

FORD MOBILITY CITY:ONE INDIANAPOLIS CHALLENGE



**Enhancing Independent Transportation for
Individuals with Cognitive Disabilities and Others
with Special Needs with the WayFinder Ecosystem**

FINAL PROJECT REPORT SUMMARY

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PROJECT SUMMARY

Millions of individuals worldwide with cognitive and other disabilities face significant transportation barriers, causing them to remain dependent upon others to take them where they want to go. They may use paratransit services that are expensive, less integrated, and often come with restrictions; or in the worst case, they may simply end up staying home. These roadblocks to independent transportation can contribute to significantly reduced quality of life, increased isolation, and reduced access to healthcare, education, employment, and participation in community life.

In February 2020, AbleLink Smart Living Technologies began an implementation field study in Indianapolis, IN, sponsored by the Ford Mobility City:One Challenge. The project specifically addressed the Indianapolis Challenge's objective to support the transition from paratransit to fixed route services. In partnership with local agency Easterseals Crossroads, AbleLink conducted a field study to evaluate whether a technology intervention - the WayFinder Ecosystem - might enable individuals with cognitive disabilities to learn to safely and independently use the public fixed route transportation system. This would provide enormous benefits to the individual by opening up access to independent



transportation, as well as reducing the load on agencies and caregivers and benefiting the public transportation service by reducing the number of people reliant on expensive and highly subsidized paratransit services.

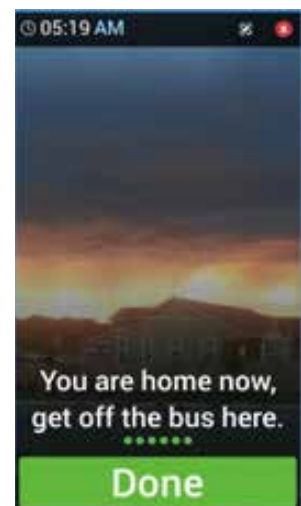
WAYFINDER DESCRIPTION

WayFinder is a commercially available research-based mobility support application that was developed specifically to enable individuals with cognitive disabilities to independently navigate fixed route transit systems. The WayFinder app itself runs on a mobile device, and is nested within an entire ecosystem of supporting programs.



The WayFinder app consists of pre-built routes based on a transit agency's route data and personalized for an individual. When a route is launched, a series of GPS-based prompts guide the user through the trip from start to finish. Using tactile, audio, visual and text-based prompts, the WayFinder app provides a similar level of the support that an individual would receive if a caregiver or travel trainer were right there, such as giving a reminder at the bus stop, "Be sure to have your bus pass ready" or later, "Your stop is coming up. It is time to pull the cord to signal the bus to stop."

Designed throughout specifically for the needs of users with cognitive disabilities, with each component backed by research and testing, the WayFinder app is designed to give end users confidence, guidance, and peace of mind as they independently navigate their trips. WayFinder is fully customizable to the specific abilities and desires of each user, and includes a cognitively accessible option to communicate with a caregiver at all times. The WayFinder Ecosystem is a group of technologies that support and enhance use of the WayFinder App itself.



THE WAYFINDER ECOSYSTEM

IN ADDITION TO THE WAYFINDER APP, THE SMART ECOSYSTEM INCLUDES A NUMBER OF OTHER TOOLS FOR TRAVEL SUPPORT. "SMART" REFERS TO SPECIALIZED MEDIA FOR ASSISTING ROUTE TRAVEL.



TRAVEL READINESS ASSESSMENTS

Cognitively accessible travel skills assessment system for users with cognitive disabilities to independently complete an online assessment of their public transit experience and skills.



TRANSPORTATION SKILLS TRAINING

Based on AbleLink's Visual Impact technology, self-directed training modules are available to address deficits in transportation skills. The Indianapolis project included modules from AbleLink's general transportation skills library, as well as new training modules created for this project to address scenarios specific to COVID-19.



SMART VIRTUALIZATION TOOLS

Utilizing AbleLink's SMART technology, virtualization tools provide a format to obtain video of a complete travel route which is overlaid with a simulation of the WayFinder app. This allows the user (or caregivers) to virtually experience a trip and the associated waypoint prompts prior to engaging in the actual trip.



SMART ROUTE LIBRARY

A SMART Route Library is a collection of pre-built routes. For this project, AbleLink built a public SMART Route Library for IndyGo based on all IndyGo transit routes, and a private SMART Route Library for Easterseals Crossroads. Routes can be downloaded from the library and then personalized for specific individuals. New routes can be shared to a library as well.



SMART ROUTE BUILDER

Routes can be built and personalized within the mobile WayFinder app itself, or via the SMART Route Builder, a map-enabled web-based application for building and personalizing routes.



SMART TRAVEL MANAGER

The SMART Travel Manager is a web-based application for providing remote support and monitoring during travel activities. If desired by the traveler, the secure Travel Manager application can be used by family or other authorized caregivers to watch a trip unfold in real time (or review it after the fact) to provide peace of mind.

PROJECT DESCRIPTION

AbleLink and Easterseals Crossroads staff worked closely together through the early weeks of the project to set up route libraries, provide training on all aspects of the WayFinder Ecosystem, and recruit volunteers with cognitive disabilities. Volunteers were recruited in two cohorts throughout the project, for a total of 21 participants with cognitive disabilities. The average age of the group was 20, all diagnosed with MSD (a vocational rehab term meaning Most Significantly Disabled). A total of 10 different routes were created for use by participants in the project, all suited to meet the most important and practical transportation needs for the individuals in the group.

