APPENDIX 3.2-C: 2015 BASELINE CONDITIONS TRAFFIC COUNTS VALIDATION

1055 West Seventh Street, Suite 2900
Los Angeles, CA 90017
o. 213.482.9444 | f. 213.482.5278
stvinc.com

MEMO

TO: Tyler Bonstead, PE, AICP, STV
FROM: Shadi Hakimi, STV
DATE: July 12, 2024
SUBJECT: Baseline Traffic Count Validation Results, Los Angeles to Anaheim Project Section

---

The purpose of this memorandum is to summarize the 2023 baseline traffic count validation efforts and determine whether substantial changes in traffic volumes and/or patterns have occurred within the California High Speed Rail (CAHSR) Los Angeles to Anaheim Project Section area post- COVID-19 pandemic. The ultimate objective is to assess if traffic counts collected in 2015 are valid to use as baseline conditions for the environmental analysis.

A previously prepared approach memorandum for these validation efforts was provided on May 18, 2023 (Attachment 1). This memorandum document proposed count locations, location selection rationale, and analysis methodology. This memorandum also described the prospective thresholds and criteria for determining whether a substantial change has occurred and was subsequently followed/superseded by another memorandum titled "Validation of Baseline Conditions Traffic Counts – Criteria and Thresholds, Los Angeles to Anaheim Project Section" approved by the Authority on April 30, 2024 (Attachment 2).

Data Collection

For the pre-pandemic (2015) condition, all turning movement count (TMC) and 24-hour Average Daily Traffic (ADT) counts were originally collected in September through November of 2015. Although collected on weeks without any major holidays, some results may have been seasonally affected by the Thanksgiving holiday since several counts were collected the week prior to Thanksgiving.

To measure potential changes, traffic counts were collected at sixteen (16) intersections and thirteen (13) roadway segments in May 2023 to use for traffic count validation analysis. Aim Traffic Data (AimTD), a professional traffic data collection firm, collected existing TMCs for the sixteen intersections during weekday AM (6:00 – 9:00 AM) and weekday PM (4:00 – 7:00) peak hours on Tuesday, May 23, 2023 for the majority of the corridor and Thursday, June 8, 2023 within the City of Commerce to determine the peak hour traffic volumes at each of the study intersections. The counts were taken on days when primary and secondary local schools were in session.

24- hour ADT counts with vehicle classifications were taken hourly and collected for the thirteen roadway segments on the same dates (Tuesday, May 23, 2023 for the majority of the corridor and Thursday, June 8, 2023 within the City of Commerce). It was determined that due to California State University at Fullerton (Cal State Fullerton) academic break and the Los Angeles Angels game in Anaheim, traffic counts at the selected locations within these areas were impacted. Subsequently, on October 17, 2023, these select locations were recounted, and a few other locations were added (as shown

1055 West Seventh Street, Suite 2900
Los Angeles, CA 90017
o. 213.482.9444 | f. 213.482.5278
stvinc.com

in **Table 6** and **Table 7**, indicated by a "+" next to the intersection identification number) to provide more data points for better accuracy of analyses.

The analysis used a 4-week county-wide Vehicle Miles Traveled (VMT) period between October 20, 2015 and November 16, 2015 from Caltrans PeMS database for the pre-pandemic condition. The 4-week county-wide VMT period between October 18, 2022 and November 14, 2022 from Caltrans PeMS database was selected for the post-pandemic condition. These 4-week periods are temporally similar to each other during the 2015 and 2022 calendar years to provide a comparable analysis.

Traffic Analysis Evaluation Criteria and Thresholds

Previously prepared approach memoranda for these validation efforts (original memo dated May 18, 2023 and superseded by the memo dated April 30, 2024, both attached) document proposed thresholds for determining whether a substantial change in traffic volumes has occurred. The approved criteria and thresholds are defined as follows:

- Change in Traffic Volume
  - Sum of all intersection turning movement count approach volumes and total roadway segment volumes not to exceed 15% variance.
  - Average of each approach volume difference not to exceed 15% variance.
- Change in Traffic Patterns
  - 75% or more of approach peak hour traffic volumes to be within 30% variance.
- Change in VMT
  - Total change in 4-week Los Angeles County + Orange County VMT not to exceed 5% pre-pandemic levels during the same 4-week period. The before and after years to calculate impacts of the COVID-19 pandemic on VMT was selected as 2015 and 2022.

