



When Uber Replaces the Bus: Learning from the Pinellas Suncoast Transit Authority's "Direct Connect" Pilot

A First-Last Mile Case Study



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Acknowledgements

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As the leading public interest organization in the mobility sector, the Shared Use Mobility Center (SUMC) has served as an advisor to cities, transportation agencies, and business leaders since 2014.

Knowledge creation and deployment are vital if we are to achieve a multi modal transportation system that works for all. To this end, we look forward to sharing lessons learned from pilots such as this that can help us reach our goal.

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This report was written by Colin Murphy and Kevin Karner of SUMC and Zak Accuardi of TransitCenter, with additional editorial oversight and input from SUMC's Sharon Feigon and TransitCenter's Chris Pangilinan. The report was edited by Leslie Gray and designed by Derek Berardi.

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Shared Use Mobility Center
Chicago, IL
312.448.8083
Los Angeles, CA
818.489.8651
www.sharedusemobilitycenter.org



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Executive Summary

The Pinellas Suncoast Transit Authority (PSTA), in Pinellas County, FL, was the first transit agency in the US to sign a service provision agreement with a transportation network company (TNC) to offer joint first/last-mile service subsidized by public dollars. PSTA's "Direct Connect" pilot allows riders to get to and from bus stops in a taxi, wheelchair-accessible vehicle (WAV), or Uber TNC vehicle at a subsidized rate.

Direct Connect was originally conceived in 2015 as a replacement for two under-performing, low-frequency feeder bus routes. Specifically, riders were given a \$3 subsidy for rides to or from bus stops in two zones via Uber, United Taxi or the WAV provider, Care Ride. While Direct Connect ridership was minimal during the initial six months of the pilot, low operational costs helped the agency to justify continuing and expanding the service on a provisional basis.

With the goal of increasing ridership, PSTA expanded the Direct Connect service area to eight zones across the county in 2017. Leading up to the expansion, Uber made usability improvements to the in-app experience while PSTA switched wheelchair service providers, increased the per-trip subsidy to \$5, and added to the pilot's overall budget. A greater effort towards marketing and outreach by PSTA, Uber, and United Taxi also led to several months of consistent ridership growth, from less than three to around forty rides per day. During that time, PSTA built on their experience and launched two additional on-demand pilots to improve late night and paratransit service.

While the pilot achieved the agency's cost-cutting goals, both overall and on a per-rider basis, there were clear shortcomings. Direct Connect's zone-based service design limited the transit routes available and required some riders to go out of their way to make an eligible trip while wheelchair users were functionally excluded entirely due to the pilot's fixed-subsidy (as opposed to fixed-fare) pricing. PSTA's ability to evaluate Direct Connect's efficacy in providing a desirable service alternative to those riders has been limited by a lack of agency rider surveys, field observations, or detailed trip data from Uber. Thus far, there has been no effective way for PSTA to understand how Direct Connect use interacts with its scheduled service, including which routes Direct Connect users are transferring to or from, or whether they are making a transfer at all.

A new iteration of Direct Connect, launched in April 2018, offers a more flexible service model that allows riders to access the nearest of 24 eligible intersections, rather than a single intersection in their service zone, while the rider subsidy for wheelchair-accessible rides was raised to make Direct Connect fares comparable for WAV and non-WAV trips. In May 2019, the PSTA board voted to establish Direct Connect as a fixture of its transit operations for the near term, funding the service through 2021.

Important data gaps remain heading forward. In early 2019, PSTA flagged an issue with Uber's app, eventually learning that an overly large geofence had resulted in a significant overstatement of the number of rides made in much of 2018. While the agency was not invoiced for the extra rides, and Uber worked to resolve the problem, the revelation underscores the continued need for transparency from service providers, particularly when pursuing new partnership models. Until a contract revision provides more data access in the wake of the geofencing error, Direct Connect will continue to evolve without the means for basic evaluation and auditing of its largest provider.

While PSTA is currently unable to understand how Direct Connect riders interact with scheduled service (if they do at all), solutions seem attainable in the near future. Since October 2018, Uber has offered a data dashboard for its late-night pilot, which allows PSTA to visualize trip origins and destinations. Additionally, PSTA recently helped launch an account-based fare app and entered into a partnership with the multimodal trip planner Transit App, both developments that offer potential paths to track transfers between fixed-route and on-demand service.

There are different interpretations of success when judging a pilot. However, we can learn from PSTA's willingness to modify the original pilot design and embark on new pilot programs using TNCs.

PSTA's overall experience developing, managing, and adapting the Direct Connect pilot provides insight into what transit agencies can expect when working with on-demand service providers. While operating on a larger scale, in a denser environment, or with a different ridership base may have offered different lessons in implementation, the Direct Connect pilot's service design shows what is necessary for a successful launch of a pilot program: good data and transparency from all parties, as well as concrete plans for outreach and evaluation. Though the program faced challenges, PSTA is to be commended for taking the chance on a new service format and for adjusting as they learned more about how it was working for riders and for the agency itself.

In summary:

Launching the pilot required public champions. The fact that a complex, highly-visible pilot developed so soon after a major funding setback for PSTA speaks to the organizational resilience and dedication of key leadership and staff in seeking new ways to provide service.

Rider engagement pays off. Initial ridership gains closely followed ground-based marketing efforts. In a functionally different service design involving new technology, time and energy must be spent engaging and educating potential riders.

Maintain options and flexibility to iterate. While the execution of bringing in new providers or providing equal access has not been seamless, PSTA deserves credit for a willingness to evolve the service design and to keep participation open to multiple providers. The pilot is richer for leveraging the diversity of TNC, taxi and wheelchair-accessible service.

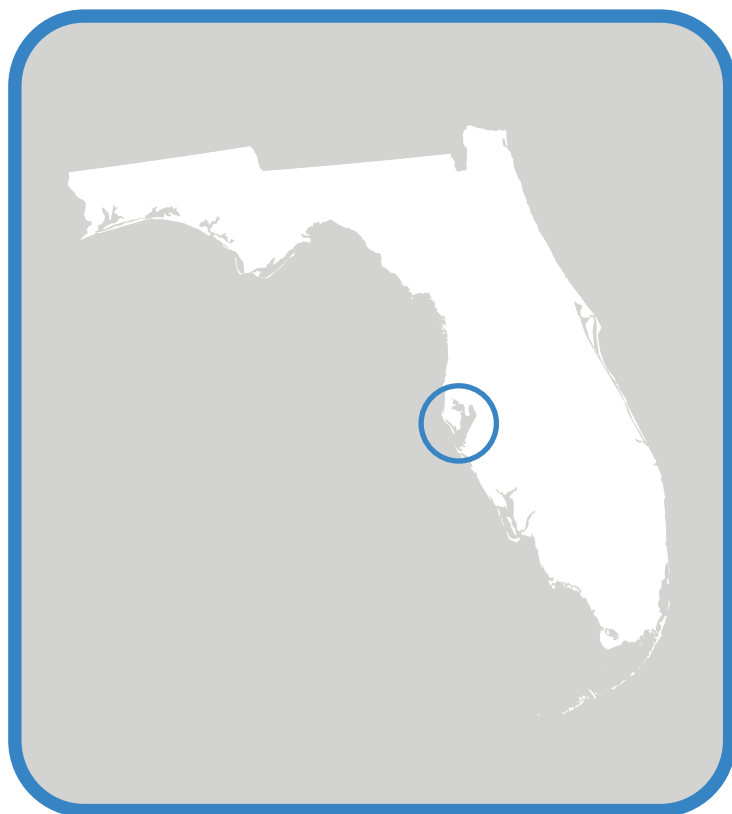
Getting good data is key to good service. Agencies should stand firm in requiring critical data from service providers and be proactive in filling information gaps that exist. Basic aspects of pilot utilization, particularly around equity implications of this service model, remain unknown after several years due to a lack of survey and TNC data.

Pilots should have up-front goals and plans for program evaluation. These data gaps, while also attributable to resource constraints, seem to have stemmed from a lack of service quality goals or subsequent plans for assessment. Pilot iterations and expansion efforts likely would have been better informed had these been articulated.

The pilot model can cut costs, but poses important trade-offs. While successful at cutting costs here, per-ride reimbursements to service providers, transfer discounts provided to riders to keep the pilot appealing, the inability to count single-occupancy vehicle rides towards federal funding, and unresolved risk and labor implications pose trade-offs among fundamental agency goals and likely limit scalability beyond very low performing routes.

