San Luis Obispo South County Transit Short-Range Transit Plan

Working Paper Four: Service Alternatives

Prepared for the

San Luis Obispo Regional Transit Authority

LSC Transportation Consultants, Inc.

San Luis Obispo South County Transit
Short Range Transit Plan

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TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

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Chapter 1
Introduction

The San Luis Obispo Regional Transit Authority (RTA) has retained LSC Transportation Consultants, Inc., to prepare a Short-Range Transit Plan (SRTP) for the South County area. This study also includes evaluation and planning for four general public Dial-A-Ride programs: Nipomo, Shandon-Paso Robles, Templeton-Paso Robles and Paso Robles. The study provides an opportunity to develop plans that will tailor transit services to current conditions and provide a "business plan" for the transit program regarding services, capital improvements, marketing strategies and management strategies.

This document is the fourth in a series of Working Papers that have been prepared over the course of the study. Previous Working Papers have summarized existing services and their performance, summarized existing plans, reviewed the policies that guide the transit programs, provided a demographic analysis of transit needs and presented a summary of stakeholder input. This document builds on this previous work to present and discuss various service alternatives for the transit program.

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Chapter 2

SoCo Transit and Avila-Pismo Trolley Service Alternatives

This chapter presents a detailed analysis of potential service alternatives for the SoCo Transit program as well as for the Avila-Pismo Trolley. (Service alternatives for the Dial-A-Ride programs are presented in the following chapter.) These alternatives have been identified through public input, the consultant's review of existing services, a review of previous documents, as well as staff input. Note that this document presents a wide range of alternatives, not all of which will be part of the SRTP. Based on the results of these evaluations as well as further discussions, the specific SRTP will be developed.

Operating costs are estimated based on the following cost model equation, developed from the adopted FY 2019/20 budget:

Marginal Operating Costs = $50.65 X Marginal Vehicle-Hours of Service +

$1.51 X Marginal Vehicle-Miles of Service

SoCo Transit Route Alternatives

Revise Routes 21 and 24 to Better Service Grover Beach Amtrak Station and New Convention Center

The Grover Beach Amtrak station is currently undergoing a $3.1 million expansion of parking and bus loading areas. This will allow the existing connecting bus service stop to be moved from the east side of the tracks to the west side and immediately adjacent to the rail platform.

The Grover Beach Lodge is also planned for a site on the north side of the westernmost end of Grand Avenue. It is currently envisioned as a 150-room hotel with 4,000 square feet of meeting space with a potential future phase of adding full convention center facilities.

The nearest existing stops are along Grand Avenue. Route 21 serves a stop at 2nd Street westbound (approximately a 400-foot walk from the train station) while Route 24 serves an eastbound stop at 3rd Street (approximately a 700-foot walk). These are roughly a two-to-three-minute walk from the train station. These stops serve an average of 6.5 and 7.7 passengers per weekday (total of boardings and alightings).

Extending the routes to the train station would add 0.3 miles to the length of each route. Both routes would also have to pass through the Grand/SR 1 signal one additional time each hour. The overall impact would be to add approximately two minutes to the running time on each route. This could add to current challenges in providing adequate driver breaks. The additional annual mileage would increase costs by an estimated $4,800 per year, as shown in Table 1.

Southbound Amtrak service is currently limited to southbound Surfliner rail service at 7:15 AM and 4:35 PM, and southbound Thruway bus service at 4: 25 AM, 9:45 AM and 1:35 PM. Northbound service consists of Surfliner rail stops at 2:01 PM and 7:55 PM and Thruway bus service at 8:45 AM, 4:55 PM and 11:55 PM. Note that the latest rail and bus arrival times are after the end of SoCo services. There are

TABLE 1: SoCo Fixed Route Alternatives Analysis

	Run Parameters		Daily Runs			Days per Year			Annual		Annual		Fare	Operating
	Hours	Miles	Wkdy	Sat	Sun	Wkdy	Sat	Sun	Hours	Miles	Cost	Ridership	Revenues	Subsidy
Revise Routes 21 and 24 to Better Serve Grover Beach Amtrak Station														
Route 21	0	0.3	13	12	11	259	51	55	0	1,375	$2,400			
Route 24	0	0.3	13	12	11	259	51	55	0	1,375	$2,400			
Total									0	2,750	$4,800	700	$400	$4,400
Shift Transfer Point From Ramona Garden to Grover Beach Train Station														
Route 21	0	0.3	13	12	11	259	51	55	0	1,375	$2,400			
Route 24	0	0.3	13	12	11	259	51	55	0	1,375	$2,400			
Route 27	0	1	13	0	0	259	51	55	0	3,367	$5,900			
Route 28	0	1.1	13	12	11	259	51	55	0	5,042	$8,800			
Total									0	11,160	$19,500	-2,100	-$1,300	$20,800
Revisions to Route 27 to Better Serve RTA Route 10														
Route 27	0	0.9	13	0	0	259	51	55	0	3,030	$5,300	1,900	$1,500	$3,800
Reroute Routes 27 and 28 to Better Service Neighborhood North of Ramona Garden														
Route 27	0	-0.2	13	0	0	259	51	55	0	-673	-$1,200	4,600	$3,700	-$4,900
Eliminate Route 27 Service to Oceano Airport Stop and Serve Valley Road Instead														
Route 27	0	0.7	13	0	0	259	51	55	0	2,357	$4,100	2,200	$1,800	$2,300
Saturday Route 27 Service														
Route 27	1	10.7	0	12	0	0	51	0	612	6,548	$42,400	3,400	$2,700	$39,700
Sunday Route 27 Service														
Route 27	1	10.7	0	11	0	0	51	0	561	6,003	$38,900	3,300	$2,600	$36,300
Evening Weekday Service Until 9:30 PM – Routes 21 and 28														
Route 21	1	14.9	2.1	0	0	259	0	0	544	8,104	$41,600	3,800	$2,400	
Route 28	1	10.4	1.45	0	0	259	0	0	376	3,906	$25,800	2,600	$2,200	
Additional Runabout Svc.	1	17.2	0.5	0	0	259	0	0	130	2,221	$10,400	50	$150	
Total									1,049	14,231	$77,800	6,450	$4,750	$73,050
Evening Weekday Service Until 9:30 PM – Routes 21, 24 and 28														
Route 21	1	14.9	2	0	0	259	0	0	518	7,718	$39,700	2,500	$1,600	
Route 24	1	11.3	2	0	0	259	0	0	518	5,853	$36,400	2,500	$1,400	
Route 28	1	10.4	1.45	0	0	259	0	0	376	3,906	$25,800	2,600	$2,200	
Additional Runabout Svc.	1	17.2	0.5	0	0	259	0	0	130	2,221	$10,400	50	$150	
Total									1,541	19,698	$112,300	7,650	$5,350	$106,950
Eliminate 6:30 PM and 7:30 PM Weekday Runs on Route 27														
Route 27	1	10.7	-2	0	0	259	0	0	-518	-5,543	-$35,900	-4,500	-$4,500	-$31,400
Extend Avila Trolley Service to First Weekend in November														
Avila Trolley	1	22.4	8	8	8	1	6	6	104	2,329	$9,300	1,500	$0	$9,300
Grand Avenue Trolley														
1 Trolley Option	0.33	7.0	15	15	15	102	51	51	1,010	21,420	$88,400			
2 Trolleys Option	0.33	7.0	29	29	29	102	51	51	1,952	41,412	$170,900			

also southbound buses on the Visalia-Santa Maria route at 1:45 PM and 10:35 PM (after the end of SoCo service), as well as northbound departures at 6:10 AM and 2:25 PM (associated with the San Joaquin rail service) and Capital Corridor Thruway buses southbound at 4:25 AM (prior to SoCo service), 1:55 PM and 7:30 PM (after SoCo service) and with northbound stops at 8:00 AM, 9:55 AM, 12:20 PM and 11:55 PM (after SoCo service). Excluding those services operating outside of the SoCo span of service, Amtrak serves the station seven times per day in the southbound direction and seven times per day in the northbound direction. Overall, 7 of the 13 daily SoCo Route 21 and 24 runs would provide a useful connection, with connection times ranging from a few minutes to 55 minutes.

Amtrak ridership figures indicate that the Grover Beach station serves a total of 19,758 passenger-trips in 2018 (up five percent from 2017), or an average of 54 per day. This reflects rail passengers only, excluding Thruway buses (for which ridership by stop data is not available). Given the overall cost and time commitment of an intercity rail or bus/rail trip, saving the two to three minutes of walk time from

the nearest SoCo stop would not significantly increase public transit ridership. However, direct service would be a convenience to intercity passengers and would tend to promote the rail service. A modest ridership increase of two passenger-trips per day is estimated.

Shift the Transfer Point from Ramona Garden to Grover Beach Train Station

Another option to improve transit access to the Grover Beach Train Station and the nearby existing and planned uses along the western end of Grand Avenue would be to relocate the Ramona Garden transit hub to the train station and reconfigure the routes and schedules of the four SoCo fixed routes to serve this new hub. This would require a minor change in Routes 21 and 24 to extend from Highway 1/Grand Avenue south to the station but would require a greater extension of Routes 27 and 28. One route option for these routes would be to use Highway 1 between Pershing Drive and Grand Avenue rather than 13th Street. This would provide a substantial running time reduction (on the order of five minutes). However, the ridership potential along this stretch of the state highway is low. In addition, traffic volumes on this section of Highway 1 are 8,000 to 10,000 vehicles per day—too high to serve bus stops while blocking travel lanes. Barring the costly construction of bus pullouts, it would not be possible to serve and stops along this segment. Another option would be to use Farroll Avenue and 4th Street rather than 13th Street between Farroll/13th and Grand Avenue. This would extend Route 27 from 10.7 to 11.7 miles, while Route 28 would extend from 10.4 to 11.5 miles. Running time on both routes would be increased by roughly three minutes, both which can be served within an hour schedule. Routes 21 and 24 would also be extended by 0.3 miles (which can also be accommodated in the existing schedule). The additional mileage would total 11,160 annually, increasing costs by $19,500.

This option would eliminate service to the following existing stops:

13th/Long Branch Southbound (Route 28)—3.4 passengers per day

13th/Trouville Northbound (Route 27) —4.6 passengers per day

13th/Mentone Southbound (Route 28) —4.4 passengers per day

In addition, the existing northbound Route 27 stop on 13th just north of Farroll would need to be relocated nearby on the remaining route. The 13th/Long Branch stop is within walking distance of the stops along Grand Avenue west of 13th Street. As a result, this option would eliminate convenient service to a total of 9 passenger boardings or alightings per day. Service would be provided to a new area west of 9th Street and south of Seabright Avenue, which includes homes and light industrial uses. The discontinued Route 23 used to travel along this route (in one direction only), serving a stop at Farroll Road/8th Street, which served 6 passengers per day. Considering that this alternative would serve this area in both directions, the ridership generated by the new service area would roughly offset the loss in ridership at existing stops, resulting in no significant change in total ridership.

This would have the result of shifting Route 21 service at the transfer hub approximately 4 minutes later and Route 24 service approximately 4 minutes earlier. Both of these routes are timed to provide direct transfers to/from RTA Route 10 at Premium Outlets at the top of the hour. While Route 21 cannot be shifted earlier without resulting in insufficient overlap with Route 10 service times, Route 24 could be

shifted 4 minutes later (departing Premium Outlets at 14 after and arriving at 59 after). This would result in service at a Grover Beach Train Station hub at 29 minutes after on Route 24 and 33 minutes after the hour on Route 21. Routes 27 and 28 would be shifted to arrive at the train station transit hub at 20 minutes after the hour and departing at 35 minutes after the hour, which would still provide direct transfers to both Routes 21 and 24 (though at different times), as well as 15 minutes of layover/driver break time per hour.

This option would also require that the improved train station have adequate capacity for the four SoCo buses at peak times, as well as the 8-times-a-day Amtrak Thruway buses. The Ramona Garden hub currently provide five saw-tooth bays over a length of 300 feet, which allows full independent operation of the four routes (the presence of buses in any of the bays does not preclude buses entering or existing any of the individual bays). The improved train station bus loading area will provide approximately 200 feet of straight curb. This is sufficient to provide for independent operation of the Amtrak Thruway bus and two SoCo buses, but not the peak of four SoCo buses. Conversion to allow for four SoCo buses would require a substantial redesign, eliminating much of the expanded auto parking spaces and/or expansion of parking or transit bays to the south.

Another consideration is that the transit hub, with service by all four SoCo routes, provides a relatively high level of transit access. As such, it is beneficial to be convenient to a high level of transit trip generators. Approximately 800 residences are within a five-minute walk of Ramona Gardens, as well as the commercial businesses along Grand Avenue between 7th Street and 12th Street and the seasonal Exploration Station. In comparison, a five-minute walk from the bus loading area at the train station (constrained by the presence of the tracks to the east and Highway 1 to the west) includes the Grand Junction and Beach Place multiuse areas along the south side of Grand Avenue west of 4th Street, low density commercial uses on the north side of Grand Avenue, a few residences behind the commercial uses and the planned hotel site. Shifting the hub would therefore make the transit service less convenient to passengers overall, resulting in a net loss of 2,100 passenger-trips per year.

In summary, it would be operationally feasible to shift the transit hub from Ramona Garden to the Grover Beach train station. However, it would require a substantial capital investment in reconfiguring the bus and parking area at the train station (beyond the cost incurrent in removing the bus bays from Ramona Park), and would not provide any overall benefit to transit ridership.

Revisions to Route 27 and 28 to Better Serve RTA Route 10

While SoCo Routes 21 and 24 provide convenient direct transfers to RTA Route 10 at Premium Outlets, direct transfers to the regional route are not currently available on Routes 27 and 28. As a result, residents of Oceano and the southern portion of Grover Beach face relatively long travel times to travel to San Luis Obispo and Santa Maria.

Route 27 does not serve the Halcyon PnR. The route gets close, coming southbound on El Camino Real to Halcyon Road but then makes a left turn to the 101 southbound onramp. This is necessary because the lack of a traffic signal at the El Camino Real/Grand Avenue intersection makes a left-turn onto Grand

Avenue infeasible at peak times. Several options were explored to provide a Route 27 stop within a reasonable walk distance of the Halcyon PnR bus stop:

- A bus stop could be created at the beginning of the US 101 southbound on-ramp, similar to stops along US 101 interchanges in Marin County. However, Caltrans has determined this not to be feasible.

- A bus stop could be created on southbound El Camino Real north of Halcyon Road, which could be served prior to the left turn onto US 101. However, this would require a pullout (stopping in the travel lane would be infeasible), and the right-of way is constrained by the presence to the west of a cemetery and a line of mature trees.

- A stop could be created on southbound El Camino Real opposite the existing Halcyon PnR stop. The route would extend south on El Camino Real to this stop and then turn right onto Faeh Avenue followed by a right onto eastbound Halcyon Road to the interchange. This would require elimination of the 10 parking spaces on the west side of El Camino Real. It would also require reconfiguration of the El Camino Real/Faeh/Bell intersection to provide a bus travel path that does not encroach onto the traffic lanes in the opposite directions, which in turn would require an additional right-of-way.

