



transit route analysis

*Transit Route Analysis
for the Glendale
Beeline Service Area*

Draft

July 11, 2019



Glendale Beeline 

Glendale Beeline 2019 Transit Route Analysis
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Glendale Beeline Transit Route Analysis Executive Summary

The Beeline operates within a transit-rich environment. Figure ES.1 shows the regional and Beeline routes that operate in or through Glendale.

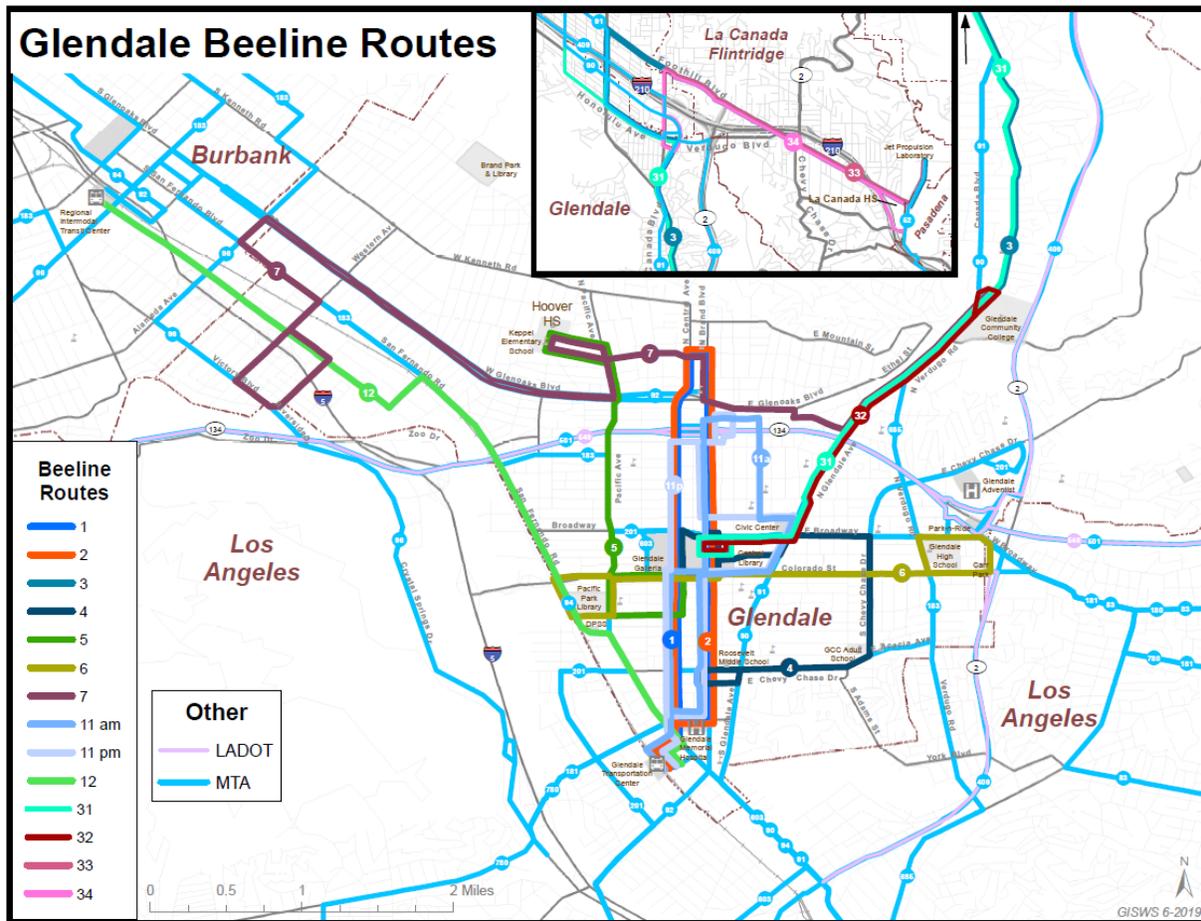


Figure ES.1 Glendale Beeline Routes and Regional Routes in and through Glendale

The Transit Route Analysis is intended to capture an abundance of precise data and analyze the existing network of all fixed route transit services (regardless of provider) in the Glendale, Burbank, La Canada Flintridge, and unincorporated areas of Los Angeles County – Montrose and La Crescenta. Regardless of provider or mode, the results of the Transit Route Analysis is a reimagining of the local transit service network in the Beeline service area, with specific recommendations for Glendale’s service deployment.

This executive summary reports on the review of local planning studies recommendations and evaluates potential impacts on Beeline service, describes ridership and performance of Beeline routes based on the 100 percent ridecheck conducted in November 2018, presents results of the on-board survey of Beeline riders, examines opportunities for enhanced agency

coordination of local and regional services within the City of Glendale and nearby areas and analyzes Metro's "Big Data" findings, describes extensive outreach efforts to Glendale residents, employees, and businesses and summarizes the results of these efforts, including e-survey findings, and identifies service options for the Beeline and presents the recommended service plan.

Previous Studies

The plans reviewed cover a wide spectrum of city planning, from city-wide and area-specific plans with transportation components to transportation plans focusing on transit to enhance the mobility of residents and visitors. Plans for Bus Rapid Transit and a Streetcar will have regional implications beyond Glendale as well as specific impacts within the City. Many plans call for a greater role for transit to support increased residential densities and provide an alternative to single-occupancy vehicles. Increased focus on bicycle and pedestrian infrastructure is also a part of many of these plans.

This study develops specific recommendations for transit improvements to support (and in some cases to anticipate) these visions of a future Glendale. While not tailored to any specific plan, the recommendations can be implemented in the near-term and the medium-term future to preserve and enhance mobility in a growing City and region.

Ridership and Productivity

Table ES.1 presents ridership by route for weekdays, Saturday, and Sunday. Route 4 Roosevelt Middle School - Glendale Galleria has the highest weekday ridership (1,037 boardings per weekday) and also leads in Saturday and Sunday ridership. Route 3 Glendale Galleria - Jet Propulsion Laboratory (JPL) is second in weekday ridership, with 998 boardings per weekday. Other all-day routes have ridership in the range of 500 to 800 boardings per day. Routes 11 (Metrolink Express Glendale Transportation Center to Downtown Glendale) and 12 (Metrolink Express Glendale Transportation Center to Burbank Regional Intermodal Transportation Center) are express routes serving the Metrolink station at the Glendale Transportation Center (GTC) and operate in the morning and afternoon peak periods only, with schedules timed to meet Metrolink trains.

**Table ES.1
Beeline 2018 Ridership by
Route and Day of Week**

Route	Weekday		Saturday		Sunday	
	Riders	Rank	Riders	Rank	Riders	Rank
1	540	6	232	4	200	3
2	572	5	284	3	225	2
3 (31 Saturday)	998	2	228	5	--	--
32	160	11	--	--	--	--
33	212	9	--	--	--	--
34	103	12	--	--	--	--
4	1,037	1	436	1	286	1
5	658	4	130	7	--	--
6	500	7	289	2	--	--
7	786	3	178	6	--	--
11	190	10	--	--	--	--
12	307	8	--	--	--	--
Total	6,063	--	1,777	--	711	--
Local Routes	5,566	--	1,777	--	711	--
Express Routes	497	--	--	--	--	--

Source: Ridecheck Data, November 2018

Table ES.2 shows the change in Beeline ridership since the 2013 ridecheck. Overall ridership has decreased by 21 percent on weekdays, 8 percent on and Saturday, and 9 percent on Sunday. Routes 32 Glendale Galleria - GCC, 3 Galleria-JPL, 7 Riverside Rancho – GCC, and 4 Roosevelt Middle School – Galleria experienced the greatest decreases in weekday ridership; all of these routes except Route 4 serve Glendale Community College.

Weekday ridership increased on the La Cañada Shuttles Route 33 La Crescenta - JPL (+16 percent) and Route 34 La Crescenta - La Cañada High School (+24 percent).

Weekday ridership declines have been modest on Routes 1 and 2 along Central and Brand in downtown Glendale. Saturday ridership increased on both routes and Sunday ridership increased on Route 1. Route 6 Pacific Community Center – Glendale High School also has increased ridership on Saturday.

**Table ES.2
Beeline Percentage Changes in Ridership by
Route and Day of Week, 2013 to 2018**

Route	Weekday	Saturday	Sunday
1	-3%	+14%	+15%
2	-6%	+11%	-7%
3 (31 Saturday)	-34%	-36%	--
32	-55%	--	--
33	+16%	--	--
34	+24%	--	--
4	-25%	-11%	-22%
5	-16%	-23%	--
6	-17%	+4%	--
7	-26%	-3%	--
11	-11%	--	--
12	-10%	--	--
Total	-21%	-8%	-9%
Local Routes	-22%	-8%	-9%
Express Routes	-10%	--	--

Source: Ridecheck Data, 2018 and 2013

Table ES.3 shows service effectiveness in terms of passenger boardings per revenue hour, a common measure of productivity in the transit industry. Route 34 – La Cañada High School Shuttle, Route 3 Galleria-JPL, and Route 4-Roosevelt MS-Galleria are the most productive routes on weekdays, while Route 4 is the most productive route on weekends. Not surprisingly, productivity is highest on weekdays and lowest on Sunday. The Metrolink Express routes have the lowest productivity. On an annualized basis, i.e., including all weekday, Saturday, and Sunday service, overall productivity is 20.9 passenger boardings per revenue hour.

As a general rule of thumb in assessing service effectiveness by means of passenger boardings per revenue hour on weekdays, 40 indicates a good route, 20 is acceptable for a community route, and anything below 15 is a red flag to examine the route more closely and restructure, change span of service or cancel service. The lowest productivity is seen on Route 31-Glendale/GCC on Saturday, with 9.7 boardings per revenue hour.

**Table ES.3
Beeline 2018 Boardings per Revenue Hour by
Route and Day of Week**

Route	Weekday		Saturday		Sunday	
	B/RH	Rank	B/RH	Rank	B/RH	Rank
1	18.4	6	13.2	5	11.6	3
2	17.9	7	16.2	3	13.1	2
3 (31 Saturday)	29.9	--	9.7	--	--	--
32	16.2	--	--	--	--	--
33	18.0	--	--	--	--	--
34	36.6	--	--	--	--	--
4	28.6	1	28.1	1	18.5	1
5	28.1	2	16.1	4	--	--
6	21.0	5	18.6	2	--	--
7	21.2	3	12.0	6	--	--
11	15.8	9	--	--	--	--
12	17.3	8	--	--	--	--
Total	21.5	--	15.8	--	14.2	--
Local Routes	22.1	--	15.8	--	14.2	--
Express Routes	16.7	--	--	--	--	--

Source: Ridecheck Data, November 2018

Percentage changes in Beeline boardings per revenue hour since the 2013 ridecheck are similar to changes in ridership, since there have been only minor changes in revenue hours. Productivity increased from 2013 to 2018 on the La Cañada Shuttles (Routes 33 and 34) on weekdays, Routes 1, 2 and 6 on Saturday, and Route 1 on Sunday.

On-board Survey Findings

Beeline riders are using transit primarily for school and work trips: 38 percent of all trips are work-related and 25 percent are school-related. The City of Glendale accounts for the overwhelming number of origins and destinations on Beeline buses. Approximately 84 percent

of all trips begin and end in Glendale. Glendale Community College, the Glendale Transportation Center, Hoover High School, and various stops in downtown Glendale are major destinations for Beeline passengers.

Most riders get to or from the bus by walking and 18 percent of all riders transfer from another bus. Beeline riders tend to be frequent, long-time riders, but 15 percent began using the system in the past six months.

Survey respondents expressed an overwhelming preference for greater frequency on existing routes over new or extended routes to new places. Respondents were more likely to choose fewer stops to speed up the buses, even if it meant a longer walk to/from the stop. More peak period service ranked highest among weekday improvements. The most requested weekend changes were to operate more routes on Saturday and to operate later in the evening.

A new question in this year's survey asked about any factors that prevent greater use of the Beeline. Over one-third of respondents indicated that there were no factors, while one-quarter said that Beeline routes do not travel where they need to go and one-fifth reported that the Beeline does not travel when they need it.

Over three-quarters of all respondents carry smartphones, and a majority in every demographic category measured have smartphones with them. Among respondents 62 years of age and older, 57 percent reported carrying a smart phone, compared to 29 percent in 2013. Half of Beeline customers have used NextBus. NextBus use is least common among respondents 62 and older and among respondents 17 and under.

NextBus has replaced printed schedules as the most common way to find out schedule information. Customers also prefer NextBus as their future source of information, followed by printed schedules and Google Transit. The majority of respondents pay for their fare with cash, and about half indicated that cash is their preferred future mode of payment. Only 28 percent of respondents own a Metro TAP card.

Beeline riders are more likely to be female than male. Many Beeline riders report low incomes, but almost 40 percent of local riders have household incomes above \$20,000 and 73 percent live in a household with at least one vehicle. Riders are of all ages. Since 2013, the percentage of riders age 62 and older has increased from 12 to 18 percent. The most common ethnicity is Latino, but Latino riders do not constitute a majority of all riders.

Beeline riders are very pleased with the service. On a scale of one (poor) to four (great), respondents rate Beeline service at an average of 3.57, a very high rating and an increase from 3.36 in 2013. The highest rated items are cleanliness, safety, and operator courtesy. The lowest ratings among all service elements are for availability of schedules (3.36), but even this score is respectable. Customer ratings increased for each service element since 2013.

Regional Bus Service in and Near Glendale

Metro is clearly a key provider of regional bus service in Glendale, with 14,000 weekday boardings and 7,000 to 8,000 weekend boardings at stops within the City. The most important

Metro lines in terms of ridership within Glendale are Routes 90 and 91 along Glendale Avenue, Cañada Boulevard, Montrose Avenue, and Foothill Boulevard, Route 92 on Brand Boulevard and Glenoaks Boulevard, and Routes 180/181/780 on Broadway, Central Avenue, and Los Feliz Boulevard.

Burbank and Pasadena also operate local bus networks within their cities. There are limited connections between either of these networks and the Beeline, although there appear to be important travel patterns between the three cities

The smartphone-based travel database developed by Metro indicates that Foothill Boulevard travel tends to stay along the corridor from Sunland to Pasadena. The geographic unit of the census tract is more appropriate for an assessment of regional as opposed to local travel, and the inability to pinpoint specific locations of interest such as GCC due to privacy concerns further limits the usefulness of this data source in reimagining the local Beeline network.

Public Outreach

The project team developed a multi-lingual, community-wide online survey (e-survey) designed to invite input from the Glendale community and individuals who travel within and through Glendale. The e-survey was open online and promoted extensively over eight weeks, from the second week of February through the second week of April, to allow for responses from Glendale Community College when they returned for spring semester and from community events during that time period. Viable responses were received and analyzed from 682 individuals.

Survey findings highlighted the following opportunities that can be addressed by TRA recommendations:

- Need for transportation is a critical driver for transit usage -one-third of transit riders do not have a vehicle and 43% have one vehicle (significantly higher on both counts than non-transit users).
- Lack of awareness of the Beeline service is a potential area to address. Over 40 percent of responding non-transit users are unaware of any bus service in the Glendale area.
- Opportunities do exist for educating and travel training non-users. Twenty-eight percent of non-transit users said they would consider riding the bus if they felt more confident. Only 10 percent of respondents indicated they would not consider riding the bus.
- At 22 percent of all respondents, students represent a significant market. Nearly four out of ten responding students indicated they rode the bus. For students who do ride Beeline or LCF Shuttle, 37 percent wanted a free ride with their student ID. Of students who don't ride the bus, 21 percent reported they wanted a free ride with their student ID.
- There is potential opportunity—and demand—for later weekday service. Fifteen percent of respondents reported returning home between 8–10pm. This is consistent with current

bus rider suggestions for later service during the week, which was reported as a priority enhancement by 37% of Beeline/LCF Shuttle riders.

Recommendations

The recommendations presented here are the result of analysis of the ridecheck and surveys, fieldwork by project team members, discussions with Glendale transit staff, and insights gleaned through the public outreach process. Existing riders value greater frequency on existing routes, faster service, additional peak-period service, and later hours of operation in the evening. E-survey respondents who do not ride the Beeline value a fast, direct ride to their destination, more choices (added routes), a shorter wait (increased frequency), and later service in the evening. The respondents also stressed the need for transit apps that track the buses in real time and enable electronic fare payment. Respondents who ride Metro or Metrolink requested coordinated transfers between these services and the Beeline.

The recommendations are intended to provide:

- Frequent, faster, later service
- New connections within the City of Glendale
- New connections between Beeline and Metro/Metrolink – Beeline as the way into Glendale
- Connections to/from neighboring cities

Near-term recommendations (over the next year) include:

- Operate Beeline service on Central Avenue and Metro service on Brand Boulevard. Combining Beeline service on a single street instead of operating a short distance apart would double the frequency of service from one bus every 20 minutes to one bus every ten minutes *at minimal cost*. This recommendation makes Central Avenue the corridor for local service and Brand Boulevard the corridor for regional service.
- Introduce a new Route 8 along South Glendale Avenue connecting the Glendale Transportation Center with Glendale Community College. Residents living near South Glendale Avenue have requested Beeline service for a long time, and GCC administrators are requesting a link to commuter rail. The route would operate every 20 minutes on weekdays and Saturday. To avoid extensive duplication with Metro and Beeline Routes 3 and 7, Route 8 is proposed to operate express between Broadway and GCC.
- Discontinue Route 32. This route was introduced several years ago to support Route 3 with additional service between downtown Glendale and GCC and has never performed up to expectations. The November 2018 ridecheck revealed only 160 riders on a typical weekday, a 55 percent decrease from 2013, and the lowest productivity of any local Beeline route (16.2 riders per revenue hour). The resources saved by this continuation can be put to better use on the new Route 8.

- Improve frequency on Route 4 and extend to San Fernando Road. Route 4 leads all Beeline routes in weekday and Saturday ridership and productivity. This proposal increases frequency on this route to one bus every 15 minutes and also extend the route westward via Broadway to San Fernando Road to connect with Metro Lines 94 and 794. This connection would provide a more direct route into downtown Glendale for riders coming from northwest of the City.
- Add evening service. Two pilot projects are proposed to provide later service on the Beeline. Evening Pilot A would provide service until 10:15 pm on Monday through Thursday nights during the fall and spring semesters on Routes 3, 7, and 8 (serving the GCC Verdugo campus), and until 8:30 PM Monday through Thursday on Route 4 (serving the GCC Garfield campus).. GCC has night classes on Monday through Thursday nights that are not served by the current schedule. Evening Pilot B would provide service until 10:15 pm on Friday and Saturday nights on local Routes 1 through 8. The Americana at Brand closes at 10 pm on Friday and Saturday, so the last outbound trip would depart at 10:15 pm. Expectations regarding ridership and productivity would be set before implementation on both pilot projects, and the success of the pilot projects can be measured in 12 months against expected performance.
- Consider participation in a U-pass Program with Metro and GCC. Metro has established a U-pass program with several colleges and transit agencies and would like to add Glendale Community College as a participating institution and the Beeline as a participating transit agency. Students can obtain passes at their school, and the school will be billed at a rate of 75 cents per boarding. Each participating agency is reimbursed 75 cents per boarding at the end of each semester. The City is concerned, and rightly so, about the impact of a U-pass program at GCC on farebox revenue. This study recommends that the Beeline continue to explore ways of participating in the U-pass program while keeping fare revenue whole. The study further recommends that any agreement to participate in a U-pass program be structured as a one-year demonstration project, with ridership and revenue impacts to be calculated at the end of the demonstration period.
- Develop a MicroTransit demonstration project in the area north of Route 3 along Foothill Boulevard, extending west to encompass the Far North Glendale city limits, using the existing dial-a-ride vehicles to test the feasibility of MicroTransit as a service truly complementary to existing fixed-route service. As part of this demonstration, the study further recommends that the City explore possible financial participation by Los Angeles County and the City of Los Angeles, which may affect the geographic boundaries of the demonstration project.
- Add service to Burbank. The study recommends new midday service on Route 12, thus providing all-day service to the Disney Grand Central Creative Campus on Flower Street & Circle 7 Drive. The route would operate between the Glendale Transportation Center and downtown Burbank on weekdays only.
- Restructure Route 11 via Brand Boulevard. Route 11 is the Metrolink Express route that connects GTC and downtown Glendale. This recommendation streamlines this route to

serve Brand Boulevard only, since the new Route 8 will provide a direct connection to Glendale Avenue. This option provides a more direct and faster connection between GTC and Brand Boulevard.

- Restructure Route 7. Every trip on this route serves Hoover High School and Toll Middle School on a route deviation via Glenwood–Concord–Stocker. 80 percent of eastbound alightings at the Glenwood & Concord stop occur on three trips and two-thirds of westbound boardings occur on a single trip. The recommendation is to deviate only certain trips at school bell times to the schools and operate the remainder of the trips via Pacific and Stocker without a deviation. Passengers needing to travel to this location can transfer to Route 5. Adjustments to the schedules of Routes 5 and 7 at Glenwood & Concord are also warranted to meet demand.

Mid-term recommendations (over the next two to five years) include:

- Establish dedicated bus lanes on Central Avenue in both directions. Several studies and plans over the past 15 years have called for transit signal priority and bus-only lanes in Downtown Glendale. Frequent Beeline service along Central Avenue makes this corridor the preferred location for dedicated bus lanes combined with transit signal priority to speed bus service. Dedicated lanes (one in each direction) could be established along the length of Central Avenue between Stocker Street and San Fernando Road or in the most congested segment between Glenoaks Boulevard and Colorado Street. This recommendation anticipates eventual Streetcar operation on Central Avenue.
- Restructure bus service on the Foothill Corridor. A Foothill Boulevard route between Tujunga and the Gold Line Memorial Station in Pasadena would provide more coherent and structured service within the corridor. The route could operate non-stop in Pasadena to the Gold Line. An alternate western terminus for this route at Lowell Avenue or at a nearby location in Far North Glendale where a turnaround loop is possible. This recommendation involves coordination among multiple jurisdictions regarding funding for the route. The City and County of Los Angeles, the City of La Cañada Flintridge, and the City of Pasadena would all be served by the long version of the proposed route, in addition to the City of Glendale. With the new Foothill Boulevard route, Route 3 could be restructured to terminate at Pennsylvania Avenue & Foothill Boulevard. The La Cañada Shuttles (Routes 33 and 34) would continue to operate as they do today.
- Respond to NextGen changes affecting Glendale. Metro's NextGen study is still underway and its final recommendations are unknown. The City has emphasized its concerns regarding Metro's possible elimination of service in east Glendale that would leave this portion of the City unserved. The mid-term recommendation if Metro Line 183 is discontinued is to increase frequency on Route 6 along Colorado Street to a consistent 15 minutes.

- Extend Route 4 to the Glendale Transportation Center. GCC has requested this link, but demand for the Route 4 extension is uncertain. It is included among the mid-term proposals pending further analysis of travel patterns to and from the Garfield campus.

Ridership and cost impacts of the near-term and mid-term recommendations are presented in Table ES.4. Detailed impacts of each proposal are included in Chapter 6.

**Table ES.4
Annual Impacts of Recommendations**

Route	Recommendation	Annual Impacts on				
		Ridership	Revenue	Operating Cost	Net Op. Cost	Revenue Hours
NEAR--TERM RECOMMENDATIONS (within 1 year)						
Total Weekday - Near-term		284,552	\$143,631	\$1,706,512	\$1,624,278	20,022
Total Saturday - near-term		41,527	\$21,281	\$442,171	\$420,890	5,007.60
Total Sunday -near term		3,441	\$1,737	\$23,723	\$21,987	268.67
Annual Total - Near-Term		329,521	\$166,649	\$2,172,406	\$2,067,155	25,298
MID-TERM RECOMMENDATIONS (2-5 years)						
Total Weekday - mid term		270,129	\$136,351	\$1,824,246	\$1,687,895	20,660
Total Saturday - mid term		1,220	\$616	\$6,470	\$5,854	73
Total Sunday mid-term		442	\$223	\$0	(\$223)	0
Annual Total - Long-Term		271,791	\$137,190	\$1,830,716	\$1,693,526	20,733

**Glendale Beeline
Transit Route Analysis
Chapter 1: Introduction and Previous Studies**

1.0 Introduction and Study Purpose

The Transit Route Analysis is intended to capture an abundance of precise data and analyze the existing network of all fixed route transit services (regardless of provider) in the Glendale, Burbank, La Canada Flintridge, and unincorporated areas of Los Angeles County – Montrose and La Crescenta. Evaluation of the fixed route systems' relationship to each other, to rail, and to future bus rapid transit, and to streetcar services is a key component of this study.

The Analysis will require a deep dive into local conditions, including considerable community outreach, to generate significant data to support service recommendations and to support the parallel Metro NextGen Project in which Glendale is an active participant. Regardless of provider or mode, the results of the Transit Route Analysis will be a reimagining of the local transit service network in the Beeline service area, with specific recommendations for Glendale's service deployment. The study will also support the Mobility element of the general plan, guiding future policy decisions regarding mobility in Glendale.

Specific purposes for undertaking this study include:

- Collect an abundance of operational data from Beeline, Burbank, Metro, and LADOT operations to create a complete and detailed statistical picture of the ridership, productivity, and performance by route and route segment.
- Obtain data and provide analysis to understand how and why passengers travel on and among Beeline routes, between Beeline, Metro, and LADOT routes, and between fixed-route bus and Metrolink and Amtrak rail service; document key "complete trip" travel patterns and trip generators.
- Obtain operational data to produce fact-based recommendations for improved regional connectivity.
- Conduct segmented public outreach to individual groups in Glendale, including local schools, the business community, new residential developments, and community organizations; implement and document a plan that exceeds Title VI outreach requirements.
- Engage with riders and non-riders on service preferences and recommendations throughout the development process.
- Produce fact-based recommendations for an updated Glendale Beeline service deployment that optimizes operating effectiveness and efficiency of the existing fixed-route network by creating new service, modifying route alignments, running times, frequencies, and spans of service, and fine-tuning service levels to ensure the best allocation of City resources.

- Produce fact-based recommendations for Metro service deployment and operation/ coordination with Burbank Transit that optimizes operating effectiveness and efficiency among all services in the Beeline service area.

The Beeline operates within a transit-rich environment. Figure 1.1 shows the regional and Beeline routes that operate in or through Glendale.

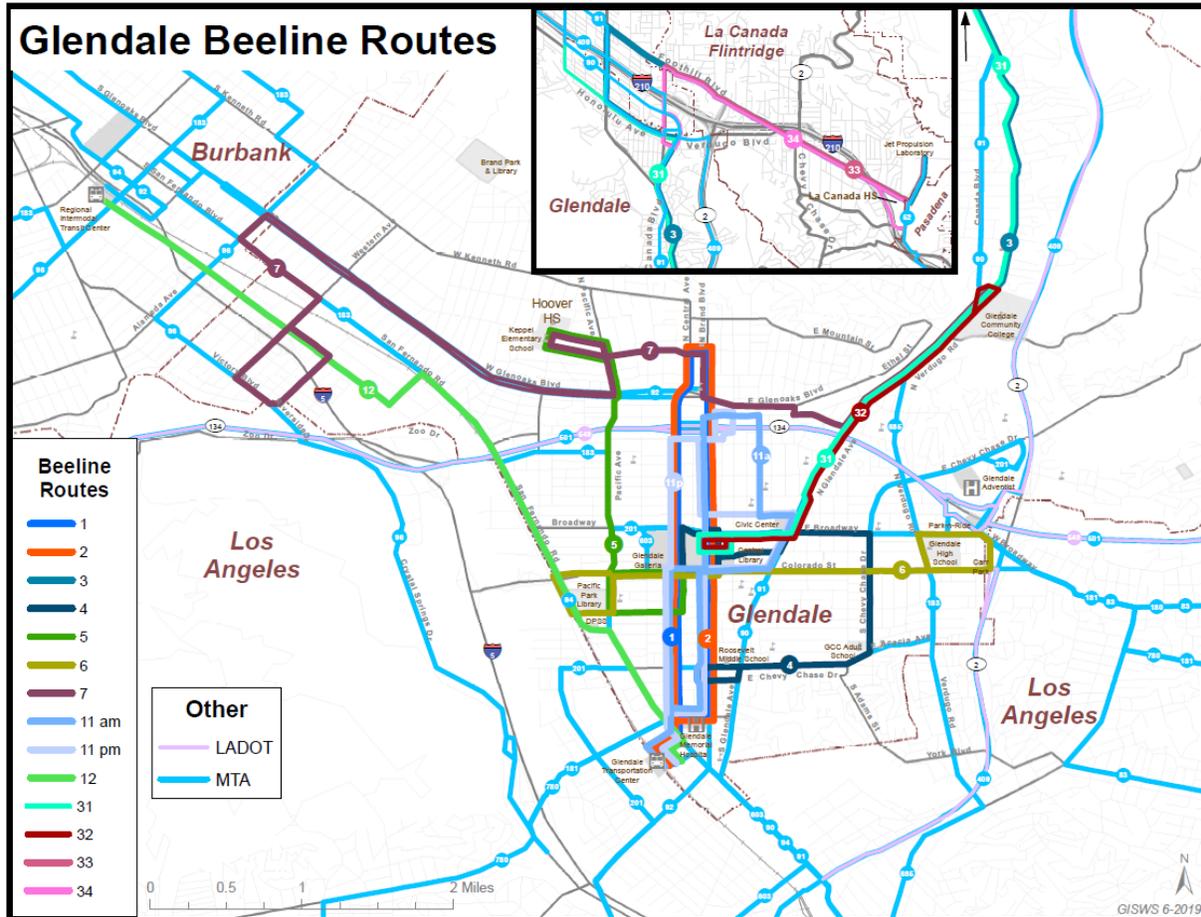


Figure 1.1 Glendale Beeline Routes and Regional Routes in and through Glendale

1.1 Organization of the Transit Route Analysis Report

The following section of this introductory chapter reviews local planning recommendations and evaluates potential impacts on Beeline service. Chapter 2 presents detailed route profiles of each Beeline route, including frequency, span of service, operating and performance data, financial data, and detailed route segment ridership, productivity, and a general summary for each Beeline route. Detailed charts and graphs are included for each route in this chapter, with additional information provided in Appendix A.

Chapter 3 presents results of the on-board survey, including origin-destination information, usage patterns, rider preferences, and ratings of Beeline service. Chapter 4 examines

opportunities for enhanced agency coordination of local and regional services within the City of Glendale and nearby areas and analyzes Metro's "Big Data" findings. Chapter 5 describes extensive outreach efforts to Glendale residents, employees, and businesses and summarizes the results of these efforts, including e-survey findings. Chapter 6 identifies service options for the Beeline and presents the recommended service plan.

1.2 Review of Previous Studies

This section reviews local planning recommendations and evaluates potential impacts on Beeline service. These summaries focus on mobility with an emphasis on public transportation.

There is great importance in connecting the Tropic Community (where the Glendale Transportation Center is located) to Downtown utilizing Central Avenue and Brand Boulevard.

The northern portion of Glendale is similar to the Crescenta Valley that maintain a suburban lifestyle in communities that are linked by a few major arterials.

From a regional perspective, the City desires high quality transportation traveling east-west between major destinations in Pasadena, Glendale, Burbank, and elsewhere and north-south rail service that provides an alternative to traveling on I-5. Overall, the City understands the importance of promoting alternative modes of transportation and encourages enhancing the provision of public transportation through major infrastructure improvements such as dedicated lanes, real-time bus information, and quality transit amenities that attract new riders.

The documents reviewed in this section are listed below. Documents are divided into two categories. The first category includes Area Plans that encompass the entire City and Specific Plans that emphasize a particular neighborhood or area. The second category are Project Level Plans, which are often the first step towards implementation. These plans describe a project concept(s) and provide recommendations to governing boards to identify a mutually preferred alternative.

Documents reviewed include the following.

Area Plans

- Glendale General Plan – Circulation Element (August 1998)
- Glendale Downtown Specific Plan (November 2006)
- Glendale Downtown Mobility Study (March 2007)
- North Glendale Community Plan (November 2011)
- Greener Glendale Plan (March 2012)
- City of Glendale Bicycle Transportation Plan (September 2012)
- Montrose Vision 20/20 (August 2016)
- Glendale Citywide Pedestrian Plan (Part 1: Taking Stock, September 2016 and Part 2: Taking Steps, September 2017)
- South Glendale Community Plan (January 2018)
- Tropic Center Plan (July 2018)

Project Level Plans

- Space 134 (November 2015)
- Metro North Hollywood to Pasadena Bus Rapid Transit Corridor Technical Study (February 2017)
- Los Angeles – Glendale – Burbank Feasibility Study (Presentation to City of Glendale Transportation and Parking Commission Meeting, March 2019)
- Glendale – Burbank Regional Streetcar Feasibility Study (Progress Update to City Council Presentation April 2019)

Area Plans

General Plan – Circulation Element (August 1998)

While the City's Circulation Element was adopted on August 25, 1988, a number of goals and policies support a strong public transportation network. Increased support of the public transit system, provision of high quality streetscapes such as bus shelters, and growth in areas served by public transit all remain important to the health of the Beeline system.

The goals and policies are still relevant today and support the City's efforts to continue to improve the provision of transit services while adhering to vision of the City. In order for the Beeline to continue to adhere to the General Plan, the agency should remain current on improvements occurring within the transit industry and adapt to the evolving transportation environment.

Glendale Downtown Specific Plan (November 2006 with subsequent amendments)

This Plan includes a chapter on Mobility which presents standards and guidelines to improve circulation in Downtown. One of the important features of this Plan is a street classification system that includes Pedestrian Priority Streets, Transit Priority Streets, Bicycle Priority Streets, and Auto Priority Streets. This system is unique in that it characterizes street segments by giving priority treatment to specific modes in order to balance competing needs.

Transit Priority Streets identified in the Downtown Specific Plan include Central Avenue, Brand Boulevard, Broadway, and Glendale Avenue. Transit Priority Streets provides support to improve public transportation service along these corridors through signal prioritization, bus-only lanes, and queue jumps. In addition, investments in shelter amenities and real-time bus information are given priority along these corridors. Such policies are consistent with the General Plan's Circulation Element. Moreover, the plan emphasizes supporting regional transit services that improve access to Downtown.

Glendale Downtown Mobility Study (March 2007)

The Downtown Mobility Study is the document that fulfills a key step towards enacting the Glendale Specific Plan (GSP). This Study goes further into crafting policies that enhance transit service. One of the key goals of the Study is to increase the percentage of transit trips in Downtown.

Immediate term actions include marketing the number of transit services available in Downtown, implementing recommendations from the Beeline's Short Range Transit Plan (SRTP), consolidating high-frequency routes on Transit Priority Streets, and developing performance standards for Transit Priority Streets. Short term actions include considering signal priority, working with Metro on an east-west regional transit service, and utilizing a Universal Transit Pass. Medium term actions include operating a hybrid bus or unique vehicle for downtown service that operates on a 10-minute frequency. Beeline has implemented a number of supportive actions in recent years such as facilitating the use of Metro's TAP pass on Beeline buses and utilizing Next Bus for real-time bus tracking.

North Glendale Community Plan (November 2011)

The North Glendale Community Plan emphasizes enhancements to commercial districts and limits on residential growth into undeveloped hillside areas. The Beeline operates service in the La Cañada-Flintridge Town Center and the Montrose Shopping Park along "Primary Transit Streets" and "Pedestrian Priority Areas". Primary Transit Streets are designated in the Community Plan as streets in which priority is given to enhance public transportation service through signal prioritization, enhanced transit stops, and bus lanes. Pedestrian Priority Areas are areas that receive priority in pedestrian enhancements such as wider sidewalks, pedestrian scale lighting, and signalized crosswalks. Provision of fast and attractive transit service within a walkable environment will encourage transit usage.

Greener Glendale Plan (March 2012)

The Greener Glendale Plan is a sustainability plan that focuses on seven specific areas: energy, water, waste, transportation, urban design, urban nature, and environmental health. A key goal of the plan is to reduce greenhouse gas (GHG) emissions. The plan includes a GHG inventory from a number of sources including electricity consumption, natural gas, vehicle fuel, water, and waste disposal. A comparison between 2004 and 2009 is illustrated in the plan in which transportation and landfills were the two sources that saw an increase in GHG emissions during these two years.

The plan outlines several objectives to help reduce GHG emissions from the transportation sector. Objectives relating to public transportation include connecting passengers to regional public transportation efforts such as Metro's proposed LRT, promoting public transportation, and replacing diesel buses with buses fueled with Compressed Natural Gas (CNG). The Beeline has already taken the latter action, with all its buses now fueled by CNG. These objectives provide a blueprint on how public transportation can play a role towards increasing sustainability for the City by reducing GHG emissions.

Since the plan was completed, the California Air Resources Board (CARB) approved Resolution 18-60, which describes the State's efforts in reducing GHG emissions by achieving a zero-emission transit system by 2040. This resolution sets a mandate, known as the Innovative Clean Transit (ICT) Regulation, for the Beeline and all other transit operators in the State to begin purchasing zero-emission buses (ZEB) beginning in 2026, if feasible without reducing service. The City is required to submit a ZEB rollout plan by July 1, 2023.

City of Glendale Bicycle Transportation Plan (September 2012)

The City of Glendale Bicycle Transportation Plan identifies existing infrastructure such as inverted U-racks for bicycle parking at a number of locations including transit stops. Bicycle infrastructure is also available at the Glendale Transportation Center. At the time of the plan, there were eight bicycle lockers and two wave racks at the GTC. Finally, the plan identifies 10.9 miles of Class II (a striped lane on the roadway for one-way bicycle travel) and 11.1 miles of Class III (a shared path with either pedestrians or automobiles marked by signage or pavement marking) bicycle lanes available in the City at the time of Plan adoption. The majority of these bicycle lanes are located in the northern and western areas of the City.

Bicycle use to and from buses provides first-mile and last-mile connections between bus routes and travel origins and destinations. The plan identifies study corridors such as Brand Boulevard and Verdugo Road, both of which present opportunities to improve bicycle/bus connectivity. The Plan documents the importance of coordination between Beeline, Metro, and Metrolink to ensure that these transit modes continue to accommodate bicycles on transit vehicles. All Beeline buses have bike racks on the front. Enhancing bicycle infrastructure and access to the local and regional public transportation modes through continued coordination is essential towards enhancing the customer experience for cyclists.

Montrose Vision 20/20 (August 2016)

The Montrose Vision 20/20 document is an economic development tool that provides a framework over a five-year period on how the community can attract more visitors to the Montrose Shopping Park. One of the document's goals is to "Explore transportation options from major employers to bring visitors to Montrose" (p. 12). The document emphasizes the importance of parking availability throughout the area and does not seriously consider the role that transit can play.

Several Beeline Routes serve Montrose, including Route 3 and the La Cañada Shuttles (Routes 33, and 34) on weekdays and Route 31 on Saturday. These routes connect Montrose with downtown Glendale, Glendale Community College, the Jet Propulsion Laboratory (JPL), and the La Cañada Flintridge Town Center, thus meeting Montrose Vision 2020's goal of transporting employees from major employers and employment sites into the community.

Glendale Citywide Pedestrian Plan (Part 1: Taking Stock, September 2016 and Part 2: Taking Steps, September 2017)

The second part of the plan is titled *Taking Steps* and provides recommendations on how to improve access to public transportation. Discussion on how to improve the first and last mile connection and the customer experience is examined. Pedestrian lighting, wayfinding, and landscaped buffers are just a few of the elements described in this section.

Taking Steps provides a list of projects that can be implemented in the first five years of the plan. Two projects are related to bus stops in which a First/Last Mile Analysis should be completed. The two locations identified in the City are Broadway at Glendale Avenue (Beeline

Routes 4 and 11 and Metro Routes 80/180/780) and Brand Boulevard at Broadway (Routes 1, 2, 4, 11, and several Metro routes).

Pedestrian access to transit stops remains an important component of the public transportation network. Safety considerations such as pedestrian crossings and lighting are all important to the transit user. The City continues to evaluate placement of transit stops and to ensure that stops are accessible and safe.

South Glendale Community Plan (January 2018)

The South Glendale Community Plan provides the development goals and policies of the City of Glendale just south of SR-134. The City was founded in this area and now includes many of the City's major destinations. The Community Plan grew from previous plans and provides the most recent framework on how the City will grow over the next 25 years. The plan's vision is to strengthen major corridors to accommodate an additional 7,000 to 9,000 housing units in the area. The vision includes a multi-modal approach combining strong pedestrian and bicycle connection within in the neighborhood as well as investment in public transportation infrastructure that includes three distinct modes: bus rapid transit (BRT), east-west light rail transit (LRT) line on SR-134, and a streetcar on Brand Boulevard.

The plan discusses two BRT alternatives that are being explored by Metro and are detailed later in this chapter. The Community Plan also identifies a potential Metro LRT that would travel east-west on SR-134. The Beeline could provide feeder service should Metro move forward with an LRT option.

The Brand Streetcar is proposed to operate along a historic Pacific Electric Railway line along Brand Boulevard and Glenoaks Boulevard. The Brand Streetcar might serve the Glendale Transportation Center in the southern part of the City and extend on its northern end to the City of Burbank and/or Burbank Airport.

These three modes can impact Beeline transit operations. For example, building dedicated lanes for BRT will have limited negative impact on automobile traffic, thus positively affecting transit operations. The City will work with Metro during the Environmental Review process to minimize the impact to transit operations as well as find opportunities to improve the provision of Beeline service. Metro is starting the Environmental Impact Review (EIR) phase of the project, with BRT service implementation scheduled for 2024.

Tropico Center Plan (July 2018)

This plan identifies the area around the Glendale Transportation Center as a mixed use neighborhood, the majority of which will be residential uses. Apartments are already being built, transforming the area. Zoning codes have been updated to allow for higher-density residential units in the area around GTC. Policy recommendations strengthening public transportation are also included in the Plan. Recommendations include enhanced service into Downtown Glendale, evaluation of service into Burbank, integration of fare payment, reduced Metrolink fares between Glendale and Los Angeles Union Station, and an improved customer experience at major transit stops.

Project Level Plans

Space 134 Final Transit Recommendations (Draft – November 2015)

Space 134 is a proposed cap over SR-134. Two visioning efforts were completed by the City of Glendale in 2013 and 2016.

Space 134 takes into consideration Metro's planning efforts for both Bus Rapid Transit (BRT) and potentially Light Rail Transit (LRT) in the future. These individual modes provide high-quality public transportation service between the Cities of Pasadena and North Hollywood through the City of Glendale. A proposed station location for both modes is identified on Brand Boulevard at SR-134 if service operates on SR-134. North-south feeder service is projected to operate on Brand Boulevard given the amount of transit services operated by both Beeline and Metro along this corridor. Another option that Metro is considering during the alternatives analysis is the BRT operating on an arterial instead of SR-134. In this case, the technical memorandum recommends BRT stations at the far side of Goode Avenue at Brand and a midblock stop on Sanchez Drive west of Brand Boulevard.

Beeline staff will continue to work with the City's project team to ensure that transit amenities are incorporated into the project.

Metro North Hollywood to Pasadena Bus Rapid Transit Corridor Technical Study (February 2017)

The Metro North Hollywood to Pasadena Bus Rapid Transit Corridor (NoHo to Pasadena BRT) Technical Study is the first step in identifying a proposed BRT corridor connecting the cities of Pasadena and North Hollywood. The Technical Study identifies two alternatives: 1) a Street Running concept and 2) a Freeway Running concept. Both concepts provided a number of different alignments, many of which proposed different station locations in the City of Glendale. The two concepts are described as follows:

- Street Running concept – this concept travels on surface streets over a 17.3-mile route with 23 stations. Two alternative alignments are proposed with the primary alignment traveling from Pasadena west on Broadway, north on Brand Boulevard, and west on Glenoaks Boulevard. The secondary alignment travels from Pasadena west on Broadway, north on Central Avenue, west on Glenoaks Avenue, south on Grandview Avenue, and northwest on Flower Street into Burbank. Depending on the alignment, there are anywhere from six to eight stations in the City.
- Freeway Running concept – this concept travels on SR-134 for approximately 15.7 miles on High-Occupancy Vehicle (HOV) lanes between Pasadena and North Hollywood with an alternative option traveling to the Hollywood Burbank Airport. Only one stop is located in the City of Glendale at Brand Boulevard at Goode Avenue or Sanchez Drive.

Metro anticipates that construction could be completed by 2022 to 2024. The Beeline should consider redesigning service as needed to function as feeder service to the BRT regardless of which concept is selected by Metro.

Los Angeles – Glendale – Burbank Feasibility Study (Presentation to City of Glendale Transportation and Parking Commission Meeting, March 2019)

The Los Angeles – Glendale – Burbank Feasibility Study examines the potential for frequent rail service between the cities of Los Angeles and Burbank with a proposed rail station in the City of Glendale. The expanded Metrolink option examines increasing frequencies between one-hour to half-hour bi-directional service options and a late night service-option. Both these options include a new Grandview/Sonora station located in the City of Glendale in the Grandview area on Sonora Avenue near the intersection of San Fernando Road. Three Metro routes (Lines 94, 794, and 183) stop on San Fernando Road at Sonora Avenue.

The final report will be presented to Metro's Board of Directors in the Summer or Fall of 2019. Approval of Feasibility report is just the initial step in a long sequence of phases that include environmental, engineering, and construction.

Glendale – Burbank Regional Streetcar Feasibility Study (Progress Update to City Council Presentation April 2019)

Two Preliminary Alternatives were presented to City Council at its April 9, 2019 meeting. These two alternatives are: 1) Central/Brand Loop and 2) Central/Brand Two-Way. The study identifies advantages and disadvantages for both alternatives.

The Central/Brand Loop will begin at GTC, running north on Central to Colorado. From Colorado, the streetcar will provide loop service continuing north on Central toward Burbank and south on Brand toward GTC. The primary advantage of this alternative, as indicated in the Study, is that the streetcar will cover a larger area at the loop. Disadvantages of this alternative include is that the system is "less intuitive" because the loop covers a larger area with the streetcar traveling in a single direction.

The Central/Brand Two-Way begins at GTC, running north on Central Avenue, east on Colorado Street, and north on Brand Boulevard. The Streetcar will run bi-directionally on all segments. Advantages includes providing service in the prime activity zone in Downtown. Disadvantages of this alternative include the possibility of a greater impact of traffic leading to SR 134 on/off ramps on Streetcar operation.

A streetcar along either alignment would lead to restructuring of Beeline service in downtown, with a specific impact on the current Routes 1 and 2 operating along Brand Boulevard and Central Avenue.

1.3 Summary

The plans reviewed cover a wide spectrum of city planning, from city-wide and area-specific plans with transportation components to transportation plans focusing on transit to enhance the

mobility of residents and visitors. Plans for Bus Rapid Transit and a Streetcar will have regional implications beyond Glendale as well as specific impacts within the City. Many plans call for a greater role for transit to support increased residential densities and provide an alternative to single-occupancy vehicles. Increased focus on bicycle and pedestrian infrastructure is also a part of many of these plans.

This study develops specific recommendations for transit improvements to support (and in some cases to anticipate) these visions of a future Glendale. While not tailored to any specific plan, the recommendations can be implemented in the near-term and the medium-term future to preserve and enhance mobility in a growing City and region.

**Glendale Beeline
Transit Route Analysis
Chapter 2: Route Profiles**

2.0 Introduction

Chapter 2 presents the ridership and productivity analysis of the November 2018 Beeline ridecheck. This evaluation includes an analysis of ridership by route, direction, time of day, and route segment. Route effectiveness or productivity, measured by boardings per revenue hour, is also considered by direction, route segment, and time of day. Route efficiency is analyzed in terms of subsidy per boarding and farebox recovery ratio (the ratio of operating revenue to operating cost) at the route level. Schedule adherence is also analyzed, along with actual versus scheduled running times by route, direction, time of day, and segment.

Section 2.1 summarizes findings related to ridership, productivity, levels of service, and cost efficiency at the route level. Section 2.2 contains route profiles. These profiles report frequency, span of service, operating and performance data, financial data, and detailed route segment ridership and productivity for each route, including:

- Route description, including major corridors, stops, and destinations;
- Schedule, including days of operation, service spans, and frequency;
- Operating and productivity data, (ridership and passengers per revenue hour);
- Ridership trends since 2013;
- Overcrowded segments (125%+ of seated capacity) and maximum loads;
- Subsidy per passenger and schedule adherence ranking among all Beeline routes;
- Assessment of route performance and trends.

Appendix A *Ridecheck Results* (under separate cover) provides all the data collected during the ridecheck in voluminous detail, including ons and offs by stop for each trip and times at each timepoint for each trip. As with any data collection effort, the data can be used in answering all types of questions that will arise regarding Beeline service.

2.1 Overall Findings

Table 2.1 presents ridership by route for weekdays, Saturday, and Sunday. Route 4 Roosevelt Middle School - Glendale Galleria has the highest weekday ridership (1,037 boardings per weekday) and also leads in Saturday and Sunday ridership. Route 3 Glendale Galleria Jet Propulsion Laboratory (JPL) is second in weekday ridership, with 998 boardings per weekday. Other all-day routes have ridership in the range of 500 to 800 boardings per day. Routes 11 (Metrolink Express Glendale Transportation Center to Downtown Glendale) and 12 (Metrolink Express Glendale Transportation Center to Burbank Regional Intermodal Transportation Center) are express routes serving the Metrolink station at the Glendale Transportation Center (GTC) and operate in the morning and afternoon peak periods only, with schedules timed to meet Metrolink trains. On an annualized basis, Beeline ridership is 1.68 million, with 1.55 million on local routes and 0.13 million on the express routes.¹

¹ Route totals were annualized by multiplying weekday ridership by 255 weekdays per year, Saturday ridership by 52 Saturdays per year, and Sunday ridership by 52 Sundays per year. Beeline service does not operate on six holidays. No seasonal adjustment was made.

Table 2.1
Beeline 2018 Daily Ridership by
Route and Day of Week

Route	Weekday		Saturday		Sunday	
	Riders	Rank	Riders	Rank	Riders	Rank
1	540	6	232	4	200	3
2	572	5	284	3	225	2
3 (31 Saturday)	998	2	228	5	--	--
32	160	11	--	--	--	--
33	212	9	--	--	--	--
34	103	12	--	--	--	--
4	1,037	1	436	1	286	1
5	658	4	130	7	--	--
6	500	7	289	2	--	--
7	786	3	178	6	--	--
11	190	10	--	--	--	--
12	307	8	--	--	--	--
Total	6,063	--	1,777	--	711	--
Local Routes	5,566	--	1,777	--	711	--
Express Routes	497	--	--	--	--	--

Source: Ridecheck Data, November 2018

It should be noted that Routes 3, 31, and 32 are interrelated: Route 3 is the long route on weekdays only between the Glendale Galleria and Jet Propulsion Laboratory. Route 32 is a shorter version of Route 3 on weekdays only, operating between the Galleria and Glendale Community College only. Route 31 operates only on Saturday between the Galleria and La Crescenta.

Routes 33 and 34 are the La Cañada Flintridge shuttles, operated by the Beeline for the City of La Cañada Flintridge and branded differently. Route 33 connects La Crescenta with the Jet Propulsion Laboratory. Route 34 operates only around school bell times in the afternoon between La Cañada High School and La Crescenta.

Table 2.2 shows the change in Beeline ridership since the 2013 ridecheck. Fares are unchanged during this period. Overall ridership has decreased by 21 percent on weekdays, 8 percent on Saturday, and 9 percent on Sunday. Routes 32 Glendale Galleria - GCC, 3 Galleria-JPL, 7 Riverside Rancho – GCC, and 4 Roosevelt Middle School – Galleria experienced the greatest decreases in weekday ridership; all of these routes except Route 4 serve Glendale Community College.

Weekday ridership increased on the La Cañada Shuttles Route 33 La Crescenta - JPL (+16 percent) and Route 34 La Crescenta - La Cañada High School (+24 percent).

Weekday ridership declines have been modest on Routes 1 and 2 along Central and Brand in downtown Glendale. Saturday ridership increased on both routes and Sunday ridership increased on Route 1. Route 6 Pacific Community Center – Glendale High School also has increased ridership on Saturday.

Table 2.2
Beeline Percentage Changes in Ridership by
Route and Day of Week, 2013 to 2018

Route	Weekday	Saturday	Sunday
1	-3%	+14%	+15%
2	-6%	+11%	-7%
3 (31 Saturday)	-34%	-36%	--
32	-55%	--	--
33	+16%	--	--
34	+24%	--	--
4	-25%	-11%	-22%
5	-16%	-23%	--
6	-17%	+4%	--
7	-26%	-3%	--
11	-11%	--	--
12	-10%	--	--
Total	-21%	-8%	-9%
Local Routes	-22%	-8%	-9%
Express Routes	-10%	--	--

Source: Ridecheck Data, 2018 and 2013

Table 2.3 shows service effectiveness in terms of passenger boardings per revenue hour, a common measure of productivity in the transit industry. Route 34 – La Cañada High School Shuttle, Route 3 Galleria-JPL, and Route 4-Roosevelt MS-Galleria are the most productive routes on weekdays, while Route 4 is the most productive route on weekends. Not surprisingly, productivity is highest on weekdays and lowest on Sunday. The Metrolink Express routes have the lowest productivity. On an annualized basis, i.e., including all weekday, Saturday, and Sunday service, overall productivity is 20.9 passenger boardings per revenue hour.

As a general rule of thumb in assessing service effectiveness by means of passenger boardings per revenue hour on weekdays, 40 indicates a good route, 20 is acceptable for a community route, and anything below 15 is a red flag to examine the route more closely and restructure, change span of service or cancel service. The lowest productivity is seen on Route 31-Glendale/GCC on Saturday, with 9.7 boardings per revenue hour.

Table 2.3
Beeline 2018 Boardings per Revenue Hour by
Route and Day of Week

Route	Weekday		Saturday		Sunday	
	B/RH	Rank	B/RH	Rank	B/RH	Rank
1	18.4	6	13.2	5	11.6	3
2	17.9	7	16.2	3	13.1	2
3 (31 Saturday)	29.9	--	9.7	--	--	--
32	16.2	--	--	--	--	--
33	18.0	--	--	--	--	--
34	36.6	--	--	--	--	--
4	28.6	1	28.1	1	18.5	1
5	28.1	2	16.1	4	--	--
6	21.0	5	18.6	2	--	--
7	21.2	3	12.0	6	--	--
11	15.8	9	--	--	--	--
12	17.3	8	--	--	--	--
Total	21.5	--	15.8	--	14.2	--
Local Routes	22.1	--	15.8	--	14.2	--
Express Routes	16.7	--	--	--	--	--

Source: Ridecheck Data, November 2018

Table 2.4 shows the change in Beeline boardings per revenue hour since the 2013 ridecheck. Percentage changes are similar to changes in ridership, since there have been only minor changes in revenue hours. Productivity increased from 2013 to 2018 on the La Cañada Shuttles (Routes 33 and 34) on weekdays, Routes 1, 2 and 6 on Saturday, and Route 1 on Sunday.

Table 2.4
Beeline Percentage Changes in Boardings per Revenue
Hour by Route and Day of Week, 2013 to 2018

Route	Weekday	Saturday	Sunday
1	-2%	7%	9%
2	-9%	5%	-10%
3 (31 Saturday)	-8%	--	--
32	-55%	--	--
33	11%	--	--
34	18%	--	--
4	-25%	-11%	-23%
5	-16%	-23%	--
6	-17%	4%	--
7	-26%	-3%	--
11	-14%	--	--
12	-11%	--	--
Total	-21%	-10%	-12%
Local Routes	-22%	-10%	-12%
Express Routes	12%	--	--

Source: Ridecheck Data, 2018 and 2013

Table 2.5 shows overall schedule adherence for each route, as measured at each timepoint on each trip. Schedule adherence is defined as no more than one minute early (to allow for minor variations among watches) and no more than five minutes late at a given timepoint along the route. This detailed measure at each timepoint, a more accurate reflection of how riders view on-time performance, produces results in the 60 to 70 percent range for most transit agencies.

Schedule adherence ranges from a low of 65.6 percent weekdays on Route 1 to a high of 91.9 percent weekdays on Route 6. More crowded and longer routes usually have more difficulty keeping to schedule, explaining the low schedule adherence for Routes 3 and 7. Weekday schedule adherence is 81.9 percent on all routes.

