

APPENDIX 3.2-D: HORIZON YEAR 2040 POST-MITIGATION LEVEL OF SERVICE

3.2-D.1 HORIZON YEAR 2040 POST-MITIGATION LEVEL OF SERVICE FOR AFFECTED SIGNALIZED INTERSECTIONS

Table 3.2-D1 Horizon Year 2040 Post-Mitigation Level of Service for Shared Passenger Track Alternatives A and B Affected Signalized Intersections

No.	Intersection	Peak Hour	Horizon Year 2040		Horizon Year 2040 Plus Project with Mitigation Delay		
			Delay (sec)	LOS	Delay (sec)	LOS	Increase (sec)
G44	East St and Lincoln Ave	AM	41.6	D	44.9	D	3.3
		PM	70.1	E*	50.3	D	-19.8
G89	Garfield Ave and Washington Blvd	AM	60.3	E*	54	D	-6.3
		PM	49.1	D	40.4	D	-8.7
G150	Beach Blvd (SR 39) and La Mirada Blvd/Malvern Ave	AM	49.3	D	49.3	D	0
		PM	46.4	D	45.2	D	-1.2
N49	Studebaker Rd and Imperial Hwy	AM	66.2	E*	42.1	D	-24.1
		PM	74.1	E*	54.8	D	-19.3
N51	Bloomfield Ave and Firestone Blvd (south)	AM	72.9	E*	25.9	C	-47
		PM	104.6	F*	43.2	D	-61.4
N58	Carmenita Rd and Rosecrans Ave	AM	46	D	43.9	D	-2.1
		PM	50.3	D	52.3	D	2
F10	Malden Ave and Commonwealth Ave	AM	15.6	B	20.5	C	4.9
		PM	48.3	D	24.2	C	-24.1
F11	Harbor Blvd and Imperial Hwy (SR 90)	AM	101.9	F*	48.4	D	-53.5
		PM	83.9	F*	58.1	E*	-25.8
F15	Harbor Blvd and Chapman Ave	AM	71.2	E*	46.5	D	-24.7
		PM	63.4	E*	43.4	D	-20
F17	Harbor Blvd and Santa Fe Ave	AM	19.1	B	23.7	C	4.6
		PM	23.6	C	23.7	C	0.1
F23	Lemon St and Chapman Ave	AM	42.3	D	39.3	D	-3
		PM	49.7	D	51.1	D	1.4
F24	Lemon St and Commonwealth Ave	AM	62.2	E*	49.3	D	-12.9
		PM	70.6	E*	46.4	D	-24.2
F26	Lemon St and Orangethorpe Ave	AM	49	D	40.8	D	-8.2
		PM	76.8	E*	54.2	D	-22.6

No.	Intersection	Peak Hour	Horizon Year 2040		Horizon Year 2040 Plus Project with Mitigation Delay		
			Delay (sec)	LOS	Delay (sec)	LOS	Increase (sec)
F28	Anaheim Blvd/Lemon St and SR 91 EB ramps	AM	51.7	D	36	D	-15.7
		PM	35.2	D	33.2	C	-2
F29	Raymond Ave and Chapman Ave	AM	32.6	C	34.1	C	1.5
		PM	52	D	49.7	D	-2.3
F32	State College Blvd and Chapman Ave	AM	40.9	D	37.9	D	-3
		PM	70.2	E*	68.5	E*	-1.7
F48	SR 57 SB ramps and Nutwood Ave ¹	AM	53.6	D	51.1	D	-2.5
		PM	34.5	C	29.2	C	-5.3
A14	State College Blvd and Orangewood Ave	AM	60.5	E*	55.2	E*	-5.3
		PM	61.2	E*	54.3	D	-6.9
A17	Sunkist St and Cerritos Ave	AM	25.2	C	21.3	C	-3.9
		PM	140.6	F*	43.5	D	-97.1
A79	Anaheim Blvd and Cerritos Ave	AM	29.8	C	17.8	B	-12
		PM	156.8	F*	48.3	D	-108.5

* Boldface type indicates that the roadway operates at an inadequate LOS (E or F).

"G" intersection number prefix indicates intersections outside of station areas; "N" intersection number prefix indicates Norwalk/Santa Fe Springs Metrolink Station area; "F" intersection number prefix indicates Fullerton Metrolink/Amtrak Station area; "A" intersection number prefix indicates Anaheim Regional Transportation Intermodal Center station area.

