



Dublin Mobility Plan

Phase III Final Report

City of Dublin, Ohio

January 2020



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1 EXECUTIVE SUMMARY

Background

The Dublin Mobility Plan is the City's strategic plan for innovative transportation network improvements to support the community's evolving mobility needs. The Plan was launched following a vision-setting workshop in 2017 that defined a shared transportation vision to guide policy, design, and implementation strategies for multimodal improvements throughout Dublin:

"To be a city of strong, growing, prosperous and inclusive communities, supported by excellent mobility options that bolster a thriving economy, accommodate new and established populations, facilitate healthier lifestyles, encourage social connection, and allow all Dubliners to fulfill their potential."

Phase II of the Dublin Mobility Plan, completed in 2018, focused on priority setting and action plan development, in alignment with the City's "Connected Community" theme. Five (5) strategic mobility priority areas were developed in response to the objectives outlined above:

1. Shuttles & Circulators (Microtransit)
2. Bike Share (Shared Micromobility)
3. Complete Streets
4. Wayfinding
5. Mobility Hubs

Dublin Mobility: Phase III

Implementation of strategies in each of these priority areas was the hallmark of Phase III of the Dublin Mobility Plan, which began in 2018 and continued through 2019. This report reviews these efforts, which included:

- **Microtransit:** The City, through its partner SHARE, operated two "microtransit" pilot programs in 2019, providing new services that were designed to meet the needs of seniors and people with disabilities and to provide first/last-mile connections for workforce commuters. The services have proven valuable and have been extended into 2020.
- **Shared Micromobility:** Dublin implemented a bike share pilot, in partnership with operator Lime, between May and December 2018. The pilot was considered a success and additional efforts are under way to bring a new operator (or operators) to Dublin in 2020.
- **Complete Streets:** The City of Dublin added to its 2018 Complete Streets Resolution by participating in MORPC's Smart Region Task Force and passing a resolution in support of the region's "Smart Streets" policy in October 2019.
- **Wayfinding:** Several wayfinding concepts for Dublin's shared use paths were developed and installed in spring 2019 and were determined to be viable for a longer-term installation pilot, which will be executed along two shared use paths in 2020.
- **Mobility Hubs:** Dublin has continued its efforts to identify collaborative opportunities to develop a series of mobility hubs throughout Dublin to improve access and facilitate convenient transitions between travel modes.

Key Outcomes & Next Steps

Throughout Phase III of the Dublin Mobility Plan, the City of Dublin has made significant progress in advancing its priorities through a series of incremental steps that yielded immediate impacts and informed future investments. These efforts have required strong administrative and staff leadership, with varying levels of support from public and private partners. Positive outcomes are apparent across each of the areas described in this report, with the following lessons and outcomes resonating throughout:

1. Demand for new mobility services exists.
2. Gaps in Dublin's mobility networks remain unfilled.
3. Effective service delivery requires cross-sector collaboration.
4. Strong City of Dublin leadership is paramount.
5. Program sustainability is a primary concern.

Moving Toward Program Sustainability

In order for Dublin to continue progressing toward its Mobility Plan vision and goals, the City will need to cultivate new partnerships, explore new policy approaches, and secure additional financial resources that will help to ensure the sustainability of its efforts.

Partnerships

Dublin's partnerships within the public and private sector have been integral to the progress made to date. Some of these partnerships, with entities like the Central Ohio Transit Authority (COTA), Mid-Ohio Regional Planning Commission (MORPC), Dublin senior living communities, and non-profit service providers, will need to be sustained and expanded. While others, including those with Dublin employers, developers, large institutions, and neighboring municipalities will need to evolve and grow to achieve maximum impact. The case must continually be made that the shared pursuit of Dublin's transportation and mobility vision will benefit all parties and help to engender a thriving, accessible, and sustainable community.

New Policy Approaches

In the face of local development pressures and the need to continually evolve within a rapidly expanding regional marketplace, Dublin should explore options for developing City policies that can create a support system for the new programs, services and resources that have been generated through the Mobility Plan. Options to be explored include development code updates, Parking Plan implementation, and creation of a transportation demand management (TDM) ordinance.

New Funding Models

Program sustainability will also require that Dublin develop new funding models to promote the viability of Mobility Plan programs and outcomes. Transitioning from the current model that leans heavily on Dublin Capital Improvements Program (CIP) funding to a more diversified model built around voluntary, value-based partnerships, codified assessments, and service-related revenue will help to ensure that these are sustainable resources for the Dublin community into the future. Options to be explored include private sector funding partnerships, branding/naming rights, parking revenue funds, and a new Dublin Mobility Fund.

2 INTRODUCTION

The Dublin Mobility Plan is the City's strategic plan for innovative transportation network improvements to support the community's evolving mobility needs. The Plan was launched out of a vision-setting workshop that brought a diverse range of stakeholders from across the Dublin community to outline mobility gaps and strategic improvement opportunities. That 2017 workshop defined a shared transportation vision that has guided policy, design, and implementation strategies for multimodal improvements throughout Dublin in the years since.

"To be a city of strong, growing, prosperous and inclusive communities supported by excellent mobility options that bolster a thriving economy, accommodate new and established populations, facilitate healthier lifestyles, encourage social connection, and allow all Dubliners to fulfill their potential."

This vision is articulated further through the following key objectives that continue to inform the Mobility Plan:

- **Support economic development**
Keep Dublin competitive as live, work, play preferences evolve and expand commute options by facilitating access to jobs for those within and outside of Dublin.
- **Promote equitable access to mobility**
Ensure access and mobility options for all residents, commuters, and visitors by ensuring ADA accessibility, enabling aging in place, and promoting Safe Routes to Schools.
- **Expand multimodal options**
Provide safe and effective walking, cycling and other multi-modal options for Dublin.
- **Improve public health**
Make Dublin a healthy place to live and work by reducing emissions, increasing walking and cycling, improving ecology, and reducing social isolation.
- **Preserve our environs by focusing future growth**
Focus new growth in walkable, mixed-use centers to preserve Dublin's character and existing neighborhoods and protect natural environment & open spaces.

Phase II of the Dublin Mobility Plan, developed in 2018, focused on priority setting and action plan development, in alignment with the City's "Connected Community" theme. Five (5) strategic mobility priority areas were developed in response to the objectives outlined above:

1. Complete Streets
2. Shuttles & Circulators (Microtransit)
3. Bike Share (Shared Micromobility)
4. Wayfinding
5. Mobility Hubs

Implementation of strategies in each of these priority areas was the hallmark of Phase III of the Dublin Mobility Plan, which began in 2018 and continued through 2019. This report reviews these efforts, which are summarized briefly below, and provides an overview of key findings and next steps for continued pursuit of the community's transportation vision and goals.

Microtransit

Dublin Mobility Phase III's most substantial effort involved the implementation of two "microtransit" pilot programs that aimed to fill gaps in fixed-route and privately operated transit networks with free, customized, app-driven circulator and shuttle services. The first of the two pilots was designed to meet the needs of seniors and people with disabilities, including residents who choose to age in place, who increasingly need mobility options for non-medical trips. The second was designed to provide first/last-mile connections for workforce commuters between fixed-route COTA transit service and Dublin employers. The City, through its partner SHARE, operated the pilots between January and December 2019, providing a combined 6,260 rides. The services have proven valuable to those who use them on a regular basis, including many Dublin residents and a small number of workers, and the City has extended them into 2020.

Shared Micromobility

The City implemented a bike share pilot in partnership with Lime between May and December 2018, with goals to provide safe and affordable multi-modal transportation options, reduce traffic congestion, and maximize carbon-free mobility for employees and visitors. The City supported the pilot by installing bike racks and painting bike parking spots to ensure the orderly parking of bikes throughout the City. Operating partner Lime managed and maintained all vehicles. The pilot initially included conventional bikes and later expanded to include pedal-assist e-bikes. Weekly ridership was relatively robust from May through July, with more than 600 rides per month, but declined to below 300 rides per month by October. The pilot was considered a success and additional efforts are under way to bring a new operator (or operators) to Dublin in 2020.

Complete Streets

The City of Dublin passed a Complete Streets Resolution in June 2018, recognizing the importance of a transportation network that serves the mobility needs of all travelers in meeting the City's mobility, economic, health, and sustainability goals. Dublin continued to align its capital project investments with those of the Mid-Ohio Regional Planning Commission (MORPC) by participating in their Smart Region Task Force and passing a resolution in support of MORPC's "Smart Streets" policy in October 2019.

Wayfinding

The Dublin Mobility Plan recommended development of a comprehensive wayfinding system along the City's shared use paths for pedestrians and cyclists. To advance this concept, several wayfinding concepts were developed and installed in spring 2019 in support of the Cycle de Mayo bicycling event. The approach was determined to be viable for a longer-term installation pilot, which will be executed along two shared use paths in 2020.

Mobility Hubs

The concept of developing a series of mobility hubs throughout Dublin to improve access and facilitate convenient transitions between travel modes remains popular and viable. However, there was little movement in this area in 2019. The City continues to communicate with potential project partners, including property owners, developers, and COTA in pursuit of opportunities to develop hubs in various locations.

3 MICROTRANSIT



BACKGROUND

Two of the most compelling ideas discussed during Phases I and II of the Dublin Mobility Study revolved around the idea of new Dublin “microtransit” services: high-quality, frequent, and locally-oriented transit services that provide connections to major destinations in Dublin. New or expanded service that met these objectives would address three of Dublin’s principal mobility objectives: “support economic development,” “promote equitable access to mobility,” and “expand multimodal options.” These services would further complement existing Central Ohio Transit Authority (COTA) service, extending the reach of the regional bus network, providing first-mile/last-mile connections, and promoting “park once” destinations in Dublin.

Following the planning efforts in Phases I and II, the City of Dublin committed funding to support two pilot efforts in 2019. The first service was designed to meet the needs of seniors and people with disabilities, including residents who choose to age in place, who increasingly need mobility options for non-medical trips. The second was designed to provide first/last-mile connections for workforce commuters between fixed-route COTA transit service stops and Dublin employers. The City launched the first service (the Senior/ADA Circulator) in January 2019, followed in March by the launch of the Workforce Shuttle.

The pilots operated through December 2019 and provided a combined 6,260 rides and 2,352 vehicle trips. More than 4,700 rides were provided to seniors and people with disabilities, enabling car-free access to local commercial, recreational, educational, and entertainment destinations. Another 1,539 rides provided valuable connections for commuters accessing local jobs and employers like AC Marriott, Friendship Village, and Stanley Steemer. At the end of 2019, the City of Dublin committed to sustaining these services beyond the “pilot” stage into 2020. The following sections provide additional detail on the pilot efforts and lessons learned that can be applied to their ongoing operation.

Microtransit Defined

An increasingly common approach to operating a circulator service in lower-density suburban areas such as Dublin is the “microtransit” model. Microtransit is an app-enabled multi-passenger transportation service that provides a flexible first-mile/last-mile mobility option that may connect to existing transit networks or operate in place of fixed-route service in low-density or hard-to-serve areas. This type of on-demand, flexible service is particularly relevant for Dublin because many of the City’s key destinations and employers are not served by COTA fixed-route transit. Microtransit services can be operated by private operators (either independently or as agency-contracted service), or directly by transit agencies using on-demand dispatching software, which may in turn be contracted or developed in-house.

The distinguishing feature of microtransit is that unlike fixed-route service, the service is operated dynamically, with real-time adjustments according to rider demand patterns and requested stop locations. Often lacking fixed stop locations, microtransit is typically hailed by mobile application or telephone hotline. Typically, microtransit service is “anchored” at one or more existing transit stops (e.g. transit centers, terminus stations, or park-and-rides) and provides on-demand service to destinations within a designated zone. In contrast to more traditional demand-response or ADA paratransit models in which service requires pre-scheduling, reservations, or runs on a pre-determined fixed route and schedule, microtransit uses real-time information (e.g. traffic conditions and rider demand) to make “live” operational decisions.

DUBLIN SENIOR/ADA CIRCULATOR

Overview

Dublin’s Senior/ADA Circulator service was designed in coordination with Dublin’s Aging in Place efforts, intending to meet the needs of seniors living independently in private homes or in senior living communities, as well as community members with disabilities in need of new mobility options. The leading objective of the pilot was to improve the mobility options available to Dublin’s senior populations through a connective mobility service that would greater enable Activities of Daily Living (ADL). The service would focus on transportation to destinations that could enhance quality of life, such as the Community Recreation Center, the new Dublin Branch of the Columbus Metropolitan Library, local restaurants, and shopping destinations.



Demographic and Behavioral Context

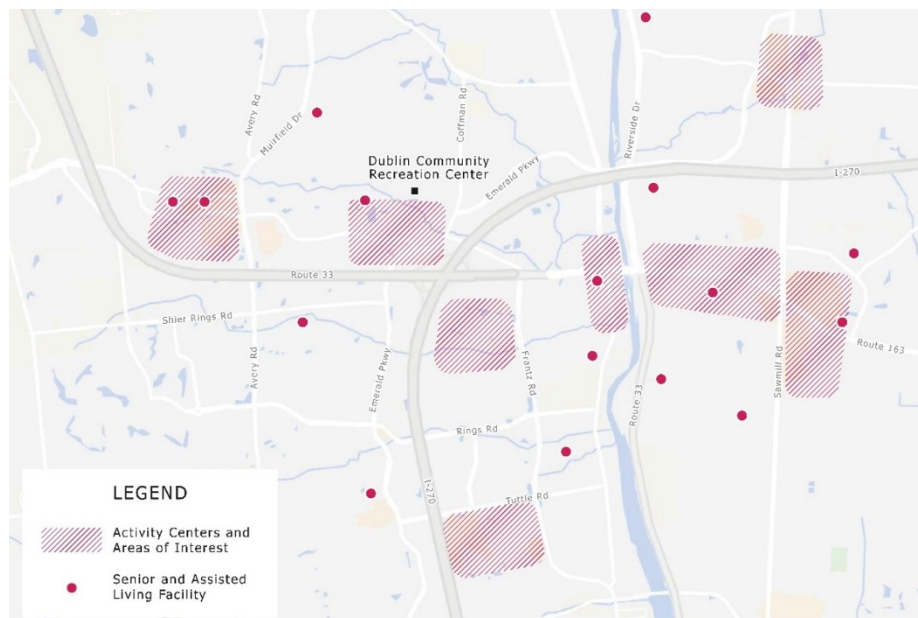
The number seniors age 55+ in Dublin is increasing and the Aging in Place Plan identified “community connections” as one of the community’s top priorities. However, many corridors in Dublin feature auto-oriented roadway designs that make walking, biking, and accessing transit particularly challenging for older adults. According to the United States of Aging Survey, 26% of respondents ages 60 to 70 said they are not confident their community will have all of the

resources they need to help them be healthy and independent into their 70s and 80s.¹ The majority of respondents in this survey (60%) strongly agreed they feel safe walking in their communities, while the same share (60%) reported they never walk to places they regularly visit. Among the community limitations older adults often face is the lack of safe, frequent, and reliable public transit, with just 22% of older adults agreeing their community's transit service is "acceptable." According to a 2014 study by the American Association of Retired Persons (AARP), 87% of those over age 65 want to stay in their current home and community as long as possible.² However, older adults in this study indicated that access to transportation, fresh food, and green space were their top priorities in considering where to live. Accessible and convenient transportation options support older adults who want to age in place. Further research conducted by the American Geriatrics Society found correlation between the frequency of leaving the house and mortality in individuals aged 70 to 90. The study found that decreasing frequency of going out was associated with negative social, functional, and medical characteristics.³

2019 Pilot

The City of Dublin issued a request for proposals (RFP) for the pilot program in September 2018. The solicitation included identification of several target areas that should be addressed in the pilot (Figure 1). The RFP emphasized route development, community engagement & marketing, ADA accessibility, and flexibility in the pilot and established a preliminary list of key performance indicators (Figure 2), which was shared with the second pilot service.

Figure 1 Dublin Senior/ADA Circulator – RFP Target Service Areas



¹ National Council on Aging. "The 2012 United States of Aging Survey." 2012. Accessed online at <https://www.aarp.org/content/dam/aarp/livable-communities/old-learn/research/the-united-states-of-aging-survey-2012-aarp.pdf>.

² AARP. "What Is Livable? Community Preferences of Older Adults. 2014. Accessed online at https://www.aarp.org/content/dam/aarp/research/public_policy_institute/liv_com/2014/what-is-livable-report-AARP-ppi-liv-com.pdf.

³ Journal of the American Geriatrics Society. "Frequency of Leaving the House and Mortality from Age 70 to 95." 2018.

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Figure 2 Dublin Microtransit Pilots – Key Performance Indicators

Category	Purpose	Metric
Service / Operating Description	Establish a framework and overview of the services that are being provided	- # of shuttle routes, lengths, # of stops per route
		- Service operating profile (hours/trips per day)
		- Average round trip times
Accessibility	Identify target users and verify that the appropriate destinations are being served	- Number/location of participating employers
		- Number/location of participating senior centers
		- Additional stops/origins/destinations requested
Utilization	Support ROI calculations and fine tune future service operations	- # of boardings and alightings per stop location
		- Trips booked vs trips taken, including reservation method
		- Peak load (by time of day and segments)
	Understand portion of actual riders in relation to the pool of potential riders	- # of unique users (Senior/ADA or Workforce)
		- # of Senior/ADA residents with access to the service
		- # of Employees with access to the service
Return on Investment	Decipher service / route productivity and efficiency	- Total operating cost, revenue hours, and rev. miles
		- Cost per trip/rider, revenue hour, and rev. mile
		- Riders per revenue hour and revenue mile
	Uncover economic development, partnership, and access benefits	- Partnership opportunities with other services
		- Retail participation and benefits to businesses
		- Improved access to jobs, services, activities
Quality of Life / User Experience	Understand the impacts on access to activities and employment for Dublin residents and workers	- # of trips per unique user
		- Transfers to/from COTA
		- Pre- and post-Pilot surveys on user access
	Track safety and customer satisfaction indicators	- # of reported incidents
		- Riders utilizing “emergency ride home” provisions

Local provider SHARE was selected to operate the Dublin Senior Circulator pilot, which officially launched in January 2019 and was designated to run through June 2019. The service was offered, fare-free, to all Dublin residents, though trips were initially required to begin or end at one of Dublin's senior assisted living communities, including:

- Avondale
- Dublin Retirement Village (DRV)
- DRV-Assisted Living
- The Convallarium
- Friendship Village of Dublin
- Sunrise of Dublin
- Village at Heatherstone
- The Grand of Dublin

The pilot prioritized service to local retail, grocery, and civic destinations, including:

- Grocery stores (e.g. Aldi, Walmart, Meijer, Trader Joe's, Kroger)
- Bridge Park
- Mall at Tuttle Crossing
- Coffman Park
- Dollar Tree
- Dublin Metro Library
- Dublin Community Rec Center
- Dublin Food Pantry
- Giant Eagle
- Historic Dublin
- Hobby Lobby
- Scioto Park
- Syntero

Dublin and SHARE conducted extensive pre-marketing efforts through City communication channels, news outlets, social media, and events at local senior and community centers, culminating with a launch event on January 11th at the Dublin Community Recreation Center. Approximately 300 people attended that event and more than 80 rides were provided on that date. SHARE also distributed a pre-launch survey to inform route planning. Responses included:

- Most common *weekly* destinations included grocery (24%), Target/Walmart (16%), and restaurants (15%).
- These trips were currently being made via friends/family (40%), another shuttle service (24%), or driving themselves (22%).
- The most convenient trip times were listed as mid-day (52%) and afternoon (31%).
- 78% of respondents reported owning a cell phone.
- 93% of respondents said they would be likely to shop at a business that offered a discount to circulator riders.

Unlike ride-hailing, the pilot initially limited trips to a range of eligible origins and destinations, and it provided curb-to-curb rather than door-to-door service.⁴ SHARE initially operated the circulator as a series of three fixed-route loops, from January to March 2019, with pre-set timetables and target frequencies of 10 to 20 minutes. Service was limited to Tuesdays, Wednesdays, and Fridays from 10 AM to 2 PM. Performance between routes varied widely, with Route 3 carrying more than 80% of the ridership through March.

In response to these patterns, the City and SHARE pursued adjustments to achieve greater cost efficiency. From March to September 2019, SHARE operated the pilot using a combination of fixed-route and scheduled, dynamically operated services. During this period, service was still divided into three routes (Routes 1, 2, and 3), with Routes 1 and 2 operating as fixed-route services and Route 3 operating with flexible routing based on riders' requested origins and destinations. Route 1 switched from fixed-route to scheduled, dynamically operated service in May 2019.

Route 3 generated the highest ridership of the three routes, in part because of high demand from one of its assisted living destinations, Avondale. SHARE began providing dedicated levels of service to the Avondale community beginning in October 2019, with 67 pre-scheduled riders per week scheduled for recurring trips to eligible destinations.

Due to its relative success with flexible operations, SHARE adopted an entirely scheduled, dynamically operated service model starting in October 2019, under the banner "Senior 2.0," and discontinued the fixed-route services, Routes 1 and 2. Under Senior 2.0, all seniors ages 55 or older can book shared, scheduled rides on the SHARE app to the destinations described below from 10 AM to 3:15 PM, Monday through Saturday. Rides must be scheduled at least 24 hours in advance, and there must be a minimum of two riders booked on each trip for it to operate. These requirements are intended to improve pilot utilization per trip and cost efficiency.

As part of the pilot, SHARE also operated another circulator service for Dublin students with disabilities, which is monitored separately from the Senior/ADA Circulator described above. When Dublin City Schools are in session, SHARE operates a scheduled, dynamically routed circulator service between Dublin Jerome High School, local service provider UFIT,⁵ where students have after-school activities, and students' homes. In April 2019, Dublin City Schools and SHARE added a similar service with a post-secondary educational program for adolescents with disabilities, PATHS.⁶

2019 Performance

SHARE's Senior/ADA Circulator ridership steadily increased from the pilot's launch in January 2019 through October 2019, from 30 rides per month to more than 600 rides per month, respectively (see Figure 3). The service's productivity, expressed as the operating cost-per-ride, has improved steadily as a result, from around \$54 per ride Q1 2019 to about \$27 per ride, by Q4 2019.⁷ A large reason for this change was the evolution of the SHARE model from the fixed route

⁴ "Curb-to-curb" service refers to service that picks up and drops off passengers at specified addresses but does not provide additional assistance to passengers such as help with loading/unloading bags or help walking to/from building entrances, as in "door-to-door" service.

⁵ <https://ufitdublin.com/>

⁶ Postsecondary Access to Transition after High School (PATHS). <https://www.dublinschools.net/paths.aspx>

⁷ SHARE's original contract billed the City \$50 per service-hour and was used through July 2019. The billing rate increased in August 2019 to \$80 per service-hour to reflect actual costs and in line with the upgrade to Senior 2.0.

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schedule during the early part of the pilot to a dynamic, or scheduled, model. With this change, a typical vehicle trip increased from 2 passengers during Q1 to 10 riders per trip during Q4 2019.

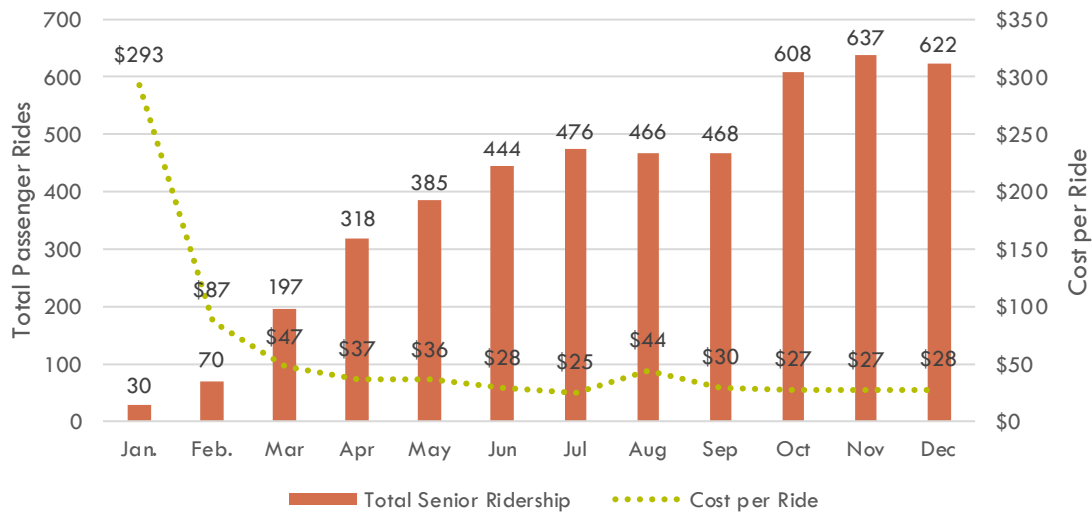
Between January and December 2019, the Senior Circulator served **4,721 rides**, operated **1,240 vehicle trips** in **two dedicated vehicles** for **2,560 service-hours**, and **cost \$160,397**. Overall, this is equivalent to an **average cost per ride of \$33.97**.

