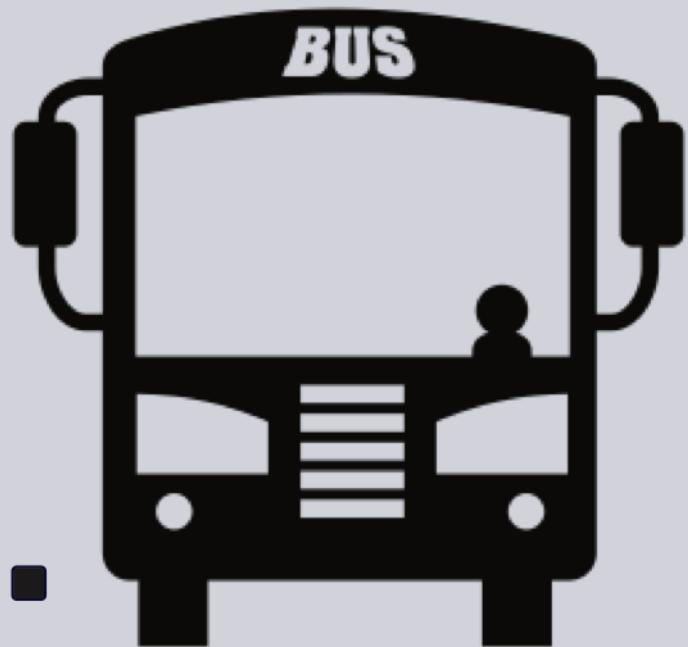


21 Key Takeaways from Partnerships between Public Transit Providers & Transportation Network Companies in the United States

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DEPAUL UNIVERSITY



SHARED-USE
MOBILITY CENTER

Note from Authors amid the Coronavirus Crisis | April 14, 2020



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Transportation professionals:

The road ahead for public transit agencies seeking to bounce back from coronavirus traffic collapse will be a difficult one. Some employers may make work-at-home arrangements permanent or adopt more flexible schedules. Fewer traditional rush-hour commuters may travel to and from downtown districts that are well served by traditional transit until virus concerns disappear. Gasoline prices could remain low until the economy recovers, making driving less expensive. Efforts to expand bus and rail services or sustain little-used routes may become more difficult as governments grapple with revenue shortfalls.

In this difficult environment, transit agencies have a strong incentive to explore new ways to tap into new markets while stretching their limited resources. **“21 Takeaways,”** shows that targeted partnerships with Lyft, Uber and Via for on-demand service can be effective. These programs run the gamut from discounts for rides to bus or train stops, to eliminating “transit deserts” or catering to disadvantaged populations.

Launching such programs, however, is not without risk. Finding the sweet-spot between being overly generous and overly restrictive can take months or even years. **The study** shows that agencies must:

- **Establish rules that limit the risk of traffic diversion from scheduled bus and train service.** This may mean limiting offerings to particular geographic areas or market segments, such as seniors or people with disabilities.
- **Be ready to accept a certain amount of trial-and-error** to move up the learning curve.
- **Grapple with vexing “cost versus control” issues.** Relatively simple programs involving targeted rideshare discounts can be inexpensive but deny agencies sought-after customer data.
- **Brand the rideshare component of the program as part of the transit system** through signage and other means, and work toward payment integration.
- **Exercise patience, allowing for more time to show results** than many initially expect, as consumers often need time to adjust their travel habits.

As strong supporters of both public transit and emerging strategies to improve mobility, we provide **“21 Takeaways”** to suggest pathways for greater collaboration in post-pandemic times.

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Dozens of cities and transit agencies across the United States partner with Lyft, Uber, Via and other smaller transportation network companies (TNCs) on programs to alleviate mobility problems. Most involve the provision of on-demand services that complement public transit, fill mobility gaps, or replace bus routes that had been poorly performing. On-demand service, unlike fixed-route service, involves schedules and routes that dynamically change to meet customer demand.

Analysis of these partnerships, however, remains incomplete. Key questions have been left unanswered or only partially addressed. For example: what are the advantages of different types of TNC-public agency partnerships, and under what scenarios? What hurdles do public agencies most frequently face? And how are agencies learning from past mistakes?

This study helps fill gaps in the understanding of these initiatives by exploring these questions and reviewing the experiences of notable on-demand partnerships around the United States. The results are distilled into 21 takeaways in seven broad categories that are important to program planners. The results begin on Page 4.

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Summary of Research Methods Used

The research team assessed and categorized the attributes of 12 partnerships and reached out to officials involved in their management to explore factors important to their success. The team reviewed technical reports and publications for a wide range of partnerships, spoke with the program teams at Uber Technologies and Via Transportation, and conducted other activities noted in Table 1.

Table 1: Methods Used to Assess Partnerships



Assessments of each program's attributes and evolution: The study team reviewed the characteristics of each program and their public sector partner(s) as well as categorized notable attributes.



Discussions with program leaders: The study team arranged for discussions and consultations with 10 city or transit agency representatives directly involved in on-going or discontinued partnerships, as well as with representatives from Uber and Via between October and December 2019. Public sector discussants were selected based on the scope and scale of the agencies' programs, the amount of time that has elapsed since service began, and their willingness to share their experiences.



Published reports and performance audits: The team reviewed a wide body of research, including reports and case studies published by various public agencies, including the Eno Center for Transportation and the Shared-Use Mobility Center. A full list can be found in the References section.

The analysis explores two types of partnerships:

- **Transportation-as-a-Service Programs** in which TNCs operate vehicles based on a public agency's contractual requirements. Subsidies are typically paid either per ride or vehicle hour. Pinellas Suncoast Transit Authority's (PSTA) *Direct Connect* program with Uber, launched in early 2016, is generally regarded as the first offering of this type in the country.
- **Software-as-a-Service Programs** in which a public agency operates or closely manages vehicle operation using technical resources provided by a TNC. In Austin, TX, Capital Metro's paratransit provider, for example, uses Via's routing algorithms for a non-paratransit, on demand shared-ride service.

Other types of partnerships are omitted from consideration. Those without a service component, such as the Regional Transportation District's arrangement in Denver, CO allowing transit tickets to be purchased on the Uber app, are excluded. Shared marketing partnerships, such as Chicago, IL's Metra permitting Uber to advertise its rideshare services on commuter trains were also outside the scope of this study.

Table 2: Partnerships Evaluated by Type and Principal Purpose

		Type of On-Demand Program
Principal Purpose	Transportation-as-a-Service Programs	Software-as-a-Service Programs
First/Last Mile Service 	<ul style="list-style-type: none"> • Pierce Transit (Lyft), Tacoma, WA* • Charlotte Area Transit Authority (Lyft), Charlotte, NC* • City of Arlington, TX (Via)* • King County Metro, in partnership with Sound Transit and the City of Seattle (Via), Seattle & Tukwila, WA* 	
Service in Response to Fixed Route Reductions and/or Low Frequency 	<ul style="list-style-type: none"> • Greater Dayton Regional Transit Authority (Lyft/Uber), Dayton, OH* • Detroit Department of Transit (Lyft), Detroit, MI* • Pinellas Suncoast Transit Authority (Uber), St. Petersburg, FL*¹ 	<ul style="list-style-type: none"> • Capital Metro (Via), Austin, TX* • Norwalk Transit District (TransLoc, Via), Norwalk, CT
Service for Seniors and/or People with Disabilities 	<ul style="list-style-type: none"> • Massachusetts Bay Transit Authority (Uber/Lyft), Boston, MA • City of Newton, MA (Via)* 	<ul style="list-style-type: none"> • Marin Transit (Via), San Rafael, CA *

*Consultations and discussion provided by agency to our study team. See also map on page 5.

As the current major TNC operators in the country, the study team focused its attention on partnerships with companies Uber, Lyft and Via.

All evaluated programs seek to achieve at least one of three goals:

1. **Provide first/last mile service** by closing the gap between bus stops or train stations and the traveler's origin and/or final destination;
2. **Respond to reductions in fixed route service** or complement service on low-frequency routes; or
3. **Improve mobility for seniors and/or people with disabilities.**

Each program's principal goal is categorized in Table 2, although it should be noted that many are designed to achieve *multiple* goals. In California, for example, Marin County's *On-Demand* program, while primarily intended to serve the elderly and the mobility-impaired, makes discounts available for all passengers traveling to and from certain transit stops. As a result, the program improves mobility for seniors and first/last mile access. In the second phase of its pilot program, Marin Transit is also testing distance-based fares with an expanded geography.

The 21 Takeaways

These takeaways are presented by thematic category, beginning with regulatory and administrative findings followed by findings related to promotion, funding and data analysis. These should not be regarded as definitive conclusions but as defensible propositions that emerged from our systematic inquiry. The study team welcomes feedback as we further explore these themes.

Federal Regulations

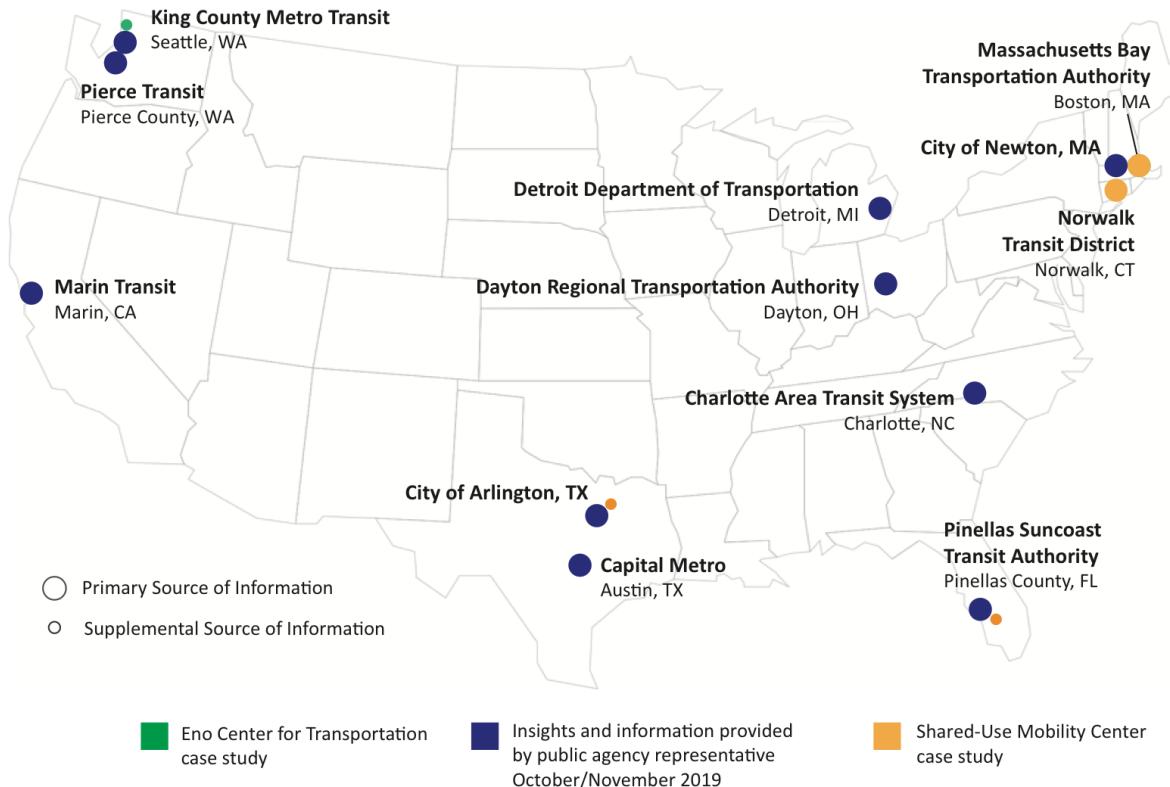
#1. The demand for wheelchair-accessible vehicles has tended to be lower than anticipated among partnerships not designed primarily to serve seniors and people with disabilities.

