OC TRANSIT VISION

Transit Opportunity Corridors

Initial Screening and Preliminary Recommendations

June 2017

NELSON
NYGAARD

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1 INTRODUCTION

This report describes the initial screening of potential Transit Opportunity Corridors (TOCs) and the evaluation of possible Freeway Bus Rapid Transit (Freeway BRT) routes and stop locations for the OC Transit Vision. The TOCs are those corridors in Orange County that may merit investment in high-quality transit service, including high-capacity or rapid transit service using modes such as streetcar, bus rapid transit, or rapid bus (see the State of OC Transit report for more information on transit modes).

Figure 1 illustrates the screening and evaluation process, which includes the identification of candidate corridors, screening of those corridors (the focus of this report), and detailed evaluation and prioritization of the TOCs. As described in the final section of this report, the TOCs recommended for advancement from screening to evaluation will undergo more detailed analysis to establish a prioritized list of corridor-specific capital and service recommendations for inclusion in the final OC Transit Vision report.

Figure 1 Corridor Evaluation Process
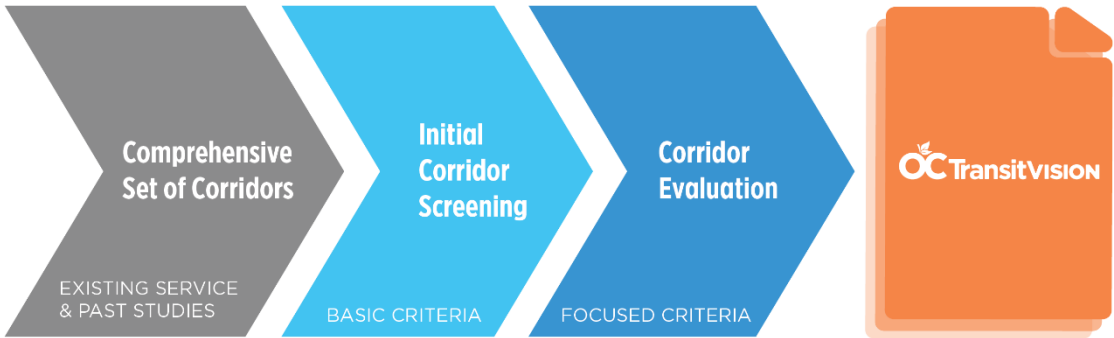
2 SCREENING AND EVALUATION CRITERIA

The corridor screening and evaluation criteria established as part of the OCTA Transit Investment Framework are shown in Table 1. The criteria were designed to help achieve the project's vision and goals. A smaller number of criteria were identified for the initial screening than for the more detailed evaluation, which is standard for a process in which a large number of candidate corridors must be analyzed. For the OC Transit Vision, the complete list of potential corridors has been screened using a subset of criteria to identify the most promising candidates for investment; these 10 corridors then undergo more comprehensive analysis—including ridership modeling—to determine specific recommendations for each.

The screening and evaluation criteria measure both potential project performance as well as corridor characteristics such as population and employment density, transit propensity of the population based on demographic analysis, and other transit-supportive factors. The screening phase focused on corridor characteristics, while the evaluation phase will focus on potential project performance based on preliminary definition of mode, design of the right-of-way, and stop locations.

Table 1 Corridor Screening and Evaluation Criteria

Category	Measures	Initial Screening Methodology	Evaluation Methodology
Speed & Reliability	% of Route w/ Transit-Only ROW	--	Calculation based on conceptual design
	% of Route w/ Grade Separation	--	Calculation based on conceptual design
	Peak and Base Frequency	--	From conceptual service plan
	Average Speed	--	Input from modeling (travel time)
Ridership/Mode Shift/VMT Reduction	Weekday Average Boardings	Boardings per corridor mile	Boardings per corridor mile and boardings per hour from model
	New Transit Trips	--	Projected ridership – existing ridership in corridor (from model)
	Transit Mode Share	--	From model
	Per-Capita VMT/CO_2 Emissions	--	From model
Density/Connections to Activity Centers	Population Density Within ½ Mile of Alignment	GIS analysis (Census data)	GIS analysis (Census data)
	Employment/Postsecondary Enrollment Density Within ½ Mile of Alignment	GIS analysis (Census data)	GIS analysis (Census data)
	Density of Hospital Beds/Retail Stores Within ½ Mile of Alignment	GIS analysis (available sources)	GIS analysis (available sources)
	Additional Major Destinations (e.g., Stadiums & Theme parks) Within ½ Mile of Alignment	GIS analysis (based on assessment of "destinations")	GIS analysis (based on assessment of "destinations")
	Traffic Volumes at Arterial Intersections per Corridor Mile (Within ½ Mile of Alignment)	GIS analysis (available sources)	GIS analysis (available sources)
	% of Employment within 30-min Travel Time on Transit	--	From model

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Category	Measures	Initial Screening Methodology	Evaluation Methodology
Multimodal Connectivity	# of Connections to Existing or Future Metrolink Stations, Transit Centers, and Major Routes, and Park-and-Rides	GIS analysis (available sources)	GIS analysis (available sources)
	Intersection Density per Square Mile	GIS analysis (available sources)	GIS analysis (available sources)
	Pedestrian Network Serving Transit	WalkScore within ½ mile of corridor	WalkScore within ½ mile of corridor
	# of Connections to Existing or Planned High-Quality Bicycle Facilities (Off-Street or Protected On-Street)	--	Based on review of existing routes/plans
Capacity	Person Throughput	--	Analysis based on vehicle capacity, conceptual service plan, and roadway capacity
Safety	Potential for Reduction in Collision Rates and Severity	--	Qualitative assessment based on project/corridor design and # of new transit trips (as proxy for VMT reduction)
Passenger Comfort/Amenities	Passenger Comfort	--	Qualitative assessment based on vehicle capacity, movement (e.g. lateral sway)
	System Legibility	--	Qualitative assessment based on conceptual design (e.g. visibility, alignment)

Category	Measures	Initial Screening Methodology	Evaluation Methodology
Equity	Density of Households with Annual Incomes < $40,000	GIS analysis (Census data)	GIS analysis (Census data)
	Density of Seniors and People with Disabilities	GIS analysis (Census data)	GIS analysis (Census data)
	CalEnviroScreen Scores	Analysis based on EnviroScreen ratings for disadvantaged communities	Analysis based on EnviroScreen ratings for disadvantaged communities
Economic Development	Support for Retail Activity	Density of retail jobs within ½ mile of corridor	Qualitative assessment based on project design (e.g., turn restrictions, additional sidewalk space, parking impacts)
	Support for Transit-Oriented Development	Qualitative assessment based on research	Qualitative assessment based on research
Transit-Supportive Policy	Inclusion of Corridor in Regional and Local Transit-Oriented Plans		Qualitative assessment
	Adoption of Supportive Zoning		Qualitative assessment
Cost-Effectiveness/ Productivity	Capital Cost per Boarding	--	Analysis based on high-level capital cost estimates (based on peer review, service plan and high-level travel time estimates) + ridership from model
	Operating Cost per Boarding	--	From model
	Boardings per Revenue Hour	--	Ridership from model / revenue hours derived from operating cost estimates
	Boardings per Revenue Mile	--	Ridership from model / revenue miles derived from operating cost estimates

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SEGMENTS AND STOP LOCATIONS

3 SEGMENTS AND STOP LOCATIONS

To ensure that the initial screening was conducted on a comprehensive set of corridors, the Project Development Team identified more than 30 potential TOCs. To allow for more refined analysis, these 30-plus corridors were divided into 96 corridor segments and 32 potential locations for Freeway BRT stops. These stops were identified to account for the fact that Freeway BRT would operate over long stretches without stopping, rendering corridor-based analysis irrelevant.

