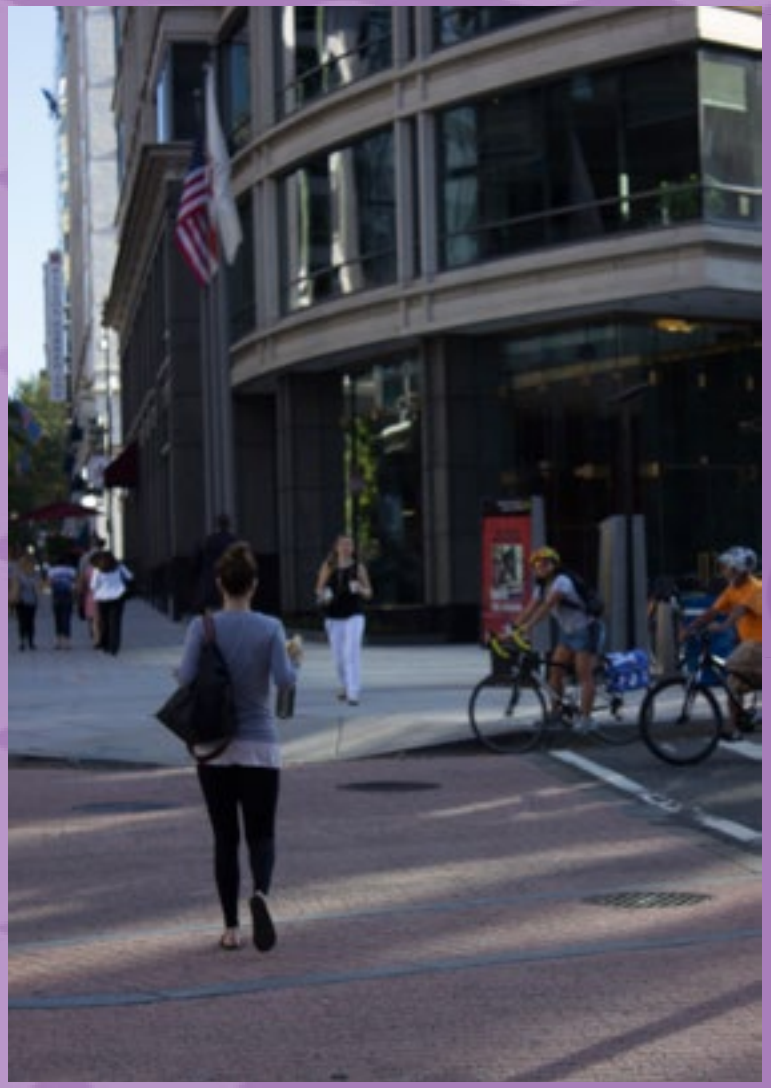


THE COMPLETE TRIP:

HELPING CUSTOMERS MAKE A SEAMLESS JOURNEY

National Center for Mobility Management

MOBILITY MANAGEMENT IN PRACTICE SERIES

This info brief introduces the concept of the "complete trip"—from planning and booking the trip to paying for and embarking on the journey to negotiating the physical infrastructure (e.g., sidewalks, street crossings) associated with the trip. It encourages mobility managers to anticipate potential stumbling blocks that may be encountered by the people they serve along the journey and to be proactive in assisting people in achieving a seamless trip.

An individual's journey in his or her community, whether using public transportation or a blend of public and private options, is now recognized as being much more complex than simply boarding and alighting from a vehicle. To have a successful journey, there are several actions that an individual must initiate before and after the trip. Mobility managers, with their customer-centric approach, can tap into many technological and communication tools to help individuals complete these activities. This brief explores the "complete trip" concept and tools and strategies to assist customers in getting to their destinations in the most efficient and least stressful way.

DEFINING THE COMPLETE TRIP

The complete trip concept "synthesizes aspects of a person's trip from the time the individual begins to plan the trip, to when he or she leaves the originating location when starting a journey, to the doorstep of the final destination."[1] Each complete trip is the sum of its parts, yet each one is different. Every complete trip consists of

- Technology and other resources to plan and pay for the trip
- All travel modes used
- Physical assets that support those modes
- Agencies supporting infrastructure and providing services
- Multiple policies and processes governing agencies and modes[2]

[1]Adapted from American Public Transportation Association Proposed Problem Title: Transit and the Built Environment: A Handbook for the Complete Trip Approach to Transit Planning and Operations. Submitted to Transit Cooperative Research Program (TCRP) 6/14/2013.

