



# North Team Service Analysis & State Highway 119 BRT Longmont Local Transit Network Feeder Plan



Final Report  
February 2020

PREPARED BY:



## Study Purpose

The Denver Regional Transportation District (RTD) tasked Transportation Management & Design, Inc. (TMD) to complete the North Team Service Analysis and State Highway 119 BRT Feeder Plan consistent with the SH 119 BRT Study. TMD performed the analysis with input from RTD's Service Planning North Team and the City of Longmont. The study takes a broad network-based approach to identify areas for optimizing local bus service and creating a system in Longmont to effectively connect with the proposed BRT route between Longmont and Boulder. Along with feeding the BRT service, revamped local bus service in Longmont will allow for more efficient service on a grid-like network and connect more directly with growing areas of the city not currently well served by the four local routes. The findings of this analysis will support the broader State Highway 119 BRT Corridor Project goals and create the foundation for cost-effective and efficient improvements for local and regional mobility to support the pending enhancement of the SH119 corridor.

## Project Context

The RTD Service Area encompasses a 2,342-square-mile area with a population of 3.03 million and includes the City and County of Denver and portions or all of seven surrounding counties. Within the northern portion of the service area are the Boulder County cities of Boulder and Longmont. Improving mobility between the two cities and reducing congestion is a key issue for RTD, local governments, and other stakeholders.

RTD, in collaboration with northwest area elected officials and other stakeholders, is currently conducting the State Highway 119 BRT study. Following the 2013 Northwest Area Mobility Study, a BRT route connecting the cities of Boulder and Longmont was identified as a top priority for the corridor. The BRT plan, which would enhance current regional bus service between Boulder and Longmont, would serve as a cost-effective mode for improving regional mobility and easing congestion in the shorter term, while funding identification and planning for the long-term B Line extension to Boulder and Longmont is being continued.

Existing regional bus service between Longmont and Boulder is currently provided by the BOLT and J.<sup>1</sup> The BOLT currently operates seven days a week with all-day service in both directions. The J operates only during peak periods on weekdays, unidirectional, with five trips to Boulder in the morning and four trips to Longmont in the afternoon. The current spans and frequencies of both services are shown in *Table 1*. These two routes currently make 55 to 60 stops in each direction. One objective for the BRT service is to reduce the travel time between the two cities by making fewer stops.

---

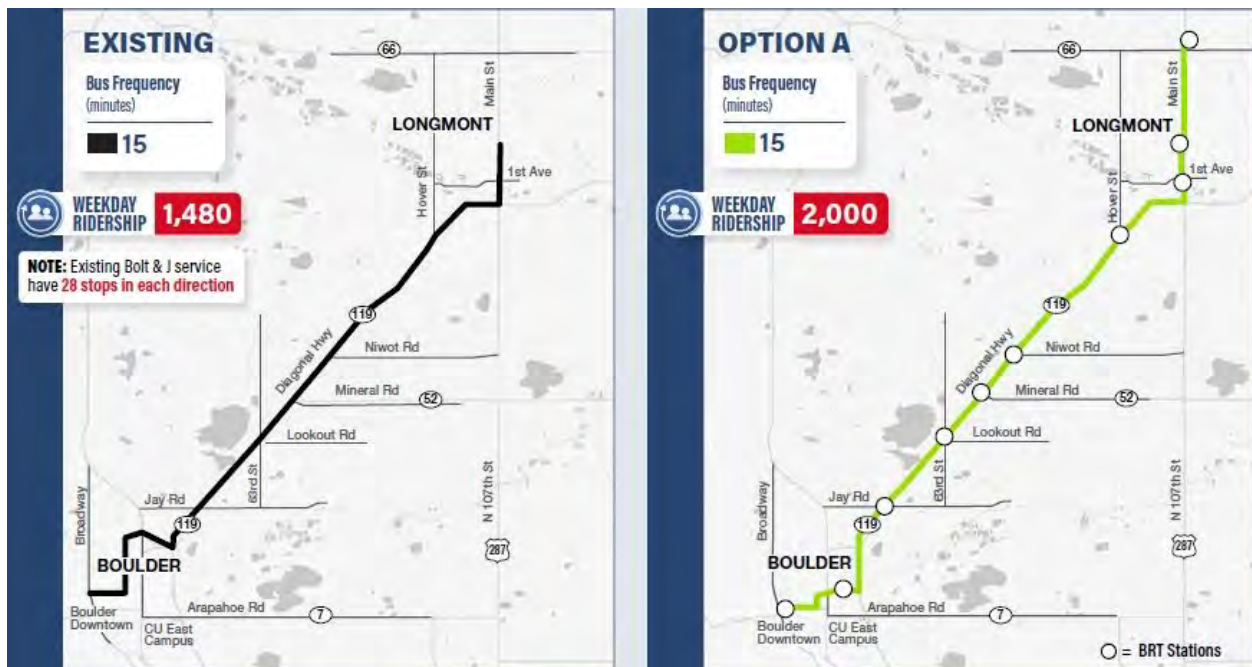
<sup>1</sup> Regional service is also provided between Longmont and Downtown Denver, on the LD and LX routes.

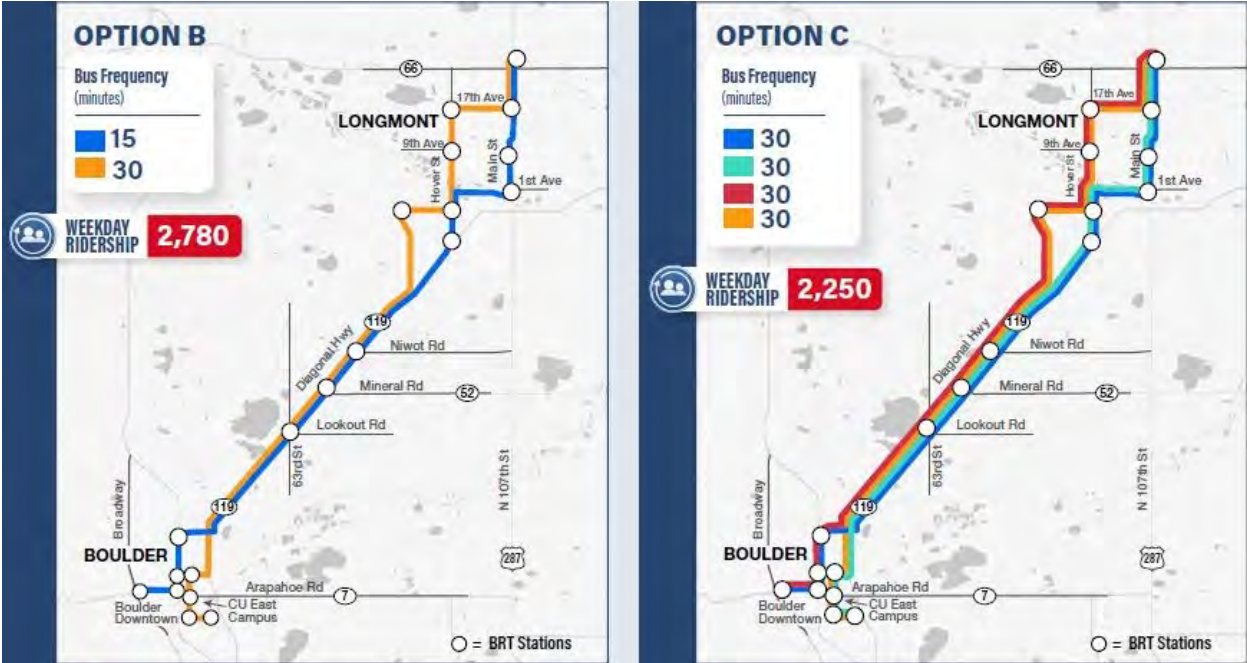
Table 1. Current SH 119 Bus Service

Current SH 119 Bus Service (Bolt & J)							
Route	Direction	Weekday		Saturday		Sunday/Holiday	
		Span	Freq.	Span	Freq.	Span	Freq.
Bolt	Northbound	5:22 AM - 12:22 AM	15-60	7:37 AM - 12:37 AM	60	6:37 AM - 11:37 PM	60
	Southbound	4:49 AM - 11:23 PM	15-60	6:22 AM - 11:22 PM	54-66	7:21 AM - 11:26 PM	59-65
J	Northbound	3:10 PM - 5:30 PM	30-60	--	--	--	--
	Southbound	5:27 AM - 8:41 AM	20-60	--	--	--	--

Three alternatives for SH 119 BRT service are currently under consideration. (See Figure 1.) Option B has been identified by RTD staff as the current preferred alternative and most likely to be implemented. Option B’s blue route shown below would operate with a 15-minute frequency in both directions all day. The orange route would initially supplement the blue route and operate only in the AM and PM peak periods with a 30-minute frequency. In a subsequent phase, the orange route would eventually be increased to a 15-minute peak period frequency. Implementation of the full SH 119 BRT service is dependent upon future funding sources. The BRT service enhancements may be introduced in phases, as funding becomes available. BOLT and J service, with the same branding, can be adjusted to mimic BRT-like service with fewer stops, but without enhanced stop amenities and higher frequencies.

Figure 1. Existing and Proposed SH 119 Bus Options





# Market Assessment

Longmont is a city of more than 96,000 people, located almost 30 miles north of Downtown Denver and about 14 miles northeast of Boulder. The city’s population grew just under 9 percent between 2010 and 2017, which is slightly slower than Boulder County as a whole and below the statewide growth rate of 11 percent in this time period. According to 2017 U.S. Census Bureau estimates, Longmont is home to just over 50,600 workers aged 16 and older, 75 percent of whom drive alone to work. Slightly over 10 percent carpool and around 4 percent commute via public transit. This latter figure drops to just under 2 percent for those who also work in Longmont. Less than 2 percent of workers do not have access to a vehicle. Among transit commuters, 20 percent do not have a vehicle. This suggests that vehicle access may be a significant factor for why RTD’s current customers in Longmont choose transit for work trips.

Nearly 27 percent of Longmont’s working residents are also employed in the city, according to the most recent U.S. Census Bureau Longitudinal Employer-Household Dynamics (LEHD) data from 2015. Among those employed outside the city, more than a quarter work in the City of Boulder. More than twice as many Longmont residents work in Boulder than in Denver. Along the SH 119 corridor, commuting to work is concentrated in the Longmont to Boulder direction and the reverse direction for the homebound trip. Almost 7,700 Longmont residents work in Boulder, according to the 2015 data, but fewer than 1,350 Boulder residents work in Longmont.

Longmont is home to several key educational facilities, employment centers, and commercial areas. The St. Vrain Valley School District includes Longmont and is the seventh largest in the state, with more than 32,000 enrolled students. The Boulder County Campus of Front Range Community College is located in Longmont and has more than 4,900 students. Key activity centers or commercial areas include the Main Street corridor, also known as the Downtown Longmont Creative District, and the Village at the Peaks shopping center on the southwest side of the

city next to SH 119. Two Walmart Supercenters, at the city's far northern and eastern ends, are also major destinations.

## Current Local Network Overview

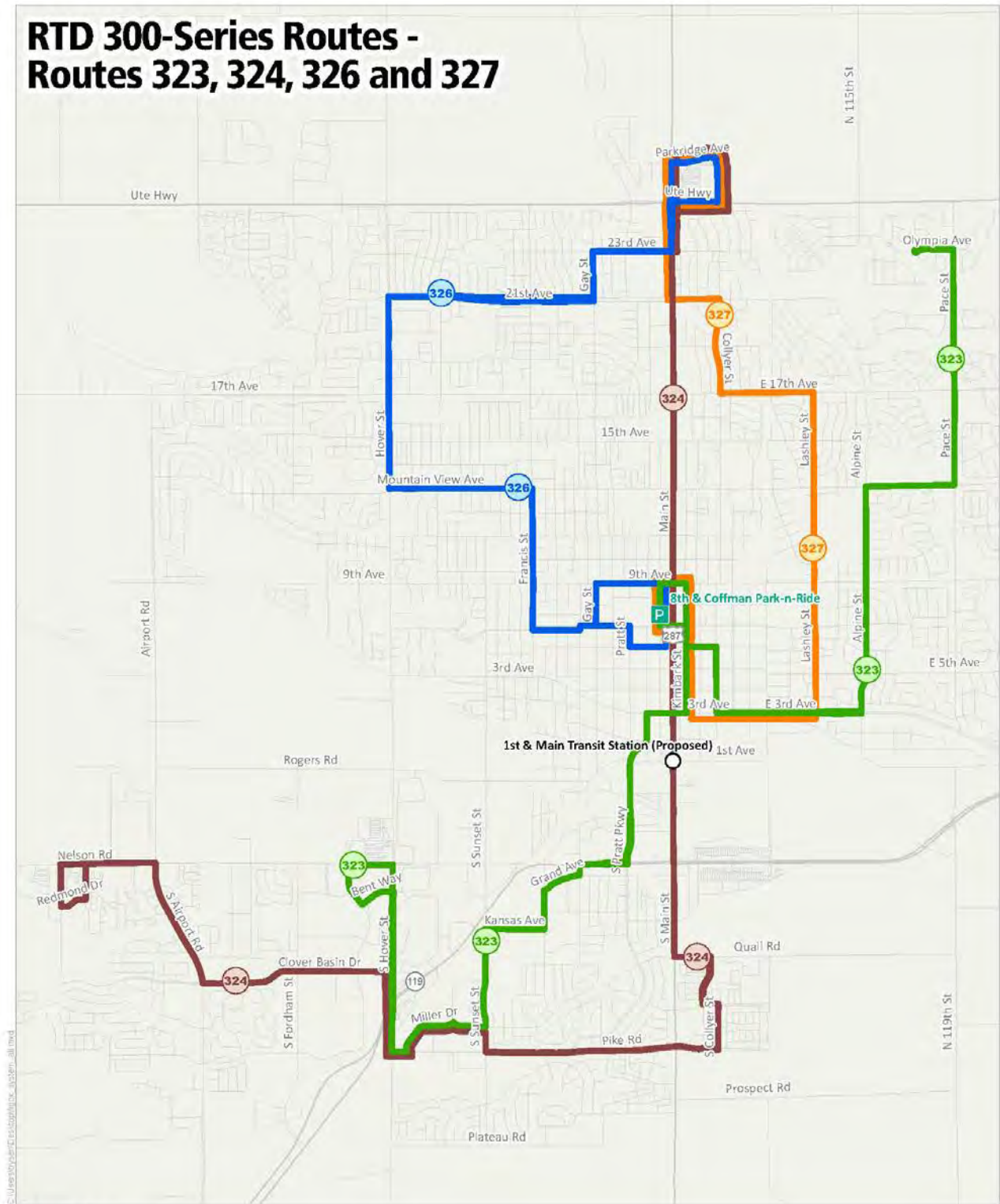
The City of Longmont is currently served by four local RTD routes: 323, 324, 326, and 327. These routes are operated by the private carrier First Transit under contract to RTD. The routes and their service statistics are presented in more detail, along with recommendations for future service, in later sections.