- The southbound bus could turn right on Halcyon Road and then left onto Faeh Avenue followed by a second left from Faeh Avenue to northbound El Camino Real to serve the existing stop and shelter. This rerouting is shown in Figure 1. The Faeh Avenue/El Camino Real intersection is complicated by the presence of Bell Street as a fourth leg of the intersection. The bus driver would need to start the turn and pull roughly perpendicular to El Camino Real, which could momentarily block movements on Bell Street. Traffic activity in this intersection is generally low enough to make this maneuver but practice runs at peak times would be needed to define whether it could be made reliably and safely. This option would add 0.3 miles and about two minutes to the route running time during peak periods. While this additional running time could probably be accommodated within the existing schedule, the additional mileage would increase operating costs by $1,800 per year.

- The route could continue to make the left turn at N. Halcyon Road onto 101 southbound and exiting at E. Grand Avenue, and then double back to the Park and Ride by making right turns onto E. Grand Avenue and El Camino Real, serve the Park and Ride and then make the right turn back onto 101 southbound, before continuing the existing route with a left turn onto E. Grand Avenue. This option would add 0.9 miles to the length of Route 27, which would increase annual operating costs by $5,300.

On balance, the latter of these options is preferable. However, the additional running time would negatively impact the on-time performance of the route.

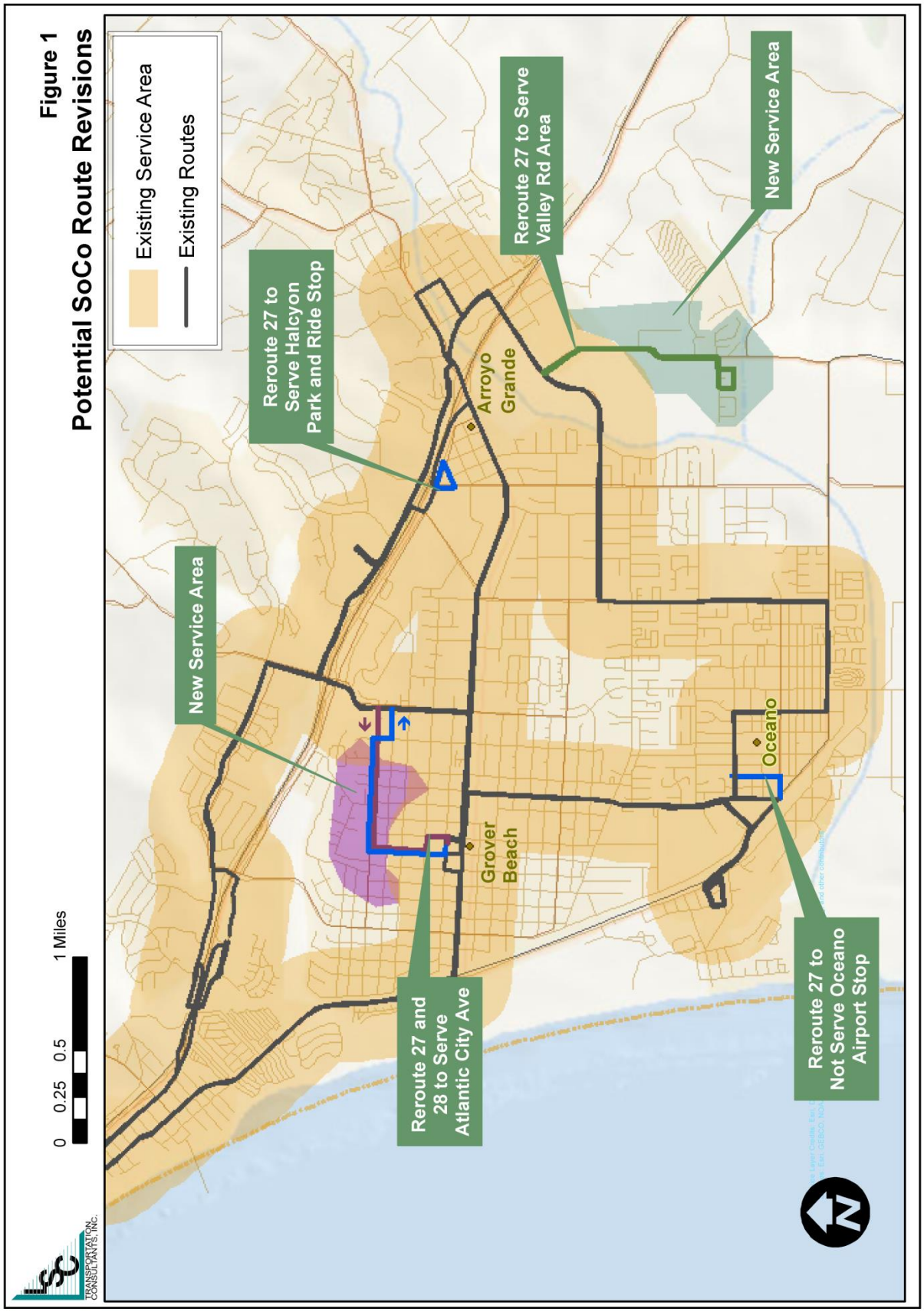


Figure 1
Potential SoCo Route Revisions
Existing Service Area
Existing Routes
Reroute 27 to Serve Halcyon Park and Ride Stop
Reroute 27 to Serve Valley Rd Area
New Service Area
New Service Area
Reroute 27 and 28 to Serve Atlantic City Ave
Reroute 27 to Not Serve Oceano Airport Stop
Arroyo Grande
Grover Beach
Oceano
0 0.25 0.5 1 Miles
LSC TRANSPORTATION CONSULTANTS, INC.

Serving Halcyon with Route 27 would change transit travel options in the following ways:

- *Trips from Oceano (and Southern Grover Beach) to the North*—Assuming current schedules, Route 27 would serve a Halcyon stop at 46 minutes past the hour. This would be convenient for travel to the north as the northbound Route 10 bus serves the stop at 49 minutes past the hour. However, the key trip origin areas in Grover Beach would not be provided a shorter trip as this would only substitute a trip on Route 27 with a transfer to northbound Route 10 at Halcyon for a trip on Route 21 or 24 with a transfer to northbound Route 10 at Premium Outlets. The current trip from Oceano to destinations on Route 10 to the north (such as San Luis Obispo) currently requires either 104 minutes (via Route 28 and a single transfer at Halcyon) or 87 minutes (via Route 27, a transfer to 21 or 24 at Ramona Garden and a second transfer at Premium Outlets). It would be possible to shift the Route 27 schedule by 3 minutes to provide a direct transfer to the northbound bus, which would also shorten trips from the south to destinations in Oceano and Grover Beach. This would still result in an overall travel time of 88 minutes but provide this relatively short travel time with the need for only one transfer from Route 27 to Route 10 at Halcyon. This would be perceived as a modest improvement in service to the rider.

- *Trips to Oceano (and Southern Grover Beach) from the North*—The fastest transit travel time from San Luis Obispo, consisting of a southbound Route 10 leg, a transfer to Route 21 at the AM PM on Grand Avenue just west of US 101, and a second transfer to Route 28 at Ramona Garden for an overall travel time of 73 minutes. With a transfer opportunity at Halcyon to Route 27, passengers would be faced with a long layover (from 5 after to 46 after) before boarding Route 27 with an overall travel time of 87 minutes. Passengers making this trip therefore would not benefit.

- *Trips from Oceano (and Southern Grover Beach) to the South*—A trip from Oceano to Santa Maria via Route 28, a transfer at Halcyon and a second leg on Route 10 takes 58 minutes to complete. As serving Halcyon with Route 27 would not provide shorter travel times, passengers making this trip would not benefit.

- *Trips to Oceano (and Southern Grover Beach) from the South*—This trip currently requires 91 minutes, including a 12 minute layover at Halcyon between Route 10 and Route 28. Shifting the Route 27 schedule by three minutes and serving Halcyon to provide a direct transfer from the northbound bus would shorten trips from the south to destinations in Oceano and Grover Beach to only 49 minutes—fully 42 minutes shorter.

In summary, service quality would improve modestly for passengers headed from the Oceano area to the north and would improve significantly for passengers headed to Oceano from the south.

The potential ridership market that would benefit from these improvements in service quality can be analyzed using the onboard surveys conducted as part of the *San Luis Obispo Regional Transit Authority Short Range Transit Plan*, which was prepared in 2016. Of the 336 surveys completed on Route 10, 23 were from passengers reporting they transferred to or from a SoCo route. Of these, 17 were to or from Routes 21 or 24, while six were to/from Route 23 (the predecessor of today's Routes 27 and 28).

Factoring for the average weekday ridership, this indicates a current estimate of 42 daily passenger-trips to/from Routes 21/24 and 15 to/from Routes 27/28. In other words, Route 10 passengers transferring to/from Routes 27/28 are roughly 35 percent of the number transferring to/from Routes 27/28. A review of the population served by the two pairs of routes indicates that approximately 40 percent of the ridership potential in the overall fixed-route service area is only served by Routes 27/28. If transfer opportunities were equal, this indicates that transfers to/from Routes 27/28 should be 66 percent (40 divided by 60) of Routes 21/24 transfers. This "missing" proportion translates to roughly 13 passenger-trips per day.

Even with a Route 27 stop at Halcyon, the convenience of the transfer would not be equal to the timed bus-to-bus connections available at Premium Outlets for Routes 21/24. Shifting Routes 27 and 28 schedules 3-4 minutes forward would provide direct transfers between Route 27 and the northbound Route 10 as well as between Route 28 and the southbound Route 10. However, this shift is not feasible as it would impact the coordination with bell times at Arroyo Grande High School. The overall benefit of these improved Route 10 transfer opportunities is therefore estimated to be limited to six passengers per weekday, or a total of 1,900 over the course of a year, due to the reduction in the need for transfers between the Routes 27/28 service area and destinations along RTA Route 10.

Reroute Routes 27 and 28 to Better Serve the Neighborhood North of Ramona Garden

The current routes have both the 21/24 pair and the 27/28 pair serving the Grand Avenue corridor between Ramona Garden and Oak Park Boulevard. There is a substantial residential area to the north of this area that is not within a convenient (five-minute or quarter-mile) walk of a bus stop. One option would be to shift Routes 27 and 28 to serve this area, as shown in Figure 1.

Departing Ramona Gardens, Route 27 would turn right on 9th Street and head north, turning right on Atlantic City Avenue, right on 16th Street, left on Saratoga Avenue and left on Oak Park Boulevard (at the 4-Way Stop)[1]. Route 28 would leave the current route by turning right (west) from Oak Park Boulevard to Atlantic City Avenue, then left (south) on 9th Street, and lefts on Brighton Avenue, 10th Street and Ramona Avenue to enter the transit center. New stops would be established (in both directions) near the Atlantic City/9th and Atlantic City/12th intersections as well as at Saratoga/Oak Park (Route 27) and Atlantic City/Oak Park (Route 28). Route 27 would be 0.2 miles shorter than at present, while the length of Route 28 would not change. This would result in a modest ($1,200) reduction in annual operating costs.

These new stops would provide service within a five-minute walk of an area roughly bounded by Newport Avenue on the south, 6th Street on the west, Ocean View Avenue/Ritchie Road on the north and 14th Street on the east. While much of this area is single family homes, north of Atlantic City Avenue there are several multifamily complexes, including Vista Pacific Apartments.

This realignment would eliminate Route 27 service to the stops at Grand/16th and Oak Park/Grand that serve a total of 10.2 passenger boardings and alightings per day, thereby shifting the 1.5 passengers using the Oak Park/Newport stop one block north to Saratoga. Route 28 service would be eliminated to

[1] The left turn from Atlantic City Avenue to Oak Park Boulevard would not be consistently feasible for a transit bus.

the Oak Park/Ramona, Oak Park/Long Branch and Grand/16th stops (serving an average of 24.8 boardings and alightings per day) and the Oak Park/Newport stop (with 2.3 passengers per day) shifted to Saratoga. As all of the stops eliminated from Route 27/28 service would still be within a short walking distance of stops served by Route 21/24, some service would still be available (though a transfer might be required for specific trips). In total, 35.0 existing Route 27/28 daily passenger-trips would be impacted, of which approximately 25 per day would shift to other stops and 10 would choose to stop using the service. Over the course of the year, this would equal a loss of 3,200 passenger-trips.

An analysis of the potential new service area indicates that an additional 540 dwelling units would be served. Considering the overall transit ridership per household in the SoCo fixed-route service area and the relatively high proportion of low-income and zero-vehicle households in the new service area, this shift in service would generate 7,800 new annual passenger-trips. The net impact of this route realignment would be an increase of 4,600 passenger-trips. Between the reduction in cost and a $3,700 increase in fare revenues, this option would reduce overall subsidy by $4,900 per year.

Reduce/Eliminate Route 21 Service along Mattie Road

North of the Mattie Road interchange in the Shell Beach area, Route 21 serves three stops on the east side of US 101 along Mattie Road (at Foothill, Pismo Beach City Hall) and four stops on the south side along Shell Beach Road. The stops on the north side along Mattie Road only serve a total of 1.2 passengers (total of boardings plus alightings) per day. As such, shifting the service to US 101 northbound was considered. Using US 101 instead would not significantly change the route length, and would only save approximately one minute of travel time, which is not sufficient to be of use somewhere else along the route. While ridership along Mattie Road is low, it is important to provide transit service to a city hall. Therefore, this option is not considered further.

Eliminate Route 27 Service to Oceano Airport Stop and Instead Serve Valley Road

Serving the Oceano Airport stop requires seven minutes of running time each hour on Routes 27 and 28. This stop serves on average only 6.6 passengers on Route 27 and 15.0 on Route 28. If Route 27 were to no longer serve this stop, some travel times for individual trips would get longer, resulting in roughly half the passengers shifting to the remaining Route 28 and the other half eliminating their use of the transit service. Over the course of a year, this would equal to a loss of approximately 800 passenger-trips.

Near the other end of Route 27, the southeastern portion of Arroyo Grande along Valley Road is presently not served by SoCo. The existing Route 27 westbound on Fair Oaks Avenue could turn south on Valley Road and travel approximately one mile to make a right on Leanna Drive and travel around a loop with Pearl Drive before returning north to Fair Oaks Avenue. This area includes the Sunrise Terrace Mobile Home Park, with approximately 300 units[2], as well as approximately 145 single family homes and 18 multifamily units (all within the Arroyo Grande city limits).

[2] Only 40 of these mobile homes are within a five-minute walk of Valley Road. An alternative turnaround for this route could potentially be provided in the entrance loop within the mobile home park, with approval by the landowner.

If service were eliminated to Oceano Airport (and the route to serve the 13th & Highway 1 stop modified to travel south on 15th Street and west on Paso Robles Street, rather than on Belridge Street and Highway One) and the service along Valley Road added, the net impact would be to extend the route length from the existing 10.7 miles to 11.4 miles. The resulting route, however, could still be operated within an hour schedule with adequate driver break and layover time. Annual operating costs would be increased by $4,100 per year.

The new service area is shown in Figure 1. Ridership per household would be relatively high, considering the demographics of the area. On the other hand, the fact that service (other than to Arroyo Grande High School) would be in one direction only would tend to reduce the ridership potential. Overall, this new service area would generate approximately 3,000 passenger-trips per year. The net impact of this shift in Route 27, therefore, would be an increase of 2,200 passenger-trips.

