



MONTEREY BAY AREA FEASIBILITY STUDY OF BUS OPERATIONS ON SR-1 SHOULDERS AND MONTEREY BRANCH LINE

Presented to
FORA Admin Committee
August 15, 2018



OVERVIEW

1. History and Project Overview
2. Findings of Feasibility Study
 - a. Traffic Congestion
 - b. Bus-on-Shoulder
 - c. Monterey Branch Line Busway
3. Next Steps
4. Questions



HISTORY

1. AB 946 (2013)
2. Funding from AMBAG, TAMC, MST, METRO (2016)
3. Feasibility of Bus-on-Shoulder on SR-1 in both:
 - Monterey County
 - Santa Cruz County
4. Monterey Branch Line Rail Corridor



Project Overview

1. Project Kick-Off – December 2016
2. Meetings with stakeholder group and local agencies – 2017
3. Feasibility Study – 2018

STUDY FINDINGS (MONTEREY ONLY)



TRAFFIC CONGESTION

- At 50th Percentile – traffic congestion is at a median point
 - better free flowing conditions on some days
 - worse traffic congestion on other days
- At 95th Percentile – traffic congestion is at its worst
 - Stop and go conditions
 - More of the corridor is congested
 - Driver cannot determine own speed
 - Speeds under 35 mph, travel time delays