Table 2.5
Beeline Schedule Adherence

Route	Weekday	Saturday	Sunday
1	65.6%	81.8%	84.5%
2	87.9%	60.0%	60.9%
3 (31 Saturday)	79.6%	88.5%	--
32	86.2%	--	--
33	82.2%	--	--
34	86.4%	--	--
4	85.0%	72.9%	96.5%
5	91.7%	66.7%	--
6	91.9%	75.0%	--
7	69.4%	34.7%	--
11	74.1%	--	--
12	85.6%	--	--
Total	81.9%	69.4%	82.1%
Local	82.0%	69.4%	82.1%
Express	81.4%	--	--

Source: Ridecheck Data, October 2013

Schedule adherence is better on weekdays than on weekends, which is unusual given that there is generally less traffic congestion on weekends. Overall schedule adherence is 60 percent on Saturday and 82 percent on Sunday. Route 31 leads on Saturday with 89 percent on-time. Route 4 leads on Sunday with 97 percent.

Table 2.6 shows the change in Beeline schedule adherence since the 2008 ridecheck. To avoid confusion, changes are expressed in percentage point differential; for example, an increase from 90 to 95 percent is shown as +5.0. Schedule adherence decreased by 1.5 percentage points on weekdays, 14.5 percentage points on Saturday, and 13.7 percentage points on Sunday. The biggest increases are seen on Route 3 on weekdays and Saturday and on Route 5 on weekdays. Overall on-time performance on local routes was unchanged on weekdays.

The Glendale Beeline tracks on-time performance year-round and notes that November 2018 has the worst on-time performance of any month to date in 2018. Reasons for this are unclear.

Table 2.6
Beeline Changes in Schedule Adherence by Route and
Day of Week, 2013 to 2018 (in Percentage Points)

Route	Weekday	Saturday	Sunday
1	-28.5%	-6.6%	-11.2%
2	-0.1%	-24.2%	-33.8%
3 (31 Saturday)	16.7%	2.7%	--
32	20.0%		
33	-10.6%		
34	13.6%		
4	-1.3%	-7.6%	0.0%
5	9.6%	-27.8%	--
6	-6.1%	-6.1%	--
7	-0.5%	-42.1%	--
11	-11.4%	--	--
12	-9.2%	--	--
Total	-1.5%	-14.5%	-13.7%
Local Routes	0.0%	-14.5%	-13.7%
Express Routes	-10.2%	--	--

Source: Ridecheck Data, 2018 and 2013

2.2 Route Profiles

Route profiles on the following pages summarize a great deal of data for the individual routes. Each route profile includes a description of the route, headway and span of service, passenger boardings, route productivity, ridership trends since 2013 of service, overcrowded segments, maximum load points, rankings of subsidy per passenger and schedule adherence, and a brief assessment of each route's performance and trends.

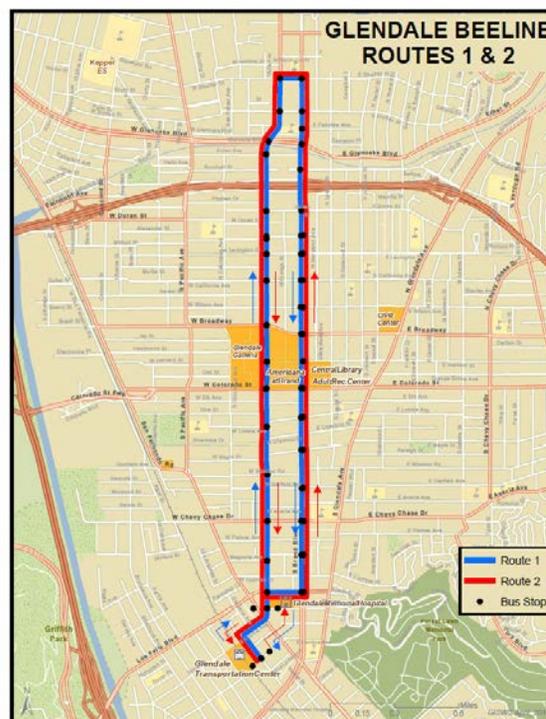
Each route profile includes a route map, a graph of boardings, alightings, and passenger loads along the route on an average weekday, and performance charts highlighting individual route performance compared to other routes

The route profiles provide information regarding passengers per revenue hour, a key performance variable used in evaluating transit routes.

Route 1 Glendale Transportation Center (GTC) to Stocker via Central/Brand

Route 1 GTC to Stocker via Central/Brand serves the Central Avenue (northbound) and Brand Boulevard (southbound) corridors in downtown Glendale. Route 2 operates in the opposite direction over the same route. Route 1’s purposes are to serve the residential, office, and retail corridors in and near downtowns and to connect downtown with Metrolink rail service at GTC throughout the day and on weekends.

Major destinations: The Glendale Galleria, Americana at Brand, other stores and offices in downtown, Dignity Health-Glendale Memorial Hospital, and GTC.



Headway generally 20 minutes weekdays
 20-30 minutes weekends

Service span 5:57 am to 7:45 pm weekdays
 9:10 am to 6:20 pm weekends

Ridership 540 weekdays (6th of 12 routes)
 232 Saturday (4th of 7 routes)
 200 Sunday (3rd of 3 routes)

Trend -3% weekday since 2013
 +14% Saturday
 +15% Sunday

Major stops GTC, Brand & Broadway, Central & Broadway, Central & Colorado, Central & Stocker

Productivity 18.4 boardings per revenue hour weekdays (7th of 12 routes)
 13.2 Saturday (5th of 7 routes)
 11.6 Sunday (3rd of 3 routes)

Overcrowded segments none

Maximum load 16 on 10:55 am trip at Central & Windsor

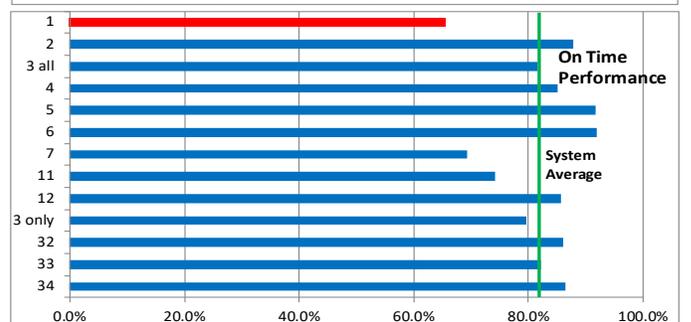
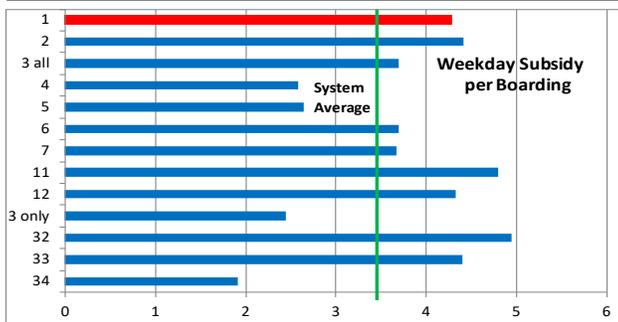
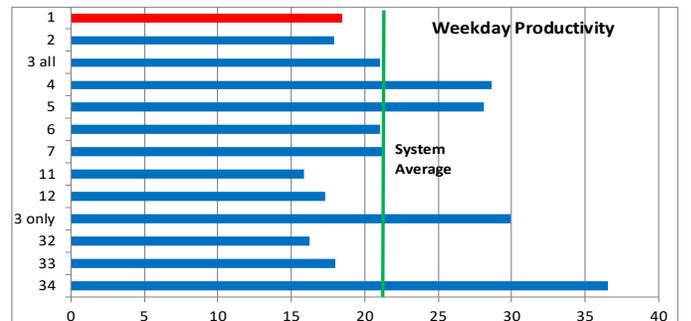
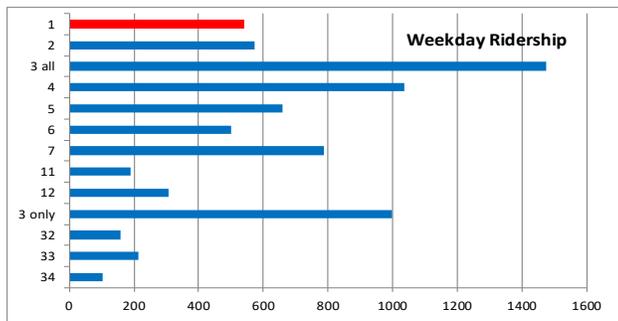
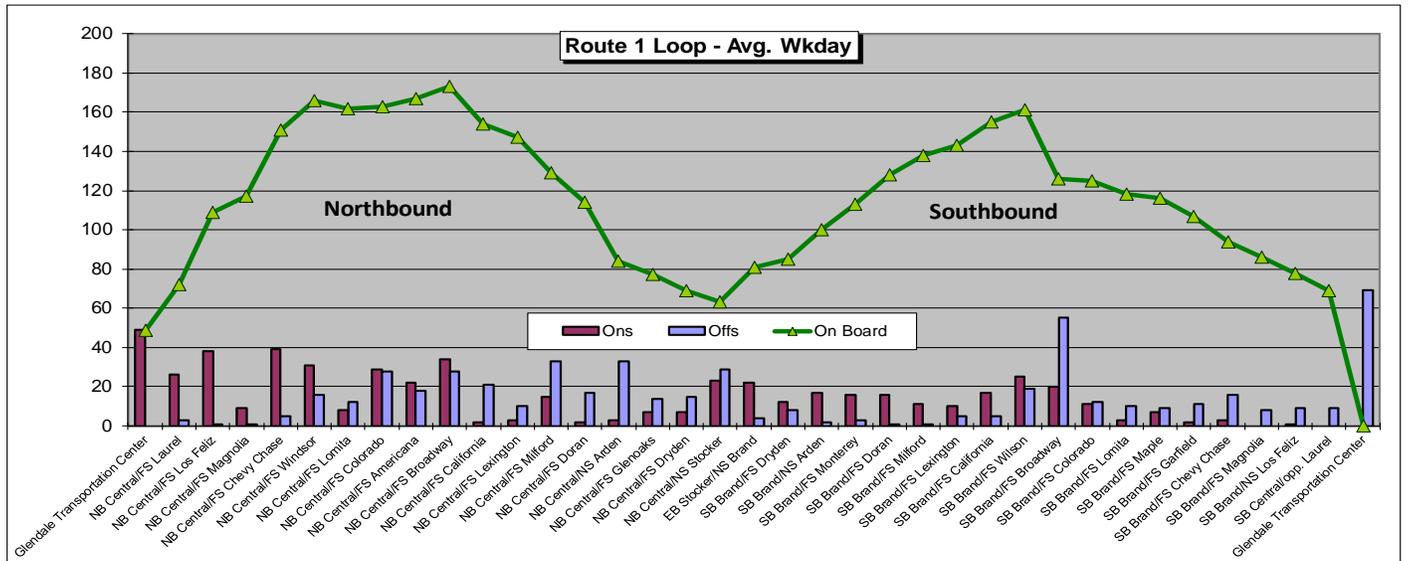
Subsidy per boarding rank 7th of 12 routes weekday
 5th of 7 routes Saturday
 3rd of 3 routes Sunday

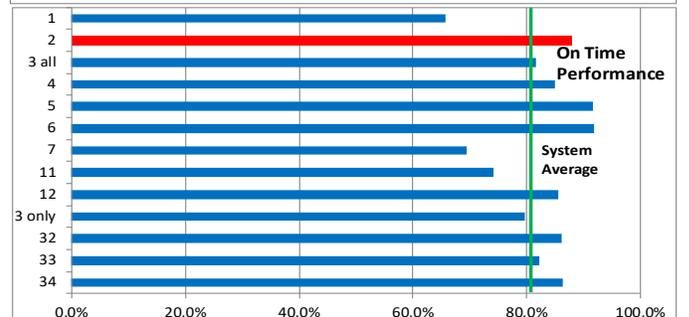
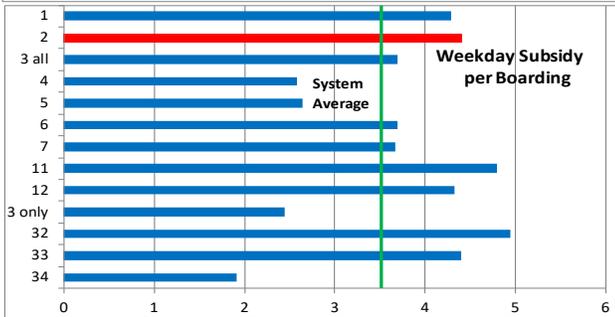
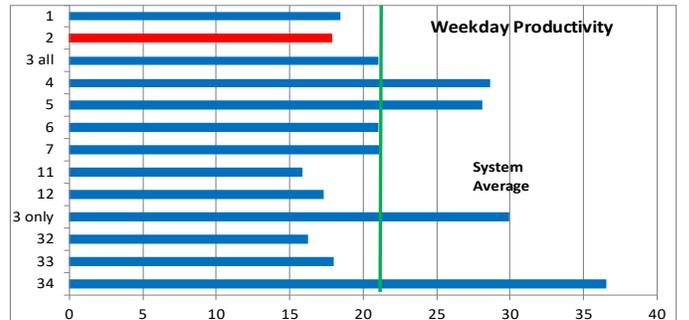
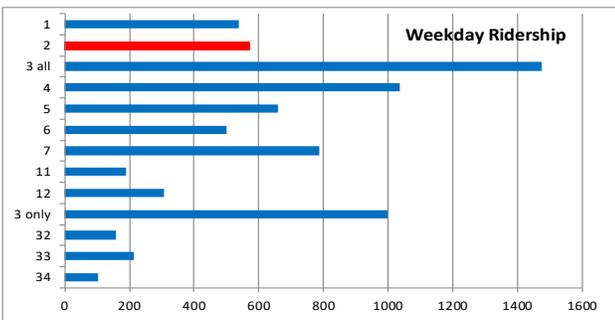
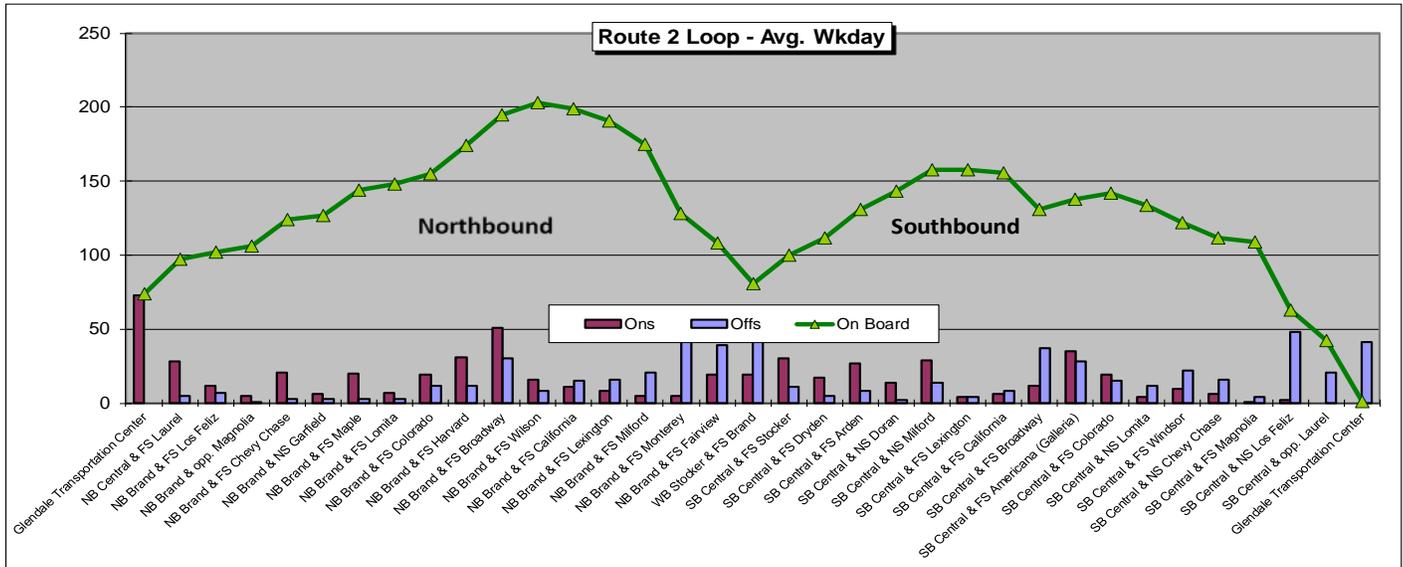
Schedule adherence rank 12th of 12 routes weekday
 2nd of 7 routes Saturday
 2nd of 3 routes Sunday

Running time analysis Adequate on all days – schedule adherence issues may be due to the cascading effect of one delayed trip

Route 1 positives Provides circulation through downtown Glendale and connections to GTC
 Weekend ridership is increasing since 2013

Route 1 negatives Productivity is below the system average
 Does not connect with residential neighborhoods outside of downtown
 Low ridership at GTC in the midday and on weekends





Route 3 Glendale Galleria to Jet Propulsion Laboratory (JPL)
Including all short-turn variations

Route 3 operates between Brand Boulevard & Broadway in downtown Glendale and the Jet Propulsion Laboratory (JPL) in La Cañada Flintridge. Route 3 has multiple functions. Its primary purpose is to connect downtown with Glendale Community College (GCC). Connections to Montrose, far north Glendale, La Cañada Flintridge and JPL are also important.

Route 3 is the longest Beeline route, and is analyzed here as a single route with several short-turns (Routes 31, 32, 33, and 34). Routes 33 and 34 are La Cañada Flintridge shuttles that complement Route 3 service, especially along Foothill Boulevard. Information on the individual routes is presented after the analysis of the family of routes together.

Major destinations: GCC, downtown Glendale, Civic Center, Montrose/La Crescenta, Foothill Boulevard corridor, JPL.

Headway generally 20-30 minutes to GCC; 40-60 minutes to JPL

Service span 5:15 am to 9:09 pm weekdays

Ridership 1,473 weekdays (see individual route rankings on the following pages)

Trend -31% weekday since 2013

Major stops GCC, Harvard & Louise, Glendale & Broadway, Oak Grove & Foothill, Foothill & Chevy Chase, La Cañada High School, JPL, Broadway & Brand, Foothill & Crown

Productivity 21.0 boardings per revenue hour weekdays

Overcrowded segments SB 3:25 pm: La Cañada HS – Foothill & Rinetti
 SB 3:28 pm: Oak Grove & Foothill – Foothill & Gould (LCHS-related)

Maximum load 60 on 3:25 pm SB trip at La Cañada HS

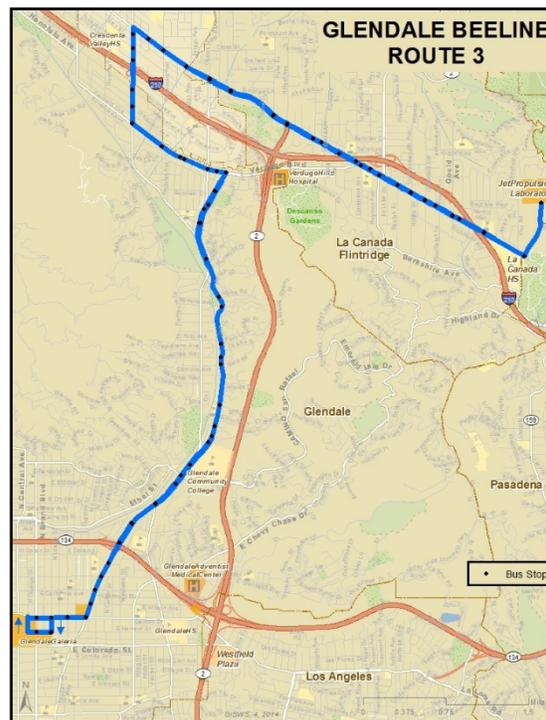
Subsidy per boarding rank ranked as individual routes

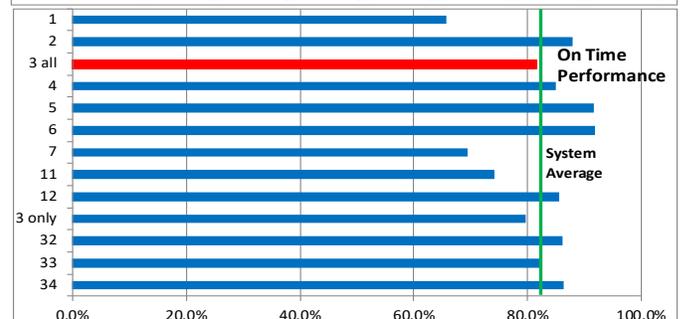
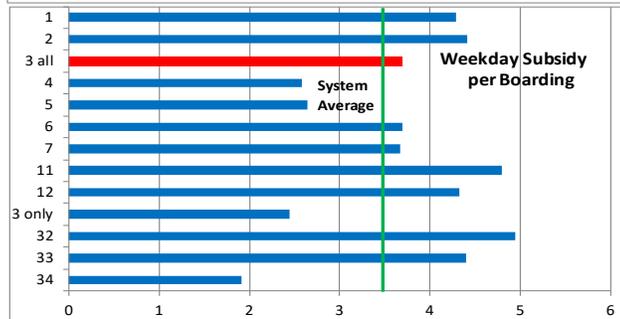
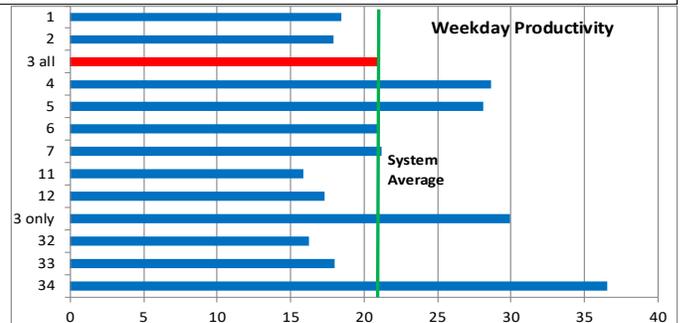
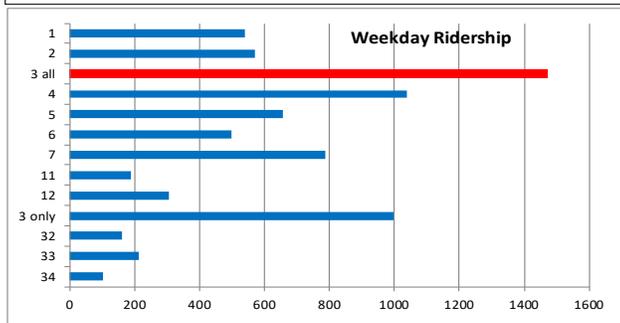
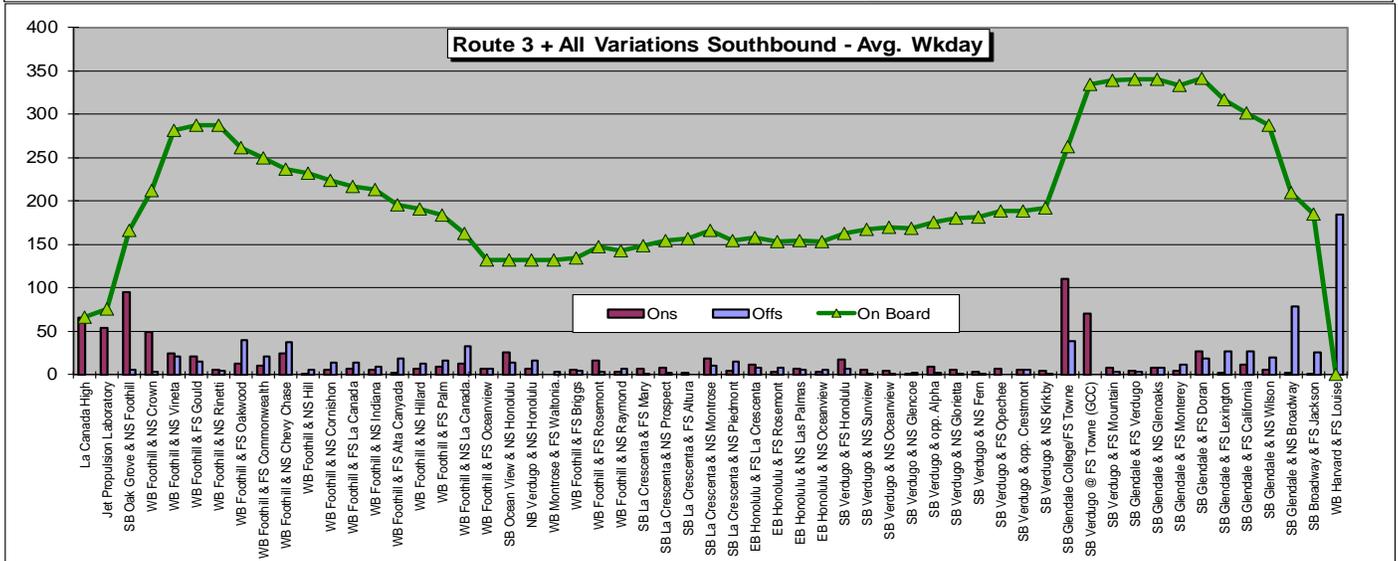
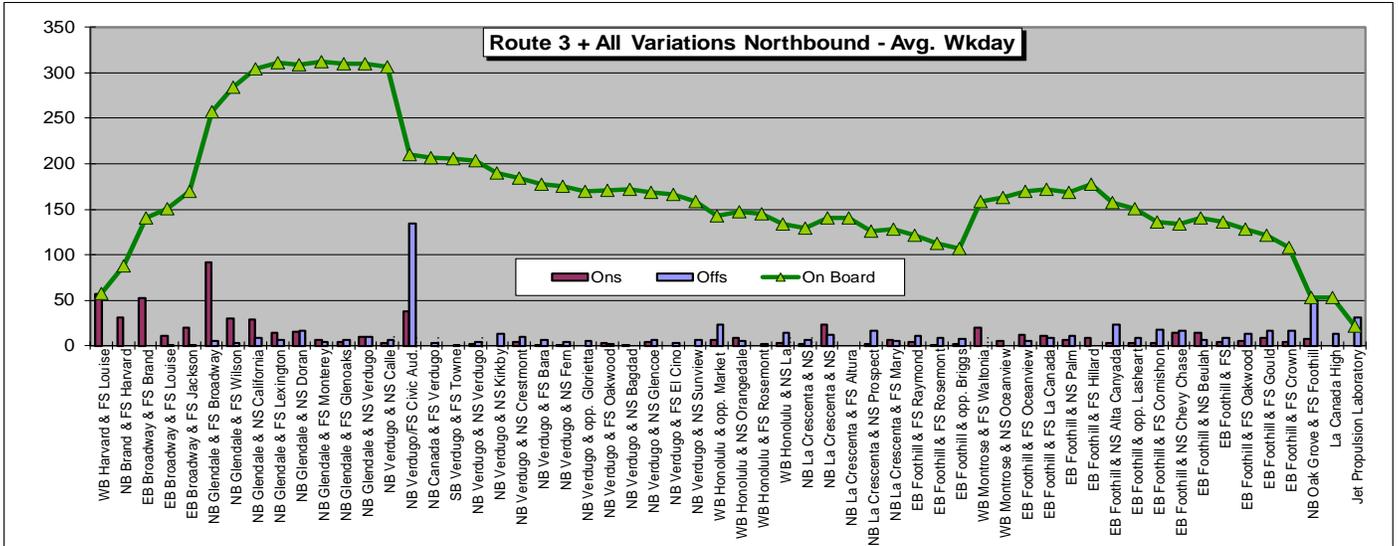
Schedule adherence rank ranked as individual routes

Running time analysis Generally adequate, possibly more time in weekday peak periods

Route 3 positives High ridership
 Connects major Beeline destinations: downtown Glendale and GCC

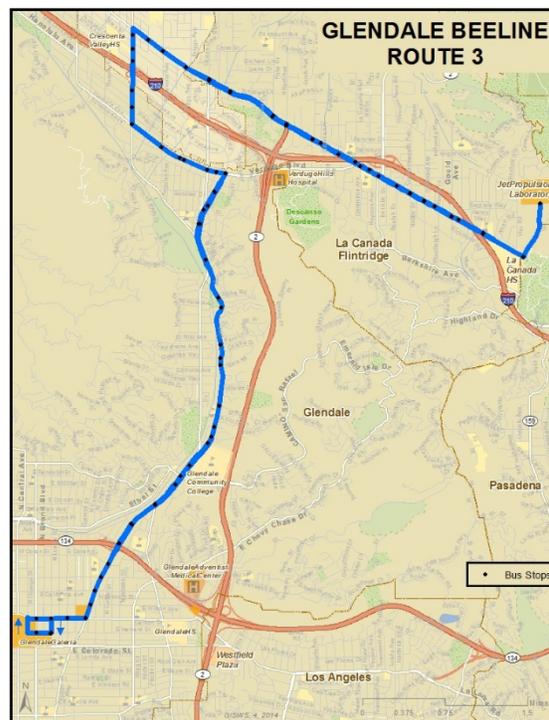
Route 3 negatives Sharp decline in ridership since 2013, notably at GCC stops
 Middling productivity
 Low ridership on Saturday
 Different route numbers for short-turns may cause confusion





Route 3 Glendale Galleria to Jet Propulsion Laboratory (JPL) Weekdays
Route 31 Glendale Galleria to La Crescenta Saturday

Route 3 operates between Brand Boulevard & Broadway in downtown Glendale and the Jet Propulsion Laboratory (JPL) in La Cañada Flintridge on weekdays. Route 31 only operates on Saturday between Downtown Glendale and La Crescenta.



Major destinations: GCC, downtown Glendale, Civic Center, Montrose/La Crescenta, Foothill Boulevard corridor, JPL.

Headway generally 30-40 minutes weekdays;
 20-35 minutes Saturday

Service span 5:15 am to 9:09 pm weekdays
 9:12 am to 6:00 pm Saturday

Ridership 998 weekdays (2nd of 12 routes)
 228 Saturday (5th of 7 routes)

Trend -34% since 2013
 -36% Saturday

Major stops GCC, Harvard & Louise, Glendale
 & Broadway

Productivity 29.9 boardings per revenue hour weekdays (2nd of 12 routes)
 9.7 Saturday (7th of 7 routes)

Overcrowded segments None

Maximum load 40 on 8:38 am NB trip at Verdugo & Calle Vaquero

Subsidy per boarding rank 2nd of 12 routes weekday
 7th of 7 routes Saturday

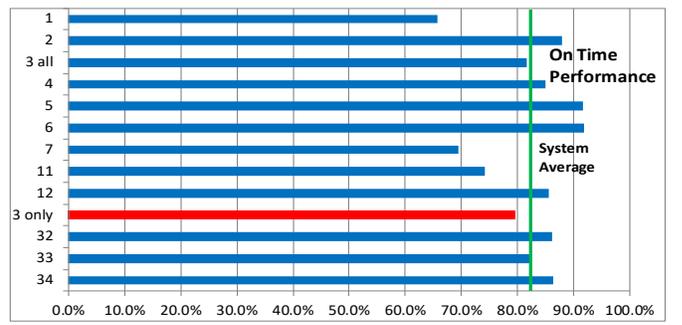
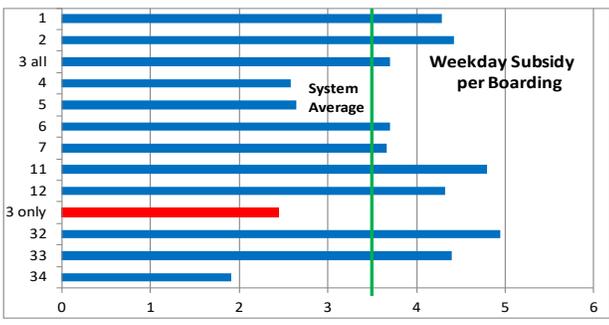
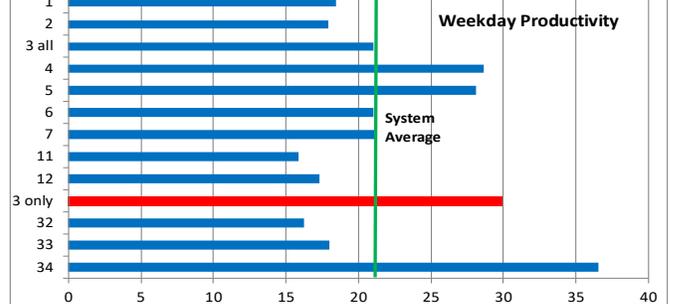
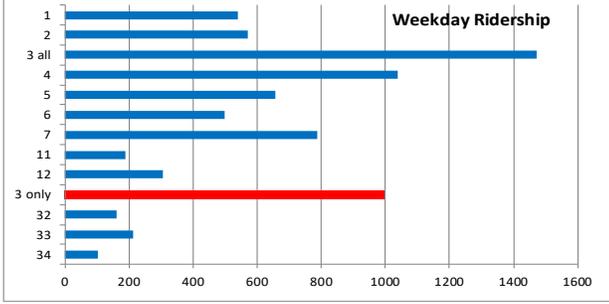
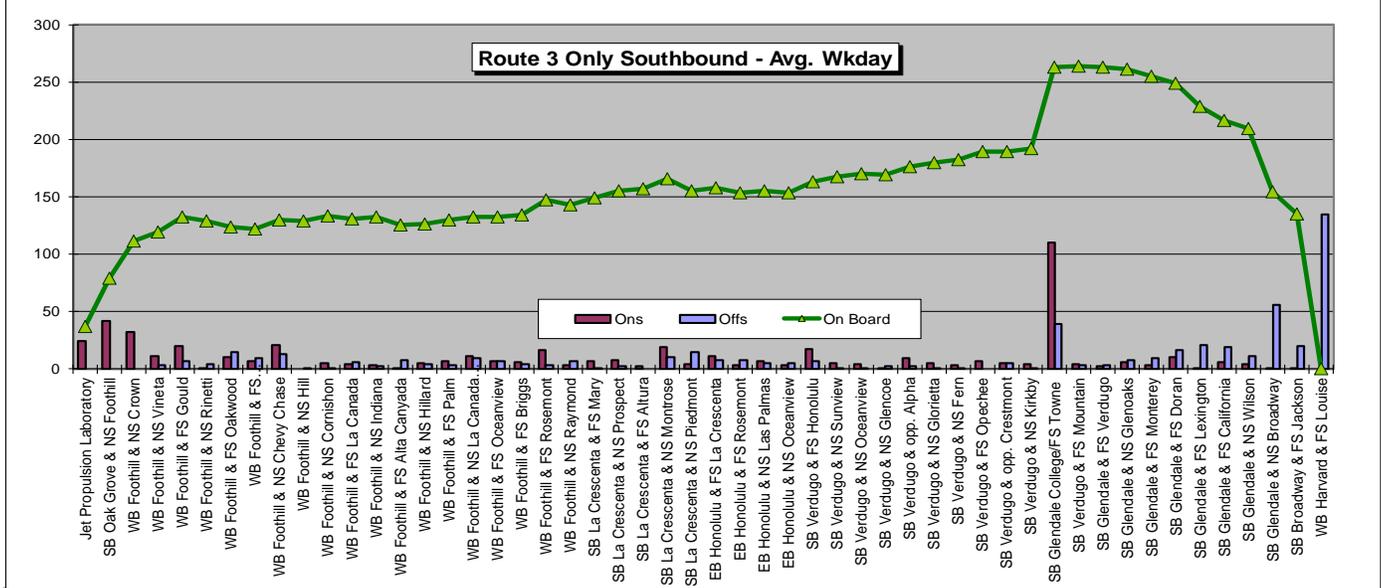
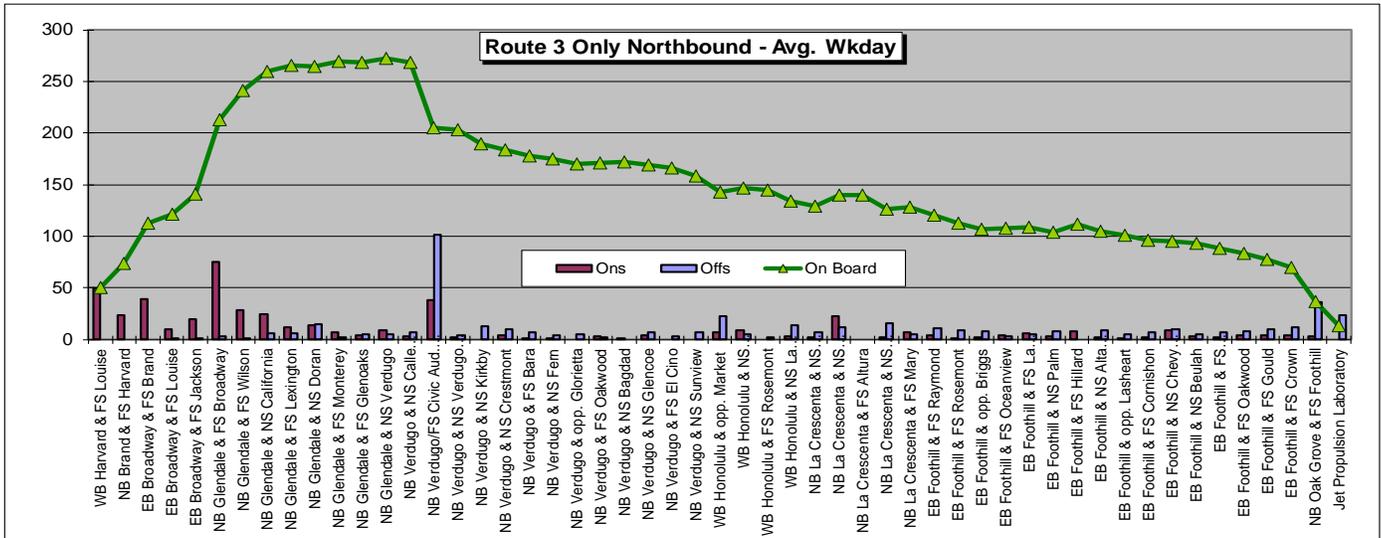
Schedule adherence rank 9th of 12 routes weekday
 1st of 7 routes Saturday

Running time analysis Generally adequate, adjustments on individual segments in weekday peak periods

Route 3 taken by itself is second among all Beeline routes in weekday ridership, productivity, and subsidy per boarding. It ranks below average in schedule adherence, primarily because of the length of the route.

Route 3 positives High ridership and productivity
 Connects major Beeline destinations: downtown Glendale and GCC
 Best on-time performance on Saturday

Route 3 negatives Sharp decline in ridership since 2013, notably at GCC stops
 Below-average schedule adherence on weekdays



Route 32 Glendale Galleria to Glendale Community College (GCC)

Route 32 is a short-turn of Route 3 that operates between Brand Boulevard & Broadway in downtown Glendale and GCC on weekdays only. The purpose of this route is to combine with Route 3 to provide service every 20 minutes between downtown and GCC.

Major destinations: GCC, downtown Glendale, Civic Center

Headway 40-50 minutes weekdays
Service span 8:56 am to 6:48 pm weekdays
Ridership 160 weekdays (11th of 12 routes)
Trend -55% since 2013
Major stops GCC, Harvard & Louise

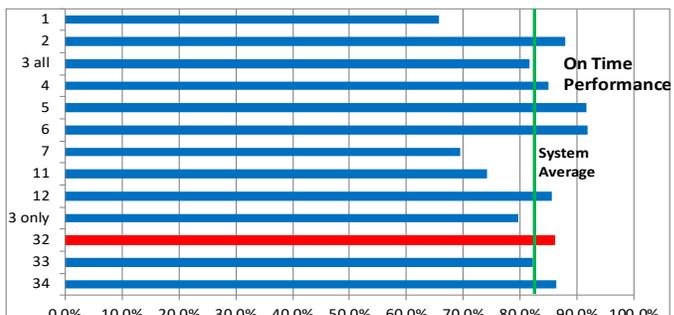
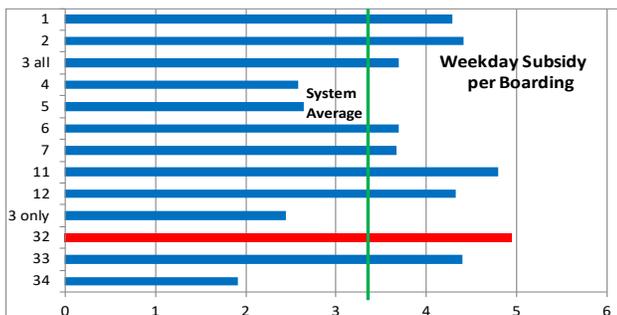
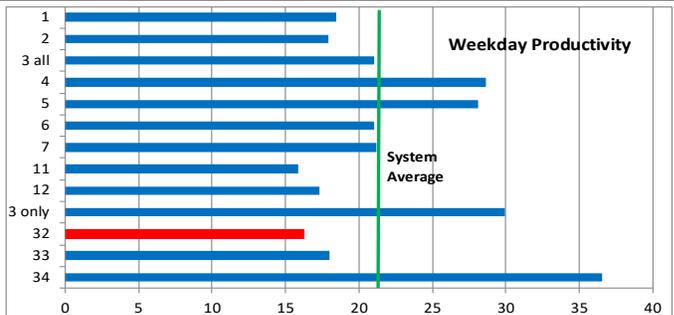
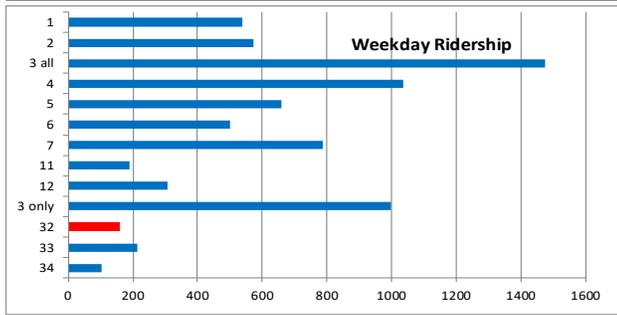
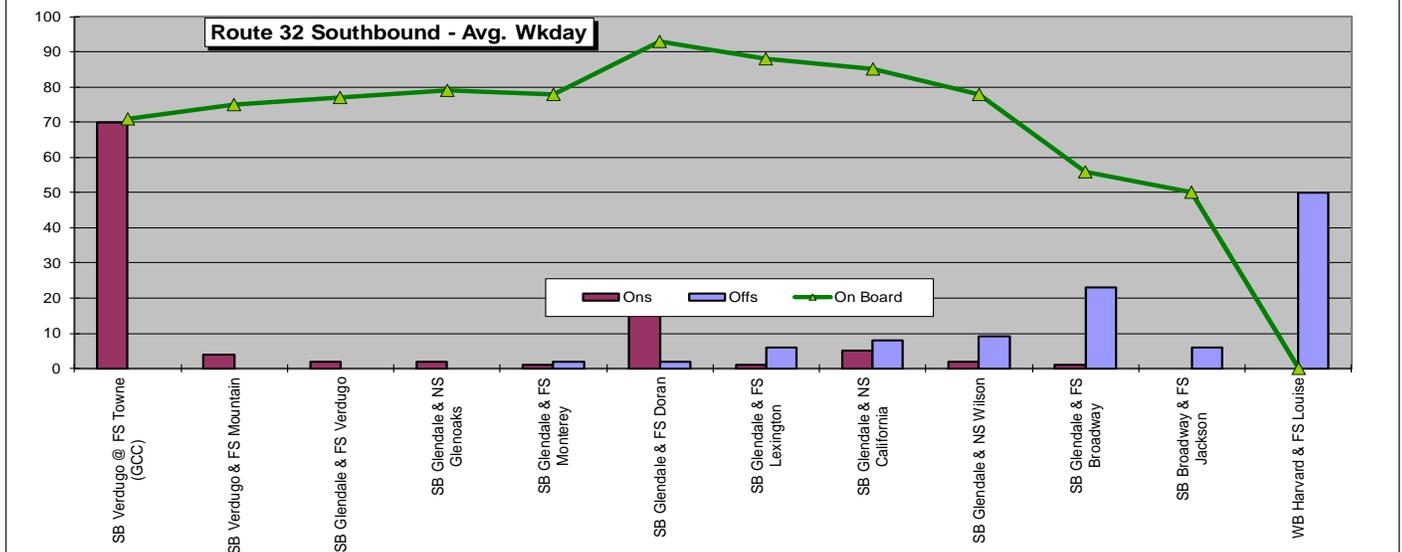
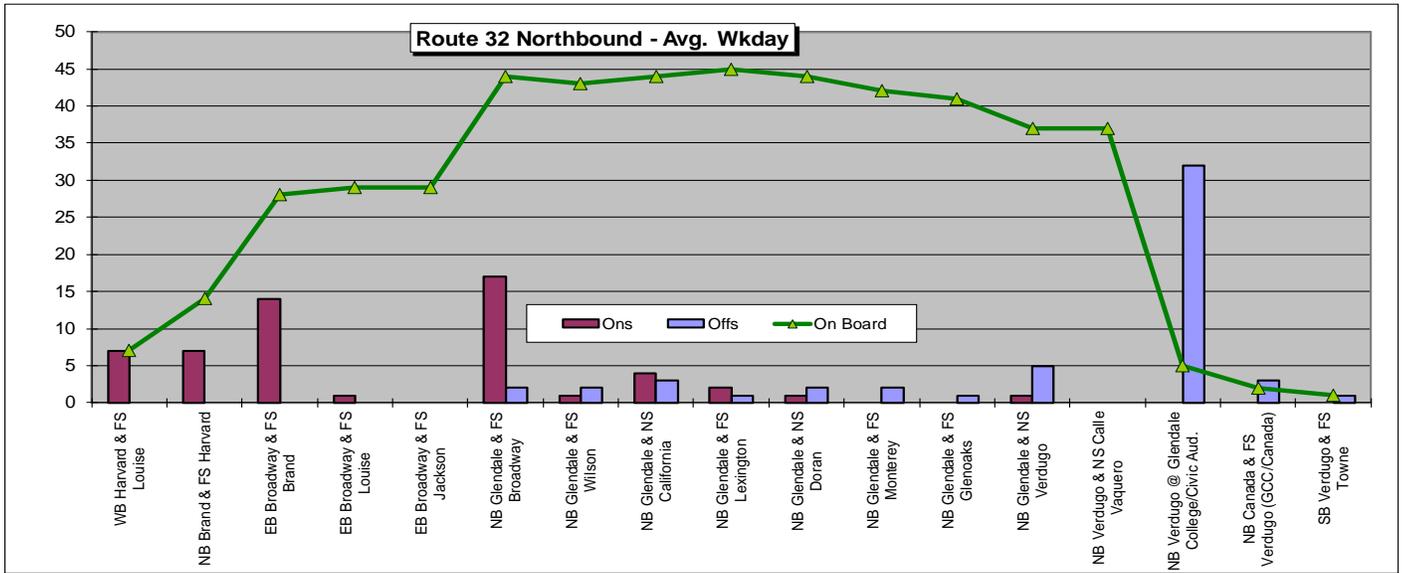
Productivity 16.2 boardings per revenue hour weekdays (11th of 12 routes)



Overcrowded segments None
Maximum load 14 on 1:44 pm SB trip at Glendale & Doran
 14 on 2:29 pm SB trip at Glendale & Doran
 14 on 3:15 pm SB trip at GCC

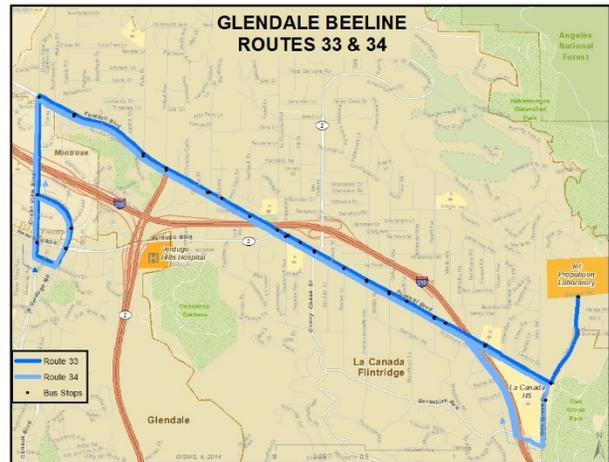
Subsidy per boarding rank 12th of 12 routes weekday
Schedule adherence rank 6th of 12 routes weekday
Running time analysis Generally adequate, possibly more running time northbound and less running time southbound

Route 32 positives Creates 20-minute frequency between downtown Glendale and GCC
Route 32 negatives Low ridership and productivity
 Has lost over half of its ridership since 2013, with no obvious cause
 Has not achieved its purpose of enhancing ridership between downtown Glendale and GCC
 Different route numbers for short-turns may cause confusion



Route 33 La Cañada Flintridge (LCF) Shuttle: Montrose to JPL

Route 33 is the LCF shuttle that operates between Montrose Avenue & Waltonia Drive and JPL. The purpose of this route is to provide service to La Cañada Flintridge residents along Foothill Boulevard.



Major destinations: Montrose/La Crescenta, JPL, La Cañada High School and five other schools along the route.

- Headway** 40-60 minutes weekdays
- Service span** 6:30 am to 6:24 pm weekdays
- Ridership** 212 weekdays (9th of 12 routes)
- Trend** +16% since 2013
- Major stops** Oak Grove & Foothill (La Cañada High School)

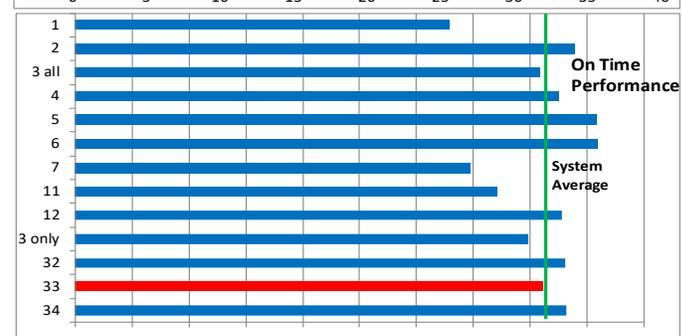
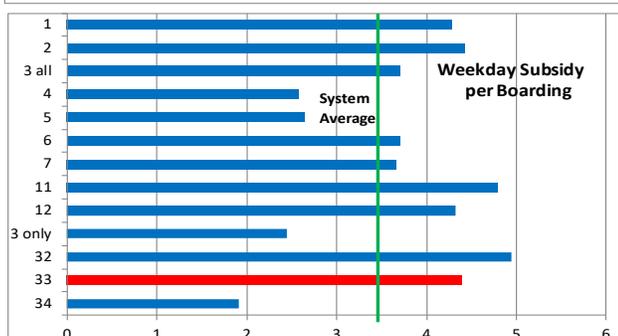
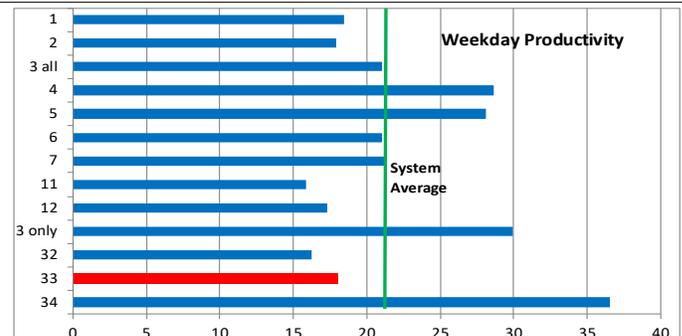
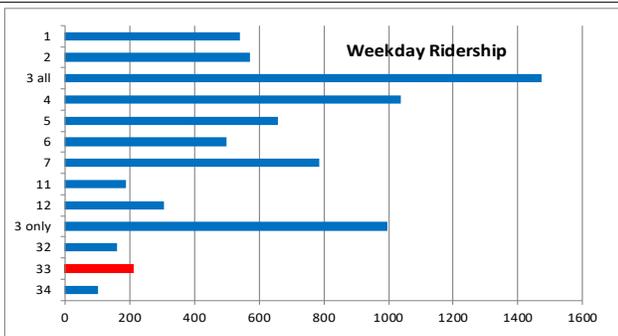
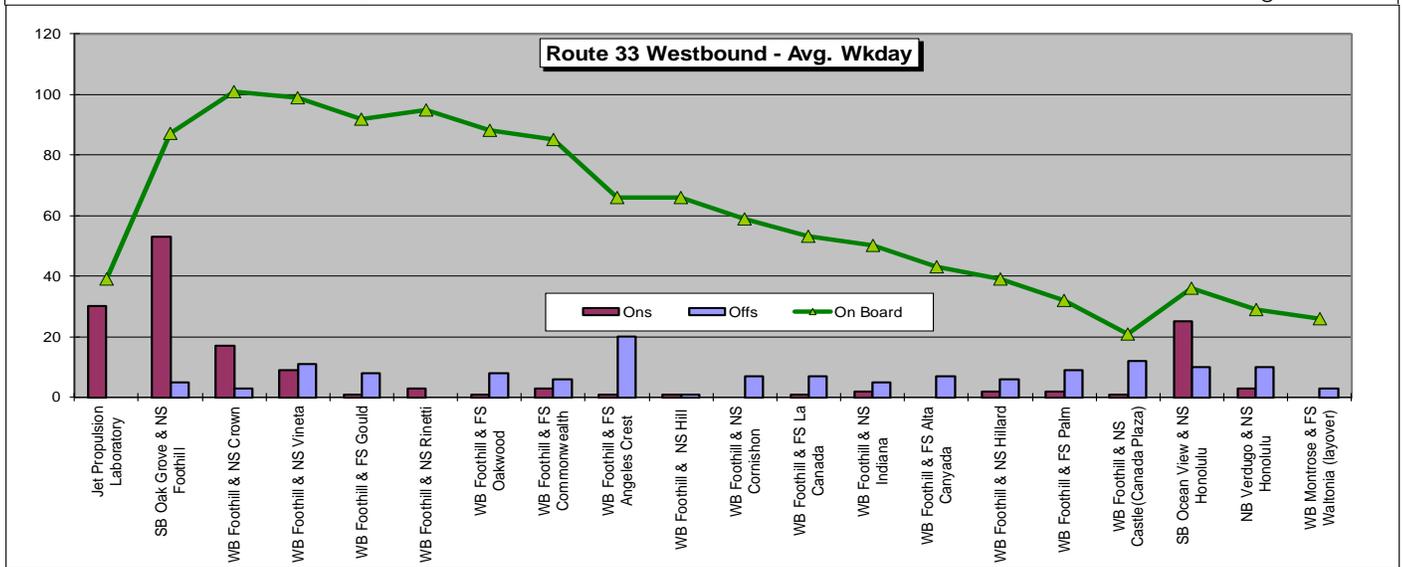
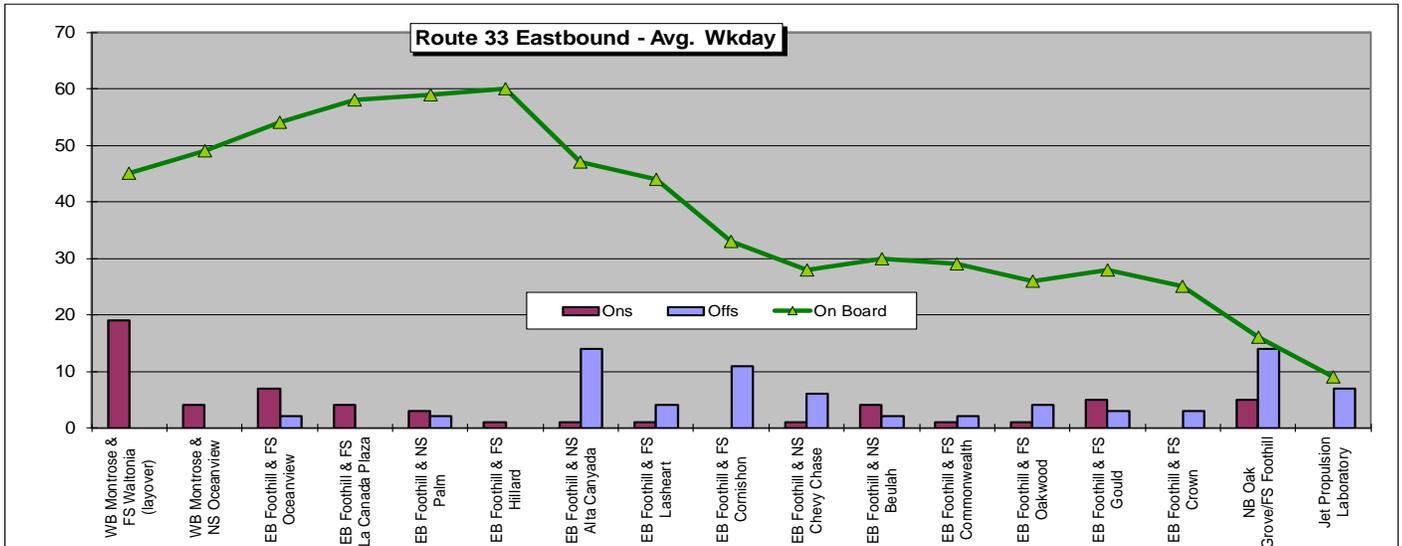
Productivity 18.0 boardings per revenue hour weekdays (8th of 12 routes)

Overcrowded segments SB 3:28 pm: Oak Grove & Foothill – Foothill & Oakwood
Maximum load 49 on 3:28 pm SB trip at Oak Grove & Foothill

- Subsidy per boarding rank** 9th of 12 routes weekday
- Schedule adherence rank** 8th of 12 routes weekday
- Running time analysis** May need more running time in the afternoon

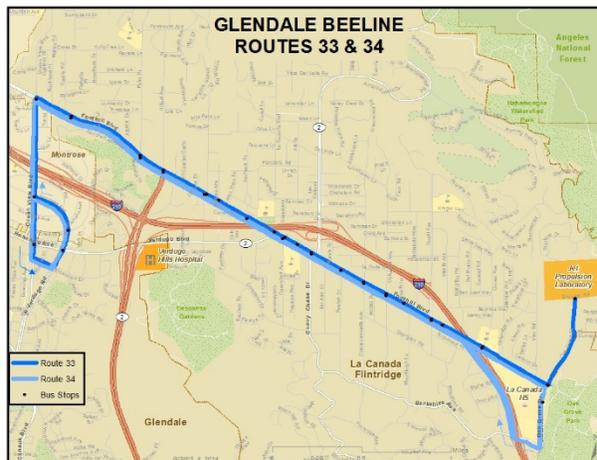
Route 33 positives Provides additional service along Foothill Boulevard corridor
 Ridership has increased since 2013

Route 33 negatives Low ridership and productivity other than at school bell times
 No Saturday service in La Cañada Flintridge



Route 34 La Cañada Flintridge (LCF) Shuttle: Montrose to La Cañada High School

Route 34 is LCF Shuttle’s variation that operates six afternoon trips per day between Montrose Avenue & Waltonia Drive and La Cañada High School. The purpose of this route is to serve students at the high school.



