Santa Cruz County Onboard Transit Ridership Survey

FINAL REPORT

AUGUST 2012

moore & associates

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List of Exhibits

EXECUTIVE SUMMARY

The Santa Cruz County Regional Transportation Commission (RTC) and the Santa Cruz Metropolitan Transit District (Santa Cruz METRO) received a Rural or Small Urban Transit Planning Studies Grant from the California Department of Transportation to conduct an on-board transit ridership study.

The three main goals of this project were to:

1. Collect current ridership data for input into the Association of Monterey Bay Area Governments (AMBAG) regional travel demand model to more accurately reflect current transit use as well as forecast future transit ridership.
2. Assess the limited English proficiency population in order to comply with Title VI requirements.
3. Collect transit service and performance data to assist in future service planning.

Moore & Associates was selected to complete the Transit Ridership Study which consisted of an onboard fixed-route customer survey and on-time performance and boarding/alighting. Data collection efforts were completed on April 17-19, 2012 and April 24-26, 2012 (Tuesdays/Wednesdays/Thursdays). A total of 1,972 valid surveys were collected; 1,016 of which were 100 percent complete (all questions had 100 percent responses except for demographic questions), a statistically-valid sampling.

Key Findings

Respondent trip origin-destination and boarding-alighting location data are presented in Appendix A. These exhibits present the general flow of travel throughout the service area and identify significant "magnets" for trip generation. The origin-destination map shows travel with a minimum of at least one leg of travel being transit within the Santa Cruz/Capitola area, between Santa Cruz and UCSC, Santa Cruz and Watsonville, and Santa Cruz/Capitola and Scotts Valley.

The onboard survey revealed the profile of Santa Cruz customers to be people who use the bus 5 or more times per week, to have an income of less than $15,000 per year and to be 16-24 years old. Home, school, and work were the three most common purposes. The majority of respondents were coming from home (44.9 percent), school (24.7 percent), and work (11.5 percent); and going to school (32.7 percent), home (30.7 percent), and work (14.3 percent). The trip purpose varied based on education level, income, and age. The majority of respondents walk to and from the bus stop (75.8 percent walking to and 79.3 percent walking from) with 48.6 percent walking less than five minutes to their stop and 49.7 percent walking less than five minutes from their stop to their destination. The majority of respondents cited using METRO five or more times a week (67.7 percent). Ninety-four percent of respondents cited using METRO fixed-route services at least once weekly.

Total travel time cited varied from one minute to 400 minutes with an average trip duration of 35 minutes. Approximately 47 percent of respondents indicated a trip duration of 25 minutes or less. The majority (81.9 percent) indicated not having a personal vehicle available to make the trip. Therefore, the majority of respondents are "captive riders" rather than "choice riders".

When asked what the most prevalent barrier is to using METRO, the most common response was "nothing" (34.7 percent). Other common barriers were "does not travel when I need it" and "costs too much/lack of financial resources" (20.2 and 10.9 percent, respectively). The three most requested service improvements were "increase service frequency" (25.7 percent), "real-time bus arrival information" (14 percent), and "shorter travel time" (13.3 percent).

The primary method of obtaining information regarding METRO service varied by respondent demographic (i.e., age, income, and education level). However, the most-frequently cited forms of obtaining information (in hierarchical order) were:

- METRO's website (46.8 percent),
- Paper bus schedule (36.4 percent),
- Google Transit (11.4 percent),
- Other (3.2 percent), and
- Call METRO customer service (2.2 percent).

Limited-English Proficiency Assessment

Several data cross-tabulations were produced so as to extract information with respect to Spanish-speaking respondents. A total of 108 surveys were collected in which the respondent chose to complete the survey in Spanish. A number of interesting patterns and trends became evident. More than 25 percent of Spanish-speaking respondents indicated there were no barriers to their use of METRO. The most-frequently cited barrier was "does not travel when I need it" (nearly 20 percent). The most common trip purposes were "home" and "work," which contrasts with English-language respondents who indicated "home" and "school." Spanish-speaking METRO customers heavily favor the printed bus schedule (Headways) (more than 70 percent).

On-Time Performance and Boarding/Alighting Information

Route-by-route on-time performance and boarding/alighting information was collected along with the transit rider survey. Total trips reported as either late or missed amount to 24 percent of all surveyed trips. Routes 4, 12, 20, and 91X to Watsonville (outbound) in particular experienced many early departures. Routes 8, 54, 69W (outbound), and Route 74 reported 100 percent on-time performance during the ride check. Detailed boarding and alighting exhibits for each route/direction are presented in the Appendix C. These exhibits identify the activity on a stop-by-stop basis. As seen in the charts, local stops serving UCSC typically experience the greatest boarding and alighting activity.

1 - OVERVIEW

An on-board transit ridership study was conducted in Santa Cruz County by the Santa Cruz County Regional Transportation Commission (RTC) and the Santa Cruz Metropolitan Transit District (Santa Cruz METRO). This study was funded through a Rural or Small Urban Transit Planning Studies Grant from the California Department of Transportation. The RTC is the state-designated regional transportation planning agency and the Santa Cruz METRO operates and manages the countywide bus system. This study encompasses the fixed-route bus system that operates in Santa Cruz County (Exhibit 1.1). RTC and Santa Cruz METRO are also coordinating with the Association of Monterey Bay Area Governments (AMBAG), the federally designated metropolitan planning organization (MPO) for the region and the agency that maintains the regional travel demand model (RTDM).

Up-to-date transit ridership data is essential to support planning efforts that achieve statewide and regional goals for the reduction of vehicle miles traveled (VMT) and greenhouse gases (GHG). Santa Cruz County, like many regions, will rely on the RTDM for evaluating the impacts of new transportation investments on GHGs and other regional goals. Increasing transit ridership can be an important strategy for reducing VMT and GHGs. Current transit ridership data was collected to enable the RTDM to reflect current transit use as well as forecast future transit ridership more accurately. In addition, the survey data will enable Santa Cruz METRO to quantify the population of its service-area that speaks a primary language other than English in order to ensure Title IV compliance.

Across the last few years, Santa Cruz METRO has seen transit ridership increase by three percent, while funding for transit operations decreased by 2.2 percent. In this environment, transit operators are reviewing transit ridership and on-time performance data to evaluate service efficiencies. The on-board transit ridership survey collected valuable data to analyze and evaluate transit service and assist in future service planning.

Moore & Associates was selected by the RTC, the Santa Cruz METRO and AMBAG to complete the transit ridership study. The study included an onboard fixed-route customer survey on all Santa Cruz Metro routes. Information collected included travel patterns, preferred service improvements, and demographic information. On-time performance and customer boarding and alighting data was also collected concurrently (referred to herein as “ride check”).

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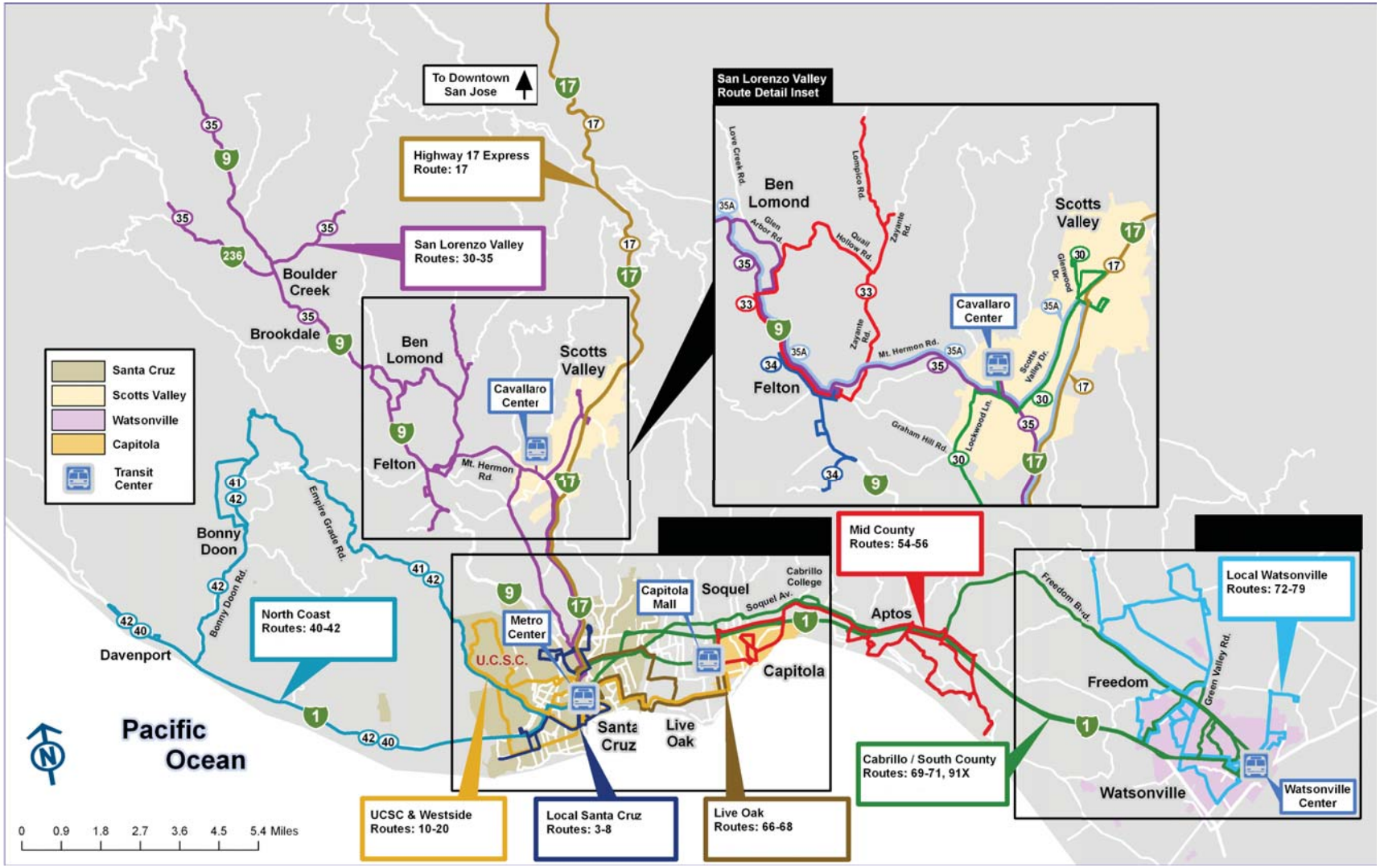
Exhibit 1.1 Metro System Map



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2 - SURVEY METHODOLOGY

Best Practices

Moore & Associates completed the survey and ride check utilizing industry practices published in the National Center for Transit Research (NCTR) "best practices" for onboard customer surveys. Said document identifies the following steps when planning and conducting a survey of public transit riders:

1. Define and Clarify Objectives,
2. Identify Sample,
3. Define Data Collection Methodology,
4. Design Questionnaire,
5. Train Surveyors,
6. Conduct Pre-test of Questionnaire and Survey Methods,
7. Conduct Survey,
8. Process and Analyze Data and
9. Report Results. [1]

Onboard Survey Planning and Preparation

Upon receipt of a Notice to Proceed, the Moore & Associates project team met with SCCRTC, METRO and AMBAG representatives on March 6, 2012 for a project initiation meeting. The project scope, timeframe, and methodologies were finalized during this meeting. Project objectives were also clarified and defined. Subsequently, client staff was granted access to Basecamp project management software.

A survey sampling plan was crafted and submitted for approval on April 3, 2012. The plan included proposed fielding dates, routes, and day-parts, with sample size goals for each route. Sample size goals were based on the percentage each route comprised of the average daily ridership onboard METRO routes. Sample targets for all METRO routes were met, including completed surveys for each day-part that routes operated. Day-part periods were provided by the regional travel demand model and are as follows:

- AM Period: 6:00 a.m. to 9:00 a.m.
- AM Peak: 7:00 a.m. to 8:00 a.m.
- Midday: 9:00 a.m. to 4:00 p.m.
- PM Period: 4:00 p.m. to 7:00 p.m.
- PM Peak: 5:00 p.m. to 6:00 p.m.

A matrix of survey responses obtained by route can be found in Appendix A.

[1] Baltes, M. R. (2002). *Customer Surveying For Public Transit: A Design Manual For On-board Surveys.* Center For Urban Transportation Research. Tampa, FL: National Center For Transit Research (NCTR).

The survey instrument was designed to gather information that will support regional transportation planning needs. The types of information gathered can be divided into three groups: data needed for the regional travel demand model (including origin and destination information, trip purpose, mode to access transit), preferred service improvements, and limited-English proficiency assessment. The survey questionnaire was approved by SCCRTC on April 3, 2012. We created three different versions of the instrument (Versions A, B, and C) to mitigate against response bias for those questions with multiple response options. Each version of the instrument was translated into Spanish. A copy of the instrument (Version A) is included in Appendix A.

Surveyor training was conducted on April 16, 2012. The training was completed in three sessions (12:00 p.m., 1:45 p.m., and 3:30 p.m.) so as to establish a pool of qualified bilingual surveyors. Matt Leal of SCCRTC was present during the 3:30 p.m. session and observed the training. All trainees were provided instruction on the following topics:

- Project background,
- Data collection (survey and ride check specific),
- Survey fielding materials and procedures,
- Survey questions/form, and
- Bus safety and information.

Subsequent to the training, our data collection team conducted a pre-test of the instrument and concluded there were no significant issues or concerns with the instrument or methodology, nor any barriers to customer response. The pre-test was conducted by two Moore & Associates' staff on April 16, 2012. The test, which resulted in 40 completed surveys (including survey versions A, B, and C) was conducted at the Downtown Transit Center. The pre-test form responses were not included within the data analysis, as there was no way to verify which route the respondent was referencing.

Car cards were designed and produced for the promotion of the survey. Two cards were installed on all METRO vehicles one week prior to the commencement of data collection. Survey and ride check data collection was conducted onboard METRO buses April 17 through 19, 2012, and again April 24 through 26, 2012. Per SCCRTC direction, data collection was limited to Tuesdays, Wednesdays, and Thursdays as these days more accurately reflect average weekday ridership.

Fielding

Each surveyor and/or ride checker was given the required fielding materials at the beginning of each shift. Materials included a reflective vest, ID badge, survey/ride check forms, clipboards, writing implements, and shift information (including route schedule and map information).

Surveyors offered each person boarding above the age of 16 an opportunity to complete a survey. If the passenger appeared under 16 the surveyor asked the passenger to verify their age. Our bilingual surveyors assessed the ability of each patron to complete the survey, and assisted as necessary. Assistance provided included the reading of survey questions for the patron (to minimize possible bias based on literacy) as well as answering any questions the respondent may have had in the rider's

preferred language (English or Spanish). Surveyors assisted in the actual completion of surveys at a patron's request.

The survey was conducted using a combination of onboard intercept (i.e., informal interview) and customer self-response on hard copies of the survey forms.

Survey efforts were coordinated so as to complete the customer survey and ride check concurrently. Surveyors worked in pairs; every vehicle was staffed with a surveyor and a ride checker. This was done to minimize the incidence of errors due to surveyors being "stretched too thin" to accurately record both survey data and ride check information.

Upon completion of each week's data collection, survey forms were shipped to Moore & Associates' Valencia office for data entry, cleaning, and verification. All data entry was overseen and verified for accuracy by our staff. The resulting data was then processed utilizing our in-house Statistical Package for the Social Sciences (SPSS) platform to generate initial response frequencies. These initial frequencies were submitted to SCCRTC for review on May 2, 2012. A complete set of response frequencies, and the ride check data with on-time performance/boarding and alighting summaries, was submitted on May 22, 2012. Additional ride check data is presented in Appendix B.

Each transit survey record attempted to descriptively convey information about four physical locations: trip origin, trip destination, where the rider boarded the bus and where he or she exited the bus. For this information to be useful for the regional travel demand model, the geographic coordinates of all four locations were determined through geocoding. This involves assigning latitude and longitude coordinates to each of the provided locations. Respondents were able to provide an address, cross streets or a landmark for each of these questions. We also utilized the website www.itouchmap.com to calculate these locations and convert to lat/long coordinates. A database was created and then entered into the program ArcGIS for visual representation of the findings.

3 - ONBOARD TRANSIT RIDER SURVEY RESULTS

Santa Cruz METRO provides approximately 21,000 rides on a typical weekday in April. As the survey effort was limited to weekday riders in April we utilized this figure as our sample size when calculating statistical validity. In order to achieve statistical validity at the 95-percent confidence level (i.e., plus or minus a five-percent margin of error) this required 377 completed surveys. In actuality we obtained 1,282 complete surveys resulting in statistical validity at the 95-percent confidence level with a margin of error of 2.66 percent. Of these, 896 surveys include valid geocoded locations. Surveys completed by route can be seen in Exhibit 4.6.

Key findings from the survey are presented below along with relevant exhibits. Response exhibits for all survey questions are presented in Appendix A.

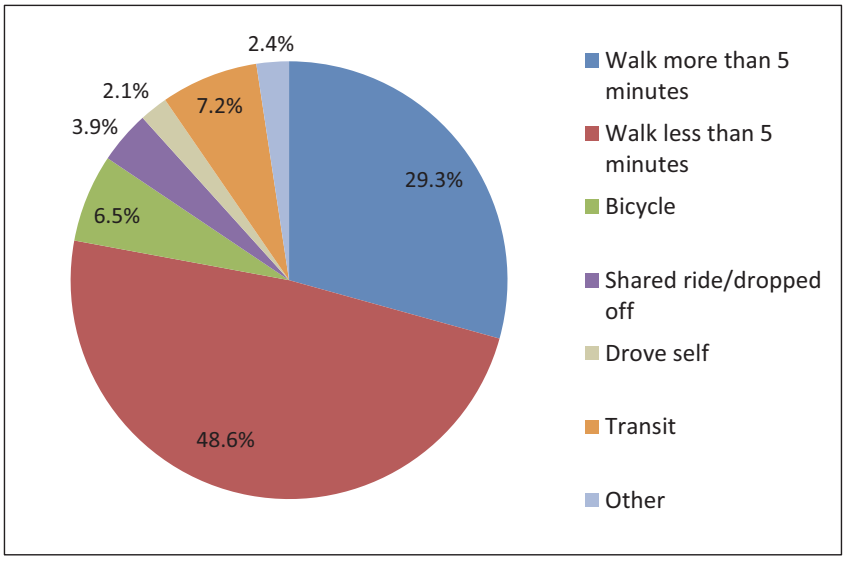
Origin and destination information

Maps showing the origins and destination locations can be found in Appendix A. In general, the majority boarding and alighting activity reported by respondents who rode local routes took place south of Mission Street and north of Laurel Street, as well as UCSC. Watsonville accounted for the majority of commuter trips, most of which originated at the Watsonville Transit Center.

MODE TO/FROM BUS

The majority of METRO customers surveyed indicated that they walk to and from the bus stop (80 percent walk to the bus stop and 75 percent walking from the bus stop to their destination). Approximately 7 percent of the respondents indicated transferring from or to another bus and 6 percent accessed the bus using a bicycle. Only 2 percent drove to the bus stop. These results highlight the importance of good pedestrian access to transit including bus stops within walking distance of key origins and destinations and complete sidewalk coverage with no barriers to access. Ensuring proper bus stop amenities supports customer safety and comfort.

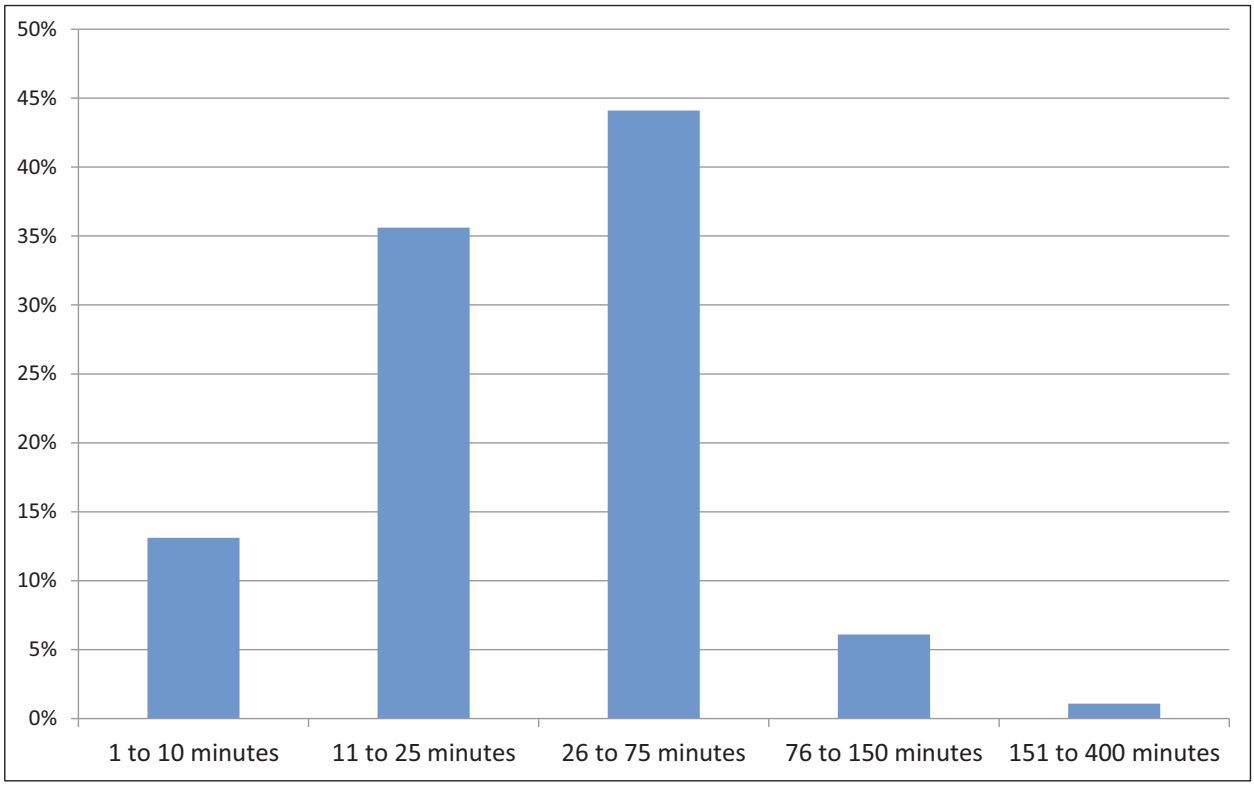
Exhibit 3.1 Q5. Access to Starting Bus Stop



TOTAL TRAVEL TIME

Exhibit 3.2 reveals that when asked to estimate their total travel time for the trip, many METRO riders (nearly 48-percent) spend 25 minutes or less traveling to their destination. This implies a high number of "in-town" trips occur on METRO routes. More than six percent cited a total travel time of at least 76 minutes and a maximum of 400 minutes (the latter included travel to San Jose International Airport).

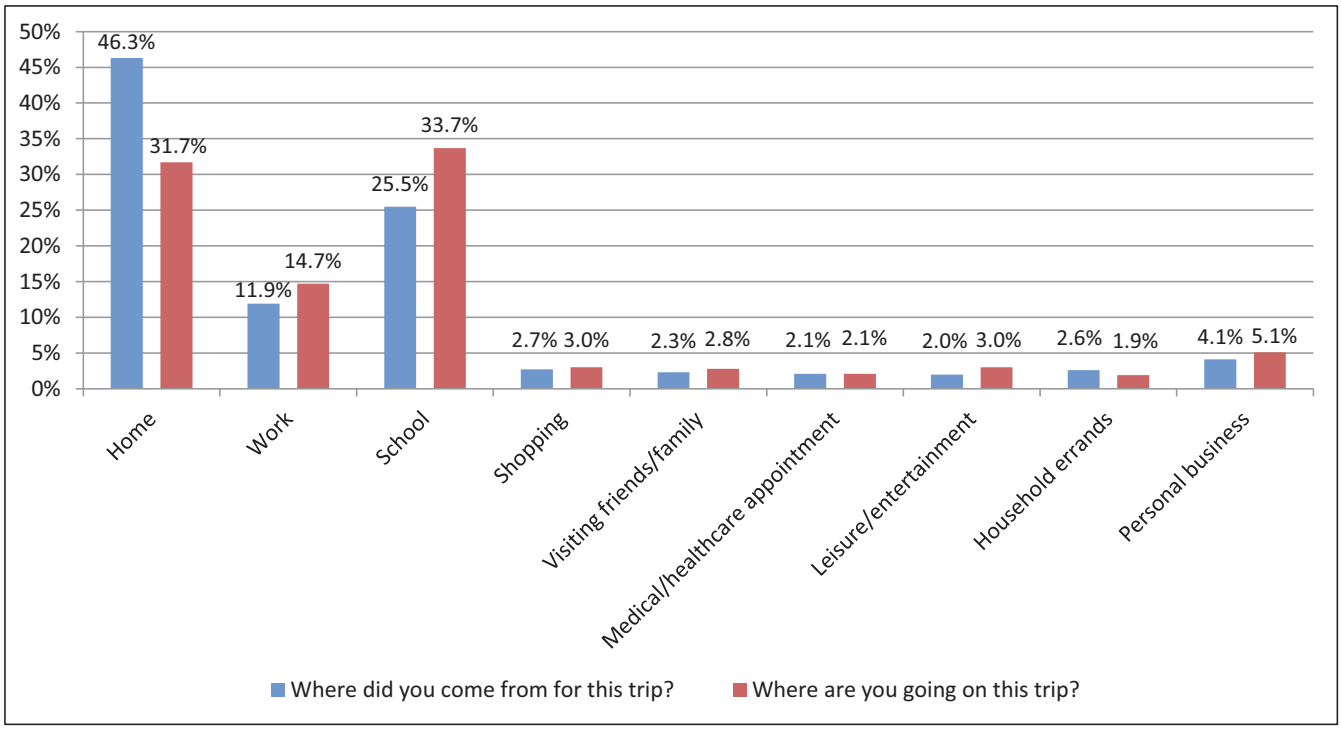
Exhibit 3.2 Q7. Total Travel Time for this Trip (In minutes)



TRIP PURPOSE

Exhibit 3.3 indicates the purpose of the respondent's trip. As expected from historic ridership patterns provided by METRO, the majority of cited trip purposes involve travel to/from "Home," "School," and "Work." This data is reflective of all METRO routes surveyed, including inter-city routes such as Route 71 and the 91X. These results highlight the important role which transit plays in providing access to schools and employment centers.

Exhibit 3.3 Q9. Origin for this Trip, and Q10. Trip Destination



ACCESS TO VEHICLE

The majority (81.9 percent) of respondents cited not having a personal vehicle available to make the surveyed trip. Respondents without access to vehicles, or captive riders, typically compose a majority of the transit customers. METRO aims to provide service that will continue to increase choice ridership in order to provide an attractive alternative to driving.

METRO CUSTOMER PROFILE

The profile METRO customer for both English and Spanish speaking respondents is described in Exhibit 3.4. While both English and Spanish-speaking respondents cited annual incomes of less than $15,000, the typical age of Spanish-speaking respondents is higher, as is the number of persons residing in their household. This indicates cost-effective transit may be more of a necessity for this demographic as available income is shared by a greater number of household members. Also noteworthy is the preferred method of obtaining service information: the English-speaking respondents (younger, and slightly more educated) utilize the internet more frequently, while Spanish-speaking respondents use the printed *Headways* schedule book. The importance of providing bilingual service/schedule materials is evident based on this information. METRO may also consider expanding the availability/distribution of the Headways schedule books to locations which may cater to Spanish-speaking persons, such as local markets and community/senior centers.

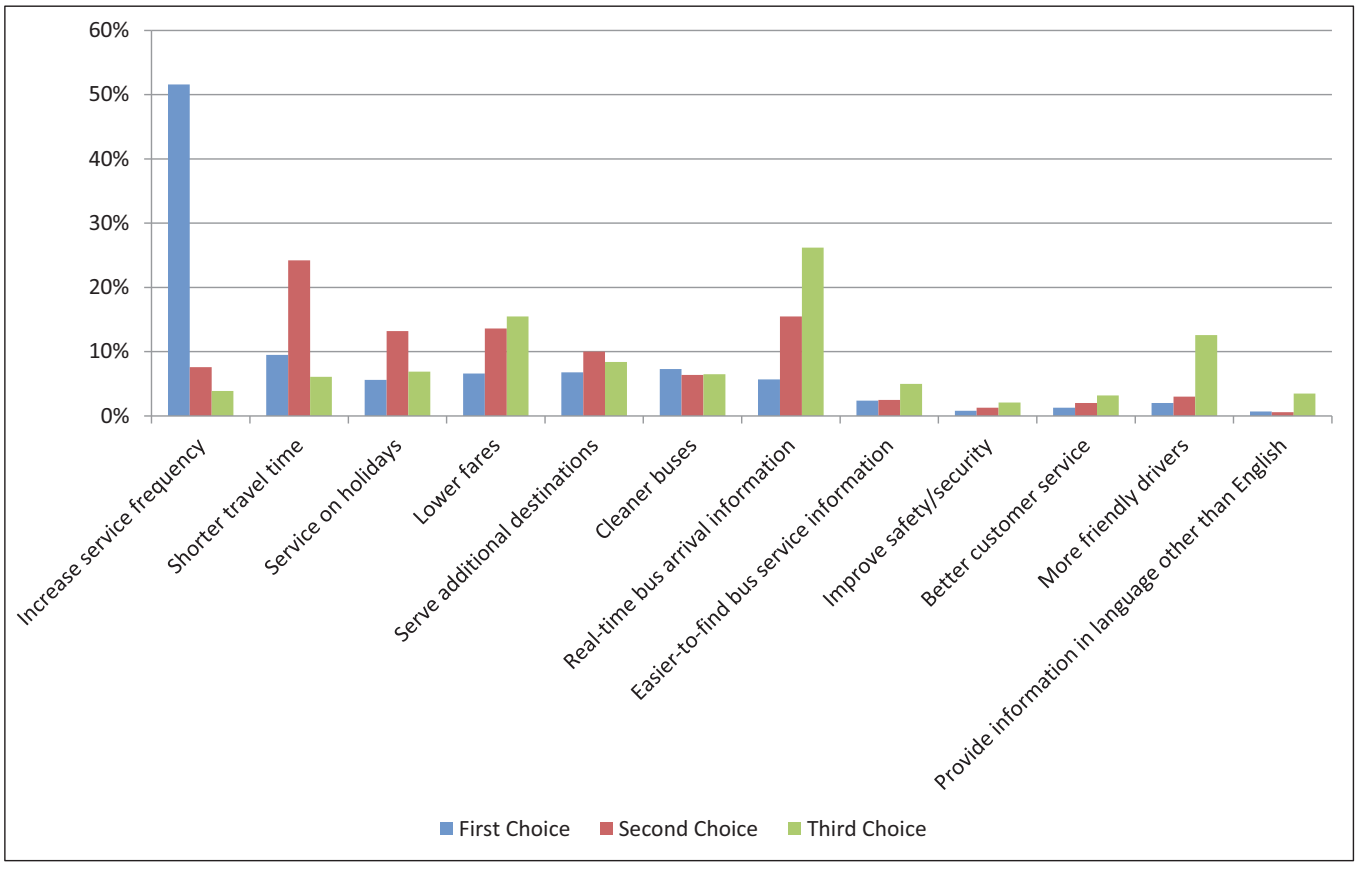
Exhibit 3.4 Customer Profile

	Income	Education	Age	People in Household	Obtain Service Information	Frequency of Use
English	Less than $15,000 per year	Some college credit	16-24 years old	One	METRO's website	5 or more times per week
Spanish	Less than $15,000 per year	12th grade or less	25-44 years old	Four or more	Paper bus schedule (Headways)	5 or more times per week

PREFERRED SERVICE IMPROVEMENTS

The three most-preferred METRO service improvements cited by customers (Exhibit 3.5) were increased service frequency, shorter travel time, and real-time bus arrival information. Increased service frequency was chosen by more than 50 percent of the respondents as number one. Shorter travel time and real-time bus arrival information were the second and third choices. Lower fares and service on holidays were also chosen for an average of 11.1 percent and 8.4 percent, respectively. Very few people responded that they would like to see better customer service and improved safety/security. Each color in the table represents the first, second and third choices for each respondent. Therefore, each color sums to 100 percent.

Exhibit 3.5 Q12. Three Most Preferred METRO Service Improvements



DATA CROSS-TABS

Cross tabulations, or cross tabs, are a good way to compare two subgroups of information. Cross tabs allow comparison of data from two questions to determine if there is a relationship between them. The following data cross-tabs were generated based upon our experience conducting similar transit market research in numerous communities throughout California.

FREQUENCY OF USE

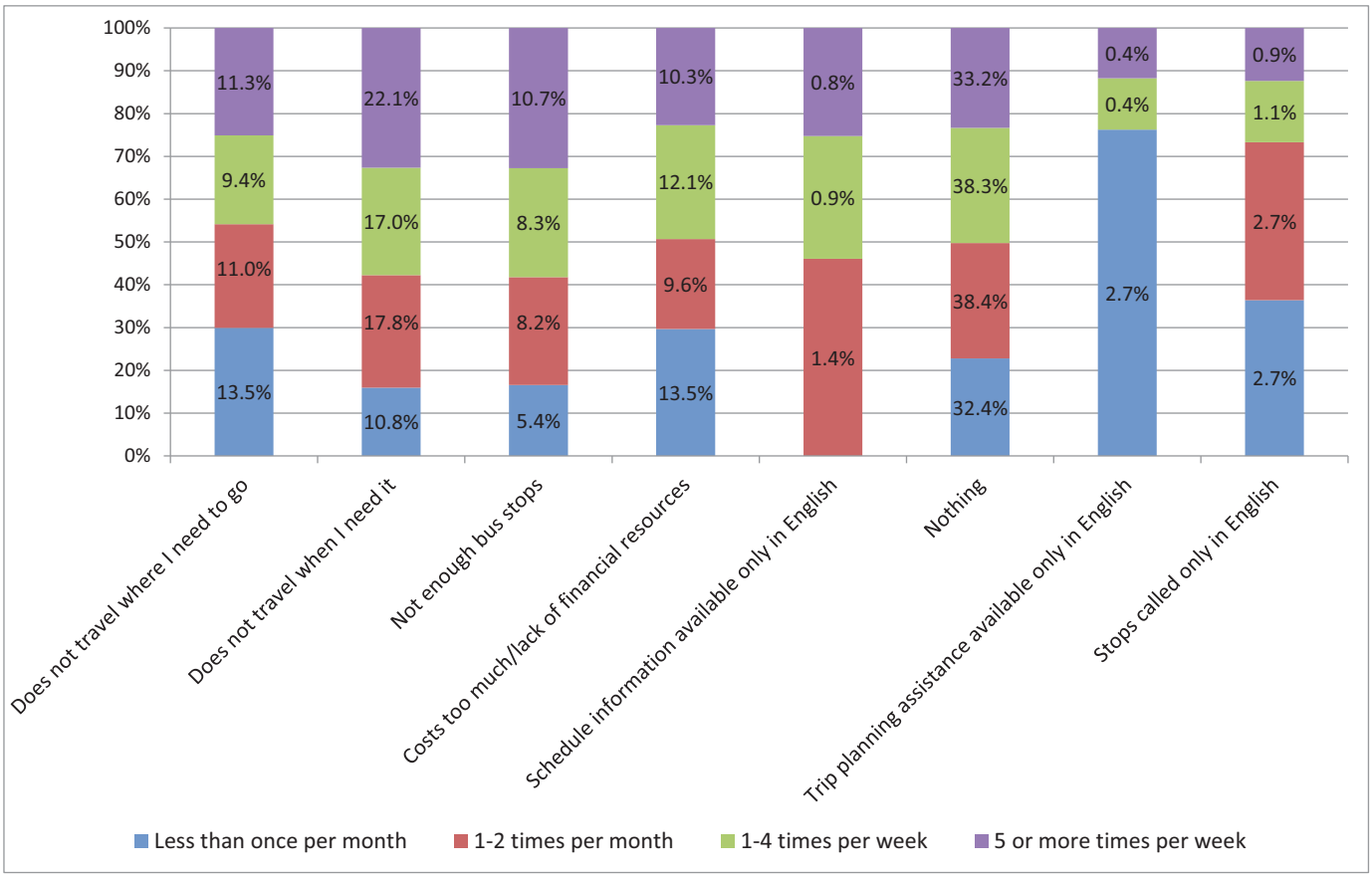
Exhibit 3.6 shows the cross tab results of each barrier, and the frequency of use as indicated by survey respondents. An example of how the cross tab results can be interpreted in Exhibit 3.6 is described here. For the people who answered that their barrier to using transit more often was "Does not travel where I need to go," 30 percent of these people take the bus less than 1 time per month, 24 percent take the bus 1-2 times per month, 21 percent take the bus 1-4 times per week, and 25 percent take the bus 5 or more times per week. These percentages are determined by looking at the percent on the vertical axis of the graph. The graph also shows that 13.5 percent of the people who take the bus less than once per month, answered that their barrier to taking transit more often is "does not travel where I need to go." Similarly, 2.7 percent of the people who ride the bus less than once per month said that their barrier to taking transit more often is "trip planning assistance available only in English."

Therefore, summing the percentages by frequency of use (i.e., summing the percentage numbers written on bars by color) will yield 100 percent.

The most-frequently cited barriers identified under the "Other" option include:

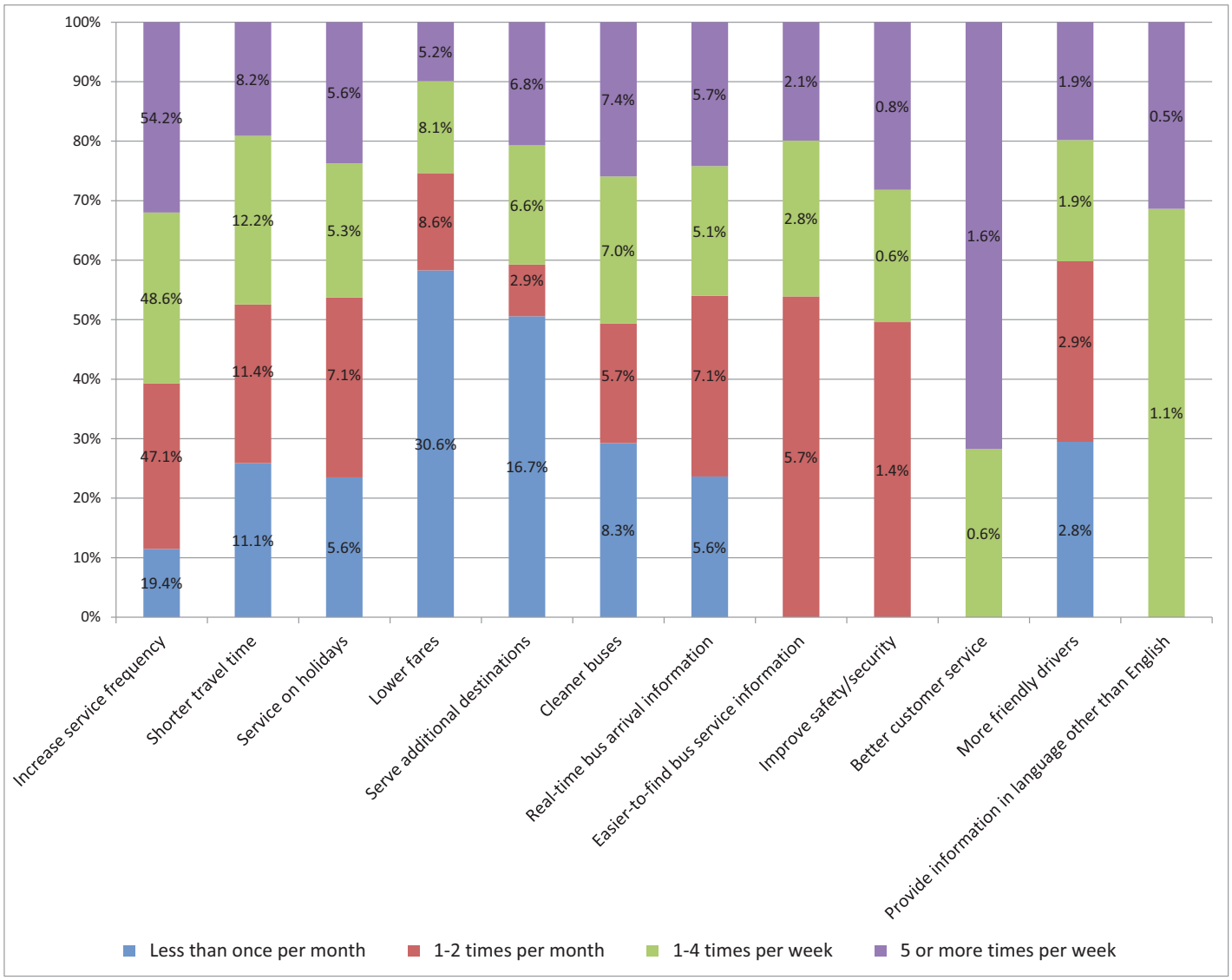
1. Infrequent service – 34 responses,
2. Buses run late – 27 responses,
3. Crowded buses – 22 responses, and
4. Bicycle capacity/inconvenient schedule/limited evening service/trip length – 13 responses each.

Exhibit 3.6 Barrier to Use vs. Frequency of Use



The most-desired improvement among the "high usage" group was increased service frequency (Exhibit 3.7). Lower fares is not necessarily an improvement desired by frequent riders, though it is the most-desired improvement among the least-frequent riders. Many of the frequently-cited locations identified under the "serve additional destinations" response were vague and included a number of locations currently served by METRO (e.g., Capitola, Eastside, Watsonville, Westside, and UCSC). No single location was outlined by more than seven respondents. Further discussion regarding this question can be found in the Limitations of Data Section.

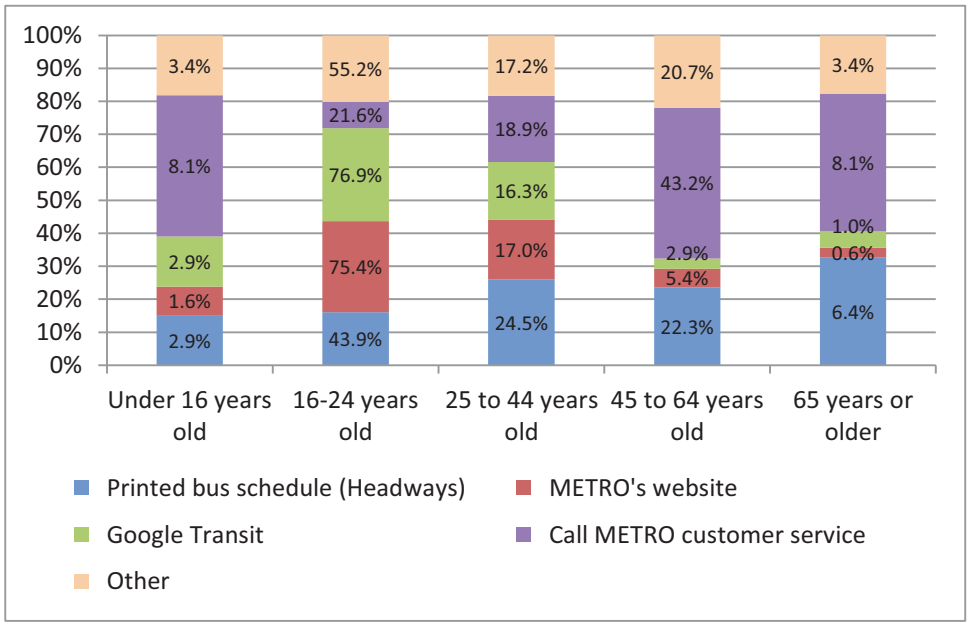
Exhibit 3.7 Desired Improvement vs. Frequency of Use



INFORMATION SOURCE

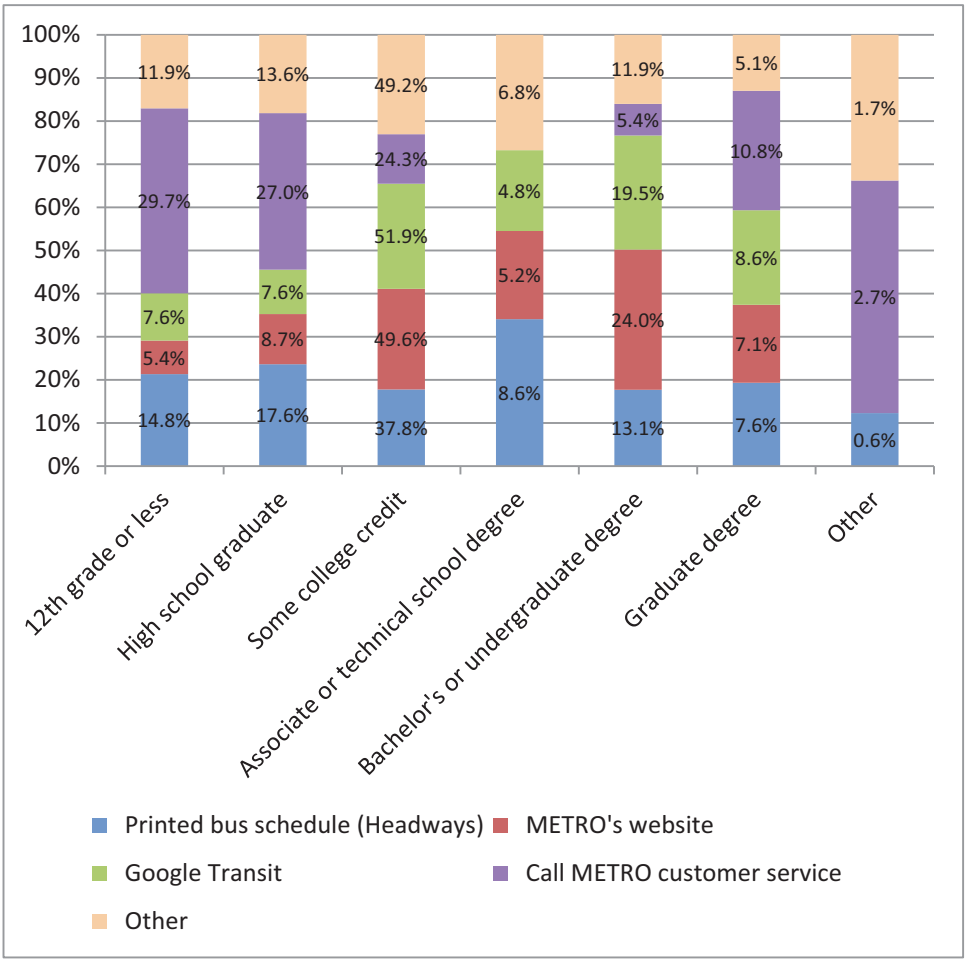
The data cross-tabulation presented in Exhibit 3.8 reflect respondents' preferred method of obtaining METRO information versus their age. Younger patrons favor more technological channels of information such as Google Transit and the METRO website. Older respondents prefer the printed bus schedule and/or calling METRO telephone information line.

Exhibit 3.8 Age vs. Information Source



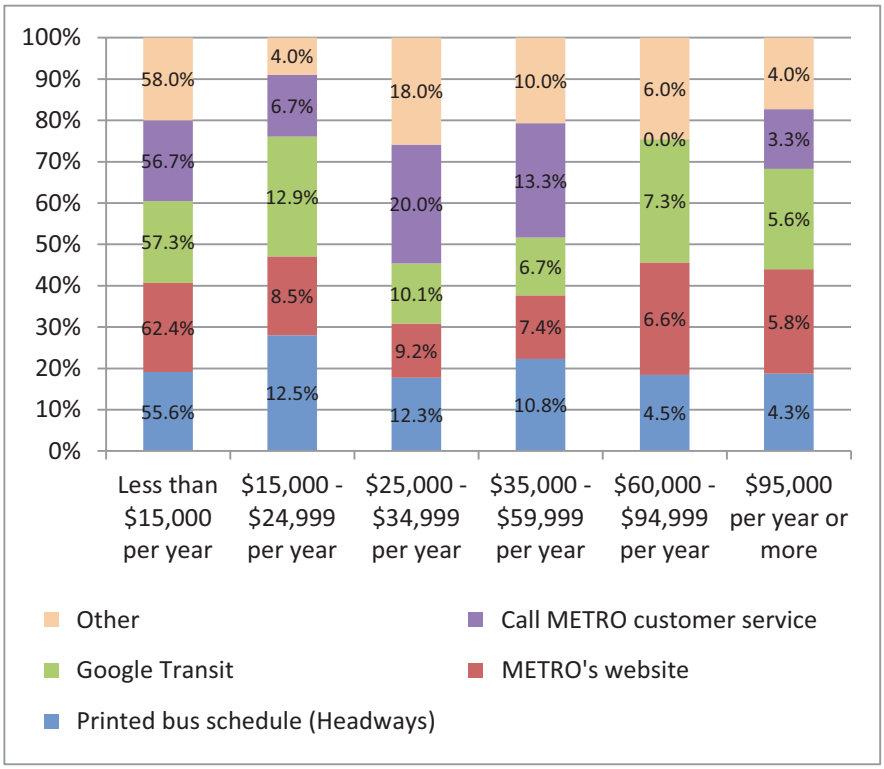
As with Age vs. Information Source, the higher the cited education level, the greater the likelihood of electronic information sources being preferred (Exhibit 3.9). Marketing of METRO information should reflect these trends and resources assigned accordingly. For example, distributing the *Headways* schedule books to senior/community centers and local elementary/middle/high schools, while focusing electronic promotion (e-mail blasts and social media) at college campuses and employment sectors that employ those with a higher education attainment.

Exhibit 3.9 Education vs. Information Source



The data cross-tabulation in Exhibit 3.10 reveals income seems to be less of a factor in determining preferred information source, although persons citing higher annual income gravitate toward more technology-based information channels.

Exhibit 3.10 Income vs. Information Source



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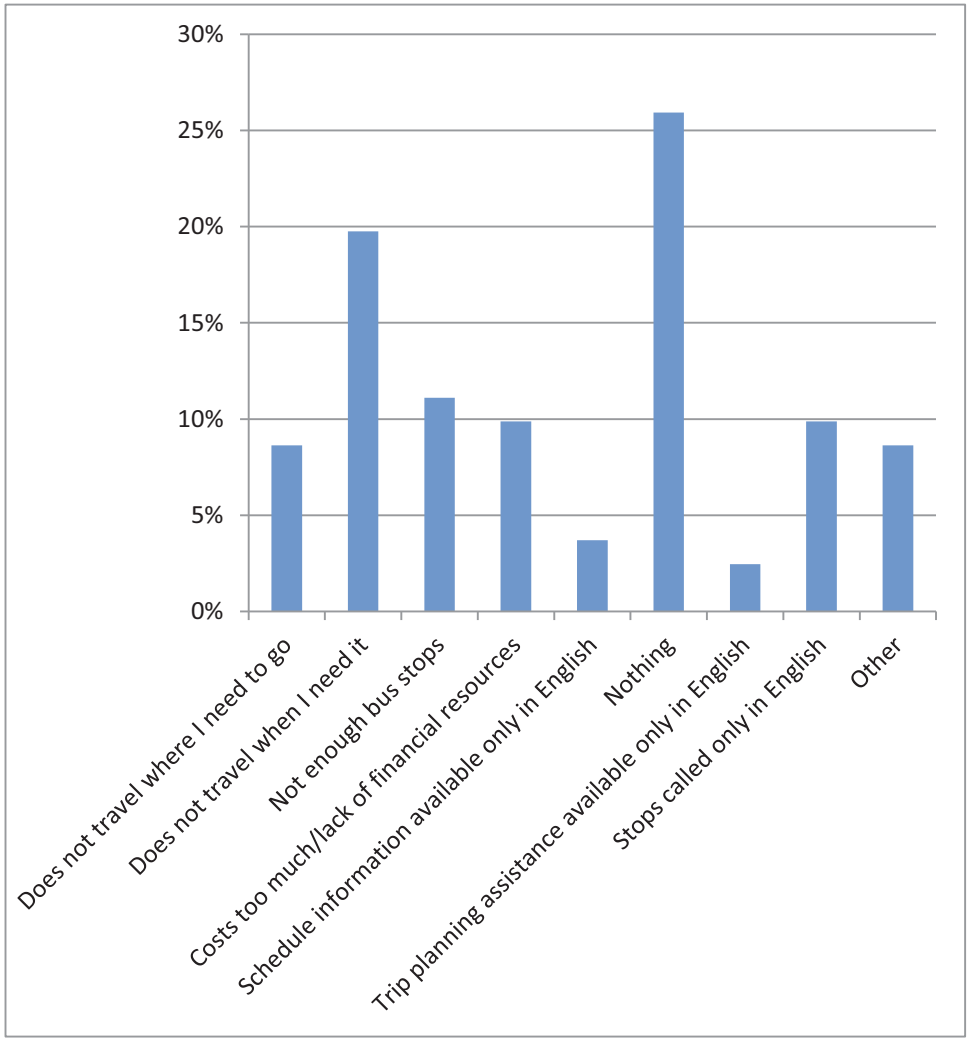
4 - LIMITED-ENGLISH PROFICIENCY ASSESSMENT

In order to assess incidence of Limited-English Proficiency, we generated data cross-tabulations specific to Spanish language respondents. A total of 108 surveys were completed in Spanish.