- Route 323 connects northeast Longmont with the commercial areas and Community College in the southwest, via downtown.
- Route 324 traverses the Main Street corridor downtown and connects with the southern and southwestern portions of the city.
- Route 326 covers a portion of northwest Longmont.
- Route 327 covers eastern Longmont, but closer to downtown than Route 323.

All four routes currently stop at the 8<sup>th</sup> Avenue & Coffman Street Park-n-Ride, one block west of Main Street. Along with the local routes, transfers are available at this location to regional BOLT, J, LD, LX, and FLEX (operated by TransFort, City of Fort Collins) buses, special SportsRide buses to sporting events, and FlexRide service. The stop's four gates are located on the west side of the street adjacent to the parking lot and a bicycle storage locker, and buses currently only stop in the southbound direction on Coffman Street. The stop is a terminal for both routes 326 and 327. Routes 323 and 324 make intermediary stops at the Park-n-Ride in both directions, requiring northbound vehicles to make a loop on to 9<sup>th</sup> Avenue and then Coffman Street. Bi-directional boarding at this location which would eliminate the current northbound loop path is planned to complement the future BRT service, when funding becomes available.



Figure 2. Existing Local Bus Routes in Longmont (2019)



**Longmont ‘Fare Buy-Up’ Program**

Rides on all four of the 300-series routes are currently being bought up and thus paid for by City of Longmont, under the “Ride Free Longmont” program. This so-called “fare buy-up” began midway through 2014 with a collaboration between the City of Longmont, Boulder County, and RTD. Today the program is paid for by the City of Longmont to RTD, through its 0.75-percent Street Fund sales and use tax and is funded through December 31, 2019. Customers who board any of the local routes can also obtain a free transfer, giving them access to a discounted ride on one of the regional routes.

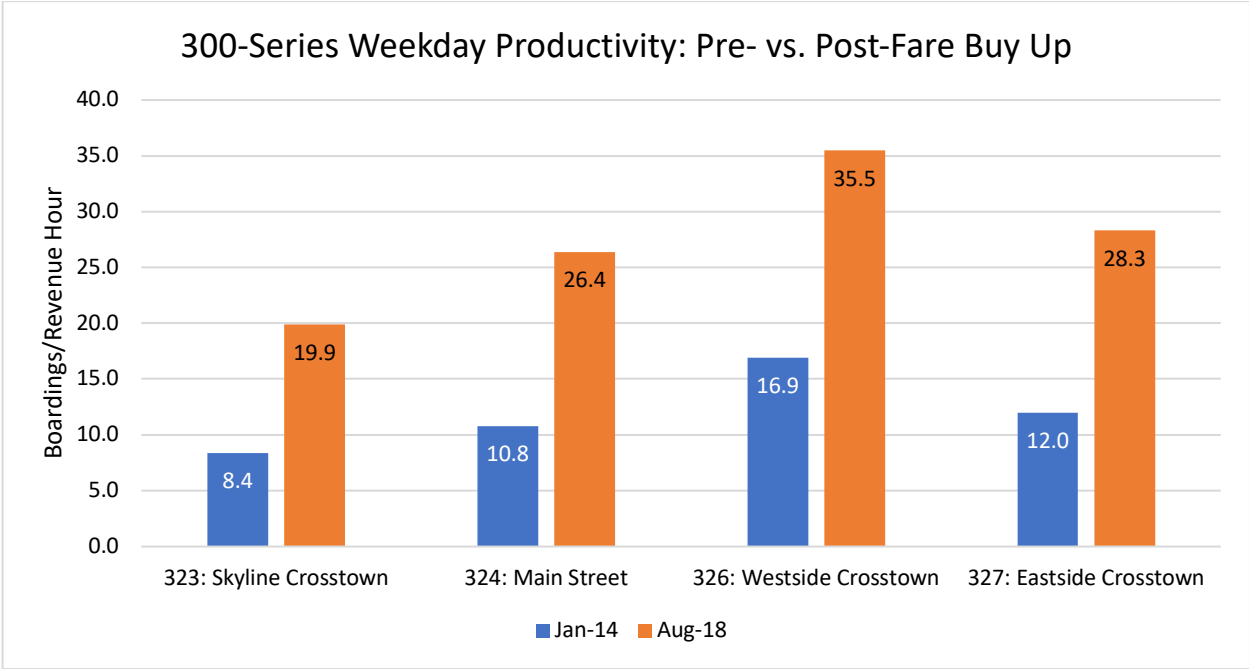
Average weekday boardings have increased for all four routes between early -2014 and present. The all-day ridership figures shown in *Table 2* are based on ridership data from average weekdays in the January 2014 and August 2018 RTD Runboards. Boardings have increased 164.6 percent across all four routes, with the greatest increase on Route 324, at 211.9 percent, and Route 326, at 140.8 percent. RTD’s research indicates that the vast majority of the increased boardings came from existing riders using the routes more often, rather than new customers.

*Table 2. 300-Series Weekday Ridership: Pre- vs. Post-Buy-Up*

<b>All-Day Boardings for Average Weekday</b>			
<b>Route</b>	<b>Jan 2014</b>	<b>Aug 2018</b>	<b>Percent Increase</b>
323: Skyline Crosstown	192	410	113.4%
324: Main Street	365	1,139	211.9%
326: Westside Crosstown	147	354	140.8%
327: Eastside Crosstown	113	261	130.0%
<b>Total</b>	<b>818</b>	<b>2,164</b>	<b>164.6%</b>

Productivity, as measured in boardings per revenue hour, has also increased on all four routes since the Ride Free Longmont program began. The productivity figures shown in *Figure 3* are based on ridership data from average weekdays in the January 2014 and August 2018 RTD Runboards. Productivity increased 136.9 percent on Route 323, 144.4 percent on Route 324, 110.1 percent on Route 326, and 135.8 percent on Route 327.

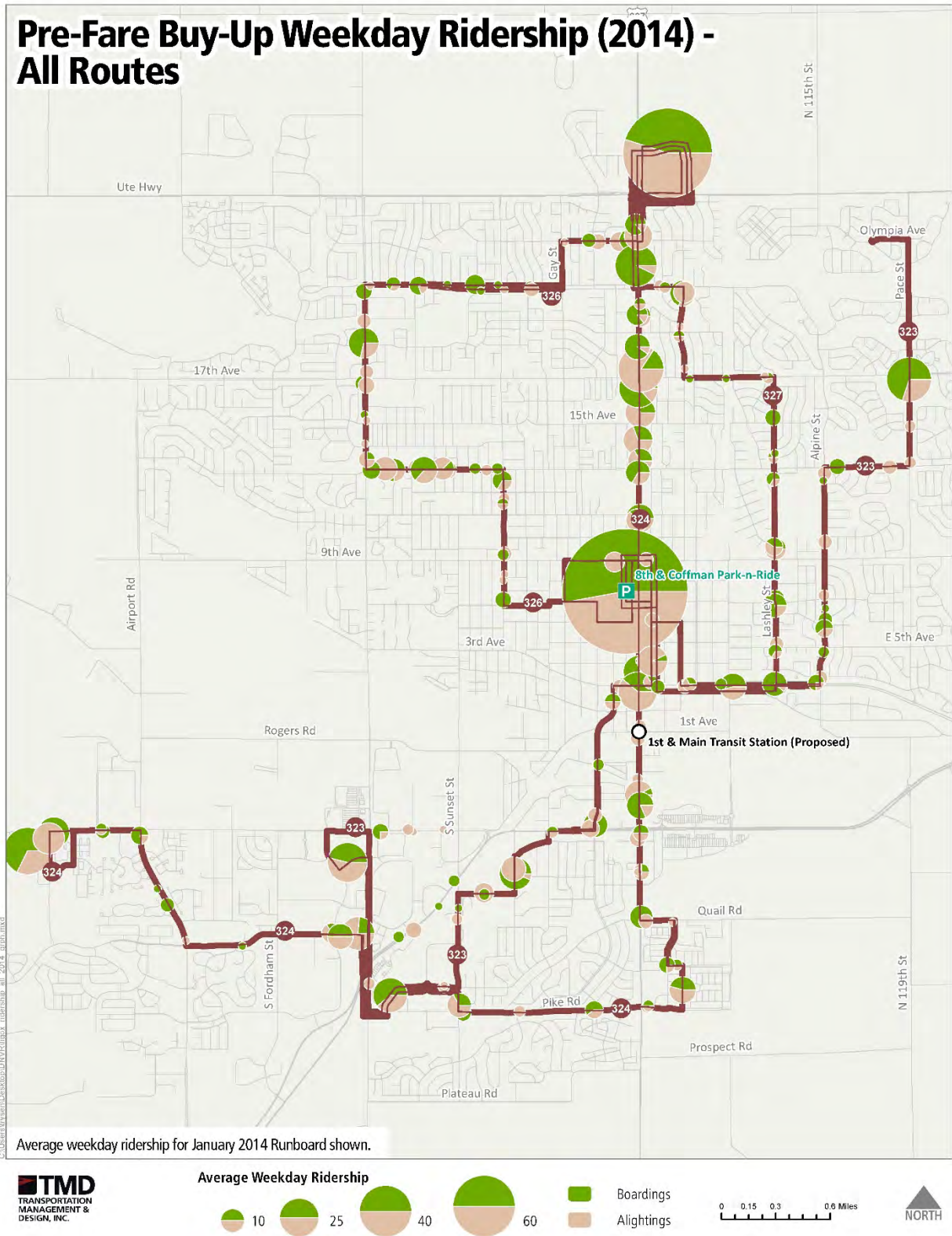
Figure 3. 300-Series Weekday Productivity: Pre- vs. Post-Buy-Up



Across the four routes, the greatest number of boardings and alightings occur at the 8<sup>th</sup> & Coffman Park-n-Ride, followed by the northern terminal for Routes 324, 326, and 327 near the Main Street and Highway 66 Walmart. (See Figure 4 below.) Ridership is also strong at stops along the northern Main Street corridor, at Front Range Community College, and at the southern end of Route 324.



Figure 4. 2015 Weekday Ridership



Boulder County conducted online resident surveys in late 2015, followed up with a City of Longmont survey in early 2018 to gauge the efficacy of the program in increasing ridership and receive customer feedback. The 2015 survey results show an increase in transit usage and residents reported more travel freedom and flexibility with the Ride Free Program. However, the 2015 survey received fewer than 110 responses, limiting its usefulness. The early 2018 survey, which received more than 1,100 responses, revealed that many residents do not know about the Free Ride program and the majority (53 percent) have never ridden one of the free buses. Approximately 19 percent report riding at least several times per month. A common request among respondents was for more service, especially over a longer service span. Several residents specifically requested service to the growing east side along East Ken Pratt Boulevard (State Highway 119). Service to this area is presented below, in the Route 323 section.

It is unclear whether the fare buy-up will still be in effect when the SH 119 BRT service goes in to operation. Service recommendations for the local routes presented in this report were informed by pre-buy-up ridership data and assume a full-fare scenario.

The elasticity of demand is lower for transit-dependent riders and for peak period and commute trips than for discretionary riders and non-peak travelers. Recent research on transit fare elasticity shows that there is no single value across situations,

but a two to five percent decline in ridership can be expected in the first year after a 10 percent fare hike, with a six to nine percent decline expected in the five- to ten-year range. At a minimum, it may limit the number of new or discretionary riders choosing these local routes.

On the other hand, 15 percent of respondents to the 2018 survey said they would be more likely to ride more often if the riding environment on the buses and/or at stops was safer. In open-ended questions, close to five percent of respondents specifically identified concerns about homeless passengers and/or illicit drugs on buses as a reason for not riding. Re-introduction of fares could reduce the perception of a high number of homeless riders and drug activity on the 300-series routes.

### Longmont FlexRide

In addition to the local bus routes, Longmont is served by one of RTD’s 22 FlexRide service areas. Customers within the approximately 48-square-mile area can reserve a shared ride on one of the FlexRide buses online or via phone, between one hour and two weeks before pickup. Fares are the same as for RTD local buses (exclusive of the current fare free Longmont routes), with the same 50 percent discount for seniors over 65, Medicare

**Future Fare Policy**  
If funding for the full Free Ride Program is not extended into 2019 or beyond, effort should be made to secure partial funding and incrementally increase the fare to regular RTD levels over time in one or more steps to temper the adverse ridership impact associated with a significantly larger initial fare increase. The shift from a free transit ride to a full-fare scenario in a single phase would seem extreme; it is likely that ridership would decline if prices rebound to the full fare, especially without a transitional partial subsidy. If current riders are subject to an overnight transition from a free ride to the full \$3.00 fare, there is the potential to erase ridership gains made over the past three years. Alternatively, if partial funding is secured, free rides could remain in place for longer for those customers already eligible for RTD’s 50 percent discount.

recipients, and customers with disabilities and 70 percent discount for passengers 19 and younger. Service is available from 5:30 a.m. to 7:00 p.m. on weekdays; and 9:00 a.m. to 6:00 p.m. on Saturdays, Sundays, and holidays. As previously mentioned, customers who obtain a transfer from one of the four local routes can use the fare as credit towards a regional route pass.

