SANTA CRUZ METRO SHORT RANGE TRANSIT PLAN

May 2014

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(Acknowledgements forthcoming from SCMTD staff)

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EXECUTIVE SUMMARY

Nelson\Nygaard worked with Santa Cruz METRO to update the Short Range Transit Plan (SRTP). This update included an assessment of the strengths and weaknesses of the existing service design for both fixed-route and ParaCruz services, a forecast of future financial and capital needs, and an updated marketing plan. A series of short- and longer-range recommendations was developed to provide a roadmap for the next five years for METRO. A working document, the SRTP provides a framework to address METRO's service needs. Although the recommendations represent a set of preferred service changes for METRO, their inclusion in an adopted SRTP does not necessitate their implementation. Over the coming years, Board members and staff will need to identify which strategies should be carried forward; any significant changes/route restructuring efforts would include a public process, including public comment, for how those service changes should be implemented.

Santa Cruz METRO operates transit service on 33 fixed-route bus lines as well as Americans with Disabilities Act (ADA) demand-responsive paratransit service, ParaCruz. It serves Santa Cruz County, and operates regional service to San Jose.

The SRTP assessed the performance of existing services, including ridership levels, productivity, and on-time performance. For select routes, additional on-time performance data was collected to assess the variation in travel times in the Highway 1 corridor. An on-board survey was also conducted on these same select routes to better understand travel characteristics and needs. Overall, METRO provides a high level of service, and ridership levels are excellent considering the operating environment.

The SRTP included a significant public outreach process. Five open houses were conducted throughout the METRO service area, with both midday and evening options. In addition, stakeholder meetings were held throughout Santa Cruz County. Overall, it was clear there was support for METRO services, and a desire to improve upon the existing system.

Recommendations in the SRTP focus on policy and practice; fixed-route and paratransit service; marketing; capital and financial planning; and marketing. A brief summary of recommendations follows.

Policy Recommendations

METRO does not appear to have adopted formal policies that could assist with prioritizing operational improvements and future service levels. Several specific areas where new policies are proposed for development include the following:

- Bus-stop spacing, including minimum spacing guidelines.
- Route deviation standards, including thresholds that measure impacts on existing and potential riders of any deviation.

- On-time performance – the need to define on-time performance standards and tracking of on-time performance.
- Operating performance standards, as well as guidelines, tracking tools, and steps to take if routes overperform or underperform.
- Transit-emphasis corridors. Policies can be developed regarding how METRO can complement existing and proposed redevelopment efforts on major corridors such as Laurel/Bay and Soquel in Santa Cruz, Main and Freedom in Watsonville, and elsewhere in the METRO service area.
- Updated fare policies to ensure the fare structure maximizes revenue while offering patrons an easy to understand, reasonable charge for service.

Practices Recommendations

One of the challenges facing METRO is that ongoing service evaluation data are not readily available. For instance, on-time performance data, which is essential to set schedules accurately, is not collected on an ongoing basis. Likewise, ridership data is not collected on an ongoing basis. This makes adjusting service levels based on loads very difficult, and tailoring METRO service to demand challenging.

METRO should conduct regular ridechecks to ensure that data are available for planning purposes. In addition, on-time performance data must be collected to ensure that a passenger's actual travel experience reflects the schedule. Moreover, refined on-time performance data can assist METRO to schedule vehicles more efficiently.

Fixed-Route Service Recommendations

METRO operates a series of excellent routes with heavy ridership. Several recommendations are made to build upon this success, and to use existing resources to simplify services. Short-term, fiscally constrained recommendations include:

- Simplify service frequencies between downtown Santa Cruz and the University of California, Santa Cruz (UCSC).
- Improve route speed for more riders in the Watsonville-Cabrillo corridor.
- Consolidate routes to simplify service in Santa Cruz and Mid-County.
- Create Transit-Emphasis Corridors where service frequencies are at least every 15-minutes during peak times and capital enhancements can be prioritized.

Longer term, fiscally unconstrained recommendations include:

- Introduce high frequency (every 15-minute service or better) between Santa Cruz and Cabrillo College, including Live Oak, Soquel and Aptos.
- Expand the service hours of service between Watsonville and Santa Cruz.
- Extend select local service in Santa Cruz to better tie in with UCSC.

ParaCruz Recommendations

ParaCruz is an excellent service that receives praise from its regular users. The comprehensive service offers nearly countywide access for eligible persons. The costs of ParaCruz are increasing, and additional resources should be allocated to accommodate this growth.

Several recommendations focus on the need for ParaCruz to contain costs to allow for its services to be sustained. METRO should examine ways to shift more riders to fixed-route service, implement conditional eligibility certification, and look for additional ways to improve scheduling and staffing efficiency. If costs continue to grow at a faster rate than revenue, METRO should consider reducing the ParaCruz service area to match the letter of the law required by the ADA – (i.e., only within ¾ of a mile of fixed route service).

Capital Recommendations

The capital and finance plan account for ongoing fleet replacement and upkeep of existing facilities. In additional to planned upgrades such as AVL systems or a park-and-ride in Scott Valley, METRO should consider implementing a bus stop improvement program to upgrade facilities at high-ridership stops.

Marketing Recommendations

Marketing recommendations are made for METRO to better understand opportunities for promoting public awareness and to improve informational tools for transit services in Santa Cruz County. Specific recommendations include:

- Update electronic informational tools, including the website and social media sites.
- Improve printed materials, including creation of a system map that reflects frequency.
- Strengthen the METRO brand.
- Implement a bus stop enhancement program.
- Evaluate the effectiveness of the marketing efforts.

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1 INTRODUCTION

A Short Range Transit Plan (SRTP) is a comprehensive review of transit services to ensure the bus network keeps up with demand, addresses the diversity of needs, and is sustainable. An SRTP includes an analysis of existing transit services, development of transit performance standards, service alternatives and recommendations, and a capital and financial plan.

An SRTP provides recommendations for specific services and investments, but it is effectively a strategic plan to reaffirm a short-term vision for transit services in Santa Cruz County. Supporting that vision are strategies to guide development of Santa Cruz METRO services.

This SRTP serves as a working document, providing a framework to address METRO's service needs. Although the recommendations represent a set of preferred service changes for METRO, their inclusion in an adopted SRTP does not necessitate their implementation. Over the coming years, Board members and staff will need to identify which strategies should be carried forward; any significant changes/route restructuring efforts would include a public process, including public comment, for how those service changes should be implemented. Likewise, some projects not included in the SRTP may be identified over the next five years as essential (due to an unanticipated development or change in the road network) and could still be carried out, even if not in the SRTP.

Santa Cruz METRO initiated this update to its SRTP in the spring of 2013. METRO's previous SRTP, completed in 2008, reflected the agency's service and performance prior to the financial crisis and subsequent recession during 2007-2009. As a result of the changing economic conditions, METRO dramatically reduced service in 2010 and 2011, in addition to raising fares. Although service was partially restored in 2012, the 2013 SRTP update provides an opportunity to assess performance of METRO's current transit service, and to incorporate new operating conditions and recent planning work into the SRTP.

The SRTP includes all aspects of METRO planning, operations, and investment through 2018, and in some cases out to a horizon year of 2023. The project was designed to address several key issues facing METRO:

- **Service planning.** METRO increased service levels and made structural changes to its route network in Watsonville. The SRTP looks to evaluate these changes and identify opportunities to improve efficiency, cost-effectiveness, and productivity throughout the system.
- **Capital planning.** A core focus of this SRTP is asset management – taking stock of the METRO inventory, assessing its needs, developing performance metrics to prioritize investment strategies, and ensuring an ongoing state of good repair.
- **Financial planning.** While METRO was able to restore some service last year, it has still not returned to pre-recession levels, and the long-term outlook for transit funding remains unclear at the state and federal levels. The SRTP reviews METRO's operations

and capital investment strategies to ensure financial stability, predictability, and sustainability in an uncertain environment.

- **Marketing and outreach**. METRO, like most agencies, has continual changes in its ridership markets. New riders, whether new college students at the University of California, Santa Cruz (UCSC) or long-time residents trying METRO for the first time, are crucial for stable or growing system ridership. This SRTP includes an implementable marketing and outreach plan that will help METRO meet this challenge.

The first chapters that follow describe and evaluate existing conditions, including systemwide fixed-route and paratransit performance (Chapter 2), route-by-route summaries (Chapter 3), on-time performance assessments of select routes (Chapter 4), demographic analysis (Chapter 5), passenger survey findings (Chapter 6), stakeholder and public input (Chapter 7), and current planning documents (Chapter 8). Later chapters in the report provide planning guidance for the future, including recommended policies and practices (Chapter 9), a service plan (Chapter 10), capital and financial plan (Chapter 11), marketing plan (Chapter 12) and implementation plan (Chapter 13). Together, these chapters will inform improvements to METRO's transit service and operations and allow for strategic implementation of the capital, financial, and marketing plans developed to support METRO's operations in the future.

RELATIONSHIP TO THE REGIONAL TRANSPORTATION PLAN

This SRTP is both different from and complementary to the Draft 2014 Regional Transportation Plan, or RTP, produced by the Santa Cruz County Regional Transportation Commission or RTC.

The SRTP is distinct from the RTP primarily in its timeframe: the SRTP is a near-term (five-year) plan, while the RTP is a long-term plan with a horizon year of 2035. The SRTP is also focused on Santa Cruz METRO transit service, while the RTP addresses the entire multimodal transportation system of Santa Cruz County.

However, the documents complement each other with regard to their aims. While formal goals and objectives were not developed for the SRTP, the values broadly embedded within its recommendations are consistent with the RTP's adopted goals:

- Goal 1: Improve people's access to jobs, schools, health care and other regular needs in ways that improve health, reduce pollution and retain money in the local economy.
- Goal 2: Reduce transportation related fatalities and injuries for all transportation modes.
- Goal 3: Deliver access and safety improvements cost effectively, within available resources, equitably and responsive to the needs of all users of the transportation system and beneficially for the natural environment.

Although the longer term is not addressed as part of this document, METRO is broadly supportive of transit investments incorporated in the RTP, including expanded service to UCSC, South County and Highway 17; transit queue jumps; and signal priority. The recommendations included in this document should be viewed as interim steps toward these ends.

2 SYSTEM OVERVIEW

Santa Cruz METRO operates transit service on 33 fixed-route bus lines as well as Americans with Disabilities Act (ADA) demand-responsive paratransit service, ParaCruz. The following sections provide an overview of the fixed-route transit system, including systemwide performance metrics.

METRO's 33 fixed routes primarily serve Santa Cruz County. METRO operates four transit centers in the Santa Cruz area, including the Santa Cruz METRO Center in Downtown Santa Cruz, the Capitola Mall Transit Center, the Watsonville Transit Center, and the Cavallaro Transit Center in Scotts Valley. Figure 1 lists METRO routes and service regions.

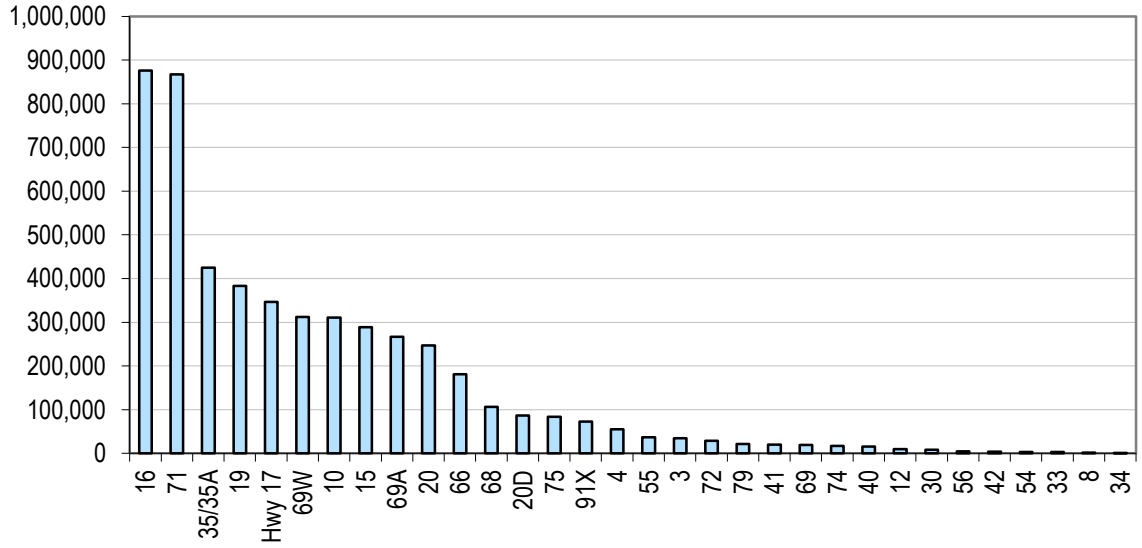
Figure 1 Description and Service Region of METRO Transit Routes

Route	Description	Service Region
Hwy 17	Amtrak Highway 17 Express	Santa Cruz to San Jose
3	Mission/Natural Bridges	Local Santa Cruz
4W	Harvey West	Local Santa Cruz
4	Harvey West/Emeline	Local Santa Cruz
8	Emeline	Local Santa Cruz
10	UCSC Via High	UCSC and Westside
12	UCSC/East Side Direct	UCSC and Westside
15	UCSC Via Laurel West	UCSC and Westside
16	UCSC Via Laurel East	UCSC and Westside
19	UCSC Via Lower Bay	UCSC and Westside
20/20D	UCSC Via Westside	UCSC and Westside
30	Graham Hill/Scotts Valley	Scotts Valley/SLV
33	Lompico SLV/Felton Faire	Scotts Valley/SLV
34	South Felton	Scotts Valley/SLV
35	San Lorenzo Valley (SLV)	Scotts Valley/SLV
35A	SLV Via Scotts Valley Drive	Scotts Valley/SLV
40	Davenport/North Coast Beaches	North Coast
41	Bonny Doon	North Coast
42	Davenport/Bonny Doon	North Coast
54	Capitola/Aptos/La Selva Beach	Mid-County
55	Rio Del Mar	Mid-County
56	La Selva	Mid-County
66/66N	Live Oak Via 17th	Live Oak
68	Live Oak Via Broadway/Portola	Live Oak
69A	Capitola Rd./Watsonville Via Airport B	Cabrillo/South County
69W	Capitola Rd./Cabrillo/Watsonville	Cabrillo/South County
71	Santa Cruz/Watsonville	Cabrillo/South County

Route	Description	Service Region
91X	Commuter Express Santa Cruz/Watsonville	Cabrillo/South County
72	Corralitos	Local Watsonville
74	Ohlone Parkway/Rolling Hills	Local Watsonville
75	Green Valley	Local Watsonville
77	Civic Plaza/Pajaro	Local Watsonville
79	East Lake	Local Watsonville

Total annual ridership by route is shown in Figure 2. Routes with over 300,000 annual boardings include routes serving the UCSC campus (Routes 16, 19, and 10), Route 35/35A, mainline routes to Watsonville (Routes 71 and 69W), and the Highway 17 Express. The system total ridership for Fiscal Year (FY) 2012 was 5.1 million riders. The highest ridership routes (Route 16 and 71) have almost 900,000 annual boardings.

Figure 2 Annual Ridership by Route



WEEKDAY SERVICE AND PERFORMANCE

Weekday service span and frequency according to the Spring 2013 schedule is shown in Figure 3. The a.m. peak period is defined as 6 a.m. to 9 a.m., mid-day as 9 a.m. to 3 p.m., and p.m. peak as 3 p.m. to 6 p.m. Most METRO routes operate on consistent headways of either 30 minutes or 60 minutes, though some have shorter headways during the a.m. and p.m. peak periods. Several routes have greater variance in headways throughout the day in order to coordinate with external schedules, such as routes serving the University of California, Santa Cruz (UCSC) and the Amtrak Highway 17 Express to San Jose. Several routes with limited service are described in terms of the number of trips per day or per period (a.m./mid-day/p.m.).

METRO service operates between 4:45 a.m. and 1 a.m. on weekdays. There is considerable variance in span among routes with limited frequency, as some routes operate only during a.m. or p.m. hours. Among routes with all-day service, the service span is typically from around 6 a.m. to 9 p.m.

Figure 3 METRO Weekday Service Span and Frequency

Route	Span	Frequency		
		a.m.	Mid-day	p.m.
3	6:50 a.m. – 6:35 p.m.	60	60	60
4	6:45 a.m. – 5:30 p.m.	60	60	60
8	7:35 a.m. – 8:01 a.m.	1 trip	--	--
10	6:50 a.m. – 8:00 p.m.[1]	30	30	15-30
12	7:10 a.m. – 8:07 a.m.[1]	1 trip	--	--
15	6:40 a.m. – 9:35 p.m.[1]	30-60	10-50	8-45
16	6:25 a.m. – 12:40 a.m.[1]	10-30	10-30	3-30
19	7:30 a.m. – 12:17 a.m.[1]	30	30	30-60
20/20D	7:20 a.m. – 9:15 p.m.[1]	30-60	60	60
30	6:55 a.m. – 3:50 p.m.	2 a.m. trips, 2 p.m. trips		
33	6:53 a.m. – 3:18 p.m.[2]	1 a.m. trip, 1 p.m. trip		
34	7:25 a.m. – 3:50 p.m.[2]	1 a.m. trip, 1 p.m. trip		
35	6:52 a.m. – 3:26 p.m.[2]	3 OB trips, 2 a.m. IB trips	--	5 OB trips, 1 IB trip
35A	5:43 a.m. – 12:08 a.m.[2]	30	30	25-95
40	6:40 a.m. – 4:20 p.m.	2 trips	1 trip	1 trip
41	5:50 a.m. – 6:50 p.m.	2 trips		2 trips
42	8:30 p.m. – 9:50 p.m.	1 trip		
54	5:35 p.m. – 6:43 p.m.			1 trip
55	7:30 a.m. – 5:25 p.m.	60	60	60
56	8:00 a.m. – 2:50 p.m.	1 trip	1 trip	
66N	10:00 p.m. – 11:05 p.m.	--	--	1 IB trip, 1 OB trip
66	6:45 a.m. – 9:00 p.m.	50-60	60	60-90
68	6:15 a.m. – 7:19 p.m.	60	60	60-65
69A	6:45 a.m. – 7:48 p.m.	60	60	60
69W	6:20 a.m. – 9:48 p.m.	60	60	30-60
71	5:35 a.m. – 12:45 a.m.	30-35	30	30-60
72	5:45 a.m. – 7:50 p.m.	60	60	60
74	6:10 a.m. – 7:03 p.m.	60	60	60
75	5:15 a.m. – 8:15 p.m.	60	60	60
77	6:30 a.m. – 7:05 p.m.	60	60	60
79	7:00 a.m. – 6:35 p.m.	60	60	60
91X	5:55 a.m. – 6:30 p.m.	30-55	30	30
Hwy 17	4:45 a.m. – 11:45 p.m.	20-60	25-65	5-35

[1] Some or all trips adhere to the UCSC School Term Calendar.

[2] Some or all trips adhere to the San Lorenzo Valley School Term Calendar.

Key operational statistics for each route, including weekday averages for numbers of boardings, daily hours of revenue service, daily trips, daily vehicle miles, boardings per revenue hour, boardings per trip, and boardings per mile are shown in Figure 4. Data are based on Fiscal Year (FY) 2012 ridership figures.[3] On average there were 16,471 boardings each weekday systemwide.

Figure 4 Weekday Operating Statistics by Route

Route	Daily Boardings	Daily Revenue Hours	Daily Trips	Daily Miles	Boardings per Revenue Hour	Boardings per Trip	Boardings per Mile
3	133	12.8	12	109	10.3	11.1	1.2
4	207	10.8	11	80	19.1	18.8	2.6
8	7	0.6	1	4	12.0	6.6	1.6
10[4]	1,067	22.3	23	200	48.0	46.4	5.3
12[4]	37	0.8	1	9	44.8	37.3	4.3
15[4]	1,123	22.9	26	227	49.1	43.2	4.9
16[4]	2,741	51.8	56	487	52.9	48.9	5.6
19[4]	1,152	24.2	24	245	47.6	48.0	4.7
20[4]	738	16.8	15	203	44.0	49.2	3.6
20D[4]	337	10.2	12	66	33.2	28.1	5.1
30	31	3.8	4	56	8.2	7.9	0.6
33	13	0.8	1	17	15.1	12.7	0.7
34	2	0.6	1	10	3.2	2.0	0.2
35/35A	1,311	73.8	64	1,303	17.8	20.5	1.0
40	56	4.8	4	104	11.6	14.1	0.5
41	72	6.5	4	132	11.0	18.0	0.5
42	9	1.3	1	39	7.0	9.3	0.2
54	8	1.1	1	22	6.9	7.8	0.3
55	142	10.1	10	139	14.1	14.2	1.0
56	19	2.1	2	39	9.4	9.7	0.5
66	531	21.8	31	215	24.4	17.1	2.5
68	349	19.6	26	159	17.8	13.4	2.2
69A	844	33.4	25	490	25.3	33.8	1.7
69W	997	35.1	26	491	28.4	38.4	2.0
71	2,683	119.6	78	1,635	22.4	34.4	1.6
72	112	9.9	9	174	11.3	12.4	0.6
74	67	7.4	7	96	9.0	9.6	0.7
75	238	13.9	14	202	17.2	17.0	1.2
79	85	8.0	11	77	10.5	7.7	1.1
91X	284	21.9	21	388	13.0	13.5	0.7
Hwy 17	1,074	64.4	53	1,839	16.7	20.3	0.6
Systemwide	**16,471**	**633.1**	**575.6**	**9,259.2**	**21.3**	**21.7**	**1.9**

[3] Figures are based on an annual total of 257 weekdays.

[4] Routes 12 and 15 operate during the UCSC school term only, and service levels on Routes 10, 16, 19 and 20/20D vary according to whether school is in session.

The following three figures illustrate key data including daily boardings per revenue hour, per trip and per mile. The system average for boardings per revenue hour is 21.7, with productivity ranging from 3.2 (Route 34) to 53 (Route 16). The system average for boardings per trip is 21.7, ranging from over 45 on Routes 20, 16, 19, and 10, to a low of only two on Route 34. The systemwide average for boardings per mile is 1.9, with highs of more than five on Routes 16, 10, and 20D, and lows of less than 0.5 boardings on Routes 54, 42, and 34.

Figure 5 Weekday Boardings per Revenue Hour by Route

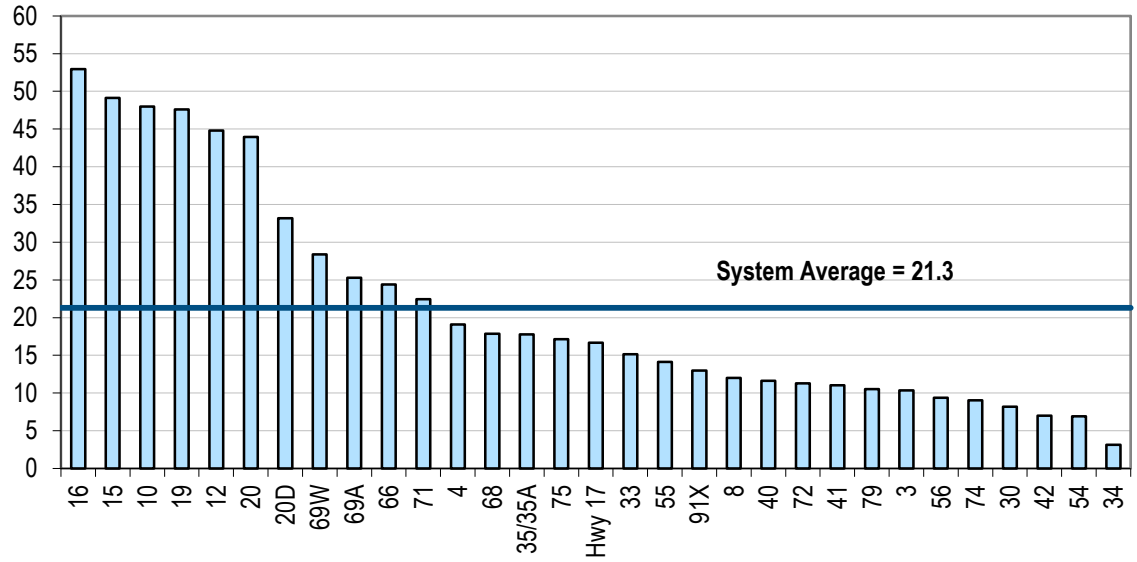


Figure 6 Weekday Boardings per Trip

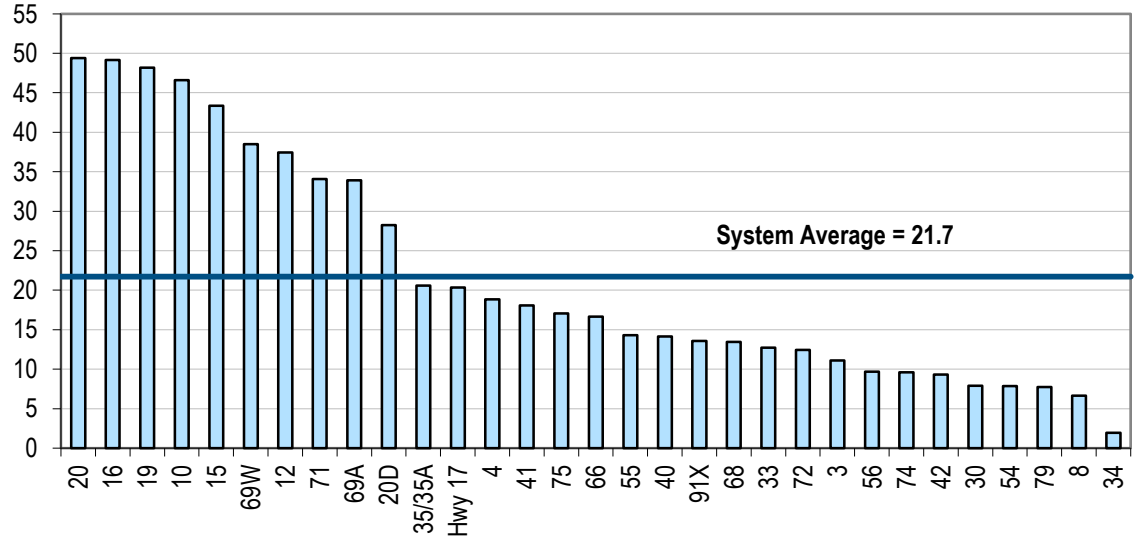
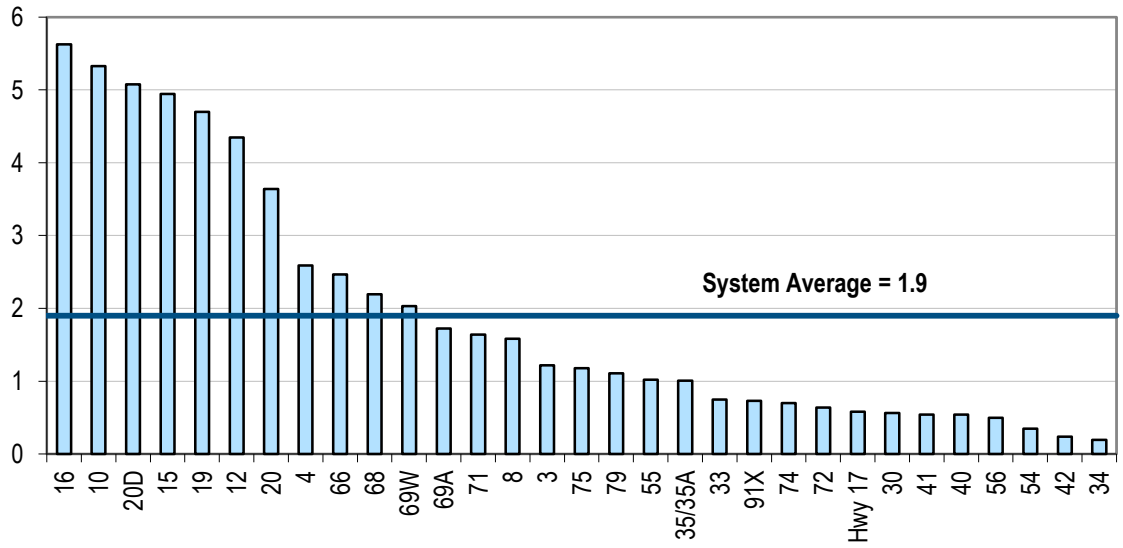


Figure 7 Weekday Boardings per Mile



On-time performance data were collected as part of a previous study commissioned by METRO. The consultant for that project sampled arrival and departure times at timepoints in April of 2012. Results are shown in Figure 8. Trips departing designated timepoints within five minutes of schedule were considered "on time", trips arriving at a timepoint six or more minutes after schedule were considered "late" and trips departing more than ten minutes late were considered "missed". The systemwide average was 70 percent on-time arrivals, 8 percent early, 14 percent late, and 8 percent missed. Routes with the highest on-time performance were Routes 3, 4, 8, 10 and 12. Routes with the lowest on-time performance included Routes 74, 75, 79, 91X, and Highway 17 Express.

Figure 8 Weekday On-Time Performance by Route

Route	On-time	Early	Late	Missed
3	100.0%	0.0%	0.0%	0.0%
4	100.0%	0.0%	0.0%	0.0%
8	89.3%	3.6%	7.1%	0.0%
10	85.7%	14.3%	0.0%	0.0%
12	83.3%	0.0%	16.7%	0.0%
15	83.3%	0.0%	8.3%	8.3%
16	83.3%	0.0%	2.8%	13.9%
19	82.6%	13.0%	4.3%	0.0%
20	81.7%	15.0%	3.3%	0.0%
30	79.2%	0.0%	14.6%	6.3%
33	77.8%	2.8%	11.1%	8.3%
34	77.6%	6.9%	10.3%	5.2%
35/35A	76.7%	2.5%	18.3%	2.5%
40	75.8%	0.0%	19.7%	4.5%
41	75.5%	4.5%	12.2%	7.7%
42	69.7%	6.3%	15.6%	8.4%
54	68.8%	6.3%	25.0%	0.0%

Route	On-time	Early	Late	Missed
55	68.0%	4.0%	18.0%	10.0%
56	67.6%	0.0%	18.1%	14.3%
66	66.7%	16.7%	16.7%	0.0%
68	64.8%	3.7%	29.6%	1.9%
69A	62.5%	6.3%	25.0%	6.3%
69W	61.5%	23.1%	15.4%	0.0%
71	59.1%	4.5%	27.3%	9.1%
72	58.3%	16.7%	0.0%	25.0%
74	53.8%	9.2%	19.3%	17.6%
75	50.0%	25.0%	25.0%	0.0%
79	50.0%	42.3%	0.0%	7.7%
91X	45.5%	0.0%	0.0%	54.5%
Hwy 17	42.1%	10.5%	36.8%	10.5%
Systemwide	**70.4%**	**7.9%**	**14.0%**	**7.7%**

WEEKEND SERVICE AND PERFORMANCE

Santa Cruz METRO operates 18 routes on weekends between 6 a.m. and 12:45 a.m., though the span varies greatly by route. Most routes operate on regular 30- or 60-minute headways during the daytime on Saturdays and Sundays. Several routes offer only a limited number of trips, such as Routes 3, 4W, 40, 41, 42, 54, and 66N.

Figure 9 Weekend Span and Frequency

Route	Span	Frequency
3	9:50 a.m. – 6:35 p.m.	5 trips
4W	8:55 a.m. – 5:09 p.m.	5 trips
10	8:50 a.m. – 6:35 p.m.	60
16	7:00 a.m. – 11:40 p.m.	20-90
19	10:00 a.m. – 7:41 p.m.	30
20	8:20 a.m. – 9:15 p.m.	60
35/35A	7:02 a.m. – 12:08 p.m.	30-60
40	8:30 a.m. – 9:20 a.m.	1 trip
41	9:30 a.m. – 10:50 a.m.	1 trip
42	6:00 p.m. – 7:25 p.m.	1 trip
54	8:00 a.m. – 7:43 p.m.	3 trips
66N	9:00 p.m. – 11:05 p.m.	2 IB trips, 2 OB trips
66	6:45 a.m. – 8:55 p.m.	60
68	6:15 a.m. – 7:05 p.m.	60
69A	8:07 a.m. – 7:48 p.m.	60
69W	7:50 a.m. – 9:48 p.m.	60
71	6:05 a.m. – 12:45 a.m.	30-60
75	5:15 a.m. – 8:15 p.m.	60
Hwy 17	6:40 a.m. – 11:55 p.m.	45-80

Weekend operating statistics by route for FY 2012 are shown in Figure 10.[5] On average there are 8,451 boardings systemwide each weekend day.

Figure 10 Weekend Operating Statistics by Route

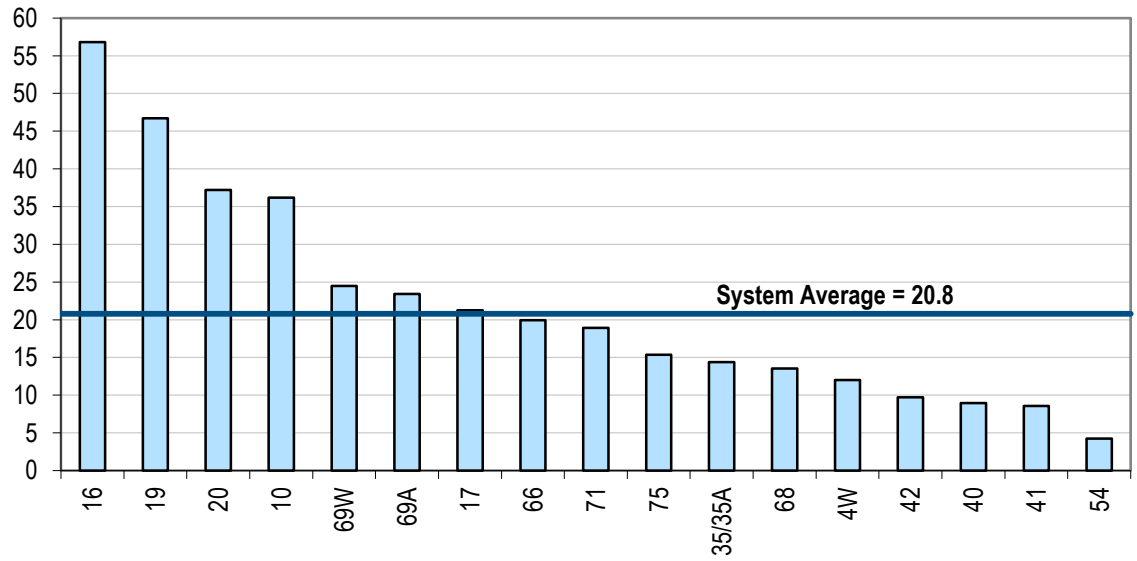
Route	Daily Boardings	Daily Revenue Hours	Daily Trips	Daily Miles	Boardings per Revenue Hour	Boardings per Trip	Boardings per Mile
3	8.0	4.3[6]	5.0[6]	10.1[6]	1.9	1.6	0.2
4W	23.2	1.9	4.0	13.5	12.0	5.8	1.7
10	344.4	9.5	10.0	86.6	36.2	34.4	4.0
16	1636.7	28.8	31.0	274.2	56.8	52.8	6.0
17	673.3	31.7	30.0	967.3	21.2	22.4	0.7
19	828.7	17.7	17.0	192.3	46.7	48.7	4.3
20	543.5	14.6	13.0	171.9	37.2	41.8	3.2
35/35A	838.3	58.3	47.0	1035.1	14.4	17.8	0.8
40	13.5	1.5	1.0	34.9	8.9	13.5	0.4
41	12.7	1.5	1.0	32.8	8.6	12.7	0.4
42	17.0	1.8	1.0	46.8	9.7	17.0	0.4
54	13.8	3.3	3.0	66.8	4.2	4.6	0.2
66	427.6	21.5	31.0	209.4	19.9	13.8	2.0
68	158.9	11.7	15.0	93.6	13.5	10.6	1.7
69A	476.4	20.4	17.0	325.8	23.4	28.0	1.5
69W	529.8	21.6	18.0	332.6	24.5	29.4	1.6
71	1692.7	89.4	61.0	1271.5	18.9	27.7	1.3
75	213.2	13.9	14.0	197.5	15.4	15.2	1.1
Systemwide	**8,451.81**	**353.39**	**319.0**	**5,392.1**	**20.8**	**22.1**	**1.7**

Productivity in terms of boardings per revenue hour is shown in Figure 11. Weekend productivity is similar to weekday productivity, with a systemwide average of 20.8 boardings per revenue hour. As with weekday service, the most productive routes are those serving the UCSC campus, including Routes 16, 19, 20, and 10. The least productive routes, with less than 10 boardings per revenue hour, are Routes 42, 40, 41, and 3. Systemwide boardings per trip and per mile are also similar to the weekday averages, at 22.1 boardings per trip and 1.7 boardings per mile.

[5] These figures are based on a total of 104 weekend days.

[6] Weekend service for Route 3 began in April 2012, and is therefore based on 27 weekend days.

Figure 11 Weekend Boardings per Revenue Hour by Route



HISTORICAL TRENDS

Fixed Route Service

Annual trends for systemwide boardings, revenue hours, miles, operating costs, and farebox revenue between FY 2010 and October FY 2013 are shown in Figure 12. Projections for 2013 are based on the first quarter of the fiscal year. Overall numbers of revenue hours and miles operated by METRO decreased approximately 5 percent between 2010 and 2013, while operating costs increased. Total annual operating costs between 2010 and 2013 rose by 12.8 percent, while operating costs per revenue hour, per mile, and per passenger increased by a greater amount. During this period of time the national inflation rate was roughly 7 percent, lower than the increase in operating costs.

Figure 12 Fixed Route Operating Trends

	2010	2011	2012	1st Quarter 2013	2013 (Projected)	2010 - 2013
Operating Data						
Ridership	5,745,945	5,776,444	5,373,217	4,588,544*	5,506,253*	-4.17%
Revenue Hours	224,278	215,278	203,997	71,005	213,015	-5.02%
Revenue Miles	3,325,225	3,156,759	2,991,670	1,046,196	3,138,588	-5.61%
Operating Costs	$31,189,985	$31,585,081	$32,913,148	$11,728,851	$35,186,553	12.81%
Farebox Revenue	$4,312,957	$4,565,899	$5,212,295	$1,890,071	$5,670,213	31.47%
Performance Indicators						
Cost Efficiency						
Operating Cost per Revenue Hour	$139.07	$146.72	$161.34	$165.18		18.77%
Operating Cost per Revenue Mile	$9.38	$10.01	$11.00	$11.21		19.52%
Cost Effectiveness						
Operating Cost per Passenger	$5.43	$5.47	$6.13	$7.13		31.31%
Farebox Recovery Ratio	26.3%	26.5%	25.8%	23.3%		-11.46%
Average Revenue per Passenger	$1.43	$1.45	$1.58	$1.66		16.08%
Average Subsidy per Passenger	$4.00	$4.02	$4.55	$5.48		37.00%
Service Efficiency						
Passengers per Revenue Hour	25.6	26.8	26.3	23.2		-9.64%
Passengers per Revenue Mile	1.7	1.8	1.8	1.6		-9.25%

* Ridership data marked with an asterisk was updated more recently, in April 2012

Annual ridership between 2010 and 2013 is shown in Figure 13. After revenue hours were reduced 4 percent 2010 and 9 percent in 2011, annual ridership fell from 5.7 million in 2010 to 5.3 million in 2012. In March 2012 an 8 percent service restoration was implemented, and ridership appeared to be recovering as of April 2013.

Annual average boardings per hour are shown in Figure 14. As of October 2012, the number of boardings per hour had decreased from a high of 26.8 in 2011 to 23.2. However, ridership began to increase in 2013.

Figure 13 Annual Ridership: 2010 - 2013

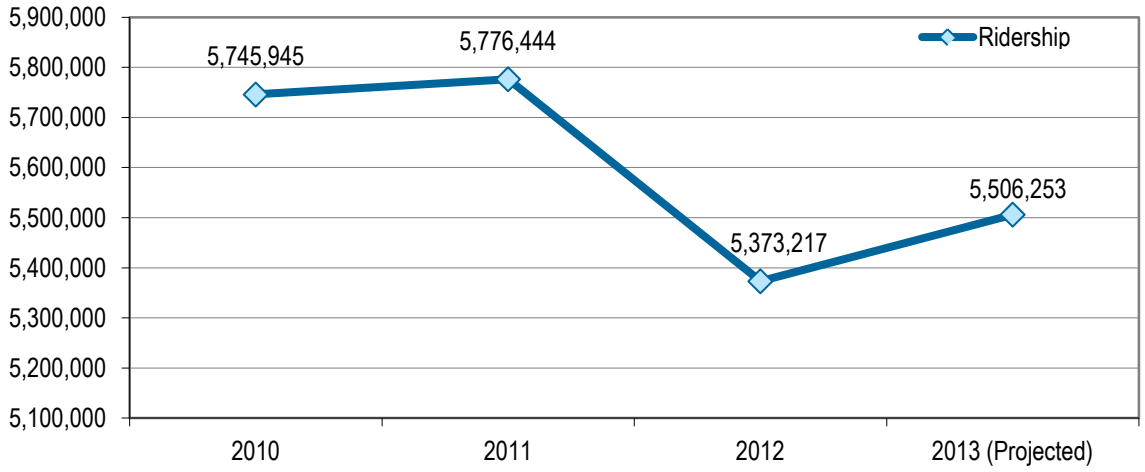
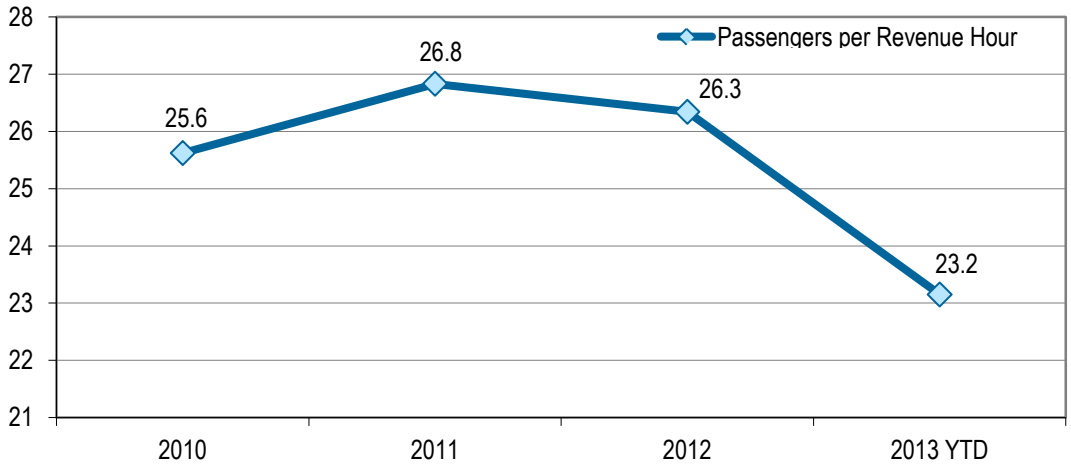


Figure 14 Passengers per Revenue Hour Systemwide: 2010-2013



PARACRUZ PERFORMANCE

METRO ParaCruz provides complementary ADA-compliant paratransit service for eligible passengers and trips. Eligible riders include people who have physical, cognitive, or psychiatric disabilities that prevent them from utilizing METRO's fixed-route service for some or all of their trips. ParaCruz service is available to destinations in Santa Cruz County that are within three quarters of a fixed-route line. Rides may be scheduled up to three days in advance and a minimum of one day in advance. The current fare is $4.00.

In FY 2012, ParaCruz provided 92,325 rides and operated a total of 46,163 revenue hours. A summary of ParaCruz operating trends is shown in Figure 15.

Figure 15 ParaCruz Operating Trends

	2010	2011	2012	2013 YTD	2010 - 2012
Operating Data					
Ridership	94,074	94,510	92,325	30,576	-1.86%
Revenue Hours	38,690	Not available	46,163	46,615*	19.32%
Revenue Miles	611,882	639,424	628,247	208,236	2.67%
Performance Indicators					
Cost Effectiveness					
Operating Cost per Passenger	$5.43	$5.47	$6.13	$7.13	12.89%
Farebox Recovery Ratio	26.3%	26.5%	25.8%	23.3%	-1.94%
Average Revenue per Passenger	$1.43	$1.45	$1.58	$1.66	10.49%
Average Subsidy per Passenger	$4.00	$4.02	$4.55	$5.48	13.75%
Service Efficiency					
Passengers per Revenue Hour	25.6	26.8	26.3	23.2	2.81%
Passengers per Revenue Mile	1.7	1.8	1.8	1.6	4.05%

*2013 Revenue hours are for all of FY 2013

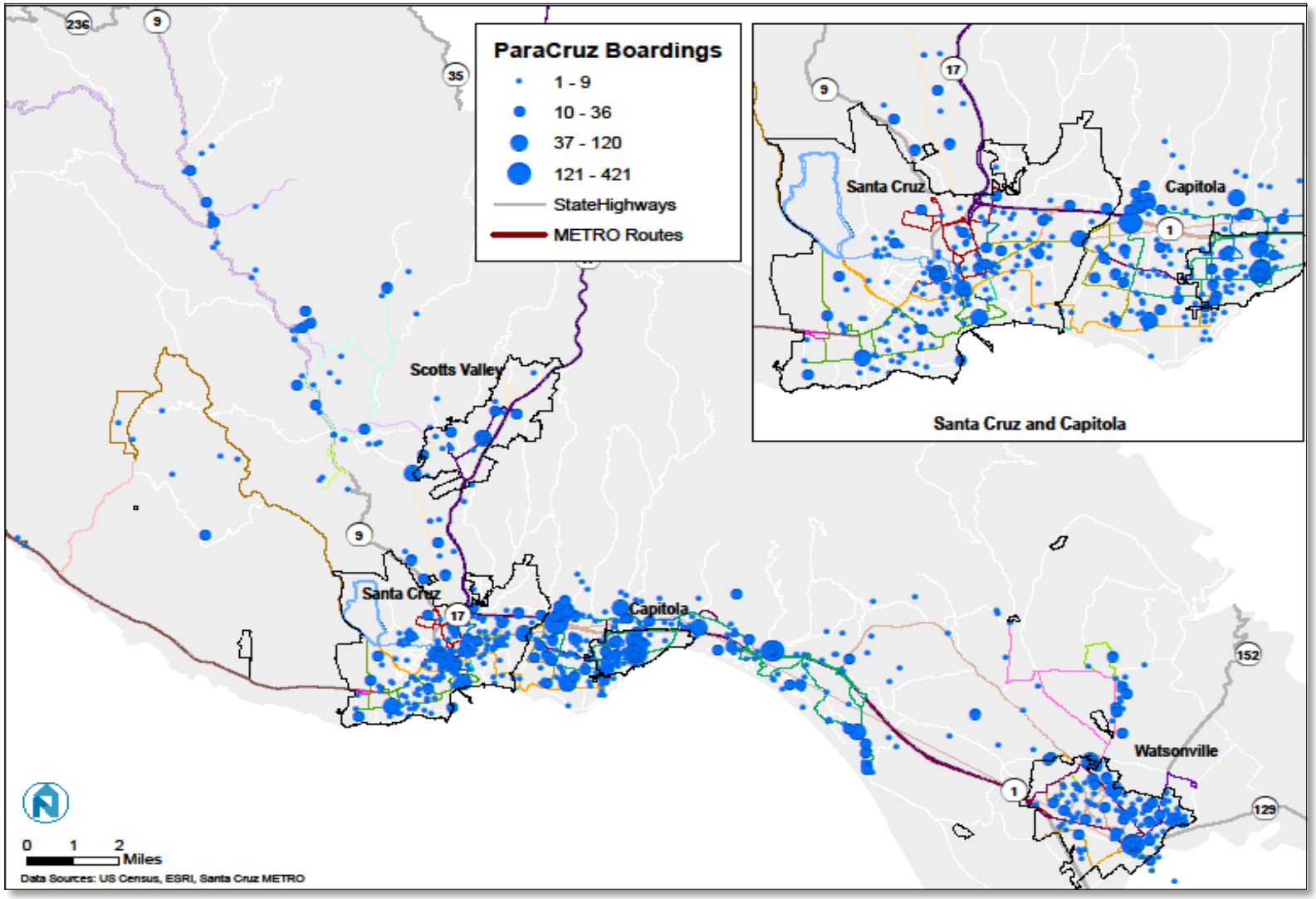
Figures 16 and 17 show data for all ParaCruz trips from September 25th to October 9th, 2013. Figure 16 shows the total number of trips by origin city and destination city. The most common trips are completely within Santa Cruz (705), completely within Watsonville (419), between Santa Cruz and Capitola (415), and between Santa Cruz and Aptos (325).

Figure 17 shows the location of all trip origins and destinations. ParaCruz trip ends are generally concentrated in and around Santa Cruz, Capitola, and Watsonville, although there are some trip origins and destinations in Scotts Valley and along Highway 9. Many passengers travel to destinations that provide medical care, including hospitals and dialysis centers.

Figure 16 ParaCruz Origin and Destination Table

TO: / FROM:	Aptos	Bonny Doon	Pajaro	Scotts Valley	La Selva Beach	Boulder Creek	Freedom	Felton	Mt Hermon	Capitola	Brookdale	Rio Del Mar	Corralitos	Ben Lomond	Soquel	Watsonville	Santa Cruz	Davenport	Total
Aptos	82		1	14	9	3	16	2		51		1	1	2	25	75	161		**443**
Santa Cruz	164	1	5	102	14	23	6	37	1	208	1	3	5	27	56	95	705		**1453**
Bonny Doon										5							3		**8**
Pajaro	1															1	5		**7**
Scotts Valley	10			26		8		12	1	16				1	7	4	112	1	**198**
La Selva Beach	14			5						1		1				4	16		**41**
Boulder Creek	3			4		4	3	1		12				1	2	1	25		**56**
Freedom	16					1				10						20	4		**51**
Felton	1			15		1		7		6	1				1		30		**62**
Mt Hermon				1													1		**2**
Capitola	54			16	3	11	8	4		63		1		9	12	80	207	1	**469**
Brookdale								1									1		**2**
Rio Del Mar	1				1					1							1		**4**
Corralitos	1			1													5		**7**
Davenport				1						1									**2**
Ben Lomond				3				1		1				11		1	12		**29**
Soquel	25			4	3	1		2		11					3	6	54		**109**
Watsonville	74		1	4	4	2	17			86				3	9	419	90		**709**
Grand Total	**446**	**1**	**7**	**196**	**34**	**54**	**50**	**67**	**2**	**472**	**2**	**6**	**6**	**54**	**115**	**706**	**1432**	**2**	**3652**

Figure 17 ParaCruz Origin and Destination Locations



3 ROUTE SUMMARIES

This chapter contains brief descriptions of each METRO route accompanied by information on ridership, service levels, productivity, on-time performance, frequency and service span. Most data are from FY 2012 and were provided by METRO staff. Stop-level ridership and on-time performance data for most routes were collected during a 2012 survey conducted by Moore and Associates on behalf of METRO[7]. Additional on-time performance data for Routes 66, 68, 69A, 69W, 71, and 91X were collected in June 2013 as part of this project, and are described in detail in Chapter 4.

