of a transit agency that is in touch with its community. With their input, tailor data about your impacts to their particular concerns. Perhaps you can impress an environmental group by showing them how your services reduced emissions by removing cars from the roads.

Step 2: Put a measurement system into place to collect inputs. Once you have determined what will impress your stakeholders, you'll need to find a way to quantify it. Basically, you need to find a way to take real data and create a simple and convincing statistic from it. With respect to the emissions example, you could make an estimate of the emissions produced by the cars that would be needed to transport your transit riders and then subtract the emissions produced by your vehicles. The difference is the amount of fuel saved by using transit—and that you can measure.

With something quantifiable in mind, you can start to collect data to measure. This might be from a rider survey, passenger counts, or something less time-consuming like using Census data.

Step 3: Periodically collect data.

Collect data methodically and regularly so that you can note ebbs and flows in ridership during the year. Keep it simple and remember that a lot of the data you may be looking for might be collected somewhere else. Don't add busywork when your staff could easily contact another agency that has the data in question. Also, if your data is going to be collected over multiple years, make sure to collect it during the same period each year so that the data is comparable and can show changes in ridership accurately.

Step 4: Analyze data and calculate the impact.

Using the data collected by both your own agency and by other complementary agencies, your agency should be able to find a story to tell. The data might well show you something you never knew. It may also be that you already had observed a ridership trend or environmental impact but only had anecdotal evidence. Now, with numbers, you have a story with teeth. However, if there are gaps in your data, be sure to make this clear, because something like this could trip up an otherwise-compelling argument in front of lawmakers looking for a hole in your data. Whatever you report, it must be beyond reproach and you must have reliable data to substantiate it.

Step 5: Develop a "wow!" factor.

So you have numbers. Numbers are boring. Numbers are dry and dull and people can get lost in numbers. You have to show the difference between what your community is like now, with your services, and what it was like before your services were in place. The difference is the story you are going to tell.

Losing funding does not simply mean your ridership is going to fall by 4,062 people. Losing funding means seniors are unable to get to the doctor's office, people cannot access jobs, employers lose money, grocery stores lose patrons. As Redfern summarizes, "Cutting service means people losing jobs and going on welfare; it's that plain and simple."

The RTAP report also suggests choosing language that specifically taps into the taxpayers in your community, on a personal level. For instance, instead of reporting the number of passenger miles provided, the Report suggests that you consider converting that number into the number of gallons

Identify the difference between what your community is like now, with your services, and what it was like before your services were in place. This difference is this story you are going to tell.

of gasoline saved by transit trips. People spend a lot of money on gas. Calculate the dollars they could keep in their pockets. Show how those dollars will come back out of those pockets if transit services are cut. Tying your data into savings or dollars per person is an excellent way to pique the interest of your audience.

Step 6: Package data into an official-looking report.

Anyone can put out a poorly-conceived report—one that is either very plain or over-laden with bells and whistles. Remember, the product you put out reflects the competency of your agency. All the data and all the compelling stories in

the world can be sabotaged by a presentation that is boring or distracting.

Some important reminders from RTAP include:

- If you call your report an "annual report," you'd better produce it every year.
- Don't spend so exorbitantly that the public thinks you spent more money on your report than you did on your service to them.
- Keep your materials consistent—consistency in appearance and tone is a mark of professionalism.
- Use quality images of your customers in your materials. What better way to reach your community than for them to see each other using your services in your materials? (Just make sure to get their permission.)
- Include testimonials; everyone connects with real stories from real people.

Step 7: Get your report in front of the eyes that matter.

The very first thing you did in retooling the way you report impacts was to identify the needs of your stakeholders. Now, put this report in front of them. These persons are often well-connected in your community. They can spread your story much further through their personal connections than you can with a shiny booklet. (Need help identifying stakeholders? See suggestions on page 10.)

And, of course, put your report on the internet. This not only saves considerable printing and binding costs but also puts it in front of many more who may want to see it. Issue a press release that highlights the biggest impacts and that directs the public to your website.

continued on next page

Sources

- National RTAP Customer Driven Service Learner's Guide.
- Interview with Ed Redfern, Drinker Biddle & Reath LLP, Washington, D.C.
- Measure and Report Your Impacts: How to Assess Your Impact and Tell Your Story, National RTAP. <http://www.nationalrtap.org/LinkClick.aspx?fileticket=FzkTDFEuzw%3d&tabid=1524>
- Assessment of the Economic Impacts of Rural Public Transportation, TCRP R-34.