Representatives at several agencies made clear that wheelchair-accessible vehicles (WAVs) have not been as large of a financial and operational component of many on-demand programs as was anticipated at their outset. Through autumn 2019 when the consultations with program leaders were conducted, *no requests* for accessible vehicles had been made in Detroit's *Night Shift* program (launched in spring 2018), Pierce Transit's *Limited Access Connections* in Tacoma, WA (launched in spring 2018) or Charlotte, NC's first/last mile pilot (launched in April 2018). Nor had any requests been made in the *Connect On-Demand* service by Ohio's Greater Dayton Regional Transportation Authority (Dayton RTA) launched in summer 2017.

Certain partnerships oriented toward first/last mile service and those supplementing fixed-route service have experienced somewhat stronger demands for accessible vehicles. In the Seattle area, King County Metro's *Via to Transit* program, for example, handled more than 400 accessible rides by the end of 2019. Nevertheless, in the opinion of most agency representatives consulted, the number of WAV requests has been well below expectations set at program launch. Tacoma's Pierce Transit was, in fact, able to extend its pilot due to an operating budget freed up by having fewer accessible rides requested than planned. Austin's Capital Metro's experienced somewhat stronger demand, as it handled many accessible trips in which a lift was deployed; however, although its service was designed to "flex off" (i.e., deviate from) fixed routes, there was very limited use of the flex option. Nearly all users lived on the established routes.

A variety of factors appear responsible for the lower-than-expected demand for WAVs. A lack of program awareness and higher level of comfort with more established paratransit options are likely prominent. One agency representative posited that, despite targeted outreach, many people may not know that these programs exist or remain unaware of provisions for over-sized mobility devices, such as wheelchairs. Of course, many first/last mile on-demand programs are oriented around transporting people to bus or light rail hubs, and some paratransit-eligible residents are unable to use bus and rail services, further limiting the demand for accessible vehicles through such programs. More analysis of these factors is clearly needed.

Figure 1: Locations of Partnerships used for Case-Study Analysis



#2: A Federal Transit Administration (FTA) memo released in December 2016 clarified some of the uncertainties regarding the applicability of the *Americans with Disabilities Act (ADA)* requirements for on-demand partnerships with TNCs.

Prior to the memo's release, there was some uncertainty regarding whether ADA requirements – such as the provision of accessible vehicles – applied to new types of on-demand partnerships, particularly those in which the federal government had not provided seed funding. The memo made clear that these requirements apply by noting that public agencies pursuing on-demand programs “must either acquire accessible vehicles or otherwise ensure that such services provide equivalent service to persons with disabilities, including those who use wheelchairs and/or have intellectual disabilities.”²

A variety of strategies can be used to meet these requirements. In its partnership with Via to improve mobility options for seniors and people with disabilities, Marin Transit purchased four accessible vehicles which are operated by the agency's non-profit paratransit provider Whistlestop. Newton, MA, which has a similar program for seniors, rented vehicles, one of which is wheelchair accessible, that are operated by Via drivers. Each of these drivers has received sensitivity training to support rides involving seniors and people with limited mobility, although the service is overwhelmingly used by relatively mobile seniors, with only a fraction of trips requiring the WAV. In both Marin, CA and Newton, MA,

drivers providing the services are attuned to the needs of the targeted clientele, and vehicles meet the transportation needs of the customers. Of course, many agencies have also continued to improve their conventional paratransit to better serve the mobility impaired.

Such deliberate actions notwithstanding, meeting ADA requirements remains a source of apprehension. A Nelson\Nygaard Consulting Associates survey of transit agencies in 2018 identified ADA compliance as one of the three most formidable challenges facing transit agencies involving partnerships.³

#3. The drug and alcohol testing required of drivers by federal regulation was initially considered to be a potentially significant administrative hurdle, but concerns have diminished due to the “taxicab exemption”.

One of the difficulties for early partnerships launched in 2016 and 2017 rested on uncertainty pertaining to whether rideshare drivers need to submit to drug testing as federally prescribed (49 U.S.C. § 5331). In negotiations with private providers, the issue of mandated testing generated a great deal of pushback due to its apparent incompatibility with rideshare business models and the associated administrative complexity. Adding to these problems, agencies tended to interpret the requirements differently.

In recent years, however, the FTA has put much of the uncertainty to rest by both making its expectations clear and identifying acceptable ways to meet them. The agency noted that “[w]hen a public transit passenger randomly chooses from among a number of taxicab companies providing service, the testing regulations do not apply”—a provision commonly referred to as the “taxicab exemption.”⁴

This exemption does not apply (meaning drug testing is required) when a passenger does not choose the taxi provider. The FTA noted: “many ADA paratransit agencies contract with taxicab companies and other entities to provide ADA paratransit service to ambulatory passengers. In those situations, when the ADA paratransit provider (not the passenger) contacts the taxicab company to schedule the ride, the drug and alcohol rules apply to the taxicab company providing the service”.⁵ Similarly, an agency simply providing vouchers for use with a single taxi provider does not meet the exemption because the passenger does not have a choice in which provider to use.

To meet these requirements when launching an on-demand partnership, most agencies have chosen to contract with both TNCs and taxi companies; by permitting passengers to choose their preferred mode in this way, drug and alcohol testing of drivers is not required. Detroit’s transportation department, for example, partnered with Lyft and Detroit Cab Co. for its *Night Shift* program. Passengers planning to book a ride may choose either option. Similarly, programs by the Dayton RTA and the Massachusetts Bay Transit Authority (MBTA) offer customers the choice between Uber, Lyft and other local providers.

According to the FTA, even if the taxi company is the *only* contracted entity that provides accessible vehicles, handles trips requested over the phone, or accepts cash payments, the taxicab exemption still applies. In this instance, it is noted: “[s]ome passengers only have one choice, but this does not change the fact that many passengers have more than one choice, so the taxicab exemption will apply to all of the providers”.⁶ As a result, drug and alcohol testing of drivers is not required in such circumstances. Of course, many agencies include taxicabs in their programs for other reasons unrelated to gaining an

exemption, such as the preference that many customers have for them. The [FTA website](#) offers more resources on meeting federal drug and alcohol testing requirements.

#4. Antidiscrimination requirements under Title VI have *not* been significant obstacles in most partnerships.

The Title VI requirements in the Civil Rights Act of 1964 can generally be met without large-scale changes to program design. In fact, no agencies pointed to particular challenges meeting Title VI antidiscrimination requirements, which includes minimum thresholds pertaining to language accessibility. Indeed, some agencies are going beyond the minimum requirements and making language accessibility a priority. King County Metro, for example, has developed for its *Via to Transit* program the most extensive language options of the 10 agencies reached for consultations. Materials are transcreated in seven languages, the website is available in five languages, and the call center can handle 14 languages.

Similarly, federal prohibitions of certain types of contracts and subcontracts, such as “cost plus a percentage of cost” agreements, have not proven problematic. The FTA’s *2016 Best Practices Procurement & Lessons Learned* manual makes clear these types of agreements are not allowed due to their tendency for profits “to increase in proportion to dollars spent thereby providing a positive incentive to inefficiency.”⁷ None of the agency representatives consulted identified this prohibition as an obstacle to the execution of on-demand partnerships.

Regulations related to vehicle inspections and the licensing of the private vehicles used by TNC drivers were not among the major hurdles cited. Although minimum wage rules and other labor regulations may be significant obstacles to the development of partnerships in some cities, particularly larger ones, they were not identified as roadblocks in the discussions with leaders. In general, regulatory barriers appear less severe than many anticipated when the first partnerships were being contemplated.

Planning

#5. A per-ride subsidy program is often the lowest-cost option among public agency-TNC partnerships. However, it routinely comes at the expense of having ready access to driver and customer information and the ability to set certain performance standards. Small programs catering to seniors and people with mobility impairments tend to avoid this approach as a result.

The goals established for TNC-public agency partnerships are usually driven by the undertaking’s primary purpose. Most on-demand programs oriented around seniors and/or people with disabilities, for example, aim for equivalent or improved service standards compared to existing paratransit service. Agencies can measure their progress toward this goal using federally mandated criteria including: fares, response times, geographic areas of service, hours and days of service, and restrictions or priorities based on trip purpose. These programs allow for formal evaluation of capabilities to support information requests and reservations, as well as constraints on capacity or service availability.⁸

Other programs – particularly those whose principal purpose is to provide first/last mile service – generally aim to increase accessibility and usage rates of existing public transit services. In these cases, agencies typically set goals related to the share of on-demand trips taken that start or end at transit stations. Some programs measure progress toward such goals by asking in surveys how customers might have otherwise taken the trip without the on-demand service available.

Although the goals of such programs may be fairly straightforward, selecting a partner and designing the program around those goals can prove challenging.

The City of Newton, MA, for example, received several submissions in response to its request for proposals (RFP) for a turnkey on-demand program for the community’s seniors. The city then weighed the benefits and costs of the options with respect to the needs and preferences of its target audience. On one end of the spectrum, Lyft offered the lowest-cost option, which would afford seniors 24-hour service, had guarantees against shortages of drivers (as Lyft could allocate drivers throughout the city to the program in instances of a demand surge), and would require payment in the form of a subsidy per ride offered from the city. Via’s proposed option was more expensive, with payment structured per service hour rather than per trip, and the service provided would not have 24-hour availability. Nevertheless, it would be provided in a dedicated fleet of branded vehicles supported by in-house customer service. Via guaranteed that all drivers involved in the program would receive sensitivity training and thus be attuned to the unique challenges faced by seniors. After deliberation, the city opted to contract with Via on account of its desire for a branded fleet, in-house customer service and trained drivers, which city officials felt were critical to a program oriented towards seniors, many of whom were likely not familiar with traditional ridesharing services. These benefits, officials determined, outweighed the cost premium.

The consultations with program leaders reveal that many agencies have faced similar “cost versus control” tradeoffs. For example, a Pierce Transit representative noted that, because the majority of trips for their per-ride subsidy on-demand program were booked through the Lyft app using discount codes, the agency did not have direct access to 95% of program customers.⁹

Agencies with programs in which rideshare providers control nearly *all* of the user experience are most likely to suffer from this problem. Nevertheless, it’s still possible for agencies to gain direct access to users if they can control the *first part* of that experience. For example, the City of Detroit’s transportation department advertised its *Night Shift* program on buses, instructing users to text the department to receive the Lyft credit. When customers did so, the department captured the phone numbers of people who later used the service as well as those who did not. Subsequent outreach with those who responded to the ads allowed the agency to gain insight into why some customers went on to use the service while others did not.

