

First + Last Mile Pilot Business Case

for RTD's Dry Creek Light Rail Station Area

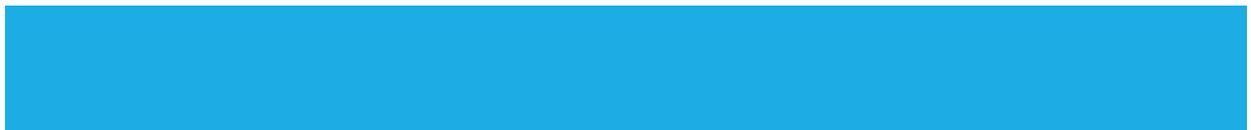
A Public-Private Partnership Model prepared by:



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Lyft

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Problem Statement

While light rail provides an efficient method of moving people along major transportation corridors, 20% of commuters to the Denver South region say they do not use light rail because it is too difficult to get from the light rail station to their workplace. This first and last mile (FLM) problem – that is, how transit users travel the final mile or so between their origins and destinations and transit stations – continues to be the Achilles heel of transit systems globally, especially in suburban environments.

Existing Conditions

Current service model

RTD, as one of the nation's premier transit agencies, introduced Call-n-Ride (CnR) to provide this First and Last Mile (FLM) service. RTD currently operates CnR in 22 service areas throughout the Denver Metro. Combined operating cost for this service accounts for more than \$10 million, only \$1 million of which is recovered through fare revenue. In 2014, CnR accounted for 0.5% of RTD's total boardings but required 2% of the agency's subsidies.

The Dry Creek CnR, one of two CnRs serving the Dry Creek light rail station, is heavily subsidized at ~\$21 per one-way trip, requires advance sign-ups and is unable to respond to real-time demand. In 2014, the Dry Creek CnR served a total of 12,200 riders, with an average of 3.5 boardings per service hour. The service runs Monday-Friday from 5:30 AM – 7:00 PM. The listed fare for the service is \$2.60 one-way, but users transferring to or from light rail and users with monthly or annual passes ride free.

To its credit, the introduction of CnR was a step in the right direction in helping to solve the FLM problem. However, disruptive tech solutions in the mobile rideshare space, specifically those provided by transportation network companies (TNC) such as Lyft, have proven to be a cost-effective way to transport people between dispersed destinations. Lyft's model presents an opportunity for transit agencies to reevaluate the efficiency of their FLM solutions.

Market characteristics

In 2015, the Denver South Transportation Management Association (DSTMA) conducted its first annual Employee Transportation Survey to learn more about the travel behavior of employees within its boundary, which includes the Dry Creek light rail station area. Roughly 88% of respondents reported that they drove alone to work on the day they completed the survey, with 97% claiming to drive alone at least once a month. Though DSTMA's service area is served by two RTD light rail lines, as well as bus, CnR, Access-a-Ride, rideshares and a plethora of private service providers, 79% of SOV respondents claimed they drove alone to work because it was the quickest and most convenient option. Though preferences for SOV commuting dominate all other options, 23% of

respondents listed that one of their reasons for driving alone was because it was “too hard to get to [the] light rail station or bus stop” and 21% claimed that it was “too hard to get to [my] work location from [the] light rail.”

Based on data from the Denver Regional Council of Governments (DRCOG), we estimate that there are 1,530 residents who live in the Dry Creek CnR area who commute to jobs near other light rail stations. There are 680 employees who live near other light rail stations and work in the Dry Creek CnR area. Adding these to the daily average of 28 people who use the CnR and 56 people who drive to the Dry Creek Park-n-Ride, we estimate there are approximately 4,600 one-way trips every day that fit the profile of this program. That’s not to say that light rail is applicable for 100% of these trips, but converting only a small percentage of these trips could show significant benefits.

Solution Options

Several transit agencies throughout the country have identified the potential benefits of coordination with private rideshare companies. Most of the pilots described below have been launched within the past year, so little data about their efficacy is available.