SoCo Transit Span of Service Alternatives

Saturday Route 27 Service

Route 27 currently does not operate on Saturdays or Sundays. This limits service on the Route 27/28 loop to counterclockwise service only. As a result, some trips require long in-vehicle travel times. As an example, a trip from Walmart to the Elm/Fair Oaks stop requires 48 minutes on the bus. In effect, service only in one direction means that any round-trip on the Route 27/28 loop requires a total of an hour on the bus. For some passengers also served by Routes 21/24 (central Grover Beach, downtown Arroyo Grande and along West Branch), long out-of-direction trips can be avoided by using Routes 21 or 24 instead.

Operating this route on Saturdays would increase annual operating costs by $42,400 per year. The potential ridership can be estimated by considering the relative productivity (passengers per vehicle-hour) on weekdays vs. Saturday for the SoCo routes, recognizing that some of the existing Saturday ridership on Route 28 consists of riders that would shift to Route 27 if available and that the Arroyo Grande High School does not generate ridership on a Saturday. This indicates that the net impact on ridership would be an increase of 3,400 annual passenger-trips. Subsidy would be increased by $39,700 per year.

Sunday Route 27 Service

Adding Sunday service on Route 27 would have a slightly lower cost of $38,900 per year, reflecting one less hour per day of service. Ridership would also be slightly lower, based on ridership patterns on the other routes, at 3,300 passenger-trips per year. This would yield an annual subsidy requirement of $36,300.

Evening Weekday Service – Routes 21 and 28

SoCo weekday services end at 7:29 PM on Routes 21 and 24, 8:13 PM on Route 27 and one minute later on Route 28. The last time that passengers can transfer to outbound Routes 21 and 24 at Ramona Garden occurs at 6:30 PM and to outbound Routes 27 and 28 at 7:30 PM. The last opportunity to transfer from RTA Route 10 to a SoCo bus at Premium Outlets occurs at 7:00 PM. Provision of service

later into the evening has been a common passenger requests over the years. In particular, the 7:33 PM and 8:33 PM southbound Route 10 departures from San Luis Obispo arrive in Pismo Beach at 8:00 PM and 9:00 PM, when no connecting SoCo service is available. The final northbound Route 10 bus (arriving in Pismo Beach at 8:00 PM) also has no connecting service available. These runs current generate a total of 7 deboardings per day (based on the ridership counts conducted as part of the 2016 RTA SRTP) and could generate more if local service was available.

Based on ridership patterns in similar communities, a reasonable option would be to provide service until roughly 9:30 PM, operating both route pairs only in one direction (the busier of the routes). Specifically, slightly more than two additional runs would be operated on Route 21 (until 9:35 PM, ending at Dolliver/Pomeroy) and roughly 1.5 additional runs would be operated on Route 28 (until 9:41 PM at the Oceano Airport). This would provide service to all the communities after the 9:00 PM transfer from Route 10.

This additional fixed-route service would increase annual operating costs by $67,400 per year. While additional dispatcher costs would not be necessary (RTA dispatchers could serve this role in the extended hours), the additional hours of fixed-route service would increase the potential demand for Runabout ADA service. As Runabout services current end around 9:00 PM, an additional 0.5 hours of Runabout service per day is included in the cost estimates, bringing the total cost of this option to $77,800 per year.

Ridership can be evaluated based upon the ridership-per-hour data for similar local transit services in other communities as well as the Route 10 ridership by run data. A total of 3,800 additional passenger-trips would be served on Route 21 (including some passengers that currently do not use the service earlier in the day as they cannot get home) and 2,600 on Route 28, for a total of 6,400 fixed-route passenger-trips per year. Including 50 additional Runabout passengers (based on current ridership in the evening hours), total ridership would increase by 6,450 annually. Subtracting the additional fare revenue, subsidy requirements would be increased by $73,050.

Evening Weekday Service – Routes 21, 24 and 28

A disadvantage of operating Route 21 but not 24 in the evening would be the long travel times for specific trips (such as from Premium Outlets to downtown Pismo Beach) as well as the fact that service is not provided to downtown Arroyo Grande. A more extensive weekday evening option would be to also operate Route 24. As Route 24 could serve the final stops in Pismo Beach, both Routes 21 and 24 would end at 9:29 at Ramona Garden, while Route 28 would still end at 9:41 PM at the Oceano Airport.

Including the additional Runabout ADA service, this option would increase annual operating costs by $123,300 per year. Ridership would total 7,650 additional passenger-trips per year, yielding $5,350 in additional fare revenues. The net impact on annual operating subsidy would be an increase of $106,950.

Eliminate 6:30 PM and 7:30 PM Weekday Runs on Route 27

Route 27 is funded through a 5-year Low Carbon Transit Operations Program (LCTOP) grant, which is set to expire in 2022. As funding may then require additional local funds, it is worth considering means of

reducing the costs of this service. A review of the ridership served by the last three daily runs of Route 27 indicates relatively low patronage as follows:

5:30 PM Run—4.6 passengers

6:30 PM Run—3.7 passengers

These two runs incur an annual operating cost of $35,900. Eliminating these runs would require passengers to shift to other routes (largely Route 28), increasing travel times for some. Considering the reduction in service quality and that some passengers would choose to stop making trips earlier in the day due to the longer return trip, this option is estimated to reduce ridership by 4,500 passenger-trips per year. With the loss in fare revenues, overall operating subsidy would be reduced by $31,400 per year.

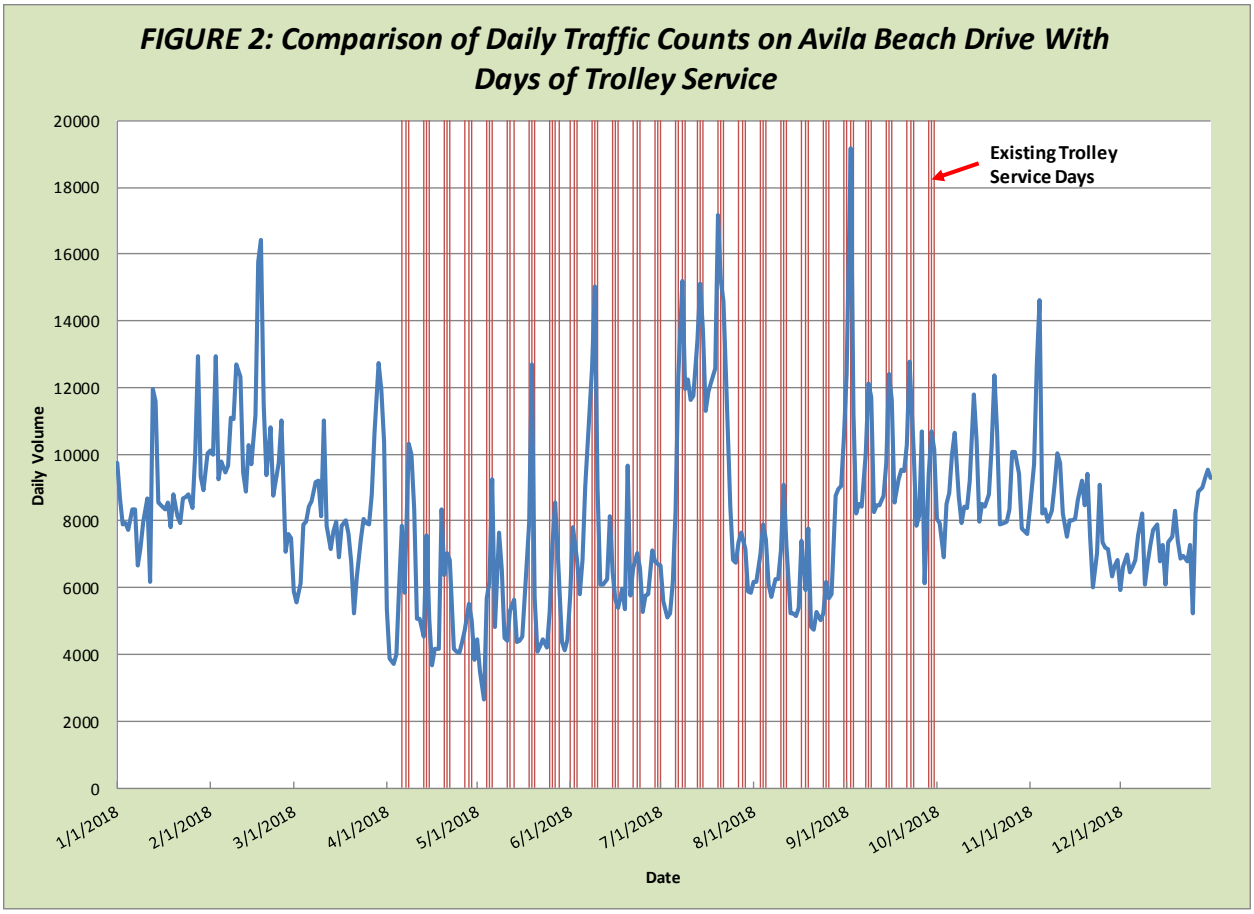
Serve Halcyon Park-and-Ride on Route 27 and Route 28 Tripper Runs

The Route 27 (afternoon) and Route 28 (morning) tripper runs timed to serve Arroyo Grande High School bell times operate between Ramona Garden and the High School only. While these runs are useful for residents of Oceano and central Grover Beach, students living further from the school (such as Pismo Beach) have long travel times. One option would be to extend these runs to also serve the Halcyon Park-and-Ride, allowing a transfer to or from RTA Route 10.

A review of potential schedules indicates that this strategy would not significantly reduce travel times. In the morning, a Halcyon stop would need to be added prior to the existing start time at Ramona Garden at 7:07 AM (most days), which means a Halcyon departure at 6:55 AM – before the 7:06 AM southbound arrival of Route 10. While a better connection could be provided in the afternoon (3:45 Route 27 tripper arrival at Halcyon, for a 3:49 NB Route 10 transfer and then another transfer at Outlets to 21 and 24, this still doesn't provide a quicker trip home along 21 or 24 than just transferring at Ramona Garden at 3:33 PM. Another option could be to deviate from the existing 27/28 route to serve Halcyon just prior to the High School in the morning and immediately after the High School in the afternoon. However, this would add about 7 minutes travel time to all existing riders, and would still result in long layovers at Halcyon to/from Route 10 runs, so no travel time would be saved. As no benefit would be provided, this option is not considered further.

Avila-Pismo Trolley

The Avila-Pismo Trolley is generally performing well, with 12.9 passenger-trips per vehicle-hour, and is providing an important public transit service to Avila Beach and the western portion of Pismo Beach. The service currently operates on Fridays, Saturdays and Sundays from early April through late September (as well as Memorial Day, 4th of July and Labor Day) with longer hours during the peak summer months of June, July and August. A review of the existing calendar of service was conducted by comparing the days of service with traffic count data collected by San Luis Obispo County on Avila Beach Road, which provides an indicator of tourism activity. This comparison, as shown in Figure 2, indicates that the existing service is aligned with much of the busier periods, but that there are days both prior to and after the existing Trolley season with high traffic counts. The weekend immediately prior to the current



beginning of the service is relatively busy, and weekends stay busy after the current end of service through the first weekend in November (though this can be dependent on the weather)[3].

The productivity of the Trolley is relatively strong (exceeding the yearly average) in the fall after Labor Day, also indicating that a longer season could be beneficial. As the Farmers Market ends at the end of September, service through the first weekend of November would be operated on Saturday and Sunday only. A reasonable option would be to start service one weekend earlier (last weekend in March), and extend service by five additional weekends until the first weekend in November. These additional 13 days of service would increase costs by $9,300 per year but would generate approximately 1,500 additional riders (a 20 percent increase over the year). This ridership, however, could vary year-to-year depending on the weather.

Grand Avenue Trolley

The Cities of Grover Beach and Arroyo Grande are striving to encourage economic activity along the Grand Avenue corridor that stretches from the Village area of Arroyo Grande west to the Pacific. The planned hotel/convention center at the west end of this corridor, in particular, is expected to generate

[3] Valentine's Day weekend is also busy, but this is too far from the existing schedule of service and is thus not considered in this analysis.

more potential for visitor activity and travel along the corridor. A rubber-tired trolley service along this corridor could be part of this overall strategy. At seven miles of route length per round-trip, one vehicle could provide service roughly every 40 minutes, or two vehicles could provide service on a more convenient 20-minute frequency. In assessing this option, the following should be considered:

- The corridor is already well served by public transit with Route 21/24 providing hour service along the corridor in both directions and Route 27/28 providing additional transit options between downtown Arroyo Grande and the central Grover Beach area. There is therefore not a strong public transit role left for a trolley service to fill. This trolley, like many similar trolley services, is more of an economic development tool. It would provide enhanced mobility along this specific corridor but is not necessary to provide mobility throughout the South County service area.

- Visitors drawn by a new hotel/convention center will largely generate the need for transportation services based on specific event schedules. This "market" is best served by private shuttle companies, at least at the outset. If a steady pattern of visitor travel demand emerges, then the possibility of a schedule ongoing trolley service would be increased.

- Some visitor-oriented transit services operate free to the rider ("free-fare") as evidenced by the Avila-Pismo Beach Trolley. The Grand Avenue corridor, however, is also served by the existing fare SoCo fixed-routes[4]. If a trolley service were operated free-fare, it can be expected that a substantial amount of existing SoCo ridership would shift over to the free option (particularly from Routes 21 and 24). This would reduce fare revenue, as well as raise issues of equity as passengers in some neighborhoods served by SoCo would be provided with free transit while other would not. Establishing a fare consistent with SoCo fixed-route fares and then providing free day passes for guests staying along the corridor could address this issue while still encouraging visitor use of the trolley service.

A reasonable operating plan would be to provide trolley service from 11 AM to 9 PM, Thursdays through Sundays. If operated year-round with one trolley (service every 40 minutes), the service would incur an operating cost of $88,400 per year. With 20-minute service (two trolleys), costs would be $170,900 per year. Similar to the Avila-Pismo Trolley, SoCo Transit should be open to the possibility of obtaining, operating and marketing a Grand Avenue Trolley service. However, local funding should be provided by the two jurisdictions (or economic interests) outside of the existing SoCo Transit arrangement, given that the service is in addition to the regional public transit network. As development occurs along the corridor, the resulting travel patterns should be reviewed to identify when a trolley program may be feasible and the specific hours and days of service that are warranted.

[4] While the Avila-Pismo Trolley overlaps with some of the Route 21 and 24 stops, this overlap is a relatively small portion of the SoCo routes.

Based upon the productivity of similar rubber-tired trolley services and the characteristics of the corridor, a reasonable range of productivity is 7 to 10 passenger-trips per vehicle-hour of service. This figure and the resulting ridership will greatly depend on the span of service, the fare structure and the future development (and visitor-trip generation) along the corridor.

COMPARISON OF SOCO FIXED-ROUTE ALTERNATIVES

The ridership impacts of the fixed-route service alternatives, presented in Table 2 and Figure 3, range from an increase of 7,650 (for evening weekday service on Route 21, 24 and 28) to a loss of 4,500 resulting from the elimination of Route 27 early evening runs. Other alternatives with relatively high ridership potential are the evening service on Route 21 and 28 (6,450) and the rerouting to serve the neighborhood north of Ramona Garden (4,600).