The corridors, segments, and Freeway BRT stop locations were identified based on the following:

- Corridors identified in previous studies, from 1990s proposed CenterLine light rail alignments to the current Central Harbor Boulevard Transit Corridor Study;
- Demographic, land use, and existing transit service analysis conducted as part of the OC Transit Vision and summarized in the State of OC Transit report;
- The Transit Investment Framework, which includes guidance for identifying potential high-capacity transit corridors;
- Discussions with OCTA staff from various departments; and
- Additional OCTA analysis of high-ridership segments of existing bus routes.

The potential corridors, segments, and Freeway BRT stops are located throughout Orange County, although the majority are in the more urbanized north and central parts of the county. Some corridors also extend a short distance into Los Angeles County to provide connections to existing and planned regional transit hubs.

The comprehensive set of corridor segments and stop locations for screening is shown in Figure 2.

Figure 2 Map of Segments and Stop Locations

CORRIDOR SEGMENTS AND BRT STOPS FOR SCREENING
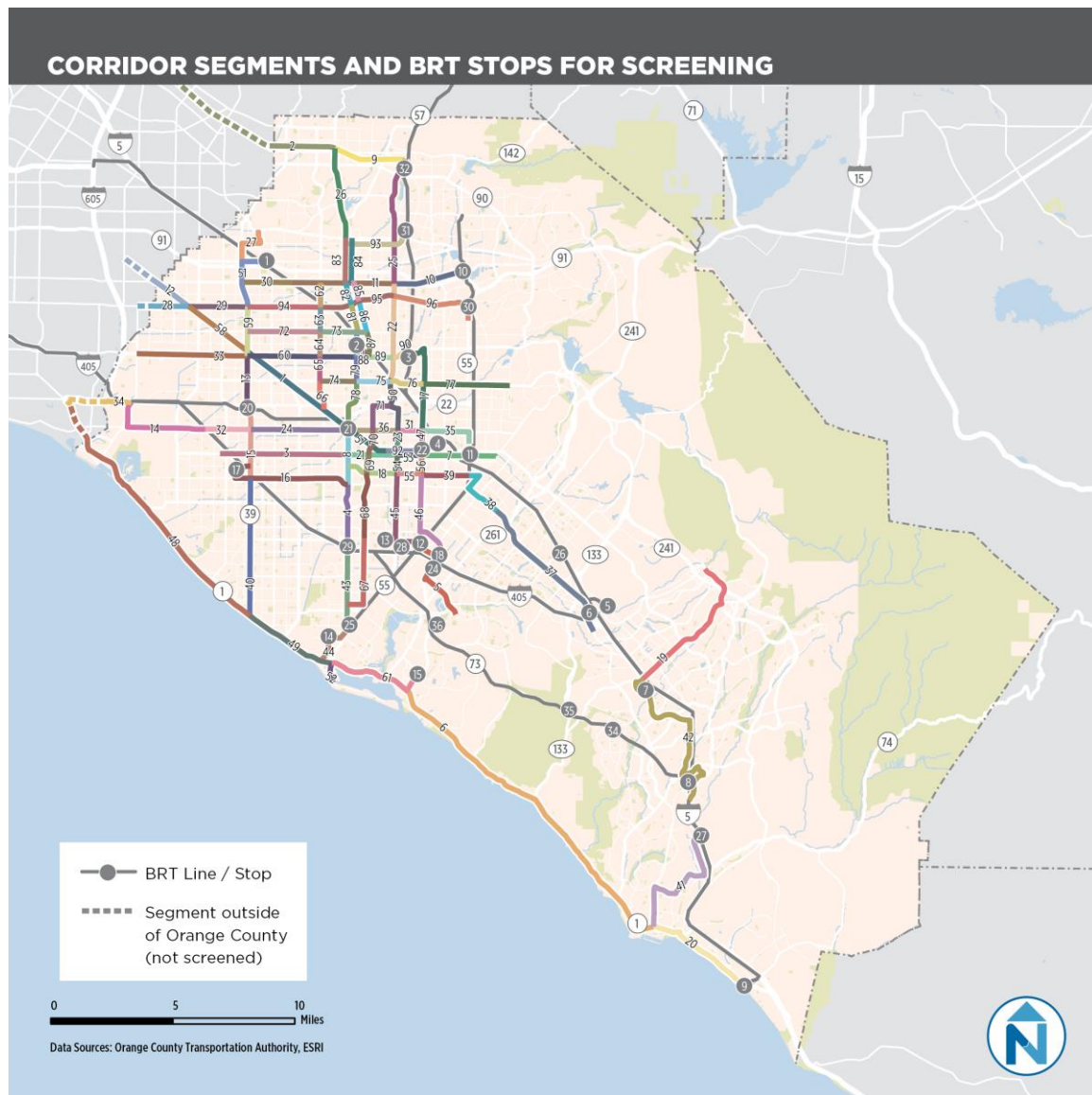
4 SCREENING RESULTS

The area of analysis for each segment alignment or stop was a half-mile radius. Within this buffer each criterion was measured and assigned a score of 1 to 5. (As there were 14 categories, the maximum possible score was 70, and the minimum was 14.) In most cases, scores were based on natural breaks. For numbers of major transit connections, the score corresponded with numbers of connections (e.g., those segments or stops with more than five connections received a score of 5). For transit-supportive policy, a qualitative assessment of multiple factors led to the assignment of "high," "medium," and "low" values, which were then combined to produce scores.

It is important to emphasize that a screening exercise such as this is one tool for planners and policy makers to use in a decision-making processes; therefore, the results of such a screen should not be viewed as solely determinative. Slight differences in scores and resulting differences in rankings should be viewed as advisory, as slight changes to definitions, such as endpoints of segments, may result in changes to both scores and rankings.

Tables APX-1and APX-2 in Appendix B provides scores by criterion for all segments and stop locations. A full circle corresponds to a score of 5—the highest rating for a criterion—and an empty circle corresponds to a score of 1.

Figures 3 and 4 on the following pages map the overall findings for segments, with higher scoring segments shown in green and lower scoring segments shown in orange and red. Note that segments in Los Angeles County were not included in the analysis as the sole purpose of these segments would be to provide connections to transit hubs in Los Angeles County; this was factored into the analysis of transit connectivity for adjoining segments.