¹ Delay is based on Highway Capacity Manual 2000 signalized intersection analysis, because of Highway Capacity Manual 2010 analysis limitations. Amtrak = National Railroad Passenger Corporation; EB = eastbound; LOS = level of service; SB = southbound; sec = seconds; SR = State Route

Table 3.2-D2 Horizon Year 2040 Post-Mitigation Level of Service for Norwalk/Santa Fe Springs High-Speed Rail Station Option Affected Signalized Intersections

No.	Intersection	Peak Hour	Horizon Year 2040		Horizon Year 2040 Plus Project with Mitigation		Delay Increase (sec)
			Delay (sec)	LOS	Delay (sec)	LOS	
G44	East St and Lincoln Ave	AM	41.6	D	40.6	D	-1
		PM	70.1	E*	42.6	D	-27.5
G84	Downey Rd and Washington Blvd	AM	43.4	D	33.1	C	-10.3
		PM	55.5	E*	48.1	D	-7.4
G89	Garfield Ave and Washington Blvd	AM	60.3	E*	44.9	D	-15.4
		PM	49.1	D	55	D	5.9
G94	Downey Rd and Bandini Blvd	AM	42.7	D	33.9	C	-8.8
		PM	41	D	40.9	D	-0.1
G96	Bonnie Beach Pl and Bandini Blvd	AM	16.4	B	17.4	B	1

No.	Intersection	Peak Hour	Horizon Year 2040		Horizon Year 2040 Plus Project with Mitigation		Delay Increase (sec)
			Delay (sec)	LOS	Delay (sec)	LOS	
G98	Atlantic Blvd/I-710 NB ramps and Bandini Blvd ¹	PM	18.4	B	18.4	B	0
		AM	112.4	F*	48.9	D	-63.5
G148	Beach Blvd (SR 39) and Stage Rd ¹	PM	102.1	F*	51.8	D	-50.3
		AM	20	C	41	D	21
G150	Beach Blvd (SR 39) and La Mirada Blvd/Malvern Ave	PM	22.3	C	39.4	D	17.1
		AM	49.3	D	50.1	D	0.8
G177	Valley View Ave and Alondra Blvd	PM	46.4	D	43.6	D	-2.8
		AM	50.4	D	44.8	D	-5.6
N1	Firestone Blvd and Imperial Hwy ¹	PM	47.6	D	42	D	-5.6
		AM	62.5	E*	41.2	D	-21.3
N7	Norwalk Blvd and Imperial Hwy	PM	62.8	E*	47.7	D	-15.1
		AM	55.3	E*	41.8	D	-13.5
N15	Bloomfield Ave and Imperial Hwy	PM	173.1	F*	52.5	D	-120.6
		AM	47	D	52.4	D	5.4
N27	I-5 NB on-ramp and Imperial Hwy	PM	49.2	D	52.6	D	3.4
		AM	44.2	D	37.4	D	-6.8
N49	Studebaker Rd and Imperial Hwy	PM	25	C	26.9	C	1.9
		AM	66.2	E*	52.6	D	-13.6
N51	Bloomfield Ave and Firestone Blvd (south)	PM	74.1	E*	51.3	D	-22.8
		AM	72.9	E*	22.5	C	-50.4
N58	Carmenita Rd and Rosecrans Ave	PM	104.6	F*	36.5	D	-68.1
		AM	46	D	46	D	0
F10	Malden Ave and Commonwealth Ave	PM	50.3	D	54.3	D	4
		AM	15.6	B	20.6	C	5
F11	Harbor Blvd & Imperial Hwy (SR 90)	PM	48.3	D	22.1	C	-26.2
		AM	101.9	F*	45.3	D	-56.6
F15	Harbor Blvd and Chapman Ave	PM	83.9	F*	39.1	D	-44.8
		AM	71.2	E*	48.4	D	-22.8
F16	Harbor Blvd and Commonwealth Ave	PM	63.4	E*	42.5	D	-20.9
		AM	71.7	E*	50.7	D	-21
		PM	41.8	D	37	D	-4.8

