SOUTH CENTRAL TRANSIT AUTHORITY

TRANSIT DEVELOPMENT PLAN UPDATE

APPENDIX J: DOWNTOWN CIRCULATOR PEER REVIEW

JULY 2018

SCTA SOUTH CENTRAL TRANSIT AUTHORITY

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1 INTRODUCTION

To inform future service plans for improvements to the Historic Downtown Trolley in Lancaster, SCTA commissioned this review of national best practices of downtown circulators. A peer review of comparable cities that have experimented with downtown circulator service provides insight into how other cities have designed their circulators, the major challenges and successes other cities have had, and what lessons can inform the evaluation of and potential improvements to circulator service in Lancaster. This report provides a summary of the research on the circulator services in each of the peer cities.

The study team used six comparison metrics to develop its list of peer cities.

- Presence of a circulator, or a circulator that has been discontinued
- City population
- Downtown Walk Score (www.walkscore.com)
- Polycentric downtown (multiple centers of activity)
- Seasonality of the circulator
- Presence of a ride-hailing company (e.g. Uber and/or Lyft)

The study team reached out to colleagues with experience in planning downtown circulators in order to populate a list of over 35 cities with downtown circulators. After reviewing these cities based on the six comparison metrics, the study team narrowed the list of peer cities down to eight. This peer group comprises a good mix of the six comparison metrics. With approval by SCTA, the eight cities and circulators chosen as peers are:

- Grand Rapids MI – DASH
- Columbia, MO – Route 10-Red Downtown Route
- Boulder, CO – The Hop
- Iowa City, IA – Downtown Shuttle
- Duluth, MN – Port Town Trolley
- Quad Cities (IA, IL) – The Loop (discontinued)
- Columbus, OH – CBUS
- Olympia, WA – DASH Shuttle

Basic information on each of these peer shuttles is summarized in Table 1. The study team used city websites and transportation agency information to conduct research. The team also personally reached out to employees of each transit agency and/or development district through phone calls to understand specifics about each circulator's schedule of operations, its background and purpose, and any notable challenges or successes, as well as any important narratives about the shuttle. The study also contains information on funding sources, finances, revenue, and ridership. Each downtown shuttle has a different story and lesson learned that may ultimately assist Lancaster in better understanding successful circulator operations.

Table 1 | List of Peers for Study

City	Shuttle/Circulator	Population	Downtown Walk Score	Polycentric Downtown	Seasonal	Presence of Ride-hailing?
Lancaster, PA	Historic Downtown Trolley	59,218	98	✓		✓
Grand Rapids, MI	DASH	193,792	94	✓		✓
Columbia, MO	10 – Red Downtown Route	116,906	94	✓		✓
Boulder, CO	The Hop	105,112	82	✓		✓
Iowa City, IA	Downtown Shuttle	73,415	72	✓	✓	✓
Duluth, MN	Port Town Trolley	86,238	69	✓	✓	✓
Quad Cities (IA, IL)	The Loop (discontinued)	383,681	58-83	✓	✓	✓
Columbus, OH	CBUS	835,957	82	✓		✓
Olympia, WA	Dash Shuttle	46,478	75	✓		✓

Economic Indicators

Table 2 presents a table of basic economic indicators for each peer city. These data highlight downtown population, population density, and population change, as well as downtown employment, employment density and employment change. The data allow for a quick identification of the downtowns with healthier trends, and the balance of population growth versus employment growth (for example, whether population is growing faster than employment). These benchmark measures can be compared to existing conditions in Lancaster in order to better understand the downtown characteristics necessary to maintain productive circulator service.

Table 2 | Economic Indicators of Downtown Health

Characteristic	Lancaster, PA	Grand Rapids, MI	Columbia, MO	Boulder, CO	Iowa City, IA	Duluth, MN	Quad Cities (IA, IL)	Columbus, OH	Olympia, WA
City Population (2017)	59,218	201,600	121,100	108,600	75,200	87,300	223,136	871,273	50,403
MSA Population (2017)	533,110	1,058,000	180,100	328,400	170,251	284,300	388,537	2,071,338	273,662
Population Change (2010-2017)	2.6%	7.0%	10.8%	11.5%	11.6%	1.6%	2.3%	8.9%	8.5%
Downtown Population (2017)	6,568[1]	4,300	1,900	670	7,100	2,100	3,100	1,925	1,752
Population Density (per sq. mi.)	13,136	4,200	6,300	3,350	16,100	4,000	3,400	4,100	2,200
Population Change (2010-2017)	13.1%	12.6%	48.9%	15.0%	14.3%	-0.2%	22.2%	56%	3%
% MSA Population Downtown	1.2%	0.4%	1.1%	0.2%	4.2%	0.8%	2.9%	0.1%	1%
Downtown Employees (2017)	15,060	35,300	11,500	9,900	9,900	18,300	17,300	58,545	17,700
Employment Density (per sq. mi.)	30,120	34,300	38,300	49,500	22,500	35,200	19,200	124,600	22,100
Employment Change (2010-2017)	4.3%	9.5%	10.5%	6.2%	10.5%	-12.2%	-6.7%	3.9%	-8.4%
Downtown Population + Employment	21,628	39,600	13,400	10,570	17,000	20,400	20,400	60,470	19,452
Population + Employment Density (per sq. mi.)	43,256	38,500	44,600	52,850	38,600	39,200	22,600	137,400	44,200
Land Area (sq. mi.)	0.5	1.03	0.30	0.20	0.44	0.52	0.90	0.47	0.80

[1] Based on Census Tracts 1 and 4 in Lancaster County

Local Studies

This memorandum was informed by The City of Lancaster, PA: City Circulator Feasibility Public Input Survey conducted by the Lancaster Alliance in April of 2018. The survey was conducted between March 22, 2018 and April 22, 2018 and received 1,238 responses. Key findings of the survey include:

- 52% of respondents live in the City of Lancaster
- 63% of respondents work in the City of Lancaster
- 81% of respondents have never ridden the existing Historic Downtown Trolley
- 52% of respondents were not familiar with the Historic Downtown Trolley

Respondents were asked how they would utilize the service, and were able to select multiple answers. Their responses included:

- Dinner (60%)
- Personal errands (54%)
- Lunch (52%)
- Nightlife/late night (51%)
- Shopping (48%)
- Connecting to Amtrak train service (43%)
- Commuting to work (27%)
- Park and ride shuttle (11%)

The survey also found that the majority of respondents would use the service after 5 PM and preferred service focused in the central business district. Overall, respondents indicated they would ride an average of 2.5 times per week. In addition, 67% of respondents indicated that they would ride more if service was improved, and 82% indicated a fare-free service would encourage them to ride more.

While these results indicate support for a circulator, it is important to note that of the top eight potential uses, all except commuting to work are considered discretionary trips and represent trips that are not taken on a regular basis. These types of trips are difficult to serve with traditional transit and often result in low performance due to inconsistent demand. Traditional transit works best with consistent utilization, between five and seven times per week. As indicated in the survey these discretionary trips would likely be made only 2.5 times per week. Stated potential trip purposes cover a very wide range of time and days of service, such as midday lunch trips, evening entertainment trips, and weekend shopping trips. This wide range of service and low utilization often results in a very low operating revenue per hour and rides per hour for circulator services, both of which are key measures that SCTA is required to meet per the Pennsylvania Department of Transportation. Additionally, over half of respondents were not familiar with the existing Historic Downtown Trolley and 81% have never ridden the existing Historic Downtown Trolley, indicating that respondents are not typical transit users.

2 PEER REVIEW OF DOWNTOWN CIRCULATORS

Information on each of the following peers includes a summary of the downtown circulator services offered, identification of the operation and management structure, background and intended purpose of the circulator, and challenges, successes and lessons learned. Qualitative and, if available, quantitative information on the economic impact of the circulator on the downtown is included. Each peer circulator's operating characteristics, funding, costs, operations, and performance is summarized in a concluding table at the end of each section.

Grand Rapids, MI: DASH

Grand Rapids' Downtown Area Shuttle, known as DASH, is a free shuttle service that connects residents and visitors to the city's downtown core. There are three free downtown routes: the North DASH, West DASH, and the northern segment of the Silver Line (a Bus Rapid Transit line not associated with DASH). The Silver Line is only free when riding north of Wealthy Street. In Figure 1 below, the DASH North is depicted in blue, DASH West in red, and Silver Line in green. DASH is provided by City Parking Services, in contrast to the Silver Line and all other local transit routes, which are provided by The Rapid. However, City Parking Services contracts with The Rapid to run the DASH routes.

DASH North

DASH North, or Route 22, circles the downtown area and connects to the Monroe North neighborhood. The North DASH runs Monday through Friday 6:30 AM to 10 PM with headways of every 7-8 minutes. The route is bidirectional north and south.

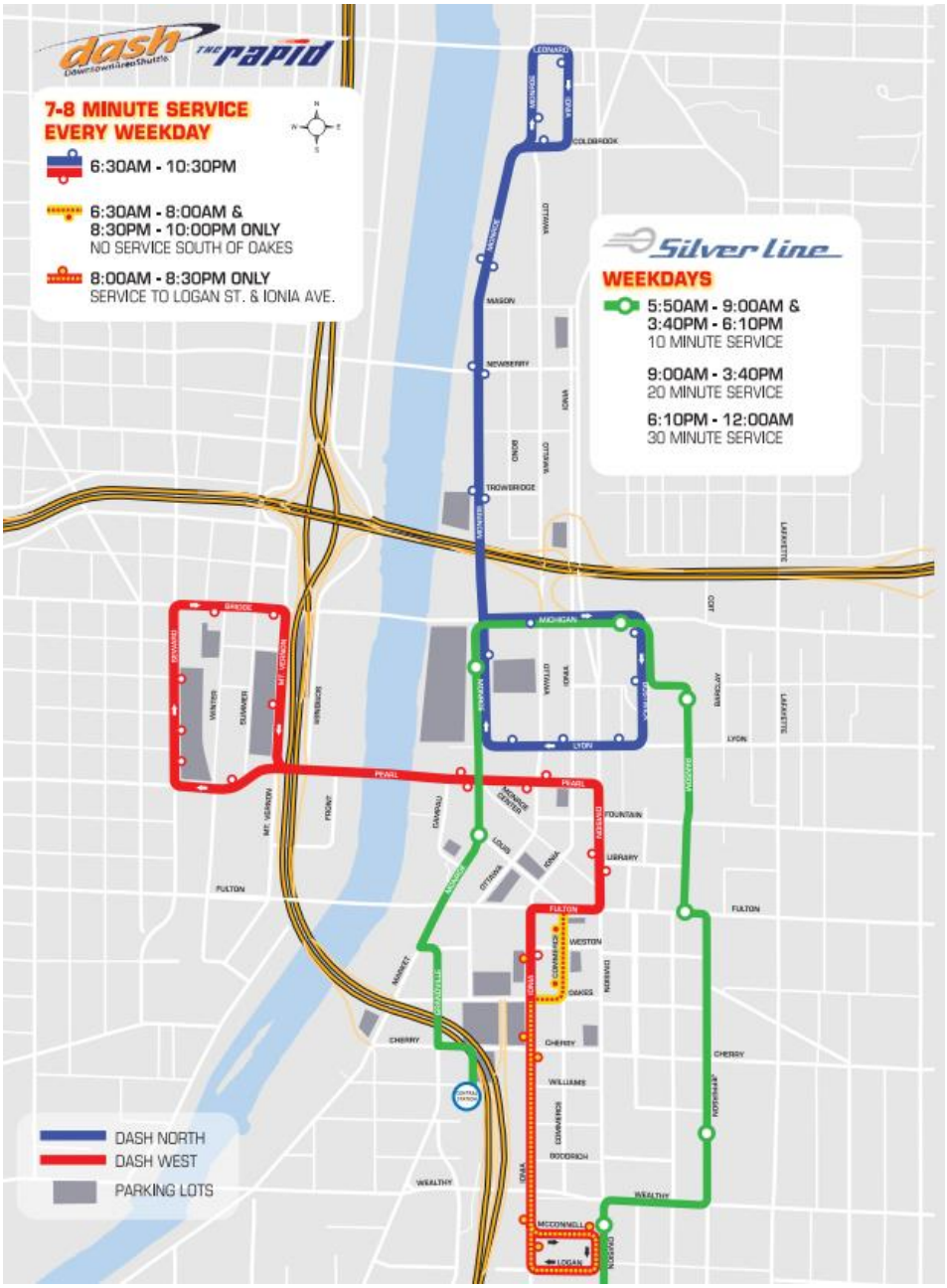
DASH West

DASH West, also known as Route 20, connects the downtown core to the Near Westside neighborhood. It has the same operating hours and headways as DASH North, running Monday through Friday from 6:30 AM to 10 PM every 7-8 minutes. After 8:30 PM, DASH West operates a shorter route that does not extend as far southeast in order to focus on service to the immediate downtown area.