[2]Adapted from Marlene Conner: The Complete Trip: A Transit Driven Movement towards a Seamless Total Travel Experience. National Rural ITS, Conference, September, 2012; http://www.nritsconference.org/downloads/Presentations12/TransitWorkshop_Connor.pdf

THE IMPACT OF TECHNOLOGY

Technology, particularly with the broad reach of smartphones and apps, has dramatically altered the ways in which people travel. It gives public transportation riders the information needed to plan, pay for, track in real-time, and complete their journeys; in the near future, it may even allow riders to schedule their own demand-response trip and receive same-day service. Apps allows travelers to connect with and pay for private options, and to plan ridesharing with others. Technology enables customers to identify safe walking routes, access bike sharing systems, and summon rides on-demand. Apps also facilitate travel by individuals with disabilities, facilitating wayfinding and transit usage.[3]

To further the reach of technology's benefits, the Accessible Transportation Technologies Research Initiative (ATTRI), led by the Federal Transit Administration and the Federal Highway Administration, is currently identifying, developing, and deploying new transportation technologies, applications or systems that address the mobility challenges of all travelers, with an emphasis on travelers with disabilities.

As the traveling public, including mobility managers and their customers, embrace these rapidly emerging technologies, it is important to acknowledge that technology is only one piece of the solution. What other types of supports will mobility managers' customers need? Who are the key partners in ensuring that all customers can experience the benefits of a seamless journey? We begin by looking at what defines a "complete trip."

[3]Learn more about apps for older adults, people with disabilities, and low-income individuals in "There's an App for That: Apps Help Mobility Management Professionals Empower Their Customers" (NCMM 2014).

ASSISTANCE IN PLANNING COMPLETE TRIPS

Often customers intuitively connect their trips—for example, cycling to transit from home and then again to their final destination. Other customers will rely heavily on technology, and others will value one-on-one assistance in integrating the segments of their journey.

There is no doubt that technology is ushering in new ways to choose the transportation mode(s) and price point that best fit an individual's needs and link those options into a seamless trip. Thus we are moving closer to fully connected "mobility on demand." As noted by an innovative mobility designer, "As we consider what type of vehicles will flourish in this "Mobility on Demand" (MoD) future, we should recognize the large opportunity to "right-size" our mobility infrastructure. While a growing number of consumers will be using these new multimodal mobility services, I expect many more will be using a "blend" of vehicle types to meet their mobility needs."[4]

[4] Sturges D: 'Mobility on Demand' and more efficient, purpose-built vehicles. https://www.greenbiz.com/article/mobility-demand-could-drive-efficient-purpose-built-vehicle-design

Already we are seeing widespread usage of apps who move us toward this blending of multimodal mobility services, most notably apps that aggregate local transportation information in one place, such as RideScout (smartphone app) and TransitScreen (a large-display app for public spaces). A new project, Mobility as a Service (MaaS), has been launched in California, to create "a seamless, door-to-door combination of transportation modes—public and private transit, bikeshare, rideshare, carshare, vanpool, taxi, employer commute benefits, electric scooter/ bike lease, pay-by-phone parking, future robo-taxis—to reduce private auto usage. A 'Mobility Aggregator' gathers all services into a unified smartphone app with easy fare payment, one-stop billing, and integrated employer subsidies. MaaS dissolves the boundaries between different transport modes, providing a more customer-centered experience while improving the efficiency of the entire transport system."[5] Google Transit was one of the first web-based apps that allowed travelers to plan trips by mode (driving, transit, walking, or cycling); the site now provides this information for hundreds of cities and towns. Many other transit systems and communities, including some states (e.g., Idaho, Pennsylvania, Oklahoma), have launched their own one-click websites that include all relevant transportation information, including connections between legs of a journey, and enable passengers to compare trip options.

