

Inclusive Coordinated Transportation Planning Year 3 Case Studies Knoxville

Goals and Objectives

The goal of the Knoxville-Knox Community Action Committee (CAC) Inclusive Coordinated Transportation (ICT) project was to overcome communication barriers experienced by people with disabilities while they use public transportation. The Knoxville team believed that the use of a tablet-based software application could facilitate communication between driver and seniors and people with disabilities. The project goal was determined through learning and experience working on previous grants, communication with the field, and analyzing data obtained through numerous community forums.

Knoxville-Knox recognized that mobility and transportation are key elements of staying active in the community for the aging population, especially as a majority of seniors choose to age in place. In 2013, The Knoxville-Knox County Community Action Committee (CAC) was one of seventeen projects awarded a demonstration grant from the U.S Administration for Community Living to gather information on barriers to inclusivity in area transportation planning efforts for residents who are older and/or have disabilities — specifically intellectual and developmental disabilities — and which inhibit their use of public transportation. The project soon expanded due to the awarding of another grant to include Anderson, Blount, Loudon, and Union counties. This work was strengthened through this current grant, where 30 small group meetings were held utilizing the small group *Meeting in a Box* concept to gather data about barriers to transportation as well as the naming and prioritizing recommendations for removing these barriers. The University of Tennessee Department of Industrial and Systems Engineering consolidated the collected data using a weighted criterion matrix and identified the top transportation barriers and solutions.

Throughout the project, a steering committee met on a monthly basis to review the work that had been done and to help direct the next months priorities. The committee is made up of representatives from all the public transportation providers in the region, members of the Knoxville Mayor's Council on Disability Issues, the ADA coordinator for the city of Knoxville, the ADA committee chair for Knox County, and members of state agencies and disability service providers and advocate groups. In consultation with **our steering committee**, the data collected was used to create projects to eliminate transportation barriers for seniors and people with disabilities. Knoxville-Knox leadership quickly recognized the importance of holding meetings in the communities where participants reside, rather than asking them to come to an unfamiliar meeting place.

In 2014, CAC was one of seven grantees from the original group who were awarded a second round of funds from the U.S. Administration for Community Living to continue the focus on one of the top barriers to transportation. CAC, in partnership with the University of Tennessee's Department of Industrial and Systems Engineering, concluded that the top barrier hindering or preventing seniors and people with disabilities from using public transportation is a communications barrier — namely, their ability to ask the bus drivers basic questions concerning destination, timeliness, and personal matters such as safety and general comments.

The *Meeting in a Box* concept used in Round 1 of the ICT grant was used again in Round 2 to collect data on communication occurring between driver and passenger during the transportation lifecycle. These data were central to the design and development of the software application (app). The team decided that the app would be named *Project ERIC* to honor graduate student Eric Arendt, who worked on Round 1, wrote the grant for Round 2, but passed away before the launch of Round 2. The app originally contained 95 essential communication phrases used by passengers during a bus trip. To streamline the app's design the number of phrases was reduced in Round 3 at the suggestion of those testing the app.

The App was unveiled by Knoxville Mayor Madeline Rogero at the community's annual workshop series, *Aging: A family Affair*. During this period of the grant, the CAC team realized that a single mode of application accessibility would not work for the range of people with disabilities for whom the app is designed, and started to consider ways to customize the communications tool.

The team learned that the key to success in developing inclusive transit planning was the *Meeting in a Box* concept cultivated by Plan East Tennessee (PlanET) to take meetings directly to participants. PlanET is a regional partnership of communities building a shared direction for the future, seeking ideas about protecting our valuable resources and addressing challenges regarding jobs, housing, transportation, a clean environment, and community health. CAC tailored this concept to reach out to seniors and people with disabilities, contacting organizations and support groups serving people with disabilities — specifically intellectual and developmental disabilities — and the elderly to request presentation time at one of their regularly scheduled meetings or events. This allowed participants to meet in a familiar place with others they see on a regular basis. The meeting format consisted of a facilitator giving an overview of the project, administering a written survey, and facilitating a group discussion. During these discussions participants shared their individual transportation concerns.