Major destinations: La Cañada High School, Montrose/La Crescenta, Foothill Boulevard corridor.

Headway 6 one-way trips per weekday afternoon

Service span 2:04 pm to 4:53 pm weekdays

Ridership 103 weekdays (12th of 12 routes)

Trend +24% since 2013

Major stops La Cañada High School

Productivity 36.6 boardings per revenue hour weekdays (1st of 12 routes)

Overcrowded segments SB 3:25 pm: La Cañada High School – Foothill & Oakwood

Maximum load 60 on 3:25 pm SB trip at La Cañada High School

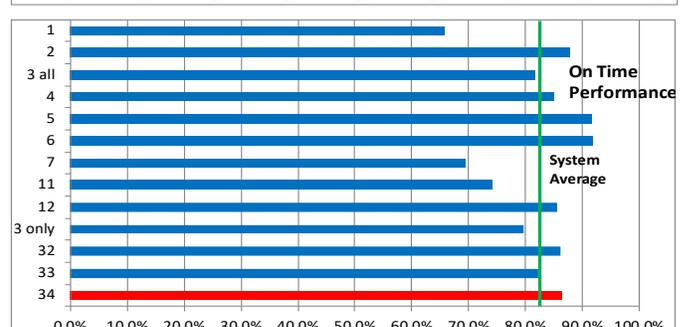
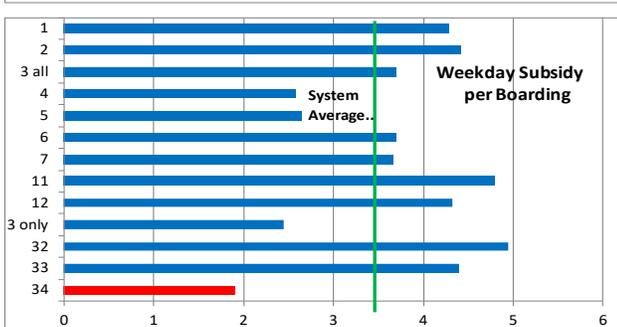
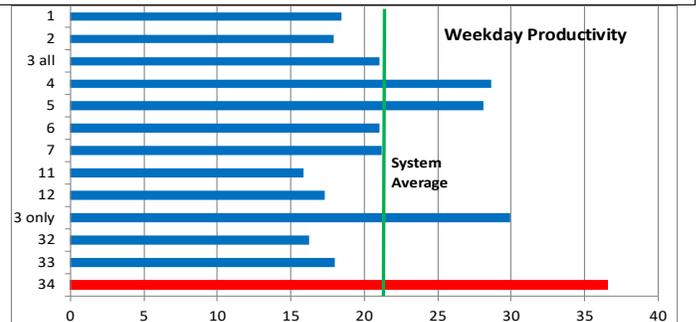
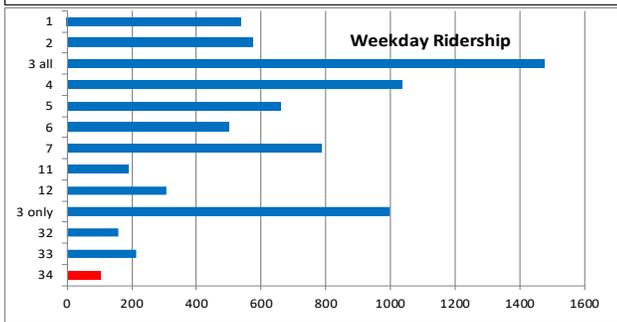
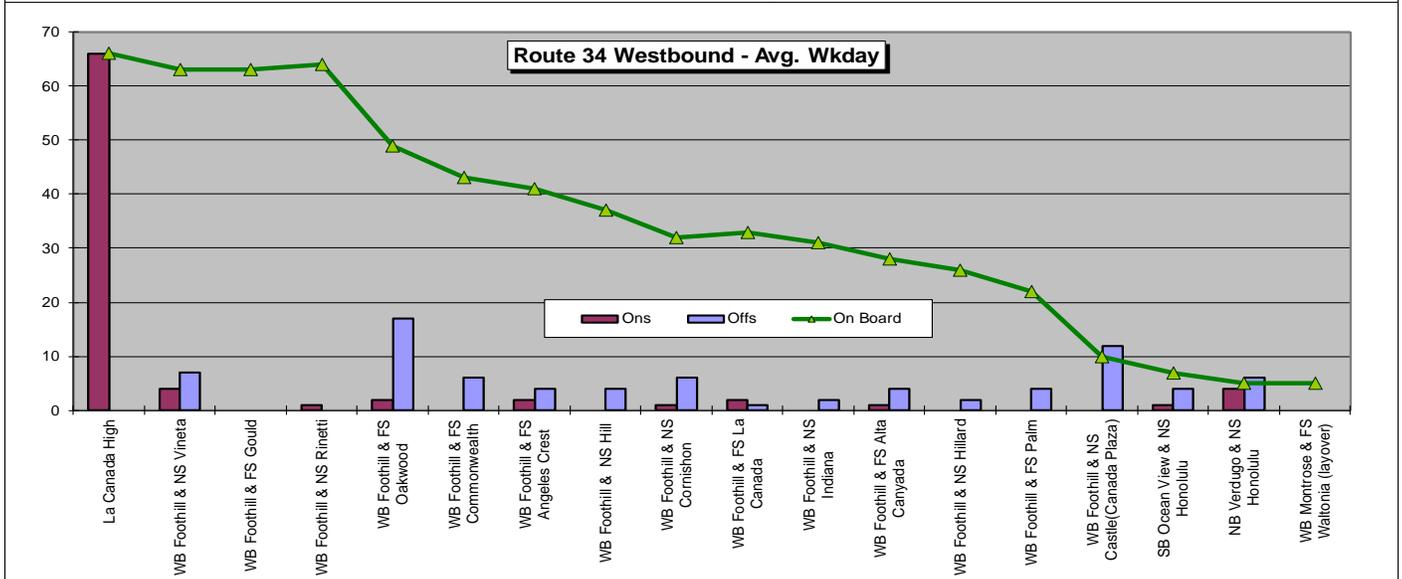
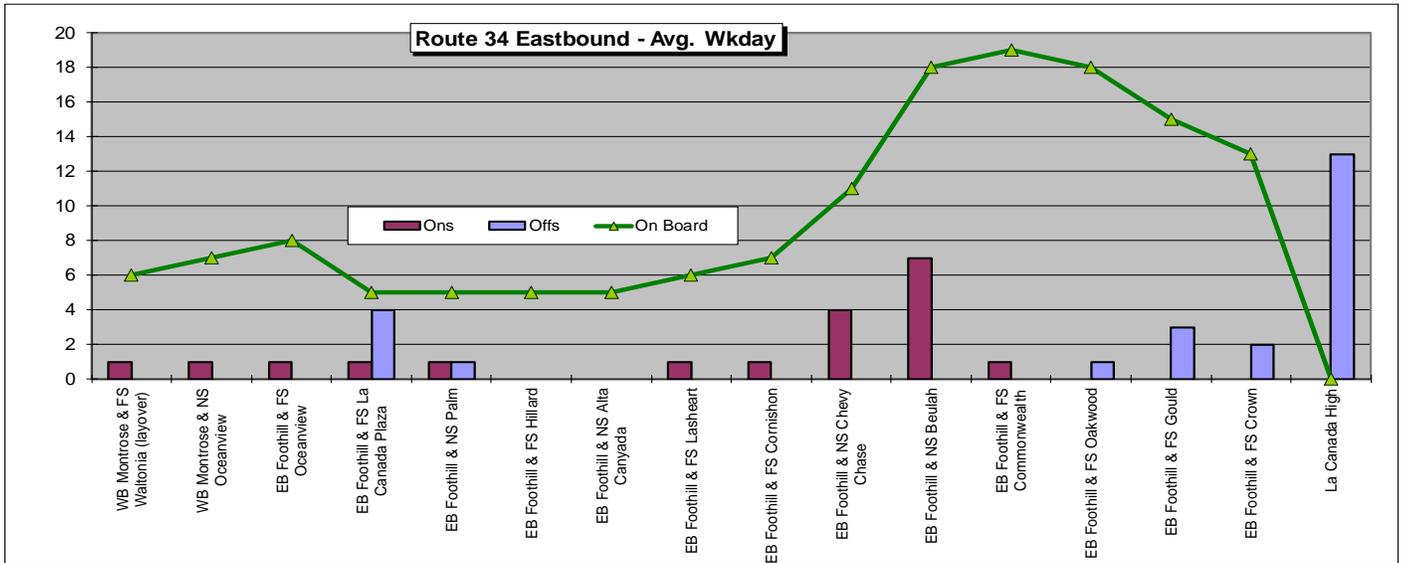
Subsidy per boarding rank 1st of 12 routes weekday

Schedule adherence rank 5th of 12 routes weekday

Running time analysis May need more running time on westbound trips

Route 34 positives Productive route with one of the highest loads on a single trip of any route
 Limited service in line with its purpose to take La Cañada High School students home in the afternoon
 Above average in schedule adherence
 Ridership has increased since 2013

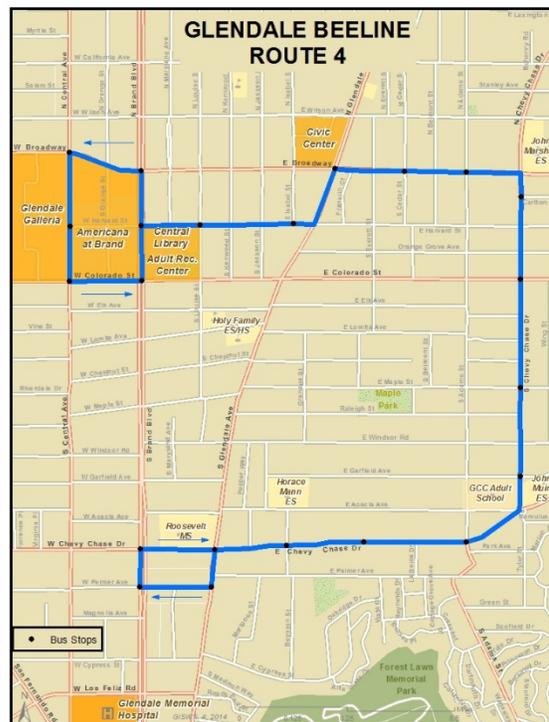
Route 34 negatives None – morning trips had been provided in the past, but had very low ridership, suggesting that most parents drop their children at school in the morning



Route 4 Roosevelt Middle School to Glendale Galleria

Route 4 operates between Chevy Chase Drive & Brand Boulevard and Colorado Street & Central Avenue. The route serves transit-dependent neighborhoods east of downtown, connecting them with downtown.

Major destinations: Glendale Galleria, Americana at Brand, GCC Garfield campus, Glendale Civic Center, the Central Library, and Roosevelt Middle School.



- Headway* 17-18 minutes weekday
25-35 minutes weekends
- Service span* 6:00 am to 6:39 pm weekdays
9:00 am to 5:10 pm weekends
- Ridership* 1,037 weekdays (1st of 12 routes)
436 Saturday (1st of 7 routes)
286 Sunday (1st of 3 routes)
- Trend* -25% since 2013 weekdays
-11% Saturday
-22% Sunday

Major stops Chevy Chase & Garfield; Colorado & Central; Broadway & Glendale; Chevy Chase & Glendale; Chevy Chase & Adams; Chevy Chase & Carlton; Chevy Chase & Brand; Central & Americana; Harvard & Louise; Chevy Chase & Colorado; Central & Broadway; Chevy Chase & Boynton

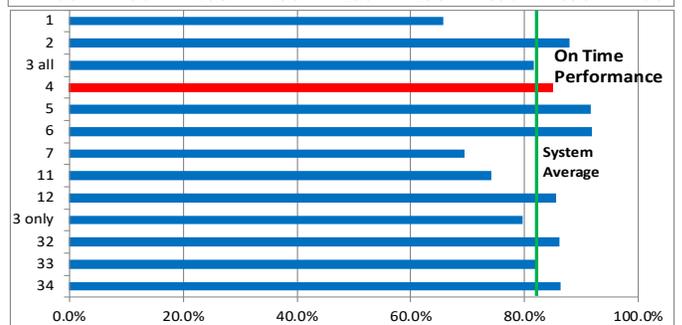
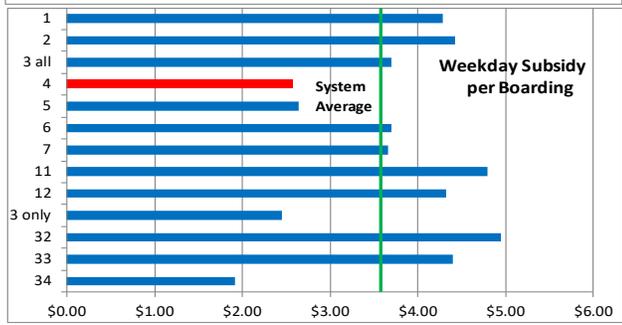
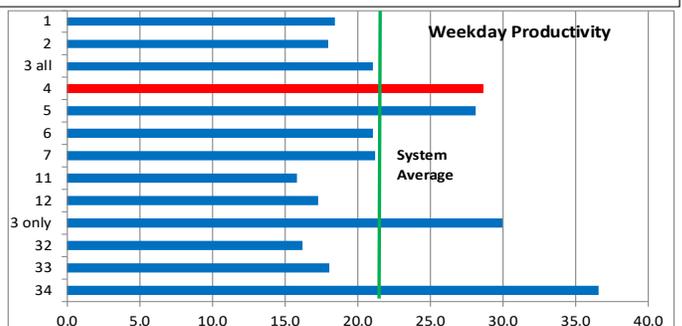
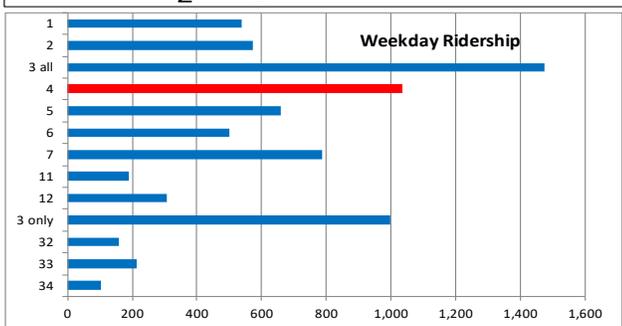
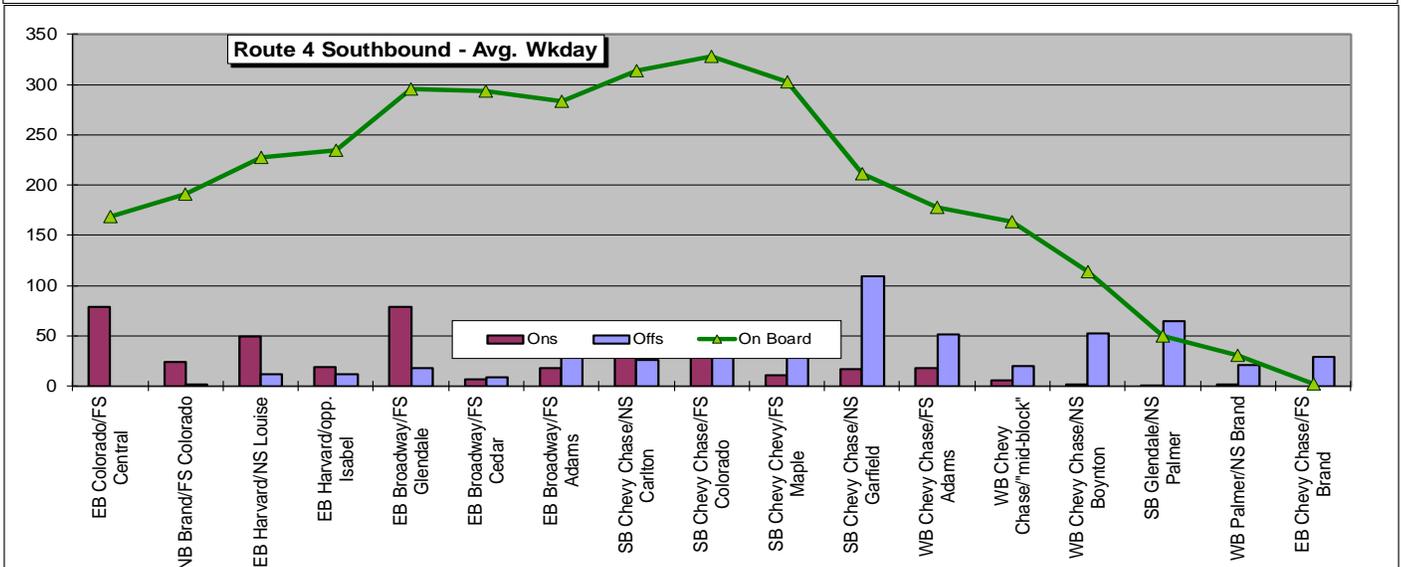
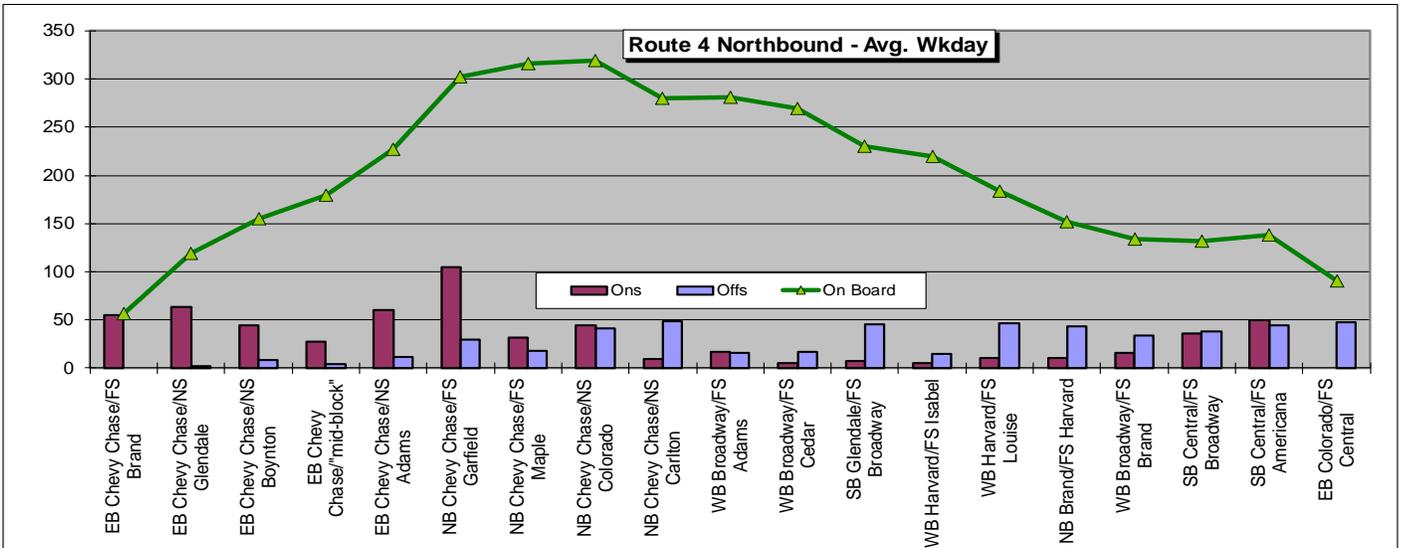
- Productivity* 28.6 boardings per revenue hour weekdays (3rd of 12 routes)
28.1 Saturday (1st of 7 routes)
18.5 Sunday (1st of 3 routes)

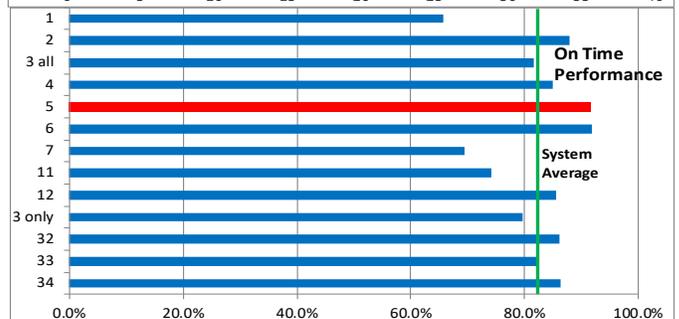
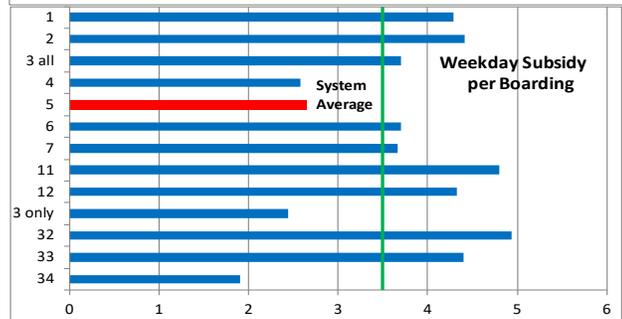
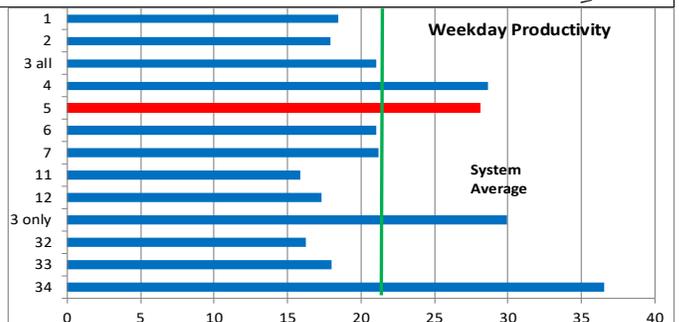
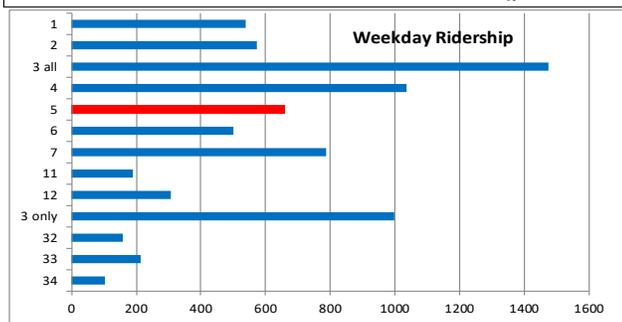
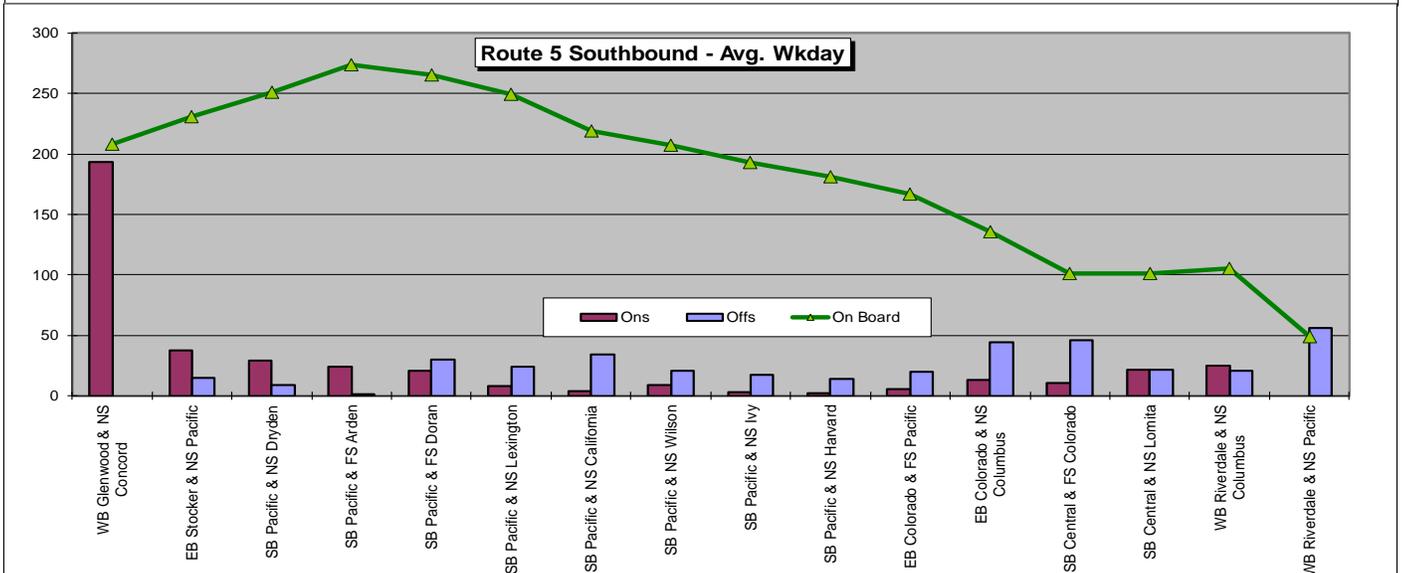
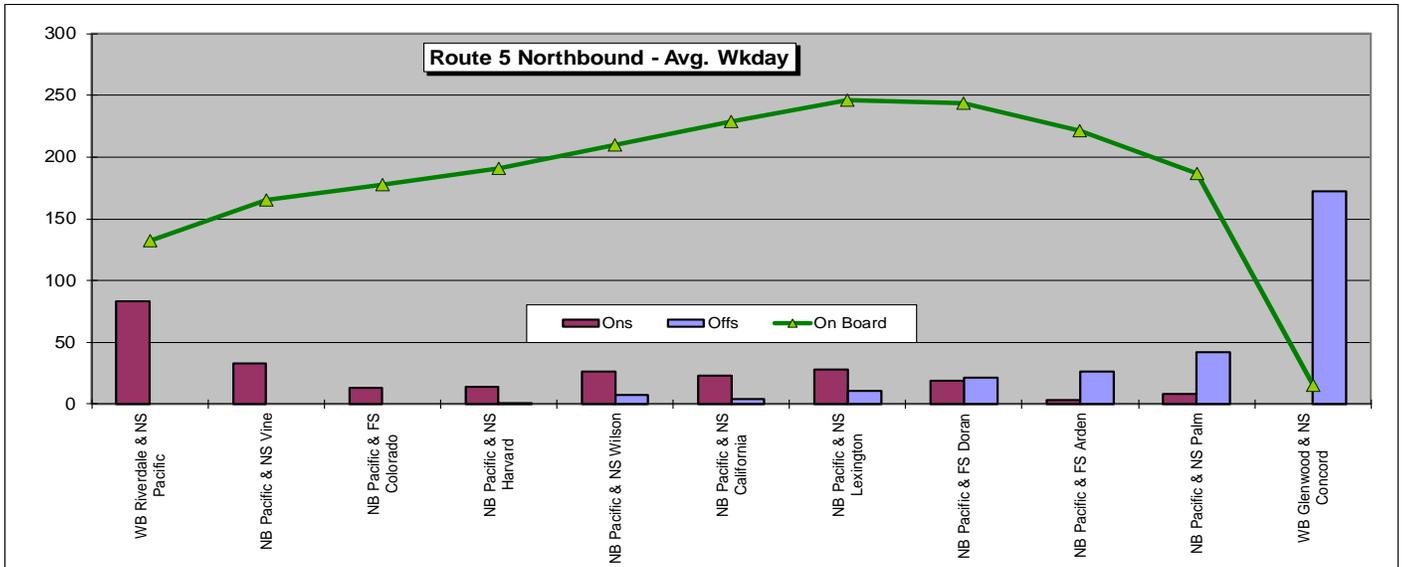
Overcrowded segments None
Maximum load 22 on 7:27 am NB trip at Chevy Chase & Garfield

- Subsidy per boarding rank* 3rd of 12 routes weekday
- Schedule adherence rank* 7th of 12 routes weekday
- Running time analysis* Adequate in both directions

Route 4 positives Most productive all-day route in the Beeline system on all days
Highest ridership of any individual Beeline route
Slightly above average in schedule adherence
Connects neighborhoods with a strong transit orientation with downtown

Route 4 negatives Ridership has decreased since 2013, especially on weekdays and Sunday





Route 6 Pacific Community Center & Park to Glendale High School

Route 6 operates primarily along Colorado Street between San Fernando Road and the eastern city limit of Glendale. Its primary function is to provide east-west crosstown service in Glendale, connecting several neighborhoods with downtown. Glendale High School is an important trip generator, but school ridership is not the dominant factor on this route.



Passenger loads are higher in both directions east of Central Avenue. Ridership activity is reasonably consistent across the route, with higher levels of boardings and alightings at major north-south streets.

Major destinations: Pacific Edison Community Center, Glendale Galleria, Americana at Brand, Adult Recreation Center, and Glendale High School.

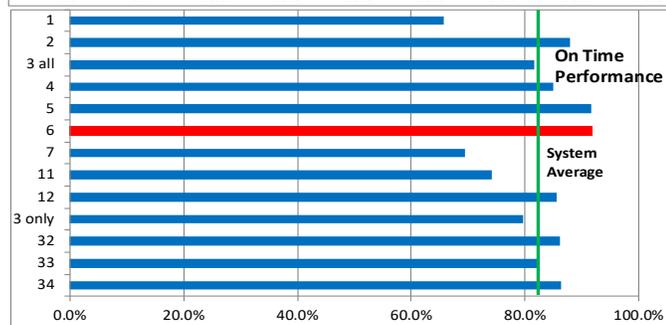
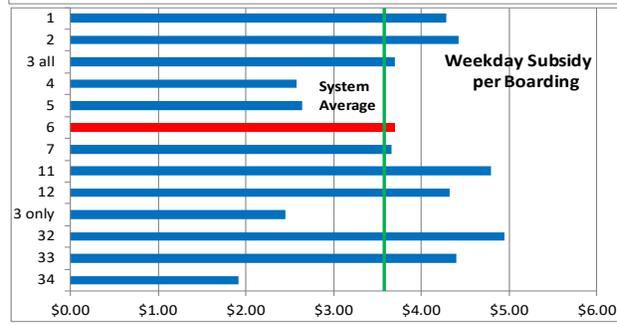
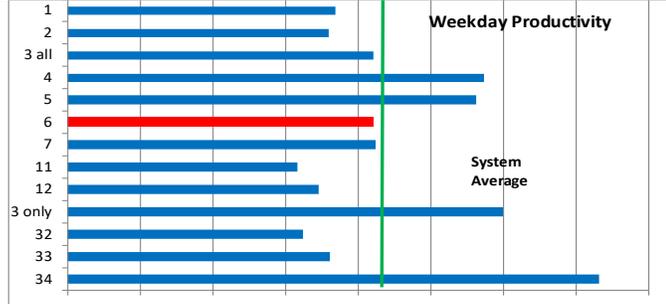
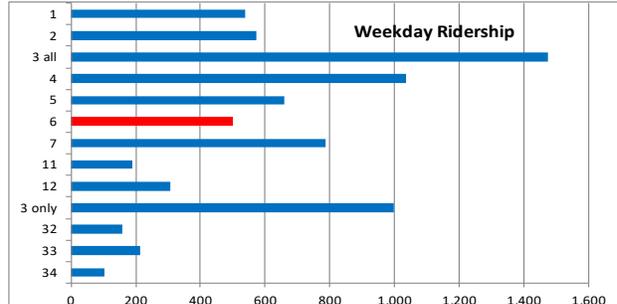
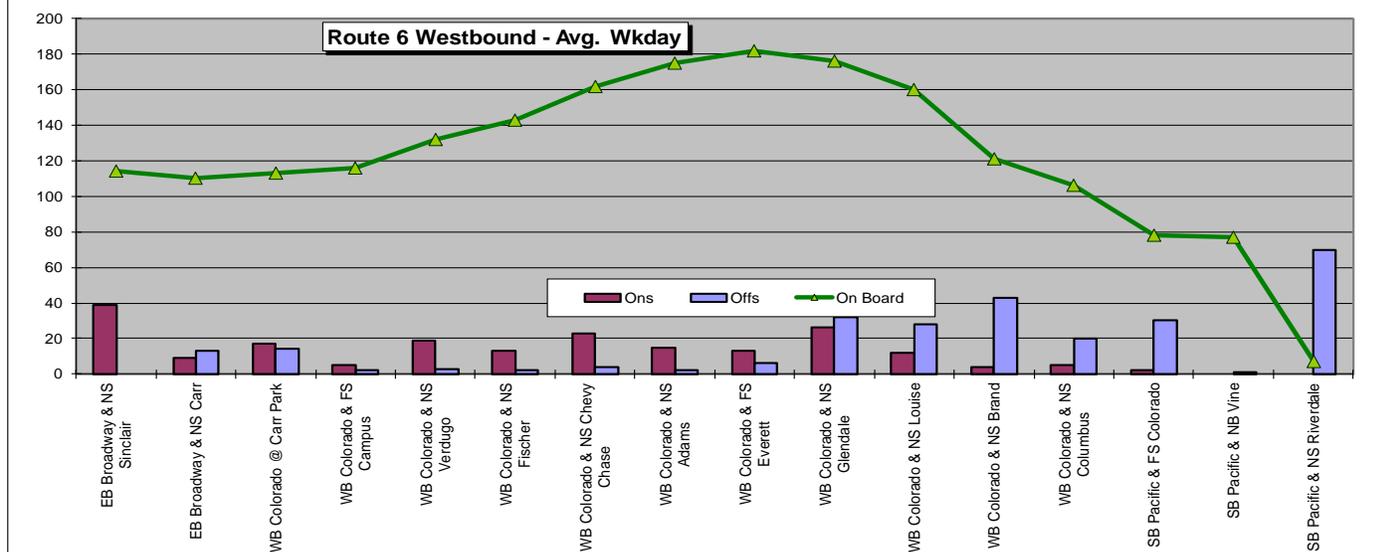
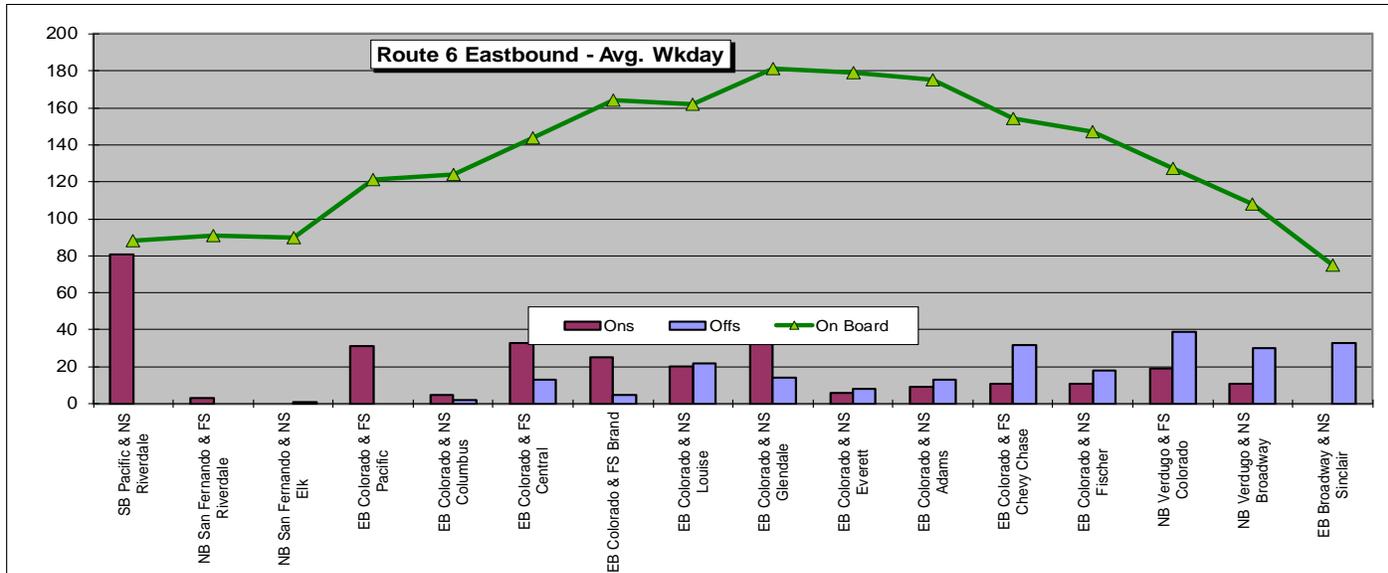
- Headway* 16 to 22 minutes weekday
20 to 30 minutes Saturday
- Service span* 6:14 am to 6:30 pm weekdays
9:00 am to 5:05 pm Saturday
- Ridership* 500 weekdays (7th of 12 routes)
289 Saturday (2nd of 7 routes)
- Trend* -17% since 2013 weekdays
+4% Saturday
- Major stops* Pacific & Riverdale; Colorado & Glendale; Colorado & Central; Colorado & Brand
- Productivity* 21.0 boardings per revenue hour weekdays (6th of 12 routes)
18.6 Saturday (2nd of 7 routes)

Overcrowded segments None
Maximum load 34 on 3:16 pm WB trip at Colorado & Verdugo

Subsidy per boarding rank 6th of 12 routes weekday
Schedule adherence rank 1st of 12 routes weekday
Running time analysis Adequate overall; more running time eastbound and less westbound in the midday and afternoon

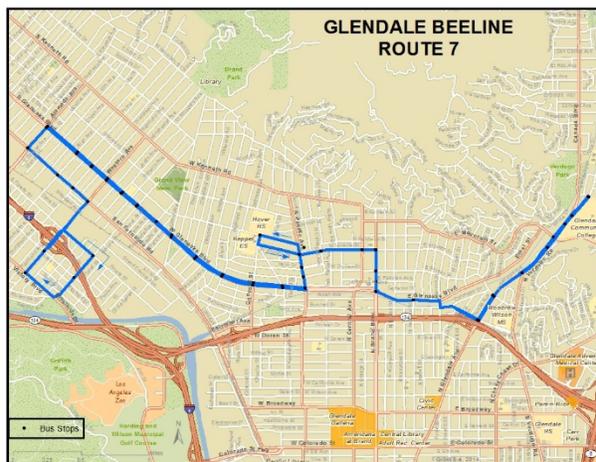
Route 6 positives Ranks second in ridership and productivity on Saturday
Excellent schedule adherence
Direct route
Ridership has increased on Saturday since 2013

Route 6 negatives Relatively low weekday ridership, also decreasing



Route 7 Riverside Rancho to Glendale Community College

Route 7 operates primarily along Western Avenue, Glenoaks Boulevard, Stocker Street, and Verdugo Road between Victory Boulevard & Western Avenue in west Glendale and GCC. The primary function of Route 7 is to connect the western part of Glendale with Hoover High School, Toll Middle School, and GCC.



The effects of student ridership can be seen in much lower Saturday ridership, a similar trend to that noted for Route 5.

Major destinations: Glendale Community College, Hoover High School, and Toll Middle School.

Headway 27 to 34 minutes weekday, with more frequent service at bell times
 40 to 45 minutes Saturday

Service span 6:18 am to 6:50 pm weekdays
 9:00 am to 5:09 pm Saturday

Ridership 786 weekdays (3rd of 12 routes)
 178 Saturday (6th of 7 routes)

Trend -26% since 2013 weekdays
 -3% Saturday

Major stops GCC; Glenwood & Concord; Brand & Fairview

Productivity 21.2 boardings per revenue hour weekdays (5th of 12 routes)
 12.0 Saturday (6th of 7 routes)

Overcrowded segments None

Maximum load 39 on 1:27 pm WB trip at Verdugo & Mountain

Subsidy per boarding rank 5th of 12 routes weekday

Schedule adherence rank 11th of 12 routes weekday

Running time analysis Adequate overall; may need more running time westbound in the midday

Route 7 positives Good weekday ridership and productivity

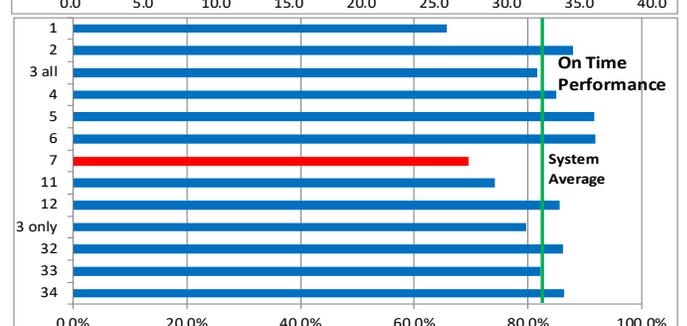
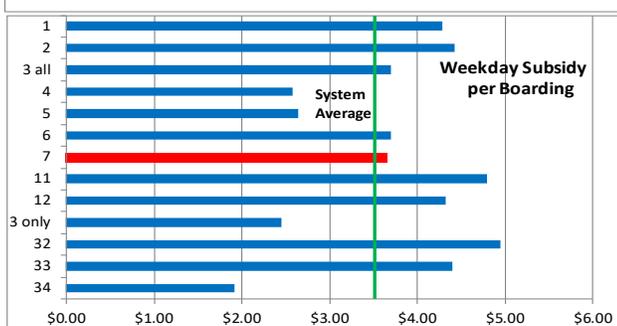
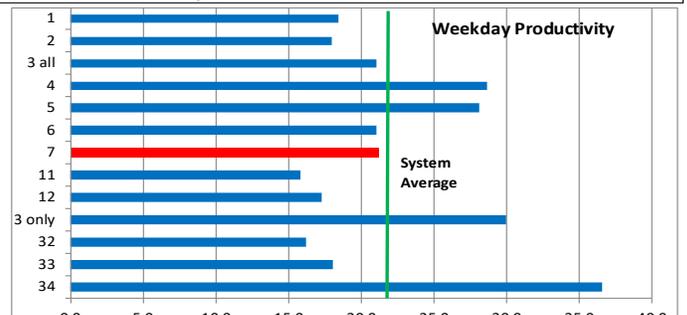
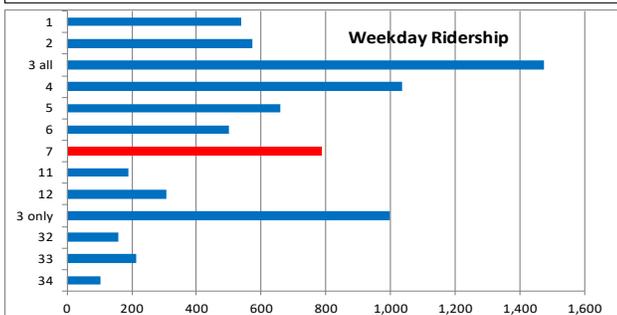
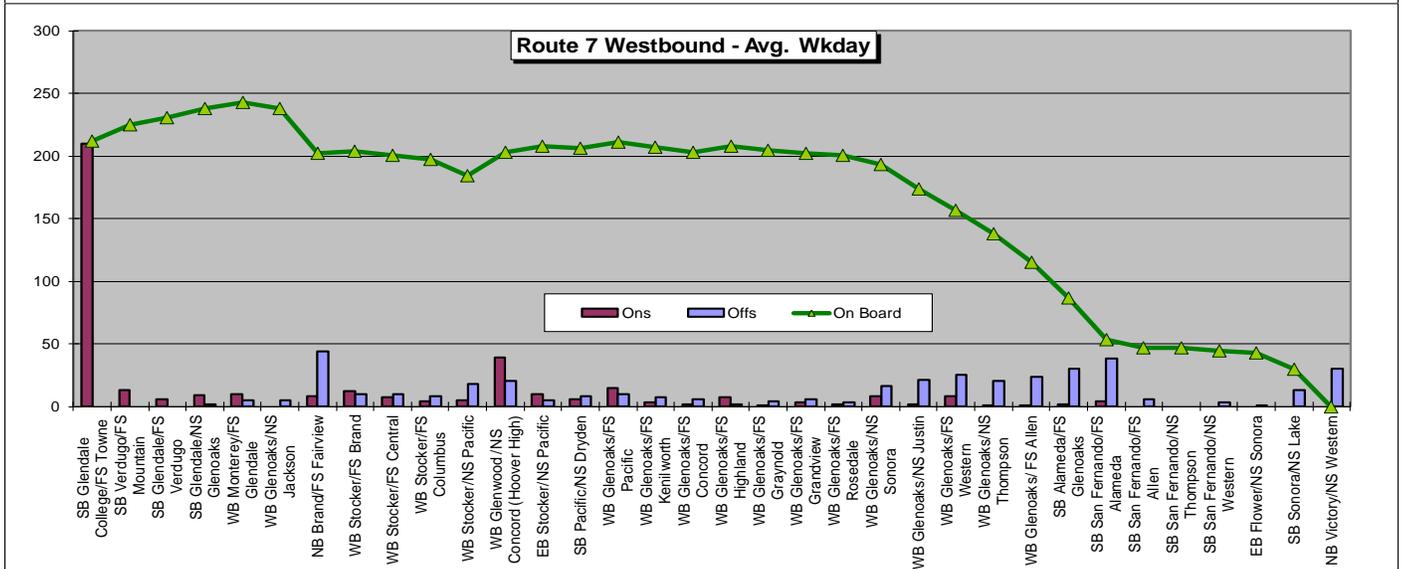
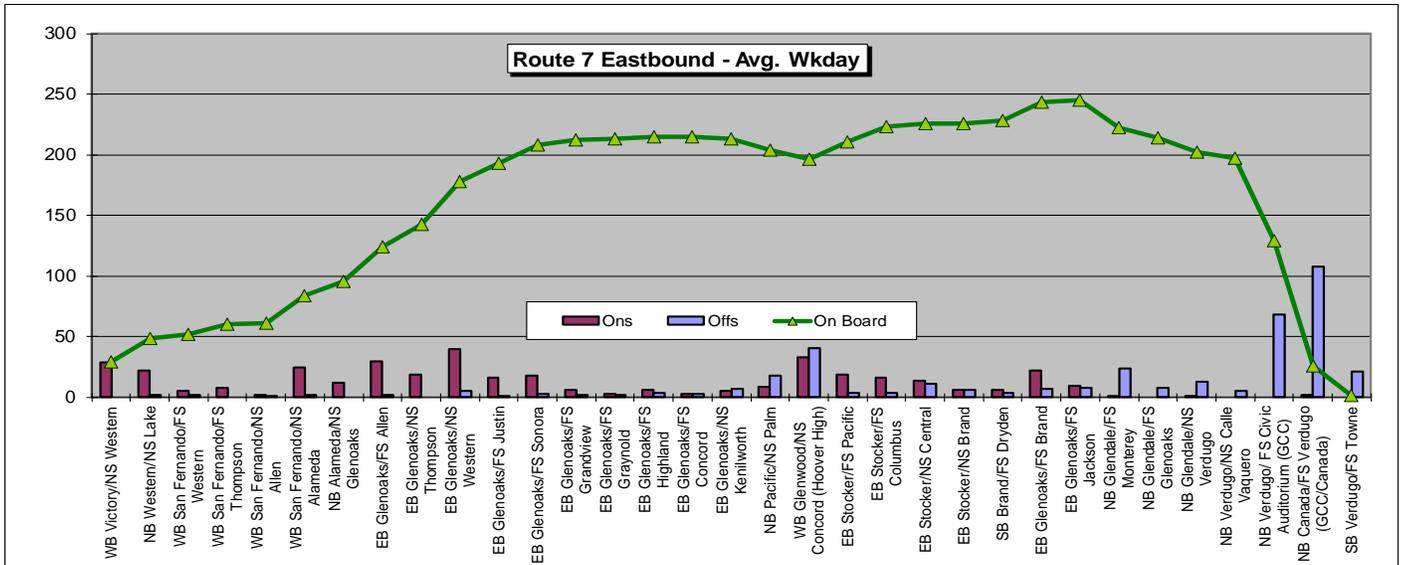
Ridership has fallen only slightly on Saturday since 2013

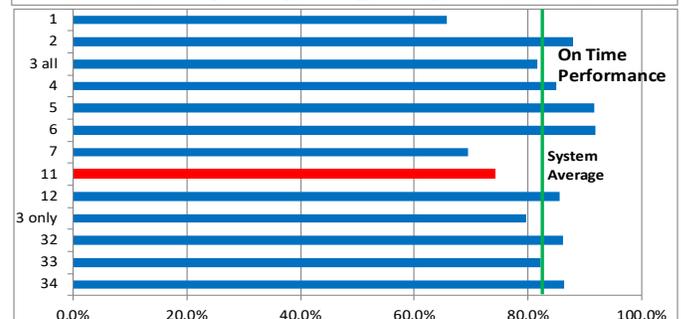
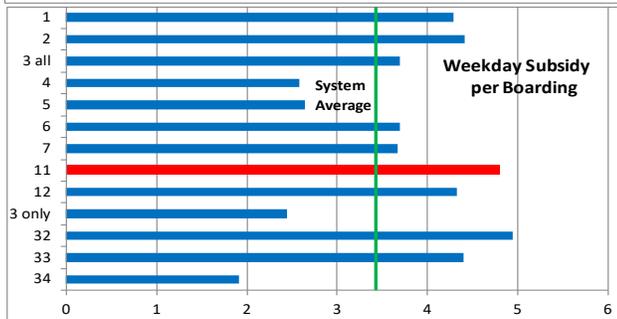
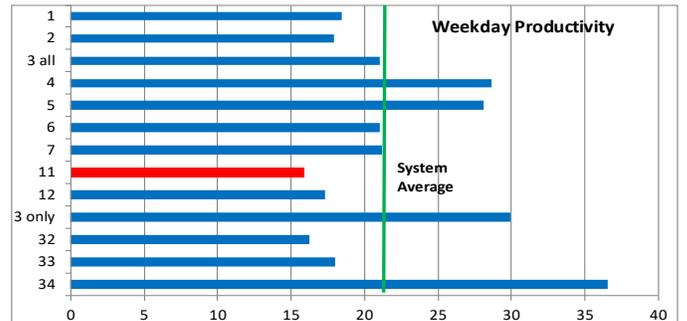
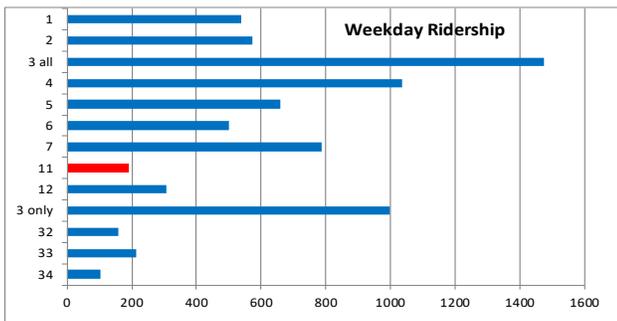
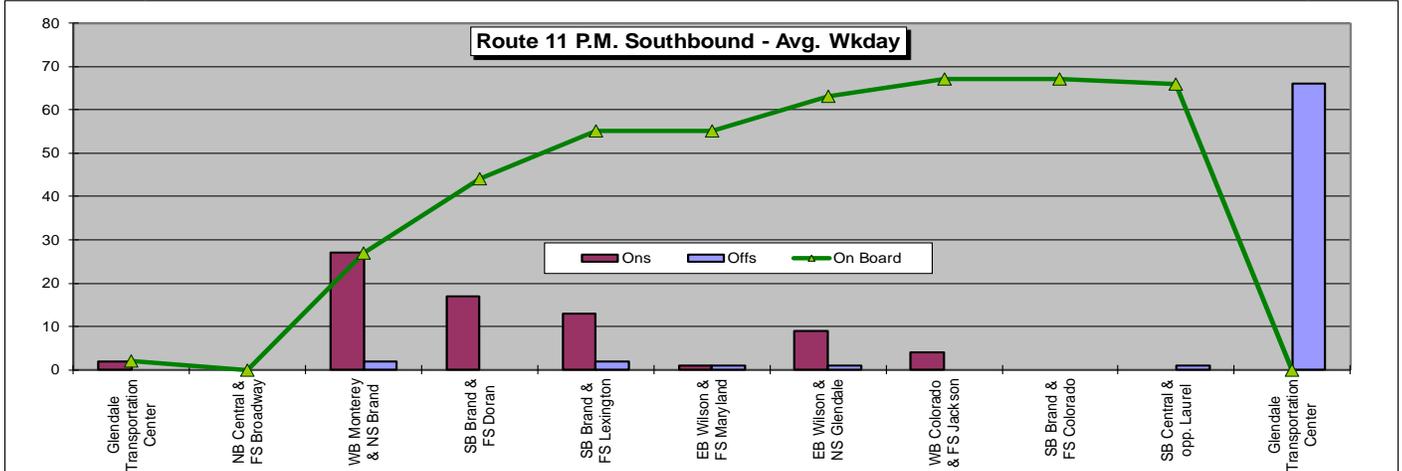
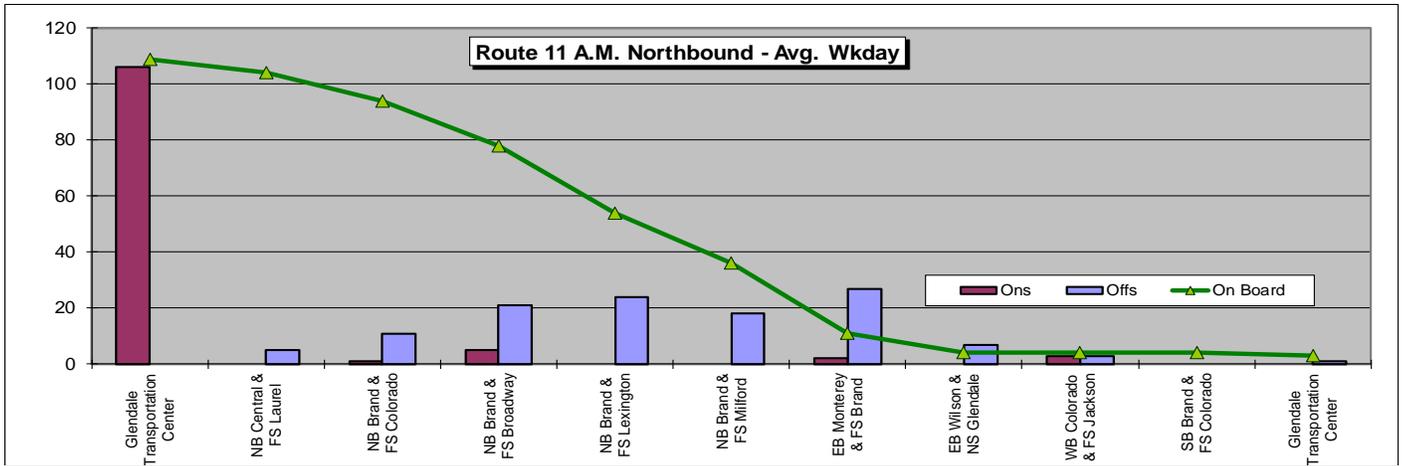
Route 7 negatives Schedule adherence issues, partly due to the length of the route

Low Saturday ridership and productivity

Sharp weekday ridership decreases since 2013

Circuitous routing to Riverside Rancho



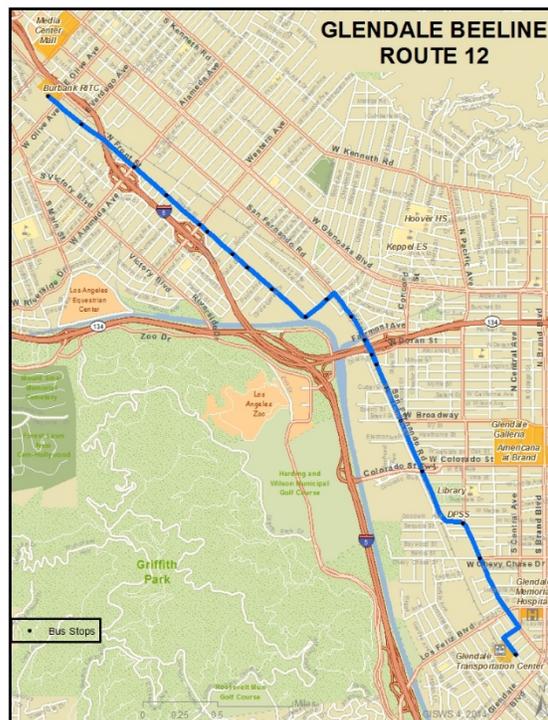


Route 12 Metrolink Express: GTC to Burbank Regional Intermodal Transportation Center (RITC)

Route 12 is a Metrolink Express route designed for workers along the San Fernando-Flower corridor who commute via Metrolink. The route is scheduled to meet Metrolink trains at both GTC and Burbank RITC and will wait for a late train in the morning. The route operates on weekdays during peak commuting hours only.