The most popular destinations of the Senior Circulator in 2019 included Walmart (Tuttle Crossing), Kroger (Dublin Plaza), Dublin Food Pantry, Dublin Recreation Center, Giant Eagle, Hobby Lobby, Dollar Tree, and the Mall at Tuttle Crossing (see Figure 4). Other common destinations are shown in Figure 5. The most common rider origin was the Avondale assisted living community, which generated 3,834 rides, more than 80 percent of the Senior/ADA Circulator's annual total ridership.

SHARE provides the City of Dublin the following performance indicators on a monthly basis:

- Total service-hours
- Cost expended
- Passenger rides
- Vehicle trips
- Boardings and alightings by stop

Figure 3 Senior Circulator Pilot Trends: Monthly Ridership and Cost-per-Ride

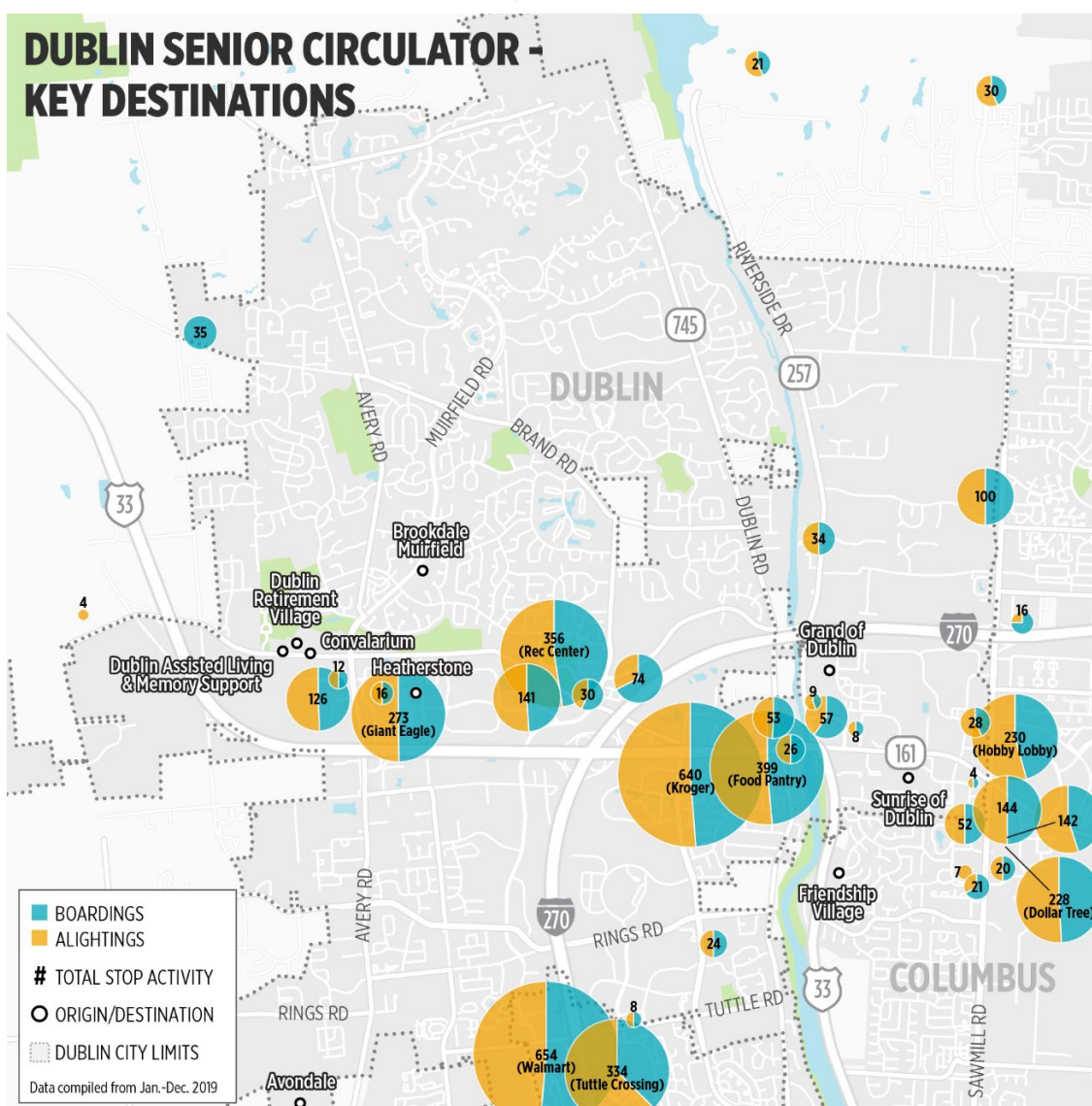


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Figure 4 Dublin Senior Circulator – 2019 Highlights

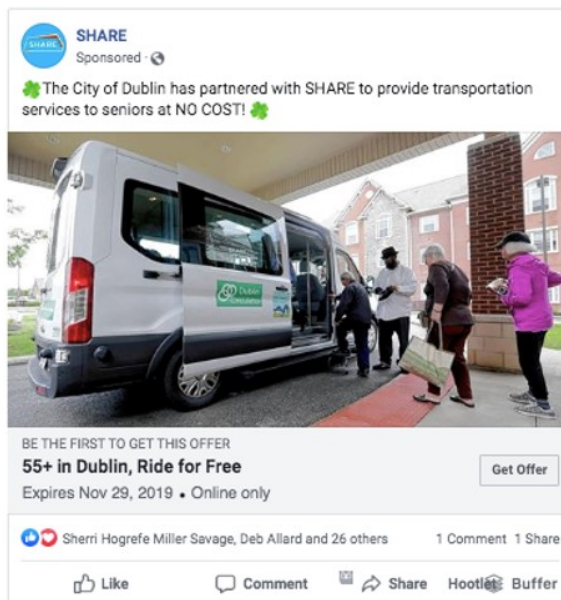
Top Senior Community Origin:	Avondale	3,834 total rides
Top Destinations:	Walmart	654 total rides
	Kroger	640 total rides
	Food Pantry	399 total rides
	Rec Center	356 total rides
	Tuttle Mall	334 total rides
Highest Monthly Ridership:	November	637 total rides
	October	608 total rides
	December	576 total rides

Figure 5 Dublin Senior Circulator – 2019 Key Destinations



Marketing and Outreach

SHARE and City of Dublin staff engaged in a series of marketing and outreach activities to inform the community about the pilot and encourage residents to ride the Circulator. Community outreach activities to support the program's launch included distributing SHARE handouts and brochures at key destinations (e.g. senior living communities, Dublin Rec Center, Bridge Park, Historic Dublin), hosting presentations with local non-profits and community-based organizations, and conducting focus groups with assisted living communities. Several of these events at Brookdale Senior Center, Village of Heatherstone, and Avondale were particularly successful in encouraging increased ridership. SHARE and City staff also increased local engagement by publicizing the Senior Circulator on local television news programs (WBNS, WOSU) and websites, where one senior rider called the service a "godsend."⁸



SHARE has continued to advertise the Senior Circulator via Facebook's digital advertising program. These advertisements have resulted in 33 downloads of the SHARE app, but no direct ride bookings. Since the launch of dedicated service at the Avondale assisted living community in October 2019, SHARE has thrown a Rider Appreciation Ice Cream Party to thank riders there for their consistent support.

Stakeholder and Community Support

The Mid-Ohio Regional Planning Commission (MORPC) supported the Senior Circulator with a key grant in 2019 that help expand service capacity and reach. \$63,496 in FTA Section 5310⁹ grant funding enabled the Senior Circulator to operate additional hours and extend service during special events, such as Dublin Irish Festival. In August 2019, SHARE's UFIT/PATHS service was granted funding from Dublin City Schools to operate their own long-term transportation program for students with disabilities. This program enables service above and beyond the funding committed by the City of Dublin. CASTO Properties, a local developer and property owner, contributed financial support for the Circulator in the form of a \$2,400 "Emerald" sponsorship, while others signed on as marketing partners, promoting the service at retail and service locations, while also offering discounts to riders.

⁸ Sole, Sarah. 2019, June 11. "Pilot Senior-Citizens Transportation, Program Initiatives Underway in Dublin." ThisWeek Community News. Accessed online at <https://www.thisweeknews.com/news/20190611/pilot-senior-citizens-transportation-program-initiatives-underway-in-dublin>.

⁹ Federal Transit Administration. "Enhanced Mobility of Seniors & Individuals with Disabilities." Accessed online at <https://www.transit.dot.gov/funding/grants/enhanced-mobility-seniors-individuals-disabilities-section-5310>.

Testimonials and Other Highlights

The following user testimonials illustrate user and stakeholder experience with the Senior Circulator:

- A group of seniors from the Avondale assisted living community schedule weekly SHARE ride to go to Dublin Rec Center to play competitive bridge.
- The project enlisted partnerships with nine local retailers who offer discounts to SHARE riders.
- A local retailer and channel partner, Kilwin's chocolate shop in Bridge Park, saw its sales double through participating in the senior discount program for SHARE riders.
- A female resident of Avondale with visual impairment regularly rides the Senior Circulator to Tuttle Mall.
- A resident with disabilities at Convallarium achieved a new level of independence by scheduling her first SHARE rider.
- The Senior Circulator brought seniors to one of Dublin's most notable community festivals, Irish Fest, driving local commerce.
- The Senior Circulator has room for improvement, as riders are particularly interested in longer hours of service on weekends and expanded coverage to local houses of worship.

DUBLIN WORKFORCE SHUTTLE

Overview

Dublin's Workforce Shuttle was designed to improve the ability of Dublin's workforce to reach places of employment in a simple, convenient, and cost-effective manner, supporting the City's overall economic development strategy of attracting and retaining jobs for a 21st Century workforce. The pilot service would provide first/last-mile connections for workforce commuters between fixed-route COTA transit service stops and major employers. A secondary focus for the pilot was to better connect Dublin workers with convenience goods and services, as well as other businesses, during the workday, lowering one of the chief barriers to non-drive-alone commuting.

Workforce Context

As the Columbus region's economy continues to expand, the unemployment rate has remained at record low levels.¹⁰ Yet, there are thousands of Central Ohio residents who lack convenient, dependable, affordable access to jobs. During Phase 1 of the Dublin Mobility Study, several employers identified mobility and access to work as primary issues that impacted their ability to attract and retain workers. In this context, the City of Dublin and Dublin employers must make additional efforts to stay competitive and improve access to employment opportunities, both in pursuit of workers to fill open positions and to retain existing employees.

Dublin's workforce population includes a heavy concentration of service industry professionals across health care, biosciences, insurance, hospitality, financial services, information technology, retail, and business services. The City's largest employers include Cardinal Health, Dublin Methodist Hospital, Careworks, Fiserv, United Healthcare, Wendy's, and IGS Energy. Several

¹⁰ <https://www.dispatch.com/business/20190423/central-ohio-unemployment-rate-hits-18-year-low>.

medium-sized employers, including Stanley Steemer, Dublin Retirement Village, and AC Marriott expressed strong interest in the pilot service. These and other Dublin businesses include a large share of employees who are new to the United States and experience additional challenges in finding and accessing employment opportunities.

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In addition to addressing the needs of recent immigrant workforce populations, the Millennial workforce is an increasingly evolving and important market. Millennials¹¹ are driving less, and walking, biking, and taking transit more than other cohorts. The proportion of Millennials who say their preferred travel mode is a private car is just 64%, compared to 81% of all other generations.¹² A recent study by the Rockefeller Foundation and Transportation for America found that 54% of millennials would consider moving to a city if it had more and better options for getting around.¹³ In the same study, 66% of millennials said that access to high-quality transportation would be one of their top three priorities when considering a move. These considerations strengthen the need for Dublin to enhance transportation options and make deliberate steps to make transit a viable option for its workforce.

2019 Pilot

The City of Dublin issued a request for proposals (RFP) for the Workforce Shuttle pilot program in September 2018. The solicitation included identification of several target areas that should be addressed in the pilot (Figure 6). The RFP emphasized route development, community engagement & marketing, and flexibility in the pilot and established a preliminary list of key performance indicators, including:

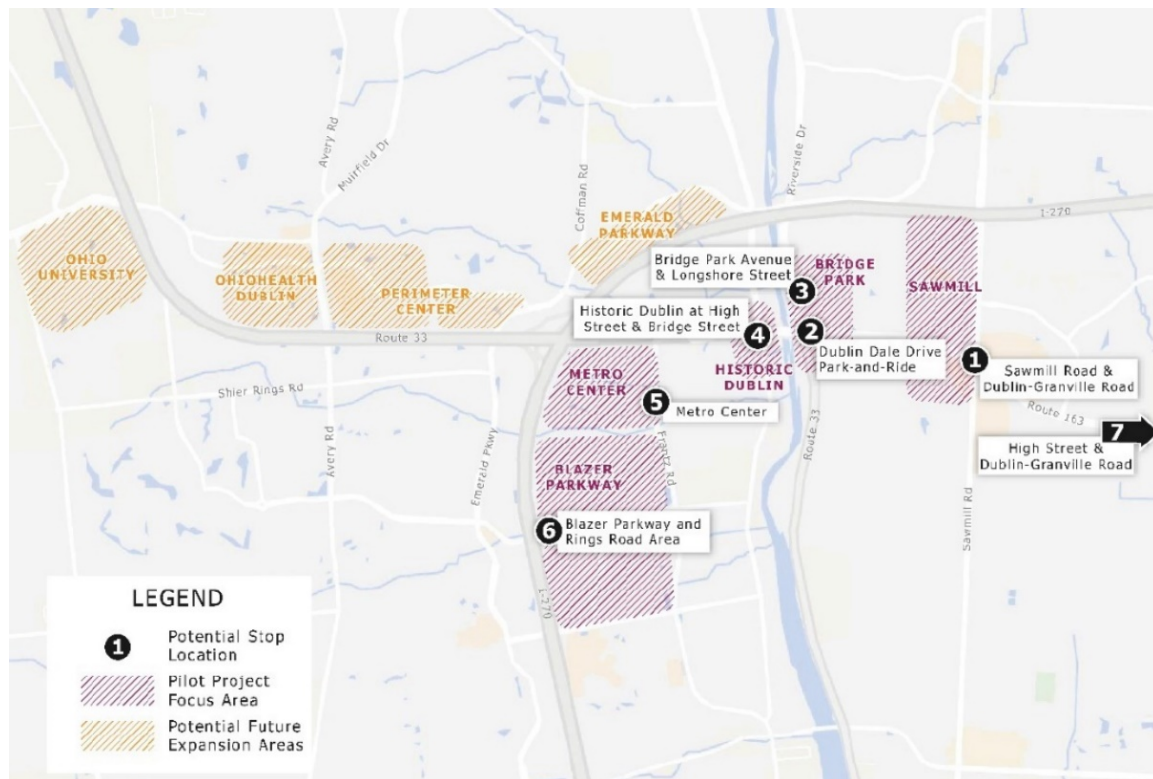
- Ridership numbers (boardings and alightings by stop and time of day)
- Route run times, total revenue service hours, total idle time
- Daily vehicle miles traveled by route
- Operating costs per route (net and on a per rider basis)
- Feedback from employers and customers

¹¹ The generation of people born between 1983 and 2000, who are currently between ages 20 and 36.

¹² <https://onlinemasters.ohio.edu/blog/millennials-cars-and-the-future-of-transportation/>

¹³ Goldberg, David. 2014. "Transportation For America – Survey: To Recruit and Keep Millennials, Give Them Walkable Places with Good Transit and Other Options." Transportation for America. <http://t4america.org/2014/04/22/survey-to-recruit-and-keep-millennials-give-them-walkable-places-with-good-transit-and-other-options/>.

Figure 6 Workforce Shuttle– RFP Target Markets



The Dublin Workforce Shuttle began operating in March 2019, with SHARE¹⁴ as the operator. The Shuttle is offered to all Dublin residents and workforce commuters with trips beginning/ending at a Dublin employer and/or a designated COTA bus stop. As such, the Workforce Shuttle is predominantly designed to help riders commuting from outside of Dublin to complete first/last-mile connections between major employers and COTA's fixed-route bus system. This service design is intended to make transit commuting more viable in Dublin, where COTA fixed-routes do not provide proximate service to many employers. The Workforce Shuttle offers riders direct connections to five COTA bus routes – 1, 21, 33, 73, and 74 – and is a fare-free service. Riders are asked to choose one of the following major employers as either the origin or destination of each trip, but may request service to an employer not on this list:

- ACG Marriott (Bridge Park)
- Cardinal Health
- Crowne Plaza Hotels & Resorts
- Express Scripts
- Fiserv
- Friendship Village of Dublin
- Home2 Suites by Hilton
- OCLC
- Stanley Steemer

¹⁴ <https://ridewithshare.com/dublin>

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- T-Cetra
- United Health Group
- WD Partners

The Shuttle connects these employers with COTA bus stops, including the following locations:

- Route 1 – Stop A (Pickforde Drive & Bethel Road)
- Route 21 – Stop J (Mall at Tuttle Crossing)
- Route 21 – Stop K (Frantz Road & Tuttle Crossing Boulevard)
- Route 21 – Stop L (PNC Bank)
- Route 21 – Tuttle Crossing Boulevard & Blazer Road
- Route 33 – Snouffer Road & Sawmill Road
- Route 33 – Stop H (Resler Drive & Sawmill Road)
- Route 33 – Stop I (Sawmill Road & Dublin-Granville Road)
- Route 33 – Stop K (Sawmill Road & Dublin-Granville Road)
- Route 33 – Stop L (565 Metro Place South)
- Route 73 – Stop H (COTA Dublin Dale Drive Park & Ride)
- Route 73 – Stop I (Home2, Frantz Road & Bridge Street)
- Route 73 – Stop J (Ashland Chemical)
- Route 74 – Stop G (Linworth Road & Dublin-Granville Road)
- Route 74 – Stop I (Smoky Row)

Figure 7 Dublin Workforce Shuttle Vehicle



Source: SHARE

As with the Senior/ADA Circulator, rides must be scheduled at least 24 hours in advance, and there must be a minimum of two riders booked on each trip for it to operate. These requirements are intended to improve SHARE's utilization and reduce the cost of its operations per trip. From March 2019 onward, SHARE operated the Workforce Shuttle as a scheduled, dynamically operated service. Each of the COTA bus stop destinations above were served only upon rider request, limiting travel times and reducing the pilot's operating costs. The Workforce Shuttle began with service to three COTA routes – 21, 33, and 73 – before expanding to include all five routes shown above in July 2019. COTA's Route 21 bus stops generated the highest ridership of the five routes, largely due to high rider demand between AC Marriott and Route 21's Stop J at Tuttle Mall. AC Marriott employees were responsible for a majority (61%) of total ridership.

2019 Performance

Dublin's Workforce Shuttle ridership steadily increased from the pilot's launch in March 2019 through July 2019, from 7 rides per month to 241 rides per month, respectively (see Figure 8). The service's productivity, expressed as the operating cost-per-ride, remained stable at between \$34 and \$38 per ride during this period.¹⁵ Ridership declined slightly in August and September 2019, due to employee turnover at participating worksites, but rebounded to more than 200 monthly riders during Q4 2019. SHARE has had 83 people create an account to date. Of these, 10 users have become regular scheduled riders.

Between January and December 2019, the Workforce Circulator served **1,539 rides**, operated **813 vehicle trips in one dedicated vehicle** for **1,172 service-hours**, and **cost \$79,028**. Overall, this is equivalent to an **average cost per ride of \$51.35**.

A typical SHARE trip had an average vehicle occupancy of 2.5 riders per trip on Route 1, 1.9 riders per trip on Route 21, and 1.2 riders per trip on Route 33. The most popular work destinations of the Workforce Shuttle included AC Marriott, Friendship Village of Dublin, Stanley Steemer, WD Partners, and OCLC. These and the most common COTA bus stop destinations are also shown in Figure 9.

As with the Senior Circulator, SHARE provides the City with the following performance indicators on a monthly basis:

- Total service-hours
- Cost expended
- Passenger rides
- Vehicle trips
- Boardings and alightings by stop

¹⁵ SHARE's original contract billed the City \$50 per service-hour and was used through July 2019. The billing rate increased in August 2019 to \$80 per service-hour to reflect actual costs.