Change in Traffic Volume

Results of traffic count validation from May 2023 for the "Change in Traffic Volume" criterion are presented in **Table 1** and **Table 2**. Based on these counts, there was a decrease in traffic volumes compared with the previously collected 2015 baseline traffic counts. The combined sum of all intersection TMC approach volumes and total roadway segment volumes showed a reduction from the 2015 count data of 12.8%. We were unable to collect the 2015 ADT along the roadway segment of Imperial Highway between Norwalk Boulevard and Bloomfield Avenue in the proposed Norwalk/Santa Fe Springs HSR Station area. Thus, this information was sourced from the 2014 LA County Strategic Goods Movement Plan. However, upon further review of the data, including other nearby count locations and traffic increase trends in the area and based on standard traffic analysis practice, it was determined that this ADT was an outlier and was excluded from the calculation.

The combined sum of all intersection TMC approach volumes and total roadway segment volumes resulted in a reduction of 8.6% between 2015 and 2023, which does not exceed the 15% variance threshold (see **Table 1**). The difference of each roadway segment is shown in **Table 2**. The average

1055 West Seventh Street, Suite 2900
Los Angeles, CA 90017
o. 213.482.9444 | f. 213.482.5278
stvinc.com

difference of each 2023 approach volume shows a reduction from the 2015 count data by 9.8%, which does not exceed the 15% variance threshold.

Table 1: Change in Traffic Volume between 2015 Traffic Counts and May 2023 Traffic Counts

Measure	Difference
Sum of All Intersection TMC / Average of Each Approach Volumes	-9.8%
Sum of Total Roadway Segment Volumes	-8.2%
Sum of All Intersection TMC and total roadway segment volumes	-8.6%

Source: *STV, 2024*

Table 2: Change in Roadway Segment Volumes between 2015 Traffic Counts and May 2023 Traffic Counts

Roadway ID	Roadway	From	To	City	Difference*
G012	Soto St	E 26th St	Washington Blvd	Los Angeles	-11.9%
G018	Garfield Ave	Telegraph Rd	Washington Blvd	Commerce	-29.0%
G036	Santa Fe Springs Rd	Telegraph Rd	Los Nietos Rd	Santa Fe Springs	3.2%
N045[1]	Imperial Hwy	Norwalk Blvd	Bloomfield Ave	Norwalk	-48.4%
N062	Carmenita Rd	Orden Dr	Rosecrans Ave	Santa Fe Springs	10.2%
G041	Valley View Ave	Gannet St	Stage Rd	Santa Fe Springs	-15.3%
G047	Beach Blvd (SR 39)	Franklin St	Stage Rd	Santa Fe Springs	-0.7%
G055	Gilbert St	Commonwealth Ave	Artesia Blvd	Fullerton	-2.5%
F019	Lemon St	Commonwealth Ave	Orangethorpe Ave	Fullerton	-27.6%
F035	Chapman Ave	Raymond Ave	Acacia Ave	Fullerton	-20.6%
G010	Lincoln Ave	Anaheim Blvd	East St	Anaheim	-23.2%
A009	State College Blvd	Gene Autry Way	Orangewood Ave	Anaheim	-9.7%
A032	Katella Ave	Sportstown	Howell Ave	Anaheim	27.4%

Source: *STV, 2024*

[1] *This roadway segment was excluded from this calculation, as it appeared to be an outlier*

** Color coding was added to show where the difference for the change in roadway segment volumes between 2015 and 2023 exceed the 15 percent threshold, specifically pink was added for volumes less than 15 percent and green was added for volumes more than 15 percent. Roadway segments that do not exceed the 15 precent threshold were not color coded.*

Change in Traffic Patterns

As presented in **Table 3**, more than 75% of the arterial intersection turning movement count approach volumes are within the 30% variance threshold. 80% of AM peak hour and 79% of PM peak hour intersection approach volumes had a change (positive or negative) of 30% or less, although most changes showed a decrease in volume (see **Table 3**). Routes to and from freeways (many are north-south) have decreased considerably in the AM peak, and to a lesser extent during the PM peak. There were a few large volume approaches with a reduction of over 50%. The difference of each approach is shown in **Table 4**.

1055 West Seventh Street, Suite 2900
Los Angeles, CA 90017
o. 213.482.9444 | f. 213.482.5278
stvinc.com

Table 3: Change in Traffic Patterns Between 2015 Traffic Counts and May 2023 Traffic Counts

Peak Hour	Total No. Approaches	No. Approaches Within 30% Variance	Share of Approaches Within 30% Variance
AM	65	52	80%
PM	65	51	79%

Source: *STV, 2024*

Table 4: Change in Approach Volumes Between 2015 Traffic Counts and May 2023 Traffic Counts

