

# Appendix M

## **Traffic Memorandum**



# MEMORANDUM

---

To: Daniel Inloes, AICP  
Development Services  
City of Costa Mesa

Date: August 27, 2019

---

From: Trissa de Jesus Allen, P.E.  
LLG, Engineers

LLG Ref: 2.18.4031.1

---

Subject: EF Costa Mesa: Focused Traffic Evaluation

---

As follow up to our prior meetings, we wanted to thank City staff for working with us to understand the transportation characteristics of this unique Project. Based on that coordination with City staff, we prepared this focused evaluation of the Project's tripmaking potential and future traffic operations under Project buildout conditions.

As you know, the EF use has many uncommon characteristics which are not typical of most trip generators. Due to these unique characteristics, we have put a lot of time and effort into studying and establishing the appropriate trip rates and understanding the travel behavior of the different user groups which we anticipate will be present at the EF campus. We provided data from other EF facilities which should have very similar or nearly identical characteristics. In particular, we provided data from the San Diego campus which is a close analogue being a Southern California campus with similar faculty and student characteristics. We believe that this establishes a very strong record on which to evaluate trip generation and we are thankful that the City of Costa Mesa has taken that information and agreed to use it as a primary basis in this focused traffic evaluation.

Please refer to **Appendix A** (attached at the end of this technical memorandum) for LLG's *EF Education First Trip Generation Assessment* (dated April 9, 2019) and *EF Costa Mesa: Responses to City Comments* (dated August 1, 2019), which include a complete record of the data provided by EF, collected by Urban Systems Associates, and reviewed for adequacy by LLG. **Appendix B** contains the intersection peak hour level of service worksheets, and **Appendix C** provides the traffic signal warrant worksheets for the Project driveway's intersection with Bear Street.

## PROJECT TRIP GENERATION

The traffic generation forecasts were developed based on the Project as now proposed, anticipated operational characteristics (i.e., programming, student enrollment, student dormitories, employee pool), and empirical data collected from existing EF campuses, as documented in LLG's prior *EF Education First Trip Generation Assessment*, dated April 9, 2019.



Engineers & Planners  
Traffic  
Transportation  
Parking

Linscott, Law &  
Greenspan, Engineers

2 Executive Circle  
Suite 250  
Irvine, CA 92614  
949.825.6175 T  
949.825.6173 F  
www.llgengineers.com

Pasadena  
Irvine  
San Diego  
Woodland Hills

Due to the international nature of the student body, the tripmaking characteristics of an EF International Language School is significantly different from conventional universities, junior/community colleges, boarding schools, and trade schools because of the following aspects inherent in, and integral to, EF's program. EF's demographics, programming, and multimodal approach to selecting sites for future campuses, are unique and well-documented from multiple independent evaluations, city approvals, and recent traffic counts from several US campuses (EF San Diego, two EF campuses in New York, EF Brighton in Massachusetts, EF Miami Beach in Florida).

The unique attributes of the EF program and similar anticipated operations at the future Costa Mesa campus clearly demonstrate that the trip generation potential for the proposed project is unlike, and therefore cannot be compared to, those of a typical university, junior or community college, boarding school, and trade school. It is important to note this because the trip generation factors and equations that are readily available from ITE, SANDAG, ULI, other industry publications, and empirical trip generation studies conducted previously by LLG and other firms, are for these conventional educational uses that do not represent, and are not indicative of, the trip characteristics of an International Language School, such as EF.

As discussed above, there are no readily available sources for trip generation rates for International Language Schools. In order to estimate the tripmaking potential for the project, the trip generation surveys, traffic counts, and calculations from existing EF campuses were considered the most appropriate and accurate data source. The focus of our empirical study has been the EF San Diego campus, given that EF Santa Barbara does not have student housing, and the highly urbanized EF San Francisco setting is not representative of the local setting for the proposed campus in Costa Mesa.

As documented in LLG's prior *EF Education First Trip Generation Assessment*, dated April 9, 2019, this approach is conservative since the programming makes it foreseeable that a greater percentage of students and employees from the Project would use public transit, bike, and walk due to the following:

- proposed EF shuttle service (that would connect to OCTA bus stops)
- proximity of the campus to South Coast Plaza (served by a variety of OCTA bus routes), which is about a 5-minute walk from the project site
- proximity of the campus to the existing OCTA bus stop at the Bear Street/Baker Street intersection that is an 8-minute walk from the site

- Class II bike lanes are proposed along Bear Street between the I-405 Freeway and Baker Street in the City’s June 2018 Active Transportation Plan
- Bear Street between Sunflower Avenue and Baker Street is identified as a “Pedestrian Opportunity Zone” in the City’s June 2018 Active Transportation Plan, where the City will pursue street enhancements to create pedestrian-friendly environments

*Table 1* indicates that buildout of the Project could generate “gross project trips” of 455 daily trips, 88 AM peak hour trips, and 78 PM peak hour trips. In order to be conservative, this focused traffic study has been prepared to analyze and disclose the impacts of the Project without any trip credits for the existing TBN baseline. These gross Project trips were assigned to the Project Driveway along Bear Street. No other signalized intersections within the influence area of the Project have been analyzed because the Project is not expected to add more than 50 peak hour trips at any other signalized intersection.

*Table 1* compares the Project’s trip generation against the existing baseline (TBN use), and indicates that the Project would generate fewer trips than the TBN use during a typical weekday, AM peak hour, and PM peak hour. The Project would be generating 15% to 19% fewer peak hour trips compared to what the TBN use generated. The “net project trips” correspond to 88 daily trips, 15 AM peak hour trips, and 18 PM peak hour trips less than the TBN use. This indicates that the Project would cause less traffic impacts at key intersections compared to TBN.

Based on *Section 13-275 (a): Development Project Review Procedures* of the City’s Municipal Code, a traffic impact study is required for all development projects generating 100 or more peak hour trips. According to the City’s criteria, a traffic impact study is not required for the EF project for two reasons: (1) taking into account the TBN use credit, the Project would result in net fewer trips; and (2) the Project’s future net trip generation at buildout would be negative and below the 100 peak-hour-trip threshold.

## **PROJECT DRIVEWAY LEVEL OF SERVICE AND QUEUING ANALYSIS**

For the purposes of this focused traffic study, although the Project is expected to be completed in Year 2020, a horizon year of Year 2021 was evaluated to provide the most conservative impact assessment.

**Table 2** summarizes the intersection operations at the Project driveway along Bear Street under Year 2021 traffic conditions at completion and full occupancy of the proposed Project, assuming buildout conditions to provide the most conservative “worse-case” scenario. The operations analysis for the project driveway is based on the *Highway Capacity Manual 6<sup>th</sup> Edition* methodology.

**Table 2** indicates that the Project driveway (specifically, the westbound approach of the driveway’s intersection with Bear Street) is forecast to operate at LOS E during the PM peak hour under Year 2021 traffic conditions. It is not uncommon for the minor street approach of unsignalized driveway intersections, such as that of the Project, to experience a longer delay due to impedance from the relatively heavier volumes on the major streets, such as Bear Street. It should be noted that the most constrained traffic movement at the intersection are the westbound left-turns (i.e., vehicles exiting the site to travel southbound on Bear Street), which corresponds to only 29 PM peak hour trips, or roughly 1 vehicle every 2 minutes during the PM peak hour. Additionally, due to the driveway being in close proximity to the signalized intersections of Bear Street at Metro Pointe East/South Coast Plaza to the north and Bear Street at Paularino Avenue to the south, it is expected that adequate gaps in traffic would occur and actual vehicular delay experienced would be less than what is being reported based on the HCM methodology.

The expected 95<sup>th</sup> percentile vehicular queue experienced for the driveway would not exceed 2-vehicles during any time period, further validating that the forecasted adverse LOS at this driveway may be adverse, but not insignificant. **Table 3** presents the queuing results for the inbound and outbound movements at the Project Driveway. **Table 3** indicates that the 95<sup>th</sup> percentile queue is at most two vehicles for the westbound left-turn movement, and at most one vehicle for the westbound right-turn, southbound left-turn and northbound right-turn movements at the Project Driveway. These short queues are fully accommodated and expected to easily dissipate at the Project Driveway intersection.

## PROJECT DRIVEWAY SIGNAL WARRANT ANALYSIS

Although the Project Driveway is forecast to operate adversely during the PM peak hour, this is not considered a significant impact since a traffic signal is not warranted for this driveway. For this assessment, the need for signalization is assessed on the basis of a peak-hour traffic signal warrant. Warrant #3 is described in the *California Manual on Uniform Traffic Control Devices (MUTCD)*. Warrant #3 has two parts: 1) Part A evaluates peak hour vehicle delay for traffic on the minor street approach with

the highest delay and 2) Part B evaluates peak-hour traffic volumes on the major and minor streets. This method provides an indication of whether peak-hour traffic conditions or peak-hour traffic volume levels are, or would be, sufficient to justify installation of a traffic signal.

**Table 4** summarizes the results of the peak-hour traffic signal warrant analysis for Year 2021 Plus Project traffic conditions. The results indicate that the Project Driveway along Bear Street will not exceed the thresholds of Warrant #3, Part A and/or Part B for the AM and/or PM peak hour. Hence, a traffic signal is not warranted for the Project Driveway.

Based on the detailed intersection peak hour level of service analysis, queuing evaluation, and traffic signal warrant analysis, we conclude that the LOS E during the PM peak hour under Year 2021 Project buildout conditions at the Project Driveway's intersection with Bear Street may be adverse, but not significant.