Table 1: Estimated Change in Cost Structure by Pilot Phase

	Phase I Feb. 2016 - Jan. 2017	Phase II Feb. 2017 - Mar. 2018	Phase III Apr. 2018 to Present
Avg. Uber Fare* (Pre/Post PSTA Subsidy)	Unavailable	\$7.64/\$2.64	Unavailable at time of publication
Avg. United Taxi Fare** (Pre/Post PSTA Subsidy)	\$8.46/\$5.46	\$6.23/\$1.23	Unavailable at time of publication
Avg. WAV Fare*** (Pre/Post PSTA Subsidy)	\$25/\$22	\$25/\$20	\$25/\$5
Geographic Constraints	Trips must begin or end within 400 feet of four potential transit stops, located between two separate communities.	Trips must begin or end within 800 feet of eight potential transit stops, located in designated zones spread across the county.	Trips must begin or end within 800 feet of 24 eligible bus stops spread throughout the county.
Bus Fare (Pre/Post Subsidy)	\$2.25/Free day pass	\$2.50/Free for single transfer with Direct Connect receipt	\$2.50/Free for single transfer with Direct Connect receipt
Fixed Route Connections****	~12 routes between ~20 stops	~20 routes between ~60 stops	~40 routes between ~200 stops
<p>*Average from August 2017 - March 2018</p> <p>**United Taxi data set draws from a much smaller sample and not necessarily equivalent ride distances</p> <p>***As of March 2018 no WAV rides had occurred; subsidized fares are based on staff estimates of trip cost</p> <p>****Defined as within a quarter mile of an eligible transit stop</p>			



With a population of just over 3 million, the Tampa Bay metropolitan statistical area (MSA) is the 17th most populous in the United States, but its residents are spread out across a low-density suburban landscape.¹ Pinellas County is the peninsula on the west side of Tampa Bay on Florida’s west coast, encompassing the city of St. Petersburg, and is one of three counties in the Tampa Bay MSA, each with its own independent transit agency—a governance structure that inherently limits regional transit planning coordination. Despite the Tampa Bay region’s population, it ranks far below peer regions in transit ridership in terms of trips and of passenger miles, as well as in total and per-capita transit spending (Table 2).

Table 2: Comparison of transit ridership and spending in Tampa and peer regions ²

Urbanized Area	UZA 2010 Census Population (rank)	Unlinked Passenger Trips 2014 (rank)	Passenger Miles 2014 (rank)	Total Operating Expenses 2016 (rank)	Per Capita Operating Expenses 2016 (rank)
San Diego, CA	2,956,746 (15)	109,685 (13)	650,125 (12)	\$323,310,095 (19)	\$109.34 (71)
Minneapolis-St. Paul, MN-WI	2,650,890 (16)	97,603 (15)	495,570 (17)	\$468,070,572 (14)	\$176.57 (26)
Tampa-St. Petersburg, FL	2,441,770 (17)	31,223 (32)	161,190 (32)	\$139,409,870 (33)	\$57.09 (180)
Denver-Aurora, CO	2,374,203 (18)	104,489 (14)	606,026 (14)	\$478,554,800 (13)	\$201.56 (20)
Baltimore, MD	2,203,663 (19)	115,882 (11)	804,862 (11)	\$684,759,729 (10)	\$310.74 (7)

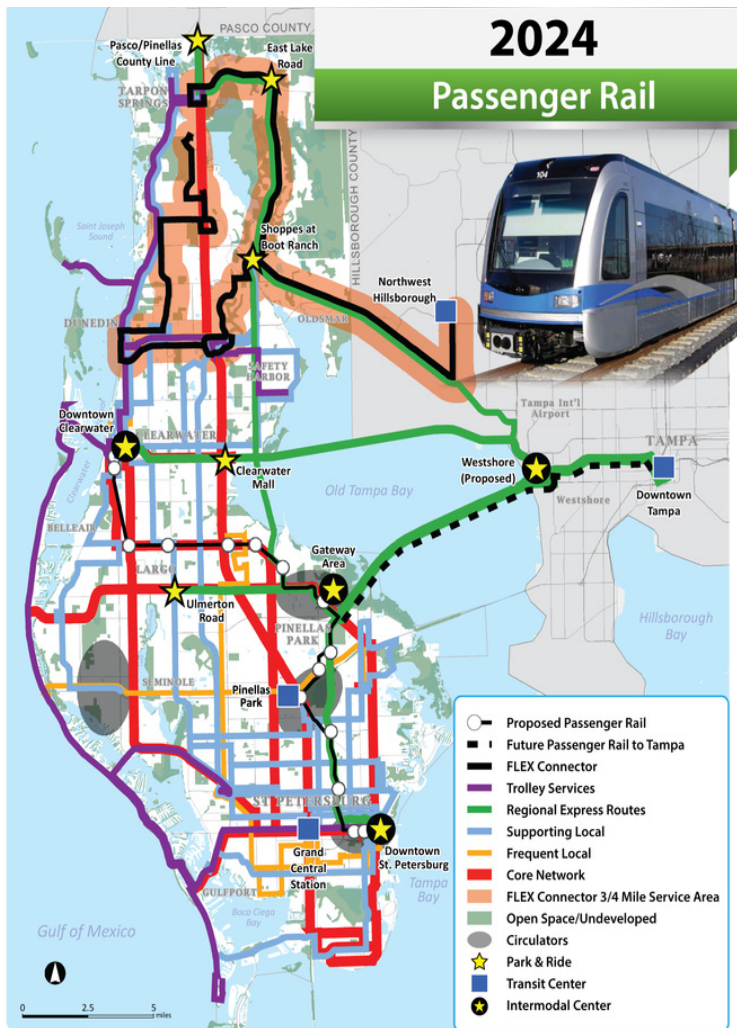
PSTA is governed by a board of elected officials from the region and relies heavily on property taxes from communities within the county that receive service. While PSTA caters to a large number of seasonal tourists, the majority of the agency's riders are transit-dependent residents in the region. Like many other transit agencies around the country, the 2008 recession led to an increase in ridership. Forecasting higher operational expenses in the face of a housing slump, PSTA made a push for a more stable source of funding that could support expanded service.

In 2011, PSTA and the Metropolitan Planning Organization (MPO) Forward Pinellas put forward a plan for the first light rail line in the Tampa Bay area. The rail would be complemented by additional bus service that, together, would form the backbone of a high-frequency transit network, and a shift away from PSTA's existing hub-and-spoke model. These combined proposals became known as the "Greenlight Pinellas" plan, with implementation hinging on Pinellas County voters approving the replacement of PSTA's property tax revenue source with a one percent countywide sales tax.³

¹ 2016 Public Transportation Factbook, American Public Transportation Association

² 2016 National Transit Database

³ Pinellas Alternatives Analysis Summary Report, 2012



The Greenlight Pinellas campaign was led by a coalition that included the MPO, local chambers of commerce, and other business leaders. Despite the broad coalition, it garnered intense local opposition, primarily from a conservative activist group called No Tax for Tracks that had materialized in opposition to a similar proposal in Tampa in 2010 (and later Nashville in 2018). The referendum was also opposed by a state senator in St. Petersburg, who argued that transit would soon be rendered obsolete by autonomous vehicles.⁴

In November 2014, the referendum was defeated by a vote of 62 to 38 percent.⁵

An overview of the bus system improvements and light rail corridor proposed under the failed Greenlight Pinellas campaign in 2014.

Improving service without new funding

In early 2015, the PSTA board held a workshop to review and refine the agency's strategy with a focus on optimizing service under the existing revenue conditions. The resulting "path forward" strategic plan outlined seven goals around different revenue collection and service delivery strategies that would lower costs, including a move away from countywide coverage.⁶ In the lead up to this agency-wide strategic plan, the Board had voted specifically to encourage "connectivity to Uber/Lyft-type and all private-sector transportation options specifically to transfer and intermodal facilities."⁷ That summer, PSTA's planning department moved forward with the contingency redesign.

⁴ Streetsblog USA, 2014

⁵ Tampa Bay Times, 2014

⁶ PSTA Board of Directors Meeting Minutes, March 2015

⁷ PSTA Board of Directors Meeting Minutes, February 2015

As the planning department launched their network redesign, PSTA's executive leadership began the process of finding partners to fill current and potential future service gaps. In 2014, Uber had launched a pilot program with the University of Florida, complementing a late-night circulator bus with subsidized Uber trips. The University of Florida student council proposed this pilot as a means to discourage late-night driving between campus housing and nearby bars, as well as to mitigate safety concerns of having students wait at bus stops late at night. In the pilot, students could enter a code provided by the council government to receive half off the cost of rides beginning and ending within geo-fenced zones during late night hours.⁸ PSTA executive leadership had a similar idea, but initially were not able to contact anyone in a senior position with Uber. Eventually, PSTA reached Uber's marketing team with the help of same local senator who had opposed the referendum and at the time was working to draft a TNC preemption bill for the state legislature.⁹ From there, PSTA engaged in discussions with Uber's local marketing and operations staff about adapting some version of the University of Florida model to improve "intermodal" connectivity, per the PSTA board's mandate, by subsidizing Uber trips to specific bus stops.

Later that summer, staff introduced a phased plan that included the redesign or elimination of five low-performing routes (1, 30, 58, 811, and 444), the latter two of which were circulator services. Route 444, the Pinellas Park Circulator, made five trips a day and connected several large residential developments, an assisted-living facility, and a Walmart Supercenter. Route 811, the East Lake Connector, ran on weekdays every 70 minutes between three major shopping centers on a 14-seat bus that, with advance scheduling, could deviate up to $\frac{3}{4}$ of a mile along its route corridor.

