

MEMORANDUM

DATE: 12/5/19

TO: Alicia Yang, Orange County Transportation Authority
Amy Tran, Orange County Transportation Authority
Agency stakeholders

FROM: Pam O'Brien, PE (OR), PTOE
Jeff Heald, PE

SUBJECT: **Proposed Cycle Length and Groupings for the Magnolia Street Traffic Signal Synchronization Project (TSSP)**

This document summarizes the proposed signal groupings/cycles length the traffic signals along the Magnolia corridor for each timing period.

The Magnolia corridor is almost 16 miles long and includes 51 traffic signals, owned by seven different cities and Caltrans. The operational objectives vary along the corridor, but the corridor mainly serves as a connection between residential land uses and the freeways (SR 91/I-5, SR 22 and I-405). Traffic flows, in general, proceed to the freeways in the a.m. and away from the freeways in the p.m. The midday volumes are relatively balanced (for north/south flow) with higher turning movements at commercial developments. There are 18 schools located along, or in close proximity, to the Magnolia corridor, which results in short, intense peaks during school arrival and dismissal.

There are 11 crossing corridors where the existing coordinated timings are to remain in place (or with minor changes).

The ultimate progression goal would be to provide a single cycle length along the entire corridor, however, given the constraints of existing east/west coordination, we had to break the corridor into multiple groups of cycle lengths (ranging from 90 seconds to 140 seconds, depending on the time period). The proposed groupings balance the need to keep the existing east/west coordinated corridors as is ("locked") and provide north/south progression along the Magnolia corridor.

The attached maps and tables provide a visual summary of the existing and proposed cycle lengths and groupings with the "locked" intersections highlighted. The appendices include the Synchro reports (per agency) that show the cycle, splits, offsets and LOS for each intersection plus the corridor Time Space Diagrams for each time period.

The cross coordinated constraints and progression goals for each timing plan period are summarized below:



AM Peak Plan

Existing Cross Coordination:

Intersection	City	Cycle Length (seconds)
Commonwealth Avenue	Fullerton	100
Orangethorpe Avenue	Fullerton	100
LaPalma Avenue	Anaheim	120
Lincoln Avenue	Anaheim	120
Ball Road	Anaheim	130*
Chapman Avenue	Garden Grove	130
Garden Grove Boulevard	Garden Grove	130*
Westminster Boulevard	Westminster	140
Warner Avenue	Fountain Valley	130
Talbert Avenue	Fountain Valley	130
Adams Avenue	Huntington Beach	130

**proposed cycle length to tie into Brookhurst signal timings (per Iteris)*

Progression Goals

- Tie into as many east/west coordinated corridors as possible
- Progress to/through the SR91/I-5 interchange to minimize queuing (no changes to existing timings proposed)
- Progress to/through the SR22 interchange to minimize queuing
- Minimize queuing at critical intersections.
- Minimize queuing during school arrival.
- Favor the heavier direction as is changes along the corridor.

Midday Peak Plan

Existing Cross Coordination:

Intersection	City	Cycle Length (seconds)
Commonwealth Avenue	Fullerton	90
Orangethorpe Avenue	Fullerton	90
Lincoln Avenue	Anaheim	120
Ball Road	Anaheim	130*
Chapman Avenue	Garden Grove	130
Garden Grove Boulevard	Garden Grove	130*
Westminster Boulevard	Westminster	130



Intersection	City	Cycle Length (seconds)
Warner Avenue	Fountain Valley	120
Talbert Avenue	Fountain Valley	120
Adams Avenue	Huntington Beach	130

**proposed cycle length to tie into Brookhurst signal timings (per Iteris)*

Progression Goals

- Tie into as many east/west coordinated corridors as possible
- Progress to/through the SR91/I-5 interchange to minimize queuing (no changes to existing timings proposed)
- Progress to/through the SR22 interchange to minimize queuing
- Minimize queuing at critical intersections.
- Balance north/south progression along the corridor.
- Minimize queuing during school dismissal.

Consider changing Warner Avenue and Talbert Avenue to 130 second cycle length. This would provide a signal grouping (130 second cycle length) between Ball Road (in Anaheim) and Atlanta Avenue (in Huntington Beach).

PM Peak Plan

Existing cross coordination:

Intersection	City	Cycle Length (seconds)
Commonwealth Avenue	Fullerton	100
Orangethorpe Avenue	Fullerton	100
LaPalma Avenue	Anaheim	120
Lincoln Avenue	Anaheim	120
Ball Road	Anaheim	130*
Chapman Avenue	Garden Grove	130
Garden Grove Boulevard	Garden Grove	130*
Westminster Boulevard	Westminster	140*
Warner Avenue	Fountain Valley	130
Talbert Avenue	Fountain Valley	130
Adams Avenue	Huntington Beach	140

**proposed cycle length to tie into Brookhurst signal timings (per Iteris)*



Progression Goals

- Tie into as many east/west coordinated corridors as possible
- Progress from the SR91/I-5 interchange to minimize queuing (no changes to existing timings proposed)
- Progress from the SR22 interchange to minimize queuing
- Minimize queuing at critical intersections.
- Minimize queuing during school arrival.
- Favor the heavier direction as is changes along the corridor.

Weekend Peak Plan

Existing Cross Coordination:

Intersection	City	Cycle Length (seconds)
Commonwealth Avenue	Fullerton	90
Orangethorpe Avenue	Fullerton	90
Lincoln Avenue	Anaheim	120
Ball Road	Anaheim	130*
Chapman Avenue	Garden Grove	130
Garden Grove Boulevard	Garden Grove	130*
Westminster Boulevard	Westminster	140*
Warner Avenue	Fountain Valley	120
Talbert Avenue	Fountain Valley	120
Adams Avenue	Huntington Beach	140

**proposed cycle length to tie into Brookhurst signal timings (per Iteris)*

Progression Goals

- Tie into as many east/west coordinated corridors as possible
- Progress to/through the SR91/I-5 interchange to minimize queuing (no changes to existing timings proposed)
- Progress to/through the SR22 interchange to minimize queuing
- Minimize queuing at critical intersections.
- Balance north/south progression along the corridor.
- Minimize queuing during school dismissal.

Consider changing Warner Avenue and Talbert Avenue to 130 second cycle length. This would provide a signal grouping (130 second cycle length) between Foxglove (in Fountain Valley) and Atlanta Avenue (in Huntington Beach).