Silver Line

The Silver Line, Route 90, although not part of DASH, serves the downtown area as a loop. The route starts in south Grand Rapids and makes its way north, eventually looping to the downtown area. The Silver Line is free when riders board north of Wealthy Street where the loop begins. In the figure below, the Silver Line is only shown north of Wealthy Street.

Figure 1 | Grand Rapids DASH & Silver Line



Background and Purpose

The DASH routes originally started as routes to connect parking lots with the downtown core. Even though downtown parking prices were increasing, lots were still nearing their capacities, making shuttles to remote lots a necessity. The DASH West route serves parking lots Area 7, Area 8, and Area 9. DASH North serves Ionia Mason, North Monroe, and Ionia North.

DASH is marketed to drivers who park in the aforementioned lots and can be found on the Parking Services website. All DASH buses are branded with the DASH logo. Schedules and real-time information are available online via the RapidConnect website or app.

Challenges, Successes, and Lessons Learned

In 2016, Grand Rapids Parking Services distributed a survey about possible route changes and consolidation of the then-existing three routes. At that time, there were DASH North, DASH South, and DASH to the Hill. The survey helped to guide consolidation of the DASH South and DASH to the Hill routes into the current DASH West, and implement minor changes to DASH North. These changes rolled out on September 1, 2016, and included service to major destinations that the previous routes had left out before, including the Downtown Market.

There has been no marketing done specifically for the DASH shuttles. To this point, the City feels that the DASH has successfully "marketed itself" and has served downtown parking lot demand very well. However, they are exploring the idea of adding a third route, likely targeting visitors and non-downtown commuters via hotels and the convention center. City Parking Services has put together an RFP for marketing and branding consultation specifically for DASH in order to support the feasibility of the possible new route. They would like to explore the possibility of renaming the DASH service, rebranding or updating the overall look, and adding a marketing and communications strategy component.

Economic Impact

Though Grand Rapids is sure that the presence of a downtown circulator has increased the number of downtown visitors, they do not have any specific figures available. Anecdotal evidence suggests that the DASH has helped the economy, however. One news article in 2014 quoted Howard Hansen, the chairman of the Monroe North tax district, explaining that people have been going to eat at restaurants in the Monroe North neighborhood more often, and that the Monroe North community has been going downtown as well. "It's been a great boon to both economies, if you will, and I think it's only going to get better in the future. It's really hard to measure the economic impact that it's having on both areas."[2]

[2] http://www.mlive.com/news/grand-rapids/index.ssf/2014/11/10_bus_rides_grand_rapids_to_s.html

Figure 2 | Operating, Performance, and Funding Characteristics of DASH in Grand Rapids, MI

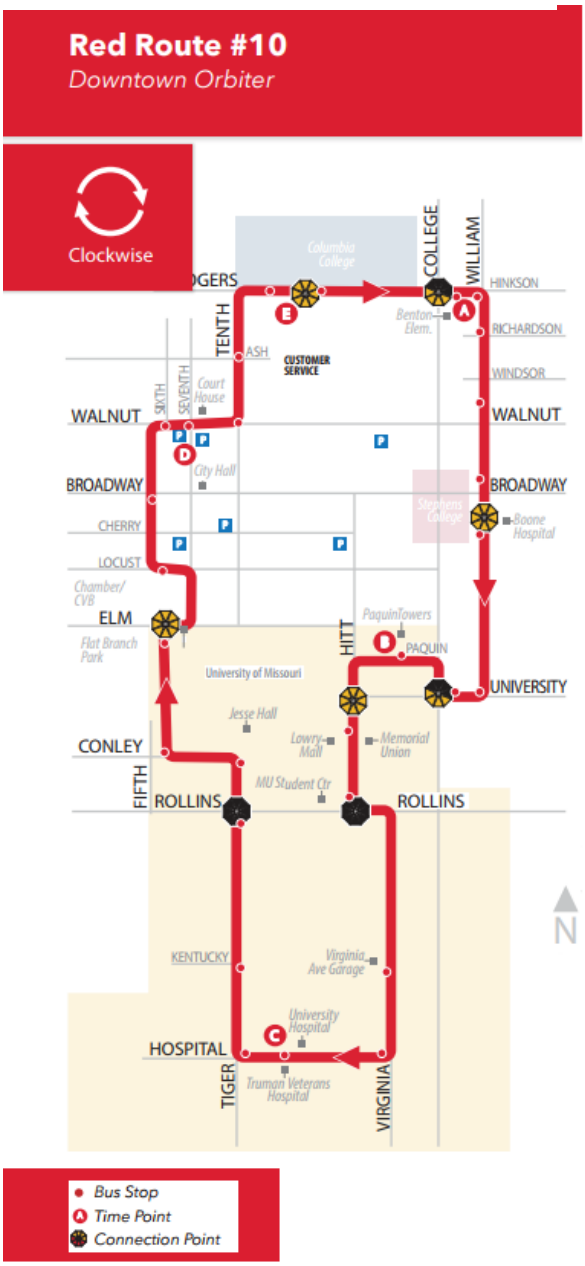
Operating Characteristics	
Service Design	Shuttle
Major Transit Hub/Stop Served	Central Station (Silver Line only)
Running Time (Round Trip)	DASH West: 28 minutes DASH North: 20 minutes
Number of Stops (Round Trip)	DASH West: 20 DASH North: 16
Fare (One-way)	Free
Discounted Fares/Passes	N/A
Cost of Transfers	N/A
Service Span (weekdays)	6:30 AM – 10 PM
Service Span (weekends)	N/A
Frequency (weekdays)	7-8 minutes
Peak	7-8 minutes
Frequency (weekends)	N/A

Funding, Costs, and Operations	
Start-up Capital Costs	N/A
Annual Operating Costs	$1M +
Operating Funding Sources:	
Local	City's parking system $80,000 to N+W Monroe North TIFA $75,000 to N
State	N/A
Federal	N/A
Private/Other	DDA $75,000 towards DASH North, along with funds from North Monroe Business Association
Manager	City Parking Services
Operator	The Rapid (contracted)
Performance	
Annual Ridership	660,000
Annual Vehicle Revenue Hours (RVH)	N/A
Annual Vehicle Revenue Miles (RVM)	N/A
Operating Cost/Passenger	$1.52
Passengers/RVH	N/A
Passengers/RVM	N/A

Columbia, MO: Red Route 10

Columbia's Route 10 is a one-way loop circulator service that operates from 6:30 AM to 8 PM Monday through Friday and 10 AM – 8 PM on Saturdays. Headways are every 30 minutes with a fee of $1.50 per ride (or $3 for an all-day pass). Discounted passes are available for pre-approved low-income, senior, or disabled customers for $0.75 (or $1.50 for an all-day pass).

Figure 3 | Red Route #10



Background and Purpose

The Red Route serves all educational campuses at University of Missouri, Columbia College, and Stephens College. It also serves the Boone County Courthouse and Wabash Station. The route has a reputation of having high performance and multiple transfer opportunities.

Challenges, Successes, and Lessons Learned

The Downtown Circulator is funded as part of the COMO Connect system. It is considered a permanent part of the system and thus receives funds in the same manner as the rest of the transit system in Columbia. Columbia's half-cent transportation sales tax allocates nearly 50 percent of its funds towards transit, which plays a large part in the overall transit budget each year. In 2013, the tax amounted to $1.8 million, where 50 percent was allocated towards transit, 25 percent towards the airport, and 25 percent towards streets. Other funds include federal and state grants, fees and service changes, user fares, fund transfers from the city's parking fund, convention and visitors funds, and Community Development Block Grant.

Economic Impact

We see no evidence that this was a consideration.

Figure 4 | Operating, Performance, and Funding Characteristics of Red Route 10 in Columbia, MO

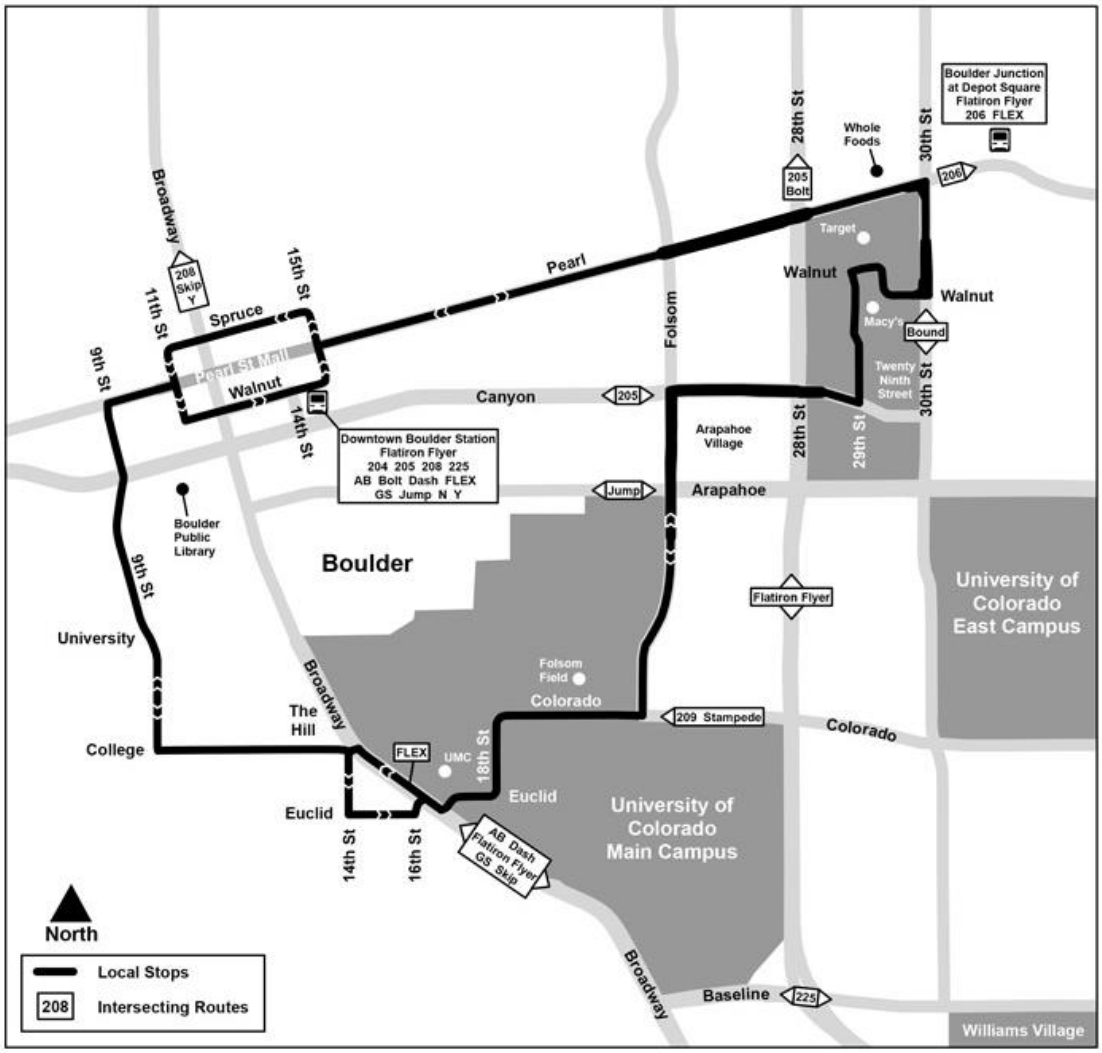
Operating Characteristics	
Service Design	Circulator
Major Transit Hub/Stop Served	University Avenue, Parquin Tower, 8th & Walnut, 10th & Rogers
Running Time (Round Trip)	30 minutes
Number of Stops (Round Trip)	22
Fare (One-way)	$1.50
Discounted Fares/Passes	$0.75
Cost of Transfers	One free transfer
Service Span (weekdays)	6:30 AM –8 PM
Service Span (weekends)	10 AM – 8 PM
Frequency (weekdays)	30 minutes
Peak	30 minutes
Frequency (weekends)	30 minutes