With Whom Should You be Sharing Your Story?

This list of transit stakeholders, modified for Kansas from the Capital Area Regional Transit Coordination Committee Stakeholder List, Austin, Texas, provides a good jumping-off point for creating your own list of stakeholders with whom to share your story to create awareness and support for your services and the potential for assistance and partnerships.

General Public Transportation

- Public transportation authorities and agencies
 - KDOT coordinated transportation districts
- Intercity transportation providers
 - Amtrak
 - Greyhound
 - Jefferson Lines
- Public transportation funding agencies
 - U.S. Department of Transportation
 - Federal Transit Administration
 - Federal Highway Administration
 - Kansas Department of Transportation

Client Transportation

- Client transportation providers
 - Children's services providers
 - Developmental disability/mental health service providers
 - Meals on wheels
 - Medical transportation providers
 - Organizations that work with those in poverty
 - Parks and recreation departments
- Recipients of Section 5310 funding
 - Elderly service providers
 - Nursing home operators
 - Veterans' affairs service providers
- Health and human service agencies
 - Area agencies on aging
 - Kansas Department of Health and Environment
 - Kansas Department of Social and Rehabilitation Services
 - Kansas Department of Veterans Affairs
 - Kansas Department on Aging
 - Workforce investment boards

Regional Planning Organizations

- Metropolitan planning organizations
- Regional planning agencies

Local Government

- Representatives of city governments
- Representatives of county governments

Human Service Providers

- American Red Cross
- Domestic violence shelters
- Easter Seals
- United Way

Advocates

- AARP
- Disability awareness advocates
- Independent living organizations
- Kansas Public Transit Association

The Public

- Interested general public
- Users of public transportation

Other Transportation Providers

- Faith-based transportation providers
- Private sector providers
 - Limousine companies
 - Taxi companies
- Student transportation
 - K-12 unified school districts
 - Universities

Business Interests

- Local Chamber(s) of Commerce
- Businesses with transit stops

What it all comes down to is focusing on mobility and access for people in your community, not just how many riders used the Route 77 bus last year. Remember, focus on big ideas and stories, not small numbers. This does not mean stop keeping track of the numbers, this means

reformulating the calculations to show impacts on the people in your community. Avoid complicated and snooze-inducing numbers. Keep things simple, yet powerful, and compelling. Put a face on the numbers. ●

Policies and Procedures to Avoid Driver Fatigue

By Matthew Barnett

You've seen the headlines: A crash on the highway, a big-rig on its side, or a car in a ditch. Some of those drivers may have been distracted, some may have encountered poor weather conditions, and possibly...some of them didn't get enough sleep.

Human error and weather, while unfortunate, will happen, but what about driver fatigue? The Federal Motor Carrier Safety Administration (FMCSA) defines fatigue as "the result of physical or mental exertion that impairs performance." It sounds simple, but addressing it isn't, because there are many possible causes for fatigue. Driver fatigue is usually attributed to lack of sleep, stress, long work hours, strenuous work or non-work activities, and any combination of other factors in a wide spectrum of issues that affect alertness.

The Transit Cooperative Research Program (TCRP) Report 81, *Toolbox for Transit Operator Fatigue*, dedicates a chapter to understanding fatigue. The nature of sleep, sleep disorders, health, nutrition, lifestyle, drugs and alertness, work schedules and performance are all pieces to the complex puzzle of human fatigue. As a manager of an agency, it's important to understand these complexities and how to work around with them, or it could mean more than just a fender-bender; it could mean serious injuries or fatalities.

In fact, a recent American Public Transportation Association (APTA) survey found that 20 percent of participating transit agencies identified fatigue experienced by their drivers as a contributing factor to on-road accidents. The same survey found that most transit agencies don't consider fatigue while conducting accident and injury investigations, so it may be that



Transit managers should know and understand what causes fatigue and adopt policies to keep it at bay.

the statistics are higher than what the survey showed.