Figure 3 Map of Findings (Segments)

SEGMENT SCREENING SCORING

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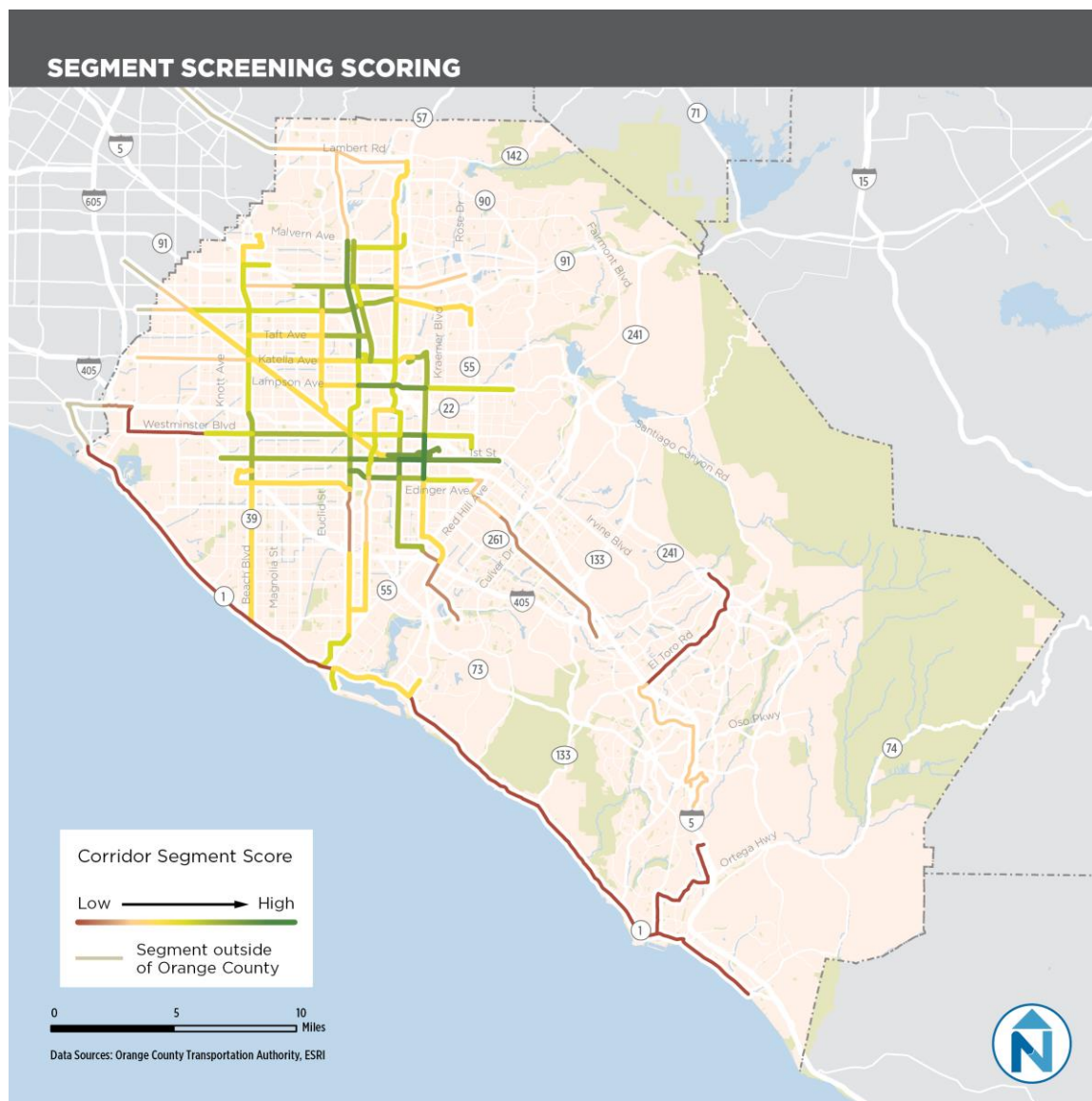
Figure 4 Map of Findings (Central County Segments)

CENTRAL COUNTY SEGMENT SCREENING SCORING
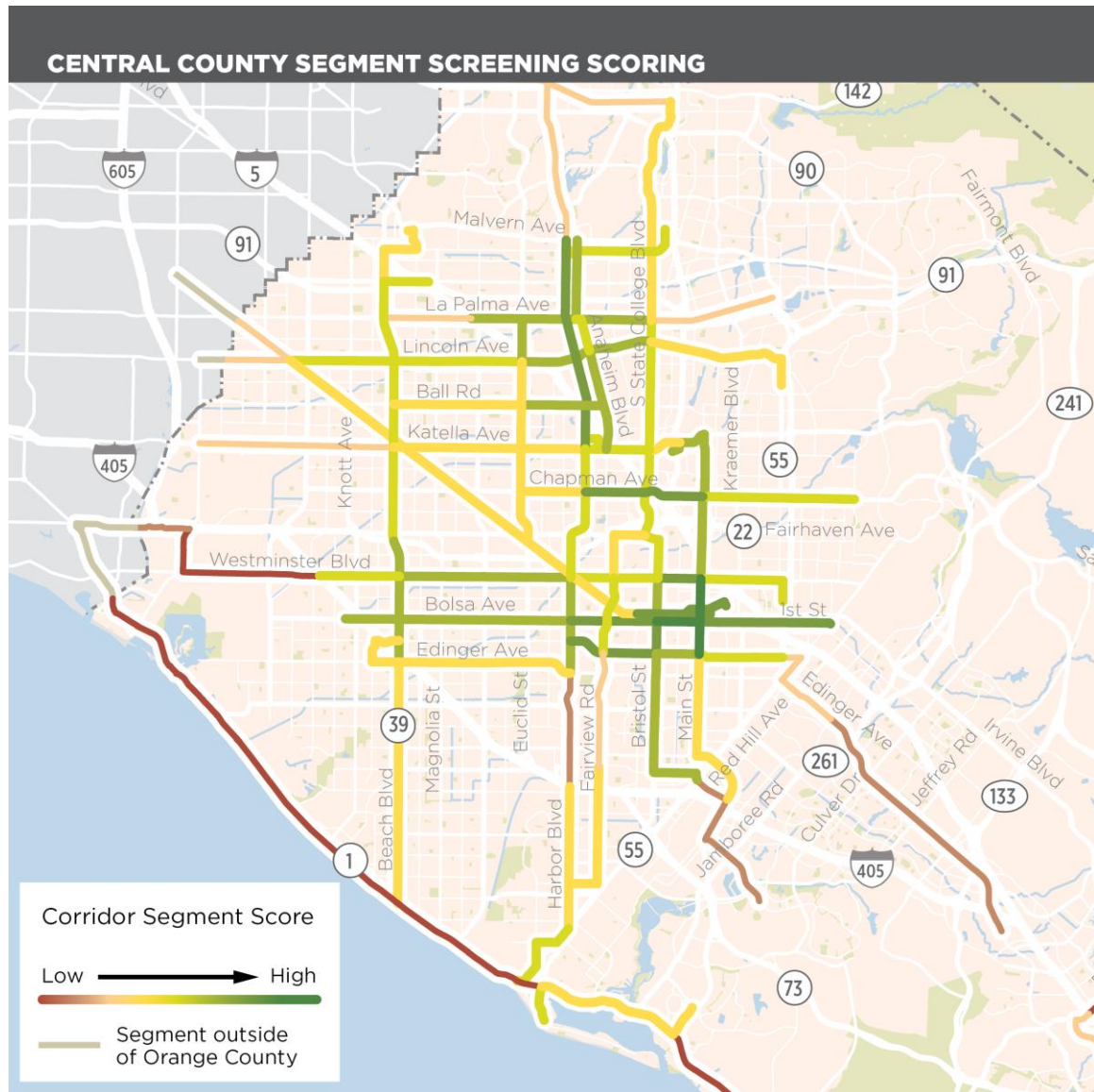
The segments that scored highest overall were located in the northern part of the county, primarily in Santa Ana and Anaheim. This area has some of the highest population densities in the county as well as relatively low incomes and other factors indicative of transit use. Existing transit services in this area include the highest-ridership OC Bus routes, consistent with the land uses and demographics. The top quartile of segments is shown in Table 2.