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Figure 8 Workforce Shuttle Pilot Trends: Monthly Ridership and Cost-per-Ride

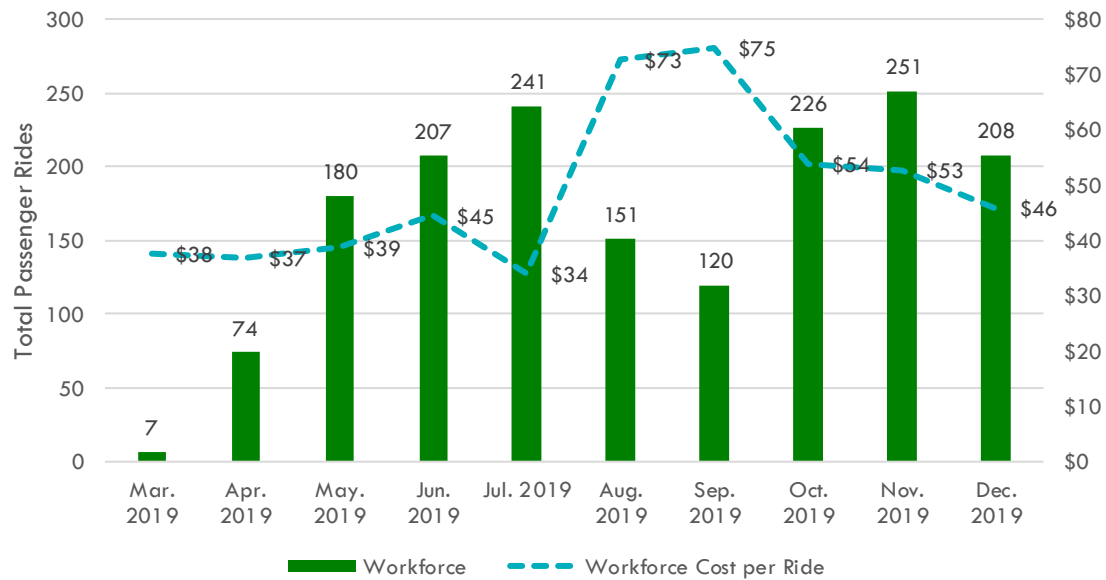
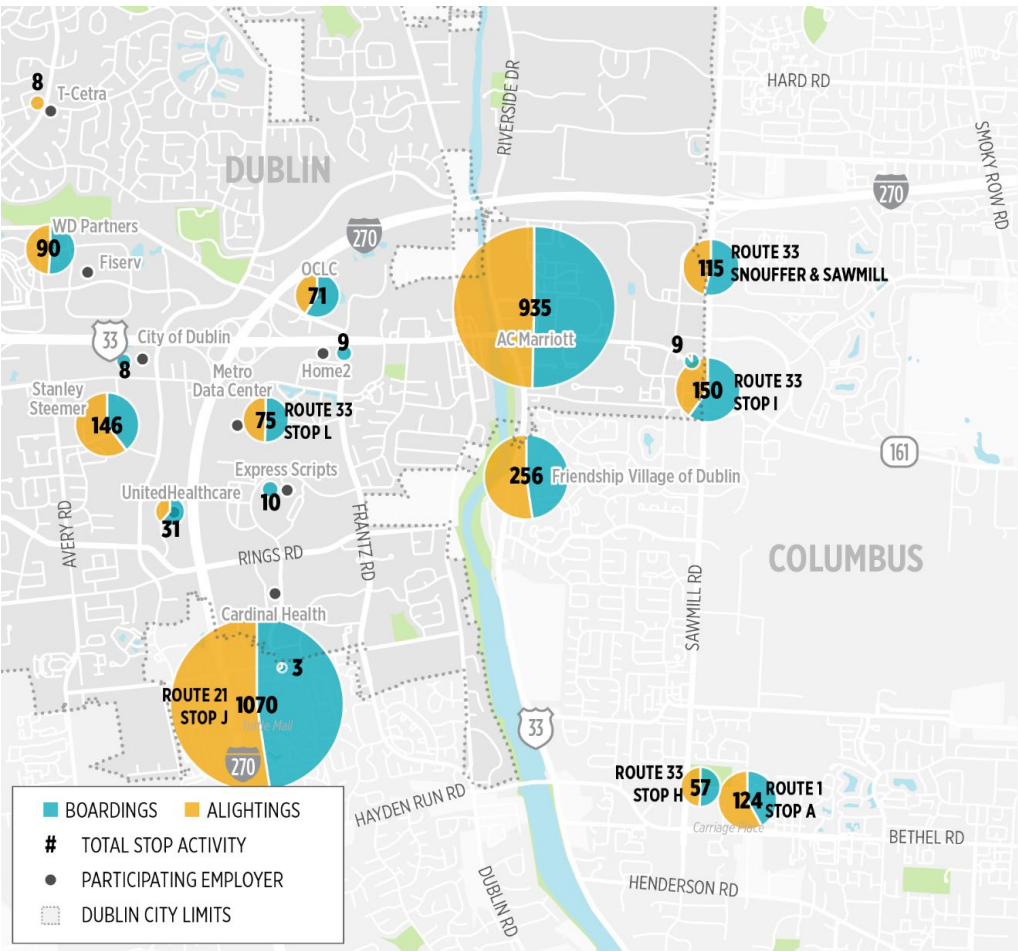


Figure 9 2019 Workforce Shuttle Ridership



Marketing and Outreach

SHARE engaged in a series of marketing and outreach activities to encourage employees to ride the Workforce Shuttle pilot. Community outreach activities to support the program's launch included distributing SHARE handouts and brochures to major employers (e.g. United Health Group, Fiserv), holding presentations with business and tenant groups at Bridge Park, and launching an in-vehicle advertising campaign consisting of audio announcements promoting the program on the five COTA bus routes to which it offers connections. The audio advertising campaign proved to be an effective marketing tool, as SHARE received a number of unsolicited queries from COTA riders due to the ads. Additional efforts were made throughout the pilot period to engage non-English-speaking populations, including Spanish, Asian Indian, Asian Pacific Islander, and Chinese communities. SHARE also conducted an email marketing campaign for existing and previous riders to promote continued ridership on the shuttle.

SHARE operated a summer Lunch Shuttle in an effort to further market the program and increase ridership among white-collar workers. The program was offered between Cardinal Health, the Metro Data Center/Dublin Entrepreneurial Center, Historic Dublin, and Bridge Park and was funded through a sponsorship of \$2,500 from MDC/DEC.

Stakeholder and Community Support

During the 2019 pilot, Dublin received marketing and operational support from the partners listed above. This primarily included COTA (marketing) and Summer Shuttle support. Dublin and SHARE staff were successful in establishing meetings with a number of employers during the pilot period, participating in more than 25 on-boarding, training, Economic Development, and Chamber of Commerce events. Formal partnerships were difficult to establish, but a number of employers and employees expressed enthusiasm for the service during these outreach efforts.

In October 2019, COTA was awarded \$338,245 in new funding from the Ohio Department of Transportation (ODOT) through the OTP2 program.¹⁶ Of this amount, COTA will use \$88,245 to expand service on routes 21 and 73 to extend operating hours in response to rider demand in the mid-day and evening hours. The expanded service will support off-peak and reverse trip commuter travel, which were identified as needs by multiple Dublin employers and employees. The remaining \$250,000 will be used in collaboration with Dublin and SHARE to fund operation of the Workforce Shuttle between July 2019 and May 2020.

Testimonials and Other Highlights

User testimonials were submitted over the course of the pilot, illustrating riders' experience with the Workforce Shuttle service:

- In the case of some riders, SHARE has decreased participating Dublin workers' daily commute time by an average of 28 minutes (14 minutes each way).
- Several workforce riders save \$400 per month in Uber costs to get to and from COTA bus stops.
- One rider cited a physical disability as the primary reason for using service, not having to walk 1/2 mile from the bus stop to work.

¹⁶ <http://www.dot.state.oh.us/Divisions/Planning/Transit/Programs/Pages/OTPP.aspx>

- AC Marriott has the highest workforce participation of any employer, with four workers from its housekeeping staff (one-third of their department), using the service.
- Lack of access to smartphones and limited English proficiency are barriers to ridership for many low-income workers. To overcome these barriers, riders working at AC Marriott have their housekeeping supervisor book rides on their behalf.
- Two riders stopped using SHARE because they purchased cars for the first time, an indication that the service is encouraging economic mobility through dependable access to work; one of these riders continues to use the service on a periodic basis.
- Some employers expressed concern over the “pilot” or temporary status of the service, leading to a reluctance to promote the service to employees; as a result, marketing for the service was repositioned in Q4 2019 to reflect Dublin’s intention to sustain the service.
- SHARE has been a complete life saver! I ride my bike 5 minutes to the Tuttle Mall COTA bus stop and SHARE vehicles come and pick me up every day, on-time. I don't know how I would get to work if it wasn't for SHARE services. Thank you for all the help!
- I would recommend SHARE services to all of my co-workers. It was recommended to me when I first started with Marriott and it has been a great transportation experience.

DUBLIN MICROTRANSIT PILOT ASSESSMENT

During Phase II of the Dublin Mobility Plan, the City confirmed that investment in new mobility services was critical to achieving a wide range of beneficial public health, quality of life, and economic development outcomes. The 2019 Dublin microtransit pilots each exhibited positive results that advanced these objectives and benefitted their target audiences: Dublin seniors, people with disabilities, and workforce commuters.

The financial expenditure of approximately \$240,000 to operate the two pilots in 2019 was larger than expected, but it engendered in-kind contributions from the operator during the initial 6-month pilot period and from COTA in the form of marketing partnerships. The two sponsorships secured for the Senior/ADA and Summer Shuttle services and operating support awarded by the FTA Section 5310 and ODOT OTP2 programs were evidence that community and public agency partners recognized the value of the service and the leading investment by the City of Dublin. All told, these sources added up to a roughly 55/45 split of external/City investment in 2019 services (see Figure 10). Two-thirds of program costs were expended on the Senior/ADA service, with the delayed launch and limited demand leading to lesser overall costs on the Workforce Shuttle (see Figure 11).

The ongoing commitment from the City (Capital Improvement Program) and COTA (through OTP2 funds) to enhance and sustain the services will allow the services to continue and grow in 2020. Ongoing funding support through MORPC (FTA Section 5310 funds) and others are pending and will provide additional opportunities to sustain, improve, and expand service.

Figure 10 Dublin Microtransit– 2019 Pilot Funding Sources

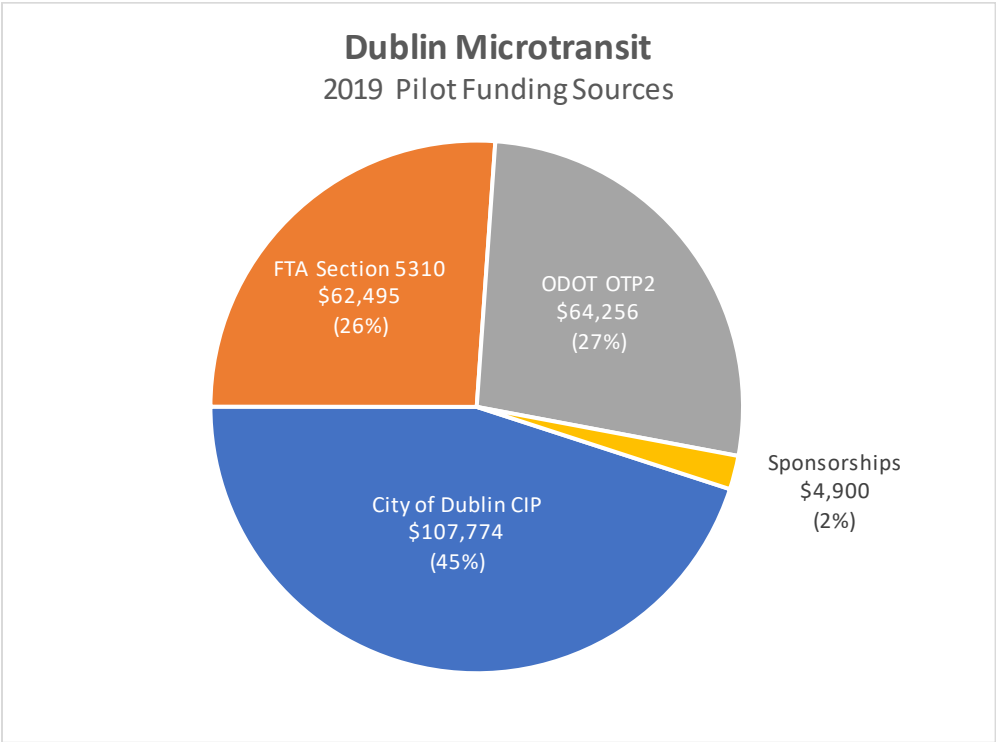
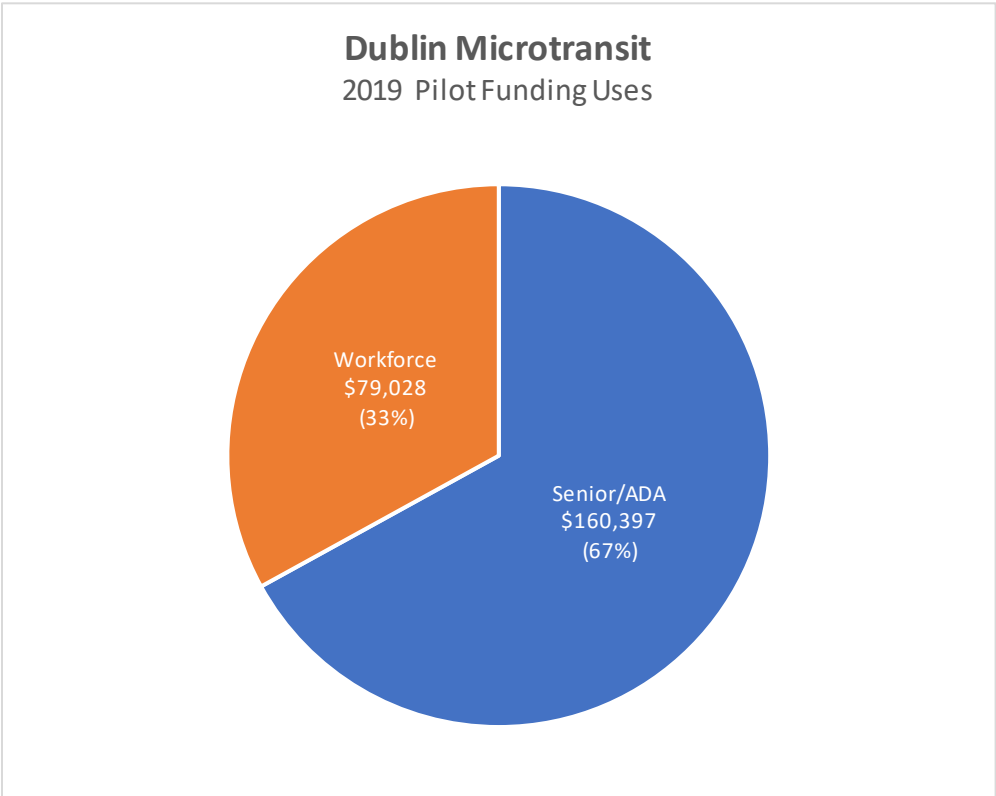


Figure 11 Dublin Microtransit– 2019 Pilot Funding Uses



As the City of Dublin and its partners prepare to carry these efforts forward, they should consider the following lessons learned from the 2019 pilot period.

Senior/ADA Circulator Pilot: Key Lessons Learned

Ridership Growth

While ridership on the Senior/ADA Circulator was slow to accelerate, the sustained growth over the course of the pilot should be celebrated. The efforts undertaken by Dublin staff and SHARE to promote the service and customize it to rider needs were substantial and were especially evident at the start of the program, when understanding (both by riders and operator) was still being developed. As awareness of the program increased, riders began to depend on the service and made regular trips to a variety of destinations. This growth had plateaued by the end of 2019, but could continue to expand as the service is promoted to a broader aging-in-place audience.

Operating Efficiency

The early stages of the pilot required a heavy lift from both Dublin staff and SHARE. Even with the in-kind setup and marketing support from SHARE during the first 6 months of the program, operating efficiency was poor, as reflected by the passengers-per-trip and cost-per-ride data collected during Q1. Some of this was unavoidable, as the service was unfamiliar and rider needs/patterns were still being developed. SHARE's transition in Q2 from the fixed route model to the dynamic/scheduled model brought with it a more efficient operating program and some additional flexibility in providing trips at times and to destinations requested by passengers. Passengers-per-trip and cost-per-ride metrics improved steadily from Q2 to Q4, even as the operating cost-per-hour increased from \$50 to \$80 in Q3. If this model is sustained and ridership continues to grow, operating efficiency should show additional improvement in 2020.

Rider Interface & Experience

While the prescribed method for booking trips is through the web/app interface, SHARE provided sufficient alternatives to these options to enable riders to book by phone or through coordination with resident service staff at senior communities. The most common method for booking trips ultimately became the latter option, which has proven to be a dependable and convenient process for both passengers and the operator. Still, there were a number of reported instances of passengers arriving for trips that were not previously booked, possibly due to a lack of understanding of the scheduling protocol. SHARE also experienced frequent requests for call-in booking by individual passengers who are either unable to or prefer not to use the mobile app. They have accommodated these requests, but acknowledge that it requires additional resources.

Addressing Market Demand

During the majority of the pilot period, service was only provided to seniors and people with disabilities who were arriving or departing from one of Dublin's senior living communities or established service agency partners. While this provided for efficient booking and route scheduling, it left out a significant portion of the potential rider market who lived in smaller multi-family buildings or single-family residences throughout Dublin. With the updates provided by Senior 2.0 in October 2019, service has now been expanded to these residents. An estimated 100 rides in Q4 could be attributed to these locations, representing just 5% of total ridership, but increasing the potential population served by a much greater percentage.

Human Capital Needs

As was referenced above, the amount of human capacity needed to launch and sustain the Senior/ADA Circulator has been substantial. User feedback reinforced the quality and value of the service and the personal impact both to riders and provided by operators, suggesting that the effort is worthwhile. That said, human capital needs – relative to the time and cost to provide the service on behalf of staff from the City of Dublin, senior communities, and operator – should not be overlooked.

Workforce Shuttle Pilot: Key Lessons Learned

Ridership Stagnation

Much like the Senior/ADA service, Workforce Shuttle ridership was slow to take hold. Extensive marketing and outreach was required on the part of the City and SHARE to generate the small number of passengers who took advantage of the service during its first few months. Changes in rider circumstances led to rapid fluctuations in these patterns as the pilot continued. Some of this can be attributed to the fact that many service-sector workers in Dublin are in low-wage, transient jobs with unpredictable hours, making it difficult to schedule rides regularly or even sustain the positions over a longer period of time. Unlike the Senior/ADA service, the Workforce Shuttle did not experience sustained growth over the course of the pilot. Continued marketing of the program and more meaningful participation on behalf of Dublin's employers will need to be established over a longer period of time in order to improve upon this measure.

Operating Inefficiency

The efficiency profile of the Workforce service differed from that of the Senior/ADA service in that there were no fixed routes operating at a timetable during the initial launch. Trips were only being made by SHARE vehicles if passengers were on board from day one. That said, operating efficiency in terms of cost-per-ride has not changed as dramatically from the pilot launch in March to the most recent full month of operation (December). The decline in ridership in August – September had less to do with the increased cost-per-ride during that period than the increase in contracted hourly operating cost for SHARE. As ridership leveled out again in Q4 with between 208 – 251 rides, operating efficiency was still relatively poor, when compared to industry norms. The \$46 cost-per-ride was nearly \$20 higher than that of the Senior/ADA service. This is indicative of lower rides-per-trip (1.9) and rides-per-service hour (1.3) results, which compare to 3.8 and 1.8, respectively on the Senior/ADA service. As the industry comparison in the next section illustrates, more sustainable levels tend to be in the 2-4 rides-per-service hour range, maxing out at around 7 in the highest performing markets. By these measures, the Workforce Shuttle service has much room for improvement.

Partnerships and Employer Buy-in

Partnerships are critical to the success of the Workforce Shuttle service. On one hand, the successful collaboration with a small number of employers in engaging employees and registering them for the service has yielded several consistent riders. The marketing partnership with COTA, which included on-board announcements and materials that promoted the service on relevant bus routes and distribution of free fare cards to incentivize first-time riders, also helped increase participation. On the other hand, securing meaningful buy-in from larger employers was elusive. As was referenced previously, the “pilot” nature of the service dissuaded some companies from promoting it to employees. Others were not convinced that their employees do or would use transit as a means of getting to work. Still more were concerned about liability issues or were

simply difficult to engage at the right levels of administration. It is clear that the value proposition to Dublin's large employers will need to be made clear if they are going to be valuable partners in promoting the service to their workforce.

Operating Efficiency: Industry Comparison

One common critique of microtransit is that it is expensive to operate (on a cost-per-ride basis) and unproductive (in terms of rides served per hour of service), compared to even low-productivity fixed-route bus networks in suburban areas. For example, many transit agencies typically operate infrequent fixed-route bus services that serve between 10 and 15 passengers per revenue-service hour. However, because microtransit pilots such as the Workforce Shuttle are explicitly designed to provide on-demand connections to fixed-route transit services in geographies where those services have been deemed unable to extend, the comparison to fixed-route services is not appropriate. Instead, microtransit should be evaluated in comparison to suburban dial-a-ride or demand-response services, which typically serve between one and seven passengers per revenue-service hour. As the case studies in the following section illustrate, some of these demand-response systems cost more than \$50 per passenger trip to operate, often because of high labor and vehicle costs.

Key performance indicators of operating cost-per-ride and service productivity (rides per hour) from a range of successful microtransit programs in the United States are shown in Figure 12. By comparison, the pilot year metrics for both the Senior/ADA and Workforce services have underperformed relative to other microtransit services on the basis of each of these metrics. This relatively poor performance is due to insufficient ridership from several senior assisted living communities (apart from Avondale) on the Senior/ADA Circulator and unproductive engagement with Dublin employers (apart from AC Marriott) on the Workforce Shuttle. Much of this can be attributed to the "pilot" or start-up nature of these services in Dublin, but efforts will need to be taken to improve service in future years if it is to be sustained over the long-term.

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Figure 12 Performance Indicators of American Microtransit Programs

Sponsoring Agency	Operator	Microtransit Pilot	Operating Cost-per-Ride	Rides per Hour	Updated
City of Dublin	SHARE	Senior/ADA Circulator	\$33.97	1.8	December 2019
City of Dublin	SHARE	Workforce Circulator	\$51.35	1.3	December 2019
COTA	UZURV	Mobility on Demand (for ADA-qualified riders only)	\$26.50	N/A	December 2019
King County Metro (Seattle, WA)	Via	Via to Transit	\$10.00	5.0 ¹⁷	December 2019
L.A. Metro (Los Angeles, CA)	Via	Mobility on Demand	\$12 to \$14	2.7 ¹⁸	December 2019
City of Arlington, TX	Via	Arlington On-Demand	\$10.85	7.0 ¹⁹	November 2019
City of West Sacramento, CA	Via	Via On-Demand Rideshare Pilot	\$13.20	N/A	December 2019
Sacramento Regional Transit (SacRT)	Via	SmaRT Ride	\$15.00 ²⁰	3.24	October 2018
Capital Metropolitan Transit Authority (Austin, TX)	In-house, software by Via	CapMetro Pickup	\$17.42 ²¹	3.65 ²²	June 2018
AC Transit (San Francisco Bay Area)	In-house, software by DemandTrans	Newark and Castro Valley Flex	\$15 to \$20 ²³	7.0 ²⁴	January 2018

¹⁷ Sullivan, Marie. 2019. "Mobility on Demand Hits 45,000 Rides; Will Comply with New California Law." *The Source* (blog). December 4, 2019. <https://thesource.metro.net/2019/12/04/mobility-on-demand-hits-45000-rides-will-comply-with-new-california-law/>.

¹⁸ Ibid.

¹⁹ Hazan, Joel, Nikolaus Lang, and Augustin Wegscheider. 2019. "On-Demand Transit Can Unlock Urban Mobility." Boston Consulting Group (BCG) Henderson Institute. November 7, 2019. <https://www.bcg.com/publications/2019/on-demand-transit-can-unlock-urban-mobility.aspx>

²⁰ Nelson\Nygaard Consulting Associates. 2018. *Citrus Heights Comprehensive Transit Plan*. P. 3-8.

²¹ Hansen, Todd, Zachary Elgart, Kristi Miller, and Maarit Moran. 2018. "Existing Transportation Network Companies Used as a Part of Basic Mobility: White Paper." Texas A&M Transportation Institute. <http://groups.tti.tamu.edu/transit-mobility/files/2019/04/TTI-Existing-TNCs-Used-as-a-Part-of-Basic-Mobility-White-Paper.pdf>. Figure 17.

²² Ibid.

²³ DemandTrans. 2017, March 29. "The newest battleground between public transit and Uber, Lyft is an unlikely one." <http://demandtrans.com/news/the-newest-battleground-between-public-transit-and-uber-lyft-is-an-unlikely-one/>

²⁴ Transit Center. 2018. "Flex V. Fixed: An Experiment in On-Demand Transit." TransitCenter. May 15, 2018. <https://transitcenter.org/adding-flexible-routes-improve-fixed-route-network/>.

IMPLEMENTATION & FUTURE CONSIDERATIONS

Program Vision

The City of Dublin has affirmed its commitment to supporting microtransit services into 2020. The vision for these programs should reflect both the community's mobility vision and the industry best practices and performance measures. The vision for Dublin microtransit services going forward can be summed as follows:

Dublin's microtransit services will continue to advance the community's mobility vision, promoting positive public health, quality of life, and economic development outcomes for the City's seniors, disabled residents, and workforce commuters. These services will be operated with increasing effectiveness, meeting the needs of their target populations, while achieving improvements around established key performance indicators (KPI), including:

- Total ridership
- Operational efficiency
- Operational safety
- Customer satisfaction
- Number of employers served
- Funding support from external partners

These KPI will each have a series of measures that will continue to be tracked by the City of Dublin, their operator and their partners to support continued service enhancement and achievement of program objectives.

Next Steps

The City of Dublin and its program partners can pursue a series of additional opportunities to improve upon microtransit program outcomes going forward. These include:

- **Consider adopting truly on-demand service:** The 24-hour advance reservation requirement allows SHARE to align service provision for operational efficiency, but it is out of step with peer operators and may discourage potential riders. Dublin and its operator should pursue opportunities to reduce the advance reservation requirement to align with best practices, some of which are already in place in the Columbus area.
- **Balance funding resources with level of subsidy provided:** By opting to offer these services at no charge to riders, Dublin is lowering a key barrier to use, but is experiencing program costs that may not be sustainable in the long-term without additional subsidy and partner support. The City will need to identify a balance between providing an attractive (and cost effective) service and constraining overuse, while simultaneously searching for new sources of support within the community.
- **Identify/elevate Senior/ADA Circulator partners:** The vast majority of the Senior/ADA pilot's ridership came from a single senior living community. As the program expands to include seniors who are aging in place, Dublin should also pursue new senior community and service agency partners who are willing to promote and support the service, both in the interest of increasing ridership and providing financial support.
- **Expand partnerships with employers:** Free or low-cost, on-demand transportation for local employees is an under-valued resource for Dublin employers that most other municipalities do not provide. The City should increase its engagement with major

employers in Dublin to increase ridership on the Workforce Shuttle and better establish the case for the service and the value proposition to employers. Ultimately, these relationships will need to lead to financial support for the service and other commuter benefits that increase the attractiveness and utilization of non-drive-alone travel options.