[7] For these routes, "on-time" was defined as departing time points within five minutes of the published schedule, "late" was defined as arriving at time points six or more minutes after the scheduled time, and "missed" was defined departing more than 10 minutes after the scheduled time. Runs are considered "early" if they depart before the scheduled time, excluding the final timepoint at the end of the route.

Route 3 Mission/Natural Bridges

At a Glance		
Weekday Boardings		133
Weekday Revenue Hours		12.9
Boardings per Hour		10.3
Boardings per Trip		11.1
Schedule Adherence	Early	16.7%
	Late	16.7%
	Missed	0.0%
	On-time	66.7%
Frequency (minutes)	Mon-Fri Peak/Mid-day/Evening	60/60/60
	Weekend	5 trips
Span	Mon-Fri	6:50 a.m.–6:35 p.m.
	Weekend	9:50 a.m.–6:35 p.m.

Description

Route 3 operates as a loop between METRO Center and Natural Bridges State Beach and the UCSC Institute of Marine Sciences via Pacific Avenue, Bay Street, Mission Street and Delaware Avenue. During most of the year, the route also serves the Santa Cruz Beach Boardwalk via Second and Beach streets. The Boardwalk is not served on summer weekend trips. Route 3 serves the south portion of Downtown Santa Cruz, the commercial corridor along Mission Street, the Westside Industrial District and new mixed-used developments along Cabrillo, then serves through several residential areas, parking facilities, and academic buildings south of the UCSC campus. The route turns around at the UCSC Institute of Marine Sciences and De Anza Mobile Home Park at Delaware and Shaffer Road.

Characteristics

Route 3 has only 10.3 boardings per revenue hour and 11.1 boardings per trip, significantly below the systemwide average. The busiest stops are the Santa Cruz Transit Center and Pacific and Second streets. All other stops have very limited boarding activity, particularly along Bay Street. All-day service to the Natural Bridges/UCSC Institute of Marine Sciences area is also provided by Route 20/20D, which offers higher frequencies and serves the UCSC campus. Productivity is much higher on Route 20/20D, suggesting that the frequency and campus connection are more attractive to passengers and the Route 3 service along Bay Street and Mission is not a large driver of demand.

On-time performance is near the systemwide average, with equal instances of late arrivals and early arrivals.

Route 4 Harvey West/Emeline and Route 4W Harvey West

At a Glance		
Weekday Boardings		207
Weekday Revenue Hours		10.9
Boardings per Hour		19.1
Boardings per Trip		18.9
Schedule Adherence	Early	23.1%
	Late	15.4%
	Missed	0.0%
	On-time	61.5%
Frequency (minutes)	Mon-Fri Peak/Mid-day/Evening	60/60/60
	Weekend	Route 4W: 5 trips
Span	Mon-Fri	6:45 a.m.–5:30 p.m.
	Weekend	Route 4W: 8:55 a.m.– 5:09 p.m.

Description

Route 4 operates on weekdays between METRO Center, Emeline Complex, and Harvey West. The route operates via Front Street, Water Street, and Ocean Street toward the Santa Cruz County Emeline Complex, which includes County health services. The Route loops around at the Emeline Complex toward the METRO administrative offices, where it again loops toward Harvey West via Grant Street and Cabrillo. The Harvey West loop serves Harvey West Park, Pogonip Natural Area, and an industrial district that includes a Costco store and the METRO bus base. The route then returns back downtown via River and Front. The first three trips of the day serve Harvey West and the METRO offices before serving the Emeline Complex.

Route 4W provides weekend service on a limited portion of the regular Route 4, serving only the Harvey West loop via Front and River Street.

Characteristics

Route 4 is close to the systemwide average for boardings per revenue hour and boardings per trip. The busiest stops are METRO Center, Emeline Complex Building K, and River and Coral Street. There is very little activity between Downtown Santa Cruz and the Emeline Complex. This is the only route with all-day service to Emeline; Route 8 duplicates a portion of the route but only makes one trip per day.

On-time performance is slightly below the systemwide average: 23 percent of trips arrive early and 15 percent arrive late, for a total on-time performance rate of 61.5 percent.

Route 8 Emeline

At a Glance		
Weekday Boardings		7
Weekday Revenue Hours		0.6
Boardings per Hour		12.0
Boardings per Trip		7
Schedule Adherence	Early	0.0%
	Late	0.0%
	Missed	0.0%
	On-time	100%
Frequency (minutes)	Mon-Fri a.m.	1 trip
	Weekend	--
Span	Mon-Fri	7:35 a.m.–8:01 a.m.
	Weekend	--

Description

Route 8 provides one round trip directly between Santa Cruz to Emeline during the a.m. peak period when Route 4 serves Harvey West before Emeline. Route 8 duplicates most of the Route 4 alignment to Emeline, though on the return trip Route 8 runs via Market to reach Water and then turns southbound on Ocean.

Characteristics

Route 8 has the second-lowest boardings per trip in the METRO system, at only seven per trip. Because Route 8 only provides one daily trip and operates for less than one hour per day, boardings per hour are somewhat higher at 12. There is an average of only one daily boarding or alighting between Santa Cruz and Emeline, at Market and Water. This route saves passengers from making the Route 4 detour to Harvey West in the a.m. peak, but very few riders are taking advantage of this option. On-time performance is 100 percent.

Route 10 UCSC Via High

At a Glance		
Weekday Boardings		1,072
Weekday Revenue Hours		22.3
Boardings per Hour		48
Boardings per Trip		46.6
Schedule Adherence	Early	0.0%
	Late	20%
	Missed	4%
	On-time	76%
Frequency (minutes)	Mon-Fri All Day/p.m. Peak	30/15
	Weekend	60
Span	Mon-Fri	6:50 a.m.–8:00 p.m.
	Weekend	8:50 a.m.–6:35 p.m.

Description

Route 10 operates as a loop between the METRO Center and the UCSC campus. Weekday headways are a half-hour during the UCSC school term and hourly on weekends and outside of UCSC school terms. Route 10 operates along Cedar Street and Front in Downtown Santa Cruz, traveling via Mission Street and the Highland Avenue/Storey Street couplet toward High Street. The route travels along High and then around the main UCSC campus loop via Hagar Drive, McLaughlin Drive, Heller Drive, and Empire Grade Road in the counterclockwise direction. Routes 12, 16, and 20 also operate counterclockwise on this loop.

Characteristics

Route 10 is one of the busiest METRO routes and is well above the systemwide averages for productivity, at 48 boardings per hour and 46.6 boardings per trip. Most passengers use the route to travel between the main UCSC campus and Downtown Santa Cruz, a trip that is scheduled to take 18 minutes. Route 10 also has some boarding activity along the Highland/Storey couplet, which serves Mission Hill Junior High School and a small business district, and moderate to low activity along most of High. High is not served by any other METRO routes.

On-time performance is above average at 76 percent, but buses are much more likely to run late than early. Almost a quarter of trips (24 percent) are either late or missed.

Route 12 UCSC/East Side Direct

At a Glance		
Weekday Boardings		37
Weekday Revenue Hours		0.8
Boardings per Hour		44.8
Boardings per Trip		37
Schedule Adherence	Early	25%
	Late	25%
	Missed	0.0%
	On-time	50%
Frequency (minutes)	Mon-Fri a.m. Peak	1 trip
	Weekend	--
Span	Mon-Fri	7:10 a.m.–8:07 a.m.
	Weekend	--

Description

Route 12 provides one a.m. peak trip during the UCSC school term and does not operate at all outside of the school term. The route begins a block south of the Capitola Mall Transit Center at 41st Avenue and Kings Plaza, traveling south on 41st and west on Portola Drive, East Cliff Drive, Seventh Avenue, Eaton Street and Seabright Avenue, then along Broadway into the southern end of Downtown Santa Cruz. From Laurel and Pacific, Route 12 duplicates the Route 16 loop running counterclockwise through the main UCSC campus and back downtown, ending at METRO Center.

Characteristics

Despite operating only one trip per day, Route 12 has the fifth-highest boardings per revenue hour with 44.8 and above-average boardings per trip, with 37. Boarding activity is very low along Portola Drive as the route passes several mobile home parks, but begins to pick up when the route reaches Seabright at Eaton and Fifth. Outside of the UCSC campus, the busiest stops are within Santa Cruz along Broadway and Laurel, including stops at Broadway and Clay Street, Laurel and Chestnut Street, Laurel and Mission, and Bay and Mission. Most passengers alight at the UCSC campus, though some ride through to METRO Center. The high ridership on this route suggests additional a.m. peak-hour demand between Santa Cruz on both sides of the San Lorenzo River and UCSC.

On-time performance is below average, with a quarter of trips running early and a quarter of trips running late.

Route 15 UCSC via Laurel West

At a Glance		
Weekday Boardings		1,128
Weekday Revenue Hours		23.0
Boardings per Hour		49.1
Boardings per Trip		43.4
Schedule Adherence	Early	7%
	Late	10%
	Missed	5%
	On-time	78%
Frequency (minutes)	Mon-Fri Peak/Mid-day/Evening	30-60/8-50/8-45
	Weekend	--
Span	Mon-Fri	6:40 a.m.–9:35 p.m.
	Weekend	--

Description

Route 15 only operates during the UCSC school term, providing service between METRO Center and UCSC via Laurel, Mission, Bay, and the UCSC campus loop, then looping back to METRO Center. Route 15 duplicates service provided by Route 16, but operates along the UCSC loop clockwise instead of counterclockwise. Scheduled travel time is 18 minutes between METRO Center and Science Hill. Headways vary throughout the day according to peak UCSC demand.

Characteristics

Route 15 is one of the most productive routes in the METRO system. Route 15 has the second-highest boardings per revenue hour, at 49.1 boardings, and the fourth-highest boardings per mile at five. The route has strong anchors in Downtown Santa Cruz and UCSC. The busiest stops are at METRO Center and the UCSC campus, including the Science Hill and Bay Tree Bookstore stops. Alightings on the return trip toward Downtown Santa Cruz are evenly dispersed along Bay and Laurel until reaching METRO Center.

On-time performance is above average at 78 percent, with 7 percent of trips running early and 15 percent of trips late or missed.

Route 16 UCSC via Laurel East

At a Glance		
Weekday Boardings		2,752
Weekday Revenue Hours		52.0
Boardings per Hour		52.9
Boardings per Trip		49.1
Schedule Adherence	Early	4%
	Late	18%
	Missed	10%
	On-time	68%
Frequency (minutes)	Mon-Fri Daytime/p.m. Peak/Evening	10-30//3-20/15-30
	Weekend	20-90
Span	Mon-Fri	6:25 a.m.–12:40 a.m.
	Weekend	7:00 a.m.–11:40 p.m.

Description

Route 16 provides year-round service along the same alignment as Route 15, although Route 16 operates in the counterclockwise direction around the UCSC loop. Outside of the UCSC school term, Route 16 operates for most of the day at 30-minute headways. During the UCSC school term, headways improve to between three and 20 minutes from 7:30 a.m. to 7:30 p.m. Headways during the school term are irregular and METRO adds unpublished service to the route to accommodate loads.

Characteristics

Route 16 is one of the most productive METRO routes and has the highest annual ridership of all routes, with over 700,000 weekday riders annually. Route 16 has the most boardings per hour with 52.9, and the second-most boardings per trip, with 49. Average peak loads on Route 16 approach 35, indicating that some trips have standing loads. The busiest stops outside of METRO Center are the UCSC stops between the Bookstore and College 8. Most boardings are early in the route at or near METRO Center, while most alightings are at UCSC or after Bay and King Street.

Schedule adherence is close to the systemwide average at 68 percent, however nearly 30 percent of trips are either late or missed.

Route 19 UCSC via Lower Bay

At a Glance		
Weekday Boardings		1,157
Weekday Revenue Hours		24.3
Boardings per Hour		47.6
Boardings per Trip		48.2
Schedule Adherence	Early	4%
	Late	29%
	Missed	2%
	On-time	65%
Frequency (minutes)	Mon-Fri Peak/Mid-day/Evening	30/30/30-60
	Weekend	30
Span	Mon-Fri	7:30 a.m.–12:17 a.m.
	Weekend	10:00 a.m.–7:41 p.m.

Description

Route 19 operates as a loop providing service between Downtown Santa Cruz and UCSC. The alignment follows Pacific south from METRO Center, turning west from the west end of the Boardwalk toward UCSC via Bay. The route utilizes the main UCSC loop through campus in the clockwise direction, like Route 15. During the UCSC school term, service continues with 60-minute headways from 9:30 p.m. to 12:17 a.m. Outside of the school term, the last trip departs METRO Center at 8:30 p.m.

Characteristics

Route 19 has 47.6 boardings per revenue hour, the fourth-highest of any route systemwide, and 48.2 boardings per trip, second only to Route 16. Like the other UCSC routes, the busiest stops are at METRO Center and the UCSC campus, with some boardings along Bay heading toward campus and alightings along Bay heading toward Santa Cruz.

Like Route 16, Route 19 has some on-time performance issues, particularly with late running. Nearly one-third of trips (31 percent) are late or missed.

Route 20/20D UCSC via Westside

At a Glance		
Weekday Boardings		1,080
Weekday Revenue Hours		27.1
Boardings per Hour		44/33
Boardings per Trip		49.4/28.2
Schedule Adherence	Early	42%
	Late	0.0%
	Missed	8%
	On-time	50%
Frequency (minutes)	Mon-Fri Peak/Mid-day/Evening	30-60/60/60
	Weekend	60
Span	Mon-Fri	7:20 a.m.–9:15 p.m.
	Weekend	8:20 a.m.–9:15 p.m.

Description

Routes 20 and 20D operate between METRO Center and UCSC via Delaware Avenue and Western Drive. Route 20 operates at scheduled headways of 60 minutes outside of the UCSC school term, with one additional trip in the a.m. and p.m. peak hours during the school term. Route 20D runs between Bay and Laguna and UCSC from 7:20 a.m. to 11:20 a.m. and 3:20 p.m. to 6:20 p.m. during the school term to provide additional capacity on Route 20. Select weekday Route 20 trips deviate between Natural Bridges Drive and Western in order to serve the Pacific Shores Apartments.

Characteristics

Routes 20 and 20D are both above average productivity, with 44 and 33 boardings per hour, respectively. Route 20 also has the highest boardings per trip systemwide, with 49.4 boardings per trip. Route 20D, which operates a shorter portion of the route, has lower boardings per trip but has the third-highest boardings per mile in the system, at just over five boardings per mile. Ridership patterns indicate that although some passengers board at METRO Center to reach destinations along Delaware, most of the ridership activity is between Western and the UCSC campus.

On-time performance is only 50 percent, in large part because 42 percent of trips run early.

Route 30 Graham Hill/Scotts Valley

At a Glance		
Weekday Boardings		32
Weekday Revenue Hours		3.9
Boardings per Hour		8.2
Boardings per Trip		7.9
Schedule Adherence	Early	4%
	Late	12%
	Missed	8%
	On-time	76%
Frequency (minutes)	Mon-Fri Peak/Mid-day/Evening	2 a.m. trips, 2 p.m. trips
	Weekend	--
Span	Mon-Fri	6:55 a.m.–3:50 p.m.
	Weekend	--

Description

Route 30 provides service between METRO Center and Scotts Valley. The route makes four trips per day, with each trip serving a different set of stops. The route alignment runs via Ocean Street and Graham Hill Road, serving the Cavallaro Transit Center, and continuing on Lockewood Lane and Scotts Valley Drive. Route 30 serves three points within the Scotts Valley town center: Vine Hill Elementary, Scotts Valley High School, and Burlwood Drive and Granite Creek.

Characteristics

Route 30 performs significantly below the systemwide average in terms of boardings per hour with 8.2 boardings per hour and 7.9 boardings per trip. The number of route variants and low frequency limit its use for most riders. Route 30 sees some use from passengers destined for Scotts Valley High School and has some boarding activity along Scotts Valley Drive. The portion of the route between the Cavallaro Transit Center and the high school has almost no boarding activity.

On-time performance is 76 percent, with a combined 20 percent of trips either late or missed.

Route 33 Lompico SLV/Felton Faire

At a Glance		
Weekday Boardings		13
Weekday Revenue Hours		0.8
Boardings per Hour		15.1
Boardings per Trip		13.0
Schedule Adherence	Early	17%
	Late	0.0%
	Missed	25%
	On-time	58.3
Frequency (minutes)	Mon-Fri	1 a.m. trip, 1 p.m. trip
	Weekend	--
Span	Mon-Fri	6:53 a.m.–3:18 p.m.
	Weekend	--

Description

Route 33 operates only during the San Lorenzo Valley Unified School District (SLVUSD) school term and provides school and local service from the Felton Faire Shopping Center around the San Lorenzo Valley via Graham Hill Road, Glen Arbor Road, Quail Hollow Road, turning east on West Zayante Road to serve the Zayante store, and continuing east on Lompico Road, turning around at Lompico and West Drive. The route then returns via Lompico and continues on West Zayante back to Felton Faire.

Characteristics

Route 33 performs below systemwide averages for productivity measures, with 15.1 boardings per revenue hour and 13 boardings per trip. The busiest stops are San Lorenzo Valley High School (SLVHS), Lompico and East Zayante, the Zayante store, and Felton Faire. Route 33 serves primarily as a local feeder to bring passengers from SLVHS and the Zayante store to Felton Faire, where transfers are available to Route 34 and Route 35/35A, which provides frequent all-day service through the San Lorenzo Valley, Scotts Valley, and Santa Cruz.

On-time performance is only 58 percent, with a quarter of trips missed and 17 percent of trips running early.

Route 34 South Felton

At a Glance		
Weekday Boardings		2
Weekday Revenue Hours		0.6
Boardings per Hour		3.2
Boardings per Trip		2
Schedule Adherence	Early	0.0%
	Late	0.0%
	Missed	54%
	On-time	46%
Frequency (minutes)	Mon-Fri Peak/Mid-day/Evening	1 a.m. trip, 1 p.m. trip
	Weekend	--
Span	Mon-Fri	7:25 a.m.– 3:50 p.m.
	Weekend	--

Description

Route 34 serves several schools and sections of South Felton during the SLVUSD school term only. The route runs from Felton Faire to San Lorenzo Valley Elementary, Junior and High Schools via Highway 9, then returns southbound on Highway 9 through Felton, exiting at Lakeview Drive to serve Forest Lakes.

Characteristics

Route 34 has the lowest productivity of any route in the METRO system, with only 3.2 boardings per revenue hour and 2 boardings per trip. Due to the distance from Santa Cruz, it also has higher operating costs than local routes. Like Route 33, Route 34 is designated school service and feeds Route 35/35A at Felton Faire. The service area of Route 34 is very low-density and may be better suited to flexible or dial-a-ride service than fixed-route service.

On-time performance is also low at 46 percent, with 54 percent of trips missed.

Route 35/35A Santa Cruz to Scotts Valley Drive/San Lorenzo Valley (SLV)

At a Glance		
Weekday Boardings		1,317
Weekday Revenue Hours		46.6
Boardings per Hour		17.8
Boardings per Trip		20.6
Schedule Adherence	Early	0.0%
	Late	18%
	Missed	14%
	On-time	68%
Frequency (minutes)	Mon-Fri Peak/Mid-day/Evening	30/30/25-95
	Weekend	30-60
Span	Mon-Fri	5:43 a.m.–12:08 a.m.
	Weekend	7:02 a.m.–12:08 a.m.

Description

Routes 35A offers 30-minute service between Santa Cruz, Scotts Valley, the San Lorenzo Valley and Big Basin State Park. Route 35 provides supplemental weekday service, primarily during the SLVHS school term around bell times. Both routes have several variants, but most trips depart Santa Cruz on Highway 17 serving Pasatiempo and the Cavallaro Transit Center. Select Route 35A trips deviate to serve Scotts Valley Drive and Granite Creek. The route then continues toward Felton via Mt. Hermon Road, with some trips serving the community of Ben Lomond via a Highway 9 and Glen Arbor Road couplet. The route continues on Highway 9 toward Brookdale and Boulder Creek, where there are three route variants: one fork serves the Boulder Creek Golf and Country Club and then continues to the Big Basin parking lot during spring, summer and fall, the second fork serves the Mountain Store and Sylvan Avenue via Highway 9, and the third serves Bear Creek Road.

Characteristics

Route 35/35A is the third-largest route in the METRO system in terms of annual weekday passengers. It is also one of the longer routes in the METRO system, with the third-most daily miles. It has slightly below-average productivity with 17.8 boardings per revenue hour, 20.6 boardings per trip, and 1 boarding per mile. The lowest boarding activity is along the Glen Arbor detour in Ben Lomond, with moderate boarding activity through most other segments of the route.

On-time performance is 68 percent, and over one-third of all trips are either late or missed.

Route 40 Davenport/North Coast Beaches

At a Glance		
Weekday Boardings		57
Weekday Revenue Hours		4.9
Boardings per Hour		11.6
Boardings per Trip		14.1
Schedule Adherence	Early	11%
	Late	37%
	Missed	0.0%
	On-time	42%
Frequency (minutes)	Mon-Fri a.m./Afternoon	2 trips/2 trips
	Weekend	1 trip
Span	Mon-Fri	6:40 a.m.–4:20 p.m.
	Weekend	8:30 a.m.–9:20 a.m.

Description

Route 40 operates on Highway 1 along the coast north of Santa Cruz. Leaving Santa Cruz, Route 40 uses Laurel with the exception of one a.m. and p.m. trip, which use Walnut Street and Mission to serve Santa Cruz High School. The route makes more frequent stops along Mission until Natural Bridges State Park and the UCSC Institute of Marine Sciences, where transfers to Route 20/20D are possible. From Highway 1 and Western the route makes limited stops, serving several beaches, and then reaches Davenport where it makes a small loop through town. Route 40 continues on Highway 1/Old Cement Plant Road for eight miles through Greyhound Rock County Park, turning around near the Rancho del Oso Visitor Center.

Characteristics

Route 40 performs below average for METRO routes, with 11.6 boardings per hour and 14.1 boardings per trip. Because the route is fairly long with infrequent stops, it has the fifth-lowest boardings per mile in the system. Most stop activity is concentrated at METRO Center, along Mission, at Western and Highway 1, and in Davenport. The portion of the route along Cement Plant Road has very little boarding activity.

On-time performance is very low at 42 percent, in large part because 37 percent of trips run late. An additional 11 percent of trips run early.

Route 41 Bonny Doon

At a Glance		
Weekday Boardings		72
Weekday Revenue Hours		6.6
Boardings per Hour		11
Boardings per Trip		18.1
Schedule Adherence	Early	13%
	Late	4%
	Missed	0.0%
	On-time	83%
Frequency (minutes)	Mon-Fri a.m./Afternoon	2 trips/2 trips
	Weekend	1 trip
Span	Mon-Fri	5:50 a.m.–6:50 p.m.
	Weekend	9:30 a.m.–10:50 a.m.

Description

Route 41 operates as a loop between Santa Cruz and Bonny Doon, serving destinations along Empire Grade Road. Like Route 40, Route 41 uses Laurel leaving Santa Cruz except for one a.m. and one p.m. trip serving Santa Cruz High School via Walnut Street. The route travels inland via Bay to Empire Grade, runs along the west side of UCSC and continues on Empire Grade until turning on to Pine Flat Road, where it makes a loop around the rural community of Bonny Doon via Pine Flat and Bonny Doon Road.

Characteristics

Route 41 is significantly below the systemwide average with only 11 boardings per hour and less than one boarding per mile. Boardings per trip are closer to average, with an average of 18 per trip. Maximum loads are low, with boarding activity spread throughout the route. The busiest stops are Laurel and Washington Center, Mission Bay and Trescony, and Pine Flat and Empire Grade. The portion of the route along Bay and High offers transfers to Routes 10, 12, 15, 16, 19, and 42. Given the route's limited frequency, its performance suggests that passengers rely on the route for local circulation within the corridor.

On-time performance is good, with 96 percent of trips either on time or early.

Route 42 Davenport/Bonny Doon

At a Glance		
Weekday Boardings		9
Weekday Revenue Hours		1.3
Boardings per Hour		7
Boardings per Trip		9
Schedule Adherence	Early	0.0%
	Late	17%
	Missed	0.0%
	On-time	83%
Frequency (minutes)	Mon-Fri a.m.	1 trip
	Weekend p.m.	1 trip
Span	Mon-Fri	8:30 a.m.–9:50 a.m.
	Weekend	6:00 p.m.–7:25 p.m.

Description

Route 42 provides only one a.m. trip on weekdays and one p.m. trip on weekends between Santa Cruz, Bonny Doon, and Davenport. The route essentially combines Routes 40 and 41 in a large loop, running along Highway 1 toward Davenport, up Bonny Doon Road and looping through the Bonny Doon community along the same route as Route 41, via Pine Flat Road and Bonny Doon, before turning around Pine Flat toward Felton Empire Road, returning to Santa Cruz via Empire Grade.

Characteristics

Route 42 is one of the lowest performing routes in the METRO system, with the third-lowest boardings per revenue hour (7) and the second-lowest boardings per mile, at 0.2. Route 42 duplicates service provided by Routes 40 and 41, but has several disadvantages including much longer trips for passengers traveling from Davenport to Santa Cruz, no service to Santa Cruz High School, and very low frequency.

On-time performance is high, with 83 percent of trips on time. Most trips that are not on time are late.

Route 54 Capitola/Aptos/La Selva Beach

At a Glance		
Weekday Boardings		8
Weekday Revenue Hours		1.1
Boardings per Hour		6.9
Boardings per Trip		8
Schedule Adherence	Early	0.0%
	Late	0.0%
	Missed	0.0%
	On-time	100%
Frequency (minutes)	Mon-Fri Peak/Mid-day/Evening	1 trip
	Weekend	3 trips
Span	Mon-Fri	5:35 p.m.–6:43 p.m.
	Weekend	8:00 a.m.–7:43 p.m.

Description

Route 54 provides service between the Capitola Mall, Cabrillo College, Deer Park Shopping Center and Seascape Golf Course, Aptos Shopping Center, and La Selva Beach. The route operates one evening trip on weekdays and weekends and two a.m. trips on weekends. Route 54 operates as a loop beginning and ending at the Capitola Mall, but the return trip from La Selva Beach expresses via San Andreas Road and Soquel Drive, stopping only at Cabrillo College.

Characteristics

Route 54 has the second-lowest boardings per hour in the METRO system with an average of 6.9 boardings per revenue hour, and the third-lowest annual ridership of any route. The busiest stops are the Capitola Mall, the Aptos Shopping Center, and in Seascape Village, but boarding activity is low throughout the route. The irregularity of the schedule and indirect routing make this route unattractive for passengers. Route 54 is a hybrid of Routes 55 and 56, designed to provide basic coverage on weekends while reducing operating costs.

On-time performance is 100 percent.

Route 55 Rio Del Mar

At a Glance		
Weekday Boardings		143
Weekday Revenue Hours		10.1
Boardings per Hour		14.1
Boardings per Trip		14.3
Schedule Adherence	Early	0.0%
	Late	8%
	Missed	8%
	On-time	84%
Frequency (minutes)	Mon-Fri	60
	Weekend	--
Span	Mon-Fri	7:30 a.m.–5:25 p.m.
	Weekend	--

Description

Route 55 provides weekday service with hourly headways between the Capitola Mall and the Seascape community. It operates along the same route as Route 54 but does not extend past the Rio Del Mar Clubhouse and does not provide express return trips.

Characteristics

Route 55 is slightly below the systemwide productivity by all measures, with 14 boardings per hour and an average of 14.3 boardings per trip. The busiest stops are the Capitola Mall, Cabrillo College, and the Senson House. Ridership is driven by the Capitola Mall and Cabrillo College, while boardings are low through the beach and golf course communities in Rio Del Mar.

On-time performance is above the system average at 84 percent on time, although 8 percent of trips are late and 8 percent are missed.

Route 56 La Selva

At a Glance		
Weekday Boardings		19
Weekday Revenue Hours		2.1
Boardings per Hour		9.4
Boardings per Trip		9.7
Schedule Adherence	Early	14%
	Late	0.0%
	Missed	0.0%
	On-time	86%
Frequency (minutes)	Mon-Fri a.m./p.m.	1 trip/1 trip
	Weekend	--
Span	Mon-Fri	8:00 a.m.–2:50 p.m.
	Weekend	--

Description

Route 56 provides express service between the Capitola Mall Transit Center and Cabrillo College and continues to La Selva Beach making limited stops along Clubhouse Drive, Sumner Avenue, Seascape Boulevard and San Andreas Road. On the return trip the route expresses from La Selva to Soquel Drive and Cabrillo College. It operates one trip in the a.m. peak and one trip in the early afternoon. It offers slightly faster service than Route 55 between the Capitola Mall and Cabrillo College, saving five minutes in the outbound direction and eight in the inbound direction.

Characteristics

Route 56 has slightly better productivity than the other Mid-Coast routes but is still below the systemwide average with 9.4 boardings per hour, the sixth-lowest in the METRO system. Like Routes 54 and 55, there is little activity outside of the Capitola Mall and Cabrillo College, with a small amount of boardings and alightings along Clubhouse, Seascape, and Soquel.

On-time performance is 86 percent, with 14 percent of trips running early.

Route 66/66N Live Oak via 17th

At a Glance		
Weekday Boardings		533
Weekday Revenue Hours		18.6
Boardings per Hour		24.4
Boardings per Trip		16.7
Schedule Adherence	Early	9%
	Late	0.0%
	On-time	91%
Frequency (minutes)	Mon-Fri Peak/Mid-day/Evening	60/60/90
	Weekend	60
Span	Mon-Fri	6:45 a.m.–9:00 p.m./10:00 p.m.–11:05 p.m. (66N)
	Weekend	6:45 a.m.–8:55 p.m./9:00 p.m.–11:05 p.m. (66N)

Description

Route 66 serves Santa Cruz, Live Oak, and Capitola via 17th Avenue. One a.m. outbound trip and one p.m. inbound trip deviate to serve Harbor High School. The route leaves Santa Cruz via Front and Water, traveling through Live Oak via Seventh Avenue, Brommer St, 17th, Portola Drive, and finally reaching the Capitola Mall Transit Center via 38th Avenue and 41st Avenue. Route 66N operates along the Route 66 alignment at night, making one inbound and outbound trip during the week and two on weekends.

Characteristics

Route 66 is slightly above average for boardings per hour with an average of 24.4 boardings per revenue hour. Boarding activity is relatively evenly distributed along the route. The busiest stops are at East Cliff Village (17th and Tremont), along 38th near the Capitola Mall Transit Center where there are several mobile home parks, and at Soquel and La Fonda. Route 66 shares portions of the route east of 17th with Route 68 and portions west of Capitola Road with Route 71, which serves Watsonville. Transfers to numerous routes are also available at the Santa Cruz and Capitola transit centers.

For this project, on-time performance on this route and on Routes 68, 69A/W, 71 and 91X was surveyed in June 2013 during the a.m. and p.m. peak periods. Observations found that schedule adherence is not a major issue for Route 66, with no trips arriving more than five minutes late to any timepoint. More detail is provided in Chapter 4 of this report.

Route 68 Live Oak via Broadway/Portola

At a Glance		
Weekday Boardings		350
Weekday Revenue Hours		19.6
Boardings per Hour		17.8
Boardings per Trip		13.5
Schedule Adherence	Early	10%
	Late	20%
	On-time	70%
Frequency (minutes)	Mon-Fri	60
	Weekend	60
Span	Mon-Fri	6:15 a.m.–7:19 p.m.
	Weekend	8:15 a.m.–7:05 p.m.

Description

Like Route 66, Route 68 serves Live Oak and other areas between Santa Cruz and the Capitola Mall Transit Center using a route closer to the coastline. Leaving Santa Cruz, Route 68 runs along San Lorenzo Boulevard, Ocean, Broadway, Seabright, and Murray Street. It operates via a couplet along Lake Avenue and Seventh Avenue, and then runs on East Cliff and Portola to 41st, turning toward the Capitola Mall Transit Center. On summer weekend trips, the route uses Broadway all the way to METRO Center instead of San Lorenzo and Ocean.

Characteristics

Route 68 is slightly less productive than Route 66 and is slightly below the systemwide average with 17.8 boardings per hour. The route has relatively few boardings and alightings on the segment between East Cliff Village and METRO Center. The busiest stops outside of the transit centers are along Portola, which serves several mobile home parks.

On-time performance is an issue for Route 68, with 70 percent of trips arriving on time to scheduled timepoints and 20 percent arriving late. For more detail see Chapter 4.

Route 69A/69W Capitola Rd/Cabrillo/Watsonville

At a Glance		
Weekday Boardings		1,849
Weekday Revenue Hours		68.8
Boardings per Hour		25.3/28.4
Boardings per Trip		33.9/38.5
Schedule Adherence	Early	18%
	Late	20%
	On-time	62%
Frequency (minutes)	Mon-Fri	30 (combined)
	Weekend	30-60
Span	Mon-Fri	6:20 a.m.–9:48 p.m.
	Weekend	7:50 a.m.–9:48 p.m.

Description

Together, routes 69A and 69W provide half-hourly service between Santa Cruz and Watsonville. Both routes operate from METRO Center in Downtown Santa Cruz toward the Capitola Mall Transit Center via Front, Soquel, Capitola, and 41st Avenue. Route 69A travels on Highway 1 to Watsonville, where it uses Airport Boulevard and Freedom Boulevard to reach the Watsonville Transit Center. Route 69W operates on Soquel from the Capitola Mall Transit Center to Cabrillo College and Aptos, then to Watsonville Transit Center via Highway 1 and Main Street.

Characteristics

Routes 69A and 69W are mainline routes with high annual ridership and above-average productivity. Route 69W has 28.4 boardings per revenue hour, and Route 69A has 25.3. Route 69W is busiest at Cabrillo College and the three transit centers (METRO Center, Capitola Mall, and Watsonville) with moderate boarding activity along Soquel and Capitola. Route 69 has similar patterns with activity concentrated at the transit centers and within Watsonville, and moderate activity between Santa Cruz and Capitola. Both routes offer transfers to Monterey Salinas Transit (MST) routes at Watsonville Transit Center.

On-time performance is somewhat low with only 62 percent on-time arrivals. Approximately one-fifth of trips are early and another fifth are late. For more detail see Chapter 4.

Route 71 Santa Cruz/Watsonville

At a Glance		
Weekday Boardings		2,693
Weekday Revenue Hours		120.1
Boardings per Hour		22.4
Boardings per Trip		34.1
Schedule Adherence	Early	19%
	Late	31%
	On-time	50%
Frequency (minutes)	Mon-Fri Peak/Mid-day/Evening	15-30/30/60
	Weekend	
Span	Mon-Fri	5:35 a.m.–12:45 a.m.
	Weekend	6:05 a.m.–12:45 a.m.

Description

Route 71 provides local all-day service with 30-minute headways between Santa Cruz and Watsonville. The route leaves Santa Cruz via Front and Water, and then travels toward Aptos on Soquel, serving Harbor High School, the Soquel Park and Ride, Dominican Hospital, Cabrillo College, and Aptos High School along the way. In South County the route runs on Freedom Boulevard north of and within Watsonville. There are several route variants within Watsonville, including variants that travel via Green Valley Road, Clifford Avenue and Main. The first two a.m. trips inbound from Watsonville are scheduled to connect with the Highway 17 Express at the Soquel Park and Ride.

Characteristics

Route 71 has the second-highest annual weekday ridership in the METRO system. Productivity is close to average at 22.4 boardings per revenue hour. Boardings per mile are just below the systemwide average of two per mile. METRO Center, Watsonville Transit Center and Cabrillo College are the anchors of the route, but there is also consistent boarding activity along Soquel and within Watsonville. The segment of the route along Freedom travels through farmland and serves some agricultural jobs, but sees relatively little activity.

Route 71 has severe on-time performance issues: only 50 percent of trips arrive at timepoints on schedule. A total of 19 percent arrive early, while 31 percent are six or more minutes late. For more detail see Chapter 4.

Route 72 Corralitos

At a Glance		
Weekday Boardings		112
Weekday Revenue Hours		9.9
Boardings per Hour		11.3
Boardings per Trip		12.5
Schedule Adherence	Early	6%
	Late	25%
	Missed	0.0%
	On-time	69%
Frequency (minutes)	Mon-Fri	60
	Weekend	--
Span	Mon-Fri	5:45 a.m.–7:50 p.m.
	Weekend	--

Description

Route 72 serves Watsonville and Corralitos via Main, Green Valley, Airport Boulevard, Amesti Road, Varni Road, and Corralitos Road, and on the return trip loops around Pinto Lake Park via Pioneer Road and Green Valley. Route 72 provides the only METRO service in Corralitos and the surrounding farming community, and serves to connect passengers to the Watsonville Transit Center and Freedom Center and Airport, which is the first place that transfers are available to Santa Cruz-bound routes. The route provides 60-minute service on weekdays.

Characteristics

Route 72, with 11.3 boardings per hour and 12.5 boardings per trip, is well below systemwide average productivity by all measures. Route 72 provides local connections and transfer opportunities to local Watsonville routes and Santa Cruz-bound routes.

On-time performance is close to the systemwide average, with 25 percent of trips arriving late to scheduled timepoints.

Route 74 Ohlone Parkway/Rolling Hills

At a Glance		
Weekday Boardings		67
Weekday Revenue Hours		7.4
Boardings per Hour		9.0
Boardings per Trip		9.6
Schedule Adherence	Early	0.0%
	Late	0.0%
	Missed	0.0%
	On-time	100%
Frequency (minutes)	Mon-Fri	60
	Weekend	60
Span	Mon-Fri	6:10 a.m.–7:03 p.m.
	Weekend	6:45 a.m.–7:45 p.m.

Description

Route 74 provides weekday and weekend local service through Watsonville and is the only route that provides direct service to the Watsonville Community Hospital. The route runs via West Beach Street, Ohlone Parkway, and Airport, then turns around the Watsonville Hospital through the adjacent neighborhood via Anna Street and Shady Oaks Road. It returns to Airport and serves the Watsonville Municipal Airport, looping around Green Valley to serve The Towers. On weekdays Route 74 makes a small loop around Freedom before serving The Towers and the surrounding farms. Transfers to other Watsonville and Santa Cruz routes are available at Freedom and Airport.

Characteristics

Route 74 is the least productive Watsonville route, with only nine boardings per revenue hour. It is the only route serving Freedom and the area north of the airport. Routing has changed since the 2012 data collection effort, so boarding activity is not available for this route.

On-time performance is 100 percent.

Route 75 Green Valley

At a Glance		
Weekday Boardings		239
Weekday Revenue Hours		13.9
Boardings per Hour		17.2
Boardings per Trip		17.0
Schedule Adherence	Early	8%
	Late	33%
	Missed	17%
	On-time	42%
Frequency (minutes)	Mon-Fri	60
	Weekend	60
Span	Mon-Fri	5:15 a.m.–8:15 p.m.
	Weekend	5:15 a.m.–8:15 p.m.

Description

Route 75 provides all-day weekday and weekend service with 60-minute headways from the Watsonville Transit Center to Amesti via Green Valley, ending at Monte Vista Christian School on Wheelock Road.

Characteristics

Route 75 is the most productive of the Watsonville routes, though it is still below the average systemwide productivity with 17.2 boardings per hour and 17 boardings per trip. Ridership is strongest within the local Watsonville area and near Pinto Lake Park. Ridership is lower on the northern loop and route terminus around Wheelock.

On-time performance is low at only 42 percent on-time, largely due to late running. One-third of trips are late and 17 percent are missed.

Route 77 Civic Plaza/Pajaro

At a Glance		
Frequency (minutes)	Mon-Fri	60
	Weekend	--
Span	Mon-Fri	6:30 a.m.–7:05 p.m.
	Weekend	--

Description

Route 77 connects Watsonville to Pajaro, making a small loop at each end of the route. The route travels from the Watsonville Transit Center via Second Street, Main, Porter Drive, Salinas Road and Bishop Street, returning via Porter and Riverside Drive. Monterey-Salinas Transit also provides service between Watsonville, which is in Santa Cruz County, and Pajaro, which is in Monterey County.

Characteristics

Productivity data are not available for Route 77.

Route 79 East Lake

At a Glance		
Weekday Boardings		85
Weekday Revenue Hours		8.1
Boardings per Hour		10.5
Boardings per Trip		7.7
Schedule Adherence	Early	6%
	Late	25%
	Missed	6%
	On-time	63%
Frequency (minutes)	Mon-Fri	60
	Weekend	60
Span	Mon-Fri	7:00 a.m.–6:35 p.m.
	Weekend	7:30 a.m.–7:05 p.m.

Description

Route 79 provides local service around Watsonville via East Beach Street, Bridge Street, Tuttle Avenue, East Lake Avenue, College Drive, and Lakeview Road. The route serves the East Lake Village Shopping Center on East Lake.

Characteristics

Route 79 has below-average productivity with 10.5 boardings per hour, and the third-lowest boardings per trip with an average of 7.7 boardings per trip. Most boardings and alightings are at the Watsonville Transit Center and the East Lake Village Shopping Center. There is very little ridership along College.

On-time performance is poor with 63 percent of trips on time, and nearly one-third (31 percent) missed or late.

Route 91X Commuter Express Santa Cruz to Watsonville

At a Glance		
Weekday Boardings		285
Weekday Revenue Hours		64.6
Boardings per Hour		13.0
Boardings per Trip		13.6
Schedule Adherence	Early	23%
	Late	10%
	On-time	67%
Frequency (minutes)	Mon-Fri Peak/Mid-day	30/30
	Weekend	--
Span	Mon-Fri	5:55 a.m.–6:30 p.m.
	Weekend	--

Description

Route 91X is an express service that makes limited stops between Santa Cruz and Watsonville. Like Routes 69A and 69W it travels primarily on Highway 1, though leaving Downtown Santa Cruz it reaches Highway 1 via Morrissey Boulevard.

Characteristics

Despite travel time that is roughly half of that for Route 71, Route 91X has below-average productivity, with 13 boardings per revenue hour. Route 91X is scheduled to relieve passenger loads on Route 71 between Santa Cruz and Cabrillo College. Like other routes serving this corridor, the busiest stops are the Santa Cruz and Watsonville transit centers and Cabrillo College. Boardings are low at the other stops within Watsonville.

On-time performance is 67 percent, with 23 percent of trips running early and 10 percent running late. More detail can be found in Chapter 4 of this report.

Route 17 Amtrak Hwy 17 Express

At a Glance		
Weekday Boardings		1,078
Weekday Revenue Hours		64.6
Boardings per Hour		16.7
Boardings per Trip		20.0
Schedule Adherence	Early	%
	Late	%
	Missed	%
	On-time	%
Frequency (minutes)	Mon-Fri Peak/Mid-day/Evening	5-35/25-65/20-55
	Weekend	55-60
Span	Mon-Fri	4:45 a.m.–11:45 p.m.
	Weekend	7:40 a.m.–11:55 p.m.

Description

The Highway 17 Express, referred to here as Route 17, is a service operated by METRO in partnership with several other agencies including the Santa Clara Valley Transportation Authority (VTA), the Capitol Corridor Joint Powers Authority (CCJPA), the California Department of Transportation (Caltrans) and Amtrak. The route provides service from Santa Cruz and Scotts Valley to Diridon Station near Downtown San Jose, where connections can be made to VTA light rail and buses, Caltrain service to San Francisco, Amtrak service to Oakland and Altamont Commuter Express (ACE) service to Stockton. Select weekday trips serve Scotts Valley Drive instead of remaining on Highway 17 until the Cavallaro Transit Center, and some peak-hour trips serve the Soquel Park and Ride, where riders can make a connection from Route 71 in the a.m. peak. Scheduled headways vary throughout the day to accommodate connections to other transit services in San Jose.

Characteristics

This route serves a different market than most METRO routes due to its regional nature, so it is not directly comparable to other routes. Route 17 travels the most daily miles of any route, and not surprisingly has somewhat lower boardings per mile than the METRO average. It has an average of 16.7 boardings per revenue hour and 20 boardings per trip, with peak loads approaching 25. Most passengers use the route to travel between Diridon Station and METRO Center, though there is some boarding activity at the Cavallaro Transit Center.

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4 ON-TIME PERFORMANCE

As part of the SRTP process, METRO staff identified five routes on which they wished to collect additional data on schedule reliability. In June 2013, schedule adherence at timepoints on Routes 66, 68, 69A/69W, 71, and 91X was surveyed in the a.m. and p.m. peaks[8]. The following section provides a detailed overview of each route's on-time performance and highlights segments with the most severe issues.

For the purposes of this analysis, on-time was defined as zero to five minutes late. Any trip that was more than 5 minutes late was considered "late".

Route 66

Detailed on-time performance data for Route 66 are shown in Figure 18 on the following page. On-time performance on this route appears to be relatively good, with 83 percent of trips arriving on-time at timepoints, 9 percent arriving early, and only 8 percent late.

Inbound, no observed trips were more than five minutes late at any timepoint. Schedule adherence was slightly worse in the a.m. peak period than in the p.m. peak, with average arrivals at two timepoints more than two minutes late. Inbound in the p.m. peak, trips arrived at the route terminal at METRO Center an average of four minutes early. Outbound schedule adherence was 80 percent, with only 15 percent of arrivals at timepoints more than 5 minutes late. Both a.m. and p.m. trips ran between two and four minutes behind schedule at Capitola Road and Seventh Avenue and Portola and30th Avenue, but generally arrived early at Capitola Mall.

[8] Note that the sample size for some routes during a given time period was small, as only peak trips (6-9 a.m. and 3-6 p.m.) were observed. In some cases the sample included trips that fall slightly outside of peak hours.

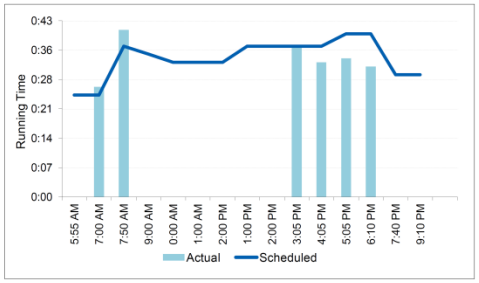
Figure 18 Route 66 On Time Performance Summary

66 Weekday		% On-Time	% Early	% Late
	Inbound	87%	13%	0%
	Outbound	80%	5%	15%
	Total	83%	9%	8%

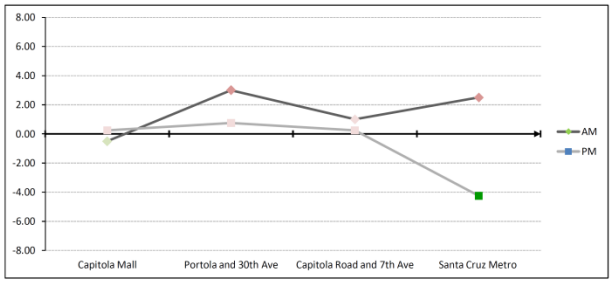
		Average Minutes Early		Average Minutes Late	
	By Time Point	Inbound	Outbound	Inbound	Outbound
1	Capitola Mall	0:01	0:04	0:01	0:02
2	Portola and 30th Ave	0:02	0:00	0:02	0:04
3	Capitola Road and 7th Ave	0:02	0:00	0:02	0:03
4	Santa Cruz Metro	0:05	0:02	0:02	0:00
	Total	**0:02**		**0:02**	

	By Time Period	Inbound	Outbound	Inbound	Outbound
	AM	0:00	0:04	0:02	0:01
	PM	0:05	0:04	0:00	0:03
	Total	**0:02**	**0:04**	**0:01**	**0:02**

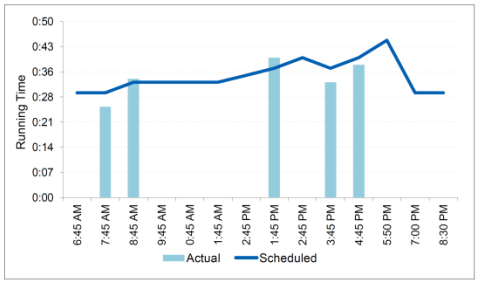
66 Weekday Inbound Running Time



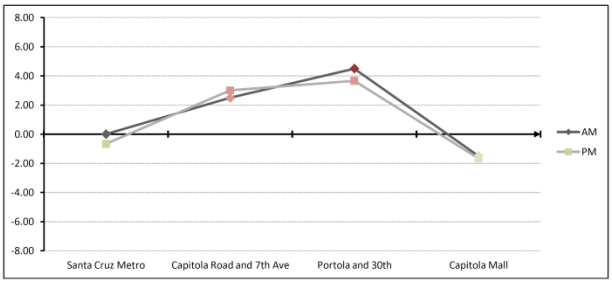
66 Weekday Inbound Schedule Variance



66 Weekday Outbound Running Time



66 Weekday Outbound Schedule Variance



Route 68

As shown in Figure 19 on the following page, Route 68 has some on-time performance issues, particularly during the p.m. peak period. Overall, 70 percent of trips arrive on-time, 10 percent arrive early, and 20 percent arrive late at scheduled timepoints.

On average, inbound a.m. trips are within two minutes of scheduled arrival times at most timepoints the route, although they arrive an average of six minutes early to METRO Center. Inbound afternoon trips run behind much of the time, including departures from the Capitola Mall that average four minutes later than scheduled. By Broadway and Seabright, inbound afternoon trips run an average of eight minutes behind schedule, but arrive at METRO Center an average of two minutes early. Outbound trips exhibit similar patterns, with late departures from METRO Center in the p.m. peak contributing to average late arrivals of four minutes throughout the p.m. peak. However, both a.m. and p.m. outbound trips generally arrive on-time or early to the Capitola Mall.