Table 2 Top Quartile of Segments by Corridor

Corridor	From	To	Primary Existing Route	ID
1st St/Bolsa Ave	Newport Ave	Main St	64/64X	7
	Main St	Bristol St		53
	Bristol St	Harbor Blvd		21
	Harbor Blvd	Westminster Mall		3
17th St/Westminster Ave	Main St	Bristol St	60/560	31
Anaheim Blvd	Chapman Ave	La Palma Ave	47	84
	Lincoln Ave	Ball Rd		86
	Ball Rd	Katella Ave		87
Ball Rd	Anaheim Blvd	Euclid St	46	73
Beach Blvd	SR-22	Edinger Ave	29	15
Chapman Ave	Main St	The City Dr	47/54	76
	The City Dr	Harbor Blvd		75
Harbor Blvd	Chapman Ave	La Palma Ave	43/543	83
	La Palma Ave	Lincoln Ave		82
	Lincoln Ave	Ball Rd		81
	Ball Rd	Katella Ave		80
	Westminster Ave	Edinger Ave		8
La Palma Ave	State College Blvd	I-5	38	11
Main St	17th St	1st St	53/53X	47
	1st St	McFadden Ave		56
McFadden Ave	Main St	Bristol St	66	55
	Bristol St	Harbor Blvd		18
State College Blvd/ Bristol St	17th St	1st St	57	23
	1st St	McFadden Ave		54
	McFadden Ave	Sunflower Ave & Main St		45
OC Streetcar (E of Pacific Electric right-of-way)			n/a	92

Figure 5 maps the results of the screening of Freeway BRT stop locations, with the stops shown in green ranked the highest and those in orange and red ranked the lowest.

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Figure 5 Map of Findings (Freeway BRT Stop Locations)
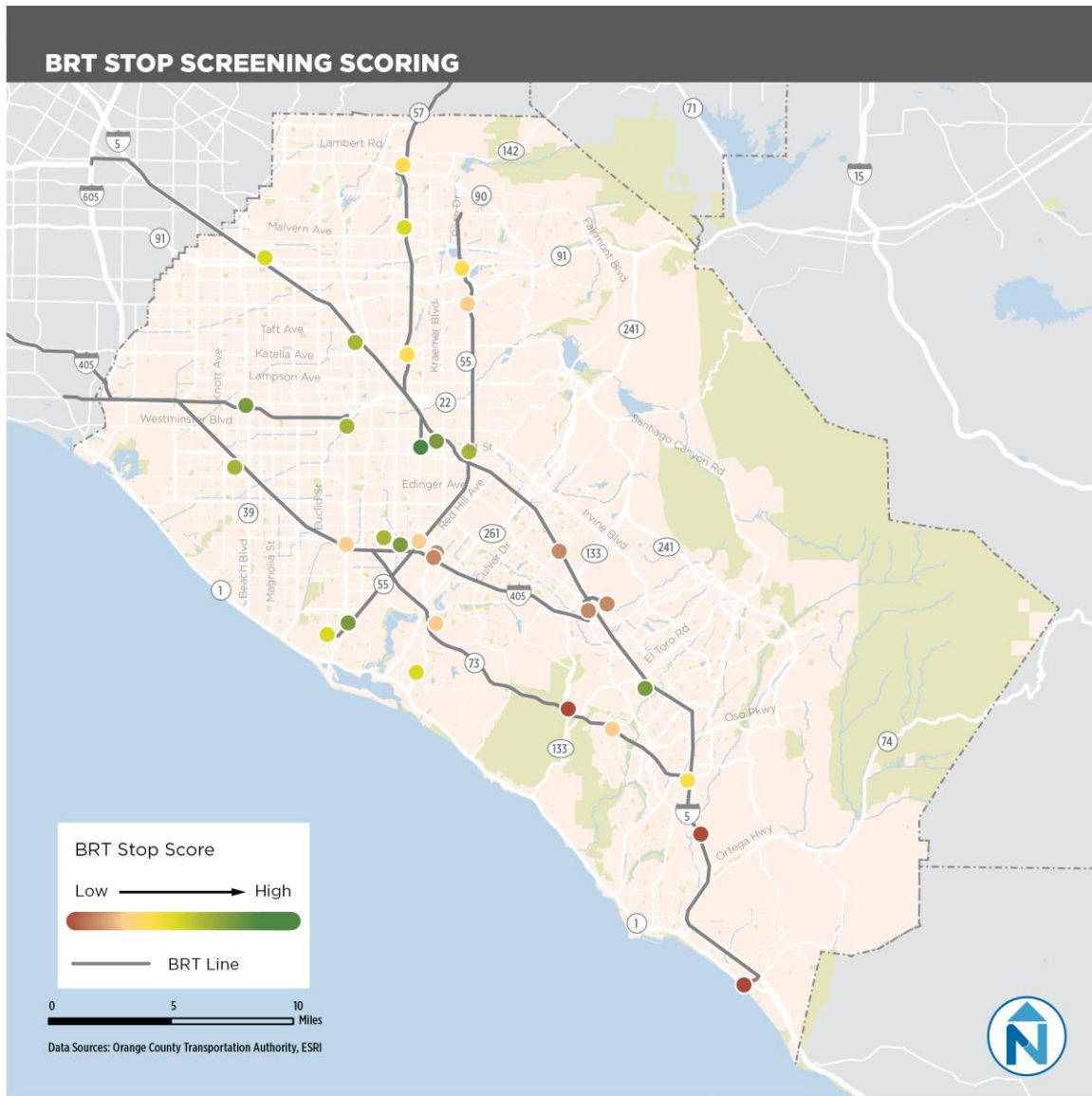
While several of the potential stop locations are along or near the highest-ranking segments in the northern part of the county, stop locations in Downtown Costa Mesa and near Laguna Hills Mall also ranked highly. The top quartile of Freeway BRT stop locations included the following:

- Santa Ana Civic Center (I-5 corridor)
- Santa Ana Station (I-5)
- Triangle Square in Costa Mesa (SR-55 corridor)
- The Laguna Hills Transit Center (I-5)
- South Coast Metro in Costa Mesa (SR-55)
- First Street and SR-55 in Tustin (SR-55)
- South Coast Plaza Park-n-Ride in Costa Mesa (SR-55)
- Beach and SR-22 in Garden Grove (SR-22)

5 PRELIMINARY RECOMMENDATIONS

Based on the analysis and discussions with OCTA staff, ten TOCs are recommended for detailed evaluation and prioritization. Each of these corridors includes segments or stop locations that rated highly in the initial screening, although some also include segments that ranked somewhat lower. By combining these segments and stop locations into "complete" corridors with major anchor destinations or transit hubs at each end, it is possible to better represent potential alignments and design more effective and efficient transit services and capital improvements.

