TRAFFIC STUDY REPORT

MONTEBELLO CORRIDOR GRADE SEPARATION PROJECT
CITY OF MONTEBELLO, CALIFORNIA

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For:

Alameda Corridor – East Construction Authority

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1. EXECUTIVE SUMMARY

The Alameda Corridor-East Construction Authority (ACE), in association with the City of Montebello and Union Pacific Railroad (UPRR) proposes grade separations at the railroad crossings on Montebello Boulevard and Maple Avenue and installing safety improvements, for enhanced safety at the crossings, on Greenwood and Vail Avenues. The purpose of the project is to alleviate congestion, improve safety, and mitigate associated impacts resulting from an anticipated increase in rail traffic.

Proposed project improvements include:

- Vail Avenue - Safety Improvements - Installation of Quad Gates
- Maple Avenue - Grade Separation (Underpass)
- Greenwood Avenue - Safety Improvements - Installation of Quad Gates
- Montebello Boulevard - Grade Separation (Underpass)

The traffic study analyzed the study area for the following scenarios:

- Existing Traffic Conditions - Year 2015
- Traffic Conditions during Construction - Year 2020
    - Maple Avenue Closed - Montebello Boulevard Open
    - Montebello Boulevard Closed - Maple Avenue Open
    - Maple Avenue and Montebello Boulevard Closed Concurrently
- Project Opening Year - Year 2022 (without project)
- Project Opening Year - Year 2022 (without project) + Other Developments
- Project Opening Year - Year 2022 (with project) + Other Developments
- Horizon Year - Year 2045 (without project)
- Horizon Year - Year 2045 + Project Traffic

The study area intersections are evaluated for significant traffic impacts based on the criteria provided by City of Montebello staff. This traffic study concludes that the traffic impacts during the construction of the proposed grade separation project at Maple Avenue and Montebello Boulevard are the same with the closure of Montebello Boulevard only or the closure of both Maple Avenue and Montebello Boulevard concurrently.

The traffic study also concludes that the following study area intersections experience significant impacts for the Project Opening Year (Year 2022) and Horizon Year (Year 2045) due to the proposed Montebello Boulevard Grade Separation Project:

25. Greenwood Avenue and Olympic Boulevard
26. Greenwood Avenue and Montebello Way
27. Greenwood Avenue and Mines Avenue
36. Montebello Boulevard and Mines Avenue

2. INTRODUCTION

2.1. PURPOSE

The purpose of this traffic study is to review and identify potential traffic impacts of the proposed Montebello Corridor Grade Separation Project. The traffic study shall review the proposed project and analyze the impacts of the proposed project on the study area from a traffic engineering point of view and recommend mitigation measures, as necessary.

This traffic study analyzes the study area for the following scenarios:

- Existing Traffic Conditions - Year 2015
- Traffic Conditions during Construction - Year 2020
  - Maple Avenue Closed - Montebello Boulevard Open
  - Montebello Boulevard Closed - Maple Avenue Open
  - Maple Avenue and Montebello Boulevard Closed Concurrently
- Project Opening Year - Year 2022 (without project)
- Project Opening Year - Year 2022 (without project) + Other Developments
- Project Opening Year - Year 2022 (with project) + Other Developments
- Horizon Year - Year 2045 (without project)
- Horizon Year - Year 2045 + Project Traffic

2.2. PROPOSED PROJECT

The San Gabriel Valley Council of Governments established Alameda Corridor-East Construction Authority (ACE) in 1998 to construct railroad improvements to alleviate congestion, improve safety, and mitigate associated impacts resulting from an anticipated increase in rail traffic. It is projected that rail traffic will increase 160% by the year 2020. The Montebello Corridor Grade Separation Project represents one of twenty planned grade separations for the 70-mile-long San Gabriel Valley mainline rail corridor. Construction has begun or is complete on a number of planned grade separations.

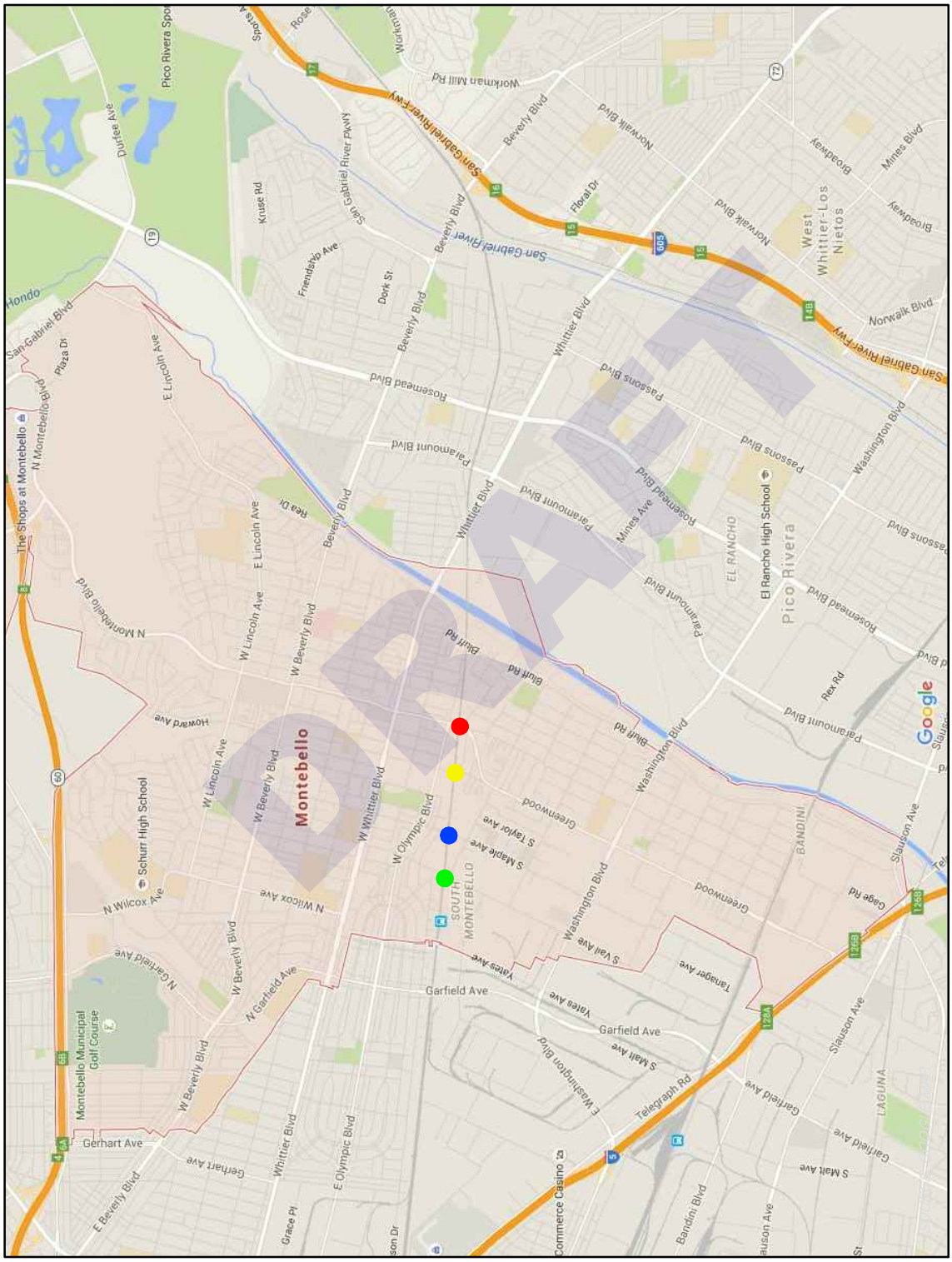
The Montebello Corridor Grade Separation project calls for constructing grade separation at the railroad crossings on Montebello Boulevard and Maple Avenue (See Appendix A for proposed project alternative plans) and installing safety improvements, including quad crossing gates for enhanced safety at the crossings on Greenwood and Vail Avenues. Project completion could result in eligibility for a "Quiet Zone" restriction on locomotive horn-blowing in Montebello. Exhibit 1 shows the proposed project location. Once completed, this project will offer the following benefits:

- Improve circulation on Montebello Boulevard and Maple Avenue without delay from lowered rail crossing gates
- Improve public safety by removing train and vehicle interaction
- Reduce emissions and eliminate horn noise

LEGEND

- VAIL AVE
- MAPLE AVE
- GREENWOOD AVE
- MONTEBELLO BLVD

NOT TO SCALE



LIN Consulting, Inc. **Traffic, Civil, and Electrical Consulting Engineers**	MONTEBELLO CORRIDOR GS PROJECT PHASE 1 - CONCEPT DESIGN TRAFFIC STUDY REPORT	EXHIBIT - 1 PROJECT LOCATION MAP

3. ANALYSIS METHODOLOGY

3.1. INTERSECTION LEVEL OF SERVICE METHODOLOGY

Level of Service (LOS) is a qualitative measure used to describe the operating conditions of a particular type of transportation facility. LOS of a facility is defined using letters "A" through "H", where LOS "A" represents the best operating conditions and LOS "H" represents worst operating conditions. The City of Montebello accepts the Intersection Capacity Utilization (ICU) methodology and Highway Capacity Manual (HCM) methodology as acceptable methods of LOS analysis for signalized and un-signalized intersections, respectively.

The ICU method sums up the amount of time required to serve all movements at saturation for a given cycle length and divides by that reference cycle length. This method is similar to taking the sum of critical volume to saturation (v/s) flow ratios, yet allows minimum timings to be considered. Synchro uses a 120 second reference cycle length and one hour traffic volume counts with no adjustment for Peak Hour Factor (PHF) to calculate the ICU of a signalized intersection. The relationship between LOS and ICU as defined in ICU 2003 is defined in Table 1.

Table 1: Level of Service (LOS) by Intersection Capacity Utilization (ICU)

LOS	ICU
A	0.00 – 55%
B	>55% - 64%
C	>64% - 73%
D	>73% - 82%
E	>82% - 91%
F	>91% – 100%
G	>100%-109%
H	>109%

The HCM methodology addresses the capacity, LOS and other performance measures for lane groups and intersection approaches as well as the LOS for the intersection as a whole. Capacity is evaluated in terms of the ratio of demand flow rate to capacity (V/C ratio), whereas LOS is evaluated on the basis of control delay per vehicle (in seconds per vehicle). The LOS for Two-Way-Stop-Controlled (TWSC) and All-Way-Stop-Controlled (AWSC) intersections is determined by the computed or measured controlled delay. The LOS for a TWSC is defined for each minor movement and not defined for intersection as a whole. Table 2 lists the LOS for AWSC and TWSC intersections based on average control delay.

Table 2: LOS Criteria for All-Way-Stop-Controlled and Two-Way-Stop-Controlled Intersections

LOS	Average Control Delay (sec/veh)
A	0-10
B	>10-15
C	>15-25
D	>25-35
E	>35-50
F	>50

3.2. ROADWAY SEGMENT LOS METHODOLOGY

The technical evaluation of the roadway system in the City of Montebello is performed using volume-to-capacity (V/C) ratios. V/C ratios are calculated based on current or future average daily traffic (ADT) volumes and daily capacity values for the various types of arterials. A LOS scale is used to evaluate roadway performance based on V/C ratios. The LOS levels range from "A" to "F," with LOS "A" representing free flow conditions and LOS "F" representing severe traffic congestion. Table 3 lists the daily volume capacities used for the different type of roadway segments for this traffic study and Table 4 lists the relationship between LOS and V/C ratio.

Table 3: Daily Volume Capacities for Roadway Segments

Roadway Type	Number of Lanes	Daily Capacity (Vehicles)
Collector	2	15,000
Secondary	4	30,000
Major	4	40,000
Major	6	60,000

Table 4: LOS by V/C Ratio for Roadway Segments

LOS	V/C Ratio
A	0.000 – 0.600
B	0.601 – 0.700
C	0.701 – 0.800
D	0.801 – 0.900
E	0.901 – 1.00
F	>1.00

3.3. SIGNIFICANT IMPACT CRITERIA

Per the information provided by the City of Montebello staff, a signalized intersection is considered significantly impacted by the proposed project based on the threshold shown in Table 5. For an un-signalized intersection, the intersection is considered significantly impacted by the proposed project if the LOS is "E" or worse. See Appendix B for email regarding significant impact criteria from City of Montebello.

Table 5: Significant Impact Criteria - Signalized Intersections

Existing ICU	**Related Increase in ICU**	
0.00 – 0.69	0.05	5%
0.70 – 0.79	0.03	3%
0.80 – 0.89	0.01	1%
>=0.90	0.005	0.5%

4. TRAFFIC VOLUMES

4.1. EXISTING TRAFFIC VOLUMES

Turning movement counts at the study intersections were conducted during the weekday AM peak period (7:00 AM to 9:00 AM) and PM peak period (4:00 PM to 6:00 PM) on Wednesday, September 16th and Thursday, September 24th, 2015. Average Daily Traffic (ADT) counts at the study area roadway segments were conducted on Wednesday, September 16th, 2015. Intersection turning movement and ADT count data are provided in Appendix C.

4.2. FUTURE TRAFFIC VOLUMES

The future traffic volumes (project construction year, opening and horizon year traffic volumes) are calculated based on an annual growth rate of 0.67% compounded annually. This growth rate is based on the data available from Los Angeles County 2010 Congestion Management Plan (CMP). LCI prepared a growth rate calculation memo and coordinated with City of Montebello for concurrence before calculating the projected future traffic volumes. See Appendix D for the growth rate concurrence email from the City of Montebello.

5. EXISTING CONDITIONS

5.1. STUDY AREA

The study area was chosen to be wide enough to capture the changes in traffic circulation resulting from the project construction and the proposed project improvements at Montebello Boulevard and Maple Avenue grade crossings. The study area intersections and roadway segments were submitted to the City of Montebello for their concurrence as part of the Traffic Study Memorandum of Understanding (MoU). The traffic study analyzed forty seven (47) intersections and eleven (11) roadway segments. Exhibit 2 shows the existing study intersection controls and intersection lane geometry.

EXHIBIT - 2
EXISTING (YEAR 2015)
LANE GEOMETRY

MONTEBELLO CORRIDOR GS PROJECT
PHASE 1 - CONCEPT DESIGN
TRAFFIC STUDY REPORT

LIN Consulting, Inc.
Traffic, Civil, and Electrical Consulting Engineers

5.2. STUDY INTERSECTIONS

1. S. Garfield Avenue (NS) and W. Whittier Boulevard (EW)

Northbound and southbound Garfield Avenue have three lanes that include an exclusive left turn only lane. Eastbound and westbound Whittier Boulevard have three lanes that include an exclusive left turn only lane. On all approaches, the outside through-right turn lane is wide enough to accommodate an exclusive right-turn only lane. This is a signalized intersection with permissive left turn phasing on all approaches.

2. S. Garfield Avenue (NS) and W. Olympic Boulevard (EW)

Northbound and southbound Garfield Avenue have three lanes that include an exclusive left turn only lane. Eastbound and Westbound Olympic Boulevard have three lanes that include an exclusive left turn only lane. This is a signalized intersection with permissive left turn phasing on all approaches.

3. S. Garfield Avenue (NS) and Ferguson Drive (EW)

Northbound Garfield Avenue has four lanes that include an exclusive left turn only lane, and an exclusive right turn only lane. Southbound Garfield Avenue has three lanes that include an exclusive left turn only lane. The outside through-right turn lane is wide enough to accommodate an exclusive right turn only lane. Eastbound and westbound Ferguson Drive have one approach lane that is wide enough to act as a through-left turn lane and an exclusive right turn only lane. This is a signalized intersection with permissive left turn phasing on all approaches.

4. S. Garfield Avenue (NS) and Flotilla Street (EW)

Northbound and southbound Garfield Avenue have three lanes that include an exclusive left turn only lane. The outside through-right turn lanes are wide enough to accommodate an exclusive right-turn only lane. Eastbound and westbound Flotilla Street have two lanes that include a through-left turn lane and a through-right turn lane with no exclusive turns on either approach. This is a signalized intersection with permissive left turn phasing on all approaches.

5. S. Garfield Avenue (NS) and Washington Boulevard (EW)

Northbound and southbound Garfield Avenue have three lanes that include an exclusive left turn only lane. The outside through-right turn lanes are wide enough to accommodate an exclusive right-turn only lane. Eastbound and westbound Washington Boulevard have four lanes that include an exclusive left turn only lane. This is a signalized intersection with protected left turn phasing on all approaches along with right turn overlap for southbound Garfield Avenue.

6. Concourse Avenue (NS) and W. Whittier Boulevard (EW)

Northbound and southbound Concourse Avenue have two lanes that include an exclusive left turn only lane. The through lanes are wide enough to accommodate an exclusive right-turn only lane. Eastbound and westbound Whittier Boulevard have three lanes that include an exclusive left turn only lane. The outside through-right turn lane is wide enough to accommodate an exclusive right turn only lane. This is a signalized intersection with permissive left turn phasing on all approaches.

7. Concourse Avenue (NS) and W. Olympic Boulevard (EW)

Northbound and southbound Concourse Avenue have one approach lane that is wide enough to act as a through-left turn lane and an exclusive right turn only lane. Eastbound and westbound Olympic Boulevard have three lanes that include an exclusive left turn only lane. The outside through-right lane is wide enough to accommodate an exclusive right turn only lane. This is a signalized intersection with permissive left turn phasing on all approaches.

8. Yates Avenue (NS) and Washington Boulevard (EW)

Northbound and southbound Yates Avenue have two lanes that include an exclusive left turn only lane. The through lane is wide enough to accommodate an exclusive right turn only lane. Eastbound and westbound Washington Boulevard have four lanes that include an exclusive left turn only lane. This is a signalized intersection with permissive left turn phasing on all approaches.

9. Wilcox Avenue (NS) and W. Whittier Boulevard (EW)

This is a T-intersection with a driveway acting as the south leg of the intersection. Southbound Wilcox Avenue has two lanes that include an exclusive left turn only lane and an exclusive right turn only lane. Eastbound Whittier Boulevard has three lanes that include an exclusive left turn only lane. Westbound Whittier Boulevard has two through lanes, with the outside through-right turn lane being wide enough to accommodate an exclusive right turn only lane. This is a signalized intersection with permissive left turn phasing for eastbound approach.

10. 21st Street (NS) and W. Whittier Boulevard (EW)

Northbound 21st Street has one approach lane. Southbound 21st Street has one approach lane that is wide enough to act as a through left turn lane and an exclusive right turn only lane. Eastbound and westbound Whittier Boulevard have three lanes that include an exclusive left turn only lane. The outside through-right turn lane is wide enough to accommodate an exclusive right turn only lane. This is a signalized intersection with permissive left turn phasing on all approaches.

11. S. Vail Avenue (NS) and W. Whittier Boulevard (EW)

Northbound Vail Avenue has two approach lanes with no directional pavement marking. Southbound Vail Avenue has one approach lane that acts as a through-left turn lane, and is wide enough to accommodate an exclusive right turn only lane. Eastbound and Westbound Whittier Boulevard have three lanes that include an exclusive left turn only lane and a through-right turn lane. This is a signalized intersection with permissive left turn phasing on all approaches.

12. S. Vail Avenue (NS) and W. Olympic Boulevard (EW)

Northbound and southbound Vail Avenue have one approach lane that acts as through-left turn lane and is wide enough to accommodate an exclusive right turn only lane. Eastbound and westbound Olympic Boulevard have three lanes that include a through-right turn lane and an exclusive left turn only lane. This is a signalized intersection with permissive left turn phasing on all approaches.

13. S. Vail Avenue (NS) and Flotilla Street (EW)

Northbound and southbound Vail Avenue have two lanes that include an exclusive left turn only lane. Eastbound Flotilla Avenue has two lanes that include an exclusive left turn only lane. Westbound Flotilla Street has one through-right turn lane with no left turns allowed. This is a signalized intersection with permissive left turn phasing on all approaches except westbound Flotilla Street.

14. S. Vail Avenue (NS) and Washington Boulevard (EW)

Northbound and southbound Vail Avenue have two approach lanes with no directional pavement markings. Eastbound Washington Boulevard has three lanes that include an exclusive left turn only lane. The outside through-right turn on eastbound Washington Boulevard is wide enough to accommodate an exclusive right turn only lane. Westbound Washington Boulevard has four lanes that include an exclusive left turn only lane. This is a signalized intersection with permissive left turn phasing on northbound and southbound Vail Avenue, and protected left turn phasing on eastbound and westbound Washington Boulevard.

15. California Avenue (NS) and W. Whittier Boulevard (EW)

Northbound California Avenue has one approach lane that is wide enough to act as an exclusive left turn only lane and an exclusive right turn only lane. Westbound Whittier Boulevard has three lanes that include an exclusive left turn only lane. Eastbound Whittier Boulevard has two lanes. This is a signalized T-intersection with permissive left turn phasing on westbound Whittier Boulevard.

16. Maple Avenue (NS) and Beverly Boulevard (EW)

Southbound Maple Avenue has one approach lane. Northbound Maple Avenue has one approach lane that is wide enough to act as a through left turn lane and an exclusive right turn only lane. Eastbound and westbound Beverly Boulevard have four lanes that include an exclusive left turn only lane. This is a signalized intersection with permissive left turn phasing on all approaches.