Int ID	Street 1	Street 2	City	Peak Hour	Difference*				
					NB	SB	EB	WB	Southwest
G100	Garfield Ave	Bandini Blvd	Commerce	AM	-25%	-22%	2%	-3%	NA
				PM	-19%	-15%	-18%	-46%	NA
G112	Greenwood Ave	Telegraph Rd	Montebello	AM	0%	0%	-14%	15%	NA
				PM	0%	-9%	11%	-3%	NA
N49	Studebaker Rd	Imperial Hwy	Norwalk	AM	-12%	-25%	-5%	-12%	NA
				PM	2%	-22%	1%	2%	NA
N71	Pioneer Blvd/San Antonio	Rosecrans Ave	Norwalk	AM	-32%	0%	16%	-13%	-26%
				PM	-4%	-2%	12%	-19%	-17%
N15	Bloomfield Ave	Imperial Hwy	Norwalk/Santa Fe Springs	AM	17%	-4%	3%	-3%	NA
				PM	16%	15%	16%	-6%	NA
N25	Carmenita Rd	Imperial Hwy	Santa Fe Springs/ Unincorporated LA County	AM	11%	14%	-16%	-2%	NA
				PM	3%	-1%	-3%	-12%	NA
G152	Beach Blvd (SR 39)	Artesia Ave	Buena Park	AM	4%	-14%	-2%	12%	NA
				PM	7%	-3%	-5%	-7%	NA
G153	Dale St	Malvern Ave	Buena Park	AM	14%	14%	-13%	-19%	NA
				PM	9%	-17%	-18%	-20%	NA
F26	Lemon St	Orangethorpe Ave	Fullerton	AM	-28%	-29%	-16%	-27%	NA
				PM	-13%	-24%	-4%	-12%	NA
F17	Harbor Blvd	Santa Fe Ave	Fullerton	AM	-19%	-21%	-19%	-57%	NA
				PM	2%	-17%	36%	7%	NA
F15	Harbor Blvd	Chapman Ave	Fullerton	AM	-22%	-15%	7%	-4%	NA
				PM	0%	8%	-1%	-20%	NA
F23	Lemon St	Chapman Ave	Fullerton/	AM	-34%	-27%	-10%	-29%	NA

1055 West Seventh Street, Suite 2900
Los Angeles, CA 90017
o. 213.482.9444 | f. 213.482.5278
stvinc.com

Int ID	Street 1	Street 2	City	Peak Hour	Difference*				
					NB	SB	EB	WB	Southwest
			Anaheim	PM	-28%	-37%	-16%	-19%	NA
A56	The City Dr/ State College Blvd	Chapman Ave	Orange	AM	-37%	-32%	-39%	-13%	NA
				PM	-51%	-37%	-38%	-23%	NA
A14	State College Blvd	Orangewood Ave	Orange	AM	-45%	-46%	-45%	-6%	NA
				PM	30%	-35%	12%	-23%	NA
A10	State College Blvd	Katella Ave	Anaheim	AM	-16%	-41%	77%	-13%	NA
				PM	23%	-29%	54%	64%	NA
A28	Douglass Rd	Katella Ave	Anaheim	AM	-37%	-30%	8%	4%	NA
				PM	-32%	-57%	86%	58%	NA

Source: *STV, 2024*
Notes:
Int ID = intersection identification number
NB = northbound, SB = southbound, EB = eastbound, WB = westbound
NA = not applicable

** Color coding was added to show where the difference for the change in approach volumes between 2015 and 2023 exceeds the 30 percent threshold, specifically pink was added for approach volumes less than 30 percent and green was added for approach volumes more than 30 percent. Approach volumes that do not exceed the 30 precent deviation threshold were not color coded.*

When comparing the counts in the proposed HSR Fullerton Station area, during the AM peak hour, nine (9) out of sixteen (16) approach volumes decreased by 20% or more. During the PM peak hour, five (5) out of sixteen (16) approach volumes decreased by more 20%. One explanation could be that Cal State Fullerton was on an academic break (May 12 was the last instructional day) and although counts were taken on May 23rd, a week without any major holidays, it was also one-week prior to the Memorial Day holiday.

When comparing the AM and PM peak periods in 2015 and 2023, peak hour time differences are mostly within 15 minutes or 30 minutes, except at intersection F17 for Harbor Boulevard and Santa Fe Avenue (shift from 4:00 PM to 5:00 PM) and F23 Lemon Street and Chapman Avenue (shift from 6:00 PM to 4:45 PM) during the PM peak period. These shifts might also speak to the fact that Cal State Fullerton was out on an academic break.