TABLE 2: SoCo Transit Fixed Route Service Alternatives Performance Analysis

	Change From Existing Service				*Performance Measures*		
	Net Annual Ridership	Net Annual Vehicle-Hours	Net Annual Revenue	Net Annual Operating Subsidy	Psgr-Trips per Service-Hour	Marginal Subsidy per Psgr-Trip	Marginal Farebox Return Ratio
Existing Fixed Route Performance Standards	*Alternative Attaining Standard Shaded*				17.0	No Standard	20%
Revise Routes 21 and 24 to Better Serve Grover Beach Amtrak Station	700	0	$400	$4,400	--	$6.29	9%
Shift Transfer Point From Ramona Garden to Grover Beach Train Station	-2,100	0	-$1,300	$20,800	--	-$9.90	-6%
Revisions to Route 27 to Better Serve RTA Route 10	1,900	0	$1,500	$3,800	--	$2.00	39%
Reroute Routes 27 and 28 to Better Service Neighborhood North of Ramona Garden	4,600	0	$3,700	-$4,900	--	-$1.07	-76%
Eliminate Route 27 Service to Oceano Airport Stop and Serve Valley Road Instead	2,200	0	$1,800	$2,300	--	$1.05	78%
Saturday Route 27 Service	3,400	612	$2,700	$39,700	5.6	$11.68	7%
Sunday Route 27 Service	3,300	561	$2,600	$36,300	5.9	$11.00	7%
Evening Weekday Service Until 9:30 PM – Routes 21 and 28	6,450	1,049	$4,750	$73,050	6.1	$11.33	7%
Evening Weekday Service Until 9:30 PM – Routes 21, 24 and 28	7,650	1,541	$5,350	$106,950	5.0	$13.98	5%
Eliminate 6:30 PM and 7:30 PM Weekday Runs on Route 27	-4,500	-518	-$4,500	-$31,400	8.7	$6.98	14%
Extend Avila Trolley Service to First Weekend in November	1,500	104	$0	$9,300	14.4	$6.20	0%

The operating subsidy impacts vary widely, as shown in Figure 4. The most costly options would be evening weekday service on Routes 21, 24 and 28 ($106,950) followed by weekday evening service on Routes 21 and 28 only ($73,050 per year). Other alternatives would have a relatively modest impact on

FIGURE 3: SoCo Service Alternatives Annual Ridership Impact

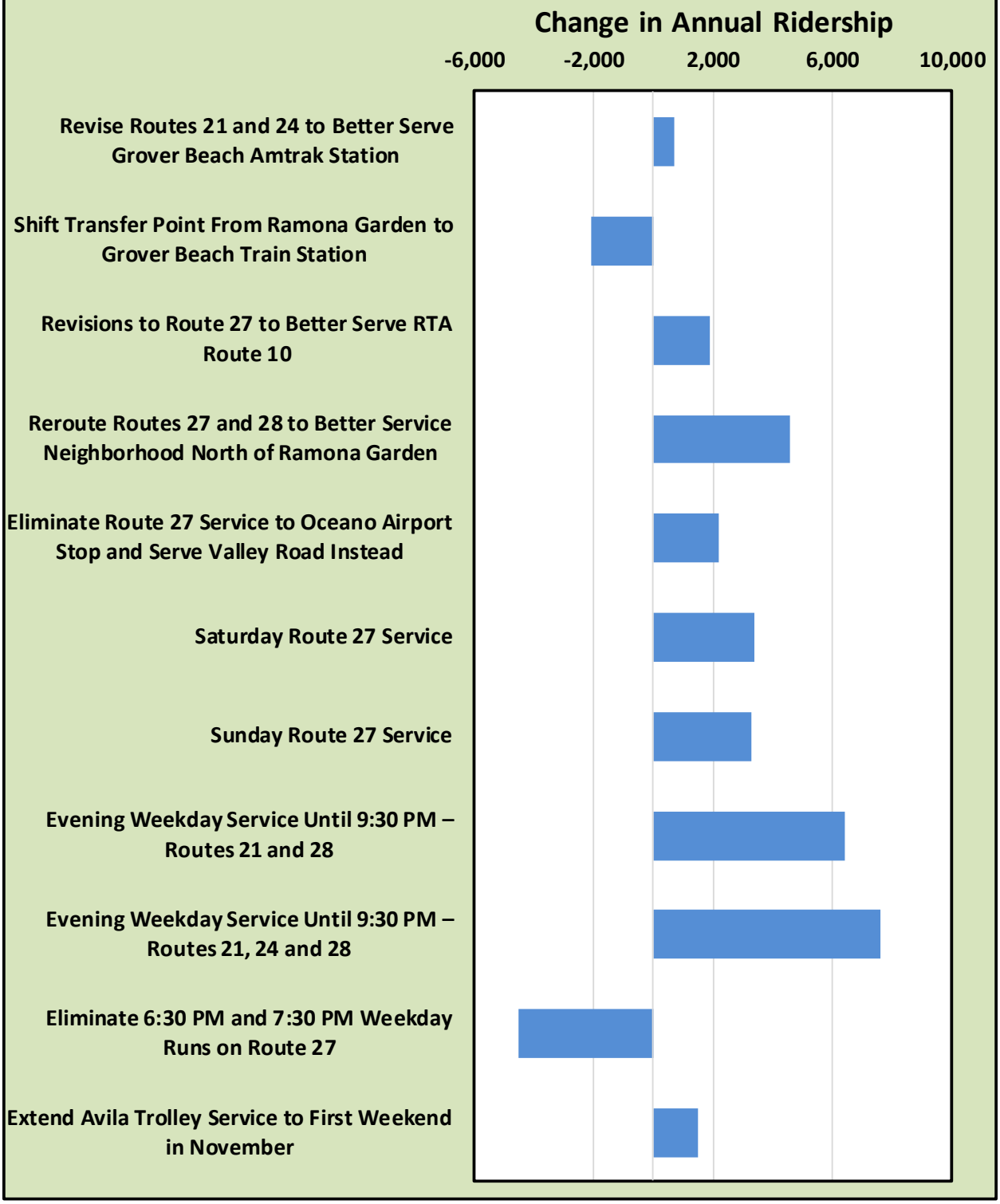
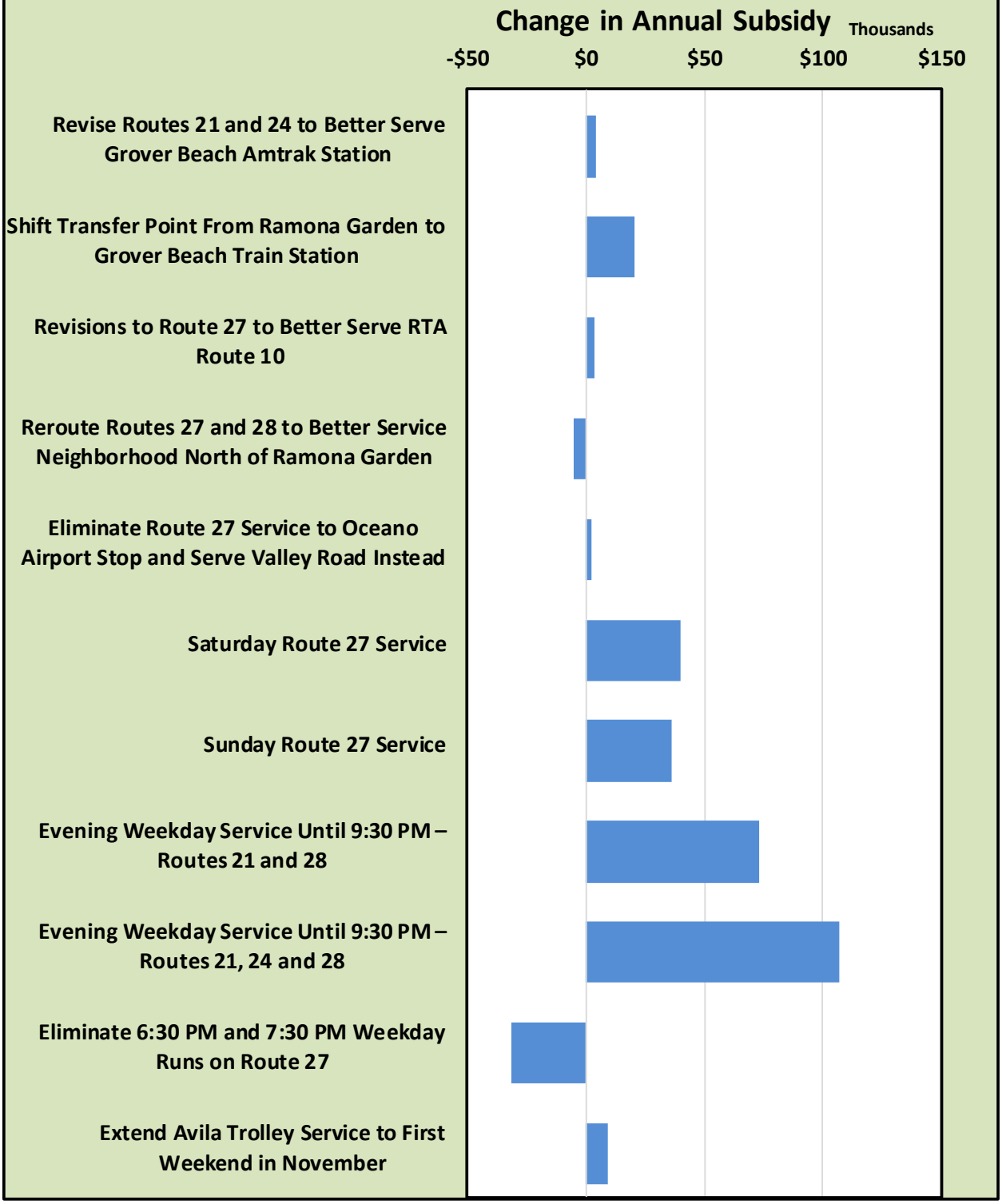


FIGURE 4: SoCo Service Alternatives Annual Operating Subsidy Impact



subsidy needs. Eliminating the last two weekday Route 27 runs would reduce subsidy (by $31,400 per year), while rerouting Route 27 and 28 north of Ramona Garden would have a small ($4,900 per year) reduction.

Fixed-Route Alternatives Performance Analysis

An analysis of the performance of the service alternatives is presented in the right side of Table 2. This considers the following key transit service performance measures.

Passenger-Trips per Vehicle-Hour

The marginal passenger-trips per vehicle-hour is a key measure of the productivity of a transit service. Note that several of the alternatives do not result in a change in vehicle-hours, making this measure inapplicable. These values are charted in Figure 5. The existing SoCo performance standard is to generate a minimum of 17 passenger-trips per vehicle-hour. As shown, none of the alternatives that increase vehicle-hours would attain this standard. The best of the alternatives by this measure is extending the Avila-Pismo Trolley season, at 14.4. The other alternatives that would increase vehicle-hours (evening service and Saturday service) range between 5.0 and 6.1 passenger-trips per vehicle-hours.

Eliminating the last two weekday Route 27 runs would yield a positive value of 8.7 passenger-trips per vehicle-hour, reflecting the loss in ridership for every hour of reduction in service. As this value is less than the standard, the service does not currently meet the standard and thus eliminating these runs would be consistent with the standard.

Marginal Subsidy per Passenger-Trip

This measure directly relates the key public input (tax funding) to the key desired output (ridership). Note that there is no standard established for this measure. As shown in Figure 6, by this measure the "best" alternative is rerouting Routes 27 and 28 to the neighborhood north of Ramona Garden; the negative figure of -$1.07 reflects a reduction in subsidy divided by an increase in passenger-trips.

The majority of these values reflect an increase in subsidy divided by an increase in ridership, in which case a lower value indicates a "better" alternative in that fewer dollars are needed to expand the ridership. Of these, the best performing alternative is the shift in Route 27 service from Oceano Airport to Valley Road, which requires $1.05 in additional subsidy per passenger-trip. This is followed by revising Route 27 to serve the Halcyon Park-and-Ride, which increases subsidy by $2.00 for every new passenger-trip. Other options expanding service and ridership require between $6.20 per passenger-trip (expanding the Avila-Pismo Trolley season) to $13.98 (evening weekday service with three routes). In the other direction, eliminating the final two weekday runs on Route 27 yields a positive $6.98 as a result of a reduction in subsidy divided by a reduction in ridership.