Project Management

The Knoxville-Knox team believe their project was unique, since project activities and management encompasses the CAC and the University of Tennessee. This collaboration creates a robust knowledge base and brings practical experience to project activities, which were guided through the *Meeting in a Box* activities conducted throughout the region. These activities allowed the project team to get detail from people with disabilities and older adults and drill down to the communication problems. By honing the wealth of information received through these community forums, the team learned what specifically about communication posed a barrier for people with disabilities and older adults.

The project team described the most engaging features of the *Meeting in a Box* as:

- ◆ First, the ability to take the meeting into the field where the people are.
- ◆ Second, it's a physical box with all of the materials at the ready.
- ◆ Third, it brought cohesiveness to the approach. All the meetings were the same.

The team modified communications during these meetings and gauged communication preferences group-by-group. For instance, during an activity where the meeting attendees had to place five dots on a board as a way to prioritize issues, the Knoxville team recognized that this activity was not

appropriate for all attendees. Some of the participants had mobility issues – and could not navigate the room, and therefore, instead of placing dots on a board to rank particular priorities, participants were asked to raise hands. In another forum, participants with intellectual and developmental disabilities could not understand the activities related to ranking priorities. Instead, the Knoxville team used diagrams and pictures, to enable participants to indicate their preferences. The Knoxville team project director noted that during the *Meeting in a Box* forums, to facilitate engagement, it was important to be flexible and understand the unique learning styles of attendees. Learning as much as possible about the audience and its needs was vital to the project's success.

The Knoxville-Knox team was surprised that their original plans regarding the communication application were not successful, and attributed this limited success to a couple of reasons. First, people who are blind or with visual impairments were not successful in using the tool because they didn't have an orientation as to where to touch the tablet. Finding the appropriate communication icon was impossible without either an audio or Braille component. Second, the team quickly recognized that there were too many communication icons on the tablet, which made the tool too overwhelming and difficult to use, particularly for users with intellectual or developmental disabilities. These surprises were not viewed as challenges; rather, the team used this information to improve the functionality of the communication application. After the initial application prototype design was rejected by the test group, the UT Engineering team sought to redesign the application and expand the designs to make them more user-friendly.

The entire Knoxville project was based on the development of a technological tool to enhance communication between riders and transit operators. The Project ERIC app enables improved communication to support the riding experience of people with disabilities and older adults. The engineering department of the University of Tennessee contributed to the technical aspects of designing and launching the tablet based app, and the CAC team was instrumental in providing content, carrying out usability testing in the field, and sharing and gleaned information from partner organizations that represent people with disabilities and older adults.

The project also relied on technology to support managerial processes and project activities. For instance, *Survey Monkey* was used as the platform for an external survey, and social media, such as *Twitter* and *Facebook*, were critical in disseminating information and reaching the field. The Knoxville team also used videoconferencing to demonstrate the application with the entire ICT project team, including the U.S. Administration for Community Living (ACL) federal project officer, the project leadership team, and other grantees.

The Knoxville-Knox team enjoys collaborative relationships with many local organizations that represent people with disabilities and older adults which they tapped to identify *Meeting in a Box* forums. The team used varying outreach strategies and learned that email and face-to-face strategies were most effective in engaging stakeholders. The team capitalized on the fact that that their agency is highly respected and valued in the community, and this trust facilitated their success in capturing information about the communication needs of riders with disabilities and older adults. Knoxville received overwhelming community support for its work, evidenced by the attention from the Mayor's office, the Tennessee Department of Intellectual and Developmental Disabilities and the Tennessee Commission on Aging and Disabilities.

Resources

At the project launch, the Knoxville-Knox team had few labor resources to devote to the project. For example, during the initial phases, the project did not employ a full-time project coordinator and had only a few UT graduate students assigned to the work. The team described the creative ways it identified additional personnel resources such as working with local nonprofit organizations to help with disseminating information and working with the East Tennessee Technology Access Center to exchange information about the technology. Additionally, Project ERIC used the in-kind support of additional UT graduate students — who were not paid for their role on the project, but contributed their content expertise and supported the prototype testing. The project director suggested that a lesson learned was that it always takes more resources than one might think.