There also appears to be discrepancies in pattern changes by geographical area. For example, intersection locations A14, A10, and A28 showed a significant increase in traffic when compared to 2015 traffic counts, especially during the PM peak hour. While this increase can be partially attributed to new developments in the Anaheim and Orange areas, it appeared to be mostly due to the Los Angeles Angels baseball game that occurred on the same day as counts were collected in May 2023. To confirm the counts were skewed as a result of the baseball game, other counts in Anaheim were reviewed including Lincoln Avenue segment from Anaheim Boulevard to East Street (G010) and the intersection of State College Boulevard and Chapman Avenue (A56). These are shown in **Table 2** and **Table 4,** respectively. Both locations had a large decrease in traffic volumes while other sampled Anaheim

1055 West Seventh Street, Suite 2900
Los Angeles, CA 90017
o. 213.482.9444 | f. 213.482.5278
stvinc.com

locations within the vicinity of the stadium showed a large increase in traffic volumes. For Norwalk/Santa Fe Springs, this network could have been affected by the closure of some of the ramps and arterials (as part of the I-5 Expansion Project) during the 2015 collection period. As a result of low traffic volumes in 2015 due to a lack of access to the area, a substantial increase in 2023 traffic volumes could be expected as ramps and arterials were reopened.

Based on the review of traffic counts and results of analyses presented above, it was determined that Cal State Fullerton academic break and Los Angeles Angels game impacted the May 2023 recount intersections and roadway segments in Fullerton and Anaheim. It was recommended by the Authority that additional traffic data be collected from secondary sources (e.g., recent projects, traffic impact studies) or recounted in the field and analyzed to revalidate traffic counts. In the "LA-A Traffic Validation Path Forward" meeting held on September 19th, 2023, the Authority directed the RC to proceed with this recommendation, results of which are described below.

Three-hour AM and PM intersection turning movement traffic counts and 24-hour roadway segment counts were collected on Tuesday, October 17, 2023 at most of the same locations where counts were conducted in Fullerton and Anaheim in May 2023. Additional intersection and segment locations were added to enhance data analyses and reliability of results. These counts were collected under normal conditions, which per industry standards are defined as schools being in session, clear weather conditions, and no on-going construction, events, or incidents. Updated changes in traffic volumes and changes in roadway segment volumes based on the October 2023 counts are presented in **Table 5** and **Table 6**.

As shown in **Table 5**, because of October 2023 Fullerton and Anaheim recounts and adding additional validation count locations, the percentage difference in total traffic volume from 2015 to 2023 was greatly reduced. The average of each approach volume difference, sum of roadway segment traffic volumes, and combined sum of all intersection turning movement and roadway segment traffic counts vary from the 2015 count data by 7.6%, 2.9%, and 4%, respectively, which do not exceed the 15% variance threshold.

Moreover, as shown in **Table 6**, except for one location in Anaheim (A032), the absolute value of percentage differences in roadway segment volumes between 2015 and 2023 was reduced when including the October 2023 counts, as compared to the validation results of May 2023. **Table 6** also presents the segment traffic volumes that were used in the final calculations and validation of traffic counts. The October 2023 traffic counts were used for all locations that were new or recounted in October 2023 and May 2023 recounts were used for all other locations.

1055 West Seventh Street, Suite 2900
Los Angeles, CA 90017
o. 213.482.9444 | f. 213.482.5278
stvinc.com

Table 5: Change in Traffic Volume Between 2015 Traffic Counts and May 2023 Traffic Counts and October 2023 Traffic Re-Counts

	Difference (May 2023)	Difference (Oct 2023)
Sum of All Intersection TMC / Average of Each Approach Volumes	-9.8%	-7.6%
Sum of Total Roadway Segment Volumes	-8.2%	-2.9%
Sum of All Intersection TMC and total roadway segment volumes	-8.6%	-4.0%

Source: *STV, 2024*

Table 6: Change in Roadway Segment Volumes Between 2015 Traffic Counts and May 2023 Traffic Counts and October 2023 Traffic Re-Counts