The primary function of Route 12 is to provide a reliable connection for Metrolink commuters between GTC or Burbank RITC and employment sites along the San Fernando-Flower corridor. Timing this route to meet trains at both stations is a challenge.

Major destinations: businesses along the Flower-San Fernando corridor; GTC; RITC.



Headway 8 morning trips from GTC and 10 from RITC; 8 afternoon trips to GTC and 7 to RITC. All trips are scheduled around train arrivals and departures. Headways range from 9 to 35 minutes in the morning and from 19 to 71 minutes in the afternoon.

Service span 5:58 to 9:44 weekday am
3:09 to 6:50 weekday pm

Ridership 307 weekdays (8th of 12 routes)

Trend -10% since 2013 weekdays

Major stops Burbank RITC; GTC; Flower & Circle Seven; Grandview & Air Way

Productivity 17.3 boardings per revenue hour weekdays (10th of 12 routes)

Overcrowded segments None

Maximum load 23 on 4:28 pm NB trip at Flower & Alameda

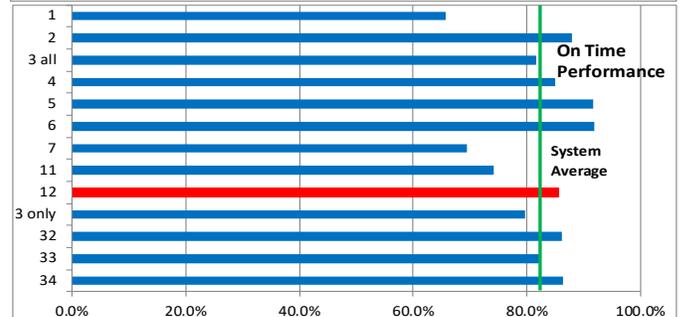
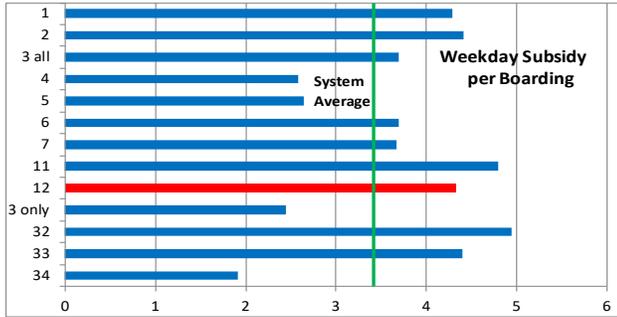
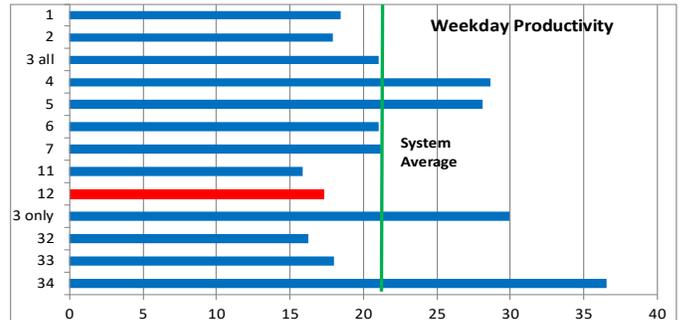
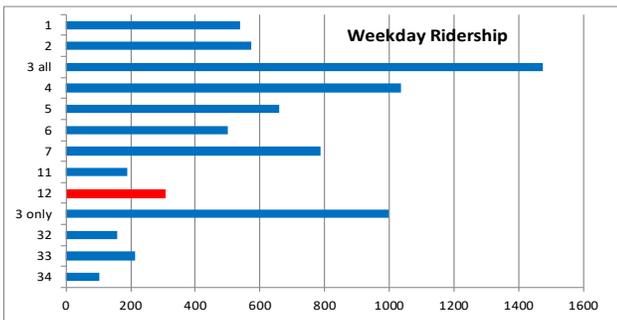
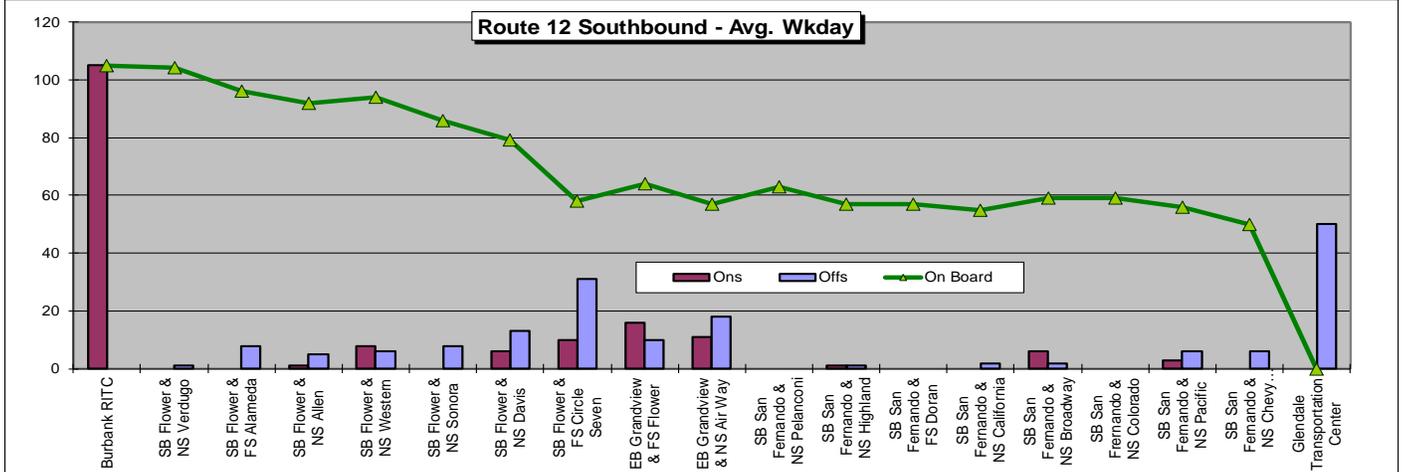
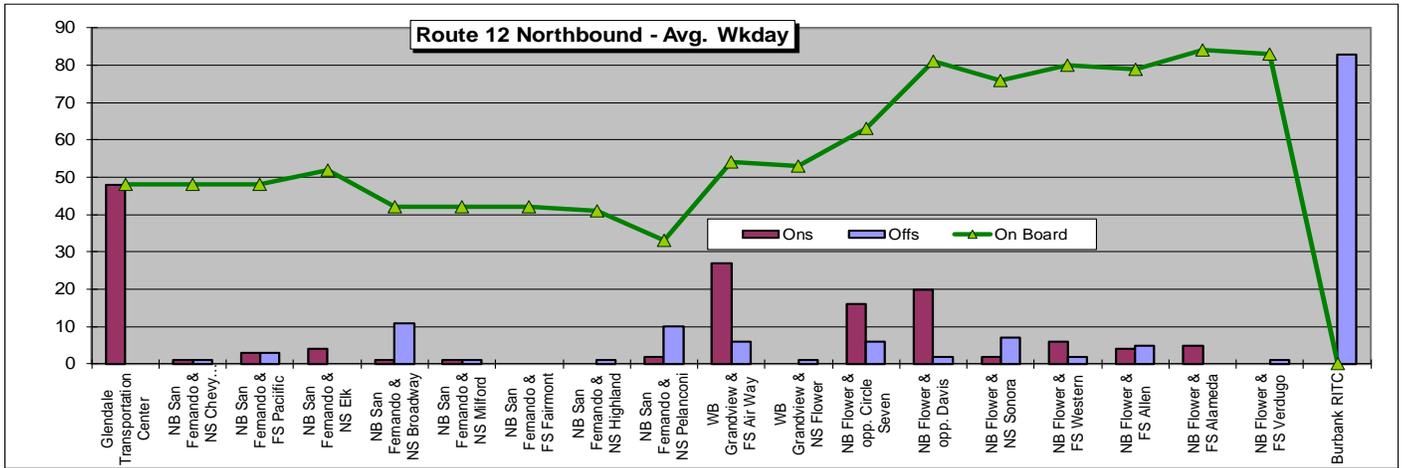
Subsidy per boarding rank 8th of 12 routes weekday

Schedule adherence rank 4th of 12 routes weekday

Running time analysis Needs more running time southbound in the morning

Route 12 positives Provides last-mile connection tailored for employees along San Fernando-Flower corridor who commute via Metrolink
Schedule adherence is above average
Ridership heaviest to/from Burbank RITC

Route 12 negatives Low ridership and productivity, in line with expectations for a peak-only express route
Decreasing ridership since 2013
Challenges in scheduling buses to meet trains at two stations
Metrolink fare zone structure results in higher fare to ride to Glendale from the north, which may affect which station riders use



**Glendale Beeline
Transit Route Analysis
Chapter 3: On-board Survey**

3.0 Introduction

Working with City Transit staff, the project team designed and conducted an on-board survey to obtain input from Beeline riders on a variety of topics. The team conducted the survey in conjunction with the ridecheck during the period from November 3 through November 8, 2018.

Surveys were printed in English, Spanish, and Armenian. Some questions were included on previous on-board surveys, giving us a chance to note trends over time. The survey added several new questions to solicit feedback on current issues. Respondents filled out 779 surveys. The survey forms may be found in Appendix B.

This chapter is organized as follows:

- Section 1 summarizes findings from the on-board survey
- Section 2 presents ridership information and travel patterns, including origins and destinations
- Section 3 examines preferences among various service alternatives
- Section 4 discusses current and preferred means of obtaining information about the Beeline
- Section 5 analyzes rider demographics and ratings of service elements
- Section 6 compares responses in this survey to those received in the 2008 and 2013 on-board survey.

3.1 Summary of On-board Survey Findings

Beeline riders are using transit primarily for school and work trips: 38 percent of all trips are work-related and 25 percent are school-related.

The City of Glendale naturally accounts for the overwhelming number of origins and destinations on Beeline buses. Approximately 84 percent of all trips begin and end in Glendale. Trip origins in La Cañada Flintridge, Los Angeles, Burbank, Santa Clarita, and Pasadena also contribute to Beeline ridership. Metrolink and Amtrak riders from San Bernardino, Riverside, and Orange County travel through Union Station to work in Glendale. Metrolink also brings employees from as far away as Lancaster, Palmdale and Oxnard and onto the Beeline for their work commute. Glendale Community College, the Glendale Transportation Center, Hoover High School, and various stops in downtown Glendale are major destinations for Beeline passengers.

Most riders get to or from the bus by walking and 18 percent of all riders transfer from another bus. Beeline riders tend to be frequent, long-time riders, but 15 percent began using the system in the past six months.

The survey asked customers to choose among various service improvements. Respondents expressed an overwhelming preference for greater frequency on existing routes over new or extended routes to new places. Respondents were more likely to choose fewer stops to speed up the buses, even if it meant a longer walk to/from the stop. More peak period service ranked highest among weekday improvements. The most requested weekend changes were to operate more routes on Saturday and to operate later in the evening.

A new question in this year's survey asked about any factors that prevent greater use of the Beeline. Over one-third of respondents indicated that there were no factors, while one-quarter said that Beeline routes do not travel where they need to go and one-fifth reported that the Beeline does not travel when they need it.

Over three-quarters of all respondents carry smartphones, and a majority in every demographic category measured have smartphones with them. Among respondents 62 years of age and older, 57 percent reported carrying a smart phone, compared to 29 percent in 2013. Half of Beeline customers have used NextBus. NextBus use is least common among respondents 62 and older and among respondents 17 and under.

NextBus has replaced printed schedules as the most common way to find out schedule information. Customers also prefer NextBus as their future source of information, followed by printed schedules and Google Transit. The majority of respondents pay for their fare with cash, and about half indicated that cash is their preferred future mode of payment. Only 28 percent of respondents own a Metro TAP card. This group of riders is likely to ride both systems on a fairly regular basis.

In terms of demographics, Beeline riders are most likely to be female. Many Beeline riders report low incomes, but almost 40 percent of local riders have household incomes above \$20,000 and 73 percent live in a household with at least one vehicle. Riders are of all ages. Since 2013, the percentage of riders age 62 and older has increased from 12 to 18 percent. The most common ethnicity is Latino, but Latino riders do not constitute a majority of all riders.

Beeline riders are very pleased with the service. On a scale of one (poor) to four (great), respondents rate Beeline service at an average of 3.57, a very high rating and an increase from 3.36 in 2013. The highest rated items are cleanliness, safety, and operator courtesy. The lowest ratings among all service elements are for availability of schedules (3.36), but even this score is respectable. Customer ratings increased for each service element since 2013.

Most responses to this survey are not appreciably different from responses in 2008 or 2013. Notable differences include increased use of NextBus for schedule information, interest in Google Transit, greater likelihood across all demographics of having a smartphone, a higher percentage of riders age 62 and older, and increased ratings of overall service and of individual service elements.

3.2 Ridership Information and Travel Patterns

Figure 3.1 summarizes survey responses by language. Over 85 percent of all respondents answered the survey in English. Of the non-English surveys, most were completed in Spanish. Armenian-language responses accounted for three percent of all surveys received.

The express routes connecting to Metrolink showed a different pattern: All surveys on Routes 11 and 12 were completed in English.

Figure 3.1
Survey Responses by Language

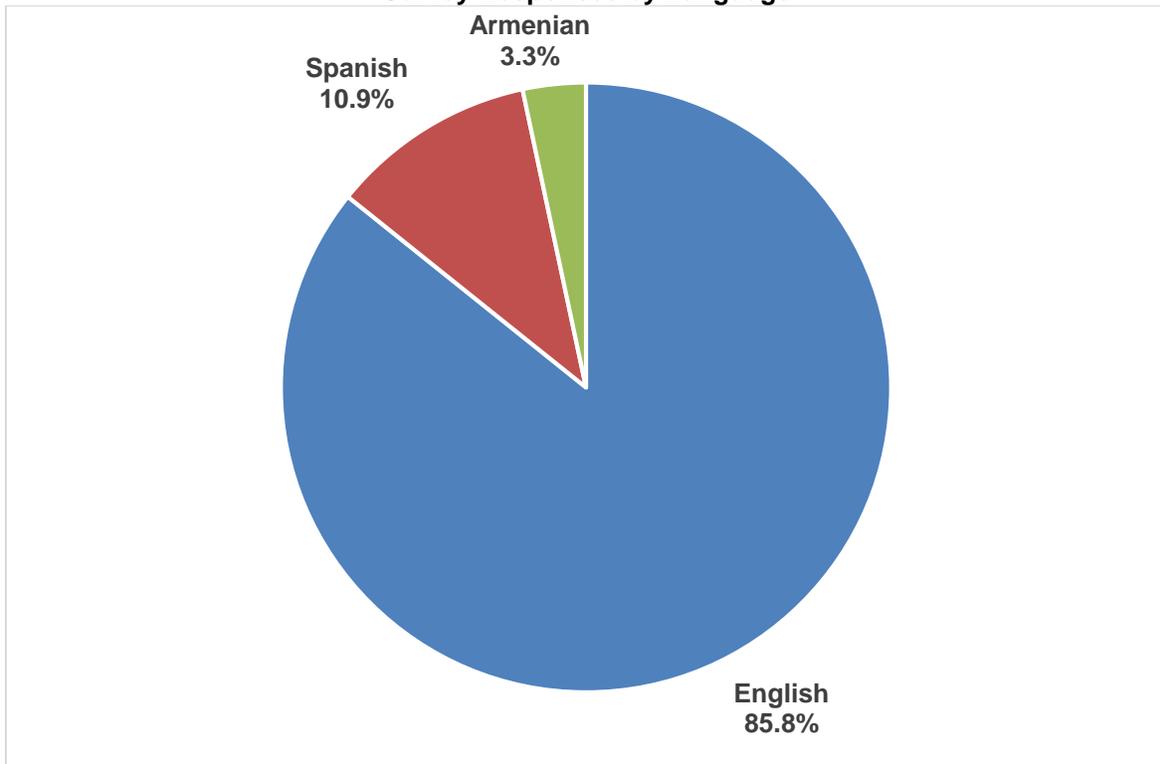


Figure 3.2 shows the number of survey responses and the percentage of riders responding by Beeline bus route. Routes 3 and 32 are combined, as are the La Cañada Flintridge shuttles (Routes 33 and 34). The survey sample included each weekday, Saturday, and Sunday trip on each route. Number of responses range from 15 on Routes 33 and 34 to 123 on Routes 1 and 2.

Figure 3.2
Survey Responses by Beeline Route

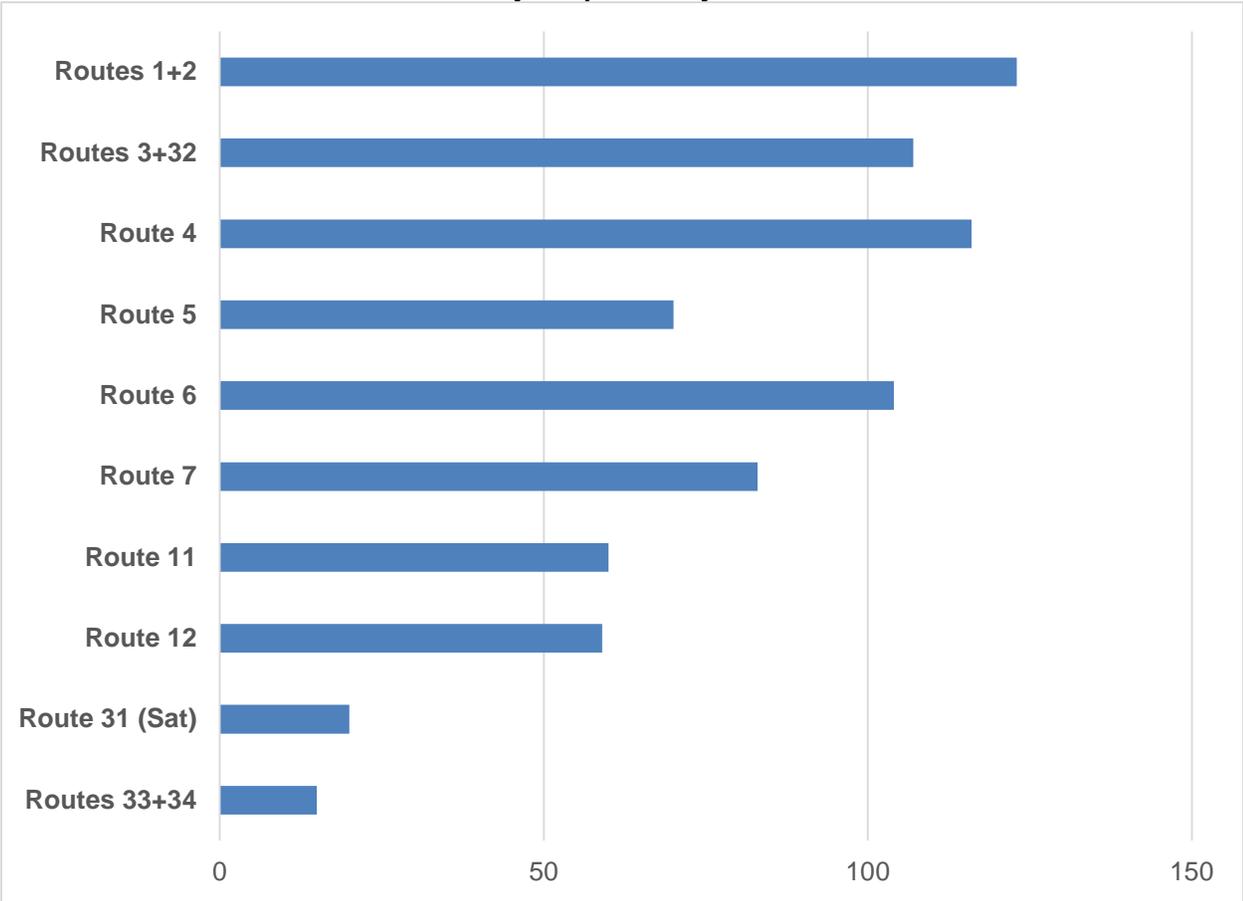


Figure 3.3 shows trip purpose for a typical week. Work is the most common trip purpose, and 63 percent of all trips are for work or school.

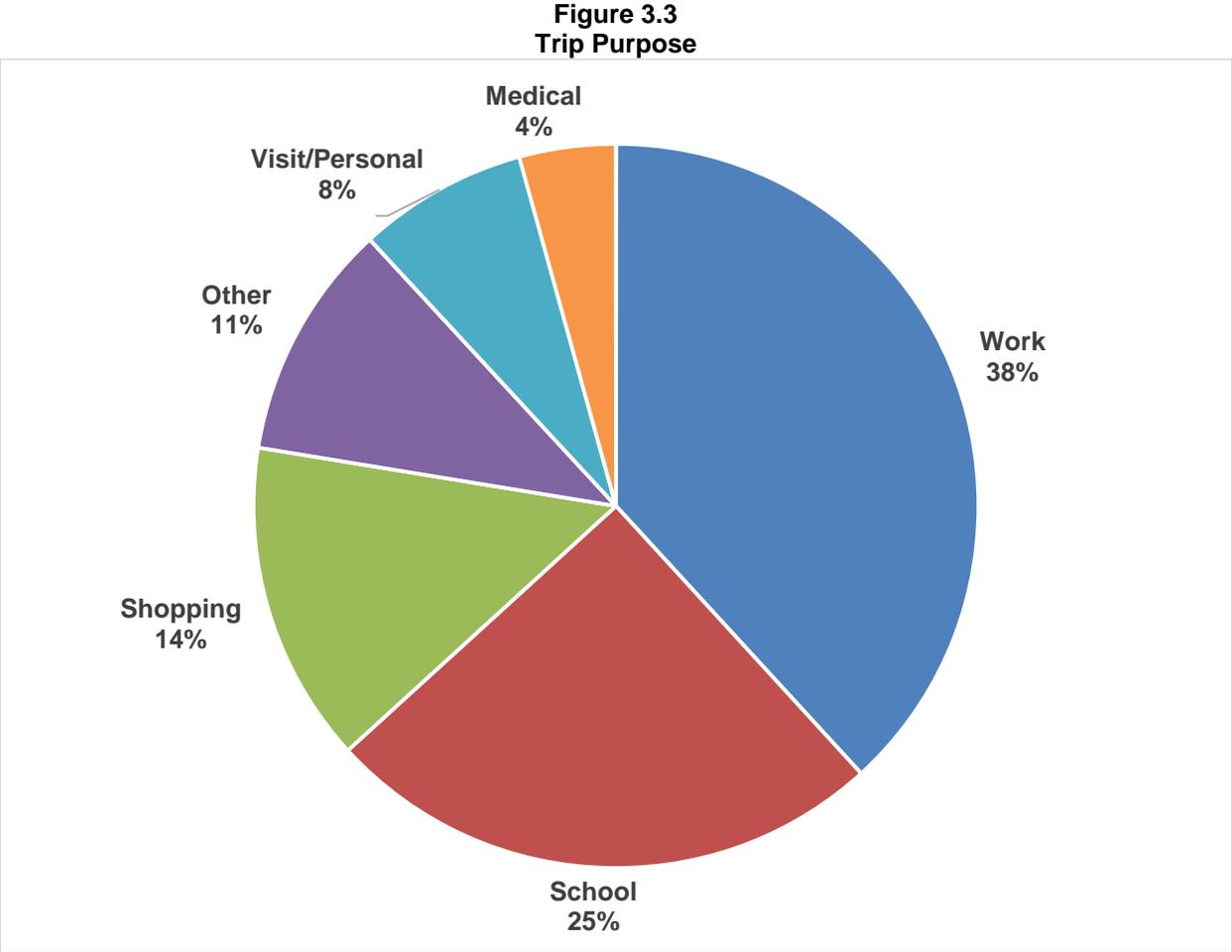


Table 3.1 lists intersections/locations with the greatest number of boardings, as reported by survey respondents. All bus stops at a particular intersection are included in the total for that intersection. Note that these numbers represent survey responses, not actual boardings. The Glendale Transportation Center and Burbank Metrolink Station are over-represented because of the higher response rate on Routes 11 and 12, while local locations are under-represented.

Table 3.1
Survey Results: Intersections/Locations with the Greatest Number of Boardings

Location	Number of Boardings
Glendale Transportation Center	65
Concord & Glenwood (Hoover High School)	30
Glendale Community College	23
Burbank Metrolink Station	15
Brand & Monterey	11
Pacific & Riverdale	10
Brand & Colorado	8
Jet Propulsion Lab	8
La Cañada High School	8

Source: 2018 On-board Survey

Table 3.2 lists intersections/locations with the greatest number of alightings, also as reported by survey respondents. All bus stops at a particular intersection are included in the total for that intersection. Differences between the two lists reflect the fact that passengers were somewhat more likely to fill out the survey on their first trip of the day. This explains why important destinations such as the Glendale Galleria and the Americana at Brand are in the top five in alightings but not in boardings. The caution regarding over-representation of destinations on Routes 11 and 12 noted in the previous paragraph also applies here.

Table 3.2
Survey Results: Intersections/Locations with the Greatest Number of Alightings

Location	Number of Alightings
Glendale Community College	32
Glendale Transportation Center	32
Glendale Galleria	23
The Americana at Brand	13
Central & Colorado	13
Brand & Broadway	11
Broadway & Glendale	11
Colorado & Verdugo (Glendale High School)	11
Pacific & Riverdale	11

Source: 2018 On-board Survey

We also asked respondents where they began and ended their trips. The survey specified that the trip origin was the place a respondent started out from before getting to the bus stop and the trip destination was the place a respondent ended at after completing the trip. Only a minority of respondents provided an address or street intersection as we requested for both the origin and destination, but we tabulated 482 responses with accurate origins and destinations and weighted these responses by the response rates by route.

Figure 3.4 shows origins and destinations by location within the City of Glendale (excluding far north Glendale for greater clarity – see Figure 5 for far north Glendale). At this fine level of detail, important origins and destinations within the City are clearly visible, including GCC, the Glendale Transportation Center, Hoover High School, Downtown Glendale, and locations along Brand Boulevard.

Figure 3.4
Origin-Destination by Location within the City of Glendale

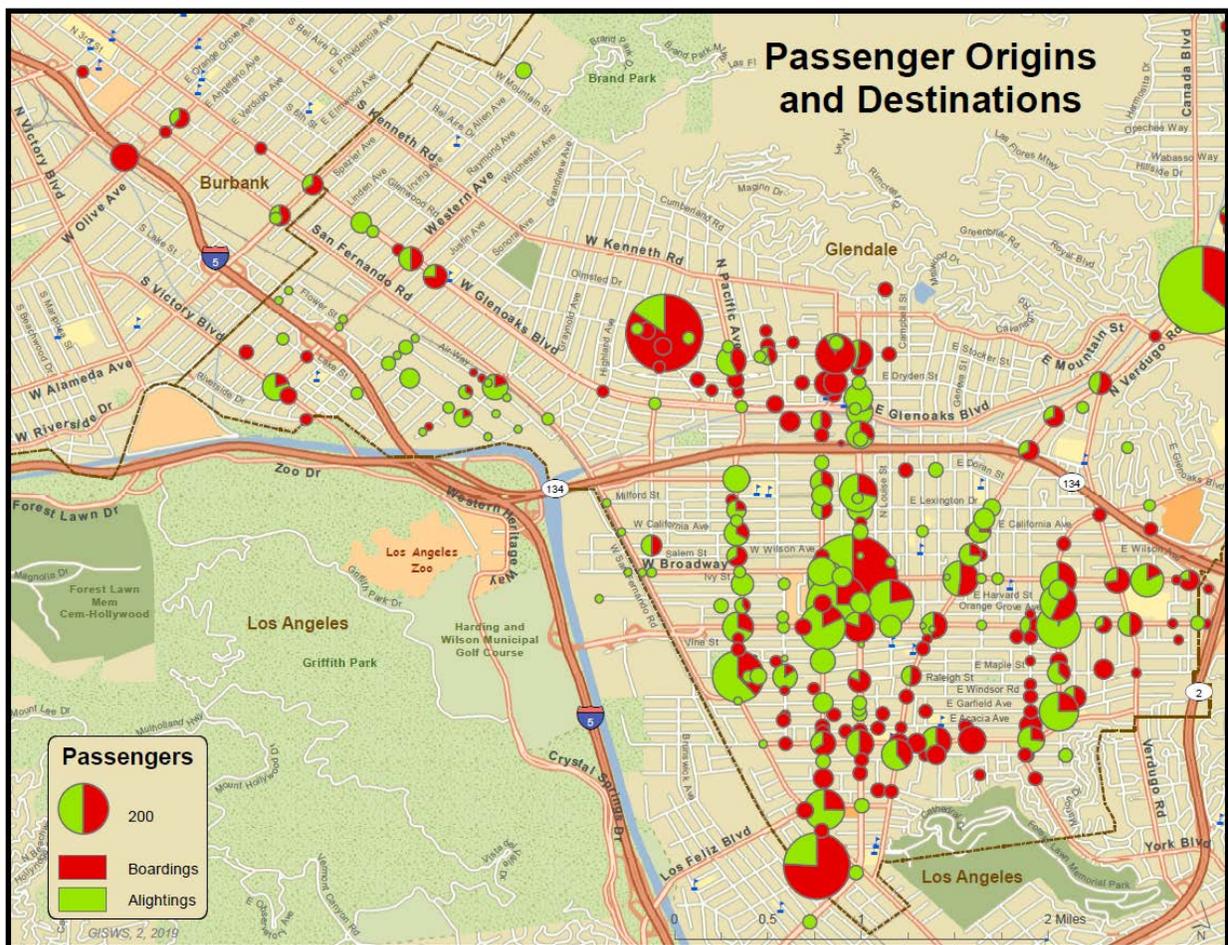
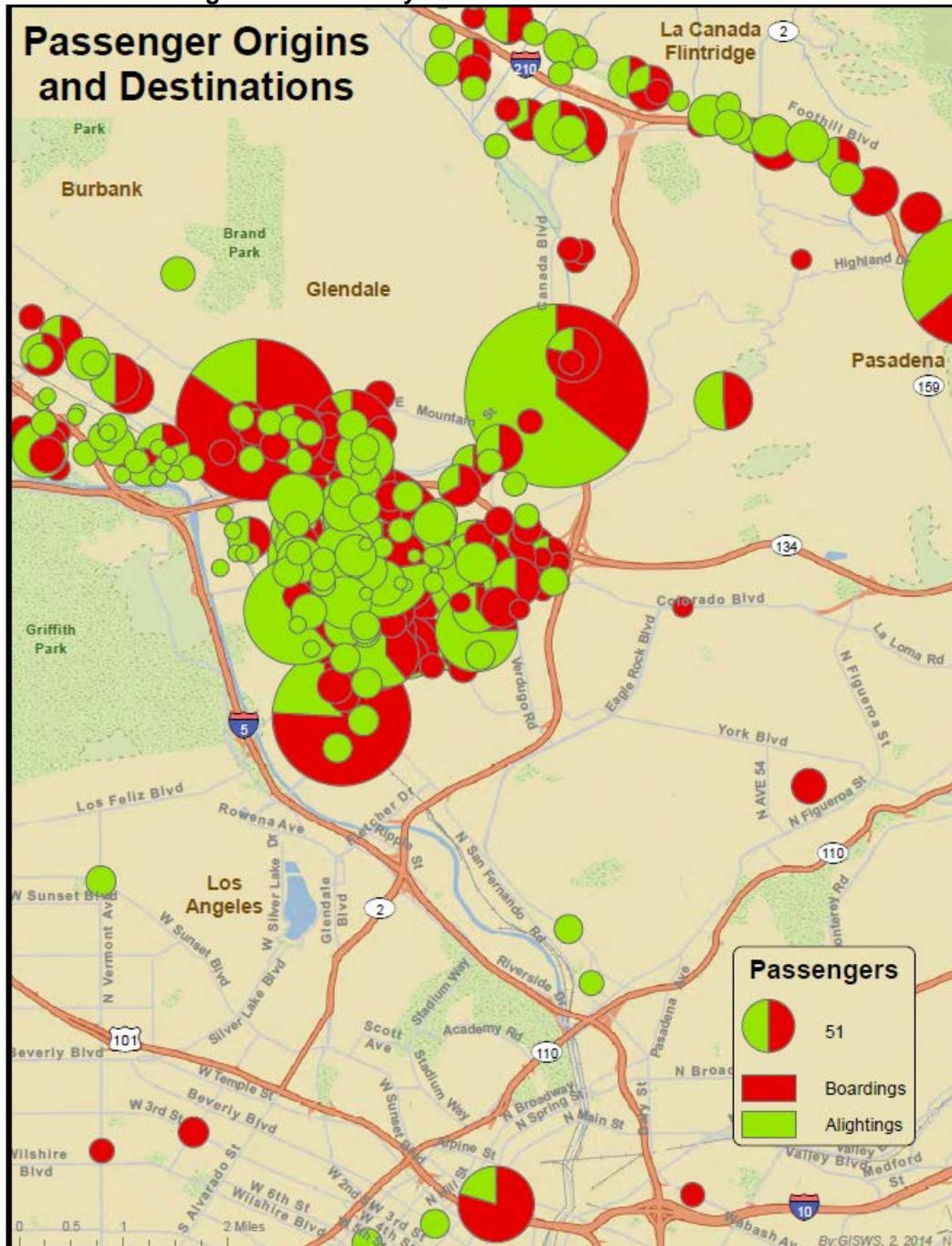


Figure 3.5 shifts the focus outward to show origins and destinations by location within Glendale and nearby cities. Major origins and destinations such as Glendale Community College at 1500 N. Verdugo Road, the Glendale Transportation Center at 400 West Cerritos Avenue, Hoover High School at Concord Street & Greenwood Road, La Cañada High School at 4463 Oak Grove

Drive, Los Angeles Union Station at 800 N. Alameda Street, and various stops in downtown Glendale can be seen clearly in Figure 5.

Figure 3.5
Origin-Destination by Location in and around Glendale



The impact of the Metrolink connection can be seen in Figure 3.6, which provides the broadest view of all the figures. The City of Glendale naturally accounts for the overwhelming number of origins and destinations on Beeline buses, but Los Angeles, La Cañada Flintridge, Santa

Figure 3.7 indicates means of access to the bus. Most riders walk to the bus. Almost three-quarters of those who walk to the bus stop walk one or two blocks, and 87 percent reported walking three blocks or fewer. Passengers transferring from Metrolink are included in the “other” category.

Over half (53 percent) of passengers transferring from another bus came from another Beeline bus, with the most of the remaining passengers coming from Metro, especially Metro Lines 180/181/780 along Broadway and Central (13 percent of transferring passengers) and Metro Lines 90 and 91 from Downtown Los Angeles to Sunland (12 percent). Most of the transfers from Metro Lines 180/181/780 take place at Brand & Broadway, while the transfers from Metro Lines 90 and 91 occur at various stops along Glendale Avenue or in La Crescenta.

Figure 3.7
Means of Access to the Bus

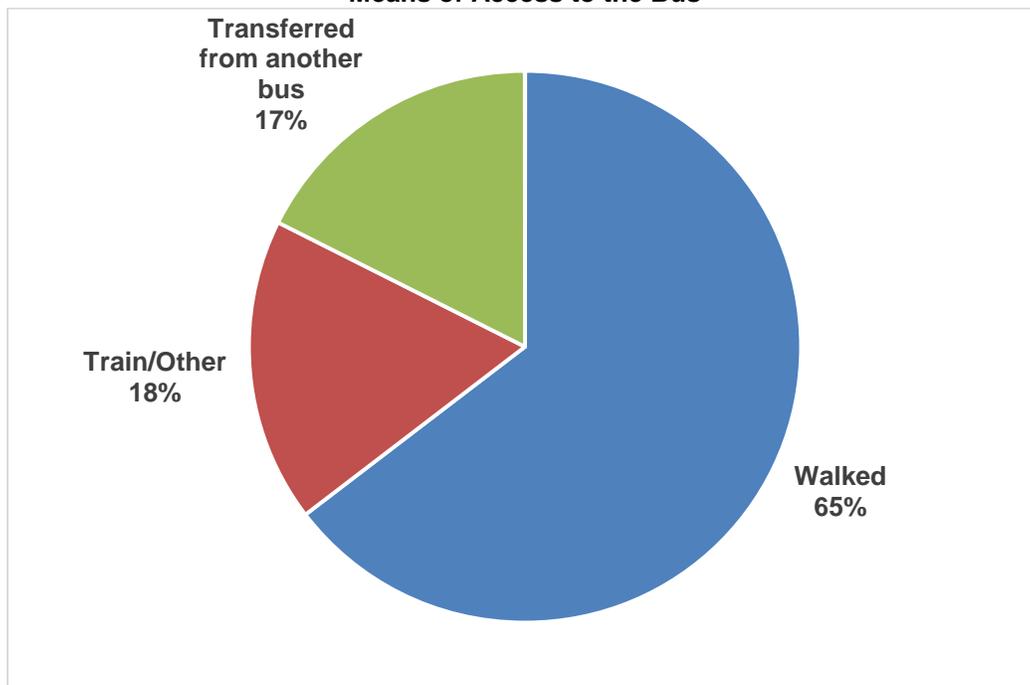
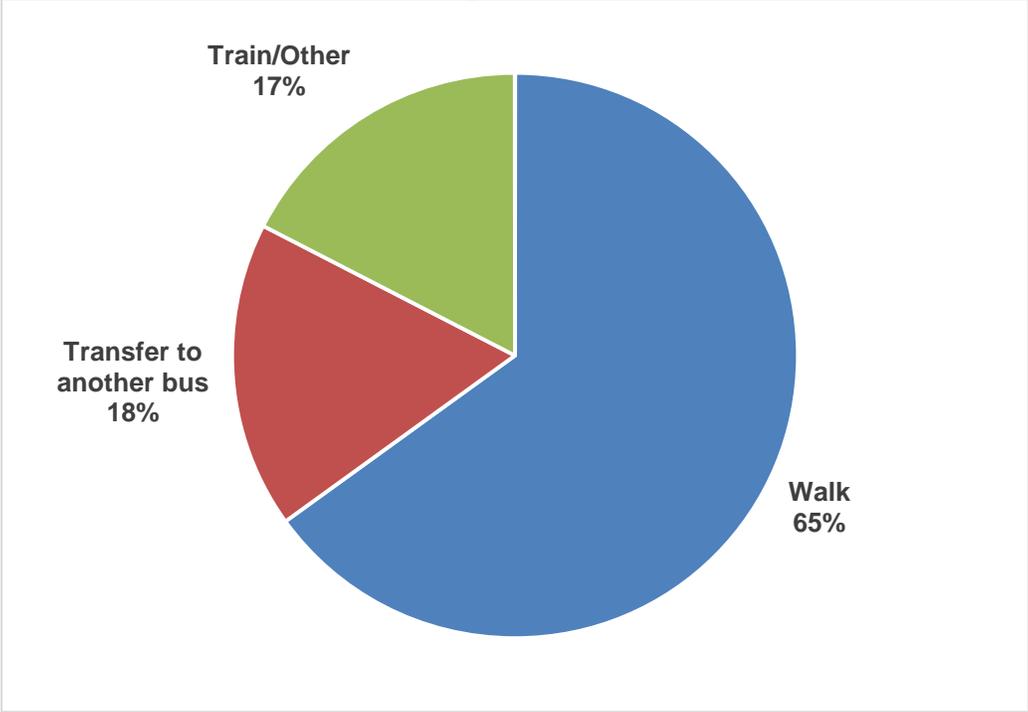


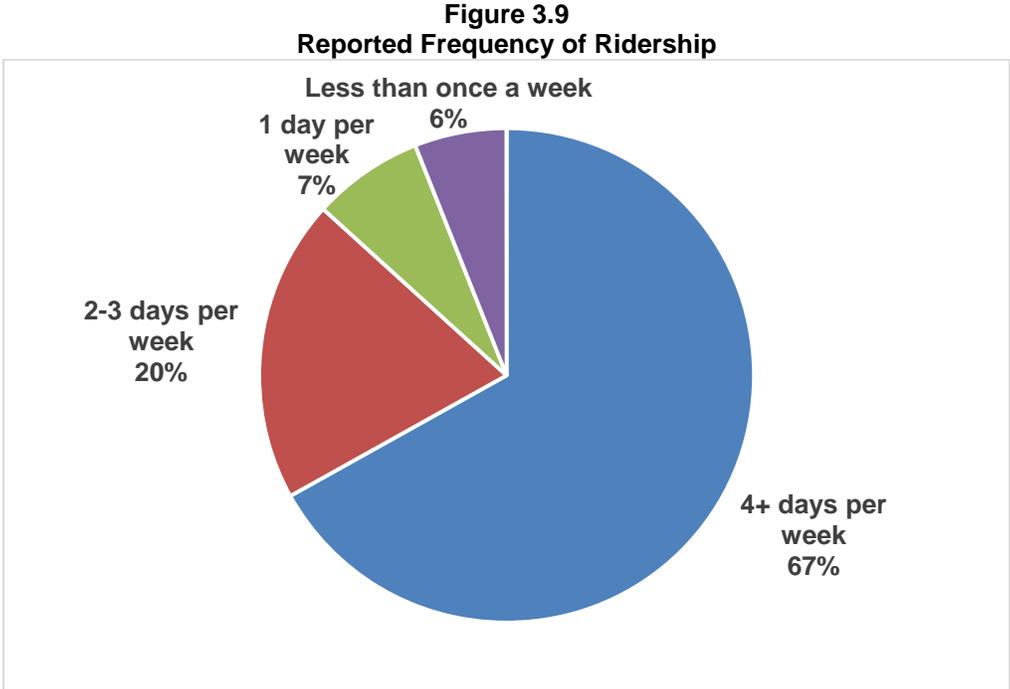
Figure 3.8 presents means of egress from the Beeline bus. Mode of egress is very similar to mode of access. Almost three-quarters of passengers who walk to their final destination walk only one or two blocks, and 83 percent walk three blocks or fewer.

Figure 3.8
Means of Egress from the Bus



Over half (53 percent) of passengers transferring to another bus are transferring to a Beeline bus, with all remaining passengers transferring to Metro. Eighteen percent of respondents transferring to another bus transferred to Metro Lines 180/181/780, while 12 percent transferred to Metro Lines 90 and 91.

Figure 3.9 presents the reported frequency of ridership in a week. Two-thirds of respondents are regular riders who use the Beeline at least four days per week.



On-board surveys tend to under-report infrequent ridership, since passengers who ride only one or two days per week or less have a lesser chance to be surveyed. Reported frequency of ridership can be adjusted by considering the likelihood of each group of riders actually receiving a survey. Table 3.3 shows reported and adjusted frequency of ridership on the Beeline.

**Table 3.3
Reported and Adjusted Frequency of Ridership**

Frequency of Ridership	Percent Reported	Percent Adjusted
4 or more days per week	67%	31%
2 to 3 days per week	20%	20%
Once a week	7%	18%
Less than once a week	6%	31%

Source: 2018 On-board Survey

Figure 3.10 presents the history of riding the Beeline. Three-quarters of all riders have been riding for at least one year. Almost one in six riders is new to the Beeline system, riding for less than six months.

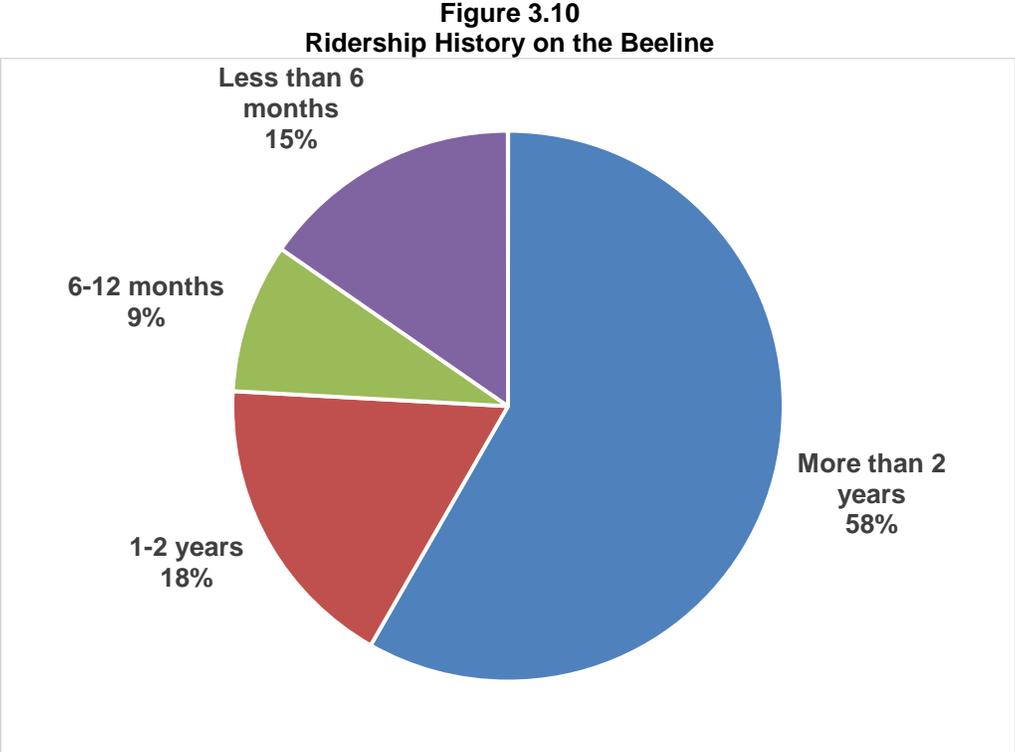


Figure 3.11 shows the fare category of Beeline riders. Almost half are in the “general” category, one-third are students and one in six riders is in the senior/disabled/Medicare category. There are differences in method of fare payment by fare category: 83 percent of students pay cash, compared to only half of riders in the other categories.

Figure 3.11
Fare Category of Beeline Riders

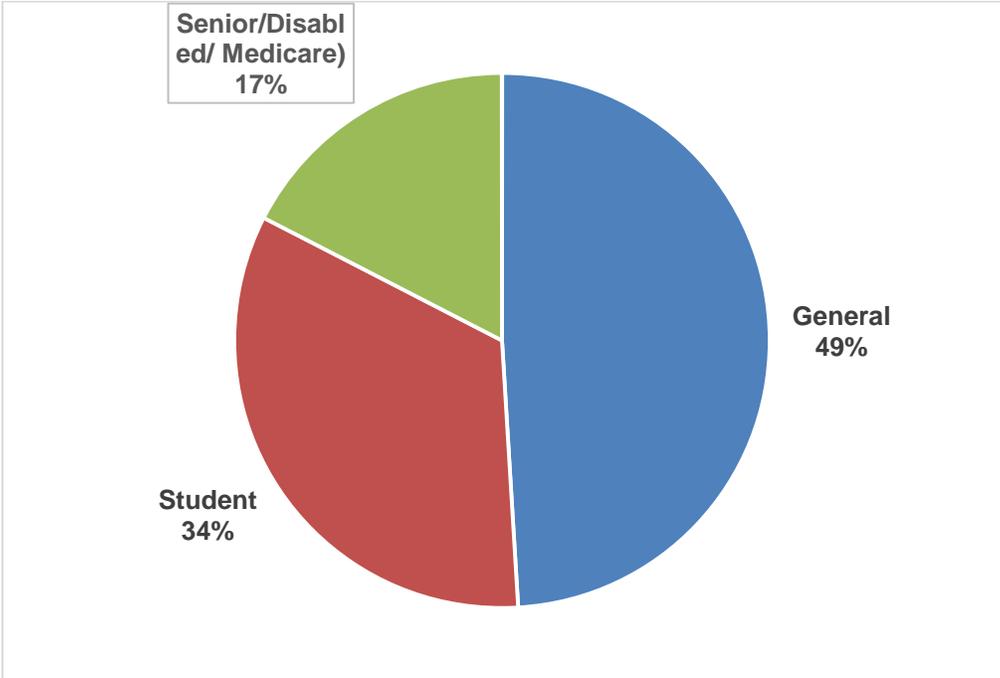
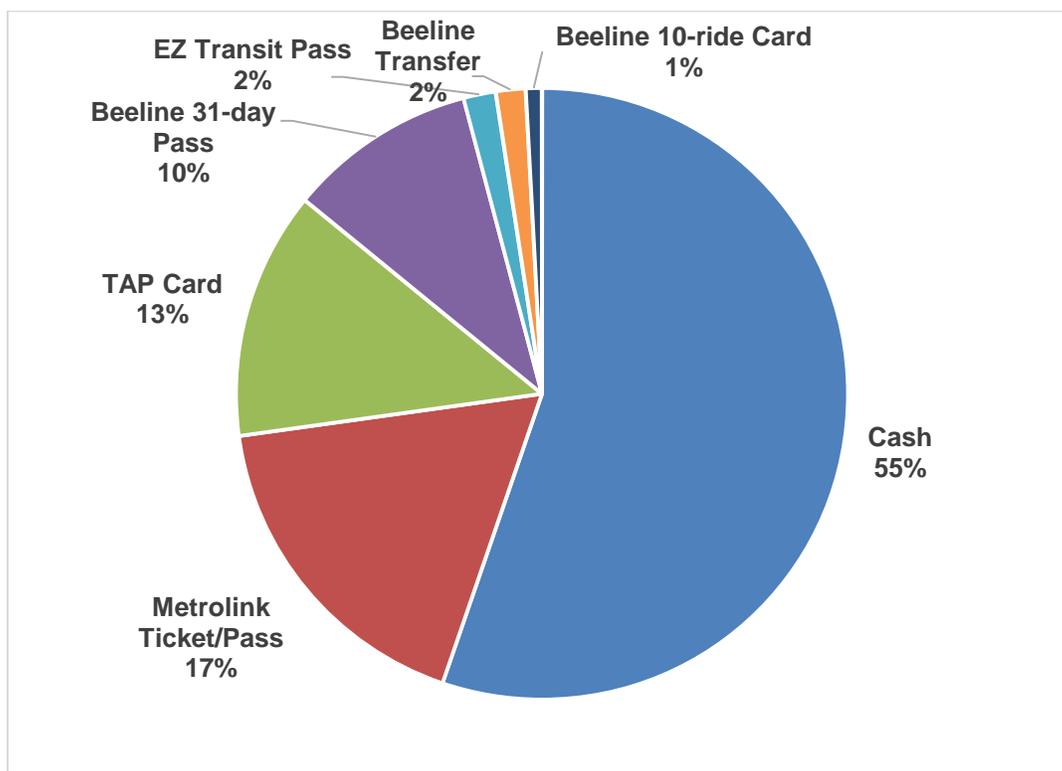


Figure 3.12 reports how riders pay their fare. The majority of riders pay with cash. Of all other fare payment options, only the TAP Card, Beeline 31-day pass and Metrolink ticket or pass account for more than 10 percent of Beeline riders.

It is worth noting differences between this and previous tables. The percentages for Beeline and Metro transfers appear low compared to the results in Figure 7 (means of access), but the transfer totals in Figure 12 do not include transfers using a pass.

**Figure 3.12
Fare Payment Methods on the Beeline**



3.3 Rider Preferences

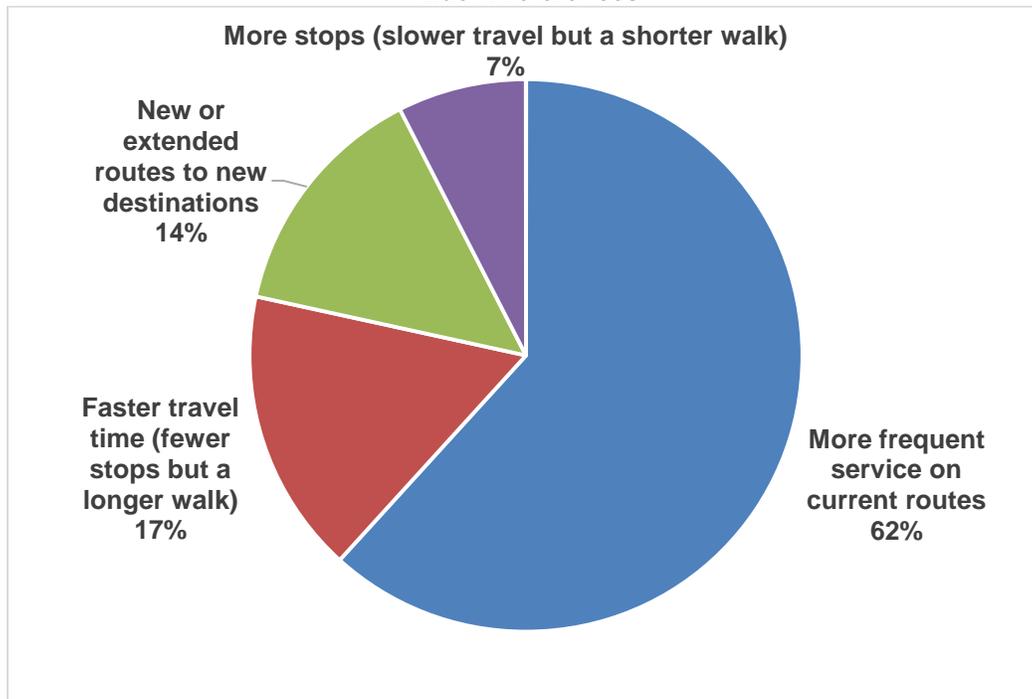
This section of the on-board survey is in some ways the most interesting, because it asks passengers to choose among several desirable options. Respondents were asked to decide between:

- More frequent service on current routes versus new or extended service to new destinations versus faster routes versus additional stops.
- Choices on weekday service. Is it better to add service during peak hours in the mornings and afternoons, to start the service day earlier, or to end the service day later?
- Choices on weekend service. Do we start earlier, end later, or add Sunday service?

A final question in this section asks about factors that discourage transit use.

Respondents expressed an overwhelming preference for greater frequency on existing routes over faster service, new or extended routes to new places, and more stops, as shown in Figure 3.13. An inference from these results is that respondents would prefer faster travel time (fewer stops and longer walks) over more stops (slower travel and shorter walks).

**Figure 3.13
Rider Preferences**



We asked those respondents with a preference for routes to new destinations where they would like to go. Replies were scattered over many possible destinations; no new destination was noted by more than three respondents. Multiple respondents mentioned Burbank, Pasadena, along Glendale Avenue, Los Angeles, Sunland/Tujunga, and La Cañada Flintridge.

Figure 3.14 shows respondent preferences for added weekday service on Beeline routes. Almost three-quarters of respondents indicated a preference for more all-day service.