[5] "Mobility as a Service (MaaS). Joint Venture." http://www.jointventure.org/index.php?option=com_content&view=article&id=1273&Itemid=789

Customers who mobility managers assist often benefit from a "high touch" personal approach to planning their trips, which requires that mobility managers develop a full understanding of the customer's journey. By doing so, the mobility manager can experience the trip through the eyes of the customer and be fully aware of potential issues facing the customer. A journey map is a good tool for developing this empathetic understanding, as it documents every step of how a customer plans and accesses all the travel modes he or she uses. Using their professional skills, mobility managers can guide customers in making the journey as seamless as possible, navigating stops or temporary diversions (e.g., delayed service, sidewalk construction)[6] that impact the journey along the way.

Another tool that can be helpful in working with customers is the Individualized Transportation Plan template and worksheets, used to identify travel needs, options, and other considerations (e.g., interim stops, accompanying passengers). Travel training, often done by mobility managers, can help customers learn how to implement a transportation plan so they can independently and safely navigate their community.

[6]To learn more about customer journey mapping, visit NCMM's Understand and Advocate page and the Design Thinking for Mobility website.

COMPLETE TRIP SCENARIOS

Below are some examples of integrated trips for different types of customers, demonstrating ways in which mobility managers can assist customers in completing a safe, comfortable, and convenient trip. Many of these scenarios are based on real-life examples shared with NCMM.

URBAN COMMUTE VIA PUBLIC TRANSIT FOR INDIVIDUAL WITH LIMITED WALKING ABILITY

Elaine is a city dweller with ample access to both bus and rail, but must plan her trips to limit her walking, as her arthritis sometimes impedes her ability to walk more than a couple of blocks. Luckily, a cross-town bus stops at her front door and, during rush hour, makes frequent trips from her home to within two blocks of her office. Prior to leaving home, Elaine checks her smartphone app which shows bus stops, scheduled arrival times, and real time updates on her route and other routes stopping at the same location. If her usual bus is late, she can opt to take another bus to the subway, located half a mile from home. Although the bus stop is located within 100 feet from her home, Elaine must still allow time to navigate the sidewalk during inclement weather and assess whether or not she can easily alight the bus when it arrives. This is a particular issue for her during the winter months when snow and ice accumulate on the sidewalk and curbs. She must also be aware of similar conditions when exiting the bus; she sometimes chooses to exit at a stop further from her office because exiting there is somewhat easier. (Perhaps in the near future there will be an app that provides information on the condition of sidewalks near transit!)

By using technology, Elaine is able to act as her own mobility manager, ensuring the walking and transit components of her trip work seamlessly. The real time app helps her avoid having to wait outside, where there is no bus shelter, during inclement weather. She is also able to add money to her farecard in many ways, even before she leaves for her journey: she can do this on the transit website, or she can do this on the bus, at the subway station, or at a local store.

OLDER ADULT TRAVELING TO MEDICAL APPOINTMENT

Like many older adults today, Jonathan hopes to remain in his home as long as he is able. He no longer drives and is dependent on paratransit services or friends to take him to his ongoing medical appointments to monitor several chronic health conditions. He uses a cane, and because of other disabilities, is eligible to ride paratransit service in his community. To take paratransit, Jonathan must plan his trip well in advance, calling to reserve a ride at least 24 hours before he needs to travel (he does not own a computer and so cannot reserve the ride via the Internet). Thus Jonathan's "trip" has several steps in addition to the actual journey, and each could be plotted on a journey map to identify any potential issues that need to be addressed:

- Plan his trip 1-3 days in advance
- At least 24-hours before the trip, call to reserve his ride during the transit agency's scheduled hours
- Inform the reservation agent if someone will accompany him on the trip
- Provide as much information as possible about appointment times and pick-up and drop-off locations
- Research the weather for the day of his travel so he is dressed appropriately in case he has to wait the entire 30-minute window before his paratransit ride arrives
- Bring a cell phone so the provider can notify him of any delays or so he can contact his paratransit provider if his appointment is running late and/or he needs to reschedule his appointment
- Bring his ID and carry exact change to pay for the trip.

When traveling to appointments located outside of the paratransit service's area, Jonathan must verify that it is at a time convenient for a friend to drive him there. If no friend is available, he calls a local taxi company. Jonathan is fortunate that his local senior agency provides reduced price vouchers that he can use to reimburse friends for their mileage or to pay for taxis, but some sometimes he forgets to pick up a new voucher book when his old one runs out.