Roadway ID	Roadway	From	To	City	Difference * (May Traffic Counts 2023)	Difference * (Oct Traffic Re-Counts 2023)	Traffic *Counts Used in final Revalidation
G010	Lincoln Ave	Anaheim Blvd	East St	Anaheim	-23.20%	NA	-23.20%
A009	State College Blvd	Gene Autry Way	Orangewood Ave	Anaheim	-9.70%	6.50%	6.50%
A032	Katella Ave	Sportstown	Howell Ave	Anaheim	27.40%	36.10%	36.10%
A005+	State College Blvd	Ball Rd	Cerritos Ave	Anaheim	NA	-19.70%	-19.70%
A045+	Katella Ave	Douglass Rd	Main St	Anaheim	NA	15.50%	15.50%
G018	Garfield Ave	Telegraph Rd	Washington Blvd	Commerce	-29.00%	NA	-29.00%
G055	Gilbert St	Commonwealth Ave	Artesia Blvd	Fullerton	-2.50%	NA	-2.50%
F013+	Harbor Blvd	Berkeley Ave	Chapman Ave	Fullerton	NA	14.20%	14.20%
F019	Lemon St	Commonwealth Ave	Orangethorpe Ave	Fullerton	-27.60%	-11.10%	-11.10%
F025+	State College Blvd	Dorothy Ln	Chapman Ave	Fullerton	NA	1.40%	1.40%
F035	Chapman Ave	Raymond Ave	Acacia Ave	Fullerton	-20.60%	-7.70%	-7.70%
F044+	Commonwealth Ave	Raymond Ave	Acacia Ave	Fullerton	NA	-17.50%	-17.50%
G012	Soto St	E 26th St	Washington Blvd	Los Angeles	-11.90%	NA	-11.90%
N045	Imperial Hwy	Norwalk Blvd	Bloomfield Ave	Norwalk	-48.40%	NA	-48.40%

1055 West Seventh Street, Suite 2900
Los Angeles, CA 90017
o. 213.482.9444 | f. 213.482.5278
stvinc.com

Roadway ID	Roadway	From	To	City	Difference * (May Traffic Counts 2023)	Difference * (Oct Traffic Re-Counts 2023)	Traffic *Counts Used in final Revalidation
G036	Santa Fe Springs Rd	Telegraph Rd	Los Nietos Rd	Santa Fe Springs	3.20%	NA	3.20%
N062	Carmenita Rd	Orden Dr	Rosecrans Ave	Santa Fe Springs	10.20%	NA	10.20%
G041	Valley View Ave	Gannet St	Stage Rd	Santa Fe Springs	-15.30%	NA	-15.30%
G047	Beach Blvd (SR 39)	Franklin St	Stage Rd	Santa Fe Springs	-0.70%	NA	-0.70%

Source: *STV, 2024*
Notes:
NA = not applicable

** Color coding was added to show where the difference for the change in roadway segment volumes between 2015 and 2023 exceeds the 15 percent threshold, specifically pink was added for volumes less than 15 percent and green was added for volumes more than 15 percent. Roadway segments that do not exceed the 15 precent threshold were not color coded.*

+ Indicates a new location that was added to ensure accuracy of analyses.

Table 7 presents a comparison of approach volume percent differences between the May 2023 counts and October 2023 recounts at selected locations. Most of the October 2023 recount locations show a smaller absolute percentage difference compared with May 2023 counts, which demonstrates that May 2023 counts may have been skewed due to abnormal conditions (e.g., sporting event and Cal State Fullerton out of session). Similar to the May 2023 count results, in comparing the 2015 traffic counts with the October 2023 recounts, more than 75% of the arterial intersection turning movement count approach volumes are within the 30% variance threshold.

Table 8 presents the approach traffic volume percentage differences that were used in the final calculation and validation of traffic counts. The October 2023 traffic counts were used for all locations that were new or recounted in October 2023 and May 2023 recounts were used for all other locations.

Table 9 shows the number and percentage of May and October count stations that deviated from the 30% variance threshold. For example, in October 2023, 81% of the morning (AM) and 85.7% of the evening (PM) counts showed a percentage deviation of less than 30%, which is consistent with the established threshold of 75% or more of approach peak hour traffic volumes to be within 30% variance.

1055 West Seventh Street, Suite 2900
Los Angeles, CA 90017
o. 213.482.9444 | f. 213.482.5278
stvinc.com

Table 7: Change in Approach Volumes Between 2015 Traffic Counts and May 2023 Traffic Counts and October 2023 Traffic Recounts