Most stops along these two routes served fewer than three riders a day. Compared to a system-wide average of around 17 passengers per revenue hour, these two routes carried fewer than five.¹⁰ In late August, the Board voted to discontinue the East Lake Connector (along with routes 1 and 30), while continuing Pinellas Park Circulator and route 58 operations to allow more time for public outreach and additional service planning in light of input received from neighborhood residents.¹¹

The augmentations to the Pinellas Park Circulator and the replacement of the East Lake Connector became the basis of the "Direct Connect" pilot—a subsidy program for first- and last-mile trips to specific fixed-route bus stops, offered for trips on participating for-hire vehicle providers. By this time, Uber's marketing team had informed PSTA that a stop-based discount system could work using geo-fences. PSTA also sought out more traditional service providers to accommodate riders preferring to pay in cash or call for rides through a dispatcher.

⁸ Independent Florida Alligator, April 2015

⁹ SB 340/HB 221 was signed into law by Gov. Rick Scott in May 2017

¹⁰ PSTA Performance Measurement Tool version 3.4, 2016

¹¹ PSTA Board of Directors Meeting Minutes, August 26, 2015



PSTA & Uber agree on terms of partnership

With service providers identified and the technical feasibility of Uber's app demonstrated, PSTA began to develop the contract template for providers in tandem with risk management staff, legal counsel, and the PSTA Board. In spite of the board's stated encouragement of connectivity with "Uber/Lyft-type" services, several members had never used a TNC and were skeptical that it could replace circulator service. PSTA planning and legal staff spent the late summer answering questions from the board regarding the service concept and TNC contracting details. PSTA wanted to design their contract with Uber to be replicable—something that they could later offer to other providers, including Lyft, which was not yet operating in Pinellas County. Key issues that emerged from the board discussion and contract negotiation process, with their respective resolutions, included the following:

- **Insurance and indemnification:** Early in the process, it was unclear who would bear liability for vehicles operating under the pilot, and whether this would expose PSTA to greater risk. To address this concern, PSTA was added as a secondary insured on Uber's insurance, something that staff considered an important hurdle. Uber would maintain a general commercial liability of \$2 million.
- **Background checks:** Across the bay in Hillsborough County, Uber had effectively been banned from operation due to conflicts with local taxi regulators as to whether Uber's background check process conformed to the local statute.

PSTA opted not to add specific background check requirements, deferring to the preemption legislation that was by then in discussion at the state legislature.

- **Usability:** PSTA wanted to ensure that people without smartphones, unbanked riders, and those who did not feel comfortable using Uber had another option, which led to the agency's decision to engage with the local company United Taxi. In addition to United Taxi's app, users could book rides via phone dispatch or through their website. United Taxi and Uber would use the same agreement, with the same ride subsidy.
- **Wheelchair accessibility:** Given Uber's and United Taxi's inability to serve people who needed wheelchair accessible vehicles, PSTA found it necessary to engage an accessible service provider in the pilot as well. They ultimately brought PSTA's paratransit provider Care Ride to participate under the same contract, and thus at the same per-ride subsidy as the other providers in the pilot. Since rides on Care Ride began with a much higher base fare (staff estimated around \$25) to cover the greater operating costs associated with a lift vehicle and specially trained driver, WAV trips remained significantly more expensive than non-accessible Uber or United Taxi trips. In the face of concerns that a flat subsidy would violate the Americans with Disabilities Act, PSTA legal staff developed a memo arguing that equalizing rider costs would make the program unaffordable to PSTA, and that riders with disabilities would still be able to use PSTA's existing paratransit service.
- **Drug and alcohol testing:** Drug and alcohol testing for drivers emerged as an important legal issue for PSTA. FTA policy requires that agencies who are recipients of federal funds (or contractors who "stand in their shoes") implement a drug and alcohol testing program for all employees who perform "safety sensitive functions"—including drivers and dispatch personnel. However, FTA guidance from 1997 provided that contractors under voucher programs could be exempted from this requirement if riders were given a legitimate choice between service providers, at least one of whom must have a compliant drug and alcohol testing program in place. PSTA's legal staff made the case internally that Uber's existing drug and alcohol testing process, which did not meet FTA standards, would be acceptable as long as the pilot included alternative providers that did. In this respect, the buy-in from United Taxi and Care Ride were critical to the regulatory compliance of the pilot.
- **Funding:** With limited funding for the Direct Connect pilot and with little precedent to draw from for TNC rides, PSTA attempted to strike a balance for a per-trip subsidy that would be appealing to the rider but would protect against quickly exhausting the pilot budget. The agency set the initial subsidy at up to \$3 per ride for qualified trips. With Uber's minimum ride price of about \$6 in the region and initial service areas built at a travel radius that would keep most trips at or below the base mileage, this left a typical Direct Connect rider responsible for around \$3 per ride, or \$0.75 more than a full bus fare.

As an early promotion for the pilot, riders presenting a Direct Connect receipt would receive a transit day pass, valued at \$4.50. Uber would be required to provide technical support to PSTA and would invoice the agency for covered rides. PSTA did not compensate Uber for the software engineering needed to prepare the Uber app for the pilot, and both parties shared responsibility for marketing the pilot after its launch.

- **Data sharing:** PSTA wanted to have access to data on a trip-level in order to understand how the service was being used, though ultimately Uber was unwilling to agree to any sharing beyond what was required to invoice monthly payments. This was a hardline position for Uber and a point on which PSTA ultimately agreed: PSTA would be prohibited from sharing data related to trips and would assume liability for information that compromised Uber's trade secrets. PSTA staff were ultimately willing to make this concession in order to move the pilot forward, receiving monthly totals for eligible trips taken through Uber. As the pilot progressed, Uber agreed to provide a quarterly ranking of the eligible intersections with the most rides. Under the contract, United Taxi and Care Ride would also provide monthly totals, but also offered to provide trip-level details including pick-up and drop-off times and locations, rider identities, and fares.

Throughout this process, PSTA planning staff coordinated closely with their CEO and key agency stakeholders to discuss the pilot design and navigate complex agency and regional politics. Without the CEO's engagement and willingness to champion this untested service model, it could have fallen apart at many junctures. By October 2015, the pilot parameters and the two zones encompassing both East Lake and Pinellas Park were established and proposed to the board.

Under the pilot proposal, service providers would be available for on-demand service to and from several designated bus stops between two locations in each service area, from 7am to 7pm daily (Figure 1). For the discount to apply, riders would enter a coupon code in Uber's app and then enter an origin or destination that was within a 400-foot radius of an eligible bus stop's intersection. While the discount was supposed to be available only to trips adhering to the radial boundary, discounts for trips by the non-TNC providers (and thus coordinated outside of an app) were applied at the discretion of drivers. Providers would keep track of Direct Connect trips, adjust fares accordingly, and invoice PSTA monthly for eligible trips.

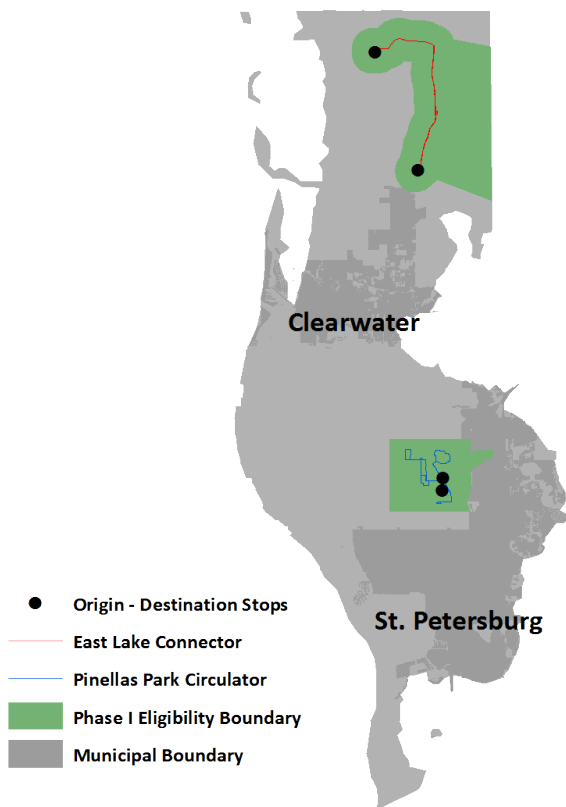


Figure 1: Phase I Service Areas and Eligible Origin/Destination Transit Stops

PSTA was eventually compelled to amend their proposal and exclude Uber from the East Lake travel zone after objections from Clearwater's state senator, whose legislative district encompassed the East Lake neighborhood. In Pinellas Park, options for Uber, United Taxi and Care Ride remained available. After minor revisions to the contract language in November, the pilot was fully approved in early December 2015 for a trial between February and July 2016.¹²

The pilot's budget was set at \$40,000, supported by funds reallocated from the roughly \$400,000 in operational costs saved from cutting the East Lake Connector. In addition to the funding for the ride subsidy, the pilot budget included around \$11,000 for marketing materials, including brochures, newspaper ads, direct mailings and instructional signs at each eligible transit stop.