Attachments

Figures 1-4: Key Operational Issues and Proposed Cycle Length Maps

Table 1: Existing and Proposed Cycle Length Summary

Appendix A: Fullerton Timings

Appendix B: Caltrans Timings

Appendix C: Anaheim Timings

Appendix D: Stanton Timings

Appendix E: Garden Grove Timings

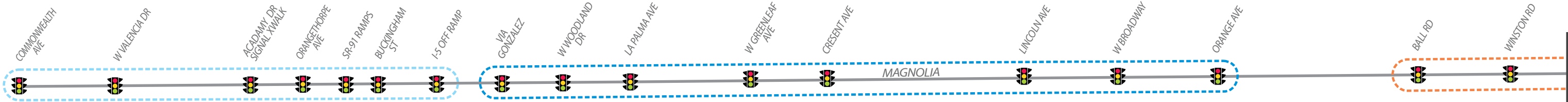
Appendix F: Westminster Timings

Appendix G: Fountain Valley Timings

Appendix H: Huntington Beach Timings

Appendix I (1-4): AM, Mid, PM, Wkend Time Space Diagrams

Proposed Cycle Lengths & Groupings



Study Corridor

Existing Conditions & Operational Constraints



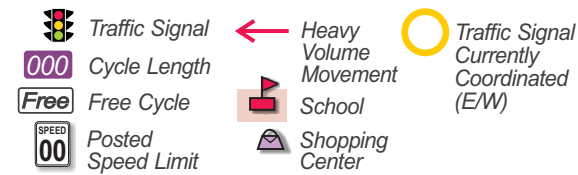
Match Line – Figure 1b (Continues to W. Cerritos Ave.)

AM Peak Period Traffic Volumes



LEGEND

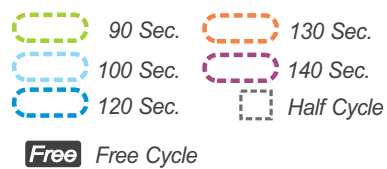
Existing Conditions & Operational Constraints



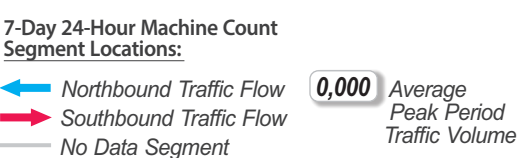
Traffic Signal Ownership – Study Corridor



Proposed Cycle Lengths & Groupings



AM Peak Period Traffic Volumes



DKS

Schematic
Not to Scale

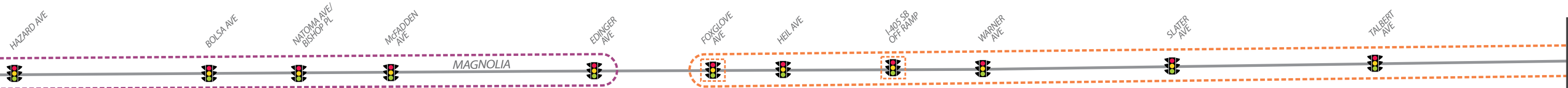
Figure 1a

KEY OPERATIONAL ISSUES & PROPOSED CYCLE LENGTHS
Magnolia – AM Peak Period
Commonwealth Avenue to Winston Road

me – Figure 1a (Continued from Winston Rd.)



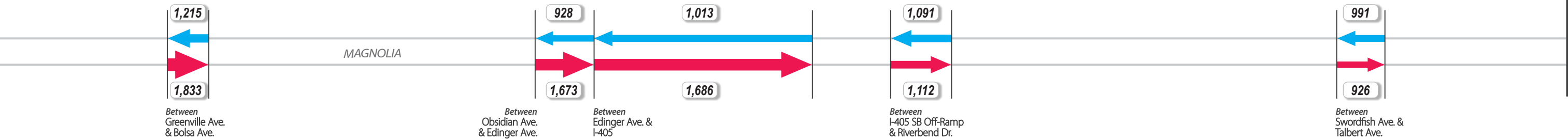
Proposed Cycle Lengths & Groupings



Study Corridor
Existing Conditions & Operational Constraints



AM Peak Period Traffic Volumes



LEGEND

Existing Conditions & Operational Constraints

- Traffic Signal
- Cycle Length
- Free Cycle
- Posted Speed Limit
- Heavy Volume Movement
- School
- Shopping Center
- Traffic Signal Currently Coordinated (E/W)

Traffic Signal Ownership – Study Corridor

- Caltrans
- City of Fullerton
- City of Anaheim
- City of Stanton
- City of Westminster
- City of Garden Grove
- City of Fountain Valley
- City of Huntington Beach

Proposed Cycle Lengths & Groupings

- 90 Sec.
- 100 Sec.
- 120 Sec.
- 130 Sec.
- 140 Sec.
- Half Cycle
- Free Cycle

AM Peak Period Traffic Volumes

7-Day 24-Hour Machine Count Segment Locations:

- Northbound Traffic Flow
- Southbound Traffic Flow
- No Data Segment

Average Peak Period Traffic Volume: 0,000

DKS

Schematic Not to Scale

Figure 1c

KEY OPERATIONAL ISSUES & PROPOSED CYCLE LENGTHS

Magnolia – AM Peak Period

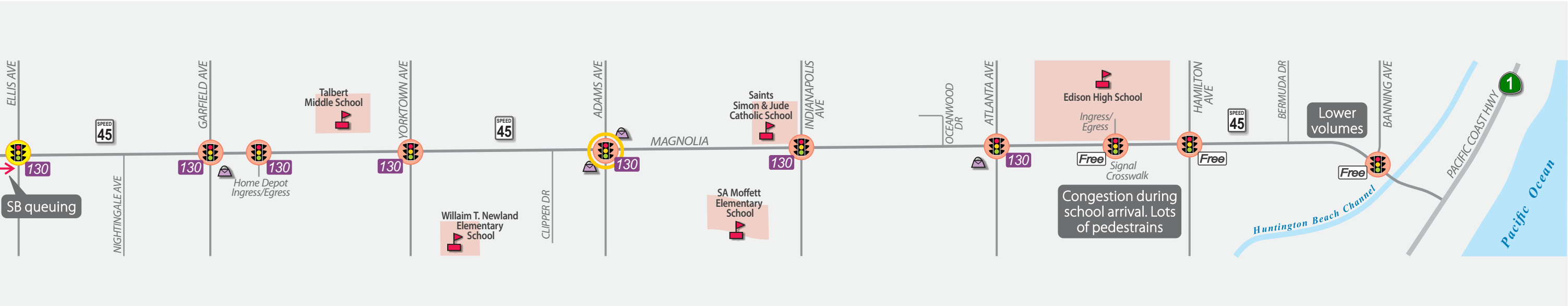
Hazard Avenue to Talbert Avenue

Match Line – Figure 1c (Continued from Talbert Ave.)