We appreciate the opportunity to present this focused traffic study. If you have any questions regarding this submittal, please do not hesitate to call me at (949) 825-6175.

TABLE 1  
TRIP GENERATION ESTIMATES FOR PROPOSED EF (BUILDOUT)  
EF Education First, Costa Mesa

| Project Component  | Units   | Daily<br>(2-Way) | AM Peak Hour |           |              | PM Peak Hour |             |              |
|--|---|------------------|--------------|-----------|--------------|--------------|-------------|--------------|
|  |   |                  | Enter        | Exit      | Total        | Enter        | Exit        | Total        |
| <b><u>Prior Site Development Trip Generation</u></b>           |   |                  |              |           |              |              |             |              |
| Corporate Headquarters Bldg.<br>(prior TBN)                    | 68,000 SF   | 543              | 96           | 7         | 103          | 10           | 86          | 96           |
| <b><u>Project Trip Generation Rates [a]</u></b>                |   |                  |              |           |              |              |             |              |
| Commuter Students (trips per commuter student)                 |   | 0.341            | 0.048        | 0.005     | 0.053        | 0.012        | 0.029       | 0.041        |
| Employees Living Off Site (trips per employee)                 |   | 2.250            | 0.700        | 0.100     | 0.800        | 0.100        | 0.700       | 0.800        |
| RAs/Employees Living On Site                                   |   | 0.600            | 0.004        | 0.018     | 0.022        | 0.017        | 0.007       | 0.024        |
| Resident Students (trips per bed)                              |   | 0.070            | 0.001        | 0.006     | 0.007        | 0.005        | 0.002       | 0.007        |
| <b><u>Project Trip Generation</u></b>                          |   |                  |              |           |              |              |             |              |
| Commuter Students  | 720 students  | 246              | 35           | 4         | 39           | 9            | 21          | 30           |
| Employees Living Off Site                                      | 50 emp  | 113              | 35           | 5         | 40           | 5            | 35          | 40           |
| RAs/Employees Living On Site                                   | 20 beds   | 12               | 0            | 0         | 0            | 0            | 0           | 0            |
| Resident Students  | 627 beds  | 44               | 1            | 4         | 5            | 3            | 1           | 4            |
|  | Sub-Total Vehicle Trips:                            | 415              | 71           | 13        | 84           | 17           | 57          | 74           |
|  | Add Future EF Shuttle Trips:                        | 40               | 2            | 2         | 4            | 2            | 2           | 4            |
|  | <b>Future Gross Project Trips:</b>                  | <b>455</b>       | <b>73</b>    | <b>15</b> | <b>88</b>    | <b>19</b>    | <b>59</b>   | <b>78</b>    |
|  | Less Prior TBN Vehicle Trips (from above):          | (543)            | (96)         | (7)       | (103)        | (10)         | (86)        | (96)         |
|  | <b>Future Net Project Trips:</b>                    | <b>(88)</b>      | <b>(23)</b>  | <b>8</b>  | <b>(15)</b>  | <b>9</b>     | <b>(27)</b> | <b>(18)</b>  |
| <b><u>Project Trips vs. City's TIA Study Threshold [b]</u></b> |   |                  |              |           |              |              |             |              |
|  | Future Net Project Trips (from above):              | --               | --           | --        | (15)         | --           | --          | (18)         |
|  | Less City's 100-peak hour trip TIA Study Threshold: | --               | --           | --        | (100)        | --           | --          | (100)        |
|  | <b>Threshold Met/TIA Required?</b>                  |                  |              |           | <b>(115)</b> |              |             | <b>(118)</b> |
|  |   |                  |              |           | <b>No</b>    |              |             | <b>No</b>    |
| <b><u>Total Project Daily Trip Rate Derivation</u></b>         |   |                  |              |           |              |              |             |              |
| Proposed Total Gross Floor Area                                | 155,000 SF  |                  |              |           |              |              |             |              |
| Daily Trip Rate for EF (455 ADT / 155 KSF)                     |   | 2.94             | --           | --        | --           | --           | --          | --           |
| (< 3 ADT per KSF threshold for 0.75 FAR)                       |   |                  |              |           |              |              |             |              |

Notes:

- [a] Source: "EF Costa Mesa Campus Traffic Characteristics", prepared by Urban Systems Associates, Inc., November 30, 2018. The daily trip generation rates derived from empirical data (as described in Appendix C of the TIA) were further adjusted and increased by 10% for commuter students, and 5% for resident students. It is presumed that 50% of these increases would occur during each of the AM and PM peak hours, as a conservative measure. Anticipated employee/staffing number, types, and work shifts for the EF Costa Mesa campus, plus a conservative assumption that each employee drives alone, provided the basis for the AM and PM peak hour trips for employees living off-site.
- [b] Based on Section 13-275 (a): Development Project Review Procedures of the City's Municipal Code, a traffic impact study is required for all development projects generating 100 or more peak hour trips.

TABLE 2  
PROJECT DRIVEWAY LEVEL OF SERVICE ANALYSIS  
EF EDUCATION FIRST, COSTA MESA

| Key Intersection | Control Type | Time Period | (1)<br>Year 2021 plus Project<br>Traffic Conditions |     |
|------------------|--------------|-------------|---|-----|
|                  |              |             | Delay (s/v)   | LOS |
| Bear Street at   | Two-way      | AM          | 14.6  | B   |
| Project Driveway | Stop         | PM          | 49.8  | E   |

Notes:

s/v = seconds per vehicle (delay)

TABLE 3  
PROJECT DRIVEWAY QUEUING ANALYSIS  
EF EDUCATION FIRST, COSTA MESA

| Key Intersection             | (1)<br>Year 2021 Plus Project<br>Traffic Conditions |   |
|------------------------------|---|---|
|                              | AM Peak Hour<br>95th Percentile<br>Queue (vehicles) | PM Peak Hour<br>95th Percentile<br>Queue (vehicles) |
| Bear Street at               |   |   |
| Project Driveway             |   |   |
| <i>Westbound Left-Turn</i>   | <i>1 vehicle</i>                                    | <i>2 vehicles</i>                                   |
| <i>Westbound Right-Turn</i>  | <i>1 vehicle</i>                                    | <i>1 vehicle</i>                                    |
| <i>Southbound Left-Turn</i>  | <i>1 vehicle</i>                                    | <i>1 vehicle</i>                                    |
| <i>Northbound Right-Turn</i> | <i>0 vehicles</i>                                   | <i>0 vehicles</i>                                   |

TABLE 4  
PROJECT DRIVEWAY SIGNAL WARRANT ANALYSIS  
EF EDUCATION FIRST, COSTA MESA

| Key Intersection | Time Period | (1)<br>Year 2021 Plus Project<br>Traffic Conditions |                                      |
|------------------|-------------|---|--------------------------------------|
|                  |             | Part A of<br>Warrant 3<br>Satisfied?                | Part B of<br>Warrant 3<br>Satisfied? |
| Bear Street at   | AM          | No  | No                                   |
| Project Driveway | PM          | No  | No                                   |

**APPENDIX A**  
**PRIOR SUBMITTALS**

*APPENDIX A-1*

**APRIL 9, 2019 EF EDUCATION FIRST TRIP  
GENERATION ASSESSMENT**

April 9, 2019

Ms. Shawna Marino  
EF Education First  
Two Education Circle  
Cambridge, MA 02141

LLG Reference: 2.18.4031.1

Subject: **Revised**  
**EF Education First Trip Generation Assessment**  
Costa Mesa, California

Dear Ms. Marino:

Linscott, Law & Greenspan, Engineers (LLG) is pleased to provide this Revised Trip Generation Assessment, which updates our prior submittal dated February 8, 2019, and presents estimates of EF Education First's tripmaking potential in support of advancing project processing with the City of Costa Mesa. The traffic generation forecasts were developed based on the project description, anticipated operational characteristics (i.e., programming, student enrollment, student dormitories, employee pool), and empirical data collected from existing EF campuses, as described by Urban Systems Associates, Inc. in their November 30, 2018 Technical Memorandum attached at the end of this letter.

## PROJECT BACKGROUND AND DESCRIPTION

EF is an International Language School with more than 580 schools and offices around the world, including three existing campuses in California (San Diego, Santa Barbara, San Francisco), in addition to an EF Academy International Boarding School currently being developed in Pasadena. EF provides students from more than 75 different countries (predominantly between the ages of 18-26) the opportunity to learn English through a fully accredited academic program for gap year, pre-professional, and post-college English courses that are offered from several weeks to six months at a time, up to a maximum of one year.

The proposed buildout of the project consists of redeveloping the former Trinity Broadcasting Network (TBN) site located at 3150 Bear Street in Costa Mesa, with an academic and boarding campus for international students totaling 168,000 square feet (SF), which would serve 700 commuter students (living with local host families), 812 resident students (living on campus) in three dormitory buildings, and 95 employees.

Philip M. Linscott, PE (1924-2000)  
William A. Law, PE (1921-2018)  
Jack M. Greenspan, PE (Ret.)  
Paul W. Wilkinson, PE (Ret.)  
John P. Keating, PE  
David S. Shender, PE  
John A. Boarman, PE  
Clare M. Look-Jaeger, PE  
Richard E. Barretto, PE  
Keil D. Maberry, PE

Outdoor amenities will include recreational uses such as a swimming pool, basketball, soccer, and volleyball.