Int ID	Street 1	Street 2	City	Peak Hour	Difference*									
					Northbound		Southbound		Eastbound		Westbound		Southwest	
					23-May	23-Oct	23-May	23-Oct	23-May	23-Oct	23-May	23-Oct	23-May	23-Oct
G100+	Garfield Ave	Bandini Blvd	Commerce	AM	NA	-25%	NA	-22%	NA	2%	NA	-3%	N/A	N/A
				PM	NA	-19%	NA	-15%	NA	-18%	NA	-46%	N/A	N/A
G112+	Greenwood Ave	Telegraph Rd	Montebello	AM	NA	0%	NA	0%	NA	-14%	NA	15%	N/A	N/A
				PM	NA	0%	NA	-9%	NA	11%	NA	-3%	N/A	N/A
N49+	Studebaker Rd	Imperial Hwy	Norwalk	AM	NA	-12%	NA	-25%	NA	-5%	NA	-12%	N/A	N/A
				PM	NA	2%	NA	-22%	NA	1%	NA	2%	N/A	N/A
N71+	Pioneer Blvd/San Antonio	Rosecrans Ave	Norwalk	AM	NA	-32%	NA	0%	NA	16%	NA	-13%	-26%	NA
				PM	NA	-4%	NA	-2%	NA	12%	NA	-19%	-17%	NA
N15+	Bloomfield Ave	Imperial Hwy	Norwalk/Santa Fe Springs	AM	NA	17%	NA	-4%	NA	3%	NA	-3%	N/A	N/A
				PM	NA	16%	NA	15%	NA	16%	NA	-6%	N/A	N/A
N25+	Carmenita Rd	Imperial Hwy	Santa Fe Springs/	AM	NA	11%	NA	14%	NA	-16%	NA	-2%	N/A	N/A
			Unincorporated LA County	PM	NA	3%	NA	-1%	NA	-3%	NA	-12%	N/A	N/A
G152+	Beach Blvd SR 39	Artesia Ave	Buena Park	AM	NA	4%	NA	-14%	NA	-2%	NA	12%	N/A	N/A
				PM	NA	7%	NA	-3%	NA	-5%	NA	-7%	N/A	N/A
G153+	Dale St	Malvern Ave	Buena Park	AM	NA	14%	NA	14%	NA	-13%	NA	-19%	N/A	N/A
				PM	NA	9%	NA	-17%	NA	-18%	NA	-20%	N/A	N/A
F26	Lemon St	Orangethorpe Ave	Fullerton	AM	-28%	-2%	-29%	-28%	-16%	-10%	-27%	-17%	N/A	N/A
				PM	-13%	-18%	-24%	-17%	-4%	-8%	-12%	-8%	N/A	N/A

1055 West Seventh Street, Suite 2900
Los Angeles, CA 90017
o. 213.482.9444 | f. 213.482.5278
stvinc.com

Table 7 Change in Approach Volumes Between 2015 Traffic Counts and May 2023 Traffic Counts and October 2023 Traffic Recounts - Continued

Int ID	Street 1	Street 2	City	Peak Hour	Difference*									
					Northbound		Southbound		Eastbound		Westbound		Southwest	
					23-May	23-Oct	23-May	23-Oct	23-May	23-Oct	23-May	23-Oct	23-May	23-Oct
F17	Harbor Blvd	Santa Fe Ave	Fullerton	AM	-19%	-8%	-21%	-24%	-19%	31%	-57%	-45%	N/A	N/A
				PM	2%	-12%	-17%	-15%	36%	40%	7%	-5%	N/A	N/A
F15	Harbor Blvd	Chapman Ave	Fullerton	AM	-22%	-14%	-15%	-14%	7%	20%	-4%	-8%	N/A	N/A
				PM	0%	-8%	8%	-1%	-1%	4%	-20%	-12%	N/A	N/A
F23	Lemon St	Chapman Ave	Fullerton/	AM	-34%	6%	-27%	-20%	-10%	8%	-29%	-18%	N/A	N/A
			Anaheim	PM	-28%	-29%	-37%	4%	-16%	-12%	-19%	-4%	N/A	N/A
A56	The City Dr/ State College Blvd	Chapman Ave	Orange	AM	-37%	-17%	-32%	-41%	-39%	-7%	-13%	10%	N/A	N/A
				PM	-51%	-11%	-37%	-20%	-38%	-16%	-23%	-5%	N/A	N/A
A14+	State College Blvd	Orangewood Ave	Orange	AM	NA	-45%	NA	-46%	NA	-45%	NA	-6%	N/A	N/A
				PM	NA	30%	NA	-35%	NA	12%	NA	-23%	N/A	N/A
A10	State College Blvd	Katella Ave	Anaheim	AM	-16%	21%	-41%	-35%	77%	93%	-13%	-12%	N/A	N/A
				PM	23%	34%	-29%	-21%	54%	55%	64%	43 %	N/A	N/A
A28	Douglass Rd	Katella Ave	Anaheim	AM	-37%	-21%	-30%	-23%	8%	27%	4%	8%	N/A	N/A
				PM	-32%	-16%	-57%	-48%	86 %	79%	58%	42%	N/A	N/A
A6+	State College Blvd	Ball Rd	Anaheim	AM	NA	-16%	NA	-17%	NA	-7%	NA	4%	N/A	N/A
				PM	NA	-15%	NA	-26%	NA	-1%	NA	-4%	N/A	N/A

1055 West Seventh Street, Suite 2900
Los Angeles, CA 90017
o. 213.482.9444 | f. 213.482.5278
stvinc.com

Table 7 Change in Approach Volumes Between 2015 Traffic Counts and May 2023 Traffic Counts and October 2023 Traffic Recounts - Continued