Eight arterial corridors (four north-south and four east-west) and two Freeway BRT corridors—several of which follow or closely follow existing OC Bus routes—are recommended for further development and evaluation. This mix of corridor types provides flexibility for analysis and potential implementation. For example, the Freeway BRT corridors would require a partnership with Caltrans and could leverage existing and planned investments in managed lanes, supporting rapid transit travel throughout the county. Arterial corridors, meanwhile, could be developed by OCTA through FTA processes.

The ten recommended corridors for further study are the following:

On-street corridors:

- Beach Boulevard from Fullerton Park-and-Ride to Downtown Huntington Beach
- Harbor Boulevard from Fullerton Transportation Center to Hoag Hospital Newport Beach
- State College Boulevard/Bristol Street from Brea Mall to the University of California, Irvine
- Main Street from Anaheim Regional Transit Intermodal Center (ARTIC) to South Coast Plaza Park-and-Ride
- La Palma Avenue/Lincoln Avenue from Anaheim Canyon Station to Hawaiian Gardens
- Chapman Avenue from Beach Boulevard to Hewes Street
- 17th Street/Westminster Avenue from Tustin Street to Cal State Long Beach
- McFadden Avenue/Bolsa Avenue from Larwin Square to Goldenwest Transportation Center

Freeway BRT corridors:

- I-5 from Fullerton Park-and-Ride to Mission Viejo/Laguna Niguel Station
- SR-55 from Santa Ana Regional Transportation Center to Hoag Hospital Newport Beach

The ten recommended Transit Opportunity Corridors are shown in Figure 6. Maps of each individual corridor are provided in Appendix A.

Figure 6 Recommended Transit Opportunity Corridors

APPENDIX A: CONCEPTUAL MAPS OF RECOMMENDED TRANSIT OPPORTUNITY CORRIDORS

Alignments and stop locations are conceptual and may be revised during the more detailed phase of corridor evaluation based on feedback from the OCTA Board of Directors, the Citizens Advisory Committee, and the public.

Figure A-1 Beach Boulevard Corridor

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Figure A-2 Harbor Boulevard Corridor

Figure A-3 State College Boulevard/Bristol Street Corridor

Figure A-4 Main Street Corridor

Figure A-5 La Palma Avenue/Lincoln Avenue Corridor

Figure A-6 Chapman Avenue Corridor

Figure A-7 17th Street/Westminster Avenue Corridor
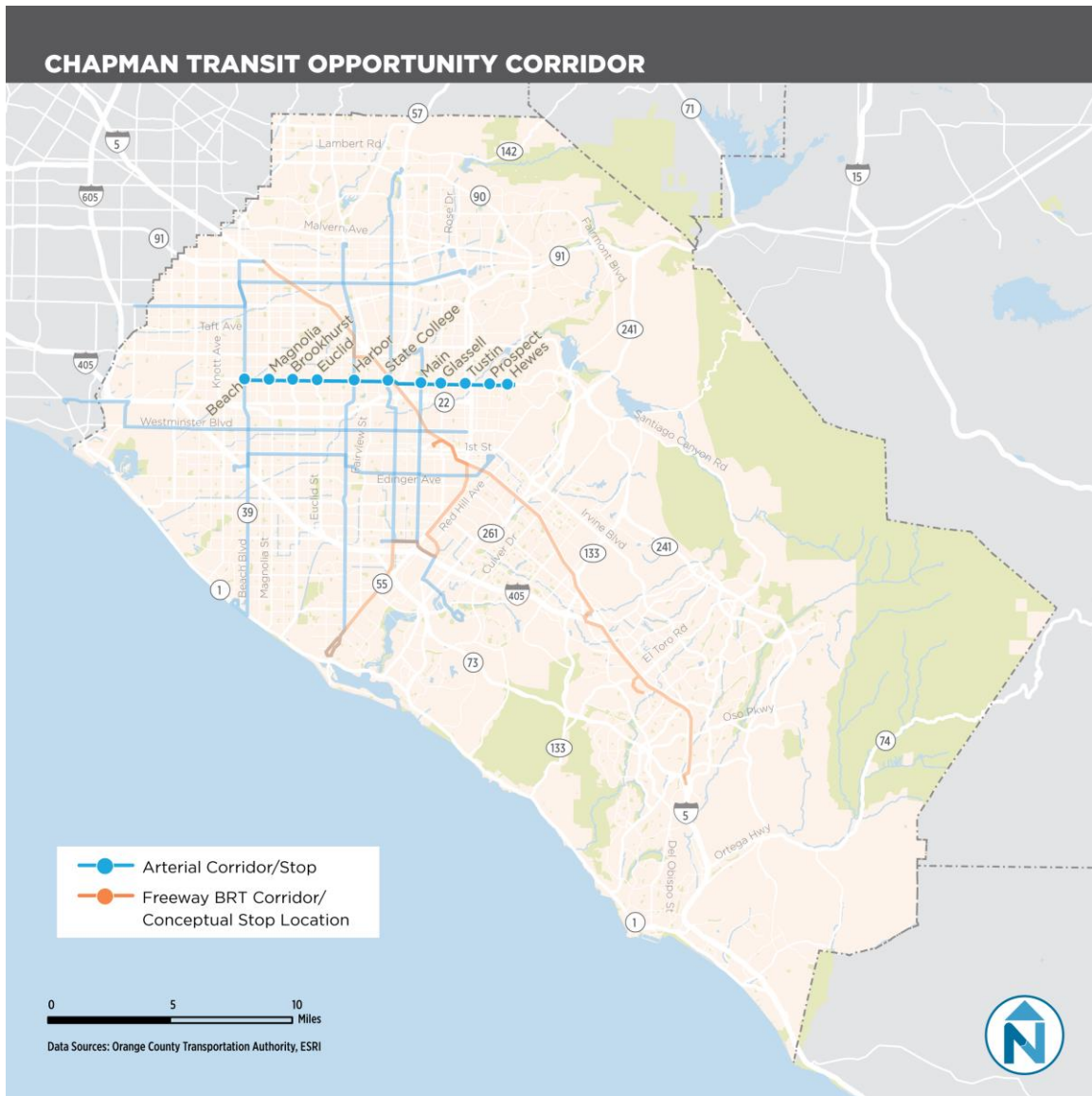
Figure A-8 McFadden Avenue/Bolsa Avenue Corridor