Proposed Cycle Lengths & Groupings



Study Corridor
Existing Conditions & Operational Constraints



AM Peak Period Traffic Volumes



LEGEND

Existing Conditions & Operational Constraints

- Traffic Signal
- Cycle Length
- Free Cycle
- Posted Speed Limit
- Heavy Volume Movement
- School
- Shopping Center
- Traffic Signal Currently Coordinated (E/W)

Traffic Signal Ownership – Study Corridor

- Caltrans
- City of Fullerton
- City of Anaheim
- City of Stanton
- City of Westminster
- City of Garden Grove
- City of Fountain Valley
- City of Huntington Beach

Proposed Cycle Lengths & Groupings

- 90 Sec.
- 100 Sec.
- 120 Sec.
- Free Cycle
- 130 Sec.
- 140 Sec.
- Half Cycle

AM Peak Period Traffic Volumes

7-Day 24-Hour Machine Count Segment Locations:

- Northbound Traffic Flow
- Southbound Traffic Flow
- No Data Segment

0,000 Average Peak Period Traffic Volume



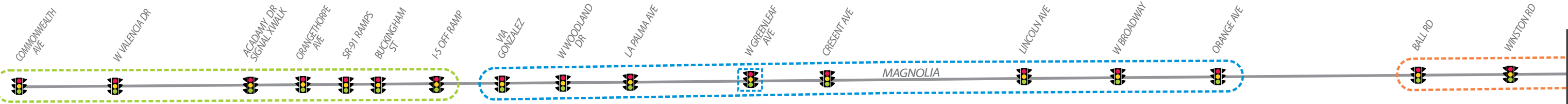
Figure 1d

KEY OPERATIONAL ISSUES & PROPOSED CYCLE LENGTHS

Magnolia – AM Peak Period

Ellis Avenue to Pacific Coast Highway

Proposed Cycle Lengths & Groupings



Study Corridor
Existing Conditions & Operational Constraints



Midday Peak Period Traffic Volumes



LEGEND

Existing Conditions & Operational Constraints

- Traffic Signal
- Cycle Length
- Free Cycle
- Posted Speed Limit
- Heavy Volume Movement
- School
- Shopping Center
- Traffic Signal Currently Coordinated (E/W)

Traffic Signal Ownership – Study Corridor

- Caltrans
- City of Fullerton
- City of Anaheim
- City of Stanton
- City of Westminster
- City of Garden Grove
- City of Fountain Valley
- City of Huntington Beach

Proposed Cycle Lengths & Groupings

- 90 Sec.
- 100 Sec.
- 120 Sec.
- Free Cycle
- 130 Sec.
- 140 Sec.
- Half Cycle

Midday Peak Period Traffic Volumes

- 7-Day 24-Hour Machine Count Segment Locations:
- Northbound Traffic Flow
- Southbound Traffic Flow
- No Data Segment
- Average Peak Period Traffic Volume

DKS

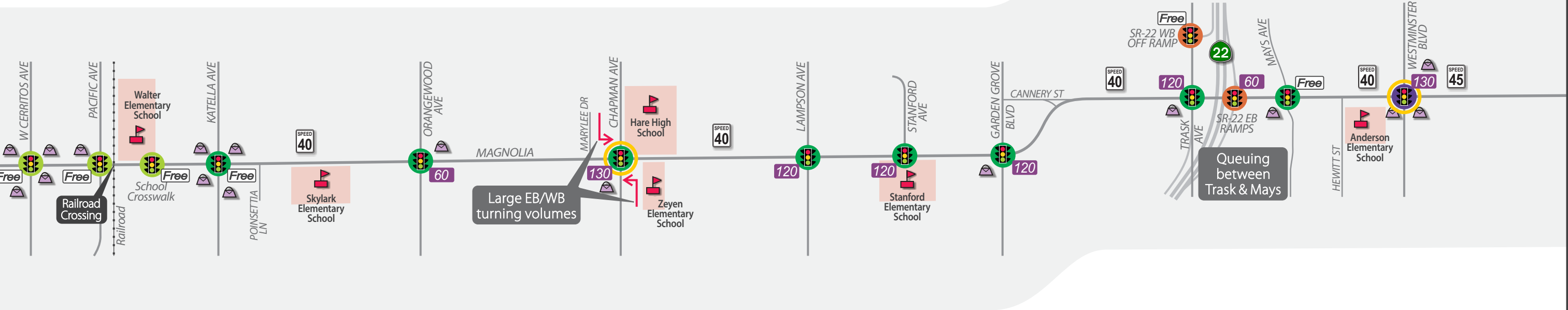
Schematic Not to Scale

Figure 2a
KEY OPERATIONAL ISSUES & PROPOSED CYCLE LENGTHS
Magnolia – Midday Peak Period
Commonwealth Avenue to Winston Road

Match Line – Figure 2a (Continued from Winston Rd.)

Proposed Cycle Lengths & Groupings

Study Corridor
Existing Conditions & Operational Constraints



Match Line – Figure 2c (Continues to Hazard Ave.)

Midday Peak Period Traffic Volumes



LEGEND

Existing Conditions & Operational Constraints

- Traffic Signal
- Cycle Length
- Free Cycle
- Posted Speed Limit
- Heavy Volume Movement
- School
- Shopping Center
- Traffic Signal Currently Coordinated (E/W)

Traffic Signal Ownership – Study Corridor

- Caltrans
- City of Fullerton
- City of Anaheim
- City of Stanton
- City of Westminster
- City of Garden Grove
- City of Fountain Valley
- City of Huntington Beach

Proposed Cycle Lengths & Groupings

- 90 Sec.
- 100 Sec.
- 120 Sec.
- 130 Sec.
- 140 Sec.
- Half Cycle
- Free Cycle

Midday Peak Period Traffic Volumes

7-Day 24-Hour Machine Count Segment Locations:

- Northbound Traffic Flow
- Southbound Traffic Flow
- No Data Segment

0,000 Average Peak Period Traffic Volume

DKS

Schematic Not to Scale

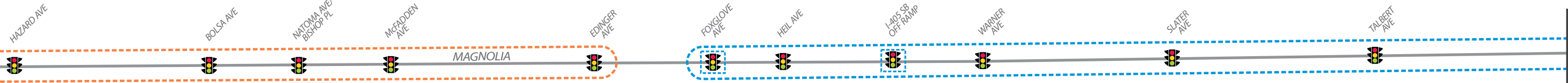
Figure 2b

KEY OPERATIONAL ISSUES & PROPOSED CYCLE LENGTHS

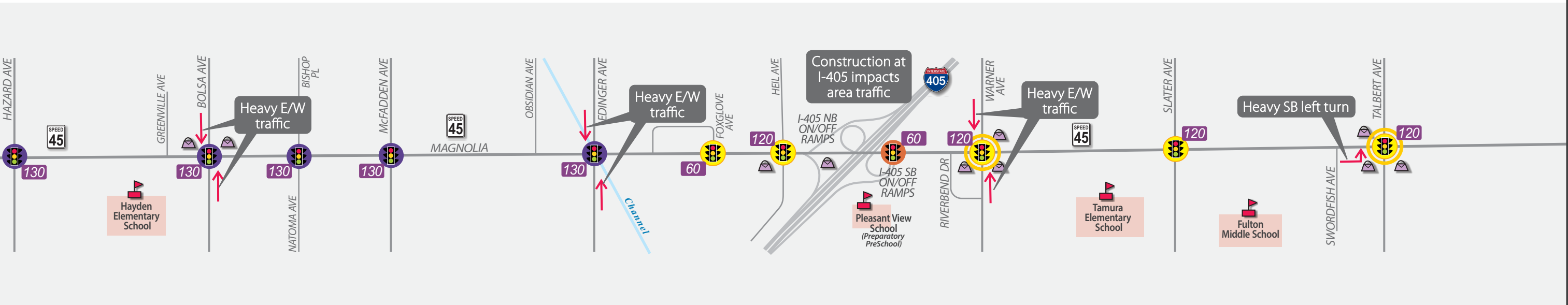
Magnolia – Midday Peak Period

W. Cerritos Avenue to Westminster Boulevard

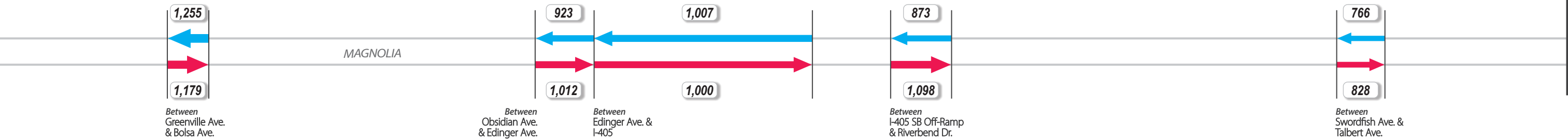
Proposed Cycle Lengths & Groupings



Study Corridor
Existing Conditions & Operational Constraints



Midday Peak Period Traffic Volumes



LEGEND

Existing Conditions & Operational Constraints

- Traffic Signal
- 000 Cycle Length
- Free Free Cycle
- 00 Posted Speed Limit
- Heavy Volume Movement
- School
- Shopping Center
- Traffic Signal Currently Coordinated (E/W)

Traffic Signal Ownership – Study Corridor

- Caltrans
- City of Fullerton
- City of Anaheim
- City of Stanton
- City of Westminster
- City of Garden Grove
- City of Fountain Valley
- City of Huntington Beach

Proposed Cycle Lengths & Groupings

- 90 Sec.
- 100 Sec.
- 120 Sec.
- Free Free Cycle
- 130 Sec.
- 140 Sec.
- Half Cycle

Midday Peak Period Traffic Volumes

7-Day 24-Hour Machine Count Segment Locations:

- Northbound Traffic Flow
- Southbound Traffic Flow
- No Data Segment

0,000 Average Peak Period Traffic Volume

DKS

Schematic Not to Scale

Figure 2c

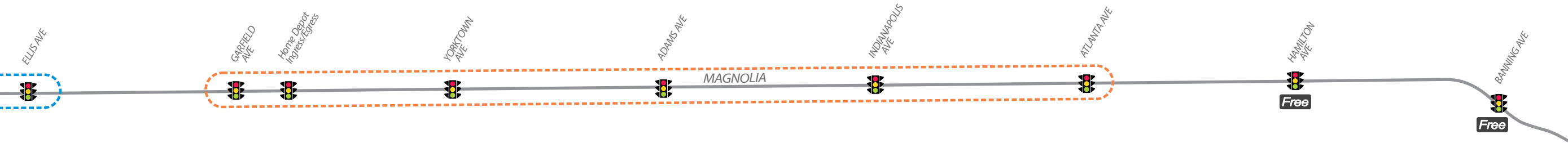
KEY OPERATIONAL ISSUES & PROPOSED CYCLE LENGTHS

Magnolia – Midday Peak Period

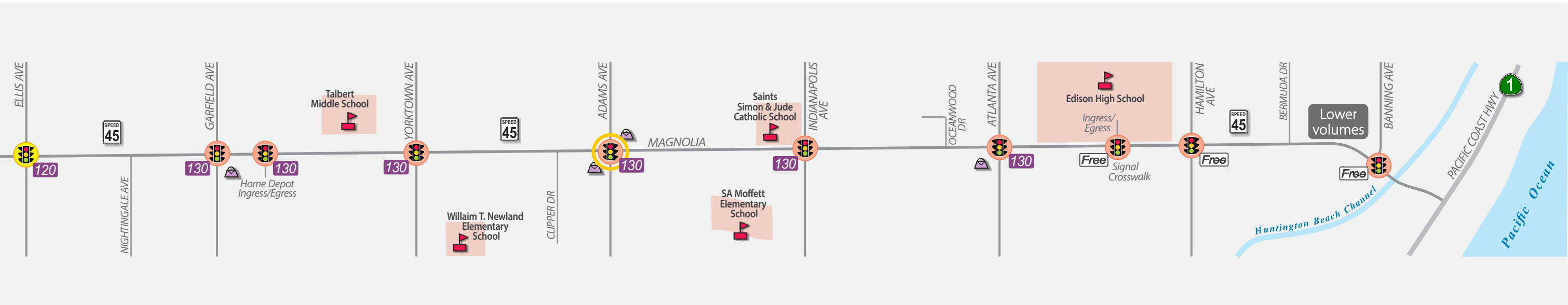
Hazard Avenue to Talbert Avenue

Match Line – Figure 2c (Continued from Talbert Ave.)

Proposed Cycle Lengths & Groupings



Study Corridor
Existing Conditions & Operational Constraints



Midday Peak Period Traffic Volumes



LEGEND

Existing Conditions & Operational Constraints

- Traffic Signal
- Cycle Length
- Free Cycle
- Posted Speed Limit
- Heavy Volume Movement
- School
- Shopping Center
- Traffic Signal Currently Coordinated (E/W)

Traffic Signal Ownership – Study Corridor

- Caltrans
- City of Fullerton
- City of Anaheim
- City of Stanton
- City of Westminster
- City of Garden Grove
- City of Fountain Valley
- City of Huntington Beach

Proposed Cycle Lengths & Groupings

- 90 Sec.
- 100 Sec.
- 120 Sec.
- 130 Sec.
- 140 Sec.
- Half Cycle
- Free Cycle

Midday Peak Period Traffic Volumes

7-Day 24-Hour Machine Count Segment Locations:

- Northbound Traffic Flow
- Southbound Traffic Flow
- No Data Segment

Average Peak Period Traffic Volume

DKS

Schematic Not to Scale

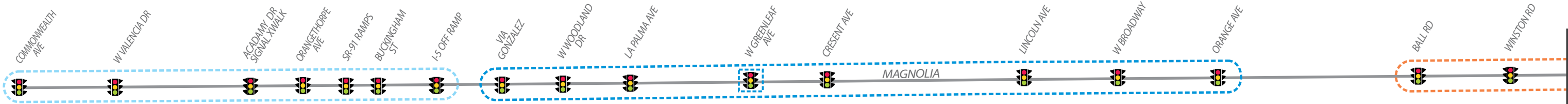
Figure 2d

KEY OPERATIONAL ISSUES & PROPOSED CYCLE LENGTHS

Magnolia – Midday Peak Period

Ellis Avenue to Pacific Coast Highway

Proposed Cycle Lengths & Groupings



Study Corridor
Existing Conditions & Operational Constraints



PM Peak Period Traffic Volumes



LEGEND

Existing Conditions & Operational Constraints

- Traffic Signal
- Cycle Length
- Free Cycle
- Posted Speed Limit
- Heavy Volume Movement
- School
- Shopping Center
- Traffic Signal Currently Coordinated (E/W)