Although the impact of COVID-19 altered the project timeline, by the summer volunteers were beginning to take travel skills assessments and training modules, including modules created specifically for this project addressing topics such as “Staying Healthy During Travel.” Through the fall and winter volunteers began learning to travel their personalized routes on the fixed route system. Some participants had no experience at all on the fixed route system, while others had limited experience but needed to learn new routes.

The initial cohort completed training on use of the fixed route system by the first week in December, and all 12 achieved the goal of successfully riding one or more fixed bus routes independently. At this point Easterseals Crossroads shifted focus to the second cohort, and created several new routes based on individual travel destination needs. Staff also analyzed the amount of training time needed to teach bus routes with and without WayFinder - showing that the use of WayFinder was successful in reducing the amount of time needed to train an individual by 31%.

At the end of the project, participants completed travel skills assessments for a second time, to measure improvements in travel skills gained from training modules and the hands-on practice in use of the bus system with WayFinder. All self-report measures improved significantly. Easterseals Crossroads staff reported that the most significant improvements in fixed route performance for the group were in the ability to use landmarks to aid navigation. Participants also improved in their knowledge of how to get to the bus stop, how to show their bus pass, when to pull the cord, and how to get to their final destination. Sixteen of the participants (76%) were even able to independently transfer from one bus to another. Participants took a self-directed survey about their satisfaction with WayFinder at the end of the project. Notably, 90% felt more confident when riding the bus with WayFinder and 95% said they would recommend WayFinder to a friend.

PROJECT OUTCOMES

Goal #	Goal	KPI or Key Learning	Outcome
1.1	Implement a Pilot Project targeting the transfer of 20-25 individuals with cognitive disabilities served in the Indianapolis metro area from Open Door paratransit services or other dependent modes of transportation to IndyGo's fixed route bus service.	For pilot project participants, achieve 80% or higher success rate of conversion from the <i>inability</i> to independently take a transit route to the <i>ability</i> to independently take a transit route.	90% (19 out of 21) of the study participants successfully learned to ride one or more IndyGo bus routes independently with WayFinder during the project period.
1.2	Conduct analysis of the results of 1.1 to determine potential cost savings to IndyGo for transferring individuals from paratransit to fixed route at various implementation scales.	Identification of potential cost savings for this technology implementation.	Analysis of potential cost savings at various scales of implementation conducted and presented as part of complete final report.
1.3	Conduct a survey of study participants to determine feedback relevant for assessing the impact of the pilot project on accessing work, education, health, and recreation to improve quality of life using the fixed route IndyGo transit system.	Identification of the impact of greater access to community resources for individuals with cognitive disabilities and their families.	Survey developed and taken by each of the 21 study participants.

All three project outcomes were achieved successfully. **Of significance, 90% of the study participants successfully learned to ride one or more IndyGo bus routes with support from WayFinder** during the project period. Study results showed statistically significant improvement in key transportation skills, including community social skills, street crossing skills, and vehicle identification skills as a result of the WayFinder-based travel training they received in the Indianapolis Pilot Project.

Use of various components of the WayFinder Ecosystem, such as the trip virtualization capability and the real-time SMART Travel Manager can provide peace of mind for caregivers as well, many of whom may have safety concerns regarding their son or daughter using the public bus system. Use of WayFinder provides benefits all around: peace of mind to caregivers, time saved for agency staff, reduction of demand for expensive paratransit services for the city, and most of all increased independence in transportation for the users themselves.

PARTICIPANT REACTIONS

"THIS IS MY FREEDOM, MY INDEPENDENCE!"

~Ethan

90% Felt more confident when riding the bus with WayFinder

96% Indicated they liked using WayFinder to get around

95% Would recommend WayFinder to a friend

90% Learned to ride an IndyGo bus with WayFinder*
*some participants already had experience with the IndyGo system, although all participants learned new routes

"I want to learn more buses."

-DeMond

"Next, teach me how to ride the bus to the airport!"

-Jakeb

"It's been a great experience for me, eye-opening."

~Keith, travel trainer



CONCLUSION

Independent access to fixed route services can go a long way toward alleviating the lifelong isolation so often felt by people with cognitive disabilities who are dependent on others to access their community resources and receive the associated quality of life benefits. This project was successful in meeting the Indianapolis Ford Mobility City:One Challenge goal to improve access and reduce social anxiety through use of the innovative training, travel support, and virtualization technologies which are part of the WayFinder Ecosystem. For more information, or to request the full project report, contact AbleLink Smart Living Technologies at info@ablelinktech.com.

AbleLink Smart Living Technologies, LLC would like to acknowledge the many individuals who provided information, feedback, evaluation, and other support to this project. We would specifically like to thank Gina Schrader, Jessica Massey, and Ananda Palanisamy from Ford Mobility; the Central Indiana Personal Mobility Network and its partners, including the Central Indiana Community Foundation, the City of Indianapolis, IndyGo, and Cummins; and our field evaluation partners at Easterseals Crossroads. A special thank you goes to Keith Fox, who led the field evaluation effort for Easterseals Crossroads. Without these outstanding partners and their high-quality support and work this project could not have been accomplished.

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