Funding, Costs, and Operations	
Start-up Capital Costs	N/A
Annual Operating Costs	$303,589
Operating Funding Sources:	
Local	Route 10 is funded as part of the entire COMO Connect System, where Fare Box = 26%, Sales Tax for operating = 32%, Fund Transfers = 5%, Other Revenues & Interest = 1%
State	Federal & State make up 30%
Federal	Federal & State make up 30%
Private/Other	N/A
Manager	COMO Connect
Operator	COMO Connect
Performance	
Annual Ridership	44,126
Annual Vehicle Revenue Hours (RVH)	3,559
Annual Vehicle Revenue Miles (RVM)	31,518
Operating Cost/Passenger	$6.88
Passengers/RVH	12.4
Passengers/RVM	1.4

Boulder, CO: The Hop

Running since 1994, The Hop is a free, high-frequency circulator that operates as a loop with headways every 7 to 10 minutes. It is one of a series of nine branded local transit routes (also Skip, Jump, Bound, Dash, Stampede, Buff, Climb, and Bolt). The shuttle runs Monday through Friday from 7 AM to 10 PM, Saturday from 9 AM to 10 PM and Sundays/holidays from 10 AM to 6 PM, and serves major bus stops including Downtown Boulder, 29th Street Retail District, University Hill, University of Colorado, and Boulder Junction.

Figure 5 | The Hop Route



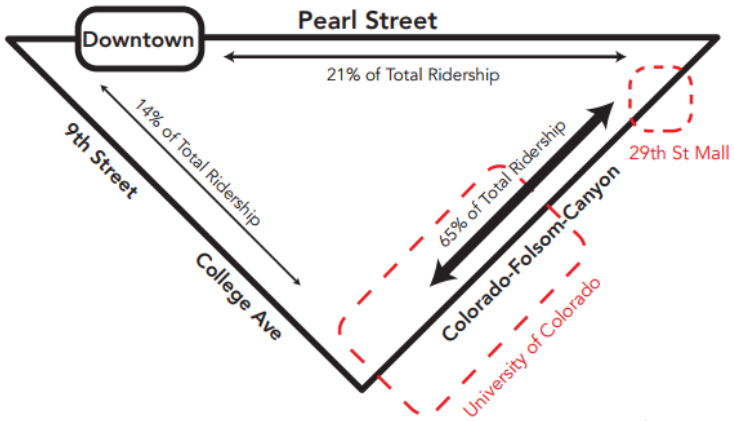
Background and Purpose

There is a very high demand for travel between student housing and University of Colorado, and thus The Hop was implemented to encourage the use of transit between these locations. The route helps to ease the parking demand as well as helps those with mobility disabilities get around downtown and CU. The Hop states that it was created to decrease single occupancy vehicle service trips in central Boulder by connecting main activity centers through public transit. About 60-65% of the route's ridership is from the university.

Challenges, Successes, and Lessons Learned

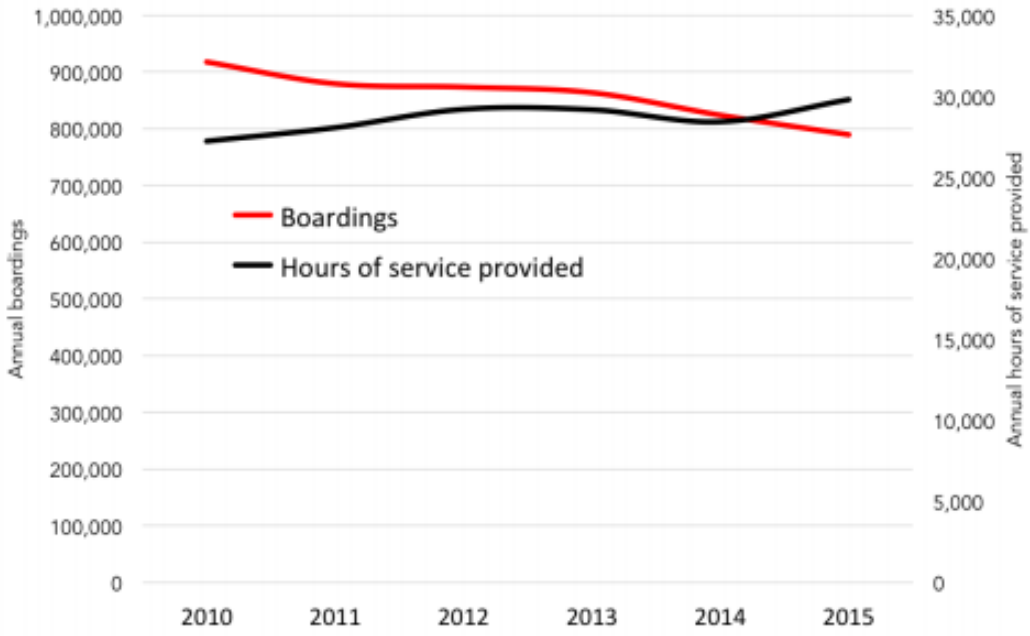
Ridership has been slowly decreasing since 2003, despite the high demand of travel between student housing and University of Colorado and increased investment in service. The Hop offers the highest frequency of any Regional Transit District bus, but is only the fourth-most productive route (where productivity is ridership relative to hours of service provided, or cost to operate). The City attributes this to the majority of the ridership only occurring between the short segment between the 29th Street Mall and CU. For many people, The Hop route only competes on travel time against walking, cycling, or driving on the straight segments, but not around the full loop. Thus, the Hop's ridership has begun to fall, even as more buses run. Operation as a shuttle only between the Mall and CU might better suit the ridership demand.

Figure 6 | Hop Ridership



Furthermore, the Hop is not being used, as had been expected, for last- or first-mile connections to intercity transit routes. Only 9% of Hop riders report transferring to or from another transit route in 2016. Additionally, there is a mismatch between the city's development trends and the shape of the loop since the route was created in 1994. Boulder workers and students live further away from the center of the city than they used to, so the loop does not serve as high as a population as it could. The Hop additionally does not connect to the main downtown commercial area very well. The CU's Late Night Black route, along with RTD's Dash and Skip routes, more directly serve the route between CU and downtown.

Figure 7 | Hop Boardings and Service Investment



Economic Impact

The Hop was created to transport mainly students and the university community throughout the downtown area, to retail and student housing. However, no exact numbers have been documented on how the route has helped economic development from retail or otherwise.

Figure 8 | Operating, Performance, and Funding Characteristics of Hop in Boulder, CO

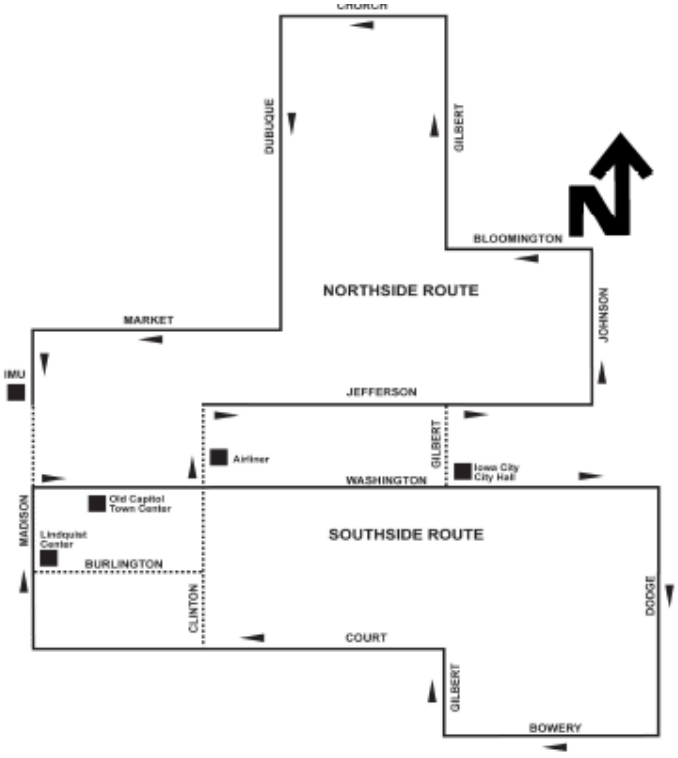
Operating Characteristics	
Service Design	Circulator
Major Transit Hub/Stop Served	Downtown boulder, 29th Street Retail, University of Colorado
Running Time (Round Trip)	Not published. Estimated 35 minutes.
Number of Stops (Round Trip)	Inbound: 22 Outbound: 15
Fare (One-way)	Free
Discounted Fares/Passes	N/A
Cost of Transfers	N/A
Service Span (weekdays)	7 AM – 10 PM
Service Span (weekends)	Saturday: 9 AM – 10 PM Sunday / holidays: 10 AM – 6 PM
Frequency (weekdays)	10 minutes
Peak	7 minutes
Frequency (weekends)	18 – 30 minutes

Funding, Costs, and Operations	
Start-up Capital Costs	N/A
Annual Operating Costs	$2.5 million
Operating Funding Sources:	
Local	City, Regional Transit District
State	N/A
Federal	Originally funded by a $1.4m Intermodal Surface Transportation Efficiency Act grant (2 years)
Private/Other	University of Colorado
Manager	City of Boulder
Operator	VIA Mobility Services
Performance	
Annual Ridership	800,000
Annual Vehicle Revenue Hours (RVH)	33,028
Annual Vehicle Revenue Miles (RVM)	30,000
Operating Cost/Passenger	$6.88
Passengers/RVH	24.22
Passengers/RVM	26.67

Iowa City, IA: Downtown Shuttle

Iowa City has been running their Downtown Shuttle—including both the Northside Loop and Southside Loop—for over 20 years. The shuttle operates Monday through Friday from 7:15 AM to 6:15 PM, and terminates service during the summer months while the University of Iowa is not in session. The shuttle operates four trips per hour, with three trips per hour to the Southside and one trip per hour to the Northside.