Rather than use a per-ride or per-service hour subsidy approach in which a TNC would operate the service, Marin Transit in California opted to contract with its existing paratransit provider, Whistlestop. Choosing an operator known to the agency afforded more control regarding:

1. Driver training, screening and support to riders outside the vehicle;
2. Vehicle design and maintenance, including wheelchair accommodation;
3. Fares and fare policy, including the ability to accept cash;

4. Routing and operational policies, including where the service is available, limitations on trip distance, etc; and
5. Reporting metrics and data access.¹⁰

Capital Metro in Austin faced a similar tradeoff at the culmination of its pilot program with the local non-profit RideAustin. The agency found that its pilot – which was a subsidy-only program – with this operator left the agency lacking essential supervision of drivers. As a result, when the pilot ended and Capital Metro launched its next microtransit program, the agency opted to have its local paratransit provider operate the program and use Via routing technology and software in an attempt to have more direct supervision over drivers and, as a result, provide a better customer experience.

A notable downside of this approach is that agencies are not able to tap into the economies of scale achieved by global TNCs, most notably Lyft and Uber, which are generally already operating in areas interested in pursuing an on-demand partnerships. Such companies have well-established operations that can make the cost of launching a subsidy-only program fairly small. In addition, drivers and customers alike tend to be familiar with their service offerings, which can simplify rollout.

In the end, an agency must wrestle with the question of whether retaining a high degree of control, perhaps by operating a service itself or through an existing paratransit provider, is worth the added cost. These costs are often the greatest for programs covering large geographic areas or generating high numbers of daily rides. Over the next several years, new technical tools will likely emerge to help communities determine what approach is best for them, although certain intangibles will invariably remain.

#6. Transit agencies must resist the temptation to pursue on-demand partnerships primarily for the purpose of demonstrating that they are at the forefront of innovative programming.

In the early phases of partnerships, TNCs may well have made it a high priority to work with public agencies as a means of demonstrating their desire to be civic-minded businesses. To some extent, they may still do so today. As businesses, however, the companies first and foremost have profit-related motives; accordingly, they seek to be part of programs that are deemed successful, and critically, are likely to be renewed following the end of a pilot. From the TNC perspective, a good public-sector partner is one that puts in the necessary work so that objectives and metrics for measuring progress are both agreed upon and clearly defined. A weak partner is concerned more about press releases and public posturing. Although an agency may get credit with its customers for trying out an innovative pilot, TNCs do not. As a result, TNCs appear to have grown wary of agencies failing to do their part to ensure that programs move past the pilot stage.

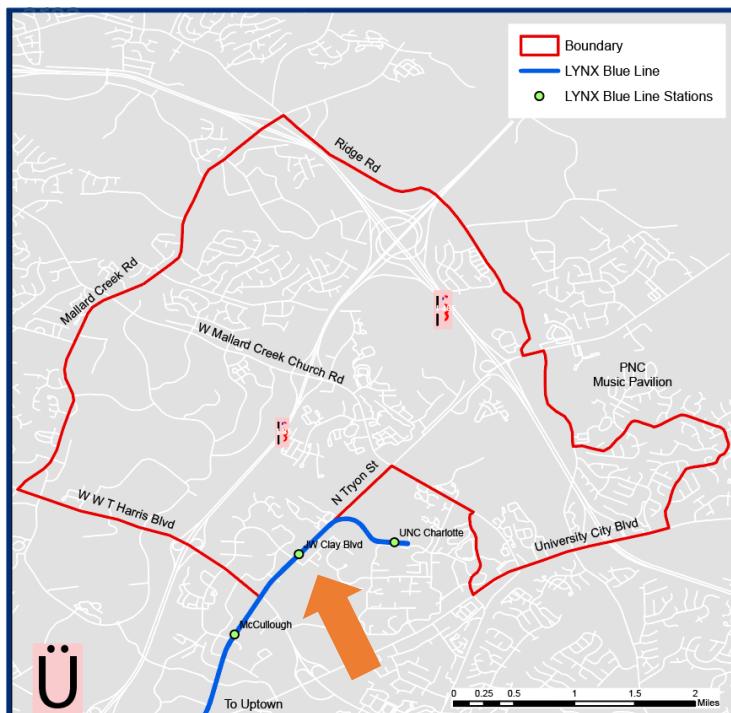
Nevertheless, the temptation for agencies to demonstrate “innovation for innovation’s sake” is strong. According to the 2018 Nelson\Nygaard survey, the top three goals for developing partnerships are to provide first mile/last mile connections (cited by 75%), demonstrate innovation (69%), and improve customer experience (61%).¹¹ A review of the Shared-Use Mobility Center’s [Mobility on Demand Learning Center](#) database of shared-mobility program and our [Partners in Transit](#) report show that many programs die after their pilot stage, some of which no doubt suffer from weak business plans.

#7. Selecting a service area for pilots usually requires considerable analysis on the part of staff, particularly when boundaries don't coincide with those of municipalities or transit districts.

Settling on a designated service area for an on-demand program is often relatively straightforward when a program is oriented towards seniors or people with disabilities. In these cases, service areas often are identical to municipal or transit-district boundaries. In Boston's paratransit pilot with Uber and Lyft, and Newton's *NewMo* program for seniors with Via, for example, service areas mirror those of the sponsoring public agencies.

When on-demand services are rolled out to replace fixed-route services that have been discontinued or to complement low-frequency services of this type, service areas can similarly be determined without much wrangling. The Dayton RTA's *Connect On-Demand* service, for example, was developed in direct response to the termination of several bus routes. Therefore, the sponsoring agency knew its service area would be restricted to those affected by the loss of bus service. In Charlotte, the local transit agency knew that it wanted to better connect the nearby business district with the transit system, so the service area for one of its program zones includes the business district and the transit station (JW Clay Boulevard) closest to it. See Figure 2 below.

Figure 2: CATS on-demand service boundary



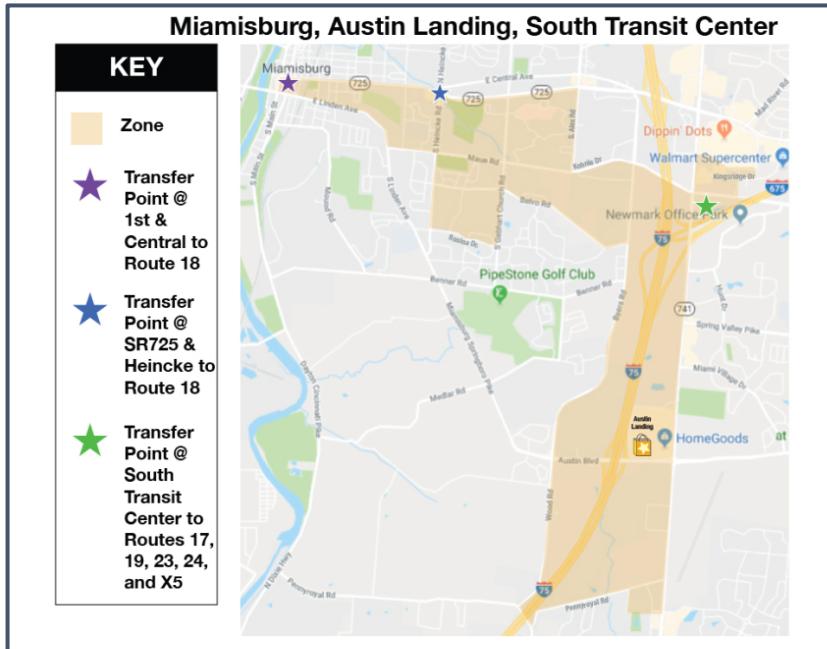
This geo-fenced service area for the Lynx partnership in Charlotte, NC is designed to improve connections between public transit and the nearby business district. Source: CATS

Unfortunately, determining the appropriate service area can be more difficult for other types of on-demand programs, particularly first/last mile offerings. Representatives at public agencies and TNCs indicated that they regularly evaluate the available metrics for the elusive sweet spot (i.e., the right balance between service coverage and cost) for their on-demand programs. For example, before launching its first/last mile service in several designated hubs around the city, Pierce Transit analyzed population density against the backdrop of existing fixed-route service and conducted a license plate study at a park-and-ride facility to see where motorists using its parking lot lived. To establish attractive pilot zones, the partners evaluated walkability, access to fixed-route service and potential congestion relief.

For its *Via to Transit* program, a first/last mile initiative, King County Metro and Sound Transit focused on finding service areas with high percentages of low-income residents, people of color, and those with limited English proficiency. Their service provider, Via, also looked for areas with moderate densities, i.e., densities high enough to allow for strong demand and efficient operations but too low to sustain high-frequency fixed-route transit service. The agencies considered the proximity of prospective areas to high-capacity transit hubs but wanted to avoid serving different areas scattered throughout the county, instead choosing to consolidate service into one general zone. Other criteria helped it determine exactly where to establish boundaries.¹² The agencies also responded to community input, and with the funding support of the City of Seattle, included the addition of a fifth service zone. When evaluating the pilot, the Seattle-area agencies did extensive data analysis. The program administrators compared the amount of ridership generated in each area with the degree to which job accessibility improved. It found that high concentrations of ridership were correlated with areas where the first/last mile service significantly increased access to jobs compared to using only fixed-route transit.

Planners of on-demand programs have a particular desire to attract riders who lack other options or would otherwise be single-occupant drivers. A major airport, casino, or stadium in the service areas, for example, could result in programs catering to well-heeled travelers who would otherwise use taxis or TNCs at a non-discounted price, which can dilute program effectiveness. If the geographically assigned service area is too confined, promotional opportunities and consumer enthusiasm can suffer, which is why finding the sweet spot with respect to both size and location of service area is so critical. Few customers will take the time to study the details of a program if there are many restrictions in fine print or utilize a service that does not meet their transportation needs.

Figure 3: Dayton RTA Connect On-Demand Service Area of Zone 1



Source: Dayton RTA

to three factors that make its on-demand program, which serves select areas with a quasi-rural orientation, financially sustainable: demand is too low to justify fixed-route service to the area, on-demand ridership is not high enough to render the program cost-prohibitive, and the service area lacks sought-after destinations besides bus stops. The latter two factors help keep costs in check. Due to its well-designed nature, an estimated 80% of this program's on-demand trips either start or end with a bus trip, despite the absence of a requirement that they do so.

Representatives from Via noted that the company has launched a growing number of partnerships with public and private entities in less densely-populated areas. Similarly, a representative from Arlington, TX noted that the design of its on-demand program is well-suited for other less densely populated areas with suburban orientations, and maintained that on-demand programs were likely poised to become more prevalent in rural and suburban areas.

On a cautionary note, some point to the relative dearth of technical resources available to design effective programs in these areas. Moreover, awareness of transit is often lower in suburban and rural regions which makes marketing a challenge. As a result of these roadblocks, agency representatives noted that one important purpose of pursuing partnerships is to *learn* what types of on-demand service works best in different situations. New rural and quasi-rural partnerships, they felt, will invariably require a certain amount of trial-and-error.