In September 2018, a total of 3,610 passengers rode the Longmont FlexRide, or an average of around 120 per day. Weekday productivity was 12.85 boardings per hour, while Saturday and Sunday productivity was around three boardings per hour. More than 92 percent of passengers rode on weekdays. A quarter of all weekday passengers were picked up in the 3 p.m. hour and almost 15 percent were picked up in the 7 a.m. hour. For all weekday trips with a pickup time before 11 a.m., 49 percent of destinations were schools. This indicates that the service is frequently used by school-aged students for before- and after-school transportation.

Around 10 to 12 percent of weekday morning trips ended at a retail establishment, but it is not clear if the passengers were shoppers or retail employees. The September ridership data does indicate some commuters use FlexRide, with nearly 10 percent of weekday morning trips ending at offices or other non-retail businesses. The predominant source of weekday morning ridership is students and customers making trips to medical offices, civic institutions, or senior facilities.

## **1<sup>st</sup> Avenue & Main Street Station**

As part of the SH 119 BRT vision and future Northwest Corridor rail service, a new station is planned for the 1<sup>st</sup> Avenue and Main Street area. The long-term project would entail bus transfer areas which would include the shorter term proposed regional BRT services, a rail platform for the long term proposed Longmont rail service, a parking structure, an extension of Coffman Street, and mixed-use transit-oriented development on several parcels. Construction is underway, on an adjacent parcel to the northeast, with a residential and retail development slated to open in fall 2019. RTD is currently conducting an infrastructure master plan for the station area. It is estimated to be completed some time in 2020.

With the future of regional and intermodal transit in Longmont oriented around the 1<sup>st</sup> & Main location, the service concepts outlined below focus on serving this area. With the exception of the northern half of the current Route 327 the other routes would be extended to, or place emphasis on, the 1<sup>st</sup> & Main stop and not terminate at the 8<sup>th</sup> & Coffman Park-n-Ride.



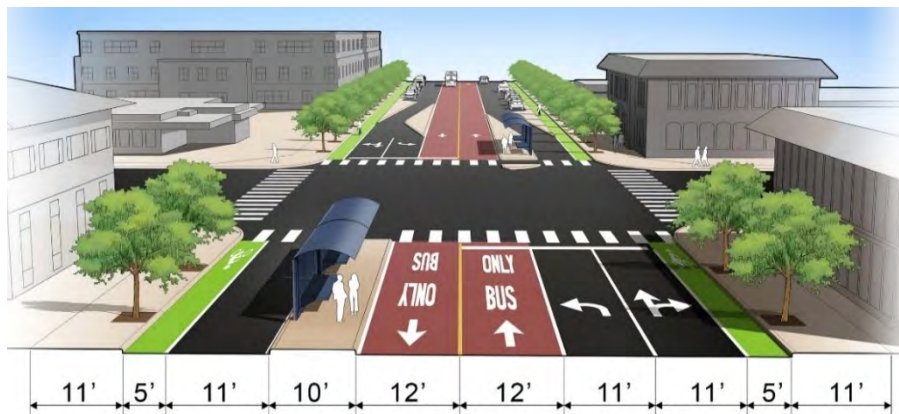
Figure 5. 1<sup>st</sup> & Main Transit Station Area Concept



### Planned Coffman Street Enhancements

The Denver Regional Council of Governments (DRCOG) recently awarded funding for the \$6.9 million Coffman Street Busway project. This transit improvement, developed as part of the City of Longmont’s *2018 Enhanced Multi-Use Corridor Plan*, will feature a dedicated, center-lane busway on Coffman Street between 1<sup>st</sup> and 9<sup>th</sup> Avenues in Longmont. It is presumed that this project will also include the planned northbound gates for the 8<sup>th</sup> & Coffman Park-n-Ride, which will facilitate bi-directional boarding and eliminate any current loop travel paths for northbound routes. Coffman will be re-envisioned to include a dedicated bus lane, plus a buffered bike lane, in each direction. While the project is intended to be a component of the necessary transit improvements for future SH 119 BRT service, along with street improvements in Boulder and upgrades to the Diagonal Highway, it will also improve local bus service in Longmont through reduced travel time. The City of Longmont will be managing the project, with final design beginning in 2020 and construction starting in 2023.

Figure 6. Coffman Street Busway Rendering (Northbound view from Coffman St./5<sup>th</sup> Ave.)



# RTD Local Bus Routes in Longmont

The following sections discuss each of the four local bus routes in Longmont. The existing route profile and ridership analysis is presented for each route, followed by service recommendations for an improved network in Longmont. These recommendations will both optimize intra-city mobility and provide an effective feeder system for the future SH 119 BRT. Potential ridership impacts discussed below are based on January 2014 Runboard average weekday ridership data, from before implementation of the Ride Free Longmont fare buy-up program.

## Route 323 – Skyline Crosstown

### Existing Service

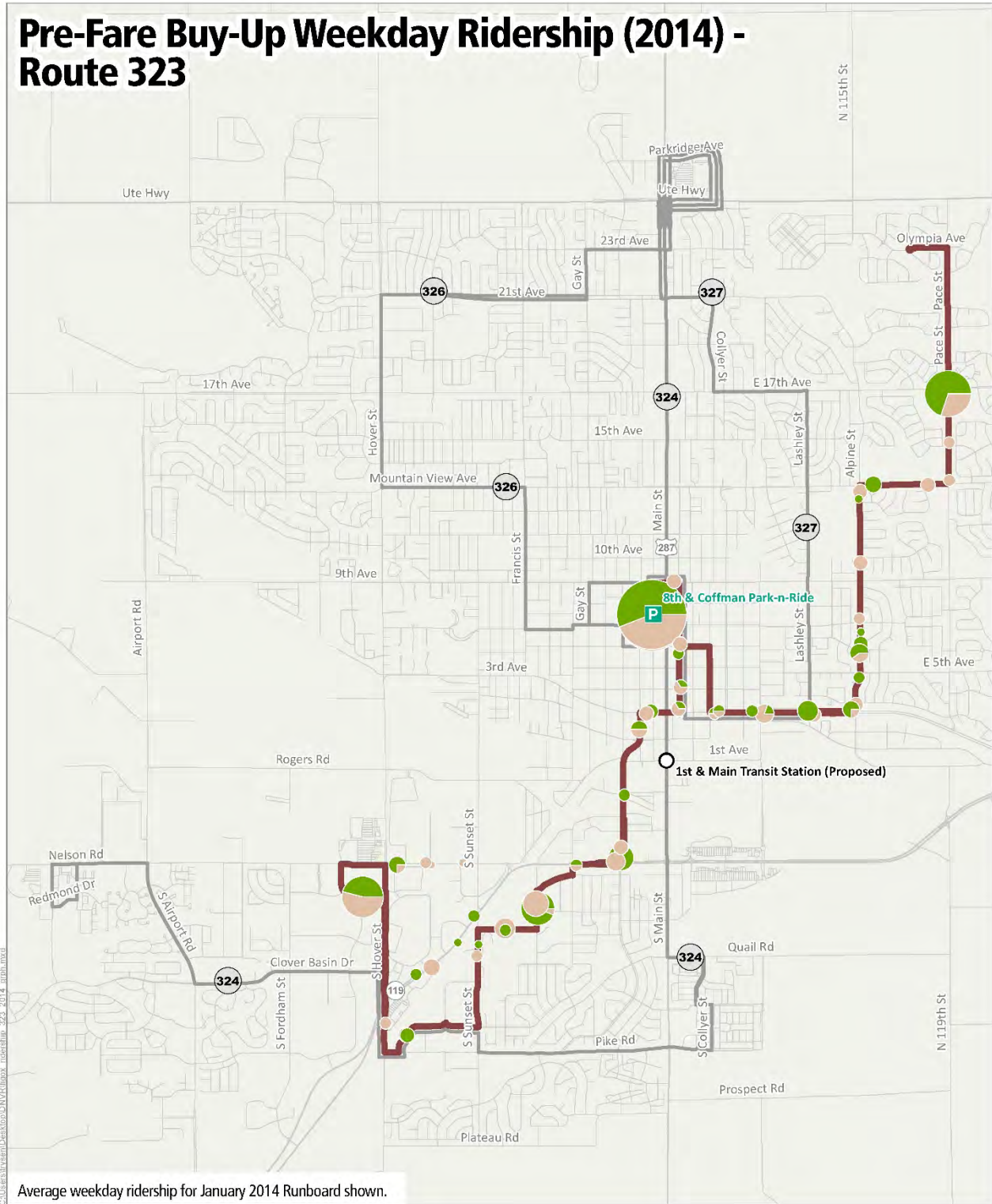
The Skyline Crosstown service (Route 323) currently operates between northeast and southwest Longmont via Downtown. Along its route it serves Skyline High School, the 8<sup>th</sup> & Coffman Park-n-Ride, the City of Longmont Public Library, Front Range Community College – Boulder County Campus, and the Village at the Peaks retail area. The route is operated hourly on weekdays and Saturdays with service from the early morning to the early evening. Saturday service begins later and ends earlier than weekdays. Route 323 was the least productive of the routes in 2015, with 17.7 boardings per revenue hour on an average weekday. After the 8<sup>th</sup> & Coffman Park-n-Ride, the greatest number of boardings occurred at Pace Street and 17<sup>th</sup> Avenue.

Table 3. Route 323 Service

Route 323: Skyline Crosstown						
Route	Weekday		Saturday		Sunday/Holiday	
	Span	Frequency	Span	Frequency	Span	Frequency
323	5:59 AM - 6:08 PM	60	8:02 AM - 5:09 PM	60	-	-



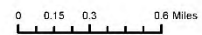
Figure 7. Route 323 Weekday Ridership Pre-Fare buy-up



Average Weekday Ridership



Boardings  
Alightings



## Proposed Service Recommendation

The current route has a scheduled weekday running time of 52 minutes in the eastbound direction and 44 minutes westbound. The route currently follows a circuitous path through Downtown Longmont in order to provide service to the 8<sup>th</sup> & Coffman Park-n-Ride.

In order to provide more efficient service and expand geographic coverage, the service concept presented here recommends splitting the existing Route 323 into two distinct services. These two routes maintain most portions of the current Route 323 alignment but differ in key ways in order to serve new areas and establish a more grid-like network for Longmont bus service. A discussion of both routes follows.

The impact to riders in splitting the two routes will not be significant. Based on 2015 ridership data from the pre-fare buy-up era, few 323 passengers are riding past the 8<sup>th</sup> & Coffman Park-n-Ride in the middle of the current route. Based on average loads at each stop, calculated from all-day weekday boardings and alightings, about 8.5 percent of eastbound riders (around nine per day) who boarded on the westside stay on after the Park-n-Ride. Conversely, approximately 13 percent of westbound riders (around 14 per day) who boarded east of Downtown stay on the bus after the Park-n-Ride.

For the current southern portion of the route, the vast majority of riders boarding eastbound are alighting at the 8<sup>th</sup> & Coffman Park-n-Ride. While the new, separate 323 South route would not serve the Coffman Park-n-Ride, as discussed below, it would serve the new 1<sup>st</sup> & Main Station allowing for transfers to the SH 119 BRT or other regional buses as well as other local routes. For westbound riders, the opposite is true. Most are boarding at the Park-n-Ride and alighting at one of several keys stops in the southwest part of Longmont. Similarly, the impact for Route 323 North riders would be minimal, as this route would serve the new 1<sup>st</sup> & Main Station instead.

Under these scenarios, both routes would operate over the same hours of service as the current Route 323. Route 323 North would operate with 30-minute peak/60-minute off-peak frequencies while 323 South would operate every 30 minutes all day. Both routes would operate hourly on Saturdays over a 6:30am – 7:00pm span. Only Route 323 South would operate on Sundays, hourly between 8:00am and 6:30pm. These weekend service spans would apply to all routes.

### Route 323 North

The northern route would originate at the 1<sup>st</sup> & Main Station and then travel east on 3<sup>rd</sup> Avenue and north on Alpine Street to Mountain View Avenue. It would continue to follow the current Route 323 alignment east and then north on Pace Street. Rather than turn around on Olympia Avenue, the new route would continue north and then travel west on Highway 66 and terminate on Park Ridge Avenue near the Walmart Supercenter. Once a traffic signal is in place at Highway 66 and Alpine, routing would be adjusted from Pace, via 17<sup>th</sup> Ave and Alpine St to Hwy 66, to allow service to the Prairie Village and Stoney Ridge neighborhoods. Until then the route would travel via 21<sup>st</sup> to Main and then to the Walmart. Due to the lack of commercial or residential development on Highway 66 between Pace and Main Streets, buses would not make any intermediary stops.