Exhibit 4.1 shows that a large percentage of Spanish-speaking respondents indicate they perceive no barriers to their use of METRO (more than 25 percent). The most common barrier is that METRO service "does not travel when they need it," suggesting that increased service may result in increased ridership.

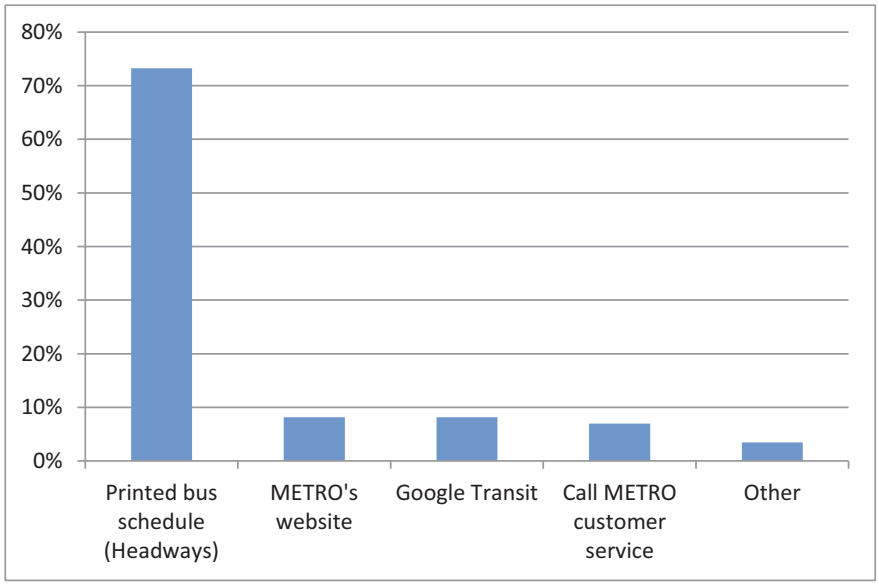
Exhibit 4.1 Barrier to Use – Spanish Respondents



The printed bus schedule *Headways* is the preferred information source by Spanish-speaking respondents when seeking METRO information (Exhibit 4.2). Therefore, it is important METRO translate all printed materials into Spanish. While the availability of Spanish-language information sources will

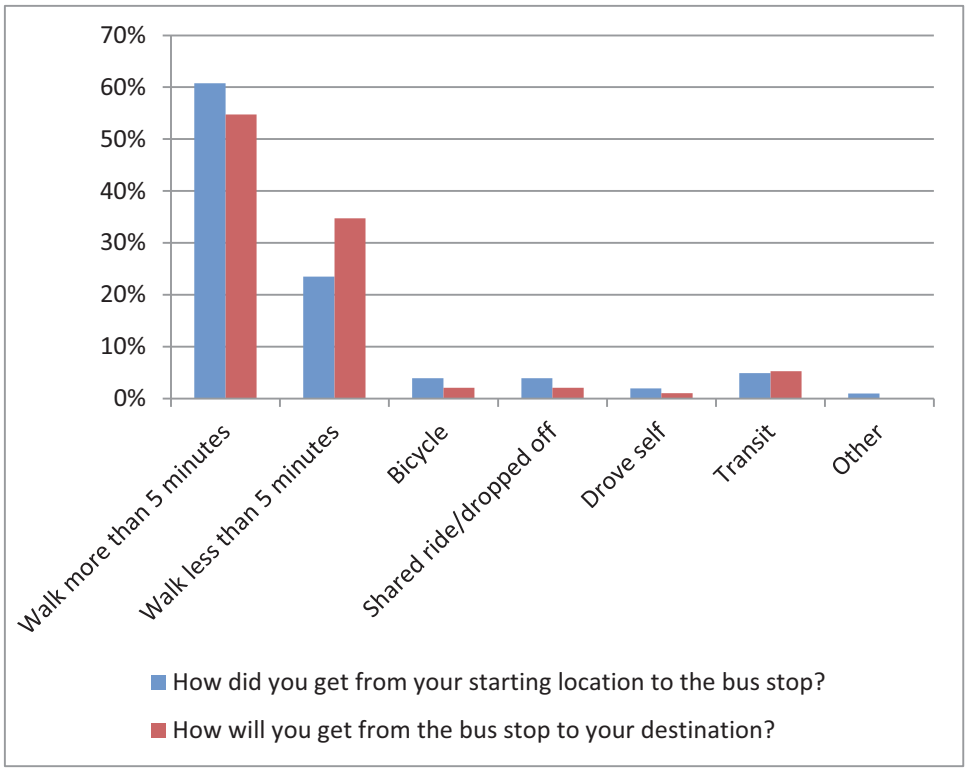
improve information accessibility, the focus should continue to be on print media. Federal grants/funding sources may be available to METRO to help offset costs such as translation and production of materials.

Exhibit 4.2 Preferred Information Source – Spanish Respondents



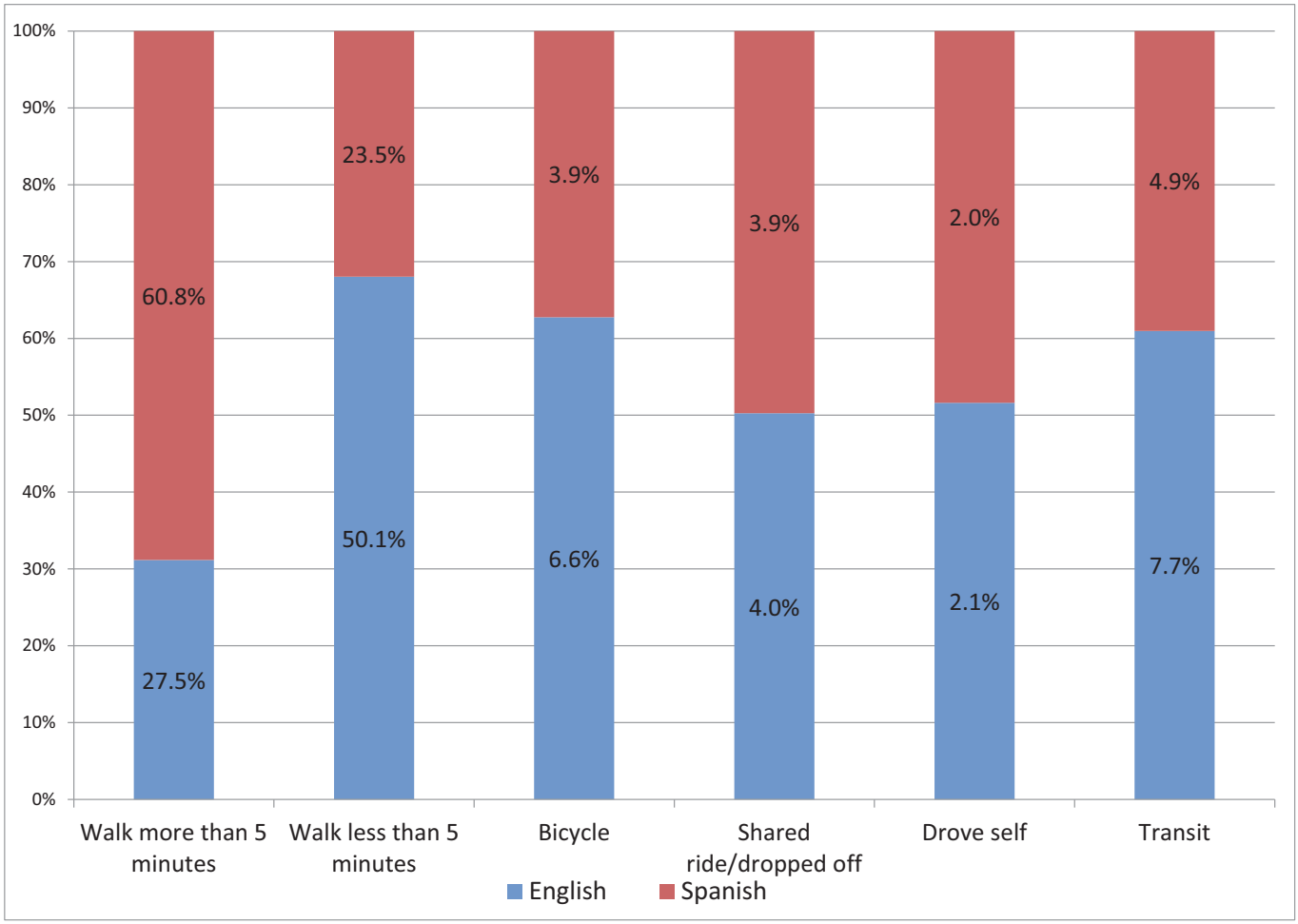
As presented in Exhibit 4.3, the majority of Spanish-speaking respondents cited walking to the bus stop (either to or from). Most respondents cited walking more than five minutes to the stop. A review of stop locations to assess if more stops are needed, routes adjusted or other improvements may be warranted.

Exhibit 4.3 Accessing Bus Stop – Spanish Respondents



As noted in the prior chart, walking more than five minutes is the most common mode of travel to the bus stop among Spanish-speaking respondents. In Exhibit 4.4, notable differences arise when comparing mode of travel between English speaking respondents and Spanish speaking respondents.

Exhibit 4.4 Accessing Bus Stop – English vs. Spanish Speakers



Spanish-speaking respondents cited "Home" and "Work" as their most common trip origins and destinations (Exhibit 4.5). This contrasts with the majority of English-speaking respondents citing "Home" and "School" as the most common trip purposes. This suggests employment centers in particular would benefit from having METRO service information available in Spanish. Should METRO aim to target Spanish-speaking customers, it may be beneficial to focus distribution of materials to transit-oriented locations (transit/transfer centers, onboard vehicles, etc.) and large employers and/or employment centers throughout the county.

Exhibit 4.5 Trip Purpose – Spanish Respondents

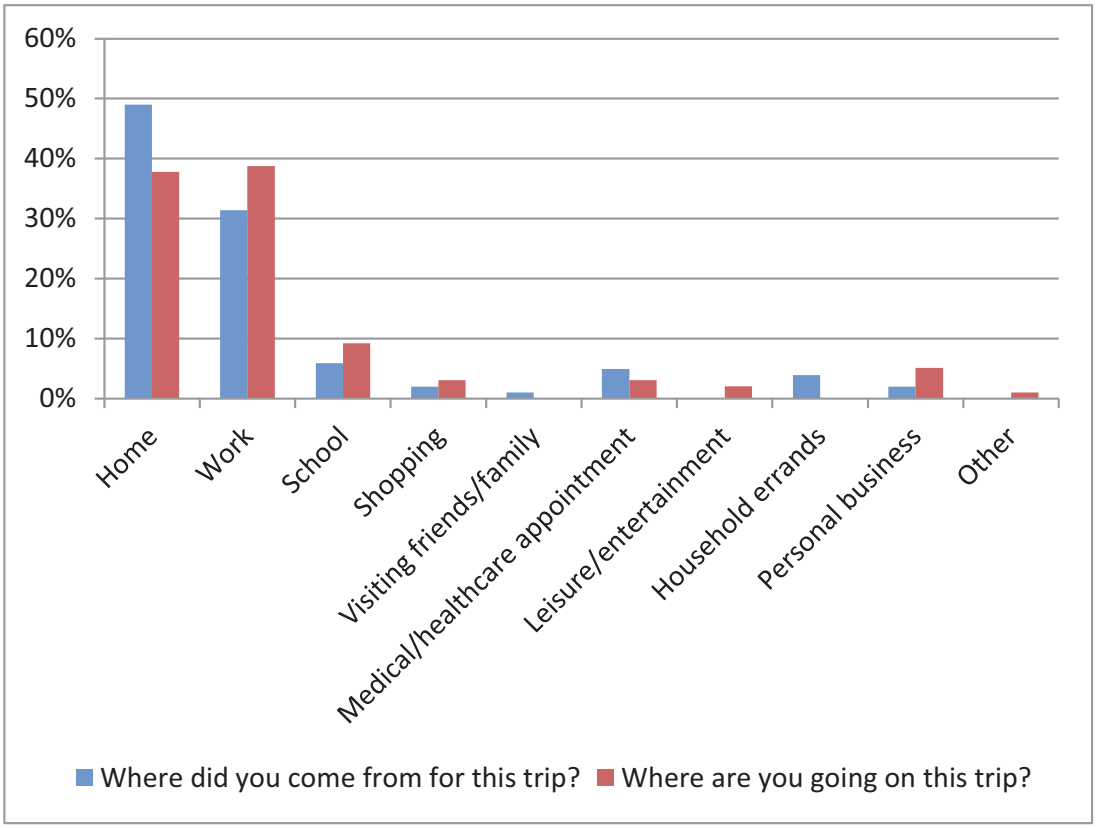


Exhibit 4.6 indicates the majority of Spanish-speaking patrons utilize Metro services which travel within or to/from Watsonville (Routes 71-91X), the San Lorenzo Valley (Route 35/35A), and the Live Oak/Capitola areas (Routes 66-69W).

Exhibit 4.6 Ridership by Route and Response Language

Route	Completed Surveys	% Ridership by Response Language		% System Ridership
		English	Spanish	
3	22	90.5%	9.5%	1.1%
4	18	100.0%	0.0%	0.9%
8	4	100.0%	0.0%	0.2%
10	121	96.6%	3.4%	6.1%
12	25	96.0%	4.0%	1.3%
15	305	99.7%	0.3%	15.5%
16	318	99.1%	0.9%	16.9%
17	81	97.6%	2.4%	4.3%
19	194	99.0%	1.0%	10.2%
20	78	97.5%	2.5%	4.1%
30	19	94.7%	5.3%	1.0%
33	18	100.0%	0.0%	0.9%
35	31	85.5%	14.5%	3.2%
35A	62	97.0%	3.0%	1.7%
40	21	100.0%	0.0%	1.1%
41	30	100.0%	0.0%	1.6%
42	7	100.0%	0.0%	0.4%
54	7	100.0%	0.0%	0.3%
55	12	100.0%	0.0%	0.7%
56	8	100.0%	0.0%	0.4%
66	101	86.3%	13.7%	4.9%
66N	5	83.3%	16.7%	0.3%
68	27	95.7%	4.3%	1.2%
69	11	91.7%	8.3%	0.6%
69A	95	88.2%	11.8%	4.4%
69W	58	92.7%	7.3%	4.3%
71	183	85.2%	14.8%	9.8%
72	19	88.2%	11.8%	0.9%
74	14	42.9%	57.1%	0.7%
75	23	78.3%	21.7%	1.2%
77	1	100.0%	0.0%	0.1%
79	16	88.2%	11.8%	0.9%
91X	23	87.0%	13.0%	1.2%

5 - ON-TIME PERFORMANCE AND BOARDING/ALIGHTING DATA

The summary of system on-time performance is presented in Exhibit 5.1. "On-time" is defined as any run departing the designated time-point within five minutes of the published schedule. "Late" is defined as a run arriving at a published time-point six or more minutes after the published schedule. "Missed" is defined as the run departing more than ten minutes after the published schedule. "Early" is defined as the run departing anything prior to the published schedule time, excluding the last stop of any run.

More than eight percent of all surveyed trips were "missed," meaning they were running more than ten minutes behind the published schedule. Total trips reported as either late or missed amount to 24 percent of all surveyed trips. There were also a number of routes which exhibited significant "hot-running" or early departures. Routes 4, 12, 20, and 91X to Watsonville (outbound) in particular experienced many early departures. Routes departing early may benefit from additional driver training to minimize the occurrence of early departures.

Routes with a significant occurrence of late trips should be reviewed in further detail to identify where along the route path each run begins to fall behind schedule. Routes often become bogged in traffic, in particular long-line routes such as the Route 71 and the 91X during peak commute times. METRO's practice of interlining various routes may also impact on-time performance: as once a route begins to fall behind, subsequent runs (regardless of route designation) also fall behind. We recommend METRO investigate "uncoupling" those routes which may benefit from independent work assignments.

Notably, Routes 8, 54, 69W (outbound), and 74 reported 100 percent on-time performance during the ride check.

Exhibit 5.1 Summary of On-Time Performance

	Early	Late	Missed	On-time
Route 3	16.7%	16.7%	0.0%	66.7%
Route 4	23.1%	15.4%	0.0%	61.5%
Route 8	0.0%	0.0%	0.0%	100.0%
Route 10	0.0%	19.7%	4.5%	75.8%
Route 12	25.0%	25.0%	0.0%	50.0%
Route 15	6.9%	10.3%	5.2%	77.6%
Route 16	4.0%	18.0%	10.0%	68.0%
Route 17 to Scotts Valley	9.1%	36.4%	0.0%	54.5%
Route 17 to San Jose	0.0%	18.2%	18.2%	63.6%
Route 19	3.7%	29.6%	1.9%	64.8%
Route 20	42.3%	0.0%	7.7%	50.0%
Route 30 to Santa Cruz	0.0%	15.4%	15.4%	69.2%
Route 30 to Cavallero	9.1%	9.1%	0.0%	81.8%
Route 33	16.7%	0.0%	25.0%	58.3%
Route 34	0.0%	0.0%	54.5%	45.5%
Route 35 NB	0.0%	20.0%	10.0%	70.0%
Route 35 SB	0.0%	16.3%	18.6%	65.1%
Route 40	10.5%	36.8%	10.5%	42.1%
Route 41	13.0%	4.3%	0.0%	82.6%
Route 42	0.0%	16.7%	0.0%	83.3%
Route 54	0.0%	0.0%	0.0%	100.0%
Route 55	0.0%	8.3%	8.3%	83.3%
Route 56	14.3%	0.0%	0.0%	85.7%
Route 66 IB	0.0%	12.5%	4.2%	83.3%
Route 66 OB	0.0%	16.7%	8.3%	75.0%
Route 66N	0.0%	0.0%	0.0%	100.0%
Route 68 IB	5.0%	30.0%	5.0%	60.0%
Route 68 OB	0.0%	6.7%	0.0%	93.3%
Route 69A IB	0.0%	16.7%	0.0%	83.3%
Route 69A OB	5.6%	5.6%	16.7%	72.2%
Route 69W IB	0.0%	5.6%	27.8%	66.7%
Route 69W OB	0.0%	0.0%	0.0%	100.0%
Route 71 IB	8.5%	18.6%	15.3%	57.6%
Route 71 OB	10.0%	20.0%	20.0%	50.0%
Route 72	6.3%	25.0%	0.0%	68.8%
Route 74 A	0.0%	0.0%	0.0%	100.0%
Route 74 B	7.1%	14.3%	0.0%	78.6%
Route 75	8.3%	33.3%	16.7%	41.7%
Route 79	6.3%	25.0%	6.3%	62.5%
Route 91X to Watsonville	20.0%	6.7%	0.0%	73.3%
Route 91X to Santa Cruz	10.0%	0.0%	0.0%	90.0%
System Total	6.3%	15.6%	8.4%	69.7%

Our surveyors recorded a total of 5,198 boardings during the survey fielding (of which 28 were wheelchair passengers). A total of 189 bicycles were loaded during the ride check as well. Detailed boarding and alighting exhibits for each route/direction are presented in Appendix C. These exhibits identify the activity on a stop-by-stop basis identifying where the most utilized stops are along each route. Pie charts are shown at each stop and are scaled based on the total boarding and alighting activity. These exhibits may be used (in conjunction with a stop amenity inventory) to identify and prioritize system-wide improvements to bus stops.

Detailed route-by-route electronic files were provided to SCCRTC on May 22, 2012. These files include data by route/direction/day-part with respect to on-time performance and boarding/alighting statistics. Summary exhibits of max-load (vehicle capacity throughout average trip) and on-time performance by route can be found in Appendix B.

Exhibit 5.2 Boarding and Alighting Summary By Route

	Passenger		Wheelchair		Bike	
	On	Off	On	Off	On	Off
Route 3	34	35	0	0	0	0
Route 4	44	43	3	4	1	1
Route 8	6	6	0	0	0	0
Route 10	596	594	0	0	20	18
Route 12	63	51	0	0	3	3
Route 15	505	495	1	1	17	17
Route 16	1040	999	0	0	39	39
Route 17 to Scotts Valley	40	39	0	0	2	2
Route 17 to San Jose	70	72	0	0	3	3
Route 19	667	665	1	1	12	12
Route 20	168	155	0	0	7	7
Route 30 to Santa Cruz	20	20	0	0	1	1
Route 30 to Cavallero	16	16	0	0	1	1
Route 33	22	22	0	0	0	0
Route 34	0	4	0	0	0	0
Route 35 NB	108	119	0	0	9	9
Route 35 SB	139	143	0	0	8	8
Route 40	67	69	1	1	8	8
Route 41	36	44	0	0	7	7
Route 42	10	10	0	0	3	3
Route 54	12	10	0	0	0	0
Route 55	62	54	4	3	1	1
Route 56	17	17	0	0	0	0
Route 66 IB	48	48	0	0	1	1
Route 66 OB	146	149	3	3	6	6
Route 66N	28	29	2	0	2	2
Route 68 IB	61	68	3	3	1	1
Route 68 OB	44	44	1	1	0	0
Route 69A IB	82	89	0	0	1	1
Route 69A OB	103	101	3	3	3	3
Route 69W IB	109	105	0	0	0	0
Route 69W OB	89	87	2	2	6	6
Route 71 IB	274	273	2	2	11	11
Route 71 OB	185	181	0	0	8	8
Route 72	43	43	1	1	0	0
Route 74 A	10	10	0	0	0	0
Route 74 B	22	22	0	0	0	0
Route 75	47	48	0	0	1	1
Route 79	27	27	1	1	0	0
Route 91X to Watsonville	57	60	0	0	5	5
Route 91X to Santa Cruz	53	53	0	0	2	2
System Total	5170	5119	28	26	189	187

6 - LIMITATIONS OF DATA

Surveying efforts were spread throughout available routes in an attempt to collect data representative of the rider population as a whole. Despite the efforts, it should be noted that survey response rates are dictated by ridership trends. Therefore, a greater number of surveys were collected on those routes that experienced the highest level ridership as well as during times which experienced the highest level of ridership. Additionally, surveys were collected during weekdays, which often experience different ridership trends then weekends. Finally, survey data represents existing riders, meaning questions regarding desired improvements do not address the needs of non-riders.

APPENDICES

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APPENDIX A – ONBOARD SURVEY DATA

Exhibit A.1 Onboard Survey Instrument

Santa Cruz METRO Rider Survey$_A$

Help us improve Santa Cruz METRO service by taking this short survey.

Route #_____ **Direction** _____
Date _____ **Time** _____

1. Where did you begin this trip? (starting location)
Address/City/Zip _____
or cross-streets: _____ and _____

2. Where did you board this bus for this trip?
Landmark or stop name _____
or cross-streets: _____ and _____

3. Where will you get off this bus for this trip?
Landmark or stop name _____
or cross-streets: _____ and _____

4. Where will you end this trip? (ending location)
Address/City/Zip _____
or cross-streets: _____ and _____

5. How did you get from your starting location to the bus stop?
☐1 Walk more than 5 minutes ☐2 Walk less than 5 minutes
☐3 Bicycle ☐4 Shared ride/dropped off ☐5 Drove self
☐6 Transit ☐7 Other (specify) _____

6. How will you get from the bus stop to your destination?
☐1 Walk more than 5 minutes ☐2 Walk less than 5 minutes
☐3 Bicycle ☐4 Shared ride/dropped off ☐5 Drove self
☐6 Transit ☐7 Other (specify) _____

7. What is your total travel time for this trip? _____ minutes

8. Did you have access to a personal vehicle for this trip? ☐1 Yes ☐2 No

9. Where did you come from for this trip?
☐1 Home ☐2 Work ☐3 School ☐4 Shopping ☐5 Visiting friends/family
☐6 Medical/healthcare appointment ☐7 Leisure/entertainment
☐8 Household errands ☐9 Personal business ☐10 Other _____

10. Where are you going on this trip?
☐1 Home ☐2 Work ☐3 School ☐4 Shopping ☐5 Visiting friends/family
☐6 Medical/healthcare appointment ☐7 Leisure/entertainment
☐8 Household errands ☐9 Personal business ☐10 Other _____

11. What, if anything, prevents you from increasing your use of Santa Cruz METRO?
☐1 Does not travel where I need to go ☐2 Does not travel when I need it
☐3 Not enough bus stops ☐4 Costs too much/lack of financial resources
☐5 Schedule information available only in English ☐6 Nothing
☐7 Trip planning assistance available only in English
☐8 Stops called only in English ☐9 Other _____

12. What are your three most preferred METRO service improvements?
☐1 Increase service frequency ☐2 Shorter travel time
☐3 Service on holidays ☐4 Lower fares
☐5 Serve additional destinations _____
☐6 Cleaner buses ☐7 Real-time bus arrival information
☐8 Easier-to-find bus service information ☐9 Improve safety/security
☐10 Better customer service ☐11 More friendly drivers
☐12 Provide information in language other than English _____

13. Where do you usually go for bus service information (i.e., schedules, fares, route destinations, etc.)?
☐1 Paper bus schedule (*Headways*) ☐2 METRO's website
☐3 Google Transit ☐4 Call METRO customer service
☐5 Other _____

14. How often do you ride public transit?
☐1 Less than once per month ☐2 1-2 times per month
☐3 1-4 times per week ☐4 5 or more times per week

15. How old are you?
☐1 Under 16 years old ☐2 16 to 24 years old ☐3 25 to 44 years old
☐4 45 to 64 years old ☐5 65 years or older

16. How many people are in your household?
☐1 ☐2 ☐3 ☐4 4 or more

17. What is your highest level of education?
☐1 12th grade or less ☐2 High school graduate
☐3 Some college credit ☐4 Associate or technical school degree
☐5 Bachelor's or undergraduate degree ☐6 Graduate degree
☐7 Other _____

18. What is your annual household income?
☐1 Less than $15,000 per year ☐2 $15,000 to $24,999 per year
☐3 $25,000 to $34,999 per year ☐4 $35,000 to $59,999 per year
☐5 $60,000 to $94,999 per year ☐6 $95,000 per year or more

Thank you for participating! To be entered in a random prize drawing, please provide your name and email (or phone number):
Name _____ Email _____

Santa Cruz METRO Encuesta del Pasajero$_A$

Ayúdenos a mejorar el servicio de Santa Cruz METRO tomando esta breve encuesta.

Ruta #_____ **Dirección de viaje** _____
Fecha _____ **Hora** _____

1. ¿En donde comenzó su viaje? (punto inicial)
Dirección (Hogar)/Ciudad/Código Postal: _____
o en las calles: _____ y _____

2. ¿Donde abordo el autobús para este viaje?
Lugar destacado o nombre de la parada: _____
o en las calles: _____ y _____

3. ¿Dónde va a bajar del autobús?
Lugar destacado o nombre de la parada: _____
o en las calles: _____ y _____

4. ¿En donde terminará su viaje? (punto final)
Dirección (Hogar)/Ciudad/Código Postal: _____
o en las calles: _____ y _____

5. ¿Cómo llegó a la parada del autobús desde el punto inicial de su viaje?
☐1 Caminar más de 5 minutos ☐2 Caminar menos de 5 minutos
☐3 Bicicleta ☐4 Viaje compartido/dejado en parada ☐5 Manejar
☐6 Transito ☐7 Otro (especifique) _____

6. ¿Cómo va a llegar desde la parada del autobús a su destino?
☐1 Caminar más de 5 minutos ☐2 Caminar menos de 5 minutos
☐3 Bicicleta ☐4 Viaje compartido/dejado en parada ☐5 Manejar
☐6 Transito ☐7 Otro (especifique) _____

7. ¿En total cuanto tiempo dura este viaje? _____ minutos

8. ¿Tenía acceso a un vehículo personal para este viaje? ☐1 Sí ☐2 No

9. ¿De dónde vino para hacer este viaje?
☐1 Casa ☐2 Trabajo ☐3 Escuela ☐4 De compras
☐5 Visitando amigos/familia ☐6 Cita médica ☐7 Ocio/entretenimiento
☐8 Mandados ☐9 Asunto personal ☐10 Otro _____

10. ¿A dónde va en este viaje?
☐1 Casa ☐2 Trabajo ☐3 Escuela ☐4 De compras
☐5 Visitando amigos/familia ☐6 Cita médica ☐7 Ocio/entretenimiento
☐8 Mandados ☐9 Asunto personal ☐10 Otro _____

11. ¿Qué, si alguna cosa, le impide a aumentar su uso de Santa Cruz METRO?
☐1 No viaja a donde tengo que ir ☐2 No viaja a la hora que lo necesito
☐3 No hay suficientes paradas
☐4 Cuesta mucho/falta de recursos financieros
☐5 La información del horario solo es disponible en Ingles ☐6 Nada
☐7 Asistencia para planear los viajes solo es disponible en Ingles
☐8 Las paradas solo se anuncian en Ingles ☐9 Otro _____

12. ¿Cuáles tres mejoramientos preferia ver al servicio de METRO?
☐1 Aumentar la frecuencia del servicio ☐2 Viajes más cortos
☐3 Servicio en días festivos ☐4 Reducción de tarifas
☐5 Servicio a destinos adicionales _____
☐6 Autobuses más limpios
☐7 Información sobre la llegada de los autobuses a tiempo-real
☐8 Hacer más fácil encontrar información sobre el autobús
☐9 Mejorar la seguridad
☐10 Mejor servicio al cliente ☐11 Más conductores amables
☐12 Información en idioma distinto del Ingles _____

13. ¿Usualmente, donde busca información sobre el servicio del autobús (es decir., horarios, tarifas, destinos de rutas, etc.)?
☐1 Libreto de horarios (*Headways*) ☐2 Página de internet de METRO
☐3 Página de internet (Google Transit)
☐4 Llamar al servicio al cliente de METRO ☐5 Otro
_____

14. ¿Con qué frecuencia viaja en tránsito público?
☐1 Menos de una vez al mes ☐2 1-2 veces por mes
☐3 1-4 veces por semana ☐4 5 o más veces por semana

15. ¿Cuántos años tiene?
☐1 Menos de 16 años ☐2 16 a 24 años ☐3 25 a 44 años
☐4 45 a 64 años ☐5 65 años o mas

16. ¿Cuántas personas hay en su hogar?
☐1 1 ☐2 2 ☐3 3 ☐4 4 o mas

17. ¿Cuál es su nivel de educación más alto?
☐1 Grado 12 o menos ☐2 Graduado de escuela preparatoria
☐3 Algunos créditos universitarios
☐4 Grado de asociado o licenciatura de escuela técnica
☐5 Licenciatura ☐6 Título de posgrado ☐7 Otro _____

18. ¿Cuáles son los ingresos anuales de su hogar?
☐1 Menos de $15,000 al año ☐2 $15,000 a $24,999 al año
☐3 $25,000 a $34,999 al año ☐4 $35,000 a $59,999 al año
☐5 $60,000 a $94,999 al año ☐6 $95,000 al año o mas

¡Gracias por participar! Para entrar al sorteo de premios, por favor escriba su nombre y correo electrónico (o número de teléfono):
Nombre _____ Correo Electrónico _____

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ONBOARD SURVEY QUESTIONS AND RESPONSES

Exhibit A.2 Q1 and Q4 – Trip Origin and Destination Locations (System-Wide)

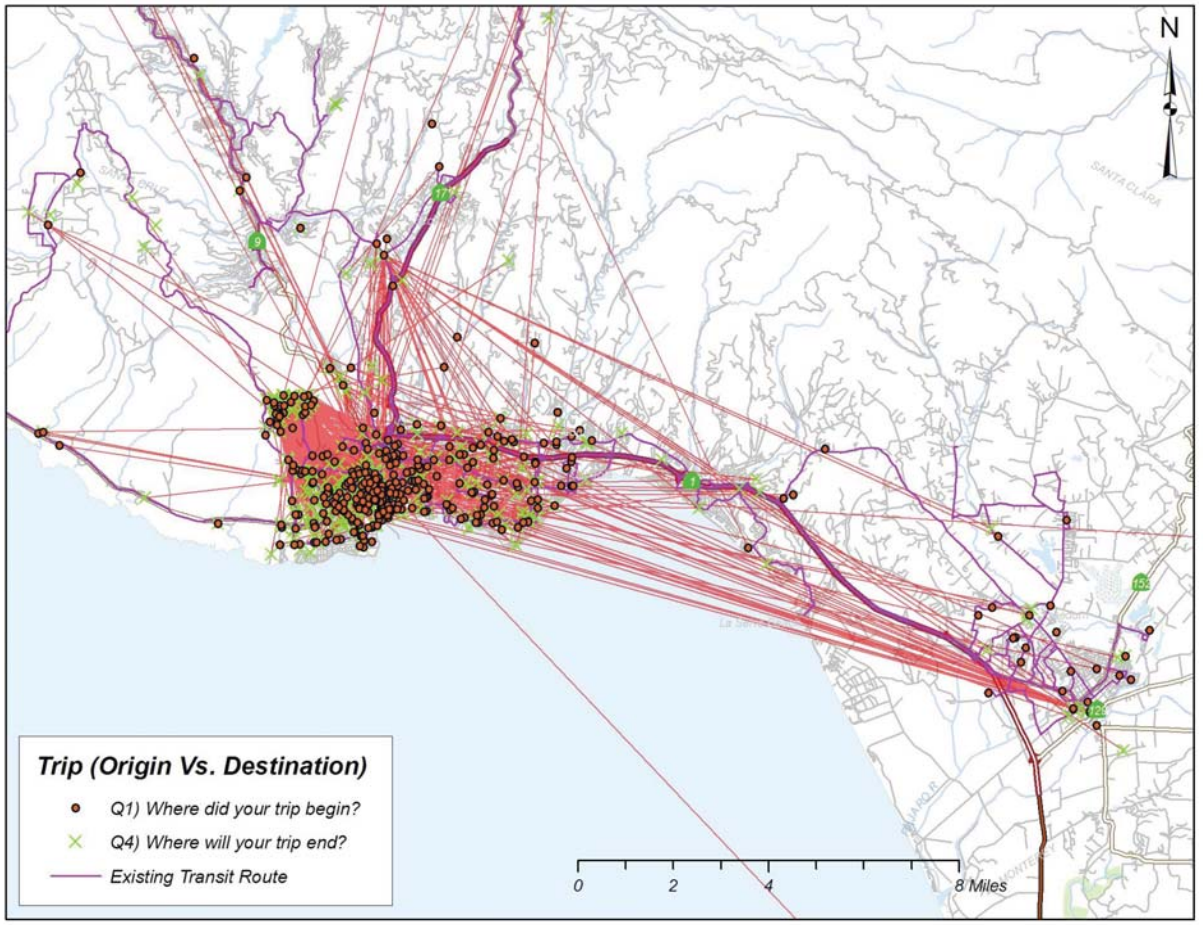


Exhibit A.3 Q2 and Q3 – Trip Boarding and Alighting Locations (System-Wide)

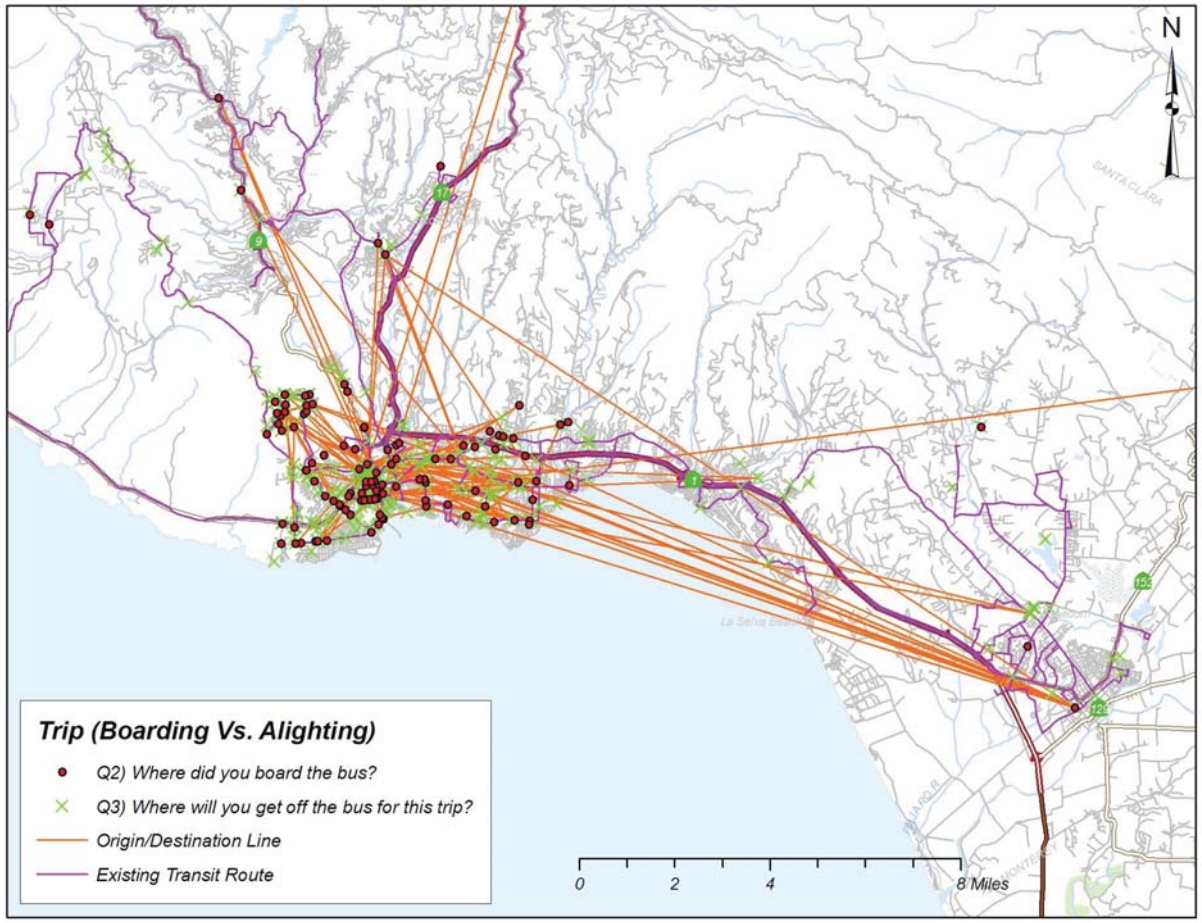


Exhibit A.4 Q5. How did you get from your starting location to the bus stop?

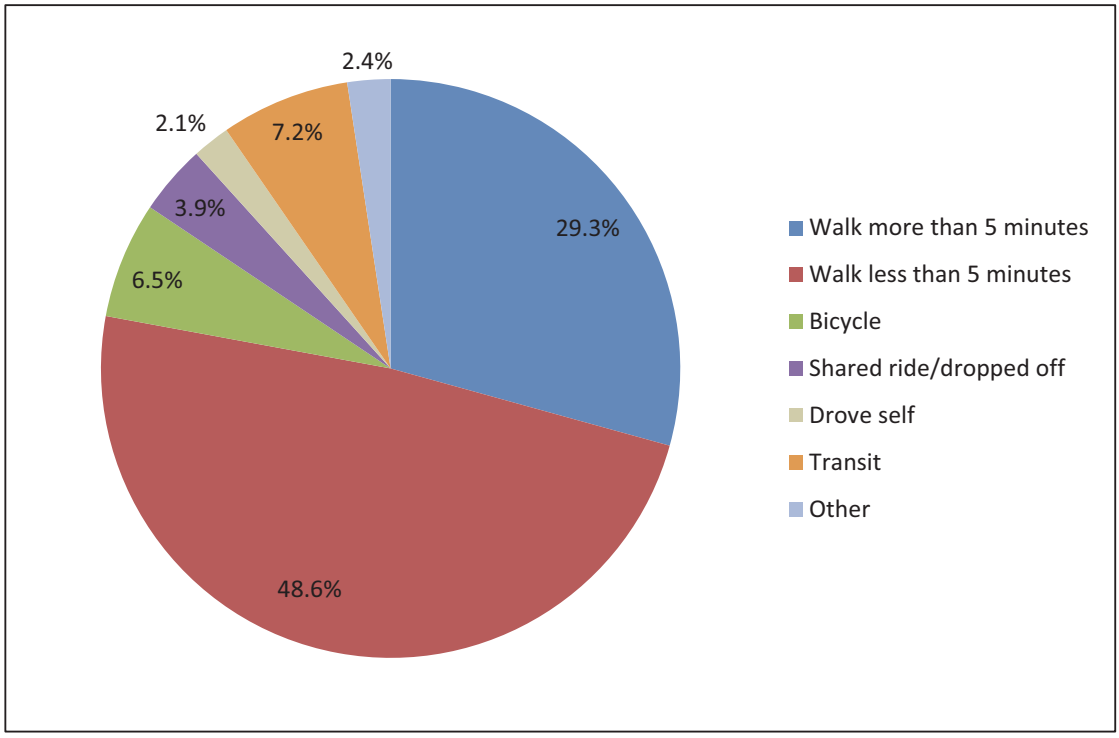


Exhibit A.5 Q6. How will you get from the bus stop to your destination?

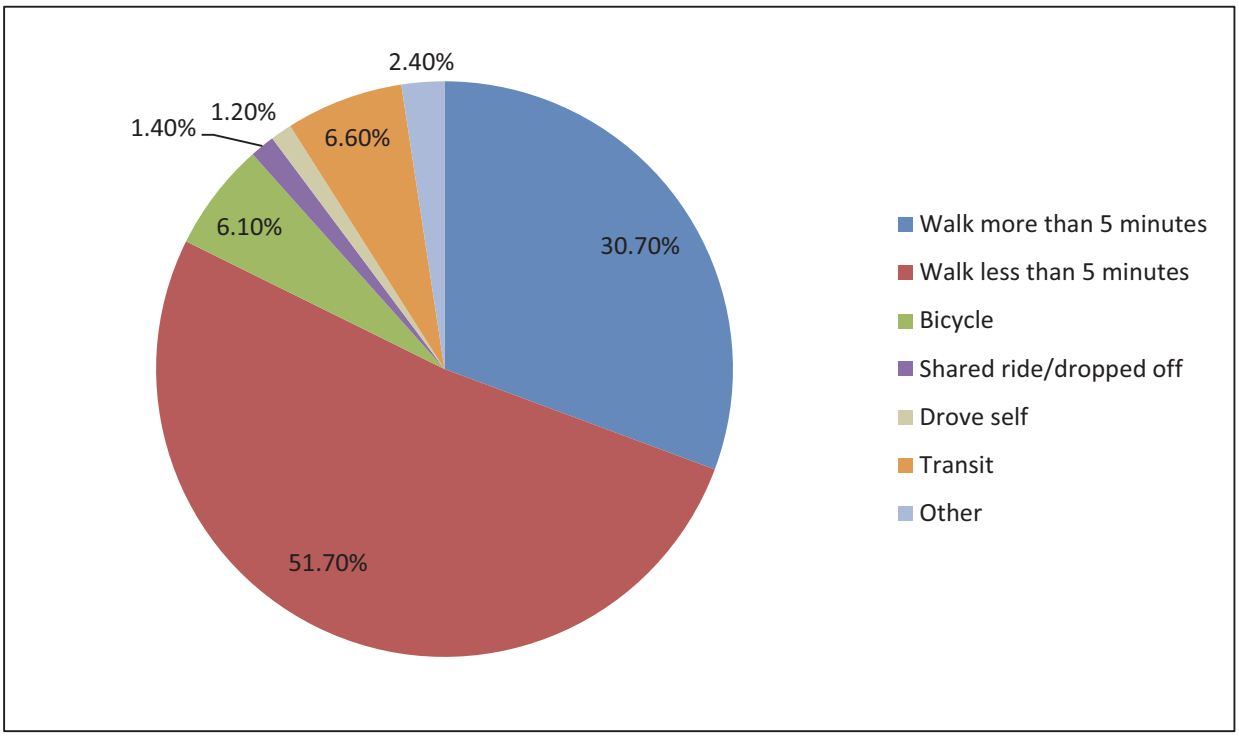


Exhibit A.6 Q7. What is your total travel time for this trip?

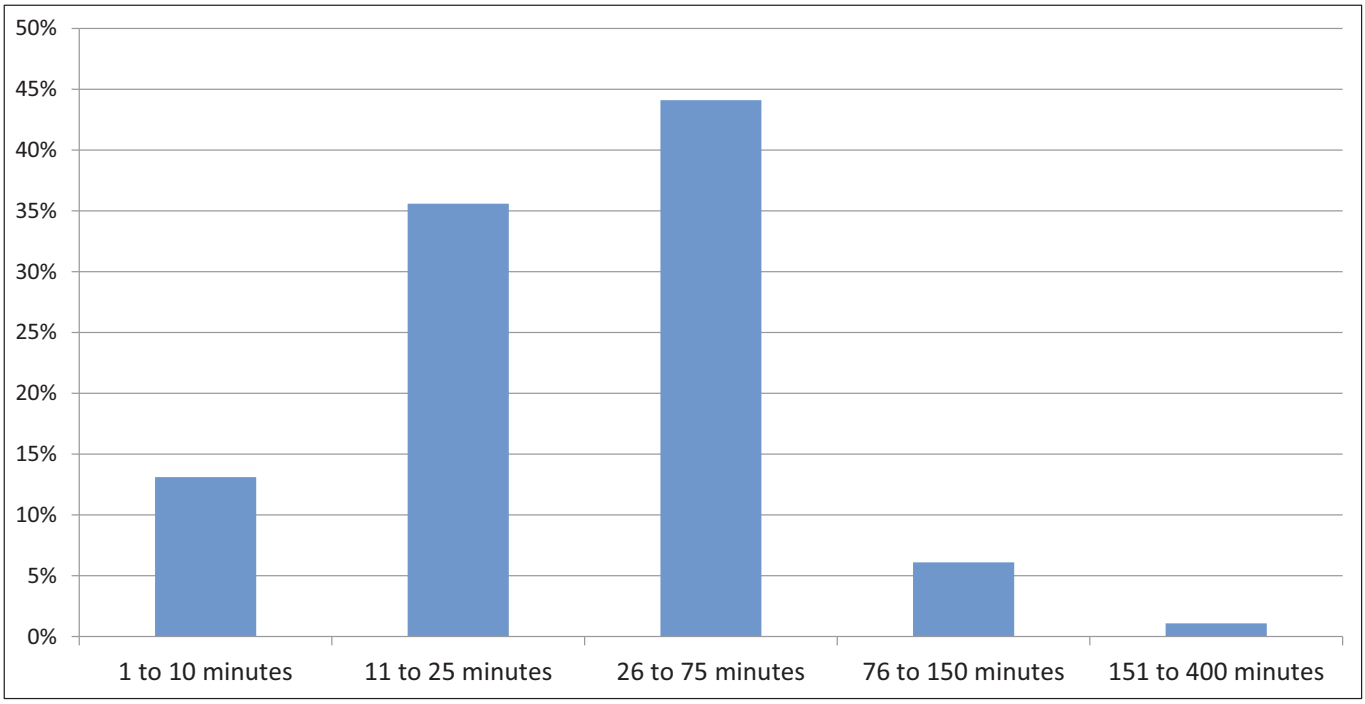


Exhibit A.7 Q8. Did you have access to a personal vehicle for this trip?

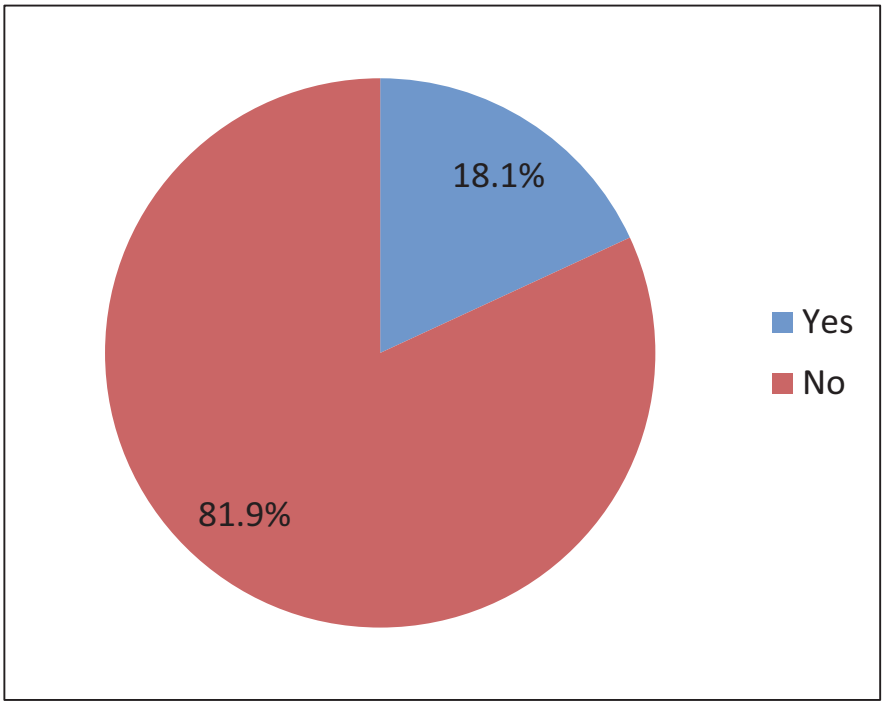


Exhibit A.8 Q9. Where did you come from for this trip and Q 10. Where are you going for this trip?

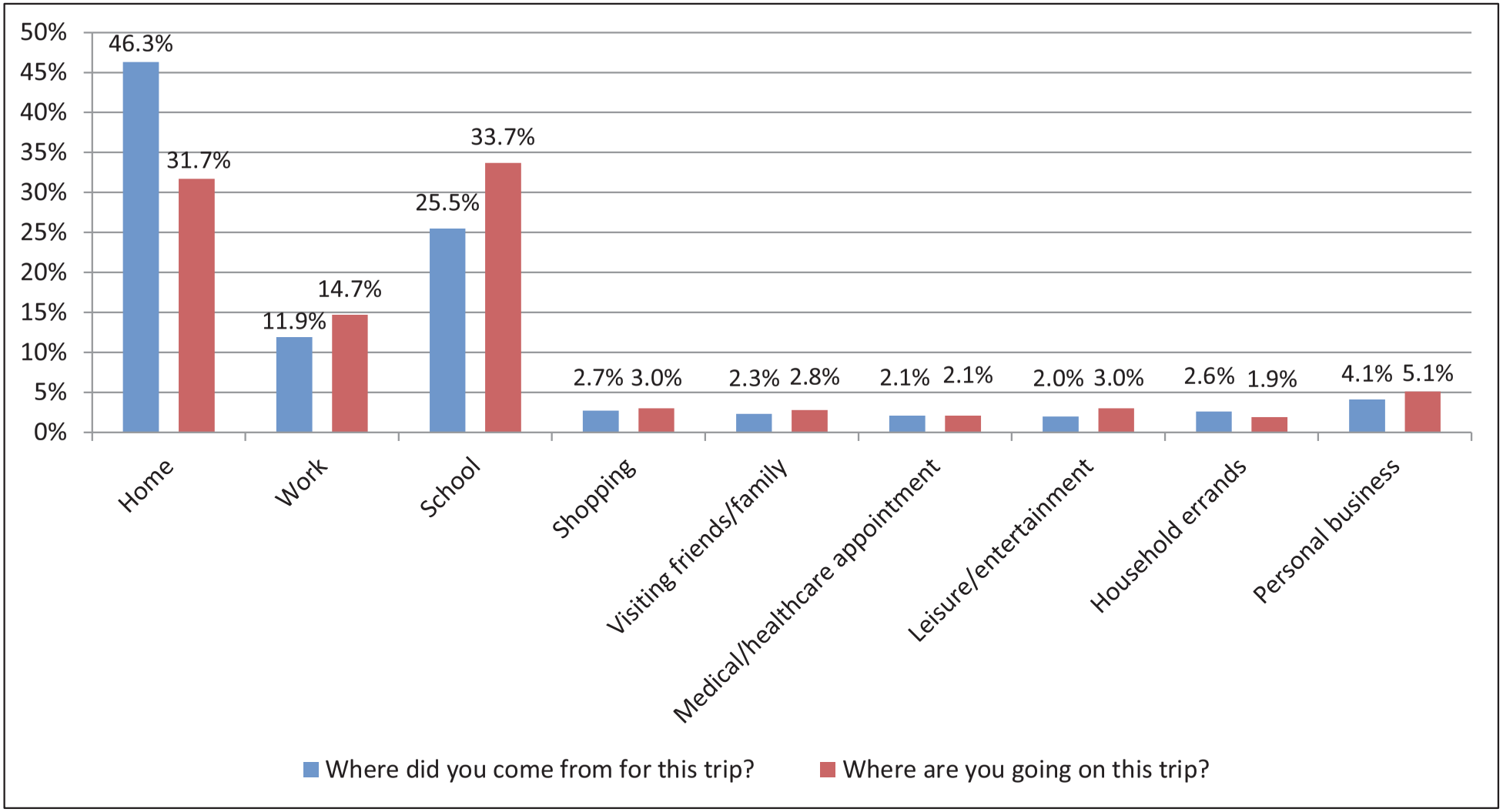


Exhibit A.9 Q11. What if anything, prevents you from increasing your use of Santa Cruz METRO?