Int ID	Street 1	Street 2	City	Peak Hour	Difference*									
					Northbound		Southbound		Eastbound		Westbound		Southwest	
					23-May	23-Oct	23-May	23-Oct	23-May	23-Oct	23-May	23-Oct	23-May	23-Oct
A8+	State College Blvd	Cerritos Ave	Anaheim	AM	NA	-14%	NA	-27%	NA	-35%	NA	3%	N/A	N/A
				PM	NA	-6%	NA	-23%	NA	-23%	NA	2%	N/A	N/A
A23+	SR 57 SB Ramps	Chapman Ave	Orange	AM	NA	80%	NA	36%	NA	14%	NA	-7%	N/A	N/A
				PM	NA	-35%	NA	9%	NA	-2%	NA	-11%	N/A	N/A
A26+	SR 57 SB Ramps	Orangewood Ave	Orange	AM	NA	37%	NA	NA	NA	-70%	NA	-34%	N/A	N/A
				PM	NA	19%	NA	NA	NA	-61%	NA	-13%	N/A	N/A
A30+	Main Street	Taft Ave	Orange	AM	NA	-24%	NA	-42%	NA	-7%	NA	-21%	N/A	N/A
				PM	NA	30%	NA	-27%	NA	-15%	NA	-16%	N/A	N/A

Source: *STV, 2024*
Notes:
Int ID = intersection identification number
NA = Not applicable

** Color coding has been introduced to highlight differences in intersection approach volumes between 2015 and 2023 that exceed the 30 percent threshold. Specifically, pink indicates reductions of over 30 percent, while green indicates increases over 30 percent. Intersection approaches that do not exceed the 30 percent threshold remain uncolored.*
+ Indicates a new location that was added to ensure accuracy of analyses.

1055 West Seventh Street, Suite 2900
Los Angeles, CA 90017
o. 213.482.9444 | f. 213.482.5278
stvinc.com

Table 8: Change in Approach Volumes Between 2015 Traffic Counts and 2023 Traffic Recounts Validation

Int ID	Street 1	Street 2	City	Peak Hour	Difference*				
					NB	SB	EB	WB	Southwest
G100	Garfield Ave	Bandini Blvd	Commerce	AM	-25%	-22%	2%	-3%	
				PM	-19%	-15%	-18%	-46%	
G112	Greenwood Ave	Telegraph Rd	Montebello	AM	0%	0%	-14%	15%	
				PM	0%	-9%	11%	-3%	
N49	Studebaker Rd	Imperial Hwy	Norwalk	AM	-12%	-25%	-5%	-12%	
				PM	2%	-22%	1%	2%	
N71	Pioneer Blvd/San Antonio	Rosecrans Ave	Norwalk	AM	-32%	0%	16%	-13%	-26%
				PM	-4%	-2%	12%	-19%	-17%
N15	Bloomfield Ave	Imperial Hwy	Norwalk/Sana Fe Springs	AM	17%	-4%	3%	-3%	
				PM	16%	15%	16%	-6%	
N25	Carmenita Rd	Imperial Hwy	Santa Fe Springs/Unincorporated LA County	AM	11%	14%	-16%	-2%	
				PM	3%	-1%	-3%	-12%	
G152	Beach Blvd (SR 39)	Artesia Ave	Buena Park	AM	4%	-14%	-2%	12%	
				PM	7%	-3%	-5%	-7%	
G153	Dale St	Malvern Ave	Buena Park	AM	14%	14%	-13%	-19%	
				PM	9%	-17%	-18%	-20%	
F26	Lemon St	Orangethorpe Ave	Fullerton	AM	-2%	-28%	-10%	-17%	
				PM	-18%	-17%	-8%	-8%	
F17	Harbor Blvd	Santa Fe Ave	Fullerton	AM	-8%	-24%	31%	-45%	
				PM	-12%	-15%	40%	-5%	
F15	Harbor Blvd	Chapman Ave	Fullerton	AM	-14%	-14%	20%	-8%	
				PM	-8%	-1%	4%	-12%	

1055 West Seventh Street, Suite 2900
Los Angeles, CA 90017
o. 213.482.9444 | f. 213.482.5278
stvinc.com

Table 8: Change in Approach Volumes Between 2015 Traffic Counts and 2023 Traffic Recounts Validation - Continued