#8. On-demand programs are poised to become more common in rural and suburban areas.

While much attention has been paid to on-demand programs in urbanized regions, programs in suburban and rural areas with relatively low population densities are quietly gaining momentum. Budgeting for the latter programs can nonetheless be tricky due to the fact that on-demand trips in these areas are often more expensive than those in urban areas on account of longer travel distances, lower density of service, and reduced predictability of customer demand.

The representative from the Dayton, OH transportation authority pointed

Financing and Payments

#9. Programs that subsidize rides by a fixed amount per trip—often a flat rate—are often administratively simpler and easier for consumers to understand. Little commonality exists, however, in the amount of subsidy provided.

A subsidy approach typically involves an agency making a discount code available to qualifying users, after which the TNC invoices the agency, usually monthly, for the total sum of trips taken using that code. For example, if an agency offers a \$3 subsidy on trips and 100 trips are taken in the month using the provided code, the agency's total cost for the month would be \$300. Agencies offering a maximum flat-rate discount for TNC trips in specified zones include the PSTA (\$5 per trip), MBTA (a program limited to paratransit-eligible passengers with discounts of up to \$40 per trip) and Detroit DOT (\$7 per trip). A smaller share of agencies cover the *entire cost* of the trip, which exposes them to greater budgetary uncertainty. Pierce Transit, for example, covered the traveler's entire cost in designated geographic zones for its on-demand pilot, which concluded at the end of 2019. As a result of this subsidy structure, the agency did not know if paying for a trip to the nearest transit connecting point would cost \$4 or \$10, as it depended on the TNC's pricing algorithms, which at times triggered price surges. Limiting subsidies to trips within relatively small and established zones, however, usually allows agencies to approximate total expenses. Over the longer term, they must often adjust the service-area boundaries to keep outlays aligned with budgets.

Partnerships where the agency operates the service using a TNC's routing technology face far less budgetary uncertainty.¹ For these software-as-a-service programs, agencies generally pay an agreed-upon sum to use a proprietary software that includes a routing algorithm, with no revenue from trips being shared.¹³ In these instances, the agency pays for all the operating costs, including renting or purchasing the vehicles and recruiting and paying drivers.

#10. For partnerships involving Via, public agencies often make payments based on vehicle-service hours rather than trips provided. These payment schemes tend to be more complex than flat-rate subsidies, as they often involve multi-variable formulas, but they spur Via to launch operations in communities the company does not already serve.

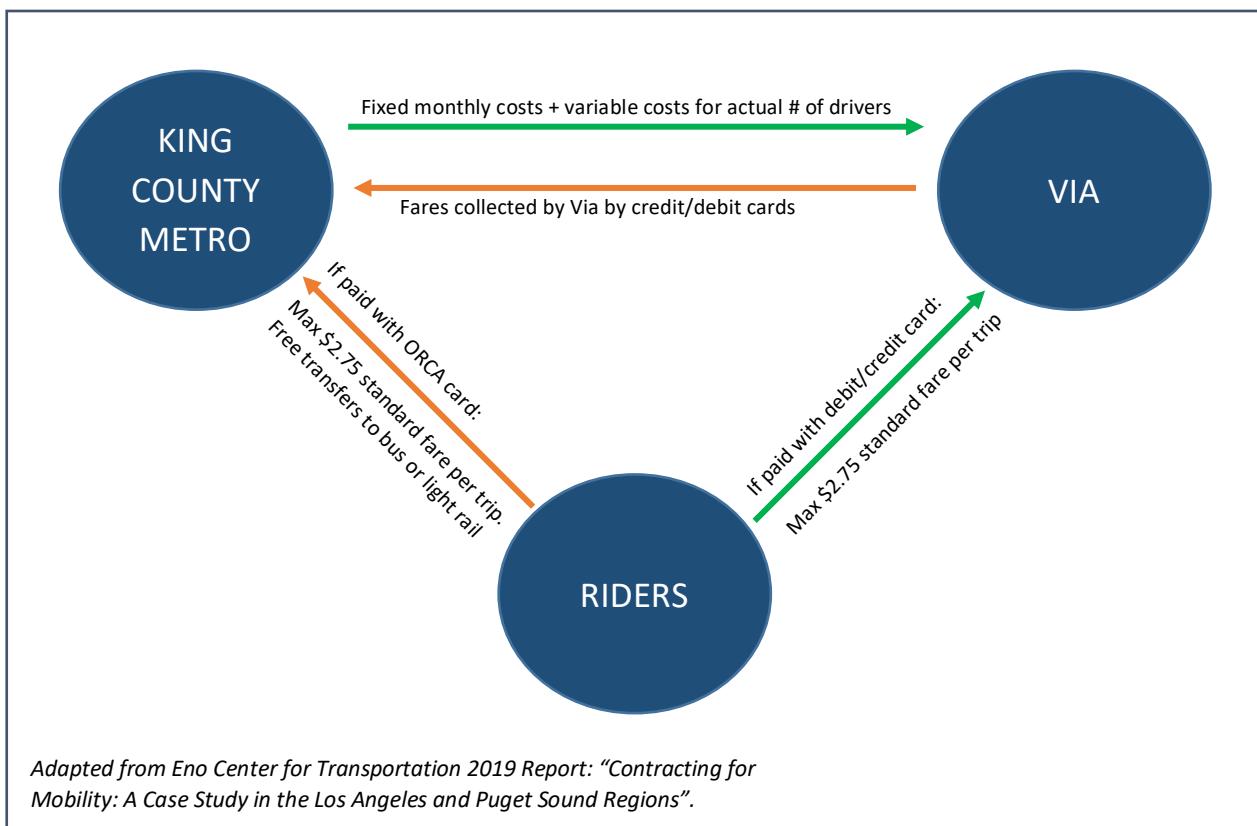
Via often submits proposals based on payments per service hour provided, rather than per trip provided, for transportation-as-a-service programs to mitigate financial risk. A company representative noted in a discussion with our study team that avoiding the need to divide revenues allows public and private partners to more accurately anticipate their monthly results. Although partnerships using this payment structure can require more initial planning and investment due to the need to acquire dedicated fleets and develop customized mobility platforms, the long-term payoff can be appreciable.

¹As of this writing, Via is the only TNC operator explored in this report that also licenses out the use of its routing algorithm to public agencies.

Some contracts of this kind stipulate that Via must operate a specified number of dedicated vehicles in a designated area and require vehicles in service only be used by the program's customers.

Via, unlike Lyft and Uber, often puts particular emphasis on a service-hour approach when it does not have an established operation in an area. In these cases, the company must make a considerable up-front investment in the form of securing appropriate vehicles and drivers for the service. Several examples illustrate how this works in practice. For its *Via to Transit* program with Seattle's Sound Transit, King County pays the company a fixed monthly amount, plus additional fees for variable costs incurred for the actual service delivered. Via was responsible for estimating the number of driver hours needed to maintain specified levels of service (e.g. wait times) over the life of the contract (12 months), which has a "not-to-exceed" budgetary cap. The agency keeps all fare revenues whether the trip is paid using public transit fare cards (ORCA card) or with a debit/credit card through the Via app. The figure below, adapted from an [Eno Center for Transportation case study exploring this partnership](#) and a related Los Angeles program, shows how this arrangement works.

Figure 4: Diagram of Via to Metro Revenue Path



#11. Transit agencies are exploring strategies to more closely align the options provided to each passenger with their individualized mobility needs, thereby lessening diversion from public transit and stretching budgets.

Some agencies have made on-demand paratransit service with TNCs available to everyone who qualifies for paratransit. In the MBTA's pilot with Uber and Lyft, the most expansive example of this, anyone who is eligible for the agency's "The RIDE" paratransit program is automatically eligible for heavily subsidized rides through its pilot program with these rideshare providers. With this program, the agency successfully reduced the need for advanced bookings and shortened wait times. The program offers a subsidy of up to \$40 per ride, with riders paying as little as \$2, depending on the fare. The MBTA has found that the average cost of a TNC trip through its pilot program for paratransit-eligible customers is \$9.07, significantly lower than the average per trip cost (\$52.00) for traditional "The RIDE" paratransit service.¹⁴

Similarly, Newton, MA's on-demand program is available to any resident over the age of 60. Other programs establish tighter restrictions. A newer offering (not explored in detail for this study) is Dakota County, Minnesota's [Go Dakota](#) program, which provides free Lyft rides to and from work for individuals with disabilities throughout this county. Eligibility for this program, which is funded by a Minnesota Department of Human Services grant, is limited to those who already receive home and community-based disability services. Participants receive credits for Lyft rides, paid through their Medicaid waiver. Although the program is in its infancy and the number of participants remains small, it offers an example of a tailored approach to meeting individualized mobility needs.

PSTA is interested in exploring an approach that involves assigning different designations of paratransit eligibility.¹⁵ Such designations could ensure that a customer receives the paratransit service most in line with their needs. For instance, if a customer's only mobility impairment is walking long distances, eligibility may be limited to a rideshare trip to the nearest transit station. If a passenger, like the majority of paratransit customers, has trouble walking even relatively short distances but is ambulatory (i.e., does not use a wheelchair or any specialized equipment), the customer could be eligible for subsidized curb-to-curb rideshare. Customers using wheelchairs would be eligible for rides on a fully accessible vehicle operated by the contracted paratransit provider. By assigning more specified designations of paratransit service, agencies would be able to provide service to best meet customer needs. Furthermore, due to the tendency for subsidies to TNCs to be significantly less expensive than providing fully accessible vehicles, such a system, if implemented, could allow the agency's service to become cost-effective and enhance mobility for all.

Funding

#12. The federal government has been an active financial contributor to many on-demand programs, particularly those advancing technological innovation. Special funding is available for programs for seniors and people with disabilities.

The FTA has been an active supporter of on-demand pilot programs and public agency-TNC partnerships. Of the 12 agencies evaluated in detail, three—Pierce Transit, PSTA, and King County Metro—received financial support from the [FTA's Mobility-on-Demand \(MOD\) Sandbox Demonstration Program](#). (PTSA's funding involves a project unrelated to *Direct Connect*). This program helps agencies “innovate, explore partnerships, develop new business models, integrate transit and MOD solutions, and investigate new, enabling technical capabilities”.¹⁶

Another important source of support is FTA's [Integrated Mobility Innovation Program](#), created in 2019 for projects that test new concepts related to partnerships, technology and efficiency.

Additionally, agencies like Marin Transit have been able to leverage [Section 5310](#) funding allocated for projects that improve mobility service for seniors and individuals with disabilities.

#13. Local businesses and organizations working to improve mobility are a growing source of funding for on-demand initiatives.