- **Expand service hours or supplement off-peak service with ride-hailing:** The Senior/ADA and Workforce services both have limited hours of service. To serve riders at other times of day, Dublin should consider engaging with ride-hailing partners (e.g. Uber, Lyft) to provide City or other public agency-subsidized rides in Dublin at off-peak hours. Several examples of this approach are outlined in the following section on Emerging Models & Best Practices.
- **Diversify support in view of vulnerable funding sources:** In addition to Dublin Capital Improvement Program funding, these services have benefitted from at least two other public sources of funds: ODOT's OTP2 program and FTA's Section 5310 funding program. These sources award annual support through a competitive application process and can be difficult to secure in successive years. Dublin should continue to evolve its microtransit program in order to exhibit a sustained case for these funding sources, while also continuing pursuit of more stable funding sources to ensure long-term viability. Examples include Columbus's Downtown C-Pass program and the concept of a Dublin Mobility Fund (summarized in the final section of this report).
- **Adopt progressive parking and demand management policies:** Developing and adopting new parking and demand management policies can increase demand for transit, microtransit, and other non-drive-alone travel modes in Dublin. Demand management policies in Historic Dublin and Bridge Park, at employer sites, and tied to economic development incentives can influence development projects and influence both employer practices and workforce travel behaviors. Options to pursue in this area, including commuter benefits ordinances, are further outlined in the final section of this report.
- **Refine KPI and continue tracking measures of program success:** The key performance indicators (KPI) established prior to program launch provided a valuable set of metrics that helped the City and SHARE track and evaluate the pilot services over the course of 2019. The program partners should assess the value of these measures and others to ensure that they are collecting data that will be meaningful to the City, the service's target audiences, program funders, and current/potential partners.
- **Consider a regular solicitation period for these services:** The initial request for proposals (RFP) for the pilot programs was issued in September 2018. The pilot contracts were extended through December 2019 and service has continued into 2020. The City of Dublin requires that contracts in excess of \$75,000 are publicly bid. Assuming forthcoming contracts for microtransit service exceed this amount, Dublin will need to issue a new solicitation for operator services, giving the City an opportunity to reinforce or re-establish program goals, service levels, reporting measures, and other expectations and deliverables with the chosen vendor.
- **Continue to advocate for increased COTA services:** Dublin's collaborative efforts with COTA during Phase III were a positive sign and acknowledged shared goals and outcomes. The OTP2 funding allocation will yield additional transit service in 2020 (and possibly beyond), but additional gaps in service will still exist. Dublin should continue to advocate for expanded service to and through the community, including potential future COTA Plus service expansion, akin to the service launched in Grove City in 2019 (see profile in the following section).

EMERGING MODELS & BEST PRACTICES

Microtransit Partnerships

COTA Plus | Grove City, OH

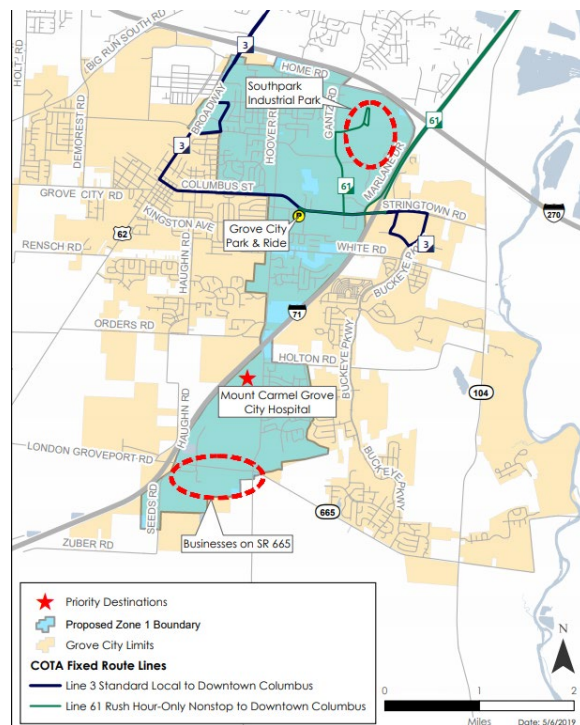
In July 2019, COTA launched COTA Plus, an on-demand microtransit service intended to provide first/last-mile connections to transit stops and other major destinations in Grove City, OH. These destinations include Southpark Industrial Park (a major employer), Mid-Ohio Food Bank, COTA's Grove City Park & Ride, Mount Carmel Grove City Hospital, and the retail corridor on SR-665. The pilot will run for one year, through July 2020. The pilot is funded through Grove City general funds and a MORPC grant, and its operating cost for the first year is \$360,000.

Customers can book rides on COTA Plus through the COTA Plus mobile app, developed by Via. Riders without smartphones can book rides by calling a COTA telephone hotline. Service on COTA Plus is available on weekdays from 5:30 AM to 8 PM. Trips must begin and end within the defined coverage zone shown in Figure 13, and the one-way fare is \$3. This fare includes a free COTA transfer for riders who travel to the Grove City Park & Ride. COTA staff operate the service in agency-owned Ford Transit vans wait times of 15 minutes or less. COTA's operator union contract prohibits subcontracting service for fixed-route operations.

As of November 2019, COTA Plus has served 1,619 rides, without about a third of these rides requested through the COTA Plus app.²⁵ The average ride duration is about 8 minutes, and average trip distance is less than two miles. To promote COTA Plus, the agency's marketing team has launched a marketing campaign that includes digital advertising, billboards, print media and social media. Agency staff are also working with local employers within the service zone to promote awareness of the service and enroll new riders in the app.

COTA also coordinated with the Mount Carmel Grove City Hospital to create a voucher system that enables patients or caregivers to pay for COTA Plus rides without a debit or credit card, as many are unbanked. The Hospital has also purchased about 300 COTA Plus vouchers to distribute to low-income patients who have no other means of transportation to their appointments.

Figure 13 COTA Plus Grove City Service Zone



Source: COTA

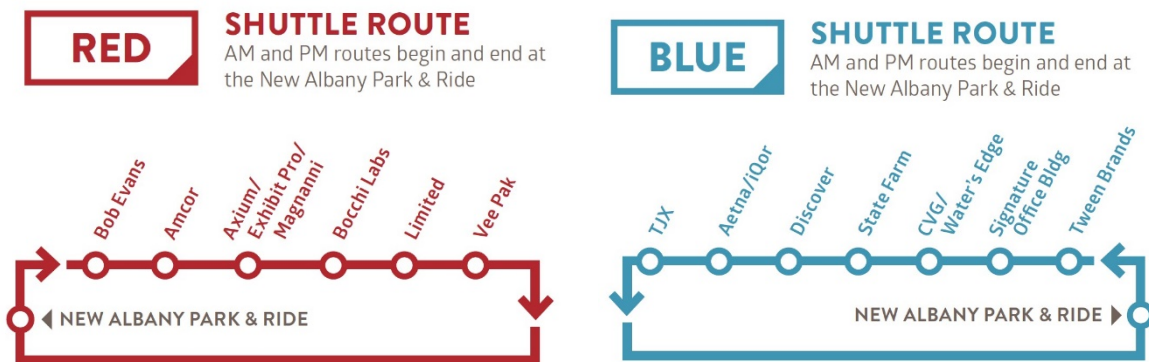
²⁵ Froman, Alan. 2019, November 25. "COTA Plus Usage in Grove City Grows along with Awareness." ThisWeek Community News. Accessed January 30, 2020. <https://www.thisweeknews.com/news/20191125/cota-plus-usage-in-grove-city-grows-along-with-awareness>.

COTA and Grove City are considering a second phase of the pilot, to be launched in late 2020, in the northwestern portion of Grove City, including Downtown Grove City, a local Walmart distribution center, and various other employers. The partners are also considering adding weekend service. This expansion would cost Grove City an estimated \$42,000.²⁶

New Albany, OH: SmartRide

The city of New Albany, Ohio offers the SmartRide commuter shuttle service to better connect workers to the growing number of jobs in the New Albany International Business Park. The service, which has operated for 6 years, is operated by Towne Park. It is provided in partnership with the Central Ohio Transit Authority (COTA) and aligns with #45 rush hour bus line that operates to and from downtown Columbus during morning and evening peak hours. SmartRide is free for passengers transferring from the COTA bus line at the New Albany Park & Ride lot.

Figure 14 New Albany, OH SmartRide Shuttles



Source: COTA

Three SmartRide routes provide five scheduled runs between Columbus and New Albany during the AM and PM peaks. The service costs New Albany an estimated \$110,000 - \$120,000 to operate annually, with the City paying an additional fee to allow for use of the buses for other purposes when not in service. The service is promoted as an economic development tool that supports business growth and the roughly 15,000 employees that work in the City's business parks. Between 20,000 – 30,000 riders use the service each year, with 2019 showing relatively low ridership at around 21,000 trips.

New Albany is working with the three business parks that are served by the shuttles to generate revenues that will support ongoing operation. However, a per-acre assessment of property owners that was recently proposed to help generate a significant portion of operating costs was shelved due to lack of support. The City's goal is to contribute around 30 percent of the cost of the service, with the remainder funded by other sources, including the business park assessments and sponsorships. New Albany is also working with COTA to examine off-peak trips to serve workers with shifts that begin before 6 AM or during the mid-day, when the #45 bus is not operating.

²⁶ Cordle, Andrea. "COTA Plus Program Could Expand City-Wide." *Columbus Messenger* (blog). January 23, 2020. <https://www.columbusmessenger.com/cota-plus-program-could-expand-city-wide.html>.

Figure 15 SmartRide Operating, Performance, and Funding Characteristics

Operating Characteristics	
Service Design	Commuter Shuttle (3 routes)
Running Time (Round Trip)	26-30 minutes
Number of Stops (Round Trip)	23 (3 routes)
Fare (One-way)	Free
Service Span (weekdays)	6:15 – 8:30 AM and 3:00 – 6:15 PM
Service Span (weekends)	No Service
Frequency (weekdays)	Varies (20-35 minutes)
Frequency (weekends)	No Service
Start-up Capital Costs	Unknown
Annual Operating Costs	\$120,000
Annual Ridership	21,000 (2019)
Operating Cost/Passenger	\$5.70

Groveport, OH: GREAT Shuttle

The City of Groveport, Ohio also partners with COTA to provide first-mile/last-mile connections between local business parks and regional bus lines. The Groveport Rickenbacker Employee Access Transit (GREAT) service is operated by Towne Park and connects local employment centers to COTA lines 22 and 24, free of charge, 7 days a week. Service hours are from 5:45 a.m. to 5:10 p.m. on weekdays, with buses arriving every 30-minutes. Weekend trips or return trips beginning later than 5:20 p.m. can be arranged on-demand. Additional supporters of the service include the Village of Obetz, the Mid-Ohio Regional Planning Commission, and Rickenbacker Employee Assistance Network.

The service was first launched in 2015 in response to job growth in the Rickenbacker area. Access to jobs and workforce was a primary concern for area employers and the GREAT service was viewed as a needed complement to increased COTA bus service. Much like

Figure 16 Groveport, OH GREAT Shuttle



Source: City of Groveport

the New Albany example, the service is promoted as an economic development tool and a means for connecting regional workforce to more the 21,000 jobs and 60 businesses in the shuttle's service area. The cost of the service is more than \$490,000, annually, with roughly 70% paid by Groveport and 30% paid by Obetz. Ridership in 2018 totaled approximately 25,000 passengers, with the vast majority being weekday trips.

With additional growth expected in the Rickenbacker area, Groveport and COTA are examining opportunities for expanded service and a new transit center with surrounding communities, including Columbus and Pickaway County. Groveport is considering adding a fourth GREAT route and COTA is seeking additional state funding to increase fixed route service frequency to the area to meet new anticipated rider demand.

Figure 17 GREAT Operating, Performance, and Funding Characteristics

Operating Characteristics	
Service Design	Shuttle/Circulator (3 routes)
Running Time (Round Trip)	22-26 minutes
Number of Stops (Round Trip)	29 (3 routes)
Fare (One-way)	Free
Service Span (weekdays)	5:45 AM – 5:10 PM (On-call from 8:15 – 10:15 PM)
Service Span (weekends)	On-call in three shifts from 5:30 AM – 9:30 PM
Frequency (weekdays)	30 minutes 5:45 AM – 5:10 PM
Frequency (weekends)	On-Call
Start-up Capital Costs	Unknown
Annual Operating Costs	\$490,000
Annual Ridership	25,000
Operating Cost/Passenger	\$19.60

Via On-Demand Rideshare | Arlington, TX

Arlington is located between Fort Worth and Dallas with a population of approximately 396,000 people. Fixed-route transit service briefly consisted of one commuter bus route known as the Metro Arlington Xpress (MAX), which was discontinued in December 2017. Until implementation of the MAX route, Arlington had the distinction of being the largest municipality in the country without fixed-route transit service. The MAX route connected the CentrePort/Dallas Fort Worth (DFW) Airport Station to downtown Arlington and the University of Texas at Arlington.

Daily ridership on MAX averaged 240 trips during the first year of service, which was less than 50% of the expected 500 trips. The Arlington Transportation Advisory Committee (TAC) recommended that MAX be replaced with an on-demand rideshare system. The TAC subsequently approved a contract with Via in November 2017 to develop and operate an on-demand rideshare program.

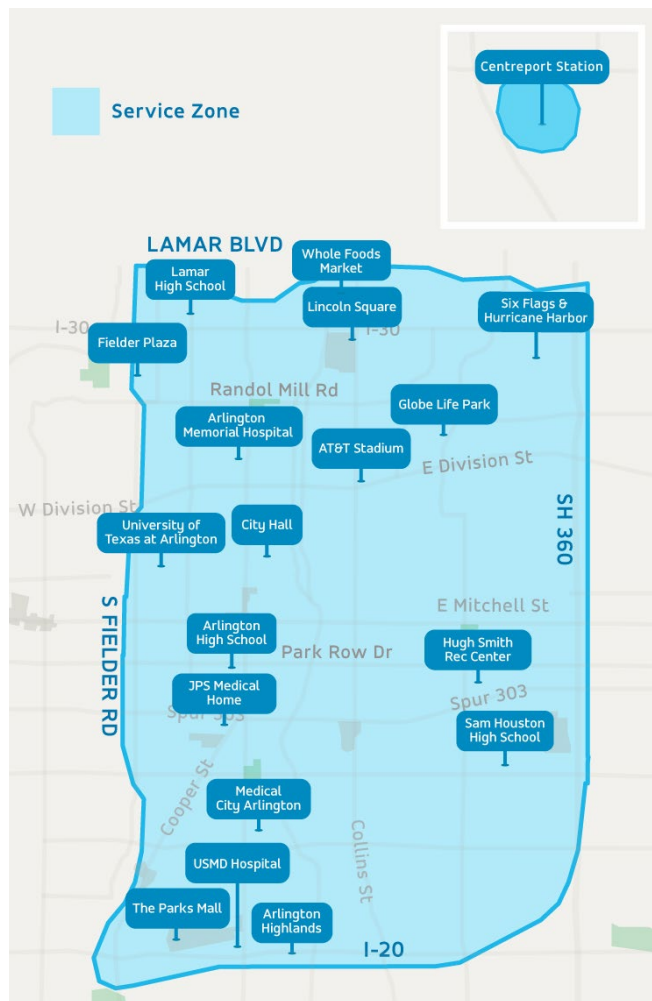
Via On-Demand Rideshare

In December 2017, Arlington launched a one-year microtransit pilot with Via to replace MAX. The primary goal was to find a more cost-effective option of providing more coverage. When reviewing different options for replacing MAX, the TAC focused on microtransit because of its ability to offer flexible service and enhance regional mobility.

Via provides subsidized rides for any trips that begin and end within the service area, which includes the downtown region and the CentrePort/DFW Airport Station in Fort Worth. The hours of operation are between 6:00 am and 9:00 pm Monday through Friday and between 9:00 am and 9:00 pm on Saturday. During select special events, Via offers extended hours past 9:00 pm.

All riders are charged a \$3 flat fee and customers are able to book a ride through the Via smartphone app or live support telephone line. For \$15, riders can purchase a weekly pass which covers rides up to four times per day. Cash fares are not accepted, and most rides are booked using credit/debit cards linked to the Via mobile app. However, to comply with Title VI of the Civil Rights Act, Via accepts prepaid debit cards as an alternative to cash fare payment, which can be purchased with cash at local retailers.

Figure 18 **Arlington, TX Via Rideshare Service Area**



Source: City of Arlington

Via On-Demand Rideshare Service Characteristics

Unlike ride-hailing, Via does not typically offer door-to-door service. Instead it uses a “virtual stop” model, which may cause passengers to occasionally walk no more than 500 feet to catch the nearest available van. This model allows Via drivers to avoid time-consuming U-turns or circuitous movements that may inconvenience other riders. Riders with disabilities can book wheelchair-accessible vehicles by entering a promotional code in the Via app at checkout or by letting a customer service representative know if booking by Via’s phone hotline. Unlike an agency-operated microtransit model, the City did not purchase vans being used for the On-Demand Rideshare Pilot. The vans are owned by Mercedes Benz, which in 2017 established a joint venture with Via that made available a fleet of Via Vans leased to Via Driver Partners through a third-party leasing entity.

Figure 19 Via On-Demand Rideshare Service Characteristics (Arlington, TX)

Via On-Demand Rideshare Service Characteristics	
Weekday Span	6:00 am – 9:00 pm
Weekend Span	9:00 am – 9:00 pm (Saturday Only)
Number of Vehicles	15
Vehicle Type	6 passenger van
One-Way Fare	\$3.00
Ride-hailing method	Via App or telephone line
Annual cost	\$2.1 million

Via On-Demand Performance

The Via pilot served more than 85,000 rides in its first year of operation. As of January 2019, there is little publicly available information on service performance.

Figure 20 Via On-Demand Performance vs. MAX (Commuter Bus)

Performance Metric	Via Pilot (Dec 17 – Dec 18)	MAX (Dec 16 – Dec 17)
Service Days	312	260
Total rides	85,000	62,544
Average monthly ridership	7,100 rides	5,119 rides
Average daily ridership	272	241
Average wait time	9 minutes	n/a
Percent ridership from repeat riders	70%	n/a
Average cost per trip	\$10.85	\$11.32

Source: City of Arlington

Overall, the performance of the Via pilot was marginally better than the performance of the MAX route. Although the service carried almost 20,000 additional riders, it also operated on Saturdays, which are also days when significant special events occur in Arlington’s entertainment district. Overall, the Via service was about \$0.50 cheaper to operate per trip than the fixed route MAX service and carried 30 additional riders per day, on average.

The cost of the one-year pilot was \$922,500, \$600,000 of which came from a Federal Transit Administration grant, and the remaining \$322,500 was funded by the City. After the one-year period ended, the City Council approved a one-year contract renewal with Via, which increased the fleet from 13 to 15 vehicles and expanded the service area. The renewal costs \$2.1 million, which is funded by the City (\$995,000), the FTA (\$807,000), and fare revenue (\$300,000). The increased cost reflects the expanded service area.

Via On-Demand Rideshare | Municipal Partnership | West Sacramento, CA

West Sacramento is a city of approximately 50,000 residents located west of Sacramento, on the west bank of the Sacramento River, in northern California. Fixed-route transit service in the area is provided by the Yolo County Transportation District, operating as Yolobus.

- Yolobus operates five local bus routes with service to West Sacramento, Routes 35, 40, 41, 42A/42B and 240. These routes provide service to local destinations within West Sacramento as well as connections to Sacramento, Davis, Woodland, and Sacramento International Airport. Each of these routes operates on seven days a week, with the exception of Route 41, which operates Monday thru Friday. All Yolobus service is hourly.
- Yolobus also operates two commuter routes with weekday-only service to West Sacramento, Routes 39 and 241. Route 39 operates four trips during the AM peak and four trips during the PM peak, while Route 241 operates two trips during the AM and PM peaks. Each of the commuter routes terminate in Downtown Sacramento.

Despite its location less than one mile from transit-rich Downtown Sacramento, West Sacramento residents who rely on transit face infrequent service, inefficient and circuitous routes, and long travel times from its Yolobus service, especially in comparison to travel in private vehicles. The City issued a formal RFP in May 2017 to explore microtransit as a potential solution to supplement its poorly performing transit service.

Via On-Demand Rideshare

In November 2017, the City selected Via as the vendor in a public/private partnership to provide microtransit service citywide. The City initiated the Via On-Demand Rideshare Pilot to meet several mobility objectives, including expanding mobility options for residents who do not have personal vehicles, providing cost-effective service in areas where fixed-route transit is not available, operating faster and more direct routes, and providing on-demand service for ADA paratransit customers, for which the City spends \$35 to \$40 per trip. The most important of these objectives was to provide more cost-effective service, as many areas of West Sacramento are lower-density and do not generate sufficient ridership to justify additional fixed-route service.

Per the Pilot's service contract, Via (doing business as "NoMad Transit LLC") provides unlimited, subsidized rides for any trips that begin and end within West Sacramento Monday through Friday, 7:00 am to 10:00 pm, and Saturdays 9:00 am to 10:00 pm. The service area consists of the West Sacramento city limits. Regular, one-way fares are \$3.50 per trip, while seniors and people with disabilities receive discounted fares of \$1.75. Rides can be hailed using the Via app or by calling a telephone hotline. For frequent riders, the Pilot offers ViaPass, a \$15 weekly pass that provides up to four trips per day. Cash fares are not accepted, and most rides are booked using credit/debit cards linked to the Via mobile app. However, to comply with Title VI of the Civil Rights Act, Via accepts prepaid debit cards as an alternative to cash fare payment, which can be purchased with cash at local retailers.

Unlike ride-hailing, Via does not typically offer door-to-door service. Instead it uses a “virtual stop” model, which may require passengers to occasionally walk no more than 500 feet to catch the nearest available van. This model allows Via drivers to avoid time-consuming U-turns or circuitous movements that may inconvenience other riders. Riders with disabilities can book wheelchair-accessible vehicles by entering a promotional code in the Via app at checkout or by letting a customer service representative know if booking by Via’s phone hotline. Unlike an agency-operated microtransit model, the City did not purchase vans being used for the On-Demand Rideshare Pilot. The vans are owned by Mercedes Benz, which in 2017 established a joint venture with Via that made available a fleet of 10 Via Vans leased to Via Driver Partners through a third-party leasing entity.

The Pilot has received \$749,000 in funding for the one-year pilot period. Funding for the Pilot is provided by the West Sacramento City Council, using \$600,000 from local Transportation Development Act funds (a combination of State Transit Assistance and Local Transportation Funds) and a \$150,000 Sacramento Council of Governments TDM Innovation Grant. The city council approved a contract amendment increasing the project budget to \$839,000 by relinquishing an additional \$90k in fare revenue to Via.

Figure 21 Via On-Demand Rideshare Service Characteristics (West Sacramento, CA)

Via On-Demand Rideshare Service Characteristics	
Weekday Span	7:00 am – 10:00 pm
Weekend Span	9:00 a.m. – 10:00 p.m. Saturday Only
Vehicle Type	6 passenger van
One-Way Fare	\$3.50 Adult/ \$1.75 Senior & Disabled
Ride-hailing method	Via App or telephone line
Annual cost	\$839,000

Via On-Demand Rideshare Performance

As a condition of the Pilot, the City Council requested monthly reports on its service performance, ridership, and any proposed service modifications. The most recent report covers the first five months (21 weeks) of the partnership between May 14, 2018 and February 11, 2019. As of February 2019, 47,700 trips have been completed on the service, and average daily ridership ranges between 300 and 400 rides per day – nearly double original predictions.