The anatomy of fatigue

The FMCSA found that alertness is related to time of day more so than "time-on-task." Your body is naturally drowsy between the hours of midnight to 6:00 AM and also 2:00 to 4:00 PM. It may not be possible to avoid driving during these hours for some of your employees, but they should be getting adequate amounts of sleep each night to help avoid drowsiness during these times. The FMCSA recommends that drivers stick to a consistent wake/sleep cycle (circadian rhythm) during the week to maintain a pattern of alertness in the human body. [The FMCSA does not have any data supporting that crashes were happening more in the time periods mentioned above, nor did they have a recommendation for how long to sleep or when to sleep.]

Other tips mentioned in the study for avoiding fatigue include maintaining a healthy diet, taking naps, avoiding alcohol, avoiding medications that cause drowsiness, and being able to recognize the signs of fatigue: frequent yawning,

heavy eyes, and blurred vision.

The FMCSA does not recommend using "alertness tricks" to keep drivers awake: smoking, turning up the radio, drinking coffee or any other caffeinated drinks, and opening the window. Nothing is a substitute for sleep.

Policies and procedures

It's up to your agency to provide effective policies and procedures for drowsy drivers. You may need to do some digging to find the right procedures for your agency. The TCRP Report

81, mentioned above, has information on myriad aspects of drowsy driving and how to manage it. Here are some tips from that report to help you get the wheels rolling.

1. Establish fatigue awareness.

Placing posters in driver areas, maintaining an open door policy, and discussing questions are all great ways to raise awareness in your agency. Posters can be found in Appendix E of the TCRP Report.

2. Learn how to detect fatigue.

A supervisor who sees operators daily will best be able to notice any signs of fatigue. You may ask these types of questions: How much sleep did you get last night? How much sleep did you get in the last three days? How many hours have you worked in the past week? When was the last time you had a day off?

3. Make a policy that covers both acute fatigue and chronic fatigue.

Handling situations for acute fatigue should be different than situations dealing with chronic fatigue. If an employee exhibits sudden onset of physical and mental exhaustion or

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An Easier Way to Get Your Bus Route Online

By Nate Vander Broek

RTAP's GTFS Builder provides step-by-step directions and useful tools.

If you have been thinking about posting your bus routes and schedule to an online mapping site such as Google Maps, but do not feel that you are technically savvy enough to do it on your own, a new tool may help. The General Transit Feed Specification (GTFS) Builder, released by the National RTAP and running "in the Cloud", can help ease the learning process and reduce the time it takes to get your transit information online.

What does it do?

The GTFS Builder provides rural transit systems with tools and training videos to help place bus route and schedule data into the format required by Transit in Google Maps (Google Transit) and other online trip planners. Participating in an online mapping system, such as Google Maps, provides your transit agency and customers with many benefits. It:

- raises awareness of public transportation;
- provides step-by-step directions;
- provides a comparison of driving and transit costs;
- helps seasoned riders discover new routes and maximize infrastructure investment;
- allows for linking to your agency's website to increase awareness;
- connects neighboring agencies' data to improve interagency connectivity;
- reduces the number of calls for route and schedule information;
- reduces the amount of printed information;
- generates standardized printed or online schedules; and
- provides trip planning capabilities for passengers on both desktop and mobile data services.

What's required?

There is no upfront or yearly fee to use this RTAP tool—it is completely free. Besides having access to the Internet, you also need access to Microsoft Excel. The GTFS Builder's management tool, running on Excel, allows transit agencies to enter information related to schedules, stop times, routes, fares, trips and a calendar. RTAP's Excel document uses macros, which helps speed up repetitive processes. (You may need to check to see if files running macros can be downloaded to your computer, as some email clients, such as Microsoft Outlook, view macros as potential viruses.) And finally, RTAP recommends that you give yourself plenty of time to learn to use the tool, and that you pay attention to details. RTAP notes that while they can answer your questions, they cannot do the work for you.

Scott Truex, executive director at Gunnison Valley RTA in Crested Butte, CO, was able to upload his agency's small bus route in just one afternoon after attending a conference session on the GTFS Builder.

Accessing the GTFS Builder

Before you can download the GTFS Builder, you must have a Cloud account with the National RTAP site. If you don't already have an account, go to <http://www.nationalrtap.org/> and click the "Cloud Sign Up" button on the top right

side of the screen.