17. S. Maple Avenue (NS) and W. Whittier Boulevard (EW)

Northbound and southbound Maple Avenue have two lanes that include an exclusive left turn only lane. Eastbound and westbound Whittier Boulevard have three lanes that include an exclusive left turn only lane. This is a signalized intersection with permissive left turn phasing on all approaches.

18. S. Maple Avenue (NS) and Olympic Boulevard (EW)

Northbound and southbound Maple Avenue have one approach lane that is wide enough to act as a through-left turn lane and an exclusive right turn only lane. Eastbound Olympic Boulevard has three lanes that include an exclusive left turn only lane. The outside through-right turn lane on eastbound Olympic Boulevard is wide enough to accommodate an exclusive right turn only lane. Westbound Olympic Boulevard has three lanes that include an exclusive left turn only lane. This is a signalized intersection with permissive left turn phasing on all approaches.

19. S. Maple Avenue (NS) and S. Mines Avenue (EW)

This is an un-signalized, all-way-stop-control intersection with one approach lane in all directions. The approach lanes are wide enough to act as through left turn lane and an exclusive right turn only lane.

20. S. Maple Avenue (NS) and Beach Street (EW)

This is an un-signalized, all-way-stop-control intersection with one approach lane in all directions. The approach lanes on eastbound Beach Street and northbound Maple Avenue are wide enough to act as through-left turn lane and an exclusive right turn only lane.

21. S. Maple Avenue (NS) and Washington Boulevard (EW)

Northbound and southbound Maple Avenue have two lanes that include one through-left turn lane and an exclusive right turn only lane. Eastbound and westbound Washington Boulevard have four lanes that include an exclusive left turn only lane. This is a signalized intersection with permissive left turn phasing on northbound and southbound Maple Avenue, and protected left turn phasing on eastbound and westbound Washington Boulevard.

22. S. Taylor Avenue (NS) and W. Whittier Boulevard (EW)

Northbound and southbound Taylor Avenue have one approach lane that is wide enough to act as a through-left turn lane and an exclusive right turn only lane. Eastbound and westbound Whittier Boulevard have three lanes that include an exclusive left turn only lane. This is a signalized intersection with permissive left turn phasing on all approaches.

23. Greenwood Avenue (NS) and W. Whittier Boulevard (EW)

This is an un-signalized intersection with stop control on north and southbound Greenwood Avenue. Northbound and southbound Greenwood Avenue have one approach lane each with southbound Greenwood Avenue wide enough to accommodate an exclusive right turn only lane. Eastbound and westbound Whittier Boulevard have three lanes that include an exclusive left turn only lane.

24. Greenwood Avenue (NS) and Los Angeles Avenue (EW)

This is an un-signalized intersection with stop control on east and westbound Los Angeles Avenue. Northbound and southbound Greenwood Avenue have one approach lane that is wide enough to accommodate an exclusive right turn only lane. Eastbound and westbound Los Angeles Avenue have one approach lane each. The through-right turn lane on eastbound Los Angeles Avenue is wide enough to accommodate an exclusive right turn only lane.

25. Greenwood Avenue (NS) and W. Olympic Boulevard (EW)

Northbound and southbound Greenwood Avenue have one approach lane each that is wide enough to accommodate an exclusive right turn only lane. Eastbound and westbound Olympic Boulevard have three lanes that include an exclusive left turn only lane. This is a signalized intersection with permissive left turn phasing on all approaches.

26. Montebello Way (NS) and Greenwood Avenue (EW)

For analysis and exhibits purposes, we assumed that the southbound (geographically) Greenwood Avenue will be treated as west leg of the intersection with one approach lane that is right turn only. This is a three legged intersection with stop control for eastbound Greenwood Avenue. Southbound Montebello Way has three lanes that include an exclusive right turn only lane. Northbound Montebello Way has three lanes that include an exclusive left turn only lane.

27. Greenwood Avenue (NS) and W. Mines Street (EW)

Northbound and Southbound Greenwood Avenue have three lanes that include an exclusive left turn only lane. Eastbound and westbound Mines Street have two lanes that include an exclusive left turn only lane. The through right turn lane on westbound Mines Street is wide

enough to act as a through lane and an exclusive right turn only lane. This is a signalized intersection with permissive left turn phasing on all approaches.

28. Greenwood Avenue (NS) and Beach Street (EW)

Northbound and Southbound Greenwood Avenue have three lanes that include an exclusive left turn only lane. Eastbound and westbound Beach Street have one approach lane that is wide enough to act as a through-left turn lane and an exclusive right turn lane. This is a signalized intersection with permissive left turn phasing on all approaches.

29. Greenwood Avenue (NS) and Washington Street (EW)

Northbound Greenwood Avenue has three lanes that include an exclusive left turn only lane. Eastbound and westbound Washington Boulevard have four lanes that include an exclusive left turn only lane. The through-right turn lane on northbound Greenwood Avenue is wide enough to act as a through lane and an exclusive right turn only lane. This is a signalized intersection with protected left turn phasing on eastbound and westbound Washington Street and permissive left turn phasing on northbound and southbound Greenwood Avenue.

30. S. 10th St (NS) and W. Whittier Boulevard (EW)

Northbound and southbound 10th Street have one approach lane each. Eastbound and westbound Whittier Boulevard have three lanes that include an exclusive left turn only lane. The approach lane on southbound 10th Street is wide enough to act as a through-left and an exclusive right turn only lane. This is a signalized intersection with permissive left turn phasing on all approaches.

31. Montebello Boulevard (NS) and W. Whittier Boulevard (EW)

Northbound Montebello Boulevard has four lanes that include an exclusive left turn only lane and an exclusive right turn only lane. Southbound Montebello Boulevard has three lanes that include an exclusive left turn only lane. The outside through-right turn lane is wide enough to act as a through lane and an exclusive right turn only lane. Eastbound and westbound Whittier Boulevard have three lanes that include an exclusive left turn only lane. The through-right turn lane on eastbound Whittier Boulevard is wide enough to act as a through lane and an exclusive right turn only lane. This is a signalized intersection with protected left turn on all approaches.

32. Montebello Boulevard (NS) and Los Angeles Avenue (EW)

This is an un-signalized intersection with stop control on Los Angeles Avenue. Northbound and southbound Montebello Boulevard have three lanes that include an exclusive left turn only lane. The outside through-right turn lane is wide enough to accommodate a through lane and an exclusive right turn only lane. Eastbound and westbound Los Angeles Avenue have

one approach lane that is wide enough to act as a through-left turn lane and an exclusive right turn only lane.

33. Montebello Boulevard (NS) and W. Olympic Boulevard (EW)

Northbound and southbound Montebello Boulevard have three lanes that include an exclusive left turn only lane. The outside through-right turn lane is wide enough to act as a through lane and an exclusive right turn only lane. Eastbound and westbound Olympic Boulevard have two lanes with no directional pavement markings. The outside through-right turn lane on westbound Olympic Boulevard is wide enough to act as a through lane and an exclusive right turn only lane. This is a signalized intersection with permissive left turn phasing on all approaches.

34. Montebello Boulevard (NS) and Roosevelt Avenue (EW)

This is an un-signalized T-intersection with stop control on westbound Roosevelt Avenue. Westbound Roosevelt Avenue has two lanes, an exclusive left turn only lane and an exclusive right turn only lane. Southbound Montebello Boulevard has three lanes that include an exclusive left turn only lane. Northbound Montebello Boulevard has two lanes with outside through-right turn lane wide enough to act as a through lane and an exclusive right turn only lane.

35. Montebello Boulevard (NS) and Truck Avenue (EW)

Northbound Montebello Boulevard has two lanes, one through lane and a through-right turn lane. Southbound Montebello Boulevard has three lanes that include an exclusive left turn only lane. The outside through-right turn lane on northbound and southbound Montebello Boulevard is wide enough to act as a through lane and an exclusive right turn only lane. Eastbound Truck Way has one approach lane that allows only right turns. Westbound Truck Way has one approach lanes with no left turns. This is a signalized intersection with protected left turn phasing on southbound Montebello Boulevard.

36. Montebello Boulevard (NS) and W. Mines Avenue (EW)

This is an un-signalized, all-way-stop-control intersection with one approach lane in all directions. The approach lanes are wide enough to act as through-left turn lane and an exclusive right turn only lane.

37. Montebello Boulevard (NS) and Washington Boulevard (EW)

Northbound and southbound Montebello Boulevard have one approach lane that is wide enough to act as a through-left turn lane and an exclusive right turn only lane. Eastbound and westbound Washington Boulevard have four lanes that include an exclusive left turn only lane. This is a signalized intersection with permissive left turn phasing on northbound and

southbound Montebello Boulevard and protected left turn phasing on eastbound and westbound Washington Boulevard.

38. S. 5th Street (NS) and W. Whittier Boulevard (EW)

Northbound and southbound 5th Street have one approach lane that is wide enough to act as a through-left turn lane and an exclusive right turn only lane. Eastbound and westbound Whittier Boulevard have two lanes with no directional pavement markings. This is a signalized intersection with permissive left turn phasing on all approaches.

39. S. 4th Street (NS) and W. Whittier Boulevard (EW)

Northbound and southbound 4th Street have one approach lane. The approach lane on southbound 4th Street is wide enough to act as a through-left turn lane and an exclusive right turn only lane. Eastbound and westbound Whittier Boulevard have two lanes with no directional pavement marking. This is a signalized intersection with permissive left turn phasing on all approaches.

40. S. 4th Street (NS) and Roosevelt Avenue (EW)

This is an un-signalized T-intersection with no stop control on any approach. Southbound 4th Street has one approach lane that is wide enough to act as an exclusive left turn only lane and an exclusive right turn only lane. Eastbound and westbound Roosevelt Avenue have one approach lane.

41. S. 2nd Street (NS) and W. Whittier Boulevard (EW)

Northbound and southbound 2nd Street have one approach lane that is wide enough to act as a through-left turn lane and an exclusive right turn only lane. Eastbound and westbound Whittier Boulevard have two lanes with no directional pavement markings. The outside through-right turn lane on eastbound and westbound Whittier Boulevard is wide enough to act as a through lane and an exclusive right turn only lane. This is a signalized intersection with permissive left turn phasing on all approaches.

42. Bluff Road (NS) and W. Whittier Boulevard (EW)

Northbound and southbound Bluff Road have one approach lane that is wide enough to act as a through-left turn lane and an exclusive right turn only lane. Eastbound and westbound Whittier Boulevard consist of three lanes that include an exclusive left turn only lane. This is a signalized intersection with protected left turn phasing on eastbound and westbound Whittier Boulevard and permissive left turn phasing on northbound and southbound Bluff Road.

43. Bluff Road (NS) and Los Angeles Ave (EW)

This is an un-signalized T-intersection with stop control on all approaches. Northbound Bluff Road has one shared through-left turn lane and southbound Bluff Road has one shared through-right turn lane that is wide enough to act as a through lane and an exclusive right turn only lane. Eastbound Los Angeles Avenue has one approach lane that is wide enough to act as an exclusive left turn only lane and an exclusive right turn only lane.

44. Bluff Road (NS) and Roosevelt Avenue (EW)

This is an un-signalized T-intersection with stop control on all approaches. Northbound Bluff Road has one shared through-left turn lane and southbound Bluff Road has one shared through-right turn lane that is wide enough to act as a through lane and an exclusive right turn only lane. Eastbound Roosevelt Avenue has one approach lane that is wide enough to act as an exclusive left turn only lane and an exclusive right turn only lane.

45. Bluff Road (NS) and W. Mines Street (EW)

This is an un-signalized T-intersection with stop control on all approaches. Northbound Bluff Road has one shared through-left turn lane and southbound Bluff Road has one shared through-right turn lane that is wide enough to act as a through lane and an exclusive right turn only lane. Eastbound Mines Street has one approach lane that is wide enough to act as an exclusive left turn only lane and an exclusive right turn only lane.

46. Bluff Road (NS) and Beach Street (EW)

This is an un-signalized T-intersection with stop control on all approaches. Northbound Bluff Road has one shared through-left turn lane and southbound Bluff Road has one shared through-right turn lane. Eastbound Beach Street has one approach lane that is wide enough to act as an exclusive left turn only lane and an exclusive right turn only lane.

47. Bluff Road (NS) and Washington Boulevard (EW)

Northbound Bluff Road has two lanes that include an exclusive left turn only lane. Southbound Bluff road has three lanes that include an exclusive right turn only lane and an exclusive left turn only lane. Eastbound and westbound Washington Boulevard have four lanes that include an exclusive left turn only lane. This is a signalized intersection with protected left turn phasing on eastbound and westbound Washington Boulevard and split phasing on northbound and southbound Bluff Road.

5.3. ROADWAY SEGMENTS

Garfield Avenue is a major north-south roadway with two lanes in each direction and connects Santa Ana Freeway (I-5) to the south and Pomona Freeway (SR-60) to the north. Garfield Avenue is grade separated from the UPRR tracks in the project vicinity. Garfield Avenue south of Whittier Boulevard lies within City of Commerce and unincorporated area of County of Los Angeles. The posted speed limit on Garfield Avenue is 35 mph and 40 mph north and south of the UPRR tracks, respectively. Garfield Avenue is served by Line 30 and 70 of the Montebello Bus Lines Transit.

Vail Avenue is a north-south collector roadway with one lane in each direction. The posted speed limit on this roadway is 30 mph.

Maple Avenue is a north-south local roadway with one lane in each direction. The posted speed limit for this roadway is 25 mph. Maple Avenue is served by Line 70 of the Montebello Bus Lines Transit.

Greenwood Avenue is a major north-south roadway with two lanes in each direction. North of Mines Avenue, Greenwood Avenue is a local street with one lane in each direction. The posted speed limit on Greenwood Avenue south of Mines Avenue is 40 mph. Greenwood Avenue south of Mines Avenue is served by Line 20 of the Montebello Bus Lines Transit.

Montebello Boulevard is a major north-south roadway with two lanes in each direction. South of Truck Way, Montebello Boulevard becomes a local residential street with one lane in each direction. The posted speed limit for southbound Montebello Boulevard between Beverly Boulevard and Truck Way is 35 mph and 40 mph, south of Truck Way. The posted speed limit for northbound Montebello Boulevard, north of Truck Way, is 40 mph. Montebello Boulevard north of Mines Avenue is served by Line 20 of the Montebello Bus Lines Transit.

Bluff Road is a north-south collector roadway with one lane in each direction. Bluff Road is grade separated over the UPRR tracks by an overpass. The posted speed limit for this roadway is 25 mph.

Whittier Boulevard is a major east-west roadway with two lanes in each direction. Whittier Boulevard provides access to San Gabriel River Freeway (I-605) across San Gabriel River for the eastbound traffic from City of Montebello. The posted speed limit for this roadway is 30 mph. Whittier Boulevard is served by Line 10 of the Montebello Bus Lines Transit.

Olympic Boulevard is an east-west collector roadway with two lanes in each direction. Olympic Boulevard east of Montebello Boulevard is a residential street that ends at 4th Street. The posted speed limit for this roadway is 35 mph.

Mines Avenue is an east-west local street with one lane in each direction, connecting Vail Avenue to the west and Bluff Road to the east. Mines Avenue is served by Line 70 of the Montebello Bus Lines Transit.

Beach Street is an east-west local street with one lane in each direction, connecting Vail Avenue to the west and Bluff Road to the east.

Washington Boulevard is a major east-west roadway with three lanes in each direction. Washington Boulevard provides access to Santa Ana Freeway (I-5) to the west and San Gabriel River Freeway (I-605) to the east. The posted speed limit for this roadway is 40 mph. Washington Boulevard is served by Line 50 and 70 of the Montebello Bus Lines Transit.

6. EXISTING TRAFFIC CONDITIONS (YEAR 2015)

6.1. INTERSECTION LEVEL OF SERVICE

Existing traffic conditions at the study area intersections are depicted in Table 6, 7, 8A and 8B. The LOS analysis worksheets from Synchro for existing traffic conditions are included in Appendix E. The intersection turning movement volumes for the Existing Traffic Conditions (Year 2015) during weekday AM and PM peak hours are shown in Exhibit 3.

Table 6: Existing (Year 2015) Traffic Conditions - Signalized Intersections

#	Intersection	AM Peak Hour		PM Peak Hour	
		LOS	ICU	LOS	ICU
1	Garfield Ave. and Whittier Blvd.	D	81.3%	F	94.7%
2	Garfield Ave. and Olympic Blvd.	F	95.1%	G	108.8%
3	Garfield Ave. and Ferguson Dr.	D	79.3%	E	84.1%
4	Garfield Ave. and Flotilla St.	C	68.9%	E	86.8%
5	Garfield Ave. and Washington Blvd.	D	78.7%	F	91.7%
6	Concourse Ave. and Whittier Blvd.	C	66.8%	D	77.7%
7	Concourse Ave. and Olympic Blvd.	C	71.1%	E	83.0%
8	Yates Ave. and Washington Blvd.	A	51.7%	B	62.6%
9	Whittier Blvd. and Wilcox Ave.	D	75.6%	C	67.2%
10	21st St. and Whittier Blvd.	C	70.7%	B	63.4%
11	Vail Ave. and Whittier Blvd.	F	92.4%	F	94.7%
12	Vail Ave. and Olympic Blvd.	E	89.7%	G	104.5%
13	Vail Ave. and Flotilla St.	B	62.5%	A	52.3%
14	Vail Ave. and Washington Blvd.	D	80.5%	F	92.4%
15	California Ave. and Whittier Blvd.	A	52.5%	A	50.6%
16	Maple Ave. and Beverly Blvd.	D	81.9%	E	86.0%
17	Maple Ave. and Whittier Blvd.	D	77.6%	C	71.5%
18	Maple Ave. and Olympic Blvd.	C	71.1%	D	76.3%
21	Maple Ave. and Washington Blvd.	C	66.1%	C	65.9%
22	Taylor Ave. and Whittier Blvd.	B	60.8%	B	61.1%
25	Greenwood Ave. and Olympic Blvd.	C	64.4%	D	78.4%
27	Greenwood Ave. and Mines Ave.	B	59.3%	C	66.8%
28	Greenwood Ave. and Beach St.	B	55.8%	B	57.6%
29	Greenwood Ave. and Washington Blvd.	E	83.0%	E	83.4%
30	10th St. and Whittier Blvd.	B	59.1%	A	52.2%
31	Montebello Blvd. and Whittier Blvd.	E	85.0%	D	81.8%
33	Montebello Blvd. and Olympic Blvd.	C	67.6%	D	78.9%
35	Montebello Way/Montebello Blvd. and Truck Way	A	53.2%	B	60.7%
37	Montebello Blvd. and Washington Blvd.	C	70.2%	C	67.9%
38	5th St. and Whittier Blvd.	D	78.1%	D	74.8%
39	4th St. and Whittier Blvd.	E	85.0%	E	86.0%
41	2nd St. and Whittier Blvd.	G	100.4%	E	87.5%
42	Bluff Rd. and Washington Blvd.	E	84.2%	F	93.5%
47	Bluff Rd. and Whittier Blvd.	E	87.5%	D	73.2%

Table 7: Existing (Year 2015) Traffic Conditions - All-Way-Stop-Controlled Intersections

#	Intersection	AM Peak Hour		PM Peak Hour	
		LOS	Delay	LOS	Delay
19	Maple Ave. and Mines Ave.	B	10.9	B	12.1
20	Maple Ave. and Beach St.	B	10.7	B	10.0
36	Montebello Blvd. and Mines Ave.	B	10.4	B	10.8
43	Bluff Rd. and Los Angeles Ave.	B	11.6	C	24.7
44	Bluff Rd. and Roosevelt Ave.	B	10.8	C	15.2
45	Bluff Rd. and Mines Ave.	B	10.1	B	13.0
46	Bluff Rd. and Beach St.	B	10.1	B	11.3

Table 8A: Existing (Year 2015) Traffic Conditions - AM Peak Hour - Two-Way-Stop-Controlled Intersections

#	Intersection	NB Approach		SB Approach		EB Approach		WB Approach	
		LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay
23	Greenwood Ave. and Whittier Blvd.	F	54.7	D	25.2	N/A	N/A	N/A	N/A
24	Greenwood Ave. and Los Angeles Ave.	N/A	N/A	N/A	N/A	B	10.4	B	11.4
26	Greenwood Ave. and Montebello Way	N/A	N/A	B	13.5	N/A	N/A	N/A	N/A
32	Montebello Blvd. and Los Angeles Ave.	N/A	N/A	N/A	N/A	C	15.2	C	16.3
34	Montebello Blvd. and Roosevelt Ave.	N/A	N/A	N/A	N/A	N/A	N/A	B	11.8
40	Roosevelt Ave. and 4th St.	N/A	N/A	A	9.7	N/A	N/A	N/A	N/A

Table 8B: Existing (Year 2015) Traffic Conditions PM Peak Hour - Two-Way-Stop-Controlled Intersections

#	Intersection	NB Approach		SB Approach		EB Approach		WB Approach	
		LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay
23	Greenwood Ave. and Whittier Blvd.	F	89.5	C	17.6	N/A	N/A	N/A	N/A
24	Greenwood Ave. and Los Angeles Ave.	N/A	N/A	N/A	N/A	B	10.6	B	10.9
26	Greenwood Ave. and Montebello Way	N/A	N/A	C	18.1	N/A	N/A	N/A	N/A
32	Montebello Blvd. and Los Angeles Ave.	N/A	N/A	N/A	N/A	C	17.3	C	16.3
34	Montebello Blvd. and Roosevelt Ave.	N/A	N/A	N/A	N/A	N/A	N/A	B	11.9
40	Roosevelt Ave. and 4th St.	N/A	N/A	A	9.1	N/A	N/A	N/A	N/A

LEGEND

XX/(XX) = AM/(PM) PEAK HOUR VOLUMES

EXHIBIT - 3
EXISTING (YEAR 2015)
AM/PM PEAK HOUR TRAFFIC VOLUMES

MONTEBELLO CORRIDOR GS PROJECT
PHASE 1 - CONCEPT DESIGN
TRAFFIC STUDY REPORT

LIN Consulting, Inc.
Traffic, Civil, and Electrical Consulting Engineers

6.2. ROADWAY SEGMENT LOS

Existing traffic conditions at the study area roadway segments are depicted in Exhibit 4. All the study area roadway segments operate at LOS ‘C’ or better.