Jonathan's situation is indicative of that faced by many older adults, a segment of the population expected to increase to 20% of the U.S. population by 2030.[7] As individuals age, their travel needs change significantly, including an increased dependence on alternative travel modes once they can no longer drive. And as their travel needs become more complex, mirroring those of Jonathan, a mobility manager can assist them in using all transportation modes available to them to access destinations. For example, mobility managers can help customers with the paratransit eligibility process, work with them to create an individualized transportation plan, and include a back-up option in the plan for when paratransit is not available, such as through a volunteer transportation service, taxi voucher program, or a shared-ride option.

YOUNG ADULT COMMUTING TO WORK VIA BIKE AND SUBWAY

Like many young adults, city-dweller Luke opted to forgo owning a car and live in the city. Unless the weather is bad, Luke's daily commute begins when he grabs his bike helmet, bicycle lock, and fare card, hops on his bike and rides about eight blocks to the nearest subway station. His city recently expanded its number of bike lanes, so Luke can travel without having to cut in and out of car traffic. Once he arrives at the subway station, he parks and locks his bike, enters the station and waits on the platform for the next train. After his train ride, he crosses the street to the office building where he works. On bad weather days, Luke walks two blocks to the nearest bus stop, where he can catch one of two different routes that will deposit him at a subway station one stop further out from the one he bikes to. Before his first transit trip, Luke bought and registered his farecard on-line and can replenish it any time in the same manner.

[7]Ortman, Jennifer M., Victoria A. Velkhoff and Howard Hogan. An Aging Nation: The Older Population in the United States, U.S. Census Bureau, May 2014; http://www.cdc.gov/features/agingandhealth/state_of_aging_and_health_in_america_2013.pdf

A 2014 article noted that over the previous decade, the number of people who bike to work has increased by 60%.[8] Although bicyclists account for less than 1% of all commuters, the number of individuals commuting to work via bike has more than doubled in many large cities. The advent of bikeshare programs and related infrastructure improvements—such as dedicated bike lanes and pedestrian friendly streets—has positively impacted this commuting choice. Almost all bikeshare programs, located primarily in urban areas, have their own app linking to available bikes and nearby bike stations.[9] This information is also often included in mobility aggregator apps.

Mobility managers can encourage biking as an alternative commute option by partnering with local transportation and commuter agencies to promote the development of bicycle infrastructure in cities and discussing the option with customers looking for an active, low-cost way to commute. Mobility managers can reach out to local employers and educate them about the federal pre-tax Qualified Bicycle Benefit they can offer employees for reasonable expenses incurred for the purchase, maintenance, and storage of a bicycle used to commute to work. Through partnerships with community bikeshare programs, mobility managers can educate customers about the benefits of membership. In the long term, mobility managers can also lend their voices in support of improved/expanded bike lanes within the communities they serve.

[8]Biking to Work Increases 60% in Past Decade, USA Today, May 9, 2014; http://www.usatoday.com/story/news/nation/2014/05/08/bike-commuting-popularity-grows/8846311/

[9]Learn more about bikeshare programs in the NCMM's "The Versatility of Cycling: Programs Evolve to Respond to Diverse Customer Needs (National Center for Mobility Management, 2014), which reviews types of bicycle programs that exist, the populations they are serving, the innovations being implemented to expand the numbers of people who bike, and the community partnerships that are making these programs happen.

INDIVIDUAL WITH MILD COGNITIVE DISABILITY TRAVELING TO WORK

Dustin is an adult male with a mild cognitive disability who is able to travel to work using public transit. He needs to practice traveling on the bus and transferring to a second bus before he feels reassured he can travel safely. Dustin's case worker referred him to travel training to assist with this. Prior to beginning his job, Dustin met with a travel trainer who provided a current bus schedule, aided Dustin in obtaining a transit pass, and helped him identify when the bus would arrive and how to coordinate transfer times. The trainer also accompanied Dustin on a practice trip to and from work and helped him to develop strategies to ensure he traveled successfully and could handle any unexpected changes along his journey (e.g., a late bus arrival). Now that he is comfortable riding the bus, Dustin successfully implements his multi-step journey by doing the following:

- Making sure he has his cell phone so he can call his employer if the bus is late or he misses his transfer.
- Carrying information with the route and number of each bus he takes to work.
- Walking three blocks to the nearest stop.
- Asking the driver to announce the stop at which he needs to exit the bus.
- Sitting near the driver, at the front of the bus.
- Watching for landmarks near his transfer point.
- Walking one block from the bus stop to another stop to wait for his second bus.
- Crossing the street and entering his place of employment.