Traffic Signal Ownership – Study Corridor

- Caltrans
- City of Fullerton
- City of Anaheim
- City of Stanton
- City of Westminster
- City of Garden Grove
- City of Fountain Valley
- City of Huntington Beach

Proposed Cycle Lengths & Groupings

- 90 Sec.
- 100 Sec.
- 120 Sec.
- 130 Sec.
- 140 Sec.
- Half Cycle
- Free Cycle

PM Peak Period Traffic Volumes

7-Day 24-Hour Machine Count Segment Locations:

- Northbound Traffic Flow
- Southbound Traffic Flow
- No Data Segment

Average Peak Period Traffic Volume

DKS

Schematic Not to Scale

Figure 3a

KEY OPERATIONAL ISSUES & PROPOSED CYCLE LENGTHS

Magnolia – PM Peak Period

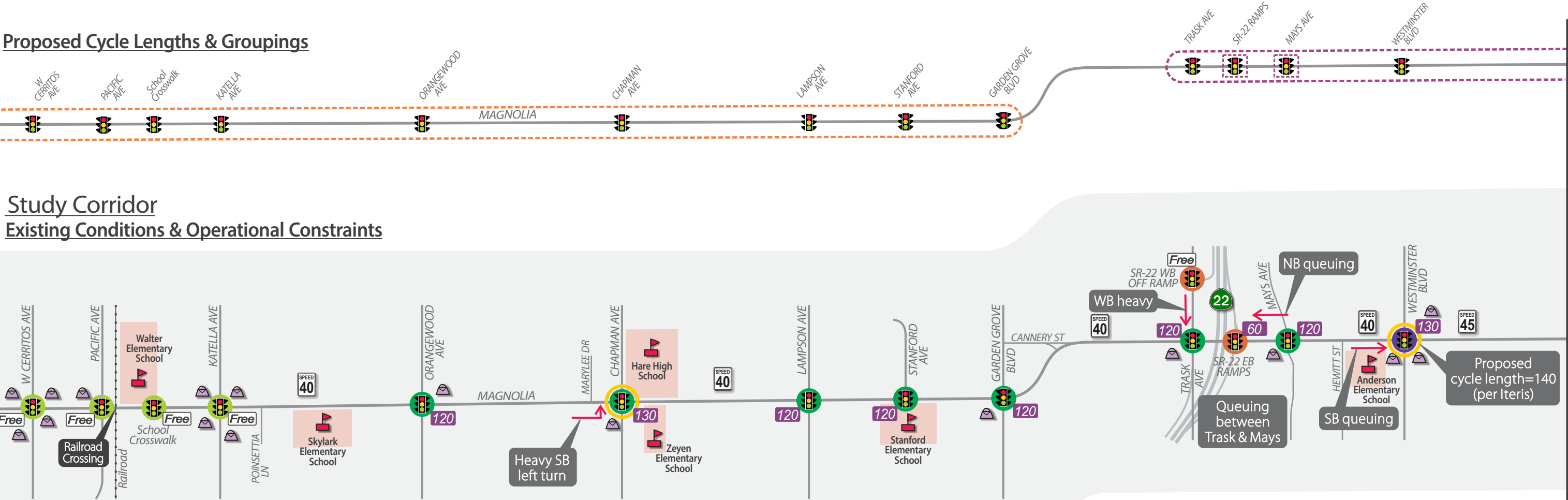
Commonwealth Avenue to Winston Road

Match Line – Figure 3b (Continues to W. Cerritos Ave.)

Match Line – Figure 3a (Continued from Winston Rd.)

Proposed Cycle Lengths & Groupings

Study Corridor
Existing Conditions & Operational Constraints



Match Line – Figure 3c (Continues to Hazard Ave.)

PM Peak Period Traffic Volumes



LEGEND

Existing Conditions & Operational Constraints

- Traffic Signal
- Cycle Length
- Free Cycle
- Posted Speed Limit
- Heavy Volume Movement
- School
- Shopping Center
- Traffic Signal Currently Coordinated (E/W)

Traffic Signal Ownership – Study Corridor

- Caltrans
- City of Fullerton
- City of Anaheim
- City of Stanton
- City of Westminster
- City of Garden Grove
- City of Fountain Valley
- City of Huntington Beach

Proposed Cycle Lengths & Groupings

- 90 Sec.
- 100 Sec.
- 120 Sec.
- Free Cycle
- 130 Sec.
- 140 Sec.
- Half Cycle

PM Peak Period Traffic Volumes

7-Day 24-Hour Machine Count Segment Locations:

- Northbound Traffic Flow
- Southbound Traffic Flow
- No Data Segment

0,000 Average Peak Period Traffic Volume

DKS

Schematic Not to Scale

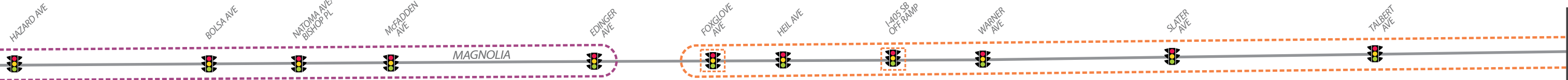
Figure 3b

KEY OPERATIONAL ISSUES & PROPOSED CYCLE LENGTHS

Magnolia – PM Peak Period

W. Cerritos Avenue to Westminster Boulevard

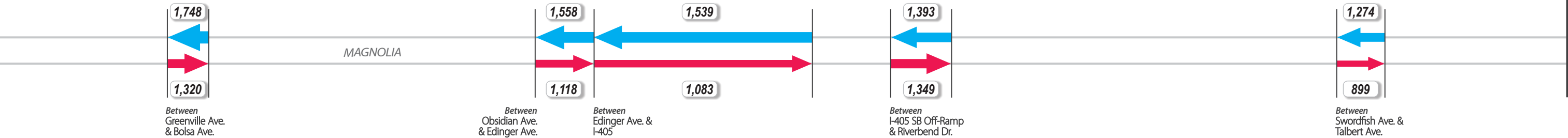
Proposed Cycle Lengths & Groupings



Study Corridor
Existing Conditions & Operational Constraints



PM Peak Period Traffic Volumes



LEGEND

Existing Conditions & Operational Constraints

- Traffic Signal
- Cycle Length
- Free Cycle
- Posted Speed Limit
- Heavy Volume Movement
- School
- Shopping Center
- Traffic Signal Currently Coordinated (E/W)

