

# **Rail Service Opportunities South of Tamien Station**

## **March 2019**

### **Introduction**

This paper explores the travel needs in the corridor extending from downtown San Jose south to the southern part of San Jose and to the South County cities of Morgan Hill and Gilroy. The paper also investigates potential rail transit services that could help address these travel needs and provide alternatives to offset current traffic congestion.

### **Background**

The South San Jose/South County Corridor is a 30-mile well-developed, mostly residential corridor. Residential densities are low to medium, with some recent, higher density developments. Retail and employment areas are scattered along the corridor and are generally suburban in character. Some sections of rural and protected lands separate the South County cities.

In terms of transportation, there have been few improvements in the last 25 years. Key highway projects from the 1990s included widening of US 101 and the construction of SR 85 and 87. On the transit side, there has been bus service along the Monterey Road corridor for many years. In 1992, Caltrain service was extended to Gilroy, with stations in San Martin, Morgan Hill and South San Jose. However, currently only three peak period round trips per day are provided.

As strong job growth has continued in the last decade, coupled with limited housing development and affordability, many workers have been pushed to live in South San Jose, South County or further outside the County. The result has been longer commutes, increased traffic congestion and greater auto reliance due to lack of alternatives.

### **Transportation Needs and Challenges**

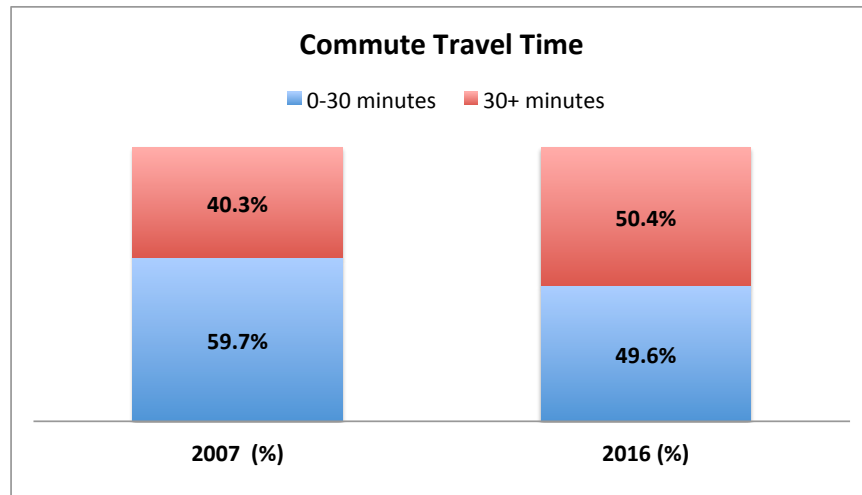
While commute alternatives are limited today, there is work underway to provide new options. This section reviews travel demand issues and planning opportunities.

### **Travel Characteristics and Mode Shift Opportunities**

South San Jose and South County commuters have slightly longer commutes and higher drive-alone rates than the rest of Santa Clara County. These trends have intensified in recent years with strong job growth. For example, 95% of new commute trips in San Jose over the past decade have been auto trips. As a result, traffic volumes, travel time and congestion on key commute arteries (85, 87, 280, 101) have increased significantly. For example, peak and daily volumes on 85 and 87 have increased 5-10% since 2011, essentially reaching peak capacity and increasing congestion delays.

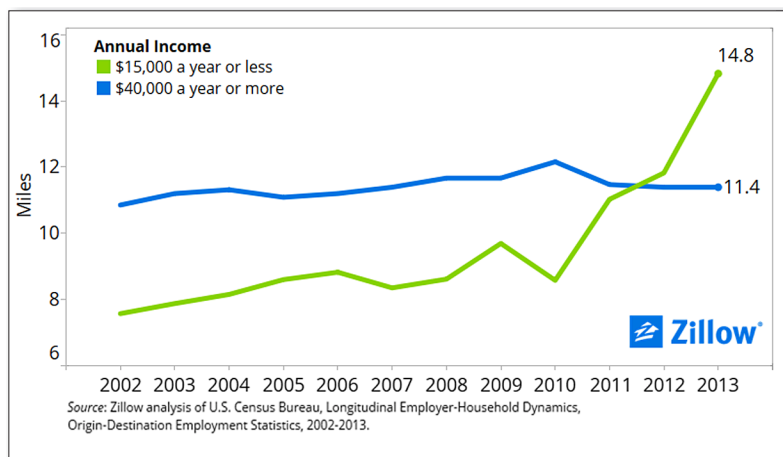
In terms of commute travel time, countywide travel times have increased substantially, with more than 50% of commuters now taking more than 30 minutes, compared to only 40% in 2007 (see Figure 1). This is significant since historical travel times do not normally exceed 30 minutes (or 1 hour a day) unless there is a high level of transit use. Additionally, travel times for South San Jose and South County tend to be about 5 minutes longer than the county average. In South County, 35% of commuters travel more than 45 minutes each way.