FIGURE 5: SoCo Service Alternatives Passengers per Vehicle Service-Hour

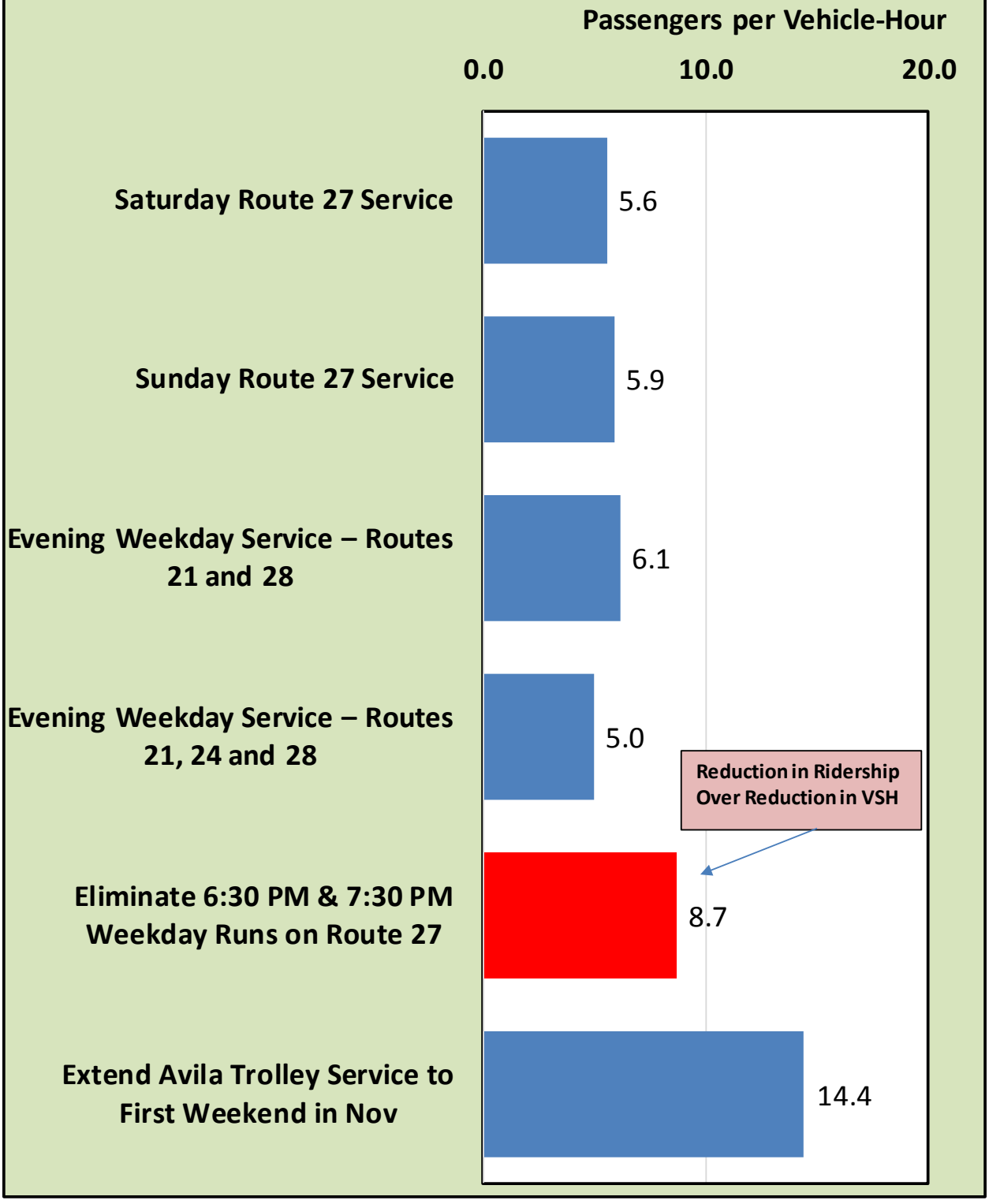
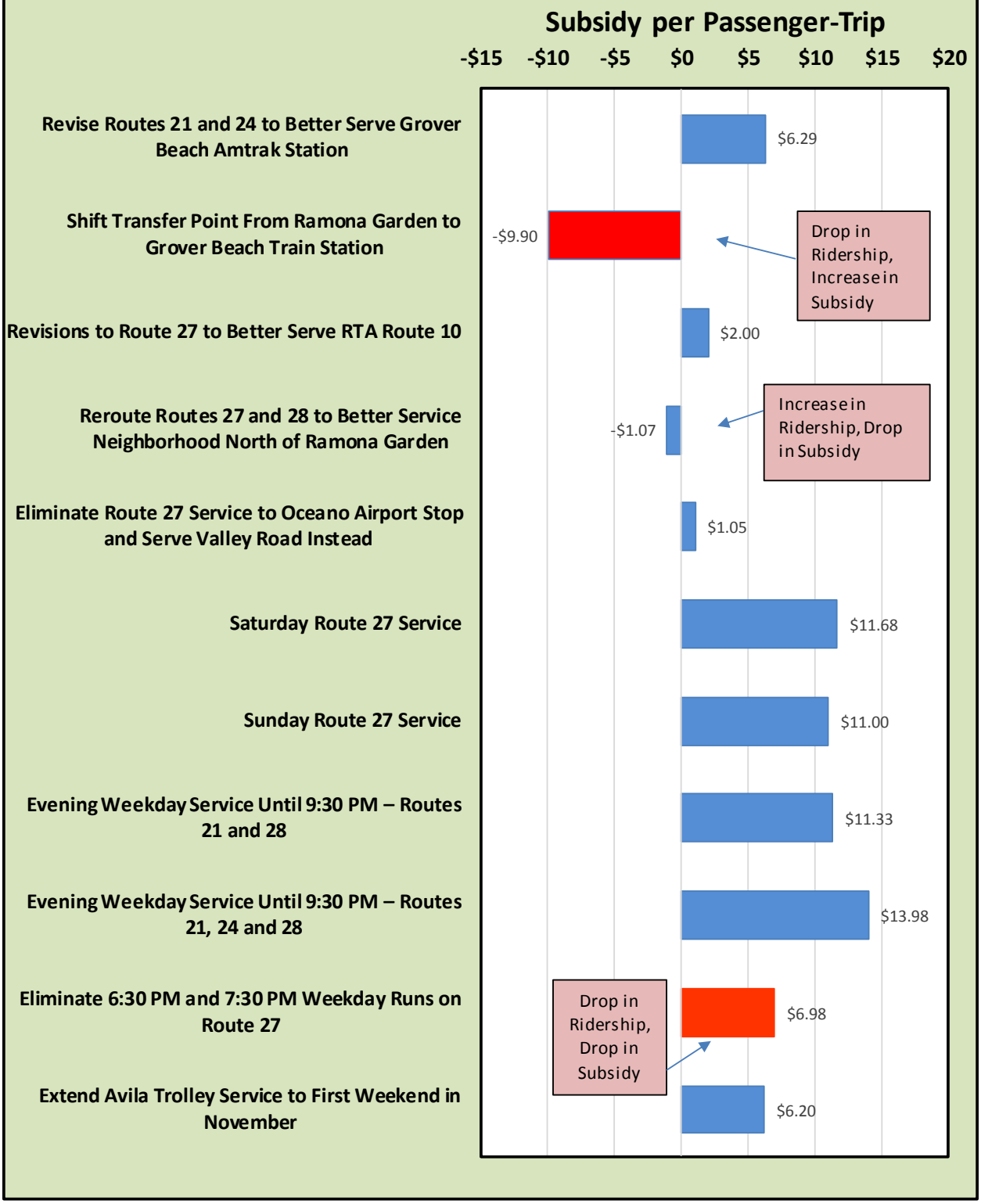


FIGURE 6: SoCo Service Alternatives Operating Subsidy per Passenger



At the other extreme, the negative figure for the shift in the transfer point from Ramona Garden to the Grover Beach Train Station reflects an increase in subsidy needs over a reduction in ridership.

Marginal Farebox Return Ratio

Consideration of the change in fare revenue divided by the change in operating costs yields a wide range of results:

- The small increase in fare revenues generated by better Route 27 connections to Route 10 ($1,500) divided by the increase in operating costs ($5,300) yields a 39 percent farebox return ratio.

- Shifting Route 27 service from the Oceano Airport to Valley Road yields a 78 percent farebox return ratio, far exceeding the standard of 20 percent.

- The revision of Routes 27 and 28 to serve the neighborhood north of Ramona Garden yields a value of -76 percent, which is a positive outcome as it reflects an increase in fare revenue divided by a reduction in operating cost.

- The elimination of the last two weekday runs on Route 27 yields a value of 14 percent, indicating that this alternative is consistent with the adopted standard in that the existing service to be eliminated does not meet the standard.

- The negative value for shifting the transfer point to the Grover Beach Train Station reflects a reduction in fare revenue divided by an increase in operating costs.

- The other alternatives that increase both fare revenues and operating costs yield values ranging from 5 percent to 9 percent—all less than the 20 percent standard.

Fixed-Route Alternatives Conclusions

The review above provides useful information for making decisions regarding the individual alternatives. It is also important to consider that there are many other factors (in particular, the ability to provide a dependable and safe transit service) beyond these financial and performance measures. There also is a benefit in providing a consistent service that is easy to communicate and understand. Nonetheless, the following are key overall findings that result from this evaluation:

- Revising Routes 27 and 28 to serve the neighborhood north of Ramona Garden would be an overall benefit.

- Shifting Route 27 service from the Oceano Airport to instead serve the Valley Road corridor would also provide a net overall benefit.

- Rerouting Route 27 to serve the Halcyon Park-and-Ride stop would provide a modest benefit, if operationally feasible.

- While serving the Grover Beach Amtrak Station with Route 21 and 24 could encourage additional future public transit use, this would not meet standards in the short run and could impact on-time performance.

- None of the alternatives that expand fixed-route service (Saturday Route 27 service, Sunday Route 27 service or evening service) meet any of the standards and would be a relatively poor use of public funding.

- Extending the Avila-Pismo Trolley service season further into the fall would generate ridership levels similar to that of existing service.

- Shifting the transfer center from Ramona Garden to the train station would not provide benefits to the transit system, but would reduce ridership (at least in the near term prior to substantial development in the area of the train station) and incur substantial capital costs.

Chapter 3
Dial-A-Ride and Other Service Alternatives

This chapter focuses on service alternatives for the existing Dial-A-Ride areas. In addition to changes in the DAR services, it also includes a discussion of fixed-route options in these areas.

Nipomo Area

The existing Dial-A-Ride service in Nipomo largely serves school trips, specifically to the three local elementary schools. As discussed in detail in Working Paper Three, fully 79 percent of existing ridership during the school year consists of elementary students traveling to or from the schools. Existing ridership excluding school trips is low, averaging only 18.6 passenger-trips per day. In summer, the service carries 25 passenger-trips per day, or 1.5 passenger-trips per service hour. For a community of approximately 16,100 residents, this indicates that there is substantial potential transit demand that is currently not being served. As discussed below, two options were developed and evaluated to provide scheduled service in Nipomo.

Provide Half-Hour Fixed-Route Service

Outside of the peak demand periods associated with the school bell times, there are many times of day when there is excess time available on the existing DAR service. This capacity could potentially be used to operate a fixed-route service over half of each hour, providing dial-a-ride service during the other half of the hour with the same vehicle. The concept would be to adequately serve the existing ridership (with some shifts in specific service times to avoid the fixed-route service times) while also serve new ridership attracted by the convenience of fixed-route service. Specifically, there are many transit riders that find the convenience and dependability of serve at specific times to be attractive compared with the need for advance reservations and the uncertain service time "windows" required for Dial-A-Ride service.

One key question is whether (and when) a fixed-route schedule could be operated without the need for significant increases in transit service levels. The existing service averages 19.25 total service hours (18.00 revenue hours) per day during the school year, on weekdays only. When local schools are not in session, an average of 16.36 service hours and 13.24 revenue hours are operated. This typically consists of three individual shifts that vary depending on demand but are generally as follows:

601—In service from 7:50 AM to 8:50 AM

602—In service from 6:45 AM to 3:30 PM

603—In service from 12:15 PM to 6:30 PM

In total, two vehicles are typically in operation from 7:50 AM to 8:50 AM as well as from 12:15 PM to 3:30 PM while one vehicle is in operation during the other periods from approximately 6:45 AM to 6:30 PM. To gain further insight regarding when capacity could be available, a detailed evaluation was conducted of DAR passenger activity by shift for a total of six days during the school year. As shown in

Table 3, the periods during which each individual bus is in use serving the pulses in student transportation around bell times are shown in yellow, while blue indicates the periods when a bus is available for other more dispersed DAR passenger-trips[5]. As shown, both buses in service at peak times are needed to serve the school bell time trips. The specific schedule for these school trips varies with the school operating schedule, but typically occurs between 7:45 AM and 9:45 AM, 12:30 PM to 1:00 PM and 3:15 PM to 3:45 PM. As shown in the right side of this table, this leaves the other periods of the operating day when at least one vehicle could be available to operate a fixed-route run every other half-hour.

In considering a fixed-route schedule, it is important to consider the schedule of the RTA Route 10 service: southbound Route 10 buses serve Nipomo (Tefft at Carillo) at 19 minutes past the hour, while northbound stops are scheduled to occur at 35 minutes past the hour. Given the uncertainties of travel times considering the potential for traffic delays on US 101, it is prudent to provide some cushion during the transfer times. A reasonable schedule would be to operate the fixed route between 45 minutes after the hour and 15 minutes after the hour (leaving the vehicle available for DAR service between 15 minutes and 45 minutes after the hour). Considering the periods when a DAR bus is available, runs could be provided at 6:45 AM, 9:45 AM, 10:45 AM, 11:45 AM and every hour from 1:45 PM to 5:45 PM (a total of nine daily runs). While breaks in scheduled service always reduce the overall convenience of a transit service, these runs do provide the opportunity to connect to Route 10 runs in both directions during the AM and PM commute periods, the ability to conduct a shopping or other short trip in the late morning and the opportunity for trips throughout the afternoon.

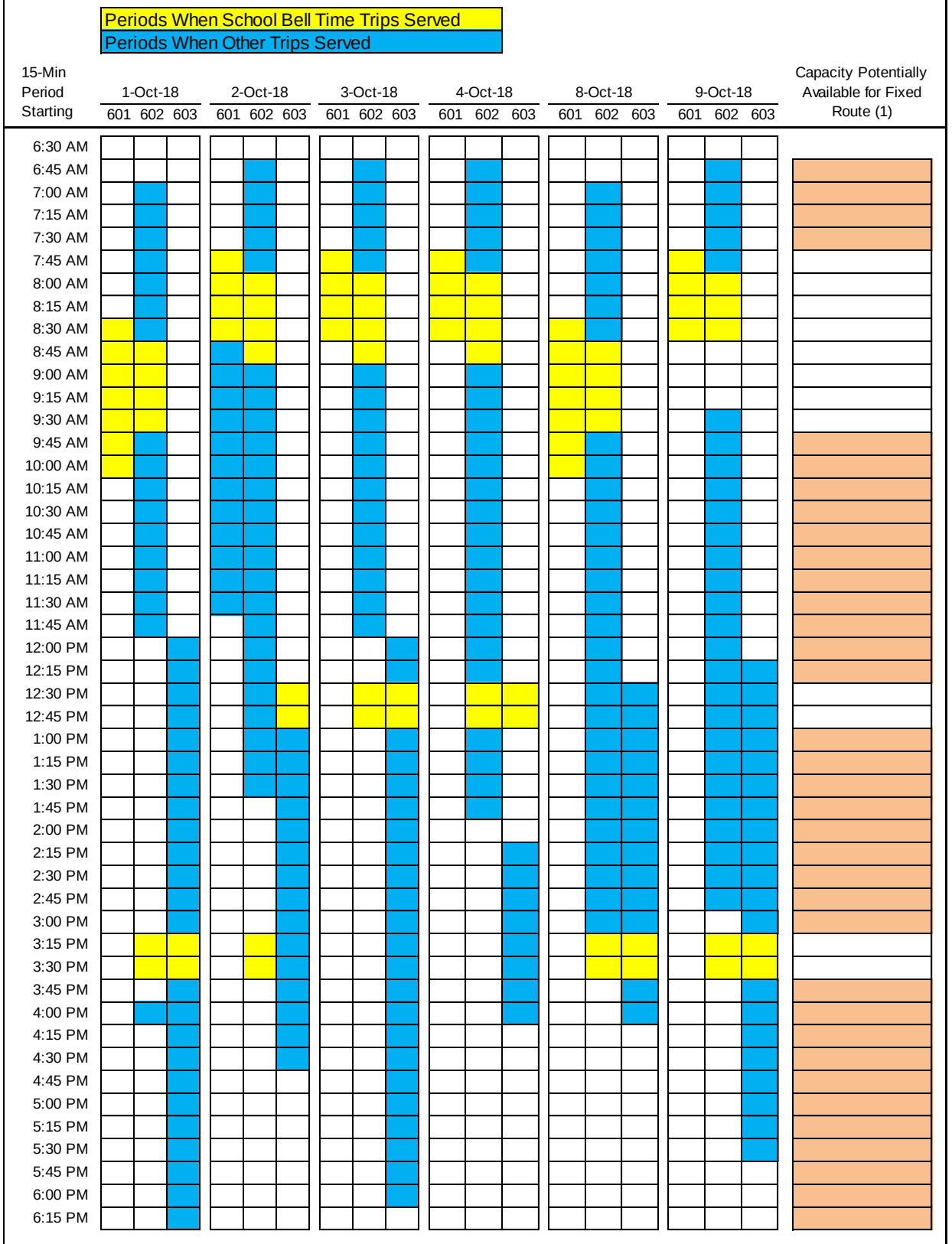
A potential route is shown in Figure 7. This route is of necessity relatively short (6.4 miles) in order to ensure that it can be reliably operated within a half-hour (including 5 minutes for recovery). The bus would first head east from the Route 10 transfer point and Park-n-Ride at Tefft and Carillo, making a counter-clockwise loop (left turns) around Wilson Street, E. Price Street and S. Thompson Street before heading west on Tefft Street[6]. The route would turn left onto S. Mary Avenue, right on Hill Street, left on Blume Street, left on Grande Street, right on S. Frontage Road, right on Division Street, right on Mercury Drive, right on Starlite Drive, left on Hazel Lane and right on W. Tefft Street to return to the start. This route connects the major commercial centers with the denser residential areas of Nipomo, including the multifamily residential areas. The resulting schedule is presented in Table 4.