If you want to learn more about the Cloud, read the October 2011 Kansas TransReporter article *Tips for Using RTAP's New Website Builder*. This article introduces RTAP's In the Cloud website and goes through the process of creating your own website. Once you have created an account and logged in to the Cloud, scroll down until you see the GTFS Builder tab. Click on the Access Dashboard link. From there, you can download the GTFS Builder using the link on the left side of the screen.

GTFS Builder Dashboard

Once you are in the GTFS Builder Dashboard, you will see a number of helpful tools. For instance, the dashboard includes a number of related links, such as Get Lat Lon, which allows you to find exact latitude and longitude points on a map. This comes in very handy when designating bus stop locations for the "stops" tab in the Excel document.

Feed Validator is another useful tool that checks your data for syntax errors and common mistakes, and verifies that your data is well formatted according to GTFS specification.

And finally, Schedule Viewer is a tool with a graphical interface that allows you to test if your stops are positioned correctly, if they have the right departure and arrival times, and if the trip shapes actually follow roads on the geographical map.

The GTFS Builder Dashboard also provides a Support Center. Within the Support Center, there are approximately 35 videos on how to work with the GTFS Builder. Topics range from downloading the GTFS Builder check-list, to creating Google accounts and updating transit schedules. If you have questions on using the GTFS Builder, the Dashboard provides

live chat support, as well as basic email and telephone support.

Upload process

When you have finished adding your data to GTFS Builder's Excel management tool and have validated the data, you can begin the upload process. Click the "Upload your Validated Transit.ZIP file" button. From there, simply upload the ZIP file to RTAP's Cloud system and then log into your Google account to complete the process.

Testimonials

Scott Truex, Executive Director at Gunnison Valley RTA in Crested Butte, CO, was able to upload his agency's small bus route in just one afternoon after attending a conference session on the GTFS Builder. For those who are not able to attend a session on using the tool, Truex suggests looking at the tutorials and other online tools.

"It's a foreign language—you have to learn how to do it. Once you know it, it's not so bad," stated Truex. He emphasized the importance of all agencies uploading their routes online to improve coordination with nearby agencies. Having routes online "is the future, everyone uses [the Internet]," summarized Truex.

Sonya McKibbon, Information Operator at Clallam Transit in Port Angeles, WA, said the GTFS Builder is very helpful. "It's a great program for any transit agency that wants to include itself online," stated McKibbon. She said that since the routes have been online, she gets fewer calls with questions concerning routes and schedules. She has even received letters in the mail praising the online tool.

Like Truex, McKibbon urges more transit agencies to get their information



Above, the GTFS Builder Dashboard is your one-stop web page for a number of essential GTFS Builder tools. The Dashboard features found in the top center of the page include a link to download the GTFS Builder, a link to upload your completed transit ZIP file, access to the online support center with its 35 videos on using the tool, and the forum. On the right side of the page, the Dashboard provides a walk-through video on using the Dashboard.

online. "The more agencies that do it, the better it will be," stated McKibbon. "Why not do it? You can even have your information available on handheld devices. Get on board!"

Online maps in Kansas

Several transit agencies in Kansas have already uploaded their schedules and routes to Google Maps, such as The JO in Johnson County, The Kansas City Area Transportation Authority (KCATA) in Kansas City, and Lawrence Transit and KU on Wheels in Lawrence.

Conclusion

While it may take some time and practice to upload your route and schedule information online, the benefits it provides for both customers and transit agencies are worth the effort. The GTFS Builder's Dashboard should provide you with plenty of helpful tools and videos to get you started in the right direction. If you have questions, use the support tools including live chat, email and telephone support. Don't be afraid to give it a try!

Sources

- National RTAP. <http://www.nationalrtap.org/Admin/NationalRTAPNews/NewsArticleDetails.aspx?NewsID=67>
- "Tips for Using RTAP's New Website Builder." Kansas TransReporter. October 11, 2011. <http://www.kutcc.ku.edu/pdf/files/KTR2011-Oct.pdf>

How To Reach Us

For a free subscription to the *Kansas TransReporter* or to contact one of our faculty or staff, call toll-free (800) 248-0350 (in Kansas) or (785) 864-2595 (outside Kansas). Send correspondence to:

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Other Services

In addition to publishing the *Kansas TransReporter*, Kansas RTAP offers a variety of other educational services. Following is a partial list of these services:

- Publication dissemination
- Program planning assistance
- Technical assistance
- Video lending library
- Telephone consultation
- Computer database searches
- Training development
- Referral services
- Website
- E-mail discussion group

Driver fatigue *Continued from page 11*

mental weariness, it is acute fatigue. If the employee exhibits constant physical and mental exhaustion or mental weariness, it is chronic fatigue.