**Figure 1 – Commute Travel Times in Santa Clara County**



The lagging growth in affordable housing has also had a particular impact in the South County corridor. Lower income workers have moved further from jobs in the Bay Area, as show in the Figure 2 example for San Francisco. While similar data has not been compiled for South County, it is likely that the trends are similar. Commuters taking more than 45 minutes are likely traveling more than 30 miles.

**Figure 2**



Currently, opportunities for non-auto commutes are limited or are not particularly time competitive. The services include:

- Light rail service from South San Jose – while serving only part of the corridor, light rail is a fairly good option for trips to downtown San Jose and North San Jose, but is not particularly timely for other job destinations. Express service is very limited at this time. However, light rail connecting to Caltrain at Tamien provides a good service to North County jobs.
- Caltrain service to South San Jose and South County – this service uses the Union Pacific (UP) tracks owned by UP from a point south of Tamien Station. The service is currently limited to three daily round trips in the peak periods only. Monterey and San Benito County transit agencies operate feeder bus service to the Gilroy Station.
- A few express bus routes to North County job centers.

Although usage of these transit options is fairly low today, there are examples that show the potential for increased transit usage. For example, over 40% of Stanford employees living in South San Jose use transit (primarily Caltrain). Stanford supports them with subsidies, connecting shuttle service and other programs.

#### Travel Demand and Transit Market

The U.S. Census/American Community Survey (ACS) data provide a Journey to Work profile for Santa Clara County cities, and a basis for estimating demand in the corridor. Adjusting for the increase in jobs since the survey was conducted, approximately 25,000 commuters travel from South San Jose and South County to North County jobs. While the ACS data does not specifically address subareas of San Jose, it can be reasonably estimated that at least 35,000 additional corridor commuters are traveling to jobs in Downtown and North San Jose. Therefore, for purposes of this paper, the base travel market in the corridor is assumed to be about 60,000 commuters. Further detailed modeling would be needed to refine this estimate.

Caltrain currently carries about 750 commuters (1,500 ons and offs) on the three daily peak period round trips (see Table 1), a 25% increase since 2016. About 2/3 of these riders are from the South County. Most riders travel past San Jose to jobs in North County or outside the county. The mode share for South County commuters is fairly good (10-15%), but South San Jose usage is low. Corridor riders on these trains occupy between 25% and 42% of available capacity.

**Table 1 - 2018 Caltrain Ridership**

Station	Northbound AM On	Southbound PM Off
Capitol	76	77
Blossom Hill	143	114
Morgan Hill	237	212
San Martin	87	71
Gilroy	252	234
Total	795	708

Based on the estimated total commute market discussed above and applying reasonable mode shares, the potential transit usage is projected at about 5,000 AM commuters, or 10,000 daily riders (see Table 2). Some additional non-commute trips would also be expected. This level of ridership on Caltrain would require at least 6 peak period round trips to provide sufficient capacity.

**Table 2 - Est. Future Transit Ridership**

Origin/Destination	North County			Downtown/North San Jose		
	AM Commuters	Est. Mode Split	Est. Transit Riders	AM Commuters	Est. Mode Split	Est. Transit Riders
South San Jose	22,000	10%	2,200	30,000	5%	1,500
South County	3,000	20%	600	5,000	15%	750
	25,000		2,800	35,000		2,250