Figure 9 | Iowa City Shuttle



Background and Purpose

The Iowa City Downtown Shuttle operates as a free service between the downtown area and University of Iowa. Because many University of Iowa students live off campus, the City saw the need to implement a shuttle that connected the University to housing. Thus, the bulk of the ridership for the shuttle is University of Iowa students, allowing the City to operate the shuttle only during the University school year (mid-August to mid-May). When the shuttle is not in operation during the summer months, Iowa City takes all shuttle-related schedules and route information offline in order to reduce confusion among riders.

Challenges, Successes, and Lessons Learned

The identified need for transportation between student housing downtown and the University of Iowa generates most of the ridership on the Downtown. The City of Iowa took over operating the route and made it free, because although the City does not accrue revenue, the route increases the City's overall transit system ridership.

Between 2015 and 2016, there was a steep decline in ridership for both the Southside and Northside routes. The Southside route fell from 179,000 to 112,000 annual boardings and the Northside route from 4,000 to 2,000. However, ridership has begun to increase since then, although only slightly for the Southside route (see Figures 10 and 11 below).

Figure 10 | Annual Southside Shuttle Ridership 2007-2017

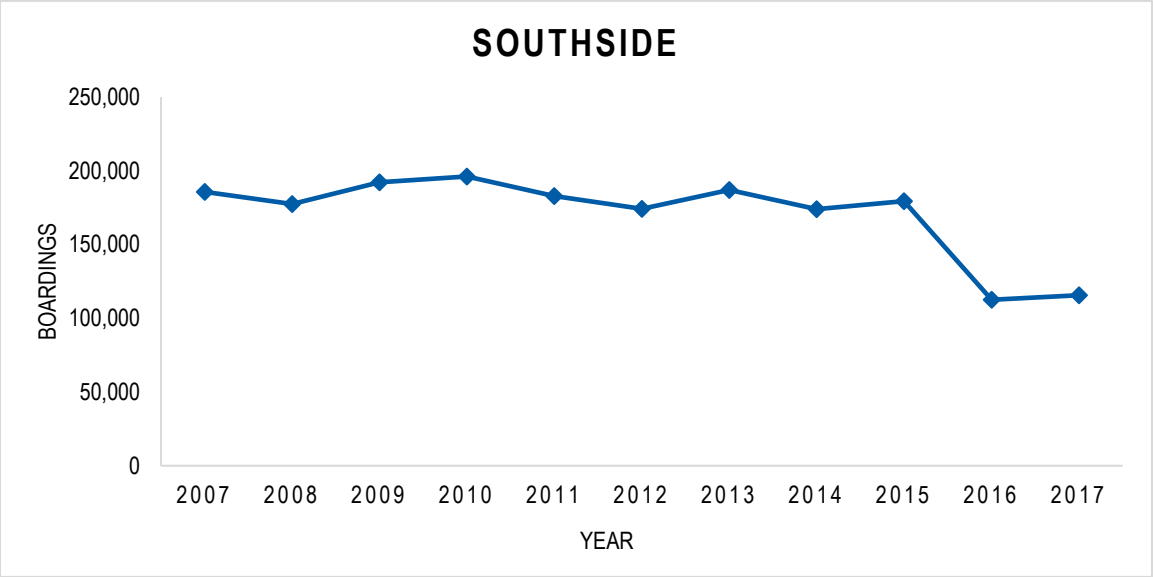
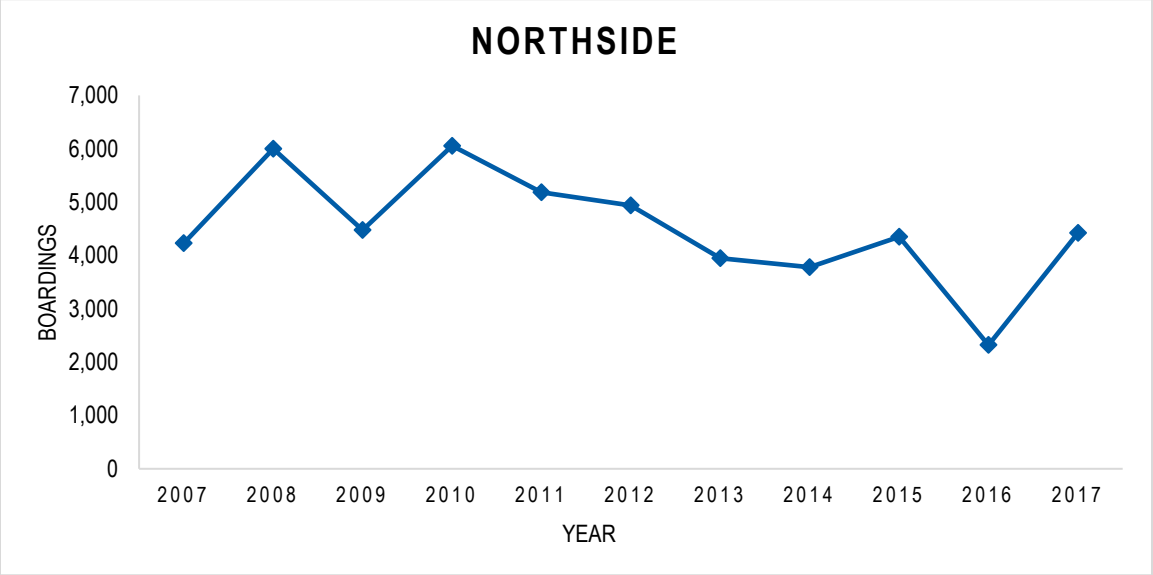


Figure 11 | Annual Northside Shuttle Ridership 2007-2017



Economic Impact

Because the University of Iowa is enveloped by the city, it would be hard to distinguish economic activity as a result of the route. The route alights passengers across from the main downtown retail area, but other than that, no economic impact has been measured.

Figure 12 | Operating, Performance, and Funding Characteristics of Downtown Shuttle in Iowa City, IA

Operating Characteristics	
Service Design	Shuttle
Major Transit Hub/Stop Served	Court Street Transportation Center (weekdays only)
Running Time (Round Trip)	15 minutes
Number of Stops (Round Trip)	Northside: 15 Southside: 35
Fare (One-way)	Free
Discounted Fares/Passes	N/A
Cost of Transfers	N/A
Service Span (weekdays)	7:15 AM – 6:15 PM
Service Span (weekends)	N/A
Frequency (weekdays)	15 minutes
Peak	N/A
Frequency (weekends)	N/A

Funding, Costs, and Operations	
Start-up Capital Costs	N/A (20+ years ago)
Annual Operating Costs	$83/hour; $215,800 annually at 10 hours a day
Operating Funding Sources:	Part of regular route network.
Local	
State	
Federal	
Private/Other	
Manager	City of Iowa City
Operator	City of Iowa City
Performance	
Annual Ridership	Northside: 4,275 Southside: 115,595
Annual Vehicle Revenue Hours (RVH)	N/A
Annual Vehicle Revenue Miles (RVM)	14,791 total
Operating Cost/Passenger	$1.81
Passengers/RVH	N/A
Passengers/RVM	8.1

Duluth, MN: Port Town Trolley

The Port Town Trolley provides service between the destinations of Canal Park, Bayfront, the HART District, and downtown Duluth during the summer months, from June 1st to Labor Day. It operates seven days a week, every 20 minutes from 11:30 AM to 7 PM, and every 30 minutes from 7 PM to 11 PM. On Sundays and Labor Day, it only operates until 10:30 PM. The trolley is a bi-directional loop with just under 30 stops.

Figure 13 | Port Town Trolley Route

Background and Purpose

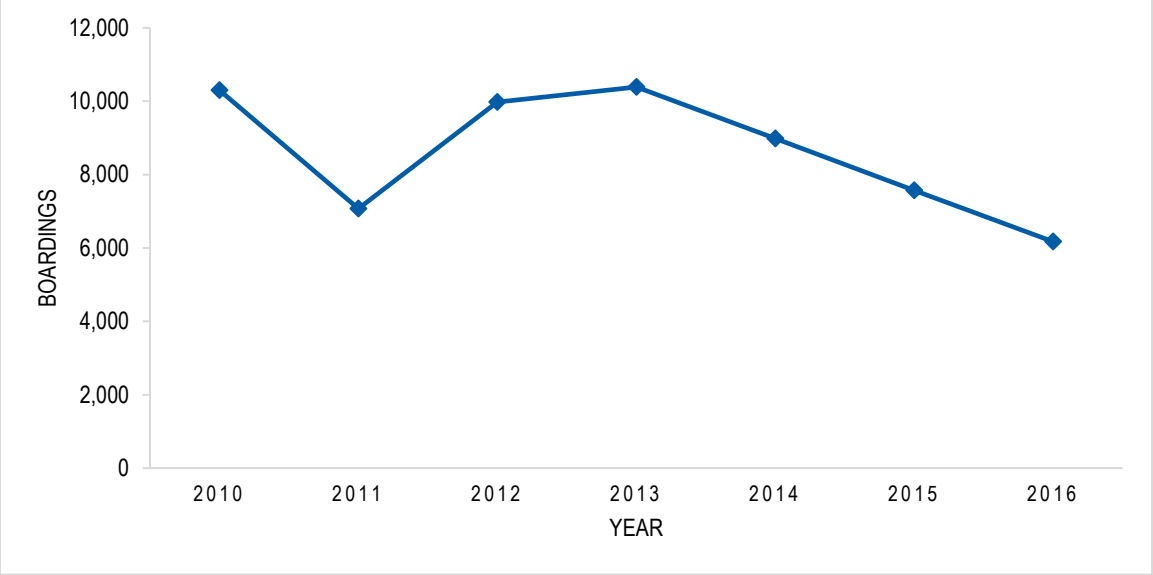
The Port Town Trolley was put into place as an option to expedite movement between downtown Duluth and the Canal area with aims to reduce congestion. It is primarily targeted towards tourists as a way to avoid driving in the downtown area during the summer season. In Duluth Transit's 2008-2009 Vision Update, the route was recommended as a way to expand on the already-existing trolley to include the hospital area and more of Downtown Duluth. This new circulator would aim to target commuters and downtown shoppers, and expanded to include the HART District of Lake Avenue. Additionally, DTA has revised the route several times, including a two-mile stretch north of downtown that was introduced back into operation for the 2017 season. The route has been crucial in that it relieves traffic and parking shortages near the waterfront during the heavy-tourist months.

Challenges, Successes, and Lessons Learned

The main users of the Port Town Trolley are summer tourists looking for rides along the waterfront, downtown, and through the Canal Park area. Because of this, DTA has learned that on-time performance is a critical aspect to making sure tourists who are not familiar with the transit system are able to ride easily. Duluth ridership has been decreasing since 2013, as shown in Figure 14.

As the City continues to work on efforts to make the downtown area as car-free as possible and encourage an increase in Trolley ridership, the $0.50 fee for the trolley had been under consideration for elimination. As of August 2017, the trolley now operates for free, encouraging its use for transportation to Canal Park.

Figure 14 | Annual Duluth Ridership 2010-2016



Economic Impact

The DTA does not specifically track economic impact of the trolley route, however, they know that the route provides crucial transportation to tourists and adds to the Duluth experience, which invites people into the downtown area, without explicit economic considerations.