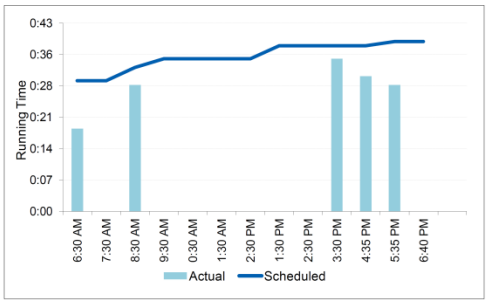
Figure 19 Route 68 On-Time Performance Summary

68 Weekday	% On-Time	% Early	% Late
Inbound	65%	15%	20%
Outbound	75%	5%	20%
Total	70%	10%	20%

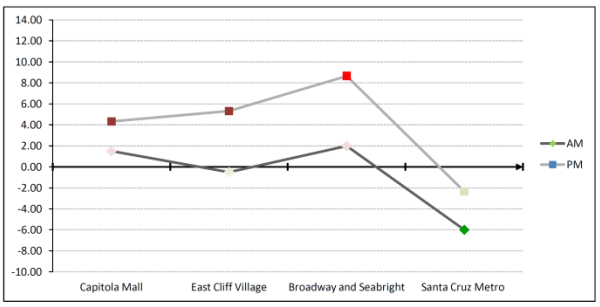
		Average Minutes Early		Average Minutes Late	
	Total Delay By Segment	Inbound	Outbound	Inbound	Outbound
1	Capitola Mall	0:00	0:08	0:08	0:03
2	East Cliff Village	0:01	0:00	0:18	0:06
3	Broadway and Seabright	0:00	0:00	0:06	0:04
4	Santa Cruz Metro	0:07	0:02	0:10	0:00
	Total	**0:02**	**0:02**	**0:10**	**0:03**

	End of Trip Delay By Time Period	Inbound	Outbound	Inbound	Outbound
	AM	0:00	0:05	0:00	0:00
	PM	0:08	0:09	0:10	0:03
	Total	**0:04**	**0:07**	**0:05**	**0:01**

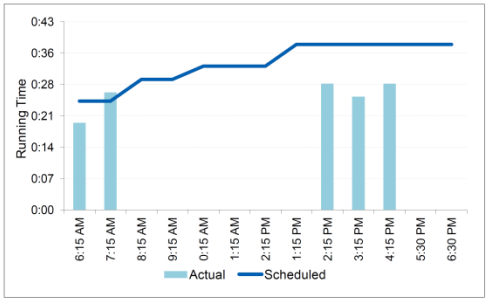
68 Weekday Inbound Running Time



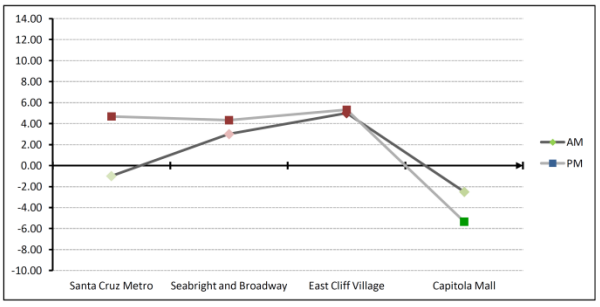
68 Weekday Inbound Schedule Variance



68 Weekday Outbound Running Time



68 Weekday Outbound Schedule Variance



Route 69A/69W

On-time performance for Route 69A/69W is shown in Figure 20 on the following page. Overall 62 percent of trips are on time, 18 percent are early, and 20 percent are late.

Late-running is especially problematic for inbound trips, with 28 percent of inbound trips arriving more than five minutes late to scheduled timepoints and only 57 percent arriving on-time. Although trips in both directions are typically arrive at the end of the route on time or early, trips in both directions average four or more minutes late for most of the route between the Watsonville Transit Center and the Capitola Mall.

Inbound, both a.m. and p.m. trips on both the 69A and 69W depart the Watsonville Transit Center an average of two minutes late. The 69A, which serves Green Valley and Main and Cabrillo College, runs an average of between four and 11 minutes late to those timepoints inbound. The 69W, which serves Airport Boulevard, Freedom Centre and Neilson, and Watsonville Hospital, runs between four and eight minutes late to those timepoints. Both routes arrive on-time or early at the Capitola Mall, then fall slightly behind at Capitola Road and Seventh Avenue, and arrive at METRO Center an average of one to four minutes early.

Outbound trips suffer from less late-running, with almost no late arrivals in the a.m. peak. Both a.m. and p.m. peak trips arrive on-time or early at Capitola Mall, although as with inbound trips, most outbound trips run one to five minutes behind schedule at Capitola Road and Seventh Avenue. In the p.m. peak, outbound trips on both the 69A and 69W run an average of three to four minutes behind schedule, arriving close to the scheduled time at the Watsonville Transit Center.

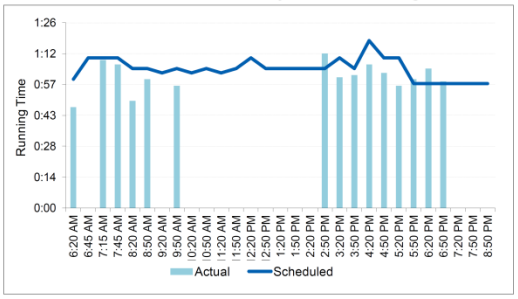
Figure 20 Route 69 On-Time Performance Summary

69A/69W Weekday	% On-Time	% Early	% Late
Inbound	57%	15%	28%
Outbound	67%	20%	13%
Total	62%	18%	20%

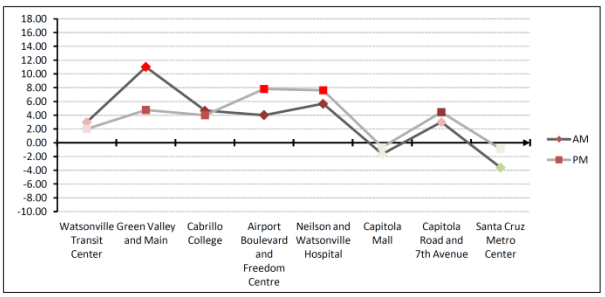
		Average Minutes Early		Average Minutes Late	
	Total Delay By Segment	Inbound	Outbound	Inbound	Outbound
1	Watsonville Transit Center	0:01	0:06	0:04	0:04
2	Green Valley and Main	0:00	0:04	0:10	0:06
3	Cabrillo College	0:00	0:00	0:07	0:00
4	Airport Boulevard and Freedom Centre	0:00	0:00	0:06	0:03
5	Neilson and Watsonville Hospital	0:00	0:03	0:06	0:04
6	Capitola Mall	0:03	0:04	0:03	0:02
7	Capitola Road and 7th Avenue	0:01	0:01	0:05	0:05
8	Santa Cruz Metro Center	0:04	0:04	0:03	0:02
	Total	**0:01**	**0:02**	**0:05**	**0:03**

	End of Trip Delay By Time Period	Inbound	Outbound	Inbound	Outbound
	AM	0:03	0:07	0:00	0:00
	PM	0:06	0:05	0:03	0:04
	Total	**0:05**	**0:06**	**0:01**	**0:02**

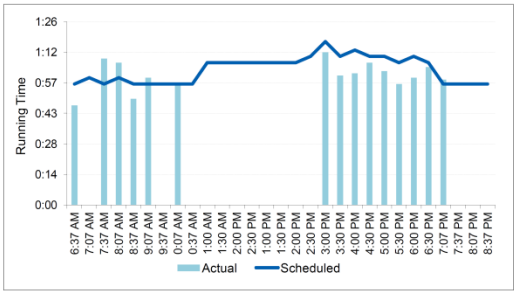
69A/69W Weekday Inbound Running Time



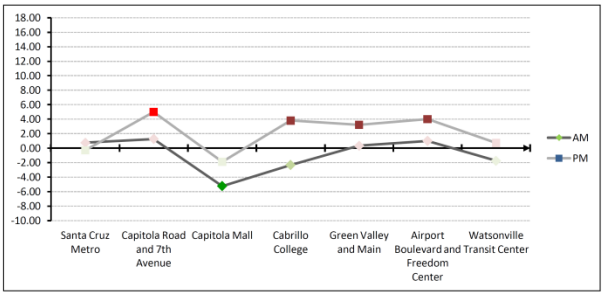
69A/69W Weekday Inbound Schedule Variance



69A/69W Weekday Outbound Running Time



69A/69W Weekday Outbound Schedule Variance



Route 71

Route 71 has the most serious schedule adherence problems of any of the routes surveyed during June 2013. As shown in Figure 21 on the following page, only 50 percent of trips arrive on-time, while 19 percent run early and 31 percent are late.

Outbound, 36 percent of trips arrive late at scheduled timepoints. Inbound, both a.m. and p.m. trips exhibit a similar pattern, with slight schedule variation through Watsonville until Airport Boulevard and Freedom Centre, at which point buses begin to run late. Inbound trips arrive at Cabrillo College between two and four minutes late and fall further behind schedule as the route continues through Santa Cruz. At Water and Poplar, Route 71 generally arrives between six and minutes late. Most trips are able to arrive within five minutes of the scheduled time at METRO Center, although p.m. trips arrive an average of four minutes late.

Outbound, on-time performance is especially problematic in the p.m. peak. While a.m. outbound trips typically arrive three minutes early at the Watsonville Terminal, p.m. outbound trips arrive an average of nine minutes late. The route falls progressively further behind schedule at each timepoint, running more than 8 minutes late from Soquel and Rancho del Mar into Watsonville. Trips that serve Clifford and Pennsylvania run especially late, arriving an average of 13 minutes behind schedule. P.m. trips arrive at the Watsonville Transit Center an average of six minutes late. Running late is only problematic in the a.m. peak for trips serving Clifford and Pennsylvania, which arrive an average of five minutes behind schedule. Outbound trips in the a.m. peak arrive an average of three minutes early at Watsonville Transit Center.

The peak on-time performance numbers suggest that mid-route timepoint times should be adjusted.

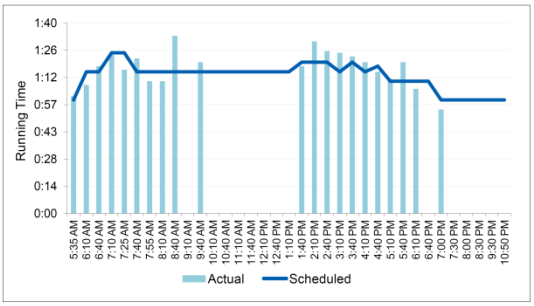
Figure 21 Route 71 On-Time Performance Summary

71 Weekday		% On-Time	% Early	% Late
	Inbound	55%	18%	27%
	Outbound	44%	20%	36%
	Total	50%	19%	31%

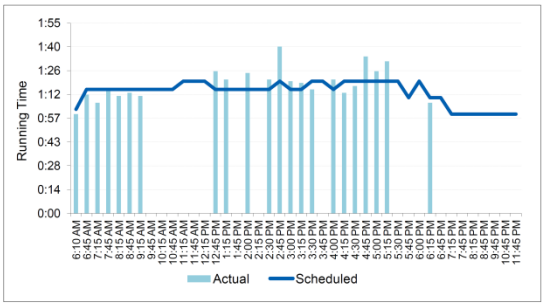
		Average Minutes Early		Average Minutes Late	
	Total Delay By Segment	Inbound	Outbound	Inbound	Outbound
1	Watsonville Transit Center	0:01	0:03	0:02	0:09
2	Crestview Center	0:01	0:00	0:03	0:10
3	Clifford and Pennsylvania	0:02	0:01	0:01	0:10
4	Airport Boulevard and Freedom Centre	0:02	0:01	0:03	0:09
5	Freedom Boulevard and Soquel Drive	0:01	0:02	0:03	0:08
6	Soquell and State Park	0:01	0:00	0:04	0:07
7	Cabrillo College	0:01	0:02	0:04	0:07
8	Soquel Drive and Daubenbiss	0:01	0:01	0:06	0:05
9	Soquel Drive and Dominican Hospital	0:00	0:01	0:06	0:03
10	Water and Poplar	0:00	0:01	0:08	0:02
11	Santa Cruz Metro	0:04	0:01	0:07	0:01
	Total	**0:01**	**0:01**	**0:04**	**0:06**

	End of Trip Delay By Time Period	Inbound	Outbound	Inbound	Outbound
	AM	0:05	0:03	0:07	0:00
	PM	0:02	0:04	0:07	0:09
	Total	**0:03**	**0:03**	**0:07**	**0:04**

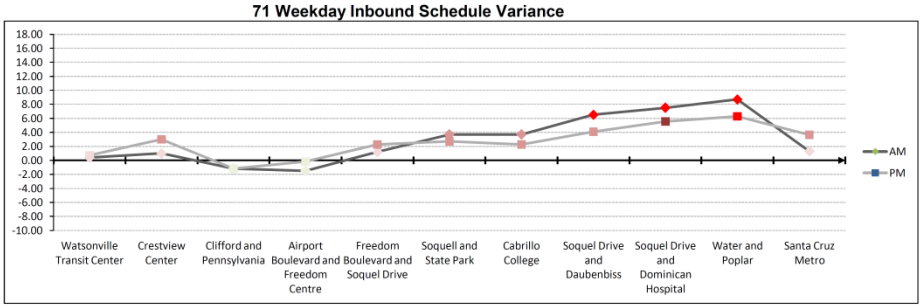
71 Weekday Inbound Running Time



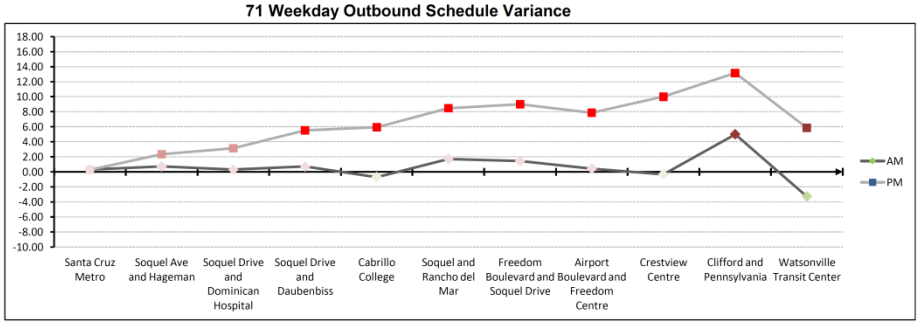
71 Weekday Outbound Running Time



71 Weekday Inbound Schedule Variance



71 Weekday Outbound Schedule Variance



Route 91X

Route 91X has average on-time performance, with 67 percent of trips arriving on-time, 23 percent arriving early, and 10 percent arriving late. Detailed on-time performance information is shown in Figure 22 on the following page.

Inbound, a.m. trips arrive early at most timepoints, falling slightly behind schedule at Hospital. P.m. trips depart the Watsonville Transit Center an average of two minutes late and remain slightly behind schedule until arriving in Santa Cruz. Similarly, a.m. outbound trips tend to run early at most timepoints. In the p.m., outbound trips run an average of four minutes behind schedule at Cabrillo College and Green Valley and Main, but are able to arrive at Watsonville Transit Center close to the scheduled time.

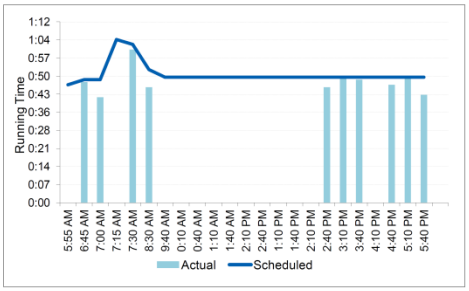
Figure 22 Route 91X On-Time Performance Summary

91X Weekday	% On-Time	% Early	% Late
Inbound	65%	20%	15%
Outbound	69%	25%	6%
Total	67%	23%	10%

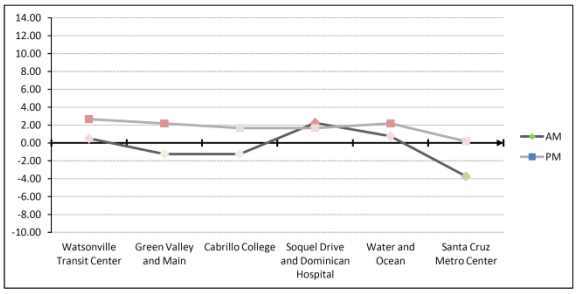
		Average Minutes Early		Average Minutes Late	
	Total Delay By Segment	Inbound	Outbound	Inbound	Outbound
1	Watsonville Transit Center	0:00	0:04	0:04	0:05
2	Green Valley and Main	0:02	0:03	0:05	0:05
3	Cabrillo College	0:03	0:01	0:04	0:04
4	Soquel Drive and Dominican Hospital	0:03	N/A	0:04	N/A
5	Water and Ocean	0:02	0:01	0:03	0:02
6	Santa Cruz Metro Center to	0:03	0:04	0:02	0:01
	Total	**0:02**	**0:02**	**0:04**	**0:05**

	End of Trip Delay By Time Period	Inbound	Outbound	Inbound	Outbound
	AM	0:03	0:06	0:00	0:02
	PM	0:03	0:03	0:02	0:08
	Total	**0:03**	**0:04**	**0:01**	**0:05**

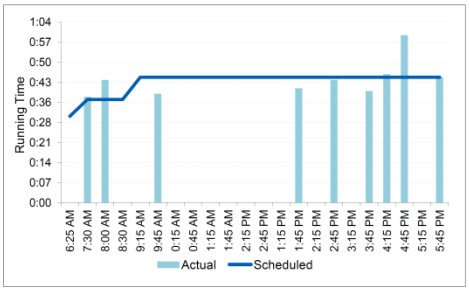
91X Weekday Inbound Running Time



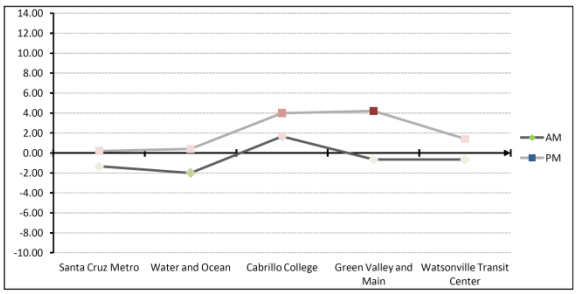
91X Weekday Inbound Schedule Variance



91X Weekday Outbound Running Time



91X Weekday Outbound Schedule Variance



5 DEMOGRAPHIC ANALYSIS

This chapter provides information on overall population density, density of young people and seniors, density of households with incomes below the federal poverty line, and density of households without access to a vehicle and density of households occupied by renters in each U.S. Census tract within the METRO service area. Data are from the 2010 census, and are illustrated in Figures 23 through 28 on the following pages. Brief analyses follow in the discussion below.

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Figure 23 Santa Cruz Population Density, 2010

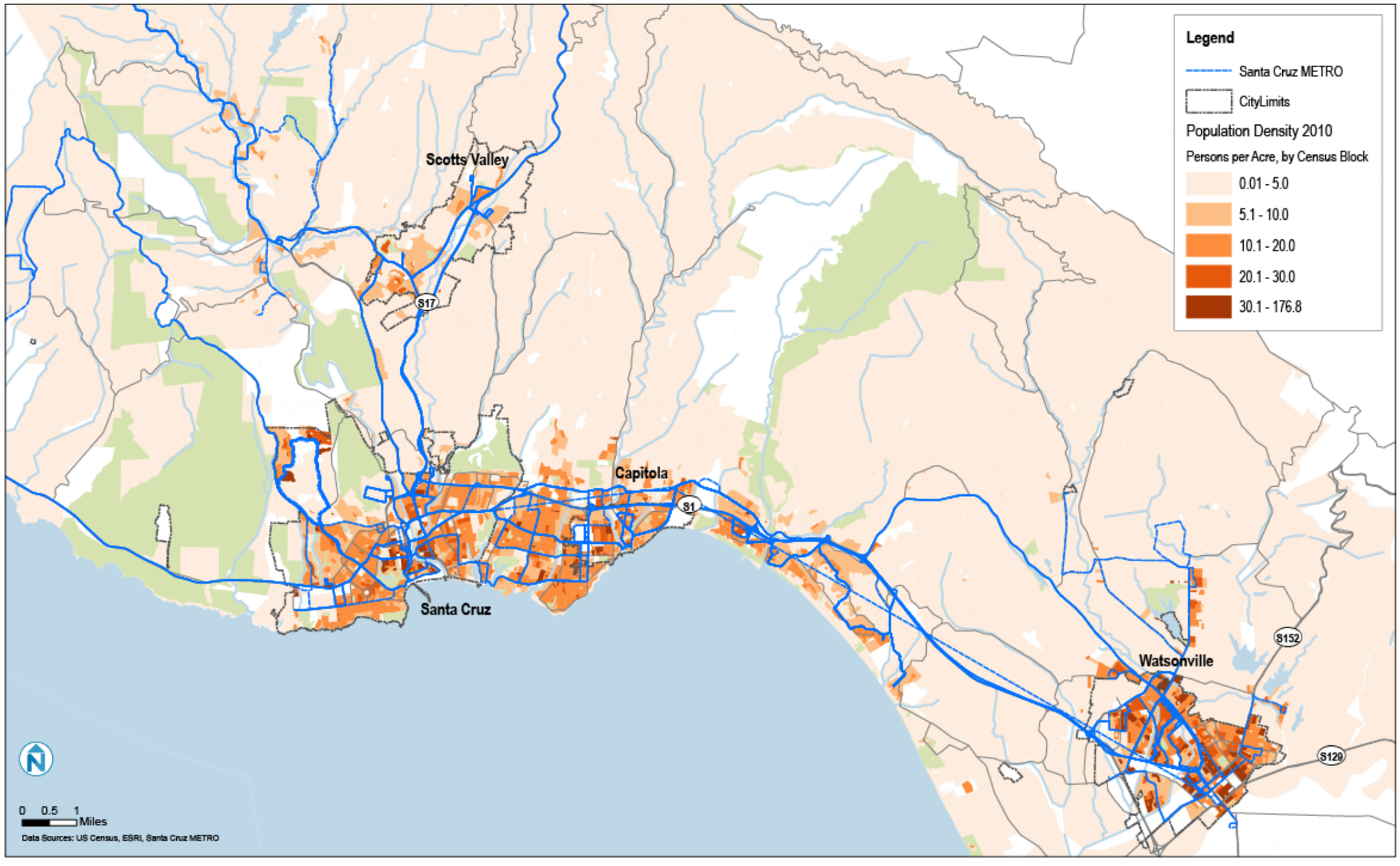


Figure 24 Youth Density, 2010

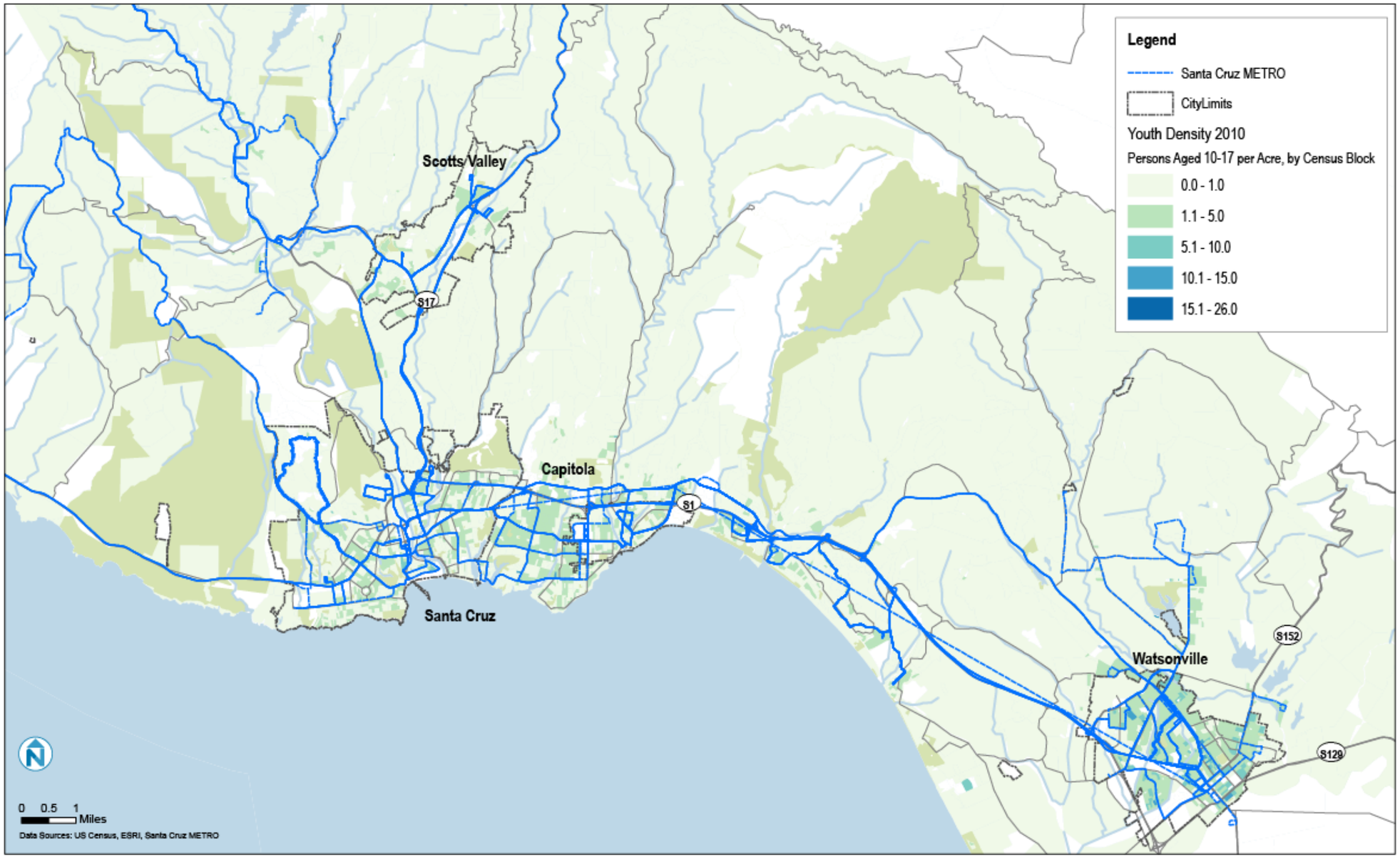


Figure 25 Senior Density, 2010

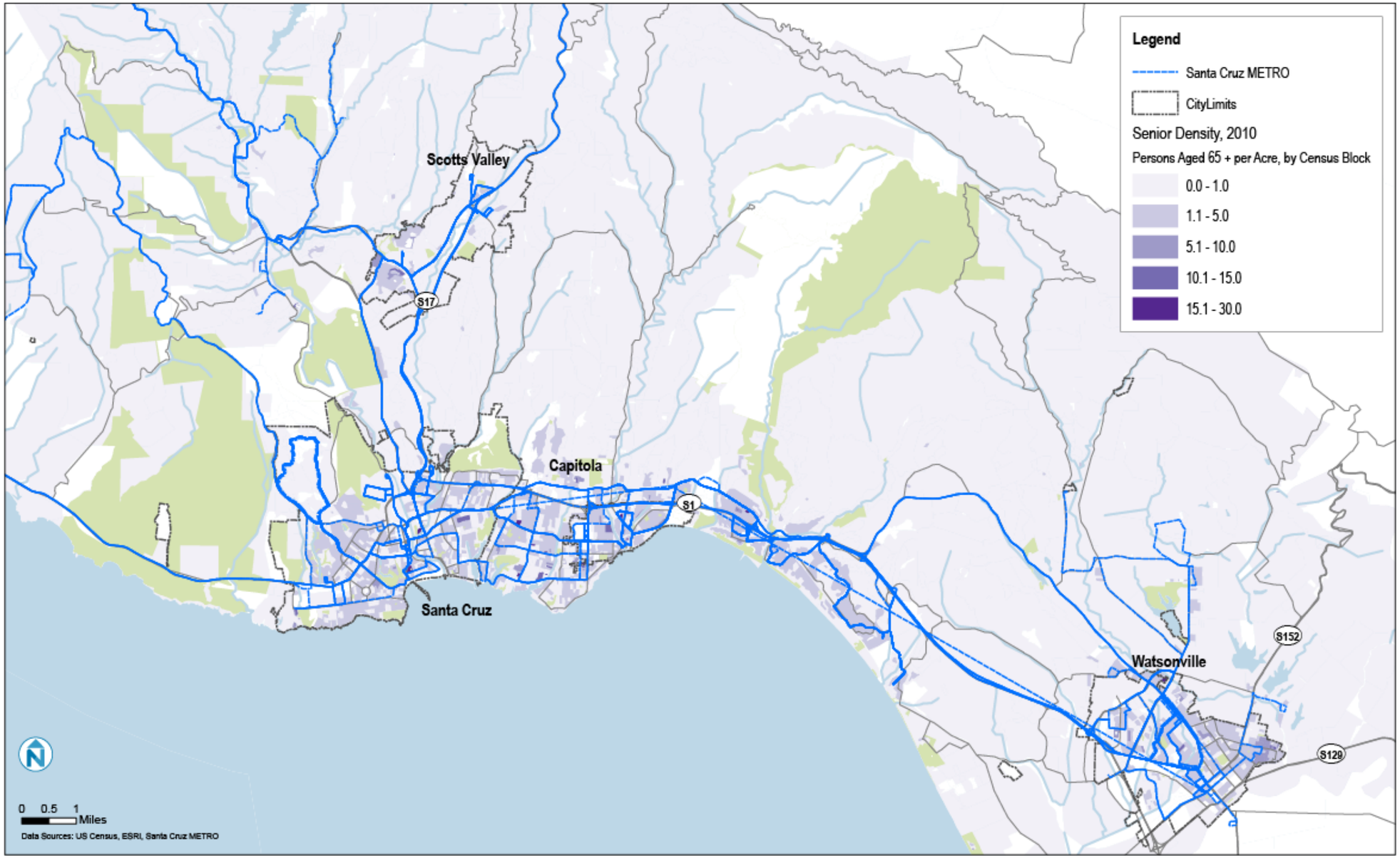


Figure 26 Density of Households Below the Federal Poverty Line, 2011

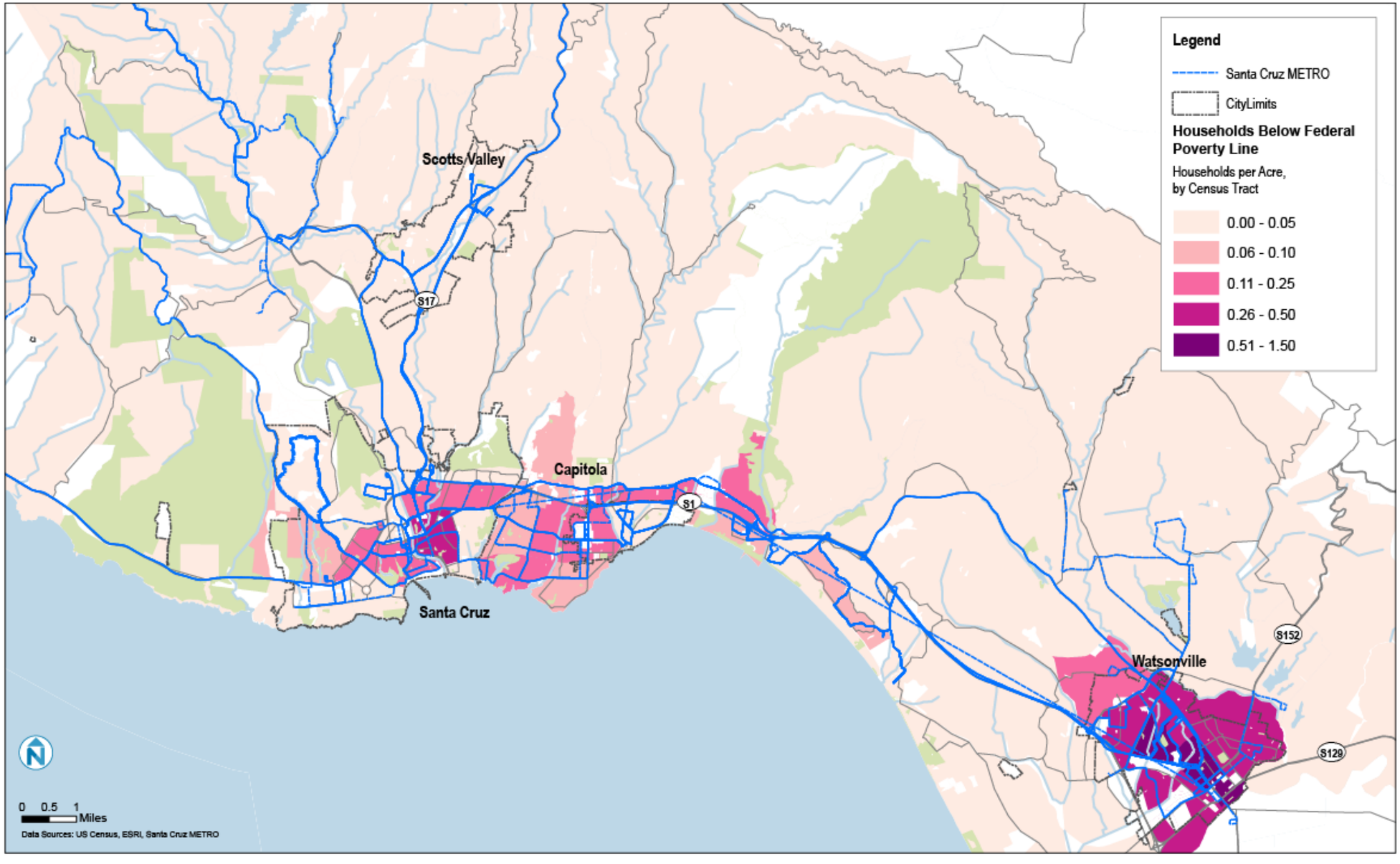


Figure 27 Density of Zero Vehicle Households, 2011

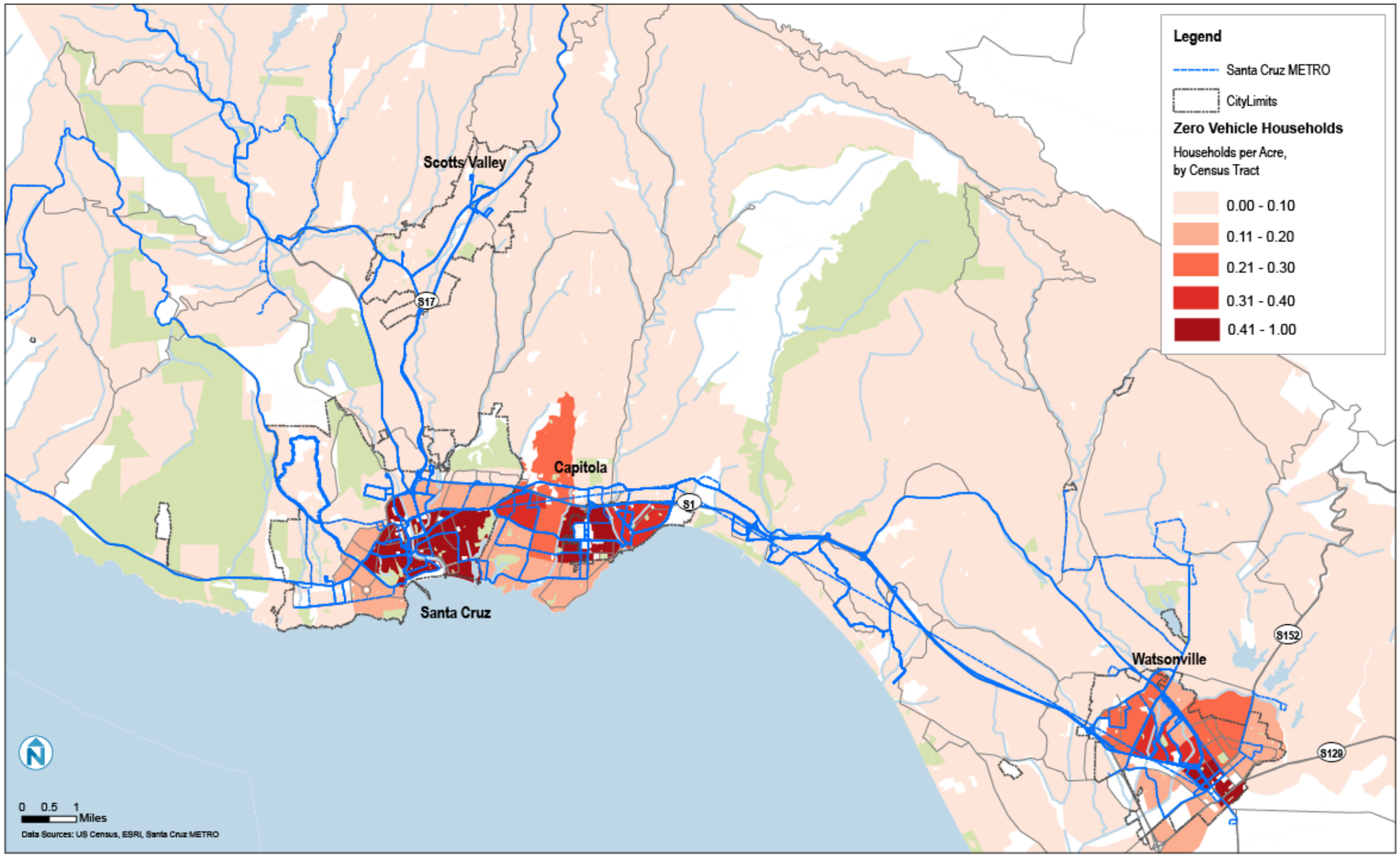
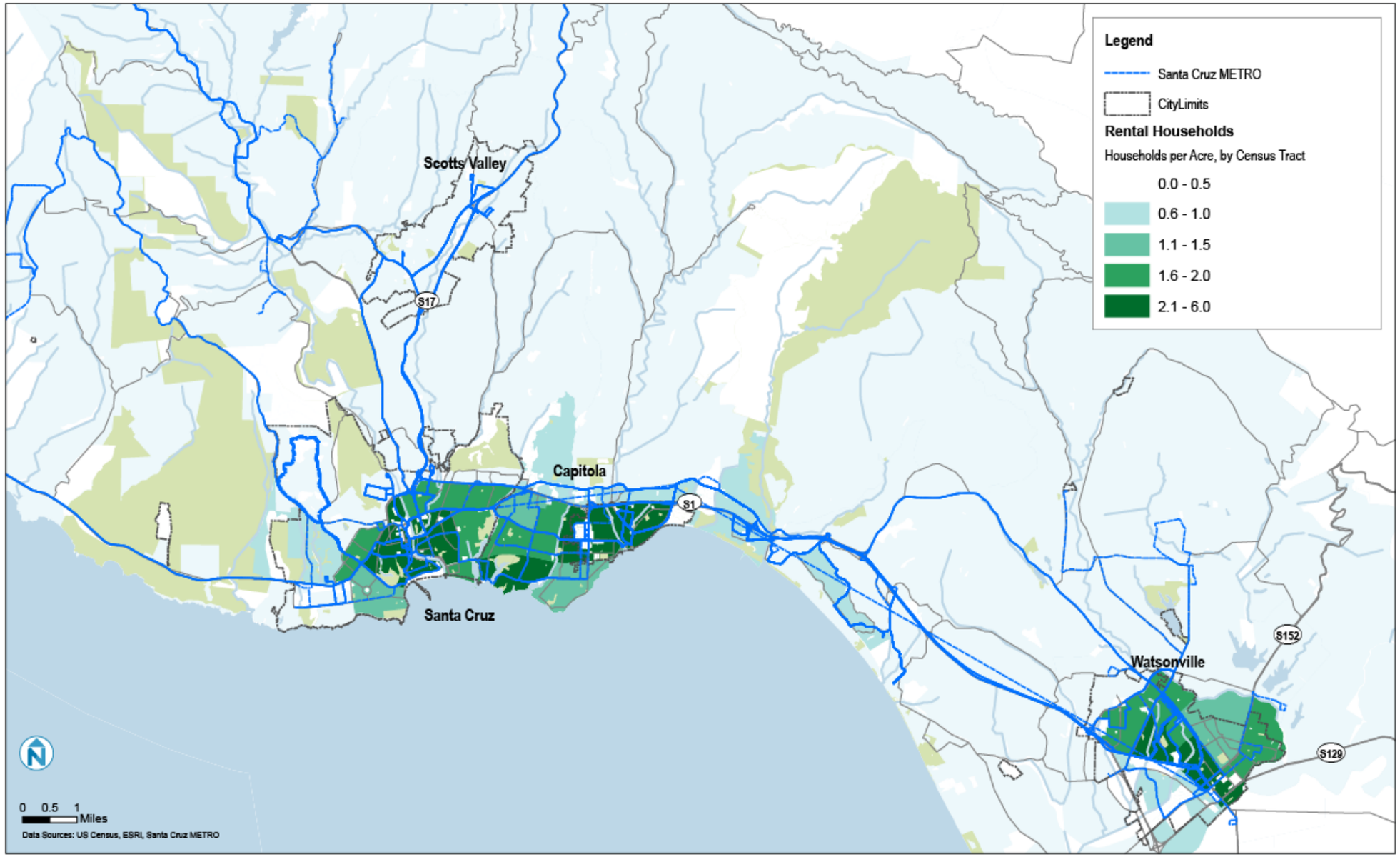


Figure 28 Density of Rental Households, 2011



Findings in each area may be summarized as follows:

- *Population density* in the METRO service area is highest in parts of Santa Cruz, Live Oak, Capitola, Watsonville and Scotts Valley. Areas of more moderate density can be found in Rio Del Mar, La Selva Beach, Felton and Ben Lomond, as well as northeast of Watsonville along Green Valley Road. The highest-density areas within Santa Cruz are in Downtown Santa Cruz, including areas on both sides of the San Lorenzo River, as well as in residential areas on the UCSC campus.
- The population density of *youth between the ages of 10 and* 17 is highest in Watsonville. Within Watsonville, the highest densities are near the Freedom Elementary School along Airport Boulevard, in Downtown Watsonville, and along East Lake Avenue. Pockets of high density are also found in Downtown Santa Cruz near Santa Cruz High School, near several of the mobile home parks in Live Oak, and at the Monterey Academy.
- Concentrations of *seniors aged 65 and over* can be found in the San Lorenzo Valley near South Felton and in Scotts Valley. In Santa Cruz, the highest-density areas are near San Lorenzo Park and Arbor Cove Senior Commons. Pockets of moderately high senior population are located throughout Santa Cruz, Aptos, Live Oak, Capitola and Watsonville. In Watsonville, the highest-density area is around the senior communities between Freedom Boulevard, Airport Boulevard, and Green Valley Road, and near Bronte and Hushbeck avenues
- Watsonville has the greatest density of *households below the federal poverty line*, with densities of between 0.26 and 1.5 households per acre in nearly all census tracts. There are pockets of relative poverty elsewhere in the county in east Santa Cruz, portions of Live Oak and Capitola, and Soquel Drive east of Aptos.
- Areas with high numbers of *zero-vehicle households* include most of central Santa Cruz, Live Oak, western Capitola, and central Watsonville.
- Distributions of *renting households* are similar to those for zero-vehicle households, although there are additional areas in La Selva Beach and Rio Del Mar and near Twin Lakes.

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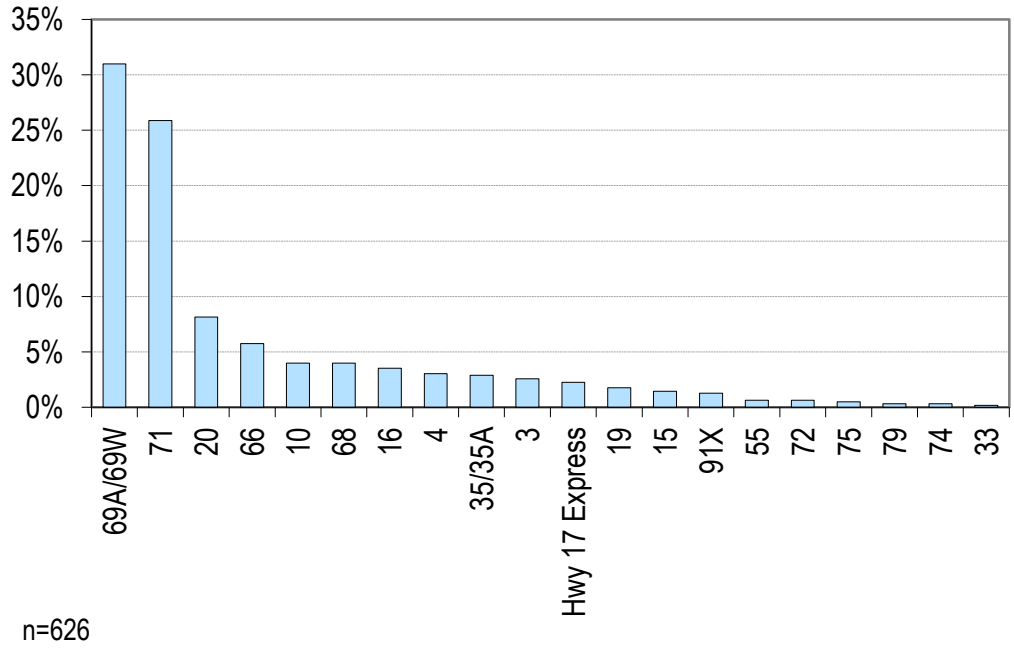
6 PASSENGER SURVEY

An on-board survey of METRO passengers was conducted between June 3 and 5, 2013, on the same five routes that were surveyed for on-time performance: Routes 66, 68, 69A/W, 71, and 91X (see Chapter 4). Additionally, surveys were distributed on all routes with more than one percent of weekday ridership and at METRO Center in Downtown Santa Cruz. Routes that made up less than 1 percent of weekday ridership as of April 2012 were either not surveyed or were surveyed on only one or two trips. These include Routes 3, 4, 8, 12, 30, 33, 34, 40, 41, 42, 54, 55, 56, 72, 74, 77, and 79.

The survey featured 12 questions addressing trip purposes, resources used for trip planning, travel to and from stops, transfer activity, passenger preferences regarding stops spacing and directness of routes, priorities for service improvement and perceptions of existing service. Participants were also asked to provide demographic information about themselves. The one-page survey was printed in English on one side and Spanish on the other.

A total of 657 responses were received, including 80 Spanish-language responses. Because surveys were distributed primarily on the routes that were surveyed for on-time performance, responses from riders on these routes made up a majority of all responses. Thirty-one percent of surveys were completed on Route 69A/69W, and 26 percent were completed on Route 71. UCSC routes including Routes 10, 15, 16, 19, and 20 accounted for nearly 20 percent of the responses. The survey was conducted during the final week of the UCSC school term, which may have reduced the response rate on UCSC routes. The survey response rate was statistically valid at a 99% confidence level with a margin of error of +/- 5 percentage points. However results for individual routes or route groups were not adequate to ensure statistical validity.

Figure 29 Survey Response by Route

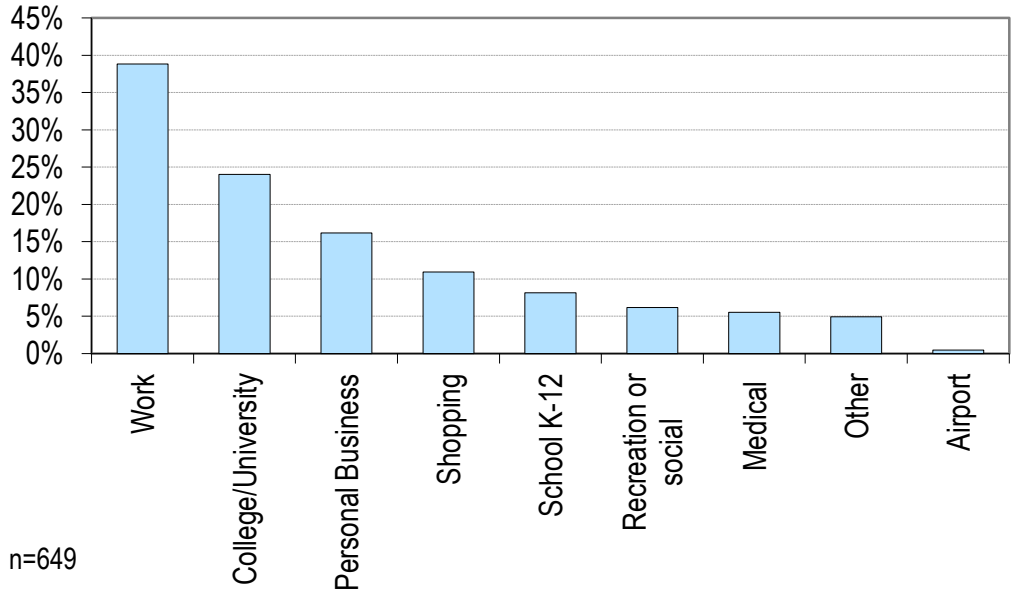


SURVEY FINDINGS

Trip Purposes

When survey participants were asked the purpose of their current trip, the most common reason reported was travel to or from work (39 percent), followed by college or university (24 percent), personal business (16 percent), shopping (11 percent), K-12 schools (8 percent), recreation/social (6 percent), medical (5 percent), and trips to or from an airport (0.5%). Responses for "other" accounted for five percent of the total, and were quite varied, including reasons such as visiting family, going out of town, church, going to the boat harbor, going to a shelter, carrying too much stuff to bike, going to the gym, and a broken-down vehicle. This diversity of responses indicates that METRO transit is used for a wide variety of reasons beyond commuting to and from work.