Figure A-9 I-5 Freeway BRT Corridor

Figure A-10 SR-55 Freeway BRT Corridor

APPENDIX B: SCREENING RESULTS BY CRITERIA, SEGMENT, AND STOP LOCATION

Table B-1 Matrix of Results by Segment

ID	Segment Extent	Weekday Boardings per Mile	Population Density Within ½ Mile of Alignment	Employment/Postsecondary Enrollment Density Within ½ Mile of Alignment	Density of Hospital Beds/Retail Stores Within ½ Mile of Alignment	Additional Major Destinations, e.g., Stadiums & Theme Parks Within ½ Mile of Alignment	Traffic Volumes at Arterial Intersections Within ½ Mile of Alignment	Existing/Future Connections to Regional Rail, Metrolink Stations, Transit Centers, Major Routes and Park-and-Rides	Intersection Density	Walkscore	Density of Households with Annual Incomes < $40,000	Density of Seniors and People with Disabilities	CalEnviro Screen	Density of Retail Jobs	Transit-Supportive Policy	Total
47	**Main St** from 17th St to 1st St	●	●	●	◔	○	◕	●	◕	●	●	●	◕	◑	●	56
53	**1st St** from Bristol St to Main St	●	●	●	◔	○	◕	◔	◔	●	●	●	●	◑	●	56
56	**Main St** from 1st St to McFadden Ave	●	●	◕	◔	○	◕	◕	◕	●	◕	●	●	◑	◕	53
83	**Harbor Blvd** from Chapman Ave to La Palma Ave	◑	◑	◕	◔	○	◑	●	◑	◕	◑	◑	●	●	●	48
92	**OC Streetcar** E of PE ROW	◑	◕	◕	◔	○	◕	●	◕	◑	◕	◕	●	◔	●	47
31	**17th St** from Bristol St to Main St	●	◕	●	◔	○	◔	●	◔	●	◕	◑	◕	◔	◕	46
7	**1st St** from Main St to Newport Ave	◑	◑	◕	◔	○	◑	●	◑	●	●	◑	◕	◑	◕	45
18	**McFadden Ave** from Harbor Blvd to Bristol St	◔	●	◔	◔	○	◑	●	◕	◕	◑	◕	◕	◑	◑	44

ID	Segment Extent	Weekday Boardings per Mile	Population Density Within ½ Mile of Alignment	Employment/ Postsecondary Enrollment Density Within ½ Mile of Alignment	Density of Hospital Beds/Retail Stores Within ½ Mile of Alignment	Additional Major Destinations, e.g., Stadiums & Theme Parks Within ½ Mile of Alignment	Traffic Volumes at Arterial Intersections Within ½ Mile of Alignment	Existing/Future Connections to Regional Rail, Metrolink Stations, Transit Centers, Major Routes and Park-and-Rides	Intersection Density	Walkscore	Density of Households with Annual Incomes < $40,000	Density of Seniors and People with Disabilities	CalEnviro Screen	Density of Retail Jobs	Transit-Supportive Policy	Total
21	**1st St** from Harbor Blvd to Bristol St															44
75	**Chapman Ave** from Harbor Blvd to The City Dr															44
81	**Harbor Blvd** from Lincoln Ave to Ball Rd															44
54	**Bristol St** from 1st St to McFadden Ave															43
76	**Chapman Ave** from The City Dr to Main St															43
80	**Harbor Blvd** from Ball Rd to Katella Ave															43
82	**Harbor Blvd** from La Palma Ave to Lincoln Ave															43
23	**McFadden Ave** from Bristol St to Main St															42
55	**Ball Rd** from Euclid St to Anaheim Blvd															42
73	**Lemon St** from Chapman Ave to La Palma Ave															42

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ID	Segment Extent	Weekday Boardings per Mile	Population Density Within ½ Mile of Alignment	Employment/ Postsecondary Enrollment Density Within ½ Mile of Alignment	Density of Hospital Beds/Retail Stores Within ½ Mile of Alignment	Additional Major Destinations, e.g., Stadiums & Theme Parks Within ½ Mile of Alignment	Traffic Volumes at Arterial Intersections Within ½ Mile of Alignment	Existing/Future Connections to Regional Rail, Metrolink Stations, Transit Centers, Major Routes and Park-and-Rides	Intersection Density	Walkscore	Density of Households with Annual Incomes < $40,000	Density of Seniors and People with Disabilities	CalEnviro Screen	Density of Retail Jobs	Transit-Supportive Policy	Total
84	Harbor Blvd from La Palma Ave to Lincoln Ave															42
3	1st St/Bolsa Ave from Harbor Blvd to Westminster Mall															42
8	Harbor Blvd from Westminister Ave to Edinger Ave															41
11	La Palma Ave from Santa Ana Fwy to State College Blvd															41
15	Beach Blvd from Garden Grove Fwy to Edinger Ave															41
45	Bristol St from McFadden Ave to Sunflower Ave; Sunflower Ave from Bristol St to Main St; Main St from Sunflower Ave to Costa Mesa Fwy															41
86	Anaheim Blvd from Lincoln Ave to Ball Rd															41

ID	Segment Extent	Weekday Boardings per Mile	Population Density Within ½ Mile of Alignment	Employment/ Postsecondary Enrollment Density Within ½ Mile of Alignment	Density of Hospital Beds/Retail Stores Within ½ Mile of Alignment	Additional Major Destinations, e.g., Stadiums & Theme Parks Within ½ Mile of Alignment	Traffic Volumes at Arterial Intersections Within ½ Mile of Alignment	Existing/Future Connections to Regional Rail, Metrolink Stations, Transit Centers, Major Routes and Park-and-Rides	Intersection Density	Walkscore	Density of Households with Annual Incomes < $40,000	Density of Seniors and People with Disabilities	CalEnviro Screen	Density of Retail Jobs	Transit-Supportive Policy	Total
87	Anaheim Blvd from Ball Rd to Katella Ave															41
17	Katella Ave from ARTIC to Main St / Main St from Katella Ave to 17th St															40
24	Westminister Ave from Beach Blvd to Harbor Blvd															40
62	Euclid St from La Palma to Lincoln Ave															40
95	Lincoln Ave from Euclid St to State College Blvd															40
44	The City Dr from Santa Ana Fwy to Memory Ln / Memory Ln from The City Dr to Bristol St / Bristol St from Memory Ln to 17th St															39
50	Newport Blvd from PCH to 22nd St															39