	LOCATION	ADT (V)	CAPACITY (C)	V/C	LOS
A	GARFIELD AVENUE - BETWEEN OLYMPIC BOULEVARD AND FERGUSON DRIVE	31,924	40,000	0.80	C
B	VAIL AVENUE - BETWEEN UPRR TRACKS AND OLYMPIC BOULEVARD	8,124	15,000	0.54	A
C	VAIL AVENUE - BETWEEN UPRR TRACKS AND BEACH STREET	8,936	15,000	0.60	A
D	WASHINGTON BOULEVARD - BETWEEN VAIL AVENUE AND MAPLE AVENUE	30,993	40,000	0.77	C
E	MAPLE AVENUE - BETWEEN UPRR TRACKS AND OLYMPIC BOULEVARD	5,908	15,000	0.39	A
F	MAPLE AVENUE - BETWEEN UPRR TRACKS AND BEACH STREET	4,897	15,000	0.33	A
G	WHITTIER BOULEVARD- BETWEEN VAIL AVENUE AND GREENWOOD AVENUE	26,796	40,000	0.67	B
H	OLYMPIC BOULEVARD - BETWEEN MAPLE AVENUE AND GREENWOOD AVENUE	11,774	40,000	0.29	A
I	OLYMPIC BOULEVARD - BETWEEN GREENWOOD AVENUE AND MONTEBELLO BOULEVARD	16,586	40,000	0.41	A
J	GREENWOOD AVENUE - WHITTIER BOULEVARD AND OLYMPIC BOULEVARD	4,201	40,000	0.11	A
K	GREENWOOD AVENUE - BETWEEN MINES AVENUE AND BEACH STREET	20,239	40,000	0.51	A
L	MONTEBELLO BOULEVARD - BETWEEN LOS ANGELES AVENUE AND OLYMPIC BOULEVARD	19,127	40,000	0.48	A
M	ROOSEVELT AVENUE - BETWEEN 4TH STREET AND BLUFF ROAD	2,275	15,000	0.15	A
N	BLUFF ROAD - BETWEEN ROOSEVELT AVENUE AND WHITTIER BOULEVARD	7,703	15,000	0.51	A
O	BLUFF ROAD - BETWEEN BEACH STREET AND WASHINGTON BOULEVARD	7,025	15,000	0.47	A
P	MAPLE AVENUE - BETWEEN BEVERLY BOULEVARD AND WHITTIER BOULEVARD	5,648	15,000	0.38	A

ADT - AVERAGE DAILY TRAFFIC
LOS - LEVEL OF SERVICE
TRAFFIC COUNTS CONDUCTED ON WED. SEP 16TH, 2015

LEGEND
= ADT COUNT LOCATION
= LOS "A"
= LOS "B"
= LOS "C"

NOT TO SCALE

LIN Consulting, Inc.
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EXHIBIT - 4
EXISTING YEAR (YEAR 2015)
ROADWAY SEGMENT LOS

7. YEAR 2020 TRAFFIC CONDITIONS (WITHOUT PROJECT)

The proposed project construction is estimated to begin in Year 2019 and completed by year 2021. For the purpose of evaluating the study area during project construction, we assume the project construction year as Year 2020.

7.1. INTERSECTION LEVEL OF SERVICE

Year 2020 traffic conditions at the study area intersections are depicted in Table 9, 10, 11A and 11B. The intersection turning movement volumes for the Year 2020 Traffic Conditions during weekday AM and PM peak hours are shown in Exhibit 5. The LOS analysis worksheets from Synchro for Year 2020 traffic conditions are included in Appendix F.

Table 9: Year 2020 Traffic Conditions - Signalized Intersections

#	Intersection	AM Peak Hour		PM Peak Hour	
		LOS	ICU	LOS	ICU
1	Garfield Ave. and Whittier Blvd.	E	83.6%	F	97.5%
2	Garfield Ave. and Olympic Blvd.	F	97.9%	H	112.0%
3	Garfield Ave. and Ferguson Dr.	D	81.5%	E	86.4%
4	Garfield Ave. and Flotilla St.	C	70.7%	E	89.3%
5	Garfield Ave. and Washington Blvd.	D	80.9%	F	94.3%
6	Concourse Ave. and Whittier Blvd.	C	68.7%	D	79.9%
7	Concourse Ave. and Olympic Blvd.	D	73.1%	E	85.3%
8	Yates Ave. and Washington Blvd.	A	52.9%	C	64.3%
9	Whittier Blvd. and Wilcox Ave.	D	77.8%	C	69.1%
10	21st St. and Whittier Blvd.	C	72.7%	C	64.8%
11	Vail Ave. and Whittier Blvd.	F	95.1%	F	97.4%
12	Vail Ave. and Olympic Blvd.	F	92.2%	G	107.6%
13	Vail Ave. and Flotilla St.	C	64.3%	A	53.6%
14	Vail Ave. and Washington Blvd.	E	82.8%	F	95.0%
15	California Ave. and Whittier Blvd.	A	54.0%	A	52.0%
16	Maple Ave. and Beverly Blvd.	E	84.2%	E	88.4%
17	Maple Ave. and Whittier Blvd.	D	79.7%	D	73.3%
18	Maple Ave. and Olympic Blvd.	D	73.1%	D	78.3%
21	Maple Ave. and Washington Blvd.	C	67.7%	C	67.4%
22	Taylor Ave. and Whittier Blvd.	B	62.4%	B	62.8%
25	Greenwood Ave. and Olympic Blvd.	C	66.2%	D	80.8%
27	Greenwood Ave. and Mines Ave.	B	60.8%	C	68.5%
28	Greenwood Ave. and Beach St.	B	57.2%	B	59.0%
29	Greenwood Ave. and Washington Blvd.	E	85.4%	E	85.8%
30	10th St. and Whittier Blvd.	B	60.7%	A	53.3%
31	Montebello Blvd. and Whittier Blvd.	E	87.5%	E	84.1%
33	Montebello Blvd. and Olympic Blvd.	C	69.4%	D	81.2%
35	Montebello Way/Montebello Blvd. and Truck Way	A	54.7%	B	62.4%
37	Montebello Blvd. and Washington Blvd.	C	72.2%	C	69.7%
38	5th St. and Whittier Blvd.	D	80.2%	D	77.0%
39	4th St. and Whittier Blvd.	E	87.3%	E	88.6%
41	2nd St. and Whittier Blvd.	G	103.4%	E	90.2%
42	Bluff Rd. and Washington Blvd.	E	86.4%	F	96.3%
47	Bluff Rd. and Whittier Blvd.	E	90.1%	D	75.2%

Table 10: Year 2020 Traffic Conditions - All-Way-Stop-Controlled Intersections

#	Intersection	AM Peak Hour		PM Peak Hour	
		LOS	Delay	LOS	Delay
19	Maple Ave. and Mines Ave.	B	11.2	B	12.5
20	Maple Ave. and Beach St.	B	10.9	B	10.2
36	Montebello Blvd. and Mines Ave.	B	10.7	B	11.1
43	Bluff Rd. and Los Angeles Ave.	B	11.9	D	28.2
44	Bluff Rd. and Roosevelt Ave.	B	11.1	C	16.3
45	Bluff Rd. and Mines Ave.	B	10.3	B	13.6
46	Bluff Rd. and Beach St.	B	10.3	B	11.7

Table 11A: Year 2020 Traffic Conditions AM Peak Hour - Two-Way-Stop-Controlled Intersections

#	Intersection	NB Approach		SB Approach		EB Approach		WB Approach	
		LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay
23	Greenwood Ave. and Whittier Blvd.	F	62.1	D	26.1	N/A	N/A	N/A	N/A
24	Greenwood Ave. and Los Angeles Ave.	N/A	N/A	N/A	N/A	B	10.4	B	11.6
26	Greenwood Ave. and Montebello Way	N/A	N/A	B	13.9	N/A	N/A	N/A	N/A
32	Montebello Blvd. and Los Angeles Ave.	N/A	N/A	N/A	N/A	B	14.9	C	16.4
34	Montebello Blvd. and Roosevelt Ave.	N/A	N/A	N/A	N/A	N/A	N/A	B	12.0
40	Roosevelt Ave. and 4th St.	N/A	N/A	A	9.3	N/A	N/A	N/A	N/A

Table 11B: Year 2020 Traffic Conditions PM Peak Hour - Two-Way-Stop-Controlled Intersections

#	Intersection	NB Approach		SB Approach		EB Approach		WB Approach	
		LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay
23	Greenwood Ave. and Whittier Blvd.	F	116.7	C	18.6	N/A	N/A	N/A	N/A
24	Greenwood Ave. and Los Angeles Ave.	N/A	N/A	N/A	N/A	B	10.7	B	11.0
26	Greenwood Ave. and Montebello Way	N/A	N/A	C	19.3	N/A	N/A	N/A	N/A
32	Montebello Blvd. and Los Angeles Ave.	N/A	N/A	N/A	N/A	C	17.1	C	16.2
34	Montebello Blvd. and Roosevelt Ave.	N/A	N/A	N/A	N/A	N/A	N/A	B	11.1
40	Roosevelt Ave. and 4th St.	N/A	N/A	A	9.2	N/A	N/A	N/A	N/A

LEGEND

XX/(XX) = AM/(PM) PEAK HOUR VOLUMES

EXHIBIT - 5

PROJECT CONSTRUCTION YEAR (YEAR 2020)

AM/PM PEAK HOUR TRAFFIC VOLUMES

MONTEBELLO CORRIDOR GS PROJECT

PHASE 1 - CONCEPT DESIGN

TRAFFIC STUDY REPORT

LIN Consulting, Inc.

Traffic, Civil, and Electrical Consulting Engineers

7.2. ROADWAY SEGMENT LOS

Year 2020 traffic conditions at the study area roadway segments are depicted in Exhibit 6. All the study area roadway segments operate at LOS "D" or better.

	LOCATION	ADT* (V)	CAPACITY (C)	V/C	LOS
A	GARFIELD AVENUE - BETWEEN OLYMPIC BOULEVARD AND FERGUSON DRIVE	33,008	40,000	0.83	D
B	VAIL AVENUE - BETWEEN UPRR TRACKS AND OLYMPIC BOULEVARD	8,400	15,000	0.56	A
C	VAIL AVENUE - BETWEEN UPRR TRACKS AND BEACH STREET	9,239	15,000	0.62	B
D	WASHINGTON BOULEVARD - BETWEEN VAIL AVENUE AND MAPLE AVENUE	32,045	40,000	0.80	C
E	MAPLE AVENUE - BETWEEN UPRR TRACKS AND OLYMPIC BOULEVARD	6,109	15,000	0.41	A
F	MAPLE AVENUE - BETWEEN UPRR TRACKS AND BEACH STREET	5,063	15,000	0.34	A
G	WHITTIER BOULEVARD- BETWEEN VAIL AVENUE AND GREENWOOD AVENUE	27,706	40,000	0.69	B
H	OLYMPIC BOULEVARD - BETWEEN MAPLE AVENUE AND GREENWOOD AVENUE	12,174	40,000	0.30	A
I	OLYMPIC BOULEVARD - BETWEEN GREENWOOD AVENUE AND MONTEBELLO BOULEVARD	17,149	40,000	0.43	A
J	GREENWOOD AVENUE - WHITTIER BOULEVARD AND OLYMPIC BOULEVARD	4,344	40,000	0.11	A
K	GREENWOOD AVENUE - BETWEEN MINES AVENUE AND BEACH STREET	20,926	40,000	0.52	A
L	MONTEBELLO BOULEVARD - BETWEEN LOS ANGELES AVENUE AND OLYMPIC BOULEVARD	19,776	40,000	0.49	A
M	ROOSEVELT AVENUE - BETWEEN 4TH STREET AND BLUFF ROAD	2,352	15,000	0.16	A
N	BLUFF ROAD - BETWEEN ROOSEVELT AVENUE AND WHITTIER BOULEVARD	7,965	15,000	0.53	A
O	BLUFF ROAD - BETWEEN BEACH STREET AND WASHINGTON BOULEVARD	7,264	15,000	0.48	A
P	MAPLE AVENUE - BETWEEN BEVERLY BOULEVARD AND WHITTIER BOULEVARD	5,840	15,000	0.39	A

ADT - AVERAGE DAILY TRAFFIC
LOS - LEVEL OF SERVICE
** PROJECTED*

LEGEND

A = ADT COUNT LOCATION

= LOS "A"
= LOS "B"
= LOS "C"
= LOS "D"

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MONTEBELLO CORRIDOR GS PROJECT
PHASE 1 - CONCEPT DESIGN
TRAFFIC STUDY REPORT

EXHIBIT - 6
PROJECT CONSTRUCTION YEAR (YEAR 2020)
ROADWAY SEGMENT LOS

8. YEAR 2020 TRAFFIC CONDITIONS (DURING PROJECT CONSTRUCTION)

The following paragraphs describe the proposed detour routes, traffic assignments and traffic conditions at the study area intersections and roadway segments for various construction scenarios. It is our assumption that there will be a complete closure of the roadway during the construction of the grade separation at Maple Avenue and/or Montebello Boulevard.

8.1. MAPLE AVENUE CLOSED – MONTEBELLO BOULEVARD OPEN

Exhibit 7 shows the proposed detour route to be implemented during the construction of the Maple Avenue Grade Separation. The northbound and southbound traffic on Maple Avenue will be detoured on to Mines Avenue, Vail Avenue, and Olympic Boulevard and then back onto Maple Avenue.

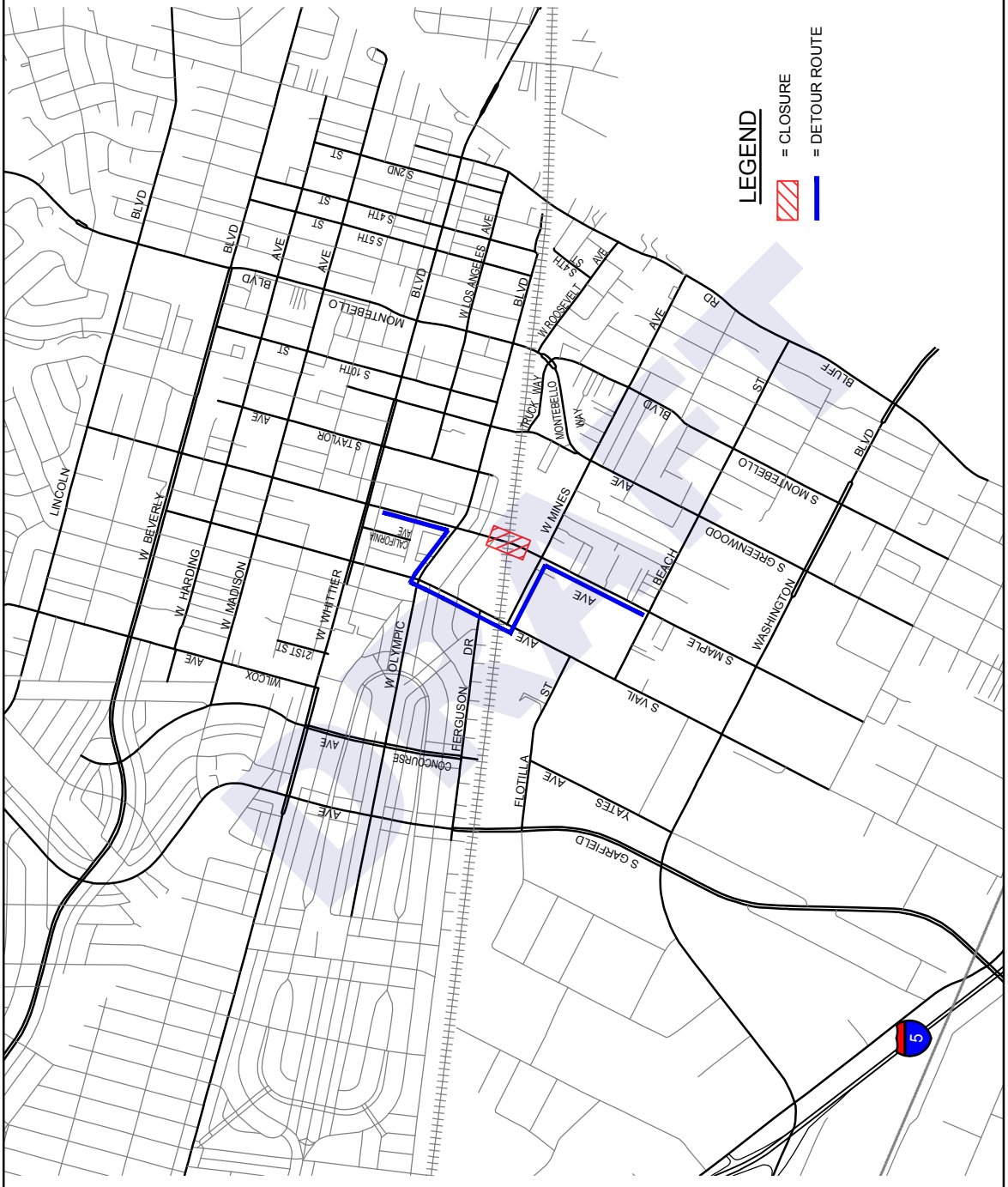
Exhibit 8 shows the estimated percentage of traffic that will be distributed to adjacent streets because of the proposed closures and detour during construction of the Maple Avenue Grade Separation. It is our assumption that there will be a certain number of drivers using alternate routes as shown, in lieu of the proposed detour route.

INTERSECTION LEVEL OF SERVICE

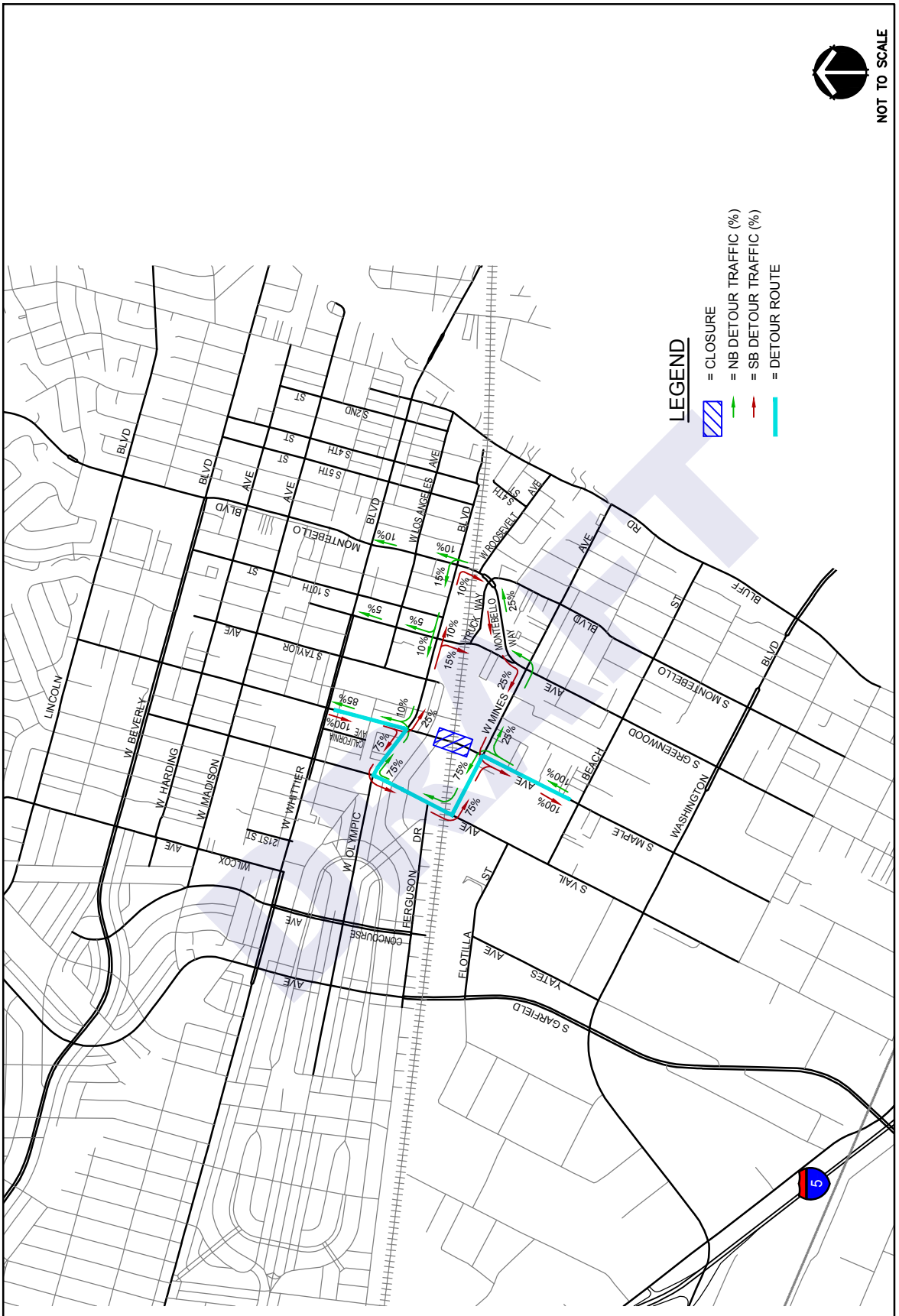
Year 2020 traffic conditions at the study area intersections with the Maple Avenue closure and proposed detour route implemented are depicted in Table 12, 13, 14A and 14B. The intersection turning movement volumes for the Year 2020 with the Maple Avenue closure and proposed detour route implemented during weekday AM and PM peak hours are shown in Exhibit 9. The LOS analysis worksheets from Synchro for Year 2020 traffic conditions with Maple Avenue closure are included in Appendix G.