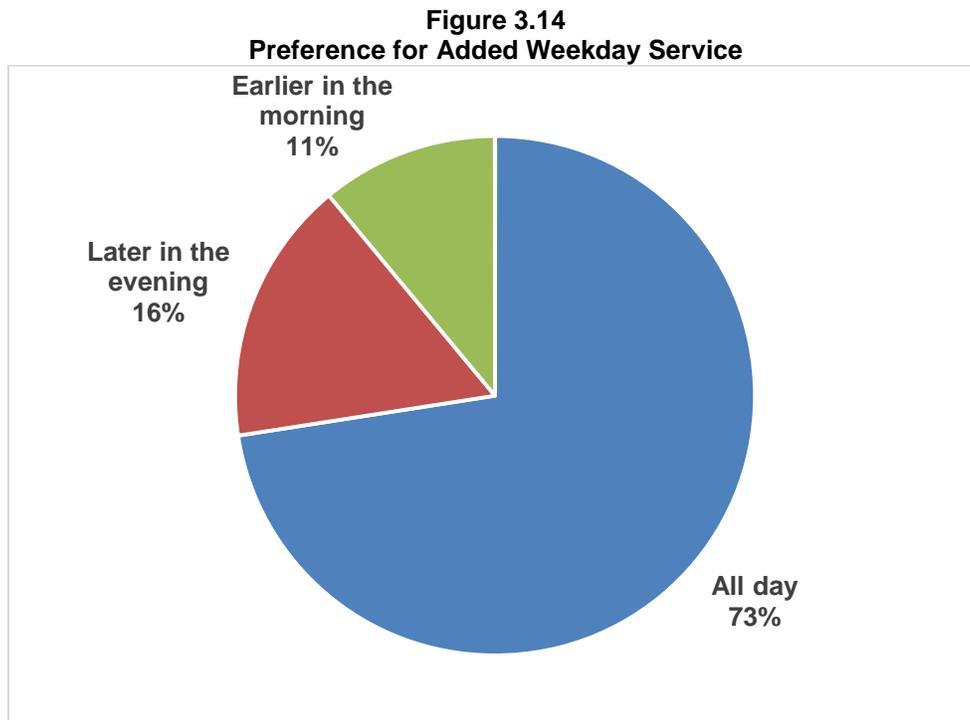


Table 3.4 indicates the desired start time among respondents with a preference for earlier service. The most often mentioned start time was 6:00 am.

Table 3.4
Requested Weekday Start Time for Those Preferring Earlier Service

Start Time	Percent Requesting
Before 5 am	17%
5:00 am	17%
5:45 to 6:00 am	33%
6:30 to 7 am	17%
8:00 am	13%
9:00 am	4%
Total	100%

Source: 2018 On-board Survey
Percentages do not add to 100 due to rounding

Table 3.5 indicates the desired end time among respondents with a preference for later service. The most often mentioned end time was 9:30 to 10:00 pm.

Table 3.5
Requested Weekday End Time for Those Preferring Later Service

End Time	Percent Requesting
6 pm	8%
6:30 to 7 pm	10%
7:30 to 8 pm	18%
8:30 to 9 pm	21%
9:30 to 10 pm	23%
10:30 to 11 pm	6%
11:30 pm to 12 am	8%
Later than 12 am	7%
Total	100%

Source: 2018 On-board Survey
 Percentages do not add to 100 due to rounding

Figure 3.15 shows preferences for added weekend service. The most requested change was to operate more routes on Saturday. Later evening service on weekends was a close second, followed by earlier morning service and more routes on Sunday.

Figure 3.15
Preference for Added Weekend Service

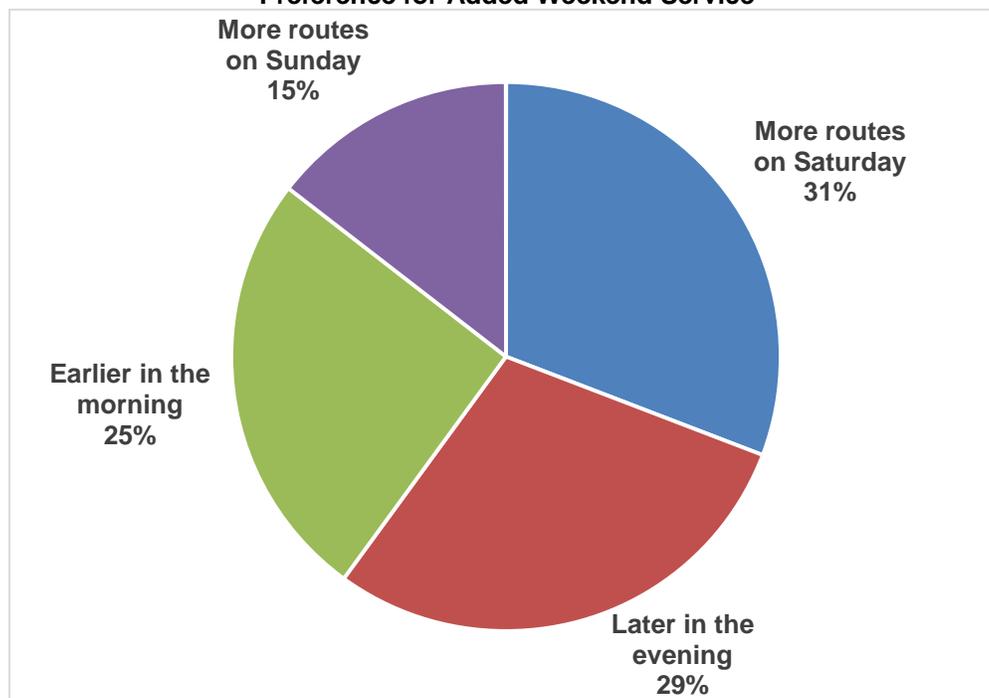


Table 3.6 indicates the desired weekend start time among respondents with a preference for earlier service. The most often mentioned start time on weekends was 7:00 am.

Table 3.6
Requested Weekend Start Time for Those Preferring Earlier Service

Start Time	Percent Requesting
5 am or earlier	10%
5:30 to 6 am	23%
6:15 to 7 am	27%
7:30 to 8 am	21%
8:30 to 9 am	11%
Later than 9 am	7%
Total	100%

Source: 2018 On-board Survey
 Percentages do not add to 100 due to rounding

Table 3.7 indicates the desired weekend end time among respondents with a preference for later service. The most often mentioned end time was 8:00 pm. Surprisingly, the percentage of responses asking for service after 10 pm was lower on weekends (9 percent) than on weekdays (21 percent).

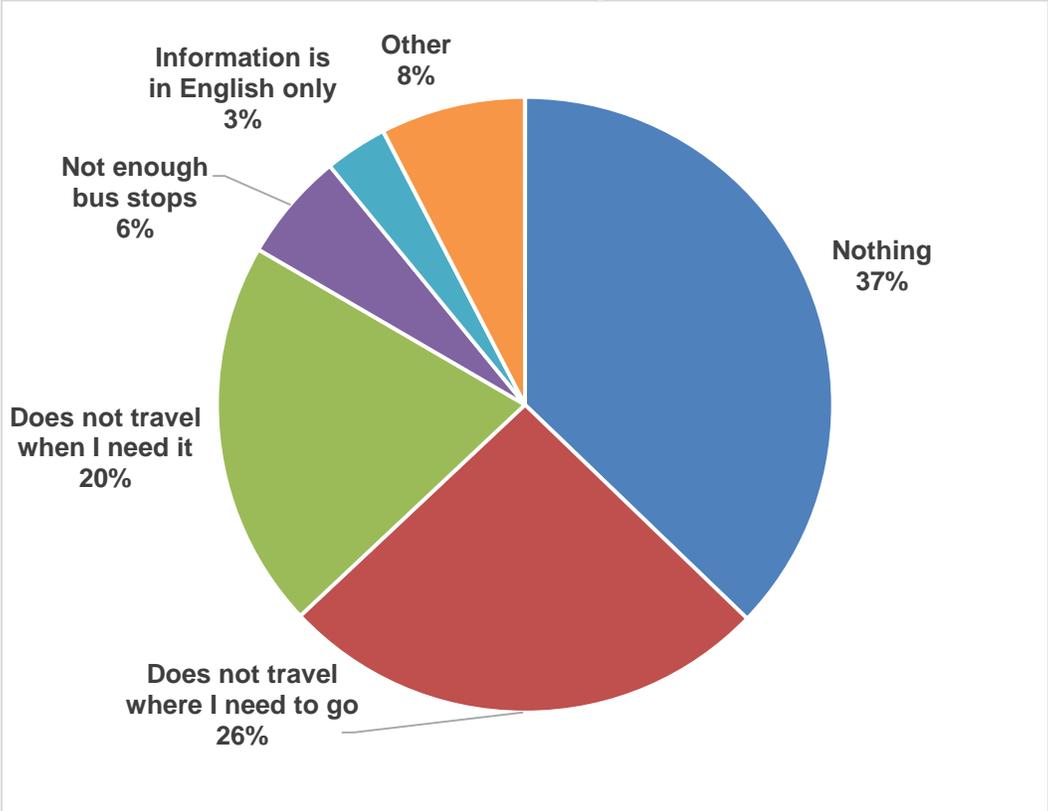
Table 3.7
Requested Weekend End Time for Those Preferring Later Service

End Time	Percent Requesting
6 pm or earlier	16%
6:30 to 7 pm	16%
7:30 to 8 pm	27%
8:30 to 9 pm	21%
9:30 to 10 pm	11%
Later than 10 pm	9%
Total	100%

Source: 2018 On-board Survey

The final question in this section asked riders what factors (if any) prevented them from increasing their use of the Glendale Beeline. As shown in Figure 3.16, the single largest response (37 percent) was “Nothing.” Among those who identified a factor, “Does Not Travel Where I Need to Go” and “Does Not Travel When I Need it” were the most common responses at 26 percent and 20 percent, respectively. Only a few respondents who answered “Other” provided specific reasons for not riding more often. The most common “Other” responses included “later service” and “more service.”

Figure 3.16
Factors That Prevent Increasing Use of the Beeline



3.4 Current and Preferred Means of Obtaining Information about the Beeline

The intent of this section of the survey is to understand:

- Mobile device ownership and usage;
- How Beeline customers currently obtain information and plan their trips;
- Preferred means of obtaining information and paying the fare.

The first question in this section asked customers: “What devices (if any) do you have with you?” Table 3.8 shows the extent to which mobile devices are carried and used by Beeline customers. Almost 90 percent of respondents carried some type of mobile device, and almost 80% percent had a smart phone. Note that the survey did not differentiate between respondents with no device and those who did not answer. The assumption is that respondents who answered subsequent questions on the survey did not have a mobile device. Five percent of respondents had more than one device.

**Table 3.8
Mobile Devices Carried by Beeline Customers**

Device	Number	Percent
Smart phone	586	78%
Other phone	80	11%
Tablet	39	5%
No device	82	11%
Total	749	100.0%

Note: Percentages do not add to 100 because some respondents reported more than one device
Source: 2018 On-board Survey

When we think about new technologies with respect to Beeline customers, we need to consider income and age. It is always a possibility that low-income and older riders do not have or choose not to have access to new technologies. Tables 3.9 and 3.10 explore this possibility by examining the percentage of riders with mobile devices within income and age categories.

Table 3.9 shows that smart phone ownership increases with income. Even so, 72 percent of all respondents with incomes under \$10,000 reported carrying a smart phone and 91 percent carry some sort of mobile device. The percentage of respondents carrying some sort of mobile device is lowest among respondents in the \$10-20,000 income category at 85 percent.

**Table 3.9
Mobile Devices Carried by Beeline Customers by Income**

Device	Percent All	Percent Income Under \$10,000	Percent Income \$10,000-\$20,000	Percent Income Over \$20,000
Smart phone	78%	72%	75%	87%
Other phone	11%	17%	9%	7%
Tablet	5%	6%	4%	7%
None	11%	9%	15%	7%
Total	100%	100.0%	100.0%	100.0%

Note: Percentages do not add to 100 because some respondents reported more than one device
Source: 2018 On-board Survey

Table 3.10 shows that smart phone ownership decreases with age, especially at age 62 or older. Among respondents 62 years of age and older, only 57 percent reported carrying a smart phone. However, this is much higher than the 29 percent of riders age 62 or older who reported carrying a smart phone in 2013. Overall, 80 percent of older riders and over 90 percent of riders under 62 carry some sort of mobile device.

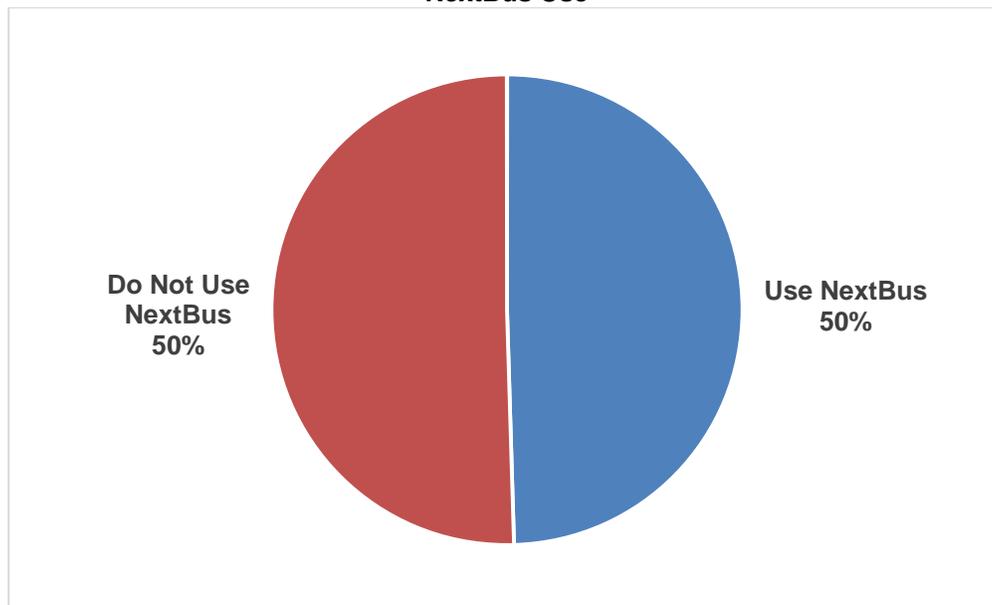
**Table 3.10
Mobile Devices Carried by Beeline Customers by Age**

Device	Percent All	Percent 17 Years and Under	Percent 18 to 24 Years	Percent 25 to 61 Years	Percent 62 Years and Older
Smart phone	78%	88%	85%	84%	57%
Other phone	11%	5%	5%	9%	25%
Tablet	5%	3%	5%	6%	9%
None	11%	6%	7%	7%	20%
Total	100%	100%	100%	100%	100%

Note: Percentages do not add to 100 because some respondents reported more than one device
Source: 2018 On-board Survey

NextBus provides real-time passenger information through the internet (mobile and computer access), via text, or by telephone. Beeline customers can find the arrival time of the next bus at a given location in real time, not based on static schedules. Figure 3.17 shows that half of Beeline customers use NextBus. NextBus usage is lowest among riders 62 and older (33 percent) and riders 17 and under (45 percent).

**Figure 3.17
NextBus Use**



How do customers access information regarding bus schedules? Figure 3.18 shows that NextBus is the most common way to find out schedule information, followed by printed schedules. Figure 3.19 presents the preferred source of bus schedule information in the future. NextBus and printed schedules are the most common responses, but Google Transit is mentioned by over 20 percent of respondents. In 2013, no respondent indicated a preference for Google Transit.

Figure 3.18
Primary Source of Bus Schedule Information

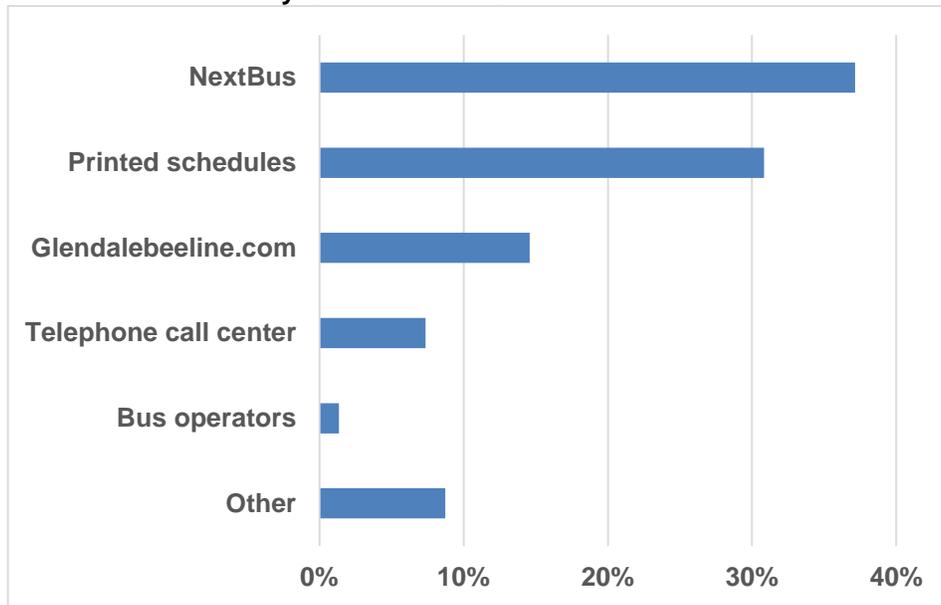
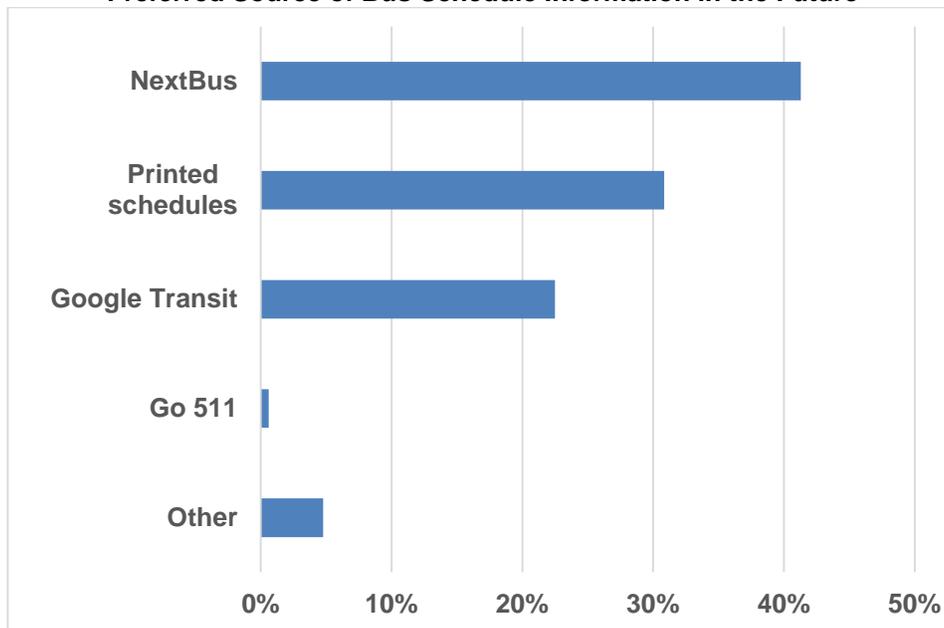


Figure 3.19
Preferred Source of Bus Schedule Information in the Future



The final questions in this section of the survey are fare-related. About one-quarter of respondents indicated that they own a Metro TAP card (the regional fare card), as seen in Figure 3.20. This suggests that most Beeline passengers either do not ride Metro at all or do not ride Metro often enough to make purchase of a TAP card worthwhile. TAP card ownership has not risen substantially since 2013, when 25 percent of respondents owned a TAP card.

Figure 3.20
Metro TAP Card Ownership

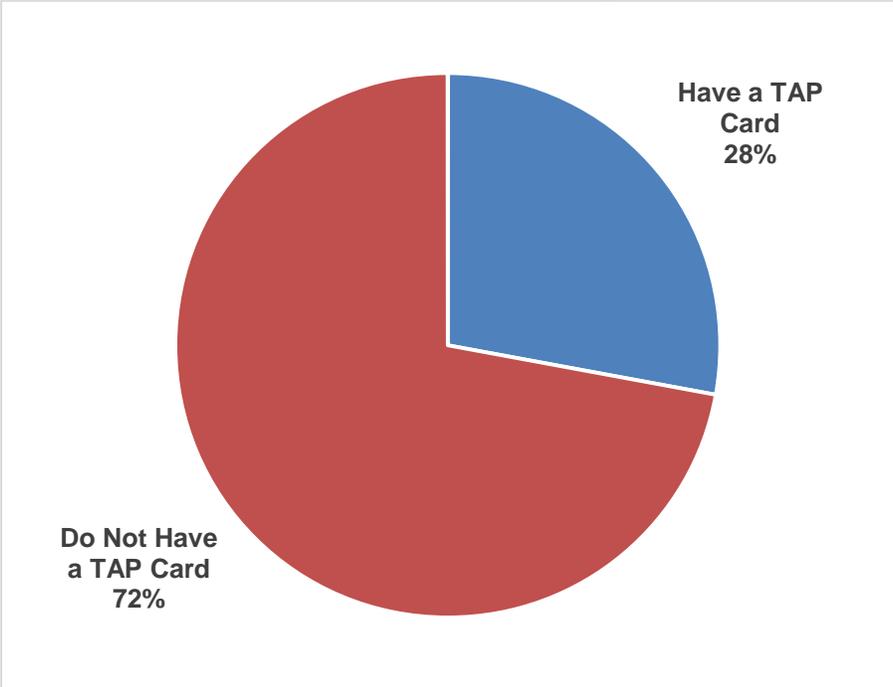
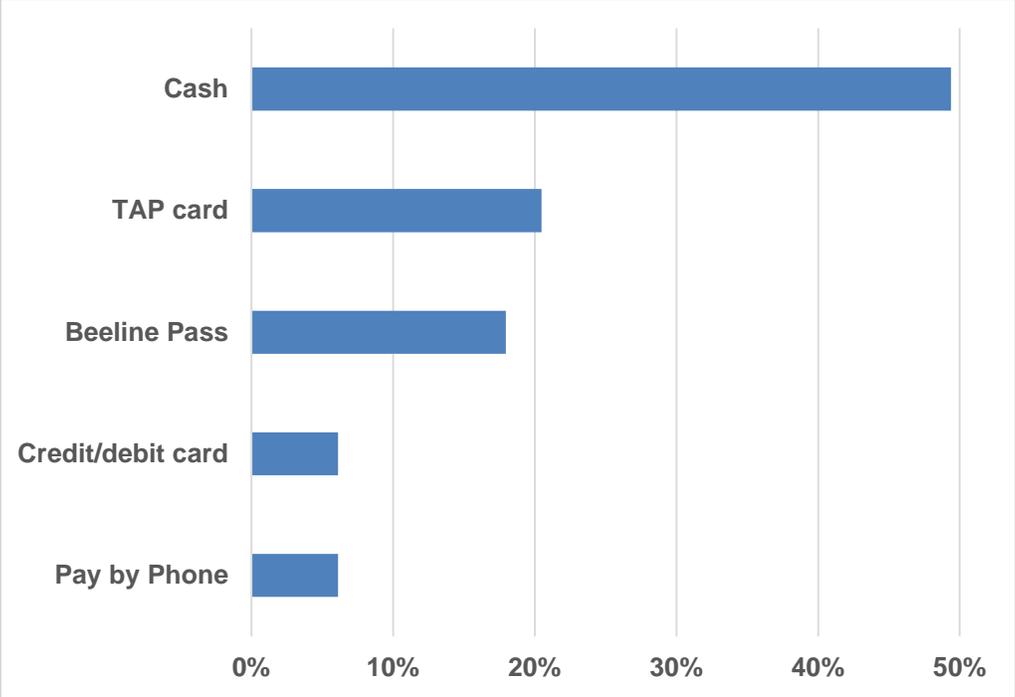


Figure 3.21 shows the fare payment preferences among Beeline riders in the future. Almost half of all respondents prefer to pay cash.

Figure 3.21
Future Fare Payment Preferences



3.5. Customer Demographics and Ratings of Service Elements

The final section of the survey asked customers to provide information about themselves and ratings of various elements of Beeline service.

Figure 3.22 shows the age distribution of Beeline customers. Almost half the respondents are in their prime working years, with 36 percent under 25 and 18 percent 62 or older.

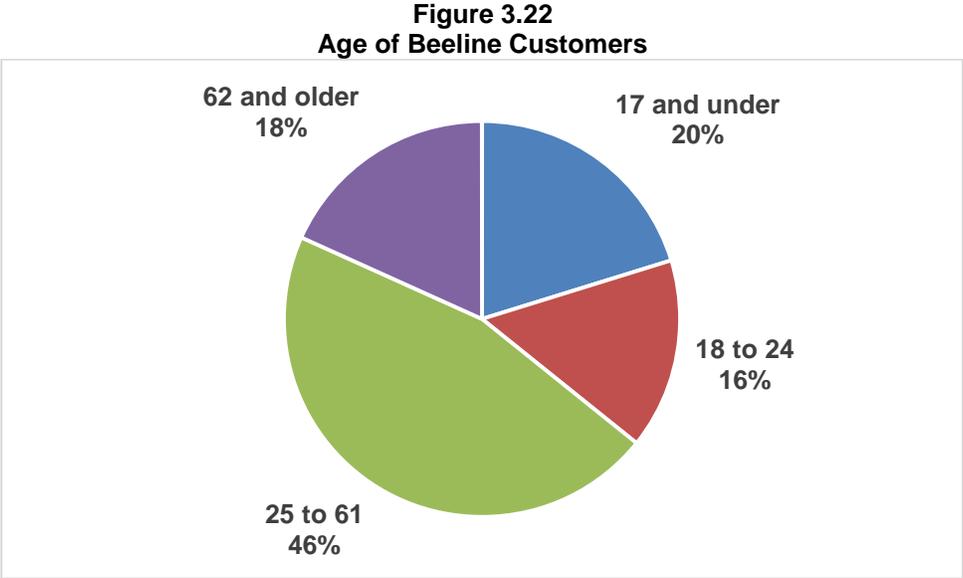


Figure 3.23 shows that more women than men are Beeline customers. This is typical of transit ridership throughout the country. The percentages of male and female riders were identical in 2013.

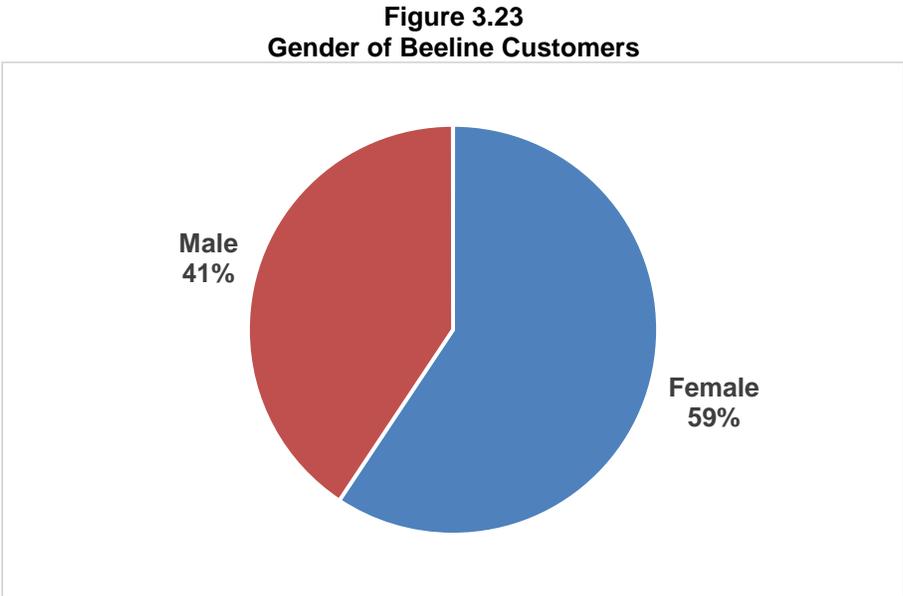


Figure 3.24 presents ethnicity. Latino/Hispanic customers account for the single largest group of Beeline riders, but are not a majority. The ethnicity results are very similar to the 2013 findings.

Figure 3.24
Ethnicity of Beeline Customers

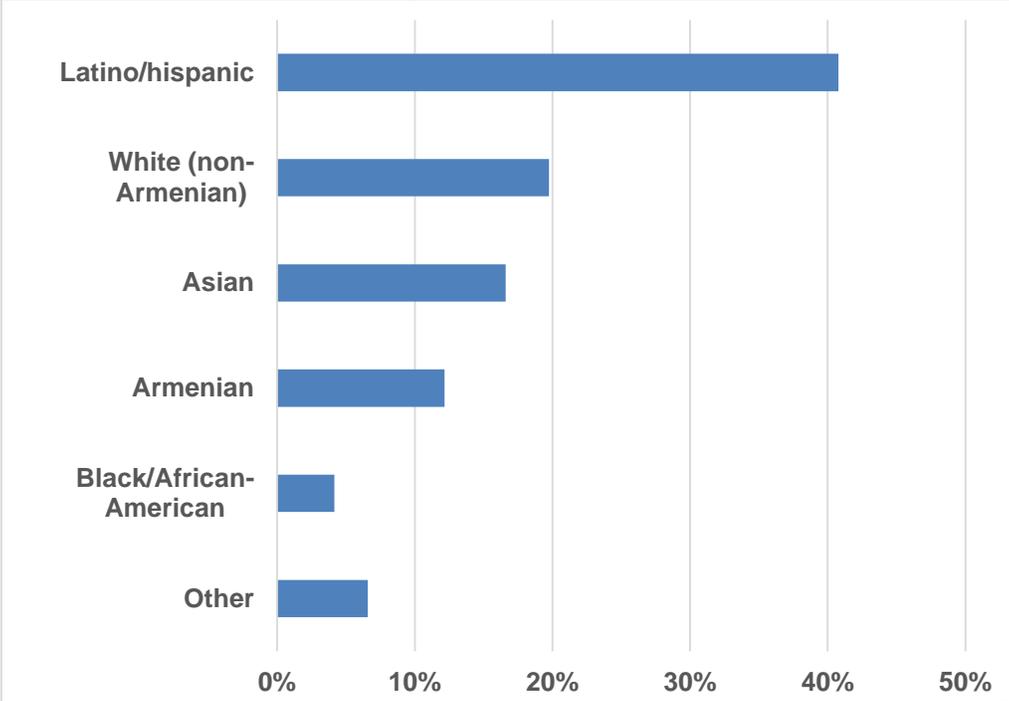


Figure 3.25 shows levels of vehicle ownership. There is a slight increase in vehicle ownership compared to the 2013 results, although the majority of respondents continue to be from households with zero or one vehicle.

Figure 3.25
Household Vehicle Ownership among Beeline Customers

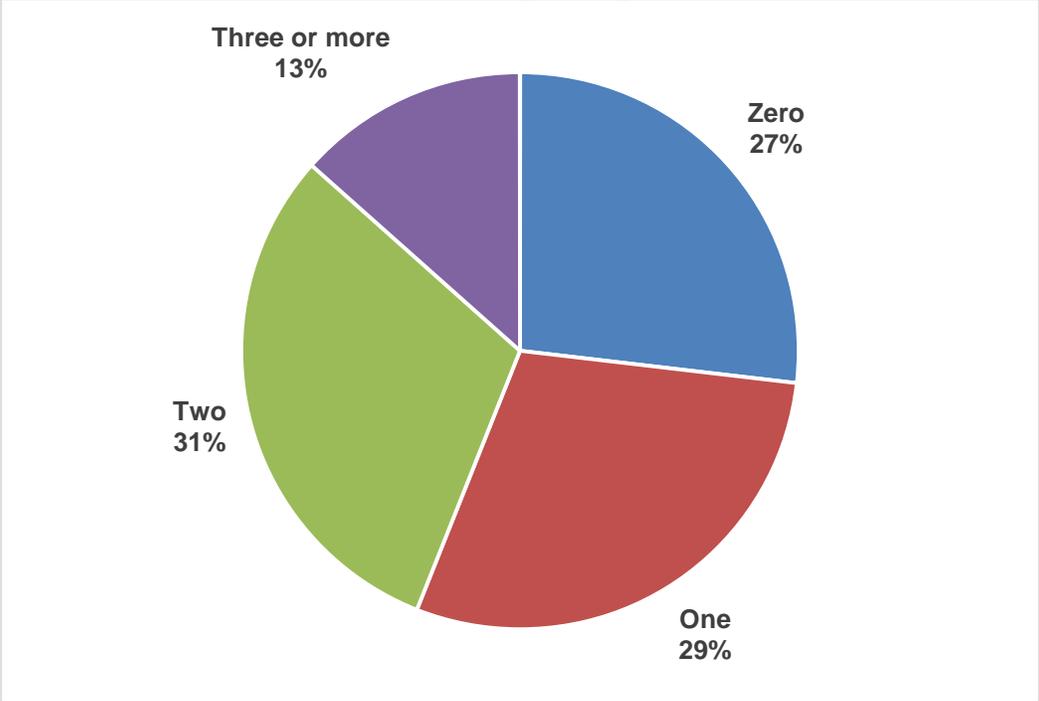
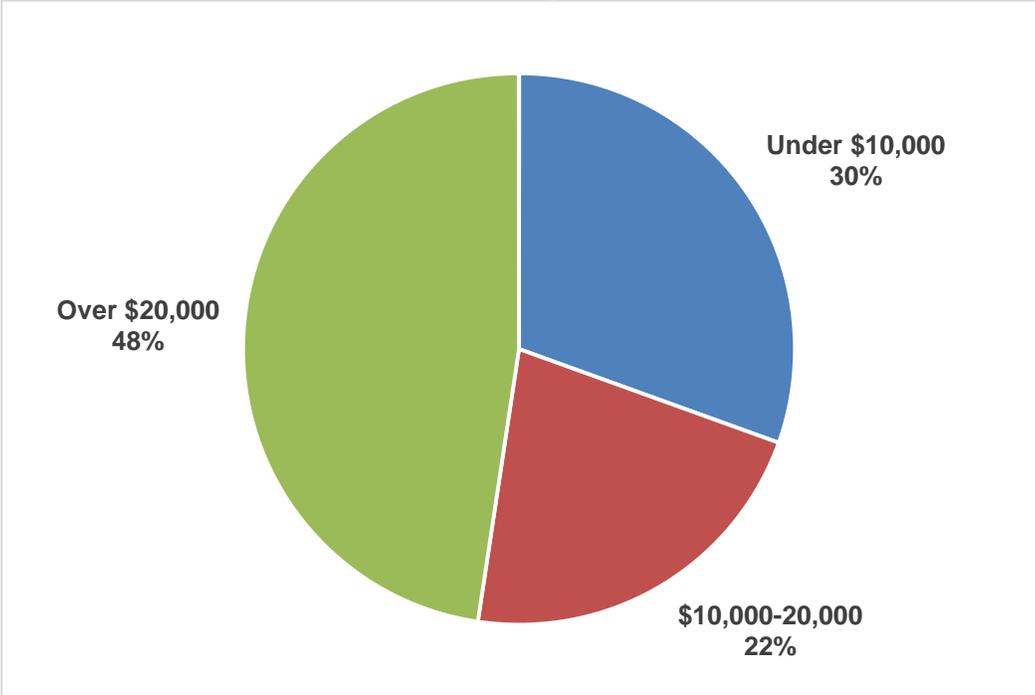


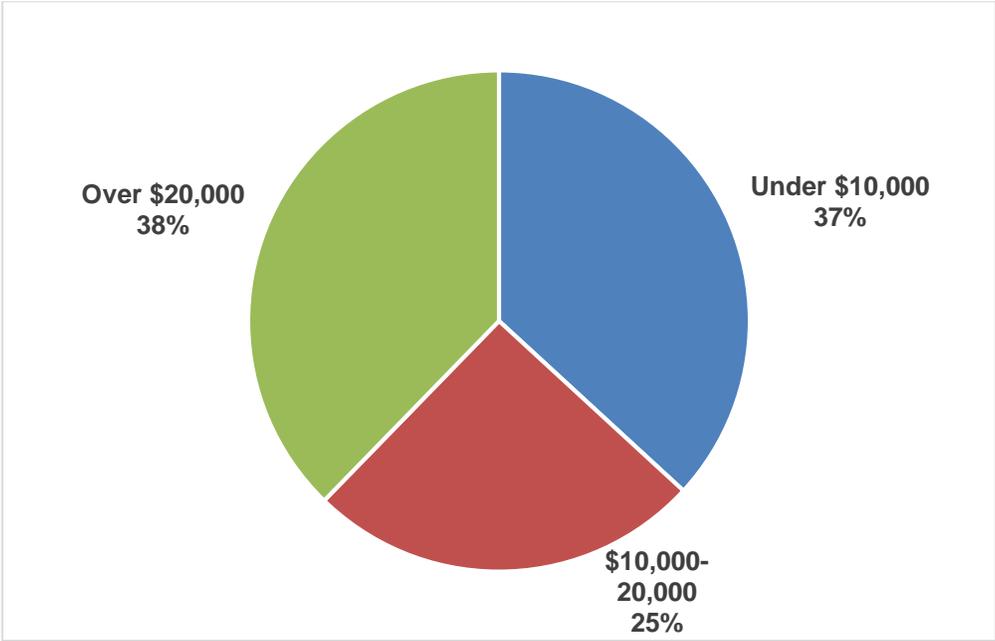
Figure 3.26 presents household income. A large segment of Beeline customers are poor, but riders come from all income levels.

Figure 3.26
Household Income among Beeline Customers



Riders on Routes 11 and 12 have a different income profile from riders on local routes. Ninety percent of riders on Routes 11 and 12 reported household income over \$20,000. Figure 3.27 shows the household income among Beeline customers on local routes. Over half of local riders have household incomes of \$20,000 or less.

Figure 3.27
Household Income among Local Beeline Customers



Finally, the survey asked riders to rate Beeline’s performance, on a scale of 1 to 4 with 1 being “poor” and 4 being “excellent,” for six different service characteristics as well as to provide an overall rating of Beeline service. Figure 28 shows the results. The highest rated item is are cleanliness and safety at 3.55. The lowest rated element is availability of schedules (3.36), but even this lowest score is respectable. The average score for overall Beeline service is 3.57, indicating a very high level of passenger satisfaction with Beeline. In 2013, the average score for overall Beeline service was 3.36. Average scores increased for all elements of service.

Figure 3.28
Average Ratings of Beeline Service Elements

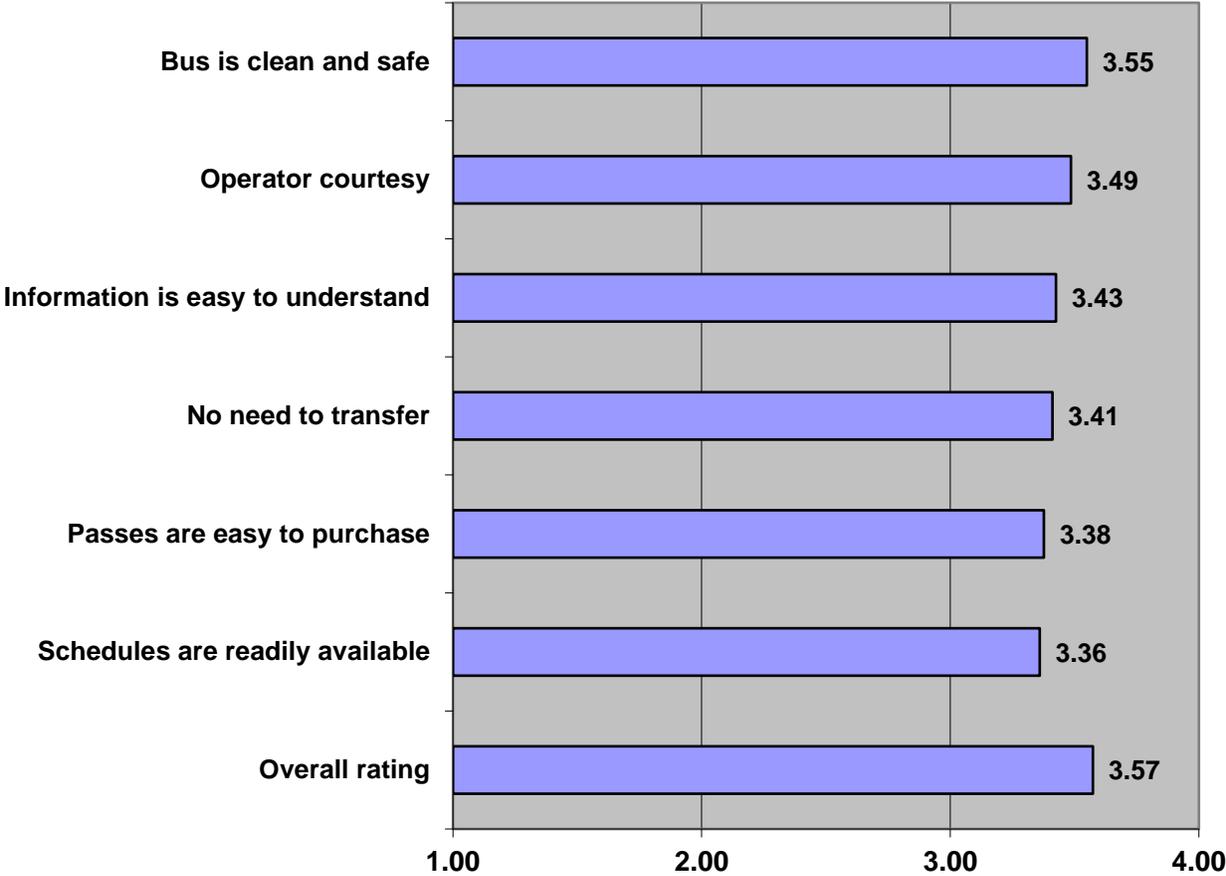


Table 3.11 presents rider perceptions of service, and includes the weighted average score (used in Figure 3.28) of all ratings for each service element as well as the distribution of actual ratings.

**Table 3.11
Detailed Ratings of Beeline Service Elements**

Service Element	Average Score	Number of Respondents Rating by Score				Total Respondents
		1 Poor	2 Fair	3 Good	4 Great	
Bus is clean and safe	3.55	8	30	198	390	626
Operator courtesy	3.49	18	45	175	382	620
Information is easy to understand	3.43	5	51	238	324	618
No need to transfer	3.41	14	59	187	329	589
Passes are easy to purchase	3.38	20	69	169	331	589
Schedules are readily available	3.36	14	65	233	320	632
Overall Rating	3.57	8	17	208	391	624

In designing service improvements, Beeline staff needs to know not only the customer ratings on individual service attributes but also the importance of each attribute in terms of overall satisfaction. Figure 3.28 and Table 3.11 focused on customer ratings; here, we consider the ratings together with the relative importance of each service attribute.

We measure the importance of each service attribute by examining the relationship of each attribute to overall satisfaction. The relationship is measured using correlation analysis to estimate the importance of each service attribute; a higher correlation indicates that a given service attribute is more important in determining overall satisfaction. An index score of 100 is assigned to the median correlation coefficient. Service attributes with a score above 100 are more correlated with overall satisfaction (as measured by the overall Beeline rating), while service attributes with a score below 100 are less correlated.

Table 3.12 shows the Pearson correlation coefficient and the importance score for each service attribute. Operator courtesy and cleanliness and safety rank highly in terms of importance, while no need to transfer and ease of purchasing passes are relatively less important.

**Table 3.12
Importance of Service Elements**

Service Attribute	Pearson Correlation Coefficient	Importance Index
Operator courtesy	0.617	112.73
Bus is clean and safe	0.611	111.67
Schedules are readily available	0.552	100.83
Information is easy to understand	0.543	99.17
Passes are easy to purchase	0.473	86.37
No need to transfer	0.454	82.92

Performance and importance can be related through scatter diagrams, with derived importance on the x-axis and performance ratings on the y-axis. The scatter diagram (Figure 3.29) is divided into quadrants, with an importance score of 100 and a performance rating of 3.40 (almost midway between a “good” rating of 3.0 and an “excellent” rating of 4.0) serving as the dividing lines. The 3.40 dividing line for performance is high; a more typical dividing line would be 3.00. Given the high ratings for Beeline service, however, a higher dividing line is needed to make this quadrant exercise meaningful.

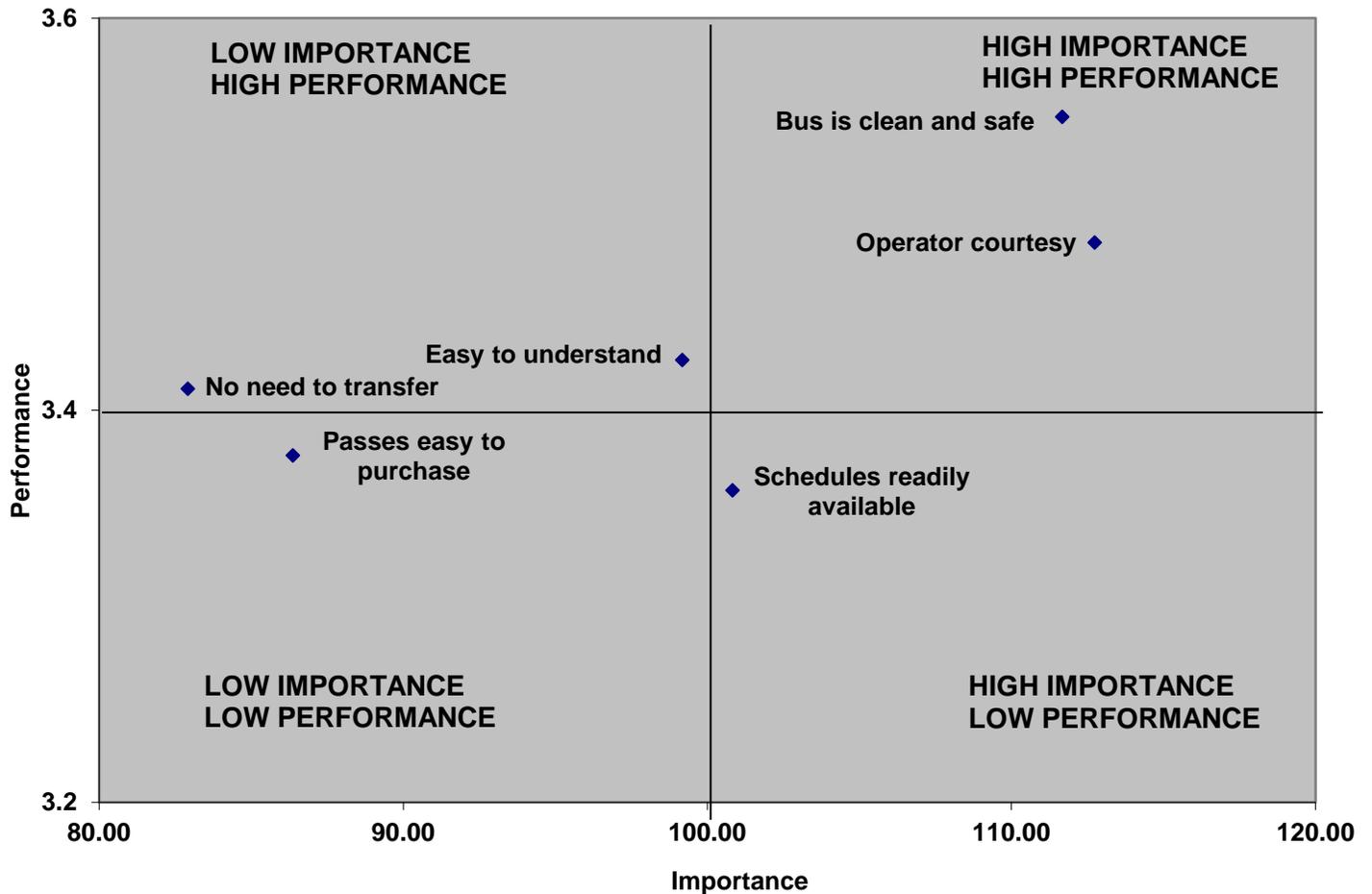
Items in the upper right hand quadrant represent important attributes with high performance ratings. These are things that Beeline does well that are important to riders. Beeline should take whatever actions are required to ensure continued high performance ratings on these attributes. “Bus cleanliness and safety” and “operator courtesy” are service elements that fall within this quadrant.

Items in the upper left hand quadrant receive high marks in terms of performance but are relatively unimportant to riders. Often, attributes in this quadrant receive lower importance ratings from passengers precisely because the agency does a good job in these areas. Riders, like everyone else, tend to take areas in which their needs are met for granted. This suggests that Beeline needs to continue to monitor service delivery in these areas to ensure high performance, but that these elements of service are not top priorities for improvements. The attributes within this quadrant are “information is easy to understand” and “no need to transfer.”

Items in the lower left hand quadrant are relatively unimportant to riders and relatively low-scoring in terms of performance. While performance levels are relatively low for these attributes, these are not strong candidates for improvement due to their low levels of importance to riders. The only element in this quadrant is “passes easy to purchase.”

Items in the lower right hand quadrant are key priorities for Beeline. Riders consider these attributes important, but current performance ratings are less than desired. Only one element is in this quadrant, “schedules are readily available.”

Figure 3.29
Importance vs. Performance for Beeline Service Elements



Survey respondents were invited to comment on any aspect of Beeline service. Only 25 comments were received. Comments on operators (good and bad), more Sunday service and later evening service were the top three comments.

3.6 Trends over Time: Comparison to 2008 and 2013 On-board Survey

This section examines trends since 2008 by comparing responses for similar questions.

Survey responses in English have increased over the years, as shown in Table 3.13.

**Table 3.13
Language, 2008-2018**

Language	2018	2013	2008
English	86%	82%	79%
Spanish	11%	13%	14%
Armenian	3%	5%	7%

Sources: 2008, 2013 and 2018 On-board Surveys

Table 3.14 indicates that school-related travel decreased in 2018 to the level seen in 2008. Work accounts for 38 percent of all trips, also similar to 2008. Other trip purposes saw only minor changes, if any.

**Table 3.14
Trip Purpose, All Days, 2008-2018**

Trip Purpose	2018	2013	2008
Work	38%	36%	38%
School	25%	33%	26%
Shopping	14%	11%	13%
Visit/Personal	8%	6%	6%
Medical	4%	4%	5%
Other	11%	9%	11%

Sources: 2008, 2013 and 2018 On-board Surveys

Table 3.15 indicates that passengers were more likely to walk to the bus in 2018 than in 2013. An identical percentage of passengers walked to their final destination in 2013 and 2018 (Table 3.16).

**Table 3.15
Means of Access, 2008-2018**

Means of Access	2018	2013	2008
Walk	65%	62%	71%
Transfer from Bus	18%	20%	15%
Other	17%	18%	14%

Sources: 2008, 2013 and 2018 On-board Surveys

**Table 3.16
Means of Egress, 2008-2018**

Means of Egress	2018	2013	2008
Walk	65%	65%	80%
Transfer to Bus	18%	19%	15%
Other	17%	16%	5%

Sources: 2008, 2013 and 2018 On-board Surveys

Table 3.17 shows a slight decrease in the percentage of frequent riders (passengers who report riding the Beeline four or more days per week) to 67 percent. Long-time riders (more than 2 years) continue to account for the majority of riders, as shown in Table 3.18.

Table 3.17
Reported Frequency of Ridership, 2008-2018

Frequency	2018	2013	2008
4+ days per week	67%	69%	70%
2 to 3 days per week	20%	20%	20%
Once per week	7%	5%	5%
Less than once per week	6%	6%	5%

Sources: 2008, 2013 and 2018 On-board Surveys

Table 3.18
Ridership History, 2008-2018

How Long Riding	2018	2013	2008
More than 2 years	58%	57%	52%
1 to 2 years	18%	18%	19%
6 months to 1 year	9%	9%	12%
Less than 6 months	15%	16%	16%

Sources: 2008, 2013 and 2018 On-board Surveys

Table 3.19 indicates that the Metro TAP card is now the third most common method of fare payment on the Beeline, after cash and Metrolink tickets/passes. Cash still account for over half of all fares.

Table 3.19
Fare Payment, 2008-2018

Payment Mode	2018	2013	2008
Cash	55%	61%	67%
Metrolink ticket/pass	17%	13%	9%
Metro TAP card	13%	NA	NA
Beeline 31-day pass	10%	14%	2%
EZ Transit Pass	2%	3%	2%
Beeline transfer	2%	2%	--
Beeline 11-ride card	1%	2%	3%
Metro transfer	0%	4%	1%
Metro monthly pass	--	--	14%
Metro day pass	--	--	2%

Sources: 2008, 2013 and 2018 On-board Surveys

Table 3.20 converts TAP card payment into cash (stored value), Metro transfers, EZ Transit Pass, and Access ID card, to be more directly comparable to previous years. The on-board surveys in 2013 and 2008 did not offer Access ID card as a fare option.

**Table 3.20
Fare Payment, 2008-2018 with TAP Card Redistributed**

Payment Mode	2018	2013	2008
Cash	57%	61%	67%
Metrolink ticket/pass	17%	13%	9%
Access ID card	10%	NA	NA
Beeline 31-day pass	10%	14%	2%
EZ Transit Pass	2%	3%	2%
Beeline transfer	2%	2%	--
Beeline 11-ride card	1%	2%	3%
Metro transfer	1%	4%	1%
Metro monthly pass	--	--	14%
Metro day pass	--	--	2%

Sources: 2008, 2013 and 2018 On-board Surveys: Beeline TAP card data

Table 3.21 shows customer preferences for fare payment and suggests that cash will remain important.

**Table 3.21
Preferred Fare Payment Method, 2013 and 2018**

Payment Mode	2018	2013
Cash	49%	45%
Metro TAP card	20%	19%
Beeline pass	18%	25%
Credit/debit card	6%	5%
Smartphone	6%	6%

Sources: 2013 and 2018 On-board Surveys
Question not included in 2008 Survey

NextBus continues to grow in importance as a primary information source for Beeline riders, as shown in Table 3.22. NextBus is also the top preferred source for Beeline information. Google Transit is cited by 23 percent (Table 3.23), up from zero percent in 2013.

**Table 3.22
Primary Information Source, 2008-2018**

Source	2018	2013	2008
NextBus	37%	28%	NA
Printed schedules	31%	42%	62%
GlendaleBeeline.com	15%	16%	19%
Telephone	7%	6%	4%
Bus Operators	1%	2%	8%
Other	9%	6%	7%

Sources: 2008, 2013 and 2018 On-board Surveys

**Table 3.23
Preferred Information Source, 2013 and 2018**

Source	2018	2013
NextBus	41%	43%
Printed schedules	31%	57%
Google Transit	23%	0%
Go 511	1%	--
Other	5%	--

Sources: 2013 and 2018 On-board Surveys
Question not included in 2008 Survey

Surveys over the years have used different definitions for older age categories. The most notable change in the age of Beeline riders in 2018 was the increase in riders age 62 and older, from 12 percent in 2013 to 18 percent in 2018, as noted in Table 3.24.

**Table 3.24
Age, 2008-2018**

Age	2018	2013	2008
Under 17	20%	19%	16%
18 to 24	16%	20%	20%
25 to 44	46%	27%	29%
45 to 61/64		22%	27%
62+/65+	18%	12%	8%

Note: 2018 used 25-61 and 62+; 2013 used 45-61 and 62+;
2008 used 45-64 and 65+

Sources: 2008, 2013 and 2018 On-board Surveys

Table 3.25 shows that the gender split among Beeline riders has remained remarkably constant. Ethnicity has also remained constant, as Table 3.26 shows

**Table 3.25
Gender, 2008-2018**

Gender	2018	2013	2008
Female	61%	61%	60%
Male	39%	39%	40%

Sources: 2008, 2013 and 2018 On-board Surveys

**Table 3.26
Ethnicity, 2008-2018**

Ethnicity	2018	2013	2008
Latino/Hispanic	41%	40%	39%
White/non-Armenian	20%	18%	20%
Asian	17%	17%	17%
Armenian	12%	16%	17%
Black/African American	4%	3%	4%
Other	7%	6%	4%

Sources: 2008, 2013 and 2018 On-board Surveys

The number of Beeline customers living in zero-vehicle households continues to decrease, while customers living in 2 or more vehicle households is increasing (Table 3.27). Income categories of local Beeline riders (excluding Routes 11 and 12) have changed little since 2013 (Table 3.28). The 2008 survey did not include an income question.

**Table 3.27
Household Vehicle Ownership, 2008-2018**

# Vehicles	2018	2013	2008
Zero	27%	30%	34%
One	29%	33%	31%
Two	31%	27%	24%
Three or more	13%	10%	11%

Sources: 2008, 2013 and 2018 On-board Surveys

**Table 3.28
Household Income among Local Beeline Riders, 2013 and 2018**

Income	2018	2013
Less than \$10,000	37%	40%
\$10,000-\$20,000	25%	24%
\$20,000 and over	38%	36%

Sources: 2013 and 2018 On-board Surveys
Income question not asked on 2008 Survey

Among the most interesting findings from this survey are the increase in smartphones carried by Beeline riders and the increases in customer ratings of Beeline Service. Table 3.29 indicates that over three-quarters of Beeline riders are carrying a smartphone, up from 59 percent five years ago. A majority of every demographic category has a smartphone. In 2013 only 29 percent of riders age 62 or over carried a smartphone. In 2018, 57 percent of riders age 62 or over have smartphones with them on the bus.