 - Longer duration of congestion

SPEEDS SOUTHBOUND MORNING

50th Percentile – average congestion

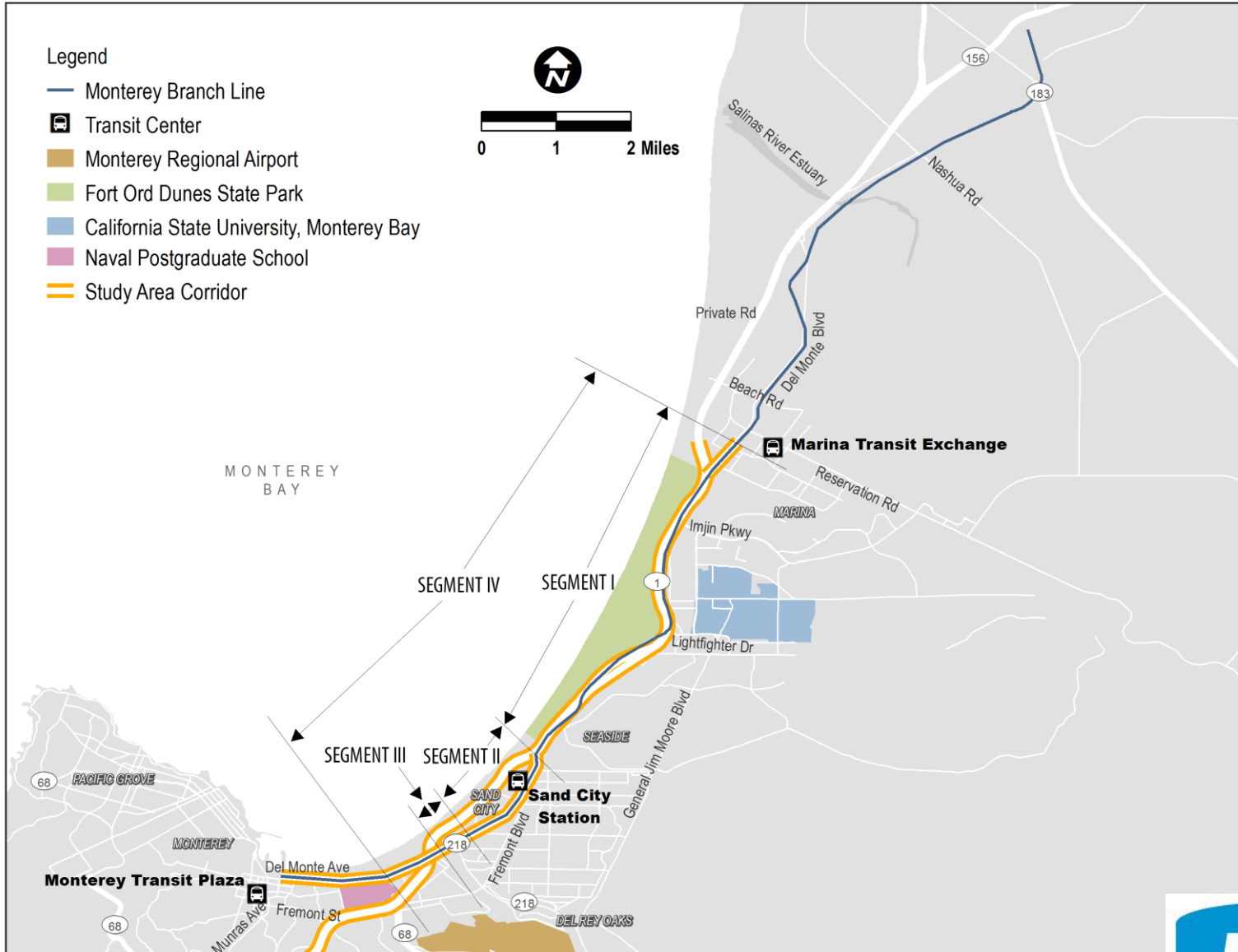
Time	Harkins Slough Road to Riverside Drive	Riverside Drive to Salinas Road	Salinas Road to Struve Road	Struve Road to Doland Road	Doland Road to Merritt Street	Merritt Street to SR-156	SR-156 to Molera Road	Molera Road to Del Monte Boulevard	Del Monte Boulevard to Reservation Road	Reservation Road to Del Monte Boulevard	Del Monte Boulevard to 1st Avenue	1st Avenue to Lightfighter Drive	Lightfighter Drive to Fremont Boulevard	Fremont Boulevard to SR-218	SR-218 to Del Monte Avenue	Del Monte Avenue to Casa Verde Way	Casa Verde Way to SR-68	SR-68 to Sloat Avenue	Sloat Avenue to Aguajito Road	Aguajito Road to Soledad Drive	Soledad Drive to Munras Avenue	Munras Avenue to SR-68	SR-68 to Carpenter Street
5:00	62	57	55	52	51	58	66	62	61	61	62	58	60	60	59	62	63	57	59	54	50	45	47
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9:45	60	60	55	51	50	55	64	63	62	64	66	62	67	67	57	60	61	56	60	57	57	49	41
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SPEEDS SOUTHBOUND MORNING