No.	Intersection	Peak Hour	Horizon Year 2040		Horizon Year 2040 Plus Project with Mitigation		Delay Increase (sec)
			Delay (sec)	LOS	Delay (sec)	LOS	
F17	Harbor Blvd and Santa Fe Ave	AM	19.1	B	36.4	D	17.3
		PM	23.6	C	34.1	C	10.5
F23	Lemon St and Chapman Ave	AM	42.3	D	40.7	D	-1.6
		PM	49.7	D	50	D	0.3
F24	Lemon St and Commonwealth Ave	AM	62.2	E*	53.4	D	-8.8
		PM	70.6	E*	45.3	D	-25.3
F26	Lemon St and Orangethorpe Ave	AM	49	D	41.4	D	-7.6
		PM	76.8	E*	53	D	-23.8
F28	Anaheim Blvd/Lemon St and SR 91 EB ramps	AM	51.7	D	46.6	D	-5.1
		PM	35.2	D	33.4	C	-1.8
F29	Raymond Ave and Chapman Ave	AM	32.6	C	34.8	C	2.2
		PM	52	D	50.2	D	-1.8
F32	State College Blvd and Chapman Ave	AM	40.9	D	35.5	D	-5.4
		PM	70.2	E*	40.7	D	-29.5
F48	SR 57 SB ramps and Nutwood Ave ¹	AM	53.6	D	43.6	D	-10
		PM	34.5	C	32	C	-2.5
A14	State College Blvd and Orangewood Ave	AM	60.5	E*	47.5	D	-13
		PM	61.2	E*	49.8	D	-11.4
A17	Sunkist St and Cerritos Ave	AM	25.2	C	20.1	C	-5.1
		PM	140.6	F*	38.6	D	-102
A79	Anaheim Blvd and Cerritos Ave	AM	29.8	C	17.4	B	-12.4
		PM	156.8	F*	42.4	D	-114.4

* **Boldface** type indicates that the roadway operates at an inadequate LOS (E or F).

"G" intersection number prefix indicates intersections outside of station areas; "N" intersection number prefix indicates Norwalk/Santa Fe Springs Metrolink Station area; "F" intersection number prefix indicates Fullerton Metrolink/Amtrak Station area; "A" intersection number prefix indicates Anaheim Regional Transportation Intermodal Center station area.

¹ Delay is based on Highway Capacity Manual 2000 signalized intersection analysis, because of Highway Capacity Manual 2010 analysis limitations. Amtrak = National Railroad Passenger Corporation; EB = eastbound; I = Interstate; LOS = level of service; NB = northbound; SB = southbound; sec = seconds; SR = State Route

Table 3.2-D3 Horizon Year 2040 Post-Mitigation Level of Service for Fullerton High-Speed Rail Station Option Affected Signalized Intersections

No.	Intersection	Peak Hour	Horizon Year 2040		Horizon Year 2040 Plus Project with Mitigation		Delay Increase (sec)
			Delay (sec)	LOS	Delay (sec)	LOS	
G44	East St and Lincoln Ave	AM	41.6	D	46.7	D	5.1
		PM	70.1	E*	53.1	D	-17
G89	Garfield Ave and Washington Blvd	AM	60.3	E*	54	D	-6.3
		PM	49.1	D	40.4	D	-8.7
G148	Beach Blvd (SR 39) and Stage Rd ¹	AM	20	C	32.9	C	12.9
		PM	22.3	C	44.9	D	22.6
G150	Beach Blvd (SR 39) and La Mirada Blvd/Malvern Ave	AM	49.3	D	48.9	D	-0.4
		PM	46.4	D	43.2	D	-3.2
G177	Valley View Ave and Alondra Blvd	AM	50.4	D	52.5	D	2.1
		PM	47.6	D	47.9	D	0.3
N1	Firestone Blvd and Imperial Hwy ¹	AM	62.5	E*	55.5	E*	-7
		PM	62.8	E*	35.8	D	-27
N49	Studebaker Rd and Imperial Hwy	AM	66.2	E*	42.1	D	-24.1
		PM	74.1	E*	54.8	D	-19.3
N51	Bloomfield Ave and Firestone Blvd (south)	AM	72.9	E*	25.9	C	-47
		PM	104.6	F*	43.2	D	-61.4
N58	Carmenita Rd and Rosecrans Ave	AM	46	D	43.9	D	-2.1
		PM	50.3	D	52.4	D	2.1
F10	Malden Ave and Commonwealth Ave	AM	15.6	B	19.9	B	4.3
		PM	48.3	D	25.4	C	-22.9
F11	Harbor Blvd and Imperial Hwy (SR 90)	AM	101.9	F*	48.4	D	-53.5
		PM	83.9	F*	58.1	E*	-25.8
F15	Harbor Blvd and Chapman Ave	AM	71.2	E*	48.9	D	-22.3
		PM	63.4	E*	44.7	D	-18.7
F17	Harbor Blvd and Santa Fe Ave	AM	19.1	B	48.9	D	29.8
		PM	23.6	C	44.7	D	21.1
F23	Lemon St and Chapman Ave	AM	42.3	D	39.3	D	-3
		PM	49.7	D	51.1	D	1.4
F24	Lemon St and Commonwealth Ave	AM	62.2	E*	49.3	D	-12.9
		PM	70.6	E*	46.4	D	-24.2