As noted in a 2011 Congressional hearing, transportation is an ongoing barrier for many individuals with cognitive disabilities.[10] Only 11 percent of individuals with cognitive disabilities work full time, and 33%, the highest number among individuals with disabilities, live at or below the poverty line.[11] Included among this population are veterans with traumatic brain injuries who are transitioning back into civilian life.

The complete trip for a person with a cognitive disability begins weeks if not longer before the actual first journey commences. It involves an entire support network that teaches the individual to plan and use the transportation system, and takes into account the entire built environment that surrounds the transit infrastructure as well as the individual's home. Contingencies have to be planned for when there are unexpected disruptions in any of the steps of the journey, such as if there is construction that closes a sidewalk, or if a bus doesn't arrive because of mechanical problems. A new cell phone–based app, called the Traveler Assistance Device, is being piloted in Florida that serves as a virtual companion to individuals with a cognitive disability traveling on fixed-route buses to ensure they get to their destination.

Mobility managers can assist individuals with cognitive disabilities put all the pieces of this complex travel puzzle together so they can successfully navigate their community. The customer journey map, individualized transportation plan, and travel training are all valuable tools to assist Dustin and other travelers with a cognitive disability.

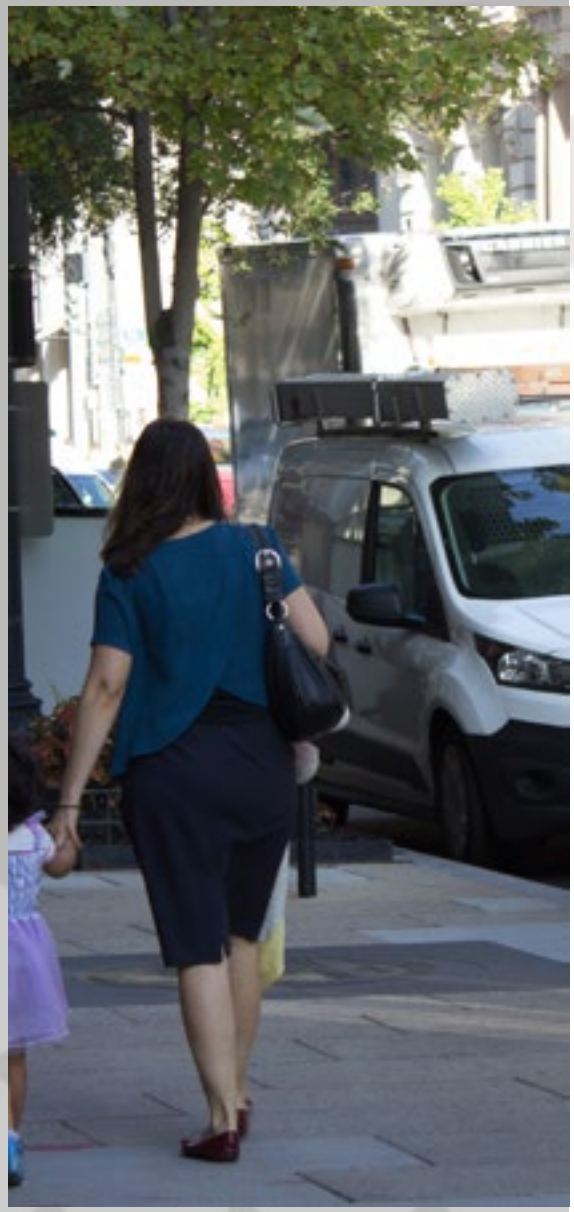
[10]Examining Improving Employment Opportunities for People with Intellectual Disabilities. Hearing of the Committee on Health, Education, Labor and Pensions, United States Senate, March 2, 2011; http://www.gpo.gov/fdsys/pkg/CHRG-112shrg80955/pdf/CHRG-112shrg80955.pdf

[11]Erickson, W. Lee, C., & von Schrader, S. (2012). 2011 Disability Status Report: United States. Ithaca, NY: Cornell University Employment and Disability Institute (EDI); http://www.disabilitystatistics.org/reports/2011/English/HTML/report2011.cfm?html_year=2011&fips=2000000&subButton=Get+HTML#emp-state