A variety of examples illustrate the role of local nonprofits and businesses in supporting on-demand partnerships. Marin Transit signed agreements with the County's two largest employers, Kaiser Permanente and the County of Marin, to subsidize employee trips taken through its on-demand program. Commuter trips involving this prominent pair of employers comprise nearly half (45%) of the program's passenger activity, and these entities are invoiced quarterly by the transit agency for the cost of their employees' rides. Similarly, Norwalk Transit District leveraged local business funding to launch its Wheels2U service and made it available at no cost to customers at the outset.¹⁷

Philanthropic support has been crucial for the Detroit DOT's on-demand *Night Shift* program, which offers discounted rides along certain bus routes in the overnight hours of 11 p.m. to 5 a.m. The program aims to complement infrequent late-night bus service. To support *Night Shift*, the Detroit DOT received a grant from New Economy Initiative, a non-profit based in southeast Michigan facilitating entrepreneurship and local economic development. The program will continue until 2,000 discounted rides have been provided. According to a representative at the agency, the use of philanthropic dollars accelerated the program's launch by streamlining procurement.

Public agency collaborations can assume heightened importance after pilots come to a close. For example, Pierce Transit benefitted from \$205,000 provided by the FTA for its on-demand pilot program, which concluded at the end of 2019. To continue the program going forward, the agency is exploring other funding options, including sharing program costs with neighboring Sound Transit, because data suggests that a large number of riders in one of Pierce Transit's service zones transferred to and from

Sound Transit trains linking Pierce County to Seattle during the on-demand pilot. Such connections provide impetus for exploring a shared-cost arrangement, although such an arrangement has thus far proven elusive.

#14. On-demand programs created to replace lightly used bus routes can be less costly than these more traditional services, thereby reducing or eliminating the need for new sources of funding to operate them. Public agency representatives, however, advise caution when exploring a reallocation of public dollars from fixed-route service to TNC programs.

Several agency representatives noted that their on-demand programs were less expensive to operate than the bus routes that previously served the same area. Administrators at the Dayton program, for example, estimate that it costs approximately \$700,000 annually to operate its *RTA Connect On-Demand* service, which is significantly lower than the fixed-route service that previously operated in the area (at a cost of about \$95 per vehicle hour). A Dayton representative noted that the on-demand program resulted in the elimination of around 45,000 annual bus-service hours while providing better customer service. In Pinellas County, the per-rider subsidy for the *Direct Connect* program was around \$5 per trip, far less than the \$40 per trip rider subsidy previously spent to operate the two circulator buses in the area.¹⁸ The agency also received a small grant from the state of Florida in 2019 to allow even larger \$9 per trip subsidies for low-income riders.

Nearly every agency representative consulted urged caution when moving public dollars from fixed route service to on-demand services operated by TNCs. Although on-demand offerings are often less costly in purely monetary terms, much remains to be learned about their effectiveness in reaching certain groups and long-term desirability. Innisfil, Ontario, for example, received extensive coverage after partnering with Uber for a subsidized on-demand service rather than funding a fixed-route bus route in 2017. By summer 2019, however, the subsidies had been reduced from \$5 to \$4 per trip and limits on the number of discounted trips per month had been established to stay within budget. Such stories reinforce the need for agencies to confront the long-term tradeoffs associated with on-demand partnerships.

Program Launches

#15. Several administrators found that their programs needed more time than originally anticipated for public awareness to grow and promotional efforts to take hold. Pilots are often extended to support an accurate appraisal of performance.

The need to allow more time than initially planned in order to cultivate a customer base was a point repeatedly emphasized in discussions with the study team. Pierce Transit's *Limited Access Connections* program was launched in May 2018, but it was not until the following March that a consistent number of trips were being taken. In Charlotte, the 12-month pilot program to provide first/last mile service was extended in response to evidence that more time was needed for the full effect of marketing strategies to be seen. Marin Transit's pilot is currently in the second of two planned six-month extensions. These extensions were partially motivated by the Marin staff's recognition that adjustments to parameters guiding service delivery, as well as software changes during the pilot's first few months, made assessment difficult. The planning team concluded that drawing more definitive conclusions necessitated gathering data on rides taken under more stable conditions.

#16. Most agencies perform major marketing activities in-house rather than having outside firms or TNC partners perform them. Certain tasks, particularly those related to on-street promotion, however, can be effectively performed by TNCs.

Most agencies have chosen to handle marketing efforts for on-demand programs in-house rather than task the TNC partner with developing marketing materials and promoting the service. However, most agencies, as well as Uber's and Via's representatives, emphasized the importance of actively exchanging ideas and information in marketing efforts. In one instance, planning for a yet-to-be-launched service with Via involved divvying up marketing responsibilities, resulting in the private company handling on-street promotions and in-app discounts and referrals, the local foundation handling community engagement, and the public agency handling press releases and website resources.

The marketing tools employed were largely dependent on the type of service launched, with three examples standing out in the following sidebar.

Excellence in Communication: Three Success Stories

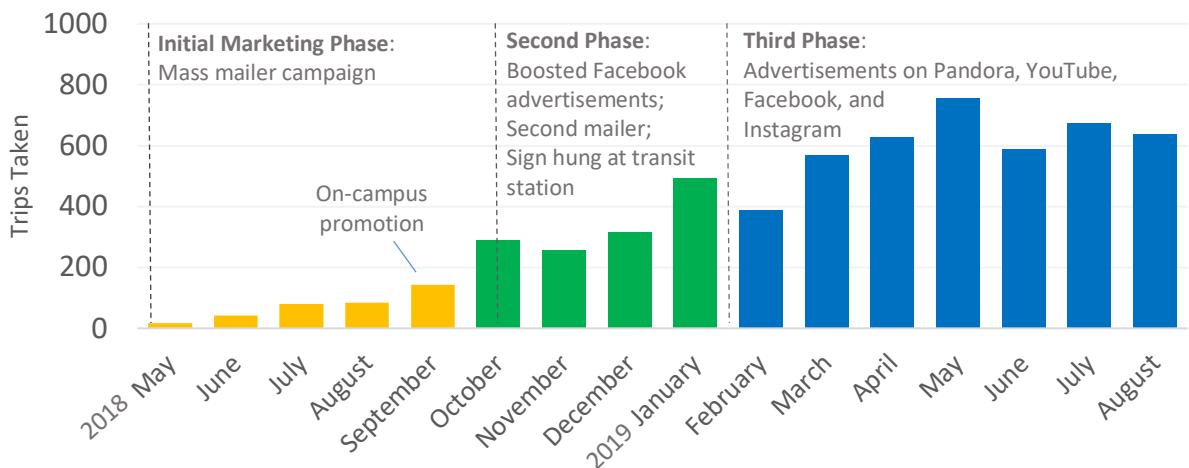
1. Detroit, MI | Engaging in brainstorming and collaboratively developing materials with representatives from Lyft resulted in higher quality marketing materials. Previously, the city sent marketing materials for its *Night Shift* program through multiple rounds of edits and approvals, resulting in unclear and ineffective language. For its second round of materials, the *Night Shift* team decided to sit down with Lyft representatives for brainstorming sessions, and together they developed clearer materials that resulted in a fairly immediate uptick in ridership.



Photo: Detroit DOT

2. Pierce Transit, WA | Conducting a formal analysis of the various social media marketing options allowed for more effective and focused program promotion. To better understand which marketing tools were most effective at boosting ridership for its *Limited Access Connections* program, the Pierce Transit team chose to regularly assess the impact of their marketing efforts. The team organized ridership data in a bar chart (Figure 5 below) showing the number of trips during the various phases of its marketing campaign, with the dotted line denoting when a new marketing strategy began. The yellow bars measure trips taken during the initial promotion phase which consisted largely of a mailer campaign and on-campus promotion. The green bars identify trips taken during the second phase which included heightened Facebook activity, a second mailer and a banner hung in a major train station. The blue bars represent trips during the third phase, which included continued use of Facebook as well as Instagram, Pandora and YouTube. The analysis showed the advertisements on YouTube and Pandora were more expensive and less effective (based on online engagement) than less expensive geofenced Facebook ads.

Figure 5: Timeline of Pierce Transit Marketing Efforts and Ridership for *Limited Access Connections*



A Pierce Transit data chart showing ridership during different phase of its marketing campaign. Source: Pierce Transit

3. Marin Transit, CA. Tapping into formal community networks of service organizations markedly increased public awareness. The agency's well-written [evaluation](#) highlights how it leveraged its paratransit coordinating council and other local partners to raise awareness for its on-demand program. The agency heavily promoted the service at community events within or near the program's service area, such as summer concert series and farmers markets. Marketing materials were delivered in person to local businesses including a nearby mall, banks and corner stores. Contacts were also leveraged at community organizations such as the YMCA and the Jewish Community Center.

#17. Successful promotion involves positioning a program as a component of a larger transit system rather than a separate and temporary initiative. Payment integration and co-branding greatly facilitate this process.

Agency representatives stress the need to publicize that partnerships are inextricably linked to established transit systems for which public awareness is usually high. Prior to the discontinuation of fixed-route service, for example,

Dayton RTA's staff held face-to-face discussions with customers in affected areas. These discussions framed the new on-demand program's role within the full RTA system. Promotional information affixed to bus shelters (see photo above) reinforced this notion.

Starting in fall 2020, customers using Dayton's on-demand program will no longer book discounted rides through Uber or Lyft apps; instead, they will receive the discount code when booking through the Transit app, the authority's mobility platform. This change will generate a greater range of ridership data for the agency.

Transit agencies in Charlotte and Pinellas County are taking similar approaches. The former plans to release a request for proposals (RFP) that will help the agency incorporate payment for Lyft rides into its booking platform. The latter agency is working with the Transit app to fully integrate fare payment and trip planning for its first/last mile program with Uber in 2020.



A bus stop of the Dayton RTA in Miamisburg, Ohio with information about its RTA Connect on Demand program—and the Lyft logo—plainly visible (left)



A co-branded vehicle in King County Metro's *Via to Transit* program. Source: King County Metro.

Programs providing first/last mile service, by their nature, tend to be integrated with public transit systems. However, King County Metro and Sound Transit have taken additional steps so that their *Via to Transit* program is viewed as a component of the region's public transit offerings. Customers can request a *Via* ride to and from the closest bus stop or to a Link Light Rail station within a geo-fenced service area. All vehicles in the fleet are co-branded, displaying King County Metro and *Via* logos (see image to the left), and each vehicle has an ORCA card (the local

transit card) reader installed to accept payment. This makes using the on-demand service payment similar to riding the bus. Customers add value to transit cards to pay for the services used, which facilitates access for the unbanked. Transfers can be made to and from buses and trains without paying an additional fare, exactly as they can when making bus-to-bus or bus-to-train transfers.

Efforts toward payment integration and co-branding are underway in other regions as well and are likely to become increasingly prevalent among on-demand partnerships with TNCs, as they are critical to framing the programs as components of the larger transit systems.

Improving Operations and Troubleshooting

#18. On-demand programs, with emphasis towards on-line reservations, provide opportunities for agencies to garner new insights about customers.

Several insights regarding customer feedback repeatedly shared by agency representatives warrant emphasis. First, agencies lacking direct contact with customers using on-demand programs operated by TNCs expressed a desire to have greater contact. Most customers using Pierce Transit's *Limited Access Connections* first/last mile program, for example, booked their trips through the Lyft app and the discount codes were freely shared, meaning that users were unknown to the agency. The agency could solicit feedback from customers who used the call center, but these travelers made up fewer than 5% of the total. Unable to send its own survey at the time of its choosing, the agency needed to distribute a survey through the Lyft platform, and the coordination required for this resulted in a time lag. Nevertheless, the process of gaining feedback via digitally-issued surveys is significantly easier than the process of gaining feedback from riders on traditional fixed route service, which often requires days of in-person questioning while riding the routes.