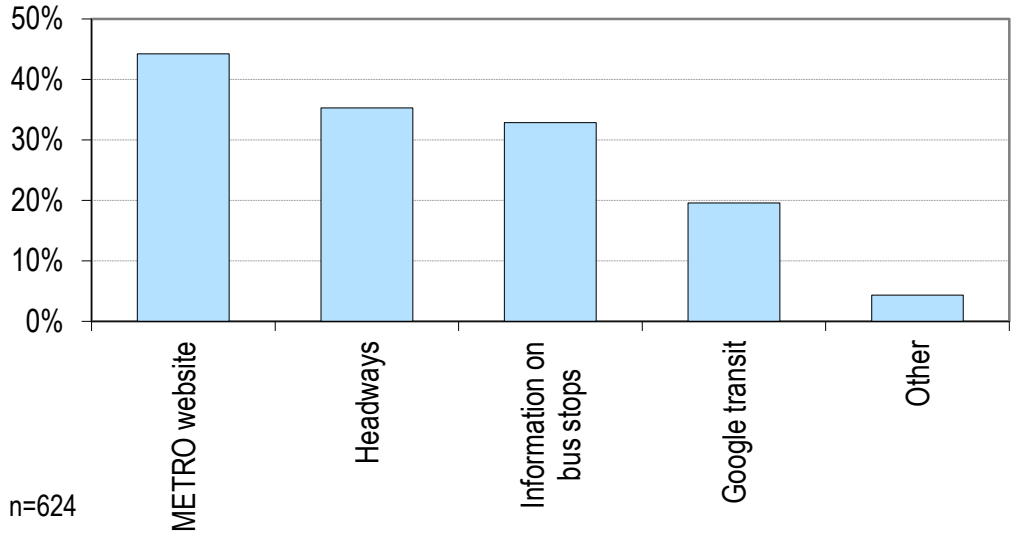
Figure 30 Trip Purpose



Trip Planning

Survey respondents were asked to select which resources they typically rely on when planning a trip. Thirty percent of respondents selected more than one resource, indicating that many people use a combination of sources for trip-planning. A plurality of respondents reported using the METRO website (44 percent), followed by the Headways schedule book (35 percent), information at bus stops, (33 percent) and Google Transit (20 percent). Four percent reported using other sources including mobile devices and personal knowledge of the routes and schedules.

Figure 31 Trip-Planning Resources Used



Travel To and From Stops

Most survey respondents (79 percent) reported getting to the bus by foot. Of those who began their trip by walking, 50 percent walked one block or less, 27 percent walked two to three blocks, 11 percent walked three to four blocks, and 12 percent walked five or more blocks. Six percent of respondents were dropped off, 2 percent drove, 7 percent biked, and 7 percent chose "other." Responses for "other" included "skateboarding/longboarding" and "rollerblading" (11 responses). Some respondents transferred from another transit system.

Similarly, a large majority of respondents (83 percent) planned to reach their final destination by walking, while 6 percent said they would be picked up, 1 percent would drive, 5 percent would bike, and 4 percent chose "other."

Figure 32 Travel to Stops

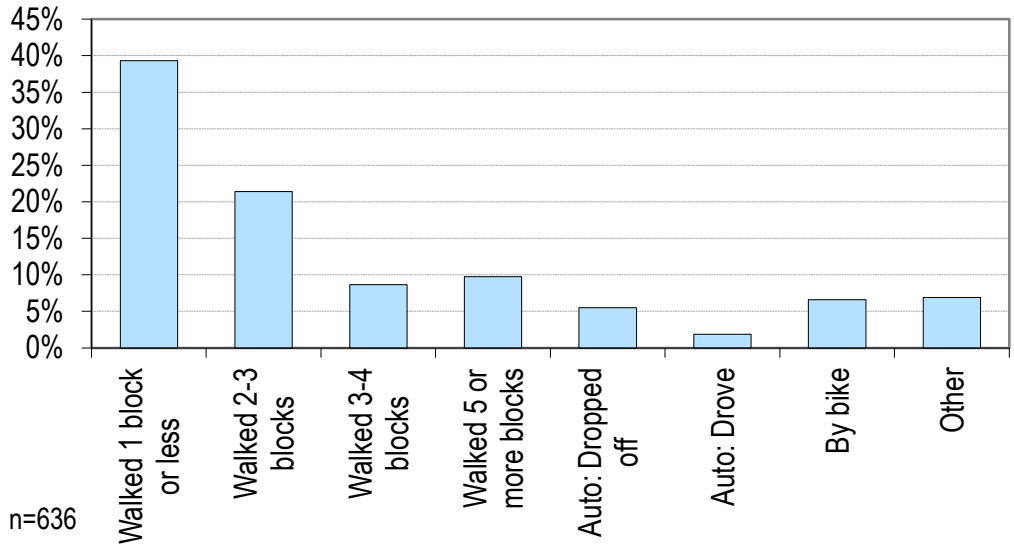
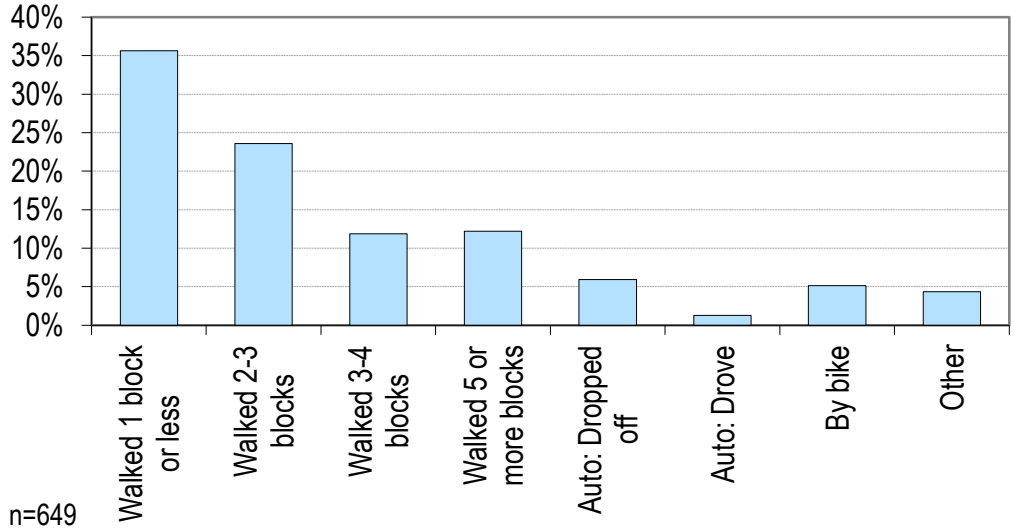


Figure 33 Travel from Stops



Transfers

Participants were asked whether or not they had transferred to the route they were currently riding and whether they planned to transfer to another route, and if so, which routes. One-fifth of respondents reported that their trip included a transfer; however, of these, only 65 percent identified a specific route, while others said they would be transferring to whichever route serving UCSC arrived first, Caltrain, Bay Area Rapid Transit (BART), MST, or VTA Light Rail. Responses identifying specific METRO routes are tabulated in Figure 34.

The survey also asked respondents who had transferred how long they had to wait. The average wait time was 14 to 15 minutes. However, the range was quite large, with many reporting waits of less than 10 minutes, and others reporting waits of a half-hour or more.

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Figure 34 Transfer Matrix

From Route: \ To Route:	3	4	10	15	16	17	19	20	33	35	40	41	42	55	66	68	69	71	72	74	75	79	91X	Total
3		3								1					1			3						**8**
4	2									2								1						**5**
10														1			2	3						**6**
15																	1	1					1	**3**
16				1												1	7	2					1	**12**
17																								**0**
19																	2	4						**6**
20															1			2					1	**4**
33																								**0**
35			1				1				1						2	2						**7**
40																								**0**
41																								**0**
42																1								**1**
55																								**0**
66					1			1									1							**3**
68										3	2													**5**
69		1				1		2		1				1	1			4				1		**12**
71					1	2	2	3		2					1							1		**12**
72																								**0**
74																								**0**
75																		3						**3**
79																								**0**
91X																	1							**1**
Total	**2**	**4**	**1**	**1**	**2**	**3**	**3**	**6**	**0**	**9**	**3**	**0**	**0**	**2**	**4**	**2**	**16**	**25**	**0**	**0**	**0**	**2**	**3**	**88**

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Stop Spacing and Directness of Routes

Survey respondents were asked two questions related to access to stops and on-board travel times. Figure 35 shows a slight preference for reducing numbers of stops in order to make on-board travel times faster. However, Figure 36 shows a slight preference for service that is slower and less direct but requires less walking to and from stops. These results indicate that there is little consensus among riders as to whether more direct service with less geographic coverage is preferable, or less direct service that brings riders closer to origins and destinations.

In many instances, the land uses and geography along each route influence METRO's ability to improve travel times by consolidating stops or providing more direct alignments. Many of METRO's routes operate in areas with challenging topography or limited pedestrian facilities. Additionally, stop spacing is a greater concern in the vicinity of senior centers, hospitals, schools and other facilities with high concentrations of riders with accessibility issues. In more walkable corridors that currently have frequent stop spacing, on the other hand, travel speeds could potentially be increased with only minimal impacts on accessibility.

Figure 35 Stop Spacing Preferences

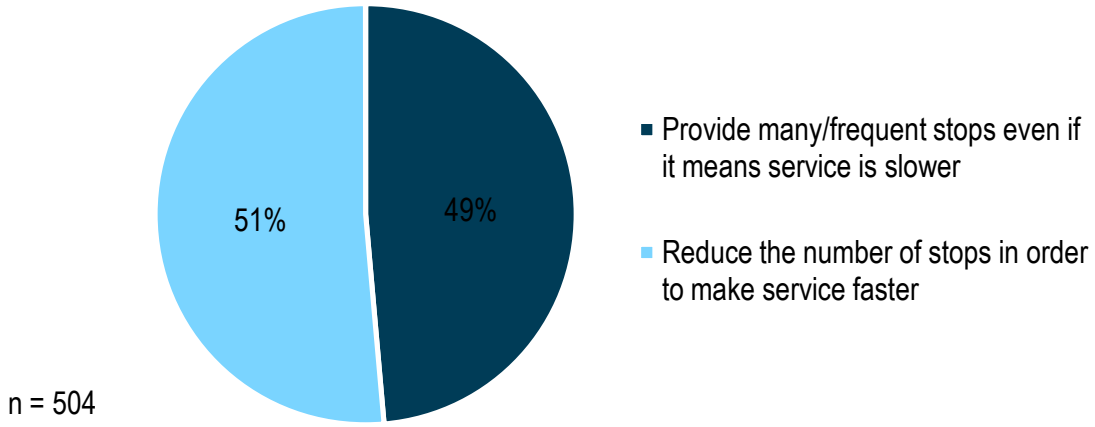
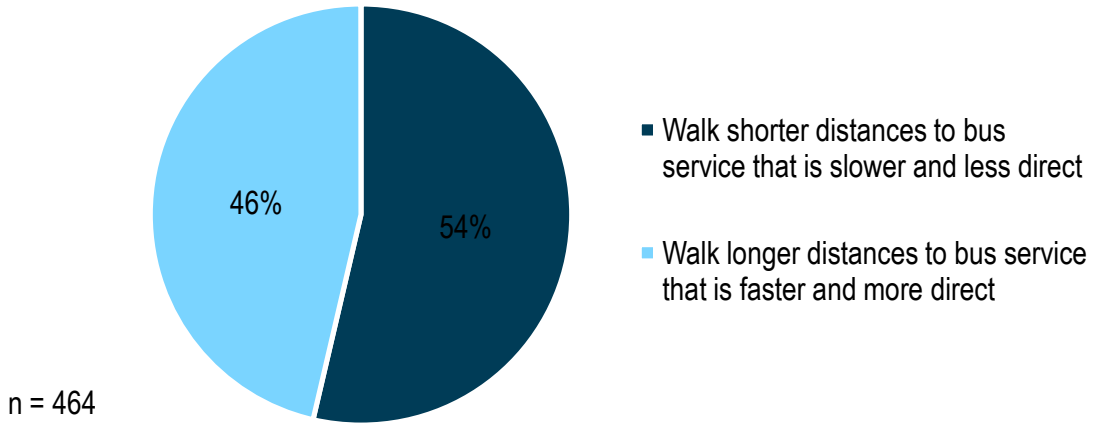


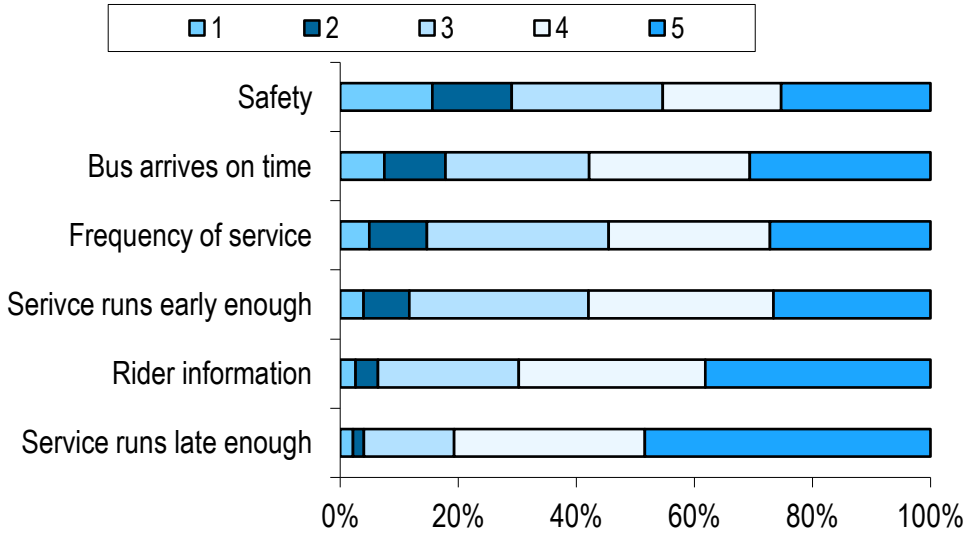
Figure 36 Directness of Service Preference



Perceptions of Service

Respondents were asked to rate METRO's performance in six categories on a scale of 1 to 5, with "1" representing "poor" and "5" representing "very good". Figure 37 shows that respondents were most satisfied with the availability of evening service, following by passenger information. Opinions of reliability, frequency and availability of early service were mixed. The area believed to be most problematic was safety: 29 percent of respondents, or nearly one-third, assigned a value of just "1" or "2."

Figure 37 METRO Service Rankings



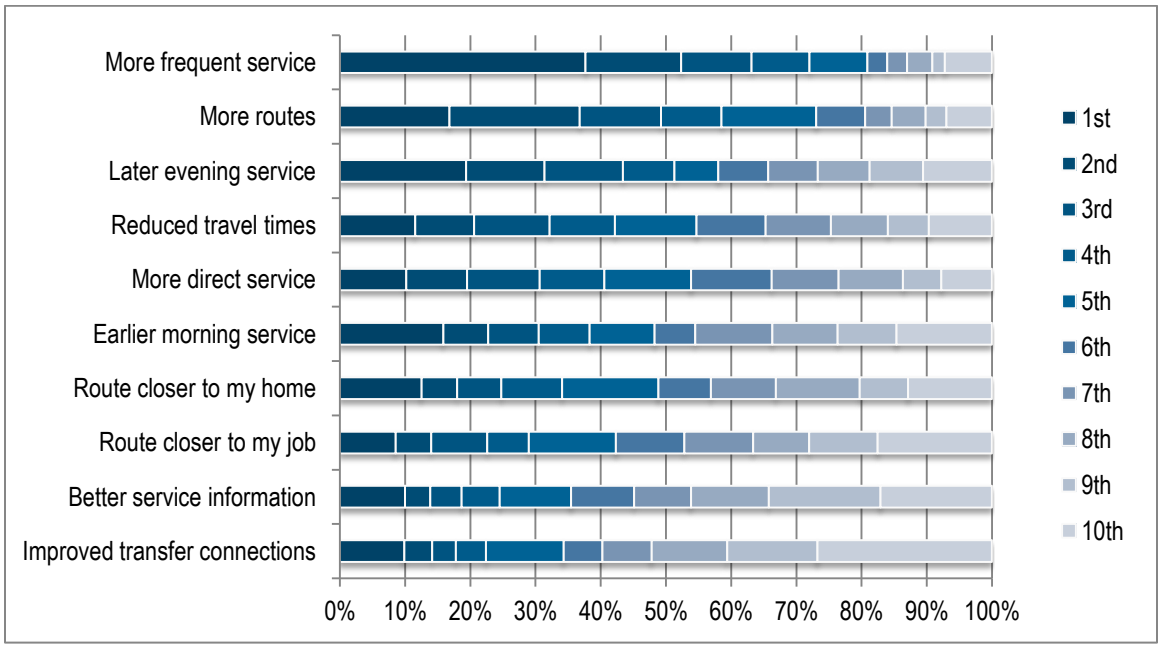
Priorities for Improvement

Respondents were asked to prioritize a variety of potential improvements to service by ranking them from 1 (most important) to 10 (least important). A write-in "other" option was also provided. Results are shown in Figure 38, in order of the number of times each improvement was ranked first, second, or third.

The three most popular service improvements were all related to expansion of transit service in terms of frequency, span, and geographic coverage. The service improvement "more frequent service" received twice as many number-one rankings as the second-most popular improvement, and was ranked as unimportant by very few respondents. The next most popular service improvements were "more routes" and "later evening service," followed by "reduced travel times" and "more direct service." Although the response to the direct tradeoff questions shown previously in Figure 32 and 33 was somewhat mixed, these rankings provide a clear indication that riders have a strong interest in transit service that runs more frequently, with a longer span of service, and is faster and more direct.

In contrast, service improvements viewed as less important included providing service to specific locations ("route closer to my home" or "route closer to my job"), "better service information" and "improved transfer connections."

Figure 38 Service Improvements Ranking



A total of 42 service improvements described as "other" were assigned rankings by survey respondents. These responses were quite varied and included the following topics:

- Comments on schedules and schedule adherence
  - Improve on-time performance (6)
  - Don't pass passengers waiting (1)
  - Do not allow early running (1)

    - Change schedule less frequently (1)
    - Adjust schedules at peak traffic times (1)
- More/earlier weekend service (5)
- More holiday service (2)
- Increase bicycle spaces or options (5)
- Late-night service:
    - More late-night service in general (1)
    - Late-night service to UCSC (1)
    - Late-night service to Capitola Village (1)
    - Late-night service on Route 20 (1)
    - Late-night service on Route 68 (1)
- Provide free transfers (4)
- Route 69A/W: Later service (2), earlier weekend service (1)
- Route 17: More service (1)
- Route 4: Unreliable on weekends (1), more service (1)
- Increase amenities: improve bus stops (1), provide stop shelters (1), wireless internet on board (1), cleaner buses (1)
- More room on buses (1)
- Direct service from UCSC to Capitola Mall (1)
- Less frequent stops (1)
- Service near strawberry fields (1)
- Provide real-time arrival information (1)

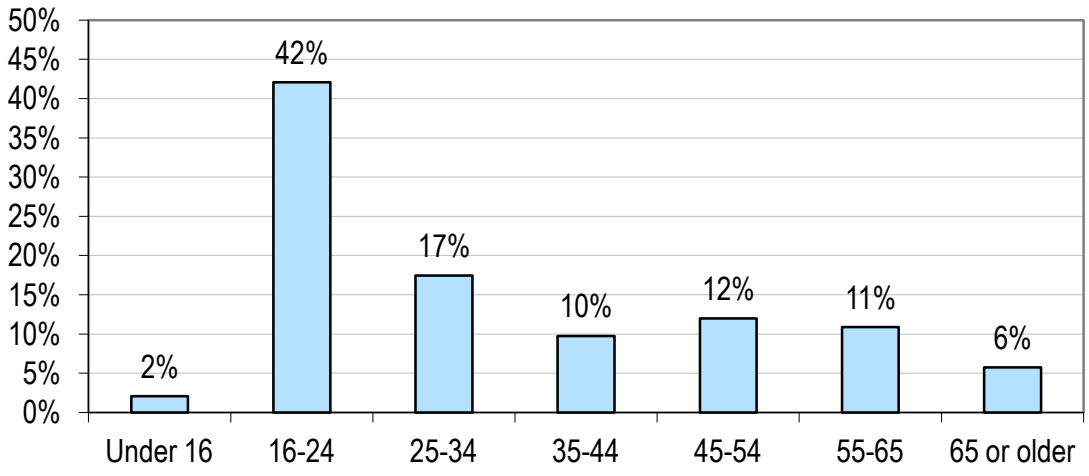
Additionally, a number of respondents noted that they are happy with the service as it is.

RESPONDENT DEMOGRAPHICS

Age

Ages of all survey respondents are shown in Figure 39. The most common age range among respondents was 16 to 24, making up 42 percent of survey respondents, and 25 to 35, accounting for 17 percent. This reflects the significant population of and college-aged students in Santa Cruz. Older adults accounted for most of the remaining responses. Just six percent of respondents were seniors, and just two percent were younger than 16.

Figure 39 Age of Respondents

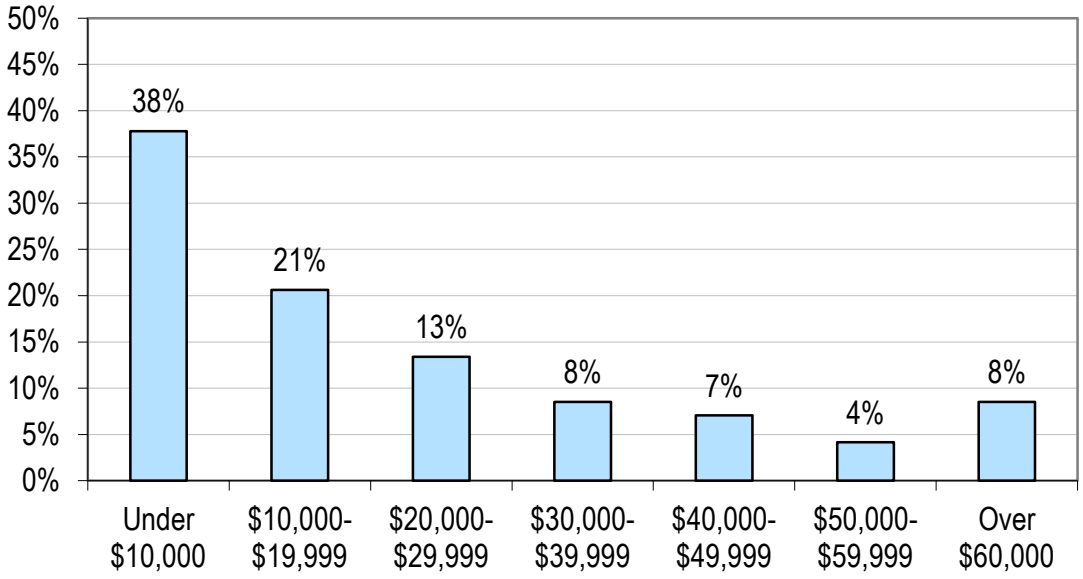


n = 625

Household Income

Household incomes of survey respondents are shown in Figure 40. A majority of respondents (58 percent) reported living in households earning less than $20,000 per year. Thirty-eight percent said they lived in households earning less than $10,000 per year, while an additional 21 percent live in households earning between $10,000 and $19,999. Of the 42 percent of respondents who reported living in households that earn more $20,000 or more, 13 percent earned between $20,000 and 29,999, eight percent earned between $30,000 and $39,999, four percent earned between $50,000 and $59,999, and eight percent earned more than $60,000.

Figure 40 Income of Respondents

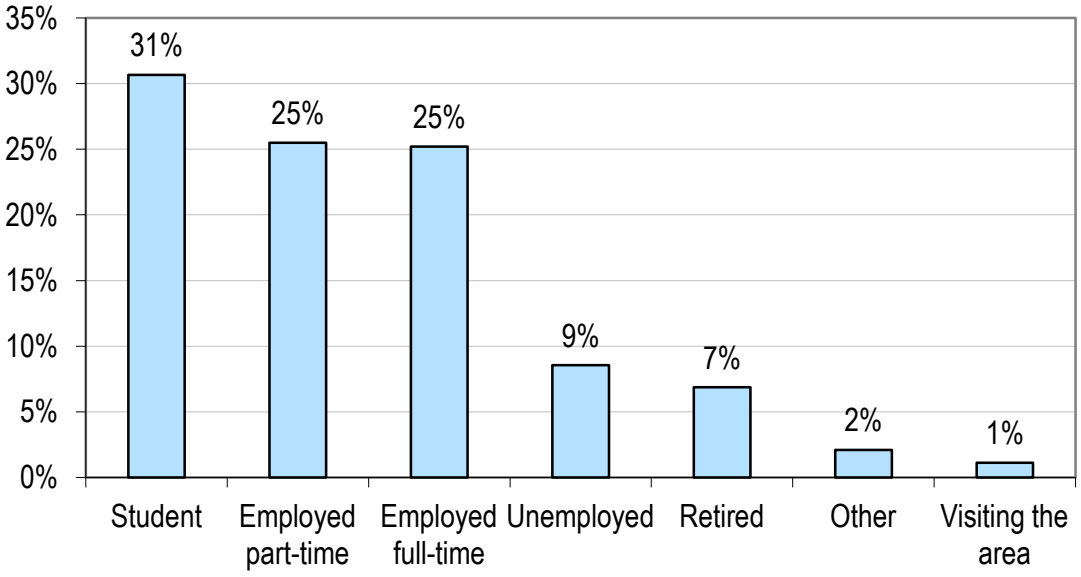


n = 553

Employment Status

The employment status of respondents is shown in Figure 41. Note that the total number of responses (714) includes multiple responses by some participants. A plurality of respondents (31 percent) reported that they are students, followed by those employed part-time (25 percent) and full-time (25 percent). The most common combination of responses was student and employed part-time (six percent). An additional nine percent of respondents reported being unemployed, seven percent said they were retired, two percent chose "other," and one percent said they were visitors to Santa Cruz County. A total of ten respondents selecting other said they were disabled.

Figure 41 Employment Status of Respondents



n = 714

7 STAKEHOLDER AND PUBLIC INPUT

To initiate the Short Range Transit Plan, extensive outreach was conducted by the project team to a range of stakeholders including METRO Board members and staff including planners, schedulers and operators, elected officials and community representatives, and members of the public. Stakeholders were assured that their answers were provided in confidence.

A series of meetings was held over a three-day period between July 23 and 25, 2013, and follow-up meetings with stakeholders were conducted by phone and in-person in the following months. Depending on the context, meeting formats ranged from relatively formal (community meetings with formal agendas and structured exercises) to informal (discussions with staff). Questions asked in each meeting were tailored to the audience in order to gather the most relevant information on perceptions of existing METRO service, unmet needs and priorities for investment.

The intention of this summary is to represent the array of concerns and ideas voiced by stakeholders and members of the public.

MAJOR TRANSPORTATION CHALLENGES FACING SANTA CRUZ COUNTY

Stakeholders were asked to share their perspectives on major transportation challenges facing Santa Cruz County and the region. They were not asked to comment specifically on transit, but rather on transportation challenges in general. The primary issues identified most often by stakeholders included the following:

- **Traffic congestion that impacts automobile and transit trips, mostly along Highway 1, but also in the Boardwalk area and on the UCSC campus.** One stakeholder's comment was repeated by several others: "We need to find a way to do an HOV lane on Soquel and Highway 1 so buses could move quickly." Most people indicated this as a top priority.
- **Limited availability of transit service in some of the neighborhoods away from the major arterials that are served by METRO.** Stakeholders noted that previous services on residential streets no longer operated and several suggested that they hoped the SRTP would identify ways to reintroduce neighborhood services.
- **The influx of visitors on the weekends, especially to the beach area.** Representatives from the City of Santa Cruz talked about the potential for additional funding for new services. Several stakeholders talked about the importance of better marketing for the Highway 17 service to encourage Bay Area residents to ride the bus over the mountain on the weekend.
- **The topography and long, narrow transit service area in Santa Cruz County.** Nearly all stakeholders acknowledged the particular challenges of providing transit

service in Santa Cruz County. Board members representing smaller communities and mountain communities indicated that their areas received less service than would be ideal, but also acknowledged the challenges of efficiently serving these communities.

All stakeholders acknowledged that transit has significant value in the community, enjoys solid public support even though the mindset for most residents is still focused on the automobile.

GENERAL TRANSIT CHALLENGES IDENTIFIED BY VARIOUS STAKEHOLDER GROUPS

Stakeholders were asked what they consider to be the primary transit-related needs in order to improve METRO services and operations. Based on variety of comments and opinions expressed by stakeholders, the following were identified as the key needs/issues:

Community Perceptions of METRO

Generally speaking, Santa Cruz County is politically progressive, and many voters self-identify as environmentalists. In general, this should translate into support for public transportation. However, stakeholders noted that some non-riding members of the public view METRO negatively. Two complaints are most common: that large, "empty" buses circulate through neighborhoods (some would prefer that smaller "cutaway" vehicles be used), and that operators receive substantial amounts of overtime pay (this perception has been fueled by critical media coverage). Both perceptions are rooted in misunderstandings of the nature of transit service: transit operating costs are primarily driven by labor, not fuel, bus loads vary by location and time of day, and operator schedules are driven primarily by demand for transit service at different times of day.

While noting that most METRO operators are professional and courteous, members of the public expressed concerns about the behavior of some drivers. Most notably, one commenter claimed that one operator he had spoken with was unaware of METRO's courtesy stop policy (under which passengers may alight at locations other than stops at the discretion of the operator).

Some stakeholders talked about the importance of ensuring that bicycle considerations are addressed in the SRTP. Bicycling is a popular and growing mode of transportation in Santa Cruz County, and METRO has sought to accommodate cyclists, but some stakeholders indicated that not enough has been done to meet bicyclists' needs. Racks on the front of METRO buses can accommodate up to three bicycles, and secure parking is available at METRO Center. In the past, cycling advocates have expressed interest in allowing bicycles aboard buses, but representatives of users of mobility devices fear that this would compromise their access. There are both bicycle lanes and bus routes on most major arterials in the county, and conflicts do sometimes occurs between buses and bikes. The protected cycle track on Beach Street adjacent to the Boardwalk was formerly a bus-only lane.

The need for additional park-and-ride lots was raised by nearly half of the Board members. Stakeholders indicated that if people could drive to a secure lot for the Highway 17 service, they believed there would be even greater use of that service. Likewise, stakeholders talked about the need for additional park-and-ride lots along Highway 1, particularly in the south.

Accessibility

Stakeholders who rely on mobility devices or who represent persons with disabilities noted a number of challenges related to METRO service. Most notable: as part of the 2011 service reductions, fixed-route service was reduced to some areas and eliminated to others, and some people who had made locational decisions on the basis of accessibility to transit were forced to move (the coverage area for ParaCruz demand-responsive paratransit service was not reduced, and exceeds ADA requirements, although ParaCruz fares are more expensive than fixed-route fares). As was previously noted, some stops lack ADA-compliant concrete pads for wheelchairs, and access to some stops is challenged by poor pedestrian infrastructure, including missing sidewalks in some locations. In a few cases, access to basic goods and services is limited for all users: one example mentioned repeatedly was the Safeway grocery on Mission Street in Santa Cruz's West Side neighborhood, which is served by METRO but on only a limited basis.

Policy Guidance

All of METRO's Board members interviewed for this study voiced support for policies that would offer the agency clear guidance on where, when and why service changes should be implemented. According to one stakeholder, "We should include them in the SRTP and adopt them, but the Board will still debate them."

Like many of its small- to medium-sized transit agency peers, METRO has relatively few official guidelines for application in decision-making processes. Informal processes are not necessarily uninformed processes. However, ad-hoc decision-making risks contradictory (or at least suboptimal) outcomes. Formally adopted policies can streamline decision-making processes, and policies can serve to ensure that performance is regularly monitored. METRO has an existing bus stop spacing standard, and staff have recently developed limited performance standards as part of the agency's federally mandated Title VI policy addressing equity concerns. Additionally, bus stop criteria developed by METRO are applied by local governments in permitting processes for proposed developments. Nonetheless, staff have indicated that METRO's planning should be "more proactive rather than reactive," they have identified additional areas in which adopted policies might be useful, and a number of policies are proposed for consideration by the METRO Board in the Service Plan section of this document. (In particular, several Board members and METRO staff indicated that policy guidance would have been especially useful in the case of deciding whether and how to provide direct service to the La Posada Retirement Community.)

The Need to Better Serve Commuter Markets and Tourist Markets

According to stakeholders, much more can be done to make transit friendly to visitors. Santa Cruz County is a major tourist destination, and there is strong interest among METRO staff and leadership in attracting a greater share of the travel market for tourists. METRO Route 17 provides access from the Bay Area, connecting to the Caltrain rail line in San Jose, and METRO partners with VTA, the transit provider for Santa Clara County, and with Amtrak in operating the service. However, there has never been a major marketing or promotional push (such as offering discount fares) focused on Route 17. From 1927 until 1940 and again between 1947 and 1959, the Southern Pacific railroad operated "Suntan Special" service on weekends from the Bay Area.

Even with an interest in tourist transportation, METRO's Board members talked about the need for improved access for commuters and the need for strategies for improving travel times. METRO's increasing reliance on limited-stop and express services appears to be viewed by the

public as a welcome development. Route 91X, which provides a faster alternative to Route 71 between Santa Cruz and Watsonville, was until recently a peak period-only service, and ridership remains below that on Route 71. However, awareness of the service is still growing. Ridership on Route 17, which provides express connections from Santa Cruz and Scotts Valley to San Jose as well as amenities including wireless internet service, is high, and the service was referred to by multiple staff and stakeholders as the "jewel" of the METRO system. Given the public's concerns with delays on local-stop services, and the simple mathematical fact that faster services can be operated more frequently at no additional cost, a shift toward greater deployment of express services in trunk corridors may be the most cost-effective way for METRO to serve stops that account for a majority of ridership. Staff have also indicated that providing "overlay" express services may be viewed as a more desirable alternative to consolidation of stops.

Geographic Equity

Economically as well as culturally, there has long been something of a divide in Santa Cruz County between the north (including the City of Santa Cruz and the University of California Santa Cruz campus), which is generally affluent, highly educated and primarily white, and the primarily working-class, Latino south, centered on the historic farming community of Watsonville. Mid-County cities are generally between the two, in sociopolitical as well as geographic terms. Historically, the bulk of the county's population was concentrated in the north; however, there has also been something of a political divide between the generally anti-development north and the somewhat more pro-growth south. As a result, Watsonville has grown to become nearly the equal of Santa Cruz in size. According to some stakeholders, this divide between north and south has informed and continues to inform discussions around allocation of countywide resources including METRO transit service.

Like many small- to medium-size transit operators, METRO ridership largely consists of so-called "transit-dependent" riders who are generally low-income, senior, and/or disabled, as well as college students. In Santa Cruz County, these populations are highly segregated, with UCSC students concentrated in the city of Santa Cruz and other transit-dependent populations disproportionately located in Watsonville (Cabrillo College students live throughout the county, but primarily reside in the north). METRO's route network and ridership largely reflects this, with high levels of service on UCSC routes in addition to intercity services that connect Watsonville, which has relatively affordable housing, to job centers in the north, including service-industry employment in the tourism sector. One stakeholder noted that historically, South County has borne a disproportionate share of service cuts, in part because community members are less likely to publicly complain.

Proposed developments in Santa Cruz and surrounding communities have historically tended to be controversial, and most of the recent growth in the county has taken place in the south, in Watsonville. However, the City of Santa Cruz's updated General Plan 2030, adopted last year, identifies a half-dozen "activity centers" or "walkable, mixed-use, transit-oriented areas … in which the city's economic, educational, recreational, cultural and social life is concentrated." The centers: Downtown, the Beach Area, UCSC, the Harvey West industrial area, the Mission Street commercial area, and the Soquel Avenue Eastside business district. All are served by METRO to varying degrees, and as the primary transit provider for the city of Santa Cruz, METRO is integral to the city's vision for focusing growth in these areas, and for accommodating increasing demand for housing and jobs in a way that is ecologically sustainable and socially equitable.

METRO reconfigured its Watsonville services last fall, realigning some routes and introducing new service to Pajaro (Route 77). Stakeholders, including staff, believe the current configuration could still be improved upon. However, it typically takes a year or more for public awareness of a major service reconfiguration to return to previous levels and for ridership to "mature" or "settle." For this reason, any time a major change is made in transit service, no additional changes should be made to that service for at least a year. Staff noted that there are three major "anchors" for transit service in Watsonville: the downtown transit center, the Target store on Main Street, and the adjacent Freedom Center and Crestview Shopping Center on Freedom. These three locations effectively form a triangle, and the route network in Watsonville reflects this, with intercity trunk services on both Freedom and Main, terminating at the transit center. Local services also operate on Main and on a short segment of Freedom, but primarily serve to provide coverage to other parts of the city.

Schedule Reliability

When asked to identify the most challenging issues confronting METRO, planning and scheduling staff, operators, supervisors, Board members and members of the public at the public meetings all cited reliability. There are a number of reasons why METRO buses may run early or late. Some are at least partially beyond the agency's control: most notably, traffic congestion in key corridors, including Highway 1 as well as Ocean and other arterial streets. To some extent, this congestion is predictable: an RTC webpage[9] states that Highway 1 in Santa Cruz "routinely operates at the worst Level of Service (LOS) 'F' for eight hours each weekday," and tourist traffic regularly causes congestion on Ocean, near the Santa Cruz Boardwalk and in Downtown Capitola on summer weekends. (METRO provides only limited service to the latter two areas, which are served during peak periods by city-funded shuttles.)

On the one hand, operators believe that schedules and reliability could be improved simply by adding running and recovery time to routes and trips with known issues. Administrative staff acknowledge that some scheduled run times are constant over the course of the day despite observed variability between periods. However, they note that even where end-to-end times may be relatively constant, travel times within segments may vary due to less-predictable factors such as wheelchair boardings, and in many cases operators regularly run "hot" or ahead of schedule because there is too much time in the schedule (one such location is between the Freedom Center and Crestview Shopping Center in Watsonville, where operators can run two or three minutes ahead of schedule if traffic is free-flowing). Scheduling practice at METRO is to "pad" schedules by adding running time between the next-to-last timepoint and the terminal, and in some cases, scheduled recovery and layover times and even run times vary widely from trip to trip[10]. Here as in other areas, staff say it is difficult to effectively make adjustments due to insufficient data. In one location, Ocean, transit- and emergency vehicle-only lanes have been proposed, and use of the shoulders on Highway 1 has been proposed, but neither project has been pursued.

Numbers of Stops

Dwell time, or time spent loading and unloading passengers at stops, is a major factor in transit running time, often accounting for one-quarter or more of overall travel time. Most bus operators

[9] http://sccrtc.org/projects/streets-highways/highway-1-aux-lanes/

[10] Between 4 and 7 p.m. weekdays, scheduled travel times on Route 69A between Capitola Road and 7th Avenue and Santa Cruz METRO Center are 23, 19, 26,18, 23 and 13 minutes.

and other staff members indicated that METRO service suffers from poor on-time performance; they also, however, noted that it can be relatively slow even when on-time (one stated that it is faster to bike from Santa Cruz to Capitola). Other than traffic congestion, the most frequently cited factor in delay was stops that are too close together. In some cases, distances between stops are less than 600 feet, which is both the minimum standard under METRO's stop-spacing policy as well as the size of the fixed "blocks" used by its automated stop announcement system to determine location and proximity to stops. In these cases, only one of the stops can be announced.

Staff noted that many of the closely spaced stops are only lightly used, reducing their impacts on reliability. Nonetheless, each stop introduces an element of variability into the schedule. In the past, METRO has not consolidated stops, although it has temporarily deactivated some. One prominent example of closely spaced stops mentioned by multiple commenters is on Soquel Drive at Cabrillo College.

Although consolidating some stops and extending spacing between stops was generally acknowledged by Board members and other stakeholders as a worthwhile idea, several individuals with disabilities attended the public meeting in Santa Cruz and indicated the value of having additional stops in some areas. This suggests that METRO might best be served by establishing a stop spacing policy, and then make some modifications to that policy to address specific needs.

Amenities and Safety at Stops

A primary concern of passengers identified through the rider survey and discussed at two of the public meetings was personal security. Referring to Santa Cruz's reputation for tolerance and its large indigent population, bus riders said that they often feel unsafe aboard vehicles and at stops, some of which lack adequate lighting. Many stops have shelters, but they are often tagged with graffiti, and homeless people sometimes sleep on the benches. In all cases, shelters are of an open design that provides only limited protection from the elements. Accessibility for users of wheelchairs and other mobility devices is also a problem at many locations, both at stops themselves (many of which lack concrete pads) and on paths leading to them.

It should be noted that METRO is attempting to address these issues on an incremental basis through its stop improvement program, and is planning full-scale redesigns of METRO Center, the Watsonville Transit Center, and potentially the Capitola Mall Transit Center (further described elsewhere). Also, METRO's practice of providing complete schedules at stops is rare within the transit industry.

BUILDING SUPPORT FOR TRANSIT

Stakeholders noted that METRO generally enjoys solid public support, the agency is active in local events (special parades and fairs), and data collected about comments/complaints shows high levels of praise. Often a true measure of support for transit is its level of funding, and given past service cutbacks, the public got a "wake up call," according to some stakeholders, that there some limitations to what can be offered.

Funding

METRO relies heavily on two sources of revenue that are themselves highly dependent on economic cycles: a local sales tax and transit fares. Combined these two sources account for roughly three-fifths of METRO's budget. Because of the variability in these funding sources, service had to be reduced during the recession, and has since been partially restored. If additional funding for operations can be found (ideally from more stable sources), there are three areas that most stakeholders feel should be priorities for investment: additional service on routes with overcrowding issues, additional service on routes with less than hourly headways (as one commenter noted, "if there's a bus twice a day it's like no bus") and increased coverage for neighborhoods and rural areas (although notably, there appears to be little interest in restoring all of the services that were cut in 2011).

Key observations by stakeholders were that political support for transit is strong in Santa Cruz County, but even still, funding, in general, is always going to be challenging because the demands are so great.

Opportunities to Address College Markets

With college students as one of METRO's most important ridership groups, opportunities exist to build support for the system through outreach and engagement with UCSC and Cabrillo College students.

METRO and UCSC's Department of Transportation and Parking Services, or TAPS, enjoy a strong working relationship. UCSC students can ride METRO for free, faculty and staff get discounted passes, UCSC subsidizes METRO service on a per-boarding basis and pays directly for Route 20D service, and METRO provides a high level of service to the main campus during the regular school term - up to 11 buses per hour during peak periods (a total of five arrivals are scheduled in the 20 minutes prior to 10 a.m. bell time).

In many ways, this service has been victimized by its own success. In addition to the aforementioned overcrowding issues, UCSC service suffers from reliability problems, in part because many students use it, rather than university shuttle service, for intra-campus trips. Additionally, the high pedestrian volumes on campus and resulting conflicts at crosswalks contribute to delay. Some West Side residents reportedly avoid the service, in part because of overcrowding, but also due to student behavior. METRO and TAPS have discussed whether METRO service should skip some of the more lightly-used campus stops in order to improve reliability. They are also involved in ongoing discussions regarding how best to support university plans including potential use of the Kaiser Permanente Arena downtown for basketball games, expanding enrollment and evening courses, a potential major rearrangement of the course schedule, and expansion of the Institute of Marine Sciences campus, which might be served upon completion in 2016 by a realigned Route 20 (UCSC staff have suggested that the route might serve the campus entrance at Delaware and Shaffer Road, then use Shaffer Road to reach Highway 1, although this would require a new at-grade crossing of the Santa Cruz Branch Rail Line and other improvements to the road).

While UCSC is the county's primary institution of higher learning, enrollment at Cabrillo College is nearly as large. The college, in Aptos, is served by a number of METRO routes, including the trunk 69W, 71 and 91X services. However, arrival times are not coordinated with bell times, and because there is no formal partnership between METRO and Cabrillo administration, Cabrillo students are unable to ride METRO for free. Cabrillo College representatives indicated that

sometimes the college gets complaints that there is not enough transit service midday, or between 8 a.m. and 9 a.m., but mostly the perception is that students are very happy with the service. Even still, the college eliminated its purchase of bus passes for students a few years ago because the total cost was too high. Cabrillo College students could tax themselves with a student fee up to $40 per semester, providing revenues of about $500,000 per semester, but METRO has indicated in the past that it would not offer the college a different formula for calculating the college's costs than it offers UCSC. Cabrillo College administrators make a reasonable argument that the college does not receive specialized METRO routes like UCSC and therefore a different payment mechanism could be appropriate.

Marketing, Passenger Information, and Fares

Several stakeholders noted that METRO has very limited proactive marketing. No specialized efforts are targeted to UCSC students, and Cabrillo College staff indicated that METRO used to set up a table to provide public information on campus to students but no longer does that.

METRO's practice of providing schedules at stops is a popular policy among riders. Overall, passengers appear satisfied with METRO's passenger information efforts, including its regularly updated *Headways* schedule book, its website, *scmtd.com*, and its participation in the Google Transit program, through which users can retrieve information on scheduled departures at each stop. While METRO has not yet been able to implement a real-time arrival system for smartphone applications and digital displays at stops like those found in larger cities, including much of the Bay Area, a member of the public unaffiliated with METRO has developed an iPhone app displaying METRO schedules. One that complicates passenger information issues is the complexity of the system itself; many routes include multiple variants, some routes are replaced by other routes at different times, and headways are often irregular.

Overall, stakeholders said that METRO has good information resources, but could take a more active role in outreach to the community. The fact that so few people attended the public meetings for this project, according to a couple of stakeholders, is an indicator that METRO's efforts to provide outreach are not as successful as they could be.

While passengers appear satisfied with METRO's public information efforts, stakeholders and staff remain somewhat dissatisfied with its continued reliance on stored value cards that must be manually reloaded, and can be reloaded only at select locations. Multiple stakeholders expressed interest in joining the Bay Area's Clipper program, which allows passengers to travel on multiple systems using smart cards linked to their bank accounts. However, the barrier for entry into the Clipper program is a high one in terms of up-front costs, and it is unknown whether Clipper's coordinating agency, the Metropolitan Transportation Commission, would welcome METRO'S participation.

OBSERVATIONS BY METRO STAFF

In general, morale among METRO's front-line staff appears to be higher than at many of METRO's peer agencies. In an organization as large and diverse as METRO, however, it is inevitable that some diversity of opinion will exist. There is some tension between management and labor; some front-line employees feel that leadership is insufficiently attentive to their concerns and to the needs of passengers,  e some among the agency's leadership point out that METRO operators are among the highest-paid in America. Board members themselves, of course, sometimes disagree with one another.

In addition to the general themes described earlier in this chapter, staff identified some specific issues regarding service capacity, fleet reliability, staffing, and operations at bus stops.

Service Capacity and Overcrowding

Overall, stakeholders had very little to say about overcrowding. While data are limited, anecdotal evidence from METRO planning staff, operators, and UCSC representatives suggests that overcrowding is a severe problem on UCSC services as well as long-distance trunk routes such as Routes 17 and 71, especially since frequencies were reduced in 2011. At its most acute, overcrowding results in "pass-bys" of waiting passengers, amounting to a de facto service reduction for affected areas and individuals. Santa Cruz's West Side neighborhood is primarily served by UCSC lines traveling through the area, and according to operators, Routes 15 and 16 buses are often full by the time they reach Santa Cruz High School, resulting in regular pass-bys on Bay Street. To mitigate this problem, dispatchers have some campus-bound trips depart a stop or two downstream from METRO Center, which reduces connectivity to and from other routes. In order to add capacity and address overcrowding during periods of peak demand, which fluctuate according to UCSC class schedules (by day of the week and over the course of the school year as well as by time of day), METRO operates an unusually high level of “unpublished" or unscheduled service on UCSC routes and on Route 17, which can be added as needed and may differ from day to day. Some scheduled trips provide "relief" service, for example Route 91X trips that depart from Watsonville Transit Center at the same time as Route 71. While this increases capacity, it reduces the range of departure times available to passengers who can use either route. In the past, METRO has considered adding 60-foot articulated vehicles to its fleet, but many stops, including stops on the UCSC campus, could not feasibly be expanded to accommodate larger vehicles, and METRO’s maintenance facility would have to be reconfigured. Double-decker buses have also been considered but rejected for safety reasons (specifically, there was concern that students sitting on the upper level might attempt to tip them over).

Fleet Reliability

METRO's fleet of low-emission Compressed Natural Gas (CNG) buses is a point of pride for the agency, reflecting the premium the community places on environmental stewardship. However, CNG is a relatively new fuel source and the technology is more complicated than for standard diesel engines. The transition to CNG, then, has come at a cost in terms of reliability: staff indicate that up to 30 percent of the fleet may be out of service for maintenance on any given day. Because METRO also suffers from shortages of operators, vehicle shortages do not always necessarily result in missed runs in and of themselves. However, they are a factor. Staff indicate that when runs must be missed, trips are first skipped on UCSC routes, which operate frequently enough that riders may not notice. Despite their high levels of service and capacity, however, UCSC routes are the agency's most crowded.

Staff Shortages

While METRO has recently restored some of the service that was cut in 2011, the agency has not yet returned to previous staffing levels. Four additional supervisors were recently hired, nearly doubling employment in that key category. It is difficult, however, to find mechanics who are trained on CNG vehicles. A part-time surveyor, a critical element if planning staff are to collect the data necessary for effective planning, has been budgeted, but the position has not been filled. Nor does the agency currently have a scheduling manager or assistant general manager.

Operations at Stops

Operators and staff have acknowledged a number of bus stop locations that are not ideal in terms of safe and efficient vehicle operation. In a few cases, stops are in locations where sightlines are limited, for example on or immediately around a curve. In others, timepoints are located at stops where buses stop in the travel lane, including some stops on streets that are just one lane each way (e.g., on Seventh Avenue at Capitola Road on Route 66). If operators are "running hot" or ahead of schedule, they are presented with a choice of blocking traffic or proceeding to the next stop ahead of schedule. Where there are pull-out stops allowing buses to stop outside of the travel lane (many of them developer-funded, per METRO design guidelines), merging back into traffic can be challenging and time-consuming, contributing to reliability problems.

METRO FACILITIES

Stakeholders talked primarily about Pacific Station, voicing support for the planning underway, and two other facilities which have been somewhat controversial.

METRO's existing transit center at the Capitola Mall is located on the mall's east side, near 41st Avenue and Capitola Road. METRO routes operate on both streets. However, the facility is 25 years old and in relatively poor condition. Additionally, buses turning left into the center from northbound 41st stop on the right side of the street just prior to that location, and must cross three lanes of traffic to turn left. For some time, METRO leadership and the mall's owners have been discussing relocation of the center to the mall's west side, adjacent to the food court. This would add two to three minutes of running time per trip, but the site would be easier for vehicles and operators to access. Additionally, operators could take restroom breaks in the food court. During one interview for this SRTP, a couple of stakeholders voiced aggressively strong opposition to this proposal, indicating the they would ensure it would not be implemented, supporting neighbors across Clares Street in unincorporated Santa Cruz County who are opposed to the idea. The location is less visible, and thus would be preferable from the perspective of mall ownership. Existing parking would have to be removed, and access to a signalized intersection adjacent to the site might have to be improved. There have been indications by mall ownership that they might be willing to partially fund relocation of the center as part of a potential redevelopment of the mall. METRO and mall ownership have entered into a joint development agreement that will fund a circulation study.