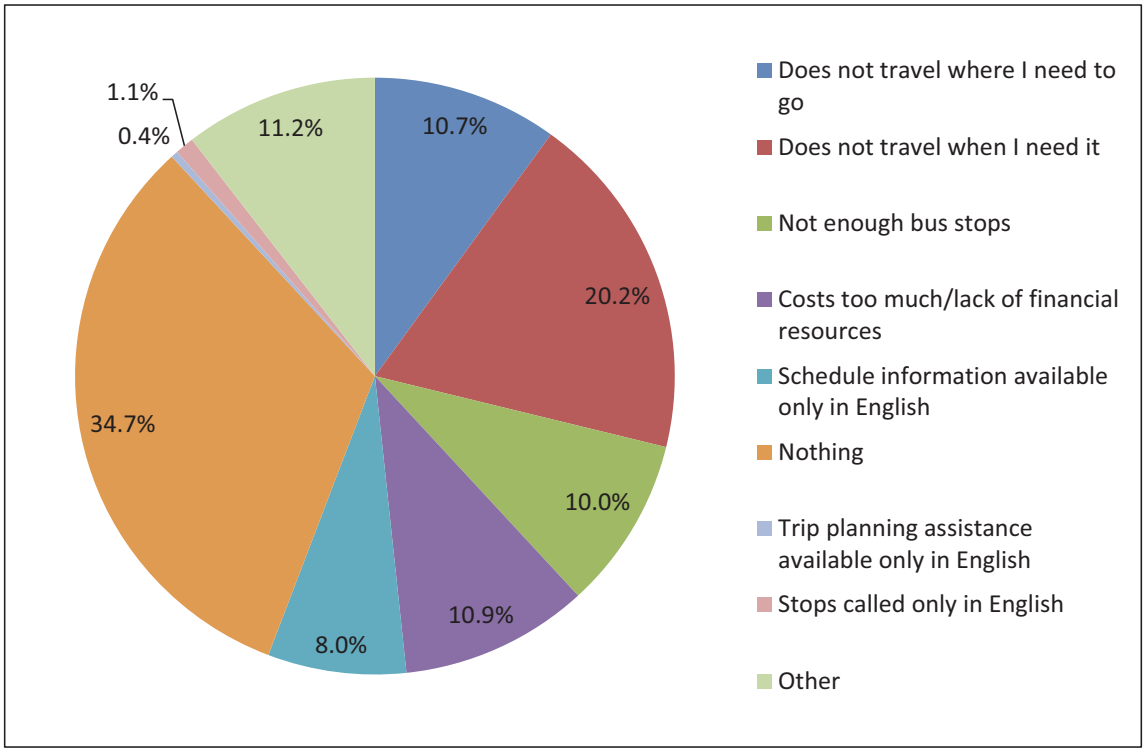


Exhibit A.10 Q12. What are your three most preferred METRO service improvements?

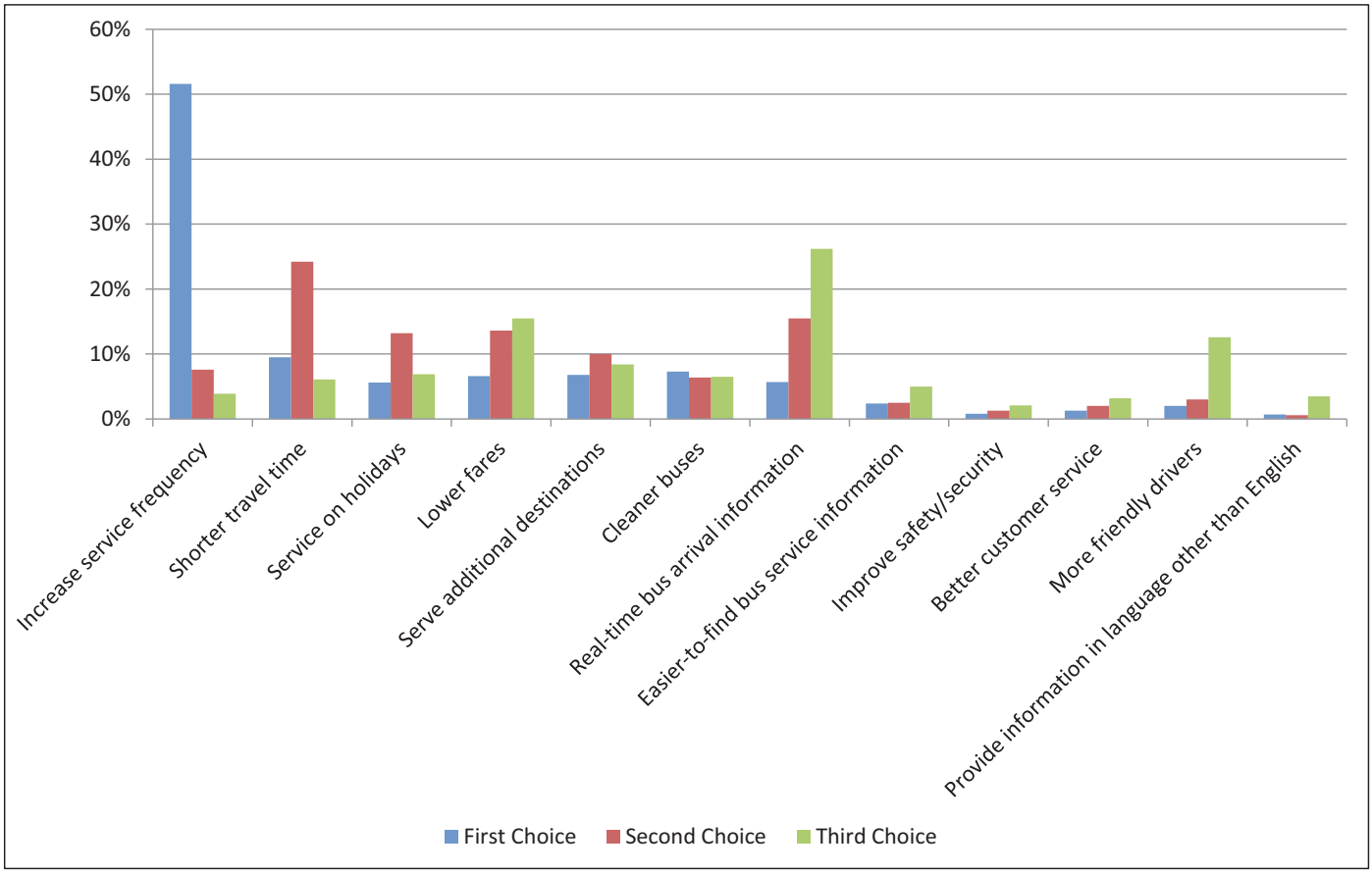


Exhibit A.11 Q13. Where do you usually go for bus service information?

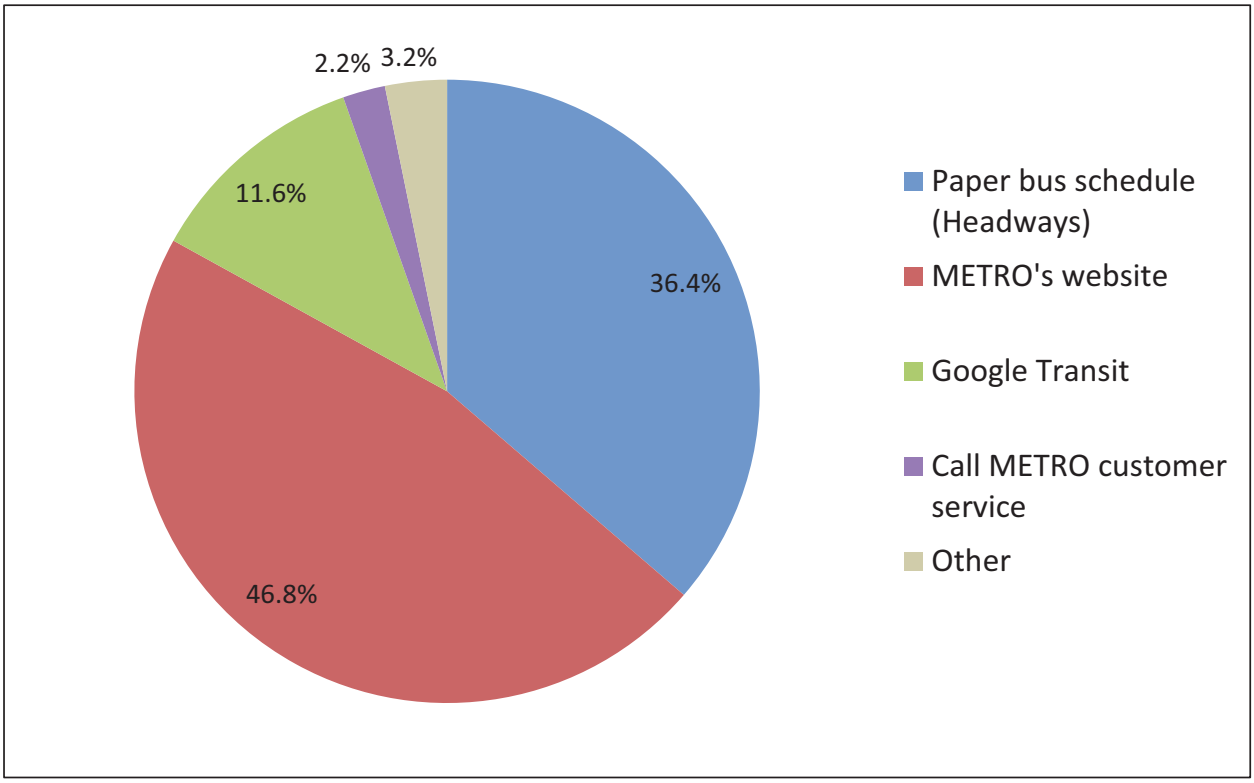


Exhibit A.12 Q14. How often do you ride public transit?

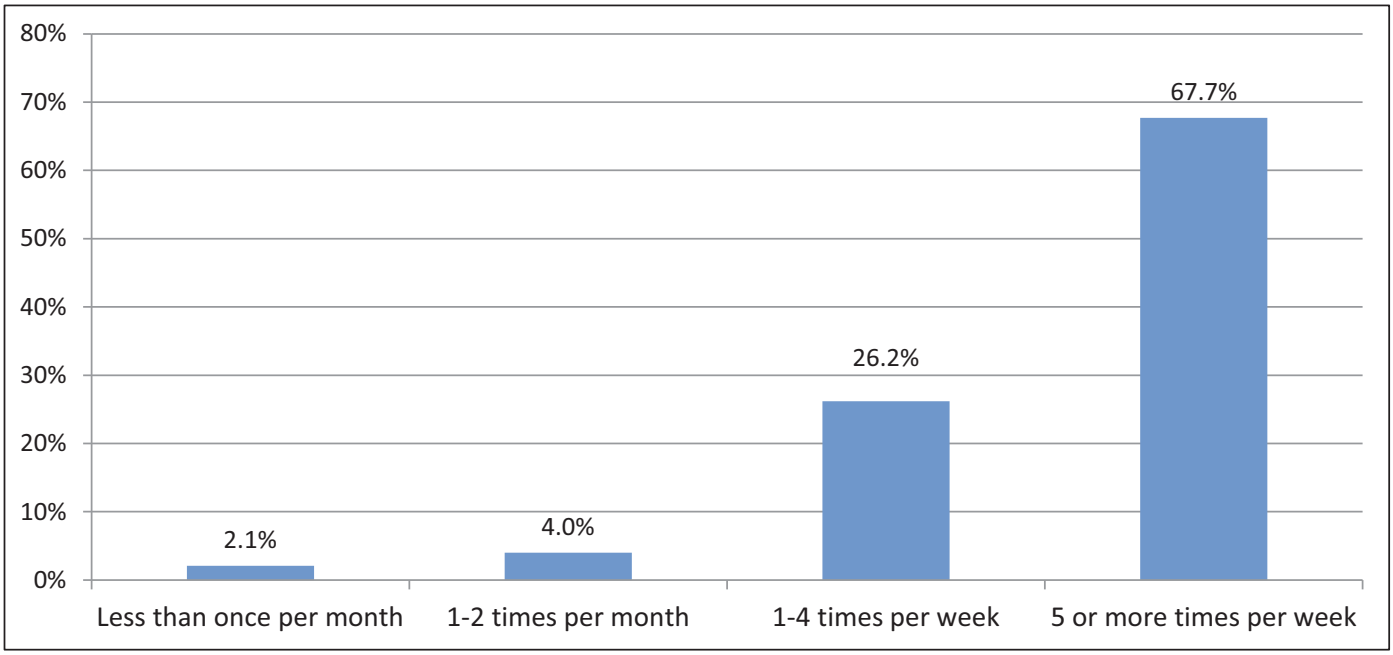


Exhibit A.13 Q15. How old are you?

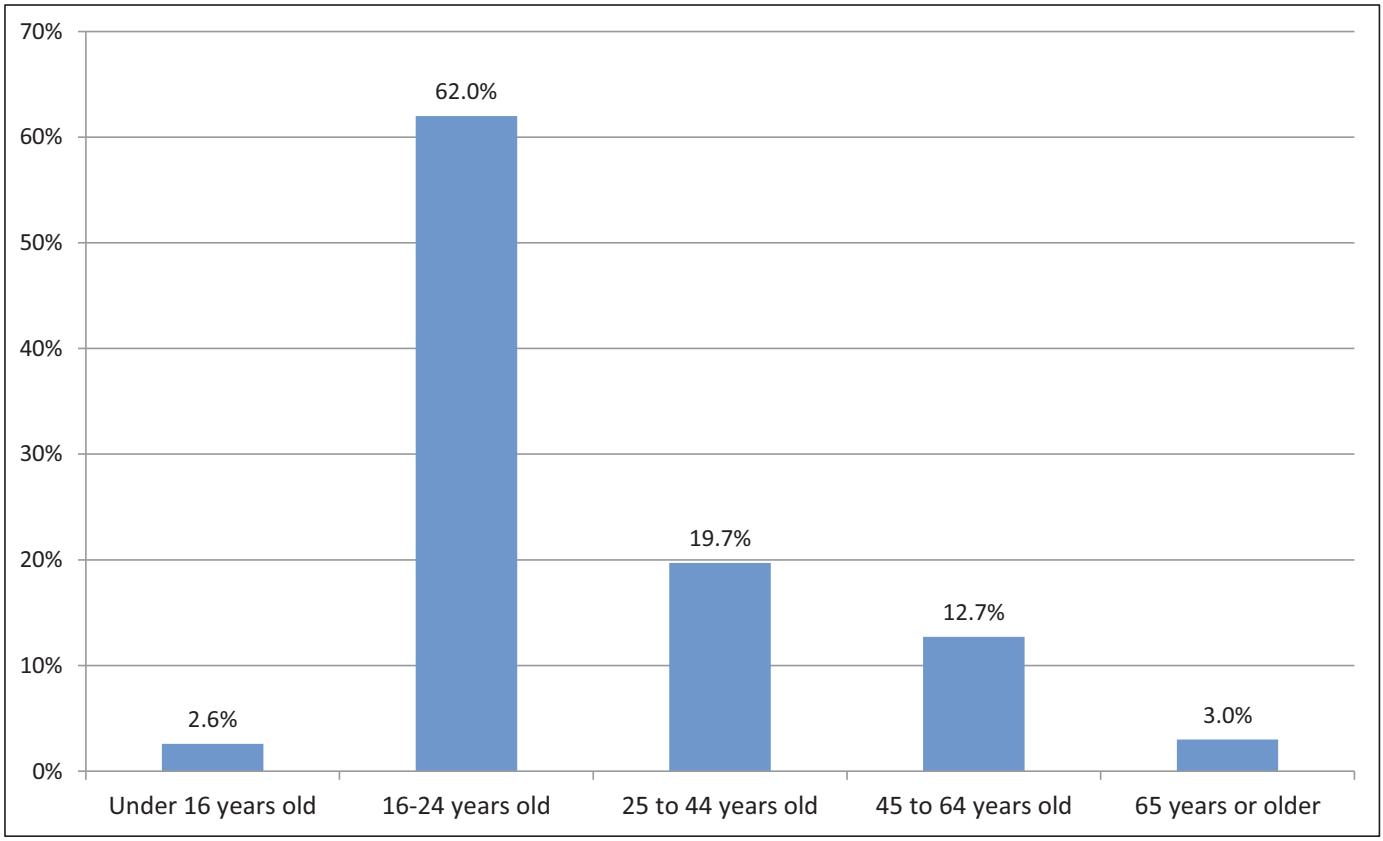


Exhibit A.14 Q16. How many people are in your household?

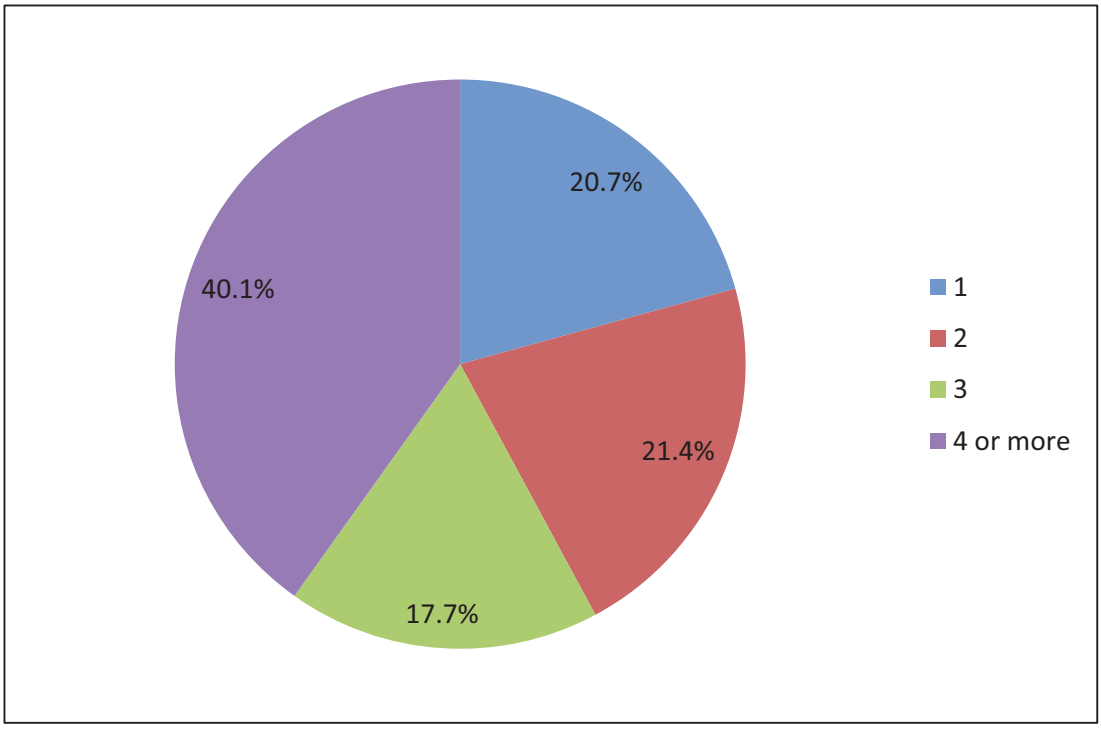


Exhibit A.15 Q17. What is your highest level of education?

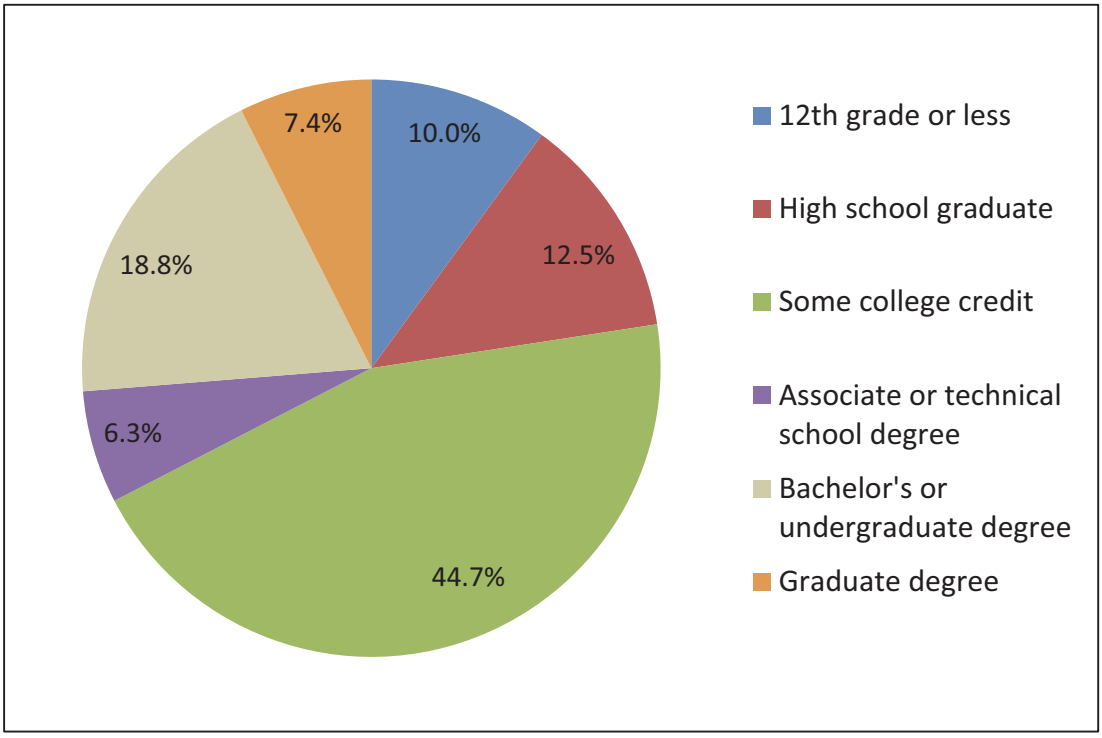


Exhibit A.16 Q18. What is your annual household income?

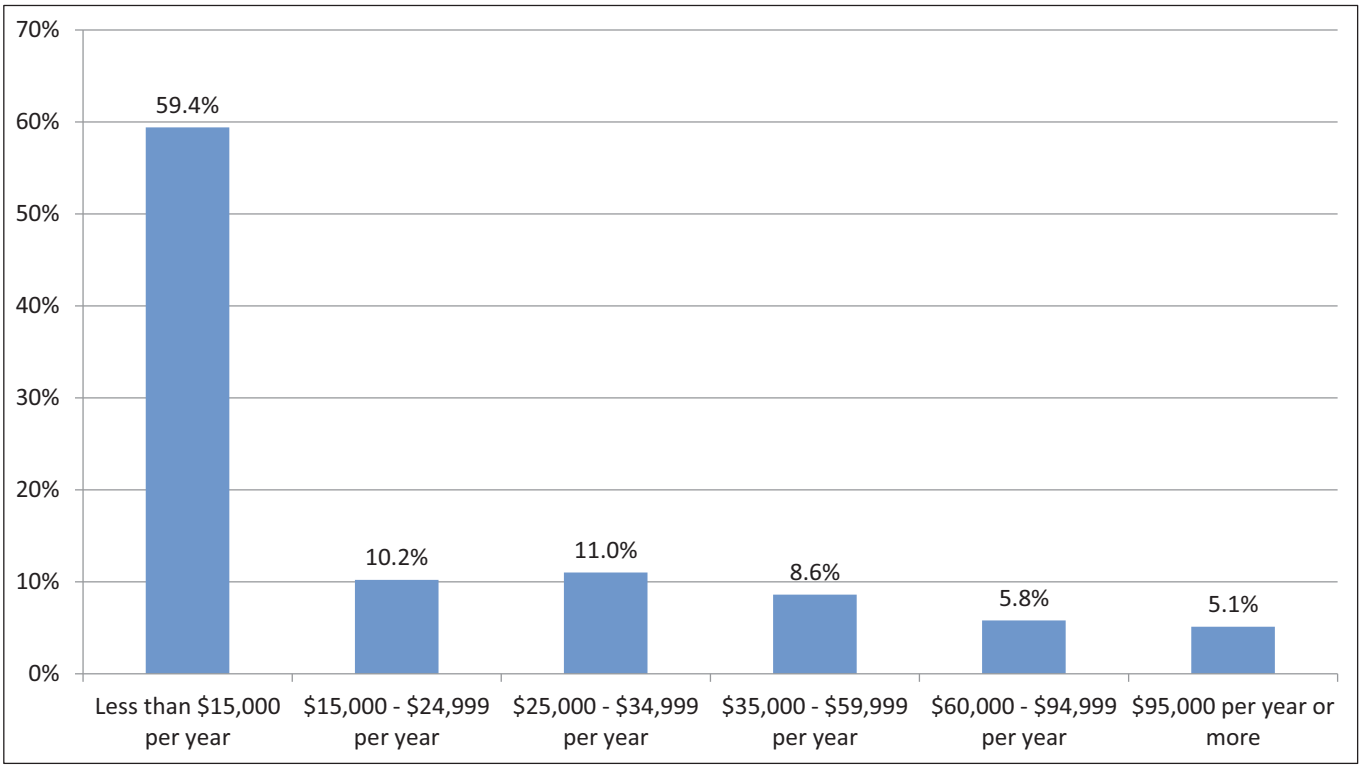


Exhibit A.17 Q8 v Q15. Vehicle Availability by Age

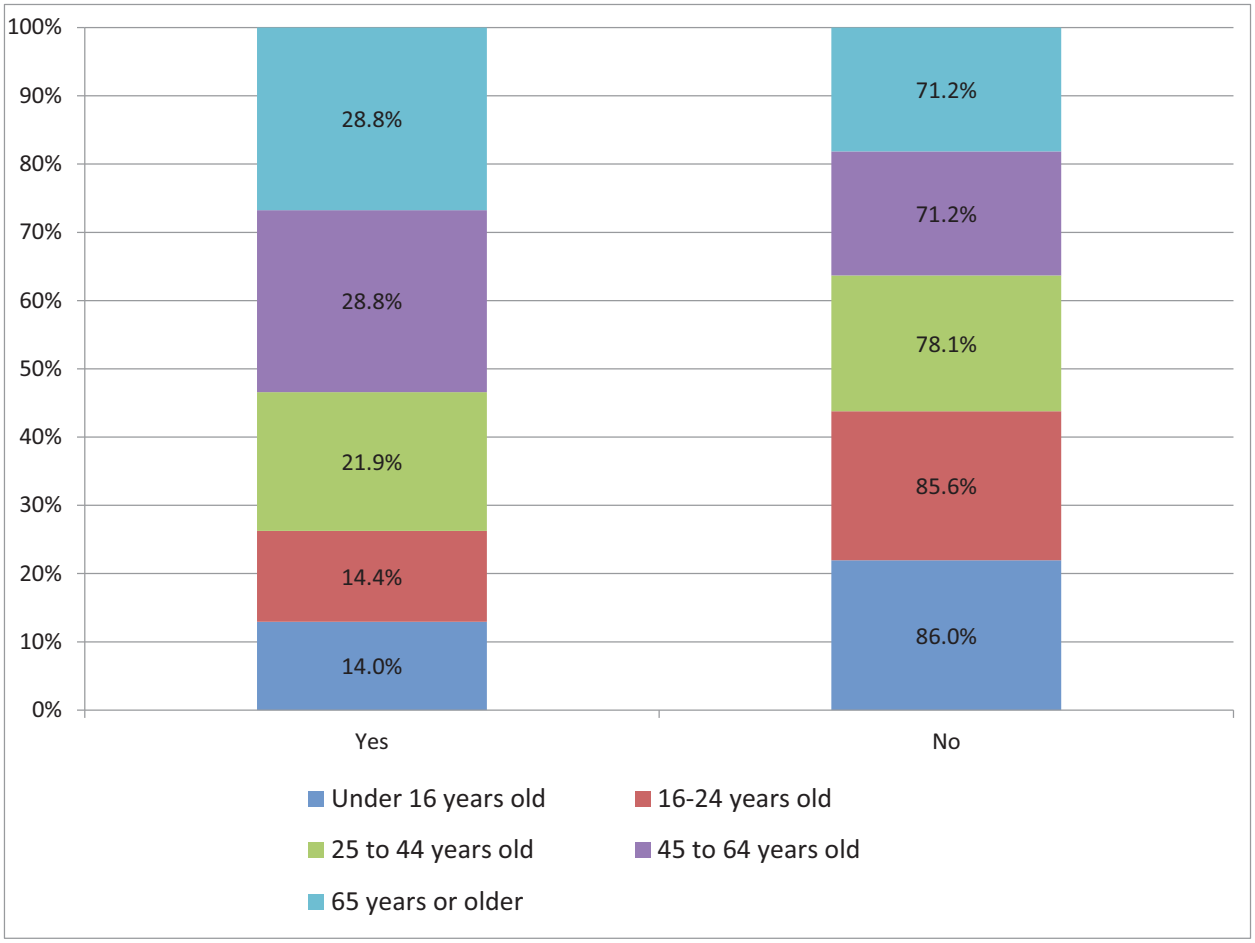


Exhibit A.18 Q11 v Q15. Age V Barriers to Transit Ridership

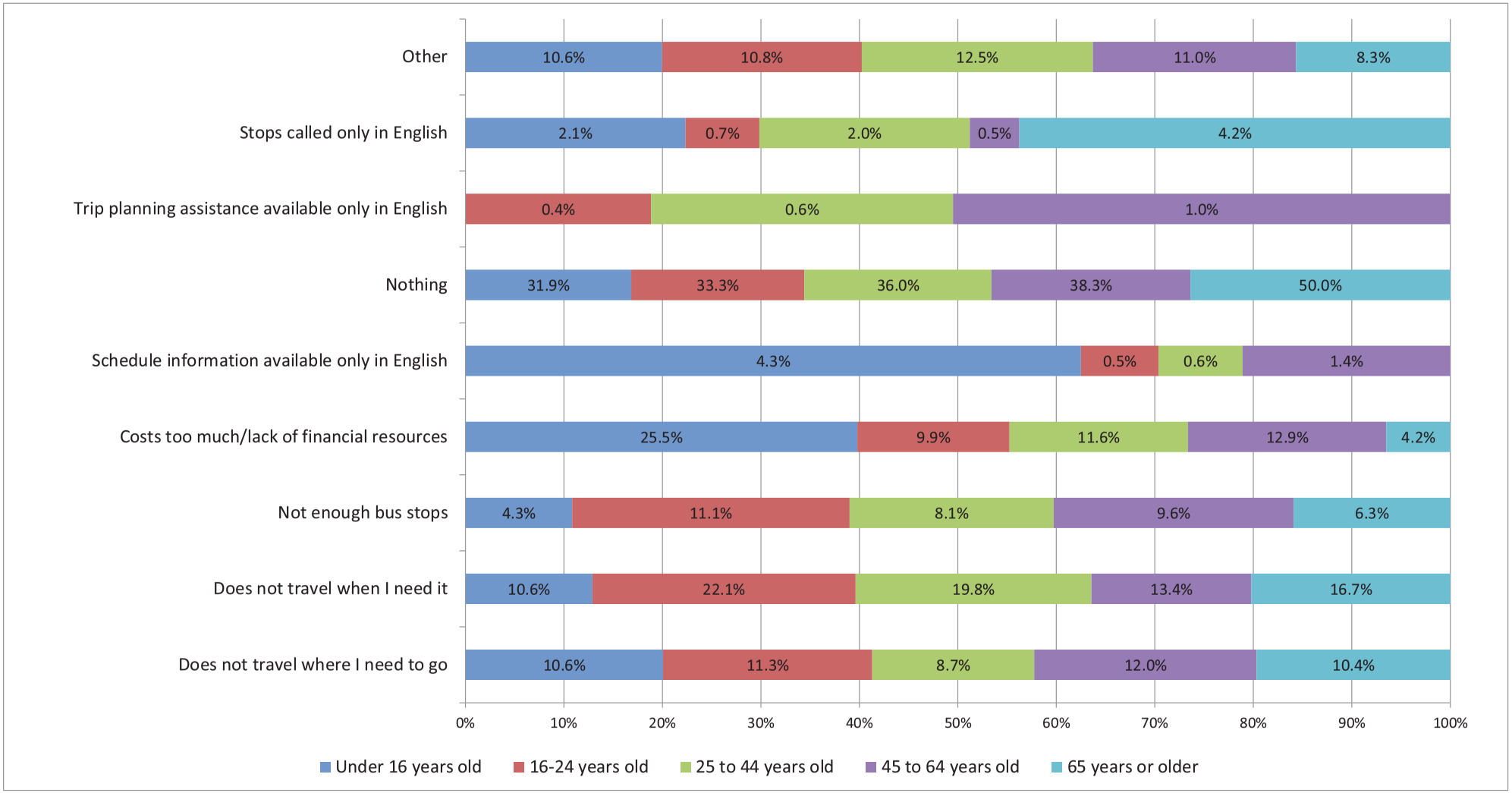


Exhibit A.19 Q5 v Q14. Mode of Travel to Stop by Frequency

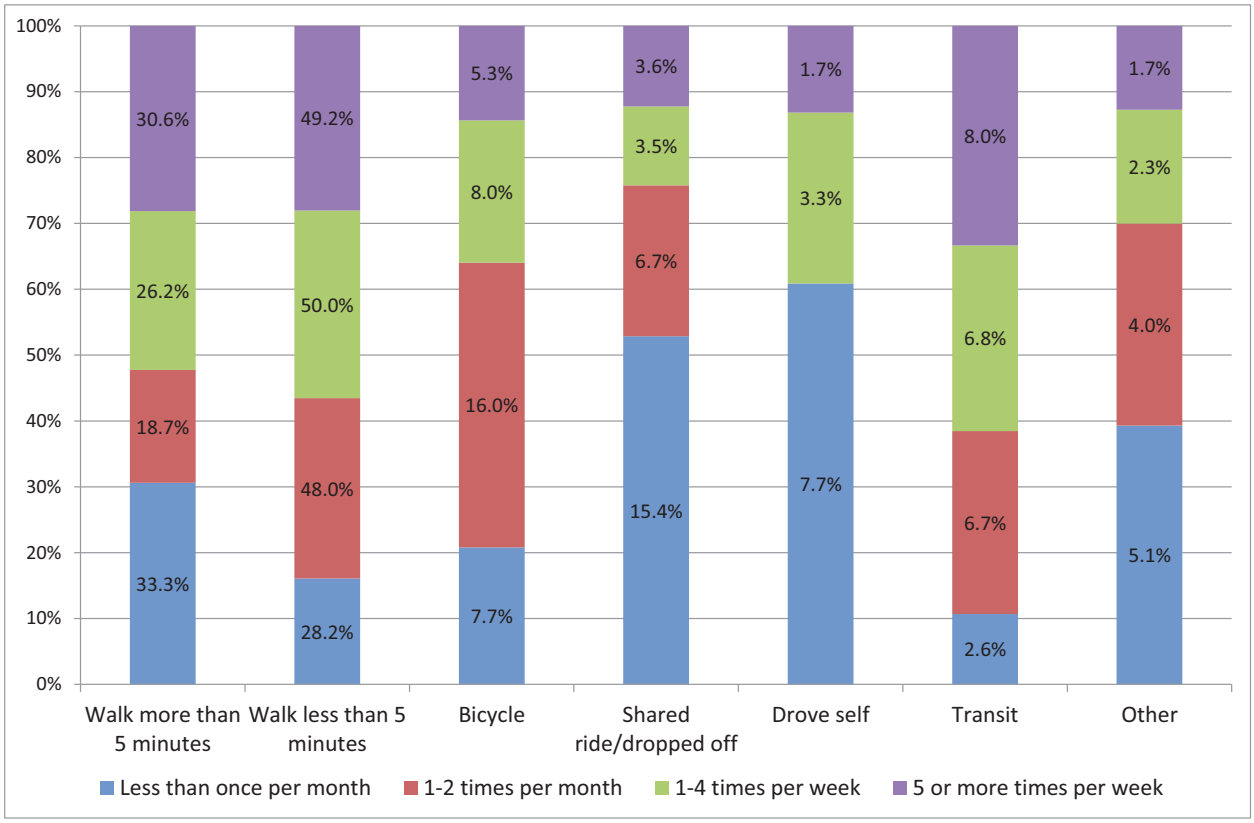


Exhibit A.20 Q6 v Q14. Mode of Travel From Stop to Destination by Frequency

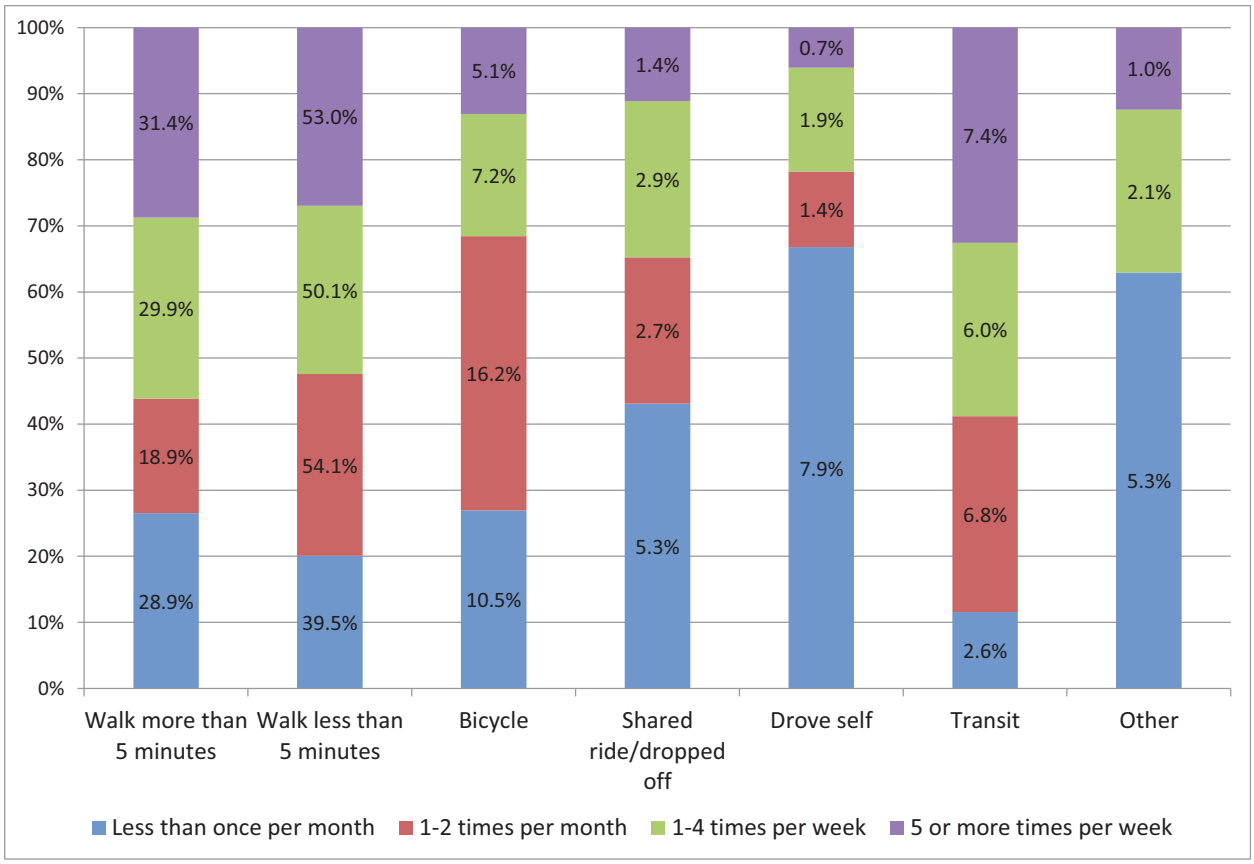


Exhibit A.21 Q5 v Q15. Mode of Travel to Stop by Age

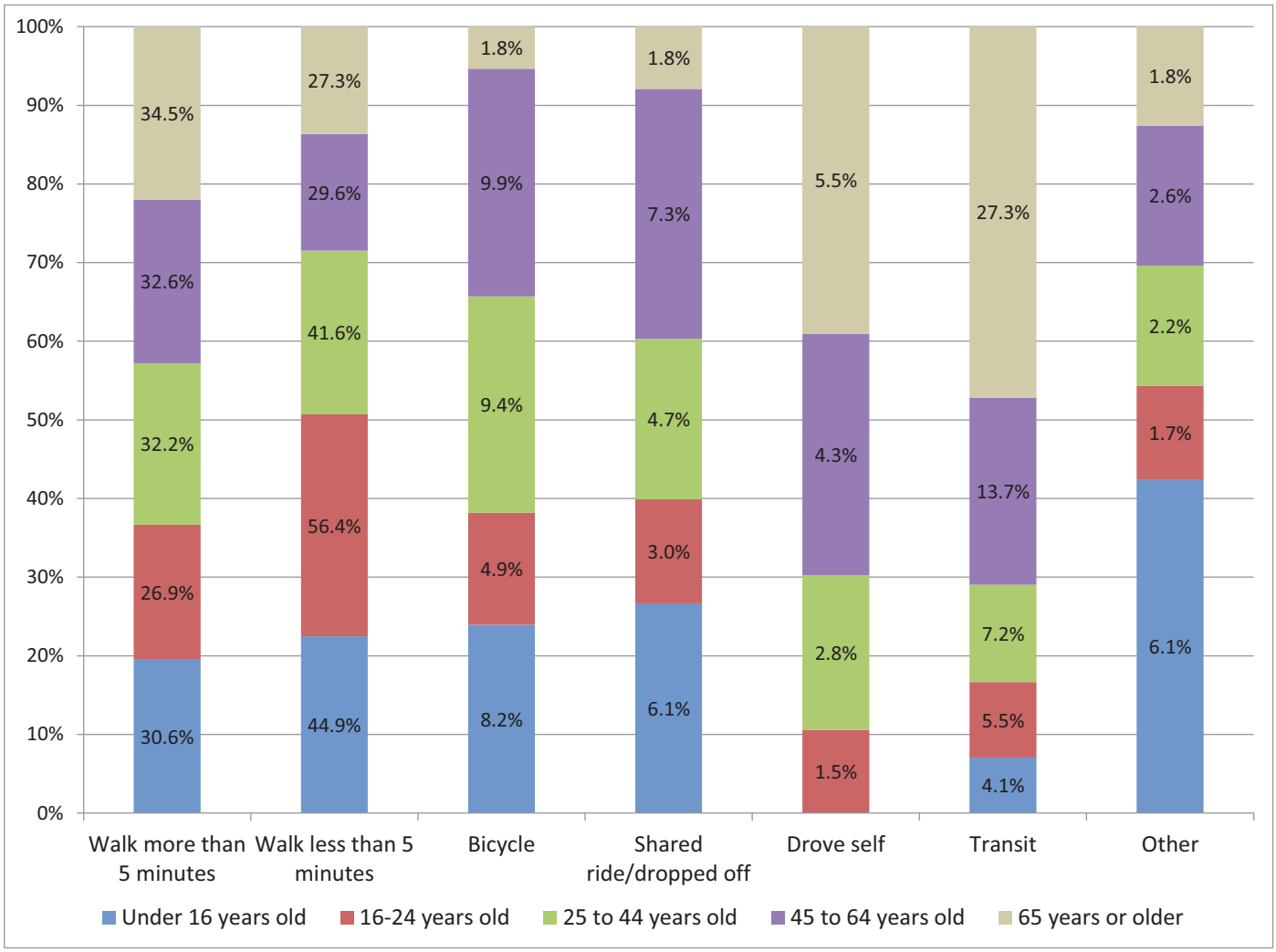


Exhibit A.22 Q6 v Q15. Mode of Travel From Stop to Destination by Age

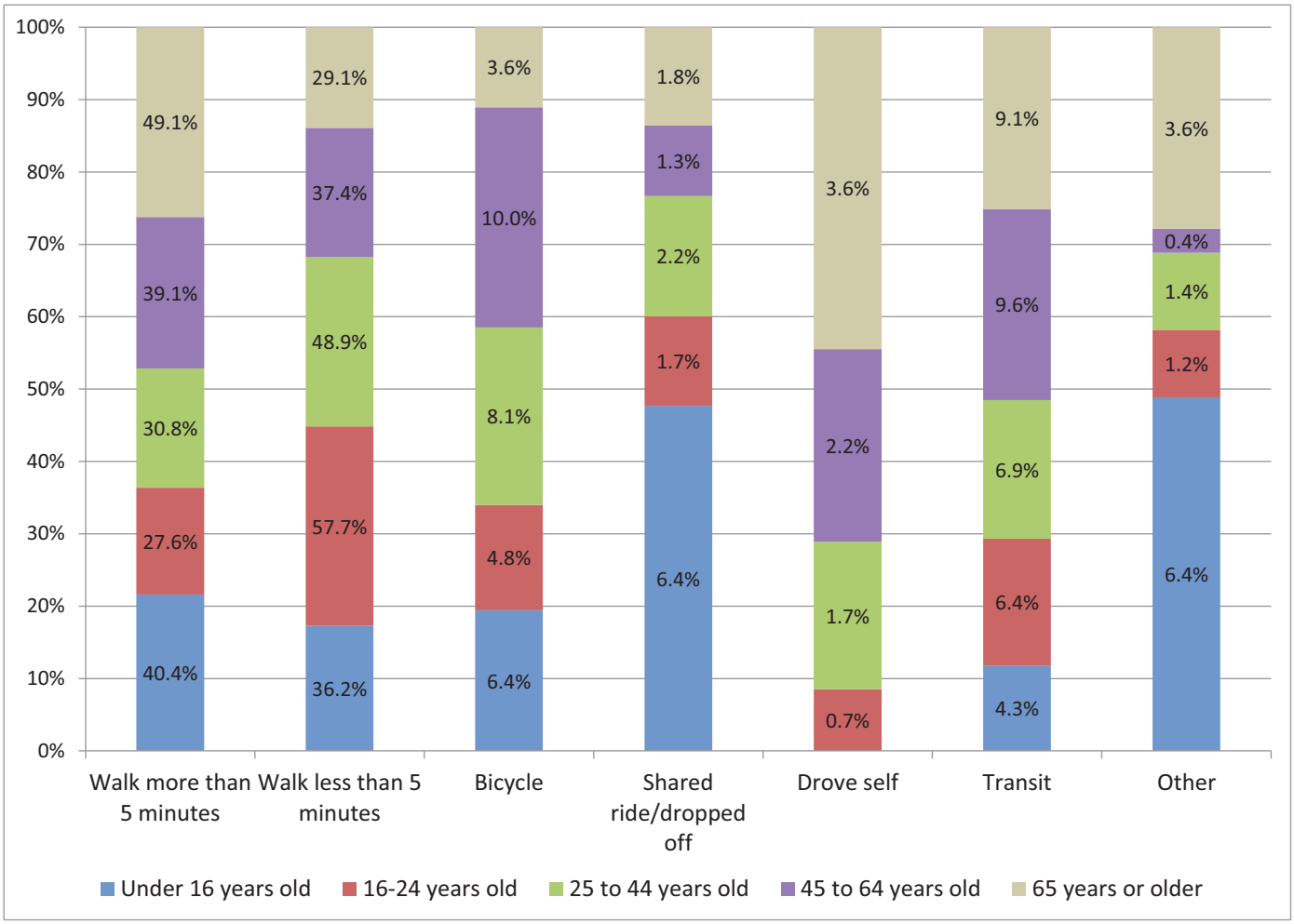


Exhibit A.23 Q10 v Q13. Tip Purpose by Source of Information

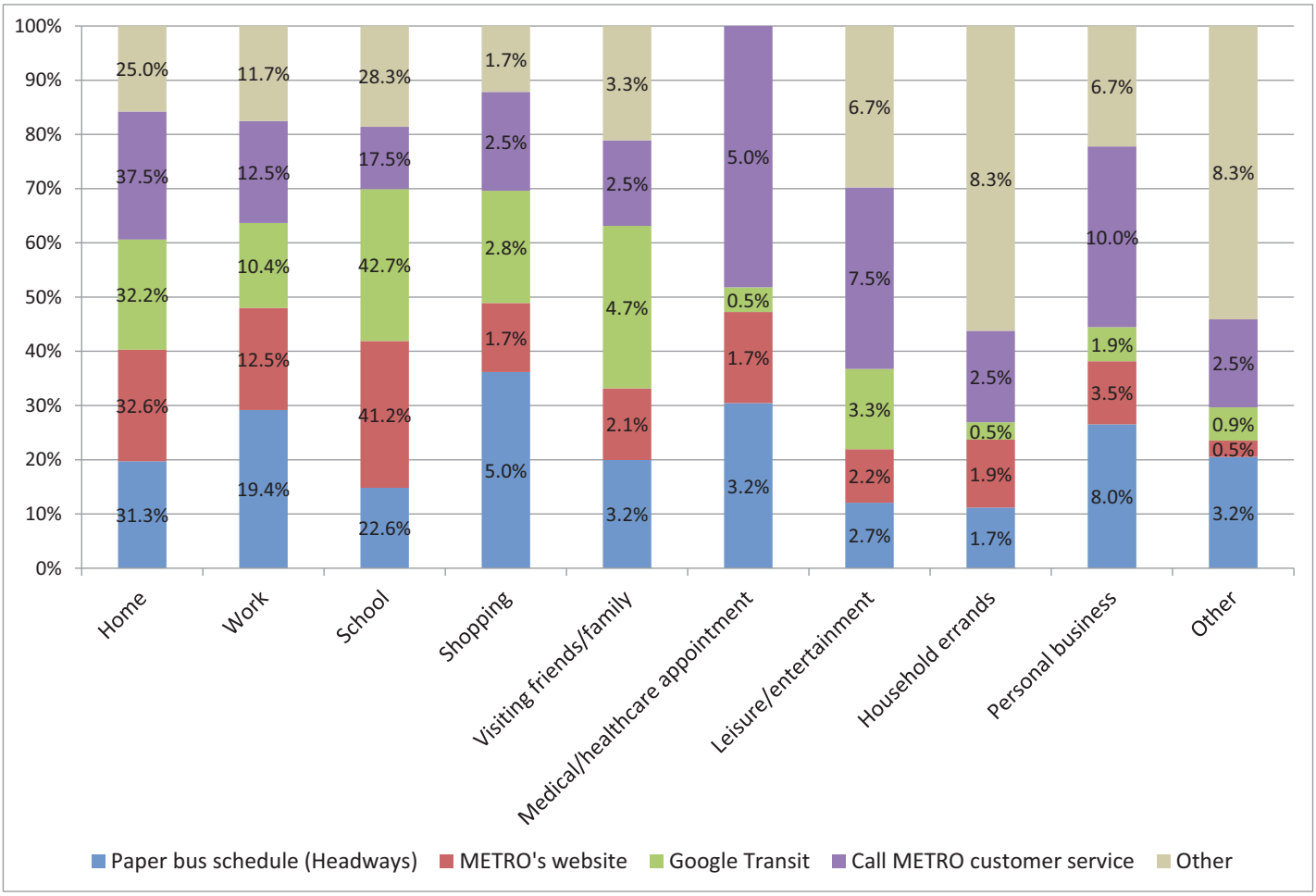


Exhibit A.24 Ridership by Route and Response Language

Route	Completed Surveys	% Ridership by Response Language		% System Ridership
		English	Spanish	
3	22	90.5%	9.5%	1.1%
4	18	100.0%	0.0%	0.9%
8	4	100.0%	0.0%	0.2%
10	121	96.6%	3.4%	6.1%
12	25	96.0%	4.0%	1.3%
15	305	99.7%	0.3%	15.5%
16	318	99.1%	0.9%	16.9%
17	81	97.6%	2.4%	4.3%
19	194	99.0%	1.0%	10.2%
20	78	97.5%	2.5%	4.1%
30	19	94.7%	5.3%	1.0%
33	18	100.0%	0.0%	0.9%
35	31	85.5%	14.5%	3.2%
35A	62	97.0%	3.0%	1.7%
40	21	100.0%	0.0%	1.1%
41	30	100.0%	0.0%	1.6%
42	7	100.0%	0.0%	0.4%
54	7	100.0%	0.0%	0.3%
55	12	100.0%	0.0%	0.7%
56	8	100.0%	0.0%	0.4%
66	101	86.3%	13.7%	4.9%
66N	5	83.3%	16.7%	0.3%
68	27	95.7%	4.3%	1.2%
69	11	91.7%	8.3%	0.6%
69A	95	88.2%	11.8%	4.4%
69W	58	92.7%	7.3%	4.3%
71	183	85.2%	14.8%	9.8%
72	19	88.2%	11.8%	0.9%
74	14	42.9%	57.1%	0.7%
75	23	78.3%	21.7%	1.2%
77	1	100.0%	0.0%	0.1%
79	16	88.2%	11.8%	0.9%
91X	23	87.0%	13.0%	1.2%