95th Percentile – worst congestion

Time	Harkins Slough Road to Riverside Drive	Riverside Drive to Salinas Road	Salinas Road to Struve Road	Struve Road to Doland Road	Doland Road to Merritt Street	Merritt Street to SR-156	SR-156 to Molera Road	Molera Road to Del Monte Boulevard	Del Monte Boulevard to Reservation Road	Reservation Road to Del Monte Boulevard	Del Monte Boulevard to 1st Avenue	1st Avenue to Lightfighter Drive	Lightfighter Drive to Fremont Boulevard	Fremont Boulevard to SR-218	SR-218 to Del Monte Avenue	Del Monte Avenue to Casa Verde Way	Casa Verde Way to SR-68	SR-68 to Sloat Avenue	Sloat Avenue to Aguajito Road	Aguajito Road to Soledad Drive	Soledad Drive to Munras Avenue	Munras Avenue to SR-68	SR-68 to Carpenter Street
5:00	65	59	59	54	53	56	60	59	61	61	57	62	64	60	59	60	60	57	60	56	52	46	46
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5:30	60	58	59	56	56	59	64	65	67	65	66	65	65	64	62	65	62	57	60	60	55	55	52
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6:00	61	58	55	52	53	59	64	62	63	63	62	61	56	58	58	59	59	55	59	56	54	48	45
6:15	64	59	60	55	54	56	62	62	61	64	60	68	66	63	62	62	62	56	59	56	53	43	43
6:30	68	59	57	56	54	58	64	64	64	64	62	63	61	66	64	66	66	57	59	58	56	49	49
6:45	65	59	55	53	55	58	64	63	65	66	67	65	62	61	58	59	59	55	58	56	53	48	47
7:00	63	57	54	51	52	57	61	61	62	62	62	64	66	63	58	71	62	57	60	58	53	48	43
7:15	66	59	49	50	52	56	63	61	62	60	50	46	37	37	51	58	59	57	59	59	56	50	43
7:30	63	63	41	51	51	57	63	62	59	28	17	18	17	29	49	62	62	54	58	58	58	52	43
7:45	63	61	50	51	51	57	66	67	60	15	11	12	16	27	48	56	50	52	56	59	59	50	43
8:00	67	68	57	51	53	58	65	64	61	12	8	12	15	23	46	56	54	53	56	56	55	46	44
8:15	63	59	55	52	52	59	64	63	61	16	12	13	16	26	49	59	62	55	59	58	57	50	49
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8:45	65	60	54	49	50	60	65	62	61	20	17	15	15	28	51	56	58	54	59	59	60	53	52
9:00	64	61	56	52	51	58	67	64	64	38	17	15	17	27	52	62	60	53	58	58	59	46	43
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9:30	59	58	56	52	52	56	65	65	67	66	63	36	20	37	50	56	57	43	56	58	57	51	45
9:45	61	63	54	50	51	56	67	66	66	69	46	62	34	27	47	60	58	53	58	58	55	48	44
10:00	61	64	56	52	51	56	66	66	66	71	73	71	60	39	53	62	59	54	58	58	57	51	48

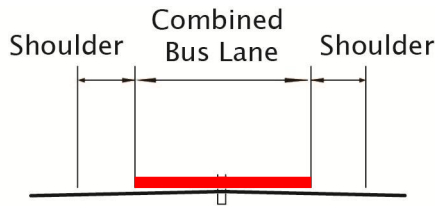
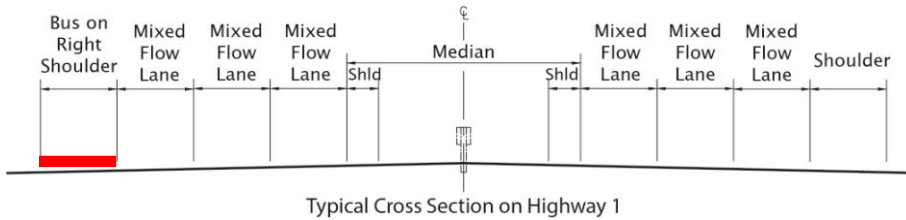
STUDY AREA: MONTEREY COUNTY