Table 3.29
Mobile Devices Carried by Beeline Customers, 2013 and 2018

Device	2018	2013
Smartphone	78%	59%
Other phone	11%	27%
Tablet	5%	6%
None	11%	13%

Sources: 2013 and 2018 On-board Surveys
Question not asked in 2008 Survey

Table 3.30 shows how customer ratings of overall Beeline service and of individual service elements have increased since 2008. On a 1 to 4 scale where 1 is poor and 4 is excellent, the rating of overall Beeline service improved from 3.36 in 2013 to 3.57 in 2018. The highest rated service elements were bus cleanliness in safety (3.55, up from 3.38 for both cleanliness and safety in 2013) and operator courtesy (3.49, up from 3.29).

Table 3.30
2008-2018 Ratings of Service Elements

Service Element	2018	2013	2008
Cleanliness and comfort	3.55	3.38	3.16
Safety at bus stops/on the bus		3.38	3.25/3.29
Operator courtesy	3.49	3.29	3.25
Information is easy to understand	3.43	3.33	3.22
No need to transfer	3.41	3.29	3.13
Passes are easy to purchase	3.38	3.18	--
Schedules are readily available	3.36	3.22	3.08
Overall rating	3.57	3.36	3.32

Ratings on a 1-4 scale with 1=poor and 4=great
Safety and cleanliness on the bus rated together in 2018
Safety at bus stops and on the bus rated separately in 2009
Sources: 2008, 2013 and 2018 On-board Surveys

**Glendale Beeline
Transit Route Analysis
Chapter Four: Regional Bus Service in and Near Glendale**

4.0 Introduction

The City of Glendale is a transit-rich environment. Metro operates several local and rapid routes in Glendale. Two of LADOT's Commuter Express Routes have stops in Glendale. Metrolink trains stop at the Glendale Transportation Center, providing direct connections to Los Angeles Union Station, San Fernando Valley, and Ventura County. Amtrak provides extended service between San Diego and San Luis Obispo.

Section 4.1 summarizes Metro passenger activity in Glendale at stops with at least 75 boardings or alightings in one direction. Section 4.2 discusses LADOT Commuter Express routes that serve Glendale. Section 4.3 shows the local transit network in Burbank. Section 4.4 shows the local transit network in Pasadena. Section 4.5 briefly analyzes Metro's "Big Data" travel patterns as they relate to Glendale.

4.1 Metro Routes in Glendale

Metro routes provide long-haul bus service connecting Glendale with other cities within Los Angeles County. Table 4.1 presents boardings and alightings within the City of Glendale by direction for all Metro routes. Boardings on Metro routes within the City limits average almost 14,000 on weekdays, over 8,000 on Saturday, and almost 7,000 on Sunday.

**Table 4.1
Boardings and Alightings on Metro Routes within the City of Glendale**

Line	Direction	Weekday		Saturday		Sunday	
		Boardings	Alightings	Boardings	Alightings	Boardings	Alightings
28	WB	102	10	58	9	55	12
90/91	NB	1,099	1,533	597	790	412	545
90/91	SB	1,581	1,201	748	617	517	419
92	NB	1,091	1,113	772	790	597	625
92	SB	1,062	1,029	760	724	579	559
94	NB	477	672	450	627	336	439
794	NB	308	421				
94	SB	650	458	563	432	450	348
794	SB	347	308				
96	NB	29	52	19	17	14	20
96	SB	56	30	22	13	23	11
180/181	EB	1,157	1,352	1,290	1,805	1,144	1,583
780	EB	681	1,174				
180/181	WB	1,380	1,099	1,743	1,217	1,524	1,052
780	WB	1,036	701				
183	EB	182	326				
183	WB	363	211				
201	NB	134	293	50	173	55	152
201	SB	297	136	158	49	139	49
501	EB	105	104	17	46	17	25
501	WB	113	126	50	27	32	19
603	NB	137	808	82	924	56	733
603	SB	915	192	976	141	859	100
685	NB	127	252				
685	SB	246	124				
TOTAL		13,675	13,725	8,355	8,401	6,809	6,691

Source: October 2018 ridership from <https://tinyurl.com/LACMTA-201810-Stop-Patronage>

Individual Metro routes serving Glendale are described below in terms of route destinations, primary streets of operation within Glendale, and major stops in Glendale/

Lines 90/91 Downtown Los Angeles (Hill Street) – Sylmar/Sunland

Metro Lines 90 and 91 operate primarily on Glendale Avenue, Cañada Boulevard, Montrose Avenue, and Foothill Boulevard in Glendale. The routing of both lines is identical within Glendale.

Table 4.2 summarizes ridership and activity at major Metro 90/91 stops in Glendale on weekdays, Saturday, and Sunday.

Riders boarding in Glendale are more likely to ride south. The stop at GCC is the busiest stop in both directions on Lines 90/91 within the City of Glendale. Weekend ridership is notably lower than weekday ridership at GCC. Weekend ridership is high at Glendale & Broadway in both directions.

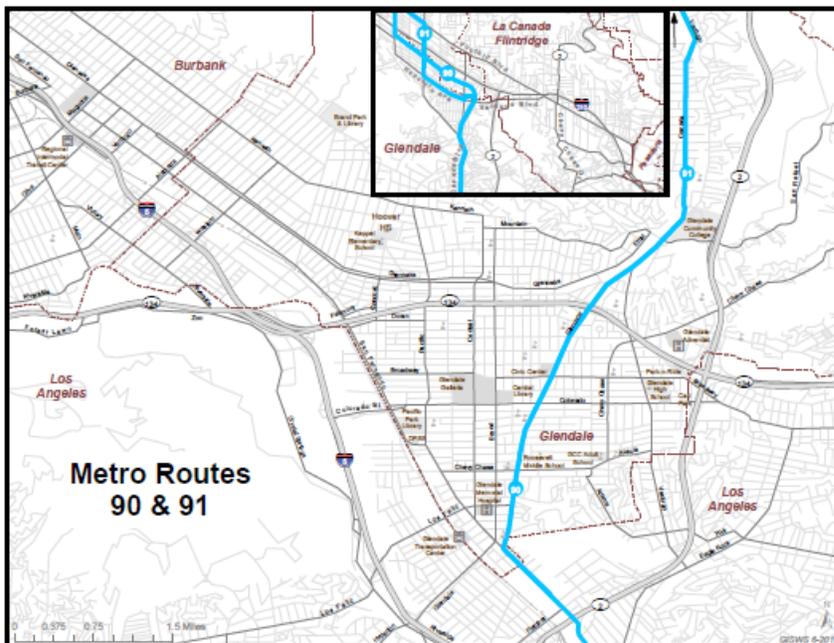


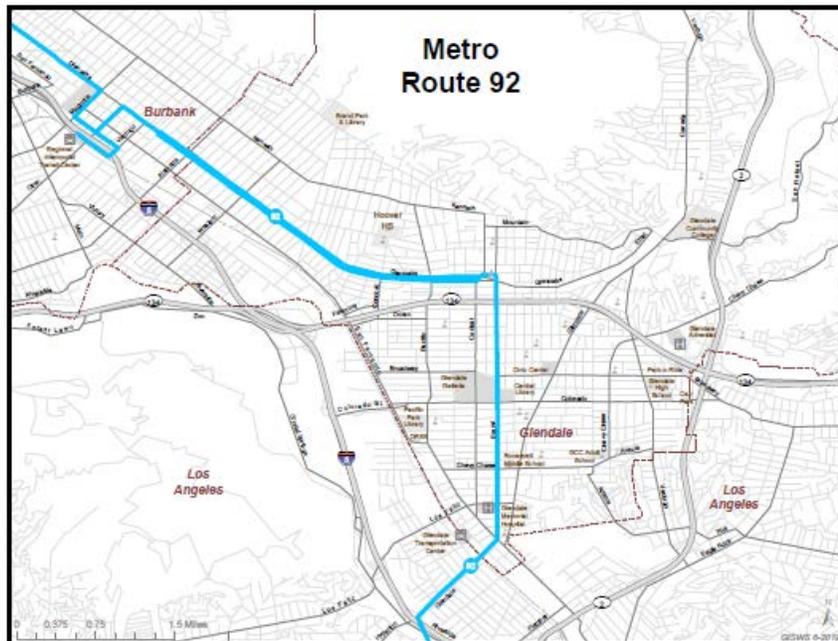
Table 4.2 Boardings and Alightings on Metro Lines 90 and 91 within the City of Glendale

Line	Direction	Weekday		Saturday		Sunday	
		Boardings	Alightings	Boardings	Alightings	Boardings	Alightings
90/91	NB	1,099	1,533	597	790	412	545
90/91	SB	1,581	1,201	748	617	517	419
Major Stops within the City of Glendale							
Canada/Towne SB (GCC)		311	98	59	12	9	2
Canada/Towne NB (GCC)		113	302	19	64	2	8
Glendale/Broadway NB		266	148	155	90	119	55
Glendale/Broadway SB		138	262	78	143	51	107
Glendale/California NB		61	112	47	88	31	68
Glendale/California SB		105	81	77	39	55	28
Verdugo/Honolulu NB		101	40	70	36	54	22
Glendale/Chevy Chase NB		90	64	40	33	26	27
Glendale/Chevy Chase SB		76	85	41	41	29	35
Glendale/Windsor NB		71	76	39	49	28	25
San Fernando/Glendale SB		26	74	13	34	12	24

Line 92 Downtown Los Angeles (Civic Center, Main & Spring – Sylmar/Sunland via Burbank

Metro Line 92 operates primarily on Brand Boulevard and Glenoaks Boulevard in Glendale. Table 4.3 summarizes ridership and activity at major stops in Glendale on weekdays, Saturday, and Sunday.

Riders boarding in Glendale are evenly split between northbound and southbound directions. The stop at Brand & Broadway is the busiest stop in both directions on Line 92 within the City of Glendale. Weekend boardings and alightings along Brand Boulevard are almost as high as weekday, suggesting that non-work travel is an important element of ridership to and from Brand Boulevard.



Line 92 is the primary link between downtown Glendale and downtown Burbank. Metro Line 94/794 does not directly serve downtown Glendale, and Metro Line 183 takes a circuitous path between the two downtowns.

Table 4.3 Boardings and Alightings on Metro Line 92 within the City of Glendale

Line	Direction	Weekday		Saturday		Sunday	
		Boardings	Alightings	Boardings	Alightings	Boardings	Alightings
92	NB	1,091	1,113	772	790	597	625
92	SB	1,062	1,029	760	724	579	559
Major Stops within the City of Glendale							
Brand/Broadway SB		152	260	137	209	107	176
Brand/Broadway NB		226	81	179	52	133	49
Brand/Harvard NB		110	82	90	82	70	78
Glenoaks/Pacific NB		67	98	36	55	25	43
Glenoaks/Pacific SB		91	64	58	33	38	24
Brand/Colorado NB		62	83	47	83	42	52
Glenoaks/Western NB		43	79	28	65	28	56
Glenoaks/Western SB		76	42	60	30	57	18
Glendale/Chevy Chase SB		76	85	41	41	29	35

Line 94/Line 794 (Metro Rapid) Downtown Los Angeles (Hill Street) – Sun Valley (weekdays) Sylmar (weekends)

Metro Lines 94 and 794 operate on San Fernando Road in Glendale. Line 794 is a Metro Rapid line operating on weekdays only. Table 4.4 summarizes ridership and activity at major stops in Glendale on weekdays, Saturday, and Sunday.

Riders boarding in Glendale are more likely to travel southbound. The stop at San Fernando & Los Feliz is the busiest stop in both directions on Lines 94/794 within the City of Glendale.

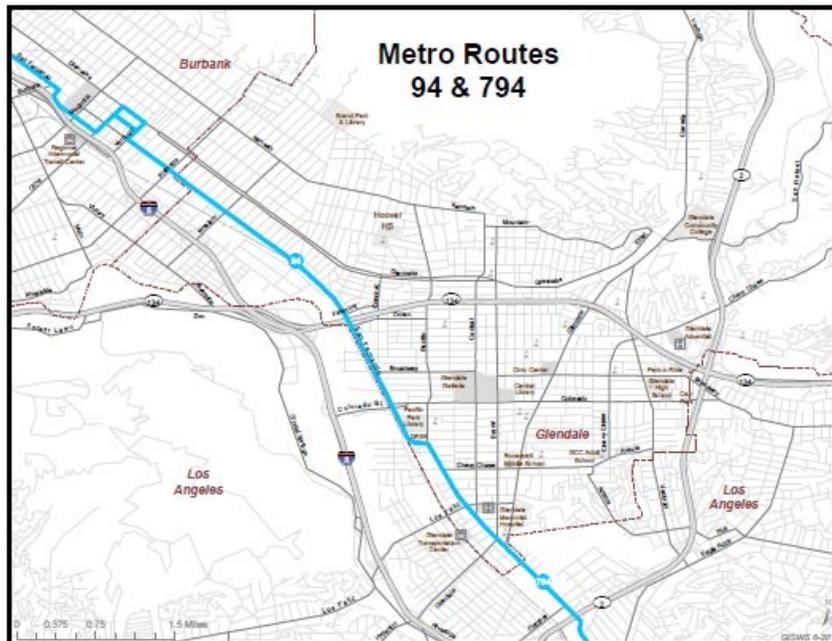


Table 4.4 Boardings and Alightings on Metro Lines 94/794 within the City of Glendale

Line	Direction	Weekday		Saturday		Sunday	
		Boardings	Alightings	Boardings	Alightings	Boardings	Alightings
94	NB	477	672	450	627	336	439
794	NB	308	421	--	--	--	--
94	SB	650	458	563	432	450	348
794	SB	347	308	--	--	--	--
Major Stops within the City of Glendale							
San Fernando/Los Feliz NB		280	262	158	150	129	116
San Fernando/Los Feliz SB		237	267	134	139	115	126
San Fernando/Sonora SB		163	85	99	50	75	41
San Fernando/Sonora NB		84	157	46	77	38	61
San Fernando/Broadway NB		62	119	30	48	19	30
San Fernando/Pacific NB		119	107	42	39	37	24
San Fernando/Broadway SB		112	62	43	29	32	24
San Fernando/Pacific SB		87	104	19	40	19	27
San Fernando/Brand NB		84	99	50	49	30	42
San Fernando/Brand SB		79	65	36	29	27	25

Lines 180/181/Line 780 (Metro Rapid) Hollywood - Altadena

Metro Lines 180/181 and 780 operate on Broadway, Central Avenue, and Los Feliz Boulevard in Glendale. Line 780 is a Metro Rapid line operating on weekdays only. Table 4.5 summarizes ridership and activity at major stops in Glendale on weekdays, Saturday, and Sunday.

Riders boarding in Glendale are more likely to travel westbound. The stops at Broadway & Brand and Los Feliz & San Fernando are the busiest stops in both directions on Lines 180/181/780 within the City of Glendale. Weekend boardings and alightings are almost as high as weekday, suggesting that non-work travel is important on these routes.

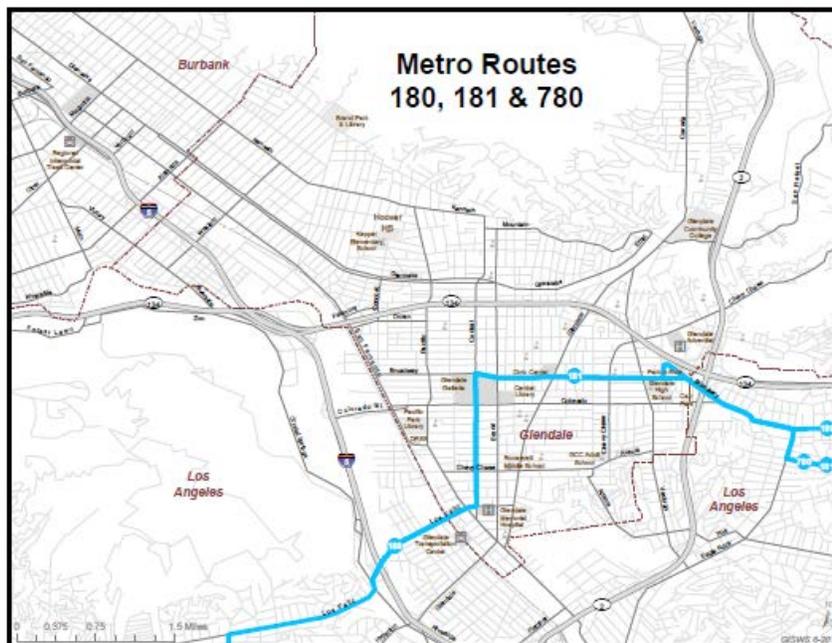


Table 4.5 Boardings and Alightings on Metro Lines 180/181/780 within the City of Glendale

Line	Direction	Weekday		Saturday		Sunday	
		Boardings	Alightings	Boardings	Alightings	Boardings	Alightings
180/181	EB	1,157	1,352	1,290	1,805	1,144	1,583
780	EB	681	1,174				
180/181	WB	1,380	1,099	1,743	1,217	1,524	1,052
780	WB	1,036	701				
Major Stops within the City of Glendale							
Broadway/Brand EB		475	413	330	204	281	169
Los Feliz/San Fernando WB		474	326	233	178	182	151
Los Feliz/San Fernando WB		330	451	180	211	158	166
Broadway/Brand WB		387	430	219	210	177	204
Central/Colorado EB		121	417	58	261	54	237
Broadway/Glendale EB		261	338	139	181	103	147
Broadway/Glendale WB		325	254	162	142	115	100
Central/Colorado WB		303	107	149	35	128	24
Broadway/Verdugo WB		252	110	112	32	98	25
Broadway/Verdugo EB		97	233	37	102	25	99
Central/Broadway WB		72	79	105	114	95	95
Broadway/Central EB		76	68	66	86	64	64
Central/Chevy Chase EB		76	62	78	58	67	46

Line 183 Sherman Oaks – Glendale

Metro Line 183 operates on numerous streets in Glendale on its way to and from the Glendale Transportation Center. This route does not operate on Saturday or Sunday. Table 4.6 summarizes ridership and activity at major stops in Glendale on weekdays.

Riders boarding in Glendale are more likely to travel westbound, since the route does not travel east of Glendale. No stop has more than 50 boardings or alightings. The stop at Broadway & Brand is the busiest stops in both directions on Line 183 in the City of Glendale.

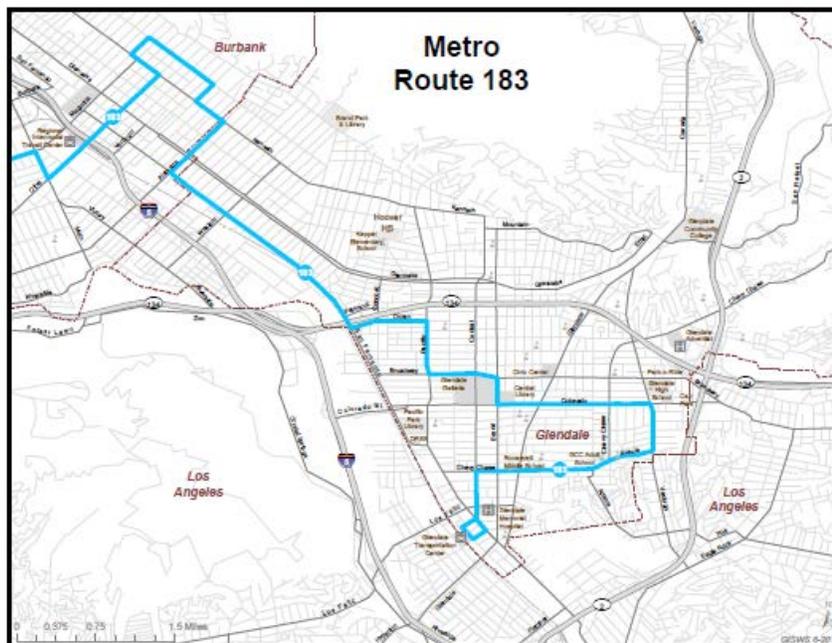


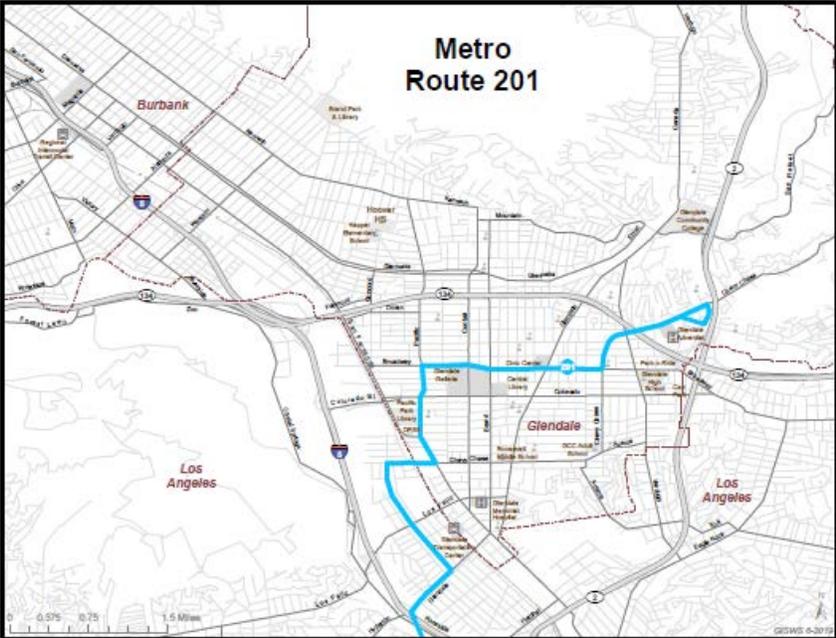
Table 4.6 Boardings and Alightings on Metro Line 183 within the City of Glendale

Line	Direction	Weekday	
		Boardings	Alightings
183	EB	182	326
183	WB	363	211
Major Stops within the City of Glendale			
No stop has more than 50 boardings or alightings.			
The busiest stops in each direction are:			
Broadway/Brand WB		47	15
Broadway/Brand EB		13	41

Line 201 Los Angeles (Silver Lake) to Glendale

Metro Line 201 operates on Pacific Avenue, Broadway, and Chevy Chase Drive in Glendale, serving Glendale Adventist Medical Center. Table 4.7 summarizes ridership and activity at major stops in Glendale on weekdays, Saturday, and Sunday.

No stop has more than 75 boardings or alightings. The stops at Chevy Chase & Glendale southbound and at Broadway & Brand northbound are the busiest stops within the City of Glendale.



Only selected trips on weekdays are extended to Gardner and Glenoaks in Glenoaks Canyon. Other weekday trips and all weekend trips terminate at Chevy Chase & Glenoaks, serving Glendale Adventist Medical Center.

Table 4.7 Boardings and Alightings on Metro Line 201 within the City of Glendale

Line	Direction	Weekday		Saturday		Sunday	
		Boardings	Alightings	Boardings	Alightings	Boardings	Alightings
201	NB	134	293	50	173	55	152
201	SB	297	136	158	49	139	49
Major Stops within the City of Glendale							
No stop has more than 75 boardings or alightings. The busiest stops in each direction are:							
Chevy Chase & Glenoaks SB		61	1	23	1	27	1
Broadway/Brand NB		37	37	15	29	19	20

Line 603 Los Angeles (Rampart) to Glendale

Metro Line 603 operates primarily on San Fernando Road, Pacific Avenue, Colorado Street, Central Avenue, and Columbus Avenue in Glendale. Table 4.8 summarizes ridership and activity at major stops in Glendale on weekdays, Saturday, and Sunday.

The stops at Columbus & Hawthorne (Glendale Galleria) in both directions and at Central & Americana southbound are the busiest stops within the City of Glendale. Saturday ridership is higher than weekday ridership on this route, and Sunday ridership is also strong.

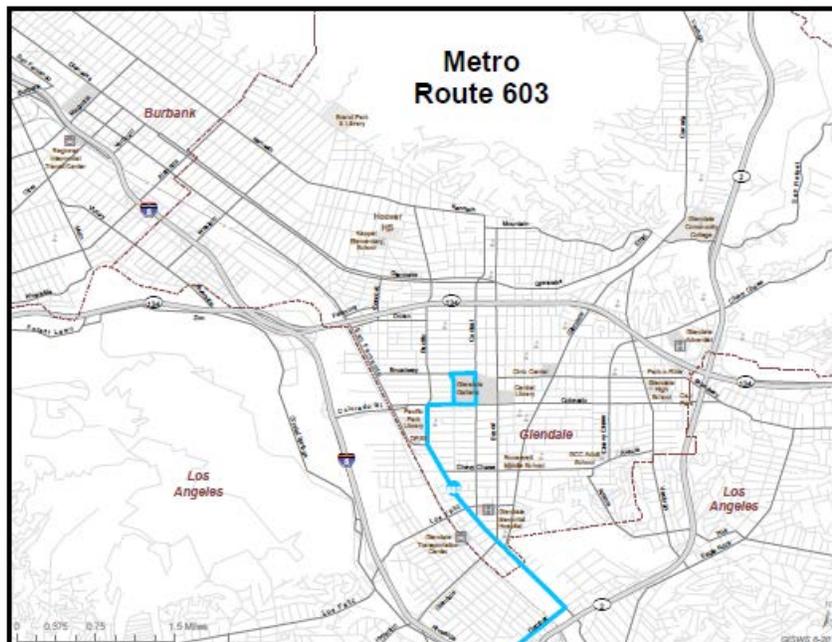


Table 4.8 Boardings and Alightings on Metro Line 603 within the City of Glendale

Line	Direction	Weekday		Saturday		Sunday	
		Boardings	Alightings	Boardings	Alightings	Boardings	Alightings
603	NB	137	808	82	924	56	733
603	SB	915	192	976	141	859	100
Major Stops within the City of Glendale							
Columbus & Hawthorne NB		11	378	3	598	3	502
Central & Americana SB		194	6	253	5	227	5
Columbus & Hawthorne SB		165	27	273	26	283	17
San Fernando & Los Feliz SB		153	46	126	34	94	23
San Fernando & Los Feliz NB		48	124	33	109	27	87
Central & Broadway SB		100	5	93	3	85	4
Pacific & Colorado NB		3	93	3	76	2	50
Pacific & Colorado SB		85	8	64	8	46	4

Line 685 Glassell Park to Glendale

Metro Line 685 operates on Verdugo Road in Glendale on weekdays only. Table 4.9 summarizes ridership and activity at major stops in Glendale on weekdays.

Riders boarding in Glendale are more likely to travel southbound, since the route does not operate north of GCC in Glendale. The stop at GCC (Cañada & Towne) is the busiest stop within the City of Glendale.

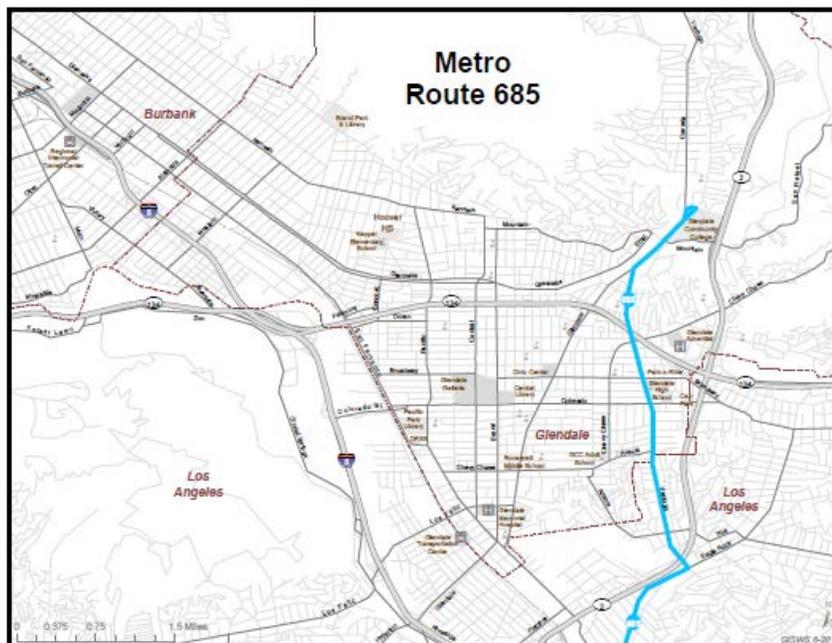


Table 4.9 Boardings and Alightings on Metro Line 685 within the City of Glendale

Line	Direction	Weekday	
		Boardings	Alightings
685	NB	127	252
685	SB	246	124
Major Stops within the City of Glendale			
Canada/Towne SB (GCC)		141	0
Canada/Towne NB (GCC)		9	132

Other Metro Routes

Metro Line 28 Century City – Eagle Rock has five stops in Glendale near Eagle Rock along a turnaround loop via Colorado Street, Verdugo Road and Broadway. Metro Line 96 Downtown Los Angeles – Burbank has four stops in each direction along Victory Boulevard in Glendale near Eagle Rock. Metro Line 501 is an express route between North Hollywood and Pasadena that travels through Glendale on SR 134 and has one stop in each direction at Brand. Table 4.10 shows boardings and alightings in Glendale for these routes.

**Table 4.10
Boardings and Alightings on Other Metro Lines within the City of Glendale**

Line	Direction	Weekday		Saturday		Sunday	
		Boardings	Alightings	Boardings	Alightings	Boardings	Alightings
28	WB	102	10	58	9	55	12
96	NB	29	52	19	17	14	20
96	SB	56	30	22	13	23	11
501	EB	105	104	17	46	17	25
501	WB	113	126	50	27	32	19
Major Stops within the City of Glendale							
Sanchez & Brand EB 501		105	104	17	46	17	25
Goode & Brand WB 501		113	126	50	27	32	19

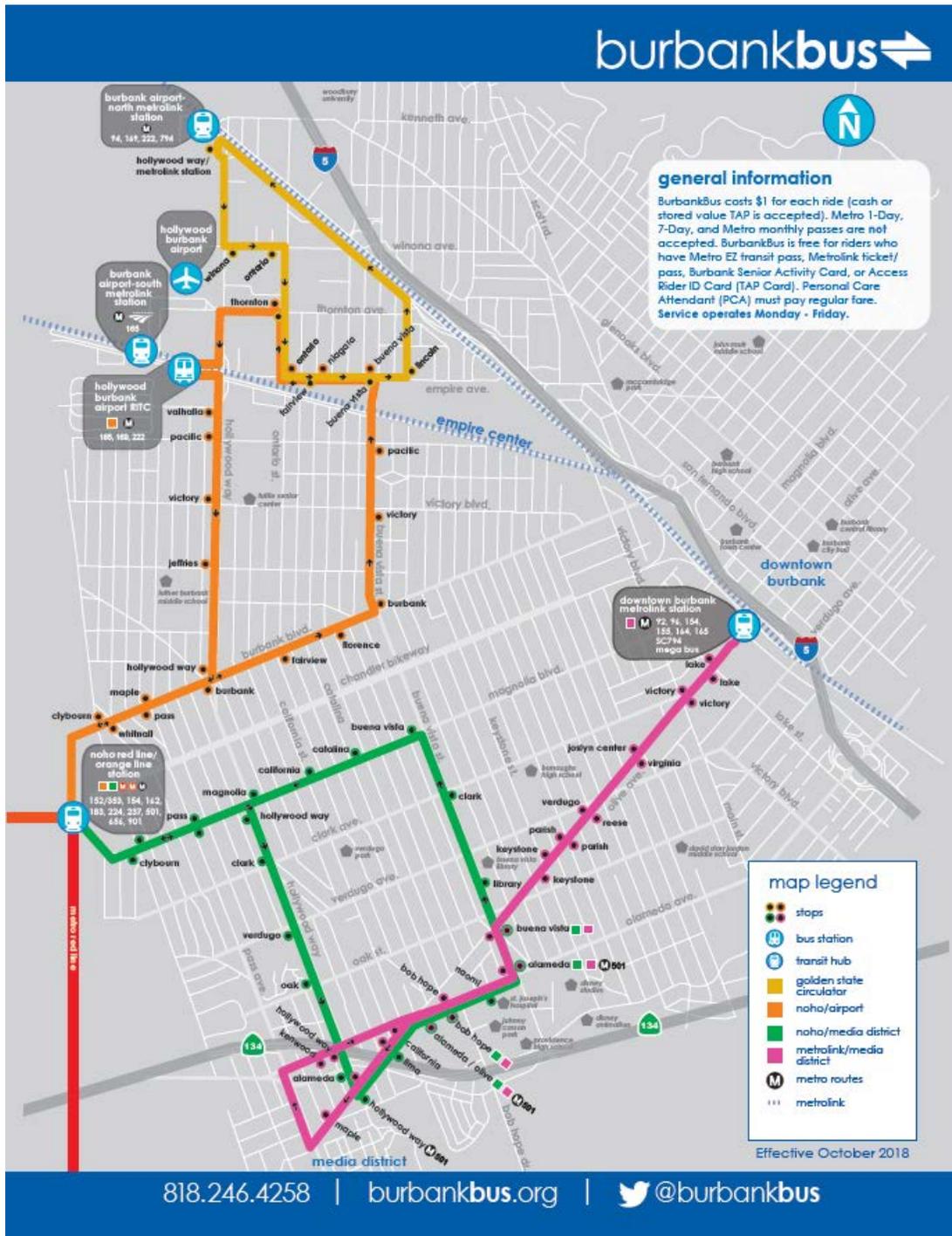
4.2 LADOT Commuter Express Routes

Two Commuter Express routes operated by the Los Angeles Department of Transportation serve Glendale. Commuter Express 409 has eight morning trips to downtown Los Angeles and seven afternoon trips to Sylmar with stops at Lowell Avenue & Honolulu Avenue in North Glendale and at the Glendale park-and-ride lot on Harvey Drive. Commuter Express 549 travels through Glendale via SR 134, with stops at Brand Boulevard and the Harvey Park-and-ride lot.

4.3 Burbank Bus

The neighboring City of Burbank provides local transit service within the city limits. Figure 4.1 is a map of the Burbank Bus network, which includes four routes that serve different sections of the City. The Metrolink/Media District route connects with the Beeline Route 12 at the BRITC. There is little service in east Burbank, leaving a gap between the BRITC and media employment centers along the Burbank/Glendale border.

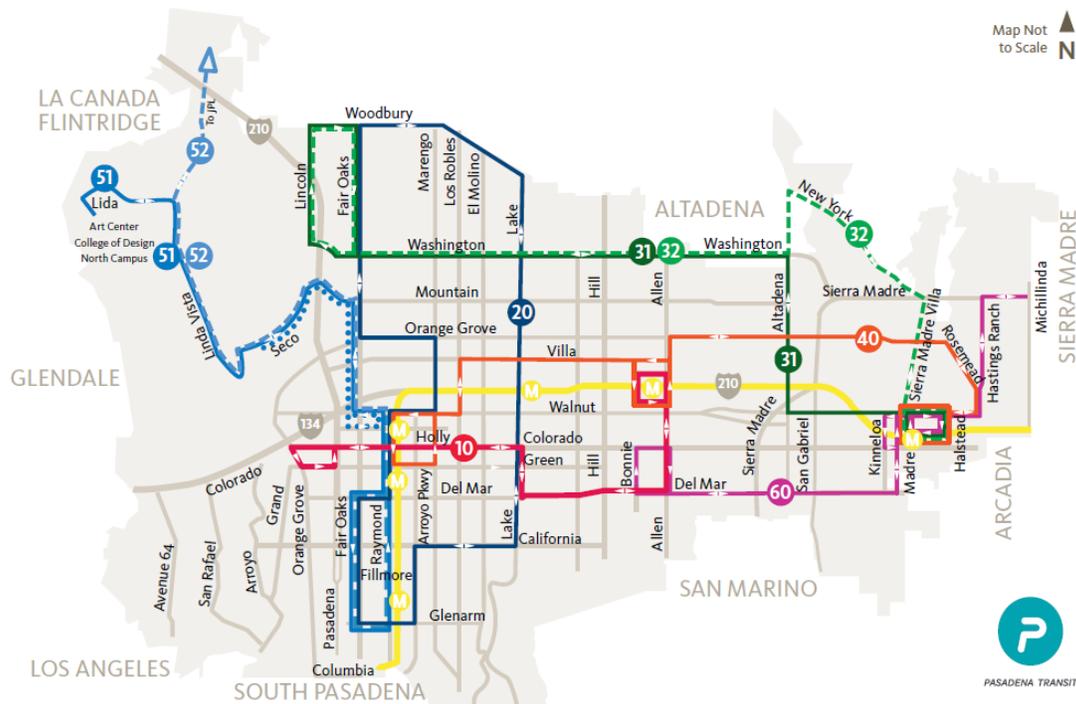
Figure 4.1
Burbank Bus Network



4.4 Pasadena Transit

Figure 4.2 shows the Pasadena Transit network. Pasadena Route 52 connects with the Beeline Route 3 and the La Cañada Flintridge Shuttle (Route 33) at JPL. There is no direct connection between the Foothill Boulevard corridor and Pasadena.

**Figure 4.2
Pasadena Transit Network**



4.5 Metro Travel Database via Smartphone Location

Through partnerships with the private sector, Metro has developed a database of travel throughout the Los Angeles region based on smartphone locations. Metro was willing to share this database on a limited basis with the City of Glendale for this study.

The City’s hope was that this database would provide much greater clarity on travel to and from Glendale. For several reasons, the travel information is less useful than we had hoped:

- The geographic unit of analysis is the census tract, which is generally too large to provide the detailed type of travel information that can be translated into transit routes for Glendale. This geographic unit was adopted to ensure the privacy of individuals making specific trips and works better to inform Metro’s long-haul route structure
- The database, at least in its early versions, was difficult to use. The project team spent most of a day at Metro exploring travel patterns of interest. Switching back and forth between trip types or times of day was time-consuming. It would have required several days at Metro to have examined every origin-destination pair of interest, and it was not

clear that the results would have been useful for this study. Off-site use by non-Metro personnel did not seem to be a feasible option. The team took photos of the results and was not able to download anything from the database.

- Individual locations of interest could not be specified. For example, we asked Metro if it would be possible to analyze all trips to the GCC main campus, and the answer was no. Analysis could only be done at the census tract level.
- Metro staff indicated that the database was not designed for analysis of a single census tract, in response to the project team's idea of looking at travel to/from every tract within the City. Metro is using the travel analysis for more general purposes, such as comparing general travel flows between regions to travel using the Tap Card.

The travel database did help Glendale with certain questions. Figure 4.3 is an example of output from the regional travel database. It shows the destination of home-based regular trips (which could be school, work, or any other recurring type of trip) from the Foothill Corridor. The darker areas are census tract destinations for more trips.

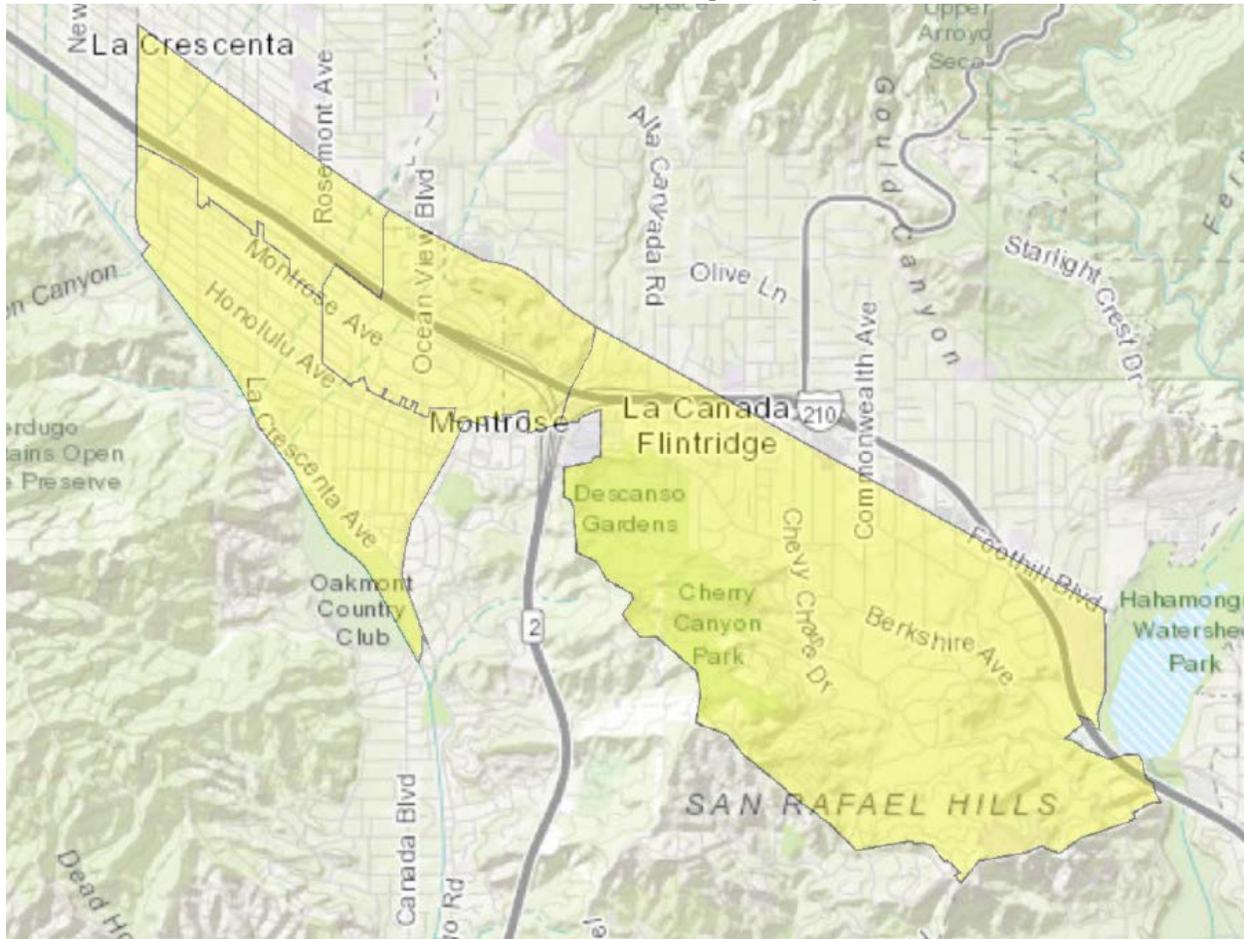
Figure 4.3

Screen Shot: Destinations of Home Based Regular Trips from Foothill Corridor from the Database



Figure 4.4 shows the two major destination census tracts overlaid on a street map. The predominant pattern for home-based regular trips from the Foothill Corridor is to stay within the corridor, as opposed to going to downtown Glendale or downtown Los Angeles.

Figure 4.4
Destination Census Tracts of Home Based Regular Trips from Foothill Corridor



4.6 Summary

Metro is clearly a key provider of regional bus service in Glendale, with 14,000 weekday boardings and 7,000 to 8,000 weekend boardings at stops within the City. The most important Metro lines in terms of ridership within Glendale are Routes 90 and 91 along Glendale Avenue, Cañada Boulevard, Montrose Avenue, and Foothill Boulevard, Route 92 on Brand Boulevard and Glenoaks Boulevard, and Routes 180/181/780 on Broadway, Central Avenue, and Los Feliz Boulevard.

Burbank and Pasadena also operate local bus networks within their cities. There are limited connections between either of these networks and the Beeline, although there appear to be important travel patterns between the three cities

The smartphone-based travel database developed by Metro indicates that Foothill Boulevard travel tends to stay along the corridor from Sunland to Pasadena. The geographic unit of the census tract is more appropriate for an assessment of regional as opposed to local travel, and the inability to pinpoint specific locations of interest such as GCC due to privacy concerns further limits the usefulness of this data source in reimagining the local Beeline network.

**Glendale Beeline
Transit Route Analysis
Chapter Five: Public Outreach**

5.0 Introduction

The project team developed a multi-lingual, community-wide online survey (e-survey) designed to invite input from the Glendale community and individuals who travel within and through Glendale. The e-survey was open online and promoted extensively over eight weeks, from the second week of February through the second week of April, to allow for responses from Glendale Community College when they returned for spring semester and from community events during that time period. Viable responses were received and analyzed from 682 individuals.

This chapter is organized as follows:

- Section 5.1 describes the survey approach and design.
- Section 5.2 presents efforts to promote the survey throughout the community.
- Section 5.3 provides findings from the e-survey on who responded; characteristics and preferences of drivers and non-transit users and characteristics and preferences of transit users.
- Section 5.4 presents opportunities for transit improvements based on e-survey findings.

5.1 E-Survey Approach and Design

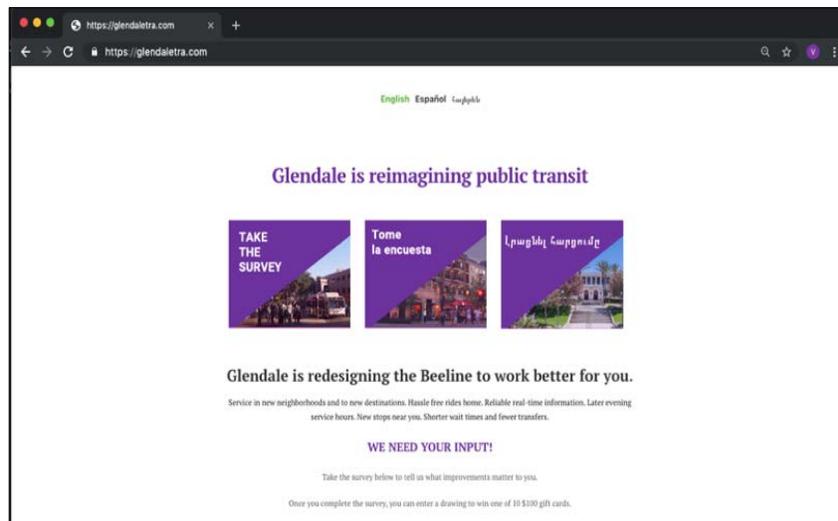
Survey questions explored corridors of travel; travel times, purposes, and modes; motivations for mode choice; experience with Beeline, Metro and Metrolink services; and desired improvements and service enhancements

The survey was designed with skip logic; based on the response to specific questions respondents only saw the questions appropriate to them. For example, only respondents that reported they used public transit services (Beeline, Metro and Metrolink) were asked to respond to questions about routes they used and travel experience on these services or to rate their experience on those services. Several A/B test, or split tests to compare two variants, were also included to gauge respondents' preference between coverage and frequency.

To incentivize participation, respondents were invited to enter a \$100 drawing. Ten winners were drawn from these entries. This process also gathered contact information to keep these individuals apprised of additional opportunities to provide feedback.

The survey was hosted on a project web site in three languages. The home page provided a one-click button to the survey in Armenian, English and Spanish. The simple url, glendaletra.com, was provided on all promotional materials.

Figure 5.1
E-Survey Landing Page



5.2 E-Survey Promotion

The Transit Survey was promoted through multiple strategies:

1. Connecting to trusted messengers: a stakeholder database was developed to identify trusted messengers and ask them to promote the survey to their networks. This strategy included identifying appropriate contacts; coordinating and conducting stakeholder interviews; email blasts and on-going communications with stakeholders.
2. Providing tools stakeholders could use to promote the e-survey: A marketing toolkit was developed to enable stakeholders to easily promote the survey to their networks. The toolkit was posted to a Dropbox and the link shared broadly, so it could be downloaded by stakeholders as needed.
3. Encouraging participation by Limited English Proficient (LEP) individuals, all materials, including the widely distributed postcards, included some information in Armenian and Spanish. Additionally, a flyer with survey information in Armenian, English, and Spanish was distributed to interested organizations and churches that serve LEP individuals.

These activities are detailed in the following sections and illustrated in Figure 5.2.

**Figure 5.2
E-Survey Outreach Process**

Objective: Invite input to the Glendale Transit Analysis through an e-survey broadly promoted to the general public, students, commuters and persons with limited English proficiency.

<p>1. Connecting to Trusted Messengers</p>	<p>Stakeholder Database 140 Organizations – 77 Contacts</p> <ul style="list-style-type: none"> ▪ Employers ▪ Community organizations ▪ Churches ▪ Business organizations ▪ Home owner associations ▪ Go Glendale members ▪ Secondary schools & colleges ▪ Downtown apartment managers ▪ Community centers 	<p>Large Employer Interviews 12 Targeted / 5 Interviewed</p> <ul style="list-style-type: none"> ▪ Disney (13,000 employees locally) ▪ Glendale Chamber of Commerce (~550 members / 2,000 subscribers) ▪ Glendale Community College (~17,40 Employees / ~25,000 Students) ▪ NBCUniversal / DreamWorks (10,000 employees daily) (1,300 employees daily) ▪ USC Verdugo Hills Hospital (844 employees + volunteers/physicians)
<p>2. Distribute Marketing Tools</p>	<p>Marketing Toolkit</p> <ul style="list-style-type: none"> ▪ Multilingual Flyers ▪ Postcards - vital info in 3 languages ▪ Newsletter posts - 3 languages ▪ Social media posts – Twitter, Facebook and Instagram ▪ Photos for articles ▪ Customized tools for: <ul style="list-style-type: none"> ▪ School District/Peachjar ▪ Web based newsletters 	
<p>3. E-Survey Promotion</p>	<p>Link through Trusted Messengers</p> <ul style="list-style-type: none"> ▪ City Connections Newsletter: electronic and printed ▪ City Council and Commission Meetings ▪ City social media postings ▪ City Website ▪ Project Website ▪ Glendale Chamber of Commerce ▪ Glendale Community College ▪ Go Glendale ▪ School District ▪ USC Verdugo Hills Hospital 	<p>Outreach Events</p> <ul style="list-style-type: none"> ▪ Women’s Summit ▪ Bach in the Subways ▪ Ceasar Chavez Event ▪ Spring Eggstravaganza ▪ Disney Environmental Fair ▪ Chamber of Commerce Fair and Business Mixer

Stakeholder Interviews

Stakeholder Interviews were conducted to increase awareness of the survey and to encourage promotion through trusted messengers. The project team identified 12 large employers with offices in or near Glendale or with many employees who reside in Glendale to interview. From this list, six employers were pursued. This effort involved multiple phone calls and emails to identify an appropriate representative and schedule a time to meet. Ultimately, five interviews were conducted as one employer had to cancel.

Employers that were interviewed included:

- Disney
- Glendale Chamber of Commerce
- Glendale Community College
- NBC Universal
- USC Verdugo Hills Hospital

An interview guide was developed to steer the conversation toward discussion about each employers' size and employee base, any known information about their travel patterns and transit use; their own transportation, rideshare or commute programs, and the Transit Route Analysis. Each interview concluded with an invitation for the employer to partner with this effort by promoting the survey to their employees. While this wasn't possible for some employers due to internal policies about third party links or their own schedules, three did agree to distribute the survey to their employees and/or students: Glendale Chamber of Commerce, Glendale Community College and USC Verdugo Hills Hospital.

Key Findings from Stakeholder Interviews

The following presents major takeaways from interviews with employer representatives that included Employee Transportation Coordinators and staff from Human Resources, Business Development, Operations Management, Communications and Community Relations, among other departments.

Key findings reported by large employer personnel included:

- **Parking availability**, where it is limited, provides some opportunity for transit.
- **Transit dependent populations** exist who will benefit from improved transit services to large employer and school facilities.
- **Employees benefits to those who could, and usually do, drive alone** will include improved transit access by spending less time in traffic, more “me” time and generally a less stressful day; they are good markets for “some trips, sometimes.”
- **Improved transit services along the Foothill corridor**, specifically between Glendale to Pasadena, will benefit commuting workers and students.
- **Improved connections to Metrolink** will benefit some employees and students.
- **Attention to Beeline service reliability, travel times and to multiple fare payment options** will benefit existing transit users and potential new riders.
- **Expanded hours and improved frequencies** – enhancements that improve the convenience of transit – are likely to encourage ridership among commuting workers and students.
- **Improved real-time Beeline information – including promoting awareness of what exists** – is desirable. This can include promoting what is available through Google’s General Transit Feed Specification (GTFS) for open-sourced trip planners to inform prospective transit users about their transit options while assuring existing transit users as to when the next bus is actually coming.
- **Employer shuttles** do exist and provide some connection to Metrolink; possibly there is greater opportunity to coordinate with these services.
- **Large employers and educators are interested in continuous promotion of Glendale Beeline** and transit services through a range of employee and student events, to grow awareness, understanding and then “use” of existing public transit.

Stakeholder Outreach

The project team developed an extensive stakeholder contact list in ten major areas: Employers, Community Organizations; Churches; Business Organizations; Home Owner Associations; Schools; Go Glendale members; Downtown Apartment Managers and Owners and Community Centers among others. The list included 140 organizations and 77 individuals for whom we had active email addresses. Contacts on this list were sent multiple emails during the survey period which included the survey link and a marketing toolkit. These individuals were asked to partner with the City of Glendale in promoting the survey to their networks. Stakeholders were also provided individualized marketing materials as requested, for example a unique poster was made for distribution to the Glendale Unified School District parents through the Peachjar network.

Additional stakeholder outreach included:

- Phone calls were made to about a dozen downtown apartment managers and owners and community organizations to ensure they had survey information.
- Delivery of marketing postcards was made to interested contacts, including three downtown apartments, two community organizations and to the public library system.
- The project team maintained regular communication with stakeholders who agreed to promote the survey.

Stakeholder Outreach to Limited English Proficiency Populations

Multiple efforts were made to proactively engage limited English proficient (LEP) individuals in the survey opportunity. Thirteen agencies and churches whose clients and constituents include high proportions of LEP individuals were identified. Multiple attempts to connect with them by phone and/or email were made to ensure they were aware of the survey and to ask their assistance in promoting it to their clients. All were provided a link to the marketing toolkit which included language-specific materials. These agencies were offered delivery of a multilingual flyer promoting the survey, of which three accepted.

Community Events

City of Glendale staff participated at multiple community events during the survey period to promote the survey and raise awareness of Beeline. Staff passed out survey postcards and set up a booth display where possible at the following events:

- Women's Summit, March 8, CBRE
- Bach in the Subways, March 24, Glendale Transit Center
- Cesar Chavez Event, March 30, Pacific Community Center and Park
- Spring Eggstravaganza, April 13, Pacific Community Center and Park
- Disney Environmental Fair, April 11, Disney
- Chamber of Commerce Community Fair in March

Additionally, the City developed a subscription list for community members who were interested in the TRA and e-survey. The e-survey link and reminders were sent directly to the 60 individuals who subscribed to this list.

Table 5.1 details efforts to widely promote the e-survey to various markets and the stakeholders who partnered with the project team in promoting the survey to their networks. Not listed are the agencies/organizations with whom multiple attempts to connect were unsuccessfully made.