Since the Loma Prieta earthquake in 1989, METRO has been operating out of temporary and in some cases leased facilities. In the mid-1990s, the agency began a site selection process for a new centralized facility. A number of locations were considered and ultimately rejected due to neighborhood opposition. Now, finally, a complex is under construction near METRO's existing maintenance facility and administrative offices in the Harvey West area. The site is relatively small, however, and staff have indicated that they will be unable to store all vehicles on-site, and will likely have to park some on adjacent streets as a result. If service were expanded, the agency might need to acquire or lease a second location for a satellite facility. METRO's former South County base in Watsonville was abandoned after Loma Prieta partly due to damage, but also because the facility, which was just four years old, had proven too expensive to operate due to duplication of staff and other resources.

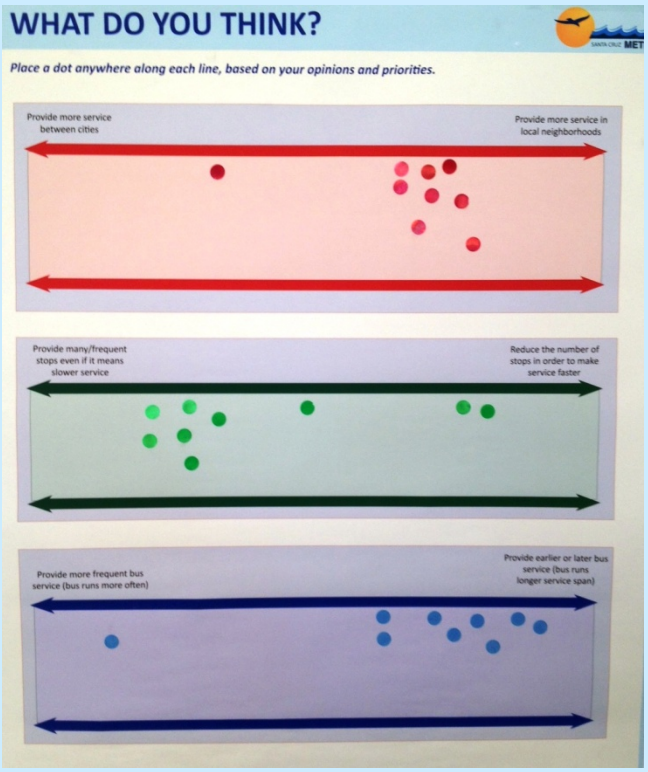
DOT EXERCISE AT PUBLIC MEETINGS

As part of the series of stakeholder meetings, community workshops were scheduled at the Aptos Library, Simpkins Center, Watsonville City Hall, Scotts Valley Library, and Santa Cruz Metro Center. METRO posted public notices advertising the meetings, and the meetings in Aptos and Watsonville had a Spanish-speaking interpreter present. Each meeting was facilitated by consulting staff in coordination with METRO staff.

Very few people attended the meetings, with only nine individuals from all five meetings participating in a "dot exercise" shown in the image below, primarily individuals in Santa Cruz, several of whom use mobility aids for travel. Perhaps due to the fact that these individuals represented a fairly specific demographic, their responses are nearly the opposite of what most stakeholders and survey respondents reported.

The questions to which individuals responded in the exercise, designed to gauge their preference between two different alternatives, were as follows:

- **Provide more service between cities versus provide more service in local neighborhoods.** Eight of nine participants indicated a preference to provide more local/neighborhood service.
- **Provide many/frequent stops even if it means slower service versus reduce the number of stops in order to make service faster.** Six of nine participants indicated a preference for more stops.
- **Provide more frequent bus service (bus runs more often) versus provide earlier or later bus services (bus runs longer service hours).** Eight of nine participants expressed a preference for longer service hours instead of improve frequencies.



CONCLUSION

METRO staff identified stakeholders to provide a diversity of insight that would reflect the concerns of the community at large. These individuals were relied upon to describe the "pulse of the community," but do not necessarily represent the full range of concerns among the citizens of Santa Cruz County. Nevertheless, stakeholders offered a wide array of ideas and suggestions about Santa Cruz County's transportation future.

The comments suggest a few primary areas of focus for this SRTP:

- The need for a comprehensive policies and performance standards adopted by the Board that can be used for making important decisions about the provision of transit services given limited resources.
- Improved travel times and reliability of routes, with fewer stops, express bus services, and schedules that more accurately reflect the amount of time it takes to complete a run
- Improved amenities, including real-time information, safe and secure bus stops and shelters, additional park-and-ride facilities.
- Strategies to reduce congestion which significantly strangles METRO's ability to effectively operate its services along Highway 1 and in the Soquel corridor.
- Opportunities to partner with Cabrillo College to reintroduce student passes for METRO.
- Ways to ensure METRO provides accessible services, especially for people without other transportation options.

One important observation is that several stakeholders talked about using transit as an economic development tool, but few policies and little guidance has been in place up to this point to encourage the development of transit-focused corridors, multimodal transportation access, and land use plans that look at the role transit plays in shaping Santa Cruz's growth. This plan can serve as a building block to encourage additional discussion and integration of transit-oriented development in Santa Cruz County's development plans.

8 DOCUMENT REVIEW

Watsonville Transit Planning Study, 2012

Santa Cruz METRO commissioned a study, completed in February 2012, to evaluate transit service in the Watsonville area and identify opportunities to maximize service efficiency given constrained economic resources. The study evaluated the eight routes serving Watsonville, including local routes 72, 74, 75, and 79. Inter-city routes to Santa Cruz included routes 69A, 69W, 71, and the commuter express route 91X.

The plan included a number of recommendations for administrative, capital, and operational improvements. Administrative recommendations included:

- Increased communication between METRO planning and operational staff in order to promote policy adherence, especially with regards to on-time performance issues.
- Actively engage communities within the METRO customer base through targeted programming efforts.
- Evaluate fare policy.

Capital recommendations included:

- Evaluate potential technological enhancements including wireless internet, especially on Santa Cruz-Watsonville routes, and consider bicycle capacity during the procurement process for new vehicles.
- Identify priorities with regards to capital improvements, utilizing public input to guide decision-making.

Operational recommendations included:

- Continue to pursue recommendations from prior plans including the 2008 SRTP recommendations to reduce interlining and consider introducing limited-stop service along routes where most boarding and alighting activity occurs at a small number of stops. In particular, the region's Coordinated Human Services Plan (CHSP) recommended introducing limited stop service along the Highway 1 corridor.
- Reduce the frequency of schedule changes, which at the time of the plan occurred four times per year, as frequent changes can erode rider confidence in the system.
- Provide clarification on route deviations and distinguish between route variants.
    - Provide greater distinction between Routes 69A and 69W by separating schedules and renaming one of the routes.

  - Rename deviations of Route 71 with new route names and eliminate two of the four variants operating at the time of the report.
- Coordinate schedules with MST routes serving Watsonville.
- On-time performance and route-level recommendations:
  - Route 69A/69W: Increase scheduled running time and unlink interlined trips.
  - Route 71: Reduce route deviations; introduce limited-stop runs as either a new route or express route serving only the current alignment's timepoints.
  - Route 91X: Add additional evening trip and work to reduce early departures from timepoints.
  - Route 72: Increase scheduled running time to address late running.
  - Route 74: Increase scheduled running time to address late running.
  - Route 75: Work to reduce early running in the a.m. and mid-day periods, increase scheduled run time in the p.m.
  - Route 79: Add time to College and Lakeview to Bronte and Hushbeck segment.
  - Reduce redundancy between Routes 72 and 75 alignments.

Transit Corridors Plan Existing Conditions Report, Ongoing

The Transit Corridors Plan was initiated by Santa Cruz County with the aim of developing a community-based vision for long-term sustainability and quality of life in the Soquel Corridor. The study area includes the unincorporated portions of the County including Live Oak, Soquel, and Aptos. The final plan will address five primary goals:

- Reduce greenhouse gas emissions
- Increase affordable housing
- Increase transportation alternatives
- Increase access to good jobs
- Identify and enhance gateways through good urban design

The planning process is scheduled to take place over the course of three years, beginning in 2011, with the goal of adopting the final plan in late 2014. The first step of the planning process involved publishing an existing conditions report, which was released in October 2012.

The transportation chapter of the existing conditions report identifies several issues within the study area, which will be addressed in the full Transit Corridors Plan. The most pertinent issues related to transit service are increasing transportation choices and transit ridership. Only nine percent of employed residents in the study area ride the bus, bike, or walk to work, and only three percent commute to work by bus. The final Transit Corridors Plan will address the questions of how to reduce the number of residents driving alone to work, and increase transit ridership.

Santa Cruz County Regional Transportation Plan, 2010

In 2010, the Santa Cruz County Regional Transportation Commission published an update to the Regional Transportation Plan (RTP) that was completed in 2005. The RTP guides transportation

policy within the County through 2035, identifying key goals, projects, and programs to improve transportation within the County. Santa Cruz County faces complex transportation issues, including traffic congestion, limited revenue for transit service and other transportation projects, increasing maintenance needs, and strict regulation of urban growth and land use. Additionally, one-third of county residents do not drive, and aging populations mean that demand for fixed-route transit and paratransit is likely to increase.

The 2010 RTP carried forward a number of goals established in prior RTPs, including preservation and maintenance of the existing transportation system, increasing mobility through multimodal investments, coordinating land use with transportation decisions, protecting the environment and reducing greenhouse gas emissions, making efficient use of financial resources, and ensuring that public input is included in all aspects of regional planning. The plan includes specific targets, such as a goal to achieve transit ridership of 10 percent of all trips. In order to meet this goal, the RTP includes policies to encourage interagency coordination, consider adopting new transit technologies such as Bus Rapid Transit (BRT) in congested corridors, protect existing commuter transit access to rail lines, and allow bicycles on board transit vehicles.

Santa Cruz METRO Short Range Transit Plan, 2008

Santa Cruz METRO's last Short Range Transit Plan was published in December 2008 and had a planning horizon of FY2008 to FY2012. Much has changed since the SRTP was written, including service reductions due to the economic recession that began in 2008. As a result of the economic conditions and revised revenue forecasts, the SRTP was ultimately adopted with the understanding that the service restructure proposed in the plan would not be pursued during the life of the plan. However, several other key recommendations of this plan have been implemented by METRO, including reducing interlining between routes and increasing headway uniformity.

The primary service recommendation of the 2008 SRTP was to replace the hub-and-spoke operations with a trunk-and-feeder system, with trunk service between major regional centers and feeder service providing reliable connections to local destinations and to the trunk service. The plan envisioned three primary trunk lines: Santa Cruz – Watsonville, Santa Cruz – UCSC, and Santa Cruz-San Lorenzo Valley. Feeder service would operate within Santa Cruz, Watsonville, Scotts Valley/Graham Hill, Capitola/Live Oak, and Aptos/Rio Del Mar/La Selva Beach.

However, the SRTP was written using financial forecasts available at the time, which foresaw increasing revenue through the planning horizon year. Following the publication of the draft SRTP, the METRO board conducted analysis of the investments required to implement the trunk and feeder system. METRO staff estimated the service increase alone would cost $850,000 in 2008 dollars, in addition to other investments in changes to fare policy, vehicles, Automated Vehicle Locator (AVL) data collection, and other initiatives. The plan was adopted with the understanding the pursuit of the service changes recommended in the plan would not be feasible given revised economic forecasts for the plan's horizon.

University of California, Santa Cruz Long-Range Development Plan, 2006

UCSC is a significant regional resource and source of transit demand. The university's most recent Long-Range Development Plan (LRDP) provides guidance for the physical development of the UCSC campus between 2005 and 2020. Although the focus of the plan is on campus planning that will fulfill the university's academic, research, and public service mission, the land use decisions

made by the University have ramifications for the Santa Cruz region's transportation needs and for METRO service.

UCSC has made a concerted effort to reduce the use of single occupancy vehicles (SOVs) on campus. As of 2004, the university reported that only 40 percent of trips to and from campus were SOV trips. The LRDP recommends continued emphasis on the transit service provided by METRO, in addition to local campus circulation provided by UCSC shuttles. Specifically, the report suggests expanding existing transit facilities to connect transit service operating on the campus loop system at parking collection points and installing Bus Rapid Transit (BRT) solutions including queue jump lanes and transit-priority traffic signals were appropriate.

9 POLICY AND PRACTICE RECOMMENDATIONS

It is essential, when planning service changes, that any changes be based on a framework of formally adopted or recommended policies, practices and procedures that is consistent with both best practices in the transit industry as well as local conditions. This chapter highlights changes to existing METRO policies and practices, as well as recommended new policies. Information is presented in three separate subsections:

- Revised Policies
- New Policies
- Practices

The recommended service changes in Chapter 10 were developed within the context of the recommended policies and practices.

REVISED POLICIES

Recommendations for stop spacing, pull-out stops, and bicycle accommodation are discusses.

Stop Spacing

METRO's stop-spacing policy designates a minimum standard for distance between stops of 600 feet. This distance corresponds with the "fixed blocks" used by METRO's stop-announcement system to determine proximity to stops. When two stops are within the same fixed block, or less than 600 feet apart, both stops cannot be announced. This is the case at numerous stops.

Even if all stops were to achieve the minimum standard, however, METRO's policy does not reflect the state of the research into "optimal" stop spacing, or stop spacing that balances access and on-board travel time to maximize ridership. Numerous studies have found that ideal stop spacing is more than double METRO's minimum standard, or close to one-quarter mile (1,320 feet), and transit agencies including VTA and Muni in the Bay Area are currently in the process of updating their stop-spacing policies to both require and allow greater distances between stops.

When stops are farther apart, access is reduced, and in some cases improvements to travel times aboard vehicles may be offset by increased travel times to and from stops. Ease of access for seniors and other people with mobility issues must also be taken into account.

Stop spacing is always a "balancing act": if access were the only concern, stops would be as closely spaced as possible, while if speed and reliability were the only concern, there would be as few stops as possible. This is why METRO sometimes provides "all-stop" or "local-stop" service as

well as limited-stop or express service in the same corridors. However, it is not always possible to do so given limited resources. In these cases, choices must be made regarding the balance between access, speed and reliability.

Stop-spacing policies should take into account a variety of factors related to the specific local condition, including: proximity of senior centers, community centers, schools, libraries, social service providers and other community institutions; composition of the area population, in particular numbers of seniors, youths and persons with disabilities; topography/grades; pedestrian connectivity, including both completeness of the street network as well as the quality of facilities including sidewalks, crosswalks and wheelchair ramps; connectivity to other routes; locations relative to intersections ("far-side" locations are generally preferable); community and official support; and other factors in stop placement. Stop-spacing policies should be flexible, allowing for deviation from the standards where it is found to be necessary on a site-specific basis.

The defined minimum and maximum standards, meanwhile, should be adequate to strike a reasonable balance between access, speed and reliability. With this in mind, an increase in METRO's minimum distance between stops from 600 to 880 feet, or one-sixth of a mile, is recommended. While this amounts to an increase of slightly less than half, it is still well below the "optimal" distance identified through research of about one-quarter mile or 1,320 feet. A maximum should also be set for stops in urbanized areas, of perhaps one-third of a mile or 1,760 feet.

While METRO's stop-spacing policy does not need to be strictly applied – existing stops that do not conform to the standard do not have to be relocated – it could be used, following the collection of ridership and on-time performance data described in a later recommendation, to offer guidance on whether stops should be consolidated to reduce delay. While most agencies consider stop consolidation as part of route restructuring processes, Seattle's King County Metro reviews stop locations on a regular, rotating basis, at a rate of two to three corridors per year. Portland's Tri-County Metropolitan Transit District or TriMet, meanwhile, has developed the following methodology for assessment of stop locations[11]:

1. *Divide line into segments.*
2. *Identify "anchor" stops including:*
   a. *transfer points*
   b. *stops adjacent to major trip generators*
   c. *stops at major intersections*
3. *Remove or relocate remaining stops according to factors including:*
   a. *preference for locations on far sides of intersections*
   b. *pedestrian connectivity*
   c. *safe pedestrian access*
   d. *history of wheelchair boardings*
   e. *traffic impacts*
   f. *compatibility with adjacent land uses*

[11] [11]Ahmed M. El-Geneidy, Thomas J. Kimpel and James G. Strathman, "Empirical Analysis of the Effects of Bus Stop Consolidation on Passenger Activity and Transit Operations." Center for Urban Studies, College of Urban and Public Affairs, Portland State University (May 2005).

g. *proximity to "paired" stop in opposite direction*
h. *level grades and clear visibility*
i. *community input*

Pull-out Stops

"Pull-out" bus stops consisting of a "bay" cut out of the curb are often funded and built for use by METRO by developers as part of development agreements. While pull-out stops serve to increase safety by removing buses from traffic where no space exists between the travel lanes and curb, they increase transit delay by requiring buses to merge back into traffic after the stop. For this reason, pull-outs should be avoided on arterial streets with multiple lanes in each direction where typical speeds are no greater than 35 or 40 miles per hour, and METRO policies and practices should be adjusted to reflect this.

Bicycles

Used in tandem with transit trips, bicycles can be especially useful in bridging "first/last mile" gaps between trip origins and destinations and transit stops, and integration of bikes with transit can increase ridership and help advance agency and community sustainability, safety and other goals. METRO currently seeks to accommodate cyclists by providing front-mounted racks on buses able to accommodate up to three bikes, by allowing folding bikes aboard buses, by allowing up to two bikes aboard buses on select routes (40, 41, 42 and Highway 17), by providing bike racks and lockers at transit centers and nine locations in Downtown Santa Cruz, and other measures. Advocates, however, have identified a number of additional steps the agency might take:

- Expansion of bikes-on-buses options.
- Addition of rear-mounted racks to Highway 17 buses.
- Addition of bike parking at stops undergoing improvement.
- Seeking out funding for a program of subsidized fold-up bikes.
- Participation in a community bikeshare program.
- Enhancements to driver training related to bicyclist safety.
- Support for safe-routes-to-transit projects.

Some options, such as allowing more bikes aboard buses or providing rear-mounted racks on Highway 17 buses, might not be desirable for reasons of competing objectives (e.g., accommodation for elderly passengers and passengers with disabilities) or operational issues. Nonetheless, METRO staff should further explore ways in which to more seamlessly integrate transit and bicycle travel.

NEW POLICIES

Transit-Emphasis Corridors

A "transit-priority" or "transit-emphasis" corridor is a street segment in which high-quality transit service is provided and physical improvements for transit are prioritized. In general, high-frequency service, a bus every 15 minutes or more often in each direction (on one route, or all

routes combined), is necessary to warrant designation as a transit-emphasis corridor[12]. Along with high-quality transit amenities, such frequency can create a virtuous cycle in which more transit service creates more demand for transit service.

In addition to a high frequency of service, there are two other attributes typically associated with a transit-emphasis corridor: (1) existing land uses and/or land use policies that are supportive of transit service and (2) a location within, adjacent to or between major trip generators. Both of these factors contribute to a high demand for frequent transit service. In particular, transit-emphasis corridors typically feature a mixture of "pedestrian-oriented" land uses such as "walkable" storefront retail and apartments or townhomes, along with high-quality pedestrian infrastructure including a well-connected street network, wide sidewalks and frequent crosswalks. In general, "pedestrian-friendly" corridors are also "transit-oriented" corridors.

METRO should develop service and infrastructural standards for transit-emphasis corridors, and in partnership with cities, the County and other agencies, it should define policy-based "thresholds" or "triggers" for designation of a transit-emphasis corridor taking into account transit requirements as well as land use and land use policy (e.g., designation of a transit corridor in the Sustainable Santa Cruz County Plan). Metro and its partners should then develop capital improvement strategies for designated corridors.

A headway standard for transit-emphasis corridors of 15 minutes or less between 7 a.m. and 7 p.m. on weekdays is recommended. Furthermore, 15 minutes should be the maximum scheduled interval between *all* arrivals, on any route (e.g., buses on different routes should not be scheduled to arrive 10, then 20 minutes apart). Transit planners differ on the definition of "walk-up" service, or service that operates so frequently that most riders cease to consult schedules before determining when to leave for the stop: some say it is 15 minutes, while some say 12 or even 10. For this reason, a minimum standard of 15 minutes is recommended, but greater frequencies are encouraged.

A number of capital improvements might be made on transit-emphasis corridors:

- ***Improvements to the right-of-way***. In a largely built-out environment such as the urbanized areas of Santa Cruz County, rights-of-way are often constrained; streets cannot be widened, at least not without property takings. Providing buses with their own travel lanes free from traffic, then, generally requires removal of either on-street parking or mixed general-purpose travel lanes. In some cases, this may have little or no effect on traffic or parking availability. In some cases, it is possible to mitigate impacts through other means, for example by providing additional left-turn lanes, off-street parking or parking on connecting streets. In other cases, complete transit-only lanes may not be feasible, but it might be possible to provide transit vehicles with lanes that are shared with some other vehicles (such as taxis, emergency vehicles, delivery trucks, high-occupancy carpools, or autos turning right), that are in effect only part of the time (for example, during peak periods), or that exist only in segments. An example of the latter is the "queue jump" lane, a transit-only lane that exists for only a short distance on approach to an intersection, allowing transit vehicles to bypass lines of cars waiting at red

[12] California Senate Bill 375 (SB 375) applies a similar standard to "high quality transit corridors," defined as corridors with 15-minute or better service during peak periods. In the 2035 MTP/SCS, AMBAG identified high quality transit corridors in the METRO service area including those listed here as well as the UCSC loop, Freedom north of Watsonville, and others. As defined here, "transit-emphasis corridors" include frequent service as well as transit-supportive land uses and high-quality pedestrian access.

lights, and go ahead of them using a special "advance phase" for transit a few seconds prior to the regular green signal for all traffic. Queue jumps may be shared with cars and trucks turning right, as shown in Figure 42 to the right.

Figure 42 Queue Jump (Milwaukie, Oregon)

- ***Improvements at intersections***. Queue jumps with advance phases are one way to improve transit travel times and schedule reliability. Other ways to reduce transit delays at signalized intersections include "transit-signal priority" (TSP) systems and simple retiming of signals. In a TSP system, signals are equipped to detect approaching buses, and signal phases may be changed in one of two ways: using signal preemption, in which red lights are turned green a few seconds early, or by signal extension, in which green lights are made to stay green a few seconds longer. In either case, the change can be reversed in the following signal cycle, restoring green time for cross traffic removed from the previous cycle and limiting impacts on traffic flow and capacity. A less-effective but simpler way to reduce transit delay at signals is to simply retime the signals so that cycles and/or red phases are shorter, reducing the maximum amount of time that buses may be stopped and/or reducing the likelihood that they will be stopped in the first place. In many cases, signal phases are longer than they need to be to allow pedestrians and queued vehicles to cross the street. (Another option is to re-time signal progressions; however, because buses must make stops, their average speeds are much slower than for other vehicles.)

Figure 43 Bulb-Out Stop (Seattle, Washington)

- ***Improvements to stops.*** Two basic types of improvements can be made to transit stops: improvements designed to reduce transit delay, and improvements to the safety, comfort and capacity of the stop itself. In a Bus Rapid Transit or BRT system, stops are sometimes raised so that they are level or nearly level with vehicle floors, eliminating steps and any need for wheelchair lifts. Ticket machines are also sometimes provided at the stop so that

passengers can enter vehicles through any door and don't have to line up to pay on-board. In BRT systems and even in many non-BRT systems, stops are sometimes located on traffic islands or on sidewalks extended into the street so that buses can stop in the travel lane and don't have to wait to merge back into traffic after the stop (the latter are called "bulb-out" stops, and an example is shown in Figure 43). Stops are also sometimes moved from the near side to the far side of an intersection, which can reduce delay in a variety of ways. Other improvements consist of amenities ranging from shelters to additional seating, enhanced signage (potentially including real-time arrival information), concrete pads for wheelchairs and pedestrian access improvements to nearby sidewalks and crosswalks.

Figure 44 High-Visibility Stop (Kansas City, Mo.)

- ***Improvements to pedestrian connections.*** Finally, transit service can be improved by improving access to transit. In an environment such as Santa Cruz County, most transit passengers walk to and from stops, and pedestrian infrastructure is often inadequate. Sidewalks may be too narrow, in poor condition, or there may be gaps. Opportunities to cross streets may be limited, and where crosswalks exist, there may not be signals requiring drivers to stop, or there may be signals, but not enough time in the walk cycle for all to safely cross. The street network itself may prevent direct pathways. Wheelchair ramps may also be missing or substandard. These issues are generally beyond the purview of the transit operator, but operators can work with cities and counties to identify needs, develop projects, and seek grant funding.

Many of these improvements may be made on an incremental basis, as funding becomes available, or on an opportunistic basis, as part of street repaving or other projects. Similarly, service could be expanded to achieve the 15-minute standard over time.

Performance Standards and Reviews

Industry-standard best practice in transit service planning is to define quantitative performance standards for fixed-route and demand-responsive services, regularly monitor and report on performance, and adopt and adhere to a formal process for reviewing and making recommendations to improve services that fail to achieve standards.

Performance standards were recommended as part of METRO'S last SRTP. These have not been implemented. Instead, staff have identified limited performance and service delivery standards for the agency's Title VI program. These may be briefly summarized as follows:

- ***Load standards.*** Average all-day loads should not exceed the total capacity of each vehicle, as defined using a ratio of standing-to-seated capacity that in most cases is 0.5 (for Highway 17 coaches, it is 0.2-0.3 depending on the vehicle type). Routes that exceed the load standard on 15 days in any six-month period are subject to corrective action.

- ***Headway standards.*** In keeping with best practice, METRO varies minimum service levels by type of route and by time of day and day of the week. Headway standards are applied to combined headways within corridors, and not individual routes. The standards are shown in Figure 45.

Figure 45 METRO Headway Standards

Route Category	Weekday Peak[13]	Weekday Base	Weekday Night[14]	Weekend
Intercity (Rts 69A, 69W, 71, 91X)	15	30	60 (Rt 71 only)	60
Rural (Rts 35/35A)	30	60	90	30
Local (Rts 3, 3W, 4, 4W, 8, 54, 55, 56, 66, 66N, 68, 72, 74, 75, 77, and 79)	60	60	60 (Rt 66N)	60
UCSC (Rts 10, 12, 15, 16, 19, and 20)	10	30	30	30
Hwy 17 (Rt 17)	20	60	60	60
Rural School Based Service and Rural Lifeline Service (30, 33, 34, 40, 41, 42)	Santa Cruz METRO will provide at minimum two trips a day Monday through Friday that serve bell times for rural students attending K-12 school. This service additionally serves as Lifeline service for some rural outlying areas.			

- ***On-Time Performance standards***. METRO's definition of "on-time" departures from timepoints is not early and no more than five minutes late. Its systemwide on-time goal is 72 percent of all departures.
- ***Service Availability standards.*** METRO applies two coverage standards[15]:
  - Within the incorporated cities of Santa Cruz, Capitola, Scotts Valley and Watsonville, 90 percent of residents should be within one-half mile of a bus stop.
  - Within Santa Cruz County, 90 percent of residents should be within one mile of a bus stop.

METRO's load and on-time performance standards are *performance* standards, while its headway and service availability standards are *service delivery* standards. This distinction is important because performance standards require monitoring to determine compliance, while service delivery standards can simply be applied whenever service changes are made (or require

[13] Peak hours are 7-9 a.m. and 2-7 p.m.

[14] Night hours are 8 p.m. to 12 a.m.

[15] Coverage-related performance measures can also be found in the RTC 2014 RTP ("Target 3C: Reduce travel times and increase travel options for people who are transportation disadvantaged due to income, race, disability or limited English proficiency by increasing the percentage that are within a 30-minute walk, bike or transit trip to key destinations by 20% by 2020 and 40% by 2035") as well as AMBAG's 2035 MTP/SCS ("Equitable Transit Access: This performance measure evaluates the low income and minority populations that are located within one-half mile of a high quality transit stop").

limited analysis of available data, such as Census data). The former require extensive data collection and analysis, while the latter do not.

The performance standards recommended in the previous SRTP were extensive, and would have required extensive data collection and analysis. New data collection efforts are recommended in this SRTP. However, given the limited resources available to METRO in the near term, a more limited performance reporting framework is recommended focused on the core metrics of on-time performance, capacity and productivity. METRO already has on-time performance and capacity (load) standards; the third standard, productivity, would be based on boardings per hour of revenue service, a relatively straightforward measure. Together, these three standards would address both "external" performance in terms of customer service (on-time performance and capacity) as well as "internal" performance in terms of efficient service delivery (productivity).

Load and on-time performance standards should be refined and productivity standards should be developed based on data collection; specifically, they should be based on (though not necessarily identical to) observed averages within each route category during each time period. Depending on availability of data, performance might be reviewed for all routes at once (e.g., annually) or for only some at a time, on a rotating basis. If the latter is necessary, all routes within a category should be reviewed at the same time. This will allow categorical averages to be updated, and for standards to be revised as needed.

As part of the framework, numeric thresholds should be defined "triggering" automatic review of routes or route segments: for example, performance below some percentage of the standard (e.g., 80 percent). The Service Planning and Review Committee, or SPARC, should develop a process for further review of routes and route segments (METRO partner VTA, to cite one example, develops "Improvement Plans," or "IP's" for routes that fail to achieve its productivity standards[16]) Routes that continuously fail to achieve standards should be candidates for elimination.

Both productivity and a fourth standard that METRO might consider, farebox recovery ratio, are measures of cost-effectiveness that may conflict with policy direction in other areas, most notably service availability. While official policy regarding definition and provision of resources for "productivity services" (i.e., those that serve high-demand corridors) and "coverage services" (those that exist primarily to provide basic lifeline access) is not recommended, staff judgment should be applied in reconciling these conflicts as part of the route review process. (Similarly, routes with very high productivity may suffer from overcrowding, and thus violate load standards.)

Route Deviation Standard

Route deviations are route segments in which the alignment becomes indirect in order to serve a specific destination that is near, but not immediately along, the route's primary path of travel. While minor deviations may improve access to specific destinations, they impact both real and

[16] See *http://www.vta.org/projects/tsp/* for more information. In addition to VTA, area agencies that conduct regular performance reporting include Monterey-Salinas Transit (see *http://www.mst.org/wp-content/media/GMReport_Sept2013.pdf* for one such example), San Francisco's Municipal Transportation Agency, or Muni (*http://sfmta.com/sites/default/files/StrategicPlanMetricsReport-January2013FINAL.pdf*), the Bay Area Rapid Transit District or BART (*http://www.bart.gov/docs/QPR/QPR_Report_FY2013_Q4_FINAL.pdf*), and San Bernardino County's Mountain Area Regional Transit Authority or MARTA (*http://www.marta.cc/media/agenda.pdf*).

perceived travel times, as well as route legibility, and tend to suffer from low ridership and poor productivity and cost-effectiveness.

Many transit agencies have established standards for route deviations. The Seattle area's King County Metro, for example, has developed the formula shown in Figure 46. New deviations may be considered only when the delay is less than 10 passenger-minutes per person boarding or exiting the bus along the deviation. If, then, 25 passengers were found to be boarding or alighting along the deviated segment on each trip, and the additional travel time required to serve the segment were five minutes per trip, then the deviation would be acceptable only if fewer than 50 passengers were traveling through the deviated segment on each trip.

Figure 46 King County Metro Deviation Standard

$$\frac{\text{Riders traveling through} \times \text{Minutes of deviation}}{\text{Boardings and exitings along deviation}} \leq 10 \text{ minutes}$$

PRACTICES

Data Collection

METRO's adopted budget includes a half-time surveyor position, but the position has not been filled for some time. Similarly, the agency currently has a planning staff of just two. Only limited funding is available for hiring outside contractors to collect data. METRO's vehicles also lack two types of devices used by larger agencies to automate collection of on-time performance and ridership data: Automatic Vehicle Locations, or AVLs, and Automatic Passenger Counters, or APCs.

For all of these reasons, METRO has only limited data available upon which to base planning and scheduling decisions. The agency has recently conducted some data collection as part of planning efforts including this one (for which a passenger survey was conducted and on-time data were collected on a few routes). Just as the agency should implement a limited, realistic framework for performance review, METRO should develop a realistic strategy for collection of those data with the potential to prove most valuable to decision-making processes.

In a previous recommendation, a regular performance reporting framework was recommended based on three metrics: vehicle loads, schedule adherence, and boardings per revenue hour. Ideally, the agency would collect these data on all routes annually or more often. However, given limited resources, it would probably be more realistic in the near term to develop a sampling plan: for example, all routes within a route category could be surveyed simultaneously.

As part of this strategy, the agency should seek to immediately collect on-time performance data on routes and route segments with known on-time performance issues, and should continue to collect data on on-time performance incrementally and opportunistically, whenever possible. Data could potentially be conducted by METRO supervisors.

METRO should also conduct regular ridechecks in order to ensure that ridership and load factor data are sufficiently current upon which to base planning efforts.

Longer-term, the agency should strive to both expand its financial and human resources for data collection, as well as to automate processes as much as possible using AVLs, APCs or other technology.

Scheduling

METRO's scheduling practices are unique in at least three ways. One, scheduled travel times do not necessarily vary by time of day. Two, scheduled layover and recovery times on the same route can vary greatly from one trip to the next. And three, to address schedule variability, METRO sometimes "pads" scheduled travel times between the next-to-last timepoint and the route's terminal.

Ideally, schedules should reflect "typical" travel times within each segment at different times of day. This is difficult when variability is high, and exceedingly difficult when only limited data are available, as is the case for METRO. To improve scheduling practices, collection of on-time performance data are recommended. This should allow METRO to adjust schedules to more closely reflect observed conditions at different times of day. This should also allow the agency to reduce the practice of "adding time" near the end of the route.

Long routes with many stops are difficult to schedule accurately, and METRO's Intercity routes, including Routes 69A/W and 71, suffer from especially high variability. Routes 69W and 71 stop near their midpoints at a major destination, Cabrillo College, where many passengers get on or off rather than "riding through," and where there is spaces for buses to recover out of traffic. For this reason, a brief interval – perhaps five minutes – might be inserted between scheduled arrivals and departures at Cabrillo, allowing more buses to depart Cabrillo on-time.

An alternative scheduling practice that METRO might consider is headway-based scheduling. On routes and corridors with "walk-up" frequencies of 10 minutes or better, riders do not necessarily need to consult schedules. This provides an opportunity for the transit provider to improve travel times by instructing operators to simply proceed without delay, and without regard to scheduled arrival and departure times at interim timepoints. In other words, by eliminating published arrival and departure times at all points but terminals, agencies can eliminate any possibility of operators "running hot," or ahead of schedule, and having to stop and wait mid-route in order not to depart early from downstream timepoints. This practice works best on short routes where opportunities for "bunching" or "gapping" of buses is reduced, and it requires that operators depart from starting points on-time, at regular intervals. In order to encourage the latter, supervisors can be stationed at terminals; "countdown clocks" or signals for operators might even be added. While headway-based scheduling would not be practical for most METRO routes, it might be desirable on Routes 15 and 16 during the UCSC school term.

Park-and-Rides

While parking is available near all four METRO transit centers, only the Cavallaro Transit Center in Scotts Valley features a large park-and-ride lot for commuters, and METRO does not operate park-and-ride lots at any other locations. Survey results indicate that just 1 to 2 percent of METRO passengers drive to or from stops; however, this may be as much a function of limited supply as of demand.

Staff have indicated that the Cavallaro lot, used by customers of METRO's Route 17 express service to San Jose, is regularly filled to capacity, and the site is constrained, so any expansion would require construction of a multimillion-dollar garage. An additional lot nearby, then, should

be pursued. A potential location may exist along Santas Village Road in northern Scotts Valley, where a mixed-use development is planned. A shared parking arrangement at this site, reserved for METRO patrons during the day but available to residents and/or retail customers in the evening, could prove mutually beneficial to both METRO and the developer. METRO should explore development of a park-and-ride lot at this location as well as any others where demand might exist and where private funding might be available. In particular, METRO should investigate options along or near their long-distance routes originating in Watsonville, in order to allow South County residents to more easily commute to jobs in the North County.

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10 SERVICE PLAN

This chapter contains recommended changes to METRO fixed-route and paratransit services. As was stated in the previous chapter, these recommendations were developed based on the analysis found in the preceding chapters as well as the recommended policies, practices and procedures outlined in Chapter 9. While the recommended service changes were developed within the context of the recommended policies and practices, changes to service should be further defined and developed following adoption of the recommended policies and practices by METRO's staff and Board of Directors.

This chapter is in three sections: Service Recommendations, Expanded Service Recommendations, and Policy and Practice Recommendations. Note that while the Service Recommendations are fiscally constrained (a roughly one percent increase in systemwide operating costs has been estimated based on a three to four percent increase in costs for UCSC service), the Expanded Service Recommendations assume additional funding.

FIXED-ROUTE SERVICE RECOMMENDATIONS

Service recommendations were developed based on field observation, operator, customer, and stakeholder outreach, and METRO staff input. Following are recommendations related to individual routes. If a route is not addressed below, no change is recommended. No changes are recommended to local services operating within Watsonville because these services were only recently reconfigured.

Route 3

Route 3 is a local route serving the West Side of Santa Cruz. Unlike most other routes serving the West Side, it does not serve UCSC. Most of the route also overlaps with other services, including Routes 19 and 20/20D, which run more frequently during the UCSC school term. Segments of Route 3 that are not served by other routes are generally a relatively short distance from other routes, including Route 20. The Route 3 segment serving the Boardwalk, meanwhile, does not operate on summer weekends when demand for travel to the Boardwalk is highest. Perhaps unsurprisingly, then, Route 3 is among the least productive METRO routes, at 10.3 boardings per hour on weekdays, just over half the system average.

Two options are recommended. Under the first option, the route would neither be revised nor eliminated. However, as was previously recommended, it (along with all other routes) would be subjected to regular performance review. If, as is likely, performance were found to be substandard, it could be subjected to service revisions and, if those were not successful, eventual elimination. If Route 3 were to be replaced, one option would be to reallocate the resources used for its operation to Route 20, thereby ensuring that the current level of service to the West Side is maintained.

A second option would be to immediately reconfigure Route 3 in an effort to improve performance. One alternative would be to realign the route to serve a longer segment of Mission Street and UCSC. This is described in detail in the following section, "Expanded Service Recommendations."

Routes 4, 4W and 8

These routes provide local service to north-central neighborhoods of Santa Cruz. Until recently, Route 4 operated along the current Route 4W alignment, and Route 8 operated full-time. In their current configuration, Route 8 operates one trip on weekdays, Route 4 serves most of the Route 8 alignment when Route 8 is not in operation, and Route 4W replaces both routes on weekends, but on only a segment of the current Route 4 alignment. Two options are recommended. Under one option, Route 8 would be eliminated, and a trip would be added to Route 4. This would effectively maintain the existing service pattern, but would improve system legibility. Under the other option, the previous configuration would be restored on weekdays. This, too, would improve system legibility, as the current Route 4 alignment is extremely complicated. Direct connectivity between the Harvey West and Emeline areas would be lost, but staff have indicated that there is little direct travel between the areas.

The existing weekday morning, weekday afternoon and weekend configurations, as well as the weekday configuration proposed under the second option, are illustrated in Figures 47 through 50 on the following pages, simplified diagrams of each route's alignment.

Figure 47 Diagram of Existing Routes 4 and 8 Alignments, a.m. Peak Period

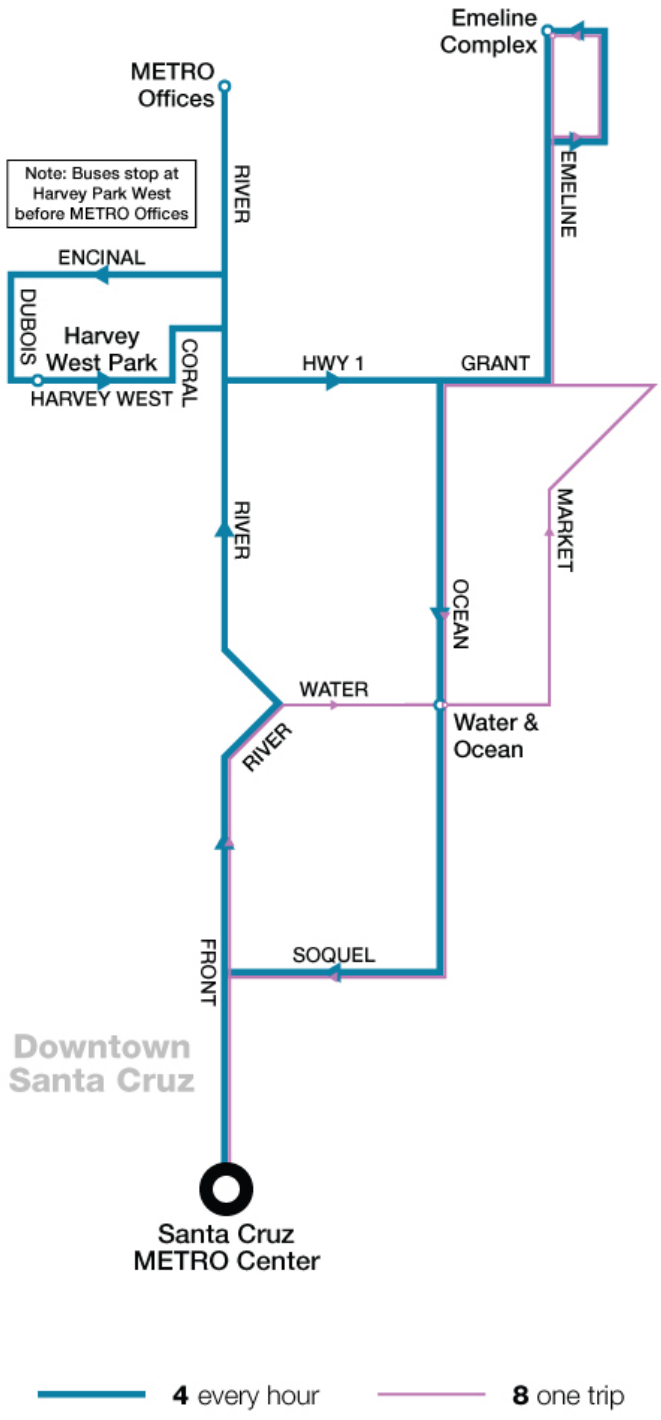


Figure 48 **Diagram of Existing Route 4 Alignment, Mid-Day and p.m. Peak Periods**

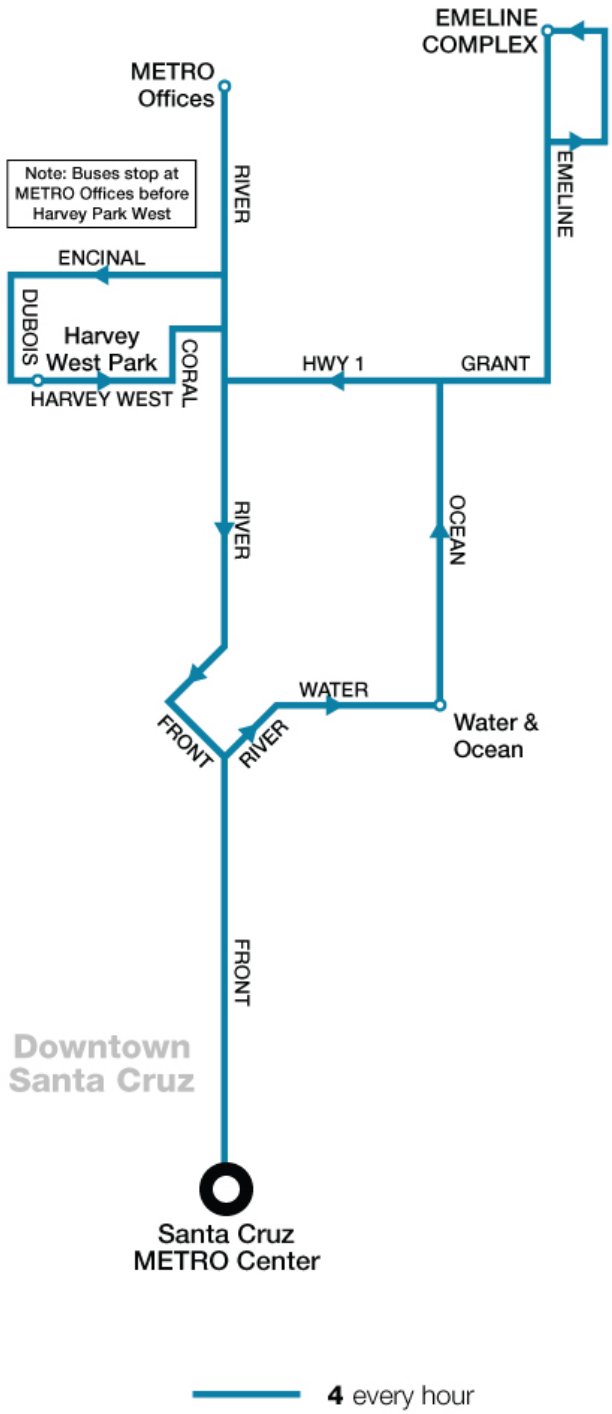


Figure 49 Diagram of Existing Route 4W Alignment, Weekends

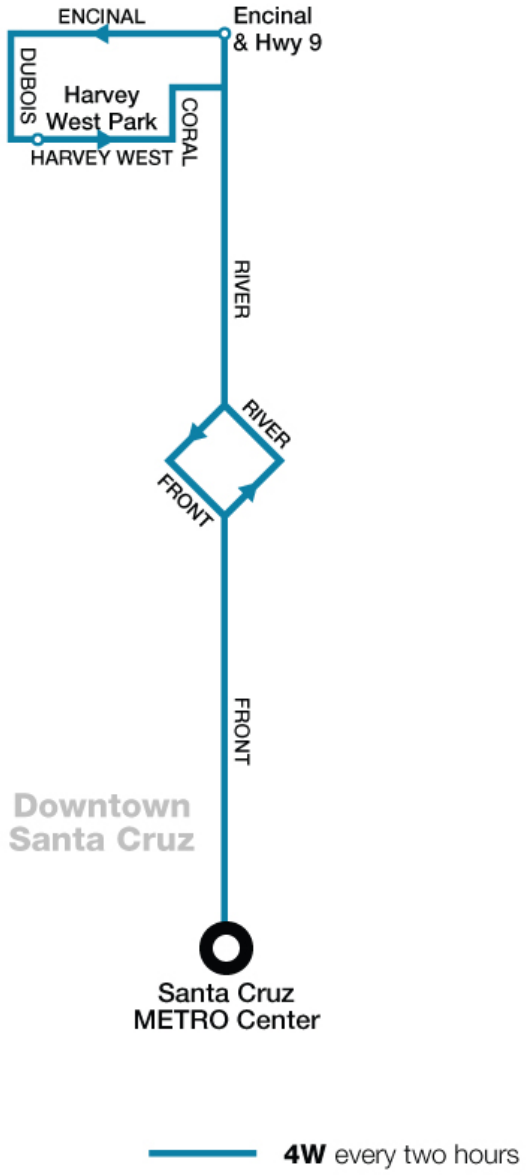
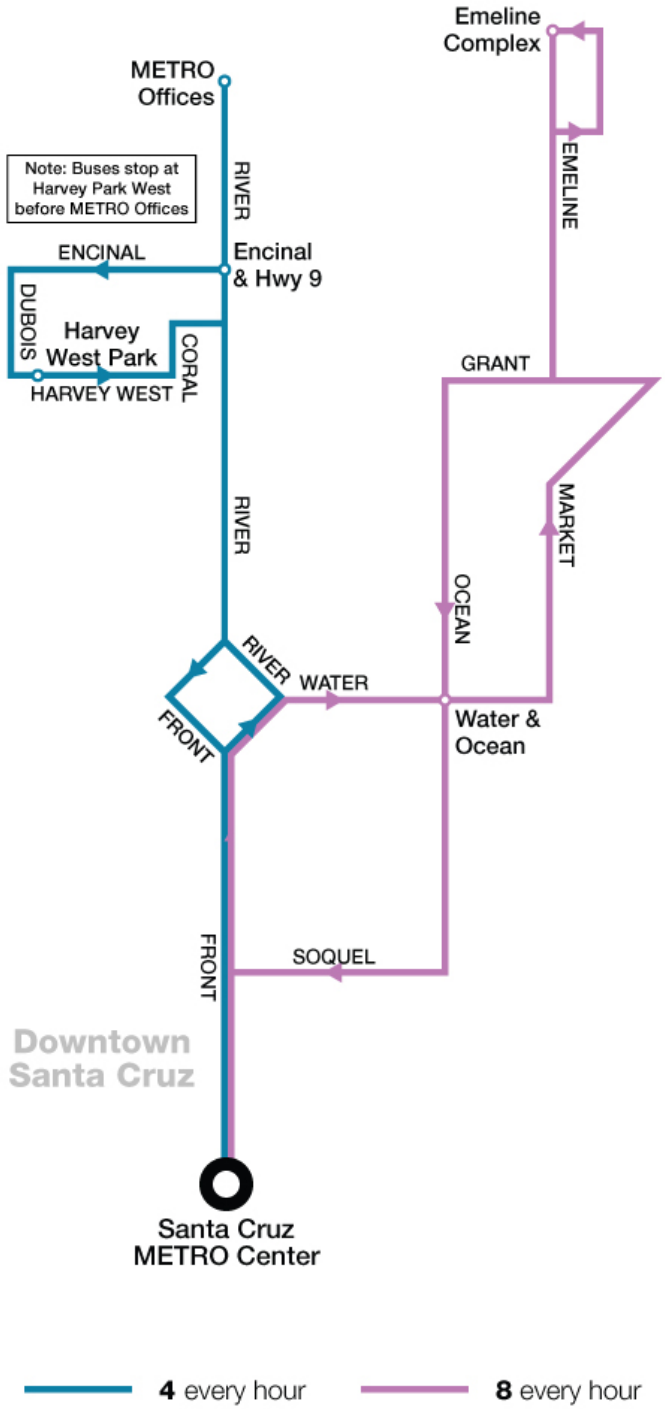


Figure 50 Diagram of Proposed Routes 4 and 8 Alignments, Weekdays



Route 12

Like Route 8, Route 12 operates just once a day, during the UCSC school term only. Also like Route 8, Route 12 formerly operated all day. Now it makes just a single inbound trip during the a.m. peak period from Capitola to UCSC, almost entirely along the Route 68 alignment east of Downtown Santa Cruz and the Route 16 alignment to the west. The route is relatively productive at 44.8 boardings per hour, reflecting high demand for this trip. However, such infrequent services detract from system legibility. For this reason, it is recommended Route 12 be converted into a Route 68 trip. The trip between the METRO Center and USCS should be replaced by another Route 16 trip. UCSC-bound riders would be required to transfer at METRO Center, but there would be little wait at this time of day.