- Dallas Area Rapid Transit (DART) – DART’s GoPass mobile ticketing application provides a link to the Uber app. To encourage ridership, Uber offers a free first ride, up to \$20.
- Pinellas Suncoast Transit Authority (PSTA) – PSTA, in Pinellas County, FL (St. Petersburg) is funding half of the cost (up to \$3) for Uber or United Taxi rides destined for two regional bus stations. Users can hail rideshare cars through the existing Uber app and can hail taxis through United Taxi’s existing app or call center.
- Southeastern Pennsylvania Transportation Authority (SEPTA) – Between May 25, 2016 and September 5, 2016, SEPTA will fund 40% (up to \$10) of Uber fares to eleven regional rail stations, primarily in suburban areas. Rides can be hailed through Uber’s existing app.
- Kansas City Area transportation Authority (KCATA) – KCATA is partnering with Bridj and Ford in a 12-month pilot to provide an on-demand circulator shuttle in two neighborhoods. Passengers can use the existing Bridj app to find a ride on the custom 14-passenger vans. The service has a one-way fare of \$1.50 (the same as KCATA fixed-route buses), and will run during morning and afternoon rush hours, Monday through Friday.

Proposed Service Model

The existence of, and funding for, RTD’s CnR service allows this pilot to go farther than the solutions discussed above. Additionally, with RTD opening four light rail lines in 2016, solving the FLM problem will afford even greater increases in mobility for Centennial’s residents, employees, and visitors.

Objective

To develop an on-demand, mobile-based PPP pilot model to 1) maximize First and Last Mile services and 2) enhance ridership to and from the Dry Creek light rail station with expenses competitive with the current operating cost for RTD's current Call-n-Ride service.

Mission statement

To develop an on-demand, mobile-based First and Last Mile Mobility-as-a-Service model that can be replicated system-wide by RTD and its partners to benefit transit users, rideshare providers, developers and the taxpayers and residents that call the Denver Metro Region home.

Target customers

This pilot will be accessible to all users, including passengers with ADA-accessibility requirements. RTD's existing service offerings, including CnR and Access-a-Ride will continue to operate during the pilot period.

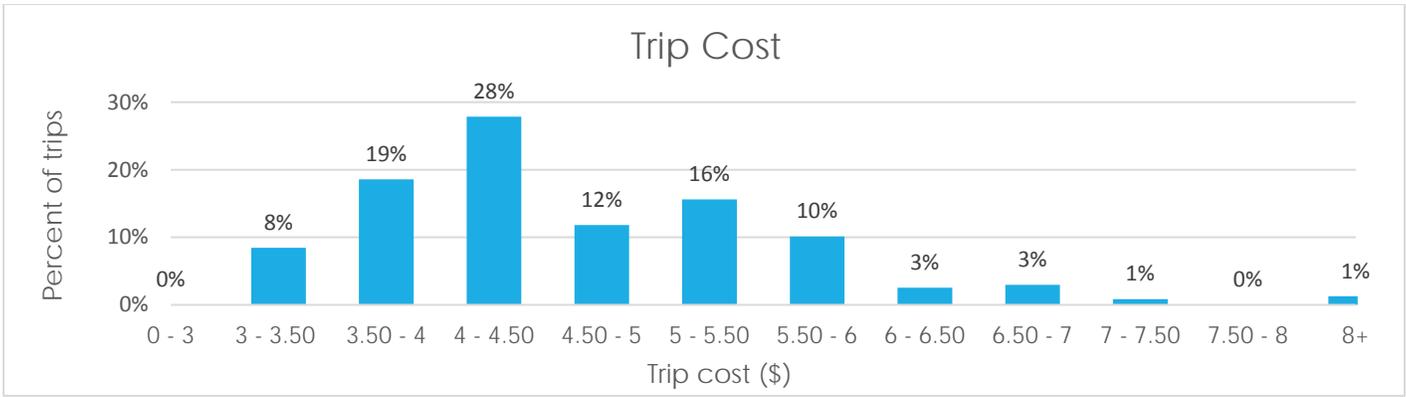
For purposes of marketing and capturing the most value from the pilot, target customers will include technologically proficient, working age adults. This group consists of current users and early adopters of mobile-based tech solutions – specifically mobile rideshare platforms – living within or commuting to Centennial, who would normally use the Dry Creek light rail station if commuting by light rail.

- **Technologically-proficient** Centennial residents:
 - residing the current Dry Creek CnR service area
 - working in DTC or Downtown Denver
 - seniors and persons with disabilities needing to use the light rail
 - participants in RTD's Non-Profit Agency Reduced Fare program
- **Technologically-proficient** Centennial employees:
 - employed by businesses located within the current Dry Creek CnR service area
 - residing in Downtown Denver or the DTC.

Projected pricing and demand

One of the major benefits provided by this pilot is the ability to reduce the average per-rider subsidy from the Dry Creek CnR's \$21 per one-way trip. To estimate the cost of providing this service through Lyft, the i-team analyzed the profile of one week of trips on the Dry Creek CnR.

