South County Transit
Short Range Transit Plan

Working Paper Five:
Capital Alternatives

SoCoTransit

Prepared for the

rta
REGIONAL TRANSIT AUTHORITY

San Luis Obispo Regional Transit Authority

LSC TRANSPORTATION CONSULTANTS, INC.

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San Luis Obispo South County Transit
Short Range Transit Plan

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Working Paper Five: Capital Alternatives

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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 and management strategies.

This document is the fifth 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, presented a summary of stakeholder input and discussed various service alternatives for the transit program. This document focuses on the capital items needed to provide transit services, and how fleet and facilities can be improved.

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Chapter 2

Capital Alternatives

Capital items required for the transit program consists of vehicles, bus stop facilities, transit centers and transit operations facilities. These elements are discussed below.

VEHICLE FLEET

Fleet Replacement

As shown in Table 1, over the next five years, a total of 15 SoCo Transit vehicles will warrant replacement: two 22-passenger Starcrafts, four 5-passenger Dodge Entravan/Caravans, two 37-passenger Gillig Phantoms, two 45-passenger Gillig Phantoms, and three 34-passenger Gillig Low Floor buses. In addition, one 31-passenger Double K Villager trolley and one company Dodge Ram vehicle will need to be replaced as well.

TABLE 1: SoCo Transit Fleet Replacement

Vehicle #	Make	Model	Mileage	Length	Seating Capacity	Year	Department	Year of Replacement
1204	FORD	STARCRAFT	120,960	22'	20 + 2 w/c	2013	CO-DAR	2019
504	DODGE	RAM 2500	176,702	22'	2 + 0 w/c	2002	SCT-SUP	2019
729	DODGE	BRAUN ENTRAVAN	52,000	22'	4 + 1 w/c	2013	PASO-DAR	2020
730	DODGE	BRAUN ENTRAVAN	51,531	22'	4 + 1 w/c	2013	PASO-DAR	2020
201	GILLIG	PHANTOM	466,310	35'	35 + 2w/c	2003	SCT-FIXED	2020
204	GILLIG	PHANTOM	500,176	35'	35 + 2w/c	2003	SCT-FIXED	2020
1011	THOR	EZ RIDER	264,599	35'	32 + 2 w/c	2010	SCT-FIXED	2022
1012	THOR	EZ RIDER	187,186	35'	32 + 2 w/c	2010	SCT-FIXED	2022
1511	FORD	STARCRAFT E450	69,527	22'	20 + 2 w/c	2015	CO-DAR	2022
516	DODGE	GRAND CARAVAN	54,221	22'	4 + 1 w/c	2014	SCT-SUP	2024
517	DODGE	GRAND CARAVAN	30,988	22'	4 + 1 w/c	2014	SCT-SUP	2024
1013	DOUBLE K	VILLAGER	103,562	29'	29 + 2 w/c	2011	CO-TROLLEY	2025
1308	GILLIG	LOW FLOOR	245,108	35'	32 + 2 w/c	2013	SCT-FIXED	2025
1309	GILLIG	LOW FLOOR	228,835	35'	32 + 2 w/c	2013	SCT-FIXED	2025
1310	GILLIG	LOW FLOOR	239,035	35'	32 + 2 w/c	2013	SCT-FIXED	2025
1509	GILLIG	LOW FLOOR	164,316	35'	32 + 2 w/c	2015	SCT-FIXED	2027
1707	DOUBLE K	VILLAGER	14,935	29'	29 + 2 w/c	2017	CO-TROLLEY	2032

Source: South County Transit Fleet Roster, dated October 1, 2018

Vehicle Size

At present, the SoCo Transit fixed routes are typically operated using standard 35-foot-long buses, with a capacity of 32 to 38 seated passengers. Existing passenger levels, however, are largely much lower than these capacities other than on the limited school "tripper" bus runs, indicating the potential to operate much of the service with smaller vehicles. Table 2 presents an evaluation of the peak design load for each route and run. This is based on the peak passenger loads observed during an on-board survey in March of 2019 (as presented in Table 14 of Working Paper 3), increased based on monthly ridership data to reflect ridership in the busiest month of the year. In addition, a 20 percent factor was added to reflect the natural day-to-day variation in ridership. As shown, passengers could be seated on

TABLE 2: SoCo Transit Fixed Route Bus Size Review

Runs That Can be Served with 20-Passenger Cutaway Without Standees

Tripper Bus Runs

Note: On day of survey, Arroyo Grande High School operated a half-day, generating the high 12:30 PM run ridership load.