No.	Intersection	Peak Hour	Horizon Year 2040		Horizon Year 2040 Plus Project with Mitigation		Delay Increase (sec)
			Delay (sec)	LOS	Delay (sec)	LOS	
F26	Lemon St and Orangethorpe Ave	AM	49	D	40.8	D	-8.2
		PM	76.8	E*	54.2	D	-22.6
F28	Anaheim Blvd/Lemon St and SR 91 EB ramps	AM	51.7	D	36	D	-15.7
		PM	35.2	D	33.2	C	-2
F29	Raymond Ave and Chapman Ave	AM	32.6	C	34.1	C	1.5
		PM	52	D	49.7	D	-2.3
F32	State College Blvd and Chapman Ave	AM	40.9	D	37.9	D	-3
		PM	70.2	E*	68.5	E*	-1.7
F48	SR 57 SB ramps and Nutwood Ave ¹	AM	53.6	D	51.1	D	-2.5
		PM	34.5	C	29.2	C	-5.3
A14	State College Blvd and Orangewood Ave	AM	60.5	E*	55.2	E*	-5.3
		PM	61.2	E*	54.3	D	-6.9
A17	Sunkist St and Cerritos Ave	AM	25.2	C	22	C	-3.2
		PM	140.6	F*	43.5	D	-97.1
A79	Anaheim Blvd and Cerritos Ave	AM	29.8	C	17.8	B	-12
		PM	156.8	F*	48.3	D	-108.5

* **Boldface** type indicates that the roadway operates at an inadequate LOS (E or F).

"G" intersection number prefix indicates intersections outside of station areas; "N" intersection number prefix indicates Norwalk/Santa Fe Springs Metrolink Station area; "F" intersection number prefix indicates Fullerton Metrolink/Amtrak Station area; "A" intersection number prefix indicates Anaheim Regional Transportation Intermodal Center station area.

¹ Delay is based on Highway Capacity Manual 2000 signalized intersection analysis, because of Highway Capacity Manual 2010 analysis limitations. Amtrak = National Railroad Passenger Corporation; EB = eastbound; LOS = level of service; SB = southbound; sec = seconds; SR = State Route

3.2-D.2 HORIZON YEAR 2040 POST-MITIGATION LEVEL OF SERVICE FOR AFFECTED UNSIGNALIZED INTERSECTIONS

Table 3.2-D4 Horizon Year 2040 Post-Mitigation Level of Service for Shared Passenger Track Alternatives A and B Affected Unsignalized Intersections

No.	Intersection	Peak Hour	Horizon Year 2040		Horizon Year 2040 Plus Project with Mitigation		Delay Increase (sec)
			Delay (sec)	LOS	Delay (sec)	LOS	
G210	Eastern Ave and Driveway ¹	AM	84.9	F*	5.7	A	-79.2
		PM	>180	F*	5.8	A	-174.2
F9	Malden Ave and Chapman Ave ¹	AM	162.3	F*	13.1	B	-149.2
		PM	>180	F*	13.9	B	-166.1

* **Boldface** type indicates that the roadway operates at an inadequate LOS (E or F).

"G" intersection number prefix indicates intersections outside of station areas; "F" intersection number prefix indicates intersections within the Fullerton Metrolink/Amtrak Station area.