Due to the international nature of the student body, the tripmaking characteristics of an International Language School such as EF is significantly different from conventional universities, junior/community colleges, boarding schools, and trade schools because of the following aspects inherent in, and integral to, EF's program:

1. International Student Length of Stay in the US is Short and Not Conducive to Driving: EF's programs vary from a few weeks up to a year, which makes acquiring a vehicle and a driver's license, or renting a vehicle, in the US difficult, impractical, and costly. The same circumstances are expected for the proposed EF in Costa Mesa.
2. International Students Prefer Not to Drive: A significant number of EF students come from cultures and countries where reliance on privately-owned vehicle travel is not nearly as prevalent. Instead, many EF students come from areas where use of public transportation, biking, and walking, are more typical. The future international students in EF Costa Mesa would also not drive.
3. International Students Living On Campus Would Not Drive: The EF Costa Mesa project proposes to accommodate more resident students (812) on campus than commuter students (700) living with local host families; therefore, the great majority of the student body would not be driving. Unlike in universities and colleges where it is typical for resident students to work off-campus, and therefore commute to/from places of employment outside of the campus during the day, EF's international students cannot obtain employment. The same attribute is expected for the EF Costa Mesa campus, where the larger portion of the student body would live on campus and would not commute.
4. Host Family (for Commuter Students) Selection Criteria: Consistent with EF's programming for existing campuses in the US, including the San Diego and Santa Barbara schools, commuter students for the proposed Costa Mesa campus would live in the surrounding community with host families that are selected based on proximity to campus and accessibility to public transportation, bike facilities, and pedestrian connections; specifically, a travel time criteria of 45 minutes using these alternative modes of travel is strictly applied in the host family selection. As part of the eligibility requirements, host families are encouraged not to drop off or pick up their student at the campus.
5. EF Shuttle Service: As part of the project, EF will be providing a shuttle service for the use of all students. This shuttle service will operate in a loop to

connect the EF Costa Mesa campus to OCTA bus stops, the South Coast Plaza/Metro area, The Lab/The Camp area, and the beach. Shuttles with a 24-passenger capacity can be accommodated within the proposed shuttle stop/pick-up and drop-off area on site. It is presumed that the future EF shuttle service would have 30-minute headways, and operate for a period of 12 hours on a typical weekday.

6. EF Policies on Driving, Parking, and TDM: As part of the project, EF will implement traffic, parking, and “Good Neighbor” policies within the student enrollment/registration procedures, student handbook, and Code of Conduct, to prohibit students from owning a vehicle, driving or parking on campus, and in surrounding neighborhoods and commercial areas. On-campus parking will be appropriately managed and allocated accordingly through a parking permit program to ensure students do not drive to campus (parking permits will only be granted to students for extenuating circumstances). TDM elements are being explored for the proposed project including bikeshare, information on other modes of transportation, reduced parking, subsidized transit, and more. Although a list has not been finalized, EF has a long history of implementing policies and measures supportive of other modes of transportation.

EF’s demographics, programming, and multimodal approach to selecting sites for future campuses, are unique and well-documented from multiple independent evaluations, city approvals, and recent traffic and parking counts from several US campuses (EF San Diego, two EF campuses in New York, EF Brighton in Massachusetts, EF Miami Beach in Florida).

The unique attributes of the EF program and similar anticipated operations at the future Costa Mesa campus clearly demonstrate that the trip generation potential for the proposed project is unlike, and therefore cannot be compared to, those of a typical university, junior or community college, boarding school, and trade school. It is important to note this because the trip generation factors and equations that are readily available from ITE, SANDAG, ULI, other industry publications, and empirical trip generation studies conducted previously by LLG and other firms, are for these conventional educational uses that do not represent, and are not indicative of, the trip characteristics of an International Language School, such as EF.

## **TRIP GENERATION FROM EXISTING EF CAMPUSES**

As discussed above, there are no readily available sources for trip generation rates for International Language Schools. In order to estimate the tripmaking potential for the project, the trip generation surveys, traffic counts, and calculations from existing EF campuses were considered the most appropriate and accurate data source. The focus of our empirical study has been the EF San Diego campus, given that EF Santa Barbara does not have student housing, and the highly urbanized EF San Francisco

setting is not representative of the local setting for the proposed campus in Costa Mesa.

The data sources are as follows:

- Travel mode student surveys from various EF campuses in the US conducted in 2014
- “EC Language School Trip Generation Analysis”, prepared by LOS Engineering, Inc. in October 2012
- City of San Diego-approved study for EF: “Cabrillo Hospital Site – Trip Generation, TDM, and Parking”, prepared by Urban Systems, Inc. in February 2015
- Traffic counts conducted at EF San Diego (in operation since 2016) by Urban Systems, Inc. in October 2018

**Table 1** presents the trip generation derived from existing EF campuses on a typical weekday.

As reported in the left-hand columns of *Table 1*, the student surveys conducted in 2014 indicate that EF schools in the US have a very low percentage (3%) of travel by private vehicle/carpool, with the remaining 97% using public transportation, walking, biking, and taxis/rideshare.

The middle columns of *Table 1* summarize the trip generation calculations for EF San Diego, as approved by the City of San Diego in 2015. This trip estimation approach takes into account empirical trip generation rates derived for commuter students and employees from the EC Language School (also located in San Diego, without any student housing). Inherent in these empirical trip rates are net effective mode percentages of 15% by private vehicles for students, and 100% by private vehicles for staff.

The right-hand columns of *Table 1* present the results of the comprehensive traffic counts conducted at EF San Diego, which has been in operation since 2016, in October 2018. The primary purpose for these traffic counts was to validate the trip generation methodology and estimates calculated for the EF San Diego campus during that development project’s City approvals in 2015. The results of the traffic counts indicate 22% to 25% travel by private vehicles and carpool (isolating carpool vehicles was not possible), similar to the 20% determined from the EC Language School surveys. The two-day traffic counts resulted in 498 and 464 total daily vehicle trips on a Wednesday and Thursday, respectively. Comparing these typical weekday trips observed against the 530 daily trips estimated using the City of San Diego-approved methodology for the San Diego Campus in 2015 corresponds to a

6% to 12% contingency inherent in applying the City of San Diego-approved methodology to forecasting trips for EF.

## PROJECT TRIP GENERATION

Based on the above considerations, it is concluded that the application of the City of San Diego-approved trip generation methodology to estimating the trips for the proposed EF Costa Mesa campus is appropriate and conservative.

The San Diego methodology is an appropriate application to the project because the tripmaking characteristics of the Costa Mesa project and the existing EF San Diego campus are similar; the international nature of the student body, as well as the educational curriculum, programming, and student commuter limitation policies are the same on both campuses.

This approach is conservative since the programming makes it foreseeable that a greater percentage of students and employees from the project would use public transit, bike, and walk due to the following:

- proposed EF shuttle service (that would connect to OCTA bus stops)
- proximity of the campus to South Coast Plaza (served by a variety of OCTA bus routes), which is about a 5-minute walk from the project site,
- proximity of the campus to the existing OCTA bus stop at the Bear Street/Baker Street intersection that is an 8-minute walk from the site
- Class II bike lanes are proposed along Bear Street between the I-405 Freeway and Baker Street in the City's June 2018 Active Transportation Plan
- Bear Street between Sunflower Avenue and Baker Street is identified as a "Pedestrian Opportunity Zone" in the City's June 2018 Active Transportation Plan, where the City will pursue street enhancements to create pedestrian-friendly environments

**Figures 1** through **3** illustrate the many public transportation services that are accessible to/from the campus, and these bus lines are as follows:

### Intersection of Bear Street/Baker Street:

- Route 55: Serves Cities of Santa Ana, Costa Mesa, Newport Beach

### South Coast Plaza:

- Route 57: Serves Cities of Brea, Fullerton, Anaheim, Orange, Santa Ana, Costa Mesa, Newport Beach
- Route 150/A: Serves Cities of Santa Ana and Costa Mesa
- Route 211: Serves Cities of Lake Forest, Irvine, Costa Mesa, Huntington Beach

- Route 463: Travels from South Coast Plaza to Santa Ana Regional Transportation Center
- Route 794: Serves Cities of Riverside, Chino, Corona, Yorba Linda, Anaheim, Placentia, Villa Park, Orange, Santa Ana, Tustin, Irvine, and Costa Mesa

Limited-Stop Bus Service: Bravo!

- Route 543: A limited-stop bus route along Harbor Boulevard that extends from Fullerton Transportation Center through Anaheim, Garden Grove, and Santa Ana, ending at MacArthur Boulevard at the Costa Mesa city limits and connects to the aforementioned OCTA Routes stated above

Anaheim Resort Transportation (A.R.T.):

- Route 22: Travels from South Coast Plaza to Anaheim Resort District

It should be noted that although *Figure 1* shows OCTA Routes 145 and 173 provide service along Bear Street adjoining the project site, these bus routes have recently been discontinued due to low ridership. As part of the project, EF will be coordinating with OCTA to re-establish these routes and/or install a bus stop closer to the campus.

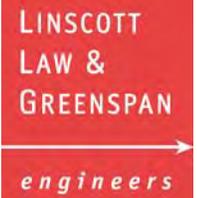
Based on the application of the City of San Diego-approved trip generation methodology to the project, **Table 2** indicates that buildout of the project could generate 503 daily trips, 60 AM peak hour trips, and 45 PM peak hour trips.