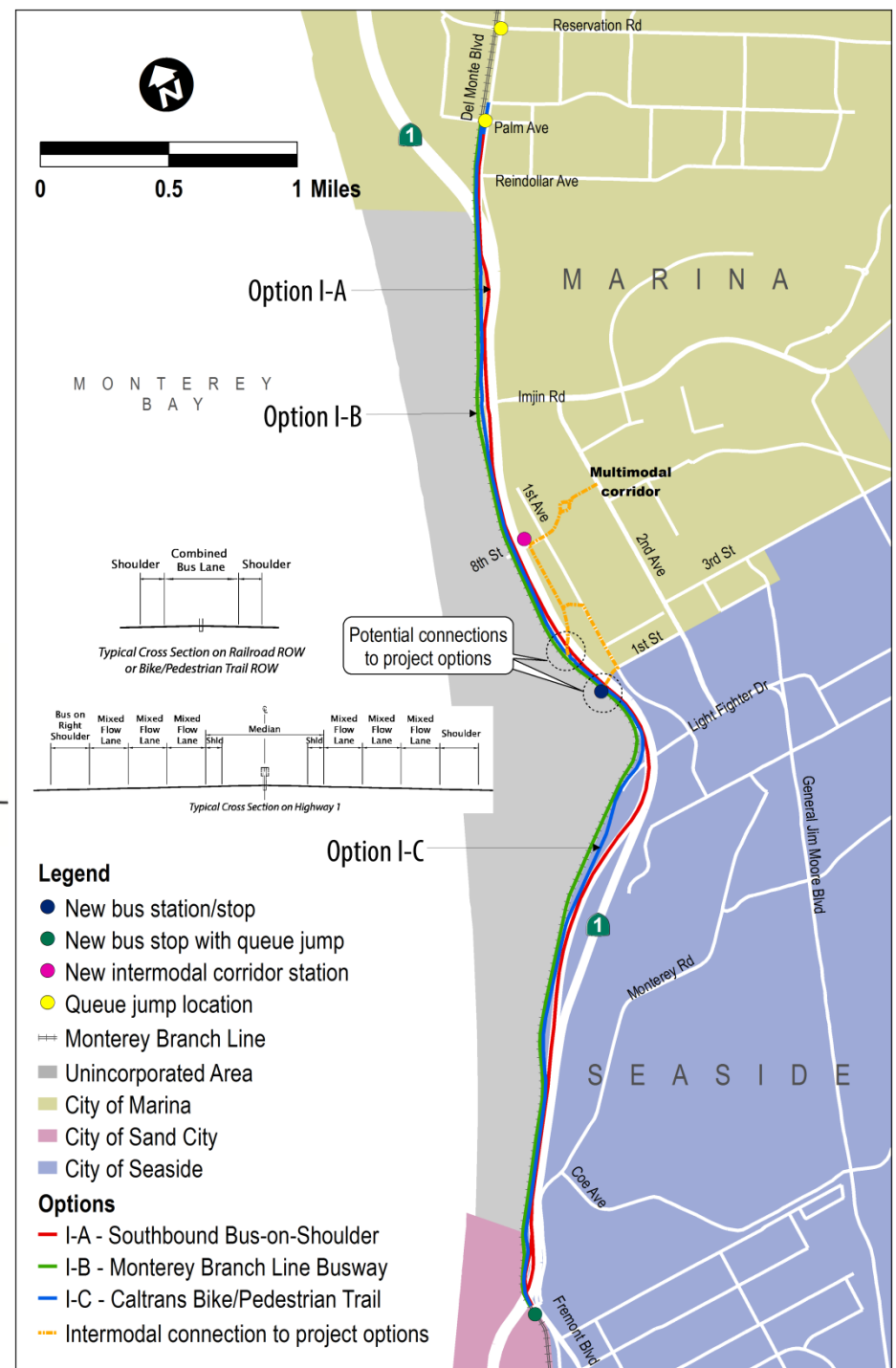
SEGMENT I

Marina to Seaside/Sand City

- Bus-on-shoulder
- Bus on Caltrans bicycle trail
- Busway on rail branch line



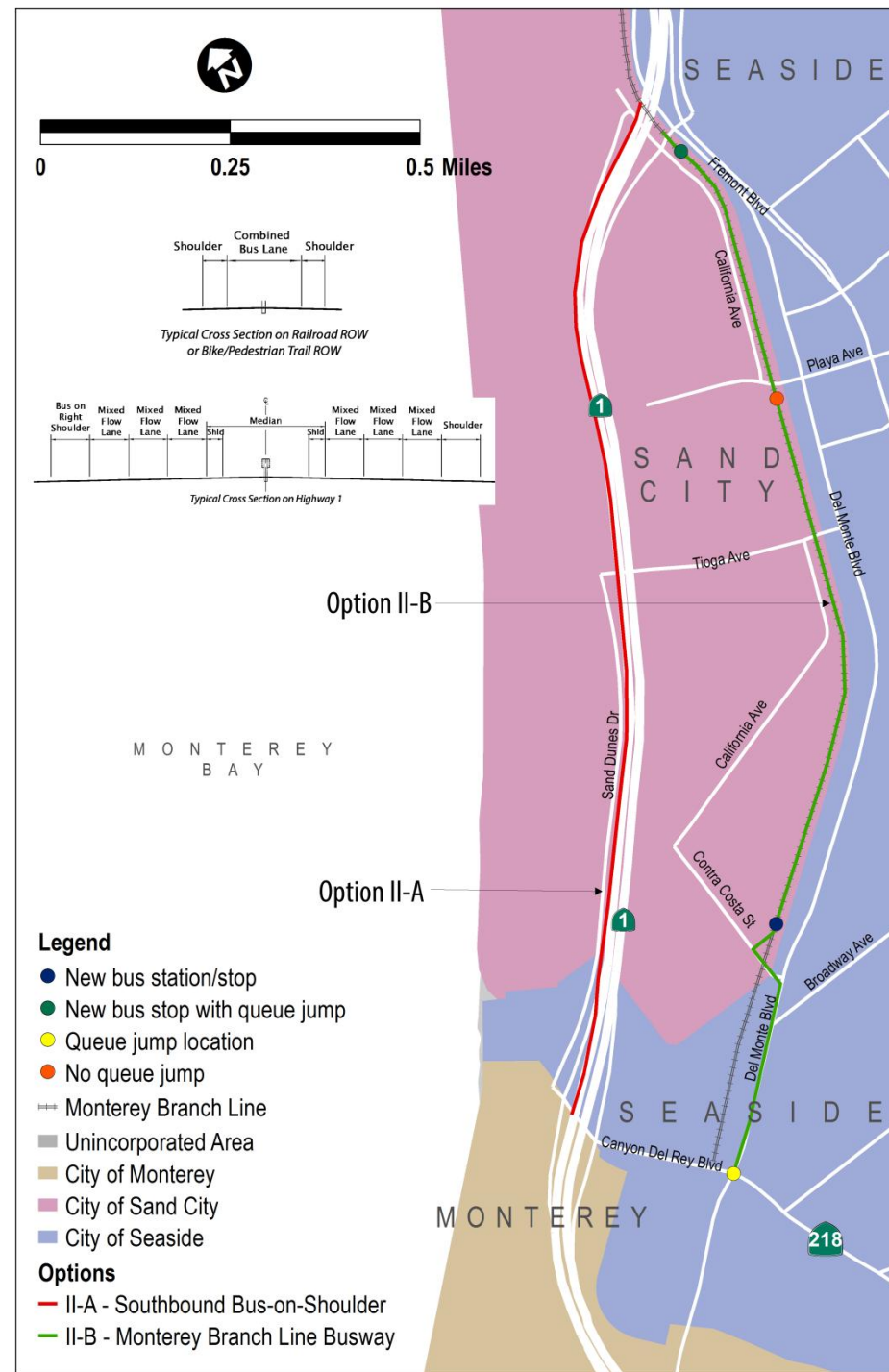
Typical Cross Section on Railroad ROW or Bike/Pedestrian Trail ROW



SEGMENT II

Seaside/Sand City to Monterey

- Bus-on-shoulder
- Busway on rail branch line



SEGMENT II – PHOTO SIMULATION



SEGMENT III

Seaside to Monterey

- Bus-on-shoulder
- Bus in regular traffic



50th Percentile Speeds – NB PM (Monterey County)