The small scope leads to few riders in Phase I

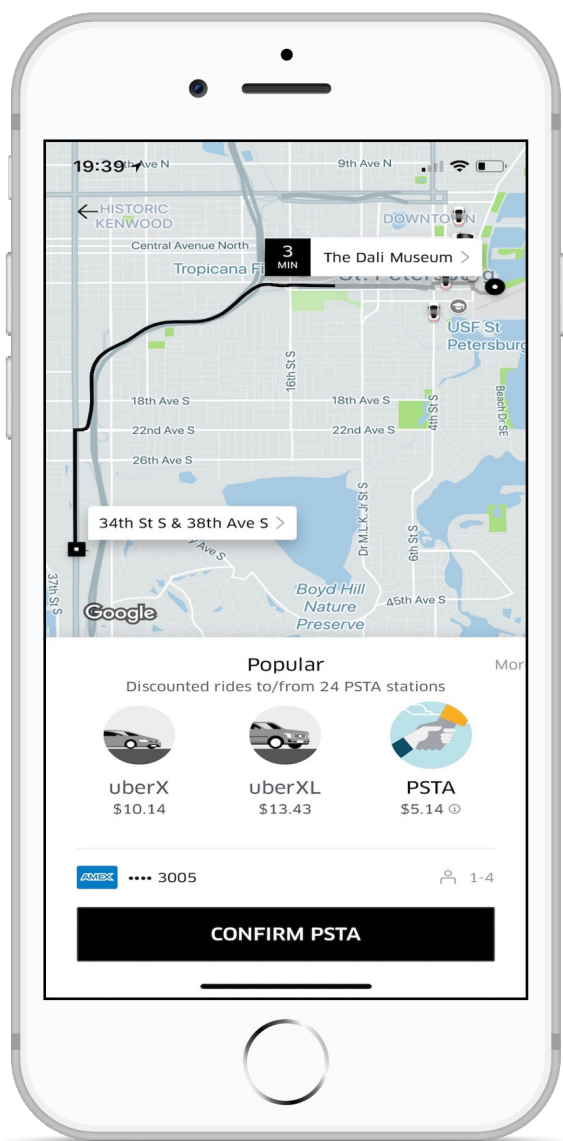
In the words of one project stakeholder, "it didn't rock anybody's world." From February to August 2016, the pilot had 202 trips total, less than two per day. All but 28 of these were Uber rides supplementing the Pinellas Park Circulator, which continued to provide around 21 rides per day during this time. Ridership virtually disappeared in East Lake, where United Taxi made less than one trip per day compared to the approximately 26 rides per day that the East Lake Connector would have been expected to make based on ridership in the prior year.¹⁴

¹² PSTA Board of Directors Meeting, December 9, 2015

¹³ APTA AdWheel Award Entry, 2015

¹⁴ Route 811 based estimated from prior years, adjusted for 2017 system decline

Pilot participation was low for a variety of reasons. Rider surveys conducted during a system redesign study earlier in 2015 indicated that many circulator riders believed they would be able to make the trips they wanted via car, bike, walking, or otherwise, if the route was cut. Other riders likely never learned about the pilot in the first place or failed to use it correctly, due either to limited initial outreach on the part of PSTA and Uber or to the program's complexity—a new service model requiring coupon codes and contingent on narrow geographic requirements. Other lower-income and elderly transit riders, particularly concentrated in the Pinellas Park service area, may have had less reliable smartphone access or were deterred by the use of an unfamiliar service.



Despite the pilot's limited scale, it garnered immediate interest with press coverage from around the country, including a feature on the cover of Mass Transit magazine. PSTA staff endorsed the pilot's continuation and proposed expanding the service area, increasing the overall budget, and focusing more on direct marketing and outreach. In October 2016, the PSTA board voted to formally extend and expand the pilot through FY 2017, with a goal to reach 50 rides per day.¹⁵ The pursuit of statewide grant funding for an additional TNC-based pilot¹⁶ and the PSTA board's ongoing desire to watch the program's progress both contributed to the decision to continue the pilot. It was further decided that Phase II would have access to the leftover budget as well as an additional \$100,000 from annual savings provided by the system redesign, which would support raising the maximum trip subsidy from \$3 to \$5. Staff hoped the higher subsidy would make the program more appealing and account for potential surge pricing.

Prior to the expansion in early 2017, Uber also made changes to the app user interface. Instead of entering a discount code in the app's "promotions" tab and entering an eligible Direct Connect location to see the PSTA icon and discount, the PSTA icon would automatically appear and just the price would adjust when an eligible origin or destination was entered.

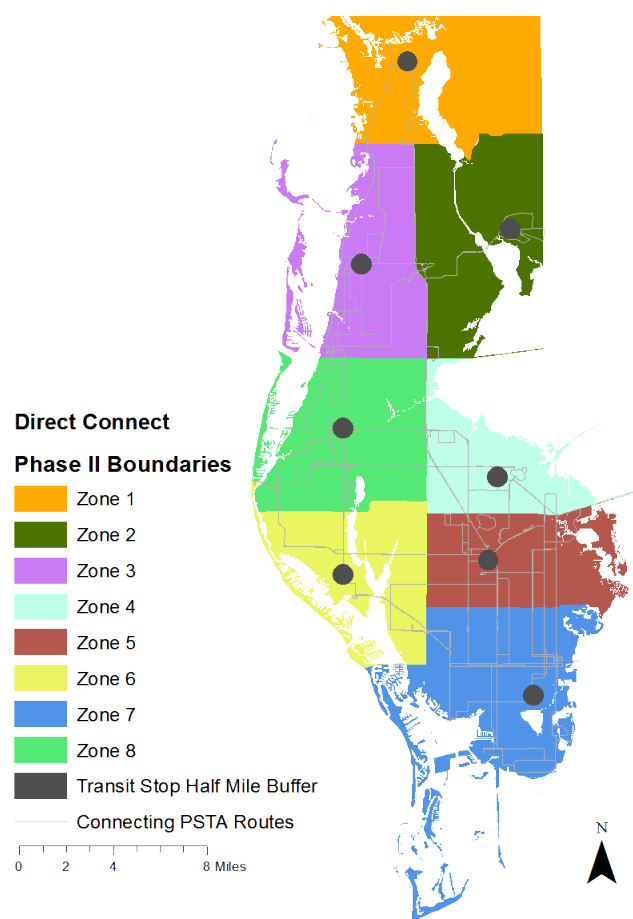
¹⁵ PSTA Board of Directors Meeting Minutes, October 26, 2016

¹⁶ The Transportation Disadvantaged Late Shift Program.

PSTA also expanded the approved pick-up and drop-off zones at the center of each designated intersection. PSTA and Uber observed that the 400-foot restriction led some passengers to be dropped off on the side of the road in relatively high-traffic areas and that expanding the boundary to 800 feet would improve drop-off safety while remaining small enough to minimize the likelihood of using the program for other purposes besides connecting to transit. Trips coordinated through the taxi service—without the use of an app or geo-fence—continued to operate without a strict boundary. Throughout Phase II, drivers were instructed by United Taxi management to leave passengers at the closet available location that the driver deemed safe enough to park at while passengers paid and exited the vehicle.

The most significant change to Direct Connect was the expanded coverage from two small service areas to a countywide patchwork of eight zones. Six new intersections were added across the county, while the four original stops in East Lake and Pinellas Park were consolidated into two (Figure 2). Collectively, these eight intersections were within a quarter mile of about 60 transit stops and 20 different routes.

Figure 2: Phase II Zone Boundaries, Eligible Stops and Connecting Routes



Phase II also came with some change to service providers. Care Ride, the primary demand-responsive transit service for the county, dropped out after concerns of a company driver shortage and was replaced with another local provider, Wheelchair Transport.

Having designed the Direct Connect contract to attract new providers, PSTA entered talks with Lyft (which had by then begun operations in Pinellas County) about joining the pilot before the launch of Phase II. Lyft agreed in principle to participate, but was never formally brought under contract. PSTA took Lyft at their word, going as far as to print physical signage for Phase II that included Lyft’s logo. While contract language had been negotiated, the final version was never signed, and the evening before the Phase II launch Lyft informed PSTA that they would not be participating.



DirectConnect will get you
a ride to the bus stop for as low as \$1



Want to save money?

Take Uber, United Taxi or
Wheelchair Transport to key bus stops
and hop on a PSTA bus to your final destination.

Service brought to you by



HOW TO RIDE



Choose a provider



Hail a ride



Travel to/from a
designated PSTA stop



Ride the bus

SERVICE PROVIDERS

UBER

Uber via App: Slide
over to "PSTA" option



United Taxi via App or
727-777-7777



Wheelchair Transport via
wheelchairtransport.com
or 727-586-2811

HOW IT WORKS

- Trips must begin or end at the designated stop, and be in the zone.
- PSTA pays the first \$5, most trips cost the rider about \$1. Actual fare may vary. Bus fare not included.
- Service available 6 a.m. to 11 p.m., 7 days a week.
- Questions? Call the PSTA InfoLine at 727-540-1900.