Figure 15 | Operating, Performance, and Funding Characteristics of the Port Town Trolley in Duluth, MN

Operating Characteristics	
Service Design	Shuttle
Major Transit Hub/Stop Served	Duluth Transportation Center
Running Time (Round Trip)	40 minutes
Number of Stops (Round Trip)	25-28
Fare (One-way)	Free
Discounted Fares/Passes	
Cost of Transfers	N/A
Service Span (weekdays)	11:30 AM – 11 PM
Service Span (weekends)	Saturday: 11:30 AM – 11 PM Sunday: 11:30 AM – 10:30 PM
Frequency (weekdays)	20 minutes 11:30 AM – 7 PM 30 minutes 7 PM – 11 PM
Peak	N/A
Frequency (weekends)	20 minutes 11:30 AM – 7 PM 30 minutes 7 PM – 11 PM

Funding, Costs, and Operations	
Start-up Capital Costs	$600,000
Annual Operating Costs	$160,000
Operating Funding Sources:	This breakdown is of the entire DTA system:
Local	Fares (19%), Subscription funding from businesses who directly benefit from the route, 20% match to State grant
State	62% - General operating grant from State of Minnesota
Federal	9.2%
Private/Other	10%
Manager	Duluth Transit Authority
Operator	Duluth Transit Authority
Performance	
Annual Ridership	6,172
Annual Vehicle Revenue Hours (RVH)	1,780
Annual Vehicle Revenue Miles (RVM)	12,478
Operating Cost/Passenger	$25.29
Passengers/RVH	3.47
Passengers/RVM	0.49

Quad Cities, IA-IL: The Loop

Running since 2010, The Loop was a seasonal riverfront circulator that served the downtown areas of Bettendorf, Davenport, Moline, Rock Island, and the Village of East Davenport. After the 2015 season, the Bi-State Regional Commission reported it lacked the funding to continue the shuttle service, and it was discontinued. The Loop was a long 14-mile route, taking about one hour per round trip, with a cost of $1 per ride.

The route operated 6 PM through 3:30 AM with headways of every 30 minutes. In 2013, the annual ridership was just over 32,000. In Figure 16, The Loop is symbolized in light blue, serving the downtown of the four cities.

Background and Purpose

The purpose of The Loop was to provide affordable late-night transportation between the Quad Cities downtown entertainment districts and destinations on weekend evenings. It was designed to complement the other fixed-route bus services in the area operated by Bettendorf Transit, Davenport Citibus, and MetroLINK.

Figure 16 | The Loop

Challenges, Successes, and Lessons Learned

The City of Bettendorf secured a $1.4 million grant from the Iowa Clean Air Attainment Program that lasted the intended three years, providing late-night transportation Thursday through Sunday year round. Collaboration with the City of Davenport and MetroLINK allowed the leftover funds to stretch so The Loop could continue running for an additional two seasons with limited service May through October, on Friday and Saturday nights only. In addition to lack of funds to continue the service, increased construction, delays, and closures along the I-74 Bridge, part of The Loop's route, would have significantly impacted the shuttle. Brian Schmidt of Bettendorf Public Works, reported that this was yet another reason that the cities felt it was best

to discontinue The Loop. City officials believe that the arrival of Transportation Network Companies like Uber have offset the late-night riders that would be using The Loop today.[3]

The Loop additionally had an infamous reputation as the "drunk bus" that had infrequent headways (1-2 times per hour) and a long route. There were not many opportunities to shorten the route because of limited locations for crossing the Mississippi River and the necessity to serve Downtown Bettendorf. The route had very low ridership and only served downtown areas, requiring the majority of users to drive to and from the bus stops, which negated the attraction of the service.

Economic Impact

No indication was discovered that economic impact was a goal or consequence of this service.

[3] http://qctimes.com/traffic/loop-bus-service-discontinued/article_74efd8f4-8fdc-5bdd-9f8b-a7c865c27238.html

Figure 17 | Operating, Performance, and Funding Characteristics of The Loop in the Quad Cities of Indiana and Illinois

Operating Characteristics	
Service Design	Circulator
Major Transit Hub/Stop Served	Riverfront
Running Time (Round Trip)	60 minutes
Number of Stops (Round Trip)	
Fare (One-way)	$1
Discounted Fares/Passes	Yes
Cost of Transfers	N/A
Service Span (weekdays)	Thursday & Friday: 6 PM – 3:30 AM
Service Span (weekends)	Saturday: 6 PM – 3:30 PM
Frequency (weekdays)	30 minutes
Peak	N/A
Frequency (weekends)	30 minutes

Funding, Costs, and Operations	
Start-up Capital Costs	
Annual Operating Costs	First year: $187,772; last year: $80,899
Operating Funding Sources:	
Local	
State	Three-year Iowa Clean Air Attainment Program grant of $1.4m, secured by Bettendorf, Davenport, and MetroLINK
Federal	
Private/Other	
Manager	City of Bettendorf
Operator	MetroLINK
Performance	
Annual Ridership	First year 35,000; last year 12,000
Annual Vehicle Revenue Hours (RVH)	First year 3600; last year 900 (est.)
Annual Vehicle Revenue Miles (RVM)	First year 72,000; last year 18,000 (est.)
Operating Cost/Passenger	First year est. $5.35; last year $6.75 (est.)
Passengers/RVH	First year 10; last year 13 (est.)
Passengers/RVM	First year 0.5; last year 0.65 (est.)

Columbus, OH: CBUS

The Central Ohio Transit Authority (COTA) CBUS is a free downtown circulator that runs a 5.4 mile route through the city's Brewery District, Downtown, and to the Short North Arts District. The service began in 2014 and operates every 10-15 minutes seven days a week. It operates Monday through Thursday 7 AM – 9 PM, Fridays 7 AM – 12 AM, Saturday 9 AM – 12 AM, and Sunday 10:30 AM – 6 PM. The CBUS does not run on New Year's Day, Thanksgiving, and Christmas Day.

Background and Purpose

After a previous circulator ceased service in 2004, COTA saw a need to transport not only employees, residents, and the rest of the community downtown, but also visitors and the tourist community. The CBUS has a "phenomenal" reputation, having more than 4,000 daily riders at its peak during festival season (June-August), with between 2,000 and 3,000 on an average weekday.[4] The CBUS has "become a favorite mode of transportation among Downtown employees, residents, and visitors."[5]

Challenges, Successes, Lessons Learned

The CBUS evolved out of a partnership with downtown employers and developers who were able to provide a portion of the operating costs. The city reached out to businesses before launching the CBUS and designed promotional materials so that businesses could help promote the route. Sherry Bump, Marketing Director at COTA, explained that the business community engagement has been extremely positive, with hotels providing maps to guests that fit in their room card sleeves.[6] After the CBUS' first year, several downtown

Figure 18 | CBUS Route Map

[4] http://shortnorth.org/cbus-success-short-north/

[5] https://columbus.org/2016/03/cotas-cbus-celebrates-one-million-trips/

[6] Ibid.

organizations continued to donate upwards of $130,000 to keep the bus free for another year.

According to a 2016 rider survey distributed by COTA, 27% of riders learned about the CBUS from a vehicle or sign and 23% learned about the bus through an advertisement, equating to 50% of riders having learned about the CBUS through some form of marketing.

Because the circulator is fare-free, drivers are asked to press a button on the farebox to record ridership. Additionally, Automated Passenger Counters (APCs) are installed on each bus but do not work as well with the wider door opening used on the CBUS. COTA has found that there have been large discrepancies between automated ridership counts and manual ridership counts and is working with the APC vendor to address this.

Many riders of the CBUS are not part of COTA's everyday market for local bus service. As a relatively new route, implemented in 2014, the CBUS has given residents and commuters a fresh understanding of what riding the bus can be like, largely due to the route's simplicity and ease of use. Columbus' High Street is a main corridor and conveniently serves all of the active areas of the downtown. The CBUS has attracted riders that may not normally use COTA because the free fare removes a barrier to entry for unfamiliar riders. Additionally, many riders walk the route and "hop on the bus" if one happens to pass. More than 60% of riders said that they ride the CBUS because it is convenient and free, and 64% of riders do not ride other COTA routes.

Columbus has historically low transit ridership compared to its peer Midwestern cities, but the start of CBUS has worked to expand this market. Many commuters have begun to park to the north and south of the downtown area for free, taking the CBUS to their final destination. In fact, 82% of riders use the CBUS every weekday for work or a work-related function.

Economic Impact

Since CBUS, CoGo Bike Share, Car2GO, Uber, and Lyft were all introduced in Columbus around the same time, it would be hard to isolate any economic impact of the CBUS specifically. Furthermore, the corridor that CBUS serves was already a "hot corridor." However, developers have noticed there is less of a need to include a large amount of parking within new developments. A currently proposed residential project in the heart of downtown that has over 100 housing units is only proposing 30-40 parking spaces, as they are predicting many of the residents may not have cars at all.

Figure 19 | Operating, Performance, and Funding Characteristics of CBUS in Columbus, OH

Operating Characteristics	
Service Design	Circulator
Major Transit Hub/Stop Served	High & Broad
Running Time (Round Trip)	35 minutes
Number of Stops (Round Trip)	31
Fare (One-way)	Free
Discounted Fares/Passes	N/A
Cost of Transfers	N/A
Service Span (weekdays)	Monday – Thursday: 7 AM – 9PM Friday: 7 AM – 12 AM
Service Span (weekends)	Saturday: 9 AM – 12 AM Sunday: 10:30 AM – 6 PM
Frequency (weekdays)	10-15 minutes
Peak	N/A
Frequency (weekends)	10-15 minutes

Funding, Costs, and Operations	
Start-up Capital Costs	
Annual Operating Costs	$1.2 million
Operating Funding Sources:	
Local	0.5% sale & use tax collected in Franklin, Delaware, Fairfield, Licking, & Union Counties makes up 85% of COTA's operating revenue; fare box = 15%. Downtown organizations/ businesses also fund ~10%.
State	Mid-Ohio Regional Planning Commission $500k per year for 4 years
Federal	
Private/Other	
Manager	COTA
Operator	COTA
Performance	
Annual Ridership	500,000
Annual Vehicle Revenue Hours (RVH)	17,000 (est.)
Annual Vehicle Revenue Miles (RVM)	170,000 (est.)
Operating Cost/Passenger	$2.40
Passengers/RVH	29 (est.)
Passengers/RVM	2.9 (est.)

Olympia, WA: Dash 101

The free Dash shuttle runs through Olympia's downtown core from the Capitol Campus to the Farmers Market. It operates 7 AM to 6 PM Monday through Friday, with headways of 15 minutes. Dash also operates on a slightly shorter route on Saturdays April through August from 9 AM to 5 PM with headways of 10 minutes. During a legislative session (January to March/April), the Dash operates 9 AM – 5 PM with 12 minute headways.

Figure 20 | Olympia Dash Route

Background and Purpose

The Dash service was implemented as a way to provide transportation between major downtown areas to reduce the need for cars, as parking is limited downtown. The route targets employees, visitors, shoppers, and the general public. It is useful for employees in the Capitol area, especially during the lunch hour.

Challenges, Successes, and Lessons Learned

Because parking is limited in the Capitol area and Downtown, Olympia provides the free shuttle service between the Farmers Market and Capitol Campus. The flyers marketing the route explicitly state that parking is limited in these areas, and encourage everyone to choose to ride the Dash, including Capitol workers during lunchtime. The route previously included a branch that lead to the Capitol Courthouse; however, it was removed from the route due to low ridership.

As shown in Figure 21, Ridership has been on a general decline for the Dash Shuttle since 2011.

Economic Impact

The Dash route was not implemented with the primary goal of economic development. It was implemented because of a parking shortage, thus there are no indicators in place to measure the economic impact that the route has on Downtown Olympia.