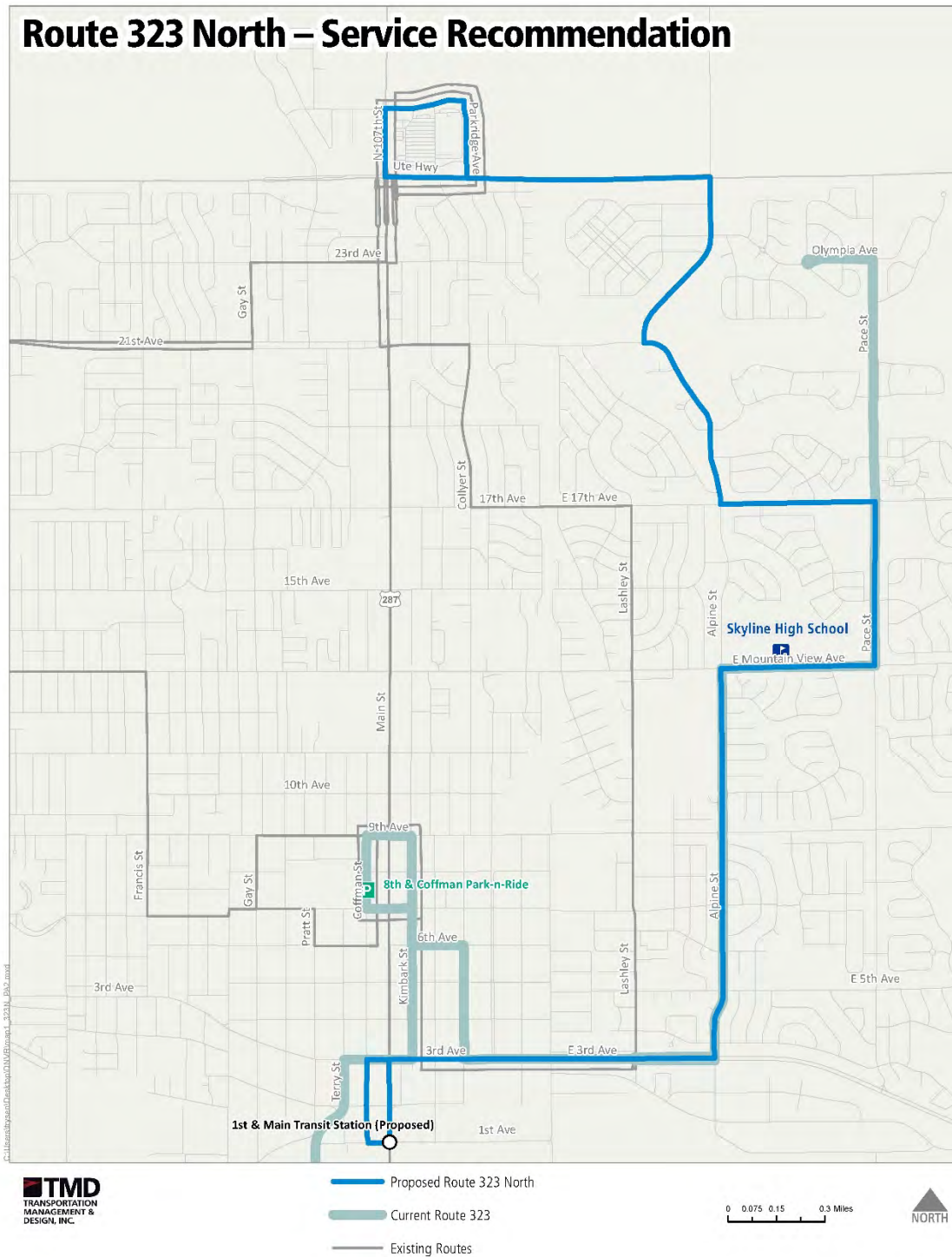
This recommendation would eliminate Route 323 stops at and near the 8<sup>th</sup> & Coffman Park-n-Ride and along Kimbark Street, 6<sup>th</sup> Avenue, and Collyer Street. The stops on these latter streets generate few boardings or alightings and are a short walk from Route 323 service on 3<sup>rd</sup> Avenue or Route 324 service on Main Street. While the route would no longer serve the Park-n-Ride, one of the largest drivers of ridership on the route, regional bus

*North Team Service Analysis & State Highway 119 BRT Feeder Plan*

transfers would still be possible at the 1<sup>st</sup> & Main Station. Additionally, the portion of Pace Street north of 17<sup>th</sup> Avenue would no longer be served.

The roundtrip running time for this route would be approximately 59 minutes on weekdays. This running time requires interlining with Route 323 South in order to maintain the current 60-minute weekday frequencies in the off-peak and offering 30-minute service in the peak periods.

Figure 8. Route 323 North Service Recommendation



### Route 323 South

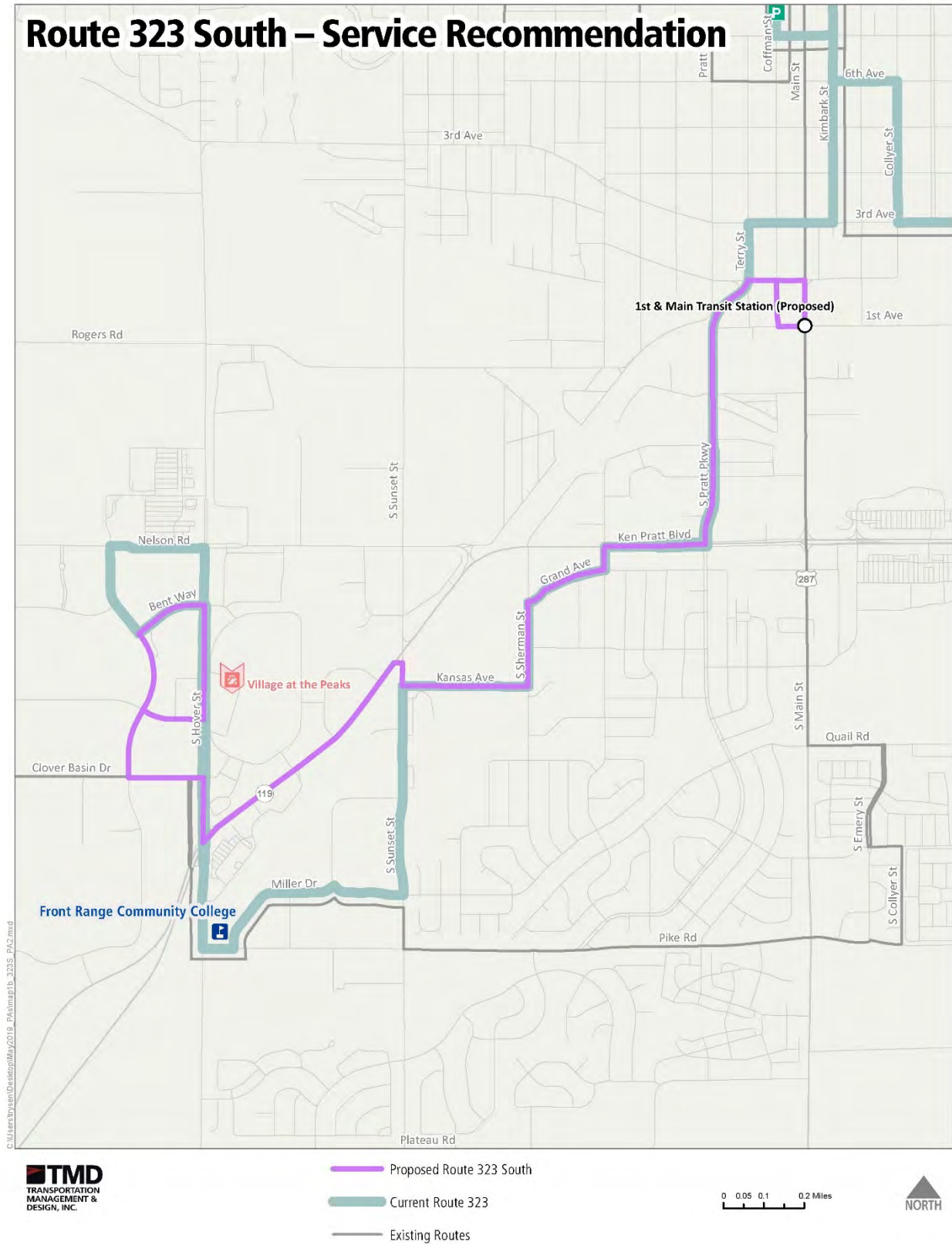
The southern route would follow a modified version of the existing Route 323 alignment between the 1<sup>st</sup> & Main Station and the Village at the Peaks retail area. The route would remain on Ken Pratt Boulevard between Sunset

Street and Hover Street, eliminating service to Front Range Community College. Additionally, the route would make a smaller loop around the Village at the Peaks area, turning on Bent Way in the north rather than Nelson Road. Route 323 South service would be provided every 30 minutes all day. This alignment would create a roundtrip running time of approximately 34 minutes before recovery. As this running time would present challenges with maintaining efficient cycles, RTD should interline this route with the new Route 323 North. The two routes together would have a running time of just over 92 minutes, which allows for a 120-minute combined cycle for the two routes but results in extra recovery time.

This proposal would have the biggest impact on riders currently traveling to or from the community college. However, the other stops along the eliminated segment generate negligible ridership and the dozen or so riders utilizing the community college stop per weekday would still have access to the Village at the Peaks area and Downtown Longmont on Route 324 South. Customers traveling to the north side of town would need to transfer at 1<sup>st</sup> & Main to a Route 323 North or Route 324 North bus.



Figure 9. Route 323 South Service Recommendation



# Route 324 – Main Street

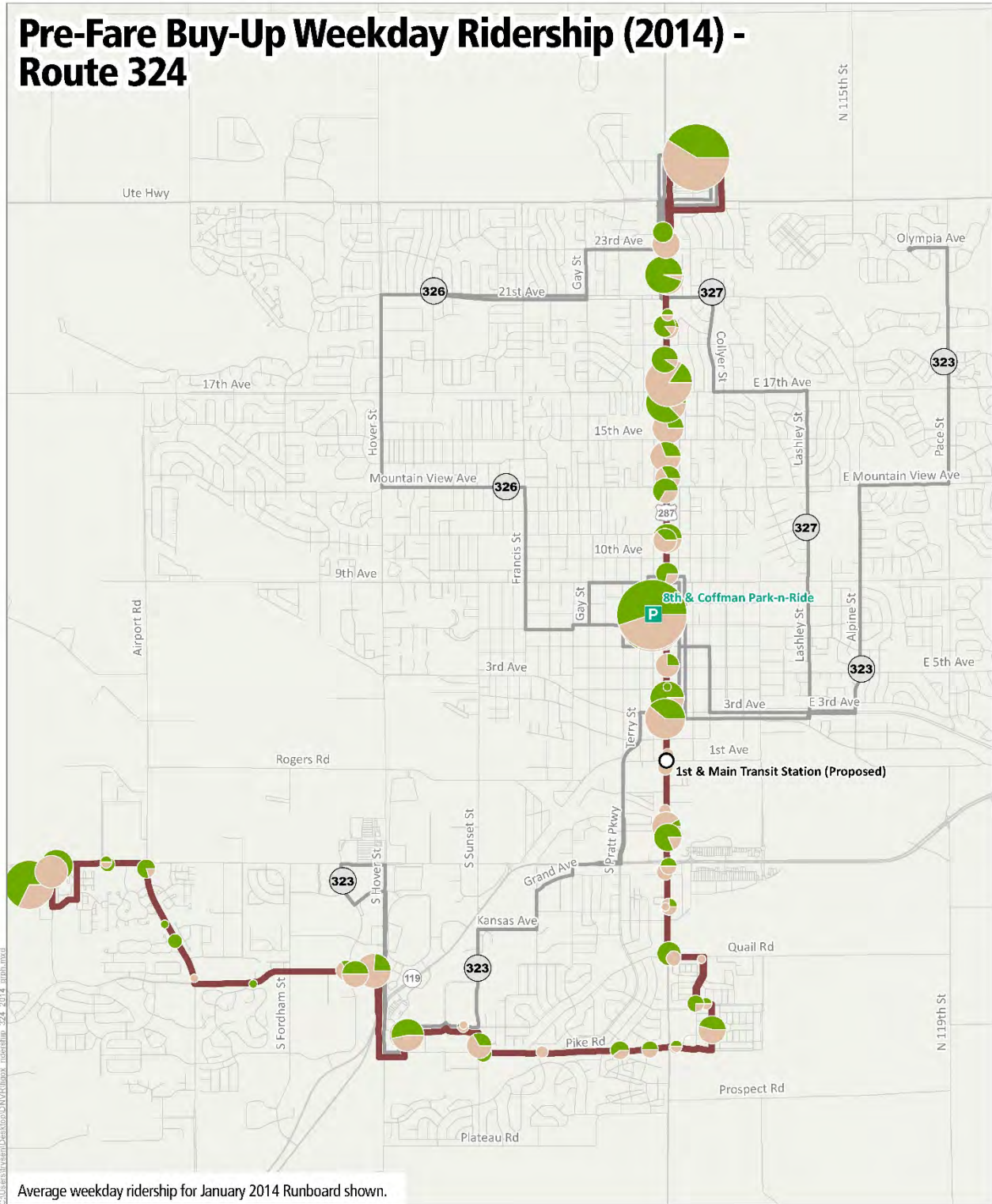
## Existing Service

The Main Street service (Route 324) currently operates along Main Street from the Walmart Supercenter at State Highway 66 through central Longmont. It then serves the residential neighborhood south of Quail Road and east of South Main Street before continuing west. The route serves the northside Walmart, Downtown Longmont, the 8<sup>th</sup> & Coffman Park-n-Ride, Front Range Community College, the Village at the Peaks retail area, and Silver Creek High School. Route 324 is operated every 30 minutes all day on weekdays and hourly on weekends and holidays. On weekdays, it is the most frequent of the four routes and has the longest span of service and carries the most passengers. Route 324 is the only local bus that currently operates on Sundays and holidays. In 2015, Route 324 was tied with Route 327 as the second most productive of the four routes, with slightly fewer than 25 boardings per revenue hour on weekdays. Ridership is concentrated at the Park-n-Ride and the northern terminal, with a fairly consistent number of the boardings in the segment between those two stops. Ridership was lower in the route’s southern segment.

Table 4. Route 324 Service

Route 324: Main Street						
Route	Weekday		Saturday		Sunday/Holiday	
	Span	Frequency	Span	Frequency	Span	Frequency
324	5:15 AM – 7:59 PM	30	7:59 AM - 6:18 PM	60	7:59 AM - 6:18 PM	60

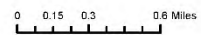
Figure 10. Route 324 Weekday Ridership Pre-Fare buy-up



Average Weekday Ridership



Boardings  
Alightings



## Proposed Service Recommendation

Route 324 is the predominant local route in Longmont, serving the commercial Main Street corridor with a greater span and frequency than the other routes. As such, it is important to maintain its alignment as the spine of the Longmont network. The route would be split at 1<sup>st</sup> & Main into North and South routes. The pair would be interlined in order to maintain efficient schedules. A discussion of each route follows.