4. Train your supervisors to coach a fatigued employee. Coaching an operator on a chronic fatigue problem will help them approach the situation and act responsibly. A 10-step outline with sample comments is in the TCRP Report 81.

5. Implement more rest breaks. 10 to 15 minute complete breaks from work consist of the driver being relieved from operating a vehicle and leaving the vehicle. Research shows that breaks help counter fatigue and sustain vigilance.

6. Give the drivers work variety. Try assigning different routes over the course of the day. Some service plans are more fatiguing than others.

For more information

There are plenty of resources out there to help you and your agency build policies and procedures that will help combat driver fatigue. Consider getting a group of employees together to help you in selecting appropriate measures for your agency. The TCRP Report 81 recommends getting everyone involved, including drivers, supervisors and managers. You can find the TCRP Report 81 *Toolbox for Transit Operator Fatigue* on the Transportation Research Board's website; see link in the sources section below.

Most transit agencies don't consider fatigue while conducting accident and injury investigations, according to an APTA survey, so fatigue may be more of a factor in crashes than is reported.

A great article written specifically for drivers is "Fatigue and the Transit Driver," by Pat Weaver. It can be found in the *Kansas TransReporter* archive at <http://www.ksrtap.org> under the Newsletters link on the left side of the page. Use the search feature to search for the article's title.

Taking measures to avoid fatigue in your agency will help prevent costly crashes and possible fatalities. Remember, everyone needs to nap now and then—just not on the road. ●

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- *Toolbox for Transit Operator Fatigue*. Transit Cooperative Research Program – Report 81. FTA. Accessed 4-26-10. http://onlinepubs.trb.org/onlinepubs/tcrp/tcrp_rpt_81.pdf
- Weaver, Pat. "Fatigue and the transit driver." *Kansas TransReporter*. <http://www2.ku.edu/~kutc/pdffiles/18.1.pdf>
- "Avoid Fatigue Risks While Behind the Wheel." Capt. Barry R Reeder. Accessed 4-26-10. <http://www.afsc.af.mil/news/story.asp?id=123116611>
- "Driver Fatigue." Federal Motor Carrier Safety Administration. U.S. DOT. Accessed 4-26-10. <http://www.fmcsa.dot.gov/about/outreach/education/driverTips/Driver-Fatigue.htm>
- "Bus Safety." FTA. U.S. DOT. Accessed 4-26-10. http://bussafety.fta.dot.gov/uploads/resource/3699_filename

Transit Resources

Boards that Perform. This National Rural Transit Assistance Program (NRTAP) guidebook examines 10 key roles and responsibilities for board members. Accompanied by a CD. 32 pages. <http://www.nationalrtap.org/>

VHF/UHF Narrowband Presentation Download. A Federal Communications Commission on-line presentation containing a brief history of the Narrowbanding proceeding, as well as information about compliance with the deadline on January 01, 2013. <http://transition.fcc.gov/pshs/public-safety-spectrum/narrowbanding.html>

Introduction to Preventive Maintenance: An Investment that Pays Off. The National Rural Transit Assistance Program (NRTAP) training module is designed to help develop the combination of teamwork and skills that an effective and mission-supporting preventive maintenance program demands. Accompanied by a CD. 108 Pages. <http://www.nationalrtap.org/>

Website Builder – Basic and Advanced Workshop. This National Rural Transit Assistance Program (NRTAP) workshop presentation is now available as a download. <http://www.nationalrtap.org/>

Livable Communities: Tips for Designing Transit Services and Infrastructure that Promote Livability. National RTAP. 6 pages. November 2011. This brief discusses the characteristics of a livable community, provides specific examples of enhancements to transportation services and infrastructure, suggests ways to implement a successful livability initiative, and presents grant opportunities. Available for download at [http://demopro.nationalrtap.org/iframe/simple_search.aspx?org=a2GSpnDbrul=&keyword=livable communities](http://demopro.nationalrtap.org/iframe/simple_search.aspx?org=a2GSpnDbrul=&keyword=livable+communities) or or check this box and fill out the order form to receive a hard copy from Kansas RTAP.