From the daily trips and project gross floor area under buildout conditions, a trip rate of 2.99 daily trips per 1,000 SF is derived, which is less than the City of Costa Mesa's threshold of 3 daily trips per 1,000 SF for a 0.75 FAR.

The lower portion of *Table 2* compares the project's trip generation against TBN, which previously occupied the site, and indicates that the EF project would generate fewer trips than the prior TBN during a typical weekday, AM peak hour, and PM peak hour.

Based on *Section 13-275 (a): Development Project Review Procedures* of the City's Municipal Code, a traffic impact study is required for all development projects generating 100 or more peak hour trips. Applying this criteria to the EF project's gross trip generation at buildout of 60 AM peak hour trips and 45 PM peak hour trips indicates that the project does not meet the peak hour trip thresholds, and would therefore not warrant a comprehensive traffic impact study. It should further be noted that the EF project would be generating 24% to 42% fewer peak hour trips compared to the prior TBN development generated.

Ms. Shawna Marino  
April 9, 2018  
Page 7



We appreciate the opportunity to present this information and look forward to working with the project team and City in its review. If you have any questions regarding this submittal, please do not hesitate to call me at (949) 825-6175.

Sincerely,  
**Linscott, Law & Greenspan, Engineers**

A handwritten signature in blue ink, reading "Trissa (de Jesus) Allen". The signature is written in a cursive style.

Trissa (de Jesus) Allen, P.E.  
Senior Transportation Engineer

TABLE 1  
TYPICAL WEEKDAY TRIP GENERATION FROM EXISTING EF SITES  
EF Education First, Costa Mesa

| Description                                | Units        | EF Travel Mode Splits per Student Surveys in 2014 [a] | EF San Diego Campus Trip Generation Calculation (per City of San Diego approval in 2015) [a] |   |  |                     | EF San Diego Campus October 2018 Traffic Counts [g] |                                   |
|--|--------------|---|--|---|--|---------------------|---|-----------------------------------|
|  |              |   | Daily Trip (2-Way) Rate  | ECLS Travel Mode Splits per Student Surveys in 2012 [b] | Private Vehicle Mode Split Inherent in Daily Trip Rate | Daily Trips (2-Way) | Wednesday, 10/24/18 Traffic Counts                  | Thursday, 10/25/18 Traffic Counts |
| Private Vehicle/Carpool                    | --           | 3%  | --   | 20%   | --   | --                  | 22%   | 25%                               |
| Public Transportation                      | --           | 60%   | --   | } 80%   | --   | --                  | [g]   | [g]                               |
| Walking                                    | --           | 34%   | --   |   | --   | --                  | 70%   | 67%                               |
| Biking                                     | --           | 1%  | --   |   | --   | --                  | 2%  | 6%                                |
| Taxi/Rideshare                             | --           | 2%  | --   |   | --   | --                  | 6%  | 2%                                |
|  |              | 100%  | --   | 100%  | --   | --                  | 100%  | 100%                              |
| Commuter Students                          | 800 students | --  | 0.31/student [b,c]   | --  | 15% [b,c]  | 248                 | --  | --                                |
| Employees                                  | 100 emp      | --  | 2.25/emp [b,d]   | --  | 100% [b,d]   | 225                 | --  | --                                |
| Resident Students                          | 700 beds     | --  | 0.067/bed [e]  | --  | 3% [e]   | 47                  | --  | --                                |
| Single-Family Residence                    | 1 DU         | --  | 10/DU [f]  | --  | --   | 10                  | --  | --                                |
| <b>Total Daily Vehicle Trips</b>           |              | --  | --   | --  | --   | <b>530</b>          | <b>498</b>  | <b>464</b>                        |
| <b>Calculated (530) Minus Actual Count</b> |              | --  | --   | --  | --   | --                  | <b>32</b>   | <b>66</b>                         |
| <b>% Contingency in Calculation</b>        |              | --  | --   | --  | --   | --                  | <b>6%</b>   | <b>12%</b>                        |

Notes:

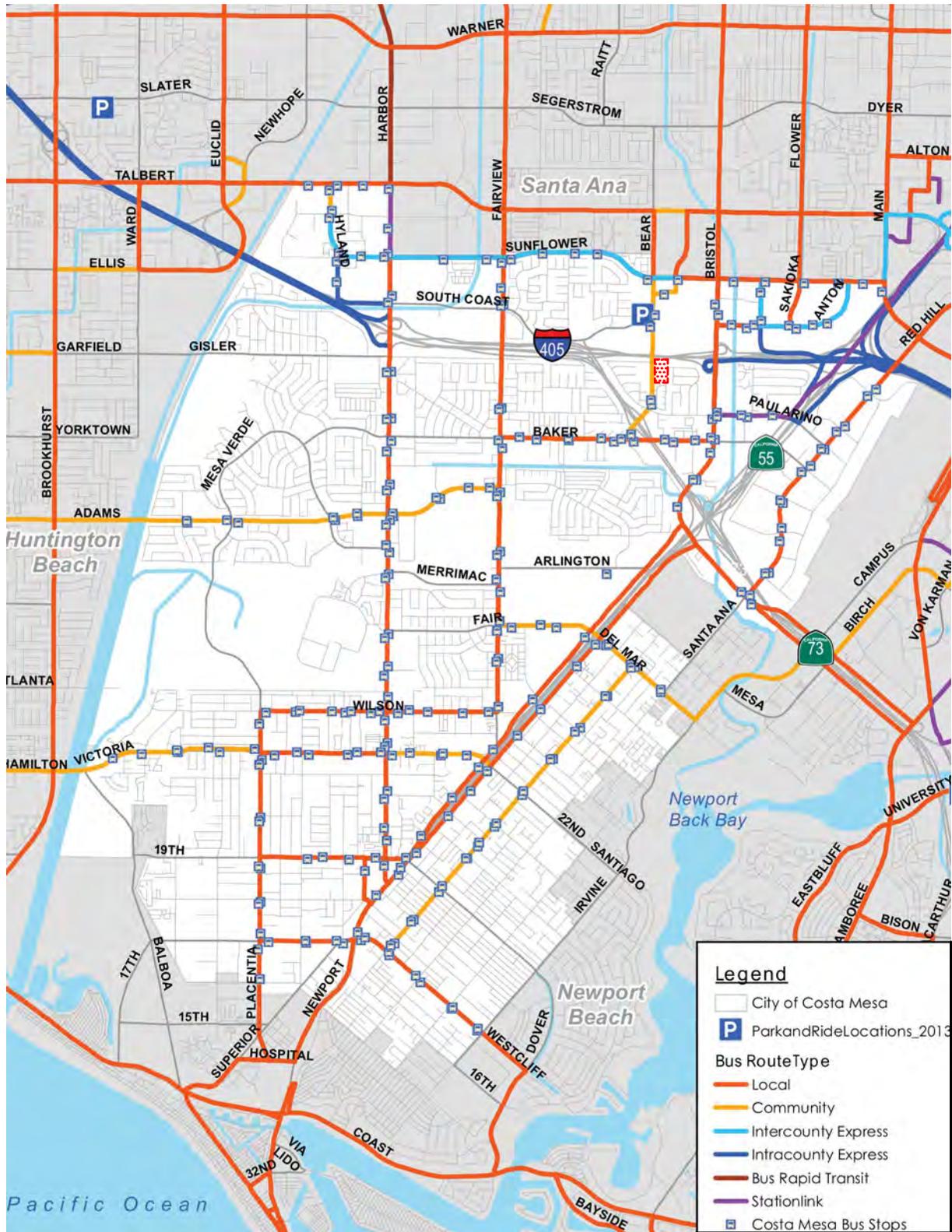
- [a] Source: "Cabrillo Hospital Site - Trip Generation, TDM and Parking", prepared by Urban Systems Associates, Inc., February 18, 2015. Student surveys provided to various EF campuses within the US between 9/16/14 and 10/5/14, resulting in 229 survey responses.
- [b] Source: "EC Language School Trip Generation Analysis", prepared by LOS Engineering, Inc., October 18, 2012. Commuter student and staff surveys were conducted at the existing school (does not have student housing) with 65 students and 10 employees.
- [c] Of the 20% students who use cars, half carpool. The 0.31 daily trips per student was derived from existing enrollment of 65 students, as follows:  
20% of 65 students drive = 13 vehicles  
50% of 13 vehicles at 2-person capacity = 3 vehicles  
Daily Trips = (7 single-occupant vehicles + 3 carpool vehicles) \* 2 = 20 daily trips  
Daily Trip Rate = 20 daily trips / 65 students = 0.31 daily trips per student
- [d] Of the 10 staff members, 5 drive (50%), 4 bike (40%), and 1 (10%) uses public transit. The 2.25 daily trips per staff was derived as follows:  
Existing Daily Trips = (5 employees drive \* 2) + (5 daily trips to account for errands and lunch runs during the day) = 15 daily trips  
Existing Daily Trip Rate = 15 daily trips / 10 employees = 1.5 daily trips per employee  
Future Daily Trip Rate = (1.5 daily trips per employee) + (50% contingency for the future) = 2.25 daily trips per employee
- [e] Source: "San Diego State University/SDSU Redevelopment EIR", September 2010. The SDSU project included new student housing, and applied a daily trip generation rate of 4.44 daily trips per unit. For the purposes of the 2016 EF Cabrillo, San Diego project, the 4.44 daily trips per unit was converted to 2.22 daily trips per bed based on two beds per unit, and a private vehicle travel mode split of 3% (rounded up from 2.7% based on the 2014 EF student surveys).
- [f] Daily trip rate of 10 daily trips per dwelling unit is from SANDAG.
- [g] Source: "EF Costa Mesa Campus Traffic Characteristics", prepared by Urban Systems Associates, Inc., November 30, 2018. Cameras were placed at key access points to the existing EF San Diego Campus (in operation since 2016) to determine existing trip generation on a typical weekday without special events or activities. Although the geographic scope for the data collection was comprehensive, it was not possible to get a breakdown of the vehicular, pedestrian, bike, and rideshare counts collected by user group (i.e., commuter students versus resident students versus employees) and public transportation users at the existing transit stops located one block from campus (but these public transportation users are considered to be counted as part of the pedestrian and bike observations).