DAILY CARPOOL TO WORK

Suburban neighbors Josh and Mike carpool to jobs in the city. Their work schedules were somewhat different, but because Josh's employer allows flextime, they were able to work out a schedule that suits them both. Since his employer provides designated parking for carpools and vanpools, Josh is the driver. They meet every morning at 7 a.m. unless Josh has emailed with information about traffic delays that may impact their drive. Unless Josh emails, asking him to leave earlier, Mike leaves his house at 6:55 and meets Josh, who is behind the wheel and ready to go. They make the 20-mile drive into the city using HOV-2 lanes, reducing the time it would take to commute if either were driving alone. Josh drops Mike off at his office and continues on to his workplace, where he parks in his designated spot and takes the elevator to his office on the 10th floor.

Mobility managers can facilitate ride-matching for their customers by partnering with local transit agencies or local transportation management associations to help identify carpool buddies. In addition to educating customers and employers about the benefits of carpooling, mobility managers can refer them to various ridesharing websites and other resources.



A FAMILY MAKING A TRIP WITH MULTIPLE STOPS

Carmen is a hotel worker with two pre-school aged children. Although her shift begins at 7 a.m., she must drop her daughters off at child care prior to reporting to work. Her morning begins at 5:15 when she wakes up and dresses the girls, gives them breakfast and gathers up the snacks and materials they need to take with them to the day care provider. They leave home by 6:15, walk three blocks to the bus stop, arriving five minutes before the bus is due, and catch the bus that will take them within a block of the day care provider's home. Luckily, the route they take to the bus stop is on a well-lit street and well-traveled, so Carmen doesn't worry much about walking with young children so early in the morning. After exiting the bus, Carmen walks the girls to the provider's home, and helps to get them settled. Carmen then walks two blocks in the opposite direction to catch the bus she needs to reach the hotel. Because a large percentage of workers at the hotel depend upon public transportation to reach their jobs, the hotel partnered with the local transit agency to provide a covered bus shelter at the hotel entrance. Carmen is also able to take advantage of a subsidy offered by her employer that covers 25 percent of her transit costs.

The presence of young children and work schedules both impact trip-chaining activities. According to one study, women in two-adult households with children under the age of five were nearly two times more likely to trip chain than men.[12] A real-time transportation app is invaluable to commuters like Carmen, as the ability to time her trips and transfers is crucial to her successful commute.

[12]Gendered Innovations, Public Transportation: Rethinking Concepts and Theories. http://genderedinnovations.stanford.edu/case-studies/transportation.html#tabs-2

Scenarios such as those noted above can be powerful tools in helping mobility managers, transit systems, and caregivers understand all the components that are involved in an individual's journey to work, medical care, or indeed to any destination. Creating a step-by-step scenario allows all the details of the journey to emerge, and areas for potential barriers to be identified and dealt with proactively. Scenarios are used in many business sectors, and there are good tools online for creating them.[13]

[13]Scenarios and Journey Maps Help Designers Become Storytellers. http://www.uie.com/articles/storytellers/

INFRASTRUCTURE TO SUPPORT SEAMLESS TRIPS

The presence of transportation-related infrastructure to enable individuals to travel by their mode of choice is key to their being able to navigate a complete trip. Below are some of the infrastructure considerations that become part of an individual's journey.

Complete streets. Basic walking infrastructure is of benefit to all travelers, regardless of modes. Complete streets include:

- Level, passable sidewalks with curb cuts that allow people using wheelchairs or pushing strollers, suitcases, or other wheeled items, to connect to carpools, vanpools, or transit stops. The sidewalks should be free of tripping hazards for all users, particularly those with impaired vision and those with walking disabilities.
- A safe place for cyclists to operate, ideally segregated from other vehicular traffic
- A protected space for individuals to cross streets with mid-cross islands and accessible signaling, especially for large intersections crossing four or more lanes of traffic
- Dedicated transit lanes to enable efficient service and easy on- and off-boarding for passengers

Mobility managers can partner with transit agency, public works department staff, and other agencies to identify street or sidewalk infrastructure that may pose a barrier to individuals, particularly those with a disability. When implemented in conjunction with universal design,[14] these concepts make public space usable for the widest range of individuals. Achieving optimum results depends on a coordinated effort between public works agencies, local governments, transportation and the community and is best achieved during the planning process. Given their knowledge about the accessibility challenges faced by customers, mobility managers are well positioned to act as advocates on their behalf during this process.