Figure 21 | Dash Shuttle Ridership, 2010-2016

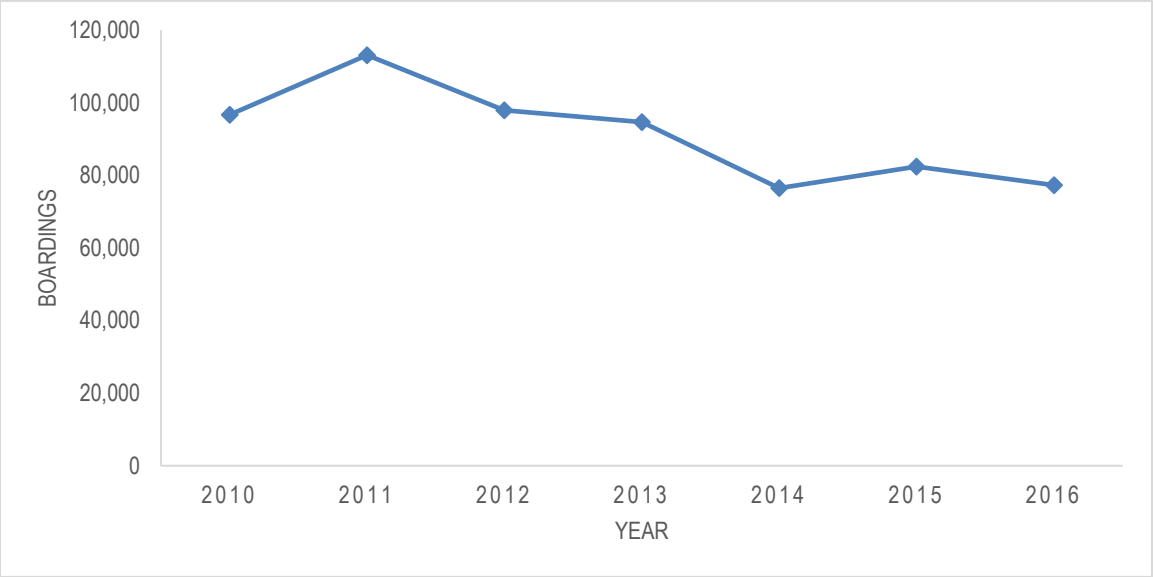


Figure 22 | Operating, Performance, and Funding Characteristics of Dash Route 101 in Olympia, WA

Operating Characteristics	
Service Design	Shuttle
Major Transit Hub/Stop Served	Farmers Market, Capitol Campus, Olympia Transit Center
Running Time (Round Trip)	25 minutes
Number of Stops (Round Trip)	32
Fare (One-way)	Free
Discounted Fares/Passes	N/A
Cost of Transfers	N/A
Service Span (weekdays)	7 AM – 6 PM Legislative season: 9 Am – 5 PM
Service Span (weekends)	9 AM – 5 PM (April to August)
Frequency (weekdays)	15 minutes
Peak	12 minutes during legislative season
Frequency (weekends)	10 minutes (April to August)

Funding, Costs, and Operations	
Start-up Capital Costs	
Annual Operating Costs	Estimated $800k/year
Operating Funding Sources:	
Local	Transit agency
State	Pursuing $375k/year from State
Federal	Via Transit agency
Private/Other	
Manager	Intercity Transit
Operator	Intercity Transit
Performance	
Annual Ridership	82,425
Annual Vehicle Revenue Hours (RVH)	6,560
Annual Vehicle Revenue Miles (RVM)	53,015
Operating Cost/Passenger	
Passengers/RVH	12.6
Passengers/RVM	1.55

Key Findings

Funding, Operations, and Service Key Findings

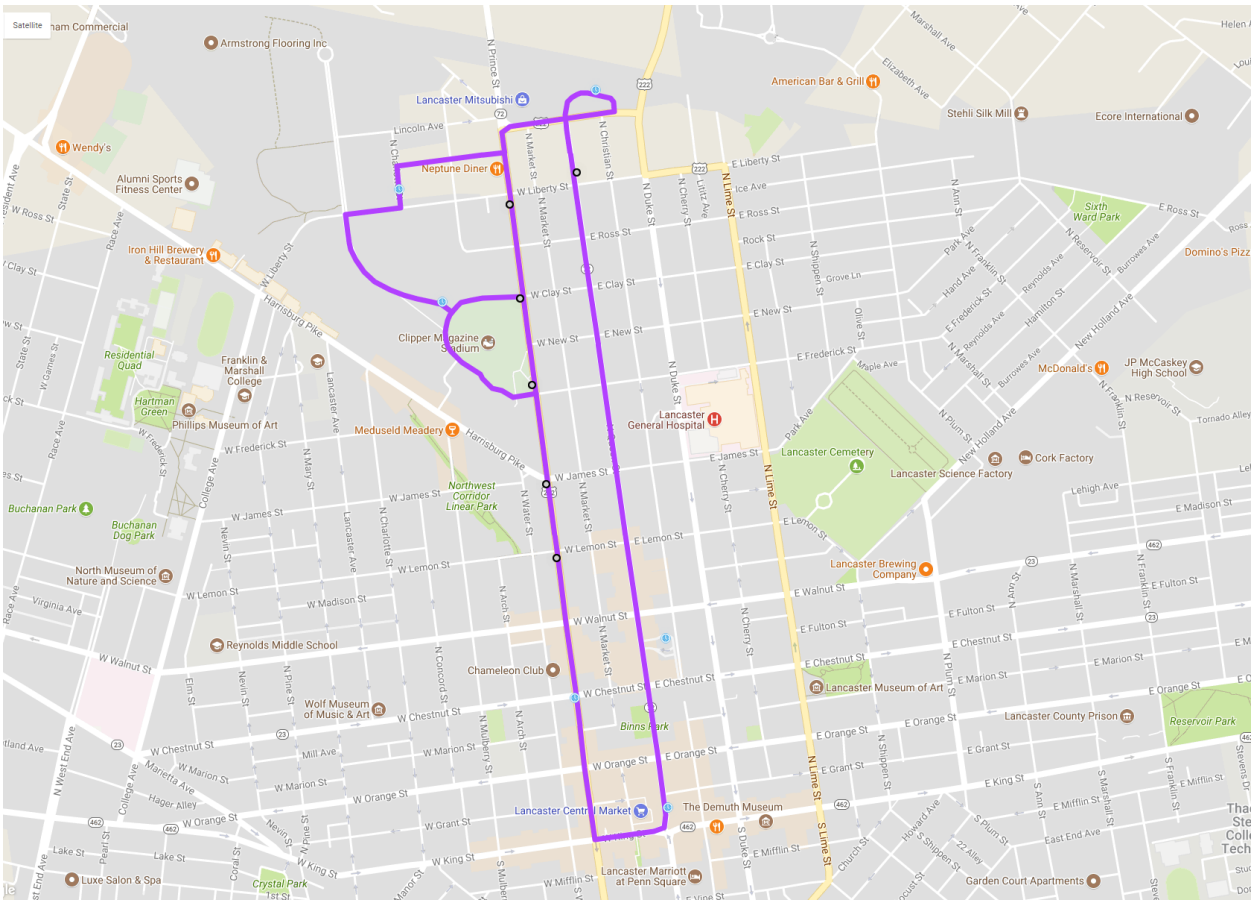
- Columbia, Missouri includes their downtown circulator permanently in the budget of the transit system, which is funded in part by a city-collected transportation half-cent sales tax. Finding a way to include the circulator in the transit budget permanently, instead of through a several-year grant, may allow it to operate for more than just a few years.
- The Loop in Quad Cities developed a negative reputation because it only operated on weekend evenings and only served the downtown areas and entertainment districts, attracting riders who had been drinking.
- Many circulators are free, including Columbus' CBUS, Grand Rapids' DASH, Boulder's HOP, Iowa City's Downtown Shuttle, and as of recently, Duluth's Port Town Trolley. However, Columbia's circulator costs $1.50 per ride and these ridership fees amount to 26 percent of its total operating funding.
- Headways of 10-15 minutes is ideal, and those with longer headways (such as The Loop's 30-minute headways) may discourage use of the circulator.
- Downtown circulators should be tailored to serve not only residents and commuters, but also visitors, serving retail, entertainment, business, and residential areas if possible (for instance, CBUS).
- Circulators and shuttles can encourage new riders to use transit if they are intuitively designed and easy to use, making the bus more approachable and less intimidating for those who are not already familiar with transit.
- Free transfers to other routes encourages riders to use other services in the larger transit system. Serving the city's main transit hub/downtown hub will connect the circulator to as many other routes as possible.
- Many shuttles serve the purpose of transporting university students between off-campus housing downtown and a university campus. Free fares and frequent headways make this a reliable option, additionally reducing the need for students to have cars.
- Downtown circulators reduce the need for cars in the downtown area. If a downtown area has a parking shortage, a circulator can help reduce the need for parking, or provide transportation to remote lots.

Economic Development Findings

- With the exception of Duluth and Quad Cities, regional population and employment growth have been comparatively strong in the peer regions.
- Combined population and employment density in downtown Lancaster is most similar to that of Columbia, Missouri, and Olympia, Washington, according to the 2010 census.
- Specific measures of economic impact or activity as a result of downtown circulator operations have not been developed in the peer downtowns.
- Most communities indicated, qualitatively, that the downtown circulator has increased pedestrian activity and/or enhanced the overall experience for residents, workers, and visitors.
- In the case of Downtown Columbus, the circulator, in combination with other multi-modal transportation options, has minimized the demand for parking in new developments, which, in effect, will minimize development costs.

3 HISTORIC DOWNTOWN TROLLEY PROFILE

Figure 23 | Historic Downtown Trolley Alignment



Route Overview

Cities Served
Lancaster

Major Corridors Served
Queen Street, Prince Street

Major Activity Centers / Points of Interest
Queen Street Station, Amtrak/Greyhound Station, RRTA Clipper Magazine Stadium/Park-and-Ride, Central market, Penn Square, Convention Center, Liberty Place