Figure 22 Via On-Demand Performance vs. Yolobus (Demand Response)

Performance Metrics	Via On-Demand (5/2017 – 2/2018)	Yolobus Demand Response (2017)
Total Rides	47,680	27,067
Operating Cost	\$629,250	\$1,700,000
Operating Expense Per Trip	\$13.20	\$62.87
Percent Shared Bookings	67%	N/A
Percent Shared Rides	49%	N/A

The Pilot has so far been most popular between the hours of 10 AM and 2 PM, an unusual pattern given that most transit demand is highest during the AM and PM commuting peaks. The most common rider pickup and drop-off points are generally commercial centers, civic buildings,

schools, and some major employers. These include several locations suggesting that a number of Via users are crossing into Sacramento using another mode. Via's customer survey includes several rider comments urging the Pilot to provide improved connections to Sacramento.

A number of challenges with the Pilot have emerged. Via's subcontracted Support Line vendor provided poor customer service at the outset of the pilot, and particularly during the morning commute hours when call volumes were most frequent. Via changed vendors in October 2018 to remedy this issue. Additionally, Via's "Virtual Stop" model presents issues for some seniors with mobility issues and people with disabilities. Via is working to develop a solution allowing users to customize their Via profiles so that Via riders with known disabilities or mobility issues will automatically receive door-to-door service.

Overall, the Via On-Demand Rideshare Pilot has been successful in expanding mobility for seniors and transit dependent populations. Preliminary ridership results indicate that microtransit is especially effective at serving shorter trips under 5 miles between major destinations. In contrast to early ride-hailing companies, microtransit operators like Via have developed more refined approaches to compliance with regulations such as ADA and Title VI.

Successes

- Improved mobility for Seniors and transit dependent persons
- Lower cost per ride compared to ADA/Paratransit trips provided by Yolo County Transportation District
- Via Pass provides an affordable option for frequent users

Challenges

- Poor quality of subcontracted customer support call center
- Walking to "virtual bus stops" is not feasible for some riders
- Customers would like connections beyond city limits

Ride-Hailing Partnerships

Ride-hailing services are typically offered by drivers registered with a transportation network company (TNC) who operate personal vehicles than can be booked through the use of personal smart phones. The potential for ride-hailing services to provide first/last mile transit access, reduce parking demand, and address localized mobility gaps stimulates partnership interest from employers, developers, cities, and transit agencies. Transit agency interest can stem from the need to serve the riding public in places or at times of day that are difficult to serve with fixed-route transit (such as for lower density first-/last-mile connections or late-night service). These partnerships can make transit a more viable travel mode, by either expand existing transit service coverage area or replace existing underperforming routes with more customized service.

COTA Mainstream On-Demand | Greater Columbus, OH

In May 2019, COTA launched a pilot service with UZURV to provide non-ADA trips for some of its riders who qualify for Mainstream, the agency's ADA paratransit service. COTA was motivated to work with UZURV, an "adaptive TNC" that specializes in serving people with disabilities and older adults, after following GRTC's Care On-Demand partnership described below. COTA's new management leadership has also expressed strong support for agency staff to test innovative service delivery concepts. UZURV provides its drivers with required elements of ADA paratransit service (e.g. more rigorous background checks, drug/alcohol testing, and sensitivity training) and

offers wheelchair-accessible vehicles, neither of which are consistently available from Uber or Lyft. Like other TNCs, UZURV drivers are contractors who provide their own vehicles. Eligible ADA riders can book same-day or advance reservation trips, with at least 2 hours' advance notice required for trip reservations.

Like GRTC, COTA wanted to provide a same-day mobility option for its ADA paratransit customers (the Mainstream ADA paratransit system requires 24 hours' notice), and also to adopt a more cost-effective service model for ADA customers. The partnership took about one year to develop. Most of COTA's preparations prior to the launch of the service involved educating its ADA customers on the process to hail same-day service through UZURV. This effort consisted of a marketing campaign through print and digital materials as well as open house-style events.

There was no formal procurement process in this pilot. COTA's prime contractor for its Mainstream ADA paratransit service, First Transit, is scoped to subcontract portions of its service as needed to operators such as UZURV. As of late 2019, UZURV appears to be the only TNC that specializes in serving people with disabilities and older adults. COTA's union contract with the ATU prohibits the agency from sub-contracting service on fixed-route operations. While this did not affect the Mainstream On-Demand pilot, it requires general public microtransit services such as COTA Plus to be operated in-house.

Mainstream On-Demand is considered a supplemental service to ADA and is therefore not subject to FTA regulations such as Title VI or ADA, as is Mainstream. As with other TNCs, riders using Mainstream On-Demand must pay their fare with a credit or debit card. Prepaid debit cards are also accepted, a condition that enables the pilot to comply with Title VI regulations for unbanked passengers. Riders who become eligible for Mainstream ADA service are automatically also eligible for Mainstream On-Demand. Non-ADA trips on Mainstream On-Demand cost \$5, compared to \$3.50 on Mainstream.²⁷ These fares apply to trips between zero and five miles, plus an additional \$1 per every additional mile after the fifth mile. Unlike other TNCs, riders request rides through a dedicated call center, a similar process to the Mainstream ADA service. Wheelchair-accessible vehicles are available on Mainstream On-Demand, though UZURV generally contracts these vehicles from local non-emergency medical transportation providers (NEMT). These trips typically cost \$50 per trip to operate, significantly higher than for other vehicle types (the typical Mainstream On-Demand trip costs about \$27).

Mainstream On-Demand currently serves about 2,500 trips per month, and about 22% of these trips occur on wheelchair-accessible vehicles. COTA is highly pleased with the preliminary results of Mainstream On-Demand. Average Mainstream On-Demand door-to-door trip time is about 20 minutes, compared to 30 minutes on Mainstream. The average customer fare is about \$7.50, and the average trip distance is 10 miles. The program's cost-per-ride is about \$27, compared to \$36 for core ADA service, Mainstream. As a result of this performance, COTA made the Mainstream On-Demand program permanent in October 2019.

There is currently no UZURV app for riders, though COTA seeks to develop one in mid-2020. COTA also seeks to reduce the trip reservation window requirement from 2 hours to just one hour. UZURV has established a national service agreement with Lyft to cover any unfulfilled trip requests it cannot accommodate. Typically, this applies to about 5% of Mainstream On-Demand trip requests.

²⁷ The ADA prohibits agencies from charging more than double the fare of fixed-route service for ADA paratransit (Mainstream), though this has no bearing on Mainstream On-Demand, a supplemental service.

As with COTA's Mainstream service, Mainstream On-Demand service is limited to origins and destinations that are within $\frac{3}{4}$ mile of a fixed-route COTA bus service. COTA recommends that any addresses that are beyond this distance communicate with them to determine the closest available route and location that is eligible for service.

Customer feedback for Mainstream On-Demand has been positive so far, and COTA has received the following testimonials:

- "The ride time is a lot shorter. It gives me the option to go a little further when I shop or to visit an area I normally don't go."
- "I think it's awesome that COTA has a new program. I like the flexibility of it. I think the two-hour advance booking is exciting."
- "They've got things really structured so it's easy to schedule, cancel, or will-call."

CARE On-Demand | Transit Agency Partnership | Richmond, VA

Greater Richmond Transportation Commission (GRTC) partnered with two hybrid network companies that provide transportation service, including accessible service. ADA riders can book same-day or advance reservation trips. GRTC wanted to provide another mobility option for its ADA paratransit customers and also to help steer the increasing demand for ADA paratransit to a service more cost effective than ADA paratransit. GRTC reached out to several other transit agencies that had implemented ADA paratransit alternatives with TNCs to learn about their experience. Additionally, one of the transit agency's senior managers brought direct experience with a same-day taxi- and sedan-based service for ADA customers from a prior position in a different city. In developing its pilot, GRTC was very focused on ensuring compliance with ADA and Title VI requirements following FTA guidance. The transit agency contacted its FTA Regional Office for further guidance. GRTC was then deliberate in including ADA and Title VI requirements in its procurement document for the pilot, in particular, including a requirement for a call center and accessible vehicles. GRTC's planning efforts explored use of taxis and the "traditional" TNCs for the same-day service. Taxis did not seem a feasible option given the local taxi industry, and the TNCs did not seem interested in providing a call center, a feature GRTC specifically required.

GRTC negotiated agreements with two "reservation network companies." The first, UZURV (founded by two Uber drivers and based in Richmond) provides a call center and a mobile app. Since late 2017, UZURV has transitioned to a TNC, calling itself an "Adaptive TNC." The company has characteristics of a "traditional" TNC but also meets certain ADA requirements, e.g., providing all drivers with ADA and sensitivity training and providing door-to-door service when needed by riders. The second company, RoundTrip (co-founded by a Richmond resident and Virginia Commonwealth University graduate), is a web-based reservation service and has agreements with transportation providers in its network to serve the requested trips, including over 15 with accessible vehicles. This second company is formally known, per Commonwealth of Virginia regulations, as a Transportation Broker/Dispatcher.

ADA eligible customers can contact either of the two companies for a same-day trip at least two hours in advance. Trips can also be booked up to 30 or more days in advance. Customers can request favorite drivers, at least with UZURV. Service includes door-to-door assistance if needed by the customer. A Personal Care Assistant (PCA) rides without charge, and companion(s)—on a space available basis—also ride without charge. The customer pays the first \$6, with GRTC paying up to an additional \$15. If the trip costs more than \$21, the customer pays the remainder. The

companies charge for trips based on mileage and the cost to the customer is also subject to an additional charge for peaktime-of-day demand.

Data Sharing

- GRTC identified data and documentation requirements in its RFP and reports that the two companies provide the required information on a monthly basis. The information is needed for reimbursement.
- According to the RFP for the pilot, the data and documentation include, among others:
 - Customer information including the GRTC Client ID number
 - Number of companions
 - Full pick-up address with phone number
 - Destination address
 - Starting and ending mileage
 - Money collected from the customer and total trip cost
 - Daily dispatch log, which shows all program reservations taken, cancelled, dispatched and no-shows
 - Complaint log, which identifies customer complaints received directly and through GRTC customer service as well as the complaint resolution
- The main indicator of success is percentage of total trips by ADA customers taken on CARE On-Demand, with the original goal of 10%. As of April 2018, approximately 1,500-1,600 trips were completed, representing 7-8% of total ADA paratransit and pilot monthly ridership. GRTC also tracks miles, hours, and ridership.

Regulatory Considerations

- GRTC was careful to address the regulatory requirements of ADA and Title VI in the planning and design of its pilot.

Marketing/Outreach Methods

- GRTC's marketing department has worked with the two companies to advertise and market the pilot. Efforts included information on the transit agency's website and through social media as well as flyers and a mailing to ADA paratransit customers.
- More recent marketing has been word of mouth in the community.

Project Wins

- GRTC is pleased with the pilot.
- The pilot is diverting ADA paratransit demand and cost: GRTC's cost for the pilot trips are a maximum of \$15, while ADA paratransit trips cost, on average, about \$30.

Areas of Further Development

- GRTC is looking at some possible synergies that may exist with the current ADA paratransit program and the pilot program.

Lessons Learned

- GRTC believes that the time it took to plan the pilot, including careful research to ensure compliance with ADA and Title VI requirements, and the additional time to conduct the procurement and contracting process were important in launching a successful pilot. As the transit agency stated, "We did our homework."
- The transit agency also reports that its pilot benefitted from a slow and gradual build-up of ridership, allowing GRTC to gain experience and learn from that early experience.
- Information for eligible customers about the cost of trips should have been more explicit, specifically that the cost is not determined only by trip mileage but it can include an

additional charge at certain times due to increased demand. There was some confusion in the early months about trip costs as customers did not understand that the cost for the same trip could vary.

Go Dublin | Transit Agency Partnership | Dublin, CA²⁸

LAVTA is a suburban Bay Area transit authority looking to provide residents an easy, affordable transit solution. Wheels (operator within LAVTA network) pays for 50% of the rider fare (up to \$5) for shared TNC trips that start and end in Dublin on UBER, Lyft, and DeSoto Cab Company.

Due to declining bus ridership, LAVTA completed a comprehensive review of its Wheels fixed-route bus system in the summer of 2016. Bus routes that did not meet productivity thresholds were eliminated, leaving less populated areas in Dublin with limited transit service. LAVTA developed the *GoDublin!* pilot to provide residents with affordable on-demand transportation and to increase access to the Dublin BART station and Wheels Transit Center. LAVTA initially explored other options, such as minibuses, to replace routes with low ridership. However, LAVTA ultimately entered a contract with Uber and Lyft, the only TNCs in the area, due to their popularity with customers. The DeSoto Cab Company, which has its own ride-hailing app, was selected as a third vendor to provide wheelchair-accessible rides and allow for cash payment and ride requests by phone. Although LAVTA intended to launch the pilot in August 2016 to coincide with service changes, contract negotiations delayed the launch by five months. The program was scheduled to end in June 2018, but was extended to June 2019 to allow more time to evaluate the program and analyze trends.

GoDublin! uses geofencing technology to provide a 50% discount (up to \$5.00) for trips that start and end within Dublin city limits (a six-square-mile region). Only shared rides booked through UberPOOL, Lyft Line, or DeSoto Share are eligible for the promotion. Customers who do not have access to a smartphone, wish to pay in cash, or are in need of a wheelchair-accessible vehicle can request rides by calling the DeSoto Cab Company.

Data Sharing

- Each provider shares different datasets.²⁹ While all data is anonymized, datasets differ in the level of detail and type of reporting. Due to the variation in data received, LAVTA has encountered challenges with comprehensively evaluating the program.
- LAVTA hired a consultant to evaluate the pilot and help determine if program continuation past June 2018 is warranted.
- Indicators of success include average cost per trip, total ridership, and origin and destination info. LAVTA staff had anticipated an average monthly ridership of 1,500 and trip cost of \$5.00. Although the ridership estimate was initially met, technical complications with a provider's discount code contributed to a significant decrease in ridership. Average ridership was approximately 1,000 and trip cost, \$3.07. The most common trip pairings were to and from neighborhoods to BART stations, which confirmed that most customers were using the discount for its intended purpose of providing access to transit centers.

²⁸ <http://www.wheelsbus.com/godublin> and knowledge from previous work with LAVTA.

²⁹ The data shared by each partner is provided in LAVTA RFP No. 2017-15, Consulting Services to Evaluate Go Dublin Program. Available online at <http://www.wheelsbus.com/wp-content/uploads/2017/07/RFQ-RFP-for-Go-Dublin-Consulting-Work-w-HB-edits.pdf>.

- LAVTA hopes to obtain data on shared rides in order to determine the amount of trips that have multiple passengers traveling to a similar destination.

Regulatory Considerations

- LAVTA was able to address ADA and Title VI concerns by partnering with the DeSoto Cab Company, which has a call-in request system, can process cash payments, and has wheelchair-accessible vehicles in its fleet. In initial testing, WAV service was not guaranteed, so LAVTA renegotiated its contract with the DeSoto Cab Company to guarantee service. The agreement stipulated that LAVTA would pay \$225 per WAV trip as a way to ensure similar response times to Uber and Lyft. One year into the pilot, the transit agency had not received any complaints regarding the responsiveness of WAVs.
- LAVTA's labor unions initially raised a concern that the partnership would replace union workers, but the pilot did not reduce service hours in the fixed-route network. The goal was to focus the transit agency's existing resources on routes with higher ridership and rely on TNCs to serve areas where LAVTA is not competitive.

Marketing/Outreach Methods

- Although Uber and Lyft offered to assist with outreach and provide marketing materials, they were resistant to showing their logos side by side. As a result, LAVTA primarily developed marketing and outreach materials, which show Uber, Lyft, and DeSoto's logos together.

Project Wins

- Weekday ridership for LAVTA has increased since the pilot launch, though LAVTA is uncertain if this is due to the partnership or other improvements it made to the system concurrently.

Areas of Further Development

- Customers access the *GoDublin!* promotion by inputting a promotion code manually. Uber, Lyft, and DeSoto notified app users of the promotion through in-app messaging. As a result, LAVTA has often been removed from direct customer engagement. The transit agency is unable to determine whether participants of the GoDublin promotion are existing TNC users or had been transit customers of discontinued transit service.

Lessons Learned

- Coordination between three different providers with varying platform specifications requires strong program management.
- Marketing efforts require a notable time investment to coordinate. Preferences for logo usage, and outreach, for example, vary by company.
- Though data privacy was not a motivation for hiring a third-party to conduct program evaluation, doing so could result in a more meaningful analysis as private firms may not be subject to public records requests and TNCs could therefore be more willing to share data.

Figure 23 GoDublin (Dublin, CA)

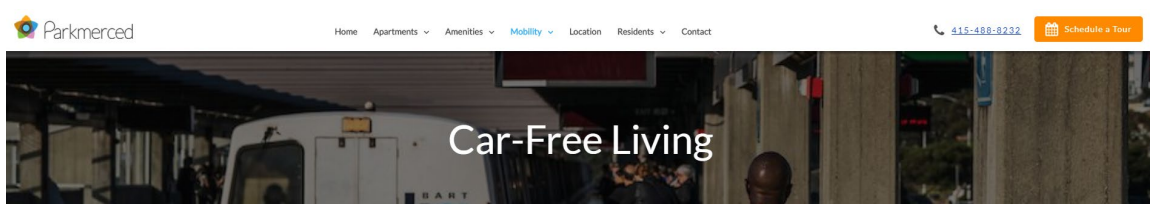


Source: LAVTA

Car-free Living Program | Developer Partnership | San Francisco, CA³⁰

Parkmerced is a newly constructed residential development in southwestern San Francisco. It offers high-rise apartments for rent and townhomes for sale. It includes off-street parking on site, however parking spaces are sold or leased separately from housing units, and there is an effort to reduce residents' need for owning and parking a car. As such, the development has a "Car-free Living" program in which it offers residents \$100 per month for transit, car share (via Getaround), or Uber trips. ParkMerced uses an online portal where residents can purchase these transportation products. In partnership with Uber, the property manager offers residents a \$5 flat fee for trips to nearby transit stations. The \$100 monthly credit does not expire, so any money unused rolls over to the following month. During the first year following the program's launch, in 2017, tenant occupancy increased 9% while parking demand remained stable.³¹ Over 1,000 of ParkMerced's residents (about 11% of the project's total residents) are enrolled in this program.³²

Figure 24 Parkmerced Car-Free Living Website



Source: Parkmerced

Palo Alto TMA | TMA Partnership | Palo Alto, CA

Downtown Palo Alto is a vibrant commercial district and destination with restaurants, retail, and office space. Parking is a scarce resource downtown, with both commuters and visitors competing for spaces. The Palo Alto Transportation Management Association (TMA) provides an "after hours" Lyft subsidy for low-income³³ commuters who live near Palo Alto and arrive at work

³⁰ <https://www.parkmerced.com/carfreeliving>

³¹ Galdes, Camille. 2017. "Ride-Hailing Becomes a CRE Amenity." NAIOP Commercial Real Estate Development Association. Fall 2017. <https://www.naiop.org/Magazine/2017/Fall-2017/Business-Trends/Ride-hailing-Becomes-a-CRE-Amenity>.

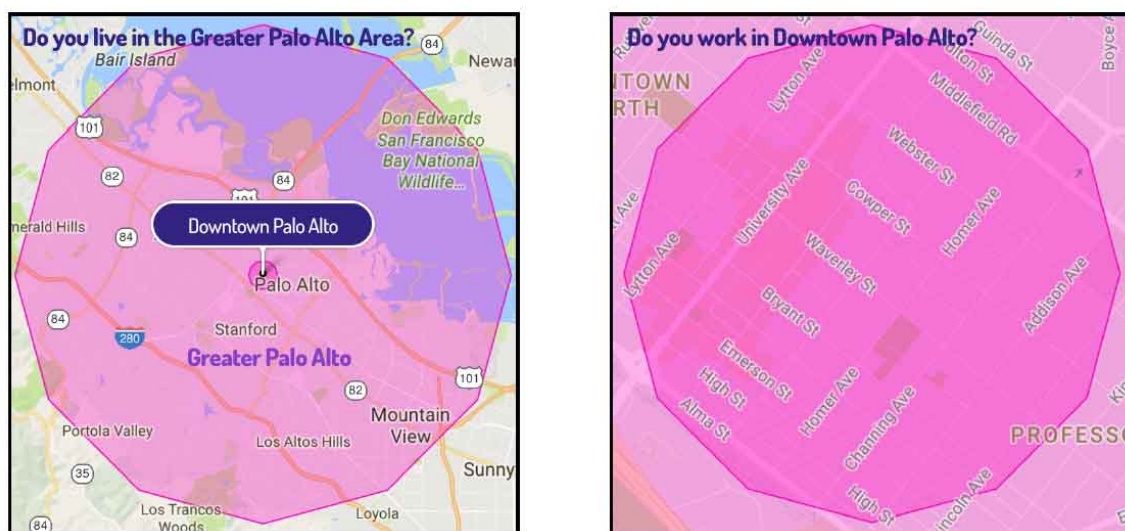
³² <https://www.maximusrepartners.com/parkmerced-partners-getaround-expands-car-free-living-program/>

³³ Defined by the TMA as a person living in a household making \$70,000 per year or less.

before 6 a.m. or leave after 8 p.m. Additionally, the TMA provides free transit passes to low-income workers and collaborates with Scoop and Waze Carpool to facilitate and incentivize carpool trips into the downtown Palo Alto area for all employees.

The Palo Alto TMA surveys Downtown workers' commute mode and found that service workers had the highest drive-alone rate of any employment sector, at about 70%. Given the high cost of living along the Caltrain corridor, as well as off-peak or irregular schedules, many service workers drive to work. Providing an after-hours Lyft subsidy when transit service is limited or infrequent allows employees to take transit more often, freeing up parking spaces for visitors/patrons and reducing traffic. The after-hours Lyft program provides a subsidy of up to \$10 per trip, for up to 15 trips a month, amounting to a maximum annual subsidy of \$1,800 per eligible employee. This volume of trips accounts for less than half of all monthly commute trips for a typical, full-time employee, and therefore encourages riders to use Lyft as a backup option and transit as their primary commute mode. Figure 25 illustrates the geographical limits of the after-hours Lyft program. To be eligible, an employee must work in downtown Palo Alto (the map on the right) and also live in "Greater Palo Alto Area" (the map on the left). Employees who do not own a smartphone can call a dispatcher to get a ride.

Figure 25 **Geographical Limits of Late-Night Lyft Program**



Source: Palo Alto TMA <http://www.paloaltohma.org/wp-content/uploads/2016/10/greater-palo-alto-area2.jpg>

The TMA provides both marketing support and financial support to the program. Palo Alto TMA's after-hours Lyft program costs \$2,028 annually per participant, inclusive of marketing, administrative, and direct subsidy costs. The program has between 11-20 active users a month and an average cost per trip of around \$8. Active users take 10-11 trips per month, on average.

This program demonstrates how a targeted ride-hailing partnership complements other TDM efforts, making transit and carpooling more viable for more people's commute. This type of targeted program is relevant to Dublin employees or work sites with irregular schedules who commute when transit service is infrequent. However, the program serves a low overall number of people and has limited capacity to shift trips from drive-alone compared to other strategies such as circulators or bike share.