ROADWAY SEGMENT LEVEL OF SERVICE

Year 2020 traffic conditions at the study area roadway segments with the Maple Avenue closure and proposed detour route implemented are depicted in Exhibit 10. All the study area roadway segments operate at LOS “D” or better.



LIN Consulting, Inc. **Traffic, Civil, and Electrical Consulting Engineers**	MONTEBELLO CORRIDOR GS PROJECT PHASE 1 - CONCEPT DESIGN TRAFFIC STUDY REPORT	EXHIBIT - 7 DETOUR ROUTE CLOSURE OF MAPLE AVENUE



LIN Consulting, Inc. **Traffic, Civil, and Electrical Consulting Engineers**	MONTEBELLO CORRIDOR GS PROJECT PHASE 1 - CONCEPT DESIGN TRAFFIC STUDY REPORT	EXHIBIT - 8 DETOUR ROUTE CLOSURE OF MAPLE AVENUE TRAFFIC DETOUR PERCENTAGE

Table 12: Year 2020 + Maple Ave Closure Traffic Conditions - Signalized Intersections

#	Intersection	AM Peak Hour		PM Peak Hour	
		LOS	ICU	LOS	ICU
1	Garfield Ave. and Whittier Blvd.	E	83.6%	F	97.5%
2	Garfield Ave. and Olympic Blvd.	F	97.9%	H	112.0%
3	Garfield Ave. and Ferguson Dr.	D	81.5%	E	86.4%
4	Garfield Ave. and Flotilla St.	C	70.7%	E	89.3%
5	Garfield Ave. and Washington Blvd.	D	80.9%	F	94.3%
6	Concourse Ave. and Whittier Blvd.	C	68.7%	D	79.9%
7	Concourse Ave. and Olympic Blvd.	D	73.1%	E	85.3%
8	Yates Ave. and Washington Blvd.	A	52.9%	C	64.3%
9	Whittier Blvd. and Wilcox Ave.	D	77.8%	C	69.1%
10	21st St. and Whittier Blvd.	C	72.7%	C	64.8%
11	Vail Ave. and Whittier Blvd.	F	95.1%	F	97.4%
12	Vail Ave. and Olympic Blvd.	F	92.2%	H	120.2%
13	Vail Ave. and Flotilla St.	C	64.3%	A	53.6%
14	Vail Ave. and Washington Blvd.	E	82.8%	F	95.0%
15	California Ave. and Whittier Blvd.	A	54.0%	A	52.0%
16	Maple Ave. and Beverly Blvd.	E	84.2%	E	88.4%
17	Maple Ave. and Whittier Blvd.	D	79.7%	D	73.3%
18	Maple Ave. and Olympic Blvd.	D	75.3%	B	63.4%
21	Maple Ave. and Washington Blvd.	C	67.7%	C	67.4%
22	Taylor Ave. and Whittier Blvd.	B	62.4%	B	62.8%
25	Greenwood Ave. and Olympic Blvd.	C	68.0%	E	83.2%
27	Greenwood Ave. and Mines Ave.	C	67.0%	C	70.1%
28	Greenwood Ave. and Beach St.	B	57.2%	B	59.0%
29	Greenwood Ave. and Washington Blvd.	E	85.4%	E	85.8%
30	10th St. and Whittier Blvd.	B	60.7%	A	53.3%
31	Montebello Blvd. and Whittier Blvd.	E	87.5%	E	85.1%
33	Montebello Blvd. and Olympic Blvd.	D	73.6%	E	85.0%
35	Montebello Way/Montebello Blvd. and Truck Way	B	57.4%	C	64.7%
37	Montebello Blvd. and Washington Blvd.	C	72.2%	C	69.7%
38	5th St. and Whittier Blvd.	D	80.2%	D	77.0%
39	4th St. and Whittier Blvd.	E	87.3%	E	88.6%
41	2nd St. and Whittier Blvd.	G	103.4%	E	90.2%
42	Bluff Rd. and Washington Blvd.	E	86.4%	F	96.3%
47	Bluff Rd. and Whittier Blvd.	E	90.1%	D	75.2%

Table 13: Year 2020 + Maple Ave Closure Traffic Conditions - All-Way-Stop-Controlled Intersections

#	Intersection	AM Peak Hour		PM Peak Hour	
		LOS	Delay	LOS	Delay
19	Maple Ave. and Mines Ave.	B	14.3	B	12.3
20	Maple Ave. and Beach St.	B	10.9	B	10.2
36	Montebello Blvd. and Mines Ave.	B	10.7	B	11.1
43	Bluff Rd. and Los Angeles Ave.	B	11.9	D	28.2

44	Bluff Rd. and Roosevelt Ave.	B	11.1	C	16.3
45	Bluff Rd. and Mines Ave.	B	10.3	B	13.6
46	Bluff Rd. and Beach St.	B	10.3	B	11.7

Table 14A: Year 2020 + Maple Ave Closure Traffic Conditions AM Peak Hour - Two-Way-Stop-Controlled Intersections

#	Intersection	NB Approach		SB Approach		EB Approach		WB Approach	
		LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay
23	Greenwood Ave. and Whittier Blvd.	F	103.0	D	27.9	N/A	N/A	N/A	N/A
24	Greenwood Ave. and Los Angeles Ave.	N/A	N/A	N/A	N/A	B	10.5	B	11.7
26	Greenwood Ave. and Montebello Way	N/A	N/A	A	8.4	N/A	N/A	N/A	N/A
32	Montebello Blvd. and Los Angeles Ave.	N/A	N/A	N/A	N/A	B	14.3	C	15.7
34	Montebello Blvd. and Roosevelt Ave.	N/A	N/A	N/A	N/A	N/A	N/A	B	11.2
40	Roosevelt Ave. and 4th St.	N/A	N/A	A	9.3	N/A	N/A	N/A	N/A

Table 14B: Year 2020 + Maple Ave Closure Traffic Conditions PM Peak Hour - Two-Way-Stop-Controlled Intersections

#	Intersection	NB Approach		SB Approach		EB Approach		WB Approach	
		LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay
23	Greenwood Ave. and Whittier Blvd.	F	156.2	C	21.2	N/A	N/A	N/A	N/A
24	Greenwood Ave. and Los Angeles Ave.	N/A	N/A	N/A	N/A	B	10.8	B	11.1
26	Greenwood Ave. and Montebello Way	N/A	N/A	A	8.4	N/A	N/A	N/A	N/A
32	Montebello Blvd. and Los Angeles Ave.	N/A	N/A	N/A	N/A	C	16.4	C	15.6
34	Montebello Blvd. and Roosevelt Ave.	N/A	N/A	N/A	N/A	N/A	N/A	B	10.2
40	Roosevelt Ave. and 4th St.	N/A	N/A	A	9.2	N/A	N/A	N/A	N/A

EXHIBIT - 9
PROJECT CONSTRUCTION YEAR
WITH MAPLE AVE CLOSURE (YEAR 2020)
AM/PM PEAK HOUR TRAFFIC VOLUMES

MONTEBELLO CORRIDOR GS PROJECT
PHASE 1 - CONCEPT DESIGN
TRAFFIC STUDY REPORT

LIN Consulting, Inc.
Traffic, Civil, and Electrical Consulting Engineers

	LOCATION	ADT* (V)	CAPACITY (C)	V/C	LOS
A	GARFIELD AVENUE - BETWEEN OLYMPIC BOULEVARD AND FERGUSON DRIVE	33,008	40,000	0.83	D
B	VAIL AVENUE - BETWEEN UPRR TRACKS AND OLYMPIC BOULEVARD	12,658	15,000	0.84	D
C	VAIL AVENUE - BETWEEN UPRR TRACKS AND BEACH STREET	9,239	15,000	0.62	B
D	WASHINGTON BOULEVARD - BETWEEN VAIL AVENUE AND MAPLE AVENUE	32,045	40,000	0.80	C
E	MAPLE AVENUE - BETWEEN UPRR TRACKS AND OLYMPIC BOULEVARD	6,109	15,000	0.41	A
F	MAPLE AVENUE - BETWEEN UPRR TRACKS AND BEACH STREET	5,063	15,000	0.34	A
G	WHITTIER BOULEVARD- BETWEEN VAIL AVENUE AND GREENWOOD AVENUE	27,706	40,000	0.69	B
H	OLYMPIC BOULEVARD - BETWEEN MAPLE AVENUE AND GREENWOOD AVENUE	13,207	40,000	0.33	A
I	OLYMPIC BOULEVARD - BETWEEN GREENWOOD AVENUE AND MONTEBELLO BOULEVARD	17,845	40,000	0.45	A
J	GREENWOOD AVENUE - WHITTIER BOULEVARD AND OLYMPIC BOULEVARD	4,344	40,000	0.11	A
K	GREENWOOD AVENUE - BETWEEN MINES AVENUE AND BEACH STREET	20,926	40,000	0.52	A
L	MONTEBELLO BOULEVARD - BETWEEN LOS ANGELES AVENUE AND OLYMPIC BOULEVARD	19,776	40,000	0.49	A
M	ROOSEVELT AVENUE - BETWEEN 4TH STREET AND BLUFF ROAD	2,352	15,000	0.16	A
N	BLUFF ROAD - BETWEEN ROOSEVELT AVENUE AND WHITTIER BOULEVARD	7,965	15,000	0.53	A
O	BLUFF ROAD - BETWEEN BEACH STREET AND WASHINGTON BOULEVARD	7,264	15,000	0.48	A
P	MAPLE AVENUE - BETWEEN BEVERLY BOULEVARD AND WHITTIER BOULEVARD	5,840	15,000	0.39	A

ADT - AVERAGE DAILY TRAFFIC
LOS - LEVEL OF SERVICE
** PROJECTED*

NOT TO SCALE

LEGEND
= ADT COUNT LOCATION
= CLOSURE
= LOS "A"
= LOS "B"
= LOS "C"
= LOS "D"

LIN Consulting, Inc.
Traffic, Civil, and Electrical Consulting Engineers

MONTEBELLO CORRIDOR GS PROJECT
PHASE 1 - CONCEPT DESIGN
TRAFFIC STUDY REPORT

EXHIBIT - 10
PROJECT CONSTRUCTION YEAR WITH DETOUR
MAPLE AVE CLOSURE (YEAR 2020)
ROADWAY SEGMENT LOS

8.2. MONTEBELLO BOULEVARD CLOSED - MAPLE AVENUE OPEN

Exhibit 11 shows the proposed detour route to be implemented during the construction of Montebello Boulevard Grade Separation. Montebello Boulevard is a major arterial that is projected to have an ADT of 20,000 vehicles in Year 2020. In order to lessen the impact of detours on adjacent streets, we propose using different detour routes for northbound and southbound traffic on Montebello Boulevard. Northbound traffic on Montebello Boulevard will be detoured onto Greenwood Avenue, east onto Whittier Boulevard and then back onto Montebello Boulevard. Southbound traffic Montebello Boulevard will be detoured onto westbound Whittier Boulevard, then south onto Vail Avenue, eastbound onto Washington Boulevard and then back onto Greenwood Avenue.

Exhibit 12 shows the estimated percentage of northbound and southbound traffic that will be using alternate routes because of the proposed closures and detour during construction of Montebello Boulevard Grade Separation. It should be noted that we assume there will be a certain percentage of drivers that will use alternate routes, in lieu of the proposed detours to arrive at their destinations. They will be the local commuter traffic that knows the area and will explore available alternate routes as the detour routes reach their full capacity.

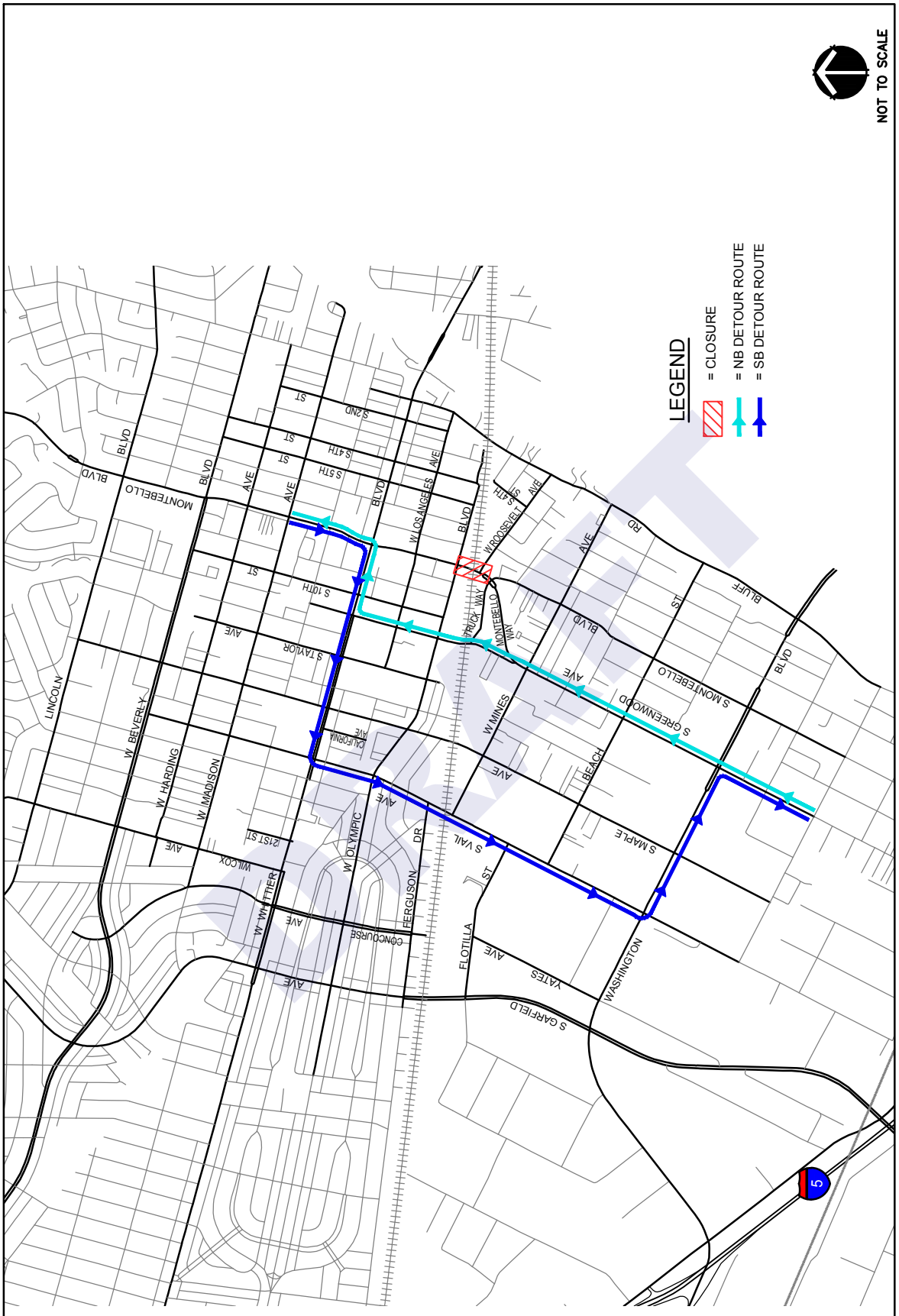
INTERSECTION LEVEL OF SERVICE

Year 2020 traffic conditions at the study area intersections with the Montebello Boulevard closure and proposed detour route implemented are depicted in Table 15, 16, 17A and 17B. The intersection turning movement volumes for the Year 2020 with the Montebello Boulevard closure and proposed detour route implemented during weekday AM and PM peak hours are shown in Exhibit 13. The LOS analysis worksheets from Synchro for Year 2020 traffic conditions with Montebello Boulevard closure are included in Appendix H.

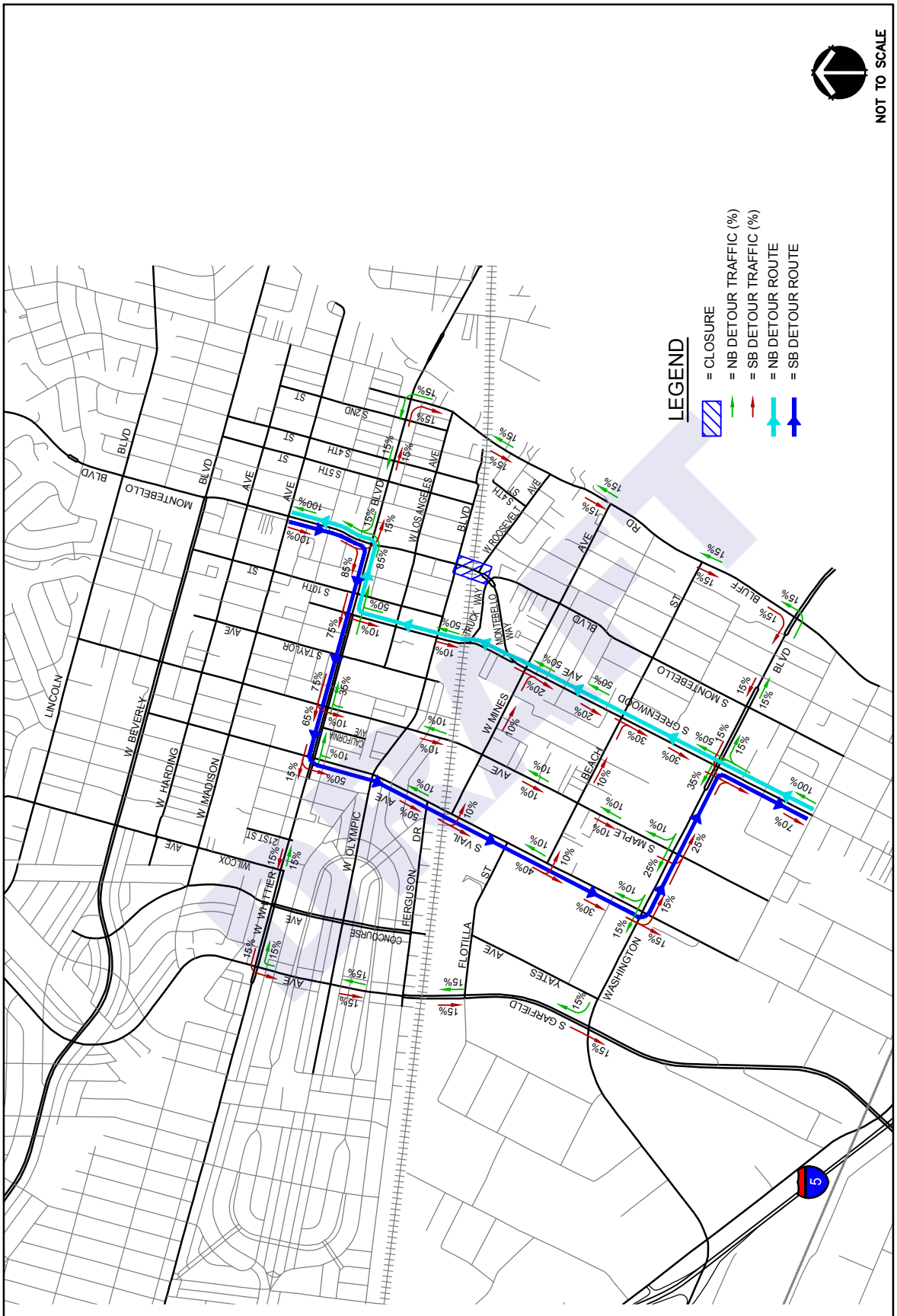
ROADWAY SEGMENT LEVEL OF SERVICE

Year 2020 traffic conditions at the study area roadway segments with the Montebello Boulevard closure and proposed detour route implemented are depicted in Exhibit 14. All the study area roadway segments operate at LOS “D” or better except for the following roadway segments that operate at LOS “E”.