### Route 324 North

Route 324 North would travel along Main Street between the 1<sup>st</sup> & Main Station and the Park Ridge Avenue stop adjacent to the Walmart. The only change to the existing 324 alignment in this area will be the elimination of the loop that northbound trips make to serve the 8<sup>th</sup> & Coffman Park-n-Ride once bi-directional boarding is introduced. This route would have a running time of approximately 31 minutes, requiring interlining with the southern route for efficiency. Service would be provided every 15 minutes during peak periods and every 30 minutes in the off-peak. The service span could be increased to include Sundays on the same hourly schedule as Saturdays.

The only possible impact to existing customers will be for those who ride through to the southwest side of Longmont and will now be forced to transfer at 1<sup>st</sup> & Main. An analysis of southbound ridership on the northern segment of Route 324 in the pre-fare buy-up era indicates that only around a quarter of passengers are riding through to the southside. (This excludes boardings at 8<sup>th</sup> and Coffman as passengers transferring from regional bus services could make use of improved local connectivity at 1<sup>st</sup> & Main.)

### Route 324 South

Route 324 South would provide service between 1<sup>st</sup> & Main and the Village at the Peaks area. This proposal makes several key changes to the existing Route 324's southern segment. From 1<sup>st</sup> & Main, buses would travel east on 1<sup>st</sup> Avenue and south on Martin Street to Ken Pratt Boulevard. The route would then travel west on Ken Pratt past the Harvest Junction retail area before continuing south on Main Street. The route then remains on Main Street to Pike Road, where it continues west until turning on Hover Street and terminating at the Village at the Peaks. The route would operate on a 30-minute frequency all day. The roundtrip running time would be approximately 44 minutes. Combined with 324 North's 31-minute running time, the interlined pair could operate on a 90-minute cycle with ample recovery time.

Among the changes to the existing 324 route, the deviation serving Front Range Community College, around Miller Drive, Lefthand Circle, and Sunset Street, would be eliminated and buses would remain on Pike Road. Eliminating this deviation could result in a modest savings in running time but would contribute most to customer perception of faster service. The only stop on the deviation that generates appreciable ridership is the one adjacent to the community college's main building. Stopping the bus on Pike Road at Miller Drive instead would add a walk of no more than approximately 100 yards for riders going to or coming from the college. The two northbound stops on the deviation only account for around six percent (25 per day) of northbound boardings and around three percent (12 per day) of northbound alightings. In the southbound direction, the three stops on the deviation account for around three percent (11 per day) of boardings and seven percent (27 per day) of alightings. The will also no longer serve the residential area east of Main Street and south of Quail Road. However,



## North Team Service Analysis & State Highway 119 BRT Feeder Plan

the stops along this segment represented less than 9.5 percent of average weekday boardings or alightings in either direction in the pre-fare buy-up era and customers would have to walk no more than approximately a third of a mile to service on Main Street.

The biggest change to this half of Route 324 is the elimination of service west of Hover Street and terminating the route at Village at the Peaks. Service to Silver Creek High School and the nearby residential area would still be provided by selected trips on the new Route 329 or Route 323 South. Customers along Clover Basin Drive and Airport Road would no longer be served. However, these stops represent a very small percentage of average weekday boarding or alightings in either direction in the pre-fare buy-up era.

Figure 11. Route 324 North Service Recommendation

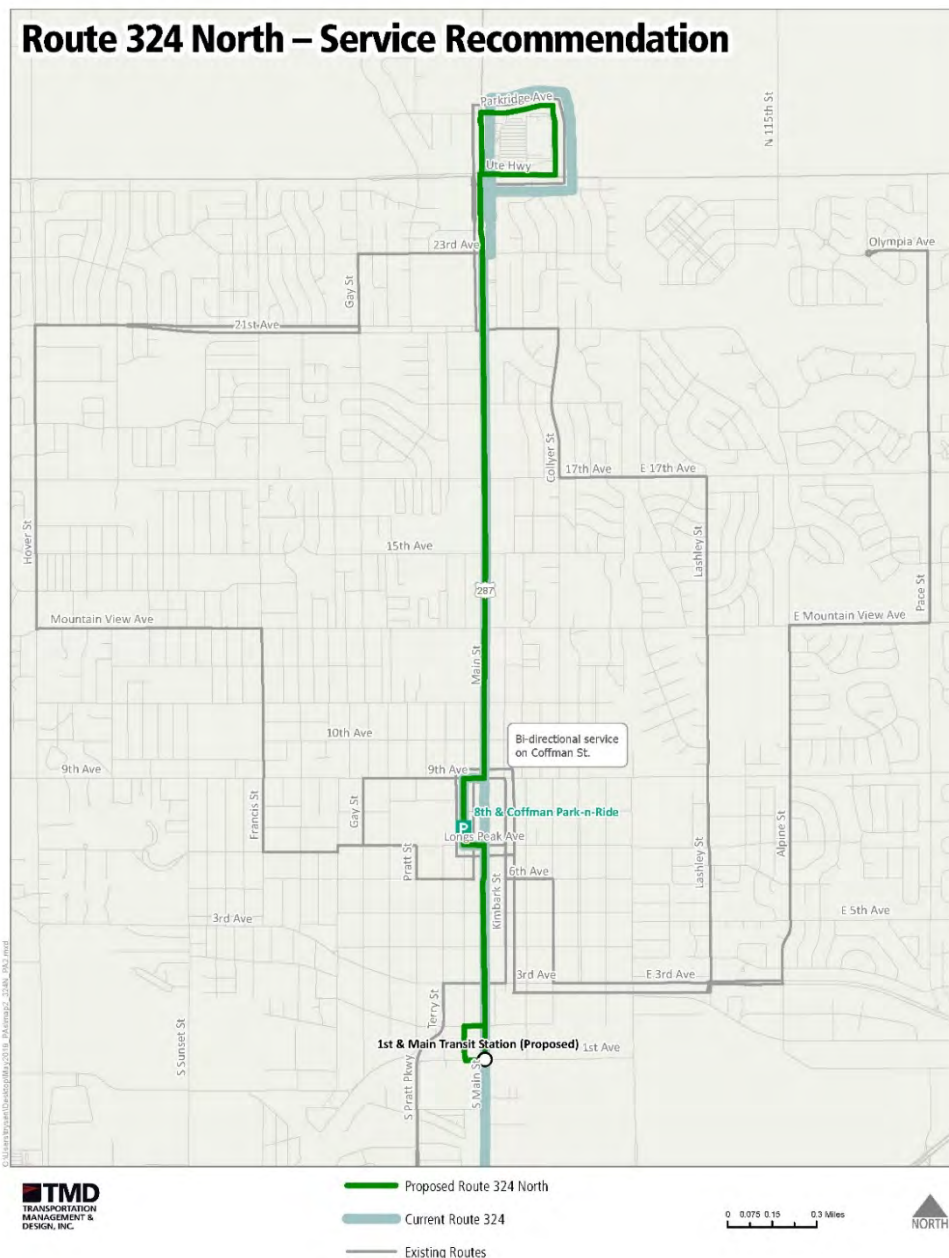
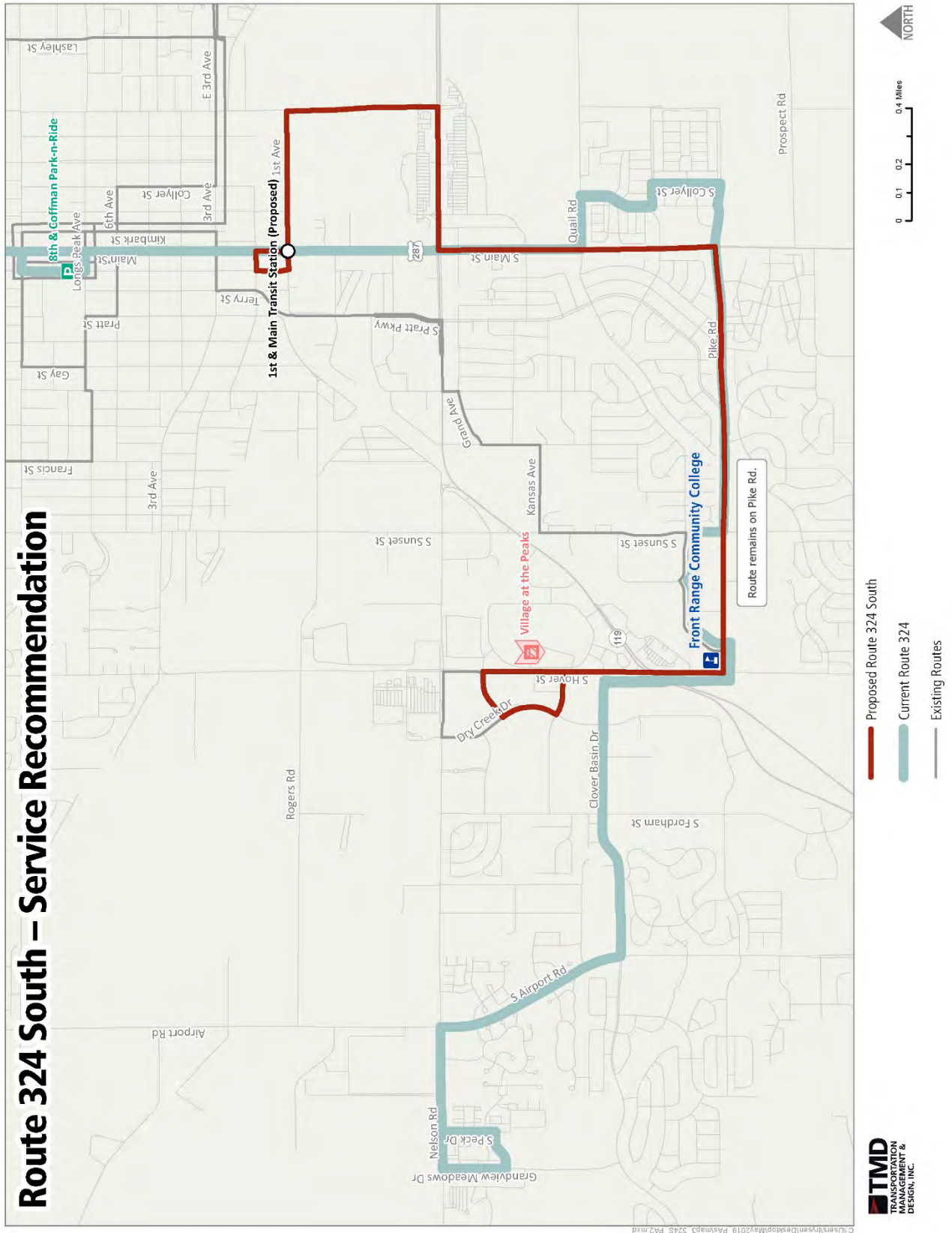




Figure 12. Route 324 South Service Recommendation



# Route 326 – Westside Crosstown

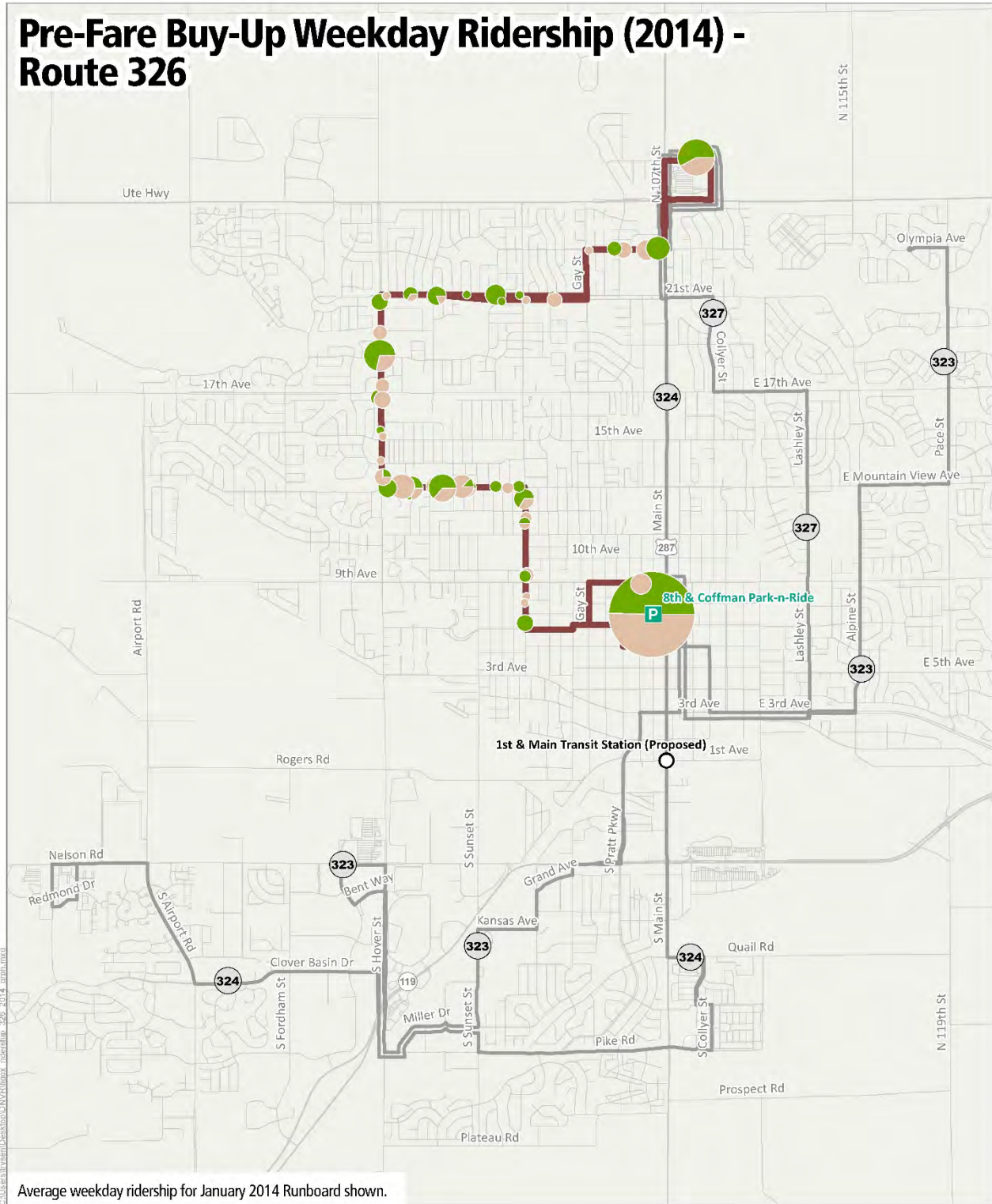
## Existing Service

The Westside Crosstown service (Route 326) currently operates between the northside Walmart at Main Street and SH 66 and the 8<sup>th</sup> & Coffman Park-n-Ride via western Longmont. Along with those two key destinations at the terminals, the route also serves Longmont High School, Longmont United Hospital and nearby medical offices, and Centennial Square Shopping Center. The route is operated hourly on weekdays and Saturdays with service from the early morning to the early evening. Saturday service begins later. Route 326 was the most productive of the four in 2015, with 32.2 boardings per revenue hour on an average weekday. Ridership is strongest at the two terminals. Along the route, more boardings occur in the southern portions along Mountain View Avenue and Francis Street than further north.