APPENDIX B – RIDE CHECK DATA

Exhibit B.1 Ride Check Sample Form Template

ROUTE 4 - (Mon-Fri) Harvey West / Emeline Trip #

BUS #:		**DATE:**	
CHECKER:		**TIME:**	

			PASSENGERS ALREADY ON		Wheelchair		Bike		
STOPS	**SCHEDULE TIME**	**ACTUAL TIME**	**ONS**	**OFFS**	**ON**	**OFF**	**ON**	**OFF**	**STOP NOTES**
Santa Cruz Metro Lane 2	6:45:00 AM								
Front & Longs									
River & River St Extension									
Water & (County Bldgs)									
Ocean & Water									
Ocean & Hubbard									
Plymouth & Ocean (Comfort Inn)									
Grant & Grant Park									
Emeline & Avalon									
Emeline & Button									
Emeline & Fernside									
Emeline & Emeline Complex									
Emeline & Emeline Complex - Building K									
Emeline & Sutphen (#1020)									
Emeline & Belmont (#508)									
Emeline & Button									
Emeline & Grant									
Grant & Grant Park									
Ocean & Felker									
Vernon & River (METRO Admin Offices)	6:58:00 AM								
River & Golf Club (City Corporation Ya									
Encinal & Highway 9									
Encinal & Sylvania									
Encinal & #370									
Dubois & #111 (Juliano)									
Harvey West & Harvey West Pool									
Harvey West & Sylvania									
Coral & Granite Rock									
Coral & River									
River & Josephine									
Front & Pacific									
Front & Soquel Ave									
Santa Cruz Metro Center	7:28:00 AM								
TOTAL			**0**	**0**	**0**	**0**	**0**	**0**	

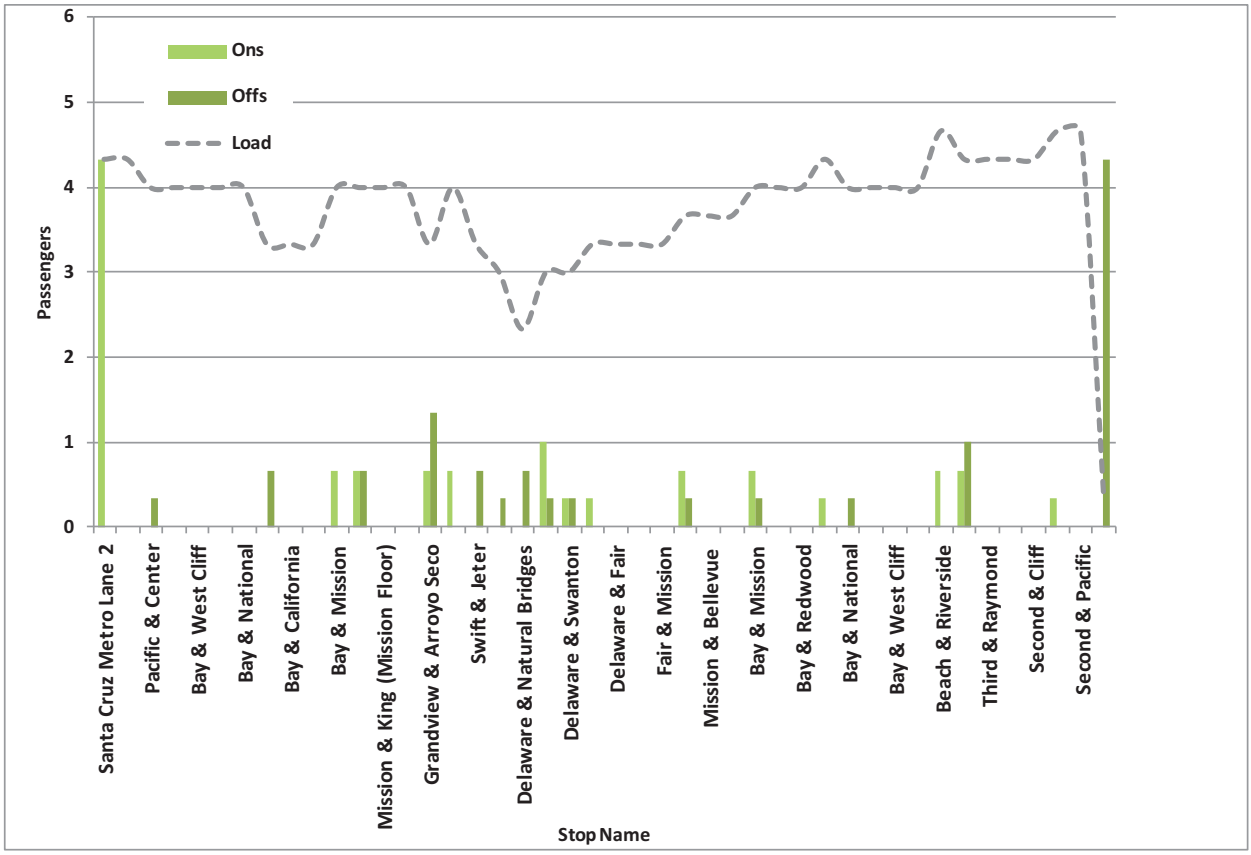
Notes:

	All	Most	Some	None
Amount of stops announced:				
Ride Notices Displayed :				
(Specify Notices Displayed)				
Brochures Available:				
(Specify Brochures)				
Exterior Clean:				
Floors Clean:				
Windows Clean:				
Graffiti:				
Condition of Bus:	Poor	Fair	Good	Excellent

ROUTE BY ROUTE MAX LOAD AND ON-TIME PERFORMANCE SUMMARIES

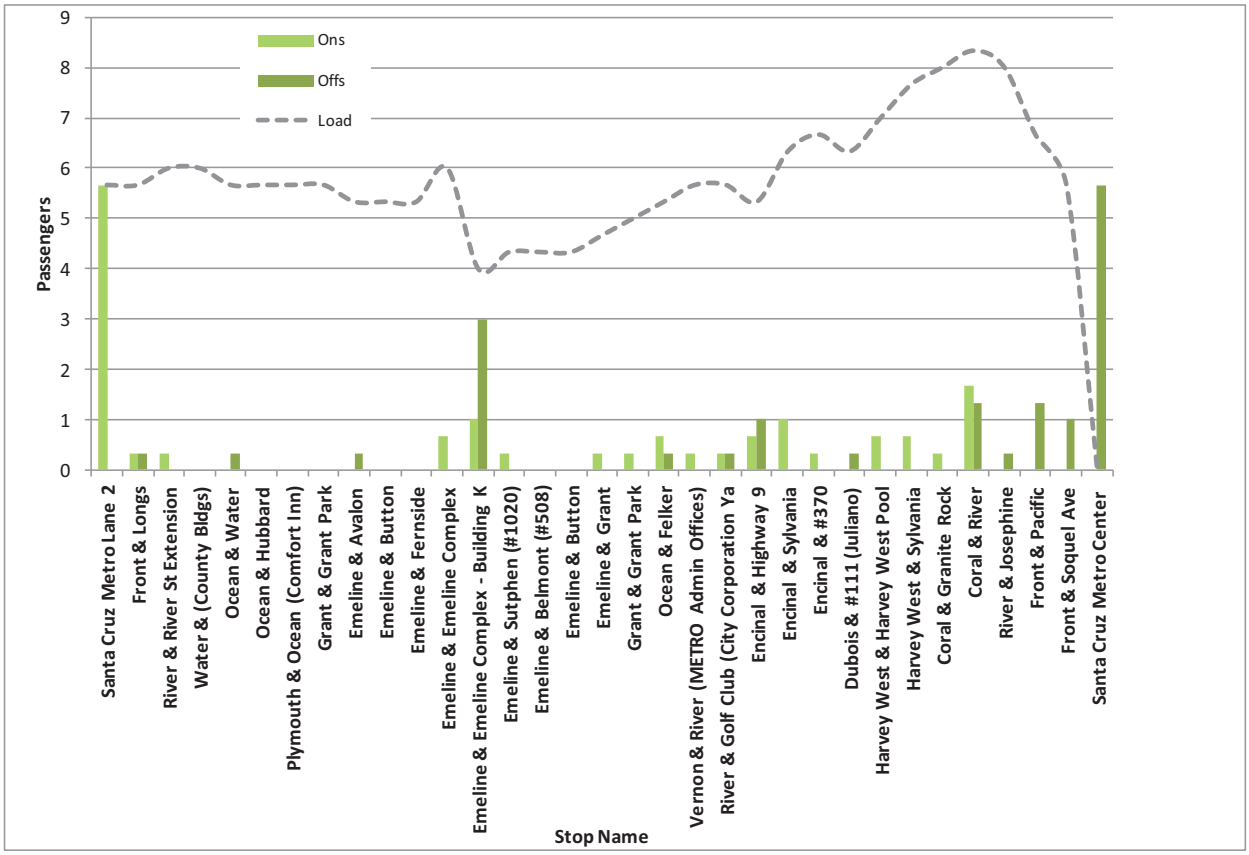
The following section provides summary charts and tables depicting vehicle load averages by route and on-time performance. Load is calculated as the total passengers already on the vehicle at a given stop summed with the difference between instances of boardings and alightings. It should be noted that using this formula may result in the occasional negative load count if substantially more passengers disembark the vehicle at a particular stop relative to those boarding.

Exhibit B.2 Route 3 Max-Load and On-time Performance Summaries



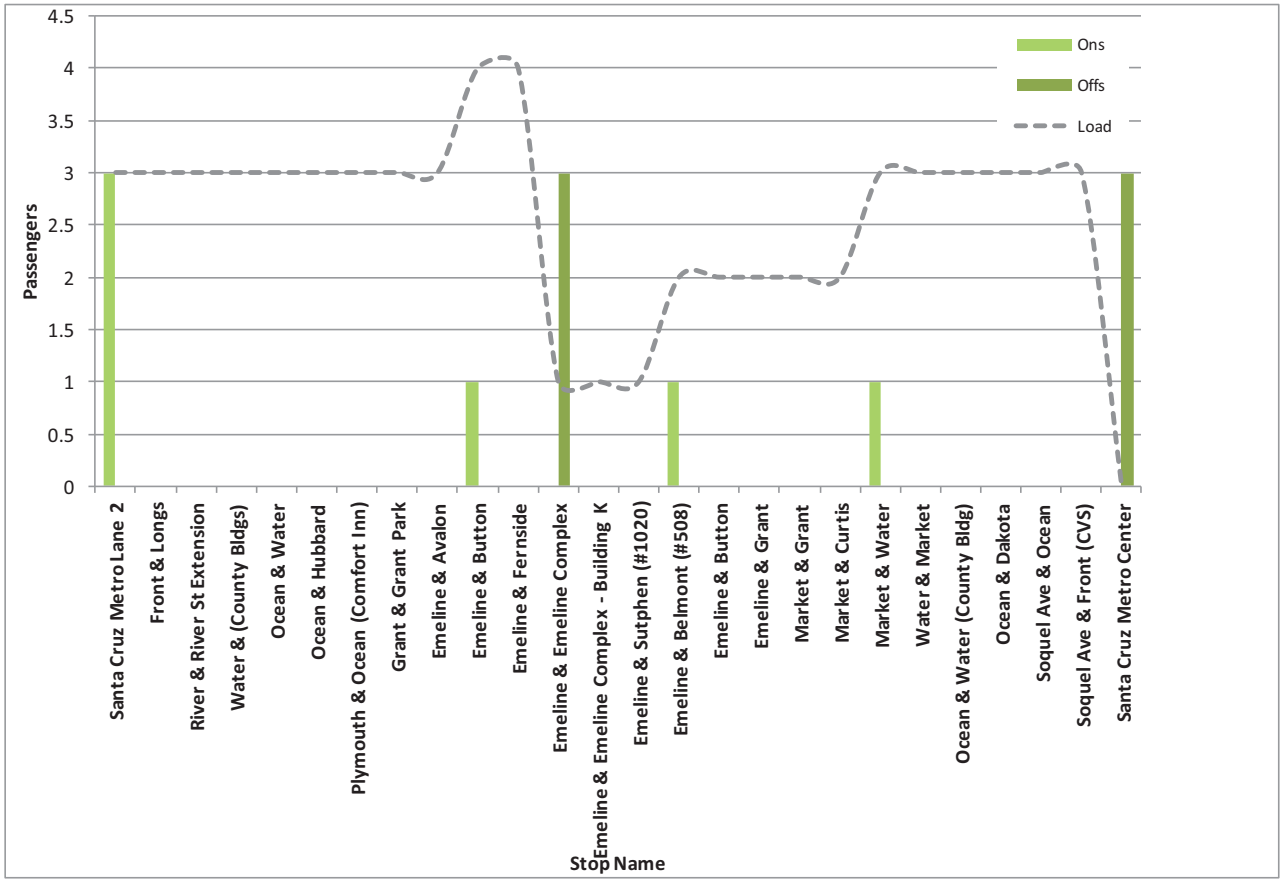
Early	Late	Missed	On-time
16.7 percent	16.7 percent	0.0 percent	66.7 percent

Exhibit B.3 Route 4 Max-Load and On-time Performance Summaries



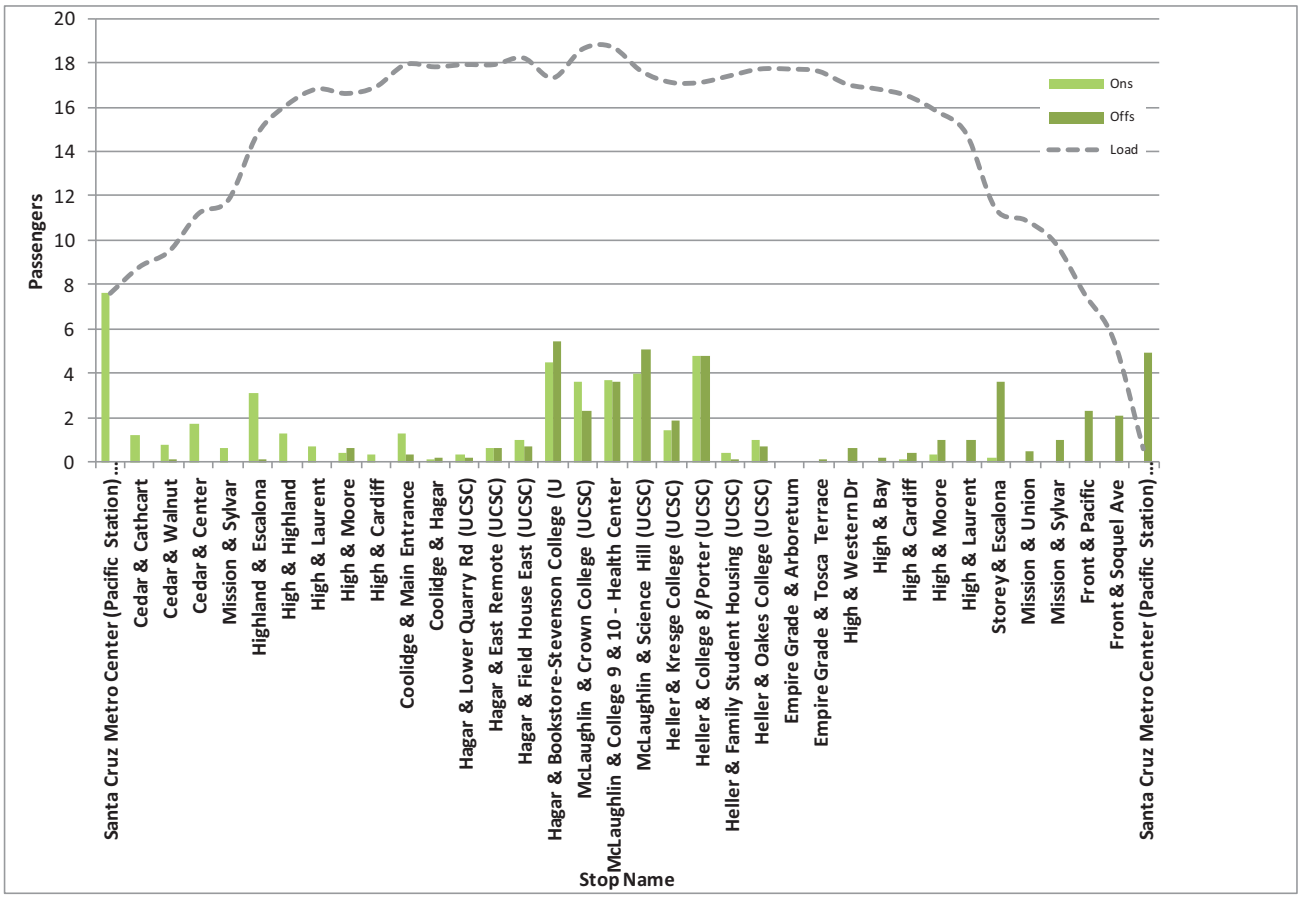
Early	Late	Missed	On-time
23.1 percent	15.4 percent	0.0 percent	61.5 percent

Exhibit B.4 Route 8 Max-Load and On-time Performance Summaries



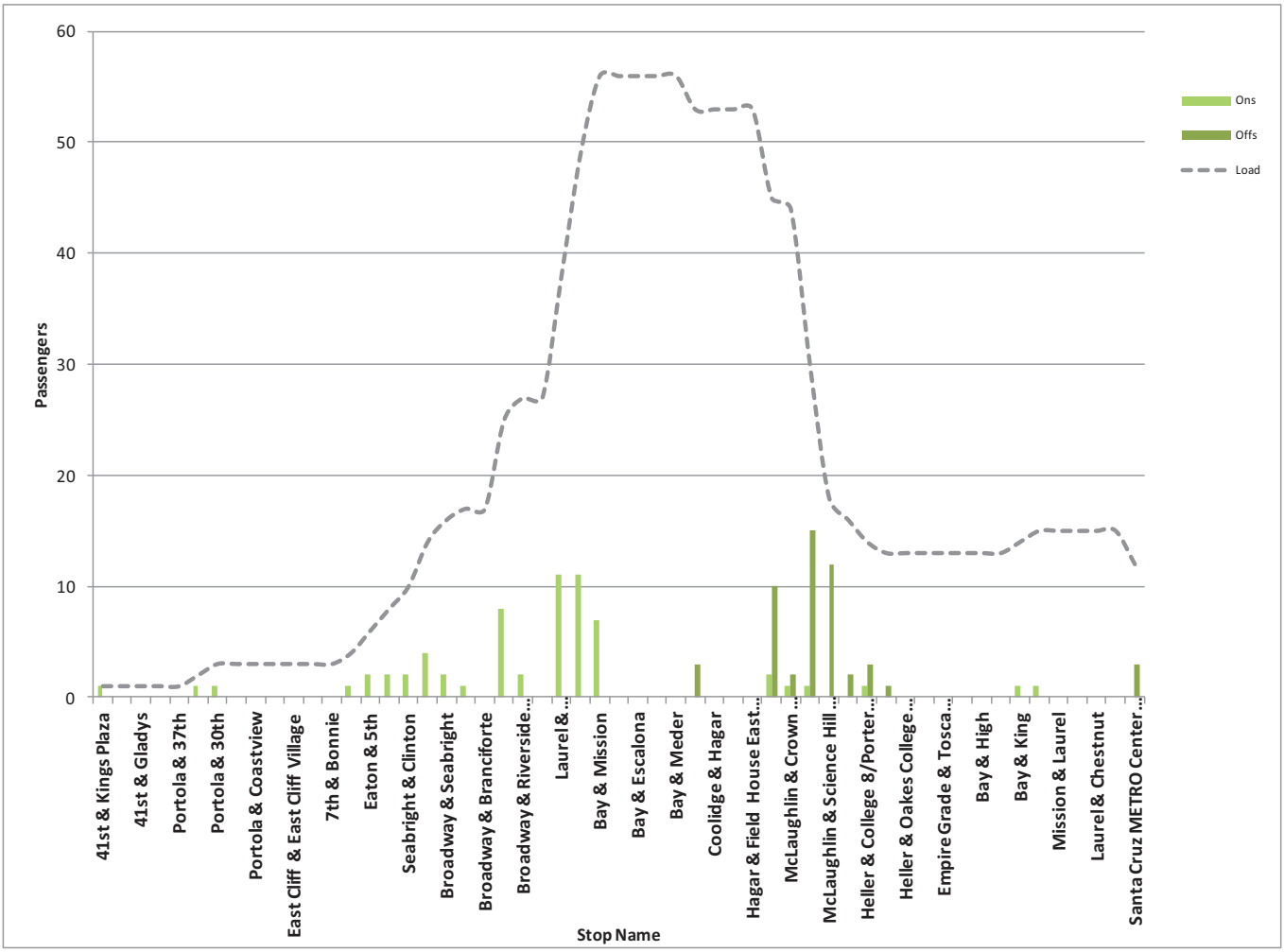
Early	Late	Missed	On-time
0.0 percent	0.0 percent	0.0 percent	100.0 percent

Exhibit B.5 Route 10 Max-Load and On-time Performance Summaries



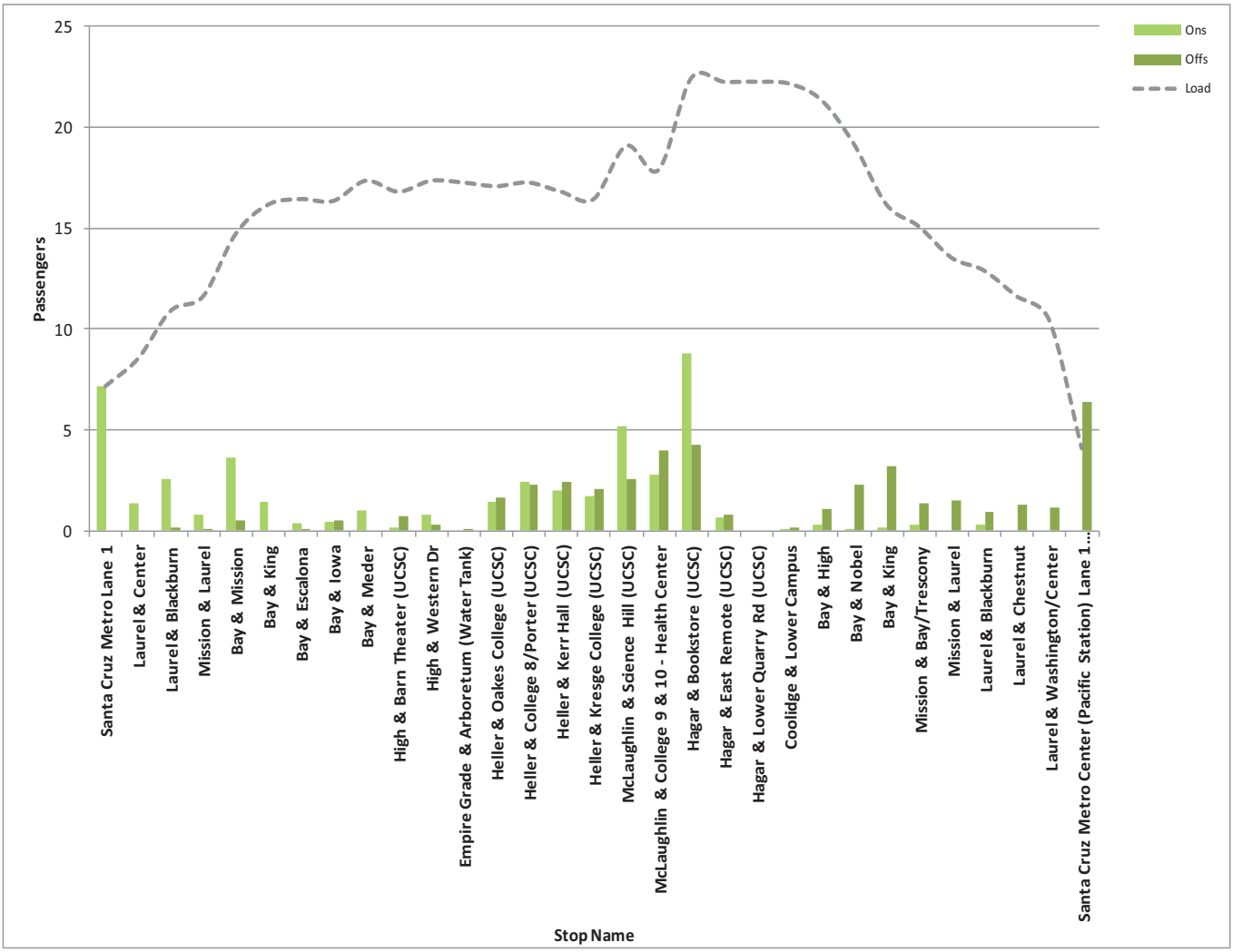
Early	Late	Missed	On-time
0.0 percent	24.1 percent	5.6 percent	92.6 percent

Exhibit B.6 Route 12 Max-Load and On-time Performance Summaries



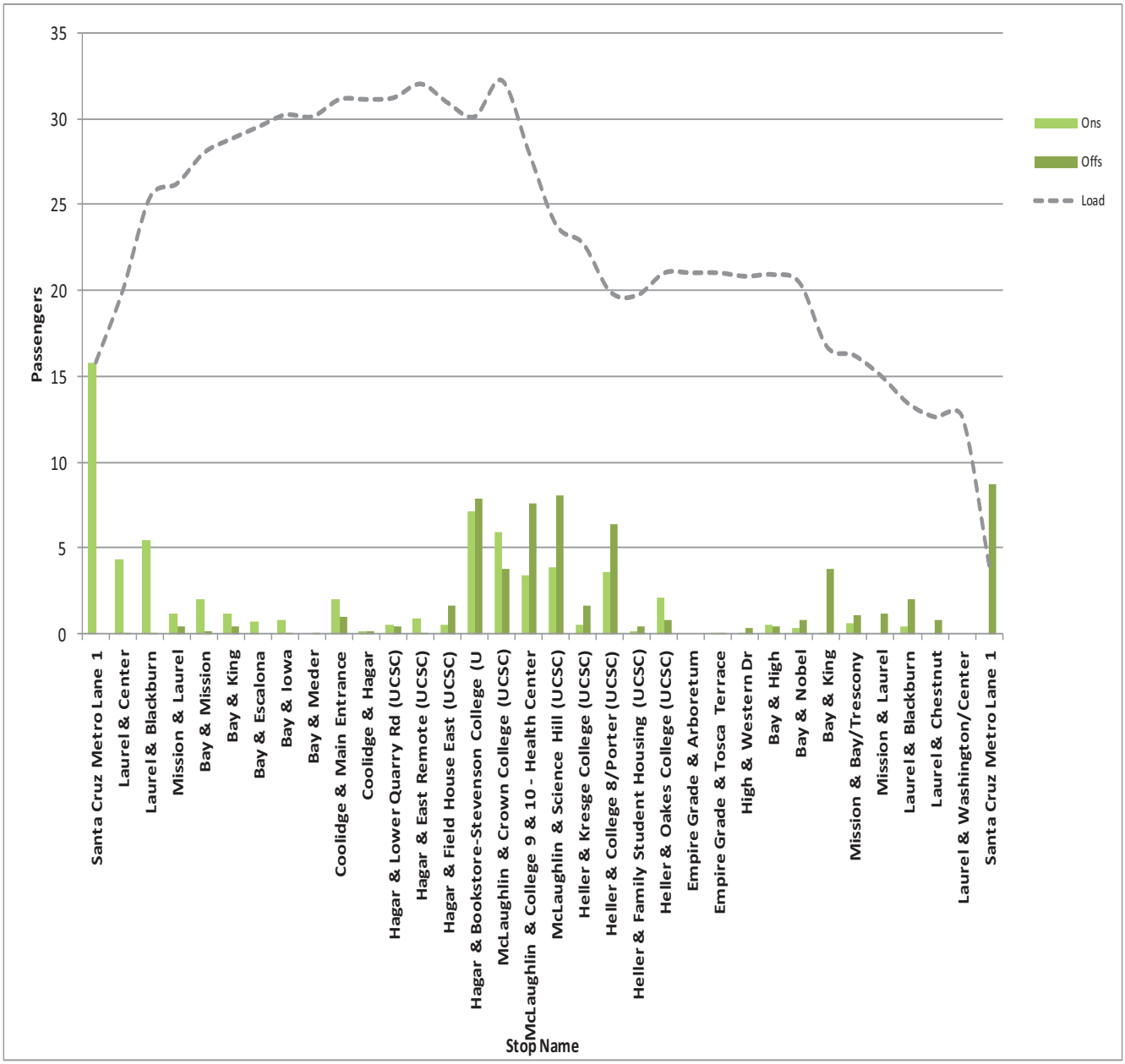
Early	Late	Missed	On-time
25.0 percent	25.0 percent	0.0 percent	50.0 percent

Exhibit B.7 Route 15 Max-Load and On-time Performance Summaries



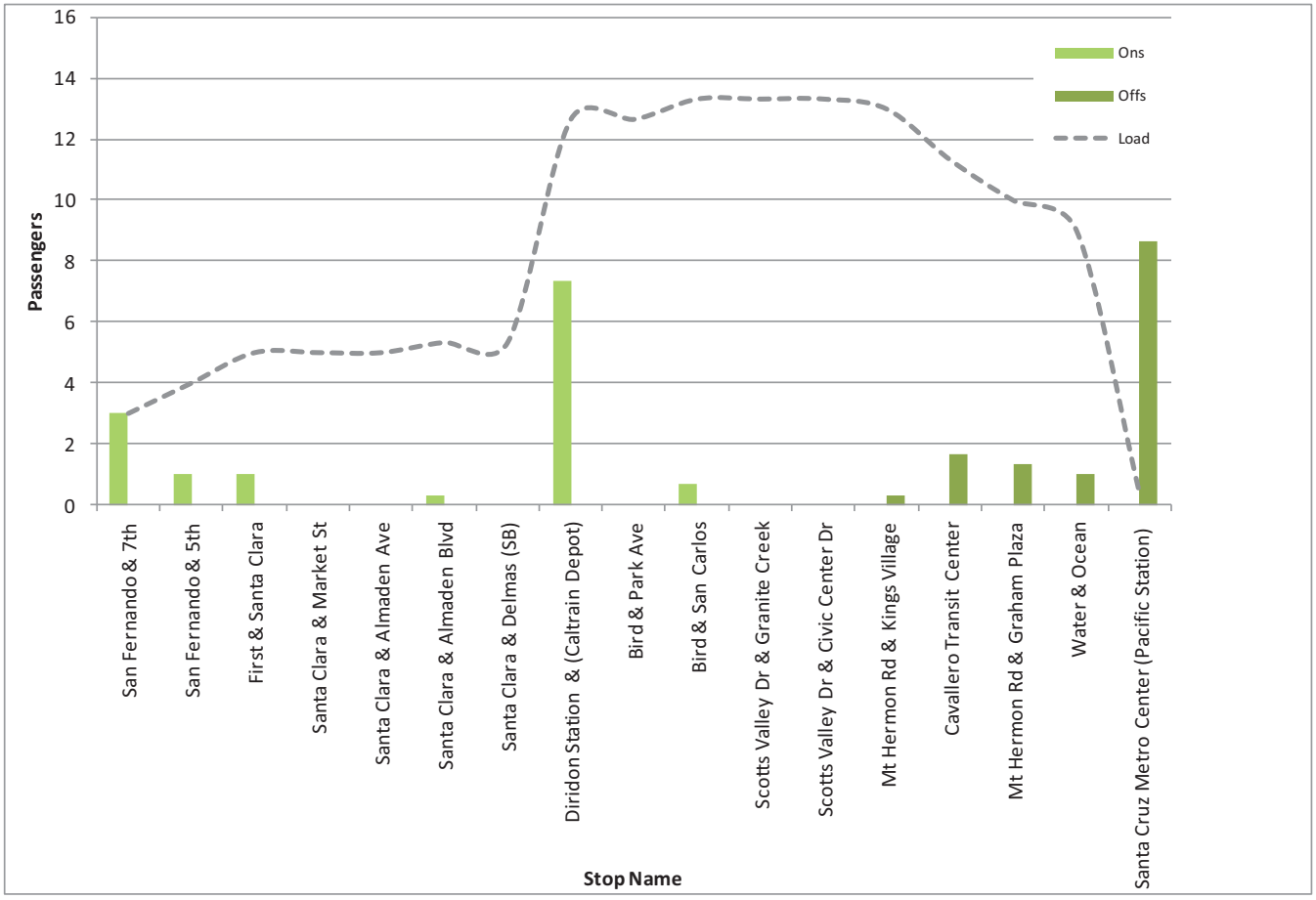
Early	Late	Missed	On-time
1.7 percent	11.7 percent	5.0 percent	81.7 percent

Exhibit B.8 Route 16 Max-Load and On-time Performance Summaries



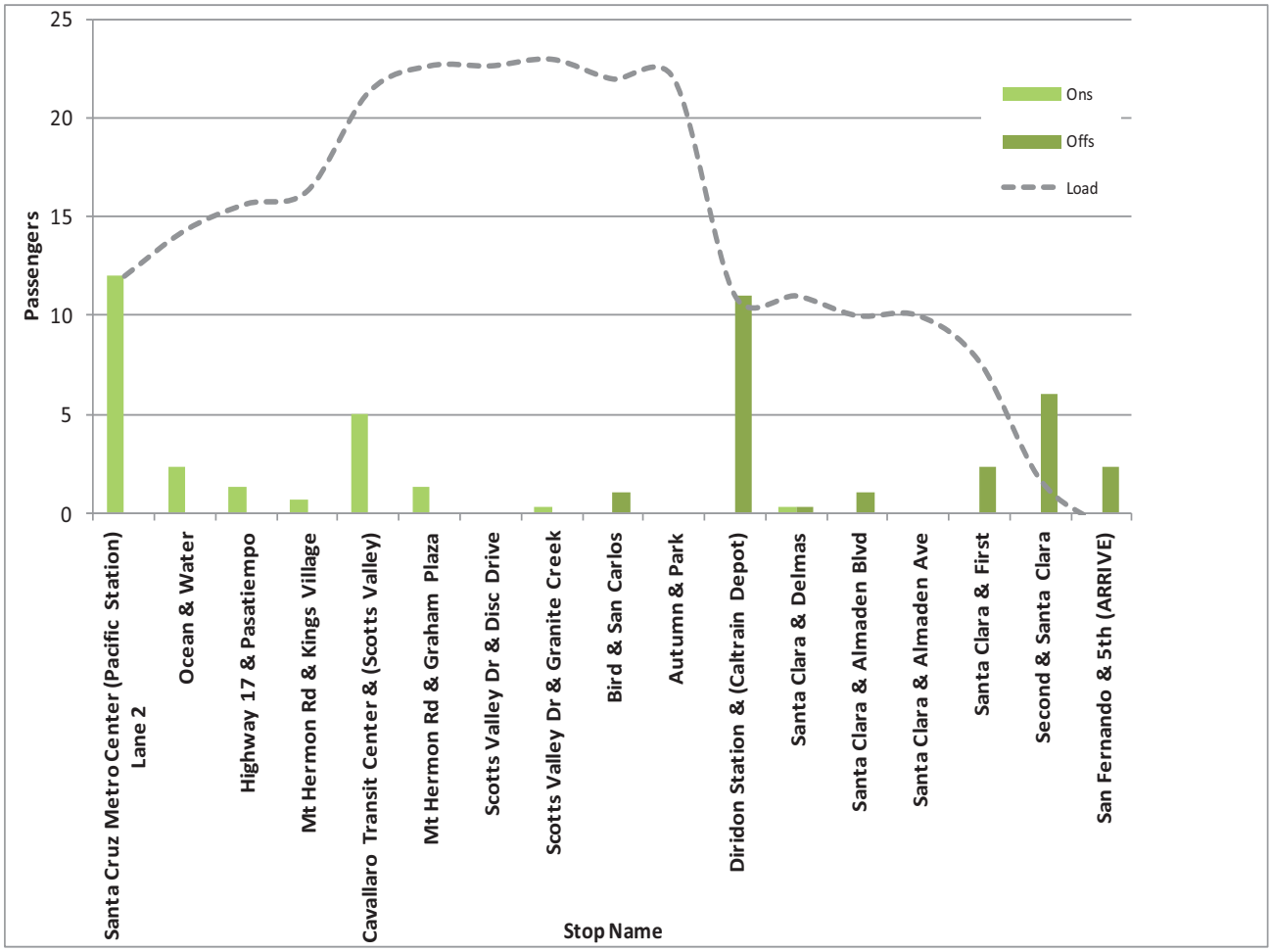
Early	Late	Missed	On-time
4.0 percent	18.0 percent	10.0 percent	68.0 percent

Exhibit B.9 Route 17 to Scotts Valley Max-Load and On-time Performance Summaries



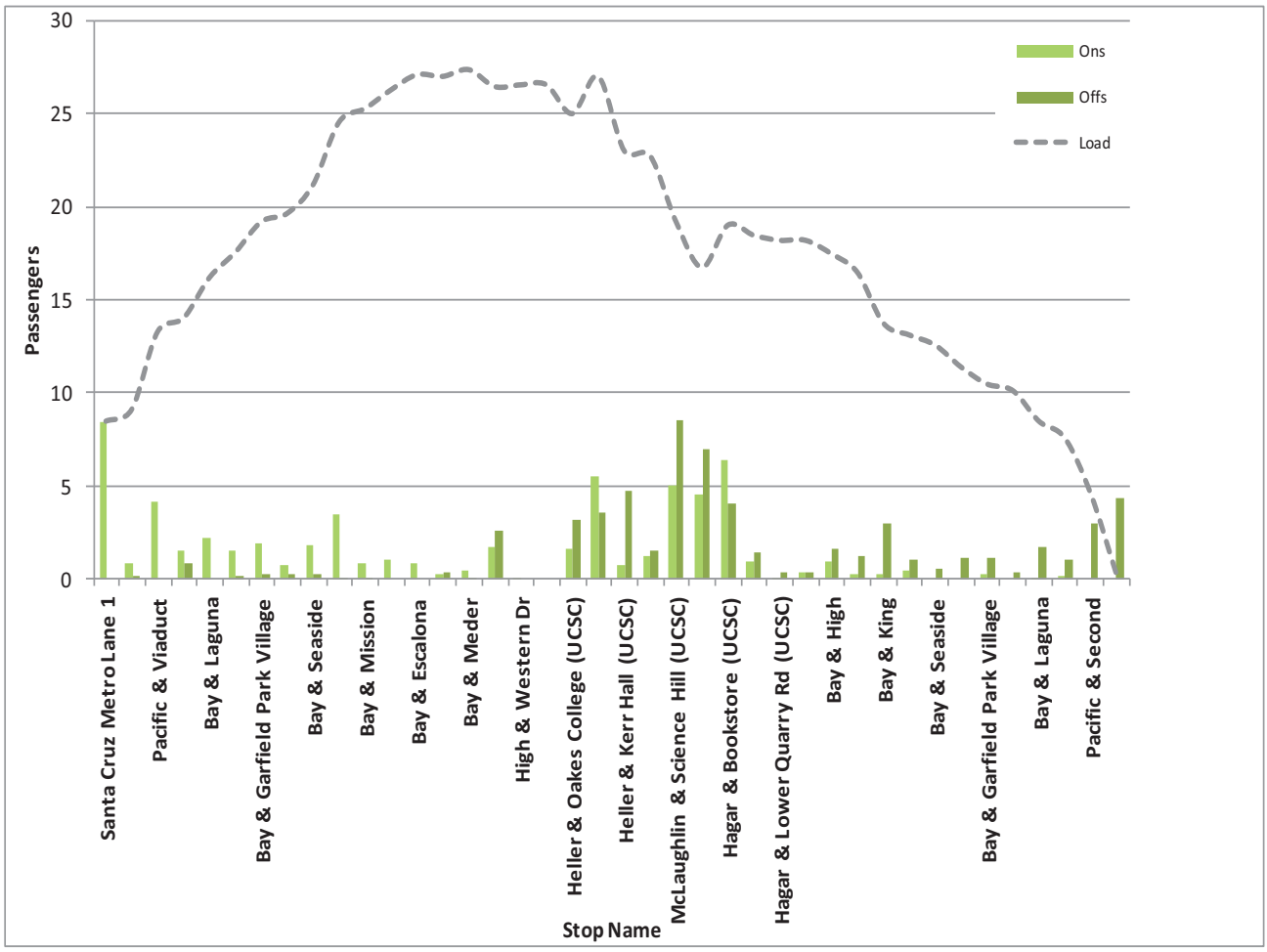
Early	Late	Missed	On-time
9.1 percent	36.4 percent	0.0 percent	54.5 percent

Exhibit B.10 Route 17 to San Jose Max-Load and On-time Performance Summaries



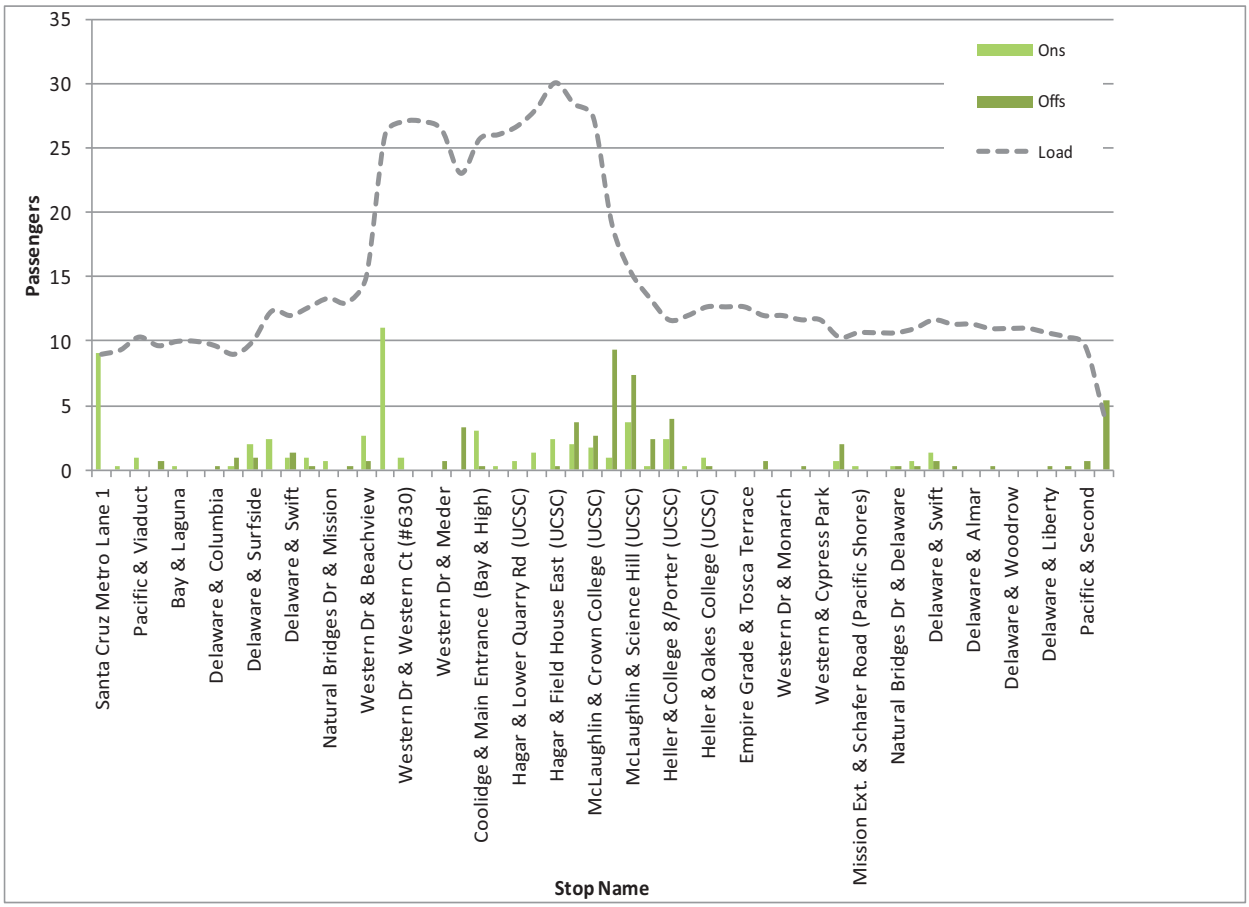
Early	Late	Missed	On-time
0.0 percent	18.2 percent	18.2 percent	63.6 percent

Exhibit B.11 Route 19 Max-Load and On-time Performance Summaries



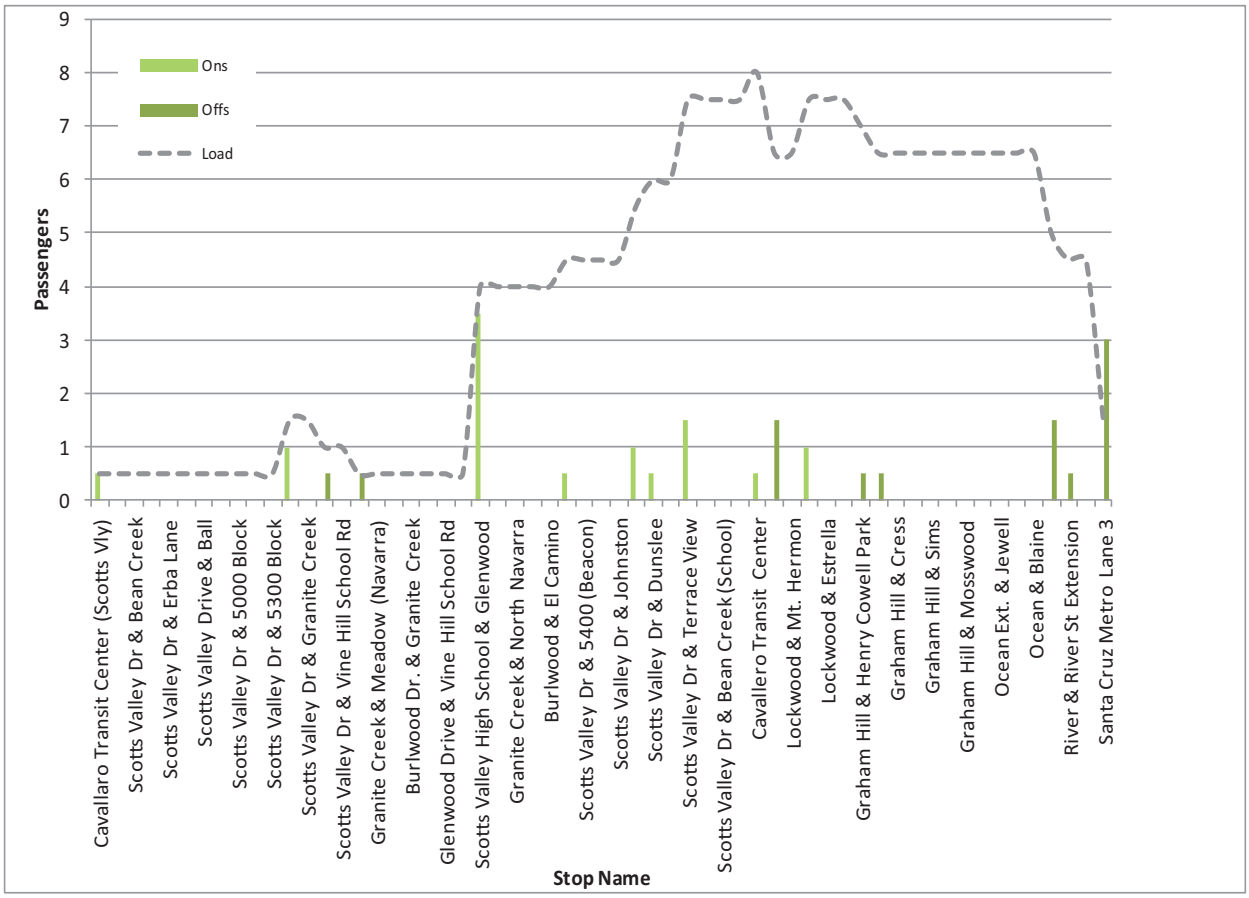
Early	Late	Missed	On-time
3.7 percent	29.6 percent	1.9 percent	64.8 percent

Exhibit B.12 Route 20 Max-Load and On-time Performance Summaries



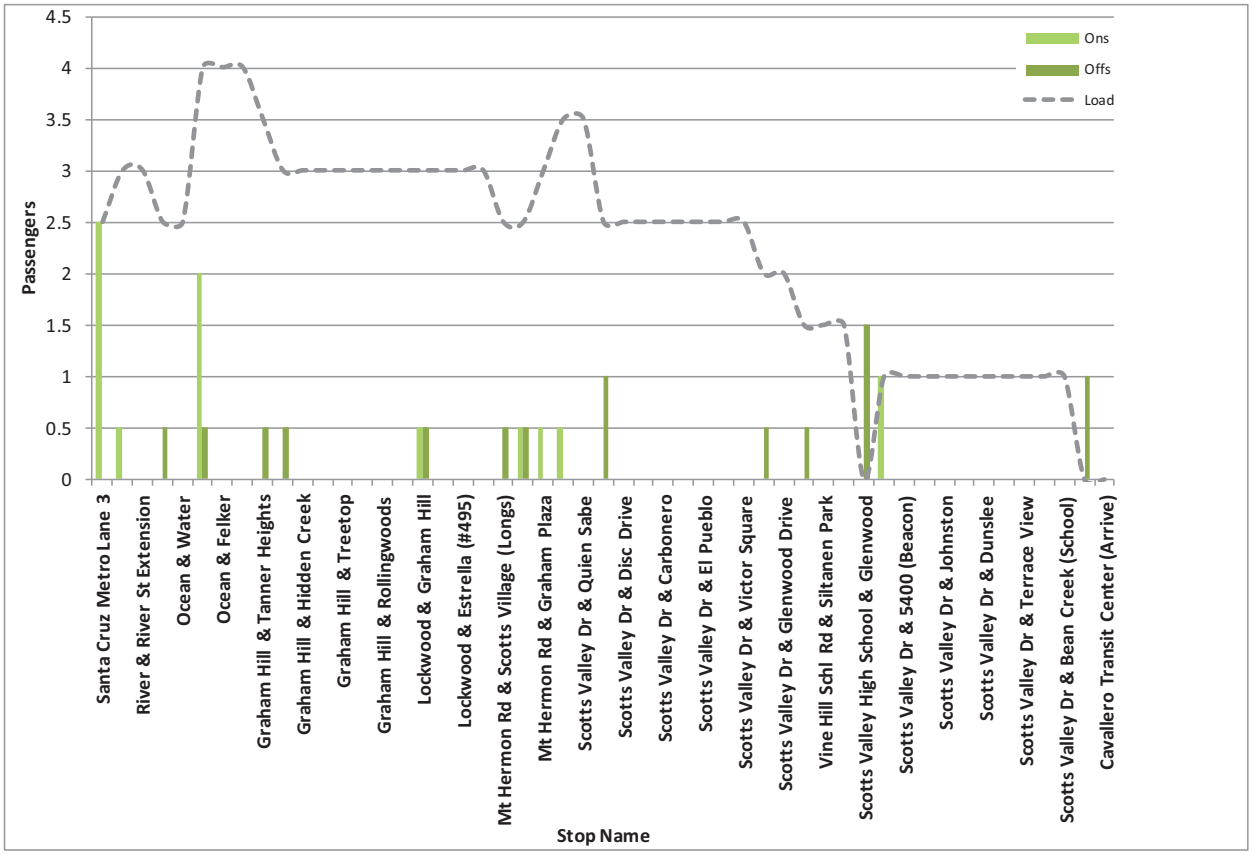
Early	Late	Missed	On-time
0.0 percent	9.5 percent	0.0 percent	90.5 percent