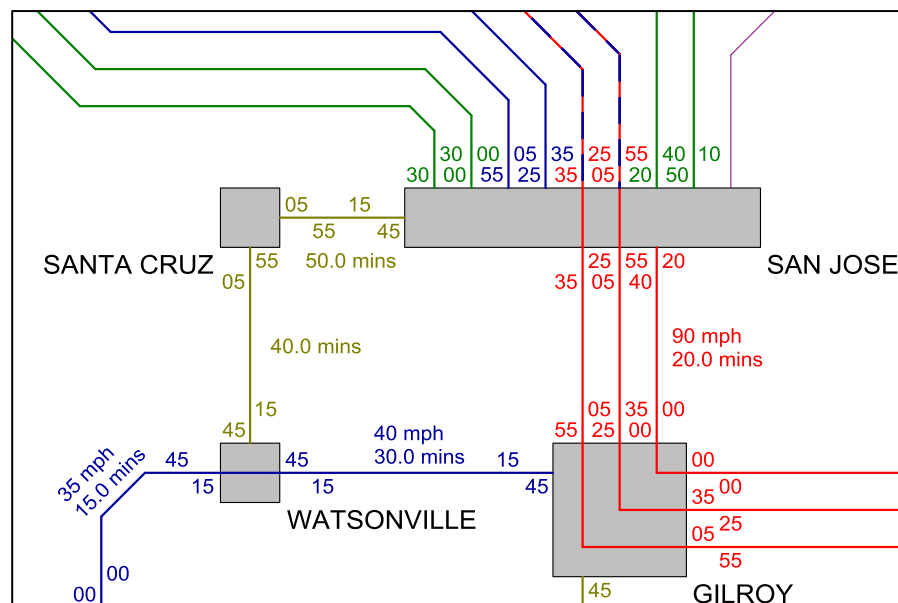
### Current Transportation Planning

While no transportation improvements have been made in the corridor for many years, there are several planning efforts underway to provide new services. These include:

- Caltrain Business Plan – Caltrain is developing a new Business Plan to develop service strategies and improvements that will build on the current electrification project. Recently released proposals for expanded service include frequent (15 minute) service to Blossom Hill Station and added all-day service to Gilroy.
- VTA Measure B Program – The 2016 Measure B sales tax program includes funds for some additional South County Caltrain service. VTA is coordinating with the Caltrain Business Plan to better understand transit needs and strategies in the corridor.

- High Speed Rail (HSR) – The 2018 HSR Business Plan included a new strategy that proposes providing service from Gilroy to San Francisco by extending the blended, electrified Caltrain corridor to Gilroy. This option is being explored in the current environmental project phase, with a preferred plan expected in 2019 and a final environmental document in 2020. However, the availability of funding for this service is uncertain given current HSR financial issues.
- Diridon Station – Station planning currently underway (led by VTA and the City of San Jose) may impact potential South County Caltrain service by changing where trains are stored and facilitating more through service at the Tamien and Diridon stations.
- State Rail Plan – The 2018 California State Rail Plan establishes a statewide vision for a future integrated rail system providing comprehensive and coordinated rail service. A key concept is the provision of frequent standardized service and convenient transfers at hub stations, including Diridon and Gilroy. The current future service plan envisions, with High Speed Rail, 90 mph service every 20 to 30 minutes (see Figure 3).

**Figure 3 – State Rail Plan Service Concept**



- Monterey Bay Area – TAMC (Transportation Agency for Monterey County) has been planning a rail extension to Salinas for a number of years. The first phase (improvements at the Salinas station) is moving into construction. Ultimately, the plan would provide train storage in Salinas (up to 6 trains). Caltrain and Capitol Corridor have been considered as operators, but there is no current agreement nor does TAMC have a final agreement with UP, the owner of the

right-of-way. Santa Cruz County has also been exploring rail service that could connect to the TAMC service.

- Capitol Corridor – The Capitol Corridor Joint Powers Authority (CCJPA), which released an updated Business Plan in January, operates inter-city service from San Jose to Sacramento. However, there are fewer trains between Oakland and San Jose and plans to expand that service have been stalled in negotiations with UP. The CCJPA has expressed interest in extending inter-city service to Gilroy and Salinas, but would need to expand San Jose-Oakland service first.
- Altamont Corridor Express (ACE) – ACE provides commuter service from Stockton to San Jose and, like the CCJPB, is hoping to expand service in the future and would consider extending some service to South County. However, an extension is not possible with current schedules.