The Knoxville-Knox team repeatedly affirmed the value of the partnership with the University of Tennessee. The relationship has afforded both partners opportunities to exchange resources, knowledge, and to learn. Prior to their participation in Project ERIC, UT representatives indicated they had little familiarity with the transportation challenges faced by people with disabilities and older adults. Their participation educated the university community about the mobility needs of diverse populations. Many of the UT graduate students who assisted with the project had had little interaction with people with disabilities, and their participation in the piloting of the communication application raised their awareness about transportation and the needs of particular populations. It is hoped that this partnership between CAC and UT will provide additional grant and recognition opportunities.

Inclusive Planning and Sustainability

People with disabilities and older adults were active participants in the Knoxville-Knox project. The CAC worked closely with the FUTURES program at the University of Tennessee as a means of getting advice, seeking feedback on prototypes, and informing communication and outreach processes. The FUTURES program is a postsecondary education program for students with intellectual disabilities that provides access to higher education to students who traditionally would not attend college. Further, the Knoxville-Knox team has the support of a variety of disability-related and older adult organizations on its steering committee, and held monthly meetings to garner input in all phases of the project. Additionally, during the *Meeting in a Box* forums, the project team provided snacks and inexpensive take-aways that were an incentive to attendees.

Sustainability was an important end goal of the project and is now embedded in many of the partner organizations involved in Project ERIC. The UT Engineering Program has stated they are interested in applying lessons learned to other projects that might be developed in the community in some sort of collaborative effort. The Knoxville Mayor's Council on Disabilities (CODI) is including accessible transportation and inclusive planning in its activities related to the city's interest in becoming the *Friendliest City in America* — that would be measured in part, by its accessibility for people with disabilities and older adults.

The activities that comprised Project ERIC, including the *Meeting in a Box* format, engaged audiences that otherwise would have little knowledge of transportation or inclusive participation. The forums offered people with disabilities a voice — and a vision — for how transportation services can be more accessible and inclusive. The project team, and other community organizations, will use the information gleaned through this process to influence training for operators, incorporate content

into community informational materials, and make changes in service delivery. Team leadership is certain that this work will be sustained in the future.

The Knoxville-Knox project director notes that the team found that bringing our project to the older adults and people with disabilities was the key to the success of the program and to ensuring that these people were included in a meaningful way. These meetings were structured in a manner to ensure that they were able to be replicated. Staff returned repeatedly to meet with the participants in their community, thereby making the meetings accessible and the project inclusive of their feedback, which increased ownership in the process and ensured that people return and continue with the planning process. In this way, the participants were truly included, honored and empowered to have a voice in the project. The team feels that it cannot over emphasize the importance of bringing the meetings to the people in ensuring that the process for transit planning is truly inclusive.

As further evidence of project sustainability, the Project ERIC Steering Committee will be invited to become a part of ongoing meetings with the Knox County CAC Transit Advisory Committee and will represent people with disabilities and older adults on the Knoxville Area Transit Citizens Advisory Committee. Additionally, Knoxville Knox CAC will utilize its computer lab to host training workshops to help people with disabilities and older adults to use the application. The University of Tennessee's Department of Engineering lead professor on Project Eric was elected to serve on the Mayor's Council and hopes to help facilitate inclusivity in all walks of city life.

Knoxville-Knox anticipates incorporating a Spanish-version of the communication application to reach those riders who are Hispanic and also may have a disability. During the project they established a relationship with Centro Hispano de East Tennessee, a grass roots organization developing programs to address the unmet needs of the area Hispanic population, as a first-step in implementing inclusive transportation planning activities for this growing population.

The project deployed a successful strategy termed *gorilla engagement* where UT graduate students, responsible for data collection regarding the communication application, would board community buses and randomly interact with passengers with disabilities and older adults. The UT students would just get on a bus and start talking to passengers. These activities became a learning experience for not only passengers, but, also for the UT graduate students. Their knowledge and interactions with people with disabilities were reportedly improved as a result of these activities, interactions that were likely to be sustained in the future, and applied in other settings.