Flyers mailed to area residents explained
Direct Connect Phase II

According to Lyft's representatives, the company was uncomfortable with the possibility that the pilot might be abruptly discontinued if it were to exhaust its budget, which would result in a negative user experience associated with their product. It is unclear whether Lyft was able to technically implement the Direct Connect program's geo-fence structure in time for the launch.

In January 2017, Phase I ended and PSTA began advertising Direct Connect's expansion. In addition to PSTA's Phase I outreach strategies, including email blasts, brochures in taxis and buses, and physical signage at eligible bus stops, PSTA engaged Uber and United Taxi to send email alerts to past users. PSTA and Uber also sent staff to eligible stops to directly instruct riders how to use the pilot program. Anticipating increased usage, PSTA replaced the promotional day passes with a single free ride upon presentation of a recent Uber or United Taxi receipt to bus drivers.



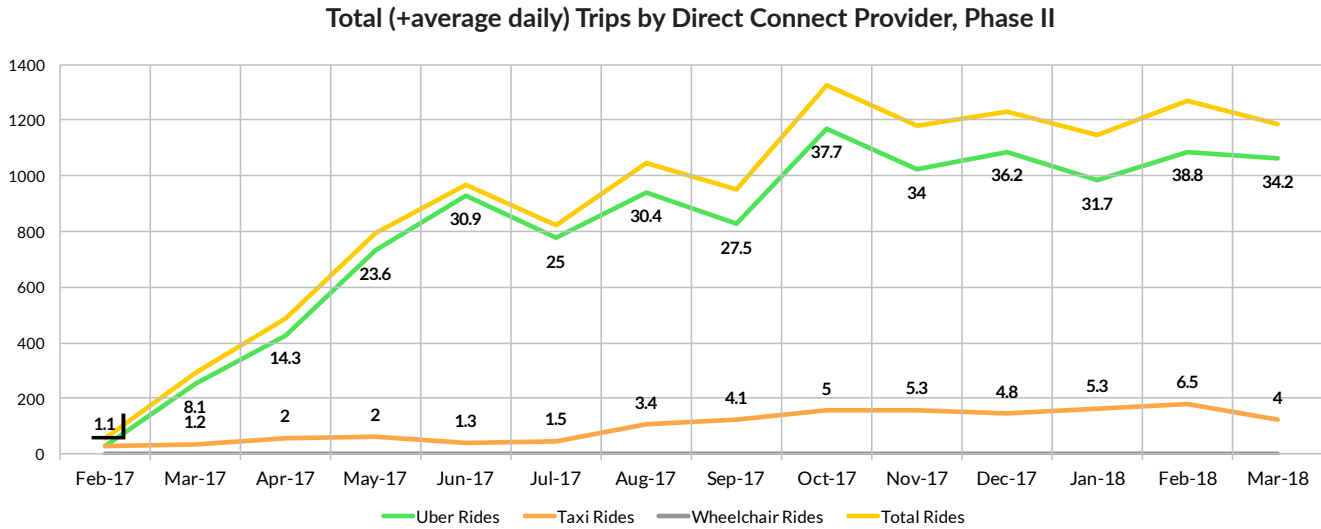
► Direct Connect Phase II Ribbon Cutting

Use picks up in Phase II, at least among a subset of users

From February to March 2017, Direct Connect's average daily ridership increased from less than three rides per day to nearly ten, continuing to grow over the summer and eventually settling at around 40 rides per day (1,200 per month) in October (Figure 3). There were no trips on Wheelchair Transport during this time, despite the company reporting customer inquiries. Uber rides made up most of the usage, though United Taxi grew steadily over Phase II and maintained comparable fares from at least August 2017 through March 2018.¹⁷ At the time, PSTA staff perceived United Taxi to be the preferred service for riders who did not already use app-based, transportation services.

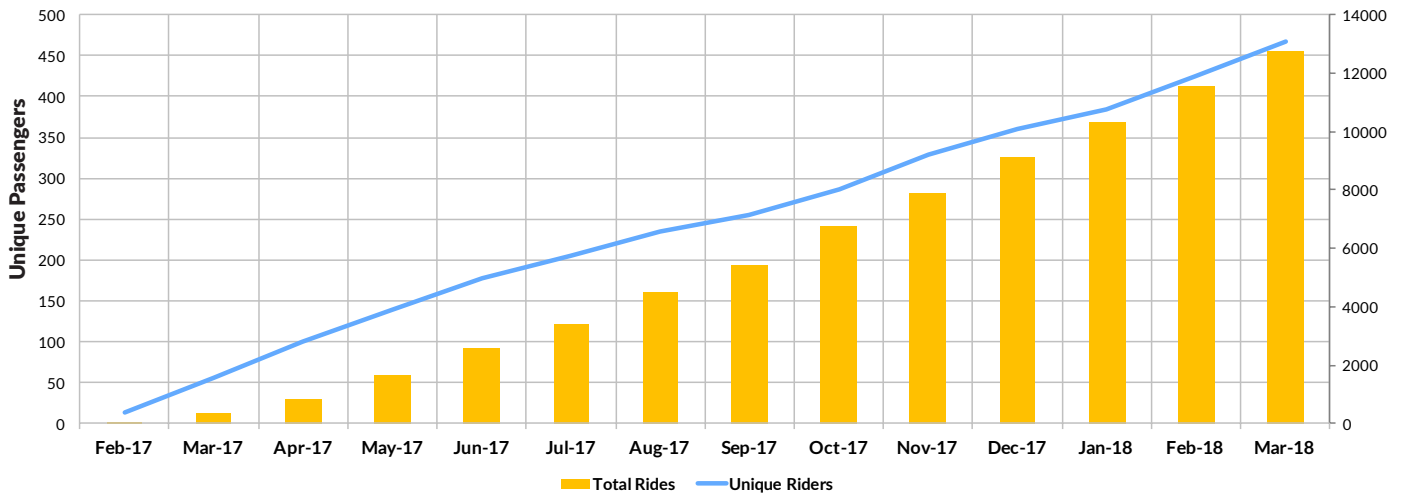
¹⁷ United Taxi only began reporting fares to PSTA in August of 2017

Figure 3: Phase II Ride Growth by Provider



Phase II attracted roughly 40 first-time users per month through June, with growth slowing slightly for the remainder of the summer and picking up again in the fall. Between February 2017 and March 2018, at least 468 individuals took nearly 12,750 rides – or slightly less than PSTA's average daily systemwide ridership (Figure 4).¹⁸

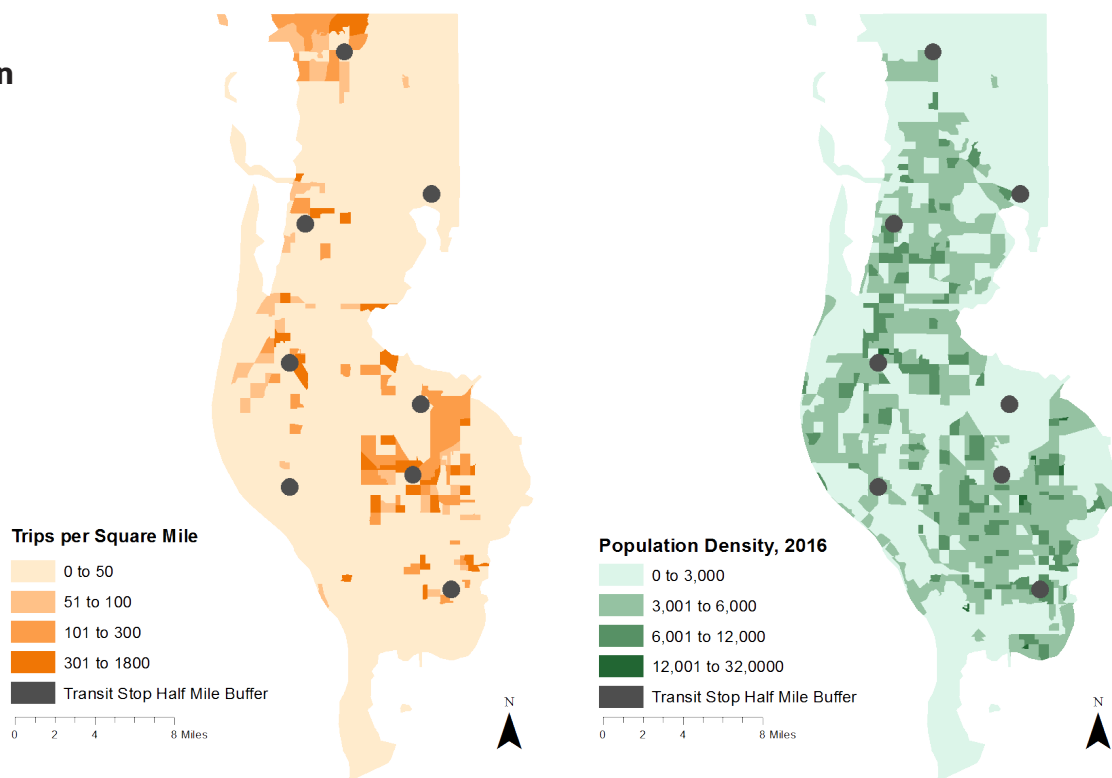
Figure 4: Phase II Cumulative Trips and Unique Riders



While Phase II drew riders from around the county, most rides originated from several clusters. Of the top three performing zones, Zone 5 in Pinellas Park and Zone 1 in East Lake corresponded to the original Phase I service areas and Zone 7 covered St. Petersburg, the most populous area of the county. Ten census block groups represented nearly a third of all rides taken in Phase II (Figure 5).