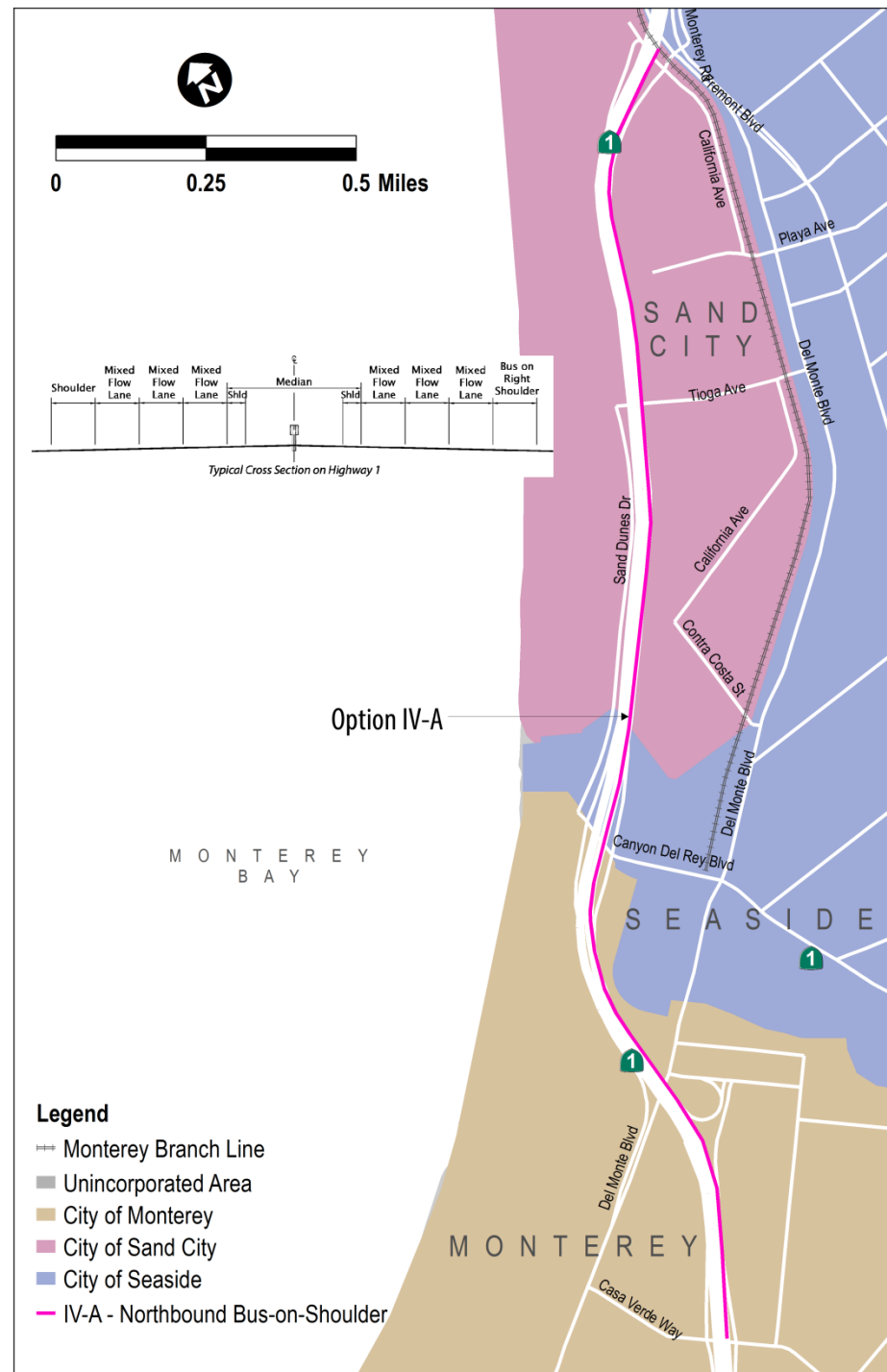
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15:00	37	52	58	60	56	59	61	62	60	62	65	68	70	69	69	67	64	50	41	52	52	59	61
15:15	44	54	58	59	56	58	61	59	52	57	62	61	62	66	66	61	63	56	40	51	52	60	61
15:30	40	56	59	59	58	58	58	62	61	62	65	63	65	66	65	63	62	57	47	51	53	62	61
15:45	38	54	60	59	59	60	62	57	43	53	65	68	66	68	65	63	62	57	49	49	50	59	61
16:00	42	57	60	60	57	50	43	29	18	44	65	64	64	67	66	64	64	33	44	52	52	60	65
16:15	38	54	60	50	19	17	16	13	19	41	65	69	72	66	66	64	61	19	46	45	47	61	64
16:30	41	51	39	22	17	19	17	14	23	44	67	69	68	69	67	65	61	19	42	33	46	63	64
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18:15	43	53	60	57	56	47	48	68	66	60	67	71	70	70	66	65	69	37	40	40	39	62	65
18:30	41	57	60	59	59	65	65	65	66	65	70	69	70	72	69	65	65	36	37	44	41	63	61
18:45	40	53	59	58	50	48	54	59	56	66	71	67	63	63	66	66	69	51	56	52	52	70	67
19:00	42	53	62	61	56	60	65	63	65	71	69	72	70	73	71	69	69	58	59	59	59	70	73