Table 5. Route 326 Service

Route 326: Westside Crosstown						
Route	Weekday		Saturday		Sunday/Holiday	
	Span	Frequency	Span	Frequency	Span	Frequency
326	6:00 AM - 6:32 PM	60	8:02 AM - 6:30 PM	60	-	-

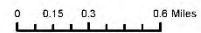
Figure 13. Route 326 Weekday Ridership Pre-Fare Buy-up



Average Weekday Ridership



Boardings  
Alightings



## Proposed Service Recommendation

Under this recommendation, the route would operate over the same hours of service as the current Route 326, with the addition of Sunday service on the same schedule as Saturdays. Weekday frequency would be increased to 30 minutes during the AM and PM peaks, with hourly service at other times. Weekend service would remain on a 60-minute frequency. As Route 326 has the highest productivity of the four routes and relatively consistent ridership across the route, the service concept recommended here maintains a nearly identical alignment with only small modifications. Consistent with the planned Station at 1<sup>st</sup> Avenue and Main Street, the route would be extended south with a new terminal at 1<sup>st</sup> & Main, rather than the 8<sup>th</sup> & Coffman Park-n-Ride. The route would travel east-west on 9<sup>th</sup> Avenue between Francis and Coffman Streets, rather than Longs Peak Avenue. This simplifies the route pattern and maintains service to 8<sup>th</sup> & Coffman. Additionally, at the north end, the route would turn directly between 21<sup>st</sup> Avenue and Main Street and no longer deviate on to Gay Street and 23<sup>rd</sup> Avenue. This means the elimination of three northbound and two southbound stops on 23<sup>rd</sup> Avenue. For the customers utilizing these stops, alternate service on Main Street is a very short walk away.

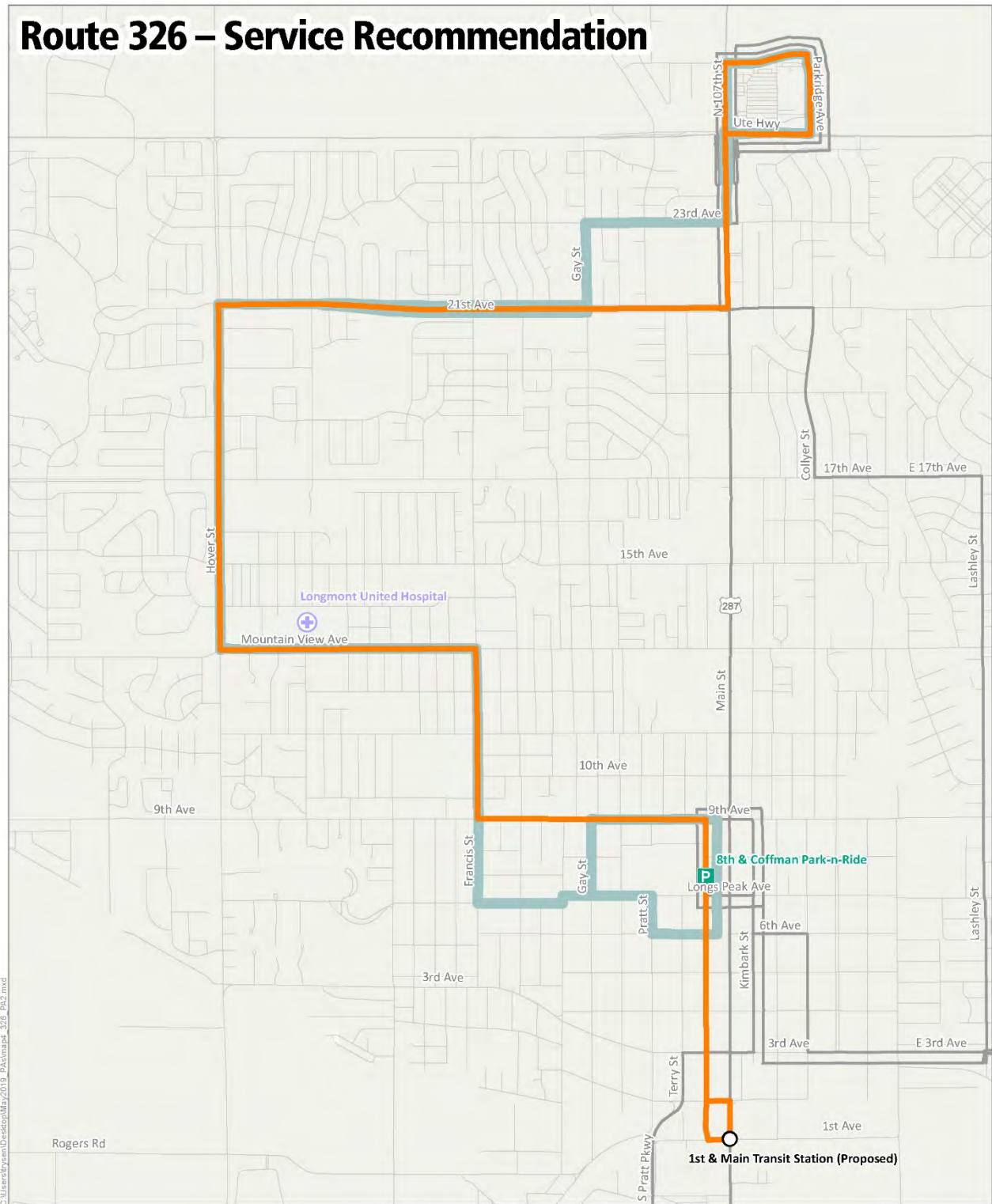
This alignment would also eliminate several stops along Francis Street and Longs Peak Avenue. However, there were very few boardings or alightings in either direction along this segment on an average weekday in 2015. This alignment would allow for a stop at the 8<sup>th</sup> & Coffman Park-n-Ride without any loops or additional turns. Northbound trips would not stop at the Park-n-Ride until bi-directional boarding is in place. Additionally, the deviation on to Pratt Street and 6<sup>th</sup> Avenue and the stop at that intersection would be eliminated. The stop is located in front of the St. Vrain Manor independent living facility for seniors, and its elimination may face some local opposition. However, weekday ridership at that stop in the pre-fare buy-up era was extremely low, averaging only one boarding and two alightings all day, according to 2014 ridership data. Even with the fare buy up program, this ridership has not shown an increase, at 2 boardings and 2 alightings per day.

Northbound trips would begin from the 1<sup>st</sup> & Main Station. Southbound trips would discharge passengers on Coffman Street, at a location near 2<sup>nd</sup> Avenue and lay over on Coffman. Alternatively, trips could begin and end at a stop on the west side of Main Street between 2<sup>nd</sup> and 1<sup>st</sup> Avenues. The latter option may be preferable, especially with the introduction of BRT service, to avoid an inconvenient transfer for southbound Route 326 customers. Eliminating the current route's loop around the Roosevelt Park area to serve the Park-n-Ride and extending the route south to 1<sup>st</sup> & Main results in a net increase of about a fifth of a mile to the roundtrip route length.

Roundtrip running time for this travel path is 45 minutes plus a recovery time of 15 minutes for an efficient cycle time of 60 minutes. This alignment would maintain the same 60-minute cycle as the current schedule and only require an operating investment for increased peak-period frequency.



Figure 14. Route 326 Service Recommendation



C:\Users\ryesen\Desktop\May2019\_PA\mapad\_326\_Pk2.mxd



- Proposed Route 326
- Current Route 326
- Existing Routes

0 0.1 0.2 0.4 Miles





# Route 327 – Eastside Crosstown

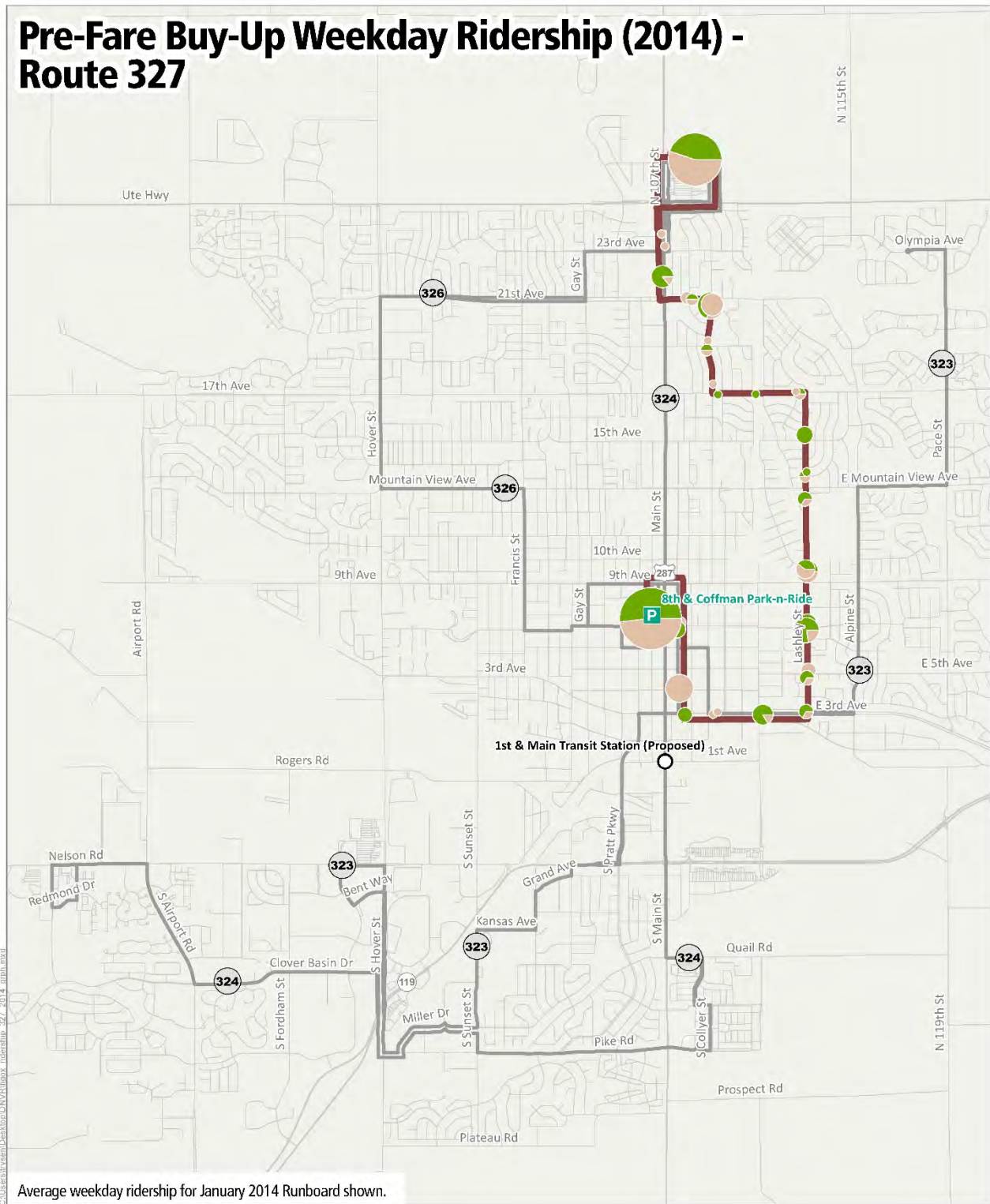
## Existing Service

The Eastside Crosstown service (Route 327) currently operates between the northside Walmart at Main Street and SH 66 and the 8<sup>th</sup> & Coffman Park-n-Ride via eastern Longmont. Along with those two key destinations at the terminals, the route also serves the City of Longmont Public Library, the Longmont Youth Center and Clark Centennial Park, and stops less than a half-mile from Skyline High School in both directions. The route is operated hourly on weekdays and Saturdays with service from the early morning to the early evening with Saturday service beginning later than weekday service. Route 327 was tied with Route 324 for second-most productive in 2015, with just fewer than 25 boardings per revenue hour on an average weekday. The greatest number of boardings on the route occur at the two terminals. Mid-route boardings are primarily concentrated along Lashley Street.