The second insight shared by multiple agency representatives was that, in some instances, there can be unique opportunities to gain feedback regarding on-demand TNC-public agency partnerships that are not available for other public transit services. For example, King County Metro has ready access to

ratings for all of its *Via to Transit* trips, and it knows that average wait time for WAVs is 14 minutes, compared to just 8 minutes for non-accessible vehicles. The nature of on-demand service facilitates immediate feedback on trips, and the data automatically received from customers can help more quickly inform route adjustments and service.

Finally, TNCs, like transit agencies, are eager to learn about customers and their preferences. Lyft, Uber and Via are working to assess information and evaluate the feedback received. Gradually, these private-sector partners are developing more streamlined customer feedback processes, template surveys and reports to support the work of agency personnel.

Informal information gathering methods remain important. Representatives of public agencies also noted that they attend community events and neighborhood meetings to hear customer perspectives.

#19. Although dedicated staff time is critical during the initial pilot phase, after a program grows more established, a regular call or meeting between the sponsoring public agency and the TNC partner usually provides sufficient opportunity to maintain open and effective lines of communication.

Partnerships generally require parties who are geographically separated to work together. After a program is well established, however, most officials representing agencies felt that a call or meeting with their TNC partners every week or two is sufficient. The Pierce Transit team, for example, had a standing call with Lyft every two weeks and sends technical queries to the company as they arose.

Marin Transit spoke with the Via team around three times weekly during its launch phase before reducing contact to twice weekly when the program stabilized. Intensive communication during the pilot, when Marin's service underwent no fewer than *eight* service level changes, was found to be critical. During this time ridership patterns were identified, and software bugs were resolved.¹⁹ A single weekly call, primarily to discuss "help tickets" submitted and customer-service issues, is now deemed sufficient.

Newton, MA established an intensive working relationship with Via to address a range of challenges. Shortly after launching the city's on-demand service for seniors, Via needed to adjust its assumptions regarding the number of vehicles required to meet demand and the number of customer service agents required. Specifically, the company had initially underestimated the time required for seniors to make a booking over the phone as well as to board and alight the vehicles being used. To address this, Via increased the number of vehicles on the road. A city employee expressed appreciation for the fact that the company absorbed the additional costs that arose as a result of the programmatic adjustments to the initial assumptions, although telephone wait times can still be challenging.

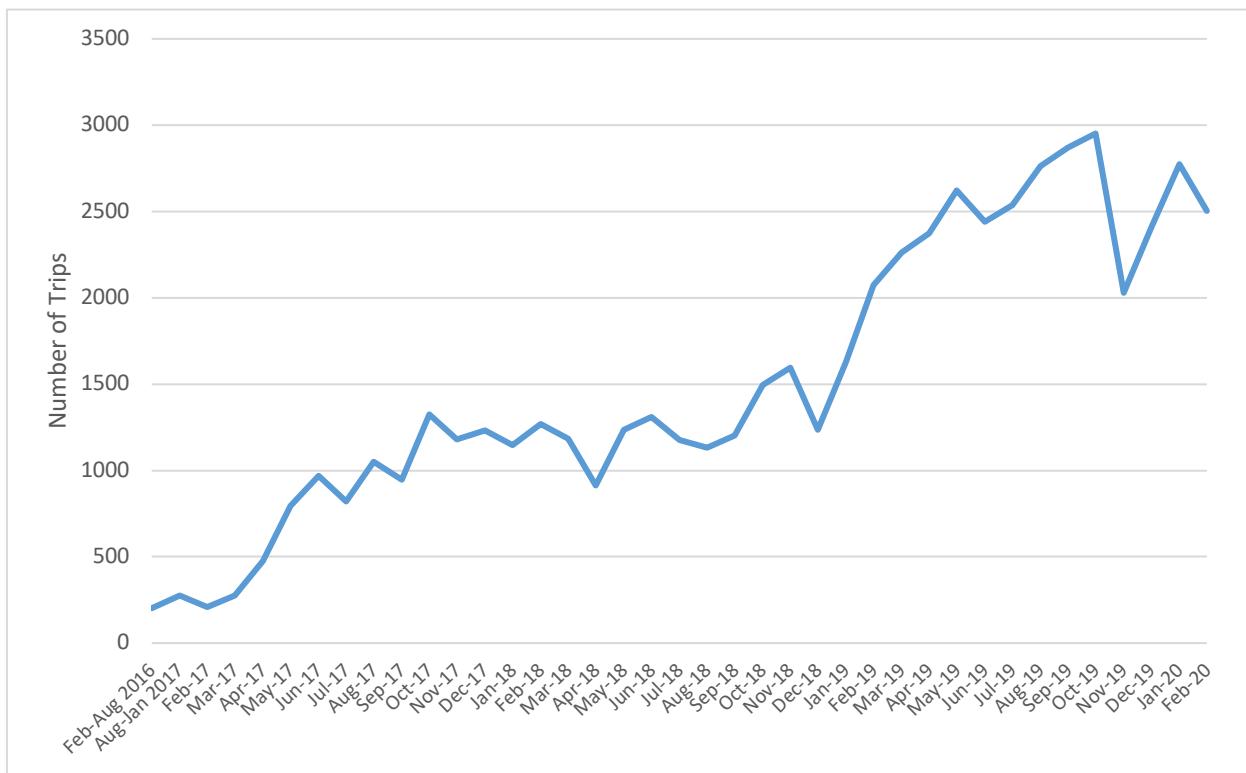
Arlington's municipal government conducted a soft launch of its on-demand program with Via by offering service in a portion of the program's full service area during the university holiday break so ridership would be lower. This helped the city and the TNC address any challenges at the outset, paving the way for the service to be expanded to the full service area the following month.

The *Direct Connect* team at PSTA noticed that the geo-fenced boundary Uber had been using for months to determine what rides fell in the designated service area was larger than it should have been. As a

result, more rides were counted than was intended. After the Pinellas team alerted Uber to the problem, the company corrected the boundary and chose not to invoice the agency for ineligible rides. In addition, near the program's outset, PSTA expanded the required geographic boundary from 400-feet around a designated drop-off zone to 800 feet after receiving feedback that such a strict boundary occasionally resulted in passengers having to exit their ride on high-traffic streets ill-suited to pedestrians.²⁰ PSTA's experience underscores the importance of clear, open lines of communication with private partners and regular service evaluation—and the need for troubleshooting during pilots.

The PSTA program, like several others, benefitted from having dedicated staff monitoring the technology and program implementation at the outset. This incubation period allowed partners to iron out challenges that inevitably arose with innovative programming. The program is now mature, having been in place for over three years and typically providing more than 2,500 trips monthly (see table below). Oversight of a related program, called *TD Late Shift*, has now been transferred from the planning department to the operations unit, and although this transition came with its own challenges, dedicated staff time and oversight during the launch period enabled a more smooth and efficient transition.

Table 3: Ridership for *Direct Connect*, a program of Florida's Pinellas Suncoast Transit Authority



Monthly ridership on *Direct Connect*, a targeted program offering discounted rideshare trips, has risen from less than 500 during its initial period to over 2,500 in certain months after Autumn 2019. Source: Pinellas Suncoast Transit Authority, St. Petersburg, Florida

Data and Evaluation

#20. Contrary to some initial concerns, most program administrators are satisfied with the quantity of data received from their private-sector partners.

Although concerns about access to data and transparency were prevalent when TNC-public agency partnerships were first emerging, the majority of public agency officials consulted noted overall high levels of satisfaction with data currently provided by their private-sector partners.

Agencies that launched programs prior to 2018, when data concerns tended to be more pervasive, indicated that they chose their partner specifically due to their willingness to share more data than other prospective partners. Capital Metro, for example, chose to contract with local non-profit RideAustin due to this local TNC's willingness to make available all of its ridership data, including rides not part of the partnership with the agency.

However, regarding current partnerships, almost every agency evaluated reported satisfaction with the amount of data they receive from their partners and that they have few concerns about forging data-sharing agreements in the future.ⁱⁱ For example, when Marin Transit releases a request for proposals for its next on-demand partnership, the agency plans to require from the TNC only the data necessary to meet FTA national transit database reporting standards and the requirements of California S.B. 1376 (TNC Access For All Act). Nevertheless, companies willing to provide data beyond those minimum requirements will be scored higher for the relevant section in the proposal-evaluation process.

One useful reference for agencies in this regard is the February 2020 [report](#) released by the Eno Center for Transportation which explores the types of data staff should consider when entering into on-demand partnerships. This report features tools and resources of great importance to agencies, and it does so by providing case studies on the partnerships with Via operating in the Los Angeles and Seattle areas.

Another useful tool for agencies is the Shared-Use Mobility Center's [Objective-Driven Data Sharing for Transit Agencies in Mobility Partnerships](#). This white paper identifies a process for transit agencies to determine the appropriate data sharing approach for their program. Additionally, in order to address concerns about making certain data public and subject to Freedom of Information Act requests, several agencies plan to have evaluations conducted by third-party organizations.

Program officials generally maintain that their private-sector partners recognize the need for public agencies to have the necessary data to evaluate performance. Uber, for example, rolled out improved data dashboards for its public sector partners to facilitate greater data visualization and reporting, and two different agency representatives asserted that they have grown increasingly pleased with the data received from Uber over the course of their respective partnerships. Via also offers its partners access to a dashboard from which they can pull reports.

ⁱⁱ A representative involved in Newton's partnership with Via noted that the city's inability to access to customer names can cause difficulties in resolving service issues. This is because many seniors call city employees directly to ask questions about their rides, much as they did when using the taxi voucher system that preceded the rideshare service. Prohibitions against the city accessing personal identifying information, however, confound the efforts of city employees to answer customers' questions directly regarding if their ride is booked or on its way.

Agencies using Via's routing technology for their own programs have access to all rider data due to the agency's role as the program's operator. For these software-as-a-service programs, Via notes that it provides access to all data *except* personal identifying information and a sufficient quantity of information that would allow for reverse engineering of the Via algorithm.

#21. Although the evaluation of programs has lagged due to constraints on staff time and resources, such evaluations are becoming more prevalent, and a growing number of resources and tools are now available.

The ability to evaluate all available data is a persistent challenge for agencies. According to the 2018 Nelson Nygaard survey, only 27% of responding transit agencies have developed a formal evaluation process for their partnership.²¹ When the Arlington municipal government launched its on-demand service, for example, there were no benchmarks or clear service usage goals from similar programs around the country in which to draw comparisons. To fill the void, it essentially started from scratch and crafted a set of goals that included cultivating a steady increase in ridership. Similarly, when Pierce Transit was calculating probable costs for its first/last mile program, planners simply entered sample trips into the Lyft and Uber apps to approximate likely fares.