TABLE 2  
TRIP GENERATION ESTIMATES FOR PROPOSED EF (BUILDOUT)  
EF Education First, Costa Mesa

| Project Component  | Units        | Daily<br>(2-Way) | AM Peak Hour |           |             | PM Peak Hour |             |             |
|--|--------------|------------------|--------------|-----------|-------------|--------------|-------------|-------------|
|  |              |                  | Enter        | Exit      | Total       | Enter        | Exit        | Total       |
| <b><u>Prior Site Development Trip Generation [a]</u></b>       |              |                  |              |           |             |              |             |             |
| General Office (prior TBN)                                     | 68,000 SF    | 662              | 68           | 11        | 79          | 12           | 66          | 78          |
| <b><u>Project Trip Generation Rates [b]</u></b>                |              |                  |              |           |             |              |             |             |
| Commuter Students (trips per commuter student)                 |              | 0.31             | 0.033        | 0.004     | 0.037       | 0.008        | 0.017       | 0.025       |
| Employees (trips per employee)                                 |              | 2.25             | 0.243        | 0.027     | 0.270       | 0.054        | 0.126       | 0.180       |
| Resident Students (trips per bed)                              |              | 0.067            | 0.001        | 0.004     | 0.005       | 0.005        | 0.002       | 0.007       |
| <b><u>Project Trip Generation</u></b>                          |              |                  |              |           |             |              |             |             |
| Commuter Students  | 700 students | 217              | 23           | 3         | 26          | 6            | 12          | 18          |
| Employees  | 95 emp       | 214              | 23           | 3         | 26          | 5            | 12          | 17          |
| Resident Students  | 800 beds     | 54               | 1            | 3         | 4           | 4            | 2           | 6           |
| Sub-Total Vehicle Trips [b]:                                   |              | 485              | 47           | 9         | 56          | 15           | 26          | 41          |
| Add Future EF Shuttle Trips [c]:                               |              | 18               | 2            | 2         | 4           | 2            | 2           | 4           |
| <b>Future Gross Project Trips:</b>                             |              | <b>503</b>       | <b>49</b>    | <b>11</b> | <b>60</b>   | <b>17</b>    | <b>28</b>   | <b>45</b>   |
| Less Prior TBN Vehicle Trips (from above):                     |              | (662)            | (68)         | (11)      | (79)        | (12)         | (66)        | (78)        |
| <b>Future Net Project Trips:</b>                               |              | <b>(159)</b>     | <b>(19)</b>  | <b>0</b>  | <b>(19)</b> | <b>5</b>     | <b>(38)</b> | <b>(33)</b> |
| <b><u>Project Trips vs. City's TIA Study Threshold [d]</u></b> |              |                  |              |           |             |              |             |             |
| Future Gross Project Trips (from above):                       |              | --               | --           | --        | 60          | --           | --          | 45          |
| Less City's 100-peak hour trip TIA Study Threshold:            |              | --               | --           | --        | (100)       | --           | --          | (100)       |
| <b>Threshold Met/TIA Required?</b>                             |              |                  |              |           | <b>No</b>   |              |             | <b>No</b>   |
| Future Net Project Trips (from above):                         |              | --               | --           | --        | (19)        | --           | --          | (33)        |
| Less City's 100-peak hour trip TIA Study Threshold:            |              | --               | --           | --        | (100)       | --           | --          | (100)       |
| <b>Threshold Met/TIA Required?</b>                             |              |                  |              |           | <b>No</b>   |              |             | <b>No</b>   |
| <b><u>Total Project Daily Trip Rate Derivation</u></b>         |              |                  |              |           |             |              |             |             |
| Proposed Total Gross Floor Area                                | 168,000 SF   |                  |              |           |             |              |             |             |
| Daily Trip Rate for EF (503 ADT / 168 KSF)                     |              | 2.99             | --           | --        | --          | --           | --          | --          |
| (< 3 ADT per KSF threshold for 0.75 FAR)                       |              |                  |              |           |             |              |             |             |

Notes:

- [a] Applied ITE trip generation rates for General Office.  
 [b] Source: "EF Costa Mesa Campus Traffic Characteristics", prepared by Urban Systems Associates, Inc., November 30, 2018.  
 [c] It is anticipated that as part of the proposed EF project, a shuttle service would be provided to serve all students that would operate in a loop to connect the EF Costa Mesa campus to the beach, The Lab/The Camp, OCTA bus stops, and the South Coast Plaza area. Shuttles with a 24-passenger capacity can be accommodated in the proposed shuttle stop on site.  
 [d] Based on Section 13-275 (a): Development Project Review Procedures of the City's Municipal Code, a traffic impact study is required for all development projects generating 100 or more peak hour trips.



n:\4000\2184031 - ef education first, costa mesa\dwg\12-3-18\4031 f-1.dwg LDP 11:19:33 05-07-2019 mempin

**Legend**

- City of Costa Mesa
- Park and Ride Locations, 2013
- Bus Route Type**
- Local
- Community
- Intercounty Express
- Intra-county Express
- Bus Rapid Transit
- Stationlink
- Costa Mesa Bus Stops

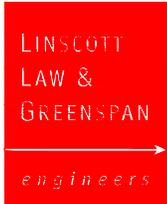
SOURCE: JUNE 2018 COSTA MESA ATP

**KEY**

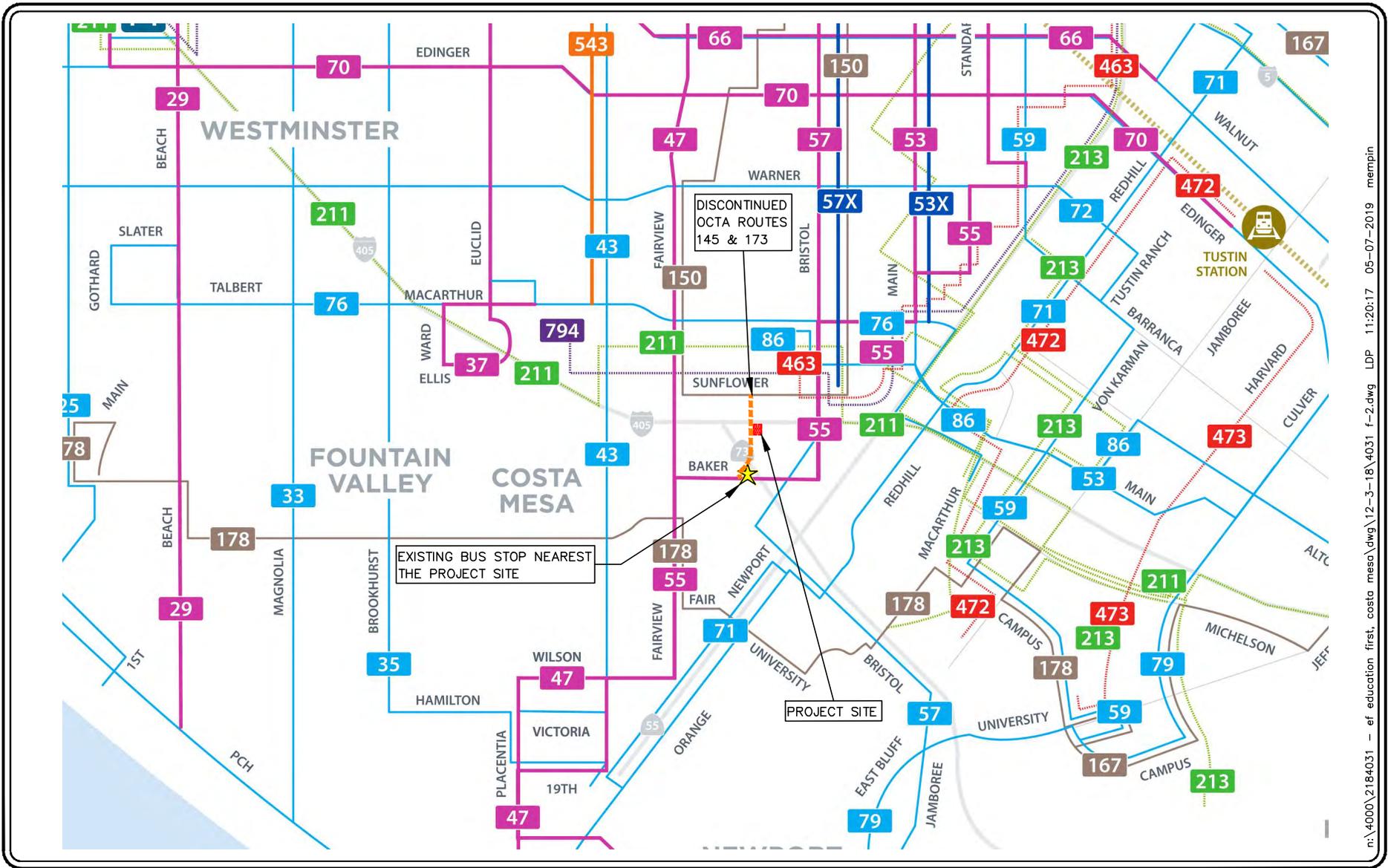
= PROJECT SITE

**FIGURE 1**

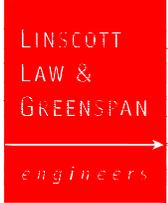
**EXISTING PUBLIC TRANSIT  
IN THE CITY  
EF EDUCATION FIRST, COSTA MESA**