Schedule Statistics

SERVICE DAY	SPAN OF SERVICE	FREQUENCY (MIN)	DAILY TRIPS (LOOP)
Monday-Friday	5:20 AM to 6:10 PM	20-30/—/—	22

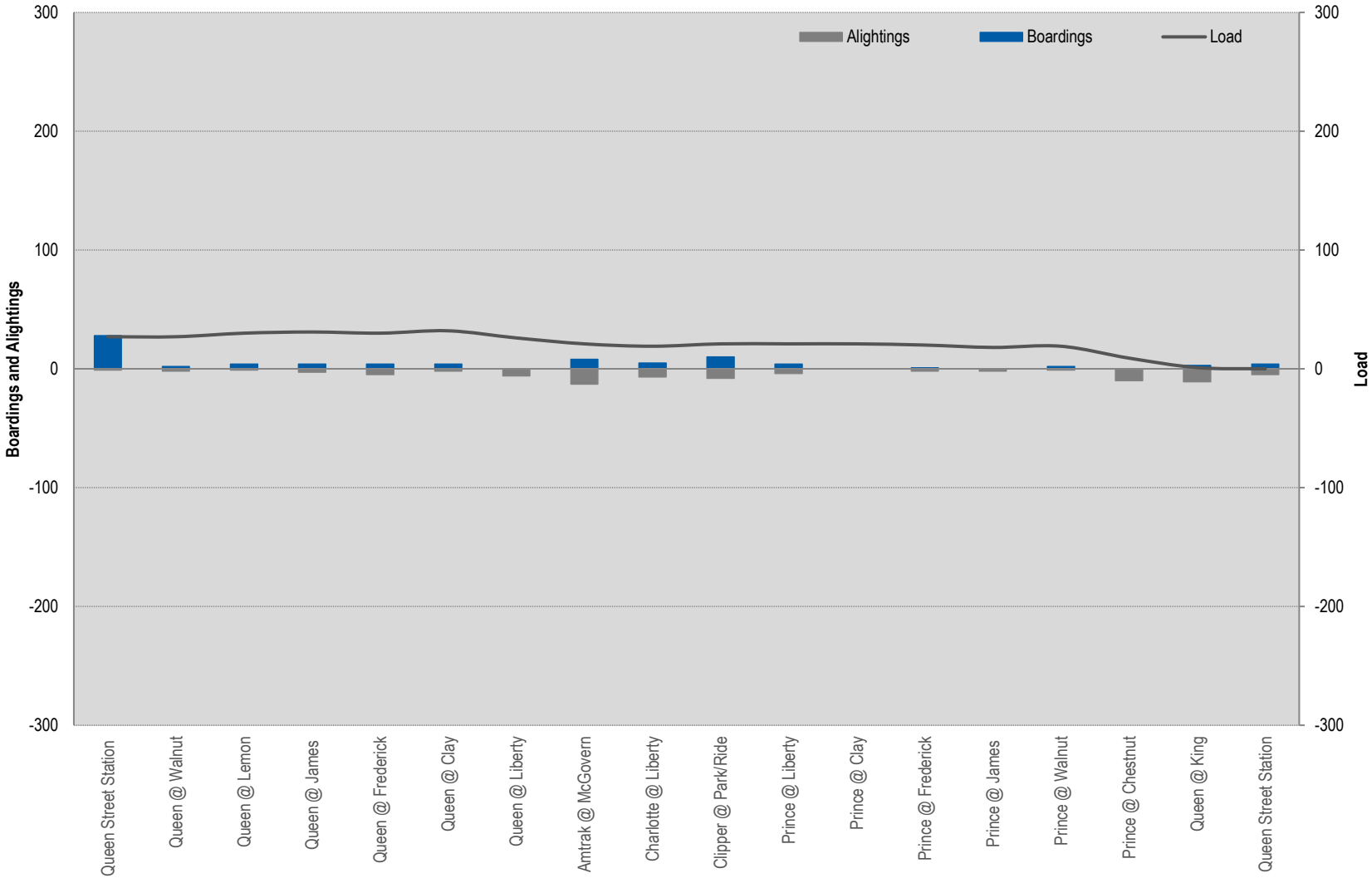
Peak frequencies are calculated for service that operates 6 AM – 9 AM and 3 PM – 6 PM. Midday service is 9 AM – 3 PM. Evening service is for service after 6 PM. Saturday and Sunday frequencies are shown as AM/PM.

Ridership by Stop

Highest Ridership Stops (10 or More Daily Boardings & Alightings)

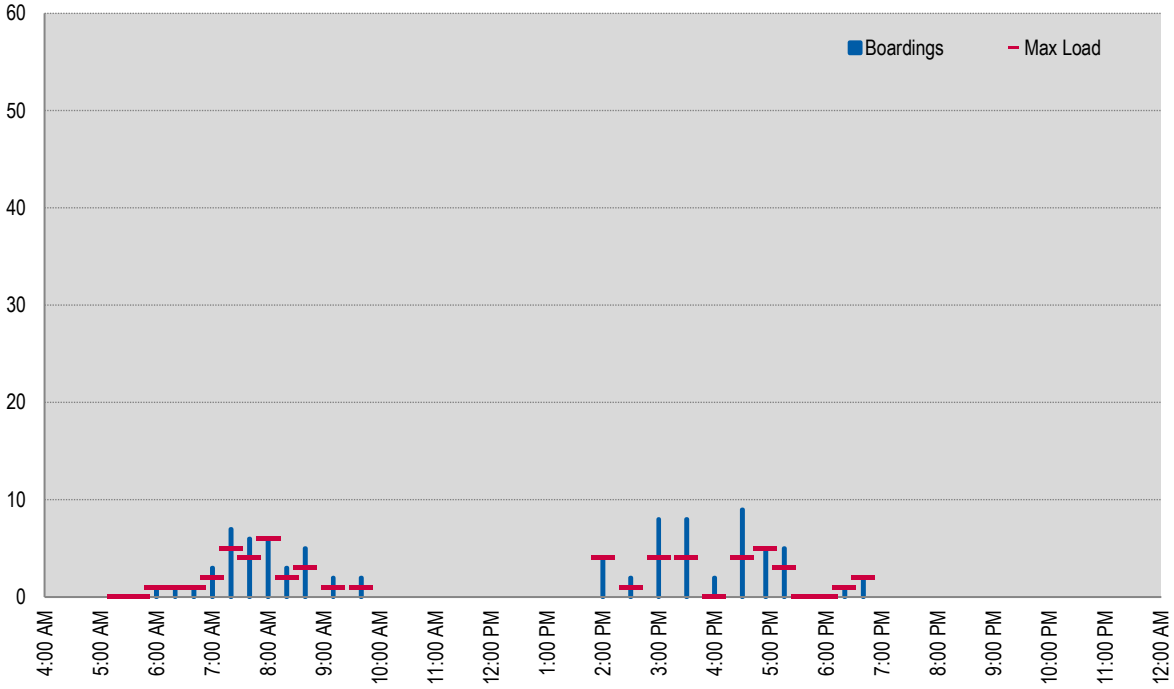
LOOP STOPS	LOOP ONs / OFFs
Queen Street Station	28/1
Amtrak @ McGovern	8/13
Clipper @ Park/Ride	10/8
Prince @ Chestnut	0/10
Queen @ King	3/11

Daily Ridership by Stop



Ridership by Trip

Daily Ridership by Trip



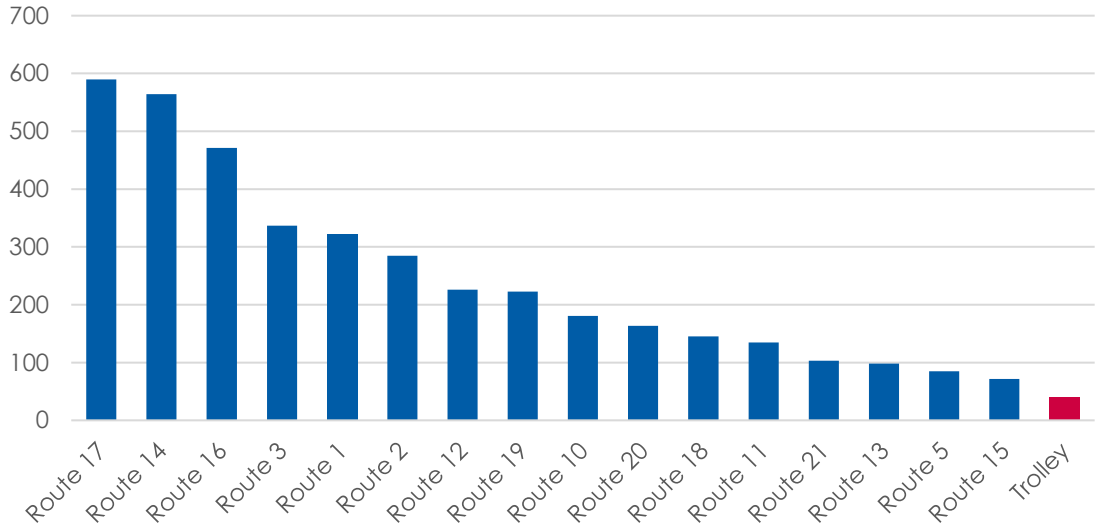
Service Performance

Productivity Statistics

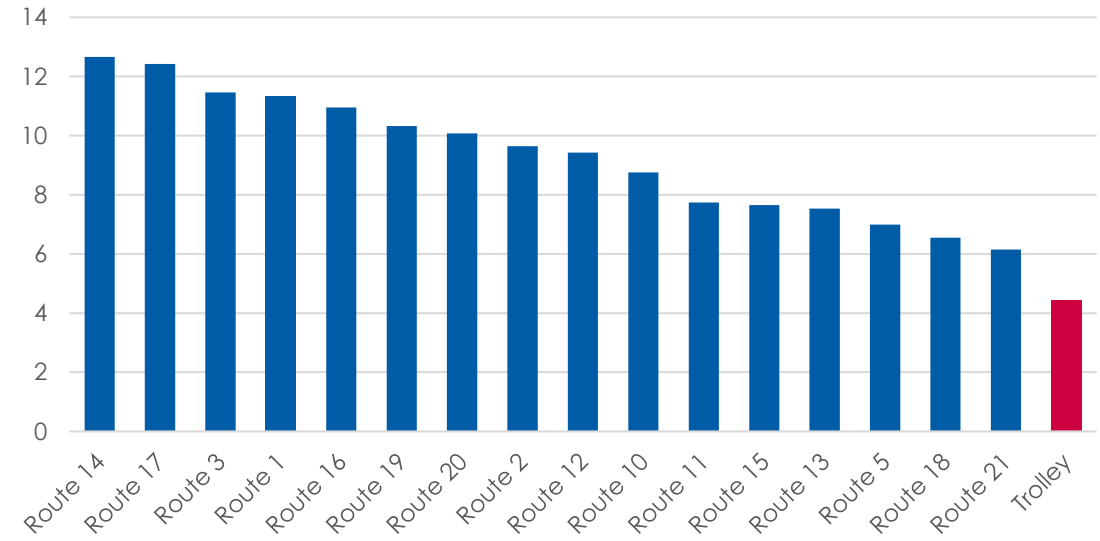
	DAILY AVERAGE
Average Daily Ridership	**83**
Pax/Revenue Hour	**9.3**
Red Rose Average	15.9
Pax/One-Way Trip	**3.8**
Red Rose Average	10.6
Pax/Revenue Mile	**1.3**
Red Rose Average	1.2

Note: Sunday service was not provided at time of ridership data collection.

Average Daily Ridership by Route



Average Daily Ridership per Revenue Hour by Route



4 POTENTIAL RECOMMENDATIONS

Both existing service performance and the best practices revealed in this peer review help to inform the following potential recommendations for Lancaster's Historic Downtown Trolley. In addition, local community input provided by the Lancaster Alliance also informed this evaluation. Potential opportunities for the Historic Downtown Trolley are listed below. Some suggestions may be contradictory, as there is more than one approach to evaluating and improving circulator service.

Figure 24 | Lancaster Historic Downtown Trolley

Discontinue Existing Trolley Service

Due to the trolley's very low ridership (it is the lowest ridership route in the RRTA system) and low productivity in an area already well-served by transit, the route could be discontinued without adversely affecting the mobility of riders. The route operates as a three-mile one-way loop through the most walkable areas of downtown Lancaster. The route also runs parallel with existing RRTA local and county routes that operate higher levels of service throughout the day, while the trolley operates during weekday peak hours only. As an alternative to the existing trolley service, the following service changes to existing routes can be made to serve the most important destinations visited by the trolley:

- Operate direct, bidirectional service between the Amtrak station and downtown Lancaster with a redesigned Route 5
- Direct passengers at the Amtrak station to utilize existing local service to provide the connection between Amtrak and downtown Lancaster

Conduct an In-Depth Alternatives Analysis

To better understand the extent to which a transit market exists for downtown circulator service, interested parties in Lancaster could conduct a detailed alternatives analysis. This study would develop possible alternatives to the existing service and identify a clear and consolidated transit market for the preferred alternative. Different characteristics such as land use, population, employment density, and socio-economic characteristics influence and shape the types of downtown transit service that will be successful.