Both these examples illustrate how little was known about TNC-public agency on-demand programs as recently as a few years ago. Today, however, agencies share insights from their counterparts in other regions and have more information at their disposal to help predict usage and establish benchmarks. According to a Via representative, agencies are now more familiar with the different offerings available to them, and they are better equipped to ask questions that help them select a partner that will deliver the service desired.

Governmental agencies are also taking steps to increase the evaluation of on-demand programs. All programs participating in the FTA's *Mobility-on-Demand Sandbox Demonstration Program* will be evaluated by an independent party. Although those evaluations have not been released in full, the evaluation plans are public. The evaluation plans for the "[Dallas Area Rapid Transit First and Last Mile](#)" project, the "[Los Angeles County and Puget Sound MOD First and Last Mile Partnership with Via](#)" project, and the "[Pierce Transit Limited Access Connections](#)" project all contain metrics being used to evaluate first/last mile programs.²² Similarly, the evaluation plan for the "[Chicago Transit Authority Integrated Fare System from Transit Fare to Bike Share Project](#)" provides a guide for how to evaluate an effort towards fare integration across differing modes, while the "[PSTA Public-Private-Partnership for Paratransit Mobility on Demand Demonstration](#)" evaluation plan contains metrics for evaluating paratransit projects. These plans can help guide agencies interested in evaluating their data and choosing appropriate metrics for their stated goals.

Program leaders at public agencies pointed to two metrics as particularly important to their evaluations: *customer satisfaction ratings* (which is particularly important for programs primarily designed to serve seniors and/or people with disabilities) and the *share of trips that start or end with a public transit ride* (particularly important for first/last mile programs). Other metrics that agency personnel cited as most-closely watched included percent of rides shared, average wait times and common trip start and end points.

Anticipated Trends for the Next Phase of TNC-Public Agency Partnerships

The analysis conducted for this study points to five trends that could reshape the TNC-public agency landscape in the next several years.

1. **A growing number of public agencies will pursue integration of fare payments for their on-demand programs with the trip planning and booking platforms used by their transit systems.** Currently, PSTA and Dayton RTA are both working to integrate payment for programs operated by TNCs into the respective agencies' public transit system platforms. Meanwhile, King County Metro has already installed transit fare card readers in each of the vehicles deployed for its first/last mile program. Payment integration is a key element in ensuring that on-demand programs are viewed by customers as components of the public transit system as a whole, and these examples illustrate the increasing push among agencies to facilitate such integration. For more, see Takeaway #17 on page 20.
2. **More on-demand programs operated by TNCs will be launched in less densely populated areas, including dispersed suburban and rural communities.** Several examples indicate that costs incurred per passenger served on underperforming bus services can be far higher than the on-demand services which replace them. Such substitution—while not without its risks—could allow some programs to be self-financed. One agency representative suggested that their on-demand program is successful as a first/last mile service precisely because demand is too low to justify fixed-route service to the area, on-demand ridership is not high enough to render the program cost-prohibitive, and the service area lacks sought-after destinations besides connections to transit. For more, see Takeaway #8 on page 12.
3. **Agencies will become better equipped at comprehensively evaluating their partnerships based on their growing familiarity with available data, the expanding technical capabilities of TNCs, and the enhanced sharing of information among stakeholders.** After a slow start in the evaluation of partnerships, agencies are quickening the pace and becoming more sophisticated in exploring the impacts on mobility. Stakeholders are increasingly sharing insights with their peers about lessons learned. Private partners are rolling out new data tools in the evaluation of programs, including marketing, service area selection and data reporting. Furthermore, the federal [Mobility on Demand Sandbox](#) and [Integrated Mobility Innovation](#) programs are increasing understanding of the possibilities presented by innovative partnerships. For more, see Takeaway #21 on page 25.
4. **More public agencies will turn to TNCs for enhanced paratransit service while scaling their offerings to the specific mobility needs of those served.** Partnerships with private-sector providers to expand on-demand service is widely acknowledged as a promising way to improve the lives of seniors and people with disabilities. A variety of examples shared in this report support this finding. Moving forward, more agencies will likely match their range of paratransit services to customers' capabilities in increasingly specified ways, which may involve providing WAVs for some, door-to-door rideshare trips for others, and last/first mile trips for those with lesser mobility challenges. For more, see Takeaway #11 on page 15.

5. **More large-scale partnerships appear likely to emerge in the United States, mirroring trends taking root in Europe.** Many of the earliest on-demand partnerships in this country involved smaller cities and small- to mid-size transit agencies. Even today, most of Via's programs encompass between five and fifteen vehicles. There are exceptions, such as the first/last mile service partnerships in Seattle and Los Angeles which involve large transit agencies and extensive operations, but even they remain relatively small by European standards. The next phase may well involve more ambitious undertakings, perhaps even ones akin to the first/last mile program partnership between ViaVans and Berlin's transportation authority, Berliner Verkehrsbetriebe, which involves more than 150 vehicles.

Such trends will make the next round of partnerships fascinating to watch. We welcome feedback from readers about the trends we observed.

References and Online Resources

Recommended resources for officials and researchers seeking to develop and improve on-demand programs.

Federal Transit Administration

- Shared Mobility FAQs:
 - [Americans with Disabilities Act](#)
 - [Controlled Substance and Alcohol Testing Requirements](#)
- [Integrated Mobility Innovation Program](#): FTA's Integrated Mobility Innovation (IMI) Program funds projects that demonstrate innovative and effective practices, partnerships and technologies to enhance public transportation effectiveness, increase efficiency, expand quality, promote safety and improve the traveler experience.
- [Mobility-on-Demand Sandbox Demonstration Program](#): FTA's MOD Sandbox Demonstration Program provides a venue through which integrated MOD concepts and solutions – supported through local partnerships – are demonstrated in real-world settings. FTA seeks to fund project teams to innovate, explore partnerships, develop new business models, integrate transit and MOD solutions, and investigate new, enabling technical capabilities such as integrated payment systems, decision support, and incentives for traveler choices.
 - [Webinar Series on Public Transportation/Shared Mobility Partnerships](#): As part of its efforts to support innovation among public transportation agencies across the country, FTA hosted two webinars in October 2019 to highlight current practices in partnerships between transit and shared mobility providers, share lessons learned from the Mobility on Demand Sandbox program and provide additional resources.
 - [Data Sharing in Transit/Shared Mobility Partnerships: Presentation PDF & Transcript](#)
 - [Compliance with FTA Requirements in Transit/Shared Mobility Partnerships: Presentation PDF & Transcript](#)
 - [Evaluation Plans](#):
 - [Los Angeles Metro and Puget Sound Region on-demand first/last mile service](#)
 - [PSTA on-demand paratransit service](#) and [Pierce Transit Limited Access first/last mile service](#)
- [Best Practices Procurement & Lessons Learned Manual, 2016](#): This manual provides FTA grant recipients with detailed information about third-party procurement requirements to help improve internal processes and avoid pitfalls. The manual covers the entire procurement cycle: (1) Planning, (2) Selecting Type of Contracting Method, (3) Evaluation of Proposals and Contract Award, and (4) Contract Administration.

Shared-Use Mobility Center

- Case Studies:
 - PSTA's on-demand first/last mile program (June 2019): [When Uber Replaces the Bus: Learning from the Pinellas Suncoast Transit Authority's "Direct Connect" Pilot](#)
 - MBTA's on-demand paratransit pilot (Nov. 2017): [MBTA RIDE P3 Partnerships: Lyft/Uber and Centralized Call and Control Center for Paratransit Services](#)

- Norwalk Transit District's on-demand microtransit service (July 2019): [Wheels2U Microtransit Service: Providing Mobility in Options in a Growing Downtown](#)
- City of Arlington TX's on-demand microtransit service (Jan. 2018): [The City of Arlington, TX and Via MOD P3 RFP and Contract Process](#)
- White Paper (July 2019): [Objective-Driven Data Sharing for Transit Agencies in Mobility Partnerships](#)

Other Resources

- Marin Transit: [Connect Evaluation Report, July 2019](#)
- Massachusetts Depart. of Transit: [Optimizing ADA Paratransit Operation with Taxis and Ride Share Programs, May 2019](#)
- Eno Center for Transportation: [Contracting for Mobility: A Case Study in the Los Angeles and Puget Sound Regions, 2019](#)
- Nelson\Nygaard: [Partnerships Between Transit Agencies and Transportation Network Companies \(TNCs\), 2019](#)

Appendix A: Sample Promotional Materials

Charlotte's CATS First/Last Mile Partnership Materials



GET A 
WITH 

FIRST MILE / LAST MILE PROGRAM

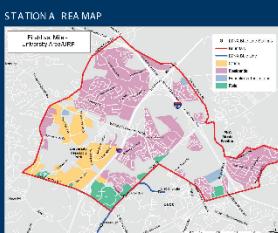
1 **Two Ways to Participate**
Purchase a monthly pass via CATSPass mobile app. Within 24 hours, a code will be activated in your Lyft app for use within the geo-fenced area. A monthly pass purchased through CATSPass provides 40 Lyft trips per month.
OR
Enter the Station Code into the Lyft app. Riders with a current valid CATS/LYNX pass can enter this Station Code displayed below into your Lyft app for use within the geo-fenced areas. This option provides 2 Lyft trips per month while supplies last.

2 **Pick Your Station**
A trip must originate or terminate at this station and end or start in the specified area displayed on the Map below. This area was selected to fill gaps in the existing transit network in order to provide better access to the region's extended rail system. See below map for travel area for this station.

3 **Pickup and Drop-off Locations**
There is a designated location to be picked up and dropped off by Lyft. The JW Clay / UNC Charlotte Station Pickup/Drop off Location is adjacent to the bus bays located on the backside of the parking deck.

LYFT APP STATION CODE
18JWC

STATION A AREA MAP



CATS and Lyft have partnered up to connect riders to the first and last miles of their commute. CATS will provide a \$4 contribution toward a Lyft trip fee to/from the LYNX Parkwood and JW Clay Blvd/UNC Charlotte Stations for trips taken within a geo-fenced area surrounding both stations. Go [here](#) to find out how!