It is next necessary to evaluate whether the remaining DAR capacity is adequate to accommodate the DAR demand (conservatively assuming that none of the existing DAR passengers choose to shift to the fixed-route service). Non-school-bell-time trips were summarized by hour for the six days analyzed and compared with the capacity remaining after the fixed-route service times are considered. As shown in Table 5, on most days between five and nine passengers would not be accommodated within the existing hour of service. Some of these trips could (with negotiation) be shifted to other hours of the day when capacity is available. Overall, however, it is conservative to assume that an additional 1.5 revenue

[5] This includes some individual trips to/from schools, similar to other non-bell-time trips.

[6] Service to the high school was considered, but this would add several minutes of running time to a stop that is also accessible by RTA Route 10 and by DAR, and which generates little ridership at present.

TABLE 3: Review of Nipomo DAR Availability For Fixed Route Service



Note 1: At least 1 vehicle in revenue service not serving school bell time trips on all days.

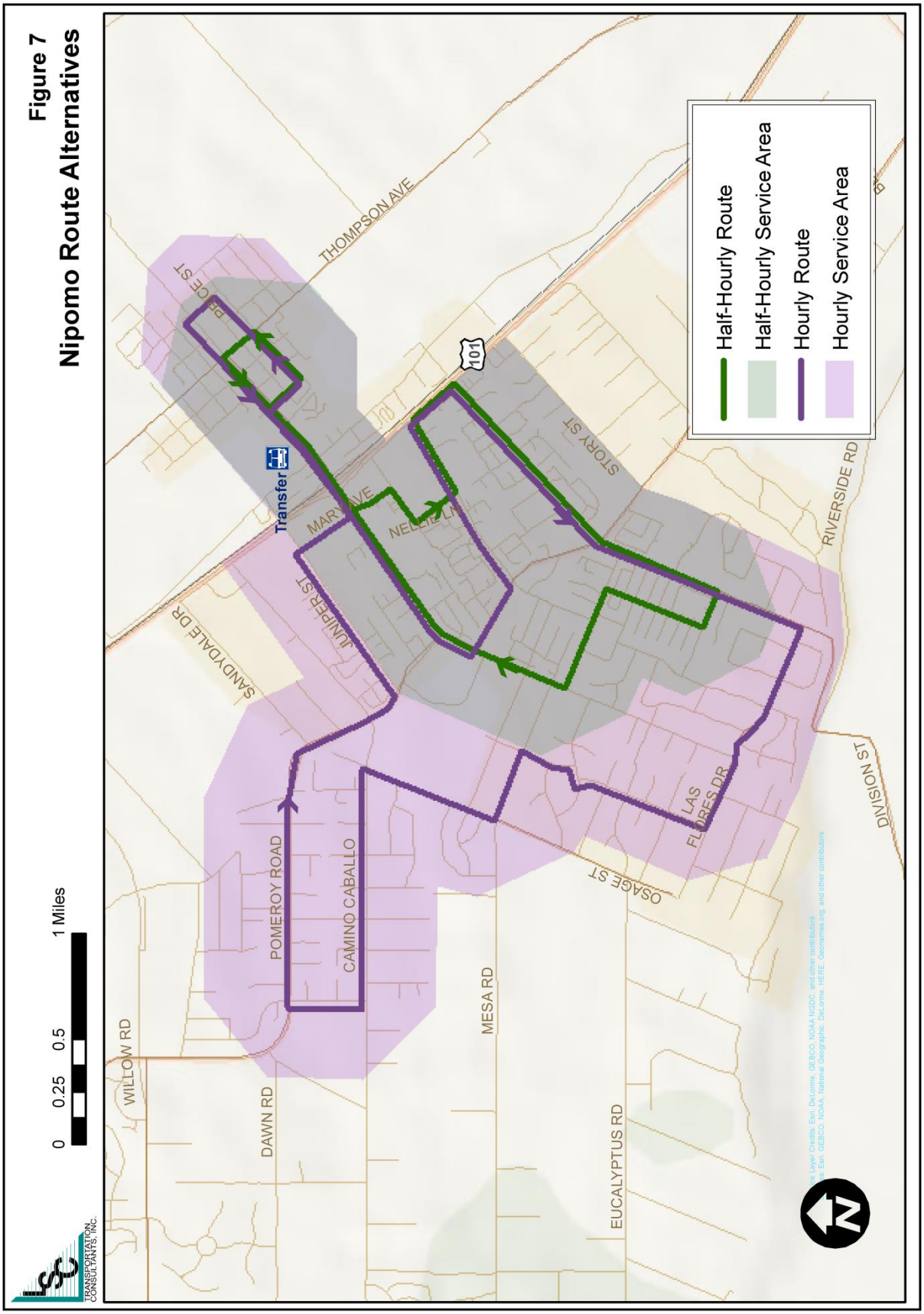


Figure 7
Nipomo Route Alternatives
Half-Hourly Route
Half-Hourly Service Area
Hourly Route
Hourly Service Area
Transfer
THOMPSON AVE
PIONEER ST
MARY AVE
NELLIE LN
STORY ST
101
SANDYDALE DR
ALUMBER ST
RIVERSIDE RD
POMEROY ROAD
CAMINO CABALLO
MESA RD
OSAGE ST
LAS FLORES DR
DIVISION ST
WILLOW RD
DAWN RD
EUCALYPTUS RD
0
0.25
0.5
1 Miles
TRANSPORTATION CONSULTANTS, INC.

TABLE 4: Example Schedule of Nipomo 30-Minute Fixed Route

Leave Tefft/Carillo Eastbound	Thompson & Price	Tefft/Carillo Westbound	Division & Frontage	Division & Mercury	Tefft & Pomeroy	Arrive Tefft/Carillo
6:45	6:47	6:49	6:55	7:00	7:06	7:10
9:45	9:47	9:49	9:55	10:00	10:06	10:10
10:45	10:47	10:49	10:55	11:00	11:06	11:10
11:45	11:47	11:49	11:55	**12:00**	**12:06**	**12:10**
1:45	**1:47**	**1:49**	**1:55**	**2:00**	**2:06**	**2:10**
2:45	**2:47**	**2:49**	**2:55**	**3:00**	**3:06**	**3:10**
3:45	**3:47**	**3:49**	**3:55**	**4:00**	**4:06**	**4:10**
4:45	**4:47**	**4:49**	**4:55**	**5:00**	**5:06**	**5:10**
5:45	**5:47**	**5:49**	**5:55**	**6:00**	**6:06**	**6:10**

Bold is PM.

TABLE 5: Analysis of Nipomo DAR Capacity Assuming Fixed-Route Service

Hour Beginning	Non-School Bell Time Passenger-Trips						Available DAR Capacity With Fixed Route for Non-School Bell Time Trips						DAR Trips Not Served by Existing Capacity						
	10/1	10/2	10/3	10/4	10/8	10/9	10/1	10/2	10/3	10/4	10/8	10/9	10/1	10/2	10/3	10/4	10/8	10/9	Average
6:00 AM	0	1	1	1	0	1	0	0	0	0	0	0	0	1	1	1	0	1	
7:00 AM	2	2	2	2	1	2	3	3	3	2	3	2	0	0	0	0	0	0	
8:00 AM	1	0	0	0	2	1	2	1	0	0	3	1	0	0	0	0	0	0	
9:00 AM	0	4	3	2	0	2	0	7	3	3	0	3	0	0	0	0	0	0	
10:00 AM	4	3	4	4	1	3	2	6	2	2	2	2	2	0	2	2	0	1	
11:00 AM	4	3	3	3	0	4	2	6	2	2	2	2	2	0	1	1	0	2	
12:00 PM	3	4	0	1	1	3	3	3	1	1	5	6	0	1	0	0	0	0	
1:00 PM	3	3	1	1	0	5	3	5	3	2	6	6	0	0	0	0	0	0	
2:00 PM	1	1	3	4	3	1	2	2	2	2	4	4	0	0	1	2	0	0	
3:00 PM	0	3	3	1	0	3	0	0	2	2	0	0	0	3	1	0	0	3	
4:00 PM	3	3	4	2	1	1	3	2	2	0	2	2	0	1	2	2	0	0	
5:00 PM	0	0	2	0	0	0	2	2	2	0	0	2	0	0	0	0	0	0	
6:00 PM	2	0	1	0	0	0	1	0	0	0	0	0	1	0	1	0	0	0	
Total	23	27	27	21	9	26							5	6	9	8	0	7	
									Required Addl Hours				1.25	1.5	2.25	2	0	1.75	1.46

vehicle hours would be needed to ensure all existing DAR passengers are adequately served. As shown in Table 6, between the additional mileage operated for the fixed route and the additional hours (and miles) of DAR service, this service would increase annual operating costs by an estimated $35,300 per year.

This route would serve approximately 3,400 households (equal to 59 percent of all Nipomo residences). Considering the demographic characteristics of the area, and the limitations on the convenience of the service (the limited runs, and the long waits for some transfers to/from Route 10), this service is

TABLE 6: Dial-A-Ride and Other Service Alternatives Analysis

	Run Parameters		Daily Runs			Days per Year			Annual		Annual Cost	Ridership	Fare Revenues	Operating Subsidy
	Hours	Miles	Wkdy	Sat	Sun	Wkdy	Sat	Sun	Hours	Miles				
Nipomo Half-Hour Fixed Route														
Addl. Fixed Route Mileage	--	2.6	9	0	0	259	0	0	0	6,035	$10,500			
Additional DAR	1.5	11.4	--	--	--	259	0	0	389	2,961	$24,800			
Total									389	8,996	$35,300	15,300	$10,700	$24,600
Nipomo Hour Flex Route														
Addl. Fixed Route Mileage	--	4.4	8	0	0	259	0	0	0	9,071	$15,800			
Additional DAR	4.00	30.5	--	--	--	259	0	0	1,036	7,896	$66,200			
Total									1,036	16,968	$82,000	20,600	$14,400	$67,600
Nipomo Commute Fixed Route	1	12	4	0	0	259	0	0	1,036	12,432	$74,100	12,000	$8,400	$65,700
Reduce Summer Nipomo DAR to 1 Van	-5.00	-37.2	--	--	--	15	0	0	-75	-558	-$4,800	0	$0	-$4,800
Revise Route Route 10 to Serve Southern Nipomo	0.18	1.8	29	10	6	251	52	52	1,487	14,600	$100,700	-2,300	-$3,400	$104,100
Eliminate Nipomo DAR Service After 5 PM	-0.58	-4.3	--	--	--	259	0	0	-151	-1,123	-$9,600	-350	-$630	-$8,970
Eliminate Nipomo DAR Service After 6 PM	-0.13	-1.0	--	--	--	259	0	0	-34	-250	-$2,100	-190	-$340	-$1,760
Revise RTA Route 9 to Serve Eastern Templeton	0.10	0.85	26	10	6	251	52	52	736	6,254	$48,200	5,600	$8,300	$39,900
Eliminate Shandon DAR Service	--	--	--	--	--	--	--	--	-5	-146	-$500	-2	-$5	-$495
Eliminate Templeton DAR Service	--	--	--	--	--	--	--	--	-60	-220	-$3,420	-167	-$405	-$3,015

estimated to generate approximately 15,300 passenger-trips per year. Assuming average fare revenues equal to that of the existing SoCo fixed-routes, $10,700 in fare revenues would be generated. This yields a net operating subsidy requirement of $24,600 annually.

Provide Hourly Flex Route Service

Another option would be to provide an hour route deviation service, or "flex route." Under this operating plan, a longer route would be operated on an hour schedule. This dedicated bus would operate on a fixed schedule but would have the flexibility to accommodate one to two deviations (close to the route) to serve passengers that otherwise would use the DAR service. A reasonable route is shown in Figure 7 that serves the half-hour route and also extends further to the east, southwest and northwest.

A total of eight daily runs could be served while still accommodating the school bell time DAR demand. As shown in Table 7, the schedule would best coordinate with the RTA Route 10 schedules by departing on the western loop at 40 minutes past the hour (five minutes after the scheduled time for the northbound Route 10), return to the transfer point at the same time as the southbound Route 10 (19 minutes after the hour) and then operate the eastern loop before arriving for a layover at the transfer point at 26 minutes after the hour.

As the route bus would not be available for DAR trips (other than a limited number of deviations), additional DAR service would be needed. An analysis of capacity versus demand for this alternative indicates the need for four additional DAR vehicle-hours of daily service. In addition, in order to avoid

TABLE 7: Example Schedule of Nipomo Hourly Flex Route and Fixed Commuter Routes

Hourly Flex Route

Leave Tefft/Carillo Westbound	Division & Frontage	Tefft/ Las Flores	Pomerly/ Waypoint	Tefft/Carillo Eastbound	Thompson & Beechnut	Arrive Tefft/Carillo
6:40	6:50	6:59	7:10	7:19	7:22	7:26
9:40	9:50	9:59	10:10	10:19	10:22	10:26
10:40	10:50	10:59	11:10	11:19	11:22	11:26
11:40	11:50	11:59	**12:10**	**12:19**	**12:22**	**12:26**
1:40	**1:50**	**1:59**	**2:10**	**2:19**	**2:22**	**2:26**
3:40	**3:50**	**3:59**	**4:10**	**4:19**	**4:22**	**4:26**
4:40	**4:50**	**4:59**	**5:10**	**5:19**	**5:22**	**5:26**
5:40	**5:50**	**5:59**	**6:10**	**6:19**	**6:22**	**6:26**

Hourly Commuter Route

Tefft/Carillo	Frontage	Flores	Waypoint	Eastbound	Beechnut	Tefft/Carillo
6:33	6:43	6:52	7:03	7:12	7:15	7:19
7:33	7:43	7:52	8:03	8:12	8:15	8:19
4:35	**4:45**	**4:54**	**5:05**	**5:14**	**5:17**	**5:21**
5:35	**5:45**	**5:54**	**6:05**	**6:14**	**6:17**	**6:21**

operating three total vehicles at peak times approximately four existing passengers per day would need to be rescheduled by up to an hour from their current service times to periods with adequate capacity. Between the additional DAR service and the additional miles of route operation, this option would increase operating costs by an estimated $82,000 per year.

The service area for this option encompasses approximately 5,000 households, equal to 87 percent of all Nipomo households. Considering the demographic characteristics and service quality characteristics (such as the long in-vehicle travel times associated with a large one-way loop), this option is estimated to serve approximately 20,600 annual passenger-trips. Subtracting the resulting fare revenue, subsidy requirements would be approximately $67,600 per year.

Provide Commute-Period Fixed Route Service

A more straightforward option for Nipomo fixed route service would be to simply operate a fixed route over the hourly route shown in Figure 7, leaving the existing DAR service unchanged. Due to the limited potential demand, a reasonable option would be to operate two runs in the morning commute period and two in the afternoon commute period. As shown in the bottom portion of Table 7, these runs would be scheduled to provide a direct transfer to the southbound Route 10 bus in the morning and

from the northbound Route 10 bus in the evening, and a 16 minute wait for the passengers transferring to the northbound Route 10 bus in the morning and the southbound Route 10 bus in the evening.