¹⁸ A lower-bound estimate since United Taxi does not systematically track users. SUMC estimates approx. 80 individuals used the tax-based service through March.

**Figure 5:
Distribution
of Phase II
Ridership**

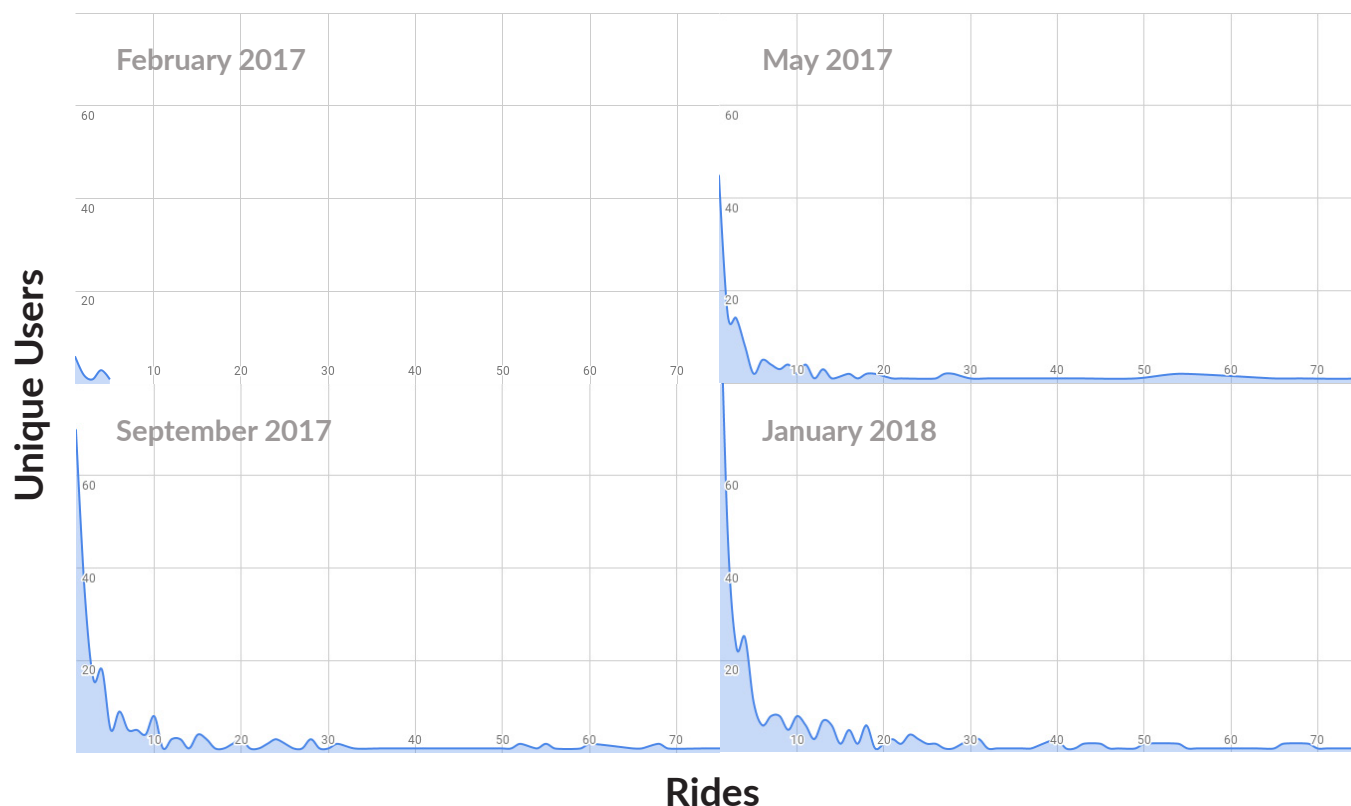


Pinellas County residents in areas of relatively high pilot use matched the demographics of the county in terms of median age, household size and transit dependency. They were different in terms of population density and median income, each being about 30% lower than the county average. While there was little difference in zero-vehicle households, transit commuters represented 3% of the population there as opposed to 2.1% in Pinellas County.

During this time, much of the pilot's ridership came from a core group of users who integrated the service into their regular routine, likely also influencing the geographic concentration above. From February to May 2017, 139 individuals tried Direct Connect through Uber at least once; however, 60% of them took fewer than five rides during that time. By comparison, the top ten most frequent users had each taken at least 40 rides, as many as 75 times for two riders, and alone represented 40% of all rides. Trips through United Taxi followed a similar trend through the last point of analysis in September 2017, with 55 of the 78 distinct users in Phase II taking fewer than five rides.¹⁹ Of the 468 individuals who had used Direct Connect through Uber by March 2018, 277 had taken fewer than five rides, while the top ten individuals made up 30% of overall use, each taking upwards of 200 trips over thirteen months. For these individuals, Direct Connect had become part of a weekly routine. For most others, it remained mostly a one-off or infrequent amenity (Figure 6).

¹⁹ Unique users for United Taxi were not estimated by SUMC from October to March 2018

Figure 6: Monthly Cumulative Rides per Unique User



Whether these Direct Connect riders made any impact on fixed-route ridership could not be determined without a more systematic rider survey effort. Sensor-based boarding counts on buses picking up at the transit stops served by Direct Connect showed an uptick of about 10% in the spring of 2017 compared to the same months in the previous year.²⁰ That apparent uptick reversed in the following months, however, when boardings at those stops dropped about 8% between October 2017 and February 2018.²¹ While this was closely aligned with PSTA's broader system ridership decline, it was also when Direct Connect began topping out at around 40 rides per day.

The impact of Direct Connect on the scheduled services it was originally designed to replace seems somewhat less mixed. Zones 1 and 2 provided an average of seven rides per day compared to the approximately 17 per day that could have been expected on the on the East Lake Circulator, which previously serviced both areas.²² The Pinellas Park Circulator, however, gradually lost riders over the course of 2017 as Direct Connect ridership grew.

²⁰ Data reflects boarding estimates from February to May. PSTA tri-annually aggregates stop-level boardings for average weekdays, Saturdays, and Sundays.

²¹ Reader collection data was not available from January to March 2018

²² East Lake Connector ridership based on 2015 monthly totals adjusted for systemwide decline

While direct causality can't be determined based on monthly averages, a comparison of circulator ridership from Phase I suggests that as much as half of the daily average Pinellas Park Circulator ridership may have switched to Direct Connect during Phase II (Table 3). After a vote to remove the Pinellas Park Circulator in December 2017, the route was finally cut early the following year.

Table 3: Total (above) and Daily (below) Direct Connect and Circulator Average Ridership

Phase I DC Zones 1,2	Phase I ELC	Phase I DC Zone 5	Phase I PPC	Phase I DC Total ²³	Phase II DC Zones 1, 2	Phase II ELC ²⁴	Phase II DC Zone 5	Phase II PPC	Phase II Total ²⁵	Fixed Route Ridership ²⁶
40	6, 287	436	5,007	476	2,871	7,329	5,016	2,807	12,748	13,713,041
0	26	2	21	2	7	17	12	10	30	32,419

Phase III and Future Efforts

In early 2018, the PSTA board allocated an additional \$60,000 to the program and voted to launch a Phase III of the pilot in April. The larger budget was accompanied by an increase in the WAV subsidy from \$5 to \$25, which staff hoped would equalize the potential out-of-pocket cost between Wheelchair Transport, United Taxi and Uber. While the terms of participation remained the same between PSTA and its service providers, day-to-day contact with Uber moved from the local staff in Florida to the company's main office in California.

Based in part on feedback from riders, PSTA made a significant change to the service design and removed the zones altogether, adding 16 additional locations and allowing riders to travel to or from any of 24 eligible transit stops within the county. The move opened up the possibility for more expensive trips, but also provided riders greater flexibility and was viewed as easier to communicate.²⁷

The changes seemingly led to a sharp increase in rides on Uber over the summer. While Phase II had capped out at around 1,200 rides per month earlier in the year, figures reported to PSTA indicated that it had surpassed 4,000 rides that September alone.²⁸ The apparent growth solidified Direct Connect as an essential component of PSTA's first/last-mile strategy, and in October, the PSTA board voted to pursue contract renewals with Uber, United Taxi and Wheelchair Transport through 2021. Facing continued revenue uncertainty and the prospect of future service cuts, staff presented Direct Connect as one of the means for its continued shift away from a coverage-based network to one focused on smaller number of higher frequency, core routes (Figure 7).