Run Start Time	Route 21		Route 24		Route 27		Route 28	
	6:30 AM	3	6:30 AM	4	6:30 AM	3	6:00 AM	5
	7:00 AM	10	7:00 AM	9	7:30 AM	7	7:07 AM	27
	8:00 AM	15	8:00 AM	10	8:30 AM	4	7:30 AM	5
	9:00 AM	10	9:00 AM	4	9:30 AM	6	8:30 AM	3
	10:00 AM	5	10:00 AM	13	10:30 AM	7	9:30 AM	9
	11:00 AM	11	11:00 AM	12	11:30 AM	6	10:30 AM	5
	12:00 PM	7	12:00 PM	10	12:30 PM	27	11:30 AM	8
	1:00 PM	13	1:00 PM	9	1:30 PM	1	12:30 PM	3
	2:00 PM	15	2:00 PM	13	2:30 PM	3	1:30 PM	8
	3:00 PM	8	3:00 PM	17	3:10 PM	7	2:30 PM	20
	4:00 PM	8	4:00 PM	4	3:30 PM	6	3:30 PM	11
	5:00 PM	10	5:00 PM	7	4:30 PM	1	3:30 PM	9
	6:00 PM	8	6:00 PM	7	5:30 PM	1	5:30 PM	9
	7:00 PM	5	7:00 PM	1	6:30 PM	1	6:30 PM	3
	--	--	--	--	7:30 PM	1	7:30 PM	5

Source: LSC Boarding/Alighting Counts, adjusted by RTA daily ridership counts.

all of the runs using a smaller "cutaway" vehicle with 20 passenger seats, with one exception: on the day that Route 27 was surveyed, Arroyo Grande High School operated a half-day schedule, resulting in 12 passengers boarding at the High School stop. On a typical school day, the design load for this run is 8 passengers, which could also be accommodated with a smaller bus. In sum, this review indicates that a smaller vehicle could serve all runs, except for the tripper runs and regular runs impacted by specific events such as changes in school times.

As driver costs do not differ depending on the size of the vehicle, the cost impacts of operating smaller buses is a factor of the difference in fuel and maintenance costs. RTA vehicle records were reviewed for FY 2018/19, which indicate that the larger Gillig low-floor buses typically used for the SoCo fixed route incur fuel and maintenance costs of $0.94 per mile, while the smaller 20-seat Ford Starcraft vehicles have equivalent costs of $0.75 per mile. Over the course of a year the non-tripper SoCo fixed route runs require a total of 250,292 vehicle-miles (both in service as well as deadhead). Multiplied by the $0.19 in operating cost savings per mile, overall annual operating costs would be reduced by an estimated $46,700.

There are other factors to consider beyond capacity and costs in defining the appropriate vehicle size to operate:

- Larger buses provide greater flexibility to accommodate infrequent peaks in passenger loads, such as school field trips

- Smaller buses have less noise and visual presence impacts on neighborhoods than do larger vehicles.
- Larger buses have a substantially longer useful life (15 years) compared to that of smaller buses (4 to 7 years). While smaller buses are less expensive to purchase than larger buses, much of the cost of bus purchases is be funded through state or Federal funding programs. Overall, the per-hour capital costs are roughly similar.
- Larger buses provide a smoother ride than do smaller buses, and can better accommodate passengers with disabilities. Overall, passengers prefer using larger buses.
- The larger low-floor buses are easier for persons using mobility devices to board and deboard, and reduce delays associated with this process.

Battery Electric Buses

The fleet examined as part of this study is currently a mix of diesel and gasoline fueled vehicles. The California Air Resource Board (CARB) has recently implemented new regulations (the "Transit Fleet Rule") that will ultimately require all public transit fleets in the state to use only Zero Emission Bus (ZEB) vehicles. ZEB technologies consist of Battery Electric Buses (BEBs) and hydrogen fuel cell buses. Of these two options, BEB technology is substantially more feasible for smaller transit agencies. The Innovative Clean Transit Regulation was approved on August 13, 2019 and went into effect October 1, 2019.

The regulation applies to all public transit agencies that own, lease, or operate buses with a gross vehicle weight rating greater than 14,000 lbs. According to the rule, cutaway buses will not be included in the initial implementation requirement as there are currently no ZEB Altoona-tested cutaway vehicles (as required to be eligible for federal funding), and it is unclear when a fully tested zero-emission cutaway will be available. Cutaway vehicle will be subject to the rule beginning January 1, 2026, if Altoona tested vehicles are available. There are also other potentially acceptable reasons to defer ZEB purchase requirements, including (1) infrastructure delays beyond a transit agency's control, (2) available ZEB range (mileage) that is not sufficient to meet daily running mileage needs, (3) available ZEB power is not sufficient for the grades operated by the transit agency and (4) financial hardship.

Specific timing of requirements depends on fleet size, which in turn is based on the number of buses in the active fleet in 2019. A large transit agency is defined as a transit agency that operates either in the South Coast or the San Joaquin Valley Air Basin and operates more than 65 buses in annual maximum service, or a transit agency that has at least 100 buses in annual maximum service in an urbanized area with a population of at least 200,000 as last published by the Bureau of Census before December 31, 2017. A small transit agency is defined as all other transit agencies that do not fit into the "large" category. By this definition, both SoCo Transit and RTA as a whole are "small" transit agencies.

For small transit agencies, the key requirements are (1) beginning on January 1, 2026 25 percent of all new bus purchases must be ZEB and (2) beginning on January 1, 2029 all transit fleet new bus purchases must be ZEBs. The purchase requirement applies only to the total number of NEW bus purchases in a calendar year, not used buses. Transit agencies may also take part in a "bonus credit" program, if there were ZEB buses in the fleet as of January 1, 2018. Bonus credits can be used to meet the ZEB bus purchase requirement until December 31, 2028 when the 100 percent zero emission bus purchase requirement goes into effect. Bonus credits cannot be used more than once.