**Table 5.1
Detail of Stakeholder Outreach by Market**

Go Glendale (SM)		Outreach Efforts (Feb 1 - April 15)
LEGEND: Special materials created (SM); Interview/meeting (I); Attempts to interview (A); Postcard/flyer delivery (P); LEP flyer delivery (LEP)		
ABM Parking	Altana (Greystar)	<ul style="list-style-type: none"> ▪ Identify appropriate contact; ▪ Multiple email blasts with toolkit ▪ Email follow up and reminders; ▪ Phone calls
Cushman & Wakefield	The Onyx	
Metrolink	AMLI Lex on Orange	
CIGNA HealthCare	Modera Glendale (Mill Creek)	
City of Glendale	The Brand (Holland Partner Group)	
Glendale Adventist Medical Center	Americana at Brand	
The Walt Disney Company	Cushman & Wakefield	
Glendale Community College		
Home Owners Associations		Outreach Efforts (Feb 1 - April 15)
Glendale Homeowners Coordinating Council (GHCC)	Montecito Park	<ul style="list-style-type: none"> ▪ Identify appropriate contact; ▪ Multiple email blasts with toolkit; ▪ Email follow up and reminders; ▪ Phone calls
Adams Hill	Montrose-Verdugo	
Chevy Chase Estates	Mountain Oaks HOA	
College Hills	NW Glendale HOA (SM)	
Deer Canyon/Oakmont Property Owners Associations	Pelanconi Estates HOA	
Fair Oaks	Rossmoyne/Mountain HOA	
Far North Glendale	Royal Canyon	
Fern Lane HOA	Verdugo Woodlands	
Glendale Rancho HOA	Whiting Woods HOA	
Glen Knolls HOA	Grand Central Neighbor-	
Glenoaks Canyon	Northwest Glendale Homeowners Association	
Downtown Apartments		Outreach Efforts (Feb 1 - April 15)
Modera Glendale	Lomita Apartments	<ul style="list-style-type: none"> ▪ Identify appropriate contact; ▪ Multiple email blasts with toolkit; ▪ Email follow up and reminders; ▪ Phone calls; ▪ Postcard distribution
Altana Apartments	Regent Apartments	
HLT Management	Camden/Triangle Apartments	
AMLI Lex On Orange	Brio Apartment Homes	
ONYX Glendale Apartments	The Griffith	
Legendary Glendale Apartments	Avalon Glendale (P)	
The Brand (P)	The Harrison Glendale Apartments	
Eleve Lofts and Skydeck Apartments	416 on Broadway	
The Continental (At Americana) (P)		

Table 5.1 Continued
Detail of Stakeholder Outreach by Market

Churches/Church Groups		Outreach Efforts (Feb 1 - April 15)
LEGEND: Special materials created (SM); Interview/meeting (I); Attempts to interview (A); Postcard/flyer delivery (P); LEP flyer delivery (LEP)		
Arabic Community Church	Glendale Filipino Seventh-day Adventist Church	<ul style="list-style-type: none"> ▪ Identify appropriate contact; ▪ Multiple email blasts with toolkit; ▪ Email follow up and reminders; ▪ Phone calls; ▪ Attempts to deliver LEP flyer; ▪ Postcard and/or LEP flyer delivery
Central Christian Church (Disciples of Christ)	Christian Outreach for Armenians Church	
New Life Christian Church	Holy Family Catholic Community	
Montrose Church	Christ Armenian Church	
First Baptist Church of LA Crescenta	Crescenta Valley Filipino Seventh-Day Adventist church	
Glendale Spanish Church	St. Mary's Armenian Apostolic Church	
Chabad of Glendale and the Foothill Communities		
Schools		Outreach Efforts (Feb 1 - April 15)
CalTech (A)	Glendale Community College, Verdugo Campus (I) (P)	<ul style="list-style-type: none"> ▪ Identify appropriate contact; ▪ Multiple email blasts with toolkit; ▪ Email follow up and reminders; ▪ Phone calls; ▪ Interviews; ▪ Attempts to coordinate interview; ▪ Postcard/flyer distribution ▪ LEP Flyer delivery
Glendale Unified School District (all schools) (SM)	GCC Professional Development Campus	
Glendale Community College, Garfield Campus (I) (LEP)		
Business Organizations		Outreach Efforts (Feb 1 - April 15)
Glendale Chamber of Commerce (I) (LEP)	Montrose-Verdugo City Chamber of Commerce	<ul style="list-style-type: none"> ▪ Multiple email blasts with toolkit; ▪ email follow up and reminders; ▪ phone calls; ▪ interviews; ▪ attempts to coordinate interviews
Glendale Young Professionals	Crescenta Valley Chamber of Commerce	
Glendale Latino Association	VerdugoGlen American Business Women's Association	
Major Employers		Outreach Efforts (Feb 1 - April 15)
Jet Propulsion Laboratory (JPL) (A)	Disney (A)	<ul style="list-style-type: none"> ▪ Identify appropriate contact; ▪ Multiple email blasts with toolkit; ▪ Email follow up and reminders; ▪ Phone calls; ▪ Interviews; ▪ Attempts to coordinate interview; ▪ Postcard distribution
Dine Equity Inc (A)	Adventist Health Glendale (A)	
Disney Consumer Products (A)	USC Verdugo Hills Hospital (I) (P)	
NBCUniversal/DreamWorks Animation LLC (I)	City of Glendale (P)	
ABC7 Broadcast Center (A)	LegalZoom (A)	
Glendale Community College (A)	Family Medicine Center (A)	

Table 5.1 Continued
Detail of Stakeholder Outreach by Market

Community Organizations		Outreach Efforts (Feb 1 - April 15)
LEGEND: Special materials created (SM); Interview/meeting (I); Attempts to interview (A); Postcard/flyer delivery (P); LEP flyer delivery (LEP)		
Armenian Relief Society Social Services (LEP)	Glendale Windsor Club (Alanon of Glendale, Inc.)	<ul style="list-style-type: none"> ▪ Identify appropriate contact; ▪ Multiple email blasts with toolkit and LEP flyer; ▪ Email follow up and reminders; ▪ Phone calls; ▪ Attempts to deliver LEP flyer; ▪ Postcard and/or LEP flyer delivery
Verdugo Hills Council Boy Scouts	Housing Rights Center	
Homenetmen Glendale Ararat Chapter	Easter Seals of Southern California	
The Glendale Historical Society	VNACARE (D)	
Armenian Society of Los Angeles	St. Anne's Maternity Home	
Korean American Family Service Center	Otto Gruber House	
Armenian Youth Association of California	Committee For Armenian Students in Public Schools (CASPS)	
Assistance League of Glendale	Ascencia	
Women's Civic League of Glendale	ARK Family Center	
Glendale Youth Alliance	All for Health, Health for All (P)	
Armenian Dramatic Arts Alliance	Didi Hirsh Mental Health Services	
Armenian Child Wellness Foundation	Tobinworld	
Community/General Public		
Glendale Public Library (all branches) (P)	Survey announcement in February and April City Connections electronic newsletter	<ul style="list-style-type: none"> ▪ Postcard distribution; ▪ Booth at event; ▪ Survey url/information distribution; ▪ Marketing material distribution
Women's Summit at CBRE (P)	Survey announcement in March City Connections print newsletter	
Bach in the Subways at Glendale Transit Center (P)	Posts on city Facebook pages	
Cesar Chavez Event at Pacific Community Center and Park (P)	Postcards at all Library Branch Counters	
Eggstravaganza at Pacific Community Center and Park (P)	Press Release from City Manager	
Enviromentality Fair at Disney (P)	Email blasts and reminders to individuals interested in receiving survey information	
Chamber of Commerce Community Fair (LEP) and After-Hours Business Mixer		

5.3 E-Survey Analysis

E-survey promotion efforts resulted in 682 responses. This section provides information on:

- summary of findings by market;
- survey respondents;
- characteristics and preferences of drivers and non-fixed route transit users;
- characteristics and preferences of Beeline and LCF Shuttle Users; and
- characteristics and preferences of LA Metro and Metrolink riders.

Summary of Findings by Market

All Respondents

- Half of the working respondents that live in Glendale stay in the city as part of their commute.
- Majority of students responding attend GCC's Verdugo Main Campus.
- Those not working or attending school say their most frequent trip keeps them within Glendale.
- Morning peak departure time is between 7 – 9am with a secondary peak between 9am – noon. Return time peaks between 4 – 6pm with secondary peaks on either side (2 – 4pm or 6 – 8pm).
- Fifteen percent of respondents reported returning home between 8 – 10pm.

Transit Riders

- One in five respondents currently uses either the Beeline and LCF Shuttle or LA Metro.
- Bus ridership skews up for students. Students accounted by 22 percent of respondents. Of those, nearly four out of ten students indicated they rode the bus,
- One-third of transit riders do not have a vehicle and 43% have one vehicle.

Solo Drivers and Non-Transit Users

- Driving is perceived as being faster than public transit. These respondents also express having a need for their vehicle during or after work.
- Over 40% of this group are unaware of bus service in the Glendale area.
- Getting a fast, direct ride, with few stops, between their home and destination was the most frequently mentioned needed service improvement to get them to consider a bus.
- When posed with potential circumstances, non-transit riders would be more likely to consider transit if the suggested improvements they made were implemented, e.g. such as direct rides with limited stops.
- They see apps (pay by phone and tracking bus arrivals) as critical.
- When asked if they would prefer increased coverage or more frequent service if they were to use transit, these respondents chose more coverage (more routes serving more destinations).

Beeline and LCF Shuttle Riders

- Eight out of ten riders (84%) report frequent ridership (3+ times per week).
- Riders have mixed views (based on their comments). Many see the service as convenient, while a fair percentage think the opposite. Inconsistent, slow and unreliable were negative themes. Positive themes include: reliable and friendly. Notably, the on-board survey effort provided a more consistent rating from riders: The average score for overall Beeline service is 3.57, indicating a very high level of passenger satisfaction with Beeline.
- Current riders would like to see weekday service until 10:00pm and shorter wait times for the bus.
- Preferred enhancements include a free ride with student ID, wi-fi service on the bus, and apps to track arrivals and pay their fares.
- When asked if they would prefer increased coverage or more frequent service, current Beeline riders are not as strong in their preferences as non-riders. However, there was a clear difference between students and non-student Beeline riders: Students would like to see more frequent service, longer hours and shorter walks to the bus stop. Non-students would prefer more routes and destinations.

LA Metro / Metrolink Riders

- Over two-thirds reported they have used Beeline.
- Of frequent riders, nine out of ten ride 3+ days per week.
- Shorter wait times for the bus, weekday service until 10:00pm and coordinated transfers with other lines were the main suggested improvements for this group
- Metro and Metrolink riders also reported wanted the following enhancements: include ability to load Beeline fares onto their TAP cards, and apps for bus tracking and fare payment.
- When asked if they would prefer increased coverage or more frequent service, this group selected coverage, more routes serving more destinations.

Making a Trip from Glendale to...

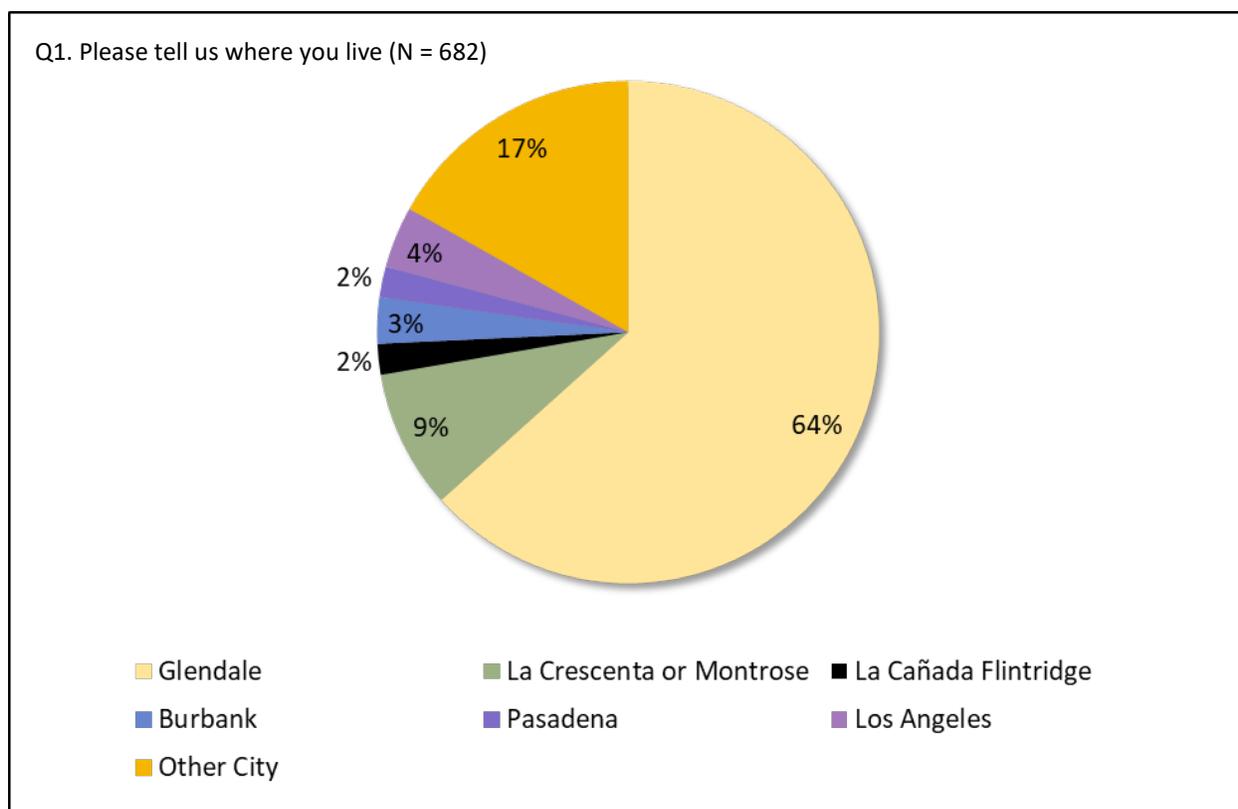
- Pasadena and Burbank were selected as common destinations outside of Glendale more frequently than Eagle Rock/Atwater Village.
- Old Town Pasadena, Burbank Town Center, and Colorado Street in Eagle Rock were the most requested destinations.

Survey Respondents

Where They Live

Glendale residents accounted for over 60% of respondents (Figure 5.3). One in nine respondents (11%) live in either La Canada Flintridge, La Crescenta, or Montrose. Other cities mentioned include: Los Angeles, Pasadena, Burbank, Sunland, Tujunga, among others. Seven out of ten (72%) bus riders responding indicated they lived in Glendale, compared to 62% of those who use other methods.

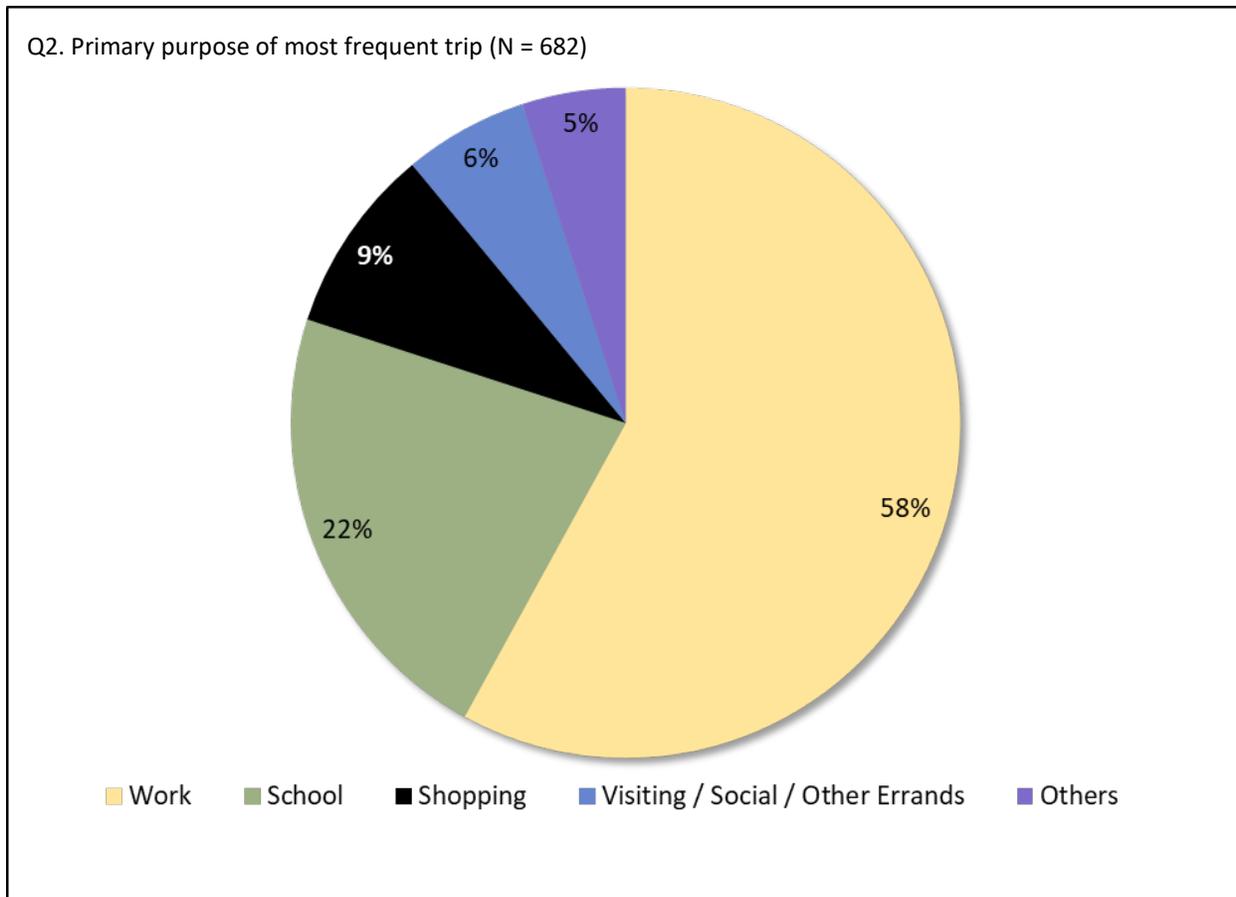
**Figure 5.3
Where Survey Respondents Live**



Primary Trip Purpose

When asked the primary purpose of their most frequent trip, over half of respondents (58%) indicated the purpose of their primary trip was going to work (Figure 5.4). Students accounted for 22% of responses to this trip purpose question. Shopping and social outings accounted for 15% combined and medical and entertainment-related and other purposes account for five (5) percent.

**Figure 5.4
Why Respondents Travel**

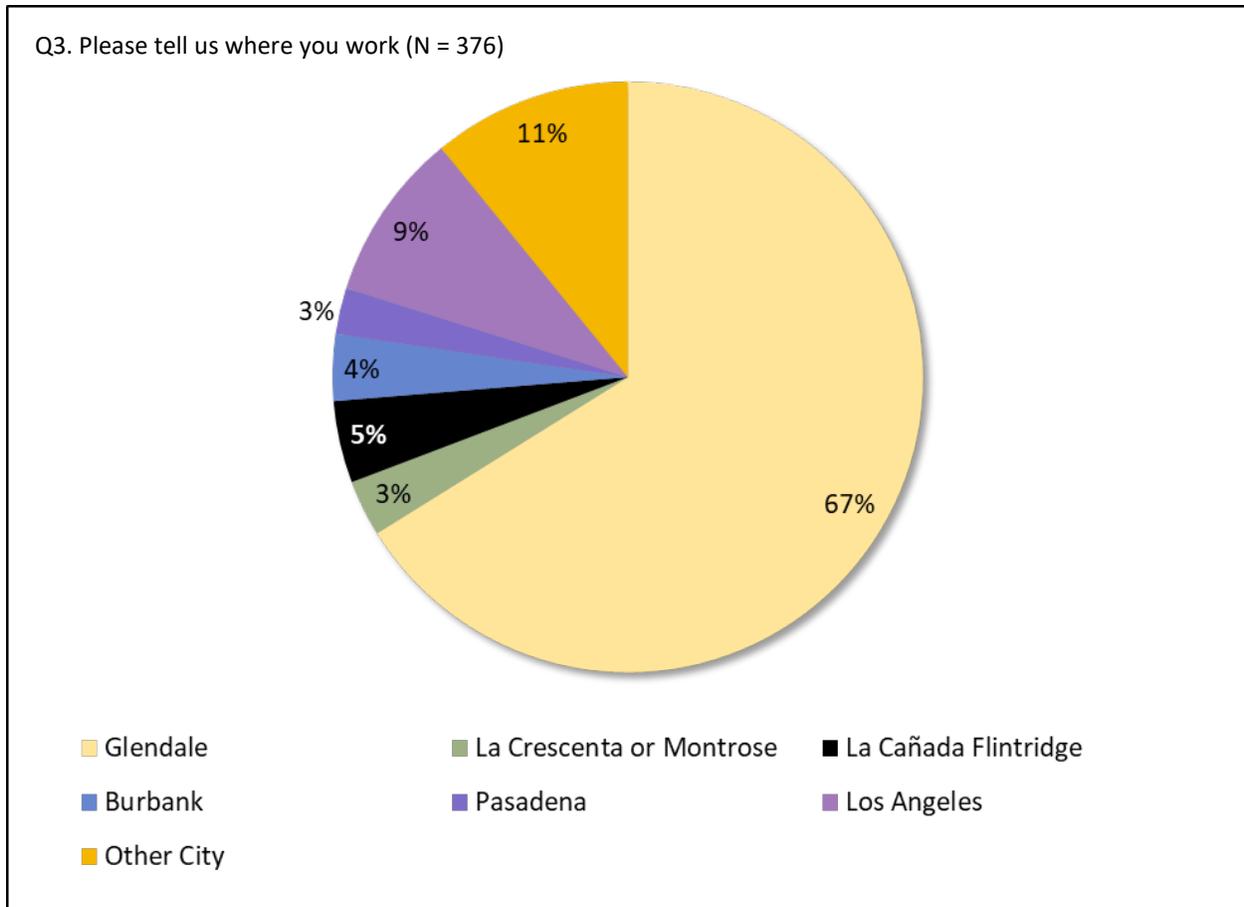


The percentage of respondents making a trip to work as their primary purpose ranges from 49% for Glendale residents to 72% for those living in other cities. Non-transit riders were more likely to report their primary trip was to work (63% vs. 38% for bus riders). Bus riders were twice as likely to report using public transit to get to school compared to non-transit riders (44% vs. 16%).

Where They Work

Two-thirds of survey respondents in Figure 5.5 indicated they commuted to Glendale for work purposes. Downtown Los Angeles was the second most frequently mentioned location for work commutes. Respondents reported commuting to “Other Cities.” When asked to specify, these destinations included that include North Hollywood, West Hollywood Beverly Hills and Studio City.

**Figure 5.5
Where Respondents Work**



Eight out of ten (80%) respondents living outside of Glendale reported they commute into the city for work. Respondents that work in Glendale come from numerous cities around the basin. For example, half of the respondents that live in La Crescenta or Montrose commute to Glendale and 15% commute to Los Angeles. Just over half (55%) of Glendale residents reported their work commute keeps them in Glendale.

Where They Commute

In Table 5.2 below, a matrix presents the city the respondent lives in and the city where they commute. Respondents that work in Glendale come from numerous cities around the basin. For example, half of the respondents that live in La Crescenta or Montrose commute to Glendale, 15% commute to Los Angeles, etc.

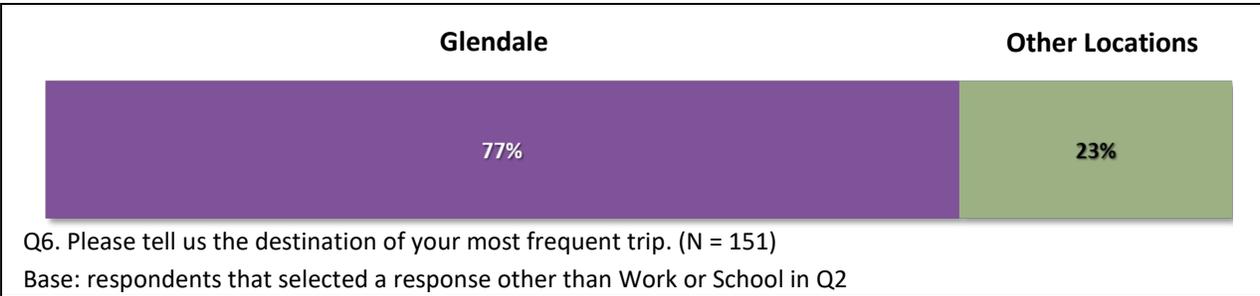
**Table 5.2
Where Respondents Commute**

Where they live	Where They Work (Row %)							N
	Glendale	La Crescenta or Montrose	La Cañada Flintridge	Burbank	Los Angeles	Pasadena	Other City	
Glendale	56%	4%	2%	6%	14%	3%	14%	206
La Crescenta or Montrose	49%	3%	13%	0%	15%	10%	10%	39
La Cañada Flintridge	73%	0%	27%	0%	0%	0%	0%	11
Burbank	78%	0%	0%	0%	11%	0%	11%	9
Los Angeles	94%	0%	0%	0%	0%	0%	6%	16
Pasadena	100%	0%	0%	0%	0%	0%	0%	9
Other City	88%	1%	5%	0%	0%	0%	6%	86
Count	250	11	17	13	35	10	40	376
% Within Live	66%	3%	5%	3%	9%	3%	11%	100%

Q1. Please tell us where you live (N = 682) and Q3. Please tell us where you work (N = 376)

The City of Glendale was selected as the most frequent destination by those not working or in school, report at 77% (Figure 5.6). Other locations frequented include La Crescenta, Burbank, Los Angeles and Pasadena. Glendale residents are more likely than respondents from other cities to stay local to Glendale (77% vs. 67%).

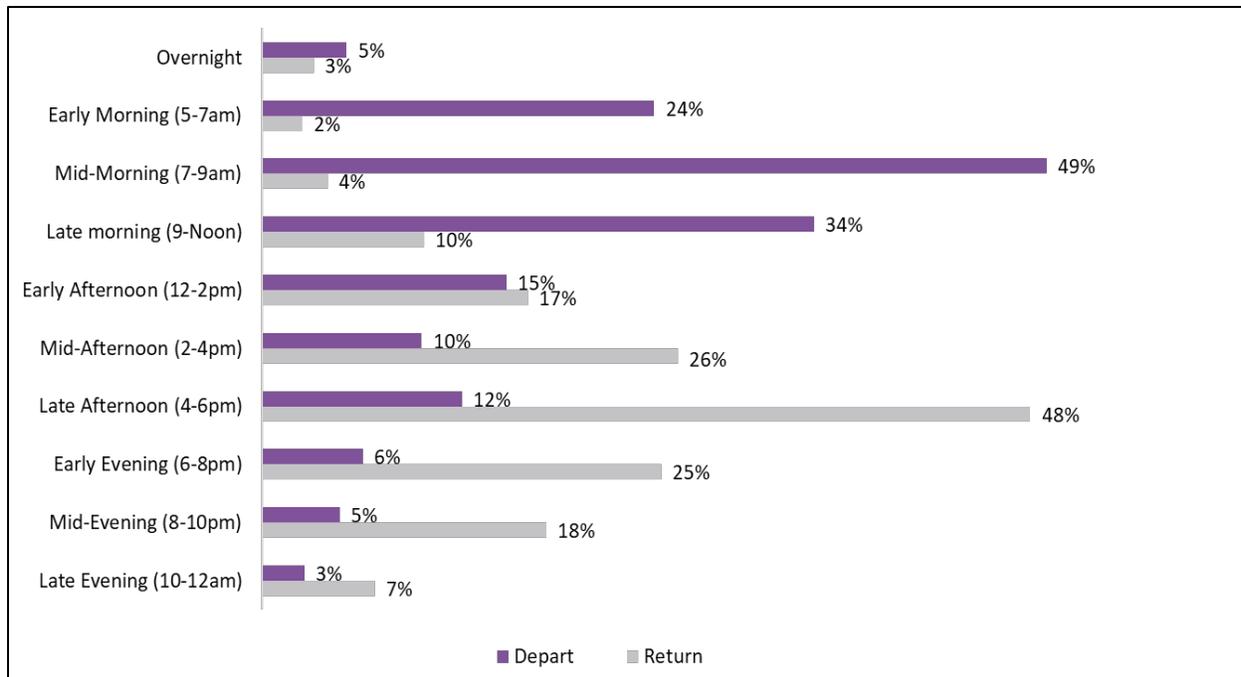
**Figure 5.6
Where Respondents Commute**



Departure and Return

To better understand the times of day the survey respondents need to travel, they were asked to indicate the time they typically leave home each day and the time they depart to return. Mid-Morning (7-9am) accounts for half of all departures, while Late Afternoon (4-6pm) accounts for nearly the same percentage of return trips.

Figure 5.7
Time of Day for Departure and Return



Q7. What time do you typically leave home each day on your most frequent trip? (N = 682)

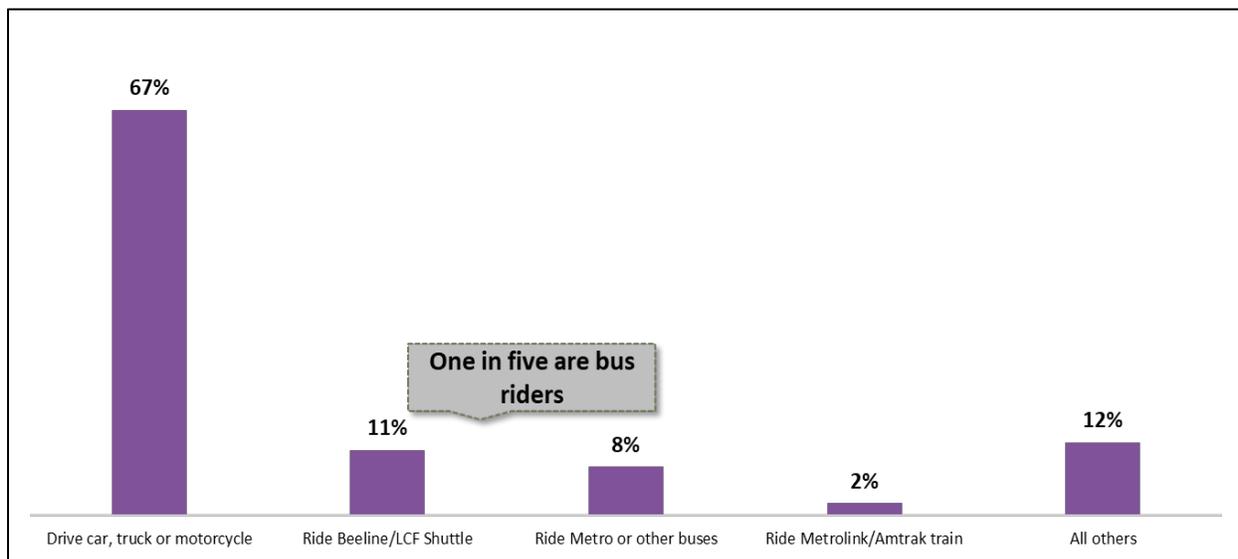
Q8. What time do you typically leave your destination to return home each day? (N = 682)

Percentages are calculated as the percent of departures or returns in a particular day-part divided by the total respondent base (N = 682). For example, 334 respondents reported departing between 7 – 9 am. When divided by the base the resulting number is 49%.

Travel Methods

Figure 5.8 shows that more than two-thirds of respondents travel alone via car, motorcycle or truck. One in five reported regularly riding a bus. Respondents from outside Glendale reporting being more likely to report driving themselves (74% vs. 65%). Of the 128 bus riders, 56% ride the Beeline or LCF shuttle and 44% ride the Metro or other lines. Non-students are more likely to be solo drivers (73%) than students (51%). Nearly four out of ten students indicated they rode the bus, compared to 13% of non-students.

**Figure 5.8
Mode of Travel**



Q9. How do you travel most frequently? (N=661)

Characteristics and Preferences of Drivers and Non-Transit Users

Reasons for Driving Alone

As presented in Table 5.3, the key perception among drivers is that it takes less time to drive solo than it does to use a bus. Other key reasons for driving alone include the need for a vehicle during the day, a lack of bus stops near home or worksite, the need for a vehicle before or after work. There also exists a perception that respondents cannot rely on transit to run on time. There are limited differences in perception when viewed through the lens of location of residence and student vs. non-student.

**Table 5.3
Reasons for Driving Alone**

Reason	Percent
Driving is much faster than using public transit	52%
Need my car during the day for personal or work use	41%
No bus stop near my home or near my worksite	24%
Need my car for other commitments before or after work	22%
Can't rely on transit to run on time	22%
Transit is not available at times I need it	15%
Don't know or am confused by how to use the bus	10%
Bus does not run on time	9%
Don't feel comfortable riding a bus	7%
Don't like traveling with other people	6%
Don't feel safe waiting at a bus stop	5%
Other (please specify)	12%
Total N	460

Q10. Tell us why you choose to drive?

Base: Q9. Those that drive a car, truck or motorcycle as their primary travel method (N = 460)

Familiarity with Bus Service for Non-Transit Users

Table 5.4 shows that 43% of respondents are unaware of bus options in the Glendale area. Glendale residents are more likely to have used the Beeline or Metro in the prior 30 days than respondents living in other communities (19% vs. 11%). Residents outside of Glendale are twice as likely (33% vs. 17%) as Glendale residents to be unaware of Metro service in Glendale and are also more likely to lack awareness of Beeline service (24% vs. 17%). There was no difference in familiarity between students and non-students.

**Table 5.4
Bus Service Familiarity of Non-Transit Users**

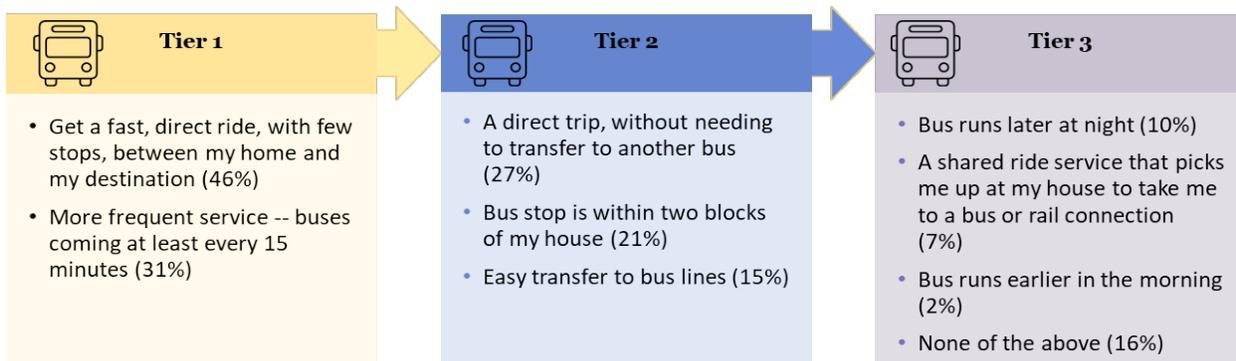
Familiarity with bus service in and around Glendale	Percent
Used Beeline or Metro in Glendale during past 30 days	16%
Used Beeline or Metro in Glendale during past year	22%
Used Beeline or Metro in Glendale, but I am somewhat aware of the bus routes	19%
Don't know about the Beeline bus service	20%
Don't know about Metro bus service in Glendale	23%
Total N	517

Q11. How familiar are you with bus service in and around Glendale?
Base: Solo drivers and non-transit users (N = 517)

Service Improvement Considerations

“Express” style service between home and destination is the most desired service improvement by non-transit users (Figure 5.9). Glendale residents are more likely to request a stop within two blocks of home than those living outside Glendale (24% vs. 16%). They also desire more frequent service, every 15 minutes, (36% vs. 22%). Residents living outside of Glendale have a greater perceived need for direct trips (34% vs. 22%), or transfers to other bus lines (20% vs. 12%). Non-students also express a greater need than students for easy transfers.

Figure 5.9
Service Improvement Considerations for Solo Drivers and Non-Transit Users



Q12a/Q12b. I would consider using a bus if you make these service improvements.
Base: Solo drivers and those who use non-transit users (N = 532)

Service Enhancement Considerations

Respondents indicated wanting mobile apps that alert them to bus arrivals and allow them to pay with their phones (33%). Glendale residents are more interested than non-residents for an app to pay their fare (27% vs. 19%) and non-residents place a greater focus on employer subsidized fares (22% vs. 10% for residents). Non-students lean toward app-based fare payment (28% vs. 7% for students) and employer subsidized fares (17% vs. 4%). Students would appreciate a free ride with their school ID (Figure 5.10).

Figure 5.10
Service Enhancement Considerations for Solo Drivers and Non-Transit Users

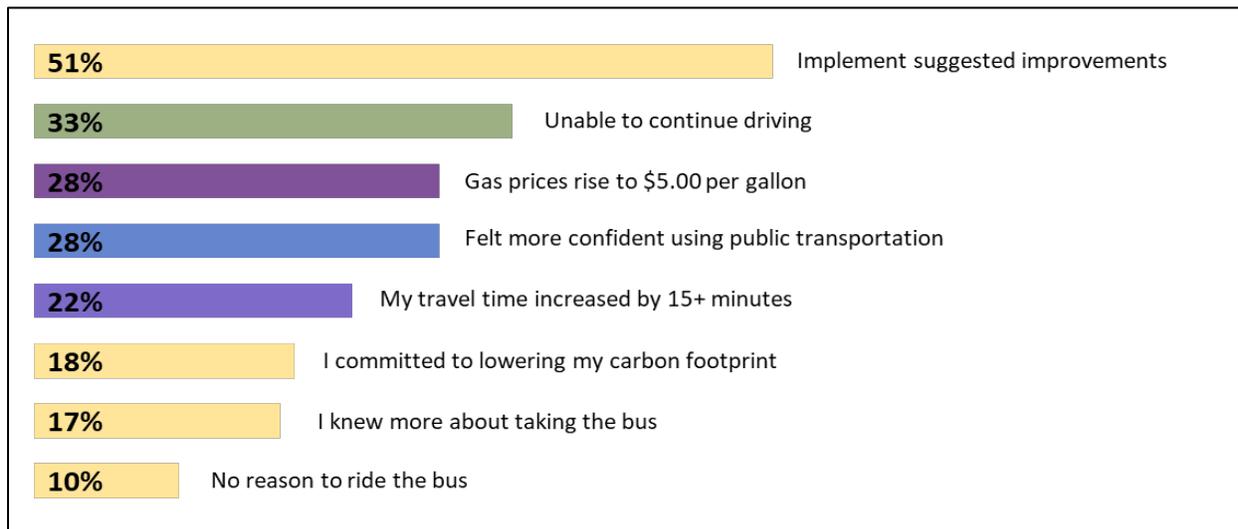


Q13a/Q13b. I would consider using a bus if you make these service improvements
Base: Solo drivers and those who use non-fixed route transit (N = 532)

Reasons to Ride the Bus

Figure 5.11 shows that respondents would consider riding if the service improvements and enhancements they suggested are implemented. No sizable differences between Glendale residents and non-residents or students vs. non-students. Opportunities exist to improve the non-users confidence in public transit and to educate them on the ins and outs of bus ridership. Only 10% of respondents indicated they would not ride the bus.

Figure 5.11
Reasons to Ride the Bus



Q22. Could you see yourself occasionally traveling by bus (at least once monthly) under any of the following circumstances? Base: Solo drivers and those who use non-fixed route transit (N = 490)

Characteristics and Preferences of Beeline or LCF Shuttle Users

Beeline or LCF Usage

When asked they travel most frequently, 80% of respondents reported riding the Beeline or the LCF shuttle three or more days per week (Figure 5.12). Routes 3/31/32 account for 40% of responses, followed by routes 4 (15%), 7 (12%), 2 (12%), and 1 (9%), with the remaining routes receiving one or two mentions.

Figure 5.12
Beeline or LCF Shuttle Usage

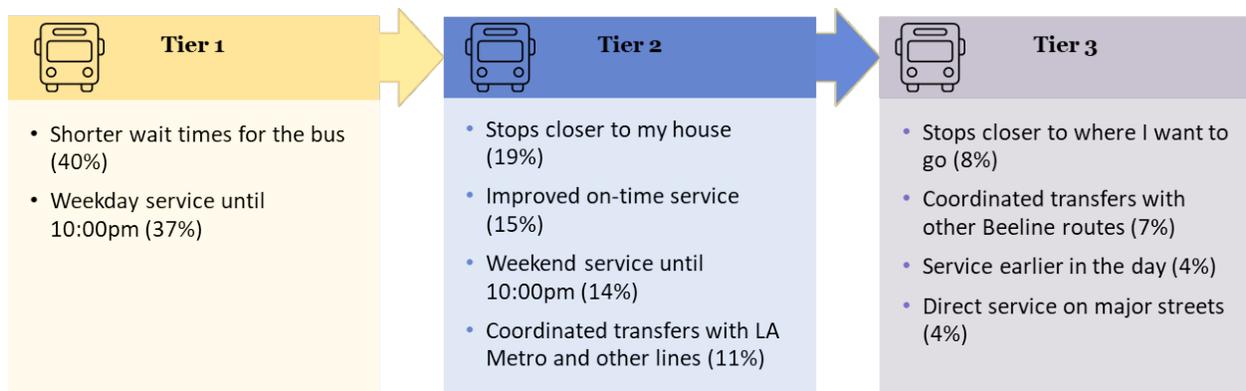


Q23. I ride the Beeline or LCF Shuttle and Q24: Beeline and LCF shuttle routes used most often. Base: Ride Beeline or LCF Shuttle (N = 76)

Service Improvement Considerations for Beeline or LCF Shuttle Riders

Longer weekday service and shorter wait times top the list for current Beeline and LCF Shuttle users as presented in Figure 5.13. With the exception of students wanting a free ride with their student ID, there are no other significant differences between key groups.

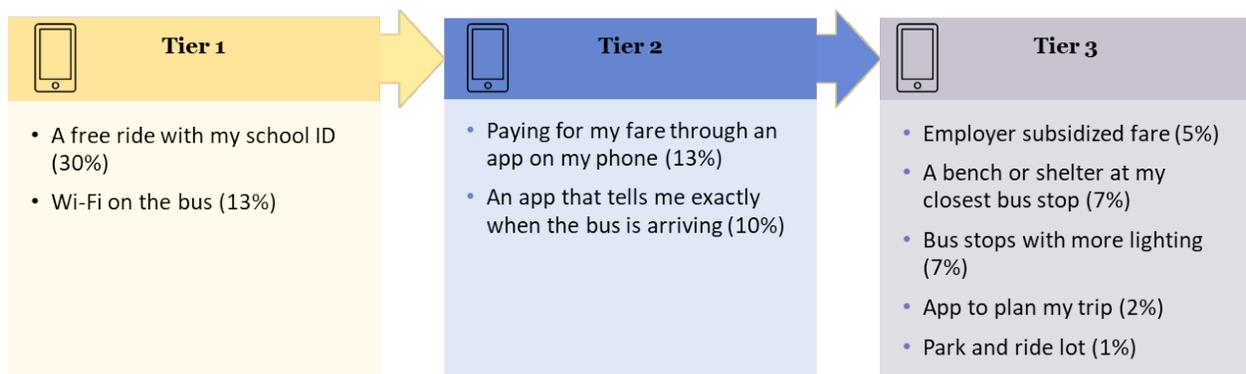
Figure 5.13
Service Improvement Considerations for Beeline or LCF Shuttle Users



Q27a/Q27b. I would consider using the bus more often if you make these service improvements.
 Base: Ride Beeline or LCF Shuttle (N = 57)

Free rides for students with school ID (37%) and Wi-Fi on the bus (13%) top the list of enhancements as seen in Figure 5.14. A second tier of response includes wanting to pay for bus fare through an app and an app that provides real-time bus arrival information. With the exception of students wanting a free ride with their student ID, there are no other significant differences between key groups.

Figure 5.14
Service Enhancement Considerations for Beeline or LCF Shuttle Users



Q28. I would consider using a bus if you make these service improvements.
 Base: Ride Beeline or LCF Shuttle (N = 57)

Characteristics and Preferences of LA Metro and Metrolink riders

Familiarity with Bus Service by LA Metro and Metrolink Users

Over two-thirds of Metro and Metrolink riders also reported using the Beeline (Table 5.5). Glendale residents are more likely to have used the Beeline or LCF Shuttle and Metro compared to respondents living in other communities (72% vs. 58%).

Table 5.5
Familiarity with the Beeline for LA Metro and Metrolink Users

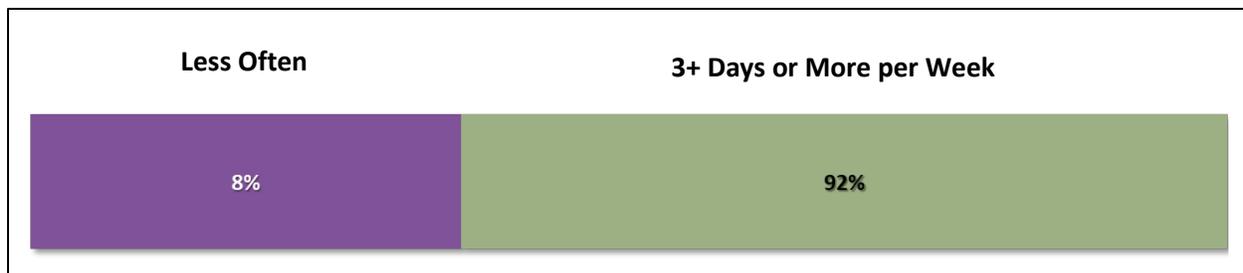
Familiarity with the Beeline	Percent
Use Beeline and Metro	66%
Use Beeline and Metrolink	3%
I don't use Beeline but I am somewhat aware of its routes	13%
I've seen Beeline, but am not familiar with its routes	8%
I don't know anything about Beeline	10%
Total N	62

Q37. How familiar are you with bus service in and around Glendale?
 Base: LA Metro and Metrolink Riders (N = 62)

Bus and Train Usage for LA Metro and Metrolink Users

In Figure 5.15, 92% of respondents report riding LA Metro or Metrolink three or more days per week. When asked what Metro routes they use, only Routes 186 and 165 have five or more mentions.

Figure 5.15
Bus and Train Usage for LA Metro and Metrolink Riders

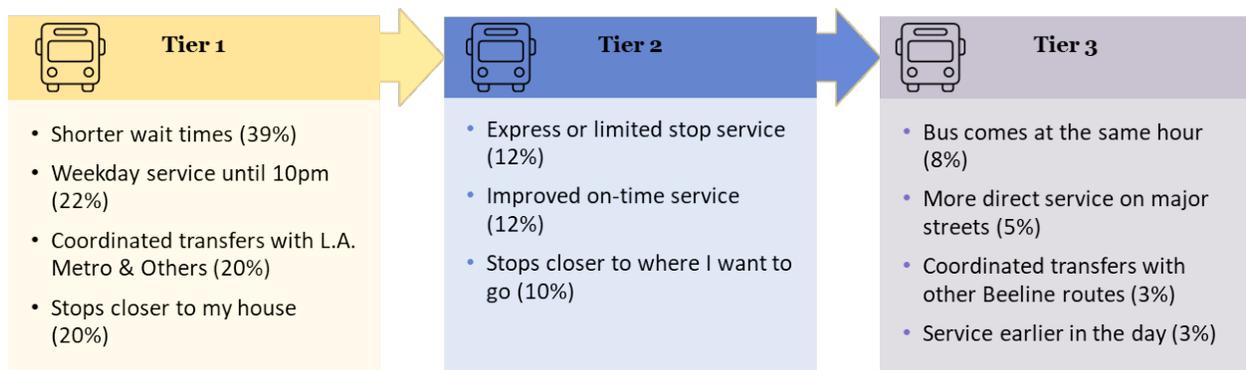


Q38. I ride the bus or train and Q39A/B: Metro and Metrolink routes used most often.
 Base: LA Metro and Metrolink Riders (N = 62)

Service Improvement Considerations for LA Metro and Metrolink Riders

The desire for shorter wait times (39%), weekend service until 10pm (22%), coordinated bus transfers (20%) and stops closer to my house (20%) top the list for current LA Metro and Metrolink users (Figure 5.16). Directionally, those that live outside Glendale, students, and those that use the train are looking for shorter wait times. Students, with their fixed schedules, are interested in improved on-time service.

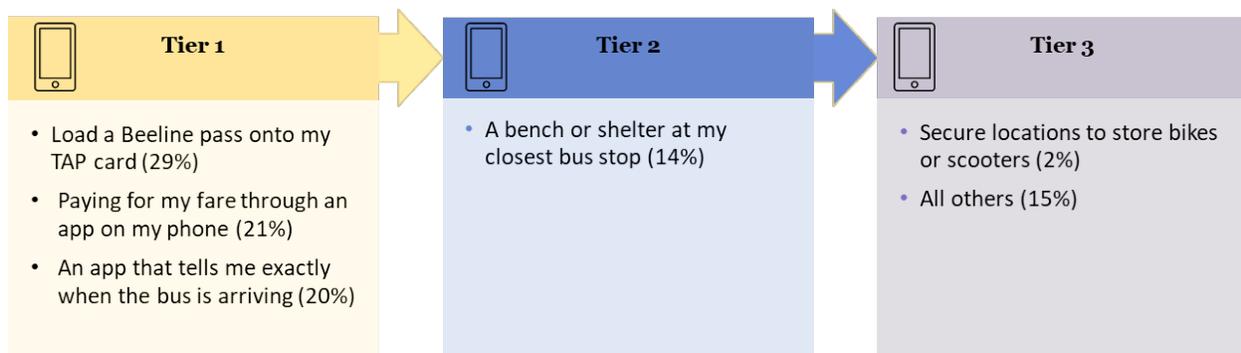
Figure 5.16
Service Improvement Considerations for LA Metro and Metrolink Users



Q40a/Q40b. I would consider using Beeline if you make these service improvements.
 LA Metro and Metrolink Riders (N = 59)

Figure 5.17 shows that Metro and Metrolink riders would like the ability to pay for fare with TAP cards (29%) and Apps (21% and 20% respectively). Having benches and shelters at their closest bus stop was also reported by 14% of respondents. There were no significant differences between key reporting groups.

Figure 5.17
Service Enhancement Considerations for LA Metro and Metrolink Users



Q41. I would consider using Beeline if you make these enhancements.
 Base: LA Metro and Metrolink Riders (N = 56)

5.4 Opportunities

Survey findings highlighted the following opportunities that can be addressed by TRA recommendations:

- Need for transportation is a critical driver for transit usage -one-third of transit riders do not have a vehicle and 43% have one vehicle (significantly higher on both counts than non-transit users).
- Lack of awareness of the Beeline service is a potential area to address. Over 40 percent of responding non-transit users are unaware of any bus service in the Glendale area.
- However, opportunities do exist for educating and travel training non-users. Twenty-eight percent of non-transit users said they would consider riding the bus if they felt more confident. Importantly, only 10 percent of respondents indicated they would not consider riding the bus.
- At 22 percent of all respondents, students represent a significant market. Nearly four out of ten responding students indicated they rode the bus. For students who do ride Beeline or LCF Shuttle, 37 percent wanted a free ride with their student ID. Of students who don't ride the bus, 21 percent reported they wanted a free ride with their student ID.
- This is a potential opportunity—and demand—for later weekday service. Fifteen percent of respondents reported returning home between 8 – 10pm. This is consistent with current bus riders suggested improvement for later service during the week, which was reported as a priority enhancement by 37% of Beeline/LCF Shuttle riders.

**Glendale Beeline
Transit Route Analysis
Chapter 6: Service Concepts and Recommendations**

6.0 Introduction

This chapter brings together the findings of the ridecheck and survey analyses, fieldwork by project team members, discussions with Glendale transit staff, and insights gleaned through the public outreach process to identify and analyze alternatives and make recommendations for transit improvements to the Beeline transit network.

The City of Glendale has changed significantly over the past decade, and continues to change today. Hallmarks of the City include a strong retail environment, with The Americana at Brand joining the Glendale Galleria in the heart of downtown Glendale, office towers along North Brand Boulevard, thriving small businesses scattered throughout the city, new options for living as multi-family housing continues to be built along major streets, and connections via highway, rail, and bus to neighboring cities and the greater Los Angeles region.

How does the Beeline fit within today's Glendale? The strongest and best-utilized metropolitan transit networks have a clear purpose for each route or part of the network as well as a blueprint for how all parts of the network work together and interact seamlessly. The analysis of existing routes helps us to understand the strengths and weaknesses of the Beeline network. The on-board rider survey reveals very positive ratings for all aspects of Beeline service, with an overall rating of 3.57 on a scale of 1 (poor) to 4 (excellent), an improvement over previous years. Yet we know that the Beeline must adapt to changed circumstances if it is to continue to be a relevant transportation option for Glendale residents, employees, and visitors.

How will the Beeline fit within tomorrow's Glendale? Metro is in the process of evaluating a major new Bus Rapid Transit line that will provide fast connections to neighboring cities and other portions of the region. The City is evaluating a Streetcar system for Glendale and possibly Burbank. Either project may make portions of the current network duplicative and therefore obsolete AND will provide new opportunities for the Beeline.

This study develops recommendations for the Beeline network that will help to fulfill its roles as providing mobility for Glendale residents, employees, students, and visitors. The current Beeline route network is designed as a grid, but a grid needs frequent service to maximize its potential.

Existing riders, when asked to choose among various service elements, value greater frequency on existing routes, faster service, additional peak-period service, and later hours of operation in the evening.

E-survey respondents who do not ride the Beeline value a fast, direct ride to their destination, more choices (added routes), a shorter wait (increased frequency), and later service in the evening. The respondents also stressed the need for transit apps that track the buses in real time and enable electronic fare payment. Respondents who ride Metro or Metrolink requested coordinated transfers between these services and the Beeline.

The challenge is to identify recommendations that will provide:

- Frequent, faster, later service
- New connections within the City of Glendale
- New connections between Beeline and Metro/Metrolink – Beeline as the way into Glendale
- Connections to/from neighboring cities

The project team identified service concepts to guide the future growth of the Beeline. These concepts are not mutually exclusive, and the City may choose to give more emphasis to specific concepts that match Glendale's overall goals for growth. The concepts are:

- **Transit for the City of Glendale.** This is the historic reason for creating the Beeline. There are some areas of the City (South Glendale Avenue is one example) that show strong potential for transit ridership yet are not served by Beeline routes. A new route along Glendale Avenue would provide a direct connection between GCC and the Glendale Transportation Center. Another new route in far North Glendale along Foothill Boulevard would connect this part of the City with Sunland/Tujunga to the west and Pasadena to the east. Increased frequency in downtown and along Route 4 makes existing service in the heart of the City more usable.
- **The Connection to Glendale.** Downtown Glendale is a desirable destination for many reasons. The current Metro NextGen study is considering many options and has not yet released recommendations, but one option affecting Glendale is to re-route one or more Metro lines into downtown at Brand & Broadway. This service concept would make the Beeline the connection into downtown and avoid the need for Metro to re-route its lines. To be effective, connecting routes need new transfer locations other than the GTC, enhanced frequency to ensure that a transfer does not involve long wait times, and extended hours of service. Combining Routes 1 and 2 on Central Avenue allows increased frequency in downtown at little or no additional cost. An extension of Route 4 west to San Fernando Road will create a more direct transfer into downtown for Metro riders arriving from the northwest.
- **Coordination with Transit Partners.** A major coordination proposal is to locate all Beeline service in downtown on Central Avenue and all Metro service on Brand Boulevard. Central Avenue would be the corridor for local service and Brand Boulevard the corridor for regional service. As noted above, this allows the Beeline to increase frequency along Central Avenue at minimal cost. Metro has not yet released recommendations from its NextGen study, but discontinuation of some lines serving Glendale may be proposed. Additional frequency on Route 6 along Colorado Street would be appropriate if Metro Line 183 is discontinued; Route 4 also shares a segment with Line 183 and is already proposed for increased frequency. Metrolink is considering new stations, with candidate locations at Grandview and Colorado/Broadway. This would allow a restructuring of Route 12 service to enhance fast and efficient connections between the train station and key employment sites.

- **Faster Service.** Two methods to speed routes are included. The first is to establish a bus-only lane on Central Avenue to improve speed and reliability on this important downtown corridor. The second is to provide non-stop service on a portion of the new Glendale Avenue Beeline route between Broadway and GCC. Along with improving the speed of the route on this segment, this proposal will also avoid over-serving North Glendale Avenue and Verdugo Road, already served by Beeline Routes 3 and 7 and Metro Routes 90 and 91.
- **The Sub-regional Connector.** The Beeline currently provides some service outside of Glendale: Route 12 connects the GTC with Burbank's Regional Intermodal Transportation Center (BRITC) during peak hours, and the Beeline operates the La Cañada shuttles. This service concept envisions additional service connecting Glendale with neighboring cities. The e-survey and on-board survey revealed the most interest in connections with Burbank and Pasadena. New midday service is proposed on Route 12 between the GTC and Burbank Town Center that would also provide all-day service for the first time to the Disney campus. A direct Foothill Corridor route is also proposed, from Sunland/Tujunga through Far North Glendale and La Crescenta to Pasadena.
- **The Eighteen-hour City.** One of the most common complaints heard from Beeline customers is the lack of evening service on the Beeline. The weekday last trip on all routes except Route 3 ends prior to 8:00 pm, and most routes end before 7:00 pm on weekdays. All weekend routes end before 6:30 pm. This service concept indicates later service on weekdays and weekends in response to greater evening activity, especially in downtown Glendale. Demonstration projects are proposed to extend hours of operation on all routes on Friday and Saturday evenings and to extend hours on Monday through Thursday for routes serving GCC to allow students to return home from evening classes.
- **Innovation.** Beeline is in discussions with Metro regarding an extension of the U-pass program to GCC. As noted in greater detail in the next section, lost revenue and potential overcrowding are concerns if college students are allowed to ride free. The City is also developing recommendations for MicroTransit service in difficult-to-reach areas. Metro's Office of Extraordinary Innovation is investigating a MicroTransit demonstration project in several locations including Glendale. Program parameters were developed without real input from the City or from Metro bus operations and, if implemented, the project structure is likely to result in reduced ridership on Beeline and Metro routes.
- **Anticipation of Future Projects.** The North Hollywood to Pasadena BRT study has not yet decided on routing through Glendale. One option would route BRT via Brand Boulevard and either Broadway or Colorado Street. Locating Routes 1 and 2 on Central Avenue and regional service on Brand Boulevard supports this option. The Streetcar Feasibility Study is also considering routing options, with Central Avenue south of Broadway included in all options and Central Avenue north of Broadway an option for one-way northbound or two-way Streetcar travel. The proposal for a bus-only lane along Central Avenue anticipates the Streetcar and can develop travel patterns in advance of Streetcar implementation.