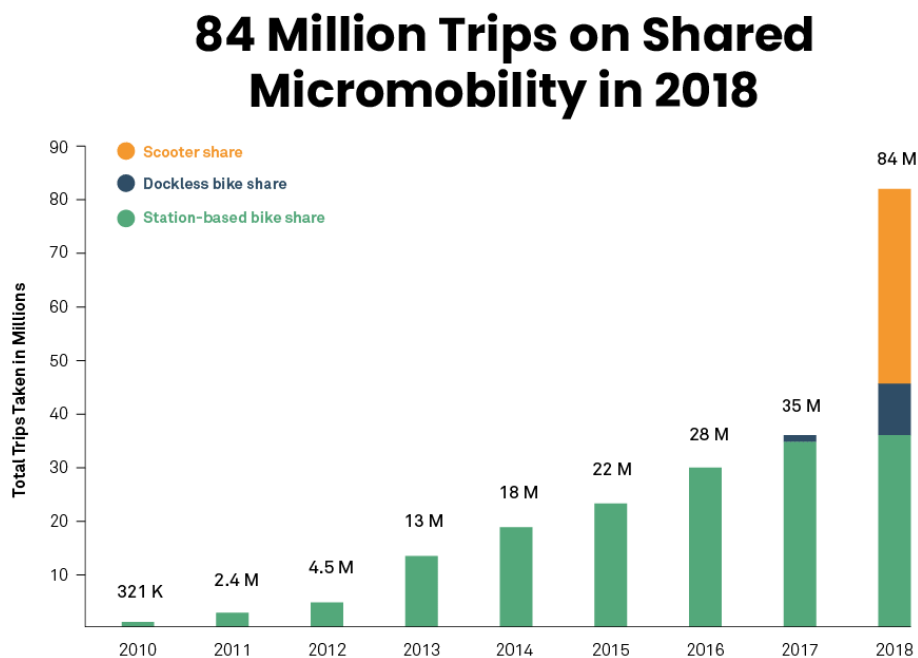
4 SHARED MICROMOBILITY

BACKGROUND

Dublin Mobility Phase II explored the viability and local considerations for implementation of a bike share system in Dublin. At the time, dockless bike sharing was a relatively new service option and electric bikes and scooters were just arriving in cities across the country. Dublin developed an operating relationship with Lime (formerly known as LimeBike) in 2018 and executed an 8-month dockless bike share pilot program. The industry continued its rapid evolution during that period and in the 12 months since the pilot ended and new opportunities are now being considered in Dublin. This section of the report will provide a brief overview of the pilot program outcomes and will re-establish the context for “shared micromobility” in Dublin, including considerations around docked and dockless bike share and electronic bikes and scooters.

Over the past several years, these services have rapidly proliferated in cities across the country, offering a wealth of new options and potential benefits to users of all types. Between 2017-2018 alone, the number of trips on these devices grew from 35 million to 84 million.³⁴ In less than 10 years, the number has grown exponentially, starting with just under a half-million trips in 2010, when the first of the current generation of docked bike share systems opened in Minneapolis and Denver.

Figure 26 Growth in Shared Micromobility Trips, 2010–2018



Source: NACTO

With that growth, has come an evolution of the industry, with dockless bicycles, e-bikes, and e-scooters grabbing larger shares of the market, while some traditional “docked” systems have experienced either slowed growth or declining ridership. The vast majority of these trips are in the largest markets, including New York City, Chicago, and Washington, DC.

³⁴ NACTO. “Shared Micromobility in the U.S.: 2018.” Accessed online at: <https://nacto.org/shared-micromobility-2018/>.

The most remarkable trend in the past 12-18 months has been the dramatic growth of dockless, e-bikes, and e-scooters, which account for the more than doubling in total trips between 2017-2018. These services and vehicle types have expanded a) the number of communities with programs on the ground, b) the quantity of vehicles, c) the geographic distribution of vehicles, d) the affordability of use, e) the types of trips that are taken, and d) the accessibility for certain user groups.

In Ohio, there were nine communities with active shared micromobility systems on the ground in 2019, including more than 170 hubs and 3,000 devices.³⁵ These figures do not include dockless e-scooters. Several more (including Dublin) have active or recently concluded pilots. While scooter share has been slower to materialize in Ohio, the number of vehicles grew throughout the year as communities either passively welcomed them or actively developed permitting programs to regulate their arrival and operation. They have become increasingly popular in cities like Columbus, Cincinnati, and Cleveland and on college campuses across the state.

Figure 27 Link Dayton Users Cycling on Brown Street



At the state level, two pieces of legislation moved forward in 2019 that impact the operation of shared micromobility programs in Ohio. The first, Ohio House Bill 250, became effective in March 2019 and established electric bicycle regulations for all of Ohio's communities. However, individual communities may pass their own legislation to further regulate or permit e-bikes locally. The new law defines e-bikes as a unique class of vehicle that is separate from other motorized vehicles. It further establishes three classes of e-bikes, who may operate them, and where they may be operated.³⁶ In September 2019, Dublin City Council approved ordinance 45-19, which included updates to Dublin's Codified

³⁵ As of Q1 2020, these communities include Cleveland, Toledo, Dayton, Columbus, Cincinnati, Oxford, Canton, Blue Ash, and Kent.

³⁶ The Ohio Legislature. "House Bill 250." Accessed online at <https://www.legislature.ohio.gov/legislation/legislation-summary?id=GA132-HB-250>.

Ordinances to align with the new State law. Of note, the code now explicitly states that class 1 and 2 electric bicycles are permitted to operate as bicycles do within the roadway and on share-use paths (with the exception of mountain biking, hiking, and equestrian paths), but that class 3 bicycles may not. The second, House Bill 295 would establish requirements for “low-speed electric scooters” and is currently under review by the Ohio Senate’s Transportation, Commerce and Workforce Committee.³⁷

During the second half of 2019, several micromobility operators such as Lyft, Bird, and the operator of Dublin’s dockless bike share pilot, Lime, have ceased operating in central Ohio to focus on more profitable markets. The ongoing costs of operating a micromobility system – such as charging electric devices, redistributing devices from low-demand zones to high-demand zones, repairing and replacing broken devices, providing software and technical support, and operating customer service hotlines – can easily exceed revenues earned from user fees in lower-density settings. Typically, micromobility operations are only profitable if rider utilization exceeds one ride per device per day, and many operators aim for utilization of at least 1.5 to 2 rides per device per day.³⁸

The Dublin Mobility Phase II report included the following summaries of docked and dockless system advantages and challenges:

Figure 28 Advantages and Challenges of the Dock-Based Systems

Advantages	Challenges/Issues
<ul style="list-style-type: none"> Proven technology backed by several years of performance data Operators tend to have deep experience and understanding to ensure smooth operations and responses to issues Docks and kiosks provide high-visibility advertising space Docks are clearly identifiable for wayfinding and access/use Iconic, predictable, and reliable station locations Familiar to tourists from other cities 	<ul style="list-style-type: none"> Capital costs can be significant Less flexibility in where users can dock bicycles (relies on dense network of stations) Can require substantial rebalancing effort with high commuter use during peak periods Potential for proprietary issues with docks, bicycles, and technology equipment (e.g. kiosks, mobile apps, etc.) Wireless internet connectivity outages and solar power disruptions can interrupt an entire station May be less suitable for a lower-density setting with fewer prominent trip generators GPS technology can be added on bikes for an additional cost

Considerations for Dublin

- Availability of existing vendor expansion
- Level of interest from potential sponsors
- Feasibility of dock-based model in Dublin land use and transportation context
- Availability of dedicated space for station infrastructure
- Existing bicycle network and proposed improvements relative to bike share service area
- Seasonal issues that impact rider behavior and bike network conditions (think snow)

³⁷ The Ohio Legislature. “House Bill 295.” Accessed online at <https://www.legislature.ohio.gov/legislation/legislation-summary?id=GA133-HB-295>.

³⁸ Sole, Sarah. 2019, May 20. “Full Story: Lime Changing Gears on Bikes in Central Ohio.” ThisWeek Community News. Accessed online at <https://www.thisweeknews.com/news/20190212/full-story-lime-changing-gears-on-bikes-in-central-ohio>.

Figure 29 Advantages and Challenges of Dockless Bike Share Systems

Advantages	Challenges/Issues
<ul style="list-style-type: none"> ▪ Flexible fleet management for operators ▪ Flexible, modular hub design can include kiosks, map/advertising panels, or standard racks ▪ Lower capital costs (between 25-50% cost savings) compared to traditional bike share ▪ Lower cost to implement and maintain by removing the need for docking stations and reducing the amount of kiosks in a system ▪ Easier system expansion/contraction, or service area adjustment, as demand and utilization evolves ▪ Lower user costs encourage greater use ▪ Eliminates risks linked to imbalanced trips: stations that lack bikes or docks to return bikes. ▪ Can reduce need to actively rebalance system, if user incentives prove effective 	<ul style="list-style-type: none"> ▪ Relies on use of a mobile app, creating equity issue ▪ Less control over system balancing, with the risk of bikes cluttering up popular return locations, being abandoned, or returned too frequently in low-demand locations. ▪ Reliance upon start-up providers lacking track record of reliability/longevity ▪ Potentially costly wireless connectivity fees as the number of internet connections scales directly with the fleet size (direct impact on operating cost) ▪ 3G wireless internet connectivity outages can disrupt an entire fleet rather than one hub location ▪ Coordination with bike share programs in neighboring communities that use a traditional model

Considerations for Dublin

- Potential cost savings over docked model for both users and system sponsors
- Offers a point-to-point, flexible mobility option
- Potential for CoGo expansion to Dublin could negate need for dockless system
- Existing bicycle network and proposed improvements relative to bike share service area
- Availability of operational funding for bike share is unclear
- Seasonal issues that impact rider behavior and bike network conditions (think snow)
- Uncertainty in new bike share systems/operators who rely on user fees for operations

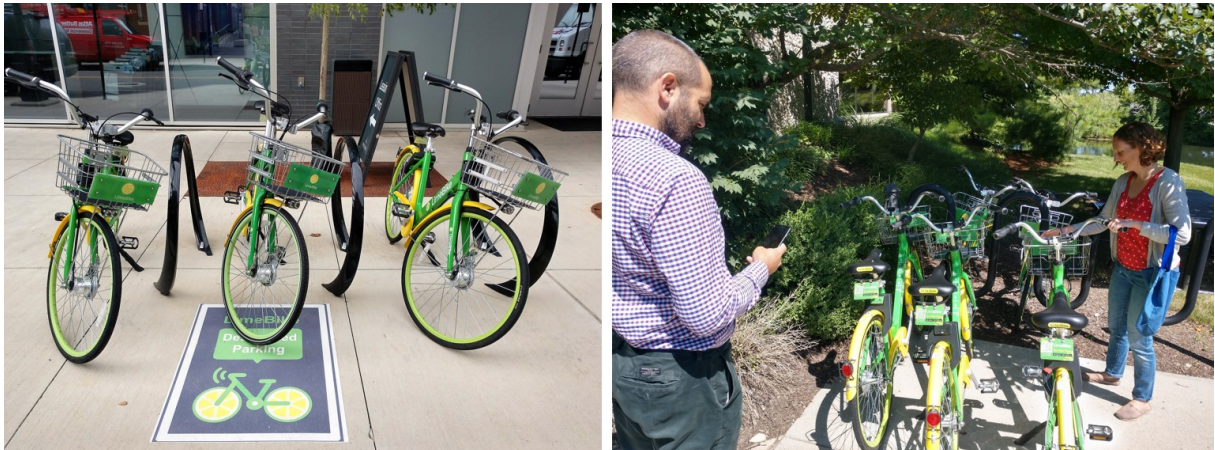
DUBLIN LIME PILOT

The City of Dublin formed a partnership with Lime in Q1 of 2018 through a Memorandum of Understanding (MOU) that specified a service level agreement for the pilot's duration. The MOU articulated that the City's primary goals for the pilot were to provide safe and affordable multi-modal transportation options to all residents, reduce traffic congestion, and maximize carbon-free mobility for employees and visitors. The MOU granted Lime the sole and exclusive right to deploy a minimum of 250 shared, dockless bikes in the public right-of-way, with an incremental increase or decrease, based on demand, with the City's permission. The City supported the pilot by installing bike racks and painting bike parking spots to ensure the orderly parking of bikes throughout the City. Lime agreed to repair and replace broken or damaged bikes, rebalance the fleet to ensure bikes are available various Dublin neighborhoods, and bear all system maintenance costs to meet its service level agreement.

Additionally, Lime was required to submit a monthly data report to the City consisting of the following:

- Location of Bikes
- Anonymized trip data for completed trips
- Number of rides for the previous month
- Anonymized and aggregated data on the routes taken by Lime bikes
- Safety reports on any crashes involving Lime bikes.
- Aggregated repair information on Lime bikes by type of repair.

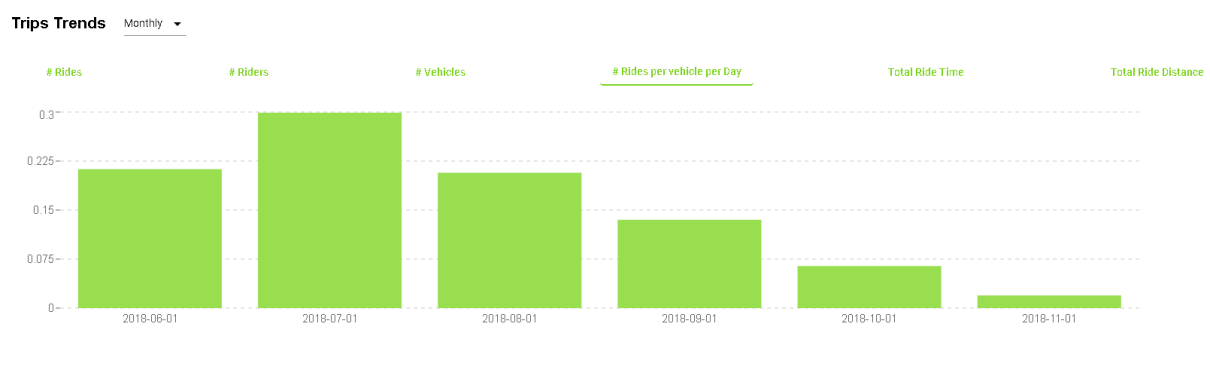
Figure 30 Lime Pilot Parking Zones and Users Unlocking Bikes



The pilot launched on May 5th, 2018 with 100 bikes and a goal of expanding to 250 bikes, as specified through the service level agreement, though the targeted number of vehicles was not attained. The pilot initially included conventional bikes, from May through September 2018, then expanded to include a selection of Class II, pedal-assist e-bikes in October and November 2018. The pilot ended in December 2018.

On conventional dockless bikes, the pilot served 4,083 rides and 2,330 unique riders over its seven months of operations. The total distance traveled of these rides was 4,537 miles, with a median trip distance of 0.6 miles and a median trip time of about 18 minutes. During October and November 2018, when e-bikes were available, there were 67 unique riders who took 127 rides, with a median trip distance of 0.4 miles and a median trip time of about 12 minutes.³⁹ As shown in Figure 33, most riders did not use the system frequently, with most unique riders having completed fewer than three trips over the life of the Lime pilot. Weekly Lime ridership was relatively robust from May through July 2018, with more than 600 rides per month (see Figure 32). However, ridership declined considerably, to below 300 rides per month by October 2018. By another key performance indicator, utilization, the pilot performed considerably below expectations. Utilization never exceeded 0.3 rides per bike per day for any monthly period, as shown in Figure 31, well below the commonly held industry threshold of 1.0 rides per bike per day.⁴⁰

Figure 31 Monthly Lime Bike Utilization – Rides Per Vehicle Per Day



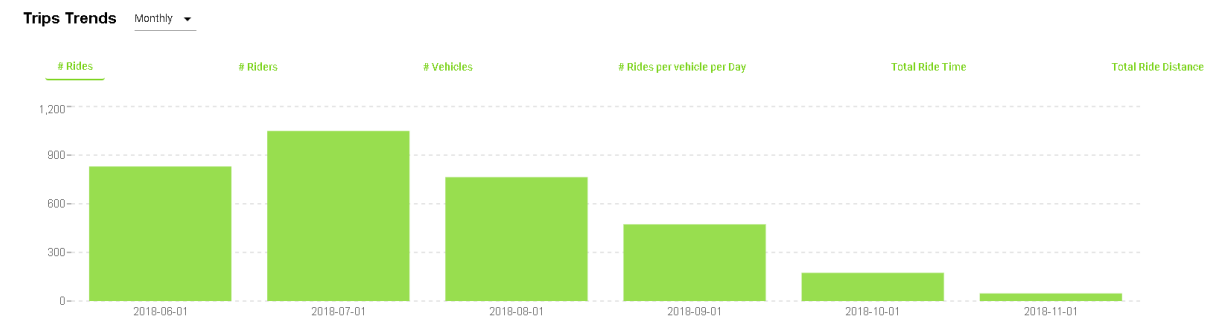
³⁹ Trip data is derived from the Lime data dashboard, but it should be noted that anomalies were present throughout the pilot relative to GPS mapping of individual trips. Trip distance data, in particular, may not reflect actual use.

⁴⁰ It should be noted that Lime's national business model was evolving as the pilot proceeded, with a transition away from conventional bicycles to e-bikes and e-scooters. With e-bikes slow to arrive and e-scooters not permitted in Dublin, Lime's level of service and attention waned, ultimately leading to a shorter duration (8 months) than originally anticipated.

DUBLIN MOBILITY PLAN | PHASE III REPORT

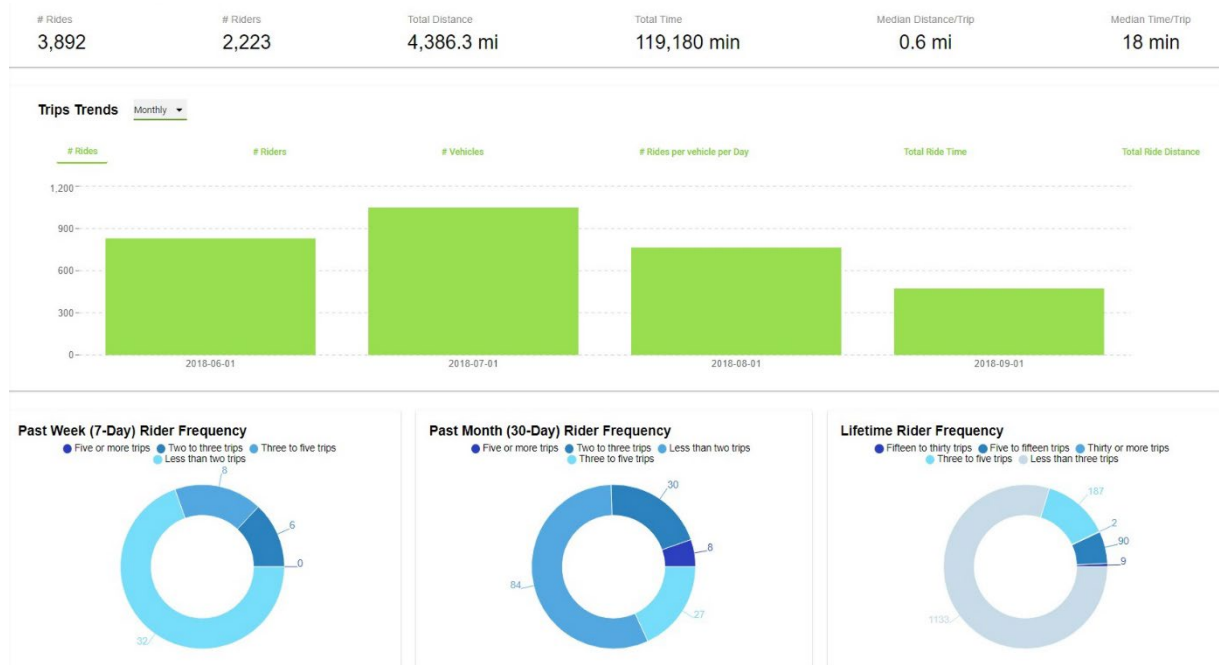
CITY OF DUBLIN, OH

Figure 32 Monthly Lime Ride Volumes – Rides Per Month



Source: Lime Data Dashboard

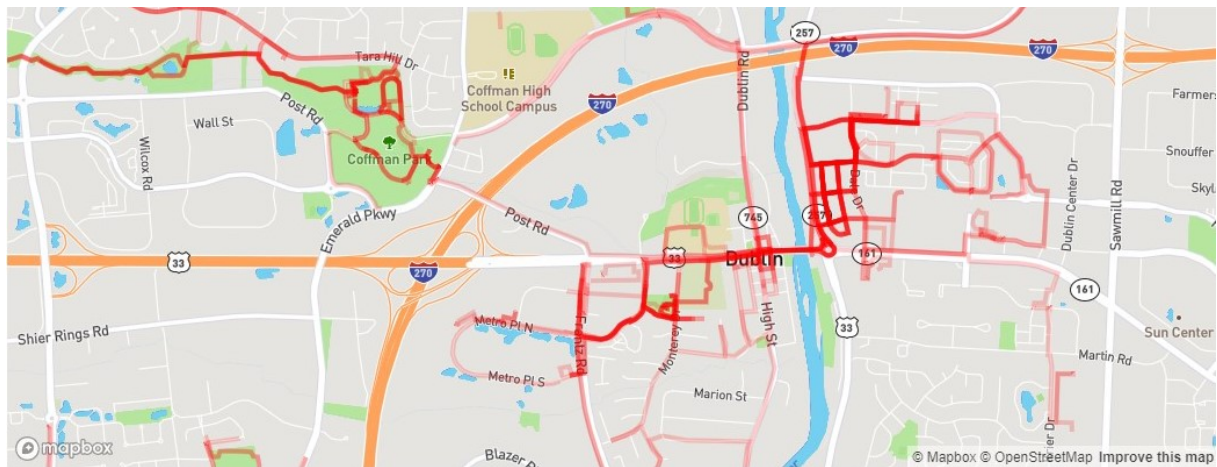
Figure 33 Lime Data Dashboard (October 2018)



Source: Lime Data Dashboard

Per the service level agreement, Lime provided the City with an anonymized GPS data for completed trips, as shown in Figure 34. While the precise magnitude of travel demand is unspecified, these line segments highlight the relative intensity of trips taken on Lime vehicles as they were distributed across the local roadway network. This data indicates relatively high intensity of use in the Bridge Park district, Historic Dublin, and near the Dublin Recreation Center and Kaltenbach Park. Bridge Park and Historic Dublin are both mixed-use neighborhoods featuring relatively high densities of retail and civic destinations, making them most suitable to bike share. Dublin Recreation Center and Kaltenbach Park are both locations with well-maintained off-street paths that are proximate to residential neighborhoods and are conducive to recreational cycling.

Figure 34 Lime Trip Route Intensity – October 2018



Source: Lime Data Dashboard

IMPLEMENTATION & FUTURE CONSIDERATIONS

The City of Dublin continues to support micromobility initiatives as a means of offering residents, employees, and visitors a healthy, convenient, and sustainable transportation option. Dublin City Council approved a one-time allocation of \$220,000 in Capital Improvement Program (CIP) funds to support docked bike share system expansion and an additional \$50,000 per year to support program management from 2021 - 2024. The assumption at this point is that the system would be an expansion of Columbus' CoGo bike share program, which is operated by Motivate. This expenditure will need to be competitively procured, per City procurement policies. City staff have been in discussions with CoGo with respect to station requirements (space, fixtures, movability, etc.), but the expansion remains unclear. Several suburban Columbus communities were successful in applying for MORPC funds through joint application for CoGo expansion in recent years. Dublin may seek similar funding for this purpose with adjacent communities (e.g. Hilliard, Upper Arlington, and Columbus).

City staff have also been in discussions with ROAMbikes, a Columbus-based micromobility operator, about launching in Dublin and Columbus. A memorandum of understanding (MOU) is currently in development, with a projected 50-bike pilot to focus around the Bridge Park and Historic Dublin areas. ROAM operates electric-assist, dockless bikes and they plan to focus their marketing strategy around partnerships with local hotels and businesses.

While the City has discussed options to permit an e-scooter operator in the future, stakeholders concluded that Dublin's roadway network is currently unsuitable for this mode and that local ordinances would need to be altered to legalize e-scooters on public roads and pathways.⁴¹ Stakeholders have recommended that the City maintain their current position on e-scooters, but are leaving open the possibility of a future program.

In the long-term, viability of these programs will hinge upon cross-sector collaboration to promote, operate, manage, and maintain shared micromobility services. The City's leadership in engaging operators and end users will continue to be critical to successful outcomes that meet the needs of all parties. Further, the City must continue to address gaps in their network of high-quality bicycle infrastructure that discourage cycling between local destinations and to adjacent communities.

⁴¹ Rental e-scooters are currently not permitted in Dublin and they are technically not allowed on shared use paths. E-bikes are allowed up to class 2 (no class 3), per statewide legislation and Dublin's 2019 code update.