NO SCALE



n:\4000\2184031 - ef education first, costa mesa\dwg\12-3-18\4031 f-2.dwg LDP 11:20:17 05-07-2019 mempin



SOURCE: OCTA  
KEY

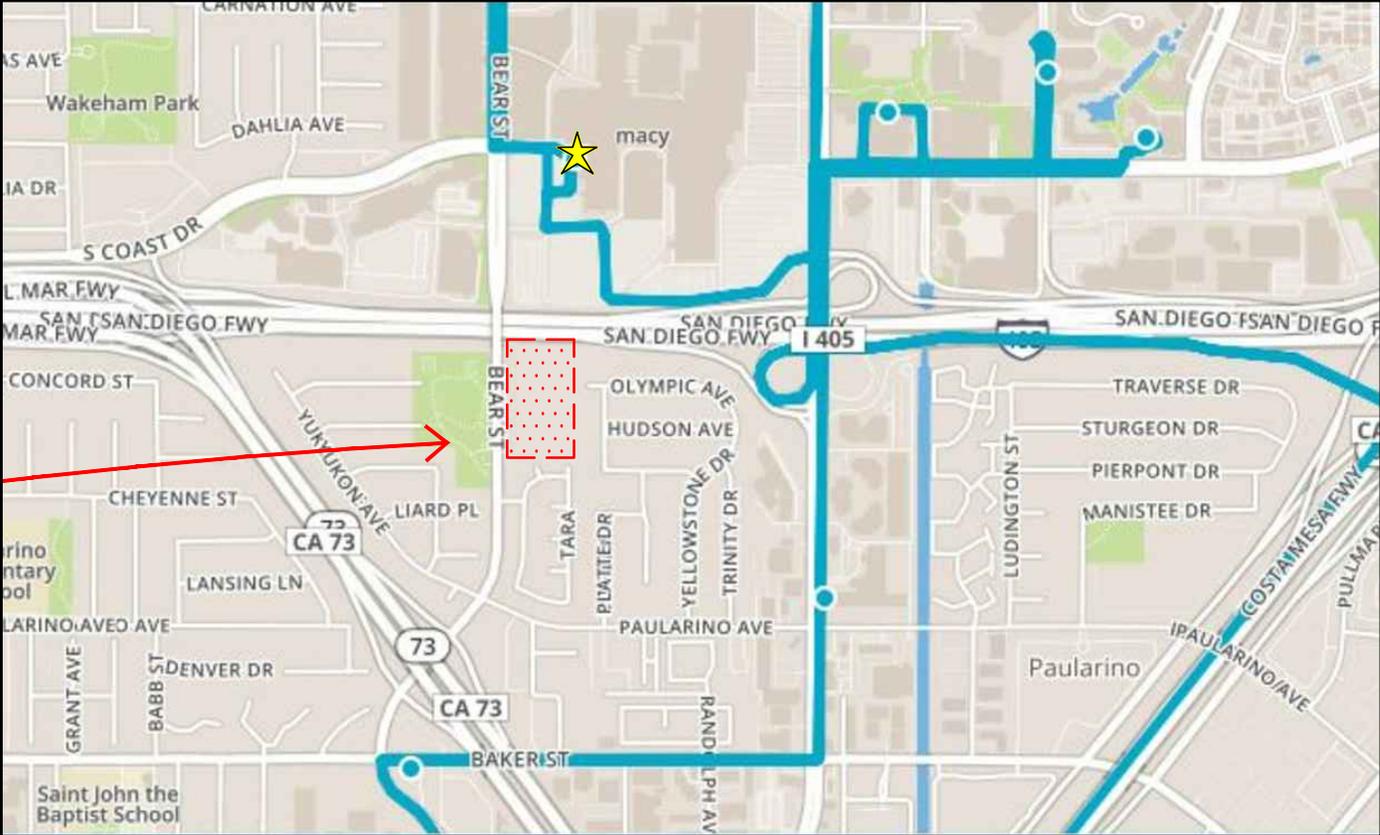
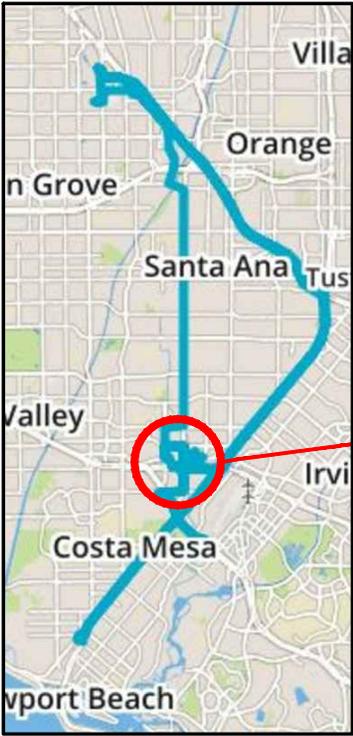
- = PROJECT SITE
- = EXISTING BUS STOP NEAREST THE PROJECT SITE (8-MINUTE WALK)
- = DISCONTINUED OCTA BUS ROUTES POST-JUNE 2018

## FIGURE 2

**EXISTING PUBLIC TRANSIT SERVICE  
OCTA BUS ROUTES**  
EF EDUCATION FIRST, COSTA MESA

22

### COSTA MESA/SOUTH COAST PLAZA LINE



n:\4000\2184031 - ef education first, costa mesa\dwg\12-3-18\4031 f-3.dwg LDP 11:20:45 05-07-2019 mempin

LINSCOTT  
LAW &  
GREENSPAN  
engineers

SOURCE: ANAHEIM RESORT TRANSPORTATION (ART)

- KEY**
- = PROJECT SITE
  - = EXISTING BUS STOP NEAREST THE PROJECT SITE (5-MINUTE WALK)

## FIGURE 3

**EXISTING PUBLIC TRANSIT SERVICE  
A.R.T. BUS ROUTES**  
EF EDUCATION FIRST, COSTA MESA



# MEMO

**ATTN:** *Shawna Marino*  
*EF Education First* **E-Mail:** ▼  
*Shawna.sullivan@ef.com*

**FROM:** *Justin P. Schlaefli, PE TE PTOE* **TOTAL PAGES** (Including  
Cover):

**DATE:** *November 30, 2018* **TIME:** 1:28:42  
PM **JOB NUMBER:** 006718

**SUBJECT:** *EF Costa Mesa Campus Traffic Characteristics*

Confidential Communications

This transmittal is intended for the recipient named above. Unless otherwise expressly indicated, this entire communication is confidential and privileged information. If you are not the intended recipient, do not disclose, copy, distribute or use this information. If you received this transmission in error, please notify us immediately by telephone, at our expense and destroy the information.

This memo is intended to provide background and information related to the proposed EF campus on Bear Street in Costa Mesa (the “Proposed Project”) and the resulting traffic characteristics for the Proposed Project. As discussed further below, the Proposed Project has unique traffic characteristics caused by the operational environment of an EF facility. Specifically, trip generation for an EF International Language School is far lower than a typical school/institutional use.

**Proposed Project:**

EF Education First ([www.ef.edu](http://www.ef.edu)) is under agreement to acquire the former Trinity Broadcasting Network (TBN) site located at 3150 Bear Street in Costa Mesa.

EF is a family-owned global education organization with more than 580 schools and offices around the world, including schools in Santa Barbara, San Diego, San Francisco and Pasadena. Since 1965, EF has helped millions of people succeed in a global interconnected economy through language learning, educational travel, cultural exchange and academic degree programs.

EF proposes to renovate the former TBN building and redevelop the six-acre site into an EF International Language Campus ([www.ef.edu/ilsd](http://www.ef.edu/ilsd)). Our international schools provide students from more than 75 different countries (predominantly between the ages of 18-26) the opportunity to learn English through our fully accredited short- and long-term intensive courses, university pathway programs and diploma-granting professional certifications.

It is anticipated that the school will have up to 1,500 students and 95 staff members. Students will be divided into resident students (approximately 900) and commuter students (approximately 600). Commuter students will live in the surrounding community with host families. Host families are encouraged to not drive and drop-

trip1 *generation memo\_rev 2 (002) with LLG edits 12-17-18*

off or pickup students and are selected (in part) based on their proximity to campus. Criteria for selecting host families include locating the family within 45 minutes of campus using either walk, bike or public transportation.