This process of thinking through what we want transit to achieve helps to identify options and provides a focus for recommended actions. Section 6.1 presents recommendations for near-term (within the next year) and mid-term (within 2 to 5 years) improvements to the Beeline network in light of current conditions, input received from stakeholders, riders, and the general public, and potential future projects.

6.1 Recommendations

The project team has developed a series of recommendations that address public input and take into account the service concepts. Recommendations are grouped into near-term (can be implemented within the next year) and mid-term recommendations (for implementation over the next two to five years).

Near-Term Recommendations

Locate Beeline Service on Central Avenue and Metro Service on Brand Boulevard

Routes 1 and 2 are downtown circulators that are mirror images of each other: Route 1 travels north on Central and south on Brand and Route 2 travels north on Brand and south on Central. Combining service on a single street instead of operating a short distance apart would double the frequency of service from one bus every 20 minutes to one bus every ten minutes *at minimal cost*. Central Avenue is chosen over Brand Boulevard to take advantage of street widening improvements and of more transit-friendly land use (retail and apartments along Central, while South Brand Boulevard is a series of automobile dealerships and the northern portion is primarily office towers which generate little ridership outside of peak periods). The Streetcar proposal places most of the service on Central Avenue for the same reasons.

This recommendation would make Central Avenue the corridor for local service and Brand Boulevard the corridor for regional service (Figure 6.1). Metro staff was favorably inclined toward this idea in preliminary conversations and suggested a consolidation of bus stops along Brand Boulevard to achieve faster service.

Frequent service encourages increased transit ridership and thus supports the concept of *Transit for the City of Glendale*. Frequent service also makes transfers between routes more acceptable by reducing the wait time involved, thus supporting the concept of *The Connection to Glendale*.

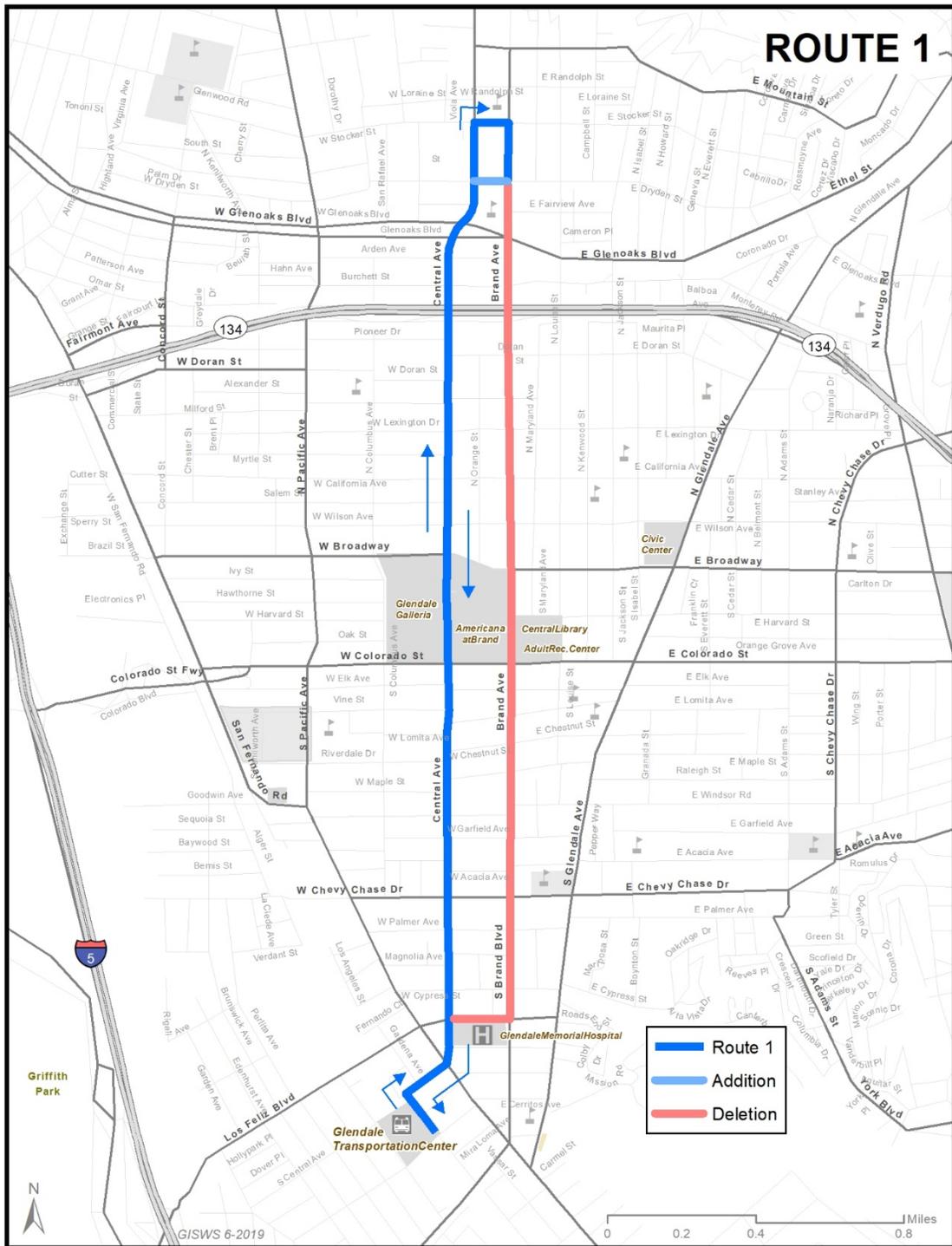


Figure 6.1 Proposed Route 1 (10-minute service), Replacing Existing Routes 1 and 2 (20-minute service)

Introduce a new Route 8 along Glendale Avenue connecting the Glendale Transportation Center with Glendale Community College

Previous Beeline studies have wrestled with the question of whether and how to serve South Glendale Avenue. Unlike several other unserved areas in Glendale, the neighborhoods along South Glendale Avenue show a high orientation toward transit. Metro Lines 90 and 91 operate along this corridor, and the previous studies have not recommended Beeline service on South Glendale Avenue because it would duplicate these Metro lines.

After a careful rethinking of this issue, the recommendation is to establish a new Beeline route (Route 8) along Glendale Avenue with a northern terminus at GCC and a southern terminus at GTC (Figure 6.2). Metro staff agreed that its current service did not connect GTC with the college and that this was a valuable connection. GCC administrators have requested a link to commuter rail. The route would operate every 20 minutes, intertimed with Route 3.

To avoid extensive duplication with Metro and Beeline Routes 3 and 7, Route 8 is proposed to operate express between Broadway and GCC.

Discontinue Route 32

Route 32 was introduced several years ago to provide additional service between downtown Glendale and GCC. The route has never quite lived up to expectations, and the November 2018 ridecheck revealed only 160 riders on a typical weekday, a 55 percent decrease from 2013, and the lowest productivity of any local Beeline route (16.2 riders per revenue hour). With the introduction of the new Route 8 providing 20-minute service on weekdays between the Glendale Transportation Center and GCC, Route 32 will be discontinued. We will analyze the Route 3 schedule with reference to peak ridership at GCC and, if necessary, add a tripper to ensure sufficient capacity in the afternoon.

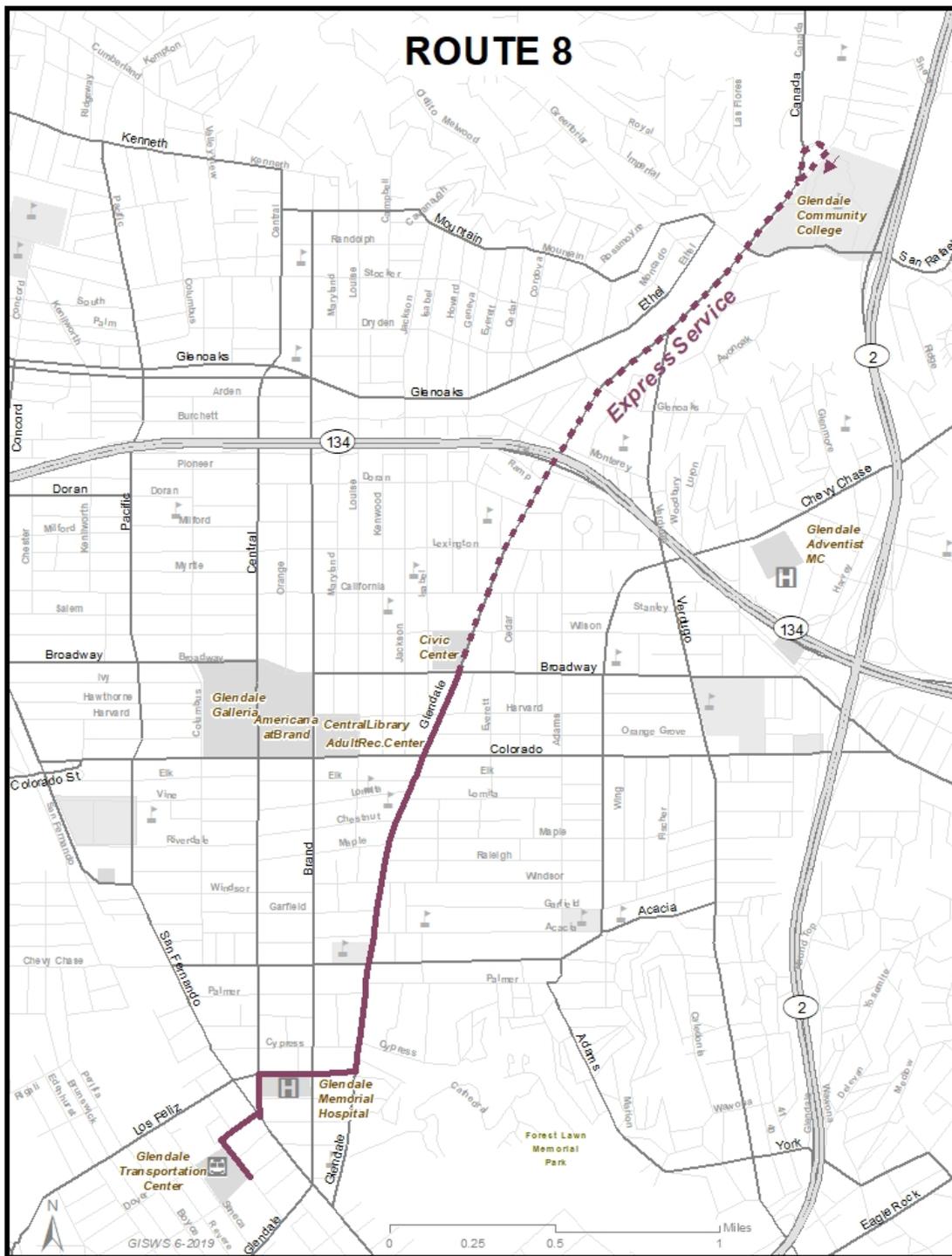


Figure 6.2 Proposed Route 8 – Glendale Avenue

Improve frequency on Route 4 and Extend to San Fernando Road

Route 4 leads all Beeline routes in weekday and Saturday ridership and productivity. This recommendation would increase frequency on this route to one bus every 15 minutes in the near term and also extend the route westward via Broadway to San Fernando Road to connect with

Metro Lines 94 and 794. This connection would provide a more direct route into downtown Glendale for riders coming from northwest of the City. Currently, riders must travel to South Central Avenue and then backtrack to downtown via Route 1 or Route 2.

The challenge for the proposed extension is where to locate the bus stop. Figures 6.3 through 6.6 show options on the four corners at San Fernando Road and Broadway. The best option is the current northbound 94/794 stop on the west side of San Fernando Road south of Broadway (Figure 6.4).

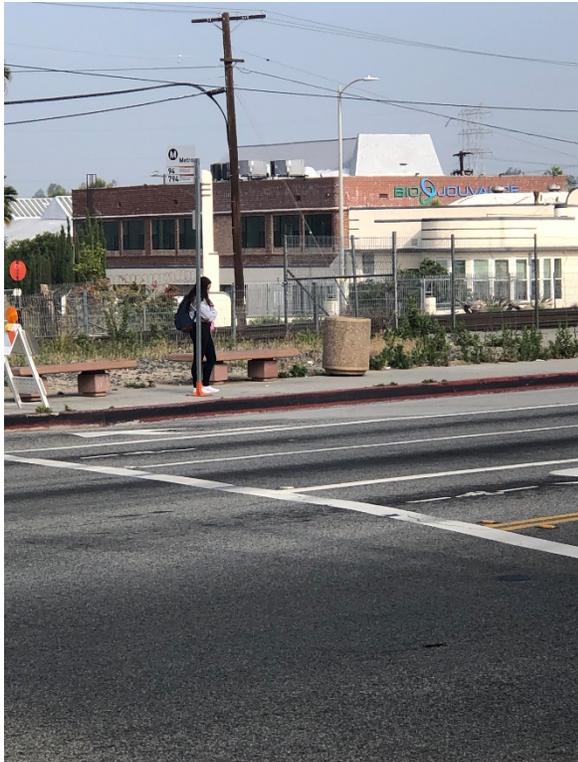


Figure 6.3 Current SB 94/794 stop on San Fernando Road north of Broadway



Figure 6.4 Current NB 94/794 stop on San Fernando Road south of Broadway; preferred location for Route 4 stop



Figure 6.5 Southwest corner of San Fernando Road and Broadway, with no sidewalk



Figure 6.6 Northeast corner of Broadway and San Fernando Road – no space for a stop

The proposed Route 4 extension is shown in Figure 6.7. Changes to Route 4 will provide more frequent service on the entire route and provide a new connection with Metro. In addition to extending the route westward, the changes have also streamlined Route 4 by eliminating the one-way loop via Central-Colorado-Brand to return to Harvard Street eastbound.

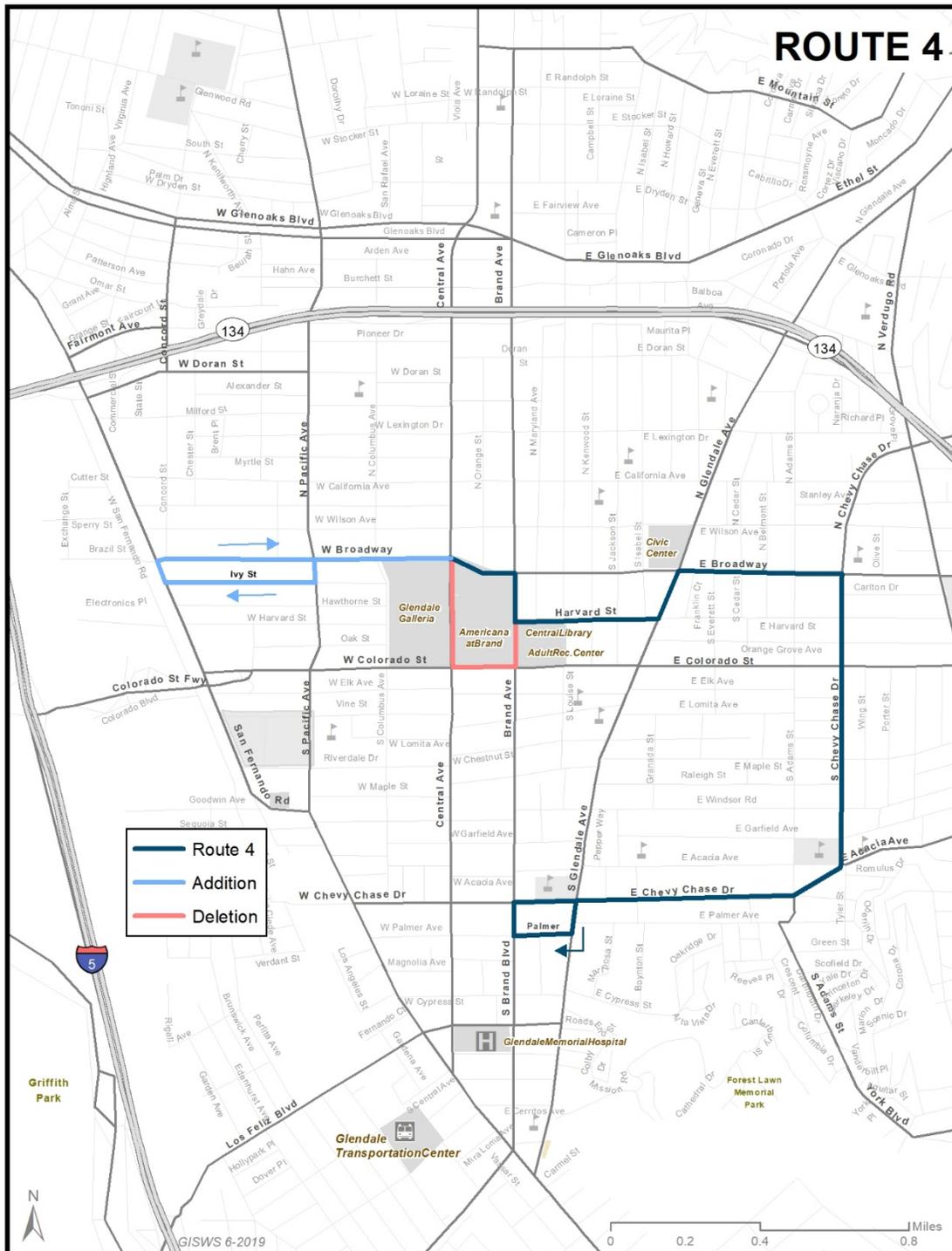


Figure 6.7 Proposed Route 4

Add evening service

This recommendation envisions two pilot projects to provide later service on the Beeline. Evening Pilot A would provide service until 10:15 pm on Monday through Thursday nights during the fall and spring semesters on Routes 3, 7, and 8 (serving the GCC Verdugo campus), and until 8:30 PM Monday through Thursday on Route 4 (serving the GCC Garfield campus).. GCC has night classes on Monday through Thursday nights that are not served by the current schedule. Evening Pilot B would provide service until 10:15 pm on Friday and Saturday nights on local Routes 1 through 8. The Americana at Brand closes at 10 pm on Friday and Saturday, so the last outbound trip would depart at 10:15 pm. Expectations regarding ridership and productivity would be set before implementation on both pilot projects, and the success of the pilot project could be measured in 12 months against expected performance.

Consider participation in a U-pass Program with Metro and GCC

Metro has established a U-pass program with several colleges and transit agencies and would like to add Glendale Community College as a participating institution and the Beeline as a participating transit agency. Students can obtain passes at their school, and the school will be billed at a rate of 75 cents per boarding. Each participating agency will be reimbursed 75 cents per boarding at the end of each semester. Metro reports that 19 schools and 10 transit agencies are currently participating in the U-pass program.

The City raised concerns about potential revenue loss due to a reimbursement rate lower than the current \$1.00 Beeline fare. Metro will not raise its reimbursement rate to the Beeline, but agreed to explore whether GCC would be willing to pay \$1.00 per Beeline boarding.

The Beeline is rightly concerned about the impact on its revenue. To understand the potential impact, consider the scenario in which the Beeline is reimbursed 75 cents per student boarding under the U-pass program. To simplify the analysis, assume 1,000 student boardings. How much would ridership need to increase to make the U-pass revenue-neutral?

$$\begin{aligned}
 \text{Current revenue} &= \text{Current ridership} * \text{Current fare} \\
 &= 1,000 * \$1.00 \\
 &= \$1,000
 \end{aligned}$$

$$\begin{aligned}
 \text{Required ridership to break even} &= \text{Current revenue} \div \text{Future fare} \\
 &= \$1,000 \div \$0.75 \\
 &= 1,333 \text{ riders}
 \end{aligned}$$

To break even, ridership by GCC students would have to increase by 33.3 percent. Metro has reported large ridership increases attributable to the U-pass program at other agencies and schools. Without knowing the details of the U-pass program at other agencies, it requires a leap of faith to assume that the Beeline could achieve a similar increase. On an average weekday while GCC is in session, there are 428 boardings on Routes 3, 32, and 7 at the GCC bus stops. Assuming all of these boardings are GCC students and they all travel to GCC via the Beeline, 286 additional daily boardings to and from school using a U-pass on an average weekday would be required to break even.

This analysis does not take into account non-school trips made by GCC students. Community college students are often frequent riders on the local transit system, because they have grown up in the community using public transportation. The on-board survey revealed that 16 percent of respondents are between age 18 and 24. Not everyone in this age group is a GCC student and not all GCC students are in this age group, but the required ridership increase to break even on a U-pass for GCC students would obviously be higher than the 286 additional boardings calculated in the preceding paragraph.

The Beeline is right to be concerned about the impact of a U-pass program at GCC on its farebox revenue. This study recommends that the Beeline continue to explore ways of participating in the U-pass program while keeping fare revenue whole. The study further recommends that any agreement to participate in a U-pass program be structured as a one-year demonstration project, with ridership and revenue impacts to be calculated at the end of the demonstration period.

Microtransit

Metro's Office of Extraordinary Innovation is undertaking a Microtransit Pilot Project and has selected Glendale as one potential location for the pilot. On its website, Metro states¹:

Most research indicates MicroTransit has the potential to be complementary to transit. We are more interested in determining if expanding our menu of options provides improved mobility for our customers, rather than whether it takes away ridership from other modes. If existing riders wind up preferring this service to our other services, that is very useful to know.

Beeline personnel were invited to a meeting with Metro and RideCo, the company selected to develop a potential MicroTransit project in Glendale. In preliminary conversations prior to the meeting, potential areas for MicroTransit in the City were discussed. Unfortunately, the boundaries for this study were set (with no input from Glendale) to include the heart of the Beeline system and the Metro hub in Glendale. Despite disclaimers that MicroTransit would not compete with transit, the only North American case study on the RideCo website in Milton, ON evaluates "success" in comparison with the local bus agency and states that if the pilot were allowed to continue, ridership could have tripled and productivity would have been 6 passengers per revenue hour.² This suggests that the actual productivity of this case study was 2 passengers per revenue hour.

Metrolink is also beginning a MicroTransit partnership with Via to provide trips to and from selected Metrolink stations, including Burbank. The May 23 announcement of the new partnership notes that trips on Via will be free for a limited time and will be provided within a 13-square mile radius of the Burbank station. This new service directly competes with Route 12, especially during the fare-free period. Metrolink did not consult with the City of Glendale prior to announcing this service.

MicroTransit has captured the interest of stakeholders and elected officials as a new service concept that enhances mobility. What is new about MicroTransit is the ease of booking a trip

¹ <https://www.metro.net/projects/microtransit/> - see the fifth entry under FAQs

² <https://docsend.com/view/wktxxms>, p. 11

through an app. The service concept is not new; the transit industry's term for the concept is "general public demand-response service." Relatively few agencies offer this service because of cost and productivity issues, which apply equally to MicroTransit.

A well-designed general public demand-response service serving multiple origins and destinations can generate up to 5 riders per revenue hour of service (note the RideCo experience in Milton cited above, which had 2 riders per revenue hour). Door-to-door service is inherently inefficient, which is why taxi and Uber/Lyft trips cost more than transit trips. The lowest-productivity Beeline route (Route 31 on Saturday) carries 10 riders per revenue hour, while the overall Beeline average for local service is 22 riders per revenue hour on weekdays and 16 on Saturday.

MicroTransit can play a role within an existing transit network by providing first-mile and last-mile connections in areas with low population densities, discontinuous street patterns, and poor or absent pedestrian facilities where fixed-route transit will not be productive. When zones for MicroTransit overlap existing transit networks, as is the case in the Metro and Metrolink demonstration projects, MicroTransit service, which is inherently less efficient due to its many-to-many trip patterns, will take ridership away from conventional transit systems.

There is also the issue of curb space. In busy places like downtown Glendale, the only open curb spaces are generally at bus stops. Use of these stops by other vehicles will cause delays in existing transit service, with a consequent negative impact on ridership.

The evaluation of Metro and Metrolink MicroTransit projects must take into account the effect on transit ridership within MicroTransit zones (though questions such as "How would you make this trip if this service did not exist" or "How did you previously make this trip?"). The evaluation must also provide quantitative measures such as riders per revenue hour of service.

This is not to say that demonstration projects should not be undertaken. The City recommended the area north of Route 3 along Foothill Boulevard, extending west to encompass the Far North Glendale city limits, as an ideal area for MicroTransit, where it can serve a true "first-mile/last-mile" function complementing the existing fixed-route network. This study recommends that the City develop its own MicroTransit demonstration project in this area using its existing dial-a-ride vehicles to test the feasibility of MicroTransit as a service truly complementary to existing fixed-route service. As part of this demonstration, the study further recommends that the City explore possible financial participation by Los Angeles County and the City of Los Angeles, which may affect the geographic boundaries of the demonstration project.

Add Service to Burbank

The e-survey revealed interest in additional service between Glendale and Burbank, with the Burbank Town Center mentioned frequently as a desirable destination. Beeline Route 7 along Glenoaks Boulevard would be a logical route to extend to Burbank, but this would require discontinuing service to the Riverside Rancho neighborhood and also would duplicate Metro Line 92 that operates on Glenoaks Boulevard to Burbank. Route 7 could also be extended to the Downtown Burbank Station, but there does not appear to be demand for this connection.

An alternate connection to Burbank involves a restructuring of Beeline Route 12, the Metrolink Express route between the BRITC and GTC during peak hours. The peak hour service would remain the same, with trips scheduled to make connections to Metrolink trains. This recommendation would introduce service during the midday on Route 12. This would provide all-day service to the Disney Grand Central Creative Campus on Flower Street & Circle 7 Drive. The existing routing of Route 12 provides a direct connection to BRITC, but there is not a great deal of activity at that location outside of peak hours.

The recommended alternative for midday service on Route 12 would be to turn north from Flower onto Alameda, turn left on San Fernando and terminate near the Burbank Town Center (Figure 6.8).

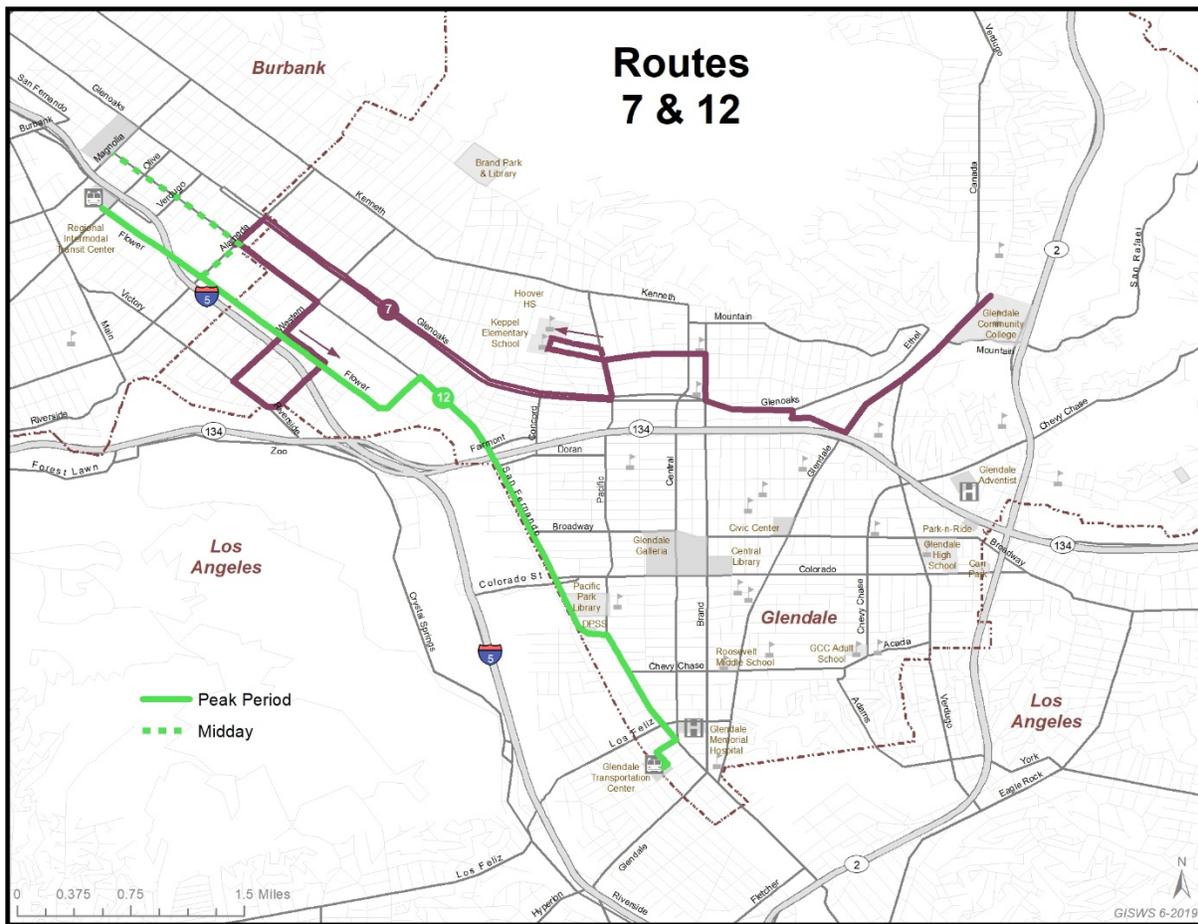


Figure 6.8 Proposed Midday Extension of Route 12

Another possible action related to Route 12 has been discussed recently with the City of Burbank. Burbank Bus is interested in exploring a route that would connect its residents north of downtown Burbank with downtown, the BRITC, and the Disney complex in Glendale. This route might also absorb the Rancho Riverside segment of the Beeline Route 7 and then travel to downtown Glendale. An interagency agreement regarding operation and funding of such a route would obviously be needed, as well as greater detail on where each city needs the route to operate,

making this action more appropriate in the mid-term. There is general agreement that the northeast section of Burbank and the northwest section of Glendale are underserved currently by transit and that connecting the two sections is a logical option that would benefit both cities.

Restructure Route 11

Route 11 is the Metrolink Express route that connects GTC and downtown Glendale. Based on ridership patterns, the recommendation for streamlining this route is to serve Brand Boulevard only, since the new Route 8 will provide a direct connection to Glendale Avenue. In the morning Route 11 will travel north along Brand Boulevard and return non-stop to the GTC via Central Avenue. In the afternoon, the route will travel non-stop north on Central Avenue and east on Glenoaks Boulevard, begin service at Brand & Monterey, and travel south along Brand Boulevard, returning to GTC via Los Feliz and Central (Figure 6.9). This option provides a more direct and faster connection between GTC and Brand Boulevard.

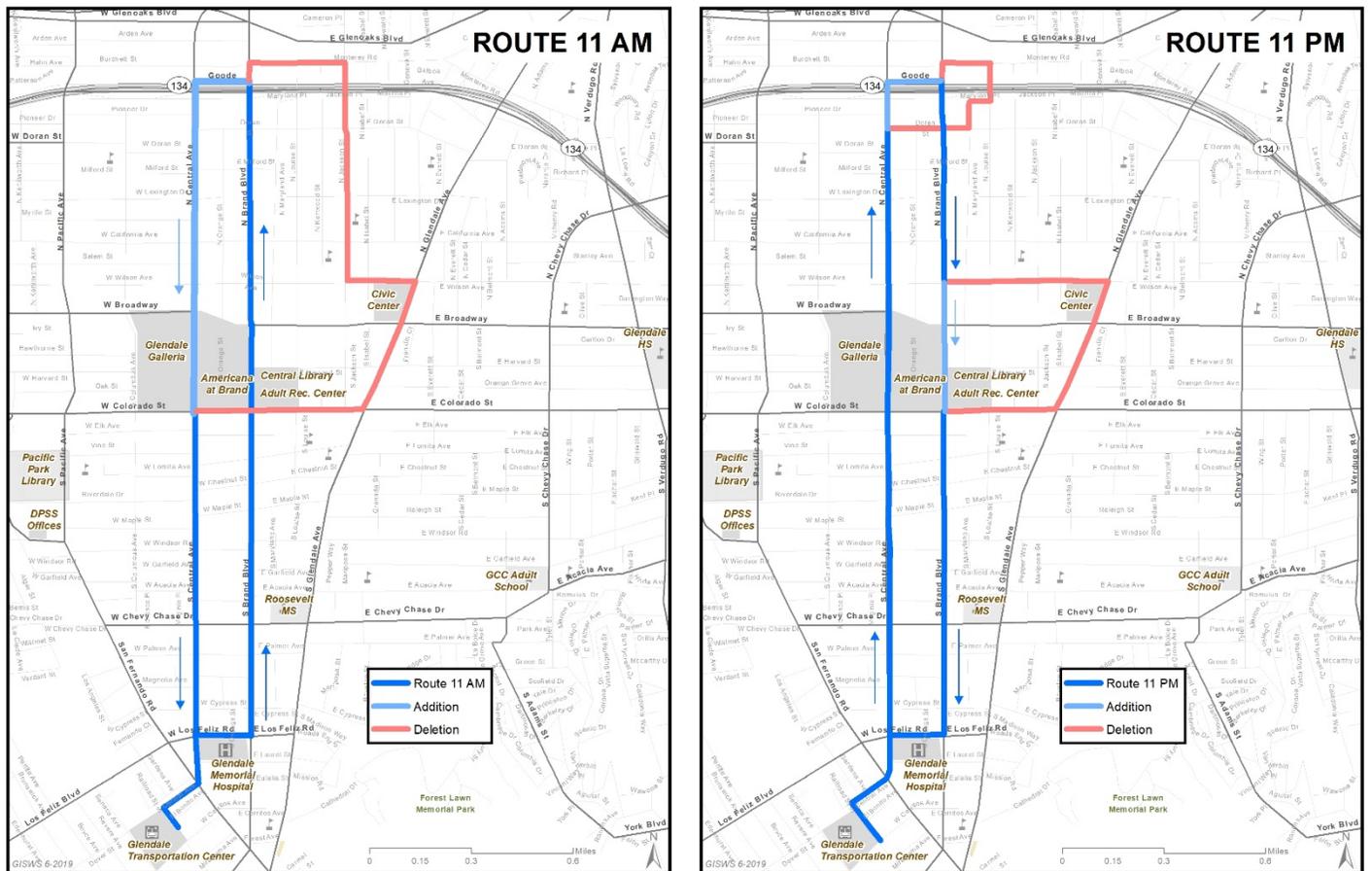


Figure 6.9 Proposed Route 11 AM and PM

Restructure Service at Hoover High School

Every trip on Beeline Route 7 serves Hoover High School and Toll Middle School on a route deviation via Glenwood – Concord – Stocker. 80 percent of eastbound alightings at the Glenwood & Concord stop occur on three trips and two-thirds of westbound boardings occur on a single trip. The recommendation is to deviate only certain trips at school bell times to the schools and operate

the remainder of the trips via Pacific and Stocker without a deviation (Figure 6.10). Passengers needing to travel to this location can transfer to Route 5.

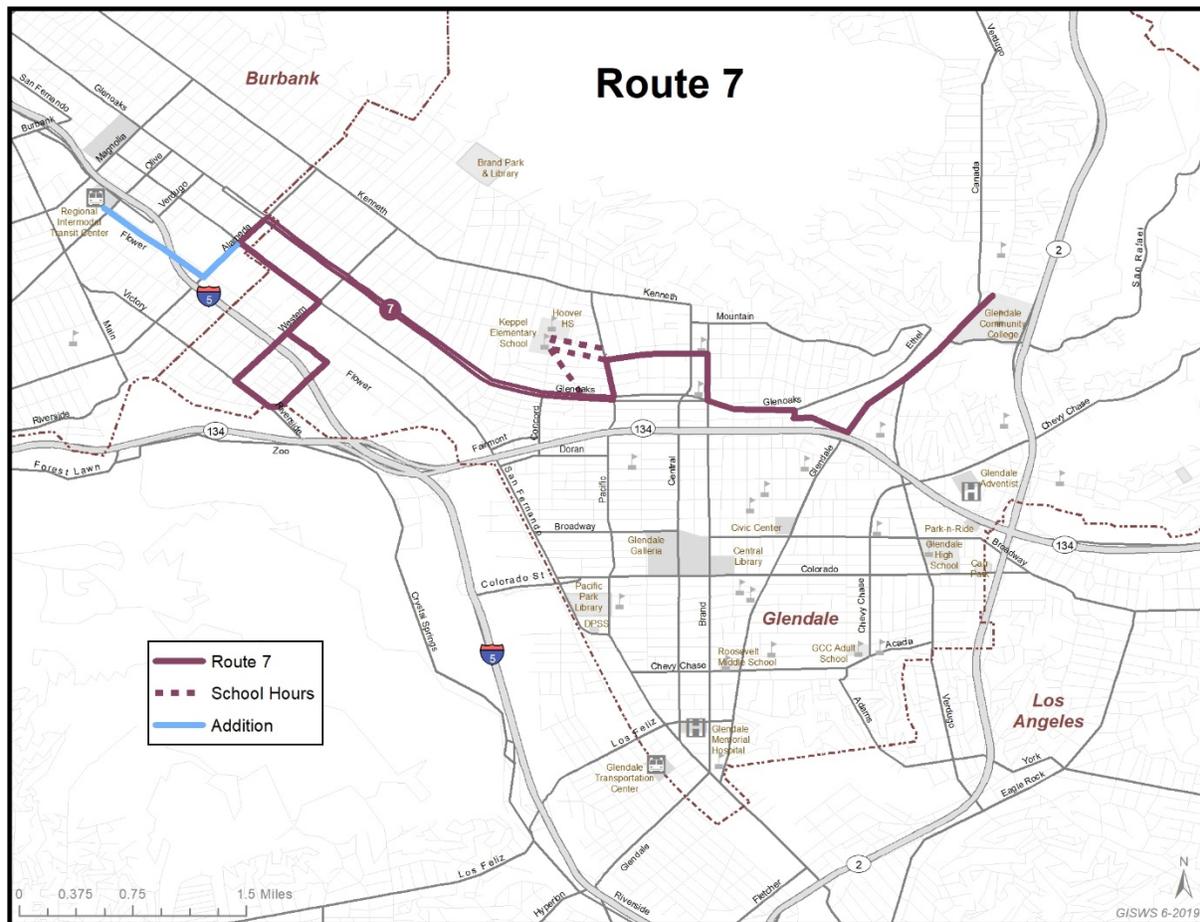


Figure 6.10 Proposed Route 7

Another possibility (shown with a dotted line in Figure 6.10) is to shorten the westbound deviation by traveling south on Kenilworth instead of Pacific between Stocker and Glenoaks. This would cause confusion if the primary recommendation to serve Glenwood & Concord during school times only is adopted, but is an alternative to reduce travel time.

Adjustments to the schedules of Routes 5 and 7 are also warranted. Each route has a “tripper” (a bus that operates only on school days to accommodate students) that is scheduled to leave at 3:10 (Route 5) or 3:15 (Route 7). Fieldwork indicated that Hoover High School students begin congregating at the stop at 3:00 pm. Regular Route 5 buses are scheduled to leave at 2:51 and 3:16 (this trip picks up students remaining after the tripper) and regular Route 7 buses are scheduled to leave at 2:54 and 3:27. Modifications to the schedules may permit timelier pickup of students and avoid the overcrowding that occurs between 3:00 and 3:10 pm (shown in Figures 6.11 and 6.12).



Figure 6.11 Glenwood & Concord, 3:05 pm



Figure 6.12 Glenwood & Concord, 3:10 pm

Mid-Term Recommendations

Establish Dedicated Bus Lanes on Central Avenue in Both Directions

Several studies and plans over the past 15 years have called for transit signal priority and bus-only lanes in Downtown Glendale. Frequent Beeline service along Central Avenue makes this corridor the preferred location for dedicated bus lanes combined with transit signal priority to speed bus service. Dedicated lanes (one in each direction) could be established along the length of Central Avenue between Stocker Street and San Fernando Road or in the most congested segment between Glenoaks Boulevard and Colorado Street.

The combination of increased frequency and speed for Beeline routes on Central Avenue will greatly enhance the attractiveness of transit service. This recommendation anticipates eventual Streetcar operation on Central Avenue.

Restructure the Foothill Corridor

There is no through service on Foothill Boulevard between Tujunga/Sunland and Pasadena. Metro Lines 90 and 91 serve the western segment while Routes 3, 33, and 34 provide service on the eastern segment as far as JPL and La Cañada High School. A Foothill Boulevard route between Tujunga and the Gold Line Memorial Station in Pasadena would provide more coherent and structured service within the corridor. The recommended routing for the Beeline Route 9 is shown in Figure 6.13.

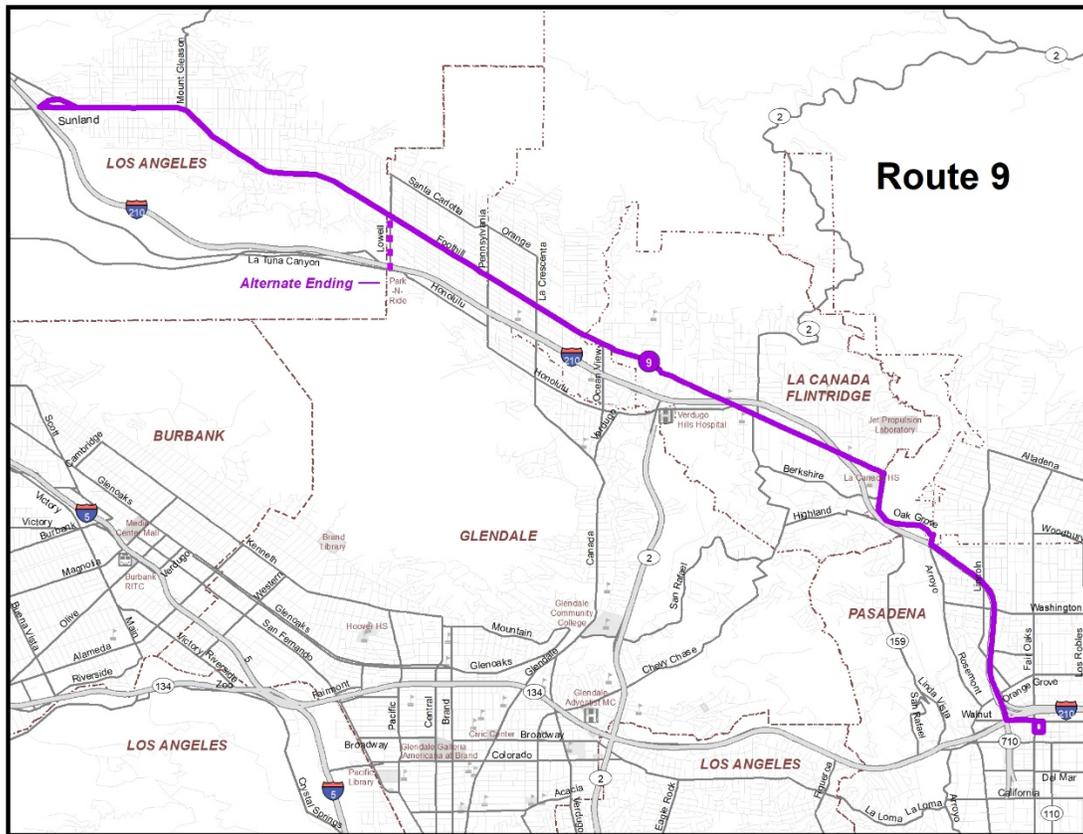


Figure 6.13 Proposed New Foothill Boulevard Route (Route 9)

The route could operate non-stop in Pasadena to the Gold Line. An alternate western terminus for this route is the park-and-ride lot at Lowell Avenue (shown as a dotted line on Figure 6.13) or at a nearby location in Far North Glendale where a turnaround loop is possible.

This recommendation involves coordination among multiple jurisdictions regarding funding for the route. The City and County of Los Angeles, the City of La Cañada Flintridge, and the City of Pasadena would all be served by the long version of the proposed route, in addition to the City of Glendale.

With the new Foothill Boulevard route, Route 3 could be restructured to terminate at Pennsylvania Avenue & Foothill Boulevard (Figure 6-14).

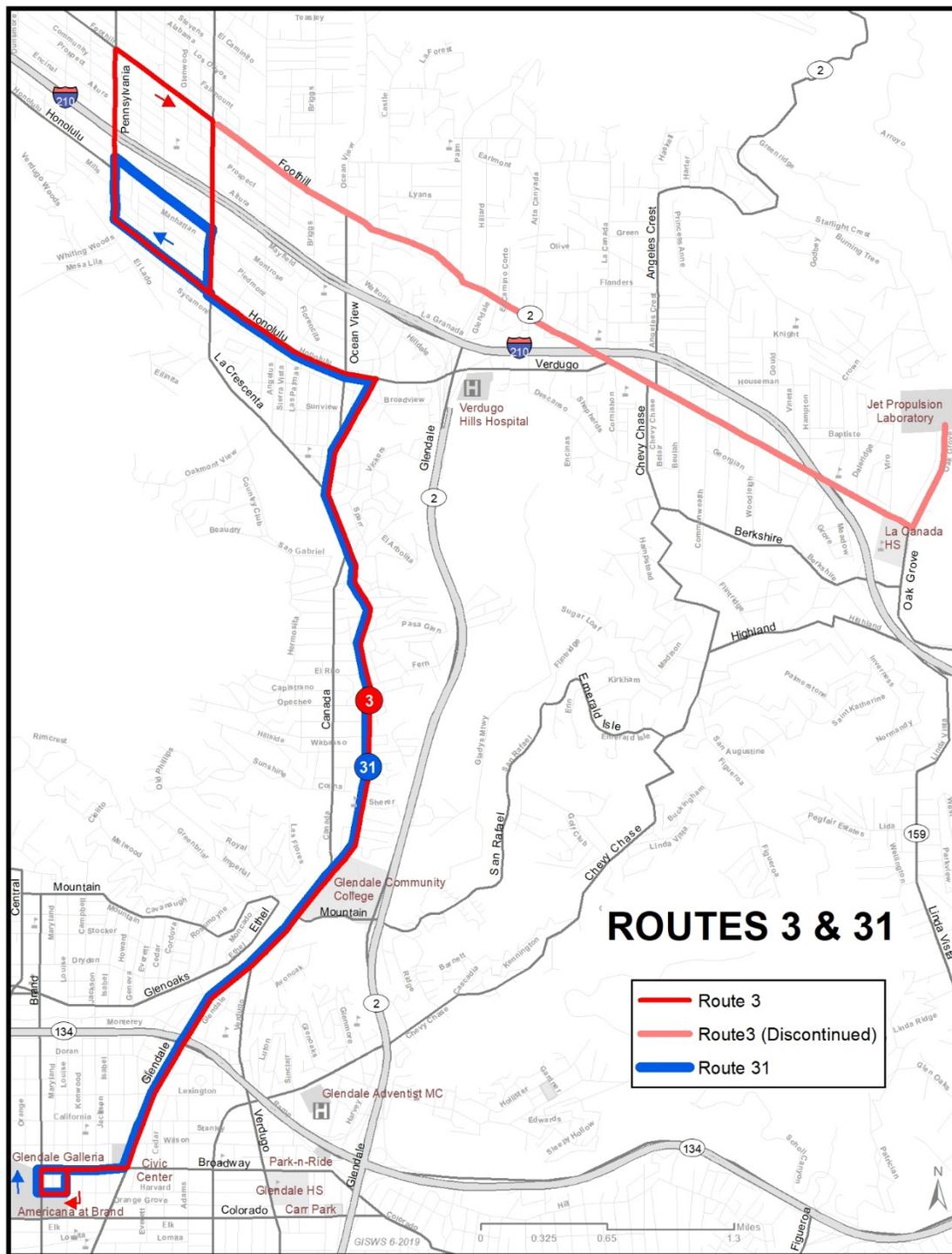


Figure 6.14 Restructured Route 3 (31 on Saturday remains the same)

The new routing for the shortened Route 3 is west on Honolulu, north on Pennsylvania, east on Foothill, and south on La Crescenta. Transfers could be made to/from the new Route 9 at Foothill & Pennsylvania or Foothill & La Crescenta and to/from the La Cañada Flintridge shuttles (Routes 33 and 34) at Montrose & Waltonia or at Ocean View & Honolulu.

Metro is considering a related alternative to keep Routes 90 and 91 on Montrose Avenue (currently the lines split, with Line 90 via Montrose and Pennsylvania and Line 91 via Honolulu and La Crescenta). This would be similar to the agreement to concentrate Beeline service on Central Avenue and Metro service on Brand Boulevard in downtown Glendale: Beeline Route 3 would operate on Honolulu and Metro Lines 90 and 91 would both operate on Montrose.

Respond to Potential NextGen Changes in Glendale

Metro's NextGen study is still underway and its final recommendations are unknown, but discontinuation of Metro Lines 94, 794, 183, 201, and 685 could be part of the final recommendations. This study does not recommend that the Beeline assume operation of any discontinued Metro lines because these are not productive bus routes and because alternate service is available on nearly all segments of these routes in Glendale. The City has emphasized its concerns regarding Metro's possible elimination of service in east Glendale (served by Routes 201 and 685), which would leave the Glendale-Adventist Medical Center and much of the Verdugo Road corridor unserved.

Discontinuation of Line 183 would reduce the amount of service on Colorado Street between Brand and Verdugo. The mid-term recommendation if Line 183 is discontinued is to increase frequency on Route 6 along Colorado Street to a consistent 15 minutes.

Extend Route 4 to the Glendale Transportation Center

The southern terminus of Route 4 is at Palmer Avenue & Brand Boulevard. This proposal would extend Route 4 west on Chevy Chase (replacing its current turnaround loop) and south on Central to the GTC. This would provide a direct link between the Glendale Transportation Center and the GCC Garfield campus.

GCC has requested this link, but demand for the Route 4 extension is uncertain. It is included among the mid-term proposals pending further analysis of travel patterns to and from the Garfield campus.

6.2 Ridership, Revenue and Cost Impacts

Tables 6.1 and 6.2 show daily and annual impacts of proposed changes.

Table 6.1
Daily Impacts of Recommendations

Route	Recommendation	Daily Impacts on				
		Ridership	Revenue	Operating Cost	Net Op. Cost	Revenue Hours
NEAR--TERM RECOMMENDATIONS (within 1 year)						
1 and 2 weekday	Combine service on Central at 10'	149	\$75	\$0	(\$75)	0.00
1 and 2 Saturday	Combine service on Central at 10'	11	\$6	\$0	(\$6)	0.00
1 and 2 Sunday	Combine service on Central at 10'	19	\$9	\$0	(\$9)	0.00
8 Weekday	New route via S. Glendale 20'	592	\$299	\$3,168	\$2,870	35.88
8 Saturday	New route via S. Glendale 20'	187	\$95	\$1,402	\$1,308	15.88
32 Weekday	Discontinue due to poor productivity	(160)	(\$81)	(\$871)	(\$790)	(9.87)
4 weekday	15' frequency + extension to SFR	104	\$52	\$640	\$587	7.24
4 Saturday	20' frequency + extension to SFR	73	\$37	\$456	\$420	5.17
4 Sunday	20' frequency + extension to SFR	48	\$24	\$456	\$432	5.17
1-7 weekday	Pilot: evening service Friday	546	\$276	\$5,055	\$4,780	57.25
1-7 Saturday	Pilot: evening service Saturday	524	\$264	\$6,645	\$6,380	75.25
3 4 7 8 weekday	Pilot evening service M-Th	236	\$119	\$2,193	\$2,073	24.83
7 weekday	Restructure at Hoover HS	16	\$8	\$0	(\$8)	0.00
7 Saturday	Restructure at Hoover HS	4	\$2	\$0	(\$2)	0.00
11 weekday	Restructure PM service	0	\$0	\$0	\$0	0.00
12 weekday	Midday service to Burbank	156	\$79	\$1,589	\$1,511	18.00
U-pass program	UNKNOWN					
Glendale MicroTransit	UNKNOWN					
Total Weekday - Near-term		1,639	\$827	\$11,774	\$10,947	133
Total Saturday - near-term		799	\$403	\$8,503	\$8,100	96.30
Total Sunday -near term		66	\$33	\$456	\$423	5.17
MID-TERM RECOMMENDATIONS (2-5 years)						
1 and 2 weekday	Dedicated bus lane	22	\$11	\$0	(\$11)	0.00
1 and 2 Saturday	Dedicated bus lane	10	\$5	\$0	(\$5)	0.00
1 and 2 Sunday	Dedicated bus lane	9	\$4	\$0	(\$4)	0.00
4 weekday	10' frequency	285	\$144	\$2,119	\$1,975	24.00
4 weekday	Extend to GTC	74	\$37	\$1,060	\$1,022	12.00
Foothill Blvd. wkd	New Route 9/truncated Route 3	561	\$283	\$3,002	\$2,719	34.00
6 weekday	consistent 15' frequencies	114	\$57	\$955	\$898	10.82
6 Saturday	consistent 20' frequencies	13	\$7	\$124	\$118	1.41
Total Weekday - mid term		1,056	\$533	\$7,136	\$6,603	81
Total Saturday mid-term		23	\$12	\$124	\$113	1.41
Total Sunday mid-term		9	\$4	\$0	(\$4)	0.00

**Table 6.2
Annual Impacts of Recommendations**

Route	Recommendation	Annual Impacts on				
		Ridership	Revenue	Operating Cost	Net Op. Cost	Revenue Hours
NEAR--TERM RECOMMENDATIONS (within 1 year)						
1 and 2 weekday	Combine service on Central at 10'	37,995	\$19,178	\$0	(\$19,178)	0
1 and 2 Saturday	Combine service on Central at 10'	572	\$289	\$0	(\$289)	0
1 and 2 Sunday	Combine service on Central at 10'	962	\$486	\$0	(\$486)	0
8 Weekday	New route via S. Glendale 20'	150,979	\$76,209	\$807,967	\$731,759	9,150
8 Saturday	New route via S. Glendale 20'	9,746	\$4,919	\$72,930	\$68,010	826
32 Weekday	Discontinue due to poor productivity	(40,800)	(\$20,594)	(\$222,164)	(\$201,569)	(2,516)
4 weekday	15' frequency + extension to SFR	26,444	\$13,348	\$163,095	\$149,747	1,847
4 Saturday	20' frequency + extension to SFR	3,779	\$1,907	\$23,723	\$21,816	269
4 Sunday	20' frequency + extension to SFR	2,479	\$1,251	\$23,723	\$22,472	269
1-7 weekday	Pilot: evening service Friday	28,396	\$14,333	\$262,869	\$248,536	2,977
1-7 Saturday	Pilot: evening service Saturday	27,246	\$13,753	\$345,518	\$331,765	3,913
3 4 7 8 weekday	Pilot evening service M-Th	37,836	\$19,098	\$289,447	\$331,747	3,973
7 weekday	Restructure at Hoover HS	4,009	\$2,023	\$0	(\$2,023)	0
7 Saturday	Restructure at Hoover HS	185	\$413	\$0	(\$413)	0
11 weekday	Restructure PM service	0	\$0	\$0	\$0	0
12 weekday	Midday service to Burbank	39,694	\$20,036	\$405,297	\$385,261	4,590
U-pass program	UNKNOWN					
Glendale MicroTransit	UNKNOWN					
Total Weekday - Near-term		284,552	\$143,631	\$1,706,512	\$1,624,278	20,022
Total Saturday - near-term		41,527	\$21,281	\$442,171	\$420,890	5,007.60
Total Sunday -near term		3,441	\$1,737	\$23,723	\$21,987	268.67
Annual Total - Near-Term		329,521	\$166,649	\$2,172,406	\$2,067,155	25,298
MID-TERM RECOMMENDATIONS (2-5 years)						
1 and 2 weekday	Dedicated bus lane	5,671	\$2,863	\$0	(\$2,863)	0
1 and 2 Saturday	Dedicated bus lane	537	\$271	\$0	(\$271)	0
1 and 2 Sunday	Dedicated bus lane	442	\$223	\$0	(\$223)	0
4 weekday	10' frequency	72,720	\$36,706	\$540,396	\$503,690	6,120
4 weekday	extend to GTC	18,864	\$9,522	\$270,198	\$260,676	3,060
Foothill Blvd. wkd	New Route 9/truncated Route 3	143,897	\$72,633	\$770,064	\$697,431	8,721
6 weekday	consistent 15' frequencies	28,977	\$14,627	\$243,588	\$228,961	2,759
6 Saturday	consistent 20' frequencies	683	\$345	\$6,470	\$6,125	73
Total Weekday - mid term		270,129	\$136,351	\$1,824,246	\$1,687,895	20,660
Total Saturday		1,220	\$616	\$6,470	\$5,854	73
Total Sunday mid-term		442	\$223	\$0	(\$223)	0
Annual Total - Long-Term		271,791	\$137,190	\$1,830,716	\$1,693,526	20,733