5 COMPLETE STREETS

BACKGROUND

Complete Streets are a core component of the Dublin's mobility strategy. Complete Streets are defined as roadways that provide an integrated, balanced, and safe transportation network for all road users, regardless of how they get around. Broadly, a Complete Streets policy provides a framework of policies, implementation guidelines, and regulatory mechanisms ensuring that all new investments in public roadways enhance the safety and mobility of all road users.

The City of Dublin passed a Complete Streets Resolution in June 2018, recognizing the importance of these principles in planning and construction projects toward meeting the City's mobility, economic, health, and sustainability goals. The City's resolution builds upon regional Complete Streets efforts by the Mid-Ohio Regional Planning Commission (MORPC) and neighboring communities, including Hilliard, Worthington, and Columbus.

IMPLEMENTATION & FUTURE CONSIDERATIONS

A Complete Streets resolution is the first legislative step toward rebalancing Dublin's transportation planning and decision-making process so that the needs of all road users are given equal consideration, regardless of their mode of travel. Phase 2 of the Mobility Plan recommended that Dublin take further steps to ensure that these principles are integrated into future plans and projects. These include developing clearly delineated supporting policies, design guidelines, enforcement mechanisms, and evaluation tools, such as those outlined below, that advance the City's mobility objectives.

These efforts require coordination across public agencies and with private development partners. Integration with the City's land use and development policies and the region's transportation investment priorities will also help achieve maximum impact. When paired with policies and regulations that effectively manage parking, encourage transit-oriented development and promote higher densities of development, the Dublin's Complete Streets resolution can be an effective tool in achieving the community's broader mobility vision.

Smart Streets

In May 2019, MORPC adopted the nation's first "Smart Streets" policy, aimed at integrating emerging digital technologies and intelligent transportation systems into the region's infrastructure network. According to MORPC, "The policy seeks to incorporate the Smart Streets concept into the planning, programming, scoping, design, implementation, maintenance, and performance monitoring of all transportation infrastructure projects awarded funding through MORPC."⁴² MORPC recommends local adoption of Smart Streets policies to advance shared goals, including connectivity, flexibility, interoperability, and equity. Successful implementation stands to improve traveler safety, reduce congestion, increase system efficiency, and deliver services more effectively in Central Ohio, while improving overall quality of life.

The City of Dublin passed a resolution in support of the policy in October 2019, acknowledging their role in MORPC's Smart Region Task Force and related efforts. The resolution directs City departments

⁴² Mid-Ohio Regional Planning Commission. "MORPC Approves Smart Streets Policy." Accessed online at <http://www.morpc.org/news/morpc-approves-smart-streets-policy/>.

to “consider and incorporate whenever feasible” the Smart Streets Policy and its concepts in both publicly and privately developed projects.

Vision Zero

Vision Zero is a strategic planning and decision-making framework centered on the goal of eliminating all traffic fatalities and severe injuries. This approach starts with the belief that these incidents are preventable and that a cross-disciplinary, systematic approach to addressing physical, regulatory, and behavioral challenges will enhance safety, health, accessibility, and equitable mobility outcomes for all travelers.

A growing number of U.S. cities have formally adopted a Vision Zero approach, while even more are using its guiding principles to re-envision and re-structure their transportation systems. Integral to the pursuit of zero traffic fatalities and severe injuries are the following key policies and practices⁴³:

- Build and sustain leadership, collaboration & accountability.
- Collect, analyze and use data.
- Prioritize equity and engagement.
- Lead with roadway design that prioritizes safety.
- Manage speed to safe levels.
- Maximize technology advances, but don't overlook low-tech solutions.

The City of Dublin has emphasized several of these components in its recent Complete Streets and Smart Streets resolutions. The opportunity to advance Vision Zero objectives and safety outcomes is a clear next step in the City's pursuit of a healthy, sustainable, equitable transportation system.

Evaluation

Dublin Mobility Phase II recommended annual review of the Dublin's Complete Streets efforts, including reporting on metrics identified as most important to the City. This report could be delivered to City Council and the community at-large as a way of conveying progress and identifying areas for additional focus. Performance measures could align with other City plans and the key objectives of Complete, Smart, Vision Zero streets. These include:

- New miles of dedicated bicycle facilities
- New linear feet of sidewalk created
- New miles of shared use paths
- Commuter travel mode splits
- Proportion of children walking or biking to school
- Number of new street trees
- Crash data for all modes
- Total dollar amount spent on Complete, Smart, and Vision Zero streets improvements

⁴³ Vision Zero Network. “Moving from Vision to Action – Fundamental Principles, Policies & Practices to Advance Vision Zero in the U.S.” February 2017. Accessed online at http://visionzeronetwork.org/wp-content/uploads/2017/01/MinimumElements_Final.pdf.

6 WAYFINDING

The Dublin Mobility Study recommended development of a comprehensive wayfinding system along secondary paths for pedestrians and cyclists. Sign types included path identification, directional information, decision points, and regulatory information. Although the Mobility Study included both at-grade signage and standard vertical signage, the City has determined that wayfinding signage for shared use paths would be limited to at-grade wayfinding graphics installed directly on the pavement.

To advance this concept, several wayfinding concepts were developed by Landplan Studios and were installed via adhesive-backed, heavy duty foil along pathways in support of the Cycle de Mayo bicycling event in May 2019. The materials were installed directly on a variety of shared use path paving materials, including asphalt, concrete, and brickpavers and have been evaluated for durability and function in the months following the event.

The approach was determined to be viable for a longer-term installation pilot, which will be executed along two shared use paths. The first route focuses on a path to be used primarily by City of Dublin residents, connecting several large subdivisions to major parks and public spaces in the northwest portion of the city. The second route focuses on visitors to the City of Dublin and will connect hotel and employment areas to Historic Dublin and the Bridge Street District. The installations will again be evaluated for durability and function prior to implementation of a comprehensive, citywide program.

Figure 35 Shared Use Path At-Grade Wayfinding Graphics



Source: LandPlan and City of Dublin

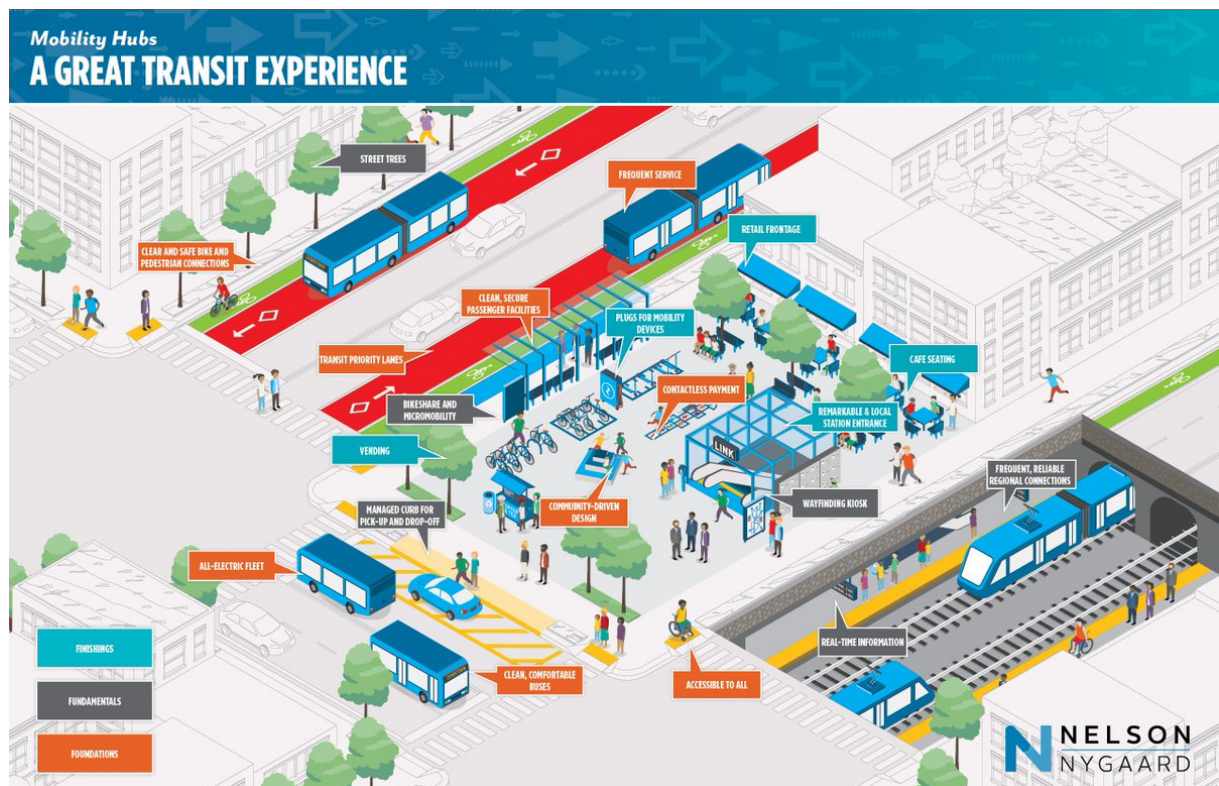
7 MOBILITY HUBS

BACKGROUND

Mobility hubs are multimodal transportation connection points designed to integrate independent mobility networks and services to make these resources more viable as primary and connected means of transportation. Dublin Mobility Phase II identified mobility hubs as an important element to elevating the quality and convenience of multimodal travel options in Dublin, overlapping with and bringing together each of the previous strategic priority areas. As emerging mobility options increasingly diversify travel choice and as technology makes it increasingly easier to find immediate information on and access to these options, mobility hubs continue to be a viable opportunity to pursue in Dublin.

Mobility hubs can include a variety of multimodal infrastructure components customized for their location within the transportation network. They can range from simple to complex in their range of features. As identified during Phase II, the term “mobility hub” in Dublin can refer to any intentional co-location of two or more publicly accessible travel modes within a public space or facility. It can also extend to hubs of information, where travelers can gain a quick understanding of mobility options, directions, travel times, etc.

Figure 36 Mobility Hub Amenities Contribute to a Quality Multimodal Experience



Phase III Mobility Hub Concepts

Dublin Mobility Phase II established a series of mobility hub elements and typologies that could serve the Dublin community. This included considerations for hub design and programming, appropriate land uses contexts and details on space requirements and infrastructure needs for each.

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Figure 37 Mobility Hub Elements Overview

Hub Elements	Most Appropriate Hub Locations	Typical Space Requirements	Essential Infrastructure Needs
Bus/Circulator Stop	Employment centers, Tourist locations, Residential/Mixed-Use Developments, High Schools, Community Center, COTA P/R lots	Minimum of 200 SF	Shelter, bench, refuse receptacle, posted (digital or static) service information, lighting,
Bike Parking	High Schools, Community Center, COTA P/R, Regional bike network connections	Minimum set-aside of 100 SF	Shelter, bike racks
Bike House	Residential/Mixed-Use developments	1,500 SF	Repair station, restrooms, showers/lockers Class B retail-space amenities
Bike share Station	Centers of employment, Centers of tourism, Residential/Mixed-Use Developments, High Schools, Community Center, Bus Stops	Minimum of 100 SF	10-20 bikes, wayfinding/signage, mobile app
Kiss-and-ride	Bus Stops	200 SF of curbside space, when designated	Dedicated Curbside space (by time of day), Signage
Ride-Share Connection Points	Centers of employment, Centers of tourism, Residential/Mixed-Use developments, High Schools, Community Center, Bus Stops	200 SF per space	Dedicated parking (by time of day), Signage, Signage, WiFi to ensure connection to apps that facilitate ride-matching (e.g. Gohio)
Hailed-Ride Service Connection Point	Centers of employment, Centers of tourism, Residential/Mixed-Use Developments, High Schools, Community Center, COTA P/R lots	200 SF of curbside space, per parked vehicle	Dedicated Curbside space (by time of day), Signage
Car share Parking	Downtown Streets & Parking Facilities	Minimum of 3 spaces @ 200 – 250 SF per space	Dedicated Curbside space, Signage
Ride-share Waiting Lounges	Residential/Mixed-Use Developments	250 SF of building-interior space	Standard retail-space amenities + Real-time transit information (e.g. TransitScreen, Roadify)
Mobility Kiosks	Centers of tourism, Residential/Mixed-Use Developments, High Schools, Community Center	10 SF of sheltered space	Utility hookups (e.g. electric, Internet), internet connection, WiFi

Hubs typologies were developed for four primary location types, each with a list of “essential,” “priority,” and “supportive” elements:

- **Downtown Hubs:** Bridge Park and Historic Dublin
- **Campus/Community Center Hubs:** Medical centers, office parks, recreation centers, etc.
- **Park & Ride Hubs:** Serving large transit stops with park& ride and/or kiss & ride facilities
- **Neighborhood Center Hubs:** Serving residential areas at a common access point

DUBLIN MOBILITY STUDY | PHASE III REPORT

CITY OF DUBLIN, OH

Figure 38 “Downtown” Mobility Hub Concept

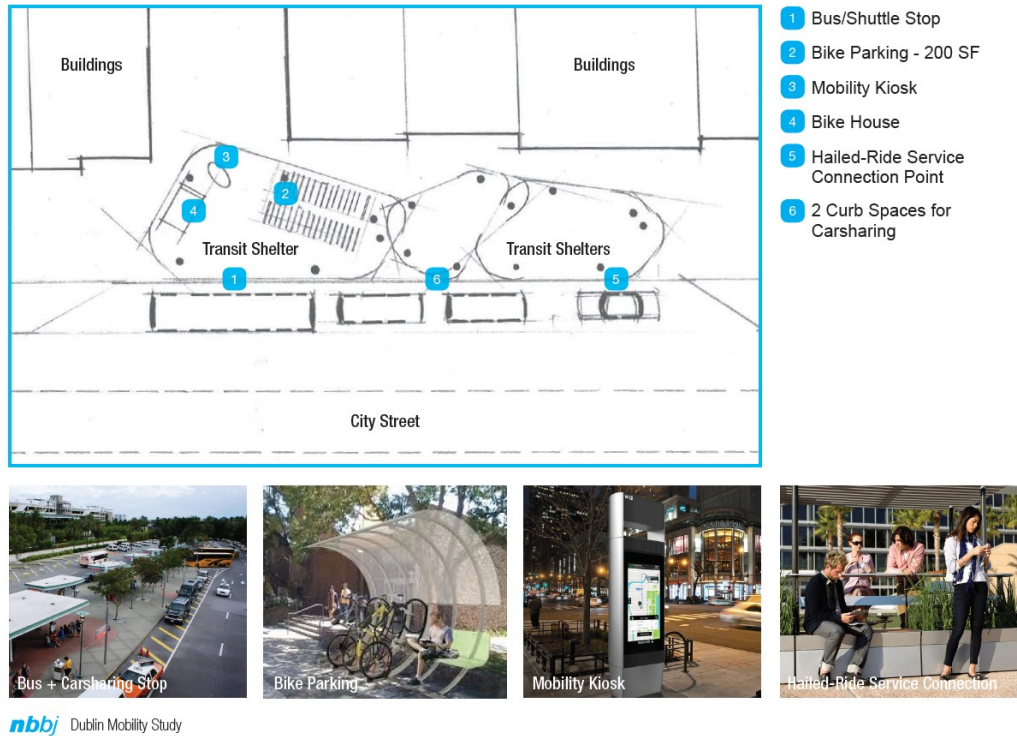
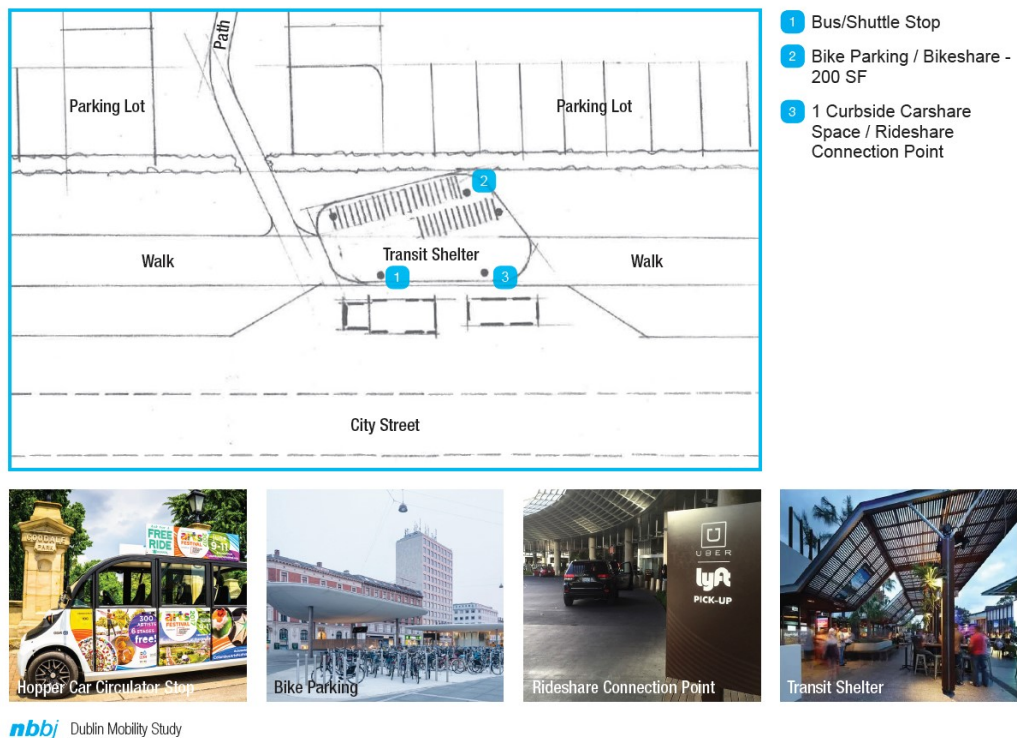


Figure 39 Campus/Community Center Mobility Hub Concept

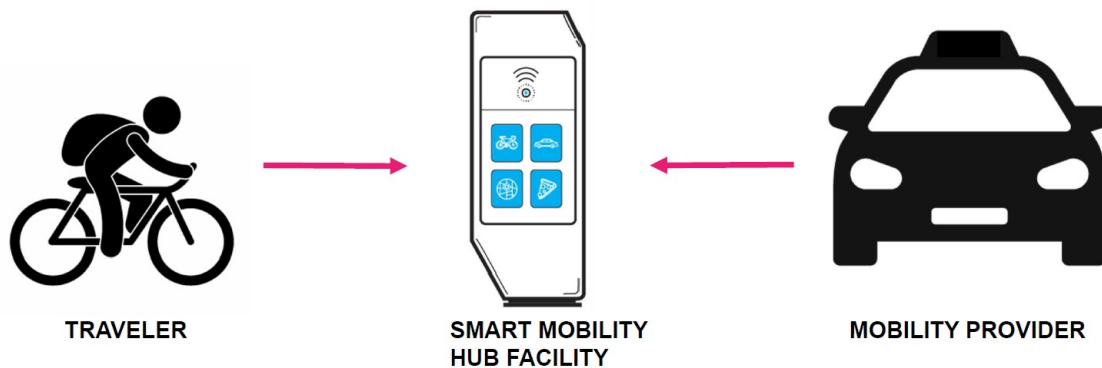


IMPLEMENTATION & FUTURE CONSIDERATIONS

While no concrete steps were taken in 2019 to install or construct mobility hubs in Dublin, the City and its partners continued to discuss opportunities to develop hubs in a variety of locations. These include COTA's Dublin Dale Drive Park & Ride location, which is conveniently situated in Bridge Park, the newly opened Columbus Metropolitan Library branch in Historic Dublin, and a series of locations that would coincide with CoGo bike share expansion into Dublin. Each of these locations would provide valuable multimodal connectivity, first-mile/last-mile transfer options, and enhancements to local circulation.

Meanwhile, COTA has continued to develop its "Smart Mobility Hubs" concept, which it aims to implement along the Cleveland Avenue Corridor in 2020. The goal of the effort is to "Create a centralized location with access to different transportation options to help residents get where they need to go."⁴⁴ Six locations were identified for a pilot effort and partnerships were developed with agencies at each location, including Columbus State Community College, St. Stephen's Community House, and Columbus Metropolitan Library.

Figure 40 COTA's Smart Mobility Hubs Concept



Source: COTA

COTA is also performing audits of all of its park & ride facilities and will be exploring options for enhancing multimodal connectivity to each location. The effort offers new opportunities to include mobility hub amenities – including information resources, bike share, car share, etc. – at locations like the Dublin Dale Drive Park & Ride.

Dublin should continue to engage COTA and other partners in these conversations and capitalize on any future opportunities to invest (or solicit investment from others) in capital improvements to strategic locations that will help to increase the convenience, viability, and attractiveness of multimodal travel options.

⁴⁴ Smart Columbus. "Smart Mobility Hubs." Accessed online at <https://smart.columbus.gov/projects/smart-mobility-hubs>.

8 KEY OUTCOMES & NEXT STEPS

KEY OUTCOMES

The City of Dublin has made significant progress during Phase III of the Dublin Mobility Plan in advancing its priorities through a series of incremental steps that yielded immediate impacts and informed future investments. These efforts have required strong administrative and staff leadership, with varying levels of support from public and private partners. Positive outcomes are apparent across each of the areas described in this report, with the following lessons and outcomes resonating throughout. Each finding can inform the City of Dublin's investments in planning and implementation of Mobility Plan next steps.

1. Demand for new mobility services exists.
2. Gaps in Dublin's mobility networks remain unfilled.
3. Effective service delivery requires cross-sector collaboration.
4. Strong City of Dublin leadership is paramount.
5. Program sustainability is a primary concern.

Demand for new mobility services exists.

Community enthusiasm around the microtransit and shared micromobility pilots was notable. Feedback from users, whether occasional or regular, demonstrated that these services provided value and were responsive to community needs. Utilization, a more important long-term measure, was below industry norms for sustainable services, but showed positive indications of demand and growth.

The bike share pilot was popular during its early months, when both the City and operator were dedicated to a targeted marketing and operational effort. The interest from additional vendors in bringing additional services to the community is a positive sign that the Dublin market has demonstrated demand characteristics that could make it a viable location for additional shared micromobility services, though they may be concentrated in smaller geographies and targeted to specific markets in their next iteration.

The Senior/ADA Circulator service showed the strongest demand characteristics of the services, with ridership that rose steadily over the 12-month pilot period. Convenience trips to area retail destinations proved to be the most popular use of the service, while trips for recreational, social, and event purposes were also common. The ability of the service to meet the unique needs of constituencies at multiple social service agencies was also notable.

The Workforce Shuttle pilot proved to be the most challenging service for which to establish demand, with ridership fluctuating during the 9 full months of operation and failing to show sustained growth during that time. The value to those commuters who used the service was clear, however, with significant travel time and financial savings and dependability for up to 14 regular users during its summer peak months. The groundwork has been laid for future growth in this service, in line with the recommendations cited in this document.

Gaps in Dublin's mobility networks remain unfilled.

While these pilot services helped to meet some of the community's need for additional mobility services, gaps still remain in the network that keep Dublin travelers from accessing goods,

services, and destinations conveniently and safely. The framework established by adopting “complete” and “smart” streets resolutions in 2018 and 2019 is important, but must lead to built projects that better connect Dubliners with safe, comfortable, accessible roads, sidewalks, pathways, and intersections. This responsibility lies both with the City of Dublin and other public agencies, through their public works projects, but also with private developers who can take the lead on providing these connections as they build. The completion of the new pedestrian bridge over the Scioto River, connecting Bridge Park to Historic Dublin, is an example of a project that will help fill a significant gap when it opens in March 2020.

The opportunity for shared micromobility programs to evolve and fill some of these needs will play out further in 2020, while Dublin’s renewed investment in microtransit services will continue to provide seniors, people with disabilities, and commuters with enhanced connectivity. Still, there are regular requests for service at times (evenings, weekends for seniors; mid-day for workers) and to destinations (events, places of worship, non-Dublin locations) that these services are not able to provide. Service adaptations during the pilot (Senior 2.0) and continued efforts to extend service (through COTA and others) should help to fill these gaps going forward.

Effective service delivery requires cross-sector collaboration.