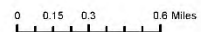
Table 6. Route 327 Service

Route 327: Eastside Crosstown						
Route	Weekday		Saturday		Sunday/Holiday	
	Span	Frequency	Span	Frequency	Span	Frequency
327	6:00 AM - 6:32 PM	60	8:02 AM - 6:30 PM	60	-	-

Figure 15. Route 327 Weekday Ridership Pre-Fare Buy-up



Average Weekday Ridership



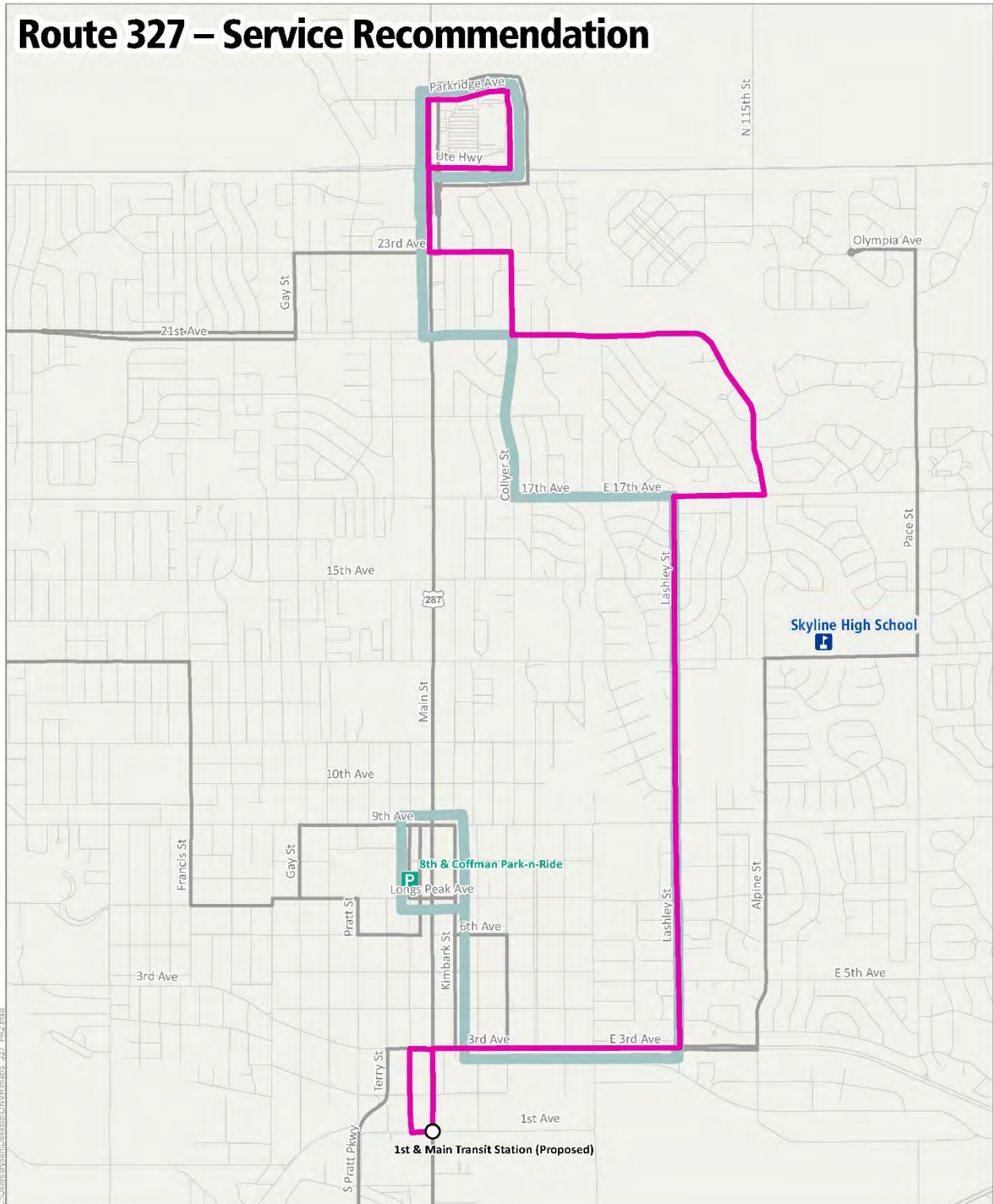
## **Proposed Service Recommendation**

Preservation of Route 327 is recommended, with several modifications. The southern terminal will be shifted to 1<sup>st</sup> and Main. At its northern end, at 17<sup>th</sup> Avenue, the route would travel east and then north on Alpine Street. It would then continue west on 21<sup>st</sup> Avenue, north on Collyer Street, west on 23<sup>rd</sup> Avenue, north on Main Street to the current terminal. The proposed alignment would have an approximately 43-minute running time and will maintain the existing hourly frequency.

The proposed alignment would have some impacts on existing Route 327 customers. Those transferring from other routes would still be able to do so at the 1<sup>st</sup> and Main terminal. Those utilizing the stops along 3<sup>rd</sup> Avenue would have direct access to Route 323 North service. However, those using stops on Kimbark Street would need to walk a short block to Main Street for Route 324 service. Former Route 327 customers on 17<sup>th</sup> Avenue between Lashley Street and Collyer Street and on Collyer Street between 17<sup>th</sup> Avenue and 21<sup>st</sup> Avenue would need to walk up to a quarter-mile for new Route 327 or Route 324 North service.

*Figure 16. Route 327 Service Recommendation*

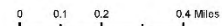
# Route 327 – Service Recommendation



C:\Users\jtyuan\Desktop\CDIVR\map5\_327\_PA2.mxd



- Proposed Route 327
- Current Route 327
- Existing Routes





## Route 328 – East Longmont

### Proposed Service Recommendation

Route 328 is a new route that would serve the growing southeast side of Longmont. It would connect the 1<sup>st</sup> & Main Station with destinations along Ken Pratt Boulevard east of Main Street, terminating near the eastside Walmart Supercenter. Extending service to this location would introduce fixed-route transit to this growing area and provide a connection to the Eastside Walmart, the recently-opened UCHHealth Longs Peak Hospital, and a new 240-unit multi-family residential development. Additionally, depending on stop placement, this route could serve the McLane Western grocery distribution center. Adjacent to the hospital, this business employs more than 400 people and is the eighth largest employer in the City of Longmont. Together with the hospital, which is the sixth largest employer, this segment of Ken Pratt Boulevard near County Line Road is home to more than 1,000 jobs. Several respondents to the previously discussed 2018 Ride Free Longmont program online resident survey specifically requested service to the eastside Walmart or the nearby area. While this represents less than one percent of respondents, there is undoubtedly some demand for transit service in this area, especially if more multi-family housing is constructed nearby. The proposed route would add service to more than a three-mile segment of Ken Pratt Boulevard not currently served by any RTD route. Along with the associated operating costs for this route, new bus stops would need to be established. A minimum of three to four stops in each direction is recommended in order to adequately serve the Harvest Junction retail area, and the residential development, hospital, and Walmart near Ken Pratt Boulevard and County Line Road. The middle portion of the Ken Pratt segment is dominated by agriculture or greenspace around the St. Vrain Creek and does not warrant a stop at this time. Service would be provided every 30 minutes in the peak periods and hourly at other times. Hourly service would be provided on Saturdays and Sundays. The roundtrip running time for this route is approximately 38 minutes. However, operating the route on a 60-minute cycle in the off-peak would create an excessive recovery time of 22 minutes.

## Route 329

### Proposed Service Recommendation

Route 329 is a proposed route that would connect 1<sup>st</sup> & Main with Village at the Peaks via Ken Pratt Boulevard and Nelson Road. School tripper service to Silver Creek High School would also be provided. With a 21-minute roundtrip running, the main 329 route would provide a fast connection between Downtown and the Village at the Peaks area. The route would also provide a local transit connection to the Boulder County Fairgrounds. There is the potential to interline Route 329 with Route 328, but the combined 59-minute running time may not allow for adequate recovery time and present schedule adherence issues. This route would be operated every 30 minutes all day on weekdays and hourly on weekends. The route should be interlined with another service on weekends due to the excessive recovery time if the route is operated only hourly.

Figure 17. Route 328 Service Recommendation

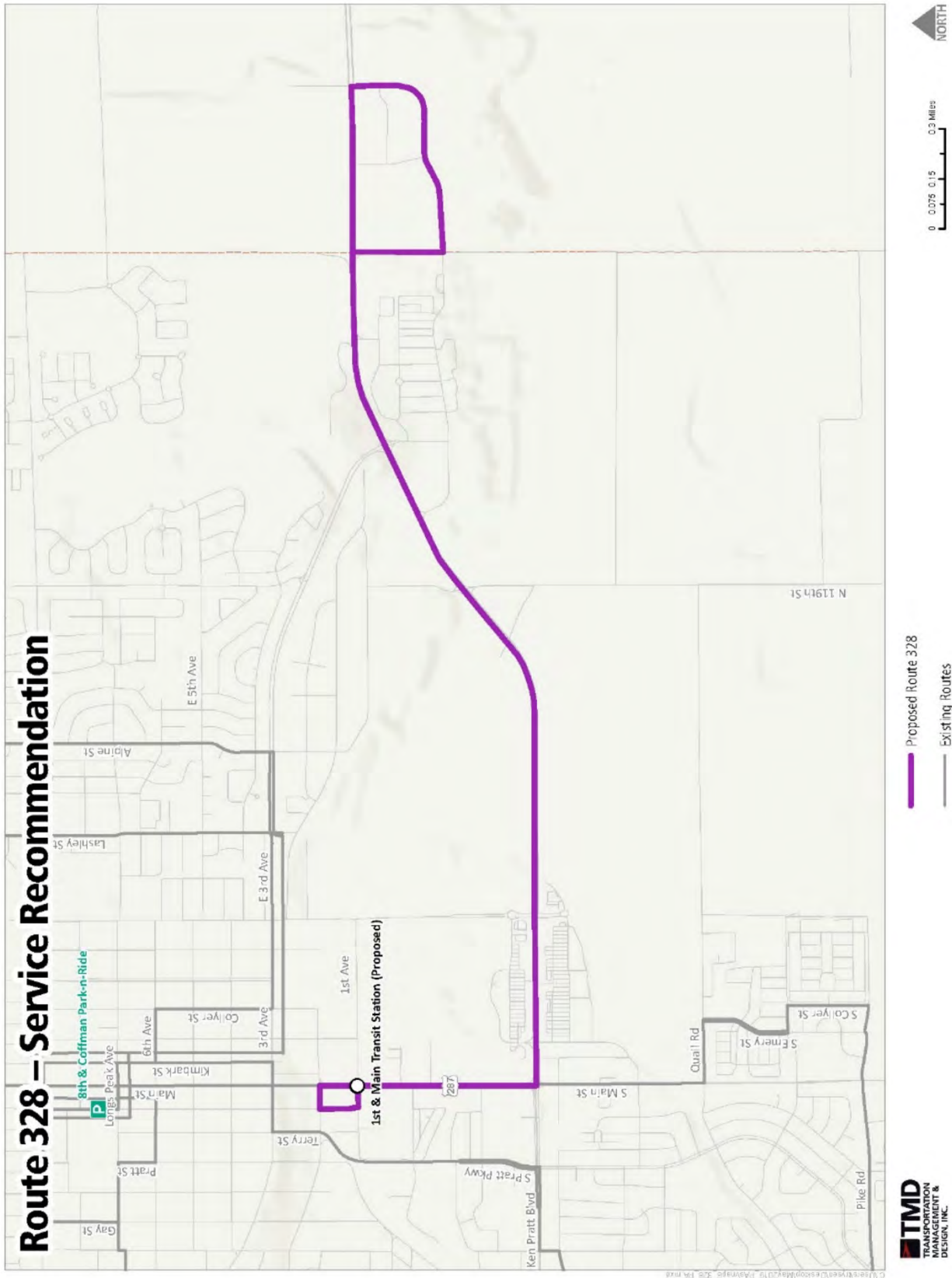
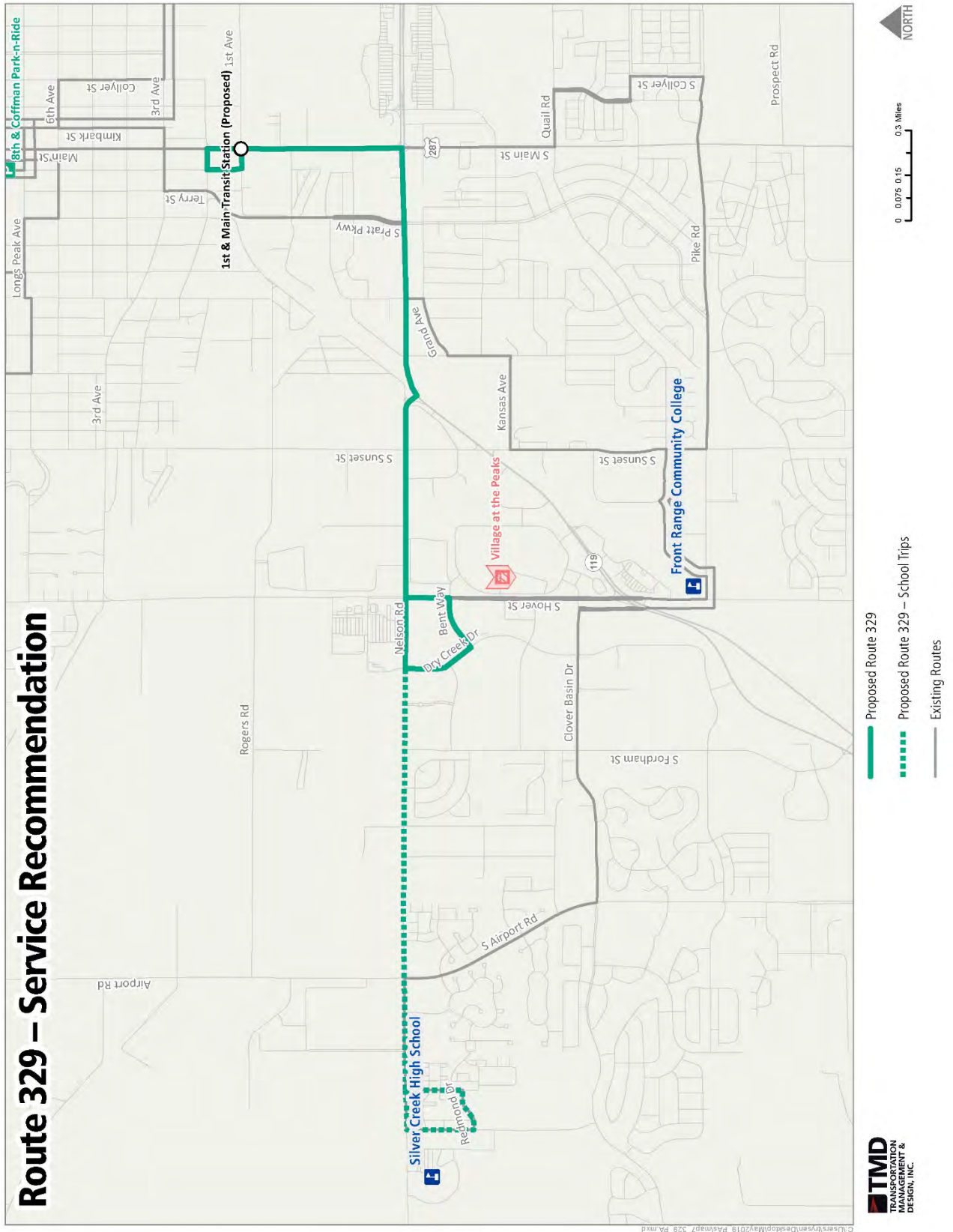