1. Vail Avenue – Between UPRR Tracks and Olympic Boulevard
2. Vail Avenue – Between UPRR Tracks and Beach Street
3. Washington Boulevard – Between Vail Avenue and Maple Avenue
4. Whittier Boulevard – Between Vail Avenue and Greenwood Avenue



LIN Consulting, Inc. Traffic, Civil, and Electrical Consulting Engineers	MONTEBELLO CORRIDOR GS PROJECT PHASE 1 - CONCEPT DESIGN TRAFFIC STUDY REPORT	EXHIBIT - 11 DETOUR ROUTE CLOSURE OF MONTEBELLO BOULEVARD



LIN Consulting, Inc. *Traffic, Civil, and Electrical Consulting Engineers*	MONTEBELLO CORRIDOR GS PROJECT PHASE 1 - CONCEPT DESIGN TRAFFIC STUDY REPORT	EXHIBIT - 12 DETOUR ROUTE CLOSURE OF MONTEBELLO BOULEVARD TRAFFIC DETOUR PERCENTAGE

Table 15: Year 2020 + Montebello Blvd Closure Traffic Conditions - Signalized Intersections

#	Intersection	AM Peak Hour		PM Peak Hour	
		LOS	ICU	LOS	ICU
1	Garfield Ave. and Whittier Blvd.	E	90.1%	G	105.2%
2	Garfield Ave. and Olympic Blvd.	G	101.2%	H	116.6%
3	Garfield Ave. and Ferguson Dr.	E	84.7%	E	90.3%
4	Garfield Ave. and Flotilla St.	D	74.0%	F	93.9%
5	Garfield Ave. and Washington Blvd.	E	83.9%	F	98.0%
6	Concourse Ave. and Whittier Blvd.	C	71.9%	E	84.4%
7	Concourse Ave. and Olympic Blvd.	D	73.1%	E	85.3%
8	Yates Ave. and Washington Blvd.	B	55.5%	C	64.32%
9	Whittier Blvd. and Wilcox Ave.	D	81.4%	D	73.4%
10	21st St. and Whittier Blvd.	D	76.0%	C	69.4%
11	Vail Ave. and Whittier Blvd.	G	108.4%	H	126.0%
12	Vail Ave. and Olympic Blvd.	H	117.7%	H	137.6%
13	Vail Ave. and Flotilla St.	D	80.8%	C	70.0%
14	Vail Ave. and Washington Blvd.	E	90.9%	F	99.10%
15	California Ave. and Whittier Blvd.	C	68.0%	B	59.6%
16	Maple Ave. and Beverly Blvd.	E	84.2%	E	88.4%
17	Maple Ave. and Whittier Blvd.	F	95.2%	F	91.7%
18	Maple Ave. and Olympic Blvd.	E	82.0%	E	89.0%
21	Maple Ave. and Washington Blvd.	D	78.5%	D	75.2%
22	Taylor Ave. and Whittier Blvd.	D	78.7%	D	73.4%
25	Greenwood Ave. and Olympic Blvd.	F	94.2%	H	114.4%
27	Greenwood Ave. and Mines Ave.	C	67.8%	D	73.9%
28	Greenwood Ave. and Beach St.	B	61.0%	B	61.3%
29	Greenwood Ave. and Washington Blvd.	H	109.4%	H	127.4%
30	10th St. and Whittier Blvd.	D	79.1%	D	78.8%
31	Montebello Blvd. and Whittier Blvd.	H	121.9%	H	125.8%
33	Montebello Blvd. and Olympic Blvd.	A	27.8%	A	35.1%
35	Montebello Way/Montebello Blvd. and Truck Way	A	6.7%	A	6.7%
37	Montebello Blvd. and Washington Blvd.	D	74.5%	D	74.3%
38	5th St. and Whittier Blvd.	E	85.9%	D	80.8%
39	4th St. and Whittier Blvd.	F	94.4%	F	92.3%
41	2nd St. and Whittier Blvd.	H	110.6%	F	97.4%
42	Bluff Rd. and Washington Blvd.	F	93.9%	G	100.7%
47	Bluff Rd. and Whittier Blvd.	G	102.1%	D	75.9%

Table 16: Year 2020 + Montebello Blvd Closure Traffic Conditions - All-Way-Stop-Controlled Intersections

#	Intersection	AM Peak Hour		PM Peak Hour	
		LOS	Delay (Sec)	LOS	Delay (Sec)
19	Maple Ave. and Mines Ave.	C	16.0	C	22.2
20	Maple Ave. and Beach St.	B	13.6	B	14.3
36	Montebello Blvd. and Mines Ave.	B	10.7	B	11.1
43	Bluff Rd. and Los Angeles Ave.	C	17.8	F	77.2

44	Bluff Rd. and Roosevelt Ave.	C	15.8	E	38.1
45	Bluff Rd. and Mines Ave.	B	14.0	D	27.4
46	Bluff Rd. and Beach St.	B	13.8	C	18.5

Table 17A: Year 2020 + Montebello Blvd Closure Traffic Conditions AM Peak Hour - Two-Way-Stop-Controlled Intersections

#	Intersection	NB Approach		SB Approach		EB Approach		WB Approach	
		LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay
23	Greenwood Ave. and Whittier Blvd.	F	415.2	F	ERR	N/A	N/A	N/A	N/A
24	Greenwood Ave. and Los Angeles Ave.	N/A	N/A	N/A	N/A	B	13.6	C	18.8
26	Greenwood Ave. and Montebello Way	N/A	N/A	A	8.4	N/A	N/A	N/A	N/A
32	Montebello Blvd. and Los Angeles Ave.	N/A	N/A	N/A	N/A	B	10.0	A	9.1
34	Montebello Blvd. and Roosevelt Ave.	N/A	N/A	N/A	N/A	N/A	N/A	A	0.0
40	Roosevelt Ave. and 4th St.	N/A	N/A	A	9.3	N/A	N/A	N/A	N/A

ERR - Volume greatly exceeds capacity. Synchro cannot compute a delay.

Table 17B: Year 2020 + Montebello Blvd Closure Traffic Conditions PM Peak Hour - Two-Way-Stop-Controlled Intersections

#	Intersection	NB Approach		SB Approach		EB Approach		WB Approach	
		LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay
23	Greenwood Ave. and Whittier Blvd.	F	ERR	F	ERR	N/A	N/A	N/A	N/A
24	Greenwood Ave. and Los Angeles Ave.	N/A	N/A	N/A	N/A	C	16.7	C	19.6
26	Greenwood Ave. and Montebello Way	N/A	N/A	A	8.4	N/A	N/A	N/A	N/A
32	Montebello Blvd. and Los Angeles Ave.	N/A	N/A	N/A	N/A	B	10.4	A	9.0
34	Montebello Blvd. and Roosevelt Ave.	N/A	N/A	N/A	N/A	N/A	N/A	A	0.0
40	Roosevelt Ave. and 4th St.	N/A	N/A	A	9.2	N/A	N/A	N/A	N/A

ERR - Volume greatly exceeds capacity. Synchro cannot compute a delay.

EXHIBIT - 13

PROJECT CONSTRUCTION YEAR

MONTEBELLO BLVD CLOSURE (YEAR 2020)

AM/PM PEAK HOUR TRAFFIC VOLUMES

MONTEBELLO CORRIDOR GS PROJECT

PHASE 1 - CONCEPT DESIGN

TRAFFIC STUDY REPORT

LIN Consulting, Inc.

Traffic, Civil, and Electrical Consulting Engineers

LEGEND

XX/(XX) = AM/(PM) PEAK HOUR VOLUMES

= CLOSURE

	LOCATION	ADT* (V)	CAPACITY (C)	V/C	LOS
A	GARFIELD AVENUE - BETWEEN OLYMPIC BOULEVARD AND FERGUSON DRIVE	36,015	40,000	0.90	D
B	VAIL AVENUE - BETWEEN UPRR TRACKS AND OLYMPIC BOULEVARD	14,404	15,000	0.96	E
C	VAIL AVENUE - BETWEEN UPRR TRACKS AND BEACH STREET	14,244	15,000	0.95	E
D	WASHINGTON BOULEVARD - BETWEEN VAIL AVENUE AND MAPLE AVENUE	36,057	40,000	0.95	D
E	MAPLE AVENUE - BETWEEN UPRR TRACKS AND OLYMPIC BOULEVARD	8,113	15,000	0.54	A
F	MAPLE AVENUE - BETWEEN UPRR TRACKS AND BEACH STREET	7,068	15,000	0.47	A
G	WHITTIER BOULEVARD- BETWEEN VAIL AVENUE AND GREENWOOD AVENUE	38,722	40,000	0.97	E
H	OLYMPIC BOULEVARD - BETWEEN MAPLE AVENUE AND GREENWOOD AVENUE	12,174	40,000	0.30	A
I	OLYMPIC BOULEVARD - BETWEEN GREENWOOD AVENUE AND MONTEBELLO BOULEVARD	17,149	40,000	0.43	A
J	GREENWOOD AVENUE - WHITTIER BOULEVARD AND OLYMPIC BOULEVARD	4,344	40,000	0.11	A
K	GREENWOOD AVENUE - BETWEEN MINES AVENUE AND BEACH STREET	17,901	40,000	0.45	A
L	MONTEBELLO BOULEVARD - BETWEEN LOS ANGELES AVENUE AND OLYMPIC BOULEVARD	19,776	40,000	0.49	A
M	ROOSEVELT AVENUE - BETWEEN 4TH STREET AND BLUFF ROAD	2,352	15,000	0.16	A
N	BLUFF ROAD - BETWEEN ROOSEVELT AVENUE AND WHITTIER BOULEVARD	10,972	15,000	0.73	C
O	BLUFF ROAD - BETWEEN BEACH STREET AND WASHINGTON BOULEVARD	10,271	15,000	0.68	B
P	MAPLE AVENUE - BETWEEN BEVERLY BOULEVARD AND WHITTIER BOULEVARD	5,840	15,000	0.39	A

ADT - AVERAGE DAILY TRAFFIC
LOS - LEVEL OF SERVICE
** - PROJECTED*

NOT TO SCALE

LEGEND
= ADT COUNT LOCATION
= CLOSURE
= LOS "A"
= LOS "B"
= LOS "C"
= LOS "D"
= LOS "E"

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MONTEBELLO CORRIDOR GS PROJECT
PHASE 1 - CONCEPT DESIGN
TRAFFIC STUDY REPORT

EXHIBIT - 14
PROJECT CONSTRUCTION YEAR WITH DETOUR
MONTEBELLO BLVD CLOSURE (YEAR 2020)
ROADWAY SEGMENT LOS

8.3. MONTEBELLO BOULEVARD AND MAPLE AVENUE CLOSURE

Exhibit 15 shows the proposed detour route to be implemented during the concurrent closure of Maple Avenue and Montebello Boulevard. This detour is a combination of the detour routes implemented during the closures of Maple Avenue and Montebello Boulevard.

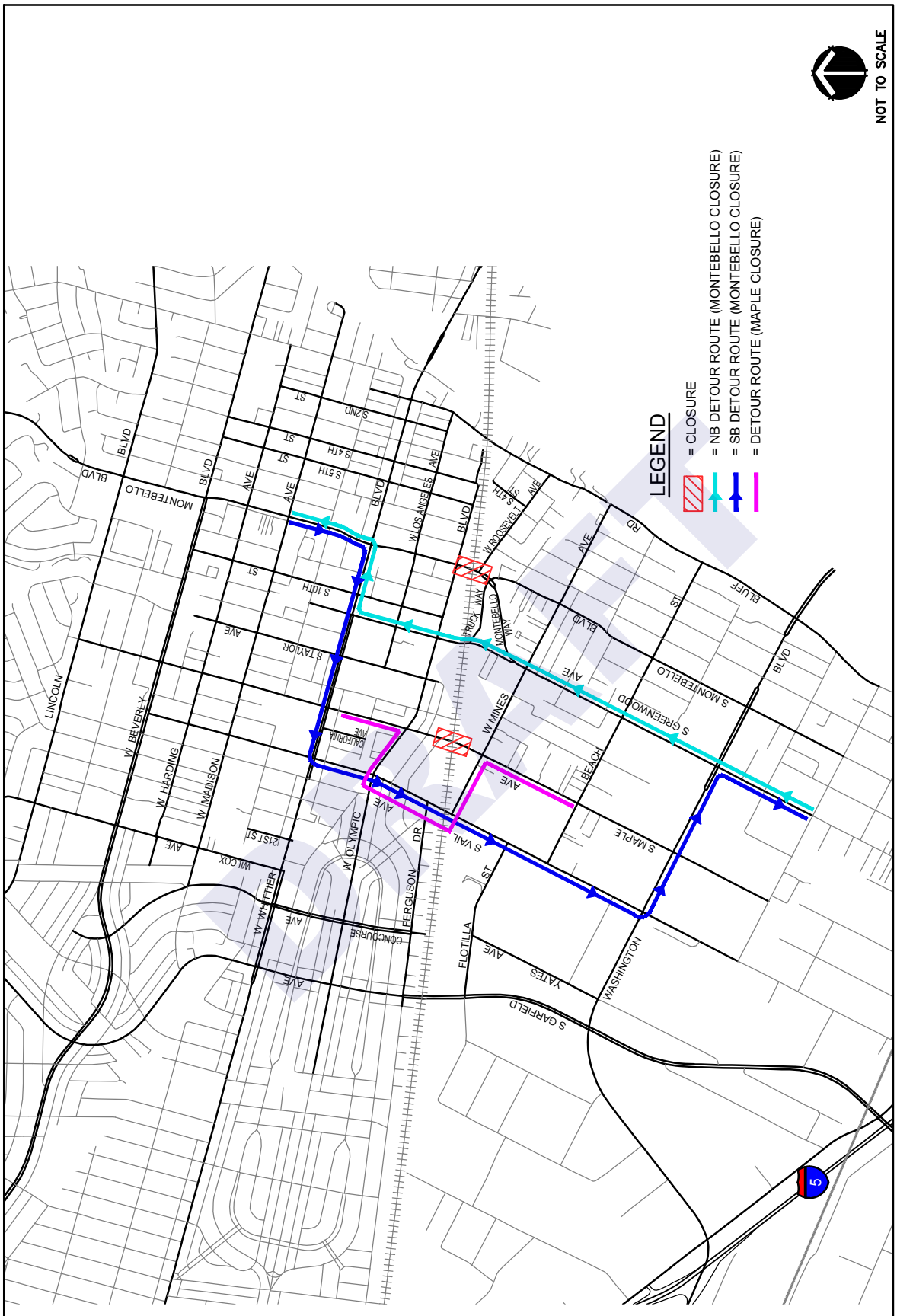
INTERSECTION LEVEL OF SERVICE

Year 2020 traffic conditions at the study area intersections with the concurrent closure of Maple Avenue and Montebello Boulevard and the proposed detour routes implemented are depicted in Table 18, 19, 20A and 20B. The intersection turning movement volumes for the Year 2020 with the Maple Avenue and Montebello Boulevard closure and proposed detour route implemented during weekday AM and PM peak hours are shown in Exhibit 16. The LOS analysis worksheets from Synchro for Year 2020 traffic conditions with concurrent closure of Maple Avenue and Montebello Boulevard are included in Appendix I.

ROADWAY SEGMENT LEVEL OF SERVICE

Year 2020 traffic conditions at the study area roadway segments with the concurrent closure of Maple Avenue and Montebello Boulevard and proposed detour routes implemented are depicted in Exhibit 17. All the study area roadway segments operate at LOS "D" or better except for the following roadway segments that operate at LOS "E" or "F".

1. Vail Avenue – Between UPRR Tracks and Olympic Boulevard
2. Vail Avenue – Between UPRR Tracks and Beach Street
3. Washington Boulevard – Between Vail Avenue and Maple Avenue
4. Whittier Boulevard – Between Vail Avenue and Greenwood Avenue



LIN Consulting, Inc. **Traffic, Civil, and Electrical Consulting Engineers**	MONTEBELLO CORRIDOR GS PROJECT PHASE 1 - CONCEPT DESIGN TRAFFIC STUDY REPORT	EXHIBIT - 15 DETOUR ROUTE CLOSURE OF MONTEBELLO BOULEVARD AND MAPLE AVENUE

Table 18: Year 2020 + Maple Ave and Montebello Blvd Closure Traffic Conditions - Signalized Intersections

#	Intersection	AM Peak Hour		PM Peak Hour	
		LOS	ICU	LOS	ICU
1	Garfield Ave. and Whittier Blvd.	E	90.1%	G	105.2%
2	Garfield Ave. and Olympic Blvd.	G	101.2%	H	116.6%
3	Garfield Ave. and Ferguson Dr.	E	84.7%	E	90.3%
4	Garfield Ave. and Flotilla St.	D	74.0%	F	93.9%
5	Garfield Ave. and Washington Blvd.	E	83.9%	F	98.0%
6	Concourse Ave. and Whittier Blvd.	C	71.9%	E	84.4%
7	Concourse Ave. and Olympic Blvd.	D	73.1%	E	85.3%
8	Yates Ave. and Washington Blvd.	B	55.5%	C	64.3%
9	Whittier Blvd. and Wilcox Ave.	D	81.4%	D	73.4%
10	21st St. and Whittier Blvd.	D	76.0%	C	69.4%
11	Vail Ave. and Whittier Blvd.	G	108.4%	H	126.0%
12	Vail Ave. and Olympic Blvd.	H	117.7%	H	137.6%
13	Vail Ave. and Flotilla St.	D	80.8%	C	70.0%
14	Vail Ave. and Washington Blvd.	E	90.9%	F	99.1%
15	California Ave. and Whittier Blvd.	C	68.0%	B	59.6%
16	Maple Ave. and Beverly Blvd.	E	84.2%	E	88.4%
17	Maple Ave. and Whittier Blvd.	F	95.2%	F	91.7%
18	Maple Ave. and Olympic Blvd.	D	77.1%	B	63.4%
21	Maple Ave. and Washington Blvd.	D	78.5%	D	75.2%
22	Taylor Ave. and Whittier Blvd.	D	78.7%	D	73.4%
25	Greenwood Ave. and Olympic Blvd.	F	99.6%	H	121.6%
27	Greenwood Ave. and Mines Ave.	C	70.0%	D	76.4%
28	Greenwood Ave. and Beach St.	B	61.0%	B	61.3%
29	Greenwood Ave. and Washington Blvd.	H	109.4%	H	127.4%
30	10th St. and Whittier Blvd.	D	79.1%	D	78.8%
31	Montebello Blvd. and Whittier Blvd.	H	121.9%	H	125.8%
33	Montebello Blvd. and Olympic Blvd.	A	27.8%	A	35.1%
35	Montebello Way/Montebello Blvd. and Truck Way	A	6.7%	A	6.7%
37	Montebello Blvd. and Washington Blvd.	D	74.5%	D	74.3%
38	5th St. and Whittier Blvd.	E	85.9%	D	80.8%
39	4th St. and Whittier Blvd.	F	94.4%	F	92.3%
41	2nd St. and Whittier Blvd.	H	110.6%	F	97.4%
42	Bluff Rd. and Washington Blvd.	F	93.9%	G	100.7%
47	Bluff Rd. and Whittier Blvd.	G	102.1%	D	75.9%

Table 19: Year 2020 + Maple Ave and Montebello Blvd Closure Traffic Conditions - All-Way-Stop-Controlled Intersections

#	Intersection	AM Peak Hour		PM Peak Hour	
		LOS	Delay	LOS	Delay
19	Maple Ave. and Mines Ave.	C	16.2	C	15.9
20	Maple Ave. and Beach St.	B	13.6	B	14.3
36	Montebello Blvd. and Mines Ave.	B	10.7	B	11.1
43	Bluff Rd. and Los Angeles Ave.	C	17.8	F	77.2

44	Bluff Rd. and Roosevelt Ave.	C	15.8	E	38.1
45	Bluff Rd. and Mines Ave.	B	14.0	D	27.4
46	Bluff Rd. and Beach St.	B	13.8	C	18.5

Table 20A: Year 2020 + Maple Ave and Montebello Blvd Closure Traffic Conditions AM Peak Hour - Two-Way-Stop-Controlled Intersections

#	Intersection	NB Approach		SB Approach		EB Approach		WB Approach	
		LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay
23	Greenwood Ave. and Whittier Blvd.	F	614.3	F	ERR	N/A	N/A	N/A	N/A
24	Greenwood Ave. and Los Angeles Ave.	N/A	N/A	N/A	N/A	B	13.8	C	19.3
26	Greenwood Ave. and Montebello Way	N/A	N/A	B	10.4	N/A	N/A	N/A	N/A
32	Montebello Blvd. and Los Angeles Ave.	N/A	N/A	N/A	N/A	B	10.2	A	9.2
34	Montebello Blvd. and Roosevelt Ave.	N/A	N/A	N/A	N/A	N/A	N/A	A	0.0
40	Roosevelt Ave. and 4th St.	N/A	N/A	A	9.3	N/A	N/A	N/A	N/A

ERR - Volume greatly exceeds capacity. Synchro cannot compute a delay.