The City of Dublin could not provide these services without considerable collaboration with public agency partners like COTA, MORPC, and ODOT, and private entities like Avondale Senior Village, Dublin City Schools, UFIT, and others. Their ongoing financial, marketing, coordination, and service support have proven integral to getting these services up and running and extending them into 2020. Sustaining and adding to these partnerships will be critical to program effectiveness going forward, and to their long-term viability.

Operators have also clearly played a critical role in these services, with those who are able to provide up-front care and ongoing attention better able to meet the needs of both the City and the communities that they serve. SHARE’s efforts to continually meet with seniors and senior community leaders throughout the circulator pilot yielded great results for that service. Lime’s inability to provide the level of attention and service required led to an abbreviated pilot with a disappointing conclusion.

Strong City of Dublin leadership is paramount.

These partnerships stem from the City of Dublin’s leading commitment to policy adoption, funding allocation, program management, and collaboration. Dedicated efforts from City Council, administration, and staff have made the Dublin Mobility Plan possible, from vision to implementation. Without the City’s leadership and attentiveness to community concerns and needs, many of these efforts would not have materialized. The City has also acknowledged its ongoing leadership role in providing these services with additional CIP funds approved for both shared micromobility and microtransit services through 2024. These lead investments are critical to continuing and expanding service and to cultivating additional buy-in from the City’s partners.

Program sustainability is a primary concern.

Program sustainability is a primary concern for both the City of Dublin and its partners. While Dublin has taken the lead on funding and administering programs, its capacity is limited and community members want to know that they can depend on the service going forward. As described in the following section, the City’s efforts will need to be bolstered by additional efforts in multiple areas, with an eye on innovation and adaptability to evolving conditions.

MOVING TOWARD PROGRAM SUSTAINABILITY

In order for Dublin to continue progressing toward its Mobility Plan vision and goals, the City will need to cultivate new partnerships, explore new policy approaches, and secure additional financial resources that will help to ensure the sustainability of its efforts.

Partnerships

Dublin's partnerships within the public and private sector have been integral to the progress made to date. Some of these partnerships, with entities like COTA, MORPC, Dublin senior living communities, and non-profit service providers, will need to be sustained and expanded. While others, including those with Dublin employers, developers, large institutions, and neighboring municipalities will need to evolve and grow to achieve maximum impact. The case must continually be made that the shared pursuit of Dublin's transportation and mobility vision will benefit all parties and help to engender a thriving, accessible, and sustainable community.

Public Sector

COTA

Dublin's working relationship with COTA has showed signs of improvement over the course of the past year, with active dialogue, recurring meetings, coordinated marketing and fundraising, and shared advocacy efforts. COTA is one of the most meaningful partners for ongoing operation and potential expansion of Dublin's microtransit services, both because of the role they play in providing fixed route services, but also because of their growing efforts to fill gaps and extend network reach with service partnerships. These have been particularly notable in suburban Columbus communities like Grove City, Groveport, and New Albany.

COTA's role as a conduit for additional funding options, like the Ohio Transit Partnership Program (OTP2), has also proved valuable in supporting Dublin's efforts. Their aspirations for mobility hub development and expanded services along the growing Columbus Northwest Corridor point to additional areas for collaboration that can enhance transit access in Dublin in the near future. Programmatic opportunities to increase ridership – including transit pass programs and marketing partnerships – are also worth pursuing. Dublin City Council Member Cathy De Rosa provides valuable synergy with COTA, serving on their Board of Trustees.

MORPC

As with COTA, MORPC has proven to be a valuable partner in pursuing new mobility opportunities over the past year. The agency provides funding through the FTA Section 5310 program (among others) and convenes regional partners for constructive conversations around a variety of mobility topics, including microtransit services, active transportation, complete and "smart" streets, the Metropolitan Transportation Plan, and the region's Transportation Improvement Program. Each of these speak to aspects of the Dublin Mobility Plan that will need constant attention and additional resources. Multiple Dublin staff and elected officials serve on the MORPC Board of Commissioners, including Mayor Chris Amorose Groomes, who serves on the MORPC Executive Committee.

ODOT

The Ohio Department of Transportation facilitates a series of state funding programs in support of enhanced mobility, transit, safety, and capital projects. Dublin's partnerships with MORPC and COTA have positioned the city well for competitive state grants and the Mobility Plan aligns with

ODOT programs like the Toward Zero Deaths (the Strategic Highway Safety Plan), Walk.Bike.Ohio, Safe Routes to Schools (SRTS), and the Ohio Transit Partnership Program (OTP2).

Neighboring Municipalities

The mobility needs of Dublin's residents, workers, and visitors do not end at the municipal borders. As evidenced by the users of Dublin's two microtransit services in 2019, riders frequently request trips and make connections to and from adjacent communities. Continued collaboration between these communities will help to ensure that travelers are able to access daily needs – including jobs, health care, shopping, and leisure destinations. Marketing and communication agreements are a logical first step, sharing the availability of mobility program and service offerings, traffic safety initiatives, and other efforts. They can extend to contracting/purchasing partnerships, joint advocacy or fundraising pursuits (such as the COTA and CoGo expansions referenced in chapters 3 and 4), and other capacity-building efforts that can serve the needs of each community and help stretch the reach and effectiveness of public resources.

Metro Parks

Connections to regional Metro Parks destinations, like Glacier Ridge, are a significant asset for Dublin residents. The City is working with the Metro Parks to improve access and connections to Glacier Ridge through a collaborative wayfinding effort. Additional efforts can be made to connect to regional parks through similar signage, complete streets, and other projects that encourage healthy, active living.

Public Institutions

Other public institutions in Dublin provide valuable partnerships that could be extended to include transportation and mobility enhancements. The new Columbus Metropolitan Library branch is already a popular destination for riders on the Senior Circulator and could provide additional resources through marketing and education partnerships around healthy/active transportation. The library is also well situated in Historic Dublin and at the western terminus of the new Dublin Link pedestrian bridge. Its parking garage serves as a resource for library visitors, but could also become a mobility hub for Historic Dublin.

Dublin is also home to several public university campuses, including outposts of Ohio University, Columbus State Community College, and Ohio State University. Employees and students at these locations could take advantage of enhancements to the transit and active transportation networks promoted by the Dublin Mobility Plan. Sponsorships, marketing, and educational partnerships between these institutions and the City of Dublin could help to increase capacity, awareness, and ridership among these audiences and make them more accessible to a broader constituency.

Private Sector

Dublin has established a number of important partnerships with private sector agencies, including senior living communities, businesses, developers, and non-profit service providers.

Senior Living Communities

The working relationship with Avondale Senior Village to promote and organize trips on the Senior Circulator is the primary example of how effective communication and shared responsibility can lead to meaningful program use and improved accessibility for Dublin residents. However, even that relationship falls short of ideal, in that Dublin provides the Senior

Circulator service at no charge to Avondale or its residents. An evolution of that partnership could include a financial sponsorship that helps to support and sustain the program.

Dublin should explore these opportunities with other senior communities, as well as the businesses who benefit from these trips. Efforts were made during the early months of the pilot program to solicit sponsorships and rider “benefits” at participating retailers, but the outcomes were minimal. As ridership on the Senior Circulator has risen, Dublin and its operating partner should revisit these opportunities, communicating the impacts and benefits and the need to diversify funding for program growth and sustainability.

Business Community

Businesses, employers, and developers have also benefitted from the availability of both the microtransit and micromobility services. Accelerating collaboration with these groups to promote the service, generate new ridership, and financially support them will need to be pursued if they are to succeed. These opportunities may come in the form of voluntary contributions or sponsorships (including branded services), or via more formal, codified approaches such as the examples cited in the following sections. The City should continue working with individual businesses and groups like the Dublin Chamber of Commerce, Historic Dublin Business Association, property owners, and developers to establish the value to mobility as a key service and benefit to their employees, residents, visitors, and tenants. These benefits, if funded adequately, could constitute yet another differentiation between Dublin and neighboring communities in the ongoing competition for investment, workforce, visitors, and residents.

Service Providers

Dublin’s mobility services provide needed connectivity to a number of non-profit community service providers, including Syntero, UFIT, and the Dublin Food Pantry. While these organizations may have limited capacity to provide financial support for Dublin mobility programs, they can serve as a valuable partner in identifying community needs and may provide a conduit to additional resources and funding that the City could not pursue on its own.

New Policy Approaches

In the face of local development pressures and the need to continually evolve within a rapidly expanding regional marketplace, Dublin should explore options for developing City policies that can create a support system for the new programs, services and resources that have been generated through the Mobility Plan. Options to be explored include the following:

- Development code updates, with a particular focus on growth areas in which development is most likely to benefit meaningfully from mobility investments
- Parking Plan implementation, formalizing a policy that parking must pay for itself, and that any revenue above system costs can be spent on strategic mobility improvements
- Commuter benefits or transportation demand management (TDM) ordinance development, designed to require and/or incentivize developer, property owner, and employer investment in mobility programs and services

Commuter Benefits / Transportation Demand Management Ordinances

A commuter benefits or transportation demand management (TDM) ordinance is another regulatory tool that the City of Dublin could use to bolster the attractiveness of non-drive-alone travel options and address congestion and parking availability issues experienced by businesses,

commuters, and other travelers. TDM efforts consist of measures that promote the efficiency of the transportation system by increasing the use of active and shared modes of transportation and reducing single-occupancy driving trips. These ordinances are popular tools for promoting TDM in cities of all sizes across the country and can help achieve Dublin's mobility goals around economic development, access to jobs, health, and environmental sustainability.

TDM ordinances are most common in rapidly growing areas where the increase in workers and other travelers is outpacing the public's ability to provide capital and service improvements to meet their mobility needs. They are generally applied through a city's development code, with specific requirements for employers or developers who fall within a certain threshold. The most common measure is the total number of employees, but others could include number of beds, number of square feet of commercial space, number of visitors, etc. The ordinances are applied either citywide or with a focus on specific geographies that are experiencing rapid growth or have a high concentration of large employers. While most of these ordinances give specific instructions to implement particular measures, flexibility can be valuable, providing a *menu* of options with an emphasis on results more than the individual programs. Examples include:

- Pre-tax benefits that allow employees to exclude from taxable wages commuting costs for transit passes, vanpool charges, bicycle commuting, or other approved travel modes.
- Employer or property provided services, including vanpool, carpool, or shuttle programs.
- Offering a taxable parking "cash-out" benefit to commuters who opt out of using employer provided parking spaces.
- Educational and marketing efforts to promote non-drive-alone trips by employees, residents, or visitors.
- On-site amenities that encourage non-drive-alone commutes, including bike parking, lockers and showers, premium parking for carpools and vanpools, etc.

Experience has shown that TDM ordinances with enforcement standards and requirements, including adequate staffing to enforce mandates, have a much higher success rate than voluntary programs. While the most notable ordinances may be found in places like Seattle, WA and Los Angeles, CA, there are a number of small- to mid-sized cities that have successfully implemented these policies.

In Cambridge, MA, non-residential developments that propose new parking above a specific threshold are required to adopt a TDM plan with a series of approved programs and reporting measures.⁴⁵ Boca Raton, FL's TDM Ordinance sets specific requirements for downtown developments above a threshold of 50 or more full-time employees or more than 30 residential units. These include physical design elements, as well as a range of incentive and programmatic measures.⁴⁶ In Rockville, MD, TDM ordinance requirements focus on trip reduction measures that escalate based on estimates of new peak-hour trips. In addition to crafting a trip reduction plan, new developments are also required to pay a one-time transportation improvement fee that is used to implement multimodal improvements throughout the city.⁴⁷

⁴⁵ City of Cambridge, MA. "Parking and Transportation Demand Management Ordinance." Accessed online at <https://www.cambridgema.gov/CDD/Transportation/fordevelopers/ptdm>.

⁴⁶ City of Boca Raton, FL. "Development Requirements." Accessed online at <https://myboca.us/754/Development-Requirements>.

⁴⁷ City of Rockville, MD. "Comprehensive Transportation Review." Accessed online at <https://www.rockvillemd.gov/DocumentCenter/View/457/Comprehensive-Transportation-Review?bidId=>.

Case Study: Santa Monica, CA TDM Program

There are several TDM ordinances within the Southern California region, including Burbank, Santa Monica, and Glendale. When the City of Santa Monica started its TDM Program over twenty years ago, the number of solo drivers driving to work was 80 percent. Today, that number has been reduced to 62 percent in the mornings, and 58 percent in the afternoons. Last year, that translated to over 12,300 fewer car trips per day.

The desire for the ordinance arose during a General Plan update, as a solution to a challenge that many communities have come to face: how to accommodate new growth without all the vehicles and traffic that would typically accompany it. The ordinance focused on reducing afternoon peak trips as a key goal, by requiring strategies that could encourage walking, biking, and transit use. To achieve these goals, the ordinance focuses on two key groups: new development and all (existing and new) employers.

Developers must provide on-site TDM facilities to reduce parking demand and the “unbundling” of parking costs⁴⁸ is required of all non-residential and multifamily residential uses. A developer TDM plan is required to demonstrate how developers will meet transportation targets.

Residential projects with more than 16 units must include a Transportation Welcome Package for residents and must prioritize marketing of the units to nearby employees. Reduced off-street parking requirements and shared parking facilities accompany these developer requirements.

Employers are required to submit a worksite TDM plan and track progress each year via an annual employee survey. The employer requirements are robust and include a series of mandatory and elective components that employers can choose from a menu of options. Options that are most likely to be effective are weighted accordingly. Categories include direct strategies, such as creating a bicycle program, to support strategies, such as personalized commute assistance.

The program uses Average Vehicle Ridership (AVR) as its key metric because it is consistent with regional South Coast Air Quality Management District (SCAQMD) methodology. AVR is calculated by dividing the number of employees reporting to work by the number of vehicles driven to the worksite.

A key partner to the City's TDM ordinance is its Transportation Management Organization (TMO), which provides transportation services throughout the city under the banner "GoSaMo." GoSaMo has helped scale up programmatic TDM efforts, which has proven especially helpful for small employers. While GoSaMo was started by the City, other TMOs are often public-private partnerships, comprised primarily of area businesses who take advantage of programs and services.



Case Study: Arlington County, VA Density Based TDM Program

Arlington County, Virginia's coordinated policy approach to land use and transportation planning has allowed it to grow rapidly over the last 30 years without major expansions in the highway

⁴⁸ “Unbundling” parking is the practice of separating the cost of parking from the cost to lease a commercial or residential unit. This effective TDM practice helps to accurately account for the full cost of driving and parking and has a demonstrated relationship to automobile ownership and travel choice.

network and minimal traffic growth. In that time, nearly 18,000 residential units, 14 million square feet of office space, 1.5 million square feet of retail, and 1,218 hotel rooms have been built in the area served by the county's Orange-Line Metrorail corridor. As intense as this development has been, it has generated only modest levels of traffic growth. A major factor in the County's successful management of growth has been its Site Plan Review program, which has allowed County planners to approve greater development densities along Arlington's Metrorail corridors in exchange for significant TDM commitments. Today, the county's Metrorail corridors provide 50% of the County's tax base — on only 7% of the land.

Arlington County's TDM Program for Site Plan Development was the product of a joint taskforce of the Arlington County Planning and Transportation Commissions, and an outgrowth of the comprehensive Site Plan Review process headed by the Arlington County Department of Community Planning, Housing and Development (DCPHD). Essentially, density bonuses that are possible along the county's key transit corridors provide a financial incentive to commit to a suite of TDM commitments that help amplify the potential traffic-reduction benefits of transit-oriented growth. Developers can select the strategies that best enhance the value of their projects, while the County ensures that the level of commitments and the strategies available are suitable to the scale and nature of the proposed developments.

A Site Plan Review Matrix defines the options available for approval of any development proposal eligible for this process. The list of available strategies is expansive and comprehensive, but the scale and nature of each proposal will determine both available options to choose from, and the minimum number of strategies that must be included as commitments in a final approved plan. Thus, the County distinguishes the intensity of the strategies, matching them with the assessed impact of different developments on the transportation system. The greater the impact, the more intense the mitigation measures in the approved Site Plan will be.

The DCPHD reviews submitted site plan proposals to assess transportation impacts and opportunities. Reviews incorporate an assessment of site characteristics, proposed land-uses, a traffic impact analysis (TIA) report, and a proposed parking plan. The County's transportation management association (TMA) then helps the developer identify site-specific strategies and prepare a TDM plan. Each TDM strategy is selected to mitigate the transportation impacts of the site on a case-by-case basis.

Participation in the Site Plan Review process is voluntary, but incentivized through density bonuses that have been effective in making this process the default approach for developments within designated transit corridors. Each zoning district permits a certain type and level of development "by-right." Beyond this, certain districts provide public review processes for a special exception by "site plan" that allows for greater flexibility in use, density, and form of development. The key to the success of the Site Plan Review Process is that additional development potential serves as an incentive to developers to seek a special exception by site plan and participate in the process.

To date, the density bonuses have been significant enough to attract the majority of new development projects into the process. By framing incentives in terms of added project density, the Site Plan Review Process supports the County's objective of concentrating development around transit stations.

New Funding Models

Program sustainability will also require that Dublin develop new funding models to promote the viability of Mobility Plan programs and outcomes. Transitioning from the current model that leans heavily on Dublin Capital Improvements Program (CIP) funding to a more diversified model built around voluntary, value-based partnerships, codified assessments, and service-related revenue will help to ensure that these are sustainable resources for the Dublin community into the future. Options to be explored include private sector funding partnerships, branding/naming rights, parking revenue funds, and a new Dublin Mobility Fund.

From Partners to Funders

As discussed in the previous sections, transitioning or advancing current partnerships to include funding support will be critical to mobility program success and sustainability. The City should pursue the following questions with their partners to cultivate new sources of operating support:

- Can businesses served by Dublin mobility programs and services become funders, either through direct, annual contributions or through marketing opportunities such as interior ad placement or external brand placement?
- Will senior communities and/or employers served by these services consider direct contributions or through marketing opportunities such as interior ad placement, external branding, or other sponsorship opportunities?
- Are there steps that can be taken to entice Dublin's economic development partners to support services, such as expanded services for workforce or visitors, increased exposure to regional markets, or direct correlation to other economic performance measures?

While the previous two case studies focused on development-related TDM ordinances, a regional example from downtown Columbus showcases a commuter benefit that is largely funded through a voluntary assessment of downtown property owners and is being promoted as a tool for attracting and retaining businesses and employees.

Case Study: Columbus, OH – Downtown C-pass Program

With multiple competing demands for real estate and parking, downtown Columbus's 2010 drive-alone commuter mode share of 83% was trending upward and was proving unsustainable. "We'd been hearing from downtown offices and brokers that the lack of parking was impacting their ability to lease space. We were asked to help find parking for tenants, but we kept finding that the spaces just didn't exist," said Cleve Ricksecker, Executive Director of the Capital Crossroads and Discovery Special Improvement Districts (SIDs). The alternative approach to adding more supply was, therefore, to reduce demand in existing parking facilities.



Faced with a parking crunch in an increasingly mixed-use downtown, two Columbus SIDs worked with the Mid-Ohio Regional Planning Commission (MORPC) to pilot a transit pass program with four property owners in 2014-2015. They modeled their approach after a student universal pass program in place at local universities that provided free transit access to all students with the requisite credential embedded in their identification cards. The \$100,000 pilot targeted a cross-section of downtown employers who had varying access to parking. The results of the pilot were very positive, with a nearly 6% increase in transit ridership across the 844 employees in the

sample within the first three months. One company saw a quadrupling of transit mode share over the 18-month pilot, growing from 5% to 19.5%.

This proof of concept was enough to move forward with a campaign among the SID property owners to develop a full-scale program. The universal pass program has now been made available to 45,000 employees at 1,500 qualifying employers in the SID service area. Program costs totaling \$5 million include a bulk rate from the regional transit agency (COTA) for the passes, marketing, and management overhead over three years. Voluntary contributions and sponsorships have been paired with a new \$.03 per square foot assessment of properties within the SID to account for more than 50% of the cost. With a considerable gap still on the table, MORPC announced in 2017 that they would cover the remainder, enabling the program to launch in June 2018.

SID staff is coordinating with MORPC on program marketing and administration, including individual sessions with large employers and creation of “member portals” for participants via the new Gohio Commute tool, which extends beyond Columbus to all metro areas in Ohio. This enables companies to create an account and upload employee information that will ease access to transit pass credentials.

The goals of the pilot include growing downtown’s transit commuter mode share from 6% to over 10% during the three-year program, improving access to jobs for low-wage employees, and retaining and attracting new employees and businesses to the downtown area without the need to expand parking supply. With demonstrated success, partners will aim to renew the property assessment in 2020 and continue the program into the future.

Program Utilization

According to the Capital Crossroads and Discovery SIDs, 442 companies and 15,189 employees had registered for the C-pass program as of December 2019. According to COTA, C-pass users logged more than 1.2 million rides in 2019. Ridership has climbed steadily over the course of the pilot, with around 15,000 weekly rides recorded in September 2018 and 25,000 in March 2019. A record 26,360 rides were taken using the C-pass during the week of November 24th, 2019. Data from surveys of employers and employees completed in mid-2019 found that a substantial increase in transit use can be associated with the C-pass program, with 7.5% of respondents reporting a shift from drive-alone commutes to COTA. 94% of respondents stating that C-pass is either the reason they started using COTA or that it helped motivate them to ride. Additional findings include:

- COTA mode share at sampled employers (with a total of 16,000 employees) reached nearly 10% by June 2019.
- Employees who had worked downtown for less than one year showed the highest rate of commuting changes to transit.
- New transit riders skewed younger, with 35% of people switching to transit reporting they were under the age of 32.
- New rider income levels are diverse, with 20% making less than \$50,000 per year, 26% making between \$50,000 to \$74,999, 19% make \$75,000 to \$99,999, and 19% making more than \$100,000 per year.
- 42% of employers reported that the C-pass benefit is helping to recruit and retain employees.
- 17 companies report that C-pass played a role in their decision to renew or sign a lease in a C-pass eligible building.

Branding/Naming Revenue

Branding or naming rights are a popular method for garnering sponsorships from private entities to support enhanced public-facing services such as transit routes, bus stops, bike share systems, and mobility campaigns. The Greater Cleveland Regional Transit Authority has successfully levied sponsorships to provide support for its downtown trolleys, and three bus rapid transit lines. Some microtransit services like Circuit (formerly “The Free Ride”) are completely paid for by advertising dollars, while others like CircleLink in Cleveland’s University Circle neighborhood, the DASH in downtown Grand Rapids, or Groove in downtown Memphis are funded by a mixture of sponsorships that keep the service free to riders. Most publicly funded bike share systems include a series of private sponsorships at a range of levels from companies or agencies whose health or mobility values align with the program. In Dublin, employers in the health care, education, or tourism sectors should be engaged as potential sponsors for Dublin’s emerging mobility programs and services.

Figure 41 CircleLink Shuttle in Cleveland’s University Circle Neighborhood



CircleLink is sponsored by the Cleveland Museum of Natural History, who designed the service's unique bus wrap.

Parking Revenue

The City of Dublin has identified parking policies and management strategies that may lead to paid parking being implemented within commercial centers like Bridge Park and Historic Dublin. These strategies offer the opportunity to both manage parking demand and capture revenues that can be used to support system management, maintenance, and enhancement. By capturing parking fees in an enterprise fund, Dublin can use them to fund ongoing parking and mobility improvements above and beyond the existing parking system. The City should continue to examine its capacity to implement these strategies as a valuable tool for supporting mobility programs and services and implementing additional Mobility Plan recommendations.

Dublin Mobility Fund

The City is currently working to establish a Mobility Fund to ensure that sponsor revenues, grants, and other outside sources of funding are attributed directly to the City's mobility efforts, expanding upon the City's commitment of Capital Improvements Program funds. This exercise is important to both sustaining and expanding Dublin's capacity to provide mobility programs and services and should clarify accounting, contracting, and procurement procedures.

Building upon the previous concept of a parking revenue "enterprise fund," the Dublin Mobility Fund could include parking revenues, plus codified and voluntary contributions from developers, property owners, and employers resulting from the new policy approaches and partnership arrangements described above.