### **The Case for Rail Service**

Additional transit service from South San Jose and South County is warranted to provide an alternative to congested roadways and long commutes. There are several reasons why commuter rail transit is the most attractive, feasible and cost-effective strategy, including:

- The rail corridor exists and supports current passenger service, with stations already in operation; the cost to upgrade service (e.g. adding additional tracks) is moderate compared to other options.
- The line UP owns and operates, the Coast Line, is not heavily used compared to other UP lines in the state. In the past UP has been willing to negotiate track use rights for additional passenger service.
- Regional rail service provides a very time-competitive alternative for peak commute trips. Ridership on higher speed transit lines has been growing, while overall transit use has been declining in recent years.
- Rail service has proven to generate a high ratio of fare revenue compared to other transit options, with Caltrain as a prime example.
- Planned upgrades to the Diridon Station will provide an important connecting hub for South County service.
- The High Speed Rail proposal to operate electrified, blended service to Gilroy offers a potential longer term strategy for significant service levels.
- Faster and better transit service to South San Jose and South County can help improve access to new and more affordable housing markets.

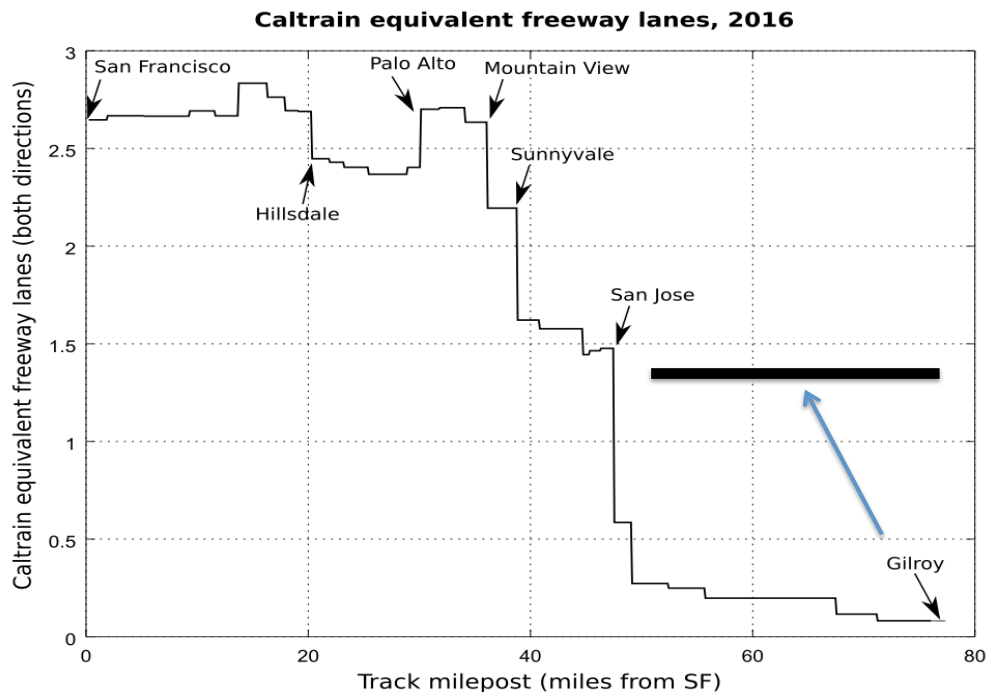
Expanding on these key points, the time advantage for rail is illustrated in Table 3 showing a comparison of peak travel times. Current drive and transit times are very comparable, with an advantage to Caltrain express service. The Caltrain times reflect existing schedules and could be reduced by as much as 30 minutes if the improvements envisioned in the Caltrain Business Plan and State Rail Plan are implemented.

**Table 3**

Travel Time (Min.) From / To	Downtown San Jose		Mountain View			Palo Alto		
	Peak Hour Drive	Caltrain	Peak Hour Drive	Caltrain Local	Caltrain Express	Peak Hour Drive	Caltrain Local	Caltrain Express
Gilroy	55	53	75	79	71	90	92	79
Morgan Hill	42	38	67	64	56	75	77	64
Blossom Hill	28	23	55	59	51	62	72	59

Another consideration is the benefit rail service provides in offsetting the need for roadway expansion. Figure 4 shows how Caltrain provides equivalent capacity in terms of freeway lanes. While the South County segment is currently much lower in benefit than the Peninsula segment, it could potentially as shown, with increased service and usage, offset 1 to 2 freeway lanes in the future.