Table 20B: Year 2020 + Maple Ave and Montebello Blvd Closure Traffic Conditions PM Peak Hour - Two-Way-Stop-Controlled Intersections

#	Intersection	NB Approach		SB Approach		EB Approach		WB Approach	
		LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay
23	Greenwood Ave. and Whittier Blvd.	F	ERR	F	ERR	N/A	N/A	N/A	N/A
24	Greenwood Ave. and Los Angeles Ave.	N/A	N/A	N/A	N/A	C	17.0	C	20.1
26	Greenwood Ave. and Montebello Way	N/A	N/A	B	12.1	N/A	N/A	N/A	N/A
32	Montebello Blvd. and Los Angeles Ave.	N/A	N/A	N/A	N/A	B	10.5	A	9.2
34	Montebello Blvd. and Roosevelt Ave.	N/A	N/A	N/A	N/A	N/A	N/A	A	0.0
40	Roosevelt Ave. and 4th St.	N/A	N/A	A	9.2	N/A	N/A	N/A	N/A

ERR - Volume greatly exceeds capacity. Synchro cannot compute a delay.

EXHIBIT - 16
PROJECT CONSTRUCTION YEAR WITH MAPLE AVE AND MONTEBELLO BLVD CLOSURES (YEAR 2020)
AM/PM PEAK HOUR TRAFFIC VOLUMES

MONTEBELLO CORRIDOR GS PROJECT
PHASE 1 - CONCEPT DESIGN
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	LOCATION	ADT* (V)	CAPACITY (C)	V/C	LOS
A	GARFIELD AVENUE - BETWEEN OLYMPIC BOULEVARD AND FERGUSON DRIVE	36,015	40,000	0.90	D
B	VAIL AVENUE - BETWEEN UPRR TRACKS AND OLYMPIC BOULEVARD	18,662	15,000	1.24	F
C	VAIL AVENUE - BETWEEN UPRR TRACKS AND BEACH STREET	14,244	15,000	0.95	E
D	WASHINGTON BOULEVARD - BETWEEN VAIL AVENUE AND MAPLE AVENUE	36,057	40,000	0.95	D
E	MAPLE AVENUE - BETWEEN UPRR TRACKS AND OLYMPIC BOULEVARD	8,113	15,000	0.54	A
L	MAPLE AVENUE - BETWEEN UPRR TRACKS AND BEACH STREET	7,068	15,000	0.47	A
G	WHITTIER BOULEVARD- BETWEEN VAIL AVENUE AND GREENWOOD AVENUE	38,722	40,000	0.97	E
H	OLYMPIC BOULEVARD - BETWEEN MAPLE AVENUE AND GREENWOOD AVENUE	13,207	40,000	0.33	A
I	OLYMPIC BOULEVARD - BETWEEN GREENWOOD AVENUE AND MONTEBELLO BOULEVARD	17,149	40,000	0.43	A
J	GREENWOOD AVENUE - WHITTIER BOULEVARD AND OLYMPIC BOULEVARD	4,344	40,000	0.11	A
K	GREENWOOD AVENUE - BETWEEN MINES AVENUE AND BEACH STREET	17,901	40,000	0.45	A
L	MONTEBELLO BOULEVARD - BETWEEN LOS ANGELES AVENUE AND OLYMPIC BOULEVARD	19,776	40,000	0.49	A
M	ROOSEVELT AVENUE - BETWEEN 4TH STREET AND BLUFF ROAD	2,362	15,000	0.16	A
N	BLUFF ROAD - BETWEEN ROOSEVELT AVENUE AND WHITTIER BOULEVARD	10,972	15,000	0.73	C
O	BLUFF ROAD - BETWEEN BEACH STREET AND WASHINGTON BOULEVARD	10,271	15,000	0.68	B
P	MAPLE AVENUE - BETWEEN BEVERLY BOULEVARD AND WHITTIER BOULEVARD	5,840	15,000	0.39	A

ADT - AVERAGE DAILY TRAFFIC
LOS - LEVEL OF SERVICE
** PROJECTED*

NOT TO SCALE

LEGEND
= ADT COUNT LOCATION
= CLOSURE
= LOS "A"
= LOS "B"
= LOS "C"
= LOS "D"
= LOS "E"
= LOS "F"

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PHASE 1 - CONCEPT DESIGN
TRAFFIC STUDY REPORT

EXHIBIT -17
PROJECT CONSTRUCTION YEAR WITH DETOUR
MAPLE AVE AND MONTEBELLO BLVD
CLOSURE (YEAR 2020)
ROADWAY SEGMENT LOS

8.4. CLOSURE OF MONTEBELLO BOULEVARD ONLY VS. CONCURRENT CLOSURE OF MONTEBELLO BOULEVARD AND MAPLE AVENUE

In order to see the difference in impacts at the study area intersections and roadway segments during the closure of Montebello Boulevard only vs. concurrent closure of Montebello Boulevard and Maple Avenue, we compared the LOS conditions under both scenarios.

All the study area intersections and roadway segments, except Vail Avenue between the UPRR Tracks and Olympic Boulevard (Location B) operate at the same LOS during the two construction scenarios - Closure of Montebello Boulevard only vs. concurrent closure of Montebello Boulevard and Maple Avenue.

8.5. SIGNIFICANT IMPACTS DURING PROJECT CONSTRUCTION

INTERSECTION LEVEL OF SERVICE

Tables 21 and 22 below list whether a study area intersection is significantly impacted by the proposed project during construction due to project construction traffic detours.

Table 21: Intersections Significantly Impacted During Project Construction - AM Peak Hour

#	Intersection	Significantly Impacted		
		Maple Closure	Montebello Closure	Montebello and Maple Closure
1	Garfield Ave. and Whittier Blvd.	No	Yes	Yes
2	Garfield Ave. and Olympic Blvd.	No	Yes	Yes
3	Garfield Ave. and Ferguson Dr.	No	Yes	Yes
4	Garfield Ave. and Flotilla St.	No	Yes	Yes
5	Garfield Ave. and Washington Blvd.	No	Yes	Yes
6	Concourse Ave. and Whittier Blvd.	No	No	No
7	Concourse Ave. and Olympic Blvd.	No	No	No
8	Yates Ave. and Washington Blvd.	No	No	No
9	Whittier Blvd. and Wilcox Ave.	No	Yes	Yes
10	21st St. and Whittier Blvd.	No	Yes	Yes
11	Vail Ave. and Whittier Blvd.	No	Yes	Yes
12	Vail Ave. and Olympic Blvd.	No	Yes	Yes
13	Vail Ave. and Flotilla St.	No	Yes	Yes
14	Vail Ave. and Washington Blvd.	No	Yes	Yes
15	California Ave. and Whittier Blvd.	No	Yes	Yes
16	Maple Ave. and Beverly Blvd.	No	No	No
17	Maple Ave. and Whittier Blvd.	No	Yes	Yes
18	Maple Ave. and Olympic Blvd.	No	Yes	Yes
19	Maple Ave. and Mines Ave.	No	No	No
20	Maple Ave. and Beach St.	No	No	No
21	Maple Ave. and Washington Blvd.	No	Yes	Yes
22	Taylor Ave. and Whittier Blvd.	No	Yes	Yes
23	Greenwood Ave. and Whittier Blvd.	No	Yes	Yes
24	Greenwood Ave. and Los Angeles Ave.	No	No	No
25	Greenwood Ave. and Olympic Blvd.	No	Yes	Yes
26	Greenwood Ave. and Montebello Way	No	No	No
27	Greenwood Ave. and Mines Ave.	Yes	Yes	Yes
28	Greenwood Ave. and Beach St.	No	No	No
29	Greenwood Ave. and Washington Blvd.	No	Yes	Yes
30	10th St. and Whittier Blvd.	No	Yes	Yes
31	Montebello Blvd. and Whittier Blvd.	No	Yes	Yes
32	Montebello Blvd. and Los Angeles Ave.	No	No	No
33	Montebello Blvd. and Olympic Blvd.	Yes	No	No
34	Montebello Blvd. and Roosevelt Ave.	No	No	No
35	Montebello Way/Montebello Blvd. and Truck Way	No	No	No
36	Montebello Blvd. and Mines Ave.	No	No	No
37	Montebello Blvd. and Washington Blvd.	No	No	No
38	5th St. and Whittier Blvd.	No	Yes	Yes

39	4th St. and Whittier Blvd.	No	Yes	Yes
40	Roosevelt Ave. and 4th St.	No	No	No
41	2nd St. and Whittier Blvd.	No	Yes	Yes
42	Bluff Rd. and Washington Blvd.	No	Yes	Yes
43	Bluff Rd. and Los Angeles Ave.	No	No	No
44	Bluff Rd. and Roosevelt Ave.	No	No	No
45	Bluff Rd. and Mines Ave.	No	No	No
46	Bluff Rd. and Beach St.	No	No	No
47	Bluff Rd. and Whittier Blvd.	No	Yes	Yes

Table 22: Intersections Significantly Impacted During Project Construction - PM Peak Hour

#	Intersection	Significantly Impacted		
		Maple Closure	Montebello Closure	Montebello and Maple Closure
1	Garfield Ave. and Whittier Blvd.	No	Yes	Yes
2	Garfield Ave. and Olympic Blvd.	No	Yes	Yes
3	Garfield Ave. and Ferguson Dr.	No	Yes	Yes
4	Garfield Ave. and Flotilla St.	No	Yes	Yes
5	Garfield Ave. and Washington Blvd.	No	Yes	Yes
6	Concourse Ave. and Whittier Blvd.	No	Yes	Yes
7	Concourse Ave. and Olympic Blvd.	No	No	No
8	Yates Ave. and Washington Blvd.	No	No	No
9	Whittier Blvd. and Wilcox Ave.	No	No	No
10	21st St. and Whittier Blvd.	No	Yes	Yes
11	Vail Ave. and Whittier Blvd.	No	Yes	Yes
12	Vail Ave. and Olympic Blvd.	Yes	Yes	Yes
13	Vail Ave. and Flotilla St.	No	Yes	Yes
14	Vail Ave. and Washington Blvd.	No	Yes	Yes
15	California Ave. and Whittier Blvd.	No	Yes	Yes
16	Maple Ave. and Beverly Blvd.	No	No	No
17	Maple Ave. and Whittier Blvd.	No	Yes	Yes
18	Maple Ave. and Olympic Blvd.	No	Yes	No
19	Maple Ave. and Mines Ave.	No	No	No
20	Maple Ave. and Beach St.	No	No	No
21	Maple Ave. and Washington Blvd.	No	Yes	Yes
22	Taylor Ave. and Whittier Blvd.	No	Yes	Yes
23	Greenwood Ave. and Whittier Blvd.	No	Yes	Yes
24	Greenwood Ave. and Los Angeles Ave.	No	No	No
25	Greenwood Ave. and Olympic Blvd.	Yes	Yes	Yes
26	Greenwood Ave. and Montebello Way	No	No	No
27	Greenwood Ave. and Mines Ave.	No	Yes	Yes
28	Greenwood Ave. and Beach St.	No	No	No
29	Greenwood Ave. and Washington Blvd.	No	Yes	Yes
30	10th St. and Whittier Blvd.	No	Yes	Yes
31	Montebello Blvd. and Whittier Blvd.	Yes	Yes	Yes
32	Montebello Blvd. and Los Angeles Ave.	No	No	No
33	Montebello Blvd. and Olympic Blvd.	Yes	No	No
34	Montebello Blvd. and Roosevelt Ave.	No	No	No

35	Montebello Way/Montebello Blvd. and Truck Way	No	No	No
36	Montebello Blvd. and Mines Ave.	No	No	No
37	Montebello Blvd. and Washington Blvd.	No	Yes	Yes
38	5th St. and Whittier Blvd.	No	Yes	Yes
39	4th St. and Whittier Blvd.	No	Yes	Yes
40	Roosevelt Ave. and 4th St.	No	No	No
41	2nd St. and Whittier Blvd.	No	Yes	Yes
42	Bluff Rd. and Washington Blvd.	No	Yes	Yes
43	Bluff Rd. and Los Angeles Ave.	No	Yes	Yes
44	Bluff Rd. and Roosevelt Ave.	No	Yes	Yes
45	Bluff Rd. and Mines Ave.	No	No	No
46	Bluff Rd. and Beach St.	No	No	No
47	Bluff Rd. and Whittier Blvd.	No	No	No

All the study area intersections that are significantly impacted, during the concurrent closure of Maple Avenue and Montebello Boulevard, are the same intersections significantly impacted during the closure of only Montebello Boulevard.

ROADWAY SEGMENT LEVEL OF SERVICE

Table 23 shows the comparsion of roadway segment LOS during construction due to project construction traffic detours. All the roadway segments except Vail Avenue - Between UPRR Tracks and Olympic Boulvevard have the same LOS during the concurrent closure of Montebello Boulevard and Maple closure and closure of Montebello Boulevard only.

Table 23: Roadway Segment LOS Comparision

#	Location	Roadway Closed		
		Maple Ave	Montebello Blvd	Montebello Blvd and Maple Ave
A	Garfield Ave. - Between Olympic Blvd. and Freguson Dr.	D	D	D
B	Vail Ave. - Between UPRR Tracks and Olympic Blvd.	D	E	F
C	Vail Ave. - Between UPRR Tracks and Beach St.	B	E	E
D	Washington Blvd. - Between Vail Ave and Maple Ave	C	D	D
E	Maple Ave. - Between UPRR Tracks and Olympic Blvd.	A	A	A
F	Maple Ave. - Between UPRR Tracks and Beach St.	A	A	A
G	Whittier Blvd. - Between Vail Ave. and Greenwood Ave.	B	E	E
H	Olympic Blvd. - Between Maple Ave. and Greenwod Ave.	A	A	A
I	Olympic Blvd. - Between Greenwood Ave. and Montebello Blvd.	A	A	A
J	Greenwood Ave. - Between Whittier Blvd. and Olympic Blvd.	A	A	A
K	Greenwood Ave. - Between Mines Ave. and Beach St.	A	A	A
L	Montebello Blvd. - Between Los Angeles Ave. and Olympic Blvd.	A	A	A
M	Roosebelt Ave. - Between 4th St. and Bluff Rd.	A	A	A
N	Bluff Rd. - Between Roosevelt Ave. and Whittier Blvd.	A	C	C
O	Bluff Rd. - Between Beach St. and Washington Blvd.	A	B	B
P	Maple Ave. - Between Beverly Blvd. and Whittier Blvd.	A	A	A

9. PROJECT OPENING YEAR - YEAR 2022 (WITHOUT PROJECT)

The estimated completion of the proposed project is by the end of Year 2021 and the project will be open to the public in Year 2022. The Project Opening Year – Year 2022 (Without Project) reflects the traffic conditions in Year 2022, without the other developments and project traffic.

9.1. INTERSECTION LEVEL OF SERVICE

Year 2022 traffic conditions at the study area intersections are depicted in Table 24, 25, 26A and 26B. The study intersections analyzed include only those impacted by the completion of the project. The intersection turning movement volumes for the Year 2022 Traffic Conditions during weekday AM and PM peak hours are shown in Exhibit 18. The LOS analysis worksheets from Synchro for Year 2022 traffic conditions are included in Appendix J.

Table 24: Year 2022 Traffic Conditions - Signalized Intersections

#	Intersection	AM Peak Hour		PM Peak Hour	
		LOS	ICU	LOS	ICU
25	Greenwood Ave. and Olympic Blvd.	C	66.9%	D	81.7%
27	Greenwood Ave. and Mines Ave.	B	61.3%	C	69.2%
33	Montebello Blvd. and Olympic Blvd.	C	70.2%	E	82.1%
35	Montebello Way/Montebello Blvd. and Truck Way	B	55.2%	B	63.1%

Table 25: Year 2022 Traffic Conditions - All-Way-Stop-Controlled Intersections

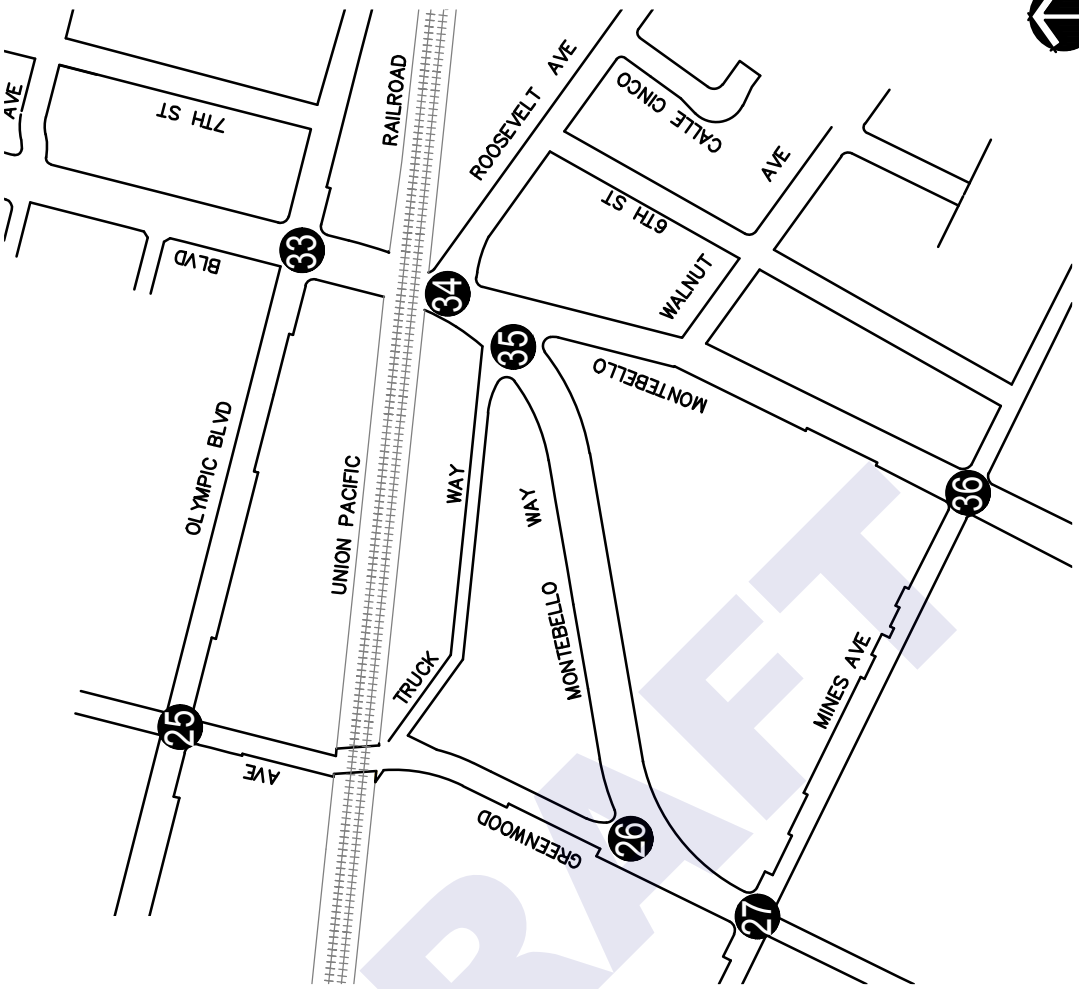
#	Intersection	AM Peak Hour		PM Peak Hour	
		LOS	Delay	LOS	Delay
36	Montebello Blvd. and Mines Ave.	B	10.9	B	11.2

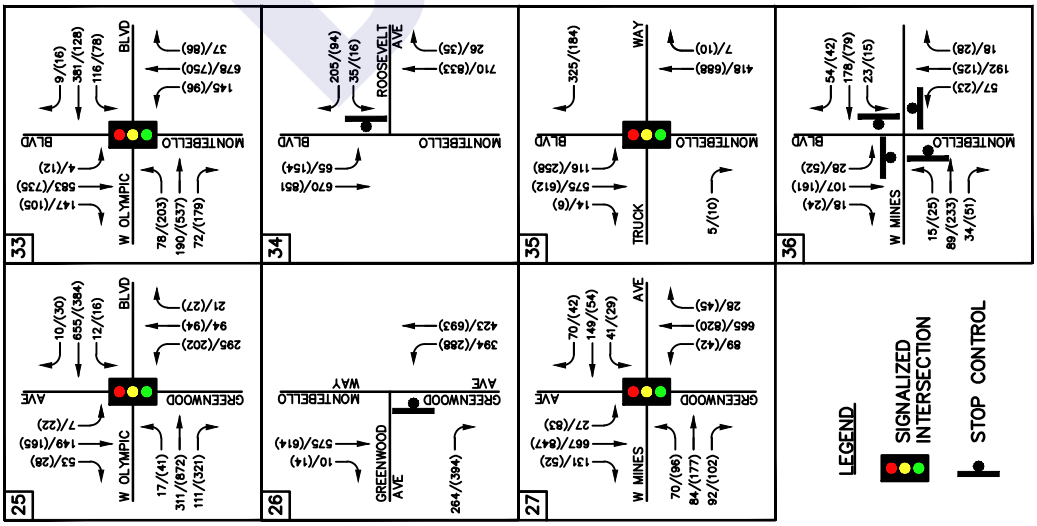
Table 26A: Year 2022 Traffic Conditions - AM Peak Hour - Two-Way-Stop-Controlled Intersections

#	Intersection	NB Approach		SB Approach		EB Approach		WB Approach	
		LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay
26	Greenwood Ave. and Montebello Way	N/A	N/A	B	14.0	N/A	N/A	N/A	N/A
34	Montebello Blvd. and Roosevelt Ave.	N/A	N/A	N/A	N/A	N/A	N/A	B	12.0

Table 26B: Year 2022 Traffic Conditions - PM Peak Hour– Two-Way-Stop-Controlled Intersections

#	Intersection	NB Approach		SB Approach		EB Approach		WB Approach	
		LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay
26	Greenwood Ave. and Montebello Way	N/A	N/A	C	19.8	N/A	N/A	N/A	N/A
34	Montebello Blvd. and Roosevelt Ave.	N/A	N/A	N/A	N/A	N/A	N/A	B	11.2





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10. OTHER DEVELOPMENTS

The study analyzes the impact of other developments, which have been approved by the City of Montebello and are expected to be developed and occupied by the Year 2022. The City of Montebello provided the Moffatt and Nichol team with a list of potential projects to be considered as other developments in projecting future traffic volumes for the project build out year (Year 2022). The Moffatt and Nichol team reviewed the projects and considered them as other developments for the traffic study, if they met the following criteria:

1. The potential project has to be approved or recommended for approval by the City of Montebello Planning Commission.
2. The potential project must generate traffic at the study area intersections.