Int ID	Street 1	Street 2	City	Peak Hour	Difference*				
					NB	SB	EB	WB	Southwest
F23	Lemon St	Chapman Ave	Fullerton/Anaheim	AM	6%	-20%	8%	-18%	
				PM	-29%	4%	-12%	-4%	
A56	The City Dr/ State College Blvd	Chapman Ave	Orange	AM	-17%	-41%	-7%	10%	
				PM	-11%	-20%	-16%	-5%	
A14	State College Blvd	Orangewood Ave	Orange	AM	-45%	-46%	-45%	-6%	
				PM	30%	-35%	12%	-23%	
A10	State College Blvd	Katella Ave	Anaheim	AM	21%	-35%	93%	-12%	
				PM	34%	-21%	55%	43%	
A28	Douglass Rd	Katella Ave	Anaheim	AM	-21%	-23%	27%	8%	
				PM	-16%	-48%	79%	42%	
A6	State College Blvd	Ball Rd	Anaheim	AM	-16%	-17%	-7%	4%	
				PM	-15%	-26%	-1%	-4%	
A8	State College Blvd & Cerritos Ave	Cerritos Ave	Anaheim	AM	-14%	-27%	-35%	3%	
				PM	-6%	-23%	-23%	2%	
A23	SR 57 SB Ramps & Chapman Ave	Chapman Ave	Orange	AM	80%	36%	14%	-7%	
				PM	-35%	9%	-2%	-11%	
A26	SR 57 NB Ramps & Orangewood Ave 1	Orangewood Ave	Orange	AM	36.7%	-	-70.1%	-34.3%	
				PM	19%	-	-61%	-13%	
A30	Main St & Ball Rd/Taft Ave 1	Taft Ave	Orange	AM	-24.2%	-41.8%	-7.3%	-20.5%	
				PM	30%	-27%	-15%	-16%	

Notes: Source, STV 2024
Int ID = intersection identification number
NB = northbound, SB = southbound, EB = eastbound, WB = westbound
** Color coding has been introduced to highlight differences in intersection approach volumes between 2015 and 2023 that exceed the 30 percent threshold. Specifically, pink indicates reductions of over 30 percent, while green indicates increases over 30 percent. Intersection approaches that don't exceed the 30 percent threshold remain uncolored.*

1055 West Seventh Street, Suite 2900
Los Angeles, CA 90017
o. 213.482.9444 | f. 213.482.5278
stvinc.com

Table 9: Change in Traffic Patterns between 2015 Traffic Counts and May 2023 Traffic Counts and October 2023 Traffic Re-Counts

Peak Hour	Total No. Approaches		No. Approaches over 30% variance		Percentage over variance	
	May	Oct	May	Oct	May	Oct
AM	65	84	13	16	20%	19.0%
PM	65	84	14	12	21.5%	14.3%

Source: *STV, 2023*

Change in VMT

To evaluate impacts of the COVID-19 pandemic using the Change in VMT criterion, Los Angeles County and Orange County VMTs were extracted from the Caltrans PeMS database for the pre-pandemic 4-week period of 10/20/2015 through 11/16/2015 and the post-pandemic 4-week period of 10/18/2022 through 11/14/2022. As presented in **Table 10** for each county, the percentage difference in 4-week total VMT for these counties between 2015 and 2022 was calculated to be 1.4%, indicating a decrease in 2022 but less than the 5% threshold for Change in VMT Criterion.

Table 10: Change in VMT from 2015 to 2022

County	Difference
Los Angeles County	-1.3%
Orange County	-1.8%
Total	-1.4%

Source: *STV, 2023*

1055 West Seventh Street, Suite 2900
Los Angeles, CA 90017
o. 213.482.9444 | f. 213.482.5278
stvinc.com

Conclusion

This validation exercise aimed to determine the validity of the 2015 traffic counts collected for the Los Angeles to Anaheim project section, considering the impact of the COVID-19 pandemic on travel patterns. The ultimate objective was to assess if 2015 project collected traffic counts are valid to use as baseline conditions. To assess this, three criteria thresholds were established to evaluate whether the 2015 traffic counts could still be used as the baseline counts.

Due to Cal State Fullerton being out of session and sporting events in May 2023, some traffic count locations were resampled or added in October 2023. The results of the resampling effort led to a more accurate representation of 2023 traffic volumes levels and patterns, and better met the established criteria and thresholds for validating baseline 2015 traffic volumes, traffic patterns, and Vehicle Miles Traveled (VMT). Based on these findings, RC concludes that the 2015 traffic counts remain valid to use as baseline conditions.

Respectfully submitted,

Shadi Hakimi
Senior Project Manager
STV, Inc.
(512) 241-2211
shadi.hakimi@stvinc.com

Attachments: Scoping Memorandum for Validation of Baseline Traffic Counts, Los Angeles to Anaheim Project Section – May 18 2023
Traffic Revalidation Criteria and Justification – April 30, 2024