In the future, the Knoxville Team hopes to replicate its Project ERIC work in other cities, and anticipates sharing their application at the Tennessee Public Transportation Association's annual conference later in the year. Also, the team is interested in including way finding in the application, to broaden the topic of access. Lastly, project leadership is interested in establishing a center at UT to enable the university to address the topic of inclusive planning and accessible transportation in a sustainable way.

Stakeholders

In forming a steering committee for Project ERIC, the Knoxville-Knox team reached out to organizations that represent seniors, people with disabilities and other transit organizations. All of the groups represented in the project steering committee were actively engaged in inclusive

transportation planning and routinely relied on the input of seniors and people with disabilities in planning transportation. The team's work on the inclusive coordinated transportation grant further validated the need for those who will be served by transportation to be a part of the planning process.

The project built upon the emphasis at Knox CAC to empower seniors and people with disabilities to live more active and fulfilling lives, as evidenced by their work to operate the O'Connor Senior Center as well as its Office on Aging, which continues to grow and serve the communities in the region in meaningful and inclusive ways.

Outcomes

The team indicated that they achieved a major outcome related to improving communication between transit passengers and operators. Since communication challenges were indicated by people with disabilities and older adults as a barrier to their using public transportation, the successful development of a communication application can address this barrier. The data that was collected as part of this project is another important outcome. This data helped drive project activities and enabled the team to make informed decisions about the application's features. Finally, the team learned that improved transit driver awareness of passengers with disabilities is a tangible outcome.

Key factors that contributed to these outcomes:

- **People with disabilities or older adult groups:** The greatest resources are the seniors and people with disabilities, as well as the agencies that participated in meetings and online surveys.
- **Collaboration with UT:** UT students were critical in data collection and consolidating the data to identify the top transportation barriers in Round 1 and in designing and developing the Project ERIC app in Round 2.
- **Steering Committee Meeting:** A participant/stakeholder advisory group that oversees and guides all planning activities administered during progression of the project.
- **Outreach Coordinator:** This coordinator managed to make sure every voice was heard.

Challenges and Solutions

The Knoxville grantee faced major staffing challenges during the project period due to the deaths of two key contributors. Both were key participants in the project and therefore the transfer of knowledge was a challenge. The project team also noted that the inconsistency of funding for the project made it difficult to retain particular key staff from year-to-year. Further, the diverse range of partners made scheduling meetings more difficult.

Other challenges and solutions offered by the grantee included:

- **Diversified Disability.** The broad range of disability groups was a challenge to assure that the application met the needs of many of these diverse constituents. The Knoxville team recognized that a multi-cluster approach to the application was needed that took into consideration different leaning styles, instead of just the initial "one size fits all" single application process to assure these diverse needs were addressed. For example, there is a

function suited to those who are visual learners that has larger pictures and/or different color schemes, and an aural presentation that ‘speaks’ to the user.

- The **Life Cycle of Transportation** is defined as a passenger’s trip from point of boarding to the dropping off at their point of destination. To develop the application, the team divided this life cycle into stages such as getting on the bus, seating, traveling, reaching the destination, and getting off. The different communication that is required in each of these stages necessitated that the team consider the best use of wording for communication between driver and rider in each of these stages. Although the amount of information was daunting, dividing project activities in this manner made the work manageable and helped to determine what specific dialogues were essential for a safe and convenient journey for passengers across the life cycle of transportation.
- **Lack of Awareness of Familiarity of Technology.** Knoxville indicated that some of the participants struggled initially but found that using tablet-based technology was much simpler than they thought. Those who had never used computer technology adapted quickly to the ease of the tablet application with a few quick lessons from one of the facilitators in a one-on-one setting. This was particularly noticeable with the agencies hosting senior populations who may not be as tech savvy or may be more fearful of newer electronic technologies.

Lessons Learned and Words of Wisdom

Realistic goal setting was vital to the project’s success. The team collected a number of good ideas that were shared at the meetings, however, they would limit the number of ideas that they addressed in the project. And although the team is committed to the *Meeting in the Box* concept and strongly encourages those working with people with disabilities and older adults to make every effort to include the format in the planning process, challenges related to continuous funding and staffingposed concerns.