This additional service would incur an operating cost of $74,100 per year. Ridership is estimated to total 12,000 passenger-trips per year, resulting in an operating subsidy of $65,700 per year. This would also require an additional vehicle.

Reduction of Nipomo DAR Summer Service to One Vehicle

Given the low ridership on the Nipomo DAR when school is not in session, the service could be adequately provided using a single van, between approximately July 15th and August 5th (a total of 15 non-holiday weekdays). This would result in an operating cost savings of $4,800 per year. This would have a negligible impact on ridership and fare revenues, yielding a reduction in subsidy requirements of $4,800 per year.

Revisions to Route 10 to Service Additional Areas of Nipomo

In the course of this study several comments were received regarding the desirability of revising some Route 10 runs to serve other areas of Nipomo. One option would be to serve the Nipomo Mesa area. While there is a substantial overall population, the area wide density is low and the roadway network is limited, making it difficult to provide transit service efficiently. A minimal option would be to head west from US 101 on Willow Road and then south on Pomeroy Road, west on Dawn Road, north on Sundale Way and returning east on Willow Road to US 101[7]. This would add six miles to each one-way bus trip, requiring 15 minutes of additional running time. The ridership potential for this area would be modest and would be more than offset by the reduction in existing ridership due to the longer in-vehicle travel times. It is recommended that this option not be considered further.

Another option would be to revise Route 10 to serve more residential areas west of US 101 and south of Tefft Street. The southbound current route serves Thompson Avenue (including Nipomo High School) and Tefft Street and then uses US 101 directly to Santa Maria. Instead, the route could continue west on Tefft over US 101, then south on Mary Avenue, east on Hill Street, south on the US 101 Frontage Road, west on Division Street and south on Orchard Road to regain US 101 at the SR 166 interchange. This route segment would be 6.1 miles in length and take approximately 16 minutes, compared to the current route of 4.3 miles and a five-minute running time (barring freeway congestion). At present the southbound Route 10 buses arrive in Santa Maria at 43 minutes past the hour and depart at 14 minutes past the hour.

With these additional running times, buses would instead arrive at 54 minutes after the hour and depart at three minutes after the hour. This would not provide sufficient layover and makeup time to operate dependably without causing the potential for cascading delays to Route 10 service. As a result, it would be necessary to start southbound Route 10 runs earlier and end them later, in order to provide the necessary layover time.

[7] An alternative would be to access the area via Tefft Avenue and Pomeroy Road, but this would eliminate service to the Nipomo High School.

The overall ridership impact of this option would consist of an increase in ridership generated at new bus stops in the Nipomo area offset by the reduction in existing ridership resulting from the increase in travel times for existing passengers. The revised route would serve approximately 850 new households in southwest Nipomo. Based on the demographics of this area and the convenience of direct service, an estimated 6,700 passenger-trips would be generated by these new stops. On the other hand, passenger survey data generated for the 2016 *RTA Short Range Transit Plan* indicates that 37 percent of all Route 10 riders are onboard between Nipomo and Santa Maria. Considering the ridership on the local runs, a total of 73,000 passenger-trips per year would be impacted by the additional travel time. Onboard travel time for these passengers would increase from a current duration of approximately 60 minutes to 71 minutes. Elasticity analysis indicates that this reduction in the convenience of Route 10 service would reduce existing ridership by 9,000 passenger-trips per year. On balance, this option would result in a net loss of approximately 2,300 passengers per year.

Eliminate Nipomo DAR Service after 5 PM

While Nipomo DAR service is available until 6:30 PM, ridership on the Nipomo DAR service drops off substantially after the 4 PM hour. Only 1.5 percent of all ridership is picked up after 5:00 PM, of which half occurs in the 5:00 PM hour and half in the 6:00 PM hour. Even excluding the school passenger-trips, only roughly 7.4 percent of passengers board at or after 5:00 PM. If no reservations are made for service after 5:00 PM, drivers return to the operations facility to clock out (saving operating costs). However, if a ride at 6:00 PM is requested without a ride during the 5:00 PM hour, drivers must stay on the clock to provide the ride, resulting in a relatively high cost per passenger-trip served. Reducing the service hours to end at 5:00 PM would save an estimated $9,600 in annual operating costs, but would eliminate 350 annual vehicle-trips. Total subsidy requirements would be reduced by $8,970.

Eliminate Nipomo DAR Service after 6 PM

A less impactful alternative would be to end service at 6:00 PM rather than 6:30 PM. The number of passenger-trips eliminated would drop to only 190 but the subsidy savings would be only $1,760 per year.

Expansion of Paso Robles DAR to Accommodate Growth in Demand

The *2050 Regional Growth Forecast for San Luis Obispo County* (SLOCOG, June 2017) indicates that Paso Robles population is forecast to grow by 1,559 residents between 2020 and 2025. This is equal to a 4.8 percent increase, above the 3.6 percent increase for the county as a whole. There are also current and planned developments in southeast Paso Robles that can be expected to modestly increase demand for the DAR service.

At an average of 1.84 passenger-trips per revenue vehicle hour, there is currently substantial unused capacity[8]. This is corroborated by the on-time performance, which indicates only 0.6 percent of trips

[8] As an aside, means of reducing this service were considered, such as cutting hours of service or days of service. At only 6 hours of service, weekdays only, any cuts in service would substantially reduce the utility of the program, and were not considered further.

served more than five minutes late. The existing capacity is expected to remain sufficient to meet growth in demand over the five-year SRTP plan period.

Revisions to Route 9 to Serve Additional Areas of Templeton East of 101

At present, RTA services in the Templeton area are limited to stops at the Templeton Park-and-Ride and at Twin Cities Community Hospital with no stops served east of US 101. Considered in the northbound direction, an option to the current service directly northbound to the Las Tablas interchange would be to instead exit at the Vineyard Drive interchange, travel east on Vineyard Drive, north on Main Street, west on 1st Street, jog north on Old County Road and travel west on Las Tablas Drive to serve the existing stops. This alternative route is shown in Figure 8. No roadway improvements would be required, though some tree trimming would be needed along Las Tablas Drive.

This route option would not serve the newer residential areas in the northern Templeton area (east of Main Street). Given the geography of the area, service along the portion of Main Street north of the Las Tablas Road corridor would require inefficient doubling back on the route. It would also be difficult given the limited geometrics of the intersections along Old County Road and would require residents of this newer residential area to cross Main Street at uncontrolled locations to reach southbound bus stops.

The revised route is 1.65 miles in length, which is 0.85 miles longer than the current route. It would serve the commercial establishments along Main Street as well as the residential neighborhoods along Las Tablas Road east of US 101 and near Main Street. It would add approximately six minutes to the Route 9 running time. This route currently has only seven minutes of layover time at the northern end (for most runs) at Cuesta College in Paso Robles. This additional service would therefore require starting round-trip runs earlier and ending them later, thus increasing costs. It would also change service times in Paso Robles and San Luis Obispo, potentially impacting the convenience of transfers to Paso Express, SLO Transit and other RTA services.

This new service area includes approximately 850 households or roughly 23 percent of all households in the Templeton area. This includes multifamily areas such as Serenity Hills. Considering the demographic characteristics of the area, residents will generate approximately 4,500 passenger-trips per year. The new route would also serve Templeton High School and Middle School, as well as the commercial/retail establishments along South Main Street (including a pharmacy). Overall, ridership generated in this new service area is estimated to total 11,300 passenger-trips per year. Route 9 passenger boarding/alighting counts indicate that an estimated 67,000 passenger-trips currently pass through Templeton on local runs each year. The increased in-vehicle travel time for these existing passengers would result in a reduction of approximately 5,600 passenger-trips per year. In total, therefore, this option would increase overall ridership by 5,700 passenger-trips per year. Subtracting $8,300 in additional fare revenues, it would require $39,900 in increased annual operating subsidy. This option is best evaluated as part of an overall analysis of RTA Route 9 corridor services.

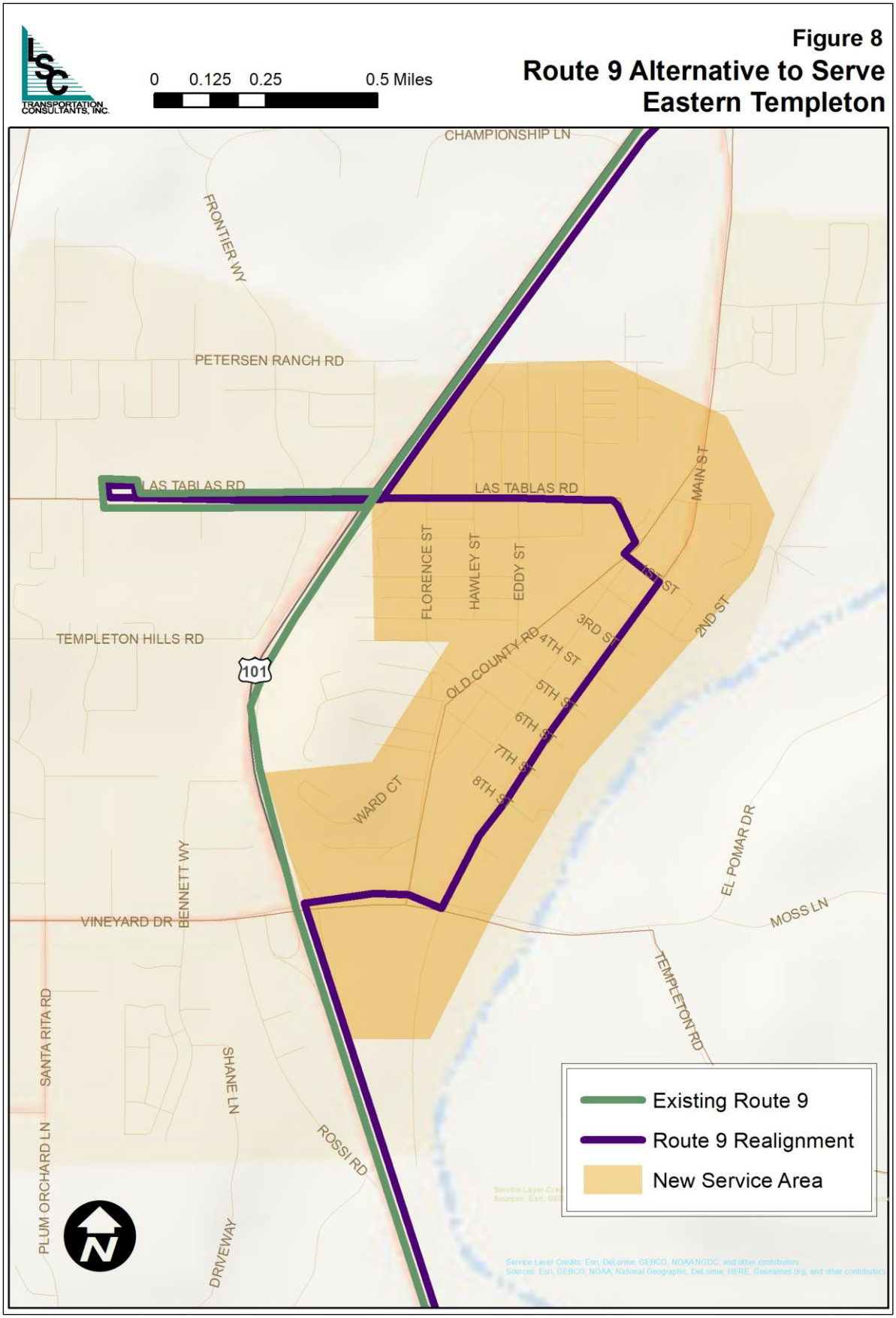


Figure 8
Route 9 Alternative to Serve Eastern Templeton
0 0.125 0.25 0.5 Miles
TRANSPORTATION CONSULTANTS, INC.
CHAMPIONSHIP LN
FRONTIER WY
PETERSEN RANCH RD
LAS TABLAS RD
LAS TABLAS RD
MAIN ST
FLORENCE ST
HAWLEY ST
EDDY ST
1ST ST
2ND ST
3RD ST
4TH ST
5TH ST
6TH ST
7TH ST
8TH ST
TEMPLETON HILLS RD
101
OLD COUNTY RD
WARD CT
EL POMAR DR
MOSS LN
TEMPLETON RD
VINEYARD DR
BENNETT WY
SANTA RITA RD
SHANE LN
ROSSI RD
PLUM ORCHARD LN
DRIVEWAY
N
Existing Route 9
Route 9 Realignment
New Service Area

Eliminate Shandon DAR

DAR service is currently available to the general public in Shandon from 8 AM to 5 PM on Mondays, Wednesdays and Fridays. Ridership has fallen to very low levels: from July 2017 through June 2018, only two passenger-trips were carried on this service. As service is only operated when requests are received at least a day in advance, marginal operating costs incurred for this service are also low, totaling $500 over this same period. In addition to saving these operating costs, eliminating this service would reduce staff time and reporting time needed for monitoring and auditing the service. This would also eliminate a service that is not filling a significant public need, and that could raise issues of equity with regards to other small outlying residential areas not provided with transit service.

Eliminate Templeton-Paso Robles DAR

The Templeton-Paso Robles DAR operates on a similar structure, except that service is available on Tuesdays and Thursdays. Ridership totals 167 passenger-trips per year or an average of 2.7 per service day. On most days that any passengers are served, a single round-trip is provided to and from a medical facility in Templeton.

Eliminating this service would reduce operating costs by approximately $3,420 per year and reduce subsidy requirements by $3,015 per year. It would also reduce management, reporting and audit costs. Along with elimination of the Shandon DAR, it would increase availability of a vehicle for other services.

There is also the potential for this service to be provided by the City of Atascadero, which is discussed in Technical Memorandum 6: Institutional and Capital Alternatives.

COMPARISON OF SERVICE ALTERNATIVES

Table 8 presents a summary of the service alternatives discussed in this chapter. As also shown in Figure 9, these alternatives have annual ridership impacts that range from an increase of 20,600 (Nipomo hour flex route service) to a loss of 2,300 (Route 10 revisions to serve southern Nipomo). Operating subsidy impacts range from an increase of $104,100 (the Route 10 revisions) to a savings of $8,970 (eliminating Nipomo DAR service after 5 PM) as also shown in Figure 10.

The performance analysis for these alternatives is shown in the right side of Table 8. For the fixed-route options, the consistency with fixed-route standards is considered. As discussed in Working Paper 2, there are no specific adopted standards for the DAR services.