Routes 15 and 16

As is typical for transit providers in communities with colleges or universities, much of the demand for METRO service comes from UCSC and Cabrillo College students and staff. Cabrillo is located along a major arterial (Soquel) within an urbanized area, and is thus relatively simple to serve. UCSC's main campus, however, is somewhat remote and isolated, perched on a hilltop outside of Santa Cruz.

Typically, transit operators in similar situations provide very frequent service to the campus: Ithaca, New York's Tompkins Consolidated Area Transit or TCAT, for example, provides service between Downtown Ithaca and the Cornell University campus on East Hill every five to ten minutes using Route 10. METRO similarly provides a high level of service to UCSC, but its school term service is more complicated: not including Route 12, which makes a single daily trip, it consists of a total of five routes, Routes 10, 15, 16, 19 and 20/20D. Route 10 has long- and short-line variants, with every other trip during the a.m. peak period starting two stops downstream from METRO Center, Route 20 has a variant serving the Pacific Shores apartments on Mission Street, and Route 20D is a short-line variant of Route 20 scheduled to arrive just before Route 20, taking some of the load off of that route. Route 16 operates on irregular headways, while Route 15 operates on *highly* irregular headways (scheduled departures during the a.m. peak are at 7:38, 8:12, 8:35, 9:25 and 9:52 a.m.). Finally, METRO operates extra service on Routes 15 and 16 that is not published in schedules and varies according to the UCSC class schedule, with separate Monday/Wednesday/Friday service and Tuesday/Thursday service patterns.

The result: service levels are high, and they are highest when demand is highest, just before the start of class (particularly 9:30 a.m. Monday/Wednesday/Friday and 10 a.m. Tuesday/Thursday classes). However, service is also difficult to comprehend, and irregular headways result in gaps in service.

Headways on Routes 10, 19, and 20/20D are relatively consistent – generally either 30 or 60 minutes during the a.m. peak period. Figure 51 shows scheduled arrivals on all routes at UCSC's Science Hill stop between 9 and 10 a.m. on school-year weekdays, with Routes 15 and 16 arrivals highlighted.

Figure 51 Morning Peak Arrival Times at Science Hill (Existing)

Monday/Wednesday/Friday		Tuesday/Thursday	
Route	Time	Route	Time
15	9:03	16	9:08
10	9:08	10	9:08
16	9:08	19	9:19
15	9:18	20	9:20
19	9:19	16	9:28
20	9:20	16	9:38
15	9:23	10	9:38
16	9:23	15	9:43
16	9:27	20D	9:45
16	9:28	16	9:48
10	9:38	15	9:48
15	9:42	19	9:49
15	9:43	20	9:50
20D	9:45	16	9:53
16	9:47	15	9:56
16	9:48	16	9:58
19	9:49		
20	9:50		
16	9:52		
16	9:58		

As Figure 51 indicates, scheduled gaps between arrivals on Routes 15 and 16 vary from zero to 20 minutes. As the figure further illustrates, there is substantially more service on these routes during the morning peak on Mondays, Wednesdays and Fridays than on Tuesdays and Thursdays (a substantial amount of Routes 15 and 16 service – six buses, or one every five minutes – arrives on campus in the half-hour *after* the start of 9:30 classes on Monday, Wednesday and Friday). The total number of buses arriving between 9 and 10 a.m. on Mondays, Wednesdays and Fridays is five on Route 15 and eight on Route 16, for average headways of 12 and 7.5 minutes, respectively, or less than five minutes combined.

Another salient feature of the unpublished Routes 15 and 16 service is that many trips are short-line trips, starting or stopping short of METRO Center (some trips operate only between Mission and UCSC, serving the Bay corridor but not Laurel), or variants with non-stop segments (such as METRO Center to Bay via Mission rather than Laurel). This allows for cycle times shorter than the full hour required for the complete Routes 15 and 16 alignments, which in turn allows the same bus to provide more service and more capacity between the West Side and UCSC.

Designing an easier-to-remember service pattern that can accommodate demand that is both highly peaked and variable by day of the week is a challenging exercise. However, a few key facts point toward a possible solution:

- Cycle times for both Routes 15 and 16 are 60 minutes. This is a "clockface" (or "memory") interval that both:
  - Allows for easily memorable clockface headways (e.g., 15 or 30 minutes); and
  - Does not require interlining with other routes, allowing for independent operation. (METRO does interline Routes 15 and 16 with each other and with other services; however, they could "stand alone" as part of operator schedules).
- While intervals on Routes 15 and 16 are irregular, the combined level of service on both routes is 13 buses per hour in the peak hour of the busiest days (Mondays, Wednesdays and Fridays).
- Campus-bound pass-ups are likeliest to occur on Bay, and short-line service operating between Bay and Mission and the UCSC campus operates on 30-minute cycles.

Given all of this, it is recommended that:

- School-term schedules on Routes 15 and 16 should be standardized and made public in order to improve public awareness of service patterns and levels. Analysis suggests that both Routes 15 and 16 could operate on regular 15-minute headways during peak periods at little or no additional cost.
- In order to provide additional capacity during peak periods and reduce numbers of pass-ups on Bay, short-line service should be operated on Route 15 (or possibly, Route 16) between Bay and Mission and the UCSC campus.

A sample schedule based on 15-minute headways on Routes 15 and 16 and including short-line service is shown in Figure 52. This schedule would reduce the number of arrivals at Science Hill during the peak hour of 9 to 10 a.m. from 20 to 19 on Mondays, Wednesdays and Fridays, but would increase the total from 16 to 19 on Tuesdays and Thursdays. The full a.m. peak period conceptual schedule from which this is excerpted would result in a 3 to 4 percent increase in operating costs for UCSC service during this period. In order to control costs, service on either or both routes might be slightly reduced during off-peak periods by reducing the span of service and/or operating on longer headways of 20 or 30 minutes.

Figure 52 Routes 15 and 16 a.m. Peak Arrival Times at Science Hill (Proposed)

Monday/Wednesday/Friday		Tuesday/Thursday	
Route	Time	Route	Time
15	9:03	15	9:03
10	9:08	10	9:08
16	9:13	16	9:13
15	9:18	15	9:18
19	9:19	19	9:19
20	9:20	20	9:20
(15 short)	9:23	(15 short)	9:23
(15 short)	9:23	(15 short)	9:23
16	9:28	16	9:28
15	9:33	15	9:33
10	9:38	10	9:38
16	9:43	16	9:43
20D	9:45	20D	9:45
15	9:48	15	9:48
19	9:49	19	9:49
20	9:50	20	9:50
(15 short)	9:53	(15 short)	9:53
(15 short)	9:53	(15 short)	9:53
16	9:58	16	9:58

As Figure 52 indicates, service would be consistent throughout the week, with no separate schedules for Monday/Wednesday/Friday and Tuesday/Thursday. However, high volumes of service would still be available on all days: the sample schedule would result in a reduction of one arrival at Science Hill in the half-hour before both 9:30 (Monday/Wednesday/Friday) and 10 a.m. (Tuesday/Thursday) classes, from 10 to nine on Mondays, Wednesdays and Fridays and from 11 to 10 on Tuesdays and Thursdays. If additional capacity were required during the a.m. peak hour, all four short-line arrivals could be provided in the top or bottom half of the hour depending on the day of the week.

The proposed schedule would result in departures from METRO Center on Routes 15 and 16 at the top of the hour and at 10, 15, 25, 30, 40, 45 and 55 minutes after the hour. For most of the day during the UCSC school term, Route 10 departs METRO Center at 20 and 50 minutes after the hour, while Route 19 departs at 30 minutes after the hour and Route 20 at 20 minutes after the hour. The result: except at five and 35 minutes after the hour, buses would depart for UCSC from Metro Center every five minutes, like clockwork. This would both improve awareness of the service and ensure that long gaps between service did not exist. (To further increase awareness, it

is recommended that all UCSC-bound trips depart from the same bay, Bay 1 at the existing METRO Center facility).

No changes are recommended to the summer schedule for UCSC service.

Routes 17 and 35/35A

Route 17 provides service between Santa Cruz, Scotts Valley and San Jose, while Route 35/35A provides service between Santa Cruz, Scotts Valley and the San Lorenzo Valley. In Santa Cruz, it operates on Ocean Street, which has significant congestion issues, particularly on summer weekends.

As part of the recommendation in the concluding section of this document, "Policy and Practice Recommendations," to create a "transit-emphasis corridor" on Ocean between Highway 17 and Soquel in Santa Cruz, Routes 17 and 35/35A, which currently use Water to travel between Ocean and Downtown Santa Cruz, would use Soquel instead. This would maintain connectivity to Route 71 (which would be rerouted from Water to Soquel as part of another recommendation) and would allow the routes to take full advantage of transit-only lanes on Ocean, if they were implemented. Such lanes could take the place of existing, relatively lightly used curbside parking spaces, and could be used by emergency vehicles, bikes and right-turning autos and trucks in addition to buses. These lanes would ensure that Routes 17 and 35/35A remained relatively reliable and viable services, and in so doing would help support the economic vitality of Santa Cruz's tourism industry by providing an attractive alternative to driving on Highway 17 for visitors from the Bay Area.

Realignment would have little impact on running times or cost, although Route 35/35A would no longer serve stops on Water just east of the San Lorenzo River and on River near Front would be eliminated (these stops would be within walking distance of other stops).

The existing and proposed alignments are illustrated in Figures 53 and 54 on the following pages.

Figure 53 Diagram of Existing Routes 17 and 35 Alignments (Within Santa Cruz)

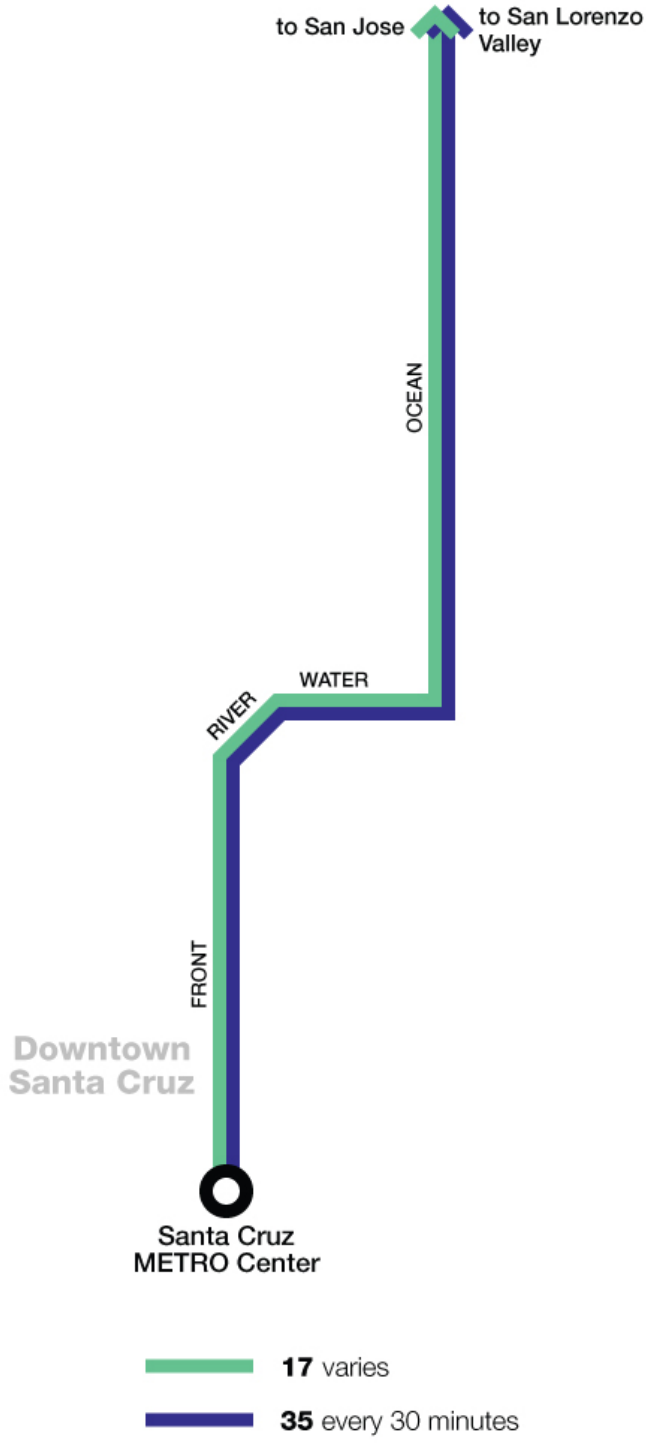
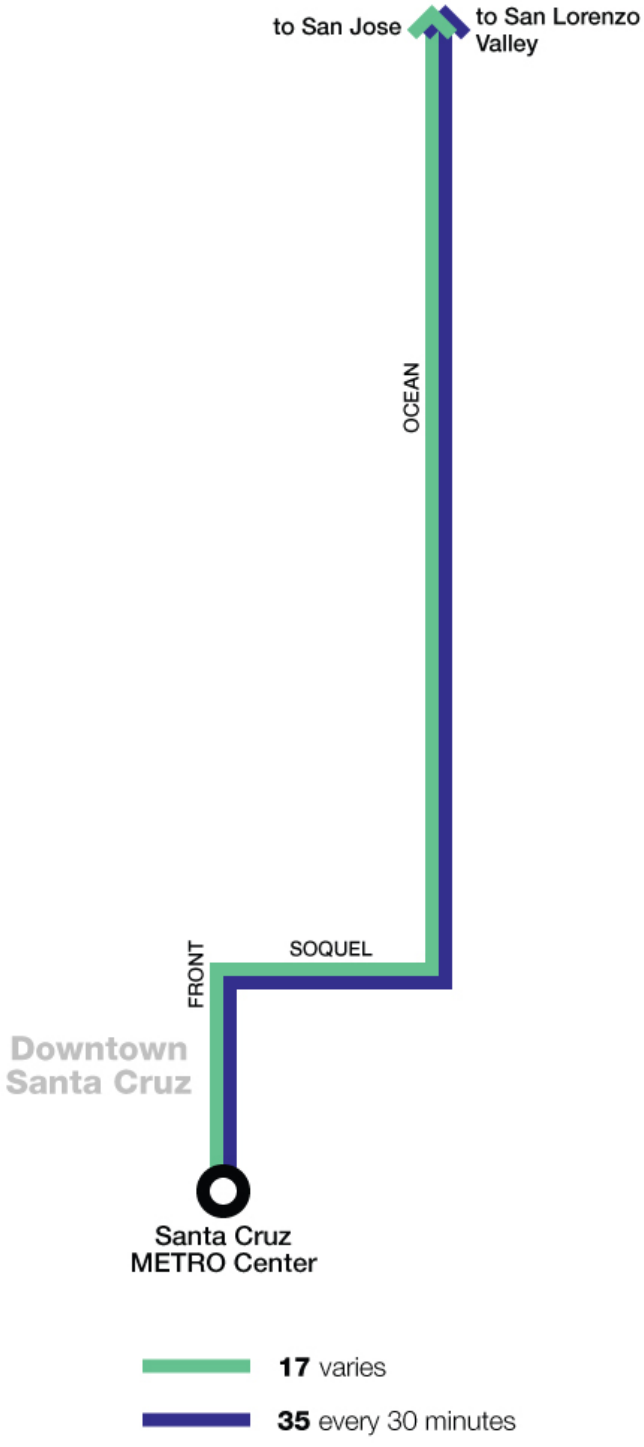


Figure 54 Diagram of Proposed Routes 17 and 35 Alignments (Within Santa Cruz)



Routes 54, 55 and 56

Routes 54, 55 and 56 serve Mid-County. Route 55 operates between Rio Del Mar and the Capitola Mall Transit Center via Cabrillo College and Downtown Capitola, while Route 56 operates between La Selva, Cabrillo College and the Capitola Mall using segments of Highway 1. Both routes operate only on weekdays. Route 54 is a hybrid of Routes 55 and 56 that operates when they are not running, making one late-afternoon round trip on weekdays and three trips on weekend days. In order to serve stops on both Routes 55 and 56, Route 54 makes all stops in the eastbound direction, then returns to the start of the route primarily via Highway 1, stopping only at Cabrillo College.

This configuration, while serving to maintain coverage, is an inconvenient one for riders, and it's made even more problematic by the infrequency of service: trips between Rio del Mar and Clubhouse Drive and Clubhouse and Sumner Avenue, for example, take five minutes in one direction and roughly an hour in the other – but there are also gaps of several hours between each trip. Unsurprisingly, then, Route 54 is used by just eight passengers per day on weekdays and slightly fewer than 14, or about four-and-a-half per trip, on weekends.

The Routes 54, 55 and 56 alignments are illustrated in Figures 55 and 56 on the following pages.

Figure 55 Diagram of Routes 55 and 56 Alignments

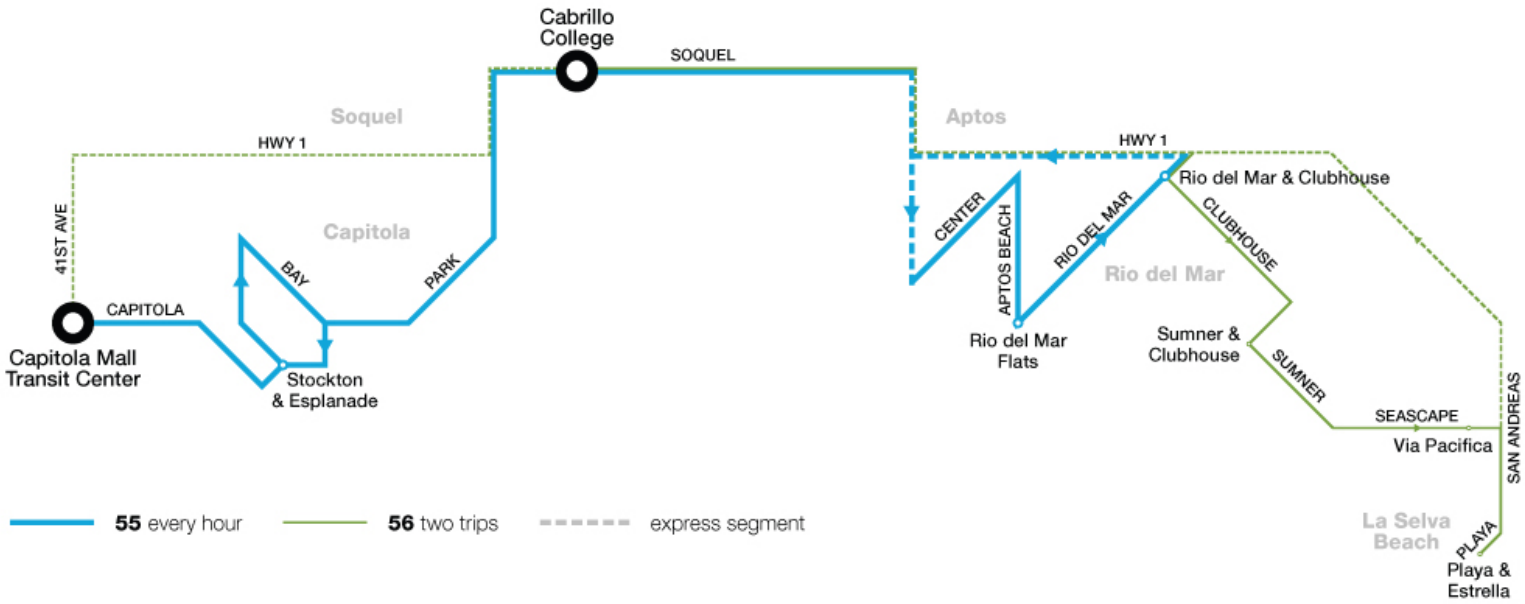
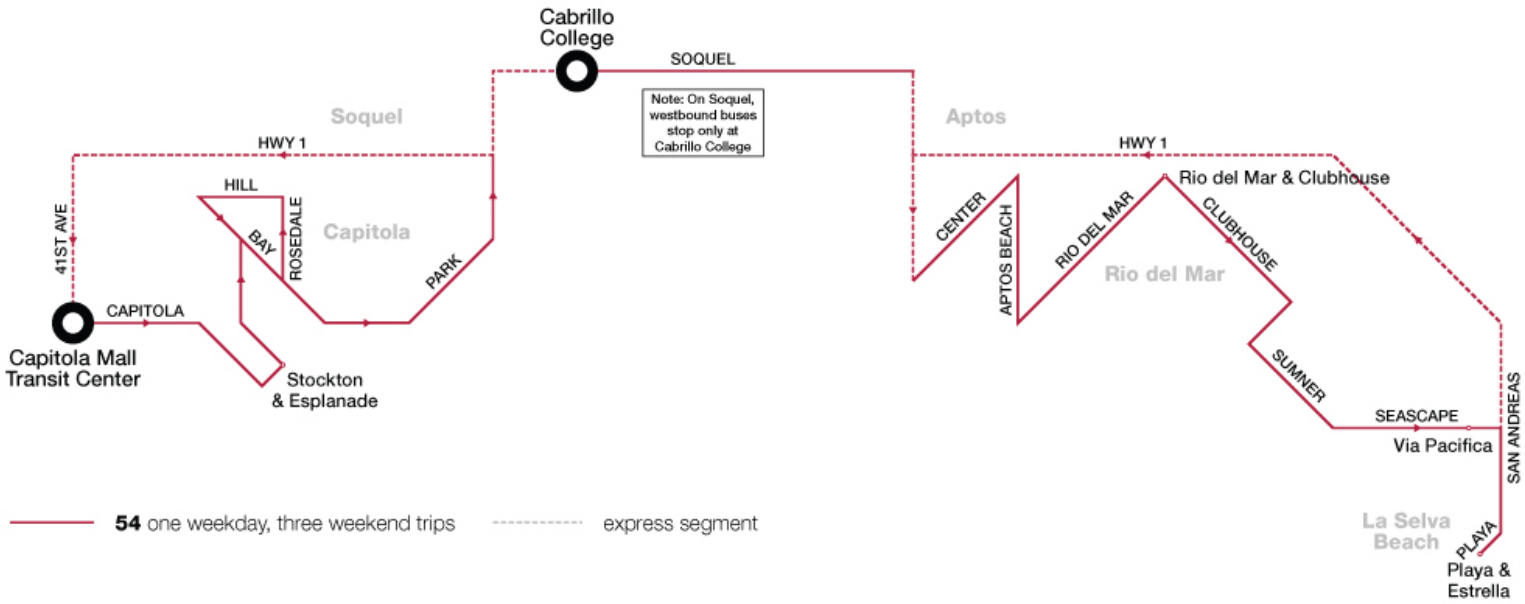


Figure 56 Diagram of Route 54 Alignment



Operation of Route 54 on weekends requires about 3.3 hours of revenue service per day. If these resources were reallocated so that Route 55 could operate on weekends, providing bidirectional service to a majority of the stops on Route 54, ridership would likely be increased significantly: weekday ridership on Route 55 is just over 14 passengers per hour. Weekend service to Route 56 stops (using Route 54) would be discontinued, but Route 56 carries fewer than 20 passengers per weekday. To help offset this loss, the single Route 54 trip on weekdays might be replaced with an additional trip on Route 56, increasing the number of round trips on that route from two to three and increasing the viability of that service by offering a late-afternoon trip in addition to the existing morning and mid-day trips.

Routes 69W, 71 and 91X

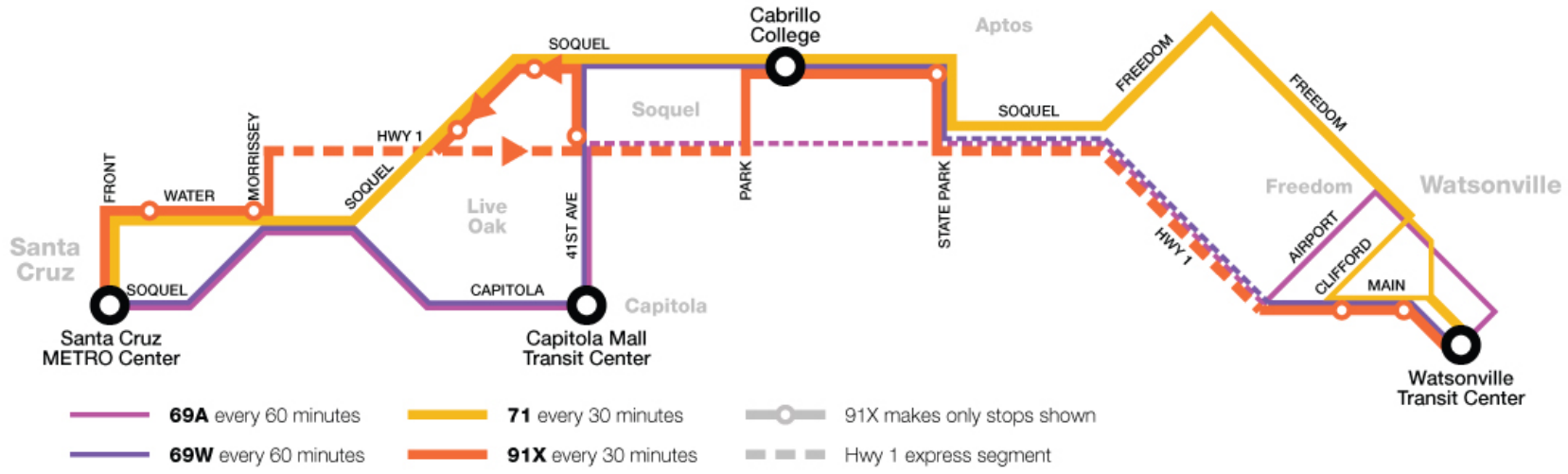
Routes 69A, 69W, 71 and 91X provide service between Santa Cruz METRO Center and the Watsonville Transit Center, connecting North and South County via the coastal communities along the Highway 1 corridor. Routes 69A, 69W and 71 are among METRO's most well-used, while Route 91X remains a relatively new service that has not yet had time to fully establish itself.

Routes 69A and 69W operate hourly, while Routes 71 and 91X operate every 30 minutes mid-day and every 15 minutes during peak periods in the peak direction. Their alignments overlap in segments, in various combinations. Three of the four routes also include non-stop segments and/or limited-stop segments. The resulting service pattern is somewhat complicated, but might be described as follows:

- Routes 69A and 69W operate outbound from Santa Cruz via Soquel and Capitola Road to Capitola Mall. They then operate via 41st Avenue to Highway 1, where they branch:
  - Route 69A operates express via Highway 1 to Airport, Freedom, Lincoln Street and a one-way couplet of East Lake Avenue and East Beach Street in Watsonville; and
  - Route 69W continues to Cabrillo College and Aptos primarily via Soquel, then on Highway 1 to Main, then Rodriguez Street in Watsonville.
- Route 71 provides local service on Water, Soquel and Freedom. In Watsonville, it first deviates east of Freedom via Airport and Green Valley, then branches, serving variants consisting of Freedom and Main and of Clifford Avenue and Main on alternating trips. Route 71 serves Cabrillo College. Because it includes no express segments, the route takes up to an hour and 20 minutes each way.
- Route 91X provides limited-stop service on Water, Soquel and Main, including a stop at Cabrillo College, and operates non-stop on segments of Highway 1. One-way travel time is 50 minutes or less.

The alignments are illustrated in Figure 57 on the following page.

Figure 57 Diagram of Existing Routes 69A, 69W, 71 and 91X Alignments



While all four routes are regional, inter-city services, they also provide local service within local communities. A number of related points should be noted:

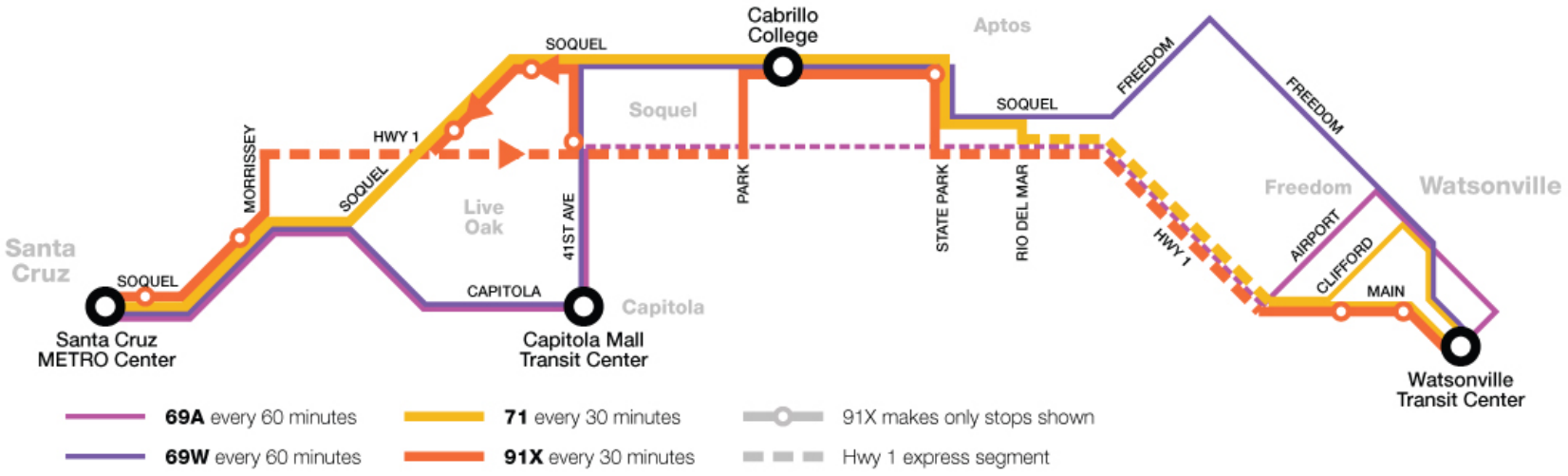
- On Santa Cruz's East Side, more service is provided on Water, a corridor with primarily auto-oriented land uses, than on Soquel, a relatively walkable corridor in which infill development is planned by the City of Santa Cruz.
- Route 71 has the second-highest ridership of any METRO route and is among the most productive. However, the Route 71 segment along Freedom north of Watsonville is primarily rural and is lightly used despite relatively frequent service (every 30 minutes).
- In Watsonville, Routes 69A and 71 provide all of the service within much of the Freedom corridor, including service to Crestview Shopping Center.

Given all of this, the following is recommended:

- Routes 71 and 91X should be realigned within Santa Cruz to serve the Soquel corridor between downtown and Morrissey. Between Ocean and Morrissey, Soquel is a walkable street with strong pedestrian connectivity to the surrounding neighborhoods and existing land uses that are supportive of transit including street-fronting retail and apartment buildings. Moreover, the City of Santa Cruz's General Plan identifies Soquel as an "activity center" or focus area for future development. This recommendation would support the "transit-emphasis corridor" designation by providing very frequent service, which should leverage further investments in transit speed and reliability. In order to reduce impacts on the Water and Front Street corridors, service could be increased on Route 4 or Routes 4 and 8 (depending on which previous recommendation is adopted) and/or on Route 66.
- South of Aptos, Routes 69W and 71 should essentially take one another's place (in order to serve Aptos Village, Route 71 could remain on Soquel rather than Highway 1 between State Park Drive and Rio Del Mar Boulevard), with Route 69W operating on the current Route 71 alignment along Freedom and Route 71 operating on the Route 69W alignment on Highway 1 and Main. Route 71 would continue to serve Clifford on every other trip. This would improve travel times (and potentially reduce operating costs) on Route 71, which operates more frequently than Route 69W; it would better match service levels to demand on Freedom north of Watsonville; and it would increase service levels on Freedom south of Clifford within Watsonville. Service between Freedom Center and Watsonville would be reduced from three buses per hour to two, although all service would operate via a relatively path, rather than the circuitous route now used by the Route 71 Clifford branch. On Main, four buses would operate per hour north of Clifford and three to the south, rather than vice versa.

The proposed changes are illustrated in Figure 58 on the following page.

Figure 58 Diagram of Proposed Routes 69A, 69W, 71 and 91X Alignments

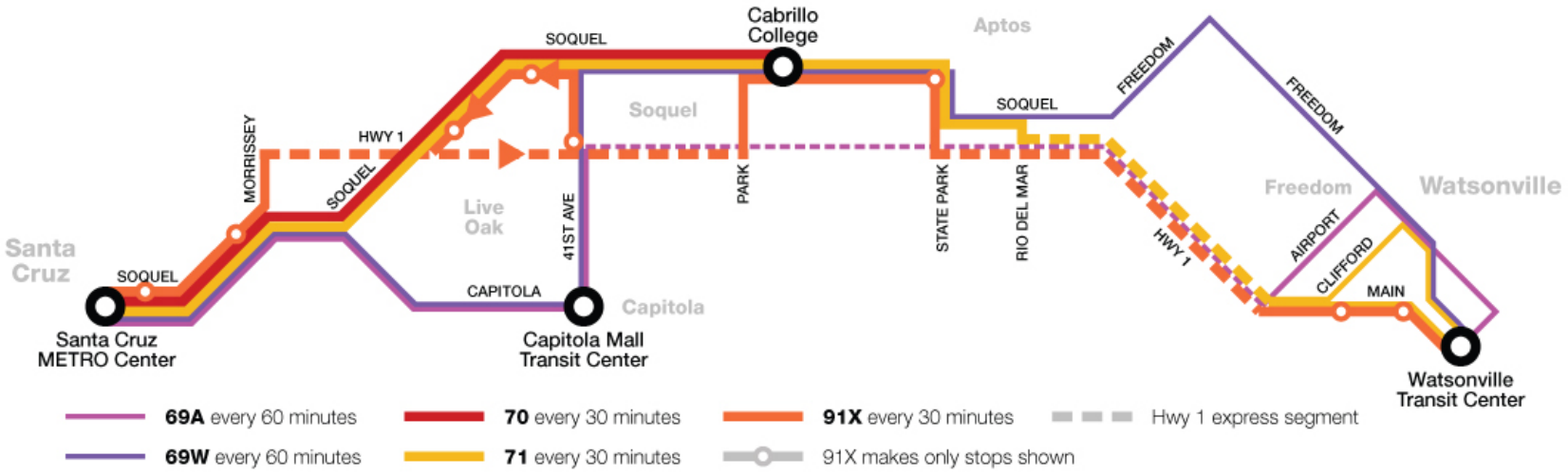


EXPANDED SERVICE RECOMMENDATIONS

While the recommendations made to this point should not require substantial additional resources (a roughly 1 percent increase in systemwide operating hours is projected based on a 3 to 4 percent increase in UCSC service; remaining recommendations should be approximately if not precisely cost-neutral), options have been identified for expansion of service should funding become available. These include:

- ***Introduction of additional service in the Soquel corridor.*** Under the recommendations, Routes 71 and 91X would be realigned to operate on Soquel rather than Water in Santa Cruz. This would result in combined base headways for all services in the segment of between 10 minutes (at 91X stops) and 15 minutes, consistent with designation of Soquel as a transit-emphasis corridor. However, in the remainder of the transit-emphasis corridor between Capitola Road and Cabrillo College, service would not be as frequent. In order to provide 15-minute or better service all day throughout the corridor, METRO should reintroduce a variant of the former Route 70 operating between METRO Center and Cabrillo College via the Route 71 alignment. If the route were to operate at the same frequencies as Route 71 – a base headway of 30 minutes, with 15-minute peak service – and over roughly the same span – until after midnight, seven days a week – it would be relatively expensive to operate, requiring approximately 20,000 hours of annual revenue service, or about 11 percent of METRO's systemwide total for Fiscal Year 2012. However, base headways would be 15 minutes or better throughout the corridor, and just over four minutes (14 buses per hour) during peak periods at Route 91X stops in Santa Cruz. The resulting configuration of corridor services is illustrated in Figure 59 on the following page.

Figure 59 Diagram of Proposed Routes 69A, 69W, 71 and 91X Alignments



- ***Extending hours of operation on Routes 69A, 69W and 91X.*** Currently, Route 91X goes out of service before 7 p.m. on weekdays, Route 69A before 8 p.m., and Route 69W before 10 p.m., leaving only Route 71 operating in the busy Soquel corridor. Hours on these routes could be extended in accordance with available resources.
- ***Realignment of Route 3.*** If a system of performance review like the one previously recommended were implemented, it is probable that Route 3 would have to be modified in an effort to improve performance. One possible way to reconfigure it would be to make it like other, more productive services on the West Side by having it serve UCSC. This would eliminate the route's status as the only route exclusively serving the West Side. However, it could save the service from possible elimination if performance failed to improve. Route 3 could be extended to the university from its current terminus at the west end of Delaware Avenue, adjacent to UCSC's Institute of Marine Sciences campus. Alternatively, it could be reconfigured to operate from METRO Center via Laurel (or alternatively, the Lincoln/Walnut couplet), Mission and Western. This would establish a direct link between the UCSC campus and the Mission Street Safeway store, and would serve Mission between Downtown Santa Cruz and Western using a single local route. Because cycle time for either option would likely be longer than the current one hour (scheduled travel time of 45 minutes plus 15 minutes layover and recovery), maintaining hourly headways would probably double operating costs. However, because the route is currently relatively inexpensive to operate, this would not amount to a substantial increase in systemwide operating costs. The existing and proposed alignments are illustrated in Figures 60 and 61 on the following pages.

Figure 60 Diagram of Existing Route 3 Alignment

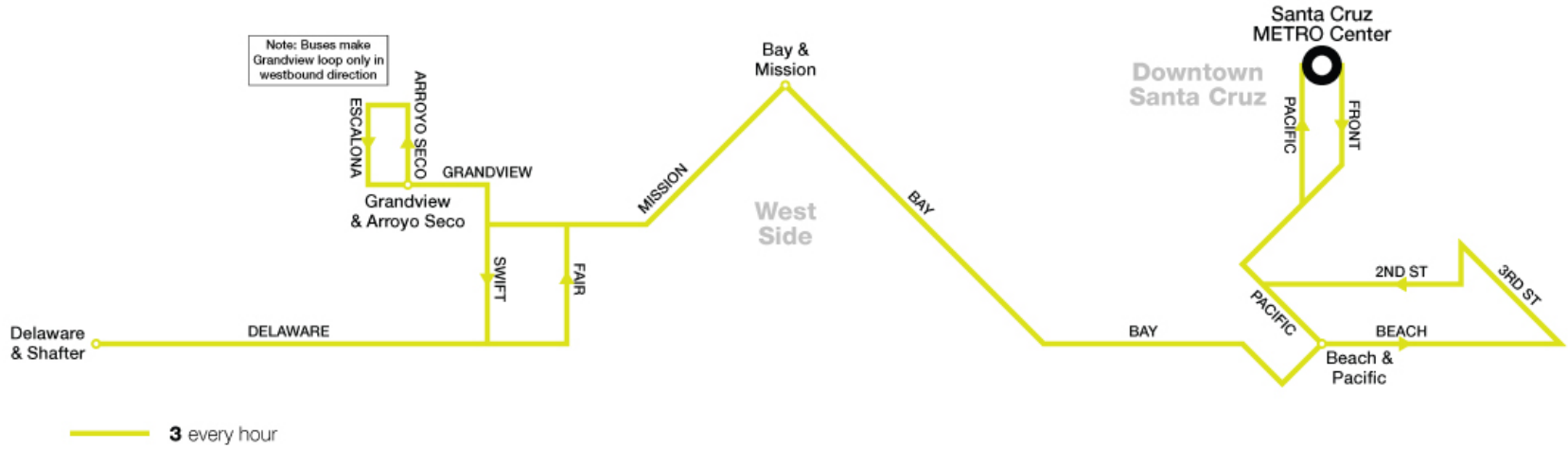
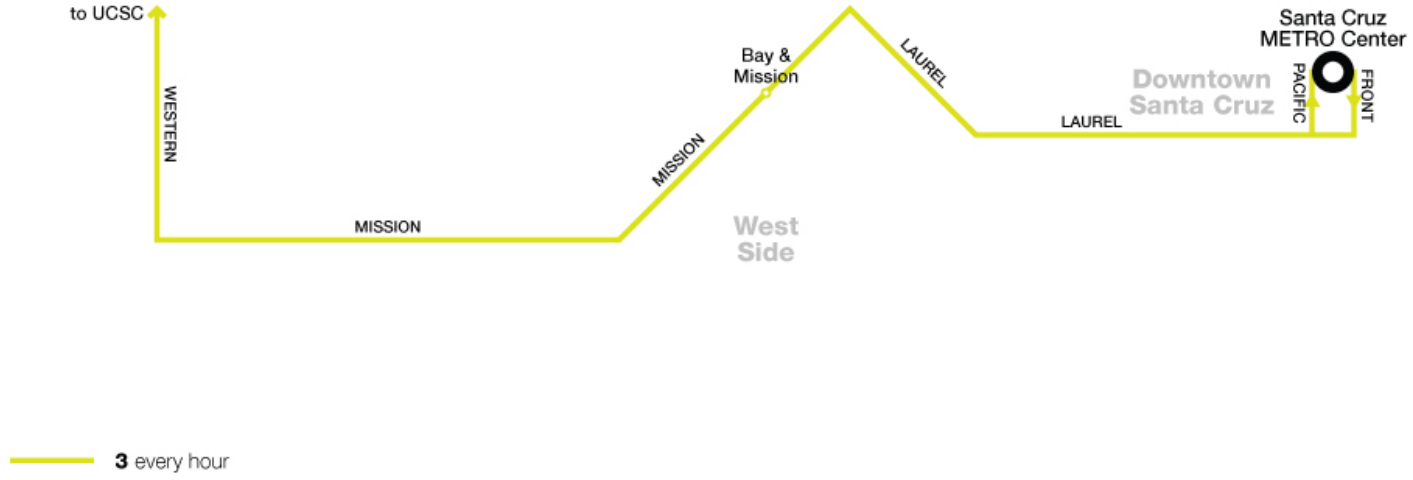


Figure 61 Diagram of Proposed Route 3 Alignment



- ***Two-way Route 35 service on Scotts Valley Drive***. METRO currently operates only in the southbound direction on the approximately 1.7-mile segment of Scotts Valley Drive between Granite Creek Road and Mt. Hermon Road. Trips serving this segment are designated Route 35A; return trips on Route 35 deposit passengers at the foot of Scotts Valley Drive. Serving Scotts Valley Drive in both directions would add about 10 minutes to Santa Cruz-bound trips on Route 35, taking passengers out of direction and increasing operating costs. However, the northern segment of Scotts Valley is a fast-growing commercial and residential area.
- ***Increasing funding for ParaCruz operations.*** METRO's demand-responsive service is addressed in another section of the SRTP, but is mentioned here in the context of expanding funding should resources available. Costs to operate ParaCruz service have been increasing faster than for fixed-route service, and in order to remain sustainable over time without reductions in service, additional funding will have to be found.

PARATRANSIT SERVICE ALTERNATIVES

Introduction

ParaCruz is Santa Cruz METRO's paratransit operation. When SCMTD brought the paratransit operation in house in 2004, the agency continued to use the original 27 vehicles that were operated by Lift Line, and acquired 22 replacement vehicles in 2010. Today, the service averages about 450 passengers per weekday.

The majority of service provided by ParaCruz is operated by METRO employees, but some "overflow" services – primarily for some of the longer distance trip requests – are provided by a local taxi provider, Santa Cruz Transportation, LLC (operator of Yellow Cab), which uses six ParaCruz-owned vehicles that are stored and maintained at the taxi facility. At peak pull out, ParaCruz provides access throughout its service area using 35 vehicles, including those operated by the taxi provider. ParaCruz has a total operations staff of 34. On a monthly basis, approximately 12% to 16% of all paratransit trips are operated by the Santa Cruz Transportation.

Based on the ParaCruz data presented in Chapter 2, this section provides a set of considerations and recommendations for ParaCruz. Recommendations are intended to respond to the priorities expressed by METRO staff and stakeholders, as well as input received from ParaCruz users.

Opportunities for METRO

Capacity Management

Concerns exist about the capacity of ParaCruz to handle current and future demand. Trying to manage capacity is a key element of a paratransit operation, because rarely does a paratransit operation seek to serve more riders: the goal is to empower riders who are able to use fixed routes for at least some of their trips to transition to fixed routes, with paratransit meeting demands that cannot be met by fixed routes.

When Lift Line provided the paratransit services for METRO, nearly 35,000 individuals were registered for the operation. METRO significantly revised the eligibility certification process when the operation was brought in house and today the eligibility database includes

approximately 3,250 registrants – about one-10th the size of the former database. Santa Cruz METRO staff attribute the reduction in registrants to policies which require individuals to initiate the process with an in-person assessment. This has been described as a self-policing effort, whereby only persons who would attend a 30-minute functional meeting are likely to apply. As a result, METRO reports very few eligibility denials, and eligibility is granted for a three-year period. Even with a database of 3,500 eligible users, the agency reports that only about one-fifth are active users (between 700 and 800 active riders). Ways to further shift riders from ParaCruz to fixed routes should be considered.

Conditional Eligibility Certification

Enhancing METRO's fixed routes will benefit everyone, including many current users of ParaCruz. Some people may be able to use fixed-route transit for some of their trips, but for other trips, they would still need ParaCruz. For example, some persons have a health condition that fluctuates (i.e., arthritis) so that sometimes they are able to walk to a bus stop, but other times they are not. Likewise, some trips may not be navigable if there are architectural barriers preventing access to or from the bus stop; or, extreme weather conditions, along with the presence of a disability, may prevent access to or from a bus stop. Some people with developmental or intellectual disabilities may be able to take routine trips on public transit, but may need to rely on paratransit if the trip is not familiar or if they have not been travel-trained.

Although certifying people as conditionally eligible introduces a new level of complexity to the certification process, it is an important step in establishing an eligibility process that is more consistent with the intent of the ADA, and will allow, at some time in the future, for implementation of trip-by-trip eligibility. According to METRO staff, the agency rarely grants conditional eligibility, a tool that is commonly used at some other transit agencies. Trip-by-trip eligibility means that an individual who is determined conditionally eligible may be required to take some trips by fixed-route transit if they are able, while for other trips, they will qualify for paratransit.

This is a consideration that could be phased in over time. Conditional eligibility is somewhat complex to initiate on a larger scale and will also require training and oversight on the part of dispatchers and staff who receive ride reservations. ParaCruz may want to consider the option of developing a step-by-step guide to identify steps needed to implement this process, and to learn from peers about successful practices elsewhere.

Reduction of ParaCruz Service Area to Match ADA Required Service Area

ParaCruz's service area extends somewhat beyond what is required under the ADA. While it is assumed that only a small number of riders live within the service area that goes beyond the ADA mandate (data was not available from METRO), METRO is not required to offer ParaCruz service to these individuals. As an agency that operates under financial constraints, METRO might consider reducing its service area to boundaries required under the ADA as a capacity management tool. It is presumed that the impact would be modest, but it also helps eliminate a precedent that suggests that if METRO wants to further eliminate unproductive route segments or test a future route that turns out not to meet performance standards, it is "on the hook" for providing ongoing ParaCruz service in those areas. METRO could grandfather in existing riders until their three-year eligibility period expires, and then refuse new registrants to bring its ParaCruz service area back into line with its fixed-route service area. In addition, while it continues to operate it, METRO might consider this service beyond the ADA requirements to be

part of a premium service area, for which a premium fare would be appropriate, allowing the agency to better cover costs for these services beyond ¾ mile of existing routes.

Efficiency Enhancements

Currently, ParaCruz rides cost a passenger $4.00 per trip, which recovers only about 6% of actual operating costs for the service. Most agencies set a paratransit farebox recovery ratio of at least 10%, which would be appropriate in Santa Cruz County, but likely difficult to achieve in the immediate term with Santa Cruz METRO's higher-than-average paratransit operating costs. In order to achieve any improvement in the farebox recovery ratio, METRO would need to reduce overall operating costs, which could be done by contracting some additional services or modifying operating/scheduling/dispatch procedures to allow the agency to improve overall productivity. Overall productivity as measured in passengers per hour has been decreasing steadily in recent years, and according to METRO staff, this is likely a function of increased ridership from Scotts Valley. Alternatives could be considered to operate some ParaCruz services, particularly in smaller communities in the mountains or between cities. For example, in some areas METRO could operate ParaCruz as a point deviation service with some fixed-schedule time points, but a fully flexible routing between those points as a way to manage ridership and put more people on vehicles. This may require more travel time negotiation (currently only between six and 10 pick-up times must be negotiated each day), but could allow for a regularly scheduled set of vehicles departing from Watsonville or Ben Lomond, for example, hourly or every other hour that could provide accommodation in compliance with the ADA.

A comprehensive analysis of ParaCruz's services can be undertaken to determine potential strategies to increase efficiencies. One of the challenges expressed by ParaCruz staff is that the current vehicle configuration is a barrier to more efficient service operations because mobility devices limit flexibility: the last wheelchair boarding on the vehicle must be the first wheelchair offloaded.

Another strategy to improve farebox recovery is to increase revenues through advertising, premium fares for premium services (same day service or trips in an extended service area), or increase fares overall, which would require an increase in systemwide fares. Recognizing the challenge of securing additional revenues for paratransit, METRO's primarily focus should be on ways to contain costs and better serve riders with existing resources.

Consideration of Premium Same-Day Services at a Premium Fare

As noted above, a premium fare is an option for premium services. ParaCruz staff express interest in being able to accommodate same-day rides. If capacity is available though service area reductions, efficiency enhancements, and staff/vehicle augmentation, then the agency could consider accommodating same-day trip requests. One opportunity for METRO would be to consider same-day trips a "premium service" and charge a premium fare. Arguably, such trips could be charged a fare double the current fare, which would more closely cover the cost of the trip, raise revenues, and allow for the service to be continued on an on-call basis.

Need for Additional Vehicles

One of the challenges identified by ParaCruz staff is that METRO currently has no spare vehicles available. Two strategies exist for working around this limitation.