Seventy-three percent of trips are expected to be shorter than two miles. Sixty-seven percent of trips are expected to take less than five minutes. In addition, without surge pricing, 67% of trips are expected to cost less than Lyft's minimum fare of \$5. The average cost for trips without a minimum fare is \$4.64. (Respecting the minimum fare, the average cost per trip is \$5.26.) Because trips will be provided by Lyft Line, which pools two users with close origins and destinations into the same Lyft vehicle, per-rider costs may be lower than these averages.



As described in the **market segmentation section** above, we estimate that there are 1,530 residents who live in the Dry Creek CnR area who commute to jobs near other light rail stations. There are 680 employees who live near other light rail stations and work in the Dry Creek CnR area. Adding these to the daily average of 28 people who use the CnR and 56 people who drive to the Dry Creek Park-n-Ride, we estimate there are approximately 4,600 one-way trips every day that fit the profile of this program.

One of the major questions this pilot seeks to answer is: How much demand will there be for an intuitive, on-demand FLM solution included with light rail fare? Therefore, the figures included in the table below are only an approximation. “Profile qualifying trips” represents the number of trips currently occurring by automobile that could be served by a FLM solution in this service area. The “Estimated FLMP Adoption Rate” is an estimate of the percent of profile qualifying trips that would realistically switch to the new service once it is offered. Finally, “Estimated Program Trips” quantifies the best estimate of daily user demand. Within the current Dry Creek CnR service area, we estimate that there will be demand for 303 FLM rideshare trips per day.

Current RTD Service Area		Profile Qualifying Trips	Estimated FLMP Adoption Rate	Estimated Program Trips
Residential	Drive to Work*	3,063	5%	153
	Call-n-Ride	56	85%	48
	Drive to P-n-R	112	30%	34
Employment	Drive to Work**	1,361	5%	68
Total		4,592	7%	303

*Profile Qualifying Trips are the maximum number of auto work trips generated in the area that are destined for areas near light rail.

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Project Benefit

Value proposition

RTD and partners

- Reduce subsidies per ride by more than half
 - Reduce vehicle maintenance and provider liability

- Reduce costs associated with current CnR dispatch system
- Improve service levels for First and Last Mile service riders
- Increase light rail ridership
- More efficient use of service provider’s seating space
- Insure multi-billion dollar FasTracks investment
- PPP model; shared risk and reward

Transit users/riders

- Reduce transit trip times
- Provide a very responsive, on-demand service
- Increase ease of booking a First or Last Mile trip
- Develop reliable and integrated trip planning and payment systems
- Reduce time stuck in traffic
- Reduce stress levels and enhance well-being

Centennial businesses

- Higher worker well-being and productivity
- Attract Denver’s most talented employees
- Reduce parking requirements
- Prestige and marketing from local innovation

Rideshare providers

- Gain access to the untapped RTD transit feeder market
- Increase resource utilization (drivers, vehicles, etc.) during traditionally off-peak times
- Increase consumer comfort with platform

Developers

- Reduce parking requirements for transit-oriented developments and light rail stations

Everyone

- Positive economic, environmental and public health benefits
- Increase light rail ridership; reduce congestion due to fewer SOVs on the roadway
- Normalize new commute behaviors and patterns
- Involvement in the creation of an efficient, more “future-proof,” multimodal transit system

Project transferability

Currently, 76% of Metro Denver’s population lives in suburbs – not Denver proper – and because the FLM is so much more problematic in low-density areas, the pilot team believes there is a large market for this type of solution. RTD currently operates CnR shuttles in 22 service areas with nearly 554,000 total annual boardings and a combined operating cost of nearly \$10.5 million in 2014. The average subsidy per boarding for each one-way trip is nearly \$17. Because this pilot model can serve two-to-three times as many riders for the same cost – not accounting for the potential savings associated with the newly unveiled Lyft Line service – if successful, it will be scalable to the entire RTD system. In fact, scaling this pilot to multiple station areas would only serve to increase its attractiveness, as riders would then have quick, easy and low-cost FLM connections on both ends of the trip. The project team is collaborating with RTD on their

application to the Federal Transit Administration’s Mobility on Demand Sandbox Grant, which has the potential to fund an extension of the pilot period in the Dry Creek service area as well as expand the service to other CnR areas in Southeast Denver.

In addition, more than 30 cities around the country have light rail systems. All of these cities wish to fully capitalize upon their transit investments and struggle to draw riders from low-density, suburban environments. If this pilot is successful in Centennial, it will provide not only a proof of concept, but a model for potential regulatory changes, system integration needs and reasonable cost estimates for suburban transit systems throughout the country.