Exhibit B.13 Route 30 to Santa Cruz Max-Load and On-time Performance Summaries



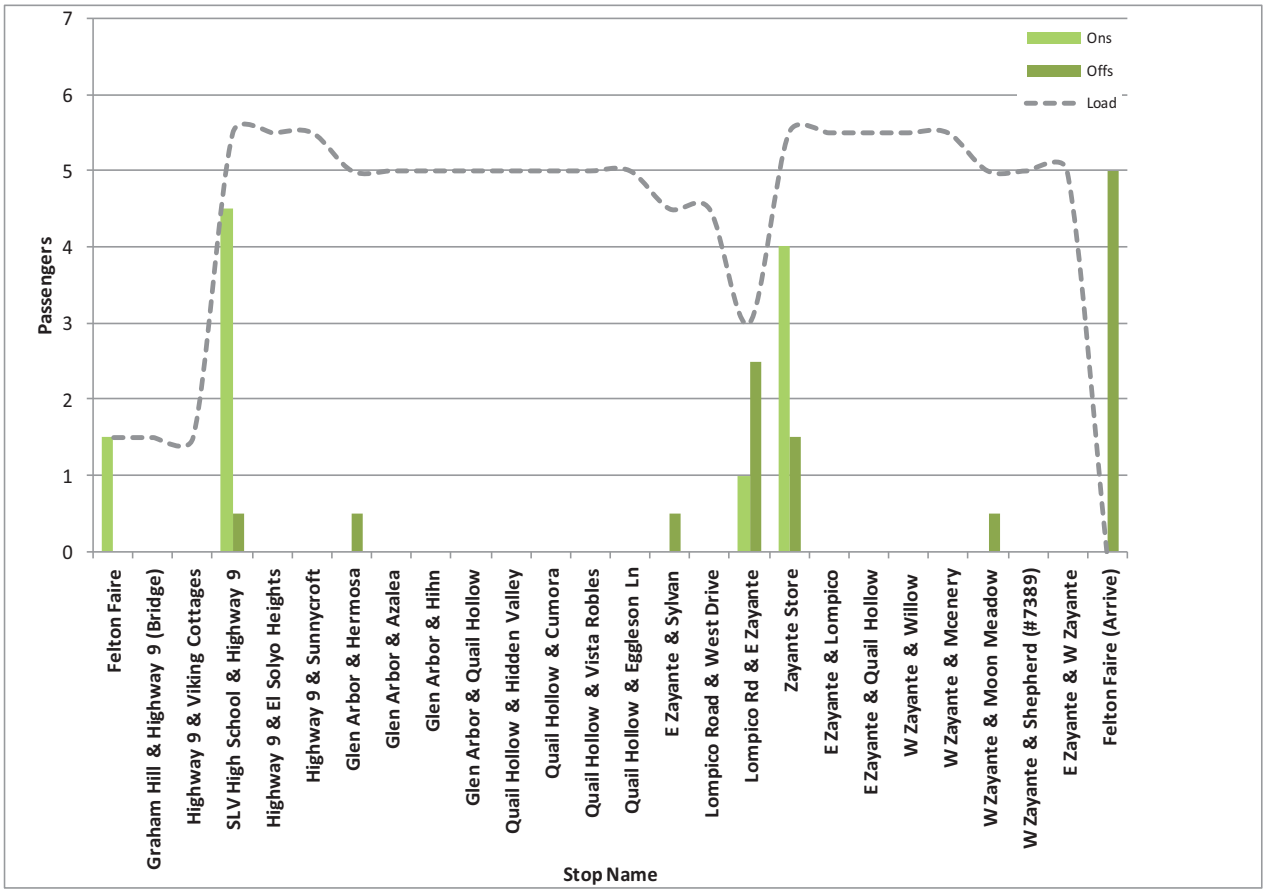
Early	Late	Missed	On-time
0.0 percent	15.4 percent	15.4 percent	69.2 percent

Exhibit B.14 Route 30 to Cavallaro Max-Load and On-time Performance Summaries



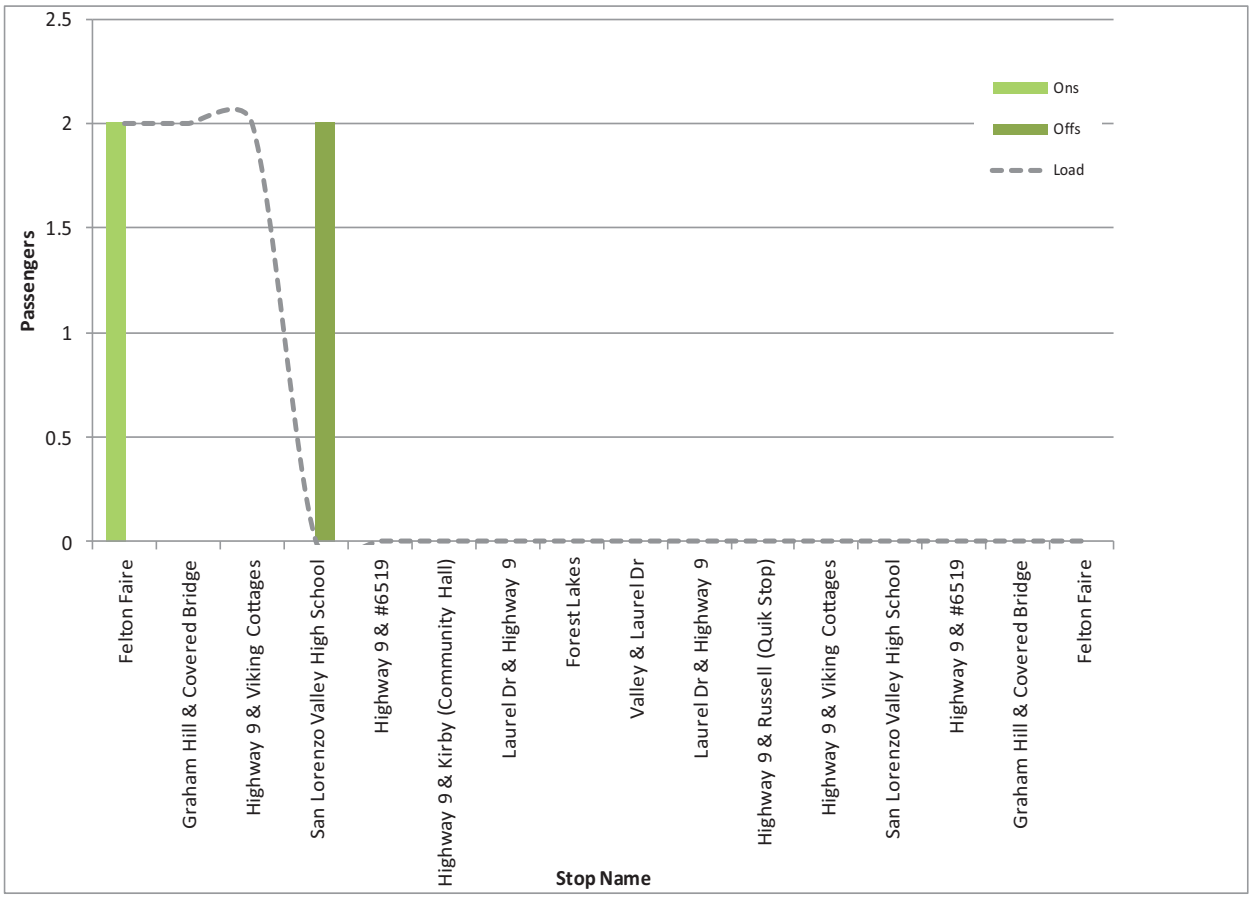
Early	Late	Missed	On-time
9.1 percent	9.1 percent	0.0 percent	81.8 percent

Exhibit B.15 Route 33 Max-Load and On-time Performance Summaries



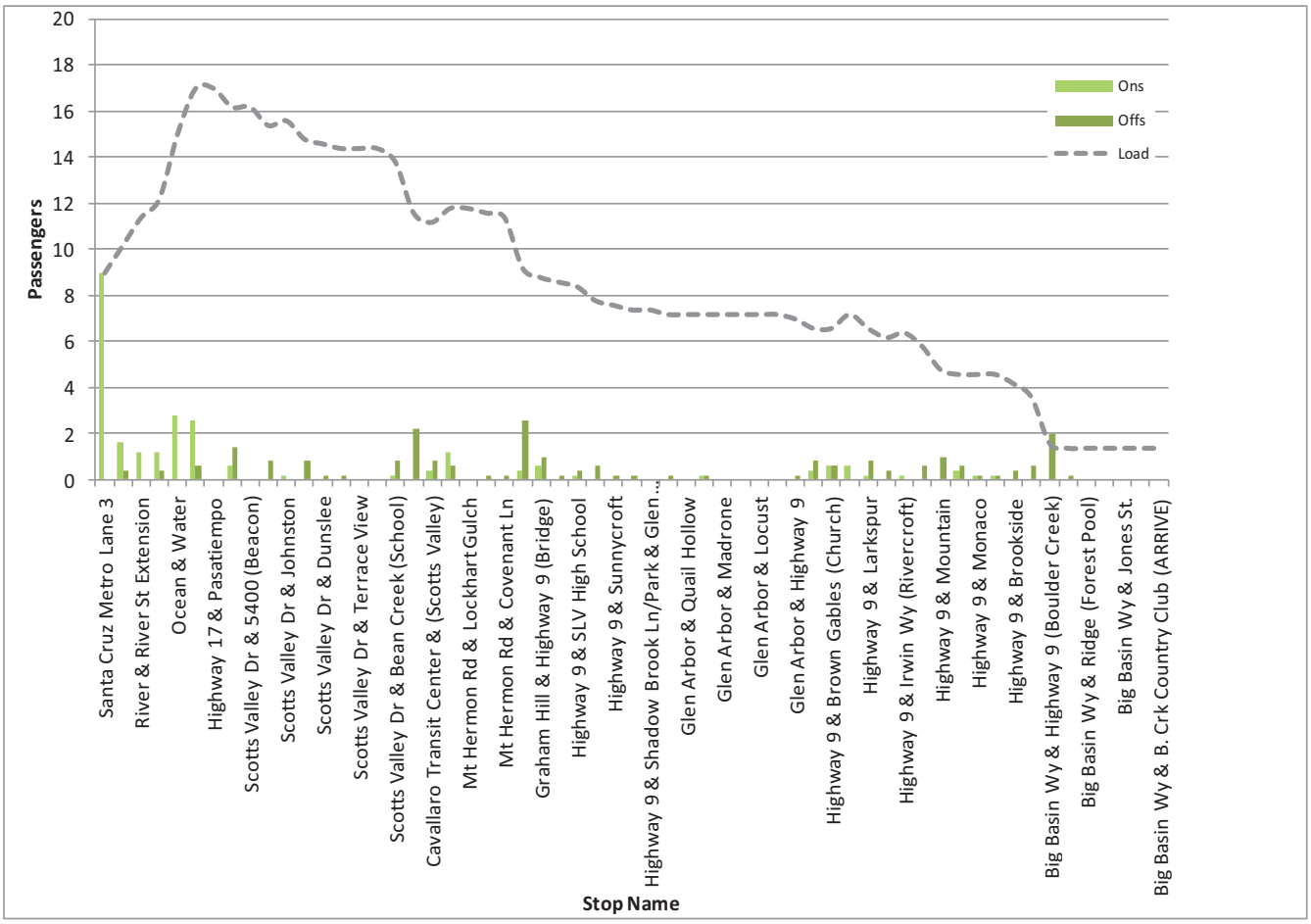
Early	Late	Missed	On-time
16.7 percent	0.0 percent	25.0 percent	58.3 percent

Exhibit B.16 Route 34 Max-Load and On-time Performance Summaries



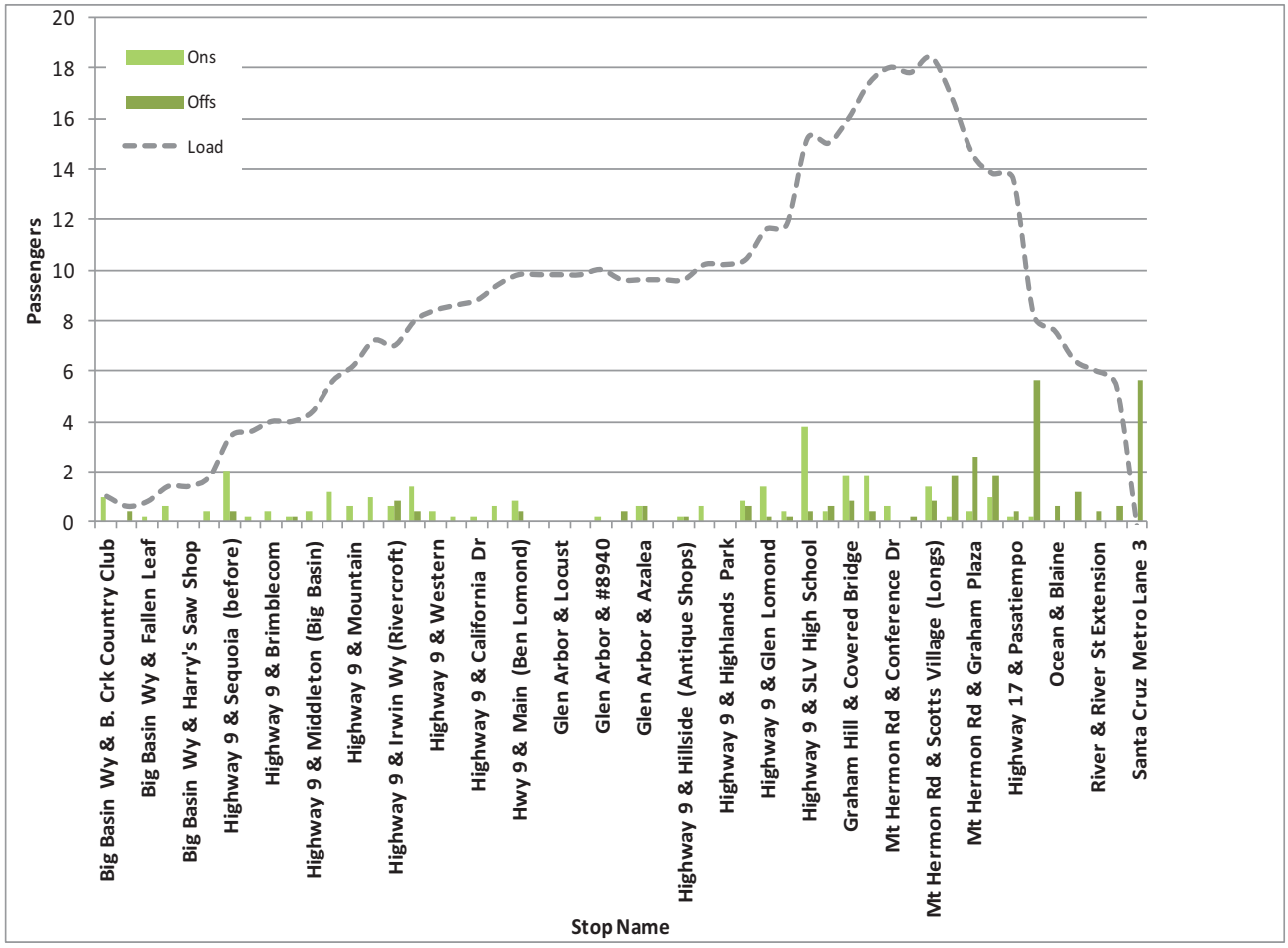
Early	Late	Missed	On-time
0.0 percent	0.0 percent	54.5 percent	45.5 percent

Exhibit B.17 Route 35 to Scotts Valley Max-Load and On-time Performance Summaries



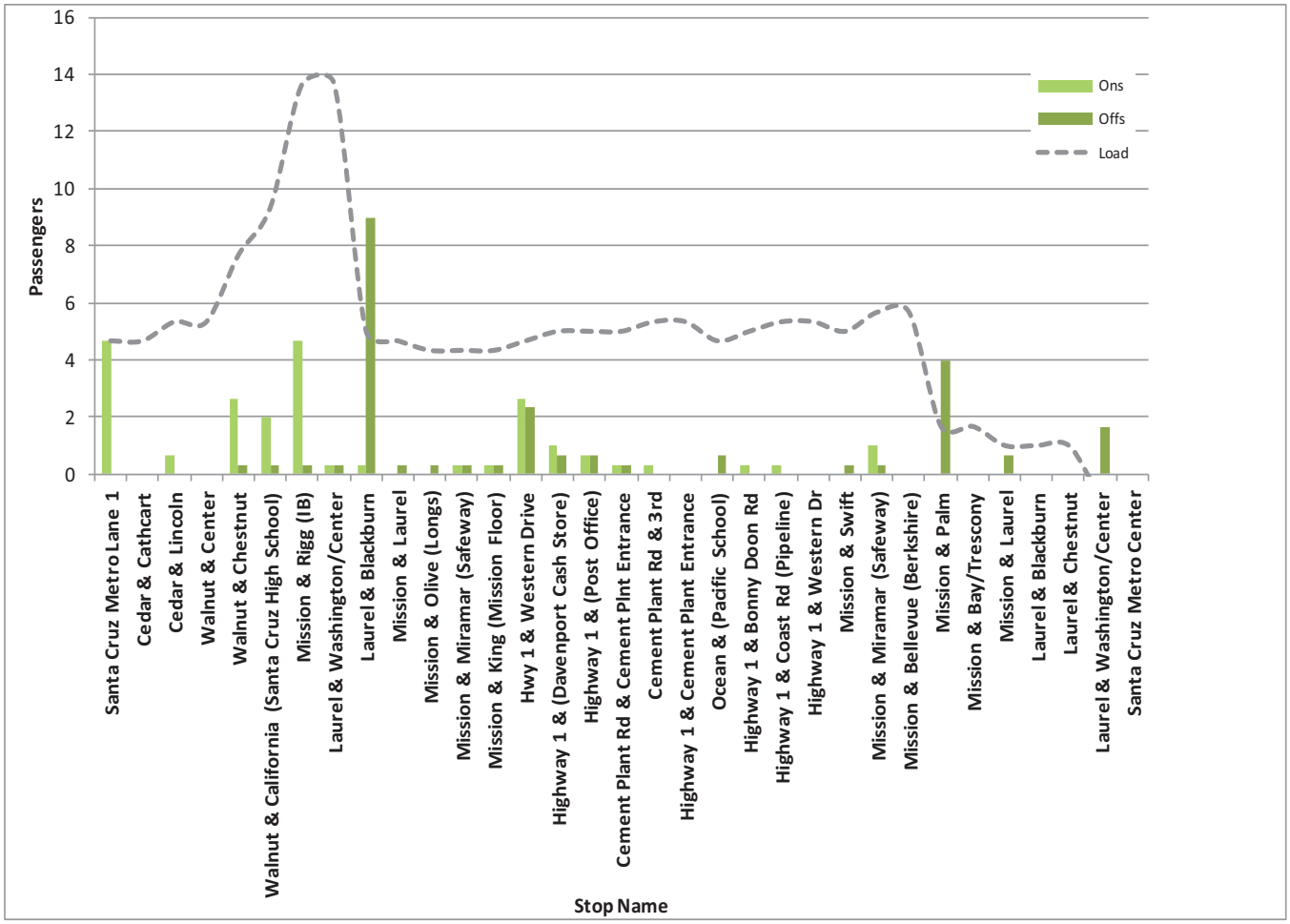
Early	Late	Missed	On-time
0.0 percent	25.0 percent	12.5 percent	87.5 percent

Exhibit B.18 Route 35 to Santa Cruz Max-Load and On-time Performance Summaries



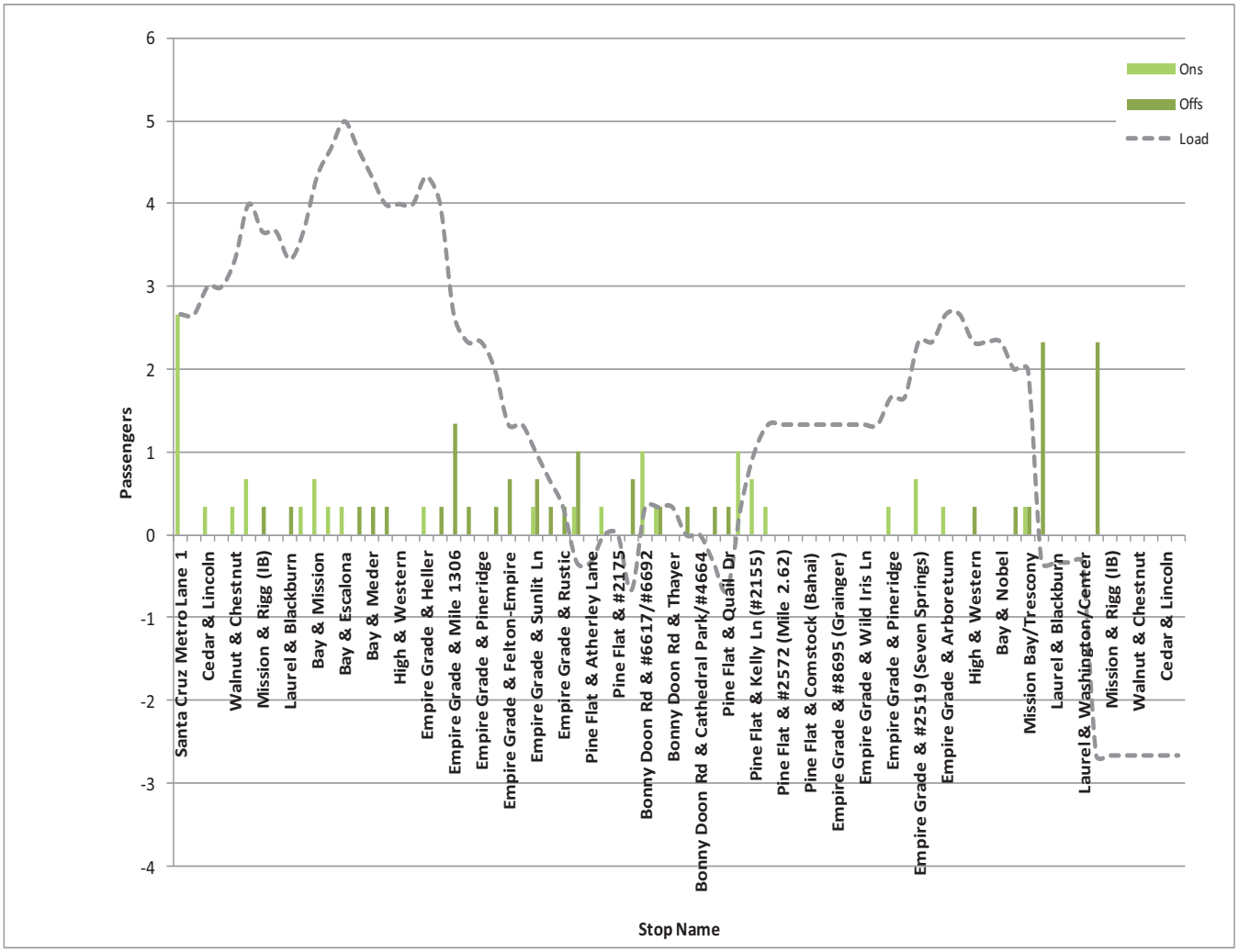
Early	Late	Missed	On-time
0.0 percent	20.6 percent	23.5 percent	82.4 percent

Exhibit B.19 Route 40 Max-Load and On-time Performance Summaries



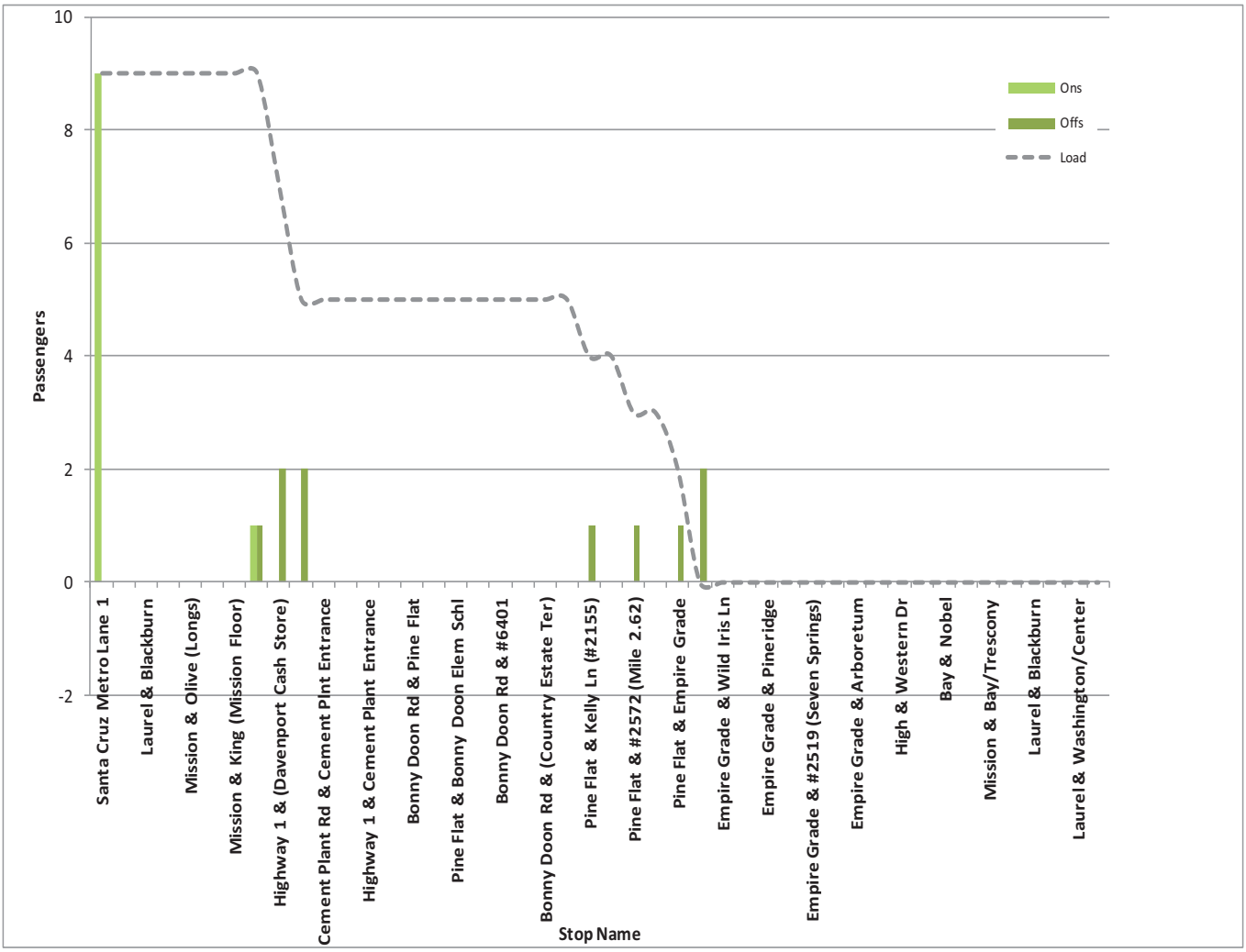
Early	Late	Missed	On-time
10.5 percent	36.8 percent	10.5 percent	42.1 percent

Exhibit B.20 Route 41 Max-Load and On-time Performance Summaries



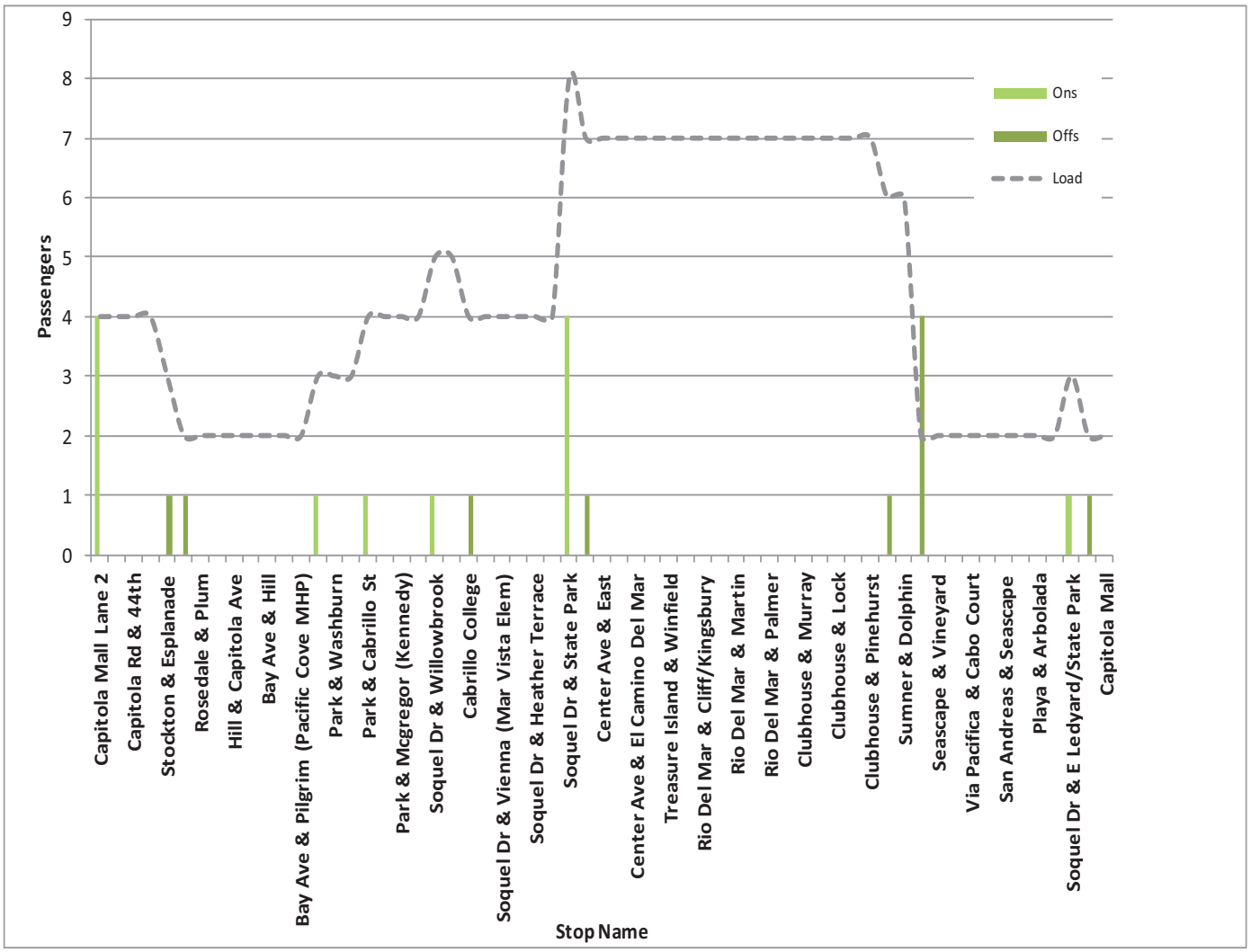
Early	Late	Missed	On-time
13.0 percent	4.3 percent	0.0 percent	82.6 percent

Exhibit B.21 Route 42 Max-Load and On-time Performance Summaries



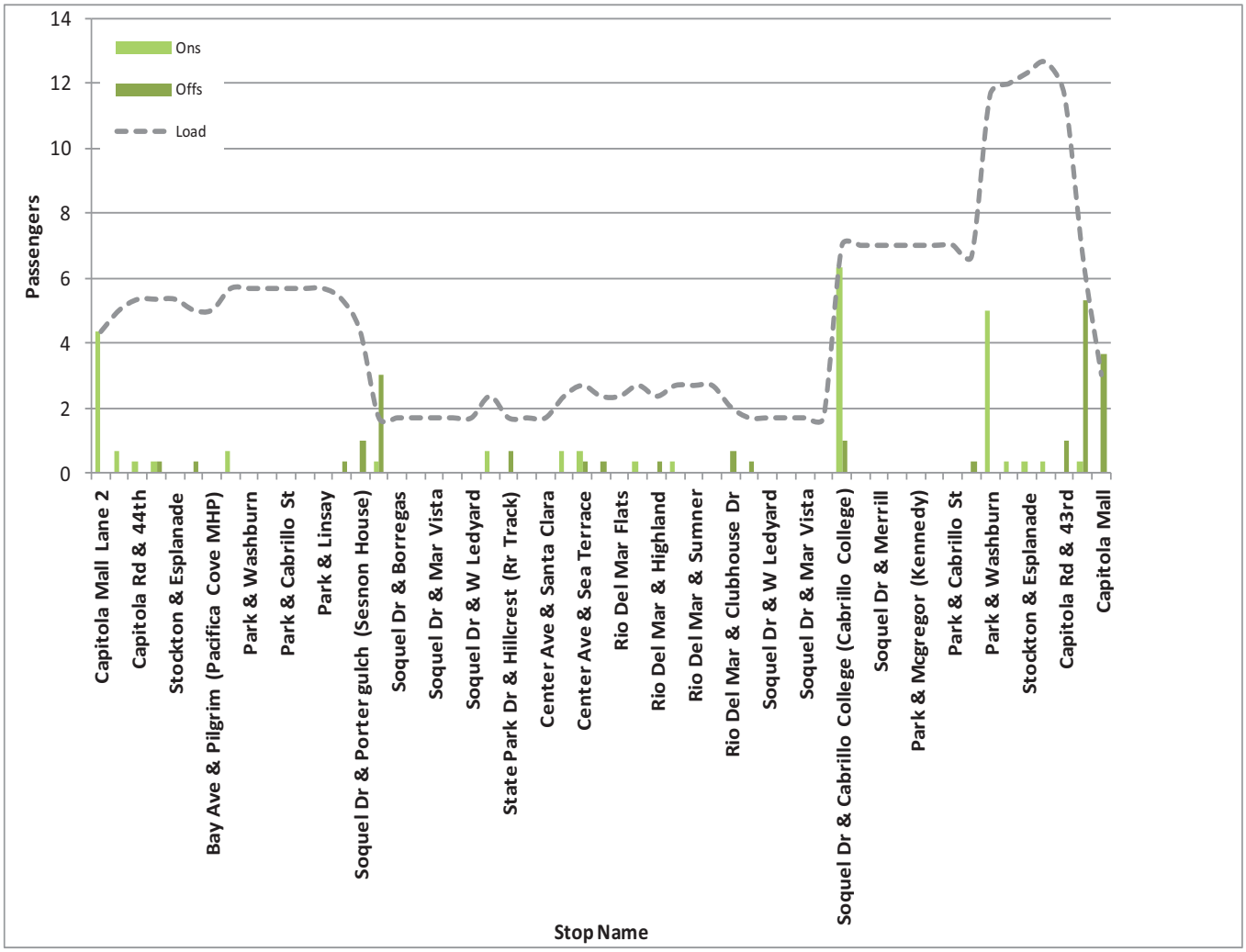
Early	Late	Missed	On-time
0.0 percent	16.7 percent	0.0 percent	83.3 percent

Exhibit B.22 Route 54 Max-Load and On-time Performance Summaries



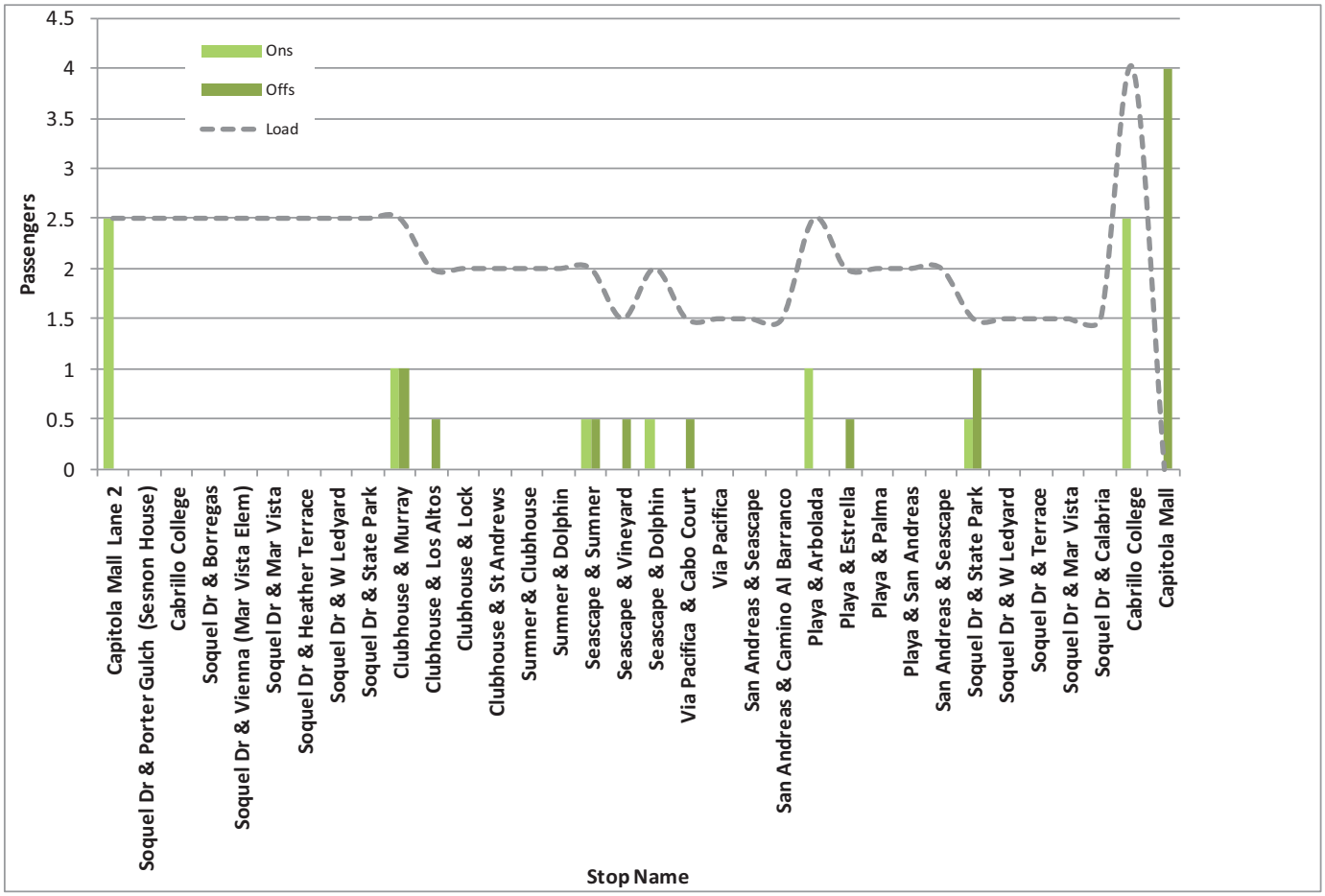
Early	Late	Missed	On-time
0.0 percent	0.0 percent	0.0 percent	100.0 percent

Exhibit B.23 Route 55 Max-Load and On-time Performance Summaries



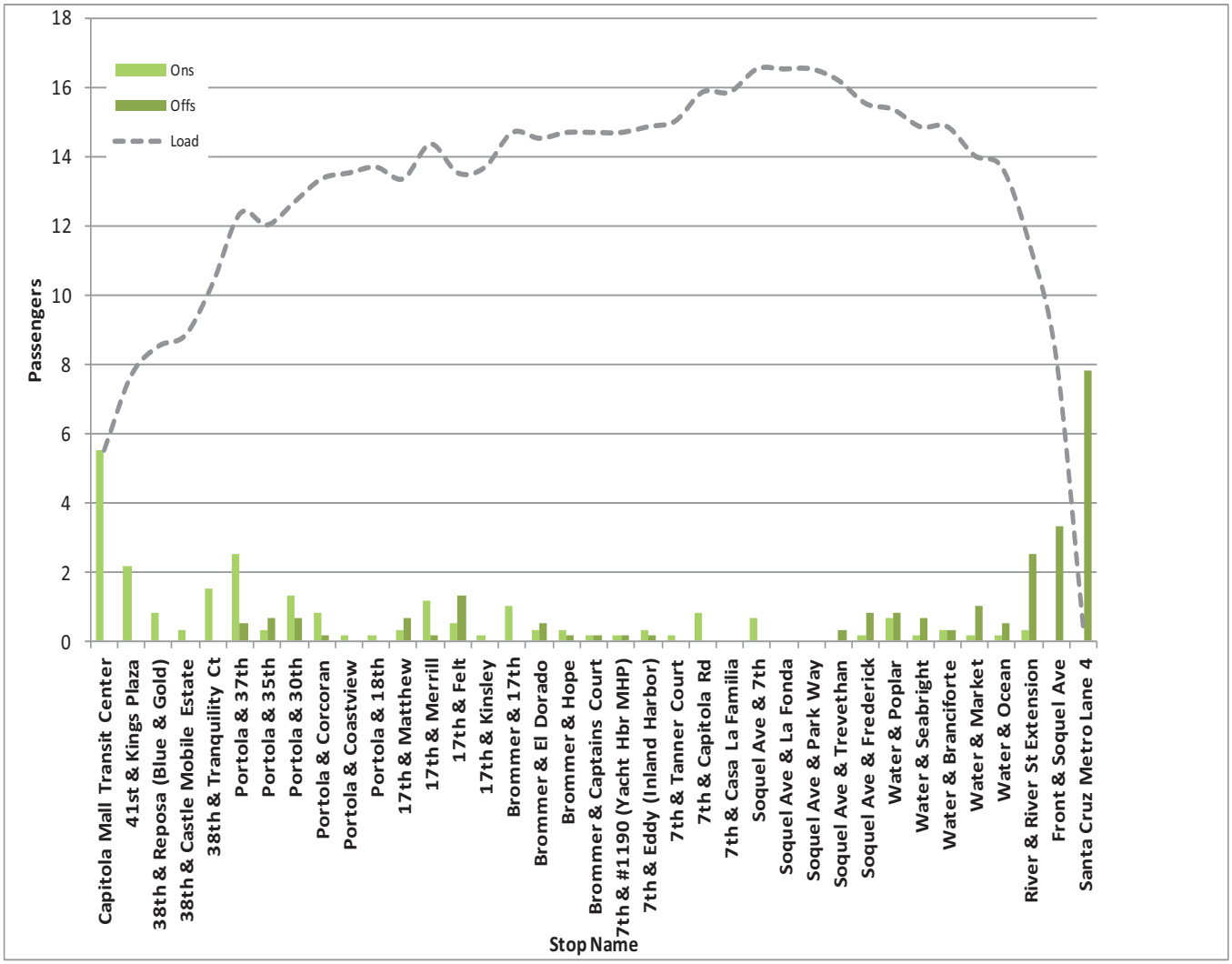
Early	Late	Missed	On-time
0.0 percent	8.3 percent	8.3 percent	83.3 percent

Exhibit B.24 Route 56 Max-Load and On-time Performance Summaries



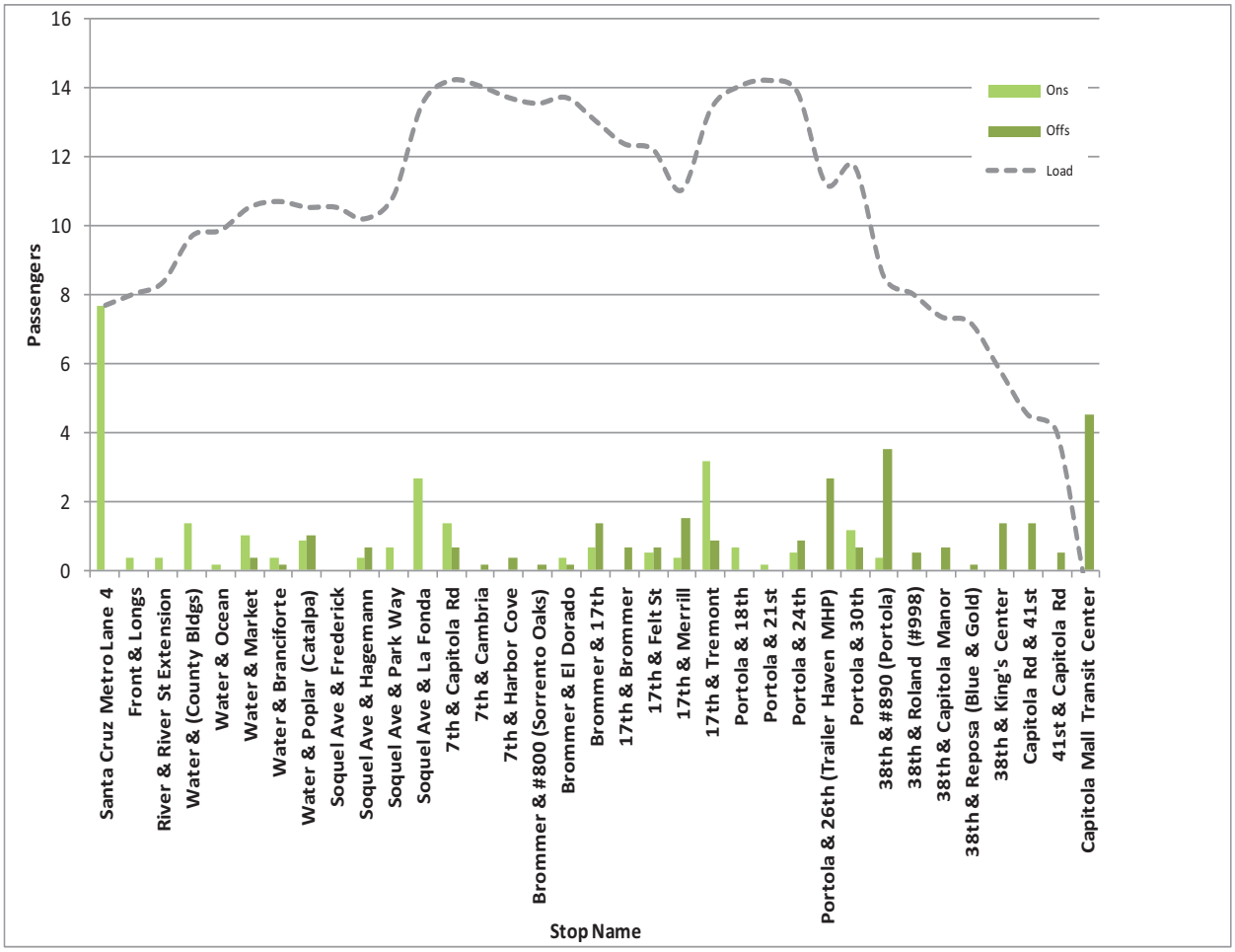
Early	Late	Missed	On-time
14.3 percent	0.0 percent	0.0 percent	85.7 percent

Exhibit B.25 Route 66 Inbound Max-Load and On-time Performance Summaries



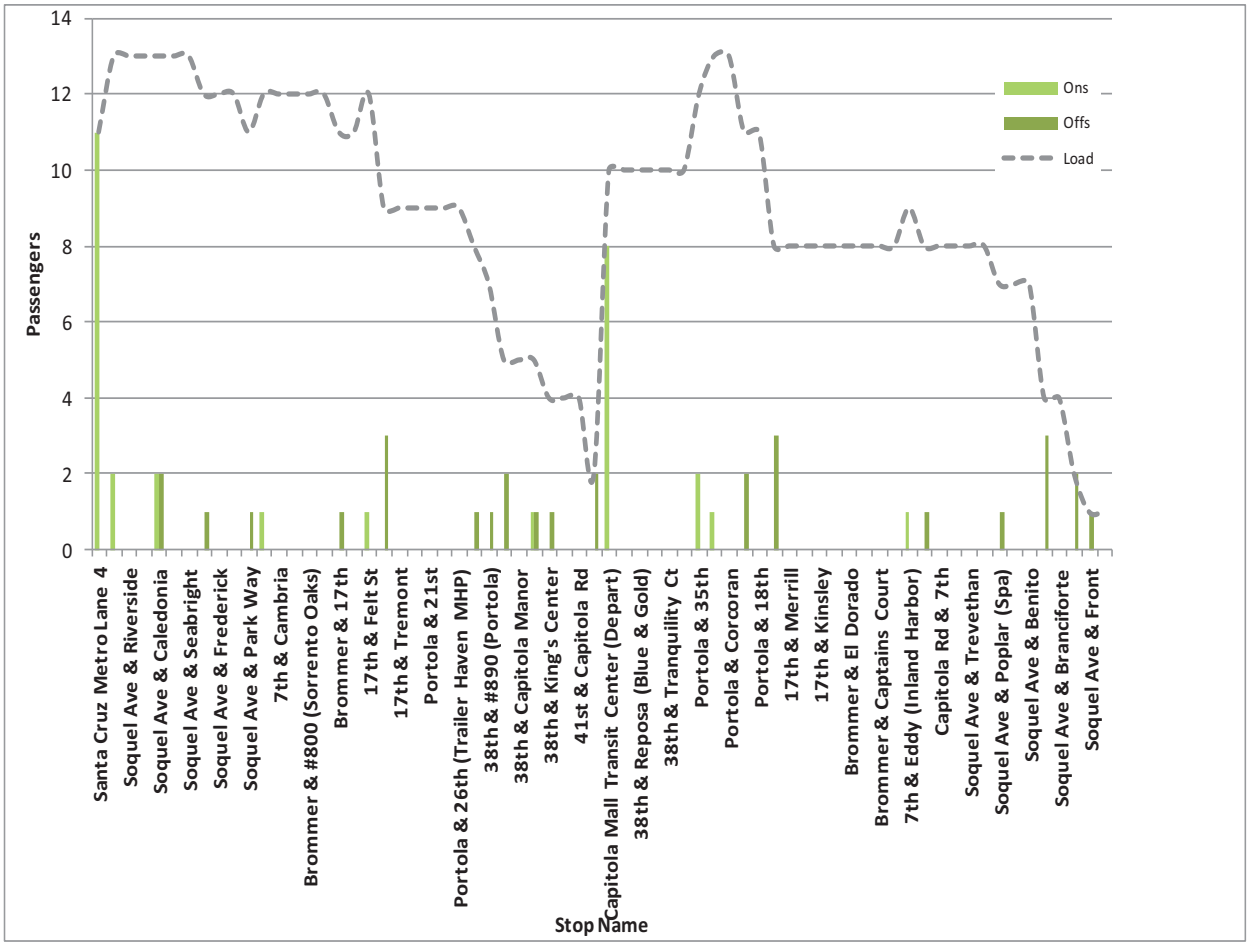
Early	Late	Missed	On-time
0.0 percent	12.5 percent	4.2 percent	83.3 percent