Zero emission mobility options are also possible in lieu of meeting the required number of minimum ZEB bus purchases. ZEB mobility options include services using bicycles, scooters or other zero emission vehicles with a GVWR of 14,000 pounds or less. To participate in this option, the transit agency must track zero-emission passenger miles. One credit is equal to 180,000 zero-emission passenger miles per year for small transit agencies.

Transit agencies must submit a "Rollout Plan" to the CARB Executive Officer which outlines how the agency will achieve the goal of full transition to zero-emissions by 2040, types of buses to be purchased, schedule of construction for infrastructure facilities, training plan, funding sources and how ZEBs will be deployed in disadvantaged communities.

There are many substantial issues regarding implementation of these requirements, including the impact on facilities, vehicle costs, operating range, charging options and time-of-day charging strategies. As SoCo and DAR services are provided using a combined overall RTA fleet, this issue is better addressed at the broader RTA level rather than for the SoCo or DAR systems.

BUS STOP IMPROVEMENTS

Passenger facilities include all equipment and amenities that serve the passenger as they access the bus. This includes bus stop shelters, benches and signs, information kiosks, pedestrian crossing amenities and transfer centers. The quality of passenger amenities is a very important factor in a passenger's overall perception of a transit service. Depending on the trip, a passenger can spend a substantial proportion of their total time using the transit service waiting at their boarding location. If this is an uncomfortable experience, if it is perceived to be unsafe, or if it does not provide adequate protection from rain and inclement weather, the bus stop can be the deciding factor regarding a potential passenger's use of the transit system.

Criteria that should be considered in siting new bus shelters are as follows:

- *Passenger activity*—Shelters are typically considered to be warranted when 10 or more passengers board over the course of an average day. If passengers at a particular stop tend to be more sensitive to environmental conditions (such as a stop at a Senior Center or social service provider), a lower number is appropriate.

- *The presence of existing shelter*—A stop immediately adjacent to a commercial building with adequate roof overhang to provide protection from rain, for example, may not need an additional shelter.

- *Spacing along the route*—A long route segment of stops that individually do not warrant shelters could benefit from provision of a shelter, particularly if it is needed to provide at least one shelter for a defined residential or commercial activity area.

The adopted bus stop improvement plan strives to provide seating (such as a bench) for stops that average 10 or more boardings per day and shelter for stops that average 20 or more boardings per day. Using the above criteria, an analysis of existing stops and their average daily ridership was performed with recommendations for potential bench and shelter locations as summarized in Table 3. As shown, six new shelters and two benches are recommended. In addition, the Oceano Airport stop needs a

TABLE 3: SoCo Transit Stop Improvements

Stop	Avg. Boarding & Alighting	Recommended Improvement
Grand & 16th	64.9	Shelter
Highway 1 & 21st	30.9	Shelter
Grand & 13th	29.8	Shelter
Dolliver & Pomeroy	22.0	Shelter
Highway 1 & 25th	21.0	Shelter
Grand & Elm	19.5	Shelter
Dolliver & Hinds	18.4	Bench
Oceano Airport	15.0	Pad, Sidewalk
Shell Beach & Seacliff	12.4	Bench

wheelchair pad. San Luis Obispo County should also be encouraged to provide sidewalks along Air Park Drive to connect this stop with nearby residences.

In addition, the service alternatives that would include new fixed route corridors would require new stops. This will be assessed as part of the overall plan development, once service strategies have been defined.

Transit Center Improvements

The Premium Outlets transfer point is a key stop in the SoCo fixed route network. The *Santa Maria – San Luis Obispo Transportation Connectivity Study* (Nelson/Nygaard, 2018) recommends a westbound bus stop for Route 10 on the northeast side of Five Cities Drive, opposite the existing bus bays. This would reduce the westbound route running time by approximately 5 minutes, providing additional layover/makeup time and improving Route 10 on-time performance. This improvement is best addressed as part of RTA plans, rather than SoCo Transit plans.

Bus Parking Facility Improvements

The SoCo Transit bus operations facility on Rodeo Drive in Arroyo Grande is generally adequate to support existing and foreseeable services. The asphalt pavement is in adequate but deteriorating condition, and will warrant a full new base and pavement replacement by the end of the five-year plan period. $200,000 is a reasonable estimate of the costs of this project.

The two vehicles used for the Nipomo DAR service are currently parked overnight in the Vons parking lot along West Tefft Street in Nipomo. This reduces the costs and wear-and-tear of deadhead travel to/from the Rodeo Drive facility, but it does increase the potential for vandalism and leaves the transit program open to the possibility that the property owner could revoke permission. One option would be to purchase and improve a secure parking facility in Nipomo, but this would incur costs more than the potential benefit. Instead, transit system management could contact other public entities (such as the

County or School District) to see if there are opportunities available to establish secure overnight parking (with 24-hour staff access) at little or no cost to the transit program.