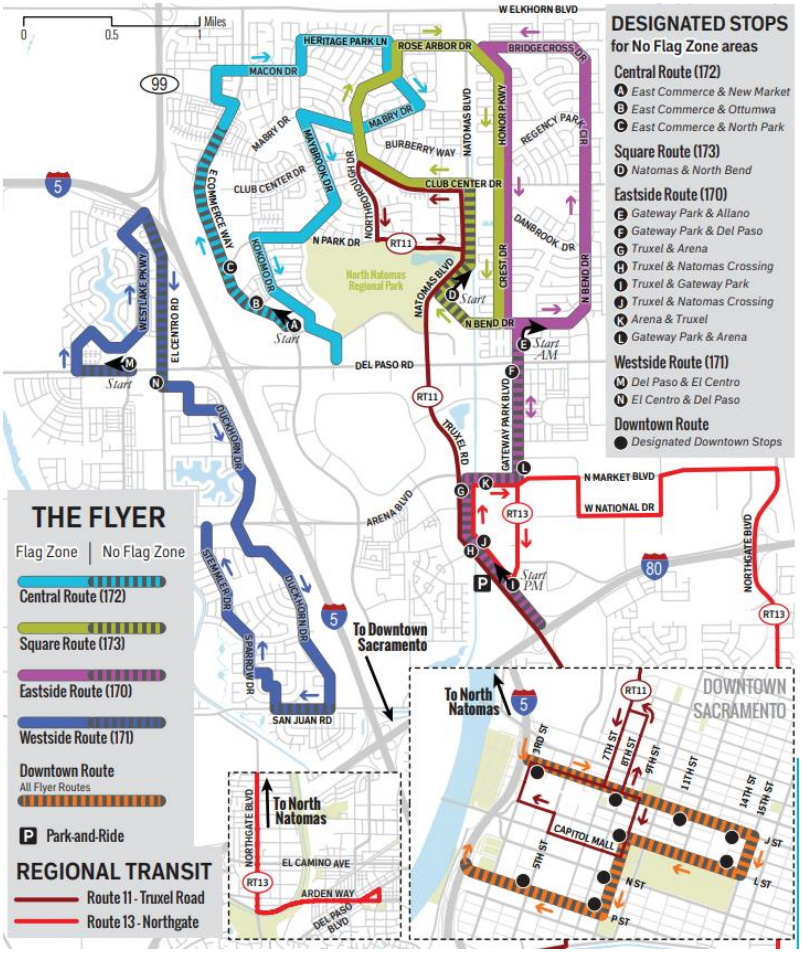
Moreover, a downtown circulator can be provided in many ways, but to be most effective, service must be matched to the appropriate markets (both for residents and visitors) and integrated into a strong overall transit network. An in-depth alternatives analysis will demonstrate different downtown circulator structures and how they would integrate into the overall Red Rose system. The final product would present several scenarios with recommendations for different alignments, frequencies, service spans, vehicle types, and budgets. These scenarios could be presented to the public for consideration.

Reorient Towards Serving Visitors

The trolley could be repurposed as a high-frequency service that is more oriented toward tourists and visitors. A circulator bus that operates often between Downtown Lancaster's most important visitor destinations would offer an accessible and reliable option for people to experience Lancaster. This service should be direct, easy to understand, and well-advertised. The following service, operations, and marketing opportunities can help to reorient the Downtown Trolley Service towards visitors:

- Focus service on visitor destinations (for example, more service along King Street and Orange Street to serve restaurants)
- Make fewer stops that are more focused on key destinations (e.g., Amtrak, shopping and dining corridors, parking lots) to provide a faster and more convenient trip
- Adjust schedule to begin service later in the day, and run during midday, evening, and weekend hours rather than just weekday peak commuting hours
- Discontinue service deviation to Liberty Place due to low ridership and to speed service
- Improve visual branding of service through custom branding, outreach materials (dedicated website and flyers), and a more legible schedule.

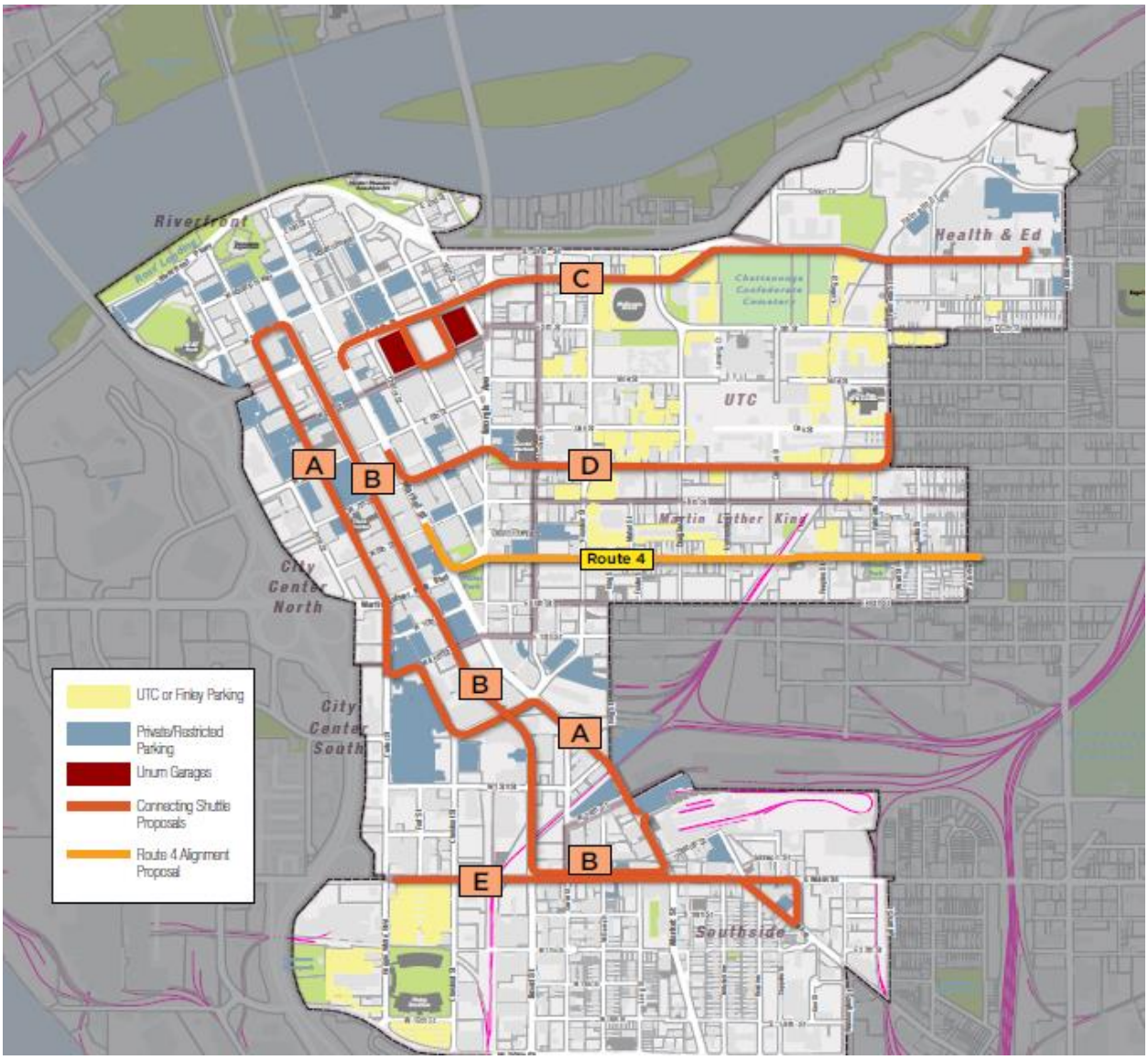
Figure 25 | The Sacramento Flyer Shuttle has easy to understand maps and schedules posted at stops



Reorient Towards Connecting Downtown with Satellite Parking Facilities

To address a perceived shortage in parking supply in downtown Lancaster, the trolley could be reconsidered to operate as a connector service between satellite parking facilities and downtown's activity centers and corridors. Operated as a park-and-ride service, the trolley would operate as a simple corridor shuttle focused on one or two satellite parking supply areas outside of the downtown core and connect them to the main activity centers of downtown Lancaster. Like all downtown circulators, a parking-oriented shuttle would require wayfinding, branding, high frequency and reliability, and easy to understand routes and schedules in order to be successful.

Figure 26 | Proposed parking shuttles in Downtown Chattanooga, TN connect activity centers with limited parking supply to underused satellite parking lots



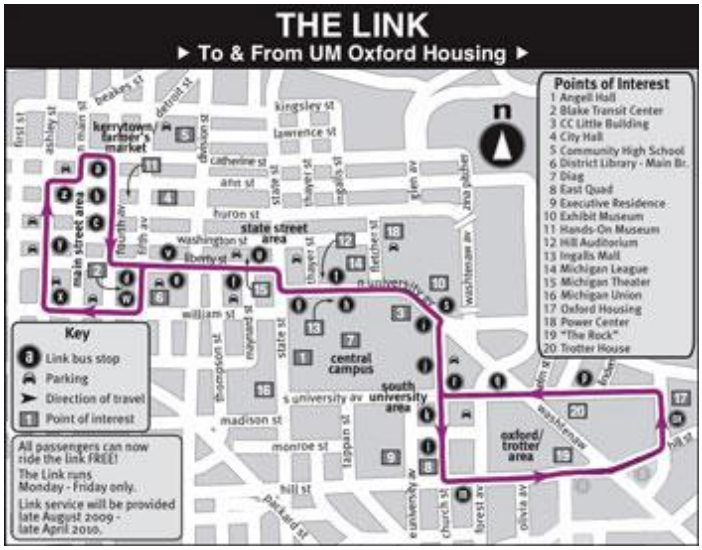
Pursue Public-Private Partnership Opportunities

Funding for an improved Downtown Trolley could be provided through sponsorships and strategic partnerships with local organizations and institutions. Public-private partnerships (PPP) have been developed to support existing circulator service in several peer cities, including Boulder, CO; Grand Rapids, MI; Ann Arbor, MI; and Emeryville, CA. These partnerships could include a transfer of ownership and operation of the service to a private entity, who has more flexibility than RRTA to operate service, increase marketing, adjust fares, or target different transit markets.

Peer cities partner with a number of private groups including business improvement districts, universities, and development authorities. Examples of downtown circulator service supported by such partnerships are described below. Two additional non-peer examples are included as well. Ann Arbor, MI, was not selected for peer review as their service has been discontinued. Emeryville, CA, was not identified as a comparable peer due to differences in population and metropolitan area characteristics. However, both services do provide an example of potential public-private partnership opportunities.

- The Hop circulator in Boulder, CO provides free and high-frequency service through Boulder's downtown through a funding partnership with the University of Colorado, a major activity center served by the circulator. Although most funding is provided by the city and the regional transit district, the University provides a significant funding contribution that allows the service to operate fare-free.
- The DASH service in downtown Grand Rapids, MI, which consists of three fare-free and very frequent routes, is funded in part by the Downtown Development Authority (DDA), a funding tool administered by the Downtown Grand Rapids Inc. business improvement district. The DDA contributes about half of the operating funds necessary to run the DASH North route serving downtown Grand Rapids' major retail and dining area.
- Ann Arbor, MI operated its Link Circulator from 2005 to 2009 between Amtrak and Downtown Ann Arbor through a PPP with the city's Downtown Development Authority (DDA). The DDA supported the circulator for the purpose of bringing visitors from the Amtrak station to support the town's businesses and restaurants, as well as provide service near the University of Michigan's main campus. This service was discontinued in 2009 due to a decline in funding support from local business partners, who felt the service was disproportionately focused on student ridership.

Figure 27| The Link Circulator Ann Arbor, MI



- Emeryville, CA's Emery Go-Round shuttle is a fare-free shuttle service, open to all Emeryville residents, shoppers, visitors and employees of Emeryville businesses. The service is primarily funded by commercial property owners in the citywide transportation Property and Business Improvement District (PBID). Emery Go-Round is a service of the Emeryville Transportation Management Association, a non-profit organization whose primary objective is to increase access and mobility to, from, and within Emeryville while alleviating congestion through operation of the shuttle program.

Figure 28 | Emery Go-Round's Branded Shuttle Bus