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ID	Segment Extent	Weekday Boardings per Mile	Population Density Within ½ Mile of Alignment	Employment/ Postsecondary Enrollment Density Within ½ Mile of Alignment	Density of Hospital Beds/Retail Stores Within ½ Mile of Alignment	Additional Major Destinations, e.g., Stadiums & Theme Parks Within ½ Mile of Alignment	Traffic Volumes at Arterial Intersections Within ½ Mile of Alignment	Existing/Future Connections to Regional Rail, Metrolink Stations, Transit Centers, Major Routes and Park-and-Rides	Intersection Density	Walkscore	Density of Households with Annual Incomes < $40,000	Density of Seniors and People with Disabilities	CalEnviro Screen	Density of Retail Jobs	Transit-Supportive Policy	Total
52	Beach Blvd from Lincoln Ave to Garden Grove Fwy															39
59	Harbor Blvd from Westminister Ave to Edinger Ave															39
69	Fairview St from 1st St to McFadden Ave															39
22	State College Blvd from La Palma Ave to Santa Ana Fwy															38
32	Westminister Ave From San Diego Fwy to Beach Blvd															38
35	Westminister Ave/17th St from Harbor Blvd to Bristol St															38
36	McFadden Ave from Main St to Costa Mesa Fwy															38
39	Fairview St from 1st St to McFadden Ave															38
78	Harbor Blvd from Chapman Ave to Westminister Ave															38

ID	Segment Extent	Weekday Boardings per Mile	Population Density Within ½ Mile of Alignment	Employment/ Postsecondary Enrollment Density Within ½ Mile of Alignment	Density of Hospital Beds/Retail Stores Within ½ Mile of Alignment	Additional Major Destinations, e.g., Stadiums & Theme Parks Within ½ Mile of Alignment	Traffic Volumes at Arterial Intersections Within ½ Mile of Alignment	Existing/Future Connections to Regional Rail, Metrolink Stations, Transit Centers, Major Routes and Park-and-Rides	Intersection Density	Walkscore	Density of Households with Annual Incomes < $40,000	Density of Seniors and People with Disabilities	CalEnviro Screen	Density of Retail Jobs	Transit-Supportive Policy	Total
79	Harbor Blvd from Katella Ave to Chapman Ave															38
85	La Palma Ave from Lemon St to Anaheim Blvd Anaheim Blvd from La Palma Ave to Lincoln Ave															38
88	Katella Ave from Harbor Blvd to Haste St															38
89	Katella Ave from Haster St to State College Blvd															38
91	Disney Way from Harbor Blvd to Clementine St Clementine St from Disney Way to Katella Ave															38
93	Pomona Ave from Santa Fe Ave to Commonwealth Ave Commonwealth Ave from Pomona Ave to Nutwood Ave															38

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ID	Segment Extent	Weekday Boardings per Mile	Population Density Within ½ Mile of Alignment	Employment/ Postsecondary Enrollment Density Within ½ Mile of Alignment	Density of Hospital Beds/Retail Stores Within ½ Mile of Alignment	Additional Major Destinations, e.g., Stadiums & Theme Parks Within ½ Mile of Alignment	Traffic Volumes at Arterial Intersections Within ½ Mile of Alignment	Existing/Future Connections to Regional Rail, Metrolink Stations, Transit Centers, Major Routes and Park-and-Rides	Intersection Density	Walkscore	Density of Households with Annual Incomes < $40,000	Density of Seniors and People with Disabilities	CalEnviro Screen	Density of Retail Jobs	Transit-Supportive Policy	Total
29	**Lincoln Ave** from Walker St to Beach Blvd															37
51	**Beach Blvd** from Lincoln Ave to Orangethorpe Ave **Orangethorpe Ave** from Beach Blvd to Campus Dr															37
13	**Beach Blvd** from Katella Ave to Garden Grove Fwy															36
70	**Fairview St** from Westminister Ave/17th St to 1st St															36
77	**Chapman Ave** from Main St to Hewes St															36
94	**Lincoln Ave** from Beach Blvd to Euclid St															36
43	**Harbor Blvd** from San Diego Fwy to Newport Blvd															35
60	**Katella Ave** from Beach Blvd to Harbor Blvd															35
63	**Euclid St** from Lincoln Ave to Ball Rd															35

ID	Segment Extent	Weekday Boardings per Mile	Population Density Within ½ Mile of Alignment	Employment/ Postsecondary Enrollment Density Within ½ Mile of Alignment	Density of Hospital Beds/Retail Stores Within ½ Mile of Alignment	Additional Major Destinations, e.g., Stadiums & Theme Parks Within ½ Mile of Alignment	Traffic Volumes at Arterial Intersections Within ½ Mile of Alignment	Existing/Future Connections to Regional Rail, Metrolink Stations, Transit Centers, Major Routes and Park-and-Rides	Intersection Density	Walkscore	Density of Households with Annual Incomes < $40,000	Density of Seniors and People with Disabilities	CalEnviro Screen	Density of Retail Jobs	Transit-Supportive Policy	Total
72	**Ball Rd** from Beach Blvd to Euclid St	○	◑	○	○	○	◑	◔	◑	◔	◑	◔	◔	○	◔	35
74	**Chapman Ave** from Euclid St to Harbor Blvd	◔	◑	○	○	○	◑	◔	◑	●	◑	◑	◑	◑	◑	35
1	**PE ROW** from Monroe Ave and Beach Blvd to Newhope St and Garden Grove Fwy	◔	◔	○	○	○	◔	◔	◑	◑	◑	◑	◔	◔	◔	34
40	**Beach Blvd** from Edinger Ave to PCH	○	◔	○	○	○	◑	◑	◔	◔	◑	◑	◔	◑	◕	34
46	**Main St** from McFadden Ave to MacArthur Blvd **MacArthur Blvd** from Main St to Main St	◔	◔	◑	○	○	◔	◔	◔	◑	○	◔	◑	●	●	34
65	**Euclid St** from Ball Rd to Chapman Ave	◔	◔	○	○	○	◑	◑	◑	●	◔	◑	◑	◔	◑	34
66	**Euclid St** from Chapman Ave to Sherman Ave	○	◔	○	○	○	◑	◔	◑	◕	◑	◑	◑	◑	◑	34

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ID	Segment Extent	Weekday Boardings per Mile	Population Density Within ½ Mile of Alignment	Employment/ Postsecondary Enrollment Density Within ½ Mile of Alignment	Density of Hospital Beds/Retail Stores Within ½ Mile of Alignment	Additional Major Destinations, e.g., Stadiums & Theme Parks Within ½ Mile of Alignment	Traffic Volumes at Arterial Intersections Within ½ Mile of Alignment	Existing/Future Connections to Regional Rail, Metrolink Stations, Transit Centers, Major Routes and Park-and-Rides	Intersection Density	Walkscore	Density of Households with Annual Incomes < $40,000	Density of Seniors and People with Disabilities	CalEnviro Screen	Density of Retail Jobs	Transit-Supportive Policy	Total
71	**Fairview St** from Westminister/17th St to Garden Grove Ave **Garden Grove Ave** from Fairview St to The City Dr															34
90	**Katella Ave** from State College Blvd to Douglas Rd															34
96	**Lincoln Ave** from State College Blvd to Tustin St **Tustin St** from Nohl Ranch Rd to Village Way															34
25	**State College Blvd** from Avocado St to La Palma Ave															33
67	**Wilson St** from Harbor Blvd to Fairview Rd **Fairview Rd** from Wilson St to Sunflower Ave															33