Segment IV

Monterey to Seaside/Sand City

- Northbound bus-on-shoulder



EVALUATION SUMMARY

Alternatives		Evaluation Results											
		Constructability Issues	Average 2025 Transit Time Savings (minutes)*	Annual Transit Operating Cost Savings (percent of existing service costs)	2025 Annual Operating Costs Compared to No-Build (millions)*	Buses Required (increase over No-Build)*	2025 Annual Rider-ship*	Connection to Intermodal Center?	Vehicle Miles of Travel Reduction*	Environmental Issues**	Total Capital Costs*	Benefit/Cost Ratio	Overall Assessment
1	Southbound Bus-on-Shoulder	Medium	7.1	3.1%	\$5.8	8	112,400	No	613,100	2	\$35.0	0.18	+
2	Southbound Bus-on-Shoulder Plus Branch Line	Medium	10.1	4.3%	\$5.5	8	304,900	No	1,663,100	7	\$32.1	0.25	++
3	Branch Line	Medium	15.9	6.8%	\$5.0	8	449,400	Yes	2,451,200	9	\$33.4	0.66	+++
4	Pedestrian/Bike Trail Plus Branch Line	Medium	15.9	6.8%	\$5.0	8	449,400	Yes	2,451,200	10	\$32.6	0.67	++
5	Northbound Bus-on-Shoulder	Low	4.8	2.1%	\$5.2	8	240,800	N/A	1,313,400	3	\$10.5	0.26	+
6	No-Build	NA	0.0	0.0%	\$0.0	0	0	No	0	4	\$0.0	N/A	N/A
7	HOV Lanes	High	14.2	6.1%	\$25.7	8	465,400	No	2,538,500	11	\$449.7	0.07	+

KEY FINDINGS

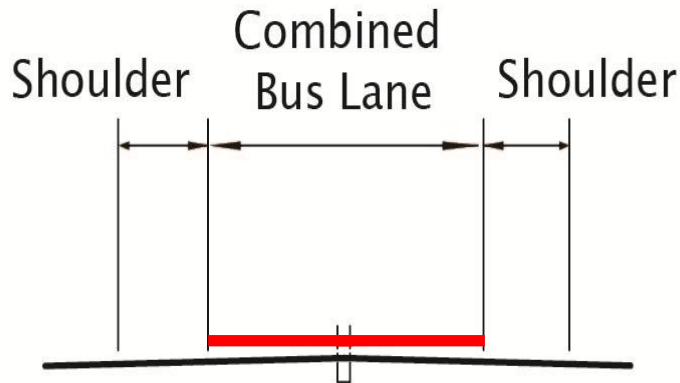
1. Traffic congestion will worsen with Fort Ord and surrounding development
2. Current traffic related delays to MST buses are significant and will worsen
3. SR-1 shoulders lack the width and structural section to support bus-on-shoulder operations without significant construction

KEY FINDINGS (CONTINUED)