**Figure 4**



It should also be noted that Caltrain does have capacity on most trains south of Mountain View and Sunnyvale, and that available capacity should increase as longer trains are deployed. Therefore, an increase in riders from south of Tamien to North County stations could be very cost-effective and an efficient use of train capacity.

Expanded South County rail service may also be compatible with other strategies being investigated in the Caltrain Business Plan and the Diridon Station planning work. Two examples:

- Additional Caltrain service could reduce the number of commuters now driving to, and parking at, the Tamien and Diridon stations. Analysis of Caltrain rider surveys show that 30-40% of Caltrain riders at Diridon and Tamien live in South San Jose. That translates to up to 300 cars at each station (600 total) that could potentially relocate to other stations with expanded South County service.
- A new storage or maintenance facility south of Tamien (to reduce train storage needs at Diridon and Tamien) could complement added service south of Tamien.

### **Service Implementation Strategies**

Implementation of expanded service will require a combination of new funding (both capital and operating), potential purchase of the rail right-of-way from UP (or a new separate operating agreement), construction of capital improvements (additional track, station upgrades) and identification of one or more operators. While the High Speed Rail for blended service to Gilroy may now fit into a longer term strategy, the Caltrain Business Plan advances a potential plan for the near to mid-term:

- Caltrain could electrify to the Blossom Hill Station and substantially increase service to South San Jose. This would require a new agreement with UPRR. The line is already double-tracked, but an additional track may be needed for freight use. Turn back and storage tracks at Blossom Hill would also be required. Added South San Jose service would not only better serve a new market, but would also help improve operations at Diridon Station by shifting train storage to the south.
- For South County, diesel service would be retained in advance of the High Speed Rail blended service plan. This strategy might follow the UP agreement previously negotiated to operate up to 10 round trips, by constructing double track segments. Funding would be needed for track work, slot fees to UP and operating costs. Even if the High Speed Rail plan is pursued, this option could provide interim service improvements until the full, electrified line is constructed.

For either strategy, the minimum desirable service would likely include 6 peak period round trips, possibly with two that could operate in an express mode, and 4 mid-day or



evening round trips. Additional inter-city service (e.g. Capitol Corridor) could also be incorporated. If some service is concurrently extended to Salinas, train storage could be provided at the Salinas station. Longer term, with High Speed Rail, further increases in service could be implemented, as shown conceptually in Table 4.

Another consideration is the identification of one or more agencies appropriate to operate service. Table 5 provides additional discussion regarding potential operators. The State Rail Plan provides guidance on how an integrated service plan might be operated.

**Table 4 – Conceptual Service Plan**

	<b>Caltrain Local</b>	<b>Caltrain Express</b>	<b>Inter-City Rail*</b>	<b>High Speed Rail</b>
<b>Near Term</b>				
AM/PM Peak Period				
Number of round trips	4	2		
Service Frequency (Min.)	30-45	60		
Mid-Day & Evening				
Number of round trips	4			
Service Frequency (Min.)	120			
<b>Mid-Term</b>				
AM/PM Peak Period				
Number of round trips	6	4	2	6
Service Frequency (Min.)	30	30	60	30
Mid-Day & Evening				
Number of round trips	6			18
Service Frequency (Min.)	120			30
<b>Future</b>				
AM/PM Peak Period				
Number of round trips	6	6	6	9
Service Frequency (Min.)	30	30	30	20
Mid-Day & Evening				
Number of round trips	12		6	24
Service Frequency (Min.)	60		120	20

\* - Includes extension to Salinas

<b>Table 5</b>				
<b>Operator</b>	<b>Possible Actions</b>	<b>Advantages</b>	<b>Constraints</b>	<b>Commentary</b>
<b>Caltrain - JPB Agreement</b>	The JPB has the right to operate five round trips, northbound in the AM, southbound in the PM. Only three of those round trip slots are used today.	Agreement in place, Easiest way to increase service to this market	Subject to JPB equipment and crew constraints; additional operating funds needed	
<b>Caltrain - VTA Agreement</b>	December 2004 agreement with UPRR to increase slots by lease payments of \$10 M for each additional pair of slots (i.e. \$5M for each round trip). Lease lasts for 10 years at which time you pay lease rate inflated by CPI. VTA obligated to build double track segments to increase capacity. Additional storage capacity may be necessary at end of line in Gilroy.	Agreement is in place and does not have to be negotiated. It provides a pathway for additional service.	1 ) The lease arrangement means you are not guaranteed permanent slots and every 10 years you are obligated to pay UPRR an inflated rate. 2) The capital costs 10 years ago when VTA discontinued the double track project exceeded \$70 M. 3) Gilroy storage compromised when you extend service south. 4) Slots are by direction, northbound in AM, southbound in PM. 5) no deadhead permitted	Consideration should be given to renegotiating this agreement to a more traditional capital project combined with a fee for permanent commuter rail slots. Lease arrangement adds on-going costs and uncertainty.