The first is obvious: to increase the fleet size. METRO is encouraged to adopt a spare vehicle standard –15% to 20% is common – to ensure the agency is able to meet demand for all scheduled

trips. According to METRO staff, trip denials are minimal but the agency has very little flexibility, and if a vehicle were to go out of service, then denials may be necessary. A lack of spare vehicles can be rectified with an increment in the vehicle expansion schedule, at a cost. Along with additional vehicles, ParaCruz is seeking to hire additional operators.

It is assumed that ParaCruz will require additional vehicles to allow for an improved spare ratio, and those vehicles have been included in the Fleet Replacement Plan in this report (Chapter 11).

In addition, METRO has shown that contracting for service has been cost effective, and could expand its contract relationship with Santa Cruz Transportation, allowing the provider to dispatch taxi cabs to serve the needs of people with ambulatory disabilities or accessible cabs to meet all needs. Just as METRO has a relationship to use Santa Cruz Transportation to address its overflow needs, additional trips could be assigned to the contractor on a short-term basis until the vehicle fleet is expanded.

Proposed ParaCruz Service Standards

Performance measures as applied to paratransit services will incorporate many of the traditional measures of revenue hours/miles per vehicle/passenger. However, some agencies are broadening the way performance is measured, particularly because of the different nature of paratransit versus fixed-route services. Ride statistics such as total number of rides, number of rides denied, and average ride time are being applied to gauge the impact of paratransit services in terms of improving transportation access. Paratransit providers are also beginning to measure their performance in terms of vehicle capacity, instead of the number of vehicles in their fleet, to reflect the mixed fleet used to deliver paratransit services.

Updated ParaCruz performance measures allow METRO staff to:

- Track compliance with certain requirements of the ADA, including on-time performance, trip denials, and access to the reservation system;
- Assess system performance based on established criteria, and compare that to past measures of performance and target goals.
- Document outcomes and trends related to system efficiency and communicate these to the METRO Board.

The following performance measures are used in the industry to assess system productivity and ADA compliance. While there is general agreement on what to measure, there are few industry-accepted standards or target values (except those related the showing adequate capacity to avoid a pattern of trip denials).[17] Proposed and updated measures and standards are shown in Figure 62.

[17]Transit Cooperative Research Program (TCRP) Report 124, page 31.

Figure 62 Proposed ParaCruz Performance Measures and Standards

ParaCruz Performance Measure	Existing ParaCruz Standard	Recommended ParaCruz Standard	Comment
Cost per service hour		<$100*	ParaCruz's current cost is approximately $100, far exceeding industry norms.
Cost per passenger		<$40*	ParaCruz's current cost is approximately $50, far exceeding industry norms.
Passengers per hour	1.6	2.5	This is somewhat higher than the current performance, but lower than many of ParaCruz's peers. ParaCruz should be able to achieve a minimum of 2.5 passengers per hour within a five-year period.
Percent of trips on-time	92%	95%	Based on industry norms
No-show/late cancellation rate	<3%	<3%	Maintain existing standard
Excessively Late/Missed Trips	0%	0%	Maintain existing standard
Advance cancellation rate		15%	Current average is closer to 19%. ParaCruz should seek to reduce cancellations.
Complaint rate (per 100,000 trips)		15	Based on industry norms
Trip denials		None	ADA requirement
Telephone Hold Times less than 2 minutes	90%	95%	Current average is better – increase standard.
Shared Rides	>60%	>70%	ParaCruz has incorrectly calculated this measure. Proposed standard is higher in effort to improve efficiency, but should be adjusted based on ParaCruz actual numbers.
Rides by Supplemental Providers	<25%		This can be maintained as a standard if necessary, but supplemental providers have shown some cost advantages during peak use times.
Length of time on vehicle compared to fixed route		Not to exceed length of fixed route trip plus 20 minutes	This is a common issue highlighted in FTA funded Topic Guide 6 on ADA Transportation. FTA Letters of Finding make a comparison to the fixed route bus, including time to get to and from the stop or station. A substantial number of excessive length trips (compared to a comparable trip on fixed route) is considered a capacity constraint.
Farebox recovery ratio		10%	Based on ParaCruz performance; this should be a minimum and may be adjusted based on ongoing performance

*Standards are high, but are based on existing costs; efforts should be made to reduce costs.

According to METRO staff, no-shows impact fewer than three percent of all trips, and can generally be attributed to a handful of regular riders. Even with a no-show policy in place, Santa Cruz METRO does not put riders on probation or rescind the right to ride. Trips may be made up to three days in advance, which is appropriate for managing capacity, and subscription trips represent less than 50% of METRO's paratransit trips in accordance with ADA requirements given capacity constraints.

Due to capacity constraints, it is fully appropriate for ParaCruz to enforce its no-show policy. The policy is that if a rider's no-shows exceed 15% of trips within 90 days, service may be suspended for 14 days.

METRO reports few missed trips, and most are due to traffic congestion.

Other proposed standards will need to be adjusted from time to time. It is recommended that standards and actual performance be reported to the METRO Board on a regular basis.

ParaCruz Reservations and SCMTD Customer Service Staffing

ParaCruz has six individuals on staff who are responsible for taking reservations, doing manifest reconciliation, dispatching services, tracking waits on phones, etc. ParaCruz's dedicated staff is strictly assigned to taking reservations only and providing information for existing ParaCruz riders about the services.

Some individuals on METRO's staff have expressed interest in combining the functions of ParaCruz reservationists and general public transit information customer service. The goal is to improve customer service by offering a one-stop call.

Although this is done in some other communities, it is not common. One example comes from a provider that contracts their services, and the contractor has trained staff who answer phones to address all customer service needs and schedule trips on paratransit vehicles. In Denton County, Texas, the contractor for DCTA has a single phone number for all information about the system and paratransit trip scheduling. According to the contract operator, this works well for them because they cross train their staff and seek this as a strategy to minimize costs. This contract provider also has operators that have experience driving both fixed-route and paratransit vehicles.

Most agencies opt to keep these as separate functions to ensure customers with unique needs receive the customer service they need when they call for either information or to schedule a trip.

Advantages of a strategy that uses the same staff to take paratransit reservations and provide general customer service/trip planning information include the following:

- Allows passengers to seek information about both fixed routes and paratransit, and may allow reservationists to encourage callers to consider whether a fixed route might be available to them that would meet their needs for the particular trip they are requesting.
- May allow agency to better utilize staff and potentially reduce staffing.
- Integrates information about all agency services and enhances the profile of paratransit. Easily allows referrals to paratransit from general public callers.

Potential limitations of this for METRO include the following:

- Different pay scales and unions for the paratransit and fixed route operations at METRO may make this challenging to implement.

- Concerns that the "where's my bus" aspect of customer service needs focused attention and can take away from paratransit reservation-taking time.
- Building in other responsibilities for telephone customer service staff can increase reservations hold/response times and will require additional staffing. Transit agencies that combine the function are at risk of putting an upset customer that may require real-time attention on hold to take reservation calls.
- METRO's ParaCruz and Customer Service staff work at different facilities and have little regular interaction on a day-to-day basis. Ideally, all operations would be consolidated at a single operations facility.

At this time, a combination of functions is not encouraged, but could be explored further in the future in the event of staff attrition, improvements in automated information (e.g., availability of real-time fixed route bus information), and revisions to the agency's organizational structure.

Conclusion

ParaCruz is an excellent service that receives praise from its regular users. The comprehensive service offers nearly countywide access for eligible persons. The considerations in the chapter are mostly modest, but focus on the need for ParaCruz to work to contain costs to allow for its services to be sustained, maintaining availability for those who require ADA paratransit.

11 CAPITAL AND FINANCIAL PLAN

This chapter presents the five-year capital and financial plans for Santa Cruz METRO covering FY 2014/15 through FY 2018/19. The operating plan includes projected expenses and revenues for the life of the SRTP. Capital projects are identified, including the replacement of buses in accordance with the fleet retirement plan and the maintenance of bus stops.

FUNDING SOURCES

Funding sources described in this chapter are those that, with a degree of certainty, can be relied upon on to support transit operations and capital investments over the duration of this plan.

Operating Funds

Santa Cruz METRO's operating funds will continue to come from a variety of sources including federal, state and local sources (including fare revenue). The following funding sources are assumed to continue to be available to METRO for operational funding. Select funding sources listed below have been identified to support funding for service enhancements over the life of this plan. Examples of these funding sources are denoted here:

Federal Funds

- FTA 5307 Urbanized Area Formula Grants (Santa Cruz METRO is eligible for these funds to provide for operating costs as it is fewer than 200,000 in population).
- FTA 5311 (f) Intercity Bus Program
- FTA Funding for Small Transit Intensive Cities (STIC)
- Compressed Natural Gas Fuel Tax Credit (CNG used as motor vehicle fuel to operate public transit services is exempt from applicable user)[18]
- Medicare Subsidy

State Funds

- Transportation Development Act (TDA) Funds
- State Transit Assistance (STA) Funds

Local Funds

- Sales Tax (0.50% Sales Tax for the Transit District)
- Highway 17 Payments (Amtrak and VTA contributions paid for Highway 17 services)

[18] Reference Senate Bill 1257, 2012 and California Revenue and Taxation Code 7284.2

- Advertising
- Fares

Capital Funds

Capital funding opportunities come from numerous sources including federal, state and regional funding sources. The majority of capital funds that have supported Metro projects in the past include FTA funds and California programs such as Prop 1B, STA and TDA funds.

Federal Funds

- Federal Grants
  - FTA 5309 State of Good Repair
  - FTA 5309 Bus and Bus Facilities
  - FTA 5307 Small Transit Intensive Cities (STIC)

State / Regional Funds

- AMBAG Sustainable Communities Planning Grants
- Monterey Bay Unified Air Pollution Control District (Air District) Grants
- Regional Surface Transportation Program (RSTP) Funds
- Prop 1B Public Transportation Modernization, Improvement, and Service Enhancement Account Program (PTMISEA) Funds
- Prop 84 Planning Grants
- Transportation Development Act (TDA) Funds
- State Transit Assistance (STA) Funds
- California Transit Security Grant Program (CTSGP) Funds (Transit Security Projects)

Local Funds

- Local matching funds (may come from operating cost surpluses, local sales taxes or carryovers).

PLAN ASSUMPTIONS

This chapter represents an estimate of capital and operating cost projections based on existing financial information and performance trends. The following section outlines various assumptions that are applied to reasonably estimate costs and revenues associated with the Service Plan in Chapter 10. Most plan assumptions are consistent or slightly more conservative than existing Santa Cruz METRO assumptions included in the Fiscal Year 2014 Final Budget and have been developed in conjunction with Santa Cruz METRO staff.

Figure 63 shows inflation, growth and decline factors for numerous components of the financial plan. In addition, it outlines performance metrics such as revenue miles per revenue hour and boardings per revenue hour used in the financial plan.

Figure 63 Annual Inflation and Background Growth or Decline Factors

Factor	Assumption
Fixed Route Revenues	+2.5%
Hwy 17 Revenues	+3.0%
Paratransit Revenues	+2.5%
FTA 5307 Funds	+5.0%
TDA Funds	+2.0%
Sales Tax Revenues	+3.5%
STIC Funding (Small Transit Intensive Cities)	+20.0%
Fuel Tax Credit	-5.0%
Fixed Route / Hwy 17 Costs	+2.0%
ParaCruz Costs	+6.0%
Other "Flat Costs"	+2.3%
Fixed Route Revenue Miles / Revenue Hour	13.7
Fixed Route Boardings / Revenue Hour	26.6

Notes: Assumption factors based on discussions with Santa Cruz METRO staff and the FY 2014 Final Budget. Assumptions updated in April 2014.

In addition to the assumptions listed above, costs associated with the hiring of a new General Manager, Security and Risk Manager or related positions are not included as part of this financial plan.

SERVICE CHANGES

The service plan outlined in Chapter 10 includes a number of proposed service updates and changes. While some of these recommendations are cost neutral, others will either reduce or increase operating costs and may warrant capital improvements.

Sustained Funding

Under a sustained funding (cost constrained) scenario where no new major revenues are identified over the course of the plan, the service plan suggests a modest 1% increase in revenue hours. The primary driver for this increase in revenue hours stems from increases in Route 15/16 which currently serve the USCS campus. There are no other major changes in revenue service or resources necessary for the five year planning period.

Expanded Funding

In the event of additional funding, the service plan outlines several changes that would increase annual revenue hours by approximately 25,000. Services that are included in the service enhancement scenario include:

- Soquel Corridor expansion (20,000 annual revenue hours)
- Extension of operations for Route 69A, 69W and 91X (1,530 annual revenue hours)

- Realignment of Route 3 (3,264 annual revenue hours)

The five-year operating plan presented in this chapter presents costs and revenues in both a "Sustained Funding" scenario and an "Expanded Funding" scenario. If METRO chooses to expand transit services beyond what is defined in this plan, additional revenue sources will need to be identified beyond what is included in this financial plan.

SUSTAINED FUNDING SCENARIO

This section will outline both the operating and capital planning assumptions and estimates for the five-year duration of the service plan under the Sustained Funding scenario which assumes no new funding sources.

Operating Plan

Under the sustained funding scenario, it is assumed that revenues will remain consistent as those identified in the FY 2014 Final Budget and will escalate (or decline) over time at the rates noted in the assumptions outlined above. Service remains relatively flat with the exception that in Year 1 (FY 2014/2015), total fixed route revenue hours increase by approximately 2,000 or 1% from roughly 215,613 to 217,558. Assuming all other factors remain unchanged, the budget operates at an increasing surplus over the life of the plan given the higher inflation factors for revenue as compared to costs. In FY 2014, there is an estimated $5.2 million net income as reported in the Final Budget. This operating surplus increases to over $6.5 million by FY 2018/2019, which may warrant discussion of other capital improvements that may be of interest. Farebox recovery ratios remain flat for fixed route service (23%) while Highway 17 service's farebox recovery ratio improves from 43% to 46% over the life of the plan. The farebox recovery ratio for ParaCruz remains flat at 5%. This is reflected in Figure 64.

Figure 64 Estimated Farebox Recovery Ratio – Sustained Funding Scenario

	FY 2014/2015	FY 2015/2016	FY 2016/2017	FY 2017/2018	FY 2018/2019
Fixed Route Farebox Recovery Ratio	23%	23%	23%	23%	23%
Hwy 17 Farebox Recovery Ratio	44%	44%	45%	45%	46%
Paratransit Farebox Recovery Ratio	5%	5%	5%	5%	5%

Figure 64 provides a summary of the operating plan under a sustained funding scenario. This figure includes FY 2013/14 (current year) in addition to years one though five of the SRTP (FY 2014/15 – FY 2018/19).

Capital Plan

Capital projects for Santa Cruz Metro are divided into five general categories: vehicle replacement, vehicle maintenance and equipment, bus stop improvements, park and ride lots and miscellaneous. Given the high costs of capital projects, it is assumed that federal funds in the form of FTA grants will cover the majority of costs supplemented with local matching funds (local sales tax or other). However, a portion of the large surpluses in operating funds could be used to support capital purchases. For purposes of this financial plan, it is assumed that FTA funds (5307, 5310 and 5339) could provide up to 80%-85% of the capital costs.

Vehicle Replacement

During the SRTP planning period, 51 Santa Cruz Metro fixed route and Highway 17 vehicles are due for replacement. The majority of these vehicles will require replacement in 2014 and 2015 including 42 fixed route vehicles and seven Route 17 vehicles. The remaining two fixed route vehicles are slated to be replaced in 2018. In addition, 28 mid-sized ParaCruz vehicles, five minivans and one small bus are slated to be replaced as part of the vehicle replacement cycle. Six of the mid-sized ParaCruz vehicles are new vehicles that will be added to the ParaCruz fleet to have a proper spare ratio to ensure service reliability. ParaCruz vehicles may be eligible for Regional Surface Transportation Program (RSTP) funds.

Assembly Bill 1706 establishes that public transit agencies may purchase buses that do not exceed the "gross weight of the heaviest bus of the current transit fleet as of December 31, 2012." Thus, CNG vehicles can continue to be purchased (within this rule) until the legislation expires on January 1st, 2016.[19]

It is assumed that vehicle costs are as follows (in 2013 dollars), escalated at 2%/year. Figure 65 below lists the vehicle cost by year.

- Fixed Route Vehicle: $250,000
- Small Bus (ParaCruz Service): $115,847
- Mid-Sized Van (ParaCruz Service): $56,470
- Minivan: $49,043

Figure 65 Sustained Funding Vehicle Replacement Cycle (Costs and Vehicle Quantity)

	2014	2015	2016	2017	2018
Fixed Route	$2,040,000 (8)	$10,664,100 (41)	$0	$0	$552,040 (2)
Small Bus	$0	$120,527 (1)	$0	$0	$0
Mid-Sized Van	$172,798(3)	$176,254 (3)	$1,318,381 (22)	$0	$0
Minivan	$0	$0	$260,224 (5)	$0	$0

Vehicle Maintenance and Equipment

Currently, the only major vehicle equipment that is proposed in the capital plan is automatic vehicle locator systems (AVL) that will assist in providing efficient operations and open the opportunity to provide real-time arrival information to patrons. It is currently estimated that the procurement and installation of this system for the fixed route fleet will cost nearly $4.8 million and is not slated to occur until FY 2016/2017. It is assumed that FTA funds will cover approximately 80% of the costs for these vehicle upgrades.

Bus Stop Improvements

Bus stop improvements are an important capital project for Santa Cruz METRO because the agency strives to improve their stops throughout the system. To gain a full understanding of existing bus stop conditions and to assess priorities, it is suggested that a Bus Stop Assessment be

[19] AB 1706 Bill Analysis: http://www.leginfo.ca.gov/pub/11-12/bill/asm/ab_1701-1750/ab_1706_cfa_20120420_120609_asm_comm.html

conducted within the next five years. An estimated cost for this type of study is approximately $27,000 and is proposed for FY 2016/2017. Upon completion, a major reinvestment in bus stops is recommended in FY 2017/2018 at the cost of approximately $548,000. It is assumed a major component of this funding will come from California Prop 1B funds.

Park and Ride Lots

To accommodate future potential commute-based users, plans currently anticipate the construction of a Park and Ride facility in Scotts Valley within the lifetime of this plan. To accommodate this expected growth, a Park and Ride facility is estimated for FY 2016/2017 at the cost of $10.7 million. It is anticipated the majority of this Federal and STA funds could be used for this purpose.

Figure 66 provides a summary of the capital plan under a Sustained Funding scenario. Based on the combined funding estimates, METRO will have a growing a cumulative balance from year to year based on the current funding and inflation assumptions. Based on the FY 2014 Final Budget, a surplus of $3.15 million exists. This grows to nearly $8.3 million by FY 2018/2019 (cumulatively). In the case that FTA funds are not available, capital purchases currently supported by FTA funds would need to be provided through other means such as state or local sources.

Figure 66 Sustained Funding – Operating Financial Plan

	FY 2013/14	FY 2014/2015	FY 2015/2016	FY 2016/2017	FY 2017/2018	FY 2018/2019
	Estimated/Budget	Projected	Projected	Projected	Projected	Projected
SERVICE HOURS						
Fixed Route	**215,613**	**217,558**	**217,558**	**217,558**	**217,558**	**217,558**
Fixed Route	*194,512*	*196,457*	*196,457*	*196,457*	*196,457*	*196,457*
Highway 17	*21,101*	*21,101*	*21,101*	*21,101*	*21,101*	*21,101*
Paratransit	**46,615**	**46,615**	**46,615**	**46,615**	**46,615**	**46,615**
TOTAL SERVICE HOURS	**262,228**	**264,173**	**264,173**	**264,173**	**264,173**	**264,173**
SERVICE MILES						
Fixed Route	**3,172,011**	**3,197,621**	**3,197,621**	**3,197,621**	**3,197,621**	**3,197,621**
Fixed Route	*2,561,028*	*2,586,638*	*2,586,638*	*2,586,638*	*2,586,638*	*2,586,638*
Highway 17	*610,983*	*610,983*	*610,983*	*610,983*	*610,983*	*610,983*
Paratransit	**624,708**	**624,708**	**624,708**	**624,708**	**624,708**	**624,708**
TOTAL SERVICE MILES	**3,796,719**	**3,822,329**	**3,822,329**	**3,822,329**	**3,822,329**	**3,822,329**
TRANSIT RIDERSHIP						
Fixed Route	**5,587,604**	**5,643,890**	**5,700,320**	**5,757,320**	**5,814,900**	**5,873,050**
Fixed Route	*5,231,252*	*5,283,970*	*5,336,810*	*5,390,170*	*5,444,080*	*5,498,520*
Highway 17	*356,352*	*359,920*	*363,510*	*367,150*	*370,820*	*374,530*
Paratransit	**92,645**	**93,570**	**94,510**	**95,450**	**96,410**	**97,370**
TOTAL RIDERSHIP	**5,680,249**	**5,737,460**	**5,794,830**	**5,852,770**	**5,911,310**	**5,970,420**
OPERATING COSTS						
Fixed Route	**$34,470,060**	**$35,473,160**	**$36,182,620**	**$36,906,280**	**$37,644,400**	**$38,397,290**
Fixed Route	*30,754,330*	*31,683,110*	*32,316,770*	*32,963,110*	*33,622,370*	*34,294,820*
Highway 17	*3,715,730*	*3,790,050*	*3,865,850*	*3,943,170*	*4,022,030*	*4,102,470*
Paratransit	**$5,269,290**	**$5,585,440**	**$5,920,570**	**$6,275,800**	**$6,652,350**	**$7,051,490**
TOTAL OPERATING COSTS	**$39,739,350**	**$41,058,600**	**$42,103,190**	**$43,182,080**	**$44,296,750**	**$45,448,780**
REVENUES						
Fixed Route	**$8,681,010**	**$8,970,480**	**$9,203,050**	**$9,441,670**	**$9,686,520**	**$9,937,760**
Fixed Route	*$7,068,970*	*$7,310,080*	*$7,492,830*	*$7,680,150*	*$7,872,150*	*$8,068,960*
Highway 17	*$1,612,040*	*$1,660,400*	*$1,710,220*	*$1,761,520*	*$1,814,370*	*$1,868,800*
Paratransit	**$285,790**	**$292,930**	**$300,250**	**$307,760**	**$315,450**	**$323,340**
Fare Revenue Subtotal	**$8,966,800**	**$9,263,410**	**$9,503,300**	**$9,749,430**	**$10,001,970**	**$10,261,100**
Federal	**$6,334,480**	**$6,804,410**	**$7,343,710**	**$7,964,380**	**$8,680,750**	**$9,509,960**
FTA Section 5307 (Operating Assistance)	*$4,068,220*	*$4,271,640*	*$4,485,220*	*$4,709,480*	*$4,944,950*	*$5,192,200*
FTA Section 5311(f) (Rural Asst)	*$207,570*	*$212,350*	*$217,230*	*$222,230*	*$227,340*	*$232,570*
FTA STIC Funding	*$1,443,690*	*$1,732,420*	*$2,078,910*	*$2,494,690*	*$2,993,630*	*$3,592,350*
Fuel Tax Credit	*$540,000*	*$513,000*	*$487,350*	*$462,980*	*$439,830*	*$417,840*
Medicare Subsidy	*$75,000*	*$75,000*	*$75,000*	*$75,000*	*$75,000*	*$75,000*
State	**$8,904,530**	**$9,091,020**	**$9,281,430**	**$9,475,860**	**$9,674,360**	**$9,877,060**
TDA	$6,104,530	$6,226,620	$6,351,150	$6,478,180	$6,607,740	$6,739,900
STA	$2,800,000	$2,864,400	$2,930,280	$2,997,680	$3,066,620	$3,137,160
Regional	**$140,000**					
Local	**$20,597,435**	**$19,492,470**	**$20,164,970**	**$20,860,800**	**$21,580,730**	**$22,325,640**
Highway 17 Payments	$242,650	$248,230	$253,940	$259,780	$265,750	$271,860
Commissions	$5,600	$5,730	$5,860	$6,000	$6,130	$6,270
Advertising Income	$265,230	$271,330	$277,570	$283,950	$290,480	$297,160
Rent Income	$160,940	$164,640	$168,420	$172,300	$176,260	$180,310
Other Non-Transportation Revenue	$18,000	$18,410	$18,840	$19,270	$19,710	$20,170
Sales Tax	$18,050,080	$18,681,830	$19,335,690	$20,012,440	$20,712,880	$21,437,830
Interest Income	$100,000	$102,300	$104,650	$107,060	$109,520	$112,040
Subsidy Revenue Subtotal	***$35,976,445***	***$35,387,900***	***$36,790,110***	***$38,301,040***	***$39,935,840***	***$41,712,660***
TOTAL OPERATING & SUBSIDY REVENUES	**$44,943,245**	**$44,651,310**	**$46,293,410**	**$48,050,470**	**$49,937,810**	**$51,973,760**
Annual Balance	**$5,203,895**	**$3,592,710**	**$4,190,220**	**$4,868,390**	**$5,641,060**	**$6,524,980**

Notes on Operating Plan:

Fixed route revenue hours are increased by 1% in FY 2014/2015 (Year 1). That level of service is maintained over the life of the plan. Ridership and revenue are increased accordingly based on the average fare per passenger and average passenger per revenue hour.

No change in ParaCruz revenue hours.

State funding includes Transportation Development Act (TDA) and State Transportation Assistance (STA) funds. Regional Funds includes AMBAG/CTC/Misc. Grand Funding and RTC Route 6 Funds (FY 13/14 only).

Cost and Revenue assumptions escalated per assumptions in Figure 63.

All figures rounded to the nearest 10.

Not shown in the operating plan: $-2.8M SLPP Backfill and $4,554,935 transfer to/from operating reserves in FY 2013/14.

Figure 67 Sustained Funding – Capital Financial Plan

	FY 2013/14	FY 2014/2015	FY 2015/2016	FY 2016/2017	FY 2017/2018	FY 2018/2019	TOTAL
	Estimated/Budget	Projected	Projected	Projected	Projected	Projected	
Five-Year Capital Plan (No New Funding) Expenses							
Replacement Fixed Route Vehicles	$3,391,010	$2,040,000	$10,664,100	$0	$0	$552,040	**$16,647,150**
Small Bus	$0	$0	$120,530	$0	$0	$0	**$120,530**
Mid-sized Van	$0	$172,800	$176,250	$1,318,380	$0	$0	**$1,667,430**
Minivan	$0	$0	$0	$260,220	$0	$0	**$260,220**
AVL/APC Equipment	$0	$0	$0	$4,817,700	$0	$0	**$4,817,700**
Bus Stop Inventory and Enhancement Program	$0	$0	$0	$26,760	$0	$0	**$26,760**
Bus Stop Improvements	$257,300	$0	$0	$0	$547,610	$0	**$804,910**
Non-Rev Vehicles	$287,217	$0	$0	$0	$0	$0	**$287,217**
Facilities	$27,143,803	$0	$0	$10,705,990	$0	$0	**$37,849,793**
Other	$334,500	$0	$0	$0	$0	$0	**$334,500**
TOTAL CAPITAL EXPENSES	**$31,413,830**	**$2,212,800**	**$10,960,880**	**$17,129,050**	**$547,610**	**$552,040**	$62,816,210
Five-Year Capital Plan (No New Funding) Revenues							
Federal	*$3,637,151*	*$1,632,000*	*$8,531,280*	*$3,854,160*	*$0*	*$441,630*	***$18,096,221***
FTA Grants	$3,637,151	$1,632,000	$8,531,280	$3,854,160	$0	$441,630	**$18,096,221**
State/Regional	*$28,469,959*	*$3,152,650*	*$3,152,650*	*$5,293,850*	*$3,700,260*	*$3,152,650*	***$46,922,019***
Prop 1B (PTMISEA)	$12,840,000	$0	$0	$0	$547,610	$0	**$13,387,610**
STA	$5,650,106	$0	$0	$2,141,200	$0	$0	**$7,791,306**
State Security Bond Funds (1B)	$665,841	$0	$0	$0	$0	$0	**$665,841**
State-Local Partnership Program (SLPP)	$5,800,000	$0	$0	$0	$0	$0	**$5,800,000**
Statewide Transportation Improvement Program (STIP)	$257,300	$0	$0	$0	$0	$0	**$257,300**
Regional Surface Transportation Program	$3,152,650	$3,152,650	$3,152,650	$3,152,650	$3,152,650	$3,152,650	**$18,915,900**
Monterey Bay Unified Air Pollution Control District (MBUAPCD)	$104,062	$0	$0	$0	$0	$0	**$104,062**
Local	*$2,459,370*	*$408,000*	*$2,132,820*	*$990,300*	*$0*	*$110,410*	***$6,100,900***
One-time proceeds (Sakata/Lawsuit Proceeds)	$1,335,000	$0	$0	$26,760	$0	$0	**$1,361,760**
Required Local Operating Match	**$10,000**	**$408,000**	**$2,132,820**	**$963,540**	**$0**	**$110,410**	**$3,624,770**
Reserved Retained Earnings	$1,114,370						**$1,114,370**
TOTAL CAPITAL REVENUES	**$34,566,480**	**$5,192,650**	**$13,816,750**	**$10,138,310**	**$3,700,260**	**$3,704,690**	$71,119,140
Carryover from Previous Year		$3,152,650	$6,132,500	$8,988,370	$1,997,630	$5,150,280	
Cumulative Balance	**$3,152,650**	**$6,132,500**	**$8,988,370**	**$1,997,630**	**$5,150,280**	**$8,302,930**	

Notes on Capital Plan:

Assumed that STIP funds are used for ParaCruz vehicle replacements and support for Facilities funding (Park and Ride)

RSTP funds based on Caltrans estimates.

FTA Grants are estimated based on capital needs for vehicle replacements and vehicle upgrades (AVL). FTA funds are assumed to provide 80% of funding with 20% local match. FTA funds are also presumed to support the construction of a Park and Ride facility.

In the event FTA funds are not available, capital purchases will be required to be funded by State or Local alternatives.

Cost and Revenue assumptions escalated per assumptions in Figure 63

All figures rounded to the nearest 10.

EXPANDED FUNDING SCENARIO

The expanded funding scenario assumes an increase in funding based on local sales tax. It is assumed that if funding were to materialize, it would be available for transit operations starting in January 2017. This section outlines operational and capital costs associated with that funding scenario.

Operating Plan

Under the Expanded Funding scenario, it is assumed that revenues will remain constant until January 2017 (FY 2016/2017) and will then escalate (or decline) over time at the rates noted in the assumptions in Figure 63. In Year 1 (FY 2014/2015), revenue hours are proposed to increase by 1% from roughly 215,613 to 217,558, similar to the Sustained Funding scenario. This is the result of an approximate 2,000 increase in fixed route (including Highway 17) revenue hours. Starting in FY 2016/2017, projected revenue hours increase from 217,558 to 242,352 on fixed route services (+11%).

In FY 2014, there was an estimated $5.2 million net income as reported in the Final Budget. This operating surplus increases to just over $8.9 million by FY 2018/2019. Farebox recovery ratios remain flat for fixed route service (23%) while Highway 17 service's farebox recovery ratio improves from 43% to 46% over the life of the plan. The farebox recovery ratio on ParaCruz is 5% in the first year of the plan and declines to 4% in FY 2016/2017. This is the result of an increase in ParaCruz service costs (ParaCruz costs are assumed to escalating at a rate of 4% annually). Farebox recovery ratios for the Expanded Funding scenario are shown in Figure 68.

Figure 68 Estimated Farebox Recovery Ratio – Sustained Funding Scenario

	FY 2014/2015	FY 2015/2016	FY 2016/2017	FY 2017/2018	FY 2018/2019
Fixed Route Farebox Recovery Ratio	23%	23%	23%	23%	23%
Hwy 17 Farebox Recovery Ratio	43%	44%	44%	45%	46%
Paratransit Farebox Recovery Ratio	5%	5%	5%	4%	4%

Capital Plan

Similar to the Sustained Funding scenario, five general capital cost categories exist including vehicle replacement, vehicle maintenance and equipment, bus stop improvements, park and ride lots and miscellaneous. This scenario also includes expansion vehicles. Federal funds in the form of FTA grants[20] and state funding (RSTP) are assumed to cover the majority of costs with local funds used as the required match.

Vehicle Expansion

The Expanded Funding scenario consists of the following three major changes:

- Soquel Corridor expansion (20,000 annual revenue hours)
- Extension of operations for Route 69A, 69W and 91X (1,530 annual revenue hours)
- Realignment of Route 3 (3,264 annual revenue hours)

[20] For purposes of this financial plan, it is assumed that FTA funds (5307, 5310 and 5339) may provide up to 80%-85% of for eligible capital costs.

As a result of these service changes, it is projected that nine additional fixed route vehicles will be required in FY 2016/2017 to maintain a spare ratio of approximately 20%.

Vehicle Replacement

Vehicle replacement requirements will remain consistent with those described in the Sustained Funding scenario. This includes 51 Santa Cruz Metro fixed route and Highway 17 vehicles, 28 mid-sized ParaCruz vehicles, five minivans and one small bus to be replaced as part of the vehicle replacement cycle. Additionally, six mid-sized ParaCruz vehicles will also be added in early years of the plan to ensure the ParaCruz fleet has an adequate spare ratio to ensure service reliability

Figure 69 Vehicle Replacement and Expansion Vehicles

	2014	2015	2016	2017	2018
Fixed Route	$2,040,000 (8)	$10,664,100 (41)	$2,435,472 (9) - *Expansion*	$0	$552,040 (2)
Small Bus	$0	$120,527 (1)	$0	$0	$0
Mid-Sized Van	$172,798(3)	$176,254 (3)	$1,318,381 (22)	$0	$0
Minivan	$0	$0	$260,224 (5)	$0	$0

Vehicle Maintenance and Equipment

Consistent with the Sustained Funding Scenario, automatic vehicle locator systems (AVL) are assumed to be added to the fleet in FY 2016/2017. The cost of this installation in this scenario is slightly higher than the Sustained Funding scenario because of nine additional fixed route vehicles. It is estimated that the procurement and installation of this system on the fixed route fleet will cost $5.09 million and FTA funds will cover approximately 85% of the costs.

Bus Stop Improvements

To gain a full understanding of existing conditions of bus stops and to assess priorities, a Bus Stop Assessment is recommended in FY 2016/2017 ($27,000). Upon the findings of this effort, a major reinvestment in bus stops is proposed in FY 2017/2018 at the cost of approximately $548,000. It is assumed a major component of this funding will come from California Prop 1B funds.

Park and Ride Lots

To accommodate future potential commute-based users, plans currently anticipate the construction of a Park and Ride facility in Scotts Valley in FY 2016/2017. The facility is currently estimated at the cost of $10.7 million. It is anticipated the majority of this funding would be Federal sources with STA funds used as the required local match.

Figure 71 provides a summary of the capital plan under an Expanded Funding scenario. Based on the combined funding estimates, METRO will have a growing a cumulative balance from year to year based on the current funding and inflation assumptions. Based on the FY 2014 Final Budget, a surplus of $3.15 million exists. This grows to nearly $8.3 million by FY 2018/2019 (cumulatively). In the case that FTA funds are not available, capital purchases currently supported by FTA funds would need to be provided through other means such as state or local sources.

Figure 70 Expanded Funding Operational Financial Plan

	FY 2013/14	FY 2014/2015	FY 2015/2016	FY 2016/2017	FY 2017/2018	FY 2018/2019
	Estimated/Budget	Projected	Projected	Projected	Projected	Projected
SERVICE HOURS						
Fixed Route	**215,613**	**217,558**	**217,558**	**242,352**	**242,352**	**242,352**
Fixed Route	*194,512*	*196,457*	*196,457*	***221,251***	***221,251***	***221,251***
Highway 17	*21,101*	*21,101*	*21,101*	*21,101*	*21,101*	*21,101*
Paratransit	**46,615**	**46,615**	**46,615**	**52,498**	**52,498**	**52,498**
TOTAL SERVICE HOURS	**262,228**	**264,173**	**264,173**	**294,850**	**294,850**	**294,850**
SERVICE MILES						
Fixed Route	**3,172,011**	**3,197,621**	**3,197,621**	**3,197,621**	**3,197,621**	**3,197,621**
Fixed Route	*2,561,028*	*2,586,638*	*2,586,638*	*2,586,638*	*2,586,638*	*2,586,638*
Highway 17	*610,983*	*610,983*	*610,983*	*610,983*	*610,983*	*610,983*
Paratransit	**624,708**	**624,708**	**624,708**	**624,708**	**624,708**	**624,708**
TOTAL SERVICE MILES	**3,796,719**	**3,822,329**	**3,822,329**	**3,822,329**	**3,822,329**	**3,822,329**
TRANSIT RIDERSHIP						
Fixed Route	**5,587,690**	**5,643,890**	**5,700,320**	**6,312,440**	**6,375,560**	**6,439,320**
Fixed Route	*5,231,340*	*5,283,970*	*5,336,810*	*5,945,290*	*6,004,740*	*6,064,790*
Highway 17	*356,350*	*359,920*	*363,510*	*367,150*	*370,820*	*374,530*
Paratransit	***92,650***	***93,570***	***94,510***	***95,450***	***96,410***	***97,370***
TOTAL RIDERSHIP	**5,680,340**	**5,737,460**	**5,794,830**	**6,407,890**	**6,471,970**	**6,536,690**
OPERATING COSTS						
Fixed Route	**$34,470,060**	**$35,473,160**	**$36,182,620**	**$41,066,410**	**$41,887,740**	**$42,725,490**
Fixed Route	$30,754,330	$31,683,110	$32,316,770	$37,123,240	$37,865,710	$38,623,020
Highway 17	$3,715,730	$3,790,050	$3,865,850	$3,943,170	$4,022,030	$4,102,470
Paratransit	**$5,269,290**	**$5,585,440**	**$5,920,570**	**$7,067,840**	**$7,491,920**	**$7,941,430**
TOTAL OPERATING COSTS	**$39,739,350**	**$41,058,600**	**$42,103,190**	**$48,134,250**	**$49,379,660**	**$50,666,920**
REVENUES						
Fixed Route	**$8,681,010**	**$8,970,480**	**$9,203,050**	**$10,295,970**	**$10,562,180**	**$10,835,310**
Fixed Route	$7,068,970	$7,310,080	$7,492,830	$8,534,450	$8,747,810	$8,966,510
Highway 17	$1,612,040	$1,660,400	$1,710,220	$1,761,520	$1,814,370	$1,868,800
Paratransit	**$285,790**	**$292,930**	**$300,250**	**$310,760**	**$318,530**	**$326,500**
Fare Revenue Subtotal	**$8,966,800**	**$9,263,410**	**$9,503,300**	**$10,606,730**	**$10,880,710**	**$11,161,810**
Federal	**$6,334,480**	**$6,804,410**	**$7,343,710**	**$7,964,380**	**$8,680,750**	**$9,509,960**
FTA Section 5307 (Operating Assistance)	$4,068,220	$4,271,640	$4,485,220	$4,709,480	$4,944,950	$5,192,200
FTA Section 5311(f) (Rural Asst)	$207,570	$212,350	$217,230	$222,230	$227,340	$232,570
FTA STIC Funding	$1,443,690	$1,732,420	$2,078,910	$2,494,690	$2,993,630	$3,592,350
Fuel Tax Credit	$540,000	$513,000	$487,350	$462,980	$439,830	$417,840
Medicare Subsidy	$75,000	$75,000	$75,000	$75,000	$75,000	$75,000
State	**$8,904,530**	**$9,091,020**	**$9,281,430**	**$9,475,860**	**$9,674,360**	**$9,877,060**
TDA	$6,104,530	$6,226,620	$6,351,150	$6,478,180	$6,607,740	$6,739,900
STA	$2,800,000	$2,864,400	$2,930,280	$2,997,680	$3,066,620	$3,137,160
Regional	**$140,000**					
Local	**$20,597,435**	**$19,492,470**	**$20,164,970**	**$27,177,340**	**$28,118,340**	**$29,092,070**
Highway 17 Payments	$242,650	$248,230	$253,940	$259,780	$265,750	$271,860
Commissions	$5,600	$5,730	$5,860	$6,000	$6,130	$6,270
Advertising Income	$265,230	$271,330	$277,570	$283,950	$290,480	$297,160
Rent Income	$160,940	$164,640	$168,420	$172,300	$176,260	$180,310
Other Non-Transportation Revenue	$18,000	$18,410	$18,840	$19,270	$19,710	$20,170
Sales Tax	$18,050,080	$18,681,830	$19,335,690	$20,012,440	$20,712,880	$21,437,830
Additional Sales Tax Funding (Jan 2017)				$6,316,540	$6,537,610	$6,766,430
Interest Income	$100,000	$102,300	$104,650	$107,060	$109,520	$112,040
Subsidy Revenue Subtotal	***$35,976,445***	***$35,387,900***	***$36,790,110***	***$44,617,580***	***$46,473,450***	***$48,479,090***
TOTAL OPERATING & SUBSIDY REVENUES	**$44,943,245**	**$44,651,310**	**$46,293,410**	**$55,224,310**	**$57,354,160**	**$59,640,900**
Annual Balance	**$5,203,895**	**$3,592,710**	**$4,190,220**	**$7,090,060**	**$7,974,500**	**$8,973,980**

Notes on Operating Plan:

Fixed route revenue hours are increased by 1% in FY 2014/2015 (Year 1). That level of service is maintained over the life of the plan. Ridership and revenue are increased accordingly based on the average fare per passenger and average passenger per revenue hour. Fixed route services expand in FY 2016/2017 based on expansion strategies described in the Service Plan.

ParaCruz revenue hours increase in FY 2016/2017 to match increases in fixed route service.

State funding includes Transportation Development Act (TDA) and State Transportation Assistance (STA) funds. Regional Funds includes AMBAG/CTC/Misc. Grand Funding and RTC Route 6 Funds (FY 13/14 only).

Cost and Revenue assumptions escalated per assumptions in Figure 63.

All figures rounded to the nearest 10.

Not shown in the operating plan: $-2.8M SLPP Backfill and $4,554,935 transfer to/from operating reserves in FY 2013/14.

Figure 71 Expanded Funding Capital Financial Plan

	FY 2013/14	FY 2014/2015	FY 2015/2016	FY 2016/2017	FY 2017/2018	FY 2018/2019	TOTAL
	Estimated/Budget	Projected	Projected	Projected	Projected	Projected	
Five-Year Capital Plan (Expanded Funding) Expenses							
Replacement Fixed Route Vehicles	$3,391,010	$2,040,000	$10,664,100	$0	$0	$552,040	**$16,647,150**
Expansion Fixed Route Vehicles		$0	$0	$2,435,470	$0	$0	**$2,435,470**
Small Bus	$0	$0	$120,530	$0	$0	$0	**$120,530**
Mid-sized Van	$0	$172,800	$176,250	$1,318,380	$0	$0	**$1,667,430**
Minivan	$0	$0	$0	$260,220	$0	$0	**$260,220**
AVL/APC Equipment	$0	$0	$0	$5,087,700	$0	$0	**$5,087,700**
Bus Stop Inventory and Enhancement Program	$0	$0	$0	$26,760	$0	$0	**$26,760**
Bus Stop Improvements	$257,300	$0	$0	$0	$547,610	$0	**$804,910**
Non-Rev Vehicles	$287,217	$0	$0	$0	$0	$0	**$287,217**
Facilities	$27,143,803	$0	$0	$10,705,990	$0	$0	**$37,849,793**
Other	$334,500	$0	$0	$0	$0	$0	**$334,500**
TOTAL CAPITAL EXPENSES	**$31,413,830**	**$2,212,800**	**$10,960,880**	**$19,834,520**	**$547,610**	**$552,040**	$65,521,680
Five-Year Capital Plan (Expanded Funding) Revenues							
Federal	*$3,637,151*	*$1,632,000*	*$8,531,280*	*$6,018,520*	*$0*	*$441,630*	***$20,260,581***
FTA Grants	$3,637,151	$1,632,000	$8,531,280	$6,018,520	$0	$441,630	**$20,260,581**
State/Regional	*$28,469,959*	*$3,152,650*	*$3,152,650*	*$3,152,650*	*$3,700,260*	*$3,152,650*	***$44,780,819***
Prop 1B (PTMISEA)	$12,840,000	$0	$0	$0	$547,610	$0	**$13,387,610**
STA	$5,650,106	$0	$0	$0	$0	$0	**$5,650,106**
State Security Bond Funds (1B)	$665,841	$0	$0	$0	$0	$0	**$665,841**
Regional Surface Transportation Program	$3,152,650	$3,152,650	$3,152,650	$3,152,650	$3,152,650	$3,152,650	**$18,915,900**
State-Local Partnership Program (SLPP)	$5,800,000	$0	$0	$0	$0	$0	**$5,800,000**
Statewide Transportation Improvement Program (STIP)	$257,300	$0	$0	$0	$0	$0	**$257,300**
Monterey Bay Unified Air Pollution Control District (MBUAPCD)	$104,062	$0	$0	$0	$0	$0	**$104,062**
Local	*$2,459,370*	*$408,000*	*$2,150,900*	*$3,672,600*	*$0*	*$110,410*	***$8,801,280***
One-time proceeds (Sakata/Lawsuit Proceeds)	$1,335,000	$0	$0	$26,770	$0	$0	**$1,361,770**
Required Local Operating Match	**$10,000**	**$408,000**	**$2,150,900**	**$3,645,830**	**$0**	**$110,410**	**$6,325,140**
Reserved Retained Earnings	$1,114,370	$0	$0	$0	$0	$0	**$1,114,370**
TOTAL CAPITAL REVENUES	**$34,566,480**	**$5,192,650**	**$13,834,830**	**$12,843,770**	**$3,700,260**	**$3,704,690**	$73,842,680
Carryover from Previous Year		$3,152,650	$6,132,500	$9,006,450	$2,015,700	$5,168,350	
Cumulative Balance	**$3,152,650**	**$6,132,500**	**$9,006,450**	**$2,015,700**	**$5,168,350**	**$8,321,000**	

Notes on Capital Plan:

Assumed that STIP funds are used for ParaCruz vehicle replacements and support for Facilities funding (Park and Ride)

RSTP funds based on Caltrans estimates.

FTA Grants are estimated based on capital needs for vehicle replacements, expansion and vehicle upgrades (AVL). FTA funds are assumed to provide 80% of funding with 20% local match. FTA funds are also presumed to support the construction of a Park and Ride facility.

In the event FTA funds are not available, capital purchases will be required to be funded by State or Local alternatives.

Cost and Revenue assumptions escalated per assumptions in Figure

All figures rounded to the nearest 10.

SUMMARY

The following figures highlight a summary of projected operating expenses, capital costs and the net income under the sustained funding and expanded funding scenarios. In both scenarios, the budget operates in a surplus however under the Sustained Funding scenario, the use of carryover funds will be necessary to help fund capital improvements in FY 2016/2017 ($2.1 million).

Based on the Sustained Funding Scenario (Figure 72), a surplus exists in each year of the plan with exception to FY 2016/2017 based on the assumptions outlined in this chapter. The annual (not cumulative) balance is approximately $8.3 million in FY 2014 and increases to approximately $9.7 million in FY 2018/2019. This surplus assumes both operating and capital revenues (including FTA funding). In the case that assumed state or FTA funds are not available, surpluses may be used to fund operational and capital expenses. In FY 2016/2017, it is assumed that carryover funds from previous year surpluses will be used to support the construction of a Park and Ride Facility in Scotts Valley.

Figure 72 Sustained Funding Financial Summary

FY	2013/14	2014/2015	2015/2016	2016/2017	2017/2018	2018/2019
	Budget	Projected	Projected	Projected	Projected	Projected
EXPENSES						
Operating Expenses						
Fixed Route	$30,754,300	$31,683,100	$32,316,800	$32,963,100	$33,622,400	$34,294,800
Highway 17	$3,715,700	$3,790,000	$3,865,800	$3,943,200	$4,022,000	$4,102,500
ParaCruz	$5,269,300	$5,585,400	$5,920,600	$6,275,800	$6,652,400	$7,051,500
TOTAL OPERATING EXPENSES	**$39,739,400**	**$41,058,600**	**$42,103,200**	**$43,182,100**	**$44,296,800**	**$45,448,800**
TOTAL CAPITAL PROJECT EXPENSES	**$31,413,800**	**$2,212,800**	**$10,960,900**	**$17,129,100**	**$547,600**	**$552,000**
TOTAL SYSTEM EXPENSES	**$71,153,200**	**$43,271,400**	**$53,064,100**	**$60,311,100**	**$44,844,400**	**$46,000,800**
REVENUE						
Operating Revenue						
Total Fare Revenue	$8,966,800	$9,263,400	$9,503,300	$9,749,400	$10,002,000	$10,261,100
Total Subsidy Revenue	$35,976,400	$35,387,900	$36,790,100	$38,301,000	$39,935,900	$41,712,700
TOTAL OPERATING REVENUE	**$44,943,200**	**$44,651,300**	**$46,293,400**	**$48,050,500**	**$49,937,800**	**$51,973,800**
TOTAL CAPITAL PROJECT REVENUE	**$34,566,500**	**$5,192,700**	**$13,816,800**	**$10,138,300**	**$3,700,300**	**$3,704,700**
TOTAL SYSTEM REVENUE	**$79,509,700**	**$49,843,900**	**$60,110,200**	**$58,188,800**	**$53,638,100**	**$55,678,400**
ANNUAL BALANCE	**$8,356,500**	**$6,572,500**	**$7,046,100**	**($2,122,400)**	**$8,793,700**	**$9,677,600**

Notes: All figures rounded to the nearest 10. Cumulative carryover funds are not shown.

Based on the Expanded Funding Scenario (Figure 73), a surplus exists in each year of the plan based on the assumptions outlined in this chapter. This balance is approximately $8.3 million based on the FY 2014 Final Budget and increases to approximately $12.1 million in FY 2018/2019. This surplus assumes both operating and capital revenues (including FTA funding). In the case that assumed state or FTA funds are not available, surpluses may be used to fund operational and capital expenses.