¹ Two-way unsignalized intersection. The delay shown is for the worst minor approach delay. Amtrak = National Railroad Passenger Corporation; LOS = level of service; sec = seconds

Table 3.2-D5 Horizon Year 2040 Post-Mitigation Level of Service for Norwalk/Santa Fe Springs High-Speed Rail Station Option Affected Unsignalized Intersections

No.	Intersection	Peak Hour	Horizon Year 2040		Horizon Year 2040 Plus Project with Mitigation		Delay Increase (sec)
			Delay (sec)	LOS	Delay (sec)	LOS	
G95	Indiana St and Bandini Blvd ¹	AM	39.6	E*	11.1	B	-28.5
		PM	31.7	D	11.8	B	-19.9
G97	Ayers Ave and Bandini Blvd ¹	AM	16	C	7.6	A	-8.4
		PM	18.5	C	14.8	B	-3.7
G114	Gage Rd and Telegraph Rd ¹	AM	53.9	F*	17.4	B	-36.5
		PM	94.8	F*	18.3	B	-76.5
G118	Chapin Rd and Union St ²	AM	10	A	6.2	A	-3.8
		PM	16.7	C	38.9	D	22.2
G132	Pioneer Blvd and Orr and Day Rd ¹	AM	133	F*	5.4	A	-127.6
		PM	>180	F*	3.4	A	-176.6
G147	Dodds Ave (east) and Stage Rd ¹	AM	16	C	13.4	B	-2.6
		PM	15.1	C	11.1	B	-4
G210	Eastern Ave and Driveway ¹	AM	84.9	F*	5.7	A	-79.2
		PM	>180 ¹	F*	5.8	A	-174.2
F9	Malden Ave and Chapman Ave ¹	AM	162.3	F*	14.1	B	-148.2
		PM	>180	F*	14.3	B	-165.7

* **Boldface** type indicates that the roadway operates at an inadequate LOS (E or F).

"G" intersection number prefix indicates intersections outside of station areas; "F" intersection number prefix indicates intersections within the Fullerton Metrolink/Amtrak Station area.

¹ Two-way unsignalized intersection. The delay shown is for the worst minor approach delay.

² Four-way unsignalized intersection.

Amtrak = National Railroad Passenger Corporation; LOS = level of service; sec = seconds

Table 3.2-D6 Horizon Year 2040 Post-Mitigation Level of Service for Fullerton High-Speed Rail Station Option Affected Unsignalized Intersections

No.	Intersection	Peak Hour	Horizon Year 2040		Horizon Year 2040 Plus Project with Mitigation		Delay Increase (sec)
			Delay (sec)	LOS	Delay (sec)	LOS	
G210	Eastern Ave and Driveway ¹	AM	84.9	F*	5.7	A	-79.2
		PM	>180	F*	5.8	A	-174.2

No.	Intersection	Peak Hour	Horizon Year 2040		Horizon Year 2040 Plus Project with Mitigation		Delay Increase (sec)
			Delay (sec)	LOS	Delay (sec)	LOS	
F9	Malden Ave and Chapman Ave ¹	AM	162.3	F*	13.4	B	-148.9
		PM	>180	F*	14	B	-166

* **Boldface** type indicates that the roadway operates at an inadequate LOS (E or F).

"G" intersection number prefix indicates intersections outside of station areas; "F" intersection number prefix indicates intersections within the Fullerton Metrolink/Amtrak Station area.

¹ Two-way unsignalized intersection. The delay shown is for the worst minor approach delay. Amtrak = National Railroad Passenger Corporation; LOS = level of service; sec = seconds

3.2-D.3 HORIZON YEAR 2040 POST-MITIGATION LEVEL OF SERVICE FOR AFFECTED MAJOR ROADWAY SEGMENTS

Table 3.2-D7 Horizon Year 2040 Post-Mitigation Level of Service for Shared Passenger Track Alternatives A and B Affected Major Roadway Segments

Roadway	Segment Limits		Peak Hour	Horizon Year 2040		Horizon Year 2040 Plus Project with Mitigation		V/C Increase
	From	To		V/C	LOS	V/C	LOS	
Bandini Blvd	Downey Rd	Atlantic Blvd	AM	0.79	C	0.79	C	0
			PM	0.83	D	0.83	D	0
Carmenita Rd	Imperial Hwy	Orden Dr	AM	0.83	D	0.54	A	-0.29
			PM	0.99	E*	0.64	B	-0.35
Studebaker Rd	Imperial Hwy	I-105	AM	0.91	E*	0.61	B	-0.3
			PM	0.87	D	0.59	A	-0.28
Carmenita Rd	Orden Dr	Rosecrans Ave	AM	0.95	E*	0.61	B	-0.34
			PM	0.87	D	0.57	A	-0.3
Rosecrans Ave	Studebaker Rd	Pioneer Blvd	AM	0.95	E*	0.61	B	-0.34
			PM	0.95	E*	0.61	B	-0.34
Euclid St	Bastanchury Rd	Malvern Ave	AM	1.07	F*	0.74	C	-0.33
			PM	1.03	F*	0.71	C	-0.32
Euclid St	Malvern Ave	Commonwealth Ave	AM	0.99	E*	0.84	D	-0.15
			PM	0.95	E*	0.82	D	-0.13
Harbor Blvd	Imperial Hwy (SR 90)	Bastanchury Rd	AM	1.55	F*	0.82	D	-0.73
			PM	1.67	F*	0.88	D	-0.79
Harbor Blvd	Chapman Ave	Commonwealth Ave	AM	0.89	D	0.79	C	-0.1
			PM	0.82	D	0.73	C	-0.09