Exhibit 19 shows the location of the projects that are considered as "other developments" for this traffic study. The project trips generated by the other developments are shown in Appendix K. Trip generation represents the amount of traffic that is produced or attracted by a development. The traffic generated by the other developments is determined by the specific land use assigned to the proposed development and the size of the proposed development. Trip generation rates are based upon the "Trip Generation, 9th Edition" published by the Institute of Transportation Engineers (See Appendix L).

Exhibits 20 thru 26 provide trip distribution for the other developments. Trip distribution represents the directional orientation of traffic to and from the project site. Trip distribution is heavily influenced by the geographical location of the site, the location of residential, commercial and recreational opportunities and the proximity to the regional freeway system.

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EXHIBIT - 20
OTHER DEVELOPMENT - A
TRIP DISTRIBUTION

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	EXHIBIT - 21 OTHER DEVELOPMENT - B TRIP DISTRIBUTION

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	EXHIBIT - 22 OTHER DEVELOPMENT - C TRIP DISTRIBUTION

LIN Consulting, Inc. *Traffic, Civil, and Electrical Consulting Engineers*	MONTEBELLO CORRIDOR GS PROJECT PHASE 1 - CONCEPT DESIGN TRAFFIC STUDY REPORT
EXHIBIT - 23 OTHER DEVELOPMENT - D TRIP DISTRIBUTION	

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EXHIBIT - 24
OTHER DEVELOPMENT - E
TRIP DISTRIBUTION

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EXHIBIT - 25 OTHER DEVELOPMENT - F TRIP DISTRIBUTION	

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	EXHIBIT - 26 OTHER DEVELOPMENT - G TRIP DISTRIBUTION

11. PROJECT OPENING YEAR - YEAR 2022 (WITHOUT PROJECT) PLUS OTHER DEVELOPMENT

11.1. INTERSECTION LEVEL OF SERVICE

Year 2022 traffic conditions with other developments traffic at the study area intersections are depicted in Table 27, 28, 29A and 29B. The LOS analysis worksheets from Synchro for Year 2022 traffic conditions with other development traffic condition are included in Appendix M. The intersection turning movement volumes for the Project Opening Year (Year 2022) with Other Developments during weekday AM and PM peak hours are shown in Exhibit 27.

Table 27: Year 2022 + Other Developments Traffic Conditions - Signalized Intersections

#	Intersection	AM Peak Hour		PM Peak Hour	
		LOS	ICU	LOS	ICU
25	Greenwood Ave. and Olympic Blvd.	C	67.6%	E	82.5%
27	Greenwood Ave. and Mines Ave.	B	62.6%	C	70.6%
33	Montebello Blvd. and Olympic Blvd.	C	71.5%	E	83.4%
35	Montebello Way/Montebello Blvd. and Truck Way	B	56.1%	C	64.3%

Table 28: Year 2022 + Other Developments Traffic Conditions - All-Way-Stop-Controlled Intersections

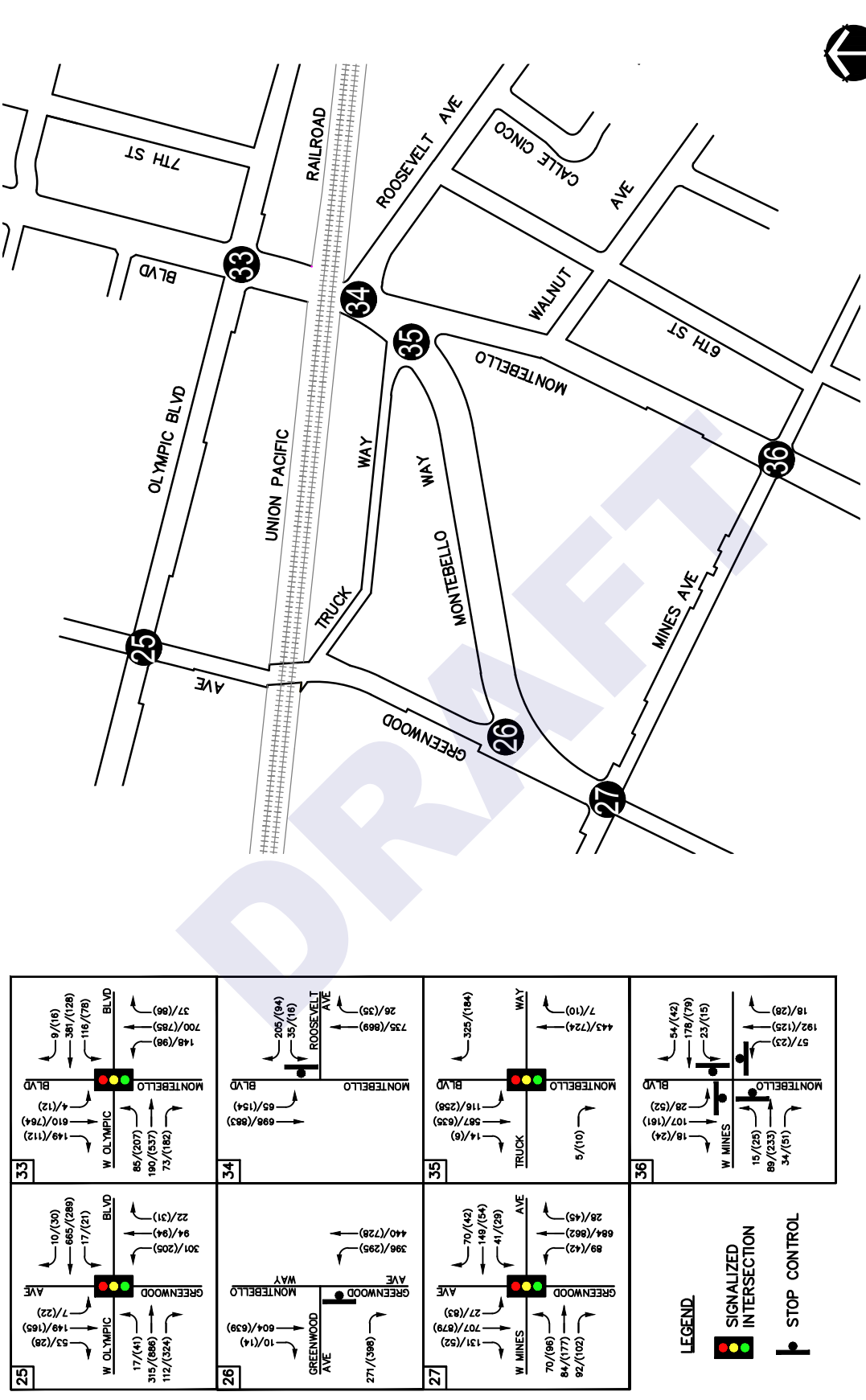
#	Intersection	AM Peak Hour		PM Peak Hour	
		LOS	Delay	LOS	Delay
36	Montebello Blvd. and Mines Ave.	B	10.9	B	11.2

Table 29A: Year 2022 + Other Developments Traffic Conditions - AM Peak Hour - Two-Way-Stop-Controlled Intersections

#	Intersection	NB Approach		SB Approach		EB Approach		WB Approach	
		LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay
26	Greenwood Ave. and Montebello Way	N/A	N/A	B	14.6	N/A	N/A	N/A	N/A
34	Montebello Blvd. and Roosevelt Ave.	N/A	N/A	N/A	N/A	N/A	N/A	B	11.9

Table 29B: Year 2022 + Other Developments Traffic Conditions - PM Peak Hour - Two-Way-Stop-Controlled Intersections

#	Intersection	NB Approach		SB Approach		EB Approach		WB Approach	
		LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay
26	Greenwood Ave. and Montebello Way	N/A	N/A	C	20.9	N/A	N/A	N/A	N/A
34	Montebello Blvd. and Roosevelt Ave.	N/A	N/A	N/A	N/A	N/A	N/A	B	11.2



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TRAFFIC STUDY REPORT

EXHIBIT - 27

PROJECT OPENING YEAR (YEAR 2022) +
OTHER DEVELOPMENTS WITHOUT PROJECT
AM/PM PEAK HOUR TRAFFIC VOLUMES

12.PROJECT OPENING YEAR - YEAR 2022 (WITH PROJECT) PLUS OTHER DEVELOPMENT

12.1. PROPOSED PROJECT AND ITS IMPACTS

The Moffat and Nichol Team, after consulting with the City of Montebello and ACE staff, came up with one alternative for each of the grade separations for Maple Avenue and Montebello Boulevard. The proposed grade separation alternative at Maple Avenue does not impact the traffic circulation, but changes the way trucks access Bimbo Bakeries. The proposed grade separation alternative for Montebello Boulevard eliminates some of the existing intersections and/or turning movements. The intersections that will be directly impacted by the proposed circulation changes due to Montebello Grade Separation are shown in Table 30.

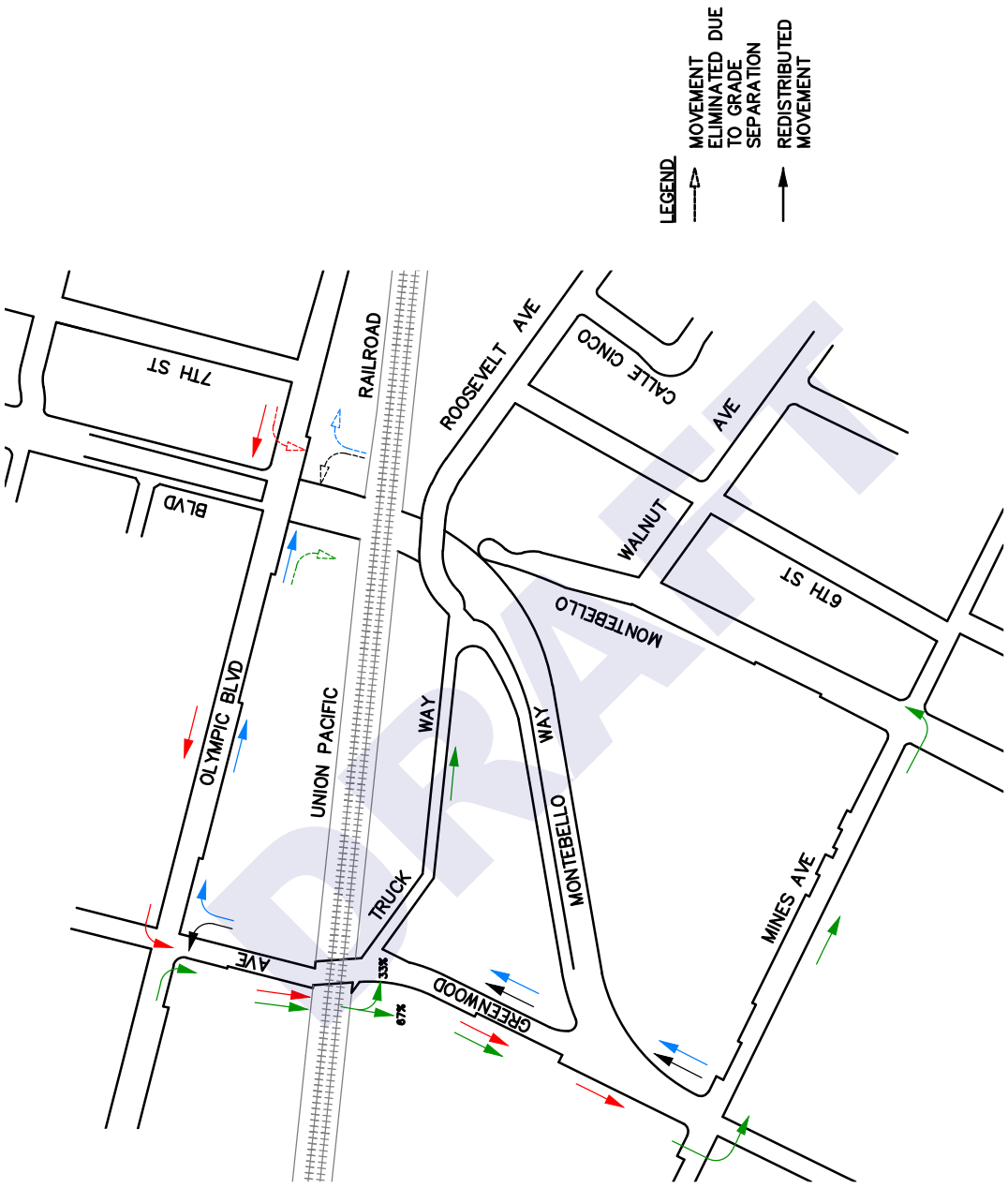
Table 30: Intersections Impacted By Montebello Blvd Project Alternative

#	Intersection	Control
25	Greenwood Avenue and Olympic Boulevard	Signalized
26	Greenwood Avenue and Montebello Way	TWSC
27	Greenwood Avenue and Mines Avenue	Signalized
33	Montebello Boulevard and Olympic Boulevard	Signalized
34	Montebello Boulevard and Roosevelt Avenue	TWSC
35	Montebello Boulevard and Truck Way	Signalized
36	Montebello Boulevard and Mines Avenue	AWSC

Exhibits 28, 29 and 30 show the changes in traffic circulation due to Montebello Grade Separation Project at the study area intersections that are in close proximity of the project. The proposed alternative for Montebello Grade Separation eliminates some of the intersections and/or turning movements as shown in the exhibits. The traffic volumes of these turning movements are reassigned to the study intersections per the new traffic circulation. The following are intersections and/or turning movements that will be eliminated by the proposed grade separation on Montebello Boulevard.

1. Montebello Boulevard and Olympic Boulevard
   - Northbound Right Turn
   - Northbound Left Turn
   - Eastbound Right Turn
   - Westbound Left Turn
2. Montebello Boulevard and Roosevelt Avenue
3. Montebello Boulevard and Truck Way

NOT TO SCALE



LIN Consulting, Inc. *Traffic, Civil, and Electrical Consulting Engineers*	MONTEBELLO CORRIDOR GS PROJECT PHASE 1 - CONCEPT DESIGN TRAFFIC STUDY REPORT	EXHIBIT - 28 CIRCULATION CHANGES AT INTERSECTION OF MONTEBELLO BLVD AND OLYMPIC BLVD

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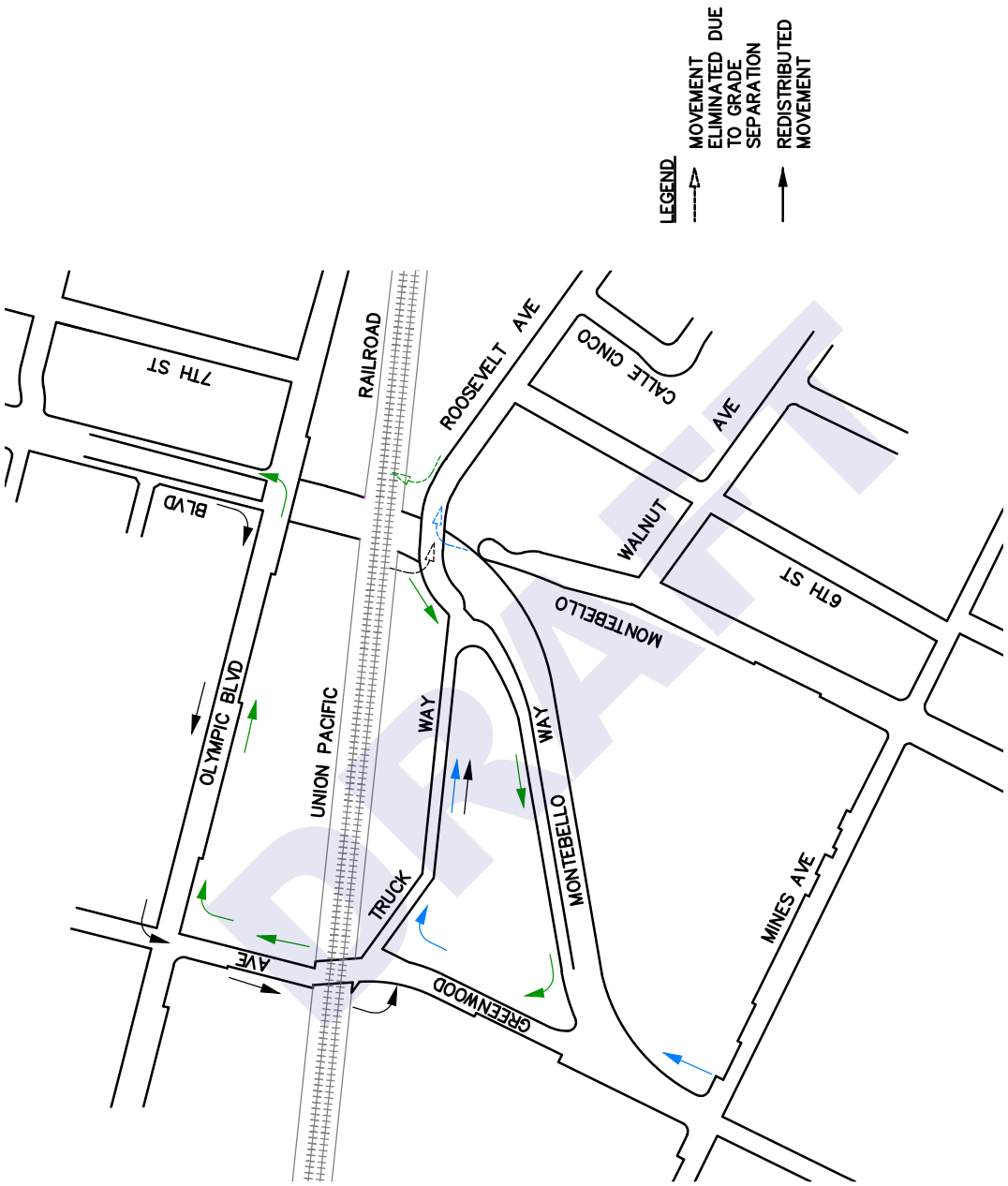
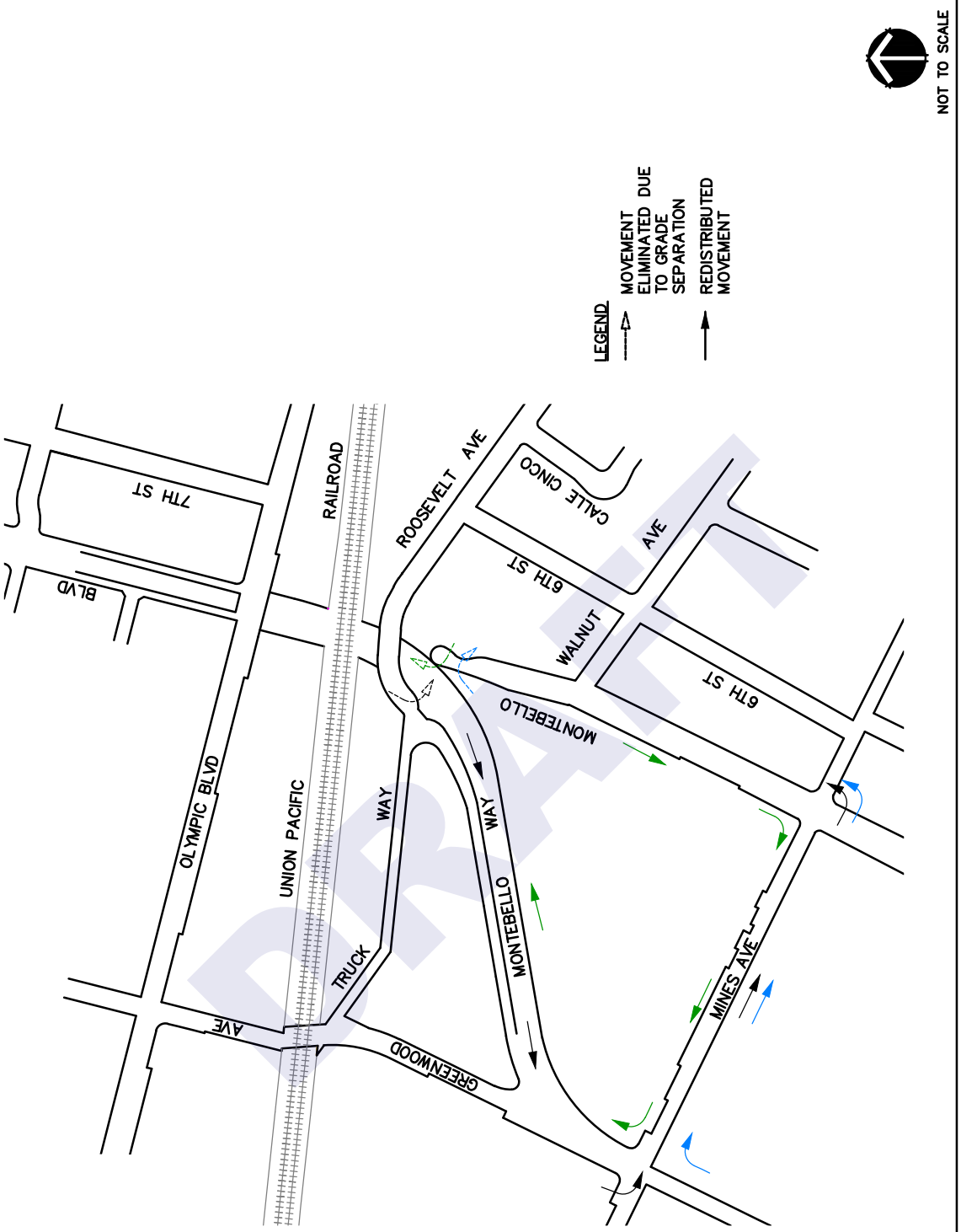


LIN Consulting, Inc. *Traffic, Civil, and Electrical Consulting Engineers*	MONTEBELLO CORRIDOR GS PROJECT PHASE 1 - CONCEPT DESIGN TRAFFIC STUDY REPORT	EXHIBIT - 29 CIRCULATION CHANGES AT INTERSECTION OF MONTEBELLO WAY AND ROOSEVELT AVE



LIN Consulting, Inc. *Traffic, Civil, and Electrical Consulting Engineers*	MONTEBELLO CORRIDOR GS PROJECT PHASE 1 - CONCEPT DESIGN TRAFFIC STUDY REPORT	EXHIBIT - 30 CIRCULATION CHANGES AT INTERSECTION OF MONTEBELLO WAY AND TRUCK WAY

12.2. INTERSECTION LEVEL OF SERVICE

Year 2022 traffic conditions with other development traffic and proposed project at the study area intersections are depicted in Table 31, 32, 33A and 33B. The LOS analysis worksheets from Synchro for Project Opening Year (Year 2022) with Other Development and proposed project traffic conditions are included in Appendix N. The intersection turning movement volumes for the Project Opening Year (Year 2022) with Other Developments and proposed project during weekday AM and PM peak hours are shown in Exhibit 31.