²³ Includes Uber and United Taxi trips, 2/29/16 – 1/31/17

²⁴ Monthly ridership from 2/1/17 – 3/31/18

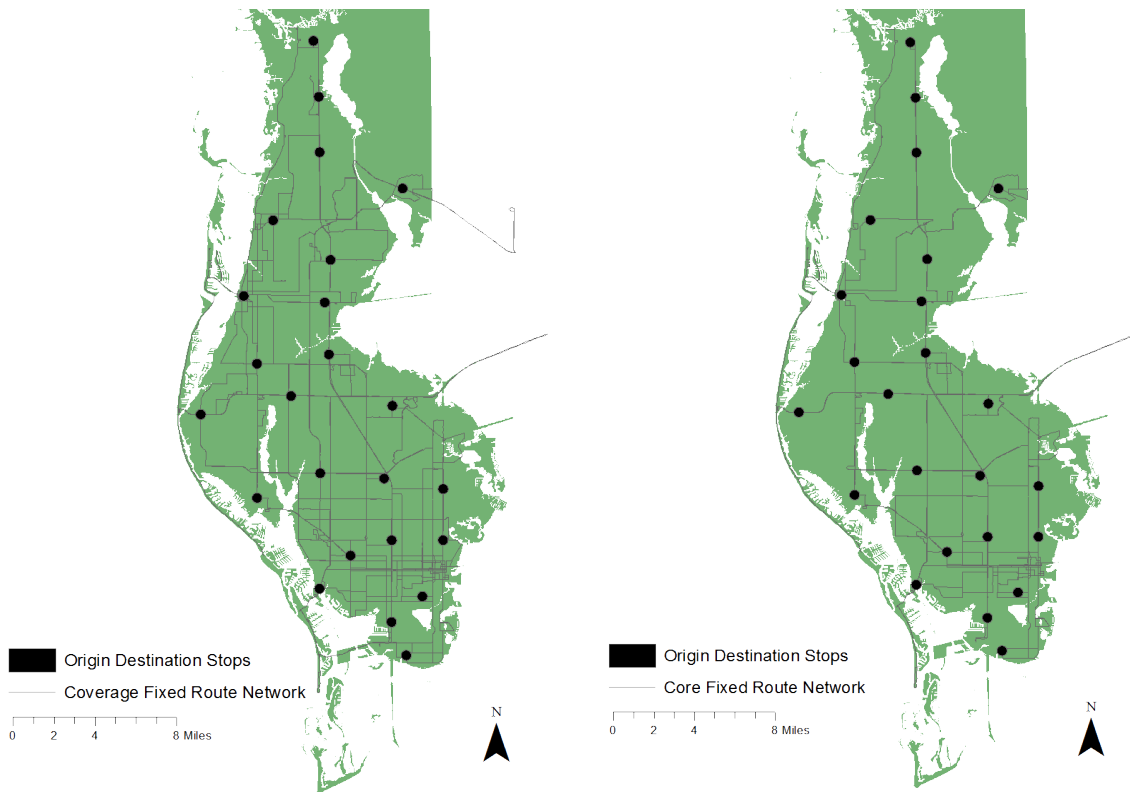
²⁵ Includes Uber and United Taxi trips, 2/1/17 – 3/31/18

²⁶ PSTA FY Ridership Reports, 2016 - 2018

²⁷ Average trip length increased from 2.8 to 4 miles between Phase II and Phase III

²⁸ The actual ridership had remained at 1,200 rides and only broke past 2,000 rides in early 2019

Figure 7: Phase III Eligible Stops²⁹



The move towards greater reliance on TNC service was bolstered the following month with the announcement of the Transit+ feature in mobile trip planning service, TransitApp. PSTA was one of several partner agencies selected to beta test a feature allowing users to plan and book rides either on Uber or Lyft on the same platform as schedule service.³⁰

Despite the forward momentum for Direct Connect, several challenges came to light in the lead-up to its formal continuation. In December 2018, PSTA and a visiting scholar flagged what appeared to be an issue with the geofence around certain stops. After several attempts and several months later, Uber notified the agency that during the transition between offices, the geofence boundaries around the 24 locations were unintentionally enlarged. For the following year, riders on Uber who entered the code to use Direct Connect had seen discounted rates for trips ending or beginning far outside the intended range. While ridership had grown slightly, figures were overstated anywhere from 60 to 300% for any given month after March 2018, representing tens of thousands of rides using a \$5 subsidy. While Uber fixed the glitch and never invoiced the agency for the extraneous rides, PSTA noted that it was one of several instances during the pilot in which Uber had needed to retroactively adjust monthly totals due to a technical issue. Contracts for Direct Connect service providers were ultimately renewed in May 2019 on a verbal commitment from Uber to provide a means for greater data transparency in the future.

²⁹ Board of Directors Meeting, October 24, 2018

³⁰ Tampa Bay Business Journal, November 27, 2018



Lessons for Future Experiments

Public champions are key to launching pilots

The Pinellas Suncoast Transit Authority has one of the lowest operating budgets for a transit agency serving a metropolitan area of its size and, since the failure of its 2014 referendum for a consistent funding source, has needed to cut or reconfigure a dozen of its scheduled routes. It is despite that adequate support—not because of it—that PSTA has been able to establish a name for itself pioneering on-demand service models.

Launching a new genre of transit service requires active engagement from agency leadership, capable staff project management, and external political champions. Getting Direct Connect off the ground depended on the CEO's engagement throughout the process, guiding the program's vision and serving as an intermediary between various project stakeholders, from PSTA's board to regional elected officials.

One PSTA staff member was the point person responsible for developing and managing the pilot day to day, coordinating among various project stakeholders, and overseeing the research and planning necessary to make the project possible. While over time the responsibility for the pilot was distributed more widely throughout the agency, the value of a few dedicated individuals in launching complex, highly visible projects cannot be overstated.

Rider engagement pays off

No matter how simple, any new and unfamiliar service model will be an adjustment for riders. Direct Connect ridership grew slowly until PSTA and Uber ramped up outreach in early 2017, dedicating staff time to on-the-ground demonstrations with riders on how to use the app. Agencies should bear in mind the importance of field-based outreach to introduce riders to new services, particularly app-based models that may be less familiar to agencies' core customer base. While the growth in unique users over 2017 and 2018 indicate that these outreach efforts were successful, the fact that a relatively small number of heavy users made up such a large proportion of rides throughout that period suggest that issues with the technology or service design may have prevented wider adoption.

Options and a willingness to iterate are key

One technological barrier to rider adoption was partially addressed through the ability of riders to choose between TNCs and conventional taxi service. United Taxi has maintained a dedicated user base and seems to have been able to provide comparably priced rides. PSTA was thoughtful in designing a common contract for Uber, United Taxi, and Care Ride (and later Wheelchair Transport) that could be used by a wider variety of service providers over time. By maintaining options, Direct Connect can potentially take advantage of an increasingly competitive ridesourcing marketplace.

But while allowing open participation can be beneficial, Lyft's unexpected departure after PSTA had already begun distributing advertising and signage featuring the company demonstrates a potential risk in that approach. In hindsight, PSTA would have benefitted from requiring Lyft to demonstrate their technical ability to implement the pilot program well in advance of launch. In general, agencies should not rely on potential contractors to keep their word without more proof of good-faith collaboration, whether in the form of formal commitments in writing or, at minimum, advance demonstration of progress.

Having more providers does not necessarily improve access either. Direct Connect's \$3-5 flat subsidy between providers did not result in meaningful access to riders using wheelchairs. Rather, it effectively created a two-tiered service model that left wheelchair-dependent riders paying upwards of \$20 each way to a Direct Connect stop. PSTA deserves credit for addressing this accessibility barrier in the later iterations of the pilot, increasing the wheelchair subsidy and equalizing the out-of-pocket expense for riders. While it remains unclear what service uptake will look like among riders using wheelchairs in the long term, it should be noted that PSTA had not received an invoice from Wheelchair Transport by the end of 2018. Staff speculate that the door-to-door access provided by its existing paratransit provider, even while requiring advance scheduling, has remained the more appealing option for those riders.

Get good data, even if it means collecting it yourself

Many of the issues that persist with Direct Connect stem from a lack of data, which ultimately inhibit PSTA's ability to learn from the pilot and make fully-informed service design improvements.

While United Taxi and the WAV providers could conceivably have been the only program participants—if the agency chose to include data sharing as a requirement of the contract—PSTA believed that Uber's presence was key to the pilot's success. At the time of the contract design, PSTA felt Uber would not have participated had they insisted on access to more detailed data than what was necessary for invoicing, even though Uber's local representatives had at one point earlier committed to sharing trip data and later backed away from that offer. Trip-level data from Uber would have helped provide insights on spatial and temporal dimensions of travel behavior in the pilot. This could have been used as the basis for where and how to focus outreach efforts or formed a basis for understanding the impact of Direct Connect on its fixed-route service. Understanding how many unique riders were using Uber over time would have provided more meaning on the impact of the service than just a monthly total. While data from United Taxi continues to offer some insight on these fronts, their trips represent only a fraction of those in the overall pilot and may represent a completely different user base than those taking Uber.²⁸

However, Uber's trip data would have only illustrated certain aspects of Direct Connect's ridership. Understanding the individual rider behavior and demographics, such as those currently using the service and those who stopped after the discontinuation of the circulators, would have only been possible by conducting focus groups or interviewing these riders directly. While this could have been facilitated through the app with Uber's cooperation, it could also have been accomplished through traditional rider intercept surveys. Feedback from riders has proved beneficial when sought out; for instance, PSTA's interactions with riders during Phase II outreach efforts ultimately helped persuade the agency to remove the zone structure.