Roadway	Segment Limits		Peak Hour	Horizon Year 2040		Horizon Year 2040 Plus Project with Mitigation		V/C Increase
	From	To		V/C	LOS	V/C	LOS	
Harbor Blvd	Commonwealth Ave	Orangethorpe Ave	AM	1.19	F*	0.76	C	-0.43
			PM	1.23	F*	0.79	C	-0.44
Lemon St	Commonwealth Ave	Orangethorpe Ave	AM	1.24	F*	0.77	C	-0.47
			PM	1.41	F*	0.85	D	-0.56
Lemon St	Orangethorpe Ave	Orangefair Ave	AM	1.16	F*	0.7	B	-0.46
			PM	1.45	F*	0.85	D	-0.6
Chapman Ave	Harbor Blvd	Raymond Ave	AM	0.89	D	0.74	C	-0.15
			PM	0.92	E*	0.76	C	-0.16
Chapman Ave	Raymond Ave	Acacia Ave	AM	0.95	E*	0.73	C	-0.22
			PM	1.12	F*	0.84	D	-0.28
Chapman Ave	Acacia Ave	State College Blvd	AM	1.39	F*	0.67	B	-0.72
			PM	1.75	F*	0.82	D	-0.93
Chapman Ave	State College Blvd	Commonwealth Ave	AM	1.39	F*	0.69	B	-0.7
			PM	1.75	F*	0.87	D	-0.88
SR 57 NB Frontage Rd	Nutwood Ave	Chapman Ave	AM	0.83	D	0.46	A	-0.37
			PM	0.83	D	0.46	A	-0.37
Brea Blvd	Rolling Hills Dr	Bastanchury Rd	AM	1.03	F*	0.66	B	-0.37
			PM	1.19	F*	0.76	C	-0.43
Brea Blvd	Harbor Blvd	Bastanchury Rd	AM	0.91	E*	0.79	C	-0.12
			PM	0.99	E*	0.85	D	-0.14
Santa Fe Ave	Harbor Blvd	Lemon St	AM	0.2	A	0.36	A	0.16
			PM	0.3	A	0.4	A	0.1

* **Boldface** type indicates that the roadway operates at an inadequate LOS (E or F).

I = Interstate; LOS = level of service; NB = northbound; SR = State Route; V/C = volume to capacity ratio

Table 3.2-D8 Horizon Year 2040 Post-Mitigation Level of Service for Norwalk/Santa Fe Springs High-Speed Rail Station Option Affected Major Roadway Segments

Roadway	Segment Limits		Peak Hour	Horizon Year 2040		Horizon Year 2040 Plus Project with Mitigation		V/C Increase
	From	To		V/C	LOS	V/C	LOS	
Bandini Blvd	Downey Rd	Atlantic Blvd	AM	0.79	C	0.79	C	0
			PM	0.83	D	0.83	D	0