Table 31: Year 2022 + Other Developments + Project Traffic Conditions - Signalized Intersections

#	Intersection	AM Peak Hour		PM Peak Hour	
		LOS	ICU	LOS	ICU
25	Greenwood Ave. and Olympic Blvd.	E	86.5%	H	109.9%
27	Greenwood Ave. and Mines Ave.	C	67.2%	F	95.6%
33	Montebello Blvd. and Olympic Blvd.	A	49.1%	A	40.5%

Table 32: Year 2022 + Other Developments + Project Traffic Conditions - All-Way-Stop-Controlled Intersections

#	Intersection	AM Peak Hour		PM Peak Hour	
		LOS	Delay	LOS	Delay
36	Montebello Blvd. and Mines Ave.	C	18.6	F	98.3
48	Montebello Way/Roosevelt Ave. & Truck Way	A	8.4	A	8.6

Table 33A: Year 2022 + Other Developments + Project Traffic Conditions - AM Peak Hour - Two-Way-Stop-Controlled Intersections

#	Intersection	NB Approach		SB Approach		EB Approach		WB Approach	
		LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay
26	Greenwood Ave. and Montebello Way	N/A	N/A	C	22.5	N/A	N/A	N/A	N/A

Table 33B: Year 2022 + Other Developments + Project Traffic Conditions - PM Peak Hour - Two-Way-Stop-Controlled Intersections

#	Intersection	NB Approach		SB Approach		EB Approach		WB Approach	
		LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay
26	Greenwood Ave. and Montebello Way	N/A	N/A	F	114.8	N/A	N/A	N/A	N/A

LIN Consulting, Inc. *Traffic, Civil, and Electrical Consulting Engineers*	MONTEBELLO CORRIDOR GS PROJECT PHASE 1 - CONCEPT DESIGN TRAFFIC STUDY REPORT	EXHIBIT - 31 PROJECT OPENING YEAR (YEAR 2022) + OTHER DEVELOPMENTS + PROJECT AM/PM PEAK HOUR TRAFFIC VOLUMES

12.3. SIGNIFICANT IMPACTS - PROJECT OPENING YEAR (YEAR 2022)

Table 34 below lists whether a study area intersection is significantly impacted by the proposed project for the Project Opening Year (Year 2022).

Table 34: Intersections Significantly Impacted - Project Opening Year (Year 2022)

#	Intersection	AM Peak Hour	PM Peak Hour
25	Greenwood Ave. and Olympic Blvd.	YES	YES
26	Greenwood Ave. and Montebello Way	NO	YES
27	Greenwood Ave. and Mines Ave.	NO	YES
33	Montebello Blvd. and Olympic Blvd.	NO	NO
36	Montebello Blvd. and Mines Ave.	NO	YES

13. HORIZON YEAR - YEAR 2045 (WITHOUT PROJECT)

13.1. INTERSECTION LEVEL OF SERVICE

Year 2045 traffic conditions at the study area intersections are depicted in Table 35, 36, 37A and 37B. The intersection turning movement volumes for the Year 2045 Traffic Conditions during weekday AM and PM peak hours are shown in Exhibit 32. The LOS analysis worksheets from Synchro for Year 2045 traffic conditions are included in Appendix O.

Table 35: Year 2045 Traffic Conditions - Signalized Intersections

#	Intersection	AM Peak Hour		PM Peak Hour	
		LOS	ICU	LOS	ICU
25	Greenwood Ave. and Olympic Blvd.	D	76.5%	F	93.7%
27	Greenwood Ave. and Mines Ave.	C	68.8%	D	78.0%
33	Montebello Blvd. and Olympic Blvd.	D	79.6%	F	93.5%
35	Montebello Way/Montebello Blvd. and Truck Way	B	62.8%	C	72.0%

Table 36: Year 2045 Traffic Conditions - All-Way-Stop-Controlled Intersections

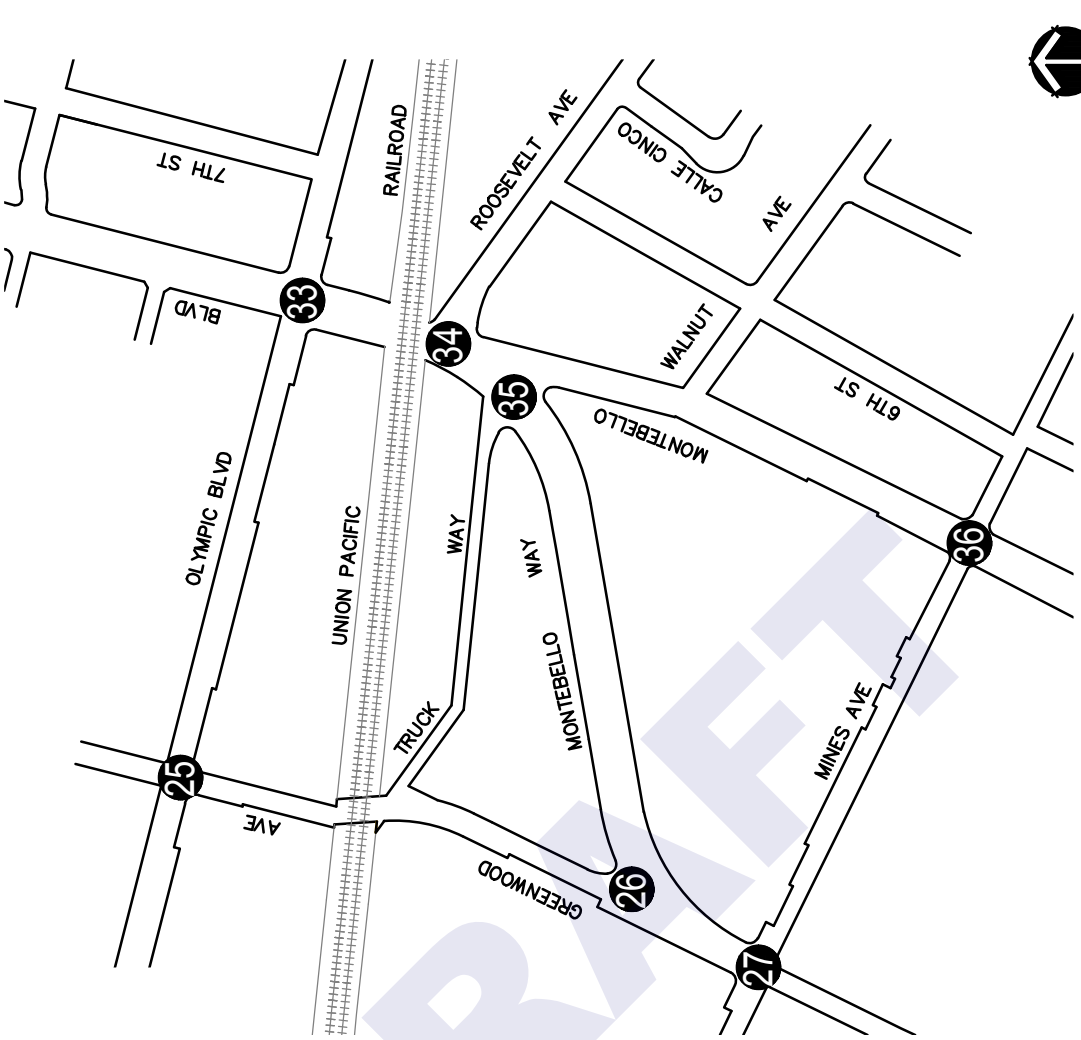
#	Intersection	AM Peak Hour		PM Peak Hour	
		LOS	Delay	LOS	Delay
36	Montebello Blvd. and Mines Ave.	B	12.8	B	13.4

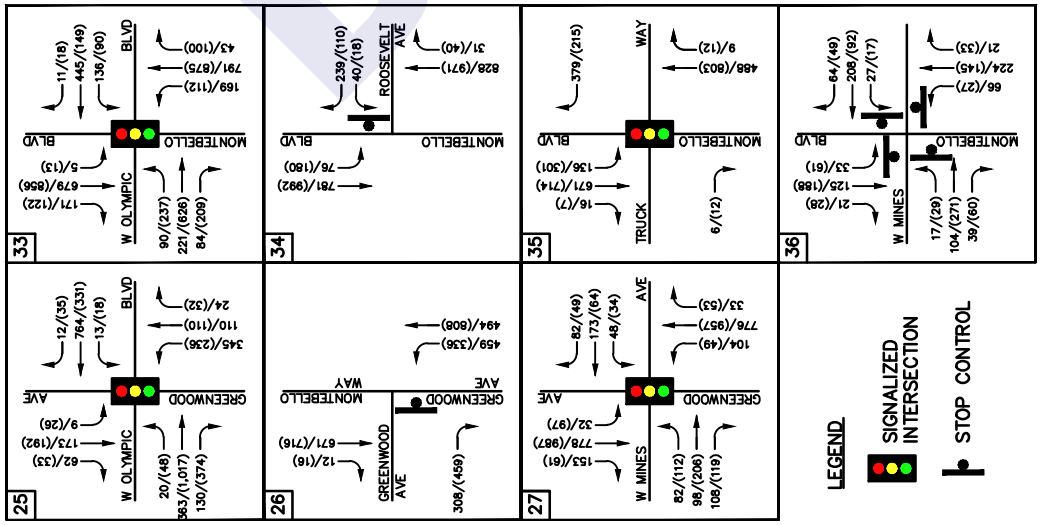
Table 37A: Year 2045 Traffic Conditions - AM Peak Hour - Two-Way-Stop-Controlled Intersections

#	Intersection	NB Approach		SB Approach		EB Approach		WB Approach	
		LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay
26	Greenwood Ave. and Montebello Way	N/A	N/A	C	16.9	N/A	N/A	N/A	N/A
34	Montebello Blvd. and Roosevelt Ave.	N/A	N/A	N/A	N/A	N/A	N/A	B	12.8

Table 37B: Year 2045 Traffic Conditions - PM Peak Hour - Two-Way-Stop-Controlled Intersections

#	Intersection	NB Approach		SB Approach		EB Approach		WB Approach	
		LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay
26	Greenwood Ave. and Montebello Way	N/A	N/A	D	32.1	N/A	N/A	N/A	N/A
34	Montebello Blvd. and Roosevelt Ave.	N/A	N/A	N/A	N/A	N/A	N/A	B	11.7





LIN Consulting, Inc. Traffic, Civil, and Electrical Consulting Engineers	MONTEBELLO CORRIDOR GS PROJECT PHASE 1 - CONCEPT DESIGN TRAFFIC STUDY REPORT	EXHIBIT - 32 HORIZON YEAR (YEAR 2045) WITHOUT PROJECT AM/PM PEAK HOUR TRAFFIC VOLUMES

14. HORIZON YEAR (YEAR 2045) PLUS PROJECT

14.1. INTERSECTION LEVEL OF SERVICE

Year 2045 traffic conditions with proposed project at the study area intersections are depicted in Table 38, 39, 40A and 40B. The LOS analysis worksheets from Synchro for Year 2045 traffic conditions with proposed project traffic are included in Appendix P. The intersection turning movement volumes for the Horizon Year (Year 2045) with Proposed Project during weekday AM and PM peak hours are shown in Exhibit 33.

Table 38: Year 2045 + Project Traffic Conditions - Signalized Intersections

#	Intersection	AM Peak Hour		PM Peak Hour	
		LOS	ICU	LOS	ICU
25	Greenwood Ave. and Olympic Blvd.	F	97.5%	H	124.5%
27	Greenwood Ave. and Mines Ave.	C	76.1%	G	107.0%
33	Montebello Blvd. and Olympic Blvd.	A	54.5%	A	44.7%

Table 39: Year 2045 + Project Traffic Conditions - All-Way-Stop-Controlled Intersections

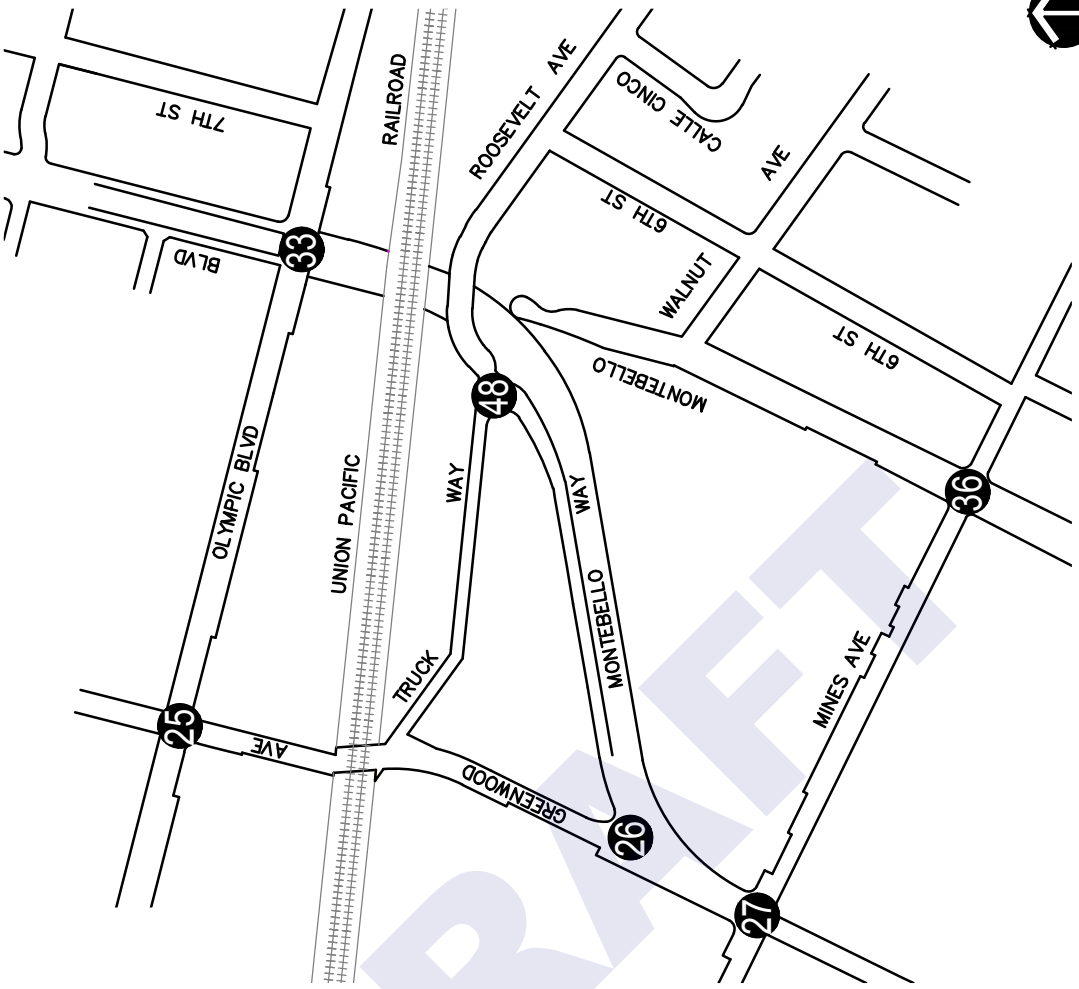
#	Intersection	AM Peak Hour		PM Peak Hour	
		LOS	Delay	LOS	Delay
36	Montebello Blvd. and Mines Ave.	D	31.8	F	158.9
48	Montebello Way/Roosevelt Ave. & Truck Way	A	8.7	A	9.0

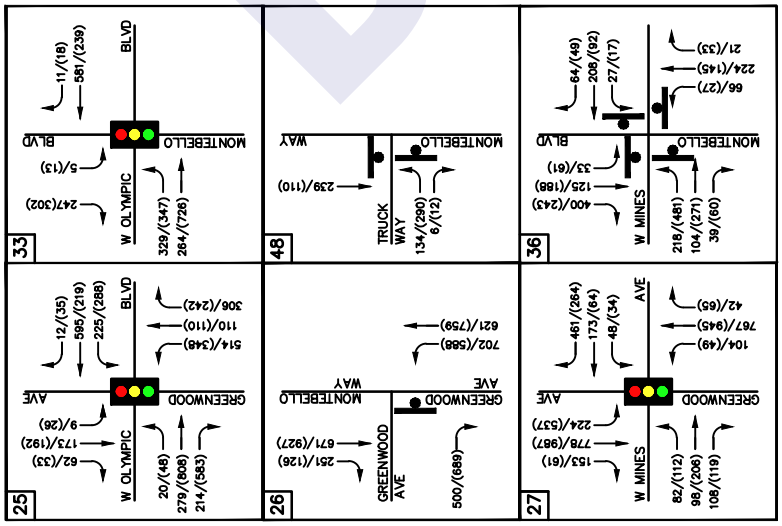
Table 40A: Year 2045 + Project Traffic Conditions - AM Peak Hour - Two-Way-Stop-Controlled Intersections

#	Intersection	NB Approach		SB Approach		EB Approach		WB Approach	
		LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay
26	Greenwood Ave. and Montebello Way	N/A	N/A	E	35.7	N/A	N/A	N/A	N/A

Table 40B: Year 2045 + Project Traffic Conditions - PM Peak Hour - Two-Way-Stop-Controlled Intersections

#	Intersection	NB Approach		SB Approach		EB Approach		WB Approach	
		LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay
26	Greenwood Ave. and Montebello Way	N/A	N/A	F	238.9	N/A	N/A	N/A	N/A





LIN Consulting, Inc. *Traffic, Civil, and Electrical Consulting Engineers*	MONTEBELLO CORRIDOR GS PROJECT PHASE 1 - CONCEPT DESIGN TRAFFIC STUDY REPORT	EXHIBIT - 33 HORIZON YEAR (YEAR 2045) + PROJECT AM/PM PEAK HOUR TRAFFIC VOLUMES

14.2. SIGNIFICANT IMPACTS - HORIZON YEAR (YEAR 2045)

Table 41 below lists whether a study area intersection is significantly impacted by the proposed project for the Horizon Year (Year 2045).

Table 41: Intersections Significantly Impacted - Horizon Year (Year 2045)

#	Intersection	AM Peak Hour	PM Peak Hour
25	Greenwood Ave. and Olympic Blvd.	YES	YES
26	Greenwood Ave. and Montebello Way	YES	YES
27	Greenwood Ave. and Mines Ave.	YES	YES
33	Montebello Blvd. and Olympic Blvd.	NO	NO
36	Montebello Blvd. and Mines Ave.	NO	YES