### **EF International Language School Transportation Characteristics**

As previously mentioned, an EF International Language School has unique transportation characteristics due to a variety of factors. Several of these factors are explored below. Of particular note are: 1) the typical length of stay for students; 2) the international nature of the students; 3) the school's restriction on students driving. With students coming from a variety of other countries, in order to drive, they must acquire a vehicle in the United States. The length of stay for each student varies but programs can be as short as a few weeks or up to a year. Typically, students are in the United States for a relatively short duration which makes vehicle ownership difficult. Vehicle rental is likewise costly for students. Additionally, the international nature of the student body ensures that a significant number of students come from cultures and countries where reliance on privately owned vehicle travel is not nearly as prevalent. Instead, many students come from areas where other modes of transportation are more typical. This is especially true of bicycling, walking and public transportation. Additionally, a large portion of the student body will live on campus and will not commute. With respect to the school's prohibition on driving, the proposed project would also implement policies within the student handbook which prohibit students from owning a vehicle, driving or parking on campus or surrounding campus. On-campus parking will be minimized and will be controlled via permit to ensure students do not drive to campus. Some students could live off-campus; however, EF Academy's prohibition on driving still applies to these students and host families are required to be within a reasonable distance to campus, so students can walk, bike or have easily accessible public transportation. Host families are encouraged not to drop their student at the campus.

Additional policies further facilitate alternative modes of transportation. TDM elements are being explored for the proposed project including bikeshare, information on other modes of transportation, reduced parking, subsidized transit and more. Although a list has not been finalized, EF has a long history of implementing policies and measures supportive of other modes of transportation. This philosophy is incorporated into the design of the project including selecting campus locations based on availability of transit and services in the surrounding area.

With respect to faculty and staff, it is expected that approximately 30 staff members will live on-campus within the dormitories. The remaining faculty and staff are expected to total up to 95 total average staffing at full enrollment.

### **Trip Generation**

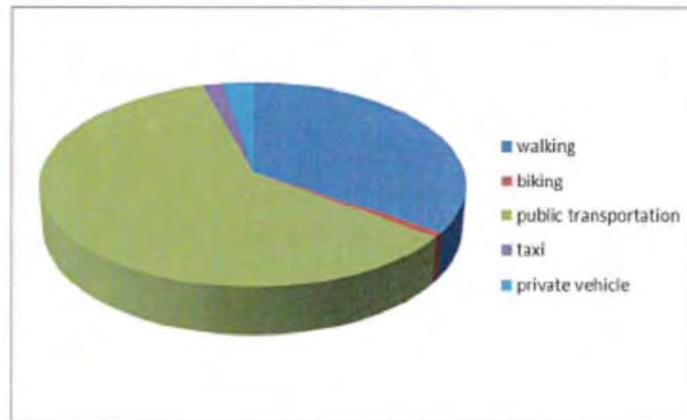
Due to the unique transportation characteristics mentioned above, use of ITE rates is not recommended. The use of ITE rates could lead to grossly overstated trip generation estimates for an EF campus. Therefore, additional research was necessary to adequately determine the trip generation for the site.

There are currently two EF campuses in California. One is located in San Diego and one is located in Santa Barbara. The Santa Barbara site is a smaller campus with no residential component. As such, it isn't a site

which is representative of what is being planned in Costa Mesa. However, the San Diego campus is very similar to what is being proposed in Costa Mesa. EF International Language has had a campus in San Diego, CA for many years. The campus was originally located in the Scripps Ranch community of San Diego where it was co-located with Alliant University. In 2014, a survey of the EF student body was conducted. This was conducted over a several week period of time with over 25% of the student body at that time responding. The school was in normal operation and had been in operation for multiple years prior to the study. The survey at that campus yielded the following results:

**EF Total Student Survey Results**  
**What is your primary mode of transportation to campus?**

|                    | Answers    |        |                       |      |                 |
|--------------------|------------|--------|-----------------------|------|-----------------|
|                    | walking    | biking | public transportation | taxi | private vehicle |
|                    | 79         | 2      | 138                   | 4    | 6               |
| Percentage by mode | 34.5%      | 0.9%   | 60.3%                 | 1.7% | 2.6%            |
| Total              | <b>229</b> |        |                       |      |                 |



Key findings of the previous survey showed significant usage of other modes of transportation by students with 34.5% of students walking, almost 1% biking, and over 60% using public transportation. Conversely, only 1.7% of students reported using a taxi/rideshare option and less than 3% reported driving. The students who drove were based on special health needs or other special requirements.

The San Diego campus moved from Scripps Ranch to the Midway District in San Diego with the school opening in 2016. The characteristics of the student body at the San Diego campus are comparable to the proposed Costa Mesa campus with 800 commuter students, 700 resident students, and 100 faculty/staff. Based on surveys of the student body at the Scripps Ranch campus, it was anticipated that Faculty/staff would have the highest trip generation and be the most significant driver of trips on a per person basis. This was followed by commuter students and finally resident students. Resident students were expected to have the lowest trip generation due to the presence of facilities and amenities on campus avoiding the necessity of leaving campus except for educational activities or shopping. It should be noted that the San Diego campus is located approximately 1,000 feet from a large shopping center similar to the Costa Mesa Campus. This encourages students to walk or bike as primary modes of transportation. Based on the survey discussed above and after consulting a variety of educational rate data from a variety of sources, the following trip generation was estimated for the San Diego campus:

### PROJECT TRIP GENERATION

| Use                           | Intensity |       | Rate                   | EF Survey Adjustment | ADT        | AM                  |           |           |           |          |     | PM                  |           |           |           |    |     |
|-------------------------------|-----------|-------|------------------------|----------------------|------------|---------------------|-----------|-----------|-----------|----------|-----|---------------------|-----------|-----------|-----------|----|-----|
|                               |           |       |                        |                      |            | Peak % <sup>3</sup> | Vol.      | In %      | Out%      | In       | Out | Peak % <sup>3</sup> | Vol.      | In %      | Out%      | In | Out |
| <b>Proposed Use</b>           |           |       |                        |                      |            |                     |           |           |           |          |     |                     |           |           |           |    |     |
| Commuter Students             | 800       | Std.  | 0.31 /St. <sup>1</sup> | 100%                 | 248        | 12%                 | 30        | 90% : 10% | 27        | 3        | 8%  | 20                  | 30% : 70% | 6         | 14        |    |     |
| Adult Education-Faculty/Staff | 100       | Staff | 2.25 /staff            | 100%                 | 225        | 12%                 | 27        | 90% : 10% | 24        | 3        | 8%  | 18                  | 30% : 70% | 5         | 13        |    |     |
| Resident Students             | 700       | Bed   | 2.22 /bed <sup>2</sup> | 3%                   | 47         | 8%                  | 4         | 20% : 80% | 1         | 3        | 11% | 5                   | 70% : 30% | 4         | 2         |    |     |
| Single-Family Residence       | 1         | Unit  | 10 /Unit               | 100%                 | 10         | 8%                  | 1         | 20% : 80% | 0         | 1        | 10% | 1                   | 70% : 30% | 1         | 0         |    |     |
| <b>TOTAL</b>                  |           |       |                        |                      | <b>530</b> |                     | <b>61</b> |           | <b>52</b> | <b>9</b> |     | <b>44</b>           |           | <b>16</b> | <b>28</b> |    |     |

**Source:**

Rates taken from the EF campus surveys and studies of other foreign language schools unless otherwise noted.

**Note:**

St.= student ADT= Average Daily Trips  
KSF = 1,000 Square Feet

<sup>1</sup> = trip rate taken from EC Language School Study

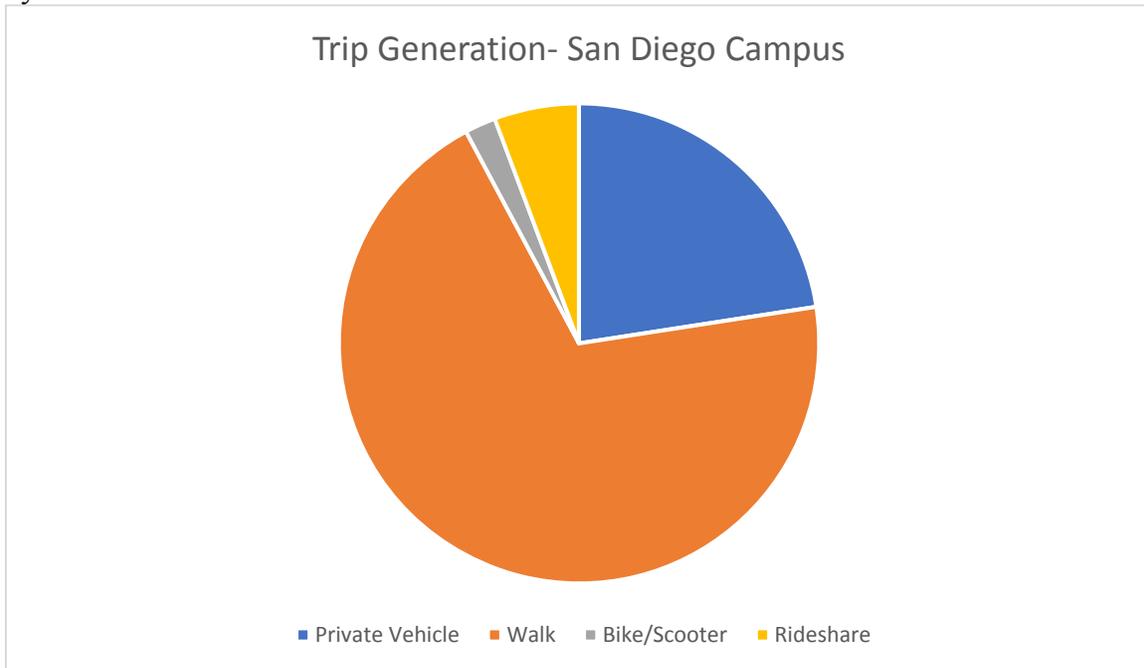
<sup>2</sup> = trip rates for Daily and Peak hour were taken from the SDSU Redevelopment EIR. The original ADT rate was converted to a per bed basis (divided by two) to account for double occupancy rooms assumed in the Redevelopment EIR.