Exhibit B.26 Route 66 Outbound Max-Load and On-time Performance Summaries



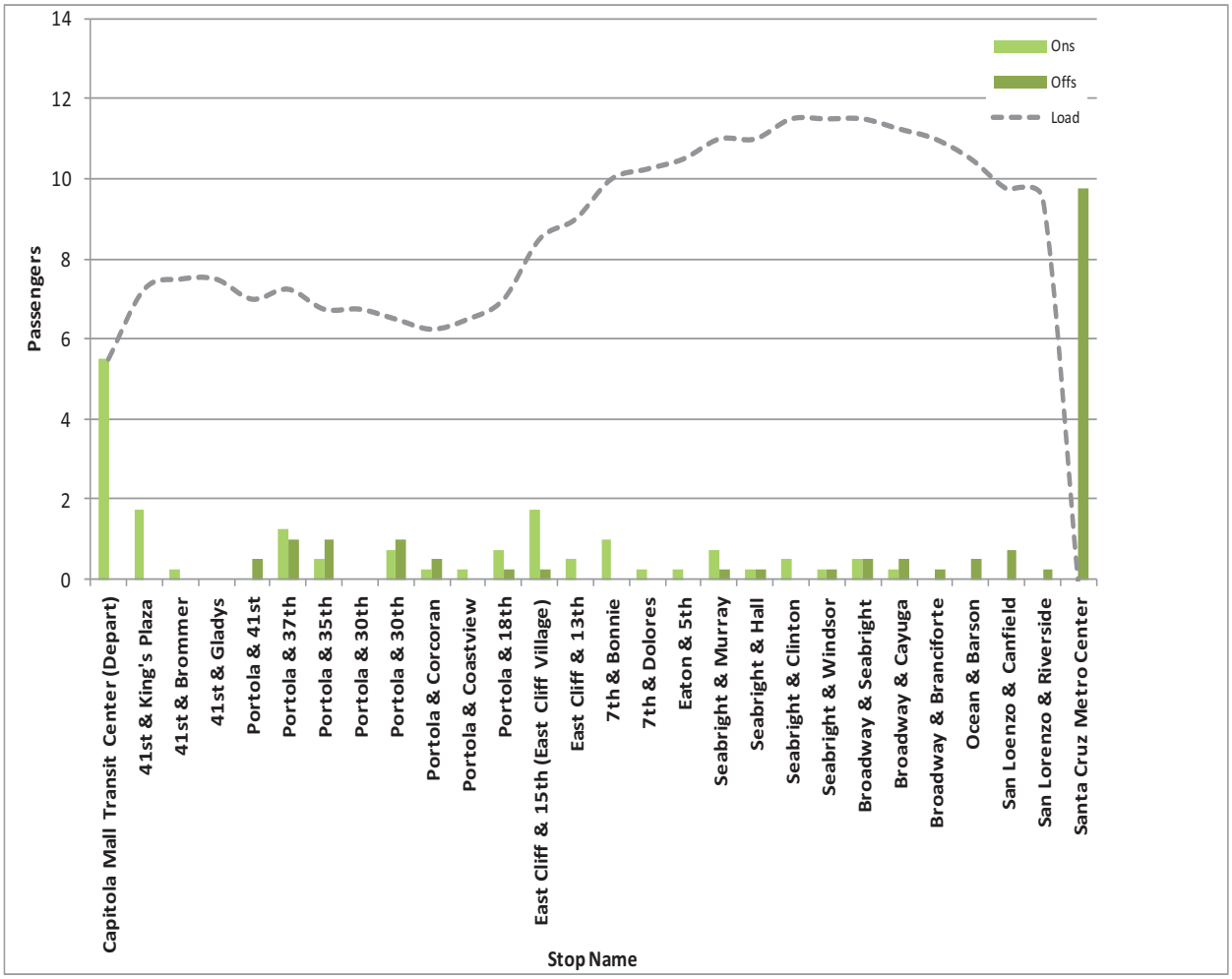
Early	Late	Missed	On-time
0.0 percent	16.7 percent	8.3 percent	75.0 percent

Exhibit B.27 Route 66N Max-Load and On-time Performance Summaries



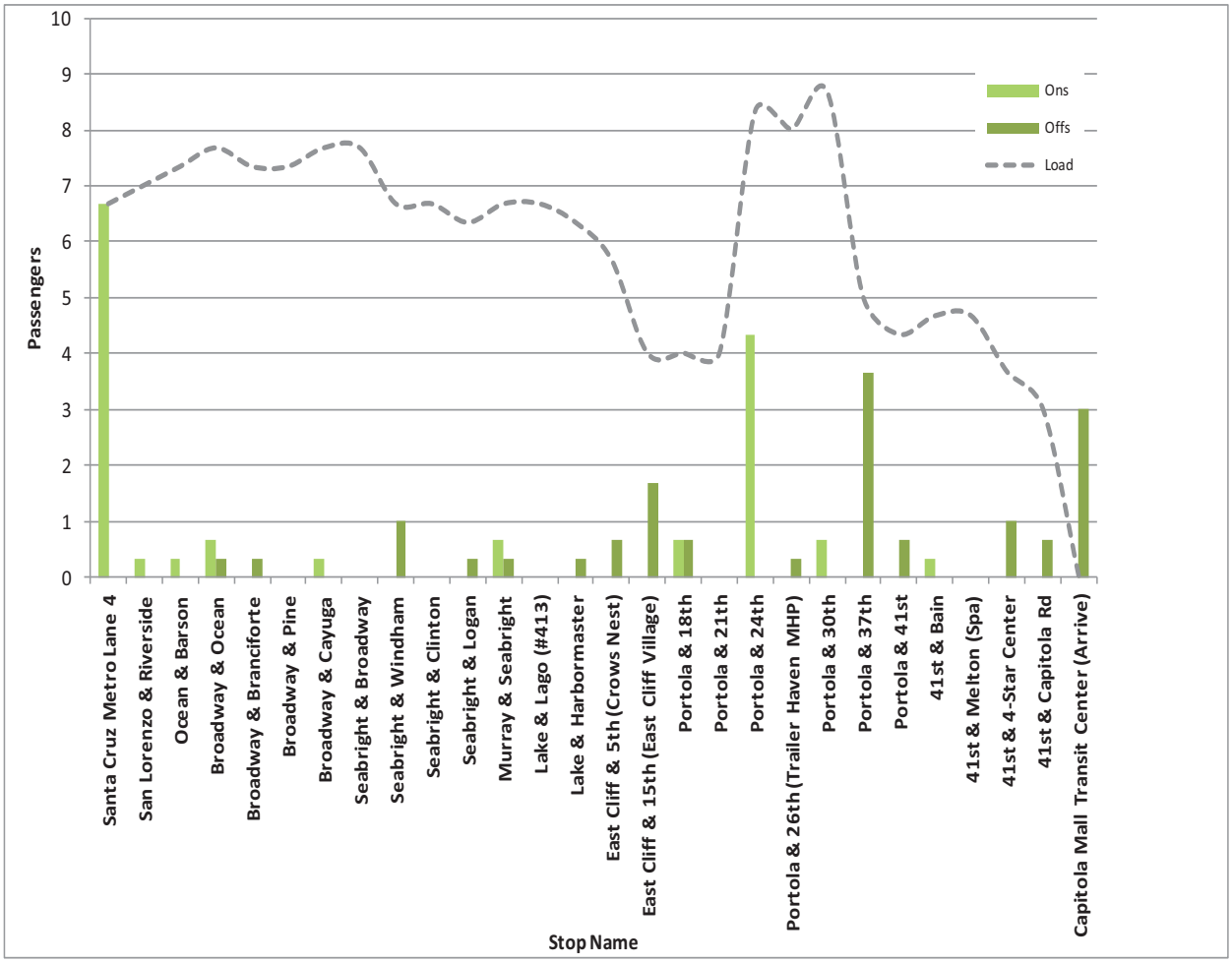
Early	Late	Missed	On-time
0.0 percent	0.0 percent	0.0 percent	100.0 percent

Exhibit B.28 Route 68 Inbound Max-Load and On-time Performance Summaries



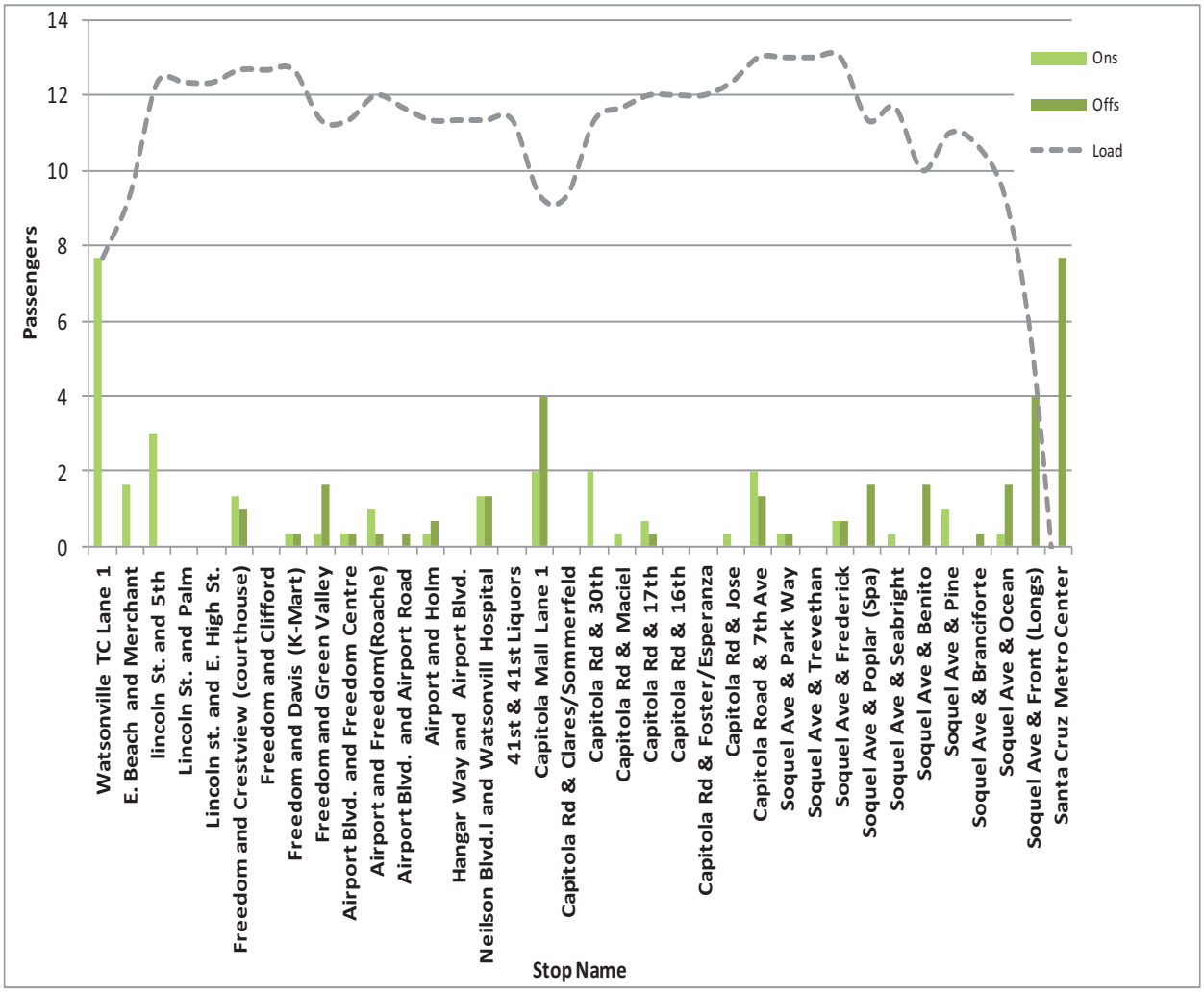
Early	Late	Missed	On-time
5.0 percent	30.0 percent	5.0 percent	60.0 percent

Exhibit B.29 Route 68 Outbound Max-Load and On-time Performance Summaries



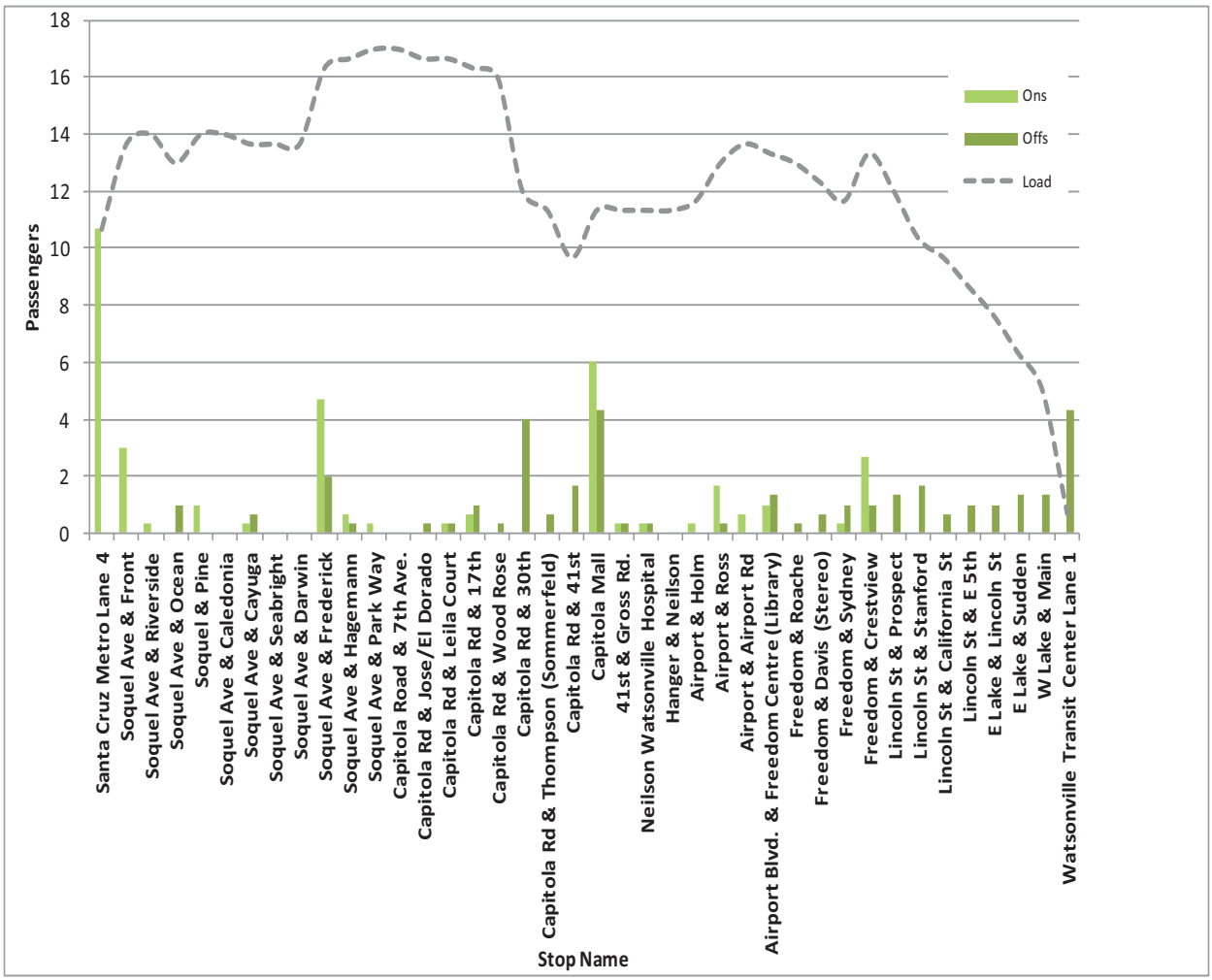
Early	Late	Missed	On-time
0.0 percent	6.7 percent	0.0 percent	93.3 percent

Exhibit B.30 Route 69A to Santa Cruz Max-Load and On-time Performance Summaries



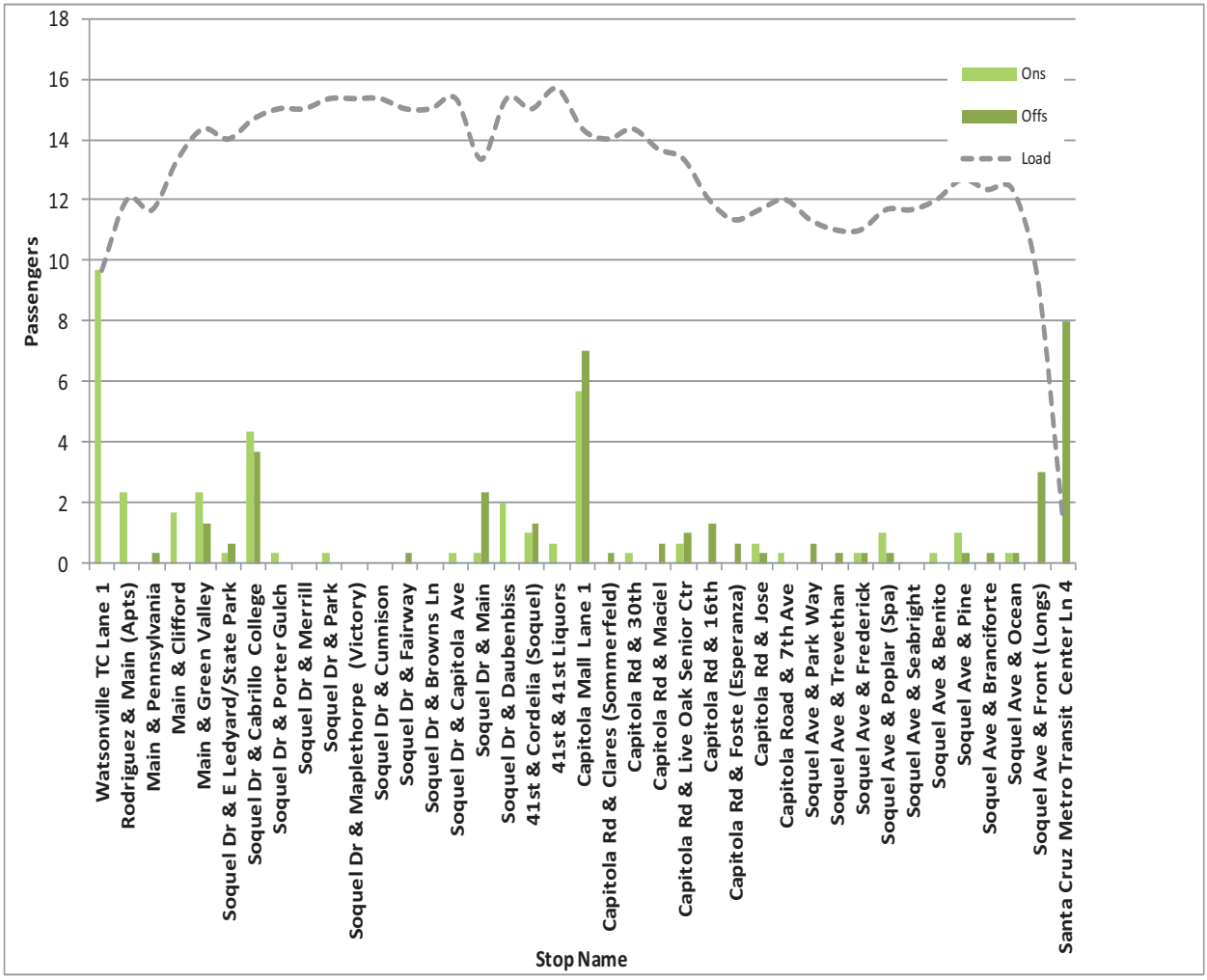
Early	Late	Missed	On-time
0.0 percent	25.0 percent	0.0 percent	125.0 percent

Exhibit B.31 Route 69A to Watsonville Max-Load and On-time Performance Summaries



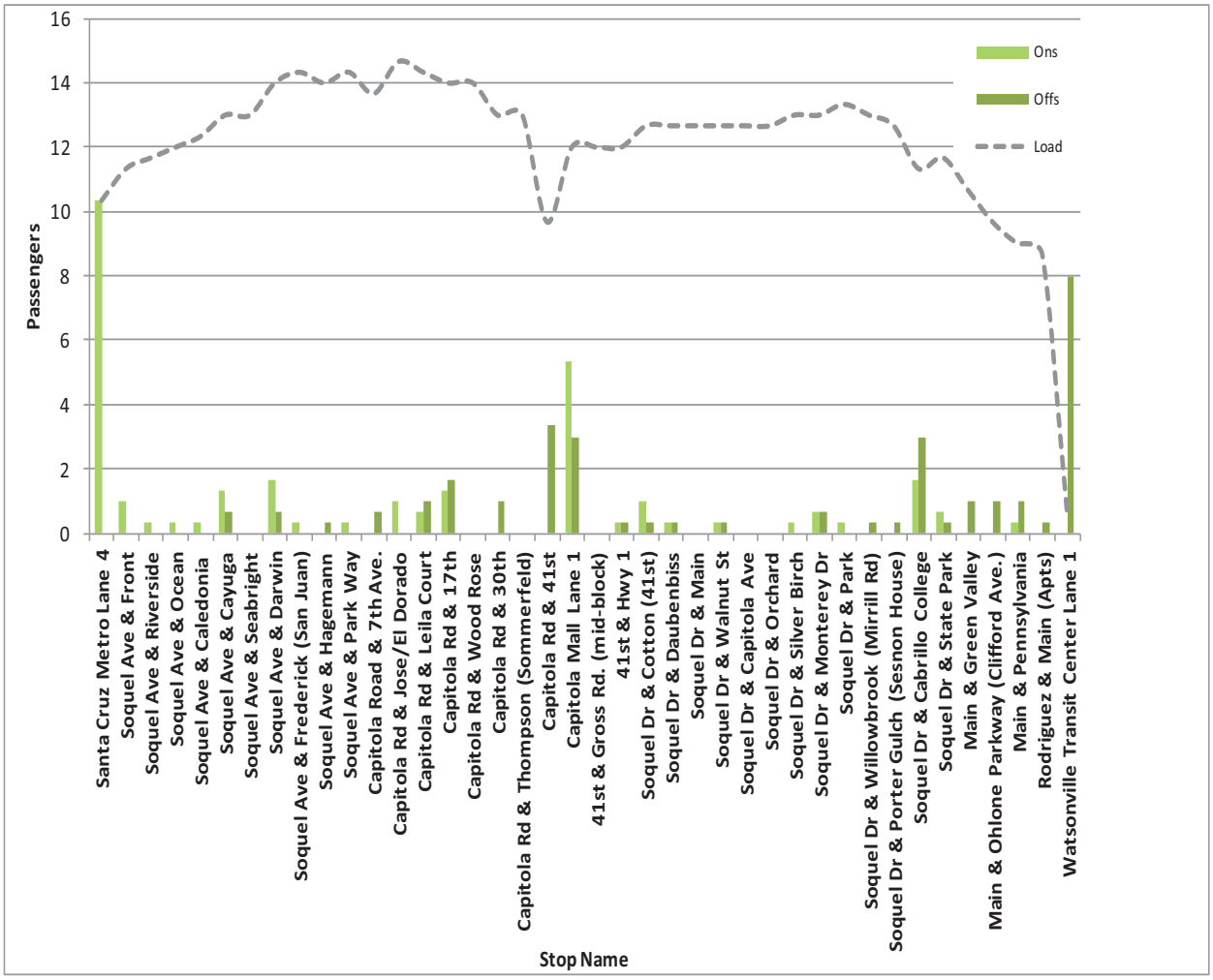
Early	Late	Missed	On-time
5.6 percent	5.6 percent	16.7 percent	72.2 percent

Exhibit B.32 Route 69W to Santa Cruz Max-Load and On-time Performance Summaries



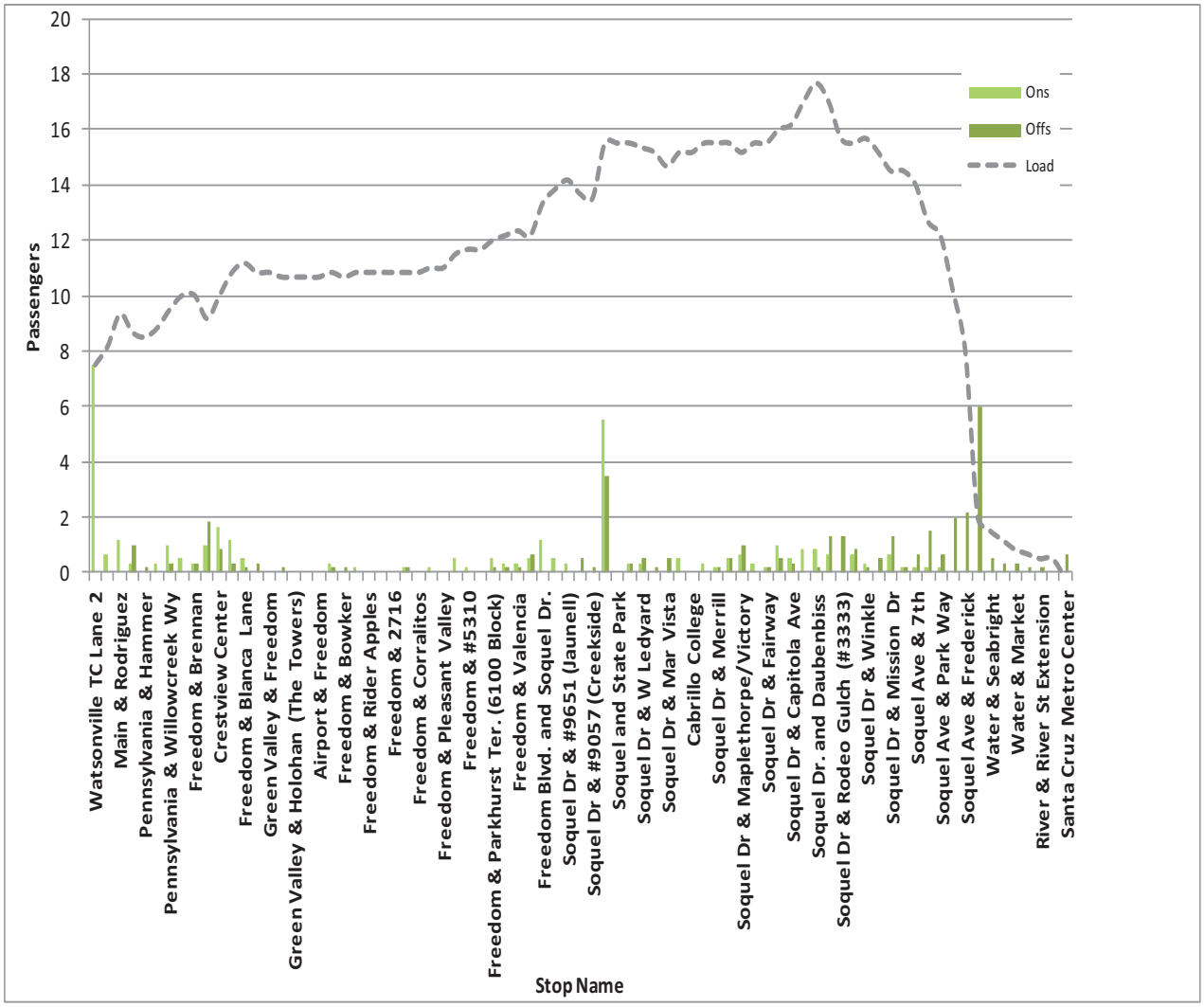
Early	Late	Missed	On-time
0.0 percent	8.3 percent	41.7 percent	50.0 percent

Exhibit B.33 Route 69W to Watsonville Max-Load and On-time Performance Summaries



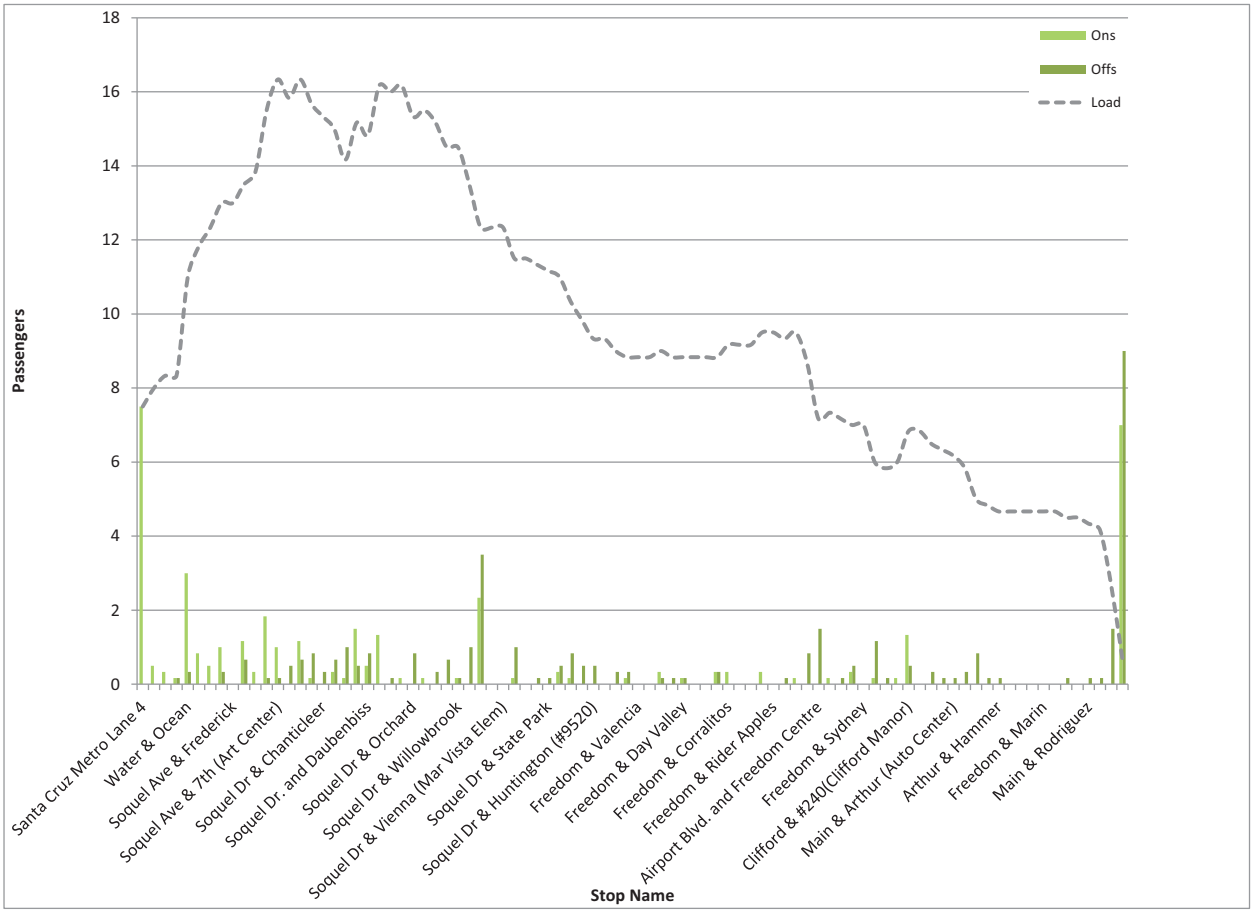
Early	Late	Missed	On-time
0.0 percent	0.0 percent	0.0 percent	100.0 percent

Exhibit B.34 Route 71 to Santa Cruz Max-Load and On-time Performance Summaries



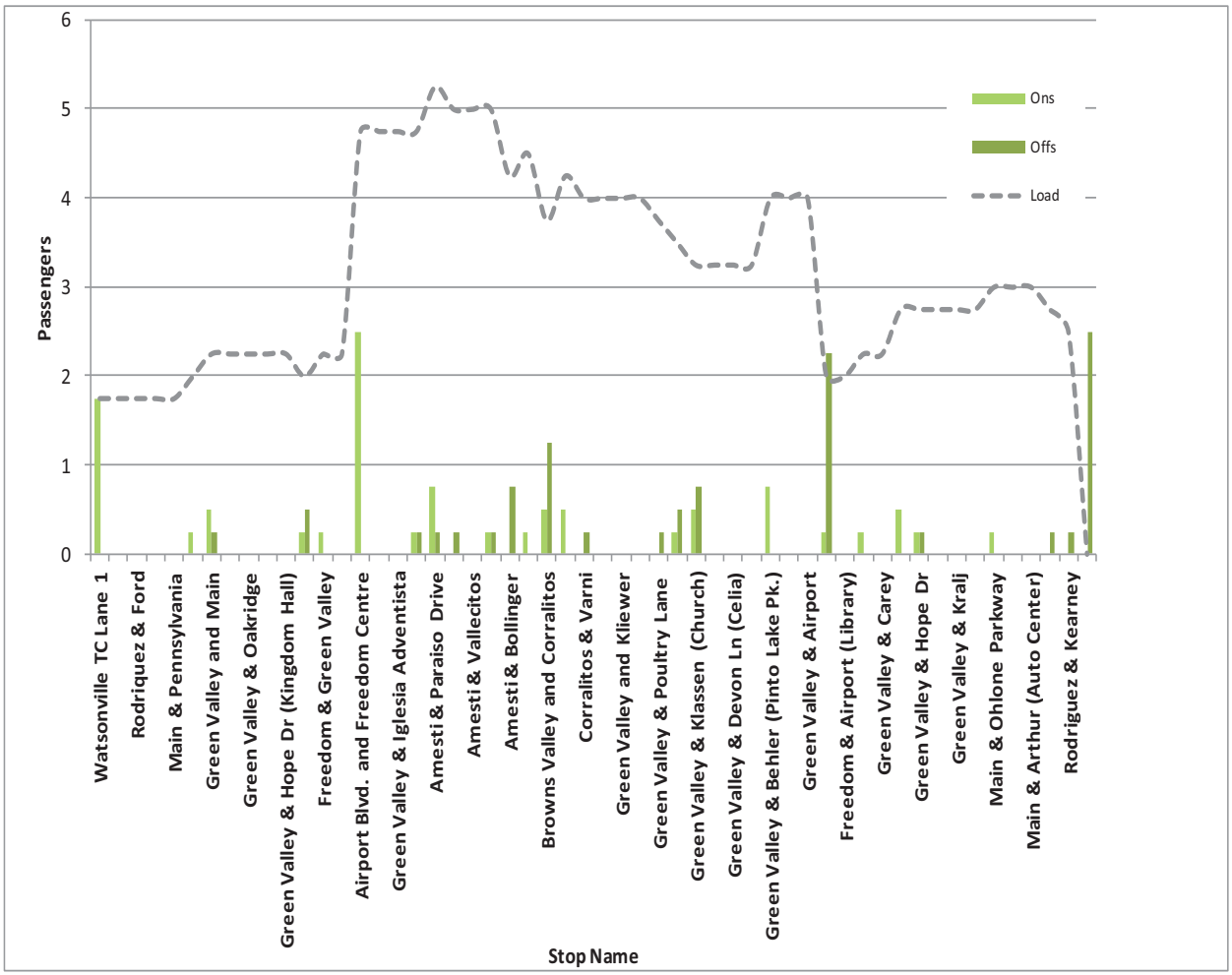
Early	Late	Missed	On-time
12.5 percent	27.5 percent	22.5 percent	85.0 percent

Exhibit B.35 Route 71 to Watsonville Max-Load and On-time Performance Summaries



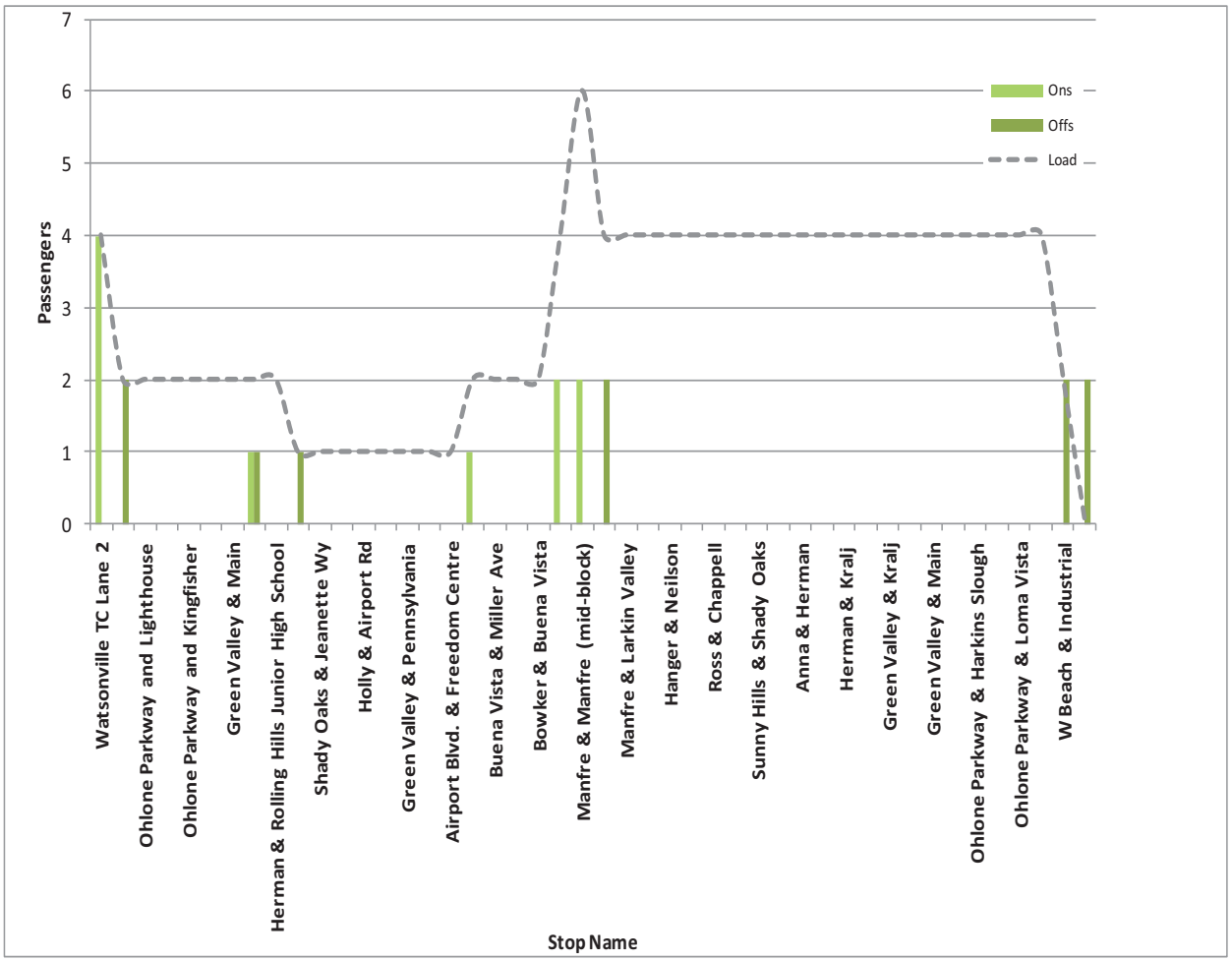
Early	Late	Missed	On-time
12.0 percent	24.0 percent	24.0 percent	60.0 percent

Exhibit B.36 Route 72 Max-Load and On-time Performance Summaries



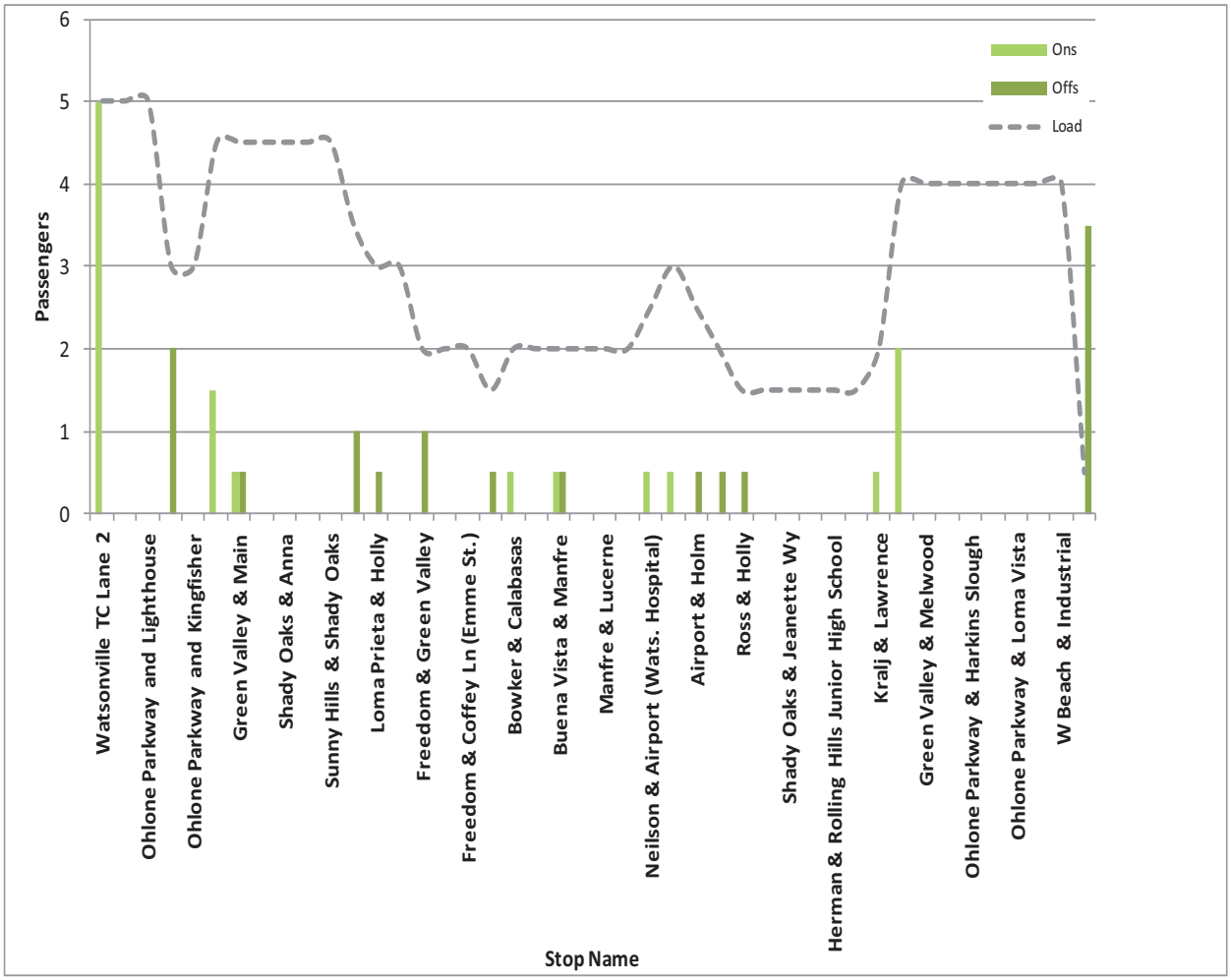
Early	Late	Missed	On-time
6.3 percent	25.0 percent	0.0 percent	68.8 percent

Exhibit B.37 Route 74A Max-Load and On-time Performance Summaries



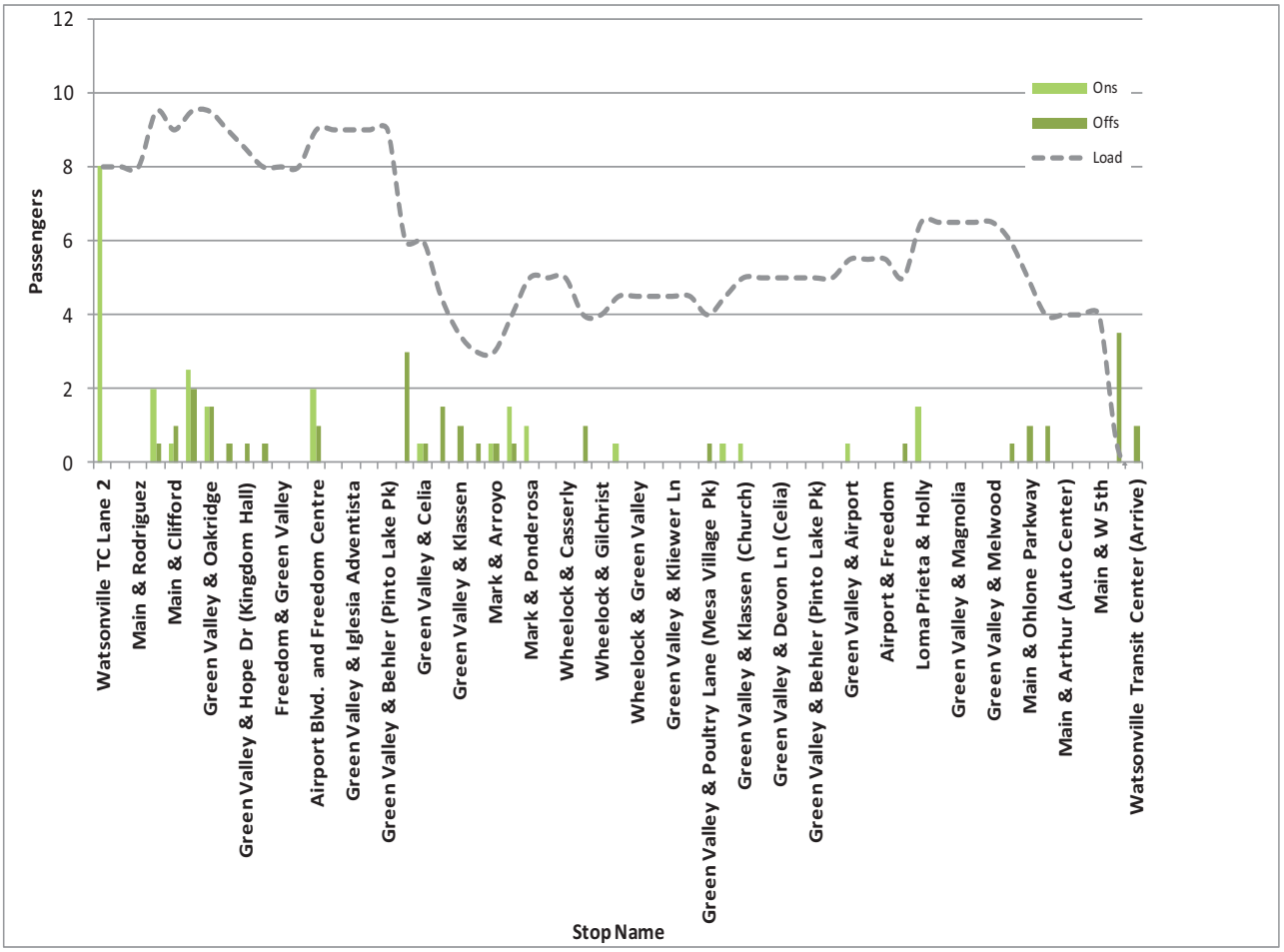
Early	Late	Missed	On-time
0.0 percent	0.0 percent	0.0 percent	100.0 percent

Exhibit B.38 Route 74B Max-Load and On-time Performance Summaries



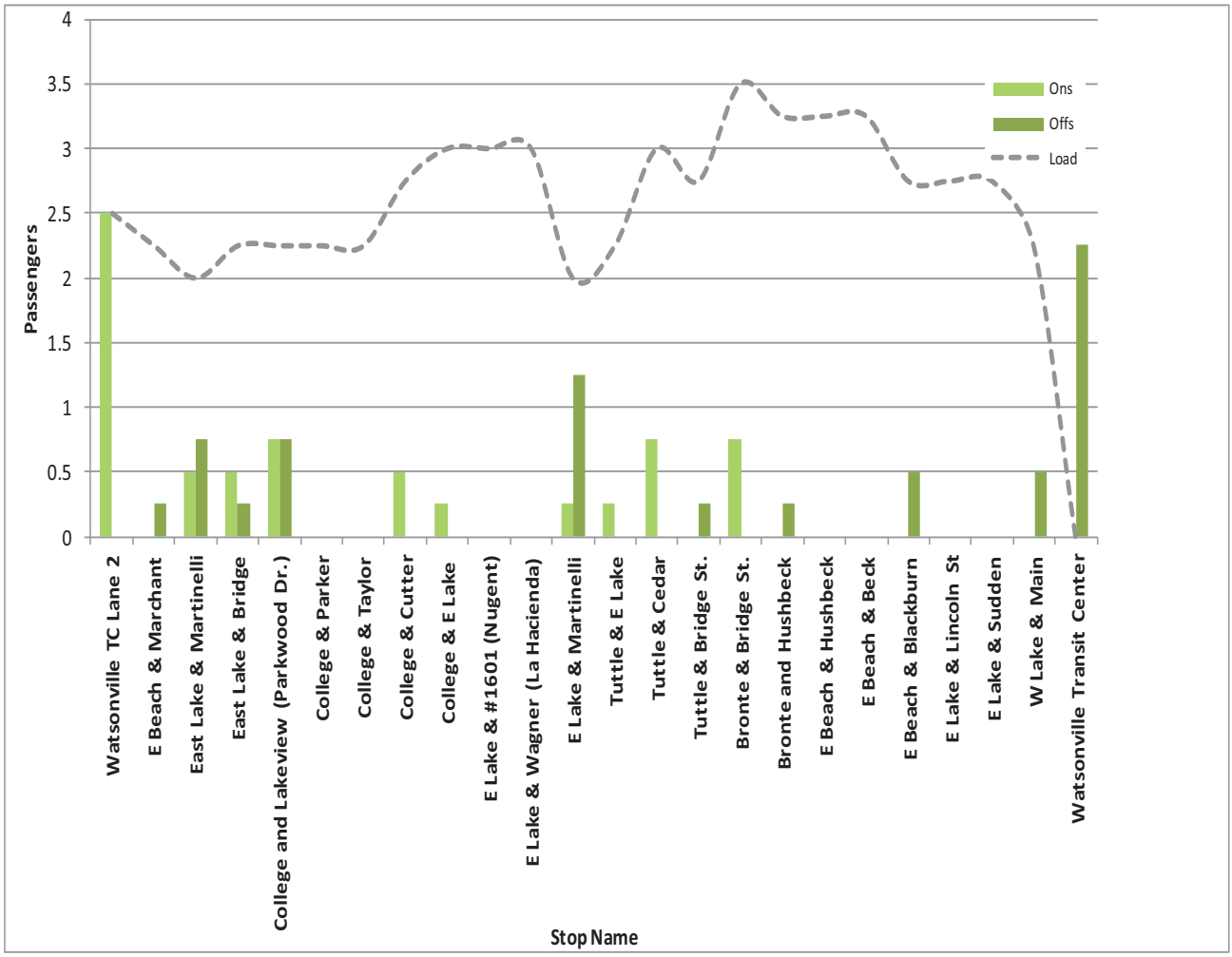
Early	Late	Missed	On-time
7.1 percent	14.3 percent	0.0 percent	78.6 percent

Exhibit B.39 Route 75 Max-Load and On-time Performance Summaries



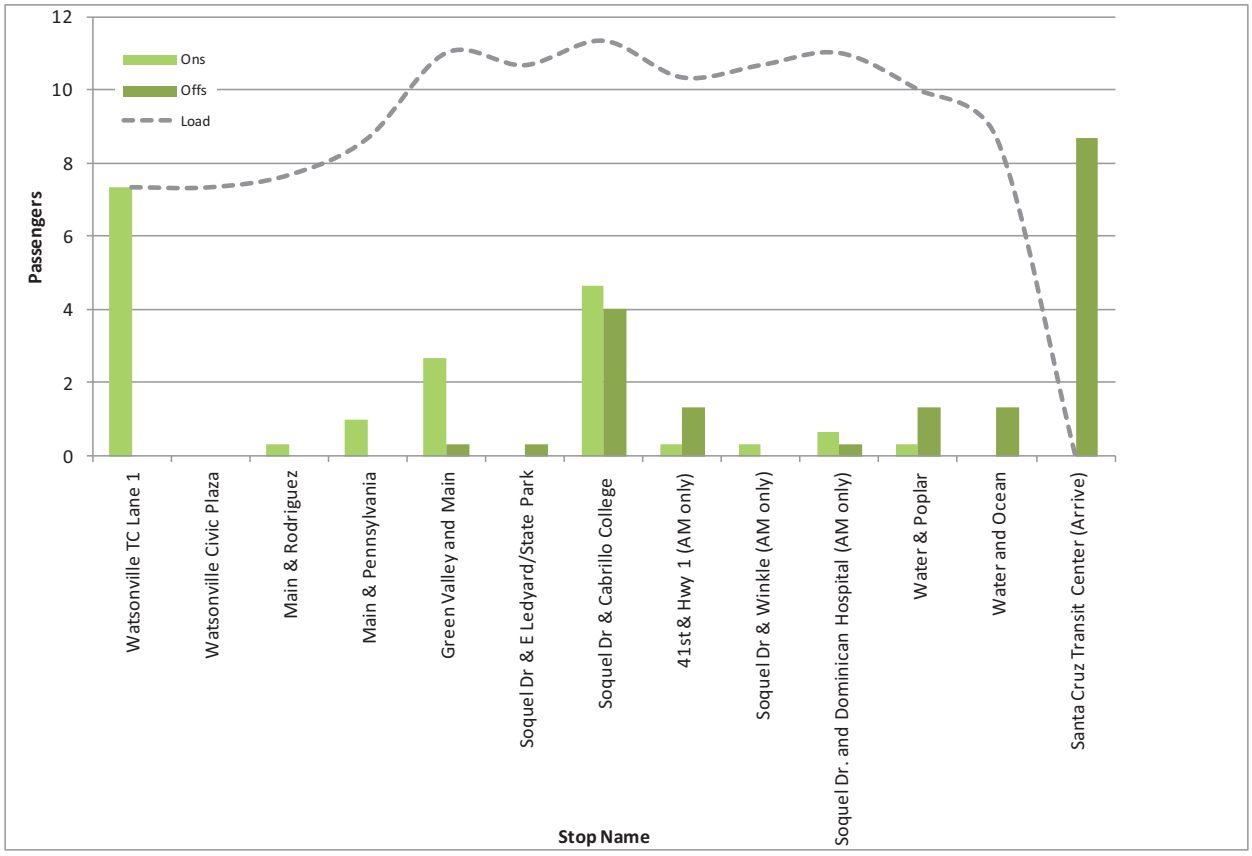
Early	Late	Missed	On-time
8.3 percent	33.3 percent	16.7 percent	41.7 percent