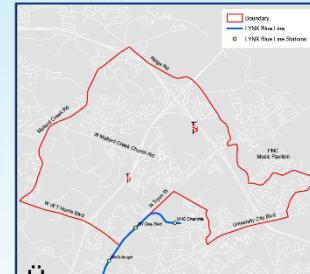
 

PARKWOOD

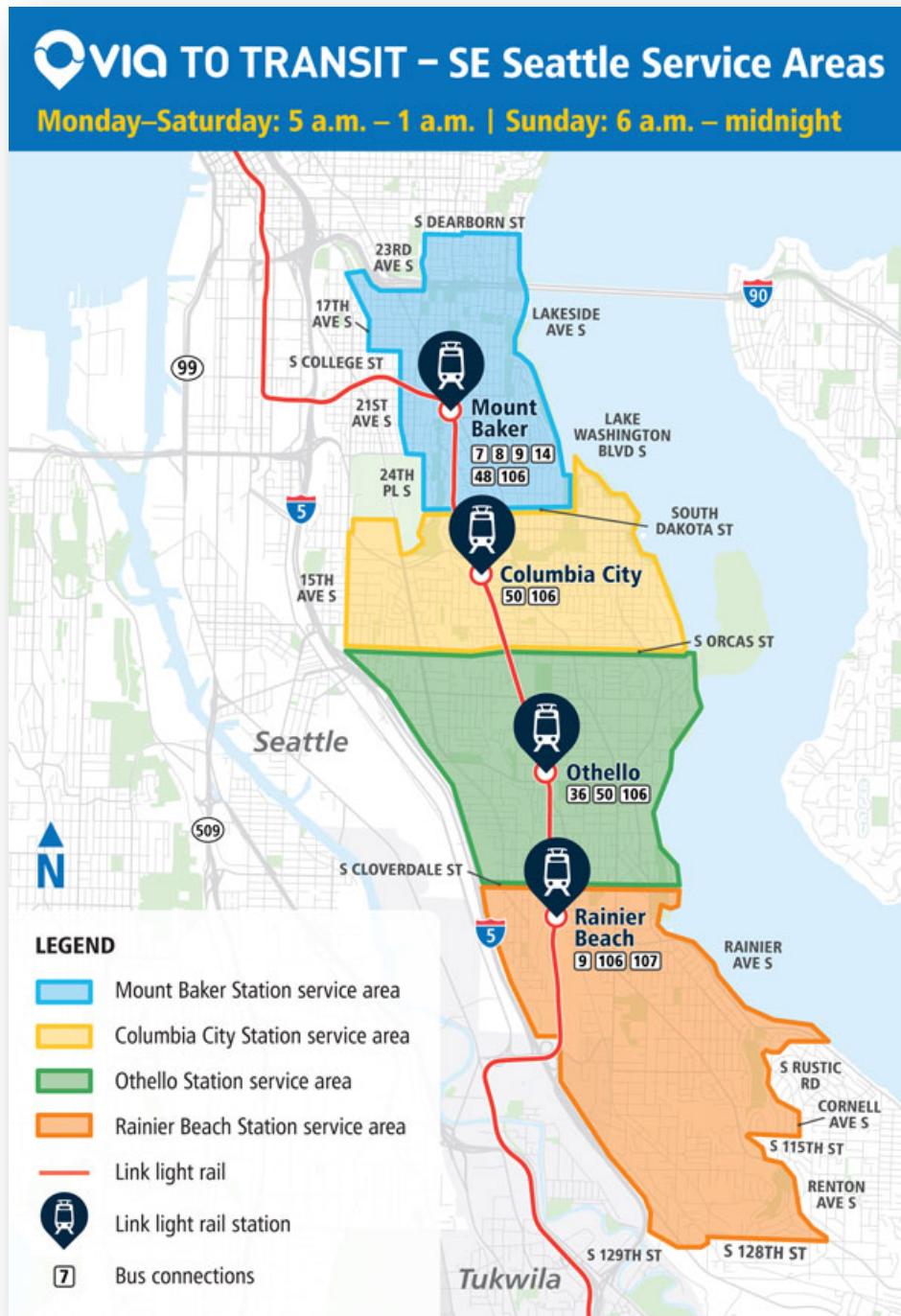
LET CATS AND LYFT GET YOU TO YOUR DESTINATION!

PARKWOOD

First/Last Mile - North Eno/Innovation Corridor



King County Transit's Via to Transit Service



Appendix B: Notes of the Research Methods Used for Study

In addition to information and insights provided by administrators of the programs and TNC staff, information was drawn from the evaluation documents and other related materials published by transit agencies, including the Marin Transit's 2019 "Marin Transit Connect Evaluation Report" and the Massachusetts Department of Transportation's 2019 study, "Optimizing ADA Paratransit Operation with Taxis and Ride Share Programs".

The study team also consulted the Shared-Use Mobility Center case studies regarding the [City of Arlington, TX](#) and [PSTA](#) programs and a case study from the Eno Center for Transportation on the [King County Metro Transit](#) program. Interviews were not conducted with the MBTA or Norwalk Transit District; information regarding the on-demand partnerships at both agencies came exclusively from material published by the transit agencies themselves, as well as from the Shared-Use Mobility Center case study on the [MBTA's on-demand paratransit pilot](#) and the [Norwalk Transit District's microtransit service](#), which was a collaboration by the Shared-Use Mobility Center and Todd Hansen, Texas A&M Transportation Institute. The 2019 [Nelson\Nygaard report](#) referenced throughout this study that assesses the results of a 2018 survey of transit agency representatives involved in partnerships with TNCs also provided background on TNC-public agency partnership across the country.

AUTHOR INFORMATION



Mallory Livingston Shurna is an independent consultant in shared mobility and emerging transportation technologies. She currently works for the [Shared-Use Mobility Center](#) to help track public-private partnerships and other Mobility on Demand transportation solutions for the [MOD Learning Center](#). She is a former Program Manager at the Chaddick Institute who co-authored the Chaddick Institute's 2018 reports [*Partners in Transit: A Review of Partnerships between Transportation Network Companies and Public Agencies in the United States*](#) and [*Uber Economics: Evaluating the Monetary and Nonmonetary Tradeoffs of TNC and Transit Service in Chicago, Illinois*](#). Mallory holds an M.S. in Public Policy Studies at DePaul University, as well as B.A. in Philosophy from Colby College. She can be reached at Mallory.livingston.shurna@gmail.com.



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¹ This program has also evolved to provide a first/last mile service.

² Foxx, A. (2016 December 5). Dear Colleague letter, Department of Transportation. Retrieved from <https://www.transit.dot.gov/sites/fta.dot.gov/files/Dear%20Colleague%20Letter%20re%20Shared%20Mobility.pdf>

³³ Curtis, T., Merritt, M., Chen, C., Perlmutter, D., Berez, D. (2019). Partnerships Between Transit Agencies and Transportation Network Companies (TNCs). Nelson\Nygaard Consulting Associates. Pp 14. Retrieved from <https://www.nap.edu/catalog/25576/partnerships-between-transit-agencies-and-transportation-network-companies-tncs>

⁴ Federal Transit Authority (FTA) (2019 October 23). Webinar: Compliance with FTA Requirements in Transit/Shared Mobility Partnerships. Pp 16. Retrieved from <https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/research-innovation/134611/compliance-fta-requirements-transit-shared-mobility-partnerships-ppt.pdf>

⁵ Federal Transit Authority (FTA) (2019 October 23). Webinar: Compliance with FTA Requirements in Transit/Shared Mobility Partnerships. Pp 17. Retrieved from <https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/research-innovation/134611/compliance-fta-requirements-transit-shared-mobility-partnerships-ppt.pdf>

⁶ Federal Transit Authority (FTA) (2019 October 23). Webinar: Compliance with FTA Requirements in Transit/Shared Mobility Partnerships. Pp 18. Retrieved from <https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/research-innovation/134611/compliance-fta-requirements-transit-shared-mobility-partnerships-ppt.pdf>

⁷ Federal Transit Authority (2016). Best Practices Procurement & Lessons Learned Manual. <https://www.transit.dot.gov/funding/procurement/third-party-procurement/best-practices-procurement-manual>

⁸ Federal Transit Authority (FTA) (2019 October 23). Webinar: Compliance with FTA Requirements in Transit/Shared Mobility Partnerships. Pp 10. Retrieved from <https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/research-innovation/134611/compliance-fta-requirements-transit-shared-mobility-partnerships-ppt.pdf>

⁹ Federal Transit Authority (FTA) (2019 October 23). Webinar: Compliance with FTA Requirements in Transit/Shared Mobility Partnerships. Pp 29. Retrieved from <https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/research-innovation/134611/compliance-fta-requirements-transit-shared-mobility-partnerships-ppt.pdf>

¹⁰ Marin Transit (2019 July). Marin Transit Connect Evaluation Report. Pp 17. Retrieved from https://marintransit.org/sites/default/files/projects/2019/Connect%20Evaluation%20DRAFT_FINAL.pdf

¹¹ Curtis, T., Merritt, M., Chen, C., Perlmutter, D., Berez, D. (2019). Partnerships Between Transit Agencies and Transportation Network Companies (TNCs). Nelson\Nygaard Consulting Associates. Pp 13. Retrieved from <https://www.nap.edu/catalog/25576/partnerships-between-transit-agencies-and-transportation-network-companies-tncs>

¹² When looking at where to establish boundaries for service areas, King County Metro and Sound Transit considered: where there was less robust fixed-route transit, where community assets were located (e.g. schools, community centers, places of worship, senior centers, food banks, grocery stores, etc.), where there was high-density/low-income housing and the existence of logical boundaries (e.g. major roads and bodies of water).

¹³ Marin Transit received use of Via's routing algorithm at no cost for the first year of operation.

¹⁴ Massachusetts Department of Transportation (2019 May). Optimizing ADA Paratransit Operation with Taxis and Ride Share Programs. Pp 5. Retrieved from https://www.mass.gov/files/documents/2019/07/17/ADA_Paratransit_Operations2019.pdf

¹⁵ PTSAs exploration of this issue is not related to Direct Connect and involves other paratransit offerings.

¹⁶ FTA. Mobility on Demand (MOD) Sandbox Program. Retrieved from <https://www.transit.dot.gov/research-innovation/mobility-demand-mod-sandbox-program>

¹⁷ Shared-Use Mobility Center & Hansen, Todd, Texas A&M Transportation Institute (2019 July). *Wheels2U Microtransit Service: Providing Mobility in Options in a Growing Downtown*. Retrieved from

<https://learn.sharedusemobilitycenter.org/casestudy/wheels2u-microtransit-service-providing-mobility-in-options-in-a-growing-downtown/>.

¹⁸ Murphy, C., Karner, K., Accuardi, Z. (2019 June 13). Shared-Use Mobility Center. *When Uber Replaces the Bus: Learning from the Pinellas Suncoast Transit Authority's "Direct Connect" Pilot*. Retrieved from

<https://learn.sharedusemobilitycenter.org/overview/direct-connect-what-the-first-transit-tnc-partnership-can-teach-us-pinellas-county-fl-2019/>

¹⁹ Marin Transit (2019 July). Marin Transit Connect Evaluation Report. Pp 26. Retrieved from

https://marintransit.org/sites/default/files/projects/2019/Connect%20Evaluation%20DRAFT_FINAL.pdf

²⁰ Murphy, C., Karner, K., Accuardi, Z. (2019 June 13). Shared-Use Mobility Center. *When Uber Replaces the Bus: Learning from the Pinellas Suncoast Transit Authority's "Direct Connect" Pilot*. Retrieved from

<https://learn.sharedusemobilitycenter.org/overview/direct-connect-what-the-first-transit-tnc-partnership-can-teach-us-pinellas-county-fl-2019/>

²¹ Curtis, T., Merritt, M., Chen, C., Perlmutter, D., Berez, D. (2019). Partnerships Between Transit Agencies and Transportation Network Companies (TNCs). Nelson\Nygaard Consulting Associates. Pp 16. Retrieved from <https://www.nap.edu/catalog/25576/partnerships-between-transit-agencies-and-transportation-network-companies-tncs>

²² PTSI's involvement with the *Mobility-on-Demand Sandbox Demonstration Program* is not related to *Direct Connect* but involves another on-demand program.