Transportation Option for Older Adults: Choices for Mobility Independence. National Center for Senior Transportation (NCST) brochure describes various types of transportation services for older adults and lists key questions to ask transportation provider to determine the best option to meet individual needs. 6 pages. October 2011. Available for download at: https://secure2.convio.net/es/site/Ecommerce?VIEW_PRODUCT=true&product_id=2881&store_id=6563 or or check this box and fill out the order form to receive a hard copy from Kansas RTAP.

Large Truck and Bus Crash Facts 2009. US Federal Motor Carrier Safety Administration (FMC) has released a report that contains descriptive statistics about fatal, injury, and property damage on crashes involving large trucks and buses in 2009. Pages 80. October 2011. Downloadable. http://www.trb.org/Main/Blurbs/166287.aspx?utm_medium=email&utm_source=Transportation%20Research%20Board&utm_campaign=TRB+E-Newsletter+-+11-21-2011&utm_content=Customer&utm_term=

Easter Seals Project Action ADA Essentials for Transit Board Members. It is a resource about the fundamentals of the Americans with Disabilities Act and Transit Public Policy. It is suited for not only board members, but bus, rail, and paratransit staff, public officials, community planners, advocates, and anyone seeking basic information on the ADA as it relates to public transportation. 68 Pages. January 2011. https://secure2.convio.net/es/site/Ecommerce/3505458?VIEW_PRODUCT=true&product_id=7181&store_id=9663

ORDER FORM

A few of the above resources are available in hard copy for readers who do not have internet access.
Check the items you would like to receive and fill out the form below. Fax to (785) 864-3199.

Name _____ Title _____

Agency _____ Phone _____

Street Address _____ E-mail address _____

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The *Kansas TransReporter* is an educational and technology transfer newsletter published quarterly by the Kansas University Transportation Center (KUTC), under the umbrella of KU's Transportation Research Institute. The newsletter is free to rural and specialized transit providers and others with an interest in rural and specialized service.

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The purposes of the RTAP program are to: 1) educate transit operators about the latest technologies in rural and specialized transit; 2) encourage their translation into practical application; and 3) to share information among operators.

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Calendar

Rural Transit Training and Conferences — Winter/Spring 2012

February 12-15, 2012

Southwest Transit Association Annual Meeting (SWTA) 2012 Annual Conference. Denver, CO. Get additional information at: <http://swta.org/>

National Transit Institute Safety and Security Reporting: Basic Setup/Minor Incident Reporting – Webinar. **February 21, 2012** or **June 26, 2012**. Register at: <http://www.ntionline.com/courses/courseinfo.php?id=198>

Defensive Driving and Passenger Assistance**

February 22 in Topeka
February 23 in Ottawa
February 29 in Chanute
March 22 in El Dorado
April 11 in Olathe
April 12 in Atchison

Defensive Driving and Emergency Procedures**

March 1 in Pittsburg
March 8 in Manhattan
March 15 in Dodge City
March 21 in Wichita
March 29 in Great Bend
April 4 in Salina
April 5 in Emporia
June 13 in Pratt
June 14 in Newton

Advance Mobility Securement Devices**

March 7 in Salina
March 14 in Garden City
March 28 in Hutchinson

March 18-21, 2012

National RTAP, FTA and National Tribal Transit Association (NTTA) 2012 Training and Technical Assistance Conference and Rodeo: Creating Partnerships for Rural Transit Solutions. Scottsdale, AZ. <http://www.nationalrtap.org>

May 6-9, 2012

American Public Transportation Association (APTA) Bus and Paratransit Conference. Long Beach, CA. Register at: <http://www.apta.com/mc/bus/Pages/default.aspx>

May 21-25, 2012

Community Transportation Association of America (CTAA) EXPO, Baltimore, Maryland May 21-25, 2011. Additional information at: <http://web1.ctaa.org/webmodules/webarticles/anviewer.asp?a=2741&z=5>

***To register for a Kansas RTAP workshop, go to <http://www.ksrtap.org>. Click on "Register to attend." Questions? Contact Kristin Kelly at (785) 864-2594 or kbkelly@ku.edu.*