Traffic Signal Ownership – Study Corridor

- Caltrans
- City of Fullerton
- City of Anaheim
- City of Stanton
- City of Westminster
- City of Garden Grove
- City of Fountain Valley
- City of Huntington Beach

Proposed Cycle Lengths & Groupings

- 90 Sec.
- 100 Sec.
- 120 Sec.
- Free Cycle
- 130 Sec.
- 140 Sec.
- Half Cycle

PM Peak Period Traffic Volumes

7-Day 24-Hour Machine Count Segment Locations:

- Northbound Traffic Flow
- Southbound Traffic Flow
- No Data Segment

Average Peak Period Traffic Volume: 0,000

DKS

Schematic Not to Scale

Figure 3c

KEY OPERATIONAL ISSUES & PROPOSED CYCLE LENGTHS

Magnolia – PM Peak Period

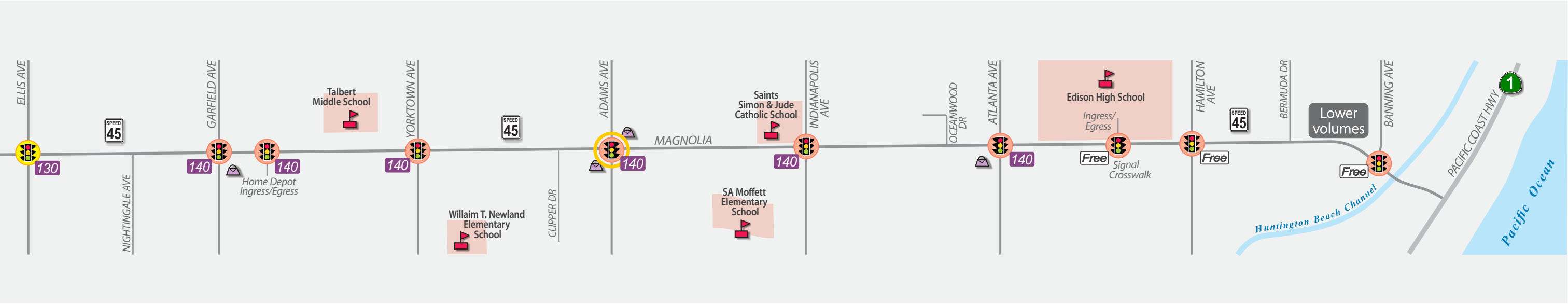
Hazard Avenue to Talbert Avenue

Match Line – Figure 3c (Continued from Talbert Ave.)

Proposed Cycle Lengths & Groupings



Study Corridor
Existing Conditions & Operational Constraints



PM Peak Period Traffic Volumes



LEGEND

Existing Conditions & Operational Constraints

- Traffic Signal
- Cycle Length
- Free Cycle
- Posted Speed Limit
- Heavy Volume Movement
- School
- Shopping Center
- Traffic Signal Currently Coordinated (E/W)

Traffic Signal Ownership – Study Corridor

- Caltrans
- City of Fullerton
- City of Anaheim
- City of Stanton
- City of Westminster
- City of Garden Grove
- City of Fountain Valley
- City of Huntington Beach

Proposed Cycle Lengths & Groupings

- 90 Sec.
- 100 Sec.
- 120 Sec.
- Free Cycle
- 130 Sec.
- 140 Sec.
- Half Cycle

PM Peak Period Traffic Volumes

- 7-Day 24-Hour Machine Count Segment Locations:
- Northbound Traffic Flow
- Southbound Traffic Flow
- No Data Segment
- Average Peak Period Traffic Volume

DKS

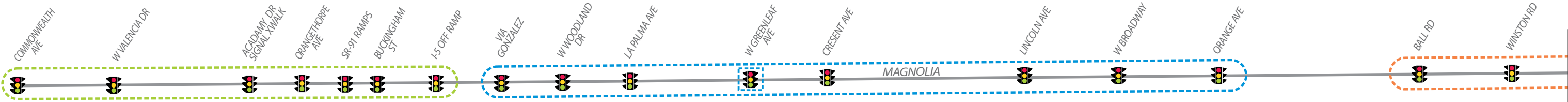


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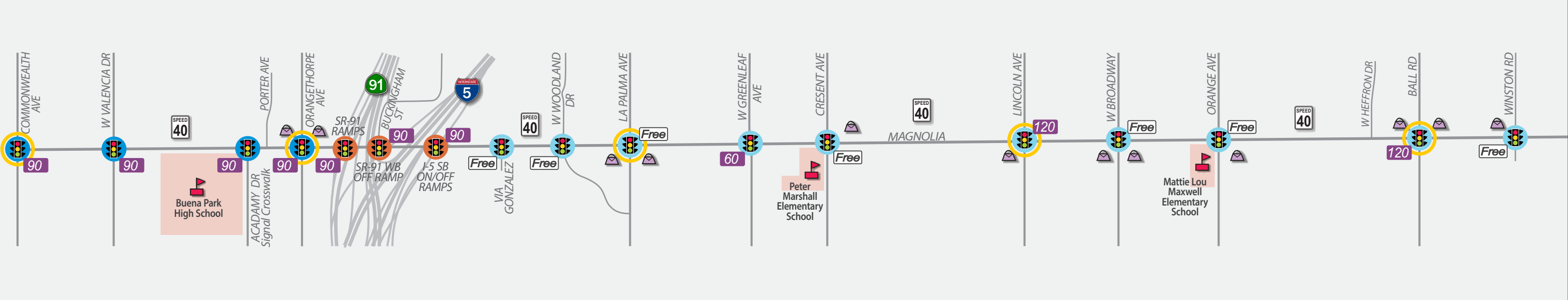
Figure 3d

KEY OPERATIONAL ISSUES & PROPOSED CYCLE LENGTHS
Magnolia – PM Peak Period
Ellis Avenue to Pacific Coast Highway