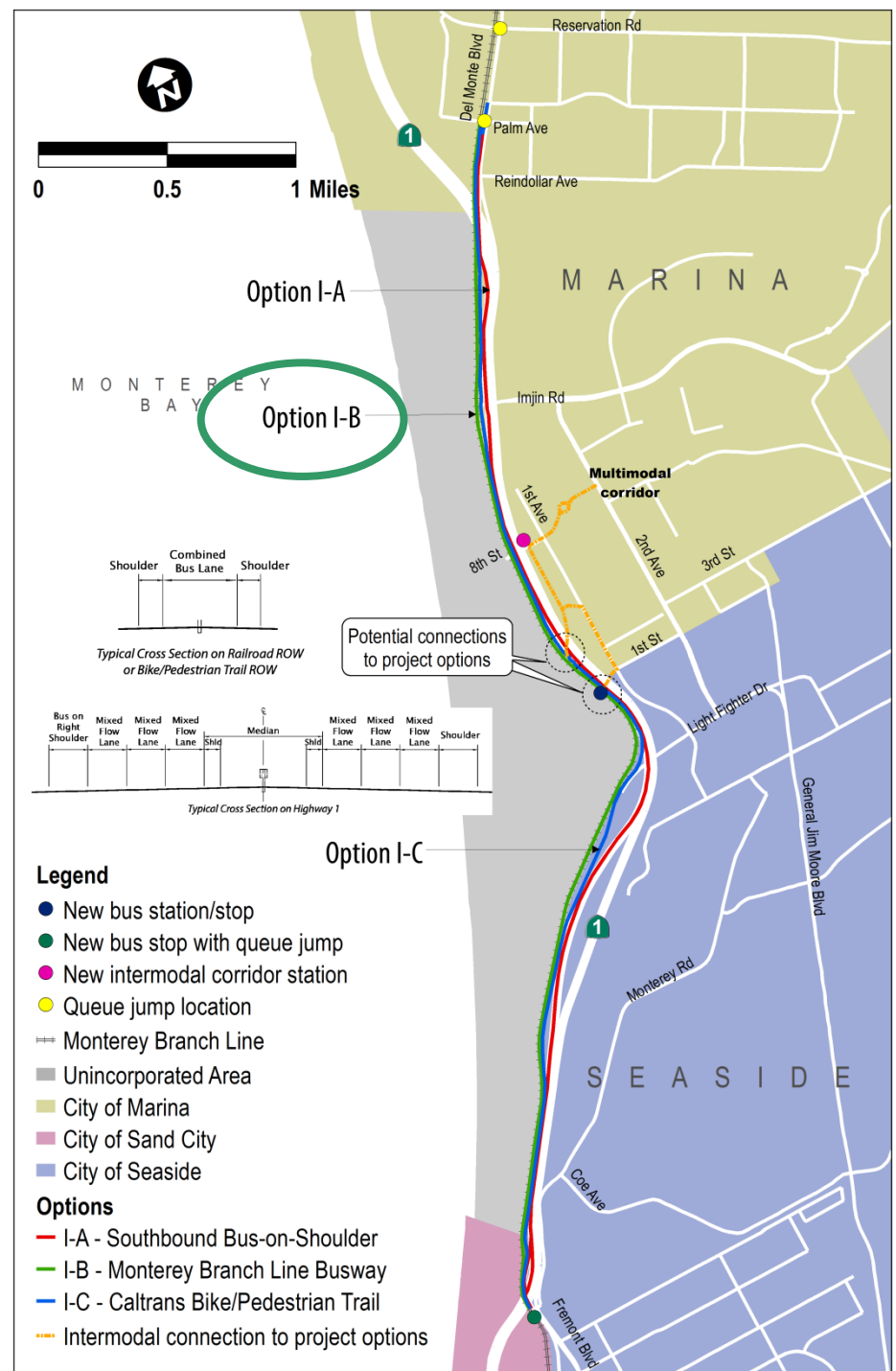
4. A busway on the Monterey Branch Line shows promise in terms of transit performance
 - Segment I – Option I-B could be a good initial busway project – yielding the greatest time savings benefits

SEGMENT I

Option 1-B:
 Busway on rail branch line
 From Marina to
 Seaside/Sand City



Typical Cross Section on Railroad ROW
 or Bike/Pedestrian Trail ROW



NEXT STEPS

1. Presentation to MST – July 2018
2. Presentations to AMBAG, TAMC, Santa Cruz METRO, and Santa Cruz RTC – August 2018
3. Transition to environmental and preliminary design



QUESTIONS?

Lisa Rheinheimer

Director of Planning and Marketing

Monterey-Salinas Transit

(831) 264-5874

lrheinheimer@mst.org