Exhibit B.40 Route 79 Max-Load and On-time Performance Summaries



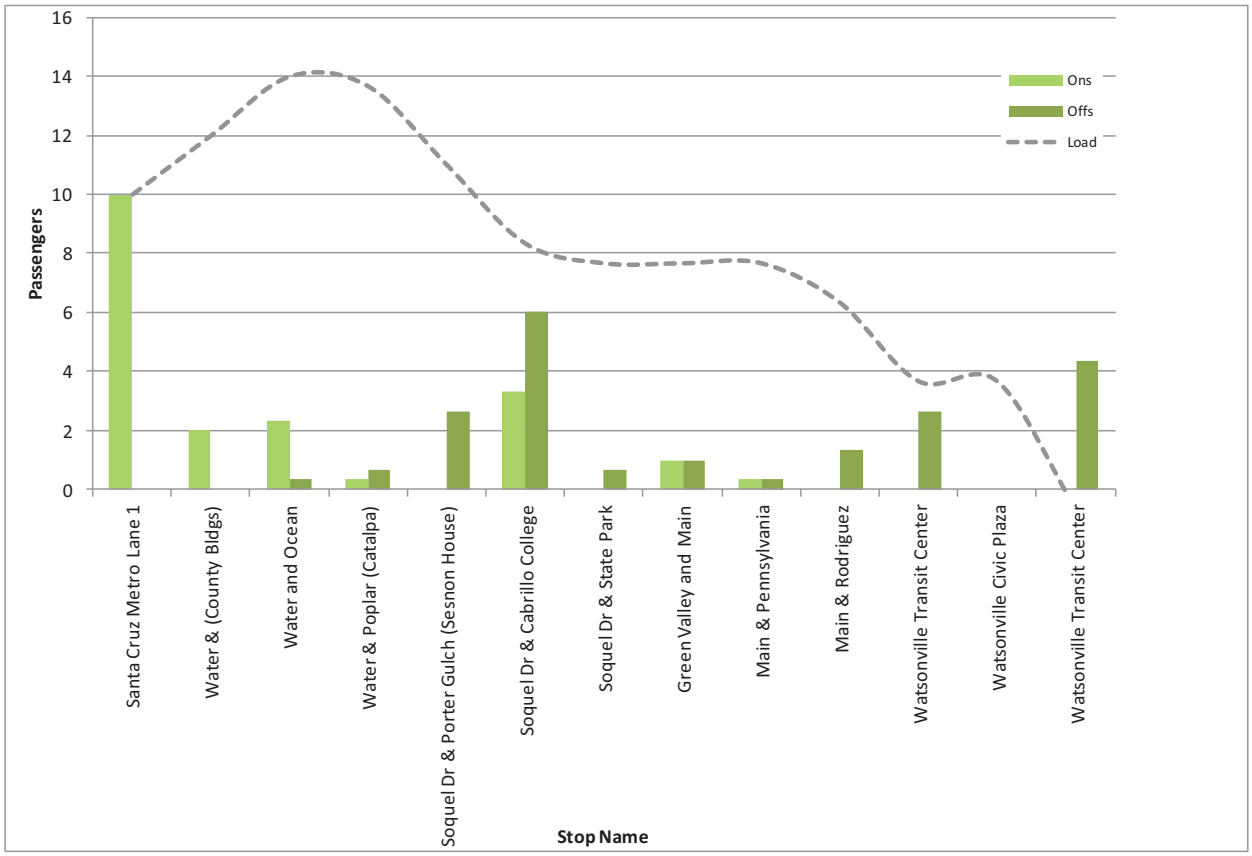
Early	Late	Missed	On-time
6.3 percent	25.0 percent	6.3 percent	62.5 percent

Exhibit B.41 Route 91X to Santa Cruz Max-Load and On-time Performance Summaries



Early	Late	Missed	On-time
10.0 percent	0.0 percent	0.0 percent	90.0 percent

Exhibit B.42 Route 91X to Watsonville Max-Load and On-time Performance Summaries



Early	Late	Missed	On-time
20.0 percent	6.7 percent	0.0 percent	73.3 percent

APPENDIX C - RIDE CHECK BOARDING AND ALIGHTING EXHIBITS BY ROUTE

Exhibit C.1 Route 4

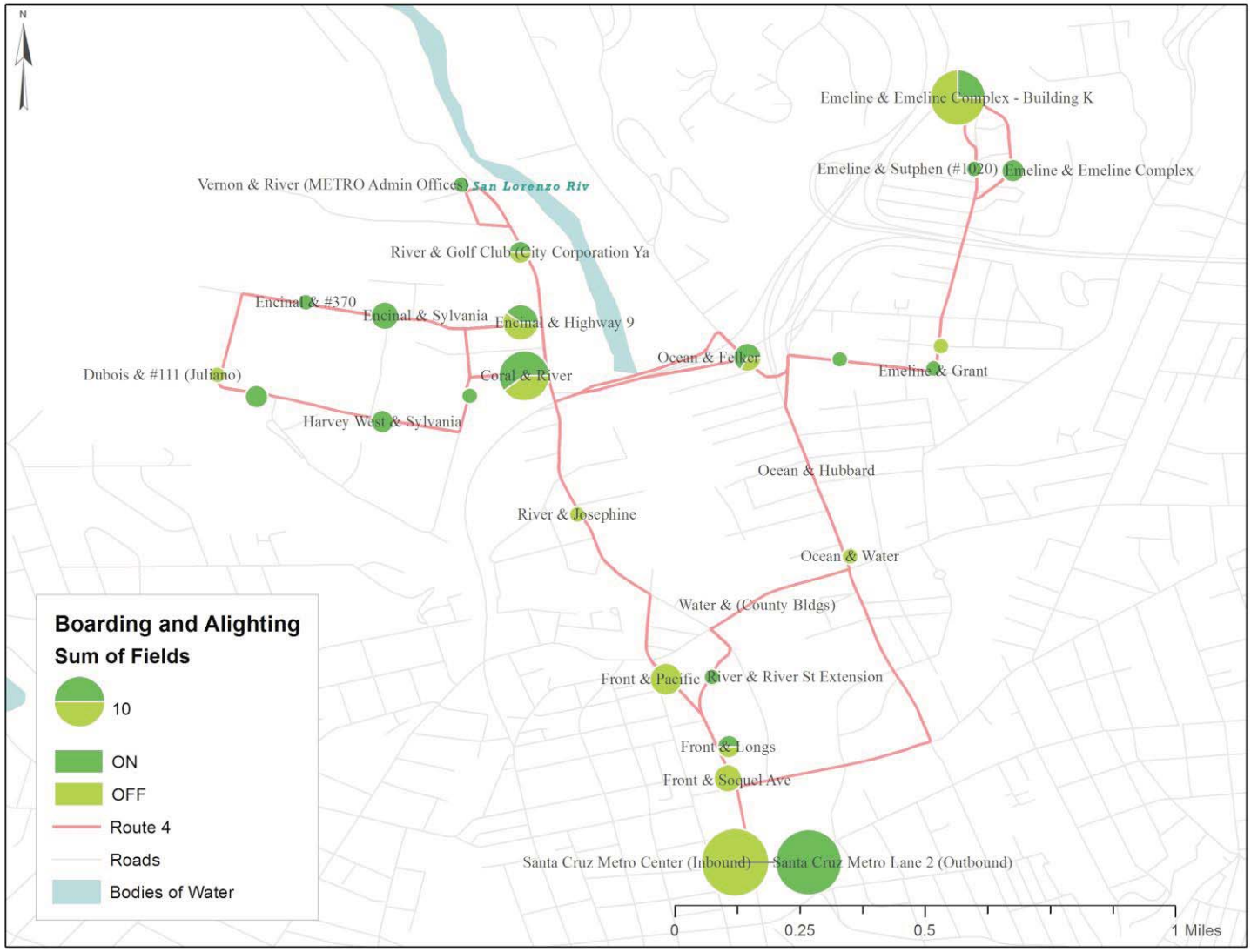


Exhibit C.2 Route 8

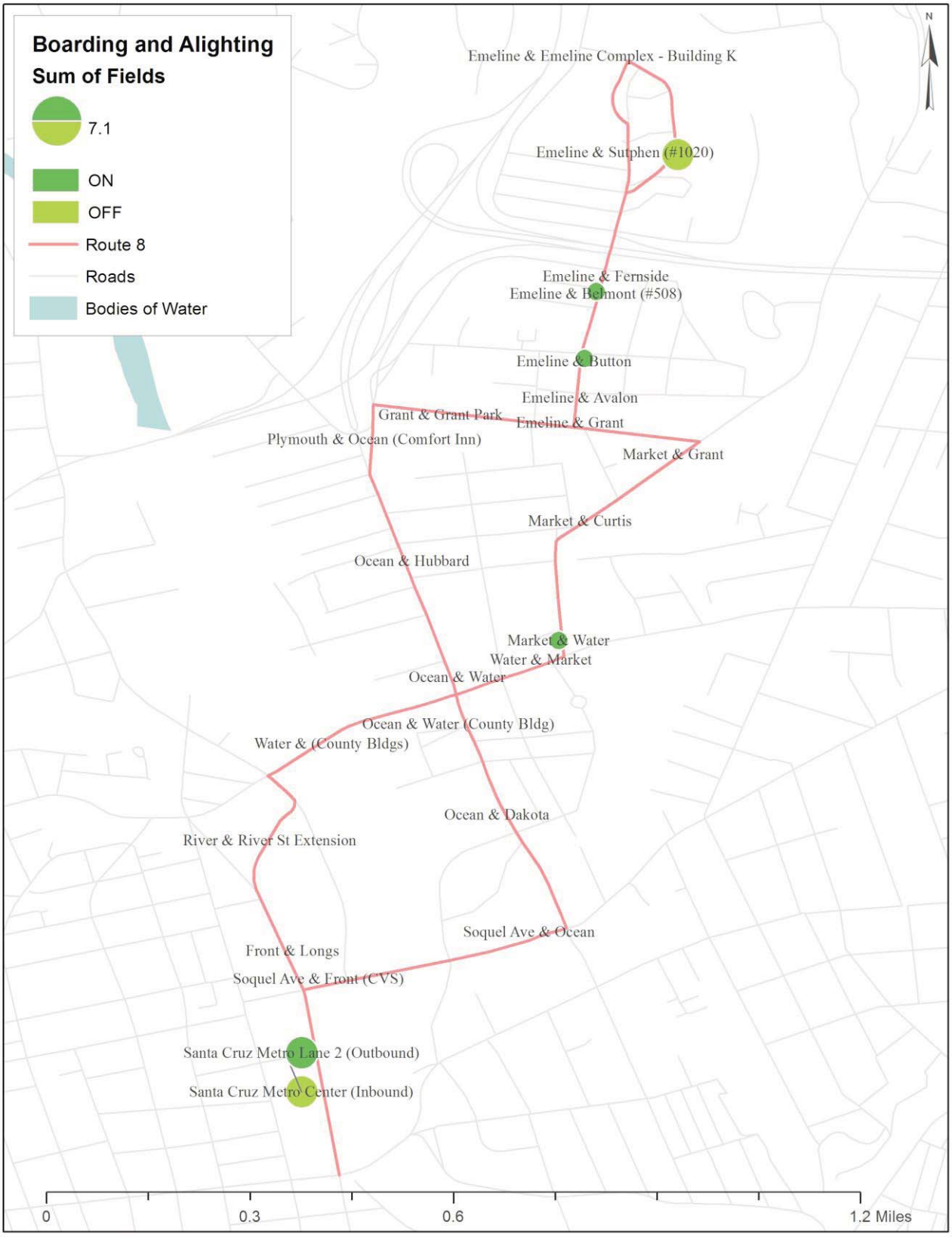


Exhibit C.3 Route 10

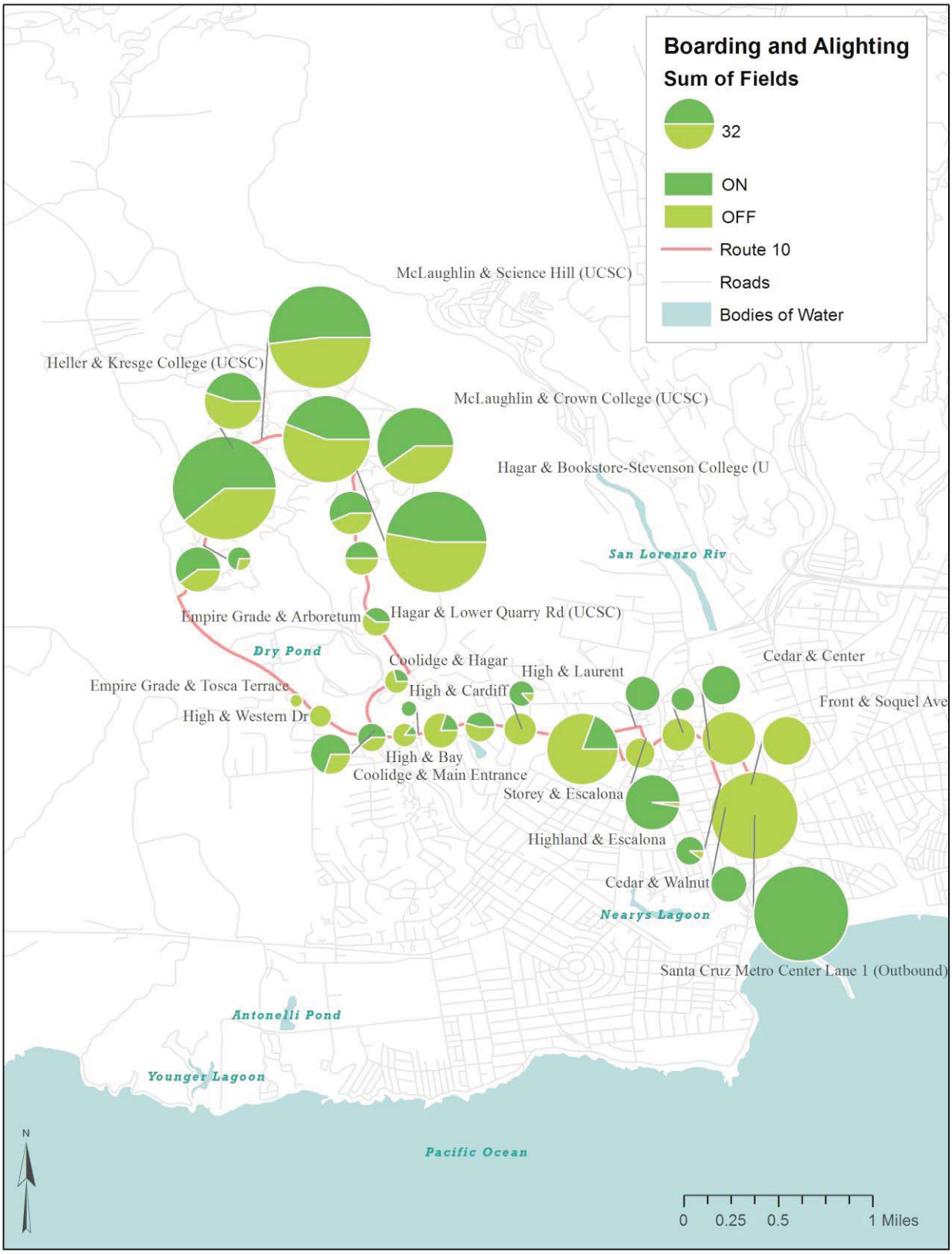


Exhibit C.4 Route 12 Northbound

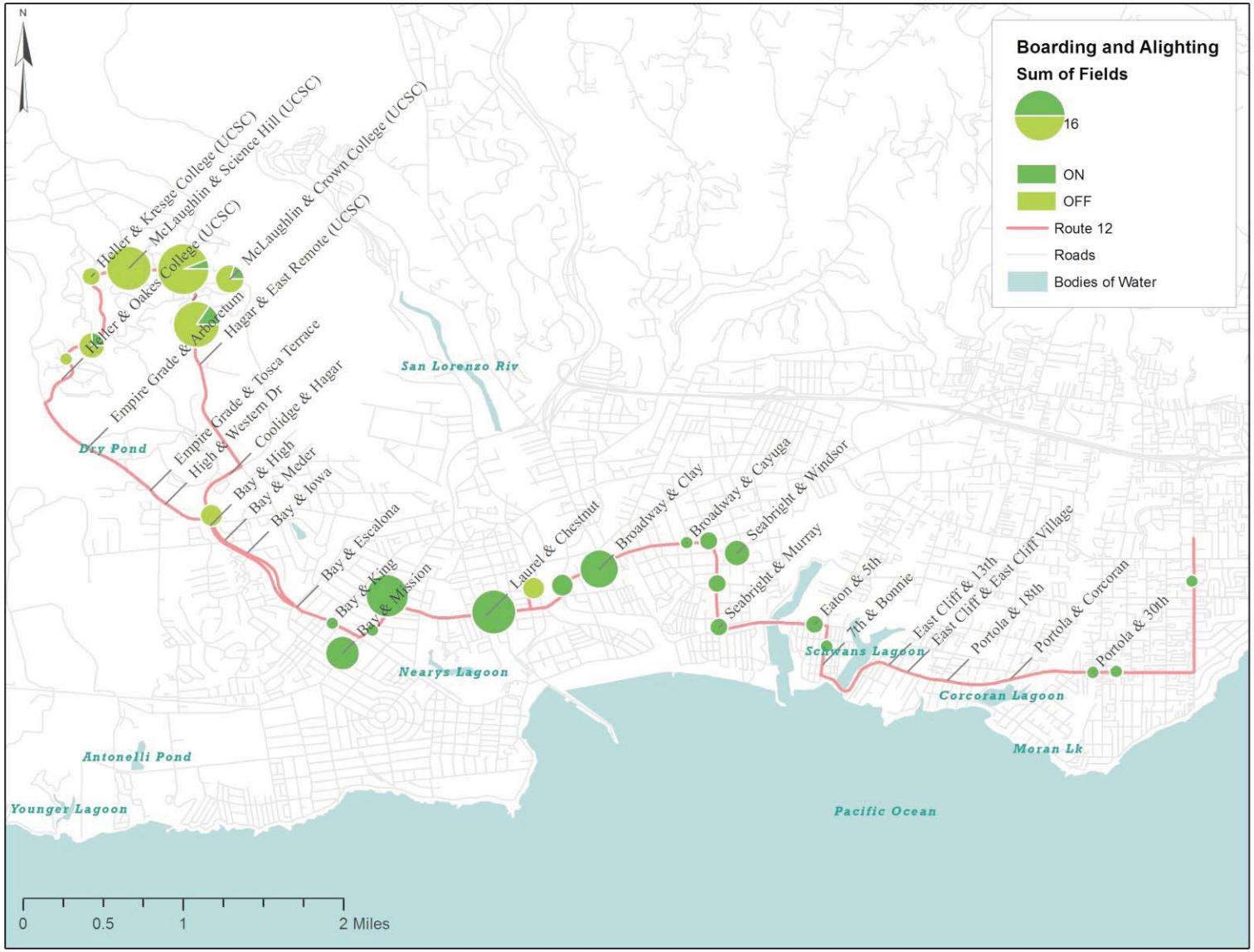


Exhibit C.5 Route 17 Northbound

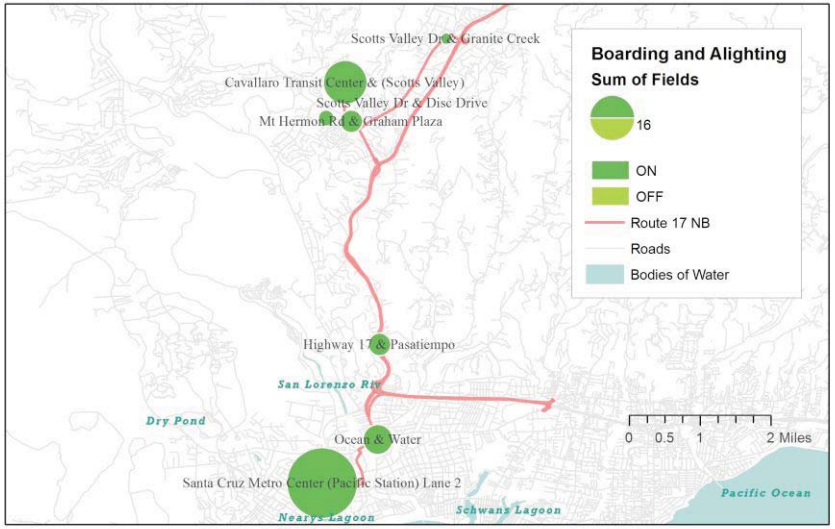
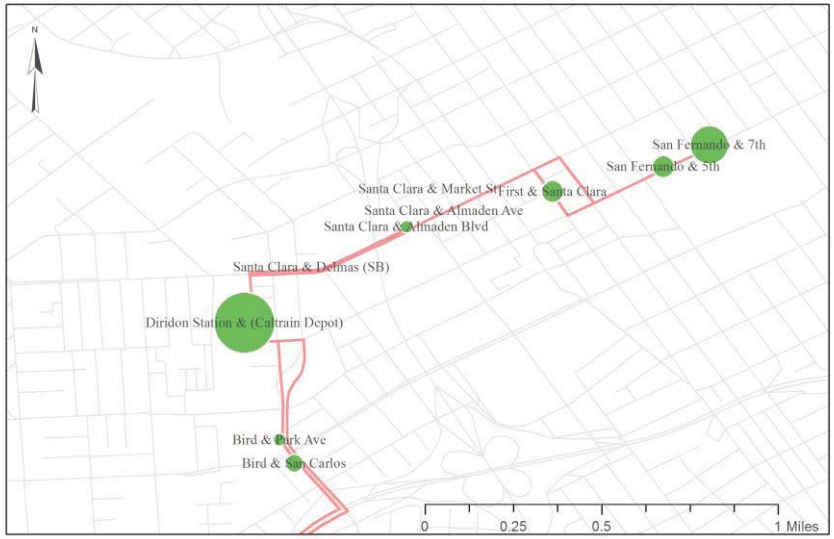


Exhibit C.6 Route 17 Southbound



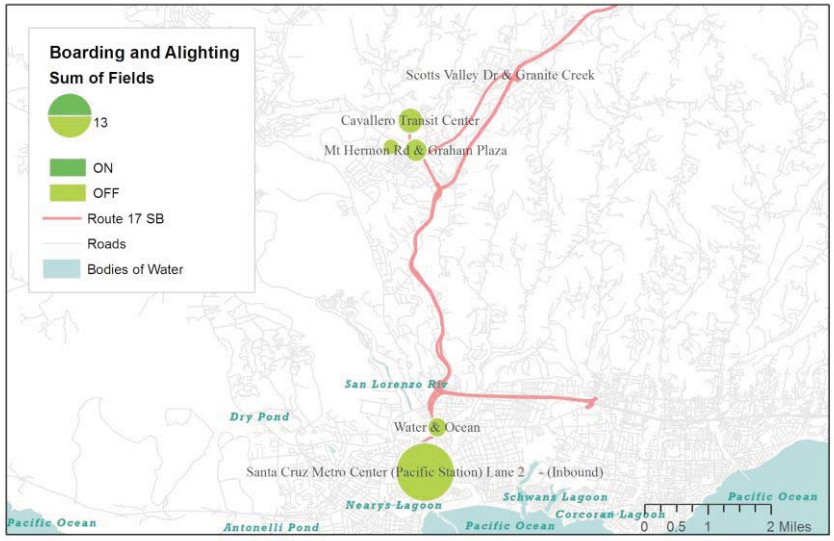
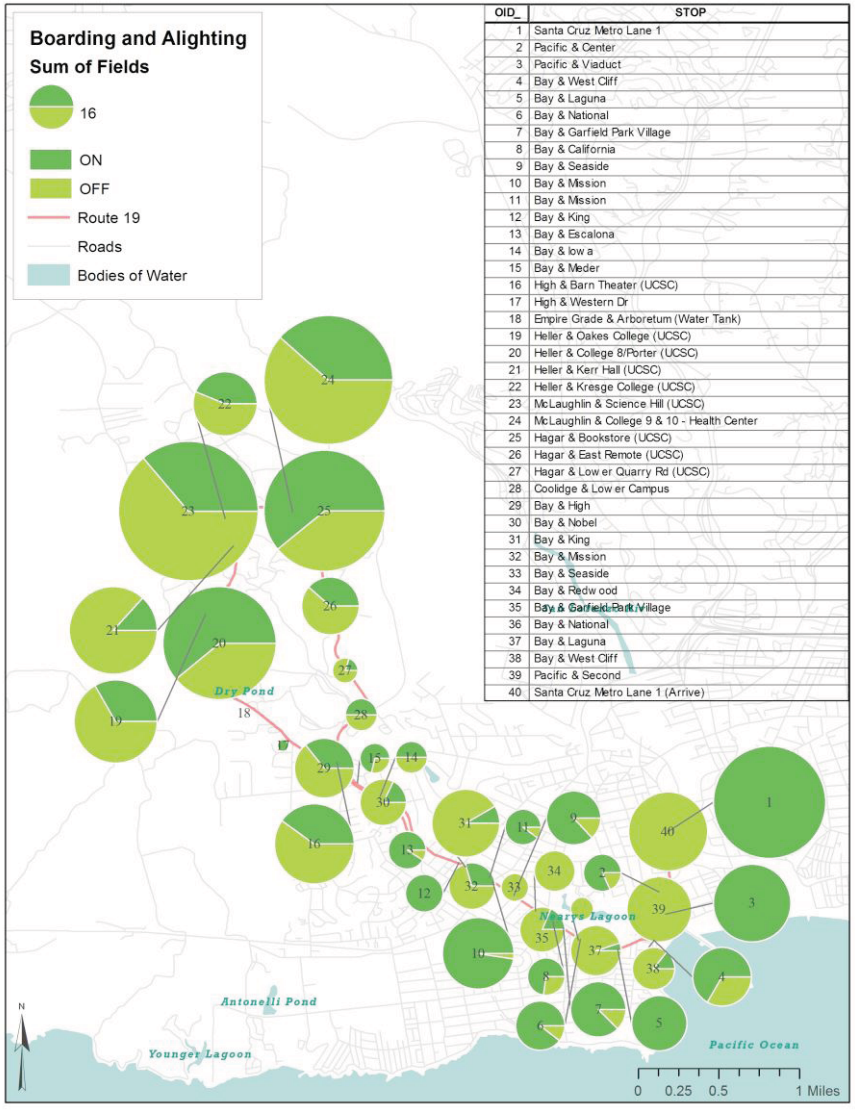
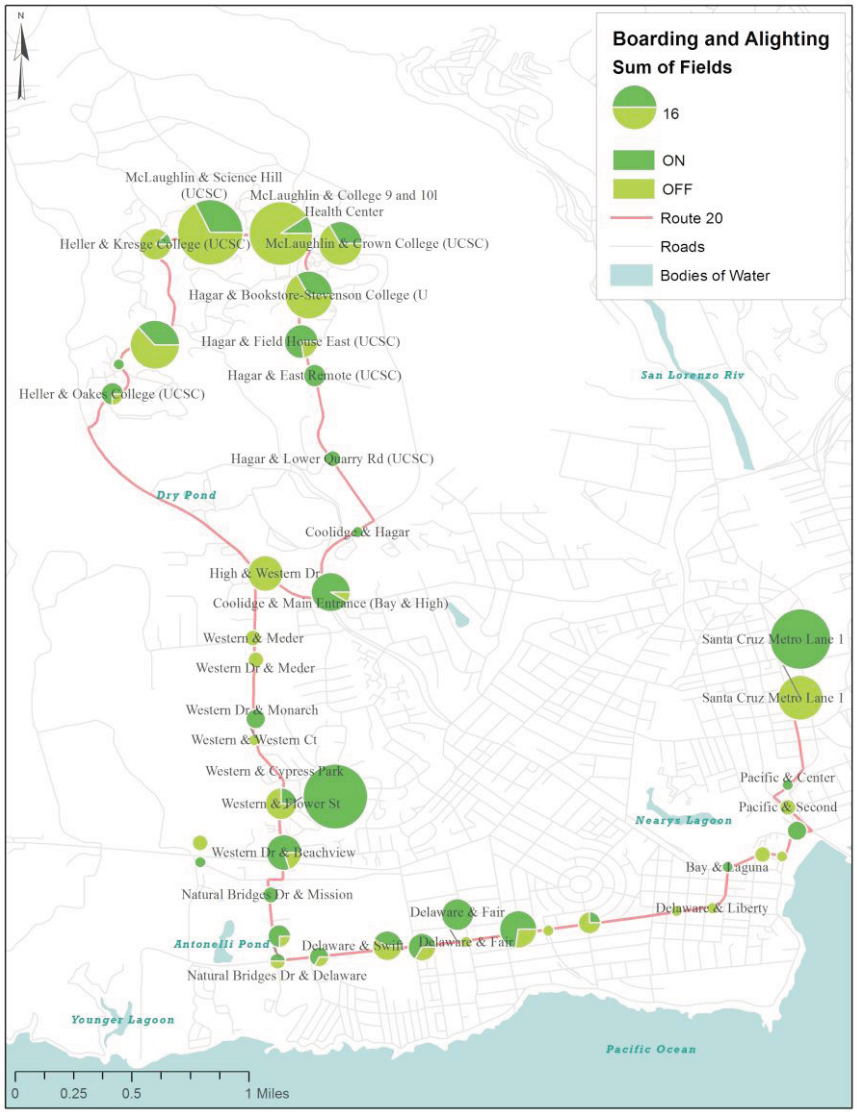


Exhibit C.7 Route 19



OID_	STOP
1	Santa Cruz Metro Lane 1
2	Pacific & Center
3	Pacific & Viaduct
4	Bay & West Cliff
5	Bay & Laguna
6	Bay & National
7	Bay & Garfield Park Village
8	Bay & California
9	Bay & Seaside
10	Bay & Mission
11	Bay & Mission
12	Bay & King
13	Bay & Escalona
14	Bay & low a
15	Bay & Meder
16	High & Barn Theater (UCSC)
17	High & Western Dr
18	Empire Grade & Arboretum (Water Tank)
19	Heller & Oakes College (UCSC)
20	Heller & College 8/Porter (UCSC)
21	Heller & Kerr Hall (UCSC)
22	Heller & Kresge College (UCSC)
23	McLaughlin & Science Hill (UCSC)
24	McLaughlin & College 9 & 10 - Health Center
25	Hagar & Bookstore (UCSC)
26	Hagar & East Remote (UCSC)
27	Hagar & Low er Quarry Rd (UCSC)
28	Coolidge & Low er Campus
29	Bay & High
30	Bay & Nobel
31	Bay & King
32	Bay & Mission
33	Bay & Seaside
34	Bay & Redw ood
35	Bay & Garfield Park Village
36	Bay & National
37	Bay & Laguna
38	Bay & West Cliff
39	Pacific & Second
40	Santa Cruz Metro Lane 1 (Arrive)

Exhibit C.8 Route 20



*Note due to the number of stops, names are provided in the accompanying table and identified numerically in the object identification (OID) column.