Figure 18. Route 329 Service Recommendation



# Service Plan Summary

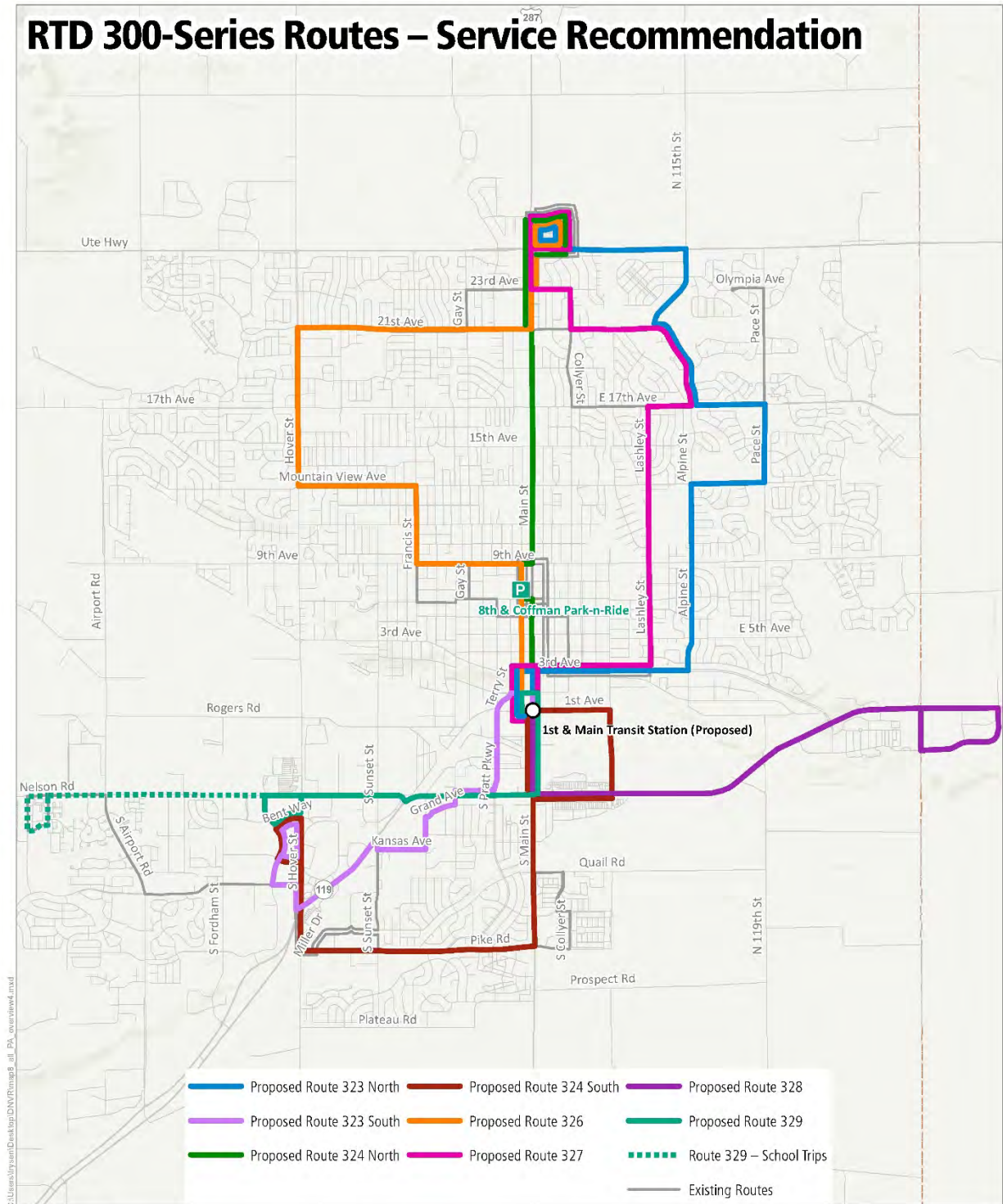
As previously discussed, implementation of the full SH 119 BRT service is dependent upon future funding sources. However, the local route changes in Longmont recommended in this report could be implemented together, or individually, as part of near-term service changes. While these recommendations shift the focus of most of the routes away from the 8<sup>th</sup> & Coffman Park-n-Ride in favor of 1<sup>st</sup> Avenue and Main Street, regional buses already serve the latter. However, improvements to the 1<sup>st</sup> and Main area should be prioritized, because the stops there do not currently have the same amenities nor is there vehicle or bike parking. Route path changes could also be implemented independently of frequency improvements, with the latter introduced as SH 119 bus improvements are made. As the local Longmont routes have different service needs, splitting the routes allows for independent demand-based adjustments and a phased approach. The table below identifies the change in roundtrip route lengths for each of the route recommendations. *Figure 19* below depicts the proposed local network in Longmont.

Table 7. 300-Series Change in Roundtrip Route Length

Change in Roundtrip Route Length		
Route	Revenue Miles	Percent Change
323 North + 323 South	(0.4)	(-1.95%)
324 North + 324 South	(3.11)	(14.70%)
326	0.17	1.38%
327	(0.21)	(1.89%)
328 (New)	8.40	100%
329 (New)	5.28	100%



Figure 19. Proposed 300-Series Network



C:\Users\jhsam\Desktop\DNV\Project\mag8\_all\_PX\_01\view4.mxd



0 0.175 0.35 0.7 Miles



Along with the one-time costs for establishing new stops on streets not presently served by the routes, more significantly there are also recurring operating costs associated with these recommendations. The table below summarizes the current and proposed weekday frequencies and roundtrip running times plus recovery.

Table 8. Changes in Weekday Frequencies & Roundtrip Running Times

Change in Weekday Frequencies & Roundtrip Running Times				
Route	Frequencies (Min)		Roundtrip Running Times + Recovery (Min)	
	Current	Proposed	Current	Proposed
323	60	--	96 (24 min. recovery)	--
323 North	--	30/60	--	92 (28 min. recovery)
323 South	--	30	--	
324	30	--	86 (33 min. recovery)	--
324 North	--	15/30		75 (15 min. recovery)
324 South	--	30		
326	60	30/60	46 (14 min. recovery)	45 (15 min. recovery)
327	60	60	44 (16 min. recovery)	43 (17 min. recovery)
328 (New)	--	30/60	--	38 (22 min. recovery)
329 (New)	--	30/30	--	21 (9 min. recovery) / 34 minutes (school trips)

The table below outlines the estimated change in Platform Hours, without garage deadheads, per weekday for these routes at the proposed frequencies shown in Table 8 and described in each route’s section above. Platform Hour calculations are based on the runtimes and layovers calculated in Remix by RTD, and the number of daily roundtrips at the proposed frequencies.

Table 9. 300-Series Change in Weekday Platform Hours

Change in Weekday Platform Hours			
Route	Current	Proposed	Difference
323 North + 323 South	25.60	37.07	11.47
324 North + 324 South	58.33	46.53	(11.80)
326	12.88	17.16	4.28
327	12.92	10.31	(2.61)
328	--	12.94	12.94
329	--	11.66	11.66
<b>Total</b>	<b>109.73</b>	<b>135.68</b>	<b>25.95</b>

The net increase of nearly 26 Platform Hours per weekday is mostly due to the introduction of Routes 328 and 329. Without them, there would be a net increase of 1.4 Platform Hours per day. While the combined route length of the two 323 routes is shorter than the existing Route 323, the increased all day frequency in the south and peak frequency in the north results in a net increase in Platform Hours. Despite the increased peak frequency

for the northern half of Route 324, the significant decrease in roundtrip route length results in a net savings of almost 12 Platform hours per day. The Platform Hour increase on Route 326 is partially offset out by Route 327’s changes, resulting in a net increase of 1.7 Platform Hours.

The table below shows the changes in weekday peak-period vehicle needs in Longmont under the proposed route recommendations. A peak-period maximum of eight vehicles total (exclusive of spares) are currently utilized for the routes on weekdays.

Table 10. 300-Series Change in Weekday Vehicle Requirements

Change in Weekday Peak Vehicle Requirements			
Route	Current	Proposed	Difference
323 North + 323 South	2	4	2
324 North + 324 South	4	6	2
326	1	2	1
327	1	1	0
328	--	2	2
329	--	1	1
<b>Total</b>	<b>8</b>	<b>16</b>	<b>8</b>

If the peak period frequency improvements are implemented concurrently, there would be a net need for eight additional vehicles during the AM and PM peaks. Two additional vehicles would be required for the 30-minute service on the two 323 routes. The interlined Route 324 pair would require three vehicles all day, one fewer than the current route. However, introducing 15-minute peak service on Route 324 North would require three vehicles, creating a net need of two for the route. Adding 30-minute peak service to Route 326 would require one additional bus. Three vehicles total would be needed for Routes 328 and 329. Due to the investment required for these route changes and frequency improvements, implementing the latter in phases as SH 119 BRT service is implement may be more feasible.

**Weekend Impacts**

The tables below show the change in platform hours and vehicle needs for the proposed route recommendations on weekends. Saturday service would be operated at 60-minute frequencies from 6:30am to 7:00pm on all routes, except for Route 324 North which would operate every half hour. Sunday service would operate on the same frequencies as Saturday, with a span of 8:00am to 6:30pm. Route 323 North would not operate on Sundays. Calculations follow the same methodology as the weekday needs above and are based on the route calculations in Remix.

Table 11. 300-Series Change in Weekend Platform Hours

Change in Weekend Platform Hours						
Route	Saturday			Sunday		
	Current	Proposed	Difference	Current	Proposed	Difference
323 North + 323 South	19.43	19.67	0.24	0.00	6.06	6.06
324 North + 324 South	21.33	22.96	1.63	21.33	19.43	(1.90)
326	10.80	10.38	(0.42)	0.00	8.78	8.78
327	10.82	10.31	(0.51)	0.00	8.73	8.73
328	0.00	7.95	7.95	0.00	6.73	6.73
329	0.00	5.00	5.00	0.00	4.23	4.23
<b>Total</b>	<b>62.38</b>	<b>76.27</b>	13.89	<b>21.33</b>	<b>53.95</b>	32.62

Similar to the weekday platform hours, the net increase on Saturdays is primarily due to the introduction of Route 328 and 329. Without them, there would be a net increase of less than one Platform Hour. Route 324 is the only route that currently operates on Sundays, requiring a more significant investment to implement the Sunday recommendations. Despite the recommended doubling of weekend frequency on Route 324, platform hour impact is negligible due to the overall decreased length on the split route.

The table below summarizes the weekend vehicle needs for the recommendations outlined above. Only one additional vehicle is needed for the existing routes, to improve Route 324 North service to 30 minutes. Routes 328 and 329 would each need one vehicle, if the pair cannot be efficiently interlined. The recommended Sunday service would create a net need for six additional vehicles: one for frequency improvements on Route 324 North and five for introducing Sunday service on the other routes.

Table 12. 300-Series Change in Weekend Vehicle Requirements

Change in Weekend Vehicle Requirements						
Route	Saturday			Sunday		
	Current	Proposed	Difference	Current	Proposed	Difference
323 North + 323 South	2	2	0	--	1	1
324 North + 324 South	2	3	1	2	3	1
326	1	1	0	--	1	1
327	1	1	0	--	1	1
328	--	1	1	--	1	1
329	--	1	1	--	1	1
<b>Total</b>	<b>6</b>	<b>9</b>	<b>3</b>	<b>2</b>	<b>8</b>	<b>6</b>



## Service Plan Implementation

The local route changes presented above are meant to be a feeder network to the SH119 Bus Rapid Transit (BRT) corridor. The implementation of these route changes would **occur simultaneously** with the **opening of SH119 BRT system**. As the SH119 BRT corridor implementation most likely will occur in several phases, the local feeder network would be implemented, as **deemed** appropriate, based on the level of SH119 BRT service operational, in each phase. **(for more specific information related to phasing of the SH119 BRT, please reference the section within the SH119 document related to phasing/implementation timeline)**. At this time, funding is **expected** to become available for construction of SH119 corridor capital improvements in 2023, with an anticipated completion of those improvements in 2025. SH119 BRT, Phase I service levels, are anticipated to start operations in mid to late 2025. Therefore, the Longmont Local Feeder Service Plan is anticipated to be implemented at that time as well.