The results regarding the **passenger-trips per vehicle-hour of service** are shown in Figure 11. These results fall into several categories:

- For those options increasing both passenger-trips as well as vehicle-hours, the best option is the Nipomo half-hour fixed-route, with 39.4 passenger-trips per additional vehicle-hour (benefited

TABLE 8: DAR and Other Fixed Route Service Alternatives Performance Analysis

	Change From Existing Service				*Performance Measures*		
	Net Annual Ridership	Net Annual Vehicle-Hours	Net Annual Revenue	Net Annual Operating Subsidy	Psgr-Trips per Service-Hour	Marginal Subsidy per Psgr-Trip	Marginal Farebox Return Ratio
Fixed Route Performance Standards	*Fixed Route Alternative Attaining Standard Shaded*				17.0	No Standard	20%
Nipomo Half-Hour Fixed Route	15,300	389	$10,700	$24,600	39.4	$1.61	43%
Nipomo Hour Flex Route	20,600	1,036	$14,400	$67,600	19.9	$3.28	21%
Nipomo Commute Fixed Route	12,000	1,036	$8,400	$65,700	11.6	$5.48	13%
Reduce Summer Nipomo DAR to 1 Van	0	-75	$0	-$4,800	0.0	--	0%
Revise Route Route 10 to Serve Southern Nipomo	-2,300	1,487	-$3,400	$104,100	-1.5	-$45.26	-3%
Eliminate Nipomo DAR Service After 5 PM	-350	-151	-$630	-$8,970	2.3	$25.63	7%
Eliminate Nipomo DAR Service After 6 PM	-190	-34	-$340	-$1,760	5.6	$9.26	19%
Revise RTA Route 9 to Serve Eastern Templeton	5,600	736	$8,300	$39,900	7.6	$7.13	21%
Eliminate Shandon DAR Service	-2	-5	-$5	-$495	0.4	$248	1%
Eliminate Templeton DAR Service	-167	-60	-$405	-$3,015	2.8	$18.05	13%

from the fact that many of the vehicle-hours are already being used for the DAR service). The Nipomo hour flex-route also has a relatively good value of 19.9, exceeding the standard of 17.0. Revising Route 9 to serve eastern Templeton generates a relatively low figure of 7.6.

- In the other direction are the options that decrease both passenger-trips and vehicle-hours. These results range from 5.9 (for eliminating Nipomo DAR service after 6 PM) to 0.4 (eliminating Shandon DAR service).

- Finally, the revision to Route 10 to serve southern Nipomo decreases passenger-trips while increasing vehicle-hours, resulting in a disadvantageous figure of -1.5.

The **operating subsidy per passenger-trip** also falls into three categories, as shown in Figure 12:

- Of those options that increase both subsidy needs and ridership, the "best" is the Nipomo half-hour fixed-route, which requires a relatively low $1.61 per new passenger-trip served. At the other extreme, the revisions to Route 9 to serve eastern Templeton require $7.13.

- Those options that decrease both subsidy needs and ridership also yield a positive result for this performance measure, but in this case a "better" alternative saves more subsidy per passenger-

trip and thus has a higher value. The "best" by this measure is the elimination of Shandon DAR service, which saves $248 per passenger-trip. The elimination of Nipomo DAR after 5 PM also yields a relatively high savings of $25.63.

- The negative value of $45.26 for the Route 10 service to southern Nipomo reflects an increase in subsidy and decrease in passenger-trips, thus indicating a poor alternative by this measure.

The review of marginal **farebox return ratio** is straightforward for those alternatives that increase both fare revenues and costs. Three of these alternatives result in a farebox return ratio exceeding the fixed-route standard of 20 percent: 21 percent for the Route 9 service to eastern Templeton and the Nipomo hour flex route and 43 percent for the Nipomo half-hour fixed-route. The Route 9 revision to serve eastern Templeton has a lower figure of 13 percent, not attaining the standard. Those options that reduce both fare revenue and costs result in values ranging from 1 percent (eliminating Shandon DAR) to 19 percent (eliminating Nipomo DAR after 6 PM). A lower value represents a "better" alternative in these cases, as it indicates elimination of a service with relatively low existing farebox return ratio. Finally, the negative value for the Route 10 service to southern Nipomo reflects a poor outcome as revenues decrease while costs increase.

Selecting appropriate service strategies requires consideration of more than the relatively straightforward quantitative analysis presented in Table 8. Based on these results and the discussion above, the following conclusions can be drawn:

- Conversion of the Nipomo DAR to provide a combination of half-hour-long fixed-route service (every hour) as well as DAR service is a promising alternative with the potential for a substantial ridership increase at a relatively modest cost. While the hour option also achieves standards, it would be more costly. An evaluation of the incremental costs and ridership impacts between these two options indicates that the stepping up from the half-hour option to the hour option generates a marginal ridership per vehicle-hour of 8.2 (not attaining the fixed-route standard).

- Serving southern Nipomo with a revised Route 10 would be a poor option, resulting in a net loss of ridership while increasing costs and subsidy requirements.

- Reducing Nipomo DAR service in summer to one van would improve the performance of the overall service and provide a modest ($4,800) reduction in annual operating subsidy requirements.

- Revising RTA Route 9 to serve eastern Templeton does not meet the passenger-trips per vehicle-hour standard. This option would require additional analysis regarding impacts to the overall RTA network.

FIGURE 9: DAR and Other Service Alternatives Annual Ridership Impact

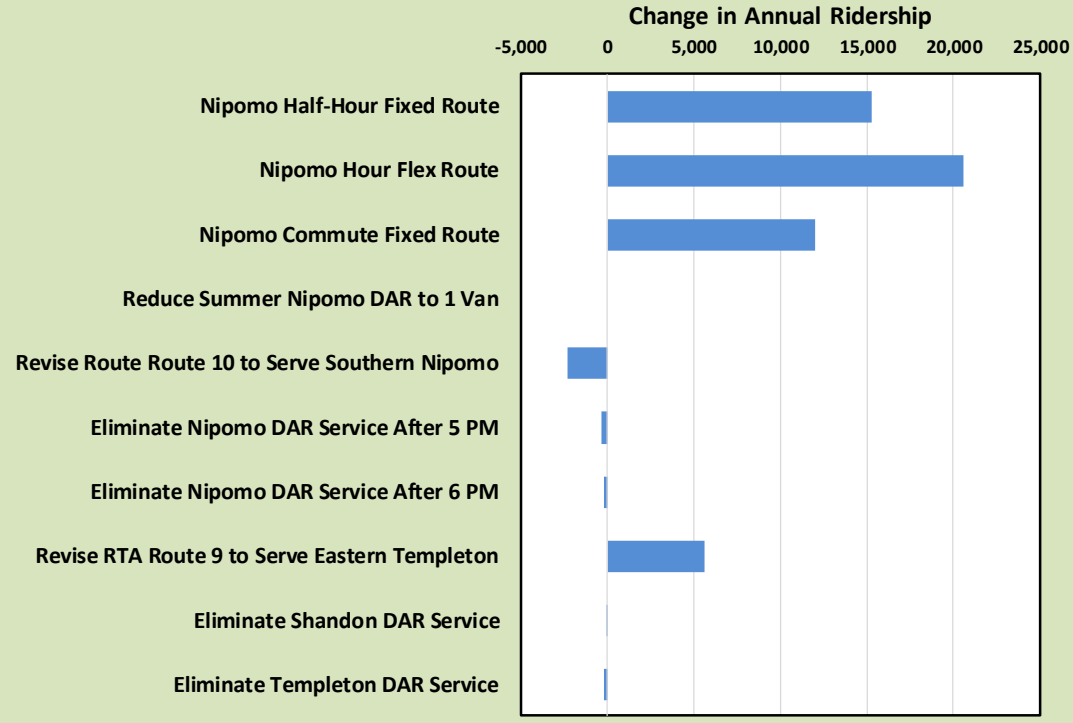


FIGURE 10: DAR and Other Service Alternatives Annual Operating Subsidy Impact

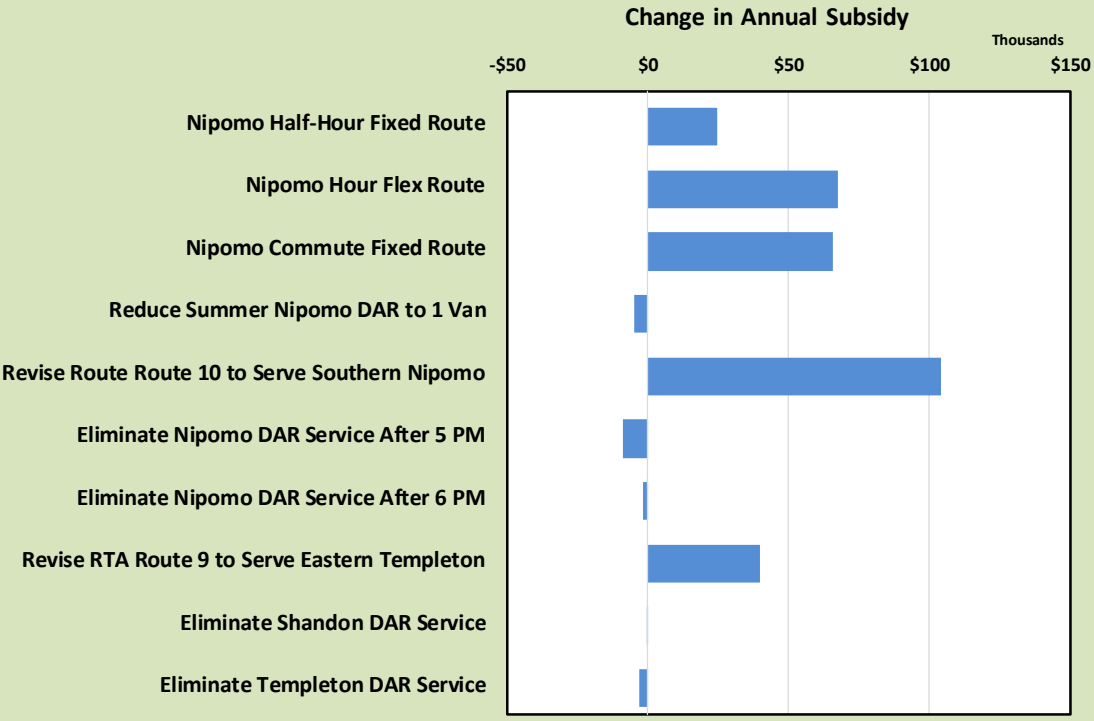


FIGURE 11: DAR and Other Fixed Route Alternatives Passengers per Vehicle Service-Hour

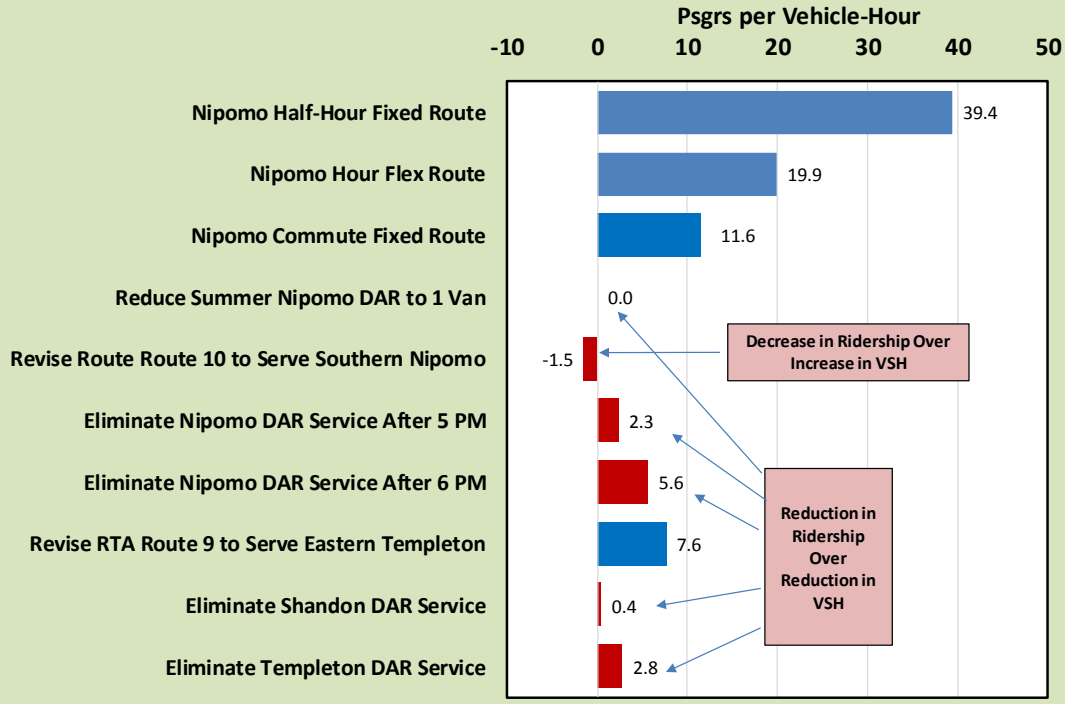
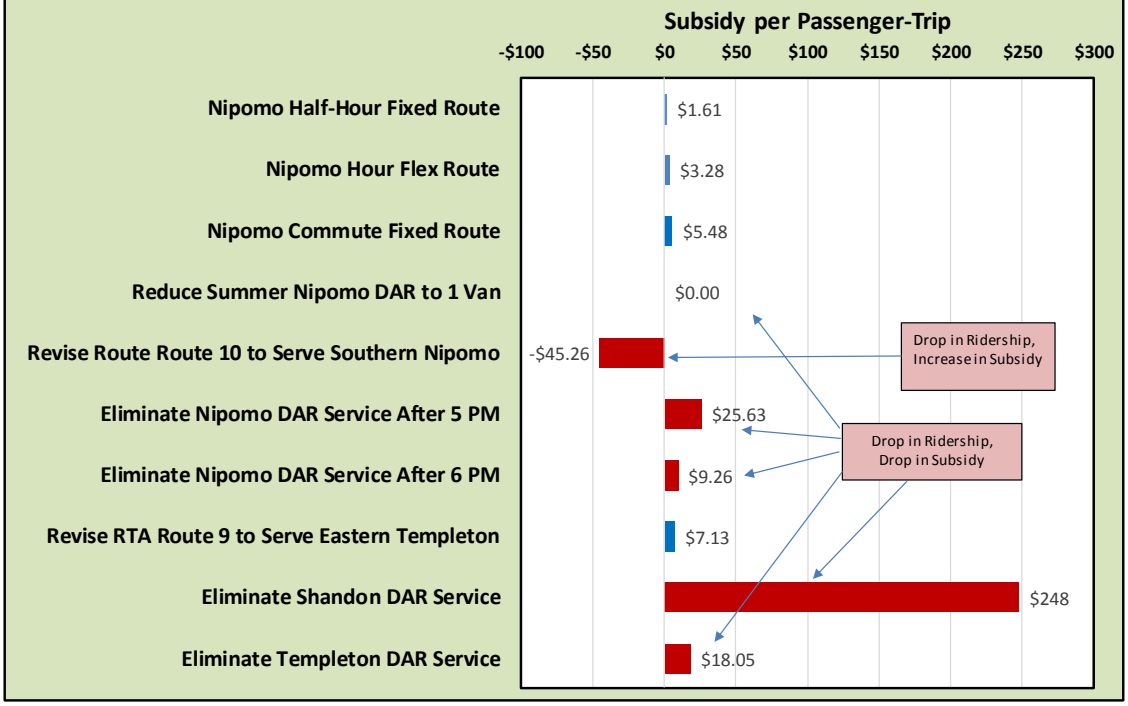


FIGURE 12: DAR and Other Service Alternatives Operating Subsidy per Passenger-Trip



- Eliminating the Templeton DAR is on the cusp. If the ridership were to shift to Runabout, the fact that the average subsidy per passenger-trip for Runabout is higher than that of the Templeton DAR is a consideration. However, dropping this service would reduce management, reporting and auditing requirements.

- Eliminating Shandon DAR service would be very cost-effective as it would drop a service that is not filling a significant unmet need. It is however, a relatively low annual cost for a lifeline service.

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