Roadway	Segment Limits		Peak Hour	Horizon Year 2040		Horizon Year 2040 Plus Project with Mitigation		V/C Increase
	From	To		V/C	LOS	V/C	LOS	
Carmenita Rd	Imperial Hwy	Orden Dr	AM	0.83	D	0.54	A	-0.29
			PM	0.99	E*	0.64	B	-0.35
Imperial Hwy	Norwalk Blvd	Bloomfield Ave	AM	0.59	A	0.7	B	0.11
			PM	0.61	B	0.72	C	0.11
Studebaker Rd	Imperial Hwy	I-105	AM	0.91	E*	0.61	B	-0.3
			PM	0.87	D	0.59	A	-0.28
Carmenita Rd	Orden Dr	Rosecrans Ave	AM	0.95	E*	0.61	B	-0.34
			PM	0.87	D	0.57	A	-0.3
Shoemaker Ave	Imperial Hwy	Foster Rd	AM	0.4	A	0.38	A	-0.02
			PM	0.5	A	0.42	A	-0.08
Rosecrans Ave	Studebaker Rd	Pioneer Blvd	AM	0.95	E*	0.61	B	-0.34
			PM	0.95	E*	0.61	B	-0.34
Euclid St	Bastanchury Rd	Malvern Ave	AM	1.07	F*	0.84	D	-0.23
			PM	1.03	F*	0.82	D	-0.21
Euclid St	Malvern Ave	Commonwealth Ave	AM	0.99	E*	0.61	B	-0.38
			PM	0.95	E*	0.61	B	-0.34
Harbor Blvd	Imperial Hwy (SR 90)	Bastanchury Rd	AM	1.55	F*	0.82	D	-0.73
			PM	1.67	F*	0.88	D	-0.79
Harbor Blvd	Brea Blvd	Berkeley Ave	AM	0.9	D	0.79	C	-0.11
			PM	0.81	D	0.71	C	-0.1
Harbor Blvd	Berkeley Ave	Chapman Ave	AM	0.89	D	0.79	C	-0.1
			PM	0.82	D	0.73	C	-0.09
Harbor Blvd	Chapman Ave	Commonwealth Ave	AM	0.89	D	0.79	C	-0.1
			PM	0.82	D	0.73	C	-0.09
Harbor Blvd	Commonwealth Ave	Orangethorpe Ave	AM	1.19	F*	0.79	C	-0.4
			PM	1.23	F*	0.81	D	-0.42
Harbor Blvd	Orangethorpe Ave	Orangefair Ave	AM	0.75	C	0.61	B	-0.14
			PM	0.88	D	0.72	C	-0.16
Lemon St	Commonwealth Ave	Orangethorpe Ave	AM	1.24	F*	0.77	C	-0.47
			PM	1.41	F*	0.85	D	-0.56
Lemon St	Orangethorpe Ave	Orangefair Ave	AM	1.16	F*	0.7	B	-0.46
			PM	1.45	F*	0.85	D	-0.6

Roadway	Segment Limits		Peak Hour	Horizon Year 2040		Horizon Year 2040 Plus Project with Mitigation		V/C Increase
	From	To		V/C	LOS	V/C	LOS	
Chapman Ave	Harbor Blvd	Raymond Ave	AM	0.89	D	0.74	C	-0.15
			PM	0.92	E*	0.76	C	-0.16
Chapman Ave	Raymond Ave	Acacia Ave	AM	0.95	E*	0.73	C	-0.22
			PM	1.12	F*	0.84	D	-0.28
Chapman Ave	Acacia Ave	State College Blvd	AM	1.39	F*	0.67	B	-0.72
			PM	1.75	F*	0.82	D	-0.93
Chapman Ave	State College Blvd	Commonwealth Ave	AM	1.39	F*	0.69	B	-0.7
			PM	1.75	F*	0.87	D	-0.88
SR 57 NB Frontage Rd	Nutwood Ave	Chapman Ave	AM	0.83	D	0.46	A	-0.37
			PM	0.83	D	0.46	A	-0.37
Brea Blvd	Rolling Hills Dr	Bastanchury Rd	AM	1.03	F*	0.66	B	-0.37
			PM	1.19	F*	0.76	C	-0.43
Brea Blvd	Harbor Blvd	Bastanchury Rd	AM	0.91	E*	0.79	C	-0.12
			PM	0.99	E*	0.85	D	-0.14
Santa Fe Ave	Malden Ave	Harbor Blvd	AM	0.2	A	0.4	A	0.2
			PM	0.2	A	0.4	A	0.2
Santa Fe Ave	Harbor Blvd	Lemon St	AM	0.2	A	0.36	A	0.16
			PM	0.3	A	0.4	A	0.1

* **Boldface** type indicates that the roadway operates at an inadequate LOS (E or F).