Figure 73 Expanded Funding Financial Summary

	FY 2013/14 Budget	FY 2014/2015 Projected	FY 2015/2016 Projected	FY 2016/2017 Projected	FY 2017/2018 Projected	FY 2018/2019 Projected
EXPENSES						
Operating Expenses						
Fixed Route	$30,754,300	$31,683,100	$32,316,800	$37,123,200	$37,865,700	$38,623,000
Highway 17	$3,715,700	$3,790,000	$3,865,800	$3,943,200	$4,022,000	$4,102,500
ParaCruz	$5,269,300	$5,585,400	$5,920,600	$7,067,800	$7,491,900	$7,941,400
TOTAL OPERATING EXPENSES	**$39,739,400**	**$41,058,600**	**$42,103,200**	**$48,134,300**	**$49,379,700**	**$50,666,900**
TOTAL CAPITAL PROJECT EXPENSES	**$31,413,800**	**$2,212,800**	**$10,960,900**	**$19,834,500**	**$547,600**	**$552,000**
TOTAL SYSTEM EXPENSES	**$71,153,200**	**$43,271,400**	**$53,064,100**	**$67,968,800**	**$49,927,300**	**$51,219,000**
REVENUE						
Operating Revenue						
Total Fare Revenue	$8,966,800	$9,263,400	$9,503,300	$10,606,700	$10,880,700	$11,161,800
Total Subsidy Revenue	$35,976,400	$35,387,900	$36,790,100	$44,617,600	$46,473,500	$48,479,100
TOTAL OPERATING REVENUE	**$44,943,200**	**$44,651,300**	**$46,293,400**	**$55,224,300**	**$57,354,200**	**$59,640,900**
TOTAL CAPITAL PROJECT REVENUE	**$34,566,500**	**$5,192,700**	**$13,834,800**	**$12,843,800**	**$3,700,300**	**$3,704,700**
TOTAL SYSTEM REVENUE	**$79,509,700**	**$49,843,900**	**$60,128,200**	**$68,068,100**	**$61,054,400**	**$63,345,600**
ANNUAL BALANCE	**$8,356,500**	**$6,572,500**	**$7,064,200**	**$99,300**	**$11,127,200**	**$12,126,600**

Notes: All figures rounded to the nearest 10.
Cumulative carryover funds are not shown.

12 MARKETING PLAN

Much of the SRTP focuses on service recommendations that can be implemented to enhance the experience of using transit in Santa Cruz County. More direct routes on some lines, better headways, and the potential for additional services will provide more options for riders. However, if riders are unaware of the options or have limited access to information about the services, then METRO will achieve little with expanded and improved services.

To better understand opportunities for promoting public awareness and improving informational tools for transit services in Santa Cruz County, this chapter focuses on a series of marketing and informational tools that were identified as being most relevant for METRO. For each tool, a discussion is included of the following:

- A review of the existing approach and resources used by METRO. The focus is on the appearance of SCMTD assets; simplicity, quality, and availability of information; and ease of using the METRO system.
- An external look to one or more examples of marketing, branding, and outreach undertaken at other transit systems. The purpose is to briefly identify examples from other communities that successfully reach out to their existing riders, potential riders and stakeholders, and have improved the quality and availability of information for the public.
- Opportunities to address needs or shortcomings identified in this planning effort with additional marketing tools.

Information, visibility and tools to debunk misinformation and build support for transportation services tends to lead to an increased willingness to value transit, talk about transit, and ride transit.

MARKETS

Eight primary markets are identified as critical to METRO's efforts to provide information about services, enhance informational tools, and attract new riders. The strategies discussed in this chapter address many of these markets, but the purpose of identifying them is to provide a checklist to METRO, suggesting that each market should be considered in future information and outreach efforts. These markets are as follows:

- **Existing METRO Users.** In one sense, existing METRO users are a captive audience. The improvements recommended as part of this service plan will enhance the service for people who depend on METRO service, and should encourage more use of the system. Even though many existing riders are comfortable with the system and knowledgeable about how it works, even current riders have limited access to information about the

system. In addition, current users need to be better informed of policies on both fixed route and dial-a-ride service.

- **Seniors and Persons with Disabilities.** Many of METRO's current users are senior citizens and persons with disabilities. While many ADA-eligible riders use ParaCruz service, with proposed improvements to frequency and directness of some fixed-route services, some of these individuals may prefer the flexibility fixed-route transit offers. Improvements in facilities, bus stop amenities, accessible stop locations and equipment, and passenger information can help METRO better serve these markets.
- **High School and Middle School Students.** Young residents represent one of the most promising markets for fixed route transit. Young residents who become comfortable with METRO and regard it positively will not only consider riding, but also will understand its value for the community and support it in the future.
- **UCSC Students, Faculty and Staff.** University students represent METRO's largest single ridership group. Opportunities exist for targeted outreach to students, not necessarily to encourage more ridership, but to make them better, more responsible riders and to give them more of a stake in defining how transit can better meet their travel goals.
- **Cabrillo College Students, Faculty and Staff.** Cabrillo College is an important market for METRO, and offered students passes for the system until three years ago. Today, passes are available at a 10% discount. Developing a new college pass and ensuring that amenities and information tools meet the needs of Cabrillo College are potential ways to build loyalty and maximize the effectiveness of service to the college.
- **Tourists.** With beaches, mountains and attractions, Santa Cruz and other portions of the METRO service area are tourist destinations. Little has been done in terms of marketing to cultivate transit use among tourists. Opportunities exist to market the Highway 17 service as a way for Bay Area residents and visitors to access Santa Cruz County.
- **Commuters.** Perhaps the toughest market to attract to transit in Santa Cruz will be local commuters. Some routes are indirect and not designed to compete with private automobiles. Certainly persons without other mobility options are the most likely to consider transit, but persons with jobs served by METRO routes can be encouraged to use transit by providing good information, with routes that meet their needs, and incentives for using transit, including potential employer-focused incentives.
- **Employers.** One of the best means for providing quality public information about METRO transit service, based on input from project stakeholders, is to build partnerships with major employers that are served by transit. METRO is encouraged to meet with major businesses and employers to involve them in the transit outreach process. For example, METRO could undertake a pilot program with an interested employer that would subsidize pass sales for employees and may qualify the employer for a tax incentive in doing so.

MARKETING STRATEGIES FOR METRO

The following strategies were identified as being appropriate for METRO's information and outreach efforts.

- Electronic Informational Tools
- Printed Materials
- Branding of the System
- Fare Media
- Bus Stops – Signage and Facilities
- Coordinated Marketing

Each is discussed in the following sections and a brief summary of opportunities is included on page 181.

Electronic Informational Tools

Existing

Transit agencies of all sizes include a great deal of information about their services on the internet: maps, service information and alerts, service changes, special event information, etc. Transit agencies typically choose a clear and succinct web page URL to maintain consistency with posted signage and reduce confusion. Increasingly, transit agencies have also expanded their web presence onto social media websites such as Facebook or Twitter where more direct communication to existing and potential riders is possible. When Facebook or Twitter users "like," or "follow" the transit agency's page or account, these users receive real-time notice of any updates that the agency makes, whether regarding special offers or service alerts.[21] Other agencies allow riders to sign up for email newsletters to stay informed of any service changes or other news.

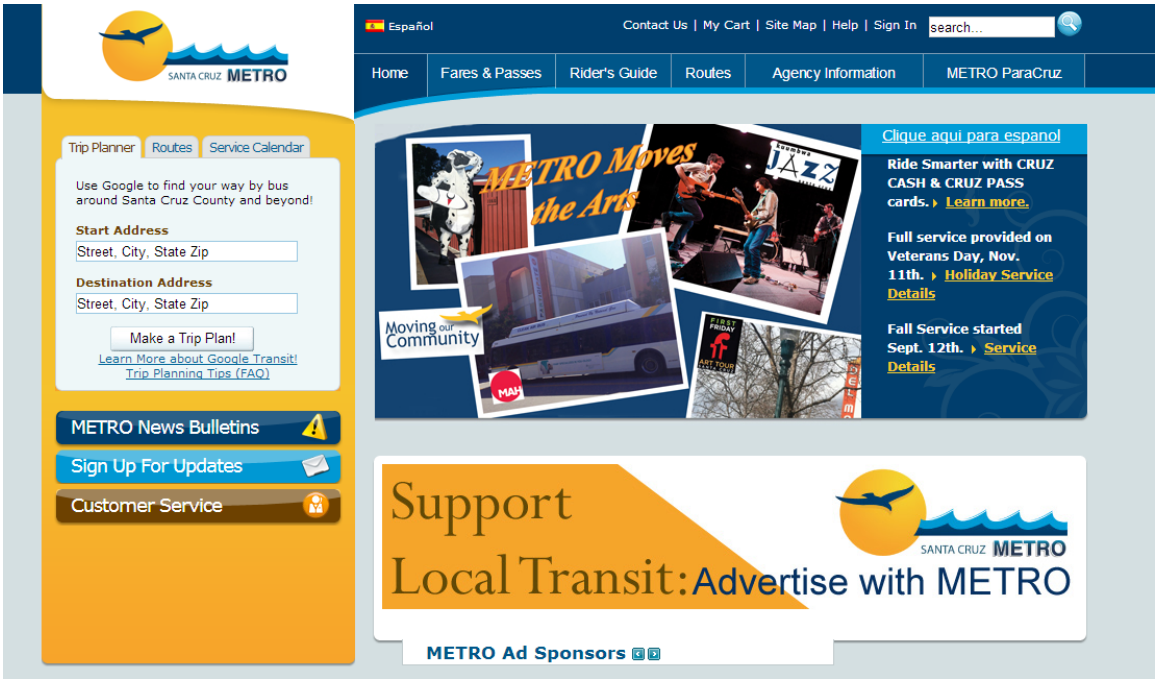
Santa Cruz METRO has a website (see Figure 74) that is managed and updated in house by individuals for several different departments. It includes a trip planning function based on scheduled departure/arrival times and uses Google Transit for mapping and relaying transit information, directing users to the Google website, and allowing users to schedule/map information for connecting transit providers.

The bilingual English-Spanish METRO website (www.scmtd.com) is attractive and comprehensive, and provides detailed information about fares, services, and schedules. Key ParaCruz information is also available on the website (www.paracruz.com also points to the paratransit portion of the website and is promoted in ParaCruz publications and outreach to people with disabilities). The website also includes information about the agency, including updated board meeting minutes — appropriate in a county with high levels of public interest and involvement in transportation.

The site includes information about where tickets and passes can be purchased, and where ticket vending machines (TVMs) are located.

[21] On Facebook, when a user "likes" a transit agency page, they will have the option to "Get Notifications" from the agency in addition to having updates show up in the user's News Feed.

Figure 74 METRO Website Home Page



In addition to its website, METRO offers a text-message-based outreach system whereby registered individuals receive text messages about changes to service or other major events.

Santa Cruz METRO also maintains a Facebook page (Figure 75) and posts informational items to it periodically. With 93 likes (as of October 10), it is not well used, compared with other college town Facebook pages, likely due to its limited content. Santa Cruz METRO also has a Twitter account, but it is not active.

Figure 75 METRO Facebook Page

Examples from Elsewhere

Denton County Transportation Authority provides commuter link service to Dallas from Denton, a college town in north Texas with significant university-oriented service. It serves as a model for METRO because, with a very lean staff, it has been able to successfully publicize itself on the web and through social media. As shown in Figure 76, the agency's web site (www.dcta.net) includes a number of public awareness tools and strategies such as a trip planner, real-time alerts (through Twitter), links to the agency's social media sites, and a set of clear menu options to easily access routes, schedules, and fares.

In addition to an engaging Facebook site (Figure 77), DCTA maintains a Twitter feed, a blog at Wordpress.com, a Foursquare (a location-based social networking website) presence, and a page at the professional networking site LinkedIn. Existing and potential riders may also sign up for "E-Rider Alerts" by email, much like METRO's text-back option.

The agency invested in a service called HootSuite (www.hootsuite.com) that allows staff members to efficiently update all social media pages simultaneously. Because HootSuite is available on mobile devices as well as through a traditional web browser, the agency says that in the event of an emergency, several different staff members can quickly update the agency's web pages with the latest news.

According to DCTA's administrative staff, the quality of a transit agency's web site affects riders' or potential riders' perception of the level of service they can expect from the agency. Web users accustomed to bold, bright, and concise social media services (such as Twitter's 140 character limit) now expect the same of websites, including those of transit providers. Successful transit agency websites, therefore, are those that include lots of pictures and small, concise bites of information.

Figure 76 Denton County Transportation Authority Home Page & Key Elements

Key Elements

Clear agency URL, logo, and name (1).

Quick access to basic information like schedules and fares (2).

Trip planner for fixed route services (3).

Bright banner advertising special offers (4).

Real-time "Rider Alerts." (5).

Ways to stay connected, including signing up for "E-Rider Alerts" by email and links to the agency's social media sites (6).

Figure 77 Denton County Transportation Authority Facebook Page & Key Elements

Key Elements

Clear agency Facebook page name, "RideDCTA" (1).

Promotional banner (2).

Key facts and information, including a contact number and hours of operation (3).

Important news and updates (4).

Opportunities

Opportunities for the METRO website include the following:

- The website should be reorganized, with the most important information readily and easily available. The current site requires more clicking than should be needed. For example, an individual seeking information about fares might logically click on the Fares and Passes tab, which opens a page with a photograph and the suggestion to click on

another tab for more specific information. To find the Route 6 schedule, one must click Routes>Schedules>Local Santa Cruz>Route 6.

- Simplify the site. METRO's goal should be to minimize opening new web pages for the most important information and to reorganize information based on demand for that information. Some search engines have done a good job of indexing the website so users can avoid navigating the site, but it is in METRO's interest for users to go directly to the site and immediately find the information they seek.
- Consider a mobile friendly design for the site. The current site does not translate cleanly to a mobile device. Simple website conversion software and a mobile domain could make the site easier to use for riders who want to get information on their mobile phone.
- Make a systemwide map readily available on the website so someone unfamiliar with the system can get their bearings and understand which routes and service areas will meet their needs.
- Develop a consistent look. Some pages currently use different typefaces than most. The use of photos is somewhat haphazard.
- Ensure a stable website. The website, hosted in-house, goes out of service from time to time and must be rebooted. The consulting team found several occasions when the website was down.
- Once an AVL system is installed, real-time arrival and departure information can be made available on the website.
- Consider a new domain name. Few people think of SCMTD when they think of the transit system. Purchasing santacruzmetro.org or another similar domain may offer the agency greater flexibility in future marketing efforts.

The web site should be maintained regularly and information should be updated as service changes are implemented.

Facebook and Twitter accounts can be managed by savvy administrative staff or customer service staff, and can be used to inform regular users of service changes, detours, or other updates. Social media have been especially successful at closing the information gap for transit providers that do not provide real-time arrivals and departures, and even more useful when they can be integrated into a comprehensive information system. A Twitter follower, for example, can find out that the system is experiencing a major delay on Highway 17 or Highway 1 simply by checking their Twitter feed. Both Facebook and Twitter posts can be consolidated using any number of free (or inexpensive) software packages, including HootSuite, allowing METRO to reach people via whatever their preferred information tool might be.

In the short term, METRO should seek to build its presence on-line to better connect with key youth and college markets, as well as commuters who are accustomed to being connected to social media.

Printed Materials

Existing

METRO's route-by-route maps are good. They are drawn to scale, include stop locations and highlight major timepoints and destinations. Although they are prepared in color and are

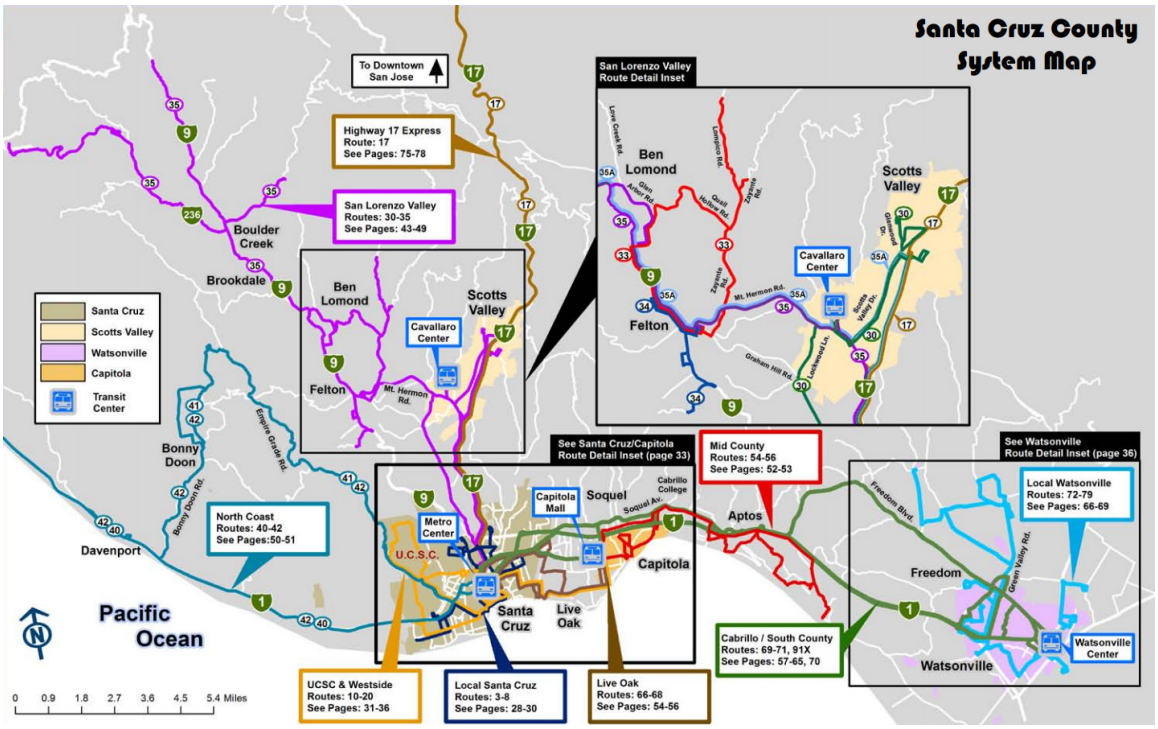
available in color on-line and on bus stop signs, they are printed and distributed to the public in black and white in the quarterly Headways publication.

Route maps could be enhanced with the inclusion of more landmarks, additional street names (for some minor cross streets), locations of TVMs and other METRO resources, and by improving the visibility of stop locations (dots) on the routes, which make it difficult to discern whether the dot references an inbound or outbound stop, or both.

A map posted at the Capitola Mall Transit Center.

METRO's systemwide map could be more useful. In most communities, the systemwide map is one of the most important tools for understanding how the routes work together to allow someone to travel from an origin to a destination. The existing map (Figure 78) is somewhat difficult to read, does not include directional arrows along one-way route segments, and illustrates all routes as being equally important, with a different color for each route.

Figure 78 METRO System Map



Each quarter, METRO prints a system guide, Headways, which is distributed free of charge throughout the Santa Cruz METRO service area. The nearly 80-page guide is printed on newsprint in with black ink, but with a color cover and system maps printed in color on four internal pages, including the centerfold. The print schedule corresponds to route changes that are implemented over the course of the calendar year, with the summer schedule reflecting reduced service to UCSC.

The quarterly Headways contains comprehensive information about the METRO system.

The comprehensive guide, measuring 8 by 10.5 inches folded, includes information about service changes, fares and passes, rider safety, and information about the agency in English and Spanish, and includes all of the maps and schedules for the system.

While some agencies have done away with comprehensive information guides in favor of route brochures (each providing information about one or two routes), METRO continues to provide useful information in one place, making this the primary information tool for the system.

Advantages of the single guide are as follows:

- A single source of information about the services METRO provides.
- Allows individuals without knowledge of the system to determine which route(s) are needed to complete a trip.
- With all information in one place, Headways can be picked up once and kept as a resource for up to four months.

There are also some disadvantages of the single publication:

- The large size of the publication makes it inconvenient to carry – it cannot be folded and carried in a pocket like a small brochure.
- Newsprint makes for inexpensive printing, but it has the appearance of being disposable; a Headways kept in a bag or briefcase will likely become wrinkled/tattered.
- Headways contains much more information than the average rider will require. Comprehensive policy information, riding tips, information about the Board of Directors, and schedules for transit services in communities outside where the reader lives (e.g., Watsonville schedules and maps for a Ben Lomond resident) may be unnecessary.

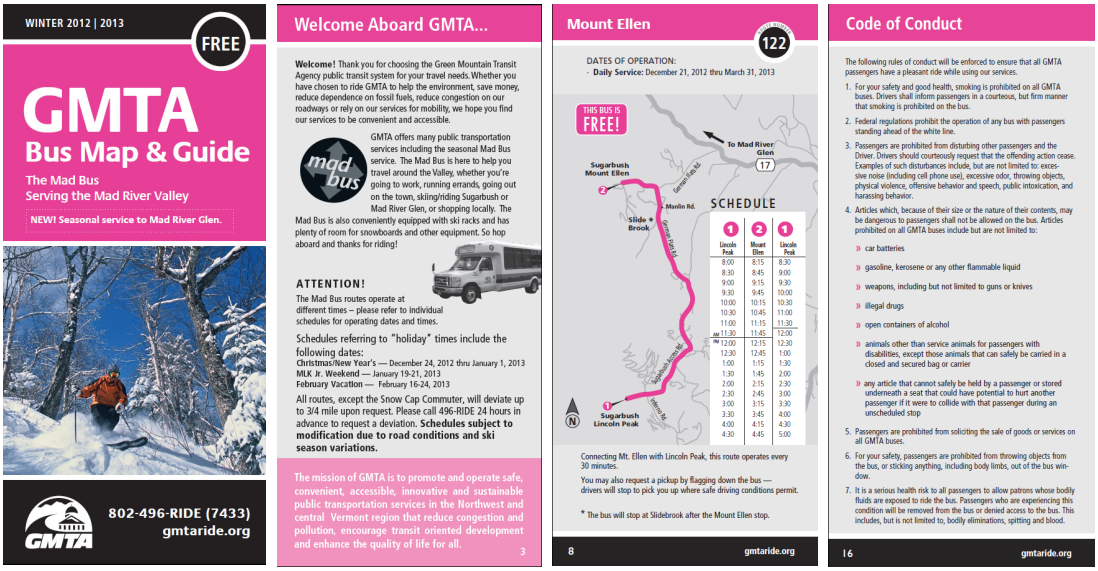
Examples from Elsewhere

The Green Mountain Transit Agency (GMTA) in Berlin, Vermont, has a particularly creative and comprehensive approach to information sharing and marketing. GMTA's printed brochures are full of information and attractive (parts of the latest brochure are reproduced in Figure 79 below).

Each "Bus Map and Guide" (of which there are four, to cover all regions that GMTA serves) includes the following elements:

- General overview of the route system
- Color maps of local services and key destinations
- Rider rules
- Fare information, including types of fares, transfers, and locations to purchase passes
- Service hours
- Transit service policies
- Information on contacting staff with questions or complaints
- A short description of dial-a-ride services

Figure 79 Green Mountain Transit Agency Mad Bus Brochure (Excerpts)



Source: Green Mountain Transit Agency

Like METRO, the brochures, which are updated and printed four times a year, are distributed to a wide variety of locations. Unlike METRO, GMTA tailors its brochures to specific segments of its large service area, and then uses a regional distribution company to stock the guides at the Chamber of Commerce, medical facilities, visitor centers, schools, city offices, local area businesses, general information displays in town centers, tourist areas, grocery stores and human service agencies. Guides are also formatted as schedule box displays. These are 11 inches by 17 inches (tabloid format) and single-route information sheets are posted in durable frames at bus stop locations. Keeping these displays up to date is typically a large job shared by a variety of staff members.

Opportunities

- The agency would benefit from an improved systemwide map that differentiates high-frequency routes from infrequent services, includes major landmark labels (UCSC, Capitola Mall, Cabrillo College, etc.), shows detailed callouts for areas with multiple routes (in Central Santa Cruz, Capitola and Soquel), and indicates park-a-ride lots.

- Consider printing Headways with a stronger cover. Higher quality paper or a full color print job would make the publication more substantial.
- Efforts should be made to encourage riders to keep the brochure and not discard it after one use (some agencies have stamped a price on their brochures — although they have offered the brochures for free — in an attempt to reduce waste and lower printing costs). These could also be sold for nominal charge. Allow people to exchange an old Headways for a new one or purchase a new copy.
- Separate brochures could be produced in English and Spanish, essentially reducing the text in the current brochure by 50%.
- Consider advertising to help offset the costs of printing the brochure. Several transit agencies have included local advertisers on the back cover and within the publication, and have branded their schedule publication as a community transportation guide.
- Consider a standard pocket-sized system brochure (no larger than 4"x11" folded dimension), with a system map. Some of the information in the current guide could be omitted to allow the brochure to be simplified.
- Consider discontinuing Headways and printing smaller brochures or pocket schedules for the routes. Brochures by sub-area could be grouped (i.e., Mountain Communities, Santa Cruz, Soquel-Live Oak-Capitola-Aptos, Watsonville), or brochures could be developed on a route-by-route basis.
- Some agencies have developed special brochures geared to university students, highlighting the routes that serve the campus and specific policies related to their fare passes. Such a brochure may be very appropriate for METRO.

Branding of the System

Existing

Branding means creating an image for a product. The brand identity makes it easy to understand and recognize. This applies not only to consumer products but also to services like transit systems. Santa Cruz METRO is the brand identity for transit in Santa Cruz County and is represented by a graphic image of the sun and seagull, as well as waves. Colors used are white, blue and gold. Buses and most printed information include the METRO logo.

The logo has been updated slightly over the years, and sometimes features the tagline, "Moving our Community." Its application on vehicles is fairly traditional, typically placed on the side of white buses, with blue and yellow stripes and blue around the passenger windows. The logo appears on bus stops, but is not featured prominently on bus stop signs. Although it is very iconic, one of the challenging elements of the METRO logo is that most of the logo area, if one were to assume a rectangular frame around the logo, is comprised of white space. The logo elements are small and word "METRO" can get lost under the ocean waves.

Highway 17 Express bus in Downtown Santa Cruz

The Highway 17 Express service has its own unique brand, which allows for a separate set of marketing tools to differentiate the service from the other routes. The Highway 17 Express uses a dedicated fleet and all buses – although painted in the same way as the local fleet– have the Highway 17 Express identifier, as do signs and schedules for the route. The branding effort has successfully allowed the service to be identified as a premium operation, touting the availability of Wi-Fi and enhanced seating and storage on board.

Examples from Elsewhere

An urban shuttle example comes from Oakland, California, where the Broadway Shuttle (Figure 80) includes a variety of information on the vehicle exterior:

- The website of the service
- Times of operation
- A catchy tagline – "Hop on the B"
- A list of attractions/neighborhoods served by the route
- Fare information – "Free Shuttle"

In developing the vehicle design, planners met to discuss what image they wanted to project about the service. They studied a wide array of bus designs and agency logos and determined that branding the shuttle was as important as branding the city where it operated, making a significant effort to create a design that would instill pride in the citizens of the city. They also branded bus stops and waiting areas, as well as the operation's website to match the look and feel of the vehicles, but the catalyst for the logo and name was the vehicle itself.

Part of the force behind the design of the vehicle was the community's Economic Development Agency, that wanted to offer not only basic transportation for people along the route, but also create something that would make the city more interesting and appealing, provide better circulation within town, and get support from the business community that might otherwise have been wary of new transit services.

Another example of a memorable identity is the MOOver system in Deerfield Valley, Vermont. In conjunction with the distinctive service name, the agency's transit vehicles are wrapped in a Holstein cow marking design that the agency advertises as being "easy to spot." Holstein cows are common in rural Vermont farming communities.

Figure 80 The Broadway Shuttle, Oakland, California and MOOver Transit Vehicle, Deerfield Valley, Vermont

Sources: Flickr user pfsullivan_1056; Deerfield Valley Transit Association

Opportunities

- Expanded use of the logo is appropriate to strengthen the METRO brand. A set of design standards would ideally be adopted by the agency to ensure that all departments apply the logo in a consistent manner, using the background colors, accompanying fonts, and preferred images. Elements of the logo could be repositioned to allow for the word "METRO" to be more prominent.
- The tagline could appear on buses and bus shelters as a reminder of METRO's important role in the Santa Cruz County transportation network.
- With such a long, linear transit network, consideration could be given to branding specific parts of the service as unique types of operations which could be used on bus stop signs, in printed informational materials and on route maps and schedules. For example, services could be specially branded as "Beach Routes," "Mountain Routes," "Watsonville Circulators," etc. Likewise, different zones could be established and branded for North County, Central Santa Cruz County, and South County, using different color schemes, route naming conventions, and providing specialized public information.

A number of agencies have taken liberties with their logos on vehicles, repurposing elements of them to fit the shape of a bus. METRO could rethink its traditional use of white buses with stripes and modify to the logo for the vehicles. A sketch example, shown in Figure 81 illustrates how the look and feel of buses cold be made more dramatic if logo elements were increased in size and repositioned on the buses.

Figure 81 Existing Bus Design Compared with a Conceptual Sketch Bus Design

Fare Media

Existing

A bus pass or CRUZ CARD is the one piece of METRO's brand that users carry with them at all times. METRO has attempted to encourage people to use the CRUZ CARD, a smart card with a memory chip, but with limited success. The CRUZ CARD is available as either a CRUZ CASH Card or CRUZ PASS Card, meaning that individuals may carry a card either loaded with a cash value or preloaded with a ride pass (may be loaded with any one of the METRO's nine pass products). Most smart cards at other transit agencies allow for a combination of fare media to be stored on a single card. For example, an individual could store a local ride pass for trips taken in town, but also maintain a cash balance for an occasional regional trip not covered by their local pass. No CRUZ CARD can be loaded with both cash and pass values.

Santa Cruz METRO's fare program is complex, and opportunities to simplify the program should be considered. A fare study would be appropriate, but in the short-term, an evaluation should be conducted of existing pass products to determine whether any of them might be eliminated or marketed differently. For example, a three-day pass could be marketed as a visitor ticket, and could also provide discounts on entry to local attractions, or come with coupons for Santa Cruz County merchants.

TVMs are the face of METRO's fare payment program, and efforts are being made to introduce new machines in additional locations. The machines provide instructions in English and Spanish, but do not include the METRO logo very prominently (it is small, on an instructions panel). The machines do not vend the CRUZ CARDs —only the paper passes— although CRUZ CARDs can be reloaded at the machines. The machines themselves are relatively user friendly, but the consultant found those in downtown Santa Cruz to be out of order on two occasions.

METRO's Ticket Vending Machine (TVM)

Examples from Elsewhere

Fare media must be tailored to the specific operating environments of transit agencies, but the marketing of fare payment tools plays a significant role in how people view a transit agency and how they interact with it. Examples of some innovative ideas for marketing transit through fares and fare media that are relevant for METRO include the following:

- Butte County's B-Line Transit System, working with the City of Chico, offers a Transit Pass for Chico City employees and individuals who work at a downtown Chico business for transit trips with an origin or destination downtown. The goal is to reduce parking demand downtown, elevate the role of transit, and facilitate a mode shift toward transit in Butte County. Employee passes provide for a free commute on B-Line buses. Persons may apply for the passes with proof of employment in downtown Chico. The City uses parking meter fees to subsidize the downtown employees transit pass program.
- SMART in Detroit offers a Money Back Guarantee. If a passenger rides SMART and is unhappy with the service, they can complete a Money Back Guarantee form to receive a free ticket.
- Metro Transit in Minnesota has an innovative student pass program for youth whereby high schools purchase passes at a discount and sell them or distribute them free of charge to students. It is touted as a program for school administrators to provide students with reliable transportation for a fraction of the cost of yellow school buses. Each school that participates in the program assigns an administrator to manage the school's Student Pass account via an online administrator site. Thus, the schools are responsible for managing and distributing passes (and replacing lost passes, etc.), while the agency benefits from a commitment from schools to encourage their students to use transit. Metro Transit provides brochures and posters for display at the schools.
- In the vicinity of Bend, Oregon, Cascades East Transit maintains an employer Group Pass program, which offers business owners the opportunity to purchase bulk transit passes for their employees. This program is mutually beneficial as the business owner may claim a State of Oregon Business Energy Tax Credit for providing bus passes, and the transit agency benefits from increased ridership.

Opportunities

Short-term opportunities to market fares and encourage public support of the fare program as follows:

- Consider undertaking a fare study to review existing fares, fare instruments, and opportunities to grow revenue returns while improving the marketing function of fares through greater ease of use, availability of fare instruments, and simplification of purchasing fare instruments.
- Develop a single CRUZ CARD smart card that allows for both passes and cash to be loaded. This would eliminate some confusion and would allow greater flexibility for METRO patrons.
- Improve marketing of the CRUZ CARD. Allow for purchase of the CRUZ CARD at additional locations, perhaps using METRO's various ticket vendors to sell the cards.
- Consider handing out CRUZ CARDs at local events, fairs and festivals to improve distribution of the cards. Likewise, cards could be sold at events with a small value already on the card, waiving the $3 card fee and thus encouraging people to use and reload their card.

Bus Stops – Signage and Facilities

Existing

Informative bus stops provide an invaluable ongoing marketing function. Comprehensive bus stop signs show people who are not familiar with METRO that it exists and might be available to them. They also reassure riders that they are at the correct location to board a specific route, and METRO's signs provide detailed schedule information.

A good bus stop sign should be clear and should include the system name and logo. It should provide stop and frequency information, as well as a contact telephone number or website whenever possible.

METRO's bus stops include a graphic image of a bus, and are updated quarterly with schedule and map information for the routes that serve the stop. Information is printed on adhesive panels that are placed on metal signs. Although not especially attractive, and certainly subject to wear and tear, the signs are highly informative. The schedule information on each sign, however, is not tailored to the specific times that the bus arrives or departs from the particular stop.

In addition to signage, many of METRO's bus stops include shelters and/or benches. The agency has a set of standards for where shelters should be placed, but they are rarely used or consulted. Many stops have solar-powered LED lights that can be activated by users who press a large red button (METRO conducted a red button campaign to alert riders to the availability of lighting). Personal safety was consistently identified as one of the key concerns about METRO, and

Bus stop serving three routes in downtown Santa Cruz


Some METRO bus stops have no amenities. Consistent application of standards for benches and shelters is recommended.

lighting is typically introduced by transit agencies seeking to address safety issues.

METRO's transit center facilities are functional if not pleasant. Santa Cruz's Metro Center, which will be replaced by the new Pacific Station will presumably include improved signage and upgraded amenities. Signage upgrades could also be made at Capitola Mall and Watsonville. Once an AVL system is in place, a real-time information system could be implemented at METRO's various transit centers, with electronic message boards to identify when buses are departing and arriving, and at which bays the buses stop.

Examples from Elsewhere

A number of agencies attach a schedule holder to the bus stop pole or to the inside of a bus shelter to include additional information, such as a schedule or a map. These allow for stop information to be developed specifically identifying arrival and departure times for the individual stop. Figure shows several examples of how other agencies that seek to provide schedule information have done so at bus stops and transit centers.

At high-traffic bus stops, or stops around schools, hospitals, or shopping centers, agencies may also install other rider amenities such as a paved concrete pad (in more rural areas) to allow for wheelchair boarding, benches, lighting, a shelter, news racks/bulletin boards, and bicycle racks. Costs can vary for transit stop amenities, but simple bus shelters can be purchased and installed for less than $2,000 each, and bus stop signs cost about $300 installed.

Even though bus stops are typically designed to be simple and economical, it is still possible to repurpose them in innovative and playful ways. As shown in Figure 82, Capital Area Transit in Bismarck, North Dakota, included an advertisement for its own services on a bench at a stop at the city's major shopping center. In Morro Bay, California, local artists transformed the inside of a simple concrete block bus shelter into a "living room," complete with a sculpted couch and painted decorations (Figure 83).

Figure 82 Bus Stop Signage for SamTrans, MST, Long Beach Transit, TriMet (Portland, OR)

Sources: SamTrans Bus Stop photo © BrokenSphere/Wikimedia Commons; all others Nelson\Nygaard.

Figure 83 Innovative Bus Stop Amenity Treatments – Bismarck, ND and Morro Bay, CA

Sources: Nelson\Nygaard; Dana Kimberly Hixson Fine Art

Opportunities

- Consider bus stop sign enhancements to better reflect the METRO brand (use of logo, colors). Simplify data on signs and improve maintenance of signs.
- Consider purchasing bus schedule boxes. Schedules could be replaced only as needed.
- In addition to installing lighting at bus stops, locate bus stops in highly visible locations near street lights or commercial lighting sources.
- Once an AVL system in put into place, schedules could be replaced with real-time information signs at major stop locations (e.g., NextBus LED sign), including transit centers. At minor stops, it is recommended to add a text-back, QR code, or mobile stop entry number to signs to allow patrons to access real-time information via their mobile device.

- Revise bus shelter standards to target shelters in locations with high numbers of passenger boardings or transfers between routes.

Coordinated Marketing

Existing

The primary objective for an information and advertising campaign should be to provide good public information. Although awareness of METRO is good, infrequent riders likely do not know where some bus stops are located and may be unfamiliar with frequencies, travel times and service hours. Implementing enhancements recommended in this SRTP are important, but perhaps just as important is providing information to the public about these improvements.

Several informal marketing and outreach strategies are carried out at METRO, even though the outreach function is highly decentralized:

- Outreach to people with disabilities and travel training is done by the agency's long-term Accessible Service Coordinator. METRO's mobility training program is known as "How to Ride the Bus." The robust and personalized service provides instruction for seniors and people with disabilities on how to use METRO services, use the Headways guide, transfer between buses, purchase fares and discounted passes, and address other specialized needs.
- Planning staff is responsible for outreach on special projects (e.g., Pacific Station), and the development of the Headways publication (maps changes, announcements regarding service changes, the cover, and layout and mapping). Planning also typically responds to requests for public presentations and outreach related to day-to-day services and planned service changes.
- Operations staff prepares schedules and information related to service schedules and safety, including preparation of car cards for the buses, and staff rarely makes public presentations.
- The IT department prepares schedule layouts and prepares the stickers that are placed on bus stops.
- Customer Service staff prepares printed information as needed (including special posters, presentations about METRO, and car cards); takes customer service inquiries; orders and distributes special marketing items; and manages comments and complaints. Customer service staff have helped with surveys in the past, and staff a booth at the County Fair.

Departments work together, but no single department is responsible for the overall appearance of METRO's marketing tools, adherence to any design policies or programs, or management of the marketing function.

Examples from Elsewhere

Some small agencies have a specific marketing/outreach position on staff, with an individual or department responsible for development of a marketing plan, development of advertising policies and plans, media purchases, and the supervision of marketing activities within the organization. In most agencies, this individual is responsible for bus schedule information, customer service, website design and maintenance, and the organization's outreach activities.

In addition to overall staffing and organizational structure, some organizations have implemented unique coordinated marketing and outreach efforts, such as the following:

- Tri-CAP Transit Connection in Waite Park, Minnesota operates a Transportation Resource Center (TRC), created in 2008 to be the central access point for transportation information in Central Minnesota. The TRC seeks to work with employers and an array of human service agencies to figure out their employees' or consumers' needs and then work to establish a program to serve those needs. The goal is to make transportation as responsive as possible to the needs that exist and develop creative solutions. The organization maintains a database of major employers and tries to schedule regular outreach meetings at the worksites to engage employees and ask them about their transit and/or ridematching needs. Staff provides informational materials and a number of resources, and schedules meetings directly with employees whenever possible.
- In the Bay Area, the SamTrans Mobility Ambassador Program provides assistance to potential and new riders regarding a variety of transportation-related issues and options, including how to plan a trip using public transit. Ambassadors may offer educational presentations, conduct group and one-on-one rider training, and organize group trips on transit to interesting destinations in the area.
- The Heart of Iowa Regional Transit Agency (HIRTA), a service in seven central Iowa counties, has an individual on staff whose role is to work with local public transit and planning agencies, as well as human service agencies to market and coordinate services. This mobility coordinator attends meetings with businesses and human service agencies, provides mobility trainings and leads an informational and outreach program for current transportation services, making public and media presentations, preparing outreach materials and developing a marketing plan.
- GMTA, discussed above, uses time on a local cable access channel to talk about services, direct benefits, the fun component of public transportation, and its safety and reliability. Staff also speak to local schools and present at libraries. They emphasize that the best outreach comes from staying on top of local issues, especially those related to local business and residential developments, economic challenges in a particular community or group, and senior citizen concerns.

Opportunities

Staff is encouraged to build on the momentum of this plan and provide regular, informative notices to the public about the service and proposed service changes. Reassessing responsibilities within METRO may help facilitate a more coordinated outreach approach.

- **Organizational roles.** An organizational structure that assigns responsibility for oversight/management of marketing activities to a single individual or department may be appropriate. This would not mean that the department should be responsible for all of the existing marketing functions, but would coordinate these functions and ensure that all informational materials, outreach presentations, posters, car cards, and capital investments have a consistent look and feel and maintain a consistent marketing message.
- **Print Advertisements.** The most critical advertising opportunities include (1) any public meetings that would be required prior to the implementation of the recommended service changes; (2) the rollout of service changes, and (3) any service changes implemented at a later date.

- **Piggybacking on Local Public Information and Advertising Campaigns**. The Santa Cruz Beach Boardwalk, Conference and Visitors Council, Santa Cruz Chamber of Commerce, and other organizations advertise via presentations, travel brochures, informational campaigns, and newsletters. METRO would benefit from working with these organizations and other local boosters to improve the dissemination of transit information in the region. Furthermore, enhanced coordination and shared advertising opportunities should be explored with MST, Amtrak, and several of human service providers that operate in the county. By pooling limited advertising resources, the agencies can focus on the seamlessness of regional travel and how they collaborate to get people to their destinations.
- **Partnership with Cabrillo College.** Many transit systems have seen their ridership numbers increase dramatically when they maximize their marketing resources in partnership with a community college. Promotion of the METRO services at Cabrillo College could be done in conjunction with parking information for the college, orientation materials, and potentially through an agreement that the college returns to using some student fees to effectively cover the fares of students and staff, allowing them to ride METRO without paying a fare each time they board. The College has expressed interest in this type of agreement, which could be marketed as a benefit.
- **Provide targeted outreach to UCSC students** at orientation and through the housing program on campus via resident advisors in the residence halls.
- **Working with RTC.** METRO has an opportunity to enhance the relationship with the RTC's Commute Solutions program, which provides information, resources and support to help travelers of all modes, including transit, to effectively use the transportation system. RTC staff have expressed interest in potential joint agency efforts to conduct employee commute surveys at large employers, implement individualized marketing programs, and co-host campaigns specifically targeted towards increasing transit use. A partnership for delivering traveler information could also be considered for the new Pacific Station.

  A new 511 traveler information service for Santa Cruz County is currently being developed by the RTC. Because transit information is a key component of this service, Santa Cruz METRO and its riders will benefit by ensuring the agency offers relevant and up-to-date transit information and, when it becomes available, real-time information about bus arrival times.
- **Ongoing Public Relations.** Advertising need not always be expensive. Some of the best advertising METRO can do get is by word of mouth and by making use of free access to the public and the press.
  - METRO enjoys some free press coverage and some government-related coverage. In addition, by participating in local special events, the system can gain further public exposure.
  - Transit education programs in the schools and at senior centers, in addition to rider education programs can maintain ridership and create demand for transit services. METRO staff – customer service, planning, and operations — are available for community presentations. Although demand is limited, having METRO staff available to speak at major events (or to school or senior group) about using transit is an excellent way for inexpensive public information. Public speaking not only allows one to get across a simple message regarding services and availability, but also allows

the speaker to educate potential riders how to use METRO, making them better riders. An effective speaker might allow the audience to address concerns about using METRO service, allaying fears and explaining the benefits of transit. Such speaking engagements also are good opportunities for distributing promotional items and information brochures.

- In addition to public speaking, the Santa Cruz Sentinel, Santa Cruz Weekly, the Register-Pajaronian, and a number of smaller papers, websites and blogs, radio stations, as well as the local cable access station, regularly seek informative news items and are glad to make available news in the public interest. Because METRO is a community service, published press releases can amount to regular media exposure. Writing and faxing press releases does not have to be labor intensive and is an excellent means of free advertising.
- Special events can make for effective and inexpensive advertising. These events might include sponsorship of a transit party; special shopper buses to downtown Santa Cruz, Scotts Valley or Capitola; displaying buses at fairs, parades and festivals throughout the area; participation in UCSC and Cabrillo College student orientation events; and other activities for children and seniors.

NEXT STEPS: EVALUATION OF MARKETING IMPACTS

Even with the implementation of the service and marketing recommendations, METRO may remain unaware of its successes (or have more dissatisfied customers than are known). Individuals will make an effort to complain if something goes wrong; rarely do they take the time to offer praise. Knowing the customer service issues that may arise can help METRO staff to make service modifications or take other corrective actions as needed. METRO must monitor its marketing and public information progress. By providing good customer service, transit users can call to describe poor experiences or problems with bus rides. A telephone number alone, however, is often not enough to encourage somebody to call. METRO users may be more comfortable, or may find it easier, to provide feedback using comment cards, on-board surveys, or the Internet.

A monitoring program will provide important information about the effectiveness of the marketing and public information efforts. Evaluating the marketing program enables METRO staff to reevaluate marketing goals and identify new strategies. Even the most successful businesses will admit that marketing is a trial-and-error process. Evaluating marketing efforts enables METRO to enhance the most successful programs and shift resources away from programs that have either reached their greatest success or require a change in emphasis.

To evaluate the success of the program, METRO is encouraged to conduct follow-up on-board bus surveys. These surveys can help to evaluate any facet of an individual's travel decision-making process, overall familiarity with services, and the effectiveness of the METRO information distribution network.

Another alternative to evaluate the marketing and public information effort would be to conduct focus groups. Focus groups can be used when more extensive qualitative input is required than a survey can provide. Focus groups can lead to productive work sessions in which not only can METRO obtain the information required, but also the participants feel like they are involved in an important decision-making process. Groups of individuals can be organized to participate in a

one- or two-hour focus group to allow for verbal feedback on transit facilities, signage and public information and proposed transit service changes.

CONCLUSION

Transit agencies have found that taken together, the marketing and public awareness strategies discussed in this chapter help to confirm within a community that transit is an integral part of daily life. Buses help reduce congestion in Santa Cruz County, provide affordable mobility, and sport the METRO brand that incorporates local geography, instilling a sense of connection to Santa Cruz and local pride among riders and non-riders alike.

Figure 84 summarizes the key marketing program opportunities discussed in this chapter.

Figure 84 Summary of Recommended Program

Strategy	Opportunities
Electronic Informational Tools	Reorganize and simplify the website. Consider a new domain name. Consider a mobile friendly design for the site. Make a systemwide map readily available on the website. Once an AVL system is installed, real-time arrival and departure information can be made available on the website. Make better use of social media tools.
Printed Materials	Improve systemwide maps. Consider options to improve printed quality of Headways or consider printing separate brochures by subregion or route. Consider advertising to help offset the costs of printing the brochure. Develop special brochure, with UCSC, targeting University transit options.
Branding of the System	Expanded use of the logo is appropriate to strengthen the METRO brand. Consider branding specific parts of the service area as unique operations. Evaluate potential for updating METRO buses.
Fare Media	Develop a single CRUZ CARD smart card that allows for both passes and cash to be loaded. Improve marketing of the CRUZ CARD and distribute it at events.
Bus Stops – Signage and Facilities	Consider bus stop sign enhancements to better reflect the METRO brand (use of logo, colors). Simplify data on signs and improve maintenance of signs. Once an AVL system in put into place, schedules could be replaced with real-time information signs at major stop locations; add a text-back, QR code, or mobile stop entry number to signs to allow patrons to access real-time information via their mobile device. Revise bus shelter standards to target shelters in locations with high numbers of passenger boardings or transfers between routes.
Coordinated Marketing	An organizational structure that assigns responsibility for oversight/management of marketing activities to a single individual or department is desired. Implement targeted print advertisements, piggyback on local public information and advertising campaigns. Conduct ongoing public relations and participation in special events.

The examples of marketing strategies used by midsize and countywide transit agencies to increase public awareness about available public transportation services range from small scale enhancements to websites and printed information to more robust branding and social media efforts. While some of the strategies are basic, there are a wide variety of creative approaches that can be taken to publicizing public transit Santa Cruz County. When combined as part of a larger marketing plan, these strategies can help to increase and improve the public perception of transit while continuing to serve an important role in the community.

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13 IMPLEMENTATION PLAN

The METRO service network has multiple elements that are interconnected. This SRTP recommends service changes may be implemented independently, and others that require packaging of multiple route recommendations. The implementation plan below shows which recommendations are independent, and which are not.

The implementation plan focuses on multiple improvements and is spread over several years to ensure that staff capacity for implementation is available. The first year focuses on no-cost service improvements and lays the groundwork for future improvements by implementing service standards and collecting the appropriate data so that METRO can better address load and on-time performance issues.

The following years focus on combined capital and service changes, such as the Transit-Emphasis Corridors, updating marketing materials, and leveraging new investments such as AVL and new a park-and-ride

The final year of the implementation plan focuses on expanded service levels. These recommendations are not fiscally constrained, but represent the best opportunities for METRO to enhance mobility in Santa Cruz County.

FY 2014-2015 Implementation

Route Recommendations

- Routes 4 & 8 – Simplify the alignments to create two stand-alone routes instead of the combined loop route.
- Route 12 – Simplify the route map and service by converting the one Route 12 trip into an additional Route 68 and Route 16 trip.

Policy Recommendations:

- Set Operational Service Standards
- Introduce Transit-Emphasis Corridors

Operations Recommendations:

- Update system map to reflect route frequency
- Begin collecting on-going operational service data, including:
  - Loads

- On-time performance
- Boardings per Revenue Hour

FY 2015-2016 Implementation

Route Recommendations

- Begin Transit-Emphasis Corridor Implementation
- Adjust Route 17/35/35A to use Soquel Avenue instead of Water Street
- Adjust Route 71 to use Soquel Avenue instead of Water Street in Santa Cruz.
- Restructure Routes s 69A, 69W, 71, and 91x schedules between Watsonville and Santa Cruz to improve corridor frequencies and better match demand with service levels.

Policy Recommendations:

- Create bus-stop policy and approve deviation standards

Operations Recommendations:

- Update website and coordinate electronic media strategy

FY 2016-2017

Route Recommendations

- Consolidate Routes 54, 55, and 56 to simplify routing /scheduling

Operations Recommendations:

- Begin Bus Stop Assessment Program (consolidation)
- Construct Scott Valley Park-and-Ride
- Implement AVL system

FY 2017-2018

Route Recommendations:

- Simplify UCSC schedules for Routes 15 and 16 to better distribute loads

Operations Recommendations:

- Update “Headways”
- Expand branding of METRO

FY 2018-2019

Route Recommendations:

- Implement additional service between downtown Santa Cruz and Cabrillo College
- Extend span on 69A / 69W, and 91X
- Extend Route 3 to UCSC.
- Expand ParaCruz capacity

Operations Recommendations:

- Conduct fare study