Exhibit C.9 Route 30 Northbound

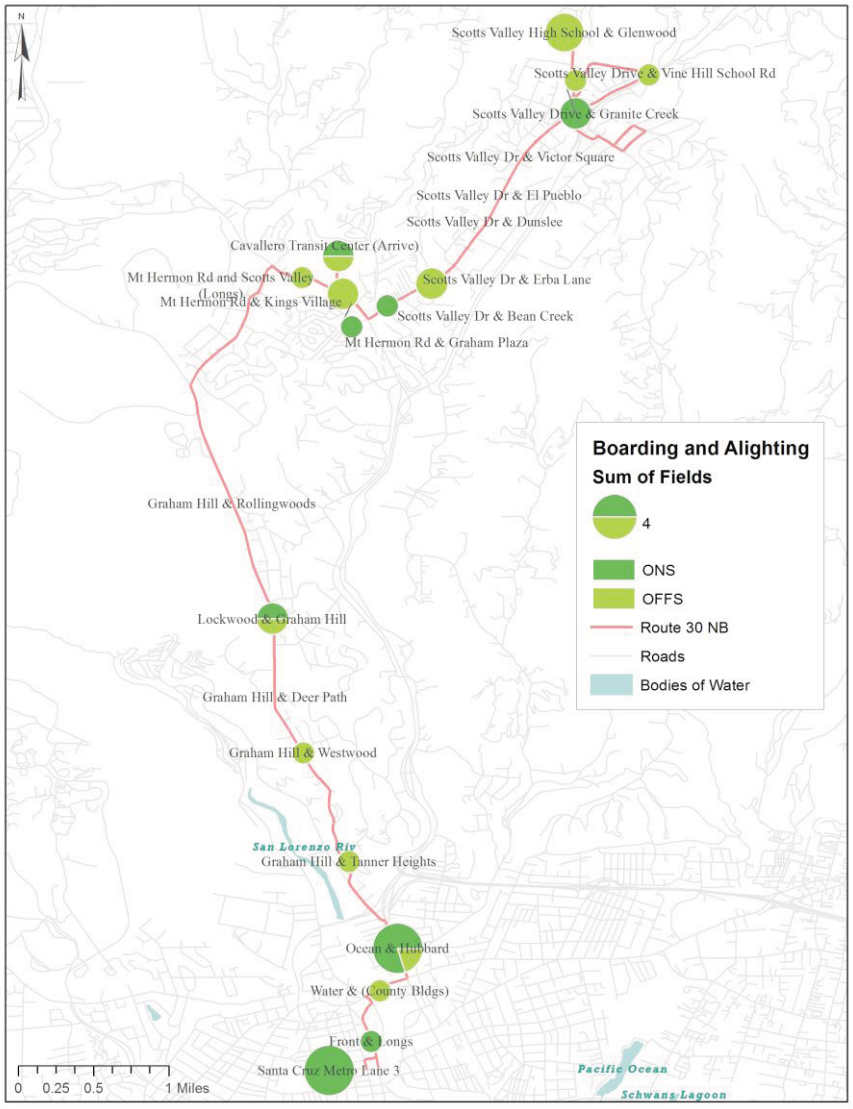


Exhibit C.10 Route 30 Southbound

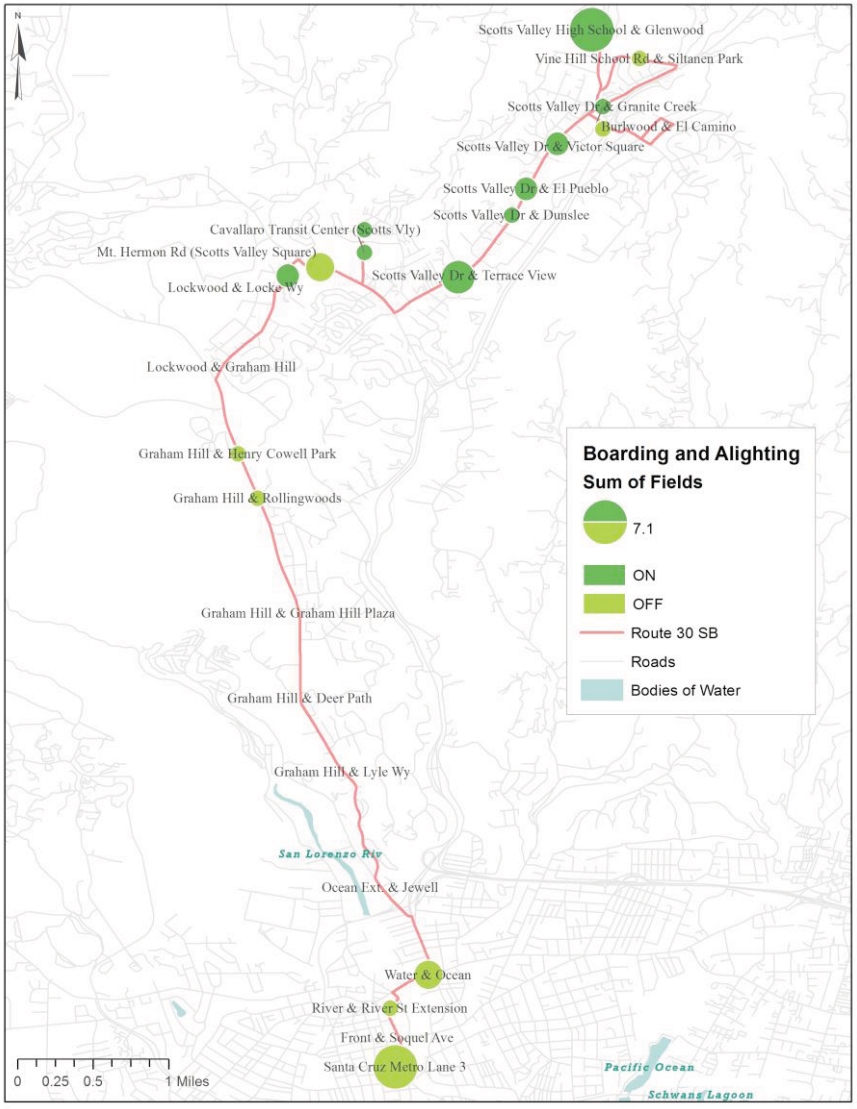


Exhibit C.11 Route 33

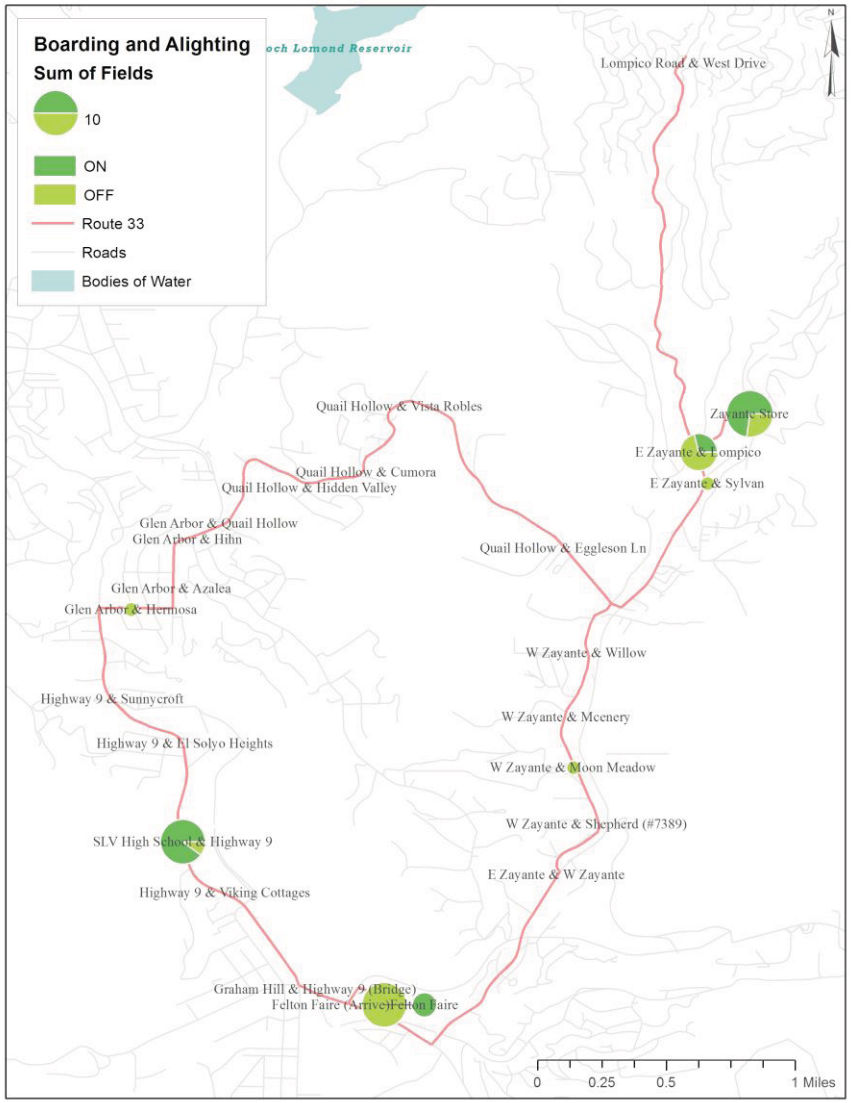


Exhibit C.12 Route 34

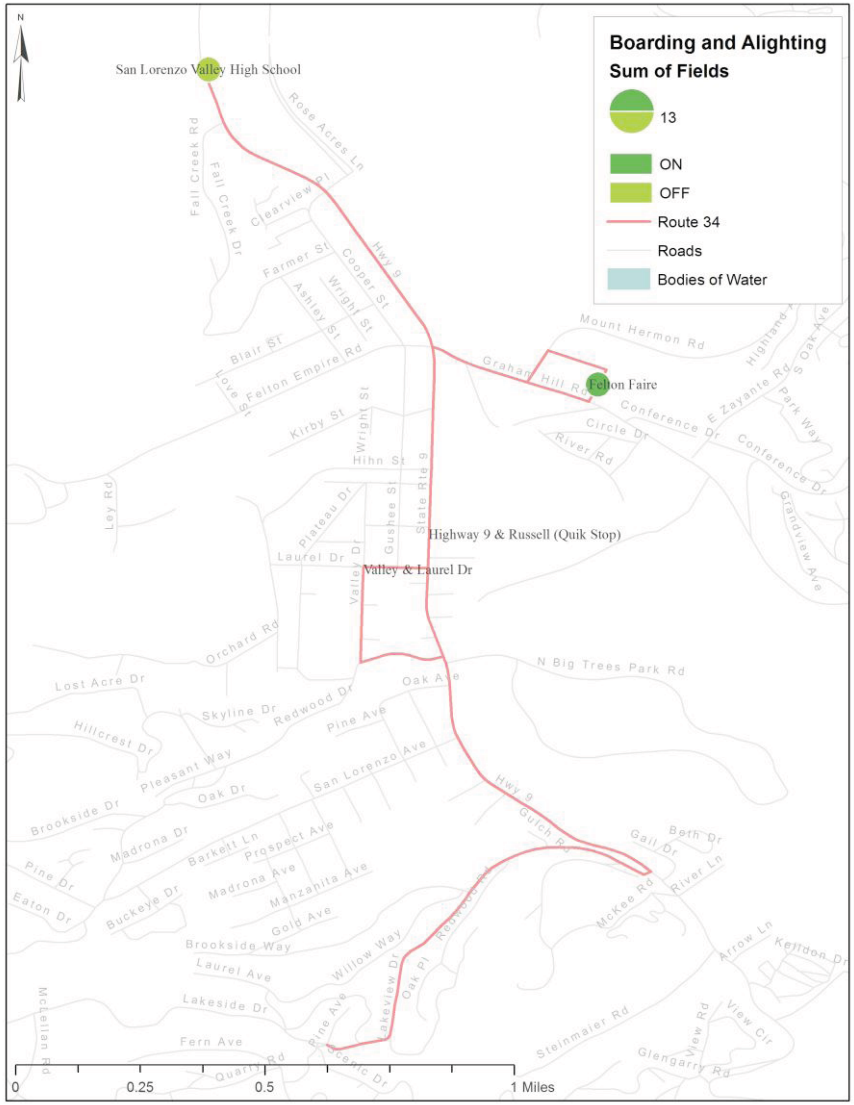


Exhibit C.13 Route 35 Northbound

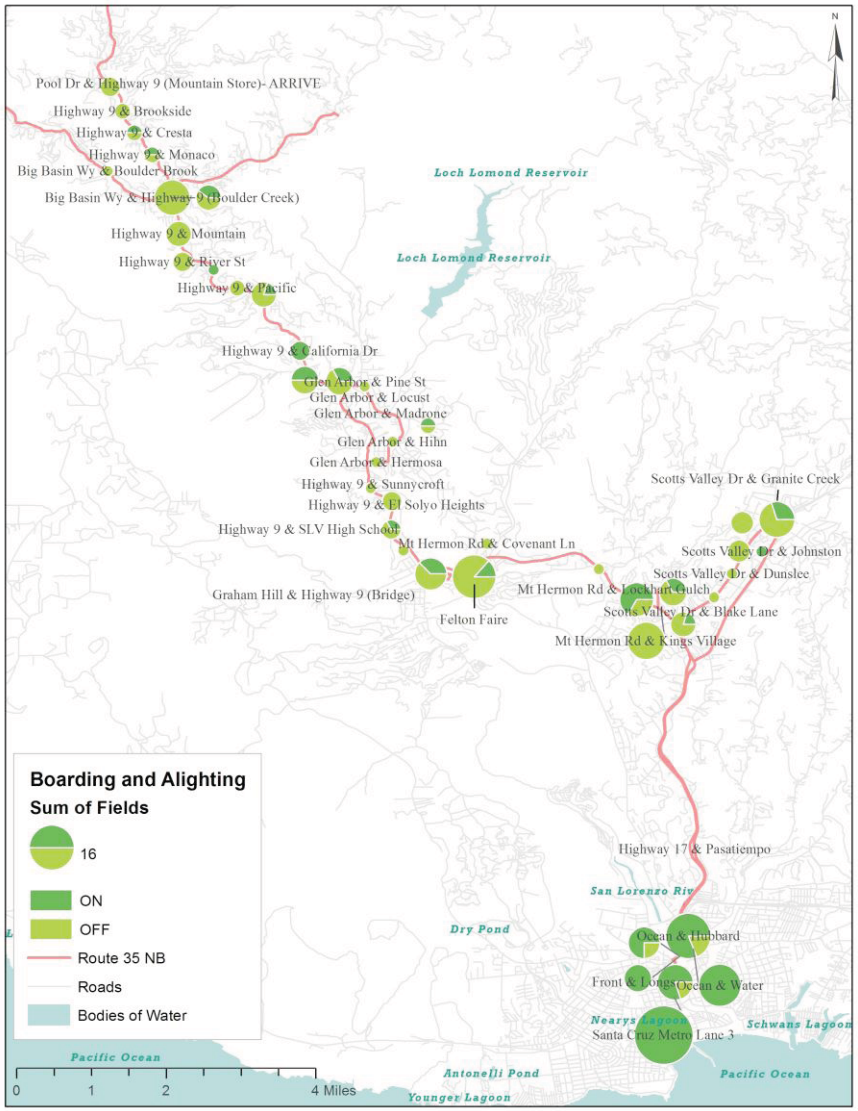


Exhibit C.14 Route 35 Southbound

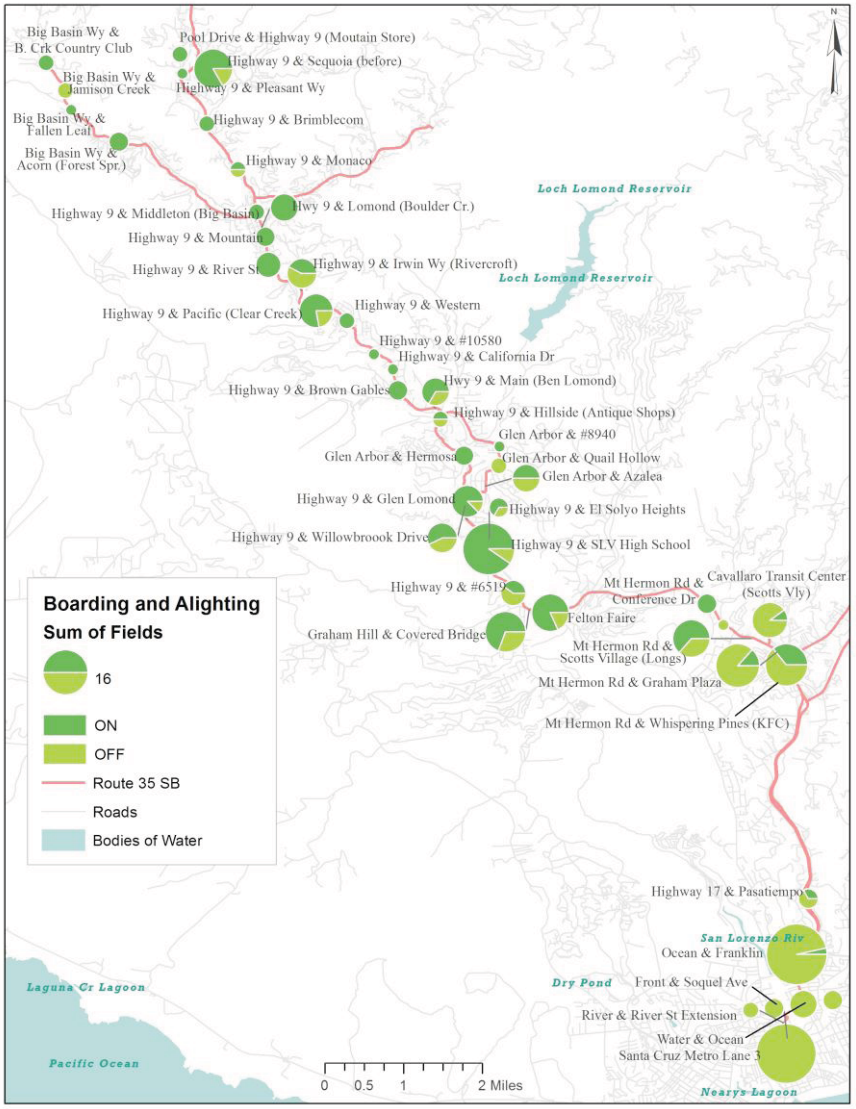


Exhibit C.15 Route 40

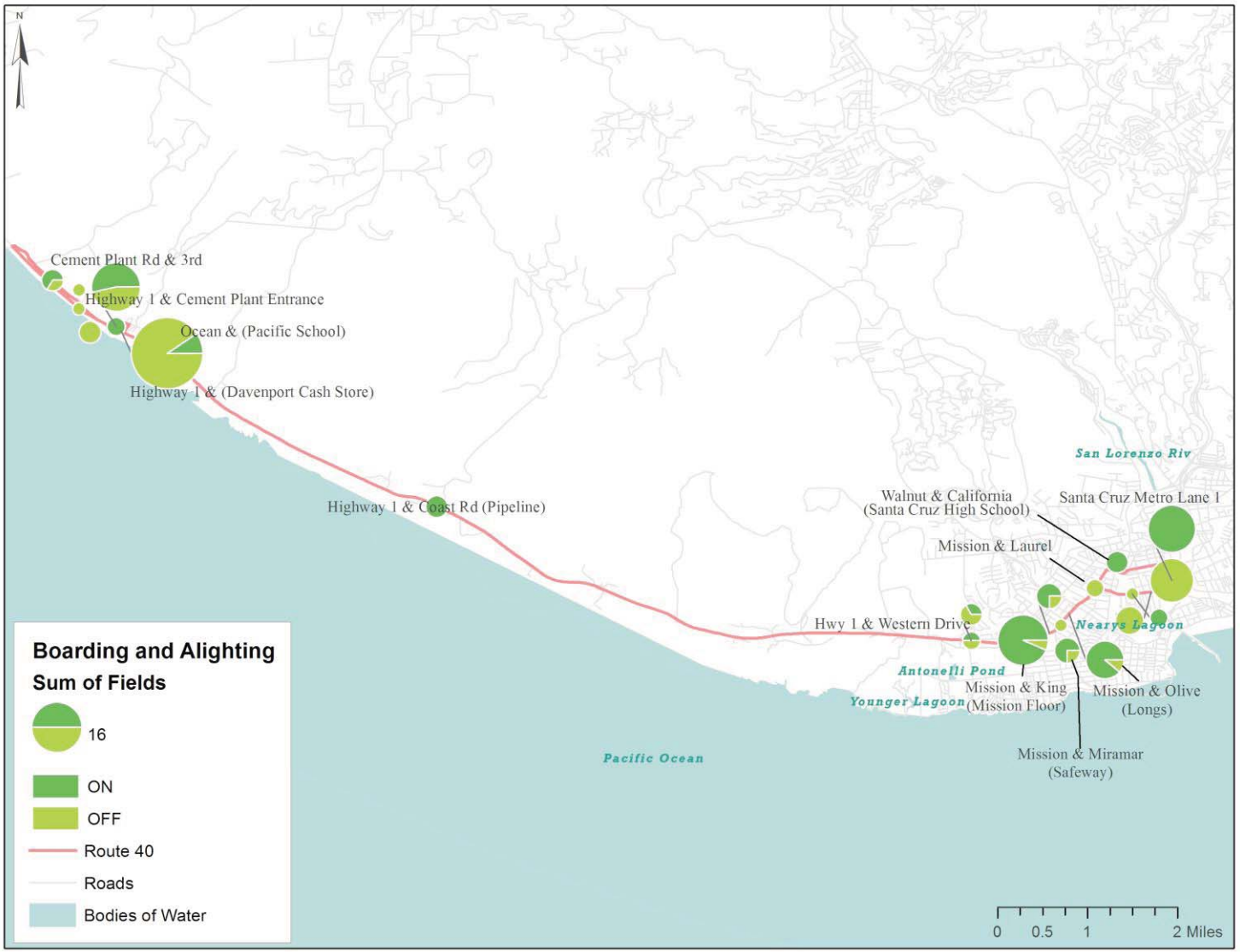


Exhibit C.16 Route 41

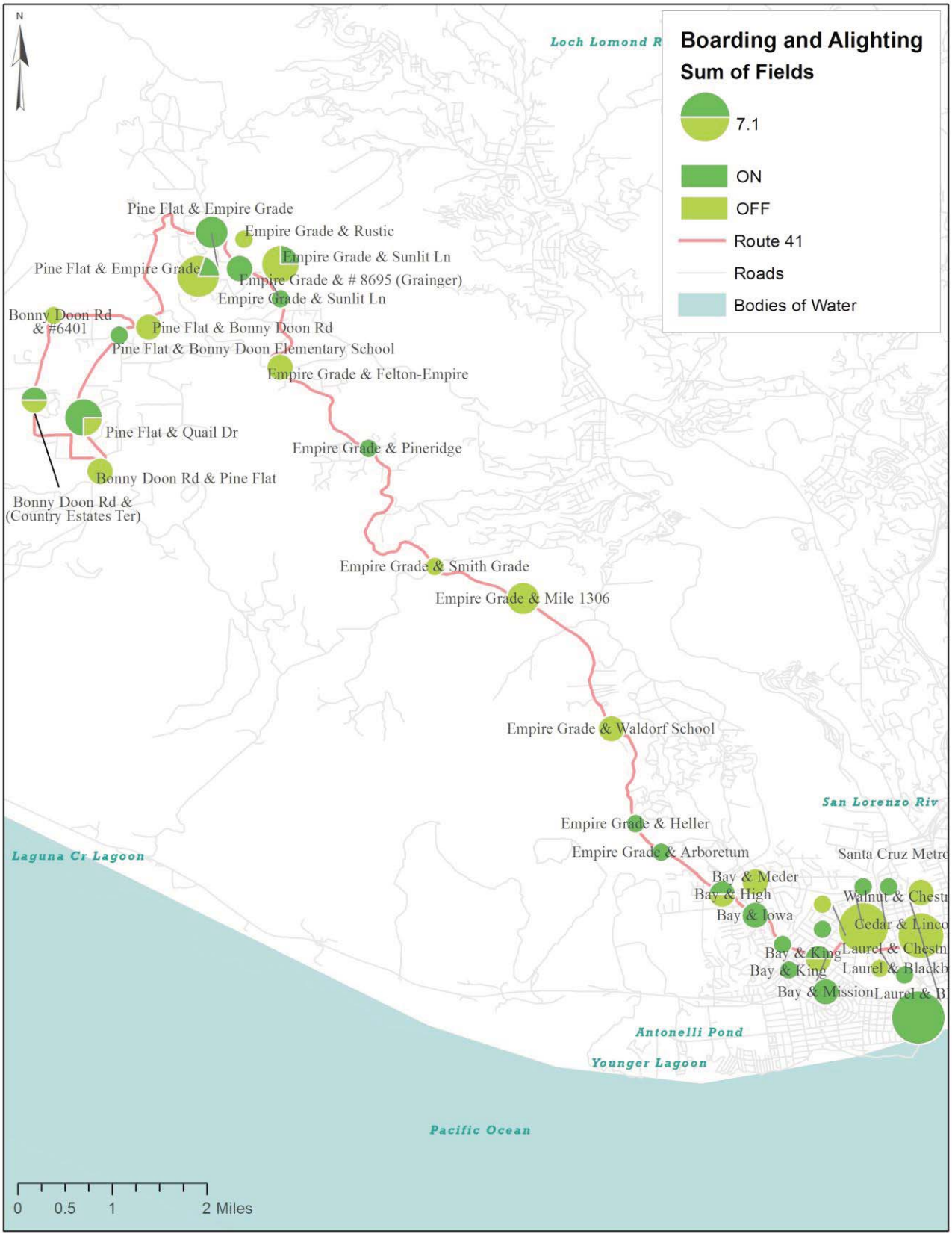


Exhibit C.17 Route 42

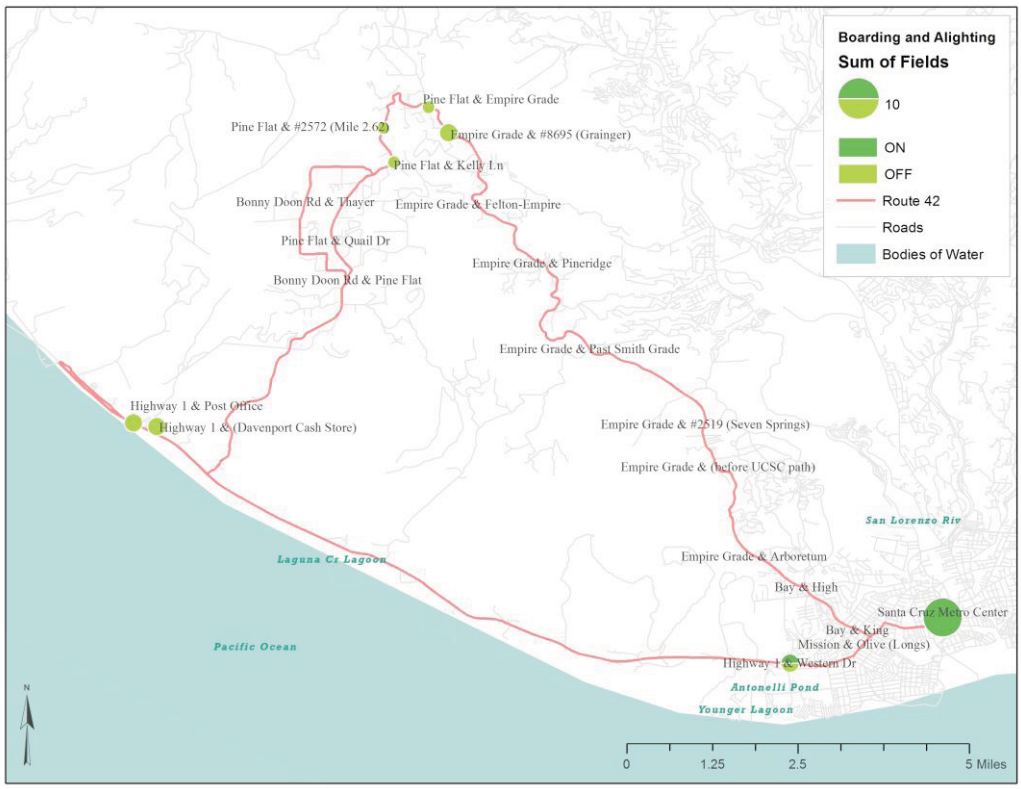


Exhibit C.18 Route 54

Exhibit C.19 Route 55

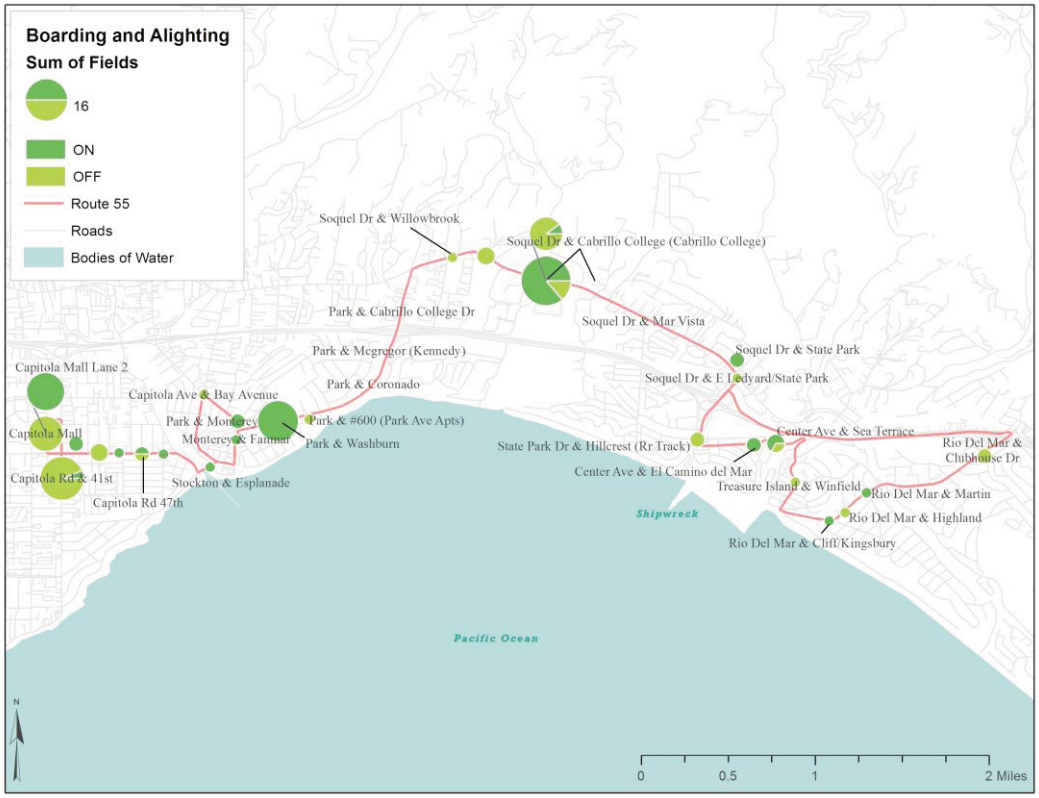


Exhibit C.20 Route 66 Inbound

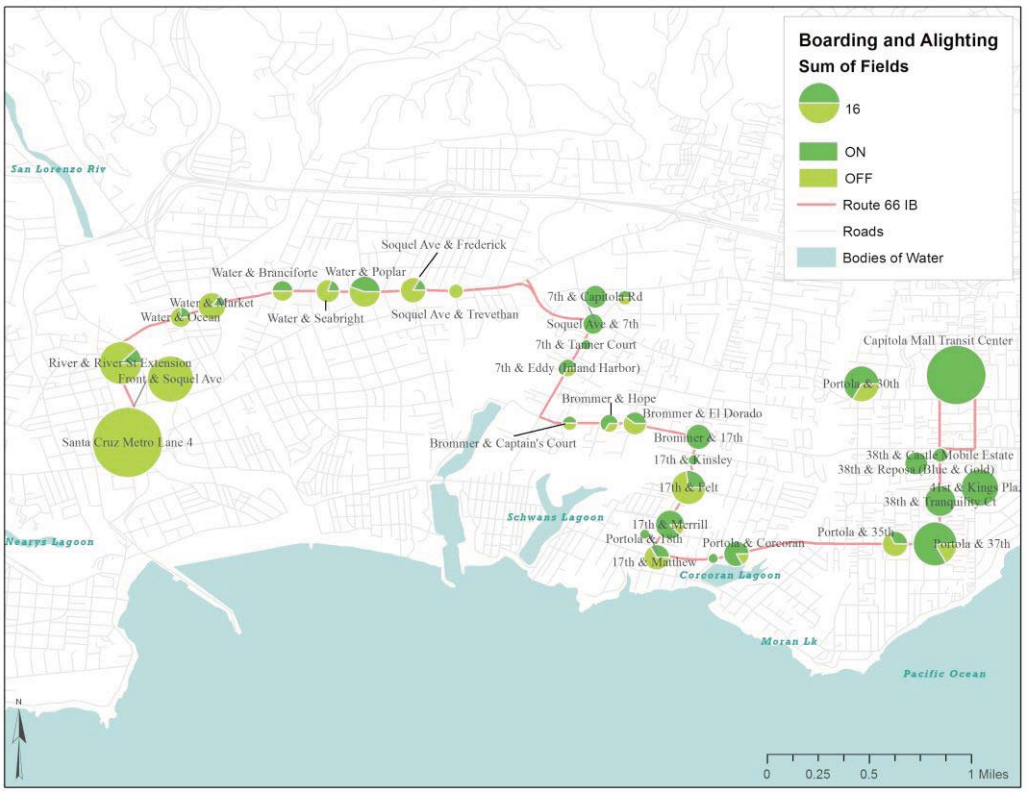


Exhibit C.21 Route 66 Outbound

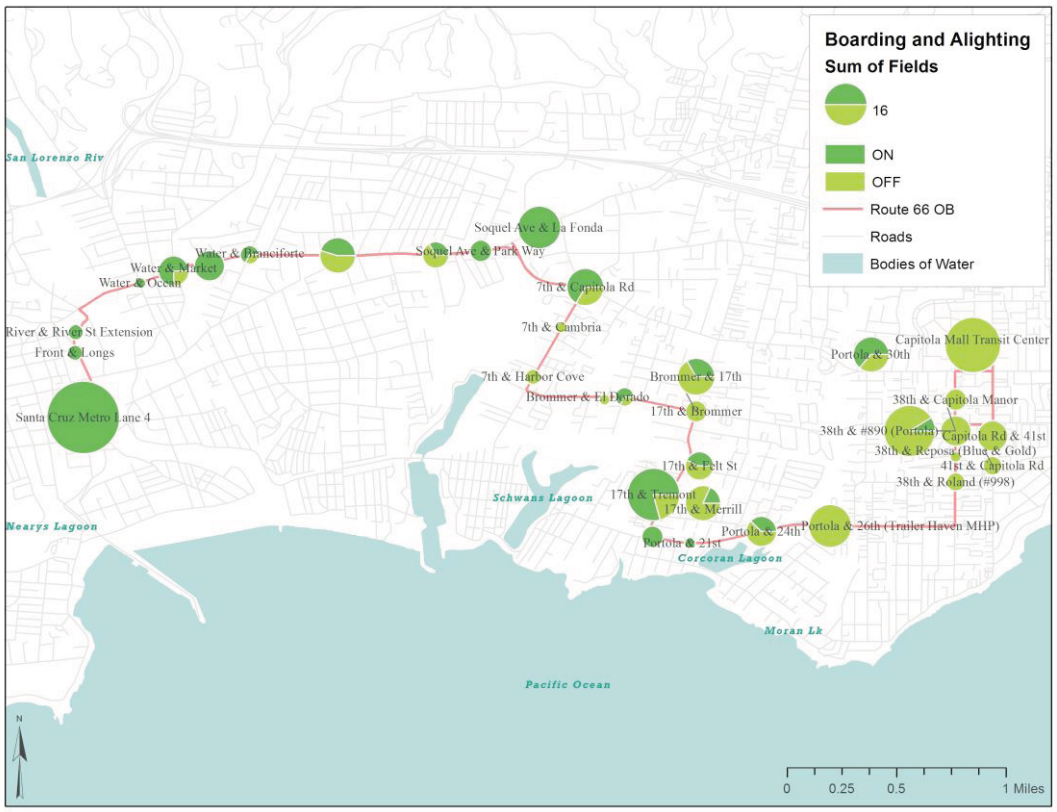


Exhibit C.22 Route 66N

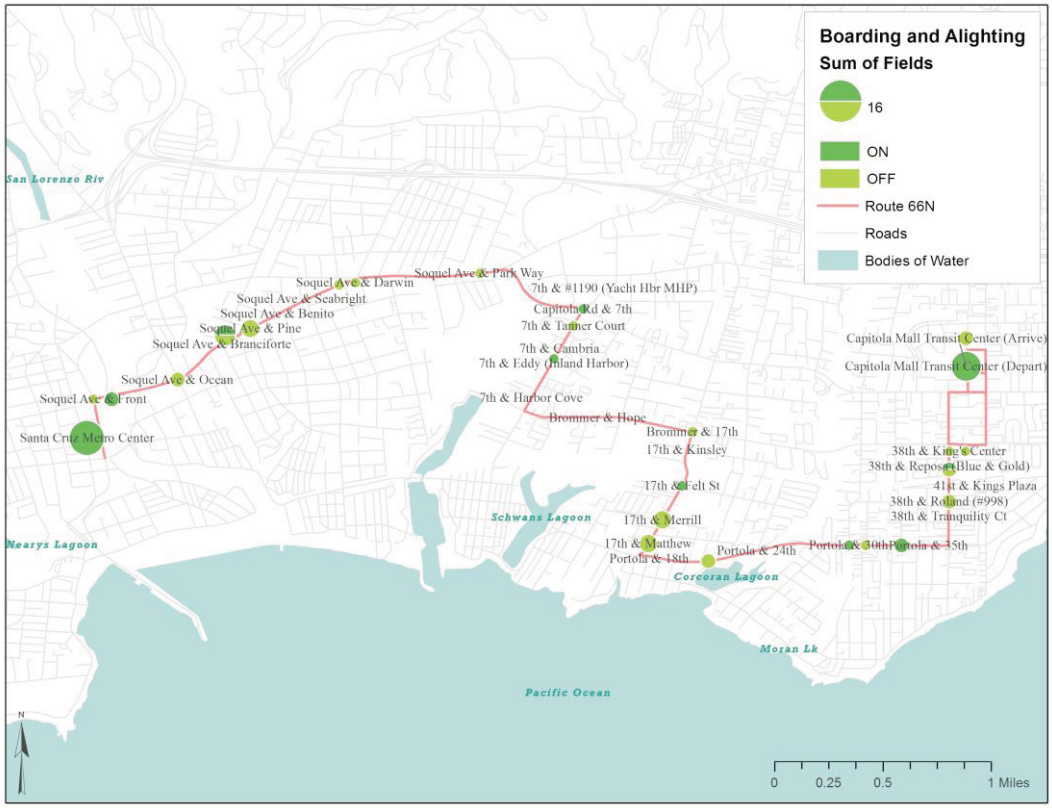


Exhibit C.23 Route 68 Inbound

Exhibit C.24 Route 68 Outbound

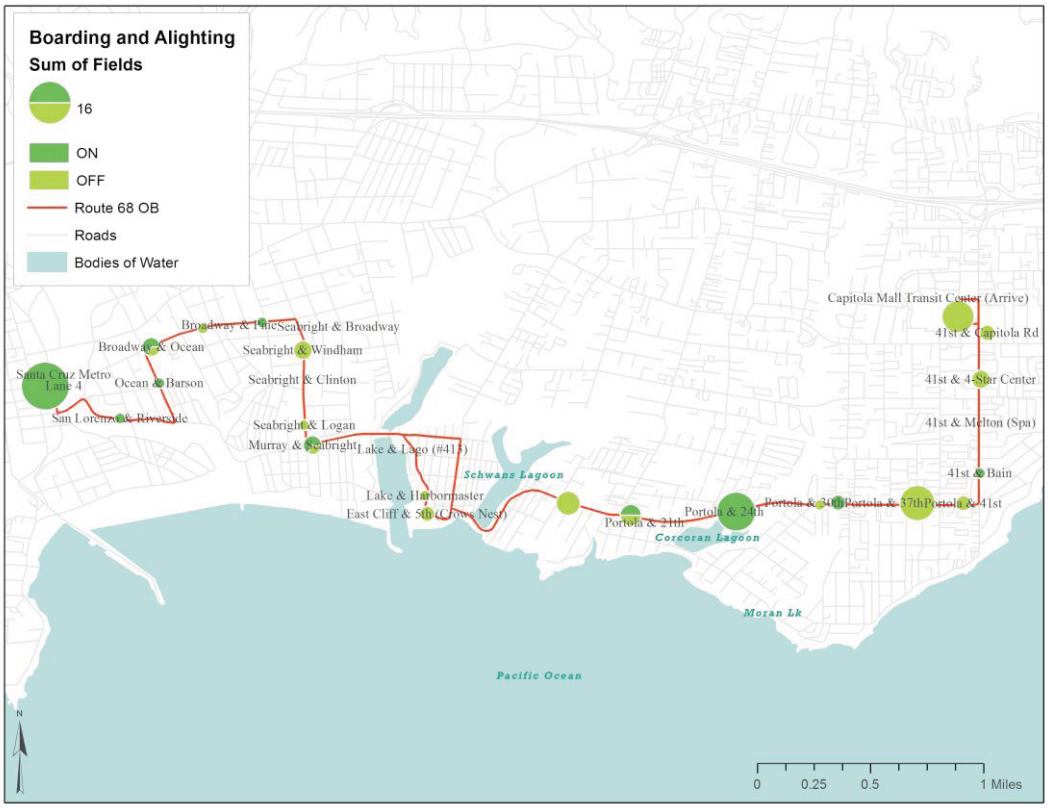


Exhibit C.25 Route 69A Inbound

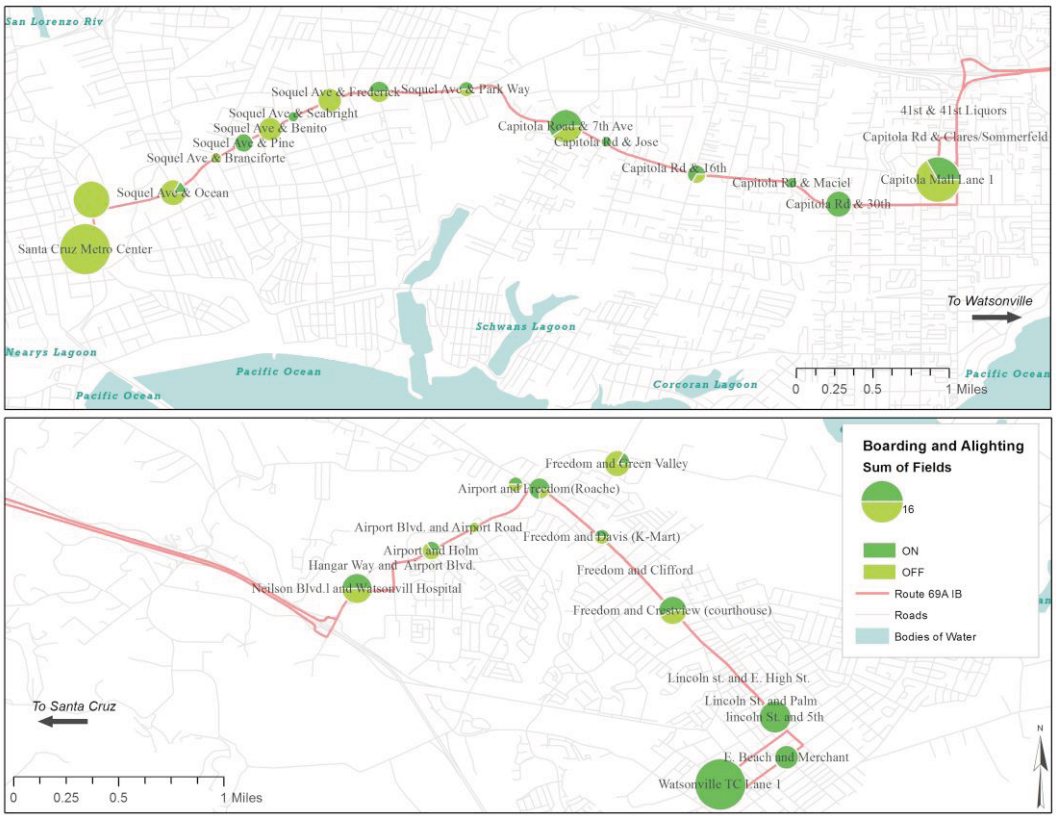


Exhibit C.26 Route 69A Outbound

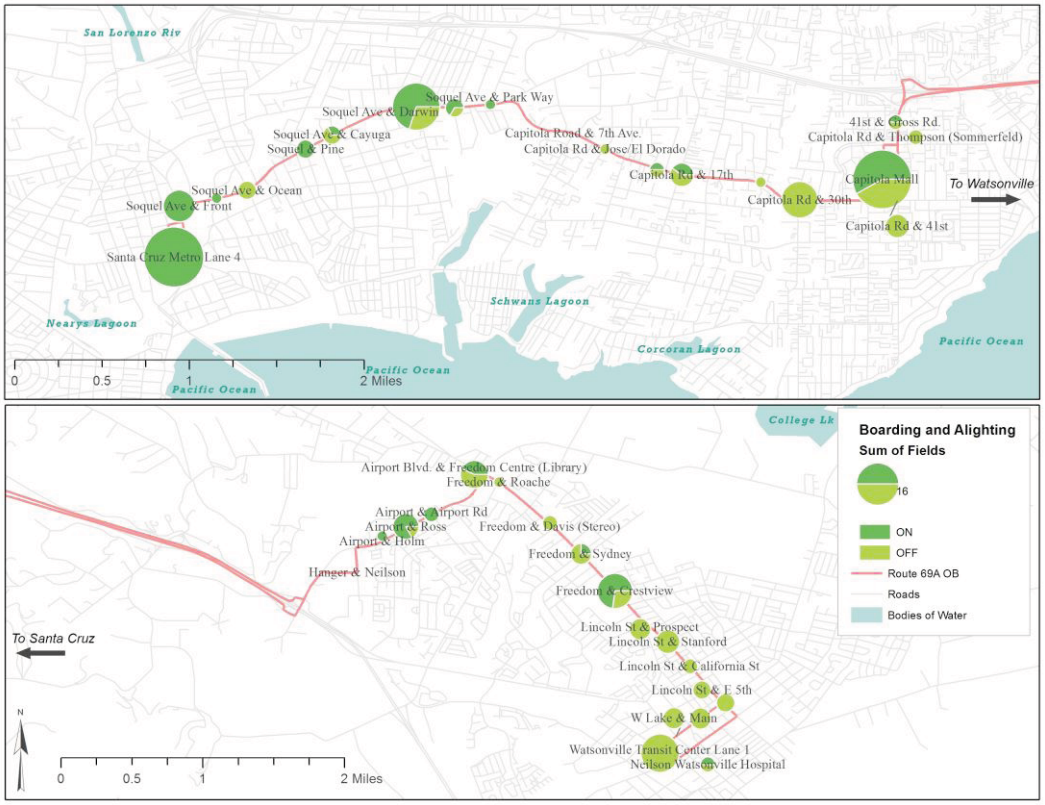


Exhibit C.27 Route 69W Inbound

Exhibit C.28 Route 69W Outbound

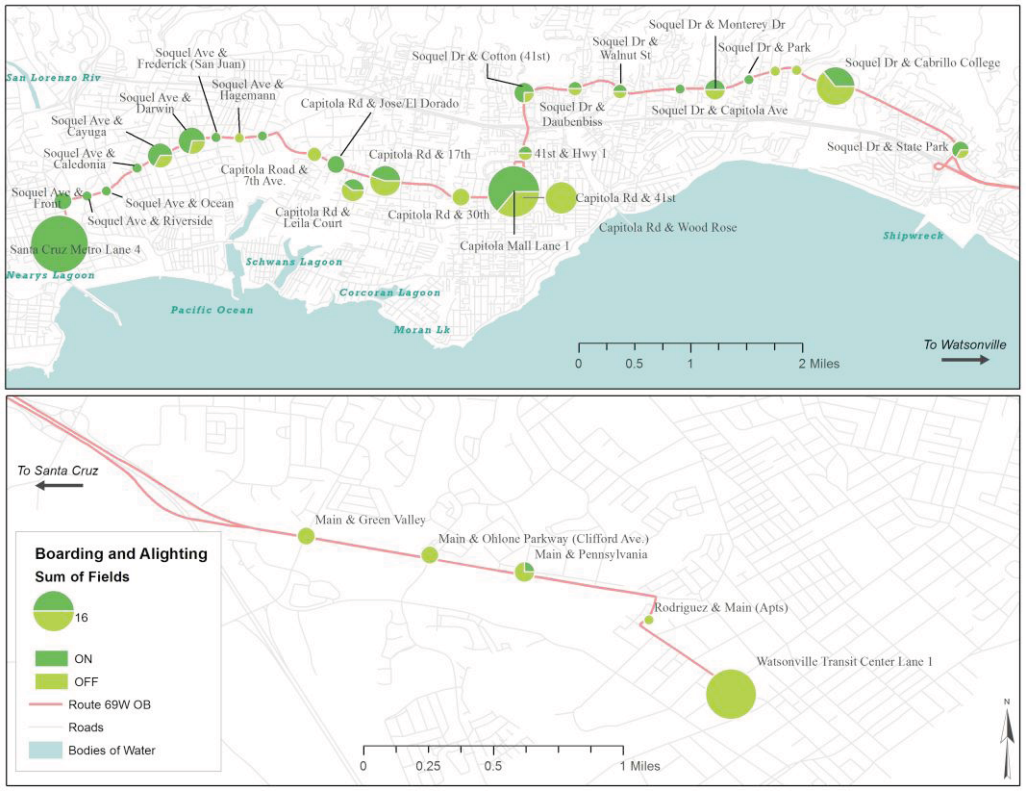


Exhibit C.29 Route 71 Inbound

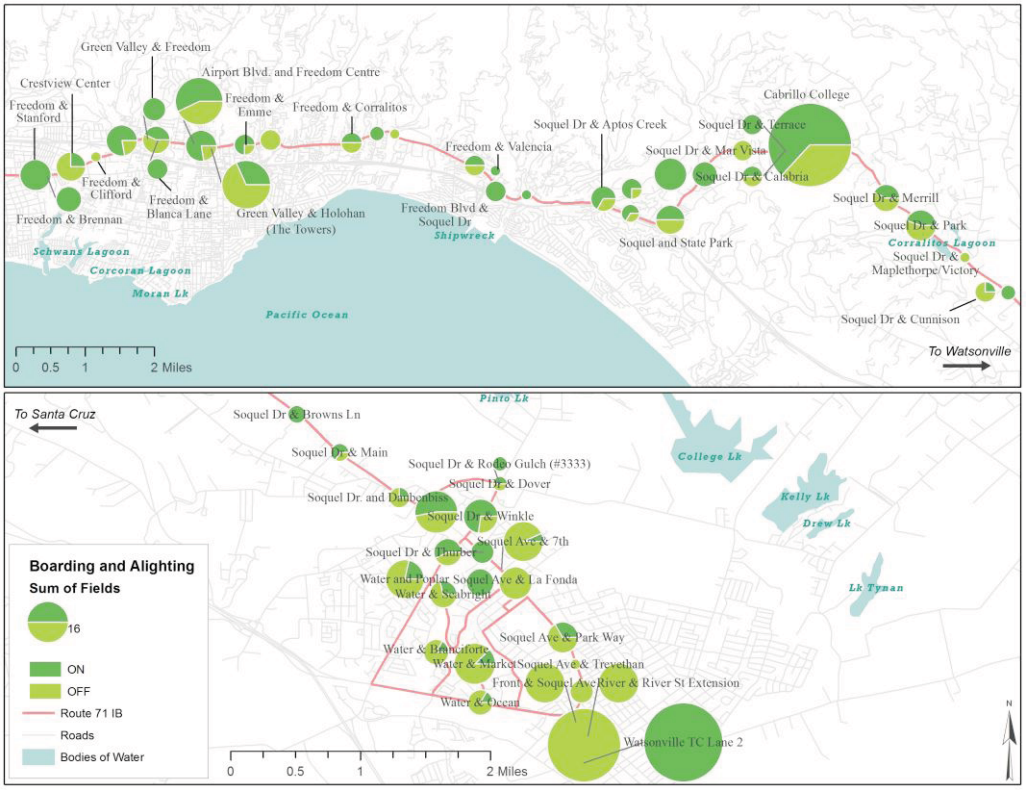


Exhibit C.30 Route 71 Outbound

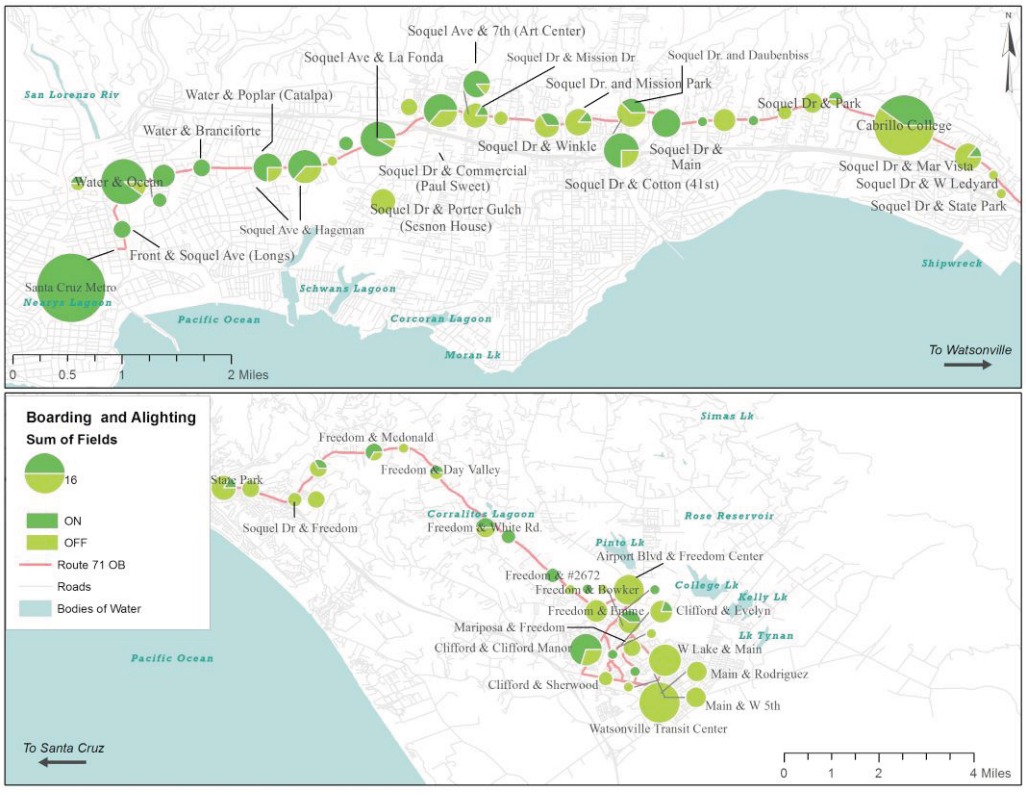


Exhibit C.31 Route 72

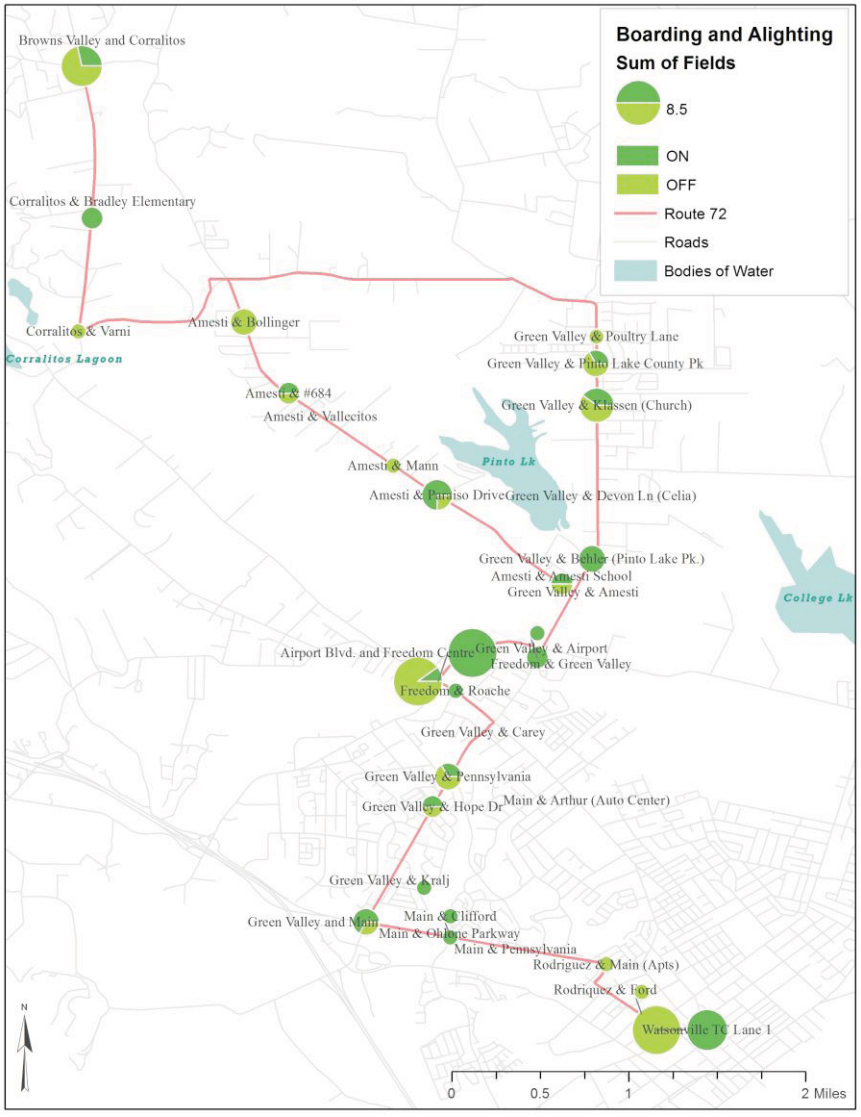


Exhibit C.32 Route 75

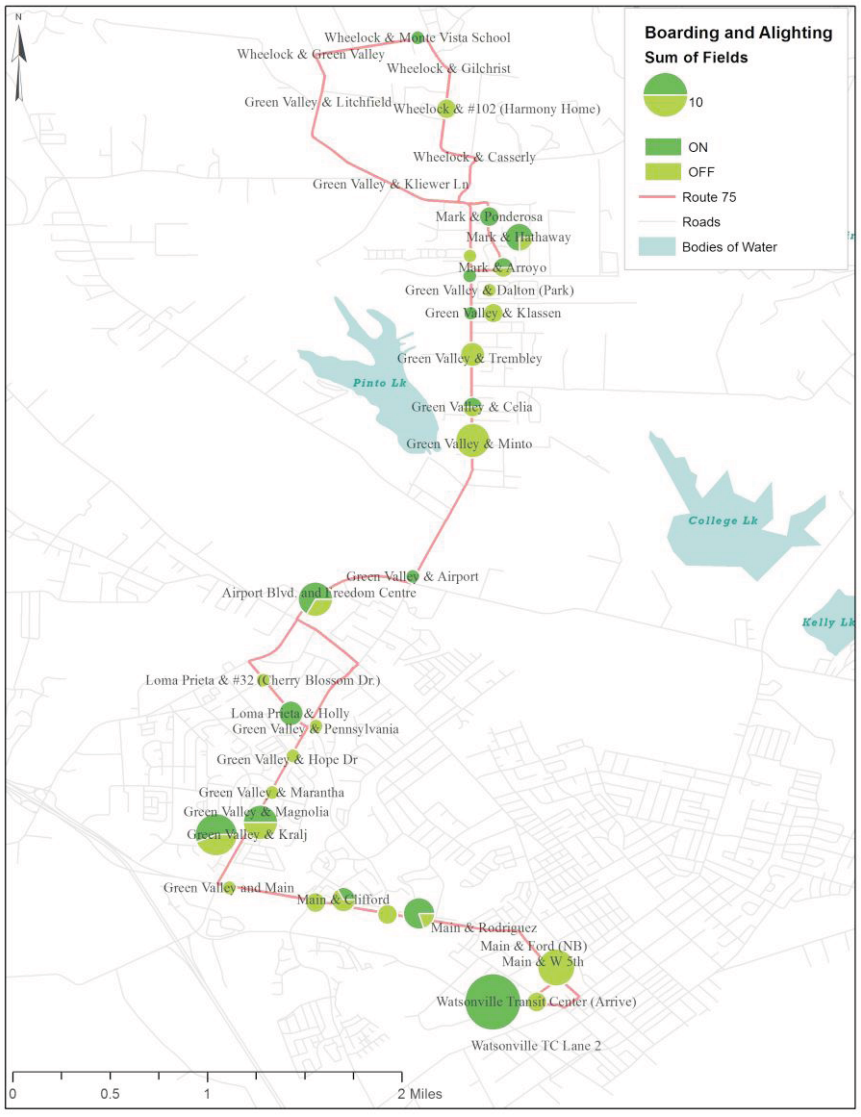


Exhibit C.33 Route 74A

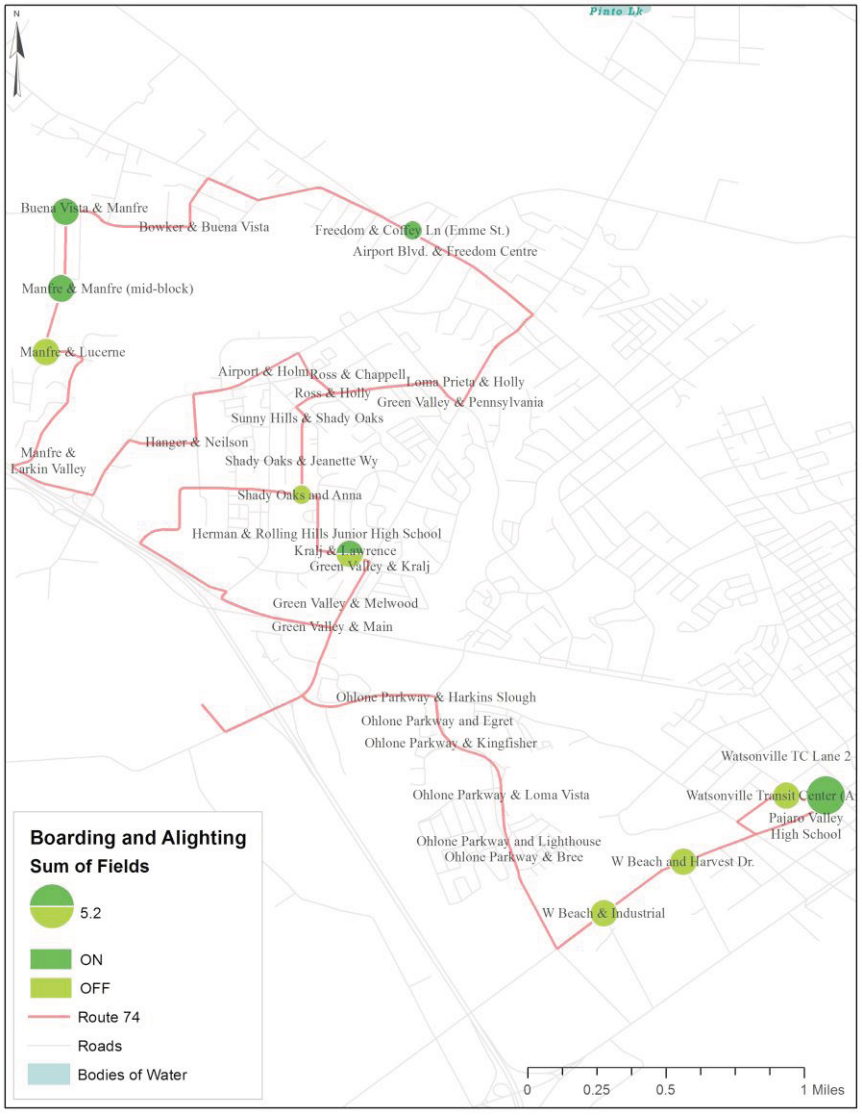


Exhibit C.34 Route 74B

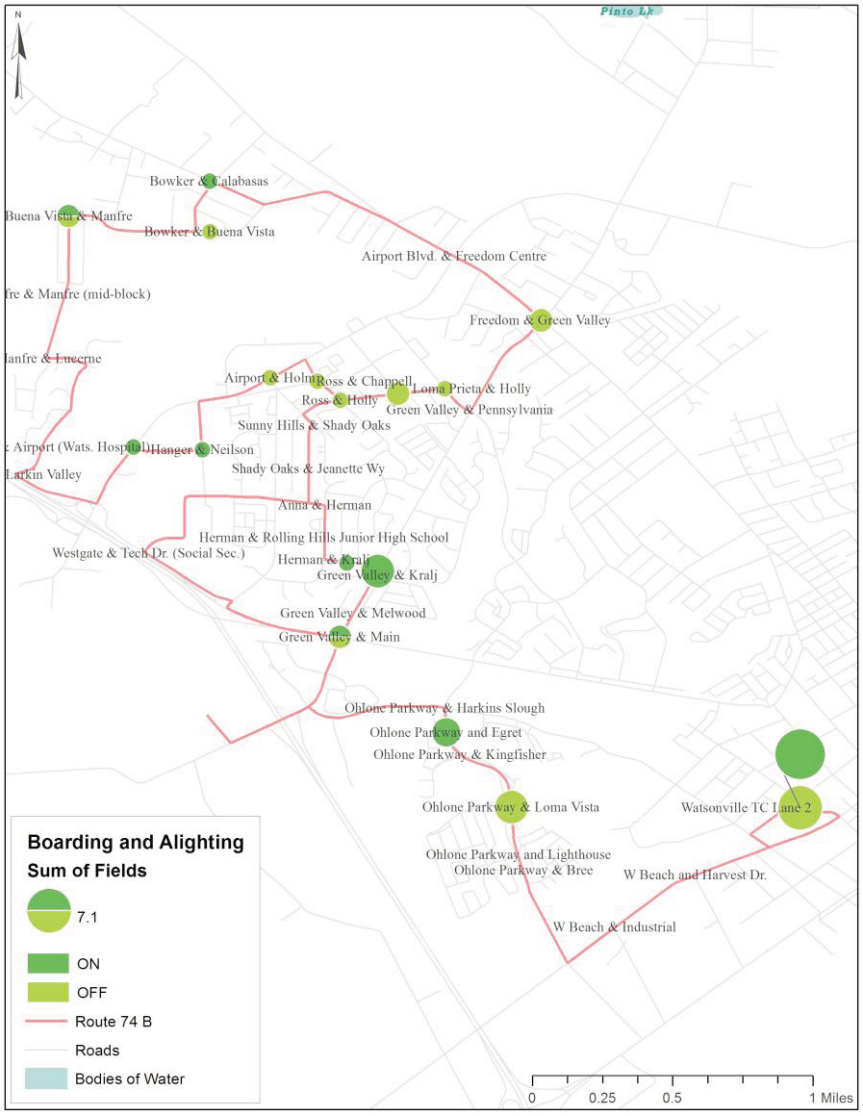


Exhibit C.35 Route 91X Inbound

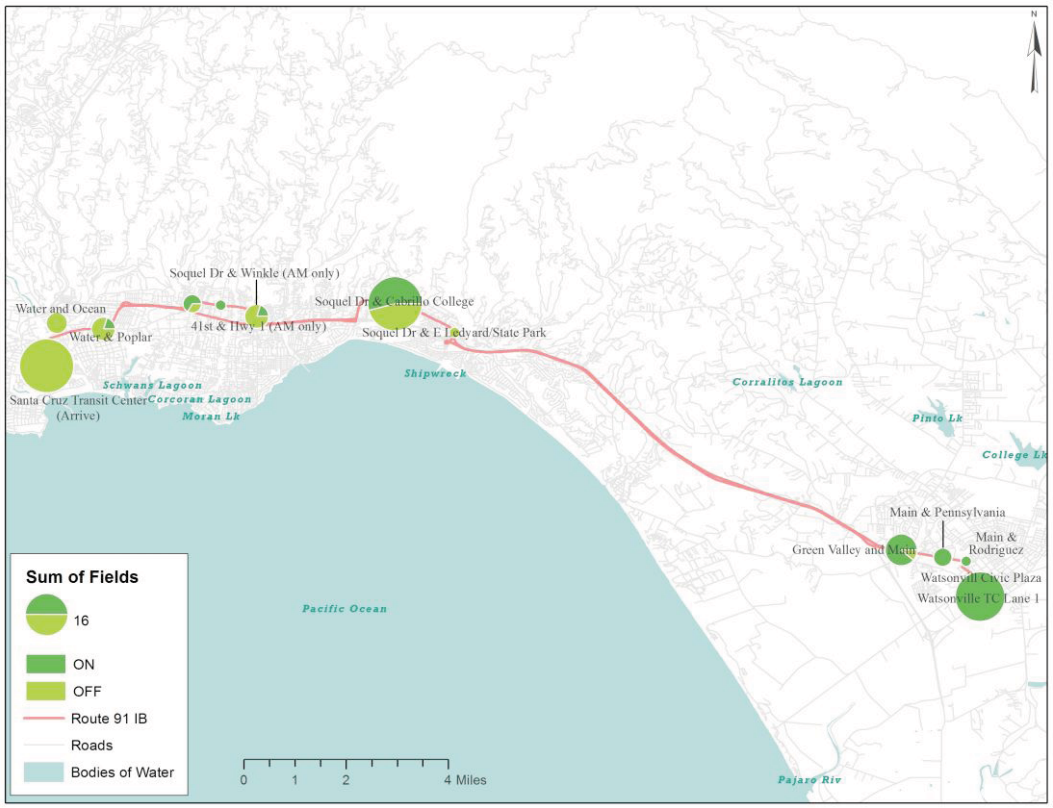
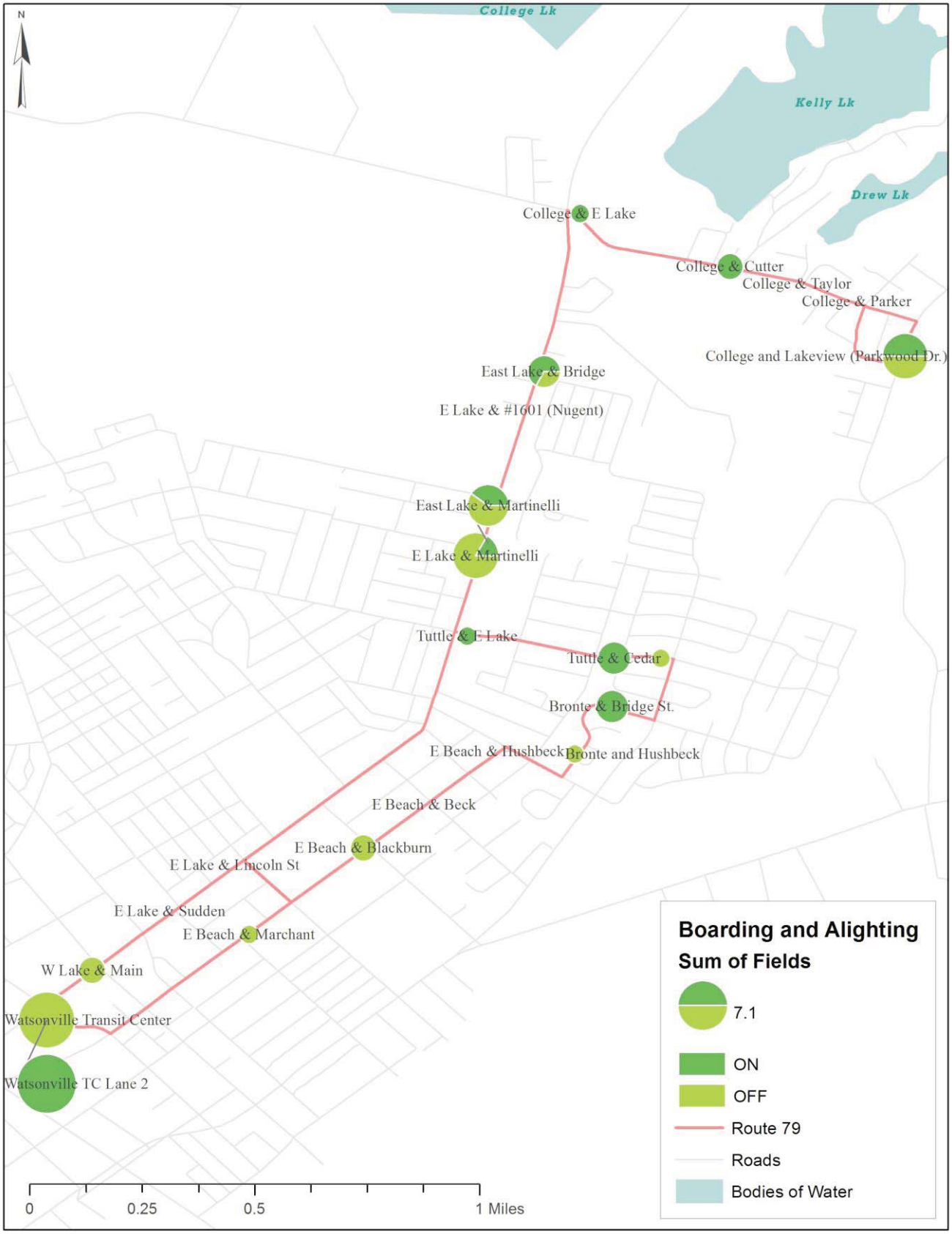


Exhibit C.36 Route 91X Outbound

Exhibit C.37 Route 79



APPENDIX D – ELECTRONIC FILES

Please note: Electronic files of this report can be found at:

Santa Cruz County Regional Transportation Commission
1523 Pacific Avenue
Santa Cruz, CA
Phone: (831) 460-3213