ID	Segment Extent	Weekday Boardings per Mile	Population Density Within ½ Mile of Alignment	Employment/ Postsecondary Enrollment Density Within ½ Mile of Alignment	Density of Hospital Beds/Retail Stores Within ½ Mile of Alignment	Additional Major Destinations, e.g., Stadiums & Theme Parks Within ½ Mile of Alignment	Traffic Volumes at Arterial Intersections Within ½ Mile of Alignment	Existing/Future Connections to Regional Rail, Metrolink Stations, Transit Centers, Major Routes and Park-and-Rides	Intersection Density	Walkscore	Density of Households with Annual Incomes < $40,000	Density of Seniors and People with Disabilities	CalEnviro Screen	Density of Retail Jobs	Transit-Supportive Policy	Total
16	**McFadden Ave** from Beach Blvd to Gothard St **Gothard St** from McFadden to Edinger Ave **Edinger Ave** from Gothard to Harbor Blvd															32
27	**Dale St, Commonwealth Ave & Beach Blvd** from Buena Park Station to Orangethorpe Ave															32
57	**PE ROW** from Garden Grove Fwy and Newhope St to Santa Ana Blvd and Raitt St (incl. OC Streetcar W segment)															32
58	**PE ROW** from Walker St and Lincoln Ave to Beach Blvd and Monroe Ave															32
61	**PCH** from Newport Blvd to Avocado Ave to NPTC															32

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64	**Euclid St** from Ball Rd to Chapman Ave															32
30	**La Palma Ave** from Beach Blvd to Santa Ana Fwy															31
10	**La Palma Ave** from State College Blvd to Anaheim Canyon Station															30
26	**Harbor Blvd** from Electric Ave to Chapman Ave															30
33	**Katella Ave** from Los Alamitos Blvd to Beach Blvd															30
42	**El Toro Rd, Paseo De Valencia, Cabot Rd, Crown Valley Pkwy, Medical Center Rd & Marguerite Pkwy** from I-5 to I-5															30
2	**Whittier-Brea Rail ROW** from Los Angeles County to Harbor Blvd and Superior Ave															30

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9	**Whittier-Brea Rail ROW** from Harbor Blvd and Superior Ave to State College Blvd and Avocado St															29
68	**Fairview St** from McFadden Ave to Sunflower Ave															28
28	**Lincoln Ave** from Los Angeles County to Walker St															27
38	**McFadden Ave** from Costa Mesa Fwy to Newport Ave **Newport Ave** from McFadden Ave to Edinger Ave **Edinger Ave** from Newport Ave to Tustin Ranch Rd															27
12	**PE ROW** from Los Angeles County to Lincoln Ave and Walker St															27
4	**Harbor Blvd** from Edinger Ave to San Diego Fwy															26

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34	**SR-22** from Los Angeles County to Seal Beach Blvd	○	○	○	○	○	○	◔	○	○	◑	●	◔	○	◑	25
37	**Edinger Ave/Irvine Center Dr** from Tustin Ranch Rd to Hubble	○	○	◔	○	○	○	●	◔	◔	○	○	○	◔	◔	25
5	**Main St** from Costa Mesa Fwy to MacArthur Blvd **MacArthur Blvd** from Main St to Campus Dr **Campus Dr** from MacArthur Blvd to Bridge Rd	○	○	●	○	○	○	○	◔	○	○	○	◑	◑	◑	23
41	**Junipero Serra Rd, Camino Capistrano, Del Obispo St, Camino Del Avion & Street of the Golden Lantern** from I-5 to PCH	○	○	○	○	○	○	◔	◔	◑	○	◔	○	○	◑	22
6	**PCH** from Channel Dr to Beach Blvd	○	○	○	◔	○	○	◔	◑	◔	○	◔	○	○	◔	20
19	**Portola Pkwy and El Toro Rd** from Market Pl to I-5	○	○	○	◔	○	○	◔	◔	◔	○	◔	○	◔	◔	20

ID	Segment Extent	Weekday Boardings per Mile	Population Density Within ½ Mile of Alignment	Employment/Postsecondary Enrollment Density Within ½ Mile of Alignment	Density of Hospital Beds/Retail Stores Within ½ Mile of Alignment	Additional Major Destinations, e.g., Stadiums & Theme Parks Within ½ Mile of Alignment	Traffic Volumes at Arterial Intersections Within ½ Mile of Alignment	Existing/Future Connections to Regional Rail, Metrolink Stations, Transit Centers, Major Routes and Park-and-Rides	Intersection Density	Walkscore	Density of Households with Annual Incomes < $40,000	Density of Seniors and People with Disabilities	CalEnviro Screen	Density of Retail Jobs	Transit-Supportive Policy	Total
48	**PCH** from Los Angeles County to Beach Blvd	○	○	○	○	○	○	●	◔	○	○	◔	○	○	◔	20
14	**Seal Beach Blvd** from San Diego Fwy to Westminster Ave **Westminster Ave** from Seal Beach Blvd to San Diego Fwy	○	○	○	○	○	○	◐	○	○	○	◐	◔	○	◔	19
49	**PCH** from Beach Blvd to Newport Blvd	○	○	○	◔	○	○	◔	◐	○	○	◔	○	○	○	18
20	**PCH** from Street of the Golden Lantern to Doheny Park Rd and Coast Hwy **El Camino Real** to Calle Deshecha	○	○	○	○	○	○	○	◔	◔	○	◔	○	○	◔	17

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Table B-2 Matrix of Results by Stop Location

ID	Stop Name	Weekday Boardings per Mile	Population Density Within ½ Mile of Alignment	Employment/ Postsecondary Enrollment Density Within ½ Mile of Alignment	Density of Hospital Beds/Retail Stores Within ½ Mile of Alignment	Additional Major Destinations, e.g., Stadiums & Theme Parks Within ½ Mile of Alignment	Traffic Volumes at Arterial Intersections Within ½ Mile of Alignment	Existing/Future Connections to Regional Rail, Metrolink Stations, Transit Centers, Major Routes and Park-and-Rides	Intersection Density	Walkscore	Density of Households with Annual Incomes < $40,000	Density of Seniors and People with Disabilities	CalEnviro Screen	Retail Jobs	Land Use	Total
22	Santa Ana Civic Center															54
4	Santa Ana Stn															46
25	Triangle Square															45
7	Laguna Hills TC															43
28	South Coast Metro															43
20	SR-22/Beach															43
11	SR-55/McFadden															42
13	South Coast Plaza PNR															42
2	Disneyland															41
17	Goldenwest TC															40
21	Harbor/Westminster															40
31	Cal State Fullerton															39
1	Fullerton PNR															39
14	Costa Mesa															37
15	Newport TC															36
3	ARTIC															35

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32	Brea Mall															35
8	Laguna Niguel/Mission Viejo Stn															32
10	Anaheim Canyon Stn															32
30	Lincoln PNR															31
34	Aliso Viejo Town Center															31
12	SR-55/Main															30
29	Harbor Blvd															28
36	UCI/Research Park															27
6	Irvine Spectrum															26
26	Jeffrey PNR															26
5	Irvine Stn															25
18	Main Plaza															24
24	Irvine Business Complex															23
9	San Clemente Stn															22
27	Junipero Serra PNR															21
35	Laguna Canyon															15

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