Proposed Cycle Lengths & Groupings



Study Corridor
Existing Conditions & Operational Constraints



Weekend Peak Period Traffic Volumes



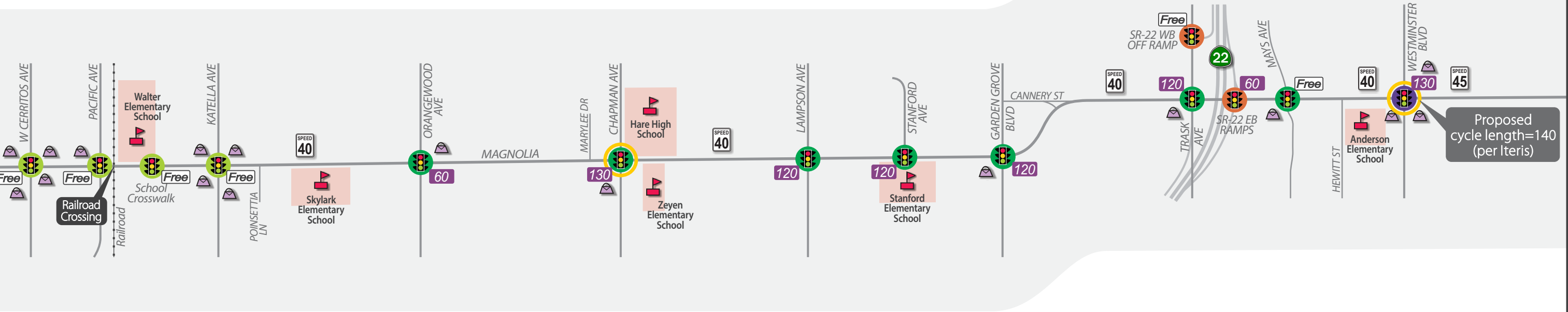
LEGEND

Existing Conditions & Operational Constraints	Traffic Signal Ownership – Study Corridor	Proposed Cycle Lengths & Groupings	Weekend Peak Period Traffic Volumes	DKS	Figure 4a
Traffic Signal	Caltrans	90 Sec.	7-Day 24-Hour Machine Count		KEY OPERATIONAL ISSUES & PROPOSED CYCLE LENGTHS Magnolia – Weekend Peak Period Commonwealth Avenue to Winston Road
Cycle Length	City of Fullerton	100 Sec.	Segment Locations:		
Free Cycle	City of Anaheim	120 Sec.	Northbound Traffic Flow		
Posted Speed Limit	City of Stanton	Free Cycle	Southbound Traffic Flow		
Heavy Volume Movement	City of Westminster	130 Sec.	No Data Segment		
School	City of Garden Grove	140 Sec.	Average Peak Period Traffic Volume		
Shopping Center	City of Fountain Valley	Half Cycle			

Match Line – Figure 4a (Continued from Winston Rd.)

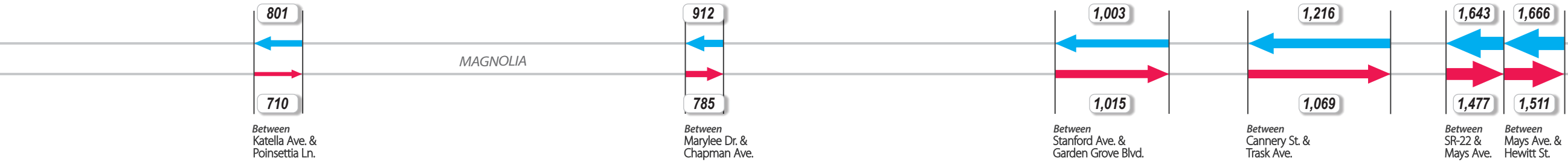
Proposed Cycle Lengths & Groupings

Study Corridor
Existing Conditions & Operational Constraints



Match Line – Figure 4c (Continues to Hazard Ave.)

Weekend Peak Period Traffic Volumes



LEGEND

Existing Conditions & Operational Constraints

- Traffic Signal
- Cycle Length
- Free Cycle
- Posted Speed Limit
- Heavy Volume Movement
- School
- Shopping Center
- Traffic Signal Currently Coordinated (E/W)

Traffic Signal Ownership – Study Corridor

- Caltrans
- City of Fullerton
- City of Anaheim
- City of Stanton
- City of Westminster
- City of Garden Grove
- City of Fountain Valley
- City of Huntington Beach

Proposed Cycle Lengths & Groupings

- 90 Sec.
- 100 Sec.
- 120 Sec.
- 130 Sec.
- 140 Sec.
- Half Cycle
- Free Cycle

Weekend Peak Period Traffic Volumes

7-Day 24-Hour Machine Count Segment Locations:

- Northbound Traffic Flow
- Southbound Traffic Flow
- No Data Segment

0,000 Average Peak Period Traffic Volume

DKS

Schematic Not to Scale

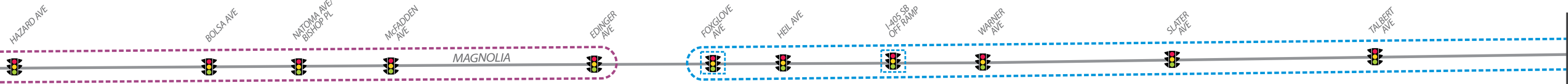
Figure 4b

KEY OPERATIONAL ISSUES & PROPOSED CYCLE LENGTHS

Magnolia – Weekend Peak Period

W. Cerritos Avenue to Westminister Boulevard

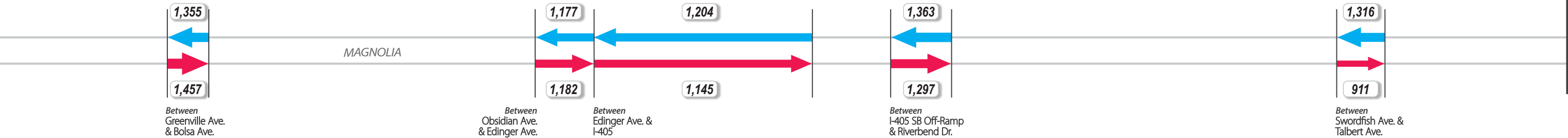
Proposed Cycle Lengths & Groupings



Study Corridor
Existing Conditions & Operational Constraints



AM Peak Period Traffic Volumes



LEGEND

Existing Conditions & Operational Constraints

- Traffic Signal
- Cycle Length
- Free Cycle
- Posted Speed Limit
- Heavy Volume Movement
- School
- Shopping Center
- Traffic Signal Currently Coordinated (E/W)

Traffic Signal Ownership – Study Corridor

- Caltrans
- City of Fullerton
- City of Anaheim
- City of Stanton
- City of Westminster
- City of Garden Grove
- City of Fountain Valley
- City of Huntington Beach

Proposed Cycle Lengths & Groupings

- 90 Sec.
- 100 Sec.
- 120 Sec.
- Free Cycle
- 130 Sec.
- 140 Sec.
- Half Cycle

Weekend Peak Period Traffic Volumes

7-Day 24-Hour Machine Count Segment Locations:

- Northbound Traffic Flow
- Southbound Traffic Flow
- No Data Segment

Average Peak Period Traffic Volume: 0,000

DKS

Schematic Not to Scale

Figure 4c

KEY OPERATIONAL ISSUES & PROPOSED CYCLE LENGTHS

Magnolia – Weekend Peak Period

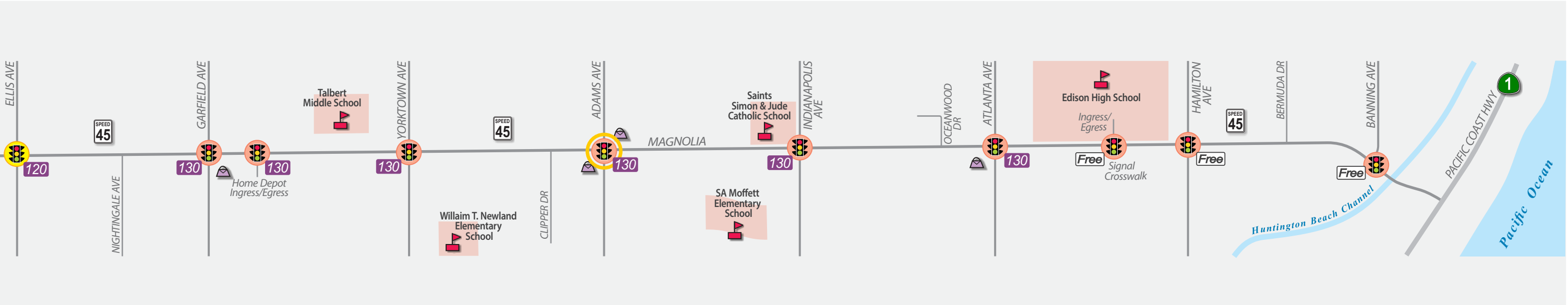
Hazard Avenue to Talbert Avenue

Match Line – Figure 4c (Continued from Talbert Ave.)

Proposed Cycle Lengths & Groupings



Study Corridor
Existing Conditions & Operational Constraints



Weekend Peak Period Traffic Volumes



LEGEND

Existing Conditions & Operational Constraints

- Traffic Signal
- Cycle Length
- Free Cycle
- Posted Speed Limit
- Heavy Volume Movement
- School
- Shopping Center
- Traffic Signal Currently Coordinated (E/W)

Traffic Signal Ownership – Study Corridor

- Caltrans
- City of Fullerton
- City of Anaheim
- City of Stanton
- City of Westminster
- City of Garden Grove
- City of Fountain Valley
- City of Huntington Beach

Proposed Cycle Lengths & Groupings

- 90 Sec.
- 100 Sec.
- 120 Sec.
- Free Cycle
- 130 Sec.
- 140 Sec.
- Half Cycle

Weekend Peak Period Traffic Volumes

7-Day 24-Hour Machine Count Segment Locations:

- Northbound Traffic Flow
- Southbound Traffic Flow
- No Data Segment

Average Peak Period Traffic Volume: 0,000

DKS

Schematic Not to Scale

Figure 4d

KEY OPERATIONAL ISSUES & PROPOSED CYCLE LENGTHS

Magnolia – Weekend Peak Period

Ellis Avenue to Pacific Coast Highway

Existing Cross Coordinated Corridors
Proposed Cross Coordinated Corridors
Impacted by Brookhurst Signal Timings (per Iteris)

		AM Peak		Midday Peak		PM Peak		Weekend Peak				
Agency	Node #	Cross Street	Existing	Proposed	Existing	Proposed	Existing	Proposed	Existing	Proposed	Comments	
Fullerton	3518	Commonwealth Avenue	100	100	90	90	100	100	90	90	Adjust Weekend splits to cover ped min	
	3531	W Valencia Drive	100	100	90	90	100	100	90	90		
	6385	Academy Drive										
	3539	Orangethorpe Avenue	100	100	90	90	100	100	90	90		
CALTRANS	2	SR91 Ramps									Can we change phase sequence for Weekend?	
	142	W/B Off Ramps - SR91/Buckingham	100	100	90	90	100	100	90	90		
	145	Off Ramps - I-5										
Anaheim	1278	Via Gonzalez	120	120	Free		120	120	Free		Adjust PM splits to cover ped min	
	609	W Woodland Drive			Free	120		Free	120	120		
	697	La Palma Avenue	120	120	Free		120	120	Free			
	1339	W Greenleaf Avenue	60		60	60	60	60	60	60	60	
	728	Crescent Avenue	Free	120	Free	120	Free	120	Free	120	Adjust Midday and PM splits to cover ped min	
	749	Lincoln Avenue	120	120	120	120	120	120	120	120		
	766	Broadway Avenue			Free				Free			
	770	Orange Avenue	120	120	Free	120	120	120	Free	120		
	784	Ball Road	130	130	130	130	130	130	130	130	Cycle length set by Iteris Brookhurst timings	
9298	Winston Street	120		120		120		Free				
Stanton	8903	Cerritos Avenue	Free		Free	130		Free		130	Cycle length set by Iteris Brookhurst timings	
	8915	Pacific Avenue	90		Free		90		Free			
	8921	School Crossing	Free		Free	65	Free		Free	65		
	8908	Katella Avenue			120				120			
			120		60	130	120		60	130		
Garden Grove	4187	Orangewood Avenue									Cycle length set by Iteris Brookhurst timings	
	4198	Chapman Avenue	130	130	130	130	130	130	130	130		
	4214	Lampson Avenue										
	4160	Stanford Avenue	120	130	120	130	120	130	120	130		
	4234	Garden Grove Blvd	130	130	130	130	130	130	130	130		
4244	Trask Avenue	120	140	120	130	120	140	120		140		
CALTRANS	32	Trask Ave @ Magnolia WB Off Ramp/SR-22	Free		Free		Free		Free		Cycle length set by Iteris Brookhurst timings (PM and Weekend)	
	35	E/B Off Ramp - SR-22	60		60		60	70	60	70		
Garden Grove	4178	Mays Avenue	120		Free	65	120	70	free			
Westminster	6090	Westminster Blvd	140	140	130	130	140	140	140	140		
	6077	Hazard Avenue									Adjust AM splits to cover ped min	
	6097	Bolsa Avenue										
	9111	Natoma Avenue/Bishop Drive	130	140	130	130	130	140	130	140		
	6109	McFadden Avenue										
	6112	Edinger Avenue										
Fountain Valley	6070	Foxglove	65	65	60	60	65	65	65	60	Adjust AM splits to cover ped min	
CALTRANS	7079	Heil Avenue	130	130	120	120	130	130	130	120		
	94	I-405 Off-Ramp SB	60	65	60	60	60	65	60	60		
Fountain Valley	7086	Warner Avenue	130	130	120	120	130	130	120	120		
	7094	Slater Avenue	130	130	120	120	130	130	120	120		
	7065	Talbert Avenue	130	130	120	120	130	130	120	120		
	7067	Ellis Avenue			120	120	130	130	120	120		
Huntington Beach	3925	Garfield Avenue									Adjust AM and PM splits to cover ped min, change Weekend sequence	
	4105	Home Depot	130	130	130	130	140	140	130	130		
	3934	Yorktown Avenue										
	3946	Adams Avenue	130	130	130	130	140	140	130	130		
	3953	Indianapolis Avenue	130	130	130	130	140	140	130	130		
	3963	Atlanta Avenue										
	3976	Edison High School Ingless/Egress	Free	Free	Free	Free	Free	Free	Free	Free		
	3966	Hamilton Avenue	Free	Free	Free	Free	Free	Free	Free	Free		
	3929	Banning Avenue	Free	Free	Free	Free	Free	Free	Free	Free		
NA	Pacific Coast Hwy	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a			