While the terms of the provider contracts remained the same for Phase III, it should be noted that Uber's team worked to offer other data metrics as the pilot unfolded. Since Phase III in 2018, PSTA has received an aggregate number of trips made under the pilot, along with the overall number of unique riders, average response time and the average distance travelled. However, as with earlier in the pilot, PSTA continues to only receive a quarterly ranking of stops with the highest use.

²⁸ After providing anonymized and aggregated data to support this case study, Uber provided the same data to PSTA.

That lack of trip-level detail prevented PSTA from noticing the incorrect size of the geofences, which led to vastly inflated performance reports for nearly a year following the Phase III service design. Not only did the board vote to extend the pilot for several years based on erroneous information from Uber, had the issue not been brought to PSTA's attention by a visiting scholar who was writing about the pilot, the agency might have been invoiced for hundreds of thousands of dollars worth of ineligible trips.

Since late 2018, the ability to view trip origins and destinations has been available for TD Late Shift, one of PSTA's other TNC-based pilots, on a view-only basis through a dashboard maintained by Uber on its own servers. While participation in that pilot is more limited and requires a specific enrollment process, the data-dashboard model represents a potential mechanism to balance the interests of agencies seeking to at least verify the services they pay for and service providers' ongoing desire to protect trade secrets and customer privacy. In the near term, both PSTA and Uber would benefit from a similar arrangement that would facilitate a baseline level of transparency without exchanging sensitive data with a public agency.

Going forward, PSTA should survey riders with United Taxi and Uber, either through their apps or through local marketing staff. Understanding the user bases between on-demand service providers and those using scheduled service is crucial to understanding the pilot's role as an alternative to low-frequency bus service and its broader viability.

In the near term, both PSTA and Uber would benefit from a similar arrangement that would facilitate a baseline level of transparency without exchanging sensitive data with a public agency.

Pilots should reflect goals, have a plan for evaluation

There is significant value in testing new ideas, but even with low stakes, public agencies designing pilot projects should be guided by fundamental goals and principles. It is the responsibility of an agency's board to set the policy and strategic direction from which these goals and principles flow. Individual projects like Direct Connect should then be evaluated in the context of those goals using relevant performance evaluation criteria chosen to reflect the agency's aims. The PSTA board asked staff to cut inefficient service and provide some sort of

alternative, possibly by using Uber- and Lyft-like services to feed into existing PSTA service. The Direct Connect model represents a very literal interpretation of service that might achieve these goals and is not in obvious conflict with the agency's mission, "to safely connect people to places."

But the pilot has continued without explicit goals needed to measure changes in service quality or ridership, like improved access to destinations, more reliable service at an equal fare, or increased ridership at targeted stops. As such, Direct Connect has evolved without a way of understanding of whether the service model was helping connect as many people as possible to the agency's fixed-route bus services—or more importantly, even to the places they want to travel.

The ability to track program efficacy in these respects could be augmented if the agency could directly measure how many riders are transferring to PSTA's fixed-route service relative to the number of trips being subsidized. While participants can present their Uber and United Taxi receipts to get a free bus transfer, the same is not possible when using those services as "last-mile" service options. In the service design iterations through Phase II there was little effort to validate whether users in fact did use the bus service either before or after taking a subsidized TNC or taxi trip, leaving unexplored the question of whether Direct Connect was accomplishing one of its core purposes.

Another pilot feature that would have been better guided with explicit goals is the zone-based model, which has since been employed in other first-last mile pilots. There were clear limits to this format when applied here, particularly apparent in places like Clearwater where the core of the city was bisected by a zone boundary and each zone's designated stop located away from downtown. As a result, riders who wanted to travel to downtown Clearwater from transit-poor neighborhoods outside the city center had to first travel away from downtown in order to connect to a bus going back to their final destination, creating long and indirect trips unlikely to attract repeat riders.

Despite these shortcomings, PSTA should be applauded for making positive changes to Direct Connect. Users have clearly taken to the simpler service design of Phase III, in which they can simply choose the transit stop that most directly connects them to their destination. This simplifying approach mirrors the elimination of coupon codes after the pilot's first phase.

The pilot model can cut costs, but poses important tradeoffs

Direct Connect was a relatively small financial risk for PSTA, which was looking for ways to provide a viable and cost-effective alternative to high-cost, low-ridership fixed routes that staff had recommended cutting. Cutting the East Lake Connector saved the agency around \$360,000 in bus capital costs and \$422,000 a year in net annual operating costs.³¹ Phase I of Direct Connect cost far less than the \$40,000 it was allotted, around \$15,000 in total.³² Not including staff time, Direct Connect only cost about \$120,000 up through Phase II.³³ In the case of the East Lake Connector and the Pinellas Park Circulator, where the rider subsidy was over \$40 per trip, a \$5 per trip subsidy represents significant savings to the agency.

³¹ System Redesign 2015 - 2017 Phase 1 Analysis

³² $(476 \times \$3 \text{ subsidy}) + (476 \times \$4.50 \text{ day pass}) + \$11,000 \text{ in marketing}$

³³ $(12,748 \times \$5 \text{ subsidy}) + (1,629 \times \$4.50 \text{ day pass}) + (11,119 \times \$2.25 \text{ fare}) + \$7,000 \text{ in marketing}$

In other contexts, it is foreseeable that a per-ride subsidy model could become more expensive than the fixed route service it is designed to replace. The \$5 per trip subsidy, which doesn't include the transit discounts that have been provided to riders for most of the pilot, is higher than the agency's system-wide average subsidy of roughly \$3 per trip for fixed-route service. This highlights a fundamental tension of Direct Connect's per-ride subsidy model, the opposite of fixed-route transit's typical incentive structure: The more riders Direct Connect attracts, the less financially sustainable it becomes. Had the quick ridership growth in Phase III been real, the 17,000 rides taken between April and September would have used up much of the remaining pilot budget. There is also the potential issue that future cuts to bus service—which by design are shared—in favor of solo TNC or taxi rides that cannot be counted towards federal funding would actually further exacerbate existing revenue issues.

Still, the ability to replace low-ridership transit routes with on-demand services remains a compelling concept, given the potential to improve service quality at a dramatically lower per-rider subsidy.³⁴ Staff now estimate that Direct Connect will cost between \$20,000 and \$25,000 per month going forward. A full accounting of the Direct Connect pilot's cost must, however, recognize that much of the cost savings depend on the on-demand service providers operating independently from the agency and deriving most of their income from non-agency sources, often in non-unionized, lower-wage roles, as in the case of Uber drivers. Other savings come from assigning price risk to riders—if surge-pricing is in place, riders bear the added cost of the trip—and from having fewer riders in total. Agencies should consider these trade-offs explicitly in the planning process.

³⁴ 70 minute fixed-route headways at \$40 a trip vs. on-demand wait times of under 10 minutes at \$5 a trip

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Conclusion

Through the Direct Connect process, PSTA has built valuable institutional knowledge and useful relationships with private-sector stakeholders that should improve the agency's capacity to develop and manage similar pilot projects moving forward. Subsequent pilots with Uber and Lyft have been designed to use these services' strengths to improve transportation access for transit-dependent groups, rather than primarily as a means to cut costs. The Transportation Disadvantaged Late Shift pilot allows income-qualified residents to get to and from work after fixed-route service has ended via subsidized transit passes and free rides on Uber, United Taxi and the wheelchair provider Care Ride. The other, funded through the Federal Transit Administration's Mobility on Demand Sandbox program, will provide on-demand trips for riders with disabilities, seeking to improve on the traditional paratransit model.

The shortcomings of Direct Connect's initial first- and last-mile subsidy model—paying a fixed, per ride fee to on-demand service providers—are clear, and limited the program's scalability. The Phase I and II designs offered limited improvements in transit access to riders by limiting options to a narrow list of stops in inflexible zones. While the pilot succeeded in reducing PSTA's operational costs, by design it could only remain financially sustainable by serving a relatively niche travel market. PSTA's recent changes to the model—doing away with zones, for example—reflect this understanding and will need to be monitored and evaluated moving forward.

The transit industry still has much to learn about using contracts with on-demand service providers to improve service quality, via pilot projects and otherwise. The scale, timeframe and local circumstances of the pilot leave the possibility that this model would work differently in a denser, more transit-rich context rather than in a low-density environment where transit has long represented a last-resort option. Agencies around the country would do well to learn from PSTA's willingness to try something new, their missteps along the way, and the creativity the agency and their private-sector partners have applied to solving challenges over the course of the ongoing Direct Connect pilot.



Case Study



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