I = Interstate; LOS = level of service; NB = northbound; SR = State Route; V/C = volume to capacity ratio

Table 3.2-D9 Horizon Year 2040 Post-Mitigation Level of Service for Fullerton High-Speed Rail Station Option Affected Major Roadway Segments

Roadway	Segment Limits		Peak Hour	Horizon Year 2040		Horizon Year 2040 Plus Project with Mitigation		V/C Increase
	From	To		V/C	LOS	V/C	LOS	
Bandini Blvd	Downey Rd	Atlantic Blvd	AM	0.79	C	0.79	C	0
			PM	0.83	D	0.83	D	0
Carmenita Rd	Imperial Hwy	Orden Dr	AM	0.83	D	0.54	A	-0.29
			PM	0.99	E*	0.64	B	-0.35
Studebaker Rd	Imperial Hwy	I-105	AM	0.91	E*	0.61	B	-0.3
			PM	0.87	D	0.59	A	-0.28
Carmenita Rd	Orden Dr	Rosecrans Ave	AM	0.95	E*	0.61	B	-0.34
			PM	0.87	D	0.57	A	-0.3

Roadway	Segment Limits		Peak Hour	Horizon Year 2040		Horizon Year 2040 Plus Project with Mitigation		V/C Increase
	From	To		V/C	LOS	V/C	LOS	
Rosecrans Ave	Studebaker Rd	Pioneer Blvd	AM	0.95	E*	0.61	B	-0.34
			PM	0.95	E*	0.61	B	-0.34
Euclid St	Bastanchury Rd	Malvern Ave	AM	1.07	F*	0.84	D	-0.23
			PM	1.03	F*	0.82	D	-0.21
Euclid St	Malvern Ave	Commonwealth Ave	AM	0.99	E*	0.61	B	-0.38
			PM	0.95	E*	0.61	B	-0.34
Harbor Blvd	Imperial Hwy (SR 90)	Bastanchury Rd	AM	1.55	F*	0.82	D	-0.73
			PM	1.67	F*	0.88	D	-0.79
Harbor Blvd	Chapman Ave	Commonwealth Ave	AM	0.89	D	0.79	C	-0.1
			PM	0.82	D	0.73	C	-0.09
Harbor Blvd	Commonwealth Ave	Orangethorpe Ave	AM	1.19	F*	0.76	C	-0.43
			PM	1.23	F*	0.79	C	-0.44
Harbor Blvd	Orangethorpe Ave	Orangefair Ave	AM	0.75	C	0.61	B	-0.14
			PM	0.88	D	0.72	C	-0.16
Lemon St	Commonwealth Ave	Orangethorpe Ave	AM	1.24	F*	0.77	C	-0.47
			PM	1.41	F*	0.85	D	-0.56
Lemon St	Orangethorpe Ave	Orangefair Ave	AM	1.16	F*	0.7	B	-0.46
			PM	1.45	F*	0.85	D	-0.6
Chapman Ave	Harbor Blvd	Raymond Ave	AM	0.89	D	0.74	C	-0.15
			PM	0.92	E*	0.76	C	-0.16
Chapman Ave	Raymond Ave	Acacia Ave	AM	0.95	E*	0.73	C	-0.22
			PM	1.12	F*	0.84	D	-0.28
Chapman Ave	Acacia Ave	State College Blvd	AM	1.39	F*	0.67	B	-0.72
			PM	1.75	F*	0.82	D	-0.93
Chapman Ave	State College Blvd	Commonwealth Ave	AM	1.39	F*	0.69	B	-0.7
			PM	1.75	F*	0.87	D	-0.88
SR 57 NB Frontage Rd	Nutwood Ave	Chapman Ave	AM	0.83	D	0.46	A	-0.37
			PM	0.83	D	0.46	A	-0.37
Brea Blvd	Rolling Hills Dr	Bastanchury Rd	AM	1.03	F*	0.66	B	-0.37
			PM	1.19	F*	0.76	C	-0.43
Brea Blvd	Harbor Blvd	Bastanchury Rd	AM	0.91	E*	0.79	C	-0.12
			PM	0.99	E*	0.85	D	-0.14

Roadway	Segment Limits		Peak Hour	Horizon Year 2040		Horizon Year 2040 Plus Project with Mitigation		V/C Increase
	From	To		V/C	LOS	V/C	LOS	
Santa Fe Ave	Harbor Blvd	Lemon St	AM	0.2	A	0.36	A	0.16
			PM	0.3	A	0.4	A	0.1

* **Boldface** type indicates that the roadway operates at an inadequate LOS (E or F).

- = Interstate; LOS = level of service; NB = northbound; SR = State Route; V/C = volume to capacity ratio