<b>Capitol Corridor</b>	As an inter-city carrier, not subject to trackage rights limitations. However, they still will pay a fee to UPRR and negotiate for access. In other words they are still subordinate to UPRR.	Probably can negotiate a better arrangement with UPRR than a commuter rail entity.	There will still be costs and needs to fit into Cap Corridor's business plan.	Additional service between Oakland and San Jose is needed to allow further service to the south.
<b>ACE</b>	Commuter rail so still must negotiate on that basis with UPRR. VTA may be able to work with JPB to "assign" JPBs two unused slots to ACE.	May present advantages to use ACE in South County so JPB can ramp down its involvement with diesel service as they electrify	The limitations on peak direction service south of Tamien may not work for ACE	
<b>TAMC</b>	Has capital funding in place to build track improvements and add two additional trains that will serve Salinas and other intermediate stations in the peak hour, peak direction.	If they find a willing operator (Caltrain and Cap Corridor are under consideration) and come to terms with UPRR, they are a good solution to add service	No operator as of yet in place and no agreement with UPRR	TAMC is far along in engineering and even acquiring ROW in Salinas for this project without having an operator and UPRR concurrence. Project proceeding at risk at this point.
<b>High Speed Rail</b>	The 2018 Business Plan calls for blended, electrified service to Gilroy, starting in 2025. HSR speeds would not exceed 110 mph. Local commute service could operate on same tracks as HSR.	A blended system offers new opportunities for additional commuter service. As a state agency, HSR may have better chance to secure a favorable agreement with UP. A shared corridor approach will help fund needed track and other improvements.	A negotiated arrangement with UP will be needed. Unclear how much commuter service would be possible. With reduced speeds, existing at-grade crossings would remain. Additional ROW likely needed at stations. Also, The HSR project has funding and other challenges before it can be relied on.	The approach in the new Business Plan provides a strategy for improved transit not previously available.

<b>Other Private Operator</b>	Assumes a private company not attached to any of the public agencies taking the lead.	Not constrained by public agency issues and can potentially be more agile in negotiating agreements with UPRR and procuring crews and equipment.	Difficult to assess the reality of these proposals until one is actually in place.	
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## **Summary**

Expanded rail service to South San Jose and South County can provide a cost-effective transit option to help address increasing traffic congestion and auto reliance in this corridor. The existing Caltrain service and stations provide a solid foundation to build on, but additional capital and operating resources will be needed. The new High Speed Rail banded service plan and the results of the Caltrain Business Plan may be the catalysts for significant new investment in the corridor. Other potential benefits include:

- Increased service, especially to South San Jose, could reduce commuter-parking demand at the Diridon and Tamien stations, potentially by 500-600 cars.
- Expanded service would provide much improved access to areas of the county with somewhat more affordable housing.
- Regional rail in this corridor could be a model for other Bay Area corridors and an early segment of the plan described in the State Rail Plan.

## **Next Steps**

The discussion above provides a foundation for considering expanded rail service to South San Jose and South County. The further development of a specific plan and funding strategy is timely given the planning work being undertaken by Caltrain, High Speed Rail, VTA and other agencies. However, political and community support will be needed to ensure that this corridor is adequately represented in these plans. In the near term, the VTA Measure B program may provide a modest service expansion. Longer-term strategies will be guided by the direction established in the coming year through the Caltrain Business Plan, the High Speed Rail environmental documents and VTA planning studies.

## Notes

This paper utilizes current plans and other information from transit agencies, but it also includes estimates by the author to frame the potential service benefits. Further analysis would be needed to confirm or modify these estimates. The paper is intended to provide a framework for better understanding the benefits and opportunities for expanded rail service to South County. The author appreciates the information received from individuals and stakeholders who share an interest in improving transit service in this corridor. Comments and additions from readers are welcomed and will be used to prepare a final draft of the paper.

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