Other physical and systematic infrastructure that supports multimodal journeys include

- Available parking for vanpools and carpools
- Kiss-and-ride areas for transit users
- Secure areas for bike storage, bike racks on buses or accommodation of bikes on subway/commuter trains
- Coordination of schedules across agencies/systems to ensure ease in transferring
- Consistent branding for ease in identifying various service modes

Customer perceptions are influenced by the ability to interact with the physical environment and the infrastructure supporting the trip. A positive perception of ease of access and use of services reflects public confidence in the service. Consider how customers describe their experience.

- Do they find it easy to gain access to the stop or station?
- Do they feel confident embarking on a trip by bike?
- Are the transit options they rely on easy to use and access?
- Are the connections seamless?

Perceptions about customer safety are another element of a successful complete trip. Safety considerations expand beyond the actual transportation mode. They include safe access via paths, walkways, and streets, and infrastructure that protects riders from the elements. Customers are more likely to frequent transit stations and stops that are located in well-lit and well-traveled pedestrian areas. Amenities such as shelters that provide protection from the elements, benches and information displays also enhance a feeling of safety. Perceptions may also be influenced by easy access to nearby community amenities such as shopping and recreational facilities.

Mobility managers' knowledge of the service challenges faced by customers can lend credence to proposed service improvements and changes. Mobility managers can promote policies supporting multi-modal access and use by becoming involved in the planning process and working to ensure these policies become part of the community's transportation plan. They can partner with departments of housing and economic development to ensure future land-use developments incorporate transit oriented development, complete streets and universal design principles. Retail, community and housing development projects that incorporate these principles improve access to transportation for all area residents.

ADVOCATING FOR IMPROVEMENT THROUGH THE PLANNING PROCESS

As advocates for improvement, mobility managers can work to ensure that the development of policies and programs within their communities provide customers the supports and services needed to achieve the complete trip. The current federal surface transportation law mandates that communities receiving grants from FTA for rural and urban transportation include public input in the planning process. This requirement offers mobility managers an opportunity to advocate during the planning process for service improvements or changes that enhance the ability of customers to make the complete trip. By adding their voice, mobility managers can educate local decision makers, elected officials, and other stakeholders about service and infrastructure improvements needed to support the complete trip. Mobility managers can also introduce customers to the process and encourage their participation. Their input can help prioritize the implementation of strategies and services that build on existing resources. There are numerous planning processes through which mobility managers can advocate for improved connectivity.[14]

[14]An in-depth description of various planning processes and the role of mobility managers in facilitating public input into each can be reviewed in an NCMM information brief, Facilitating Public Input into Transportation Plans: The Role for Mobility Management Practitioners.

CONCLUSION

As the choice of diverse transportation modes within communities has grown, so too has the complexity of individuals' journeys. Mobility management practitioners are adept at assisting individuals with complex trip needs, as they have for years in assisting older adults, people with disabilities, and others who rely on publicly funded transportation options. This brief has introduced tools and strategies that assist mobility managers—and others in the transportation field—in developing an even more in-depth understanding of customers' transportation needs and how to assist them in achieving a seamless, efficient complete trip.

RESOURCES

Included below are resources that support customers and mobility managers in planning and implementing a complete trip in the most efficient and affordable manner.

- Smart Growth America, National Complete Streets Coalition. The coalition promotes the development and implementation of policies and programs guaranteeing that streets allow everyone safe access to employment, health care and other destinations via multiple travel modes. The organization advocates, conducts research, and provides technical assistance and services in support of complete street initiatives nationwide.

- Reconnecting America is a national organization working to integrate transit and economic development. Its focus on transit oriented development promotes mixed use community development efforts in which housing, business and recreation are easily accessible via public transit.

- Center for Transit Oriented Development provides information related to development around existing and proposed transit stations in 50+ metropolitan areas throughout the U.S.

- Wayfinding Pocket Guide, outlines considerations for individuals as they navigate their communities.

- Accessible Pathways and Livable Communities Pocket Guide presents concepts for consideration by communities working to improving transportation facilities, sidewalks, and routes to transit.

- Checklist for Assessing the Accessibility of Transportation and Mobility, developed to assist local stakeholders assess the accessibility of a transit route by evaluating routes and trips.

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