<sup>3</sup> = Peak hour percentages and splits taken from City of San Diego, Trip Generation Manual for Community College or SDSU Redevelopment EIR

In order to better approximate the trip generation characteristics shown in the survey, applicable rates were adjusted to better reflect an EF campus. A trip generation assessment for the San Diego campus is included in Attachment 1. These trip generation characteristics were confirmed with two days of counts conducted in October 2018. At the time of these counts, the San Diego campus was in normal operation with a typical student body. No unusual events or activities were noted either in observations or in discussions with school administration. Cameras were placed at key access points to the San Diego campus and two days of observational data was recorded and tabulated. The cameras were placed at two cordon locations observing three driveways and multiple sidewalk access points as well as the rideshare pickup and drop-off point. This data was unable to record numbers of public transportation users as transit stops were located one block from campus. Therefore, it is probable that some of the pedestrian, bike or rideshare users are also users of public transportation. This is particularly the case since the Transportation Demand Management (TDM) Plan included rideshare as a last-mile transportation component. The counts showed slightly higher volumes on Wednesday, 10/24/18. Although data on both Wednesday and Thursday was similar, the Wednesday data was utilized as it was higher and therefore conservative.

Although the original trip generation study estimated 520 vehicle trips generated by the San Diego campus (single-family residence was subtracted out), it was found that actual vehicle trip generation was 498 ADT. This supports the trip generation methodology established for the San Diego campus. Pedestrian traffic was the

highest traffic generator with 1,537 trips. A total of 126 rideshare trips were counted. It should be recalled that rideshare services are encouraged at the San Diego campus as a TDM measure and a form of last-mile transportation. Rideshare is a swiftly evolving mode of transportation and was not considered to be a form of new trip generation by the City of San Diego due to its common use as a “last-mile” option encouraging use of public transportation. Finally, 46 bike or scooter trips were counted at the San Diego campus. The trip generation by mode is illustrated below:



With a total trip generation of 2,207 trips, only 22.6% of trips generated utilized a private vehicle. As anticipated, the vast majority of private vehicle trips are from faculty and staff. The results of this survey are included in **Attachment 2**.

The data from the San Diego studies at EF campuses are further supported by an independent study of an International Language school in a different area of San Diego which is also referenced in **Attachment 1**. A study completed in 2012 by LOS Engineering, Inc. looked at a site in La Jolla, CA for the EC English Language School. The school was smaller in size than the EF school but the student body had similar characteristics. It should be noted that no campus dormitory facilities were provided at the EC site. Therefore, rate information derived in the study is primarily useful for determining trip generation characteristics of commuter students or non-resident staff. For this study a rate of 0.31 trips per student and 2.25 trips per staff was established. This data provides a third critical data point useful in determining the trip generation characteristics of an International Language School.

Based on the research discussed above and shown in **Attachments 1** and **2**, it is recommended that the trip generation methodology accepted by the City of San Diego for the EF International Language School be utilized for estimating trip generation at the Costa Mesa site. Following this methodology, a trip generation estimate for the Costa Mesa site was prepared and is shown below. As the anticipated student body and faculty/staff counts are comparable to the San Diego school, it is estimated that the Costa Mesa site will

generate up to 460 Average Daily Trips during typical operation. This estimate is considered conservative as the San Diego campus had excess parking enabling a small portion of the student body to drive and park on campus. This will be restricted at the Costa Mesa site further reducing private vehicle trips.

**PROJECT TRIP GENERATION- Costa Mesa Site**

San Diego Approved Methodology

| Use                           | Intensity |       | Rate                   | EF Survey Adjustment | ADT | AM                  |      |           |      |    |     | PM                  |           |      |      |    |     |
|-------------------------------|-----------|-------|------------------------|----------------------|-----|---------------------|------|-----------|------|----|-----|---------------------|-----------|------|------|----|-----|
|                               |           |       |                        |                      |     | Peak % <sup>3</sup> | Vol. | In %      | Out% | In | Out | Peak % <sup>3</sup> | Vol.      | In % | Out% | In | Out |
| <b>Proposed Use</b>           |           |       |                        |                      |     |                     |      |           |      |    |     |                     |           |      |      |    |     |
| Commuter Students             | 600       | Std.  | 0.31 /St. <sup>1</sup> | 100%                 | 186 | 12%                 | 22   | 90% : 10% | 20   | 2  | 8%  | 15                  | 30% : 70% | 4    | 10   |    |     |
| Adult Education-Faculty/Staff | 95        | Staff | 2.25 /staff            | 100%                 | 214 | 12%                 | 26   | 90% : 10% | 23   | 3  | 8%  | 17                  | 30% : 70% | 5    | 12   |    |     |
| Resident Students             | 900       | Bed   | 2.22 /bed <sup>2</sup> | 3%                   | 60  | 8%                  | 5    | 20% : 80% | 1    | 4  | 11% | 7                   | 70% : 30% | 5    | 2    |    |     |
| <b>TOTAL</b>                  |           |       |                        |                      | 460 |                     | 53   |           | 44   | 9  |     | 39                  |           | 14   | 24   |    |     |

**Source:**

Rates taken from the EF campus surveys and studies of other foreign language schools unless otherwise noted.

**Note:**

St.= student ADT= Average Daily Trips  
 KSF = 1,000 Square Feet

<sup>1</sup>= trip rate taken from EC Language School Study

<sup>2</sup>= trip rates for Daily and Peak hour were taken from the SDSU Redevelopment EIR. The original ADT rate was converted to a per bed basis (divided by two) to account for double occupancy rooms assumed in the Redevelopment EIR.

<sup>3</sup>= Peak hour percentages and splits taken from City of San Diego, Trip Generation Manual for Community College or SDSU Redevelopment EIR

# Attachment 1



# E-MEMO

**ATTN:** *Ann Gonsalves – City of San Diego* **E-Mail:** ▼  
*agonsalves@sandiego.gov*

**FROM:** *Justin P. Schlaefli, PE, TE, PTOE* **TOTAL PAGES (Including 5+ Cover):** Attachments

**DATE:** *February 18, 2015* **TIME:** *4:54:50 PM* **JOB NUMBER:** *003214*

**SUBJECT:** *Cabrillo Hospital Site– Trip Generation, TDM and Parking*

Confidential Communications

This transmittal is intended for the recipient named above. Unless otherwise expressly indicated, this entire communication is confidential and privileged information. If you are not the intended recipient, do not disclose, copy, distribute or use this information. If you received this transmission in error, please notify us immediately by telephone, at our expense and destroy the information.

As discussed previously, the trip generation for the EF Education at Cabrillo hospital site is expected to be unique. The proposed project is located south of Interstate 8 bounded by Kenyon Street and Wing Street just off of Midway Drive. An adjacent medical office building is located next to the hospital building with project parking wrapping around the office building. EF Education First proposes to redevelop the former Cabrillo Hospital site at 3425-3475 Kenyon Street into a new 183,000-square foot EF International Language School. With 14 schools in the U.S. and 400 schools globally, EF offers international students from more than 70 countries the opportunity to learn English through a fully accredited academic program and a blended learning experience that occurs both inside and outside the classroom.

EF has more than ten years of experience operating an International Language School in San Diego at the Alliant International University campus. EF proposes to relocate its campus and expand in San Diego thanks to the city's popularity with international students and the Cabrillo Hospital site's convenient location to downtown, the beaches and area attractions. It is expected that the availability of retail services, transit and more convenient location will better serve a student population which by and large does not have access to personal automobiles.

Due to international students' preferences to walk, bike or take public transportation as well as the restrictions on international driver's licenses, EF's typical vehicle ownership rate on campus is less than three percent. Additionally, the Cabrillo Hospital site is conveniently located within walking distance to dozens of retail, restaurant options in the Midway Pacific corridor and the MTS Bus #35 provides easy public transportation to/from downtown, attractions and area beaches. As with all EF's campuses, there will be ample bike storage on-site and EF plans to provide transportation demand management measures.

EF is seeking a conditional use permit (CUP) from the City of San Diego to allow for educational and dormitory uses with a maximum student enrollment of 1,500 students (predominantly between the ages of 18-26). The maximum anticipated staffing level is approximately 100 with a site manager who could reside in the existing single-family house. If approved, EF would conduct interior renovations of the existing structures to create approximately 40 classrooms, single, double and triple dormitory rooms for up to 450-700 students, as

well as some exterior site work to allow for outdoor community and recreational space. EF would place most additional students with local host families during peak enrollment times. For students with special needs, who cannot be placed in dormitory or with host families, housing within easy walking or transit distance will be obtained.

**Attachment 1** shows the proposed site plan and title sheet for the EF Education School at the Cabrillo Hospital site.

This memo is intended to further document the anticipated trip generation, discuss parking and establish a Transportation Demand Management (TDM) program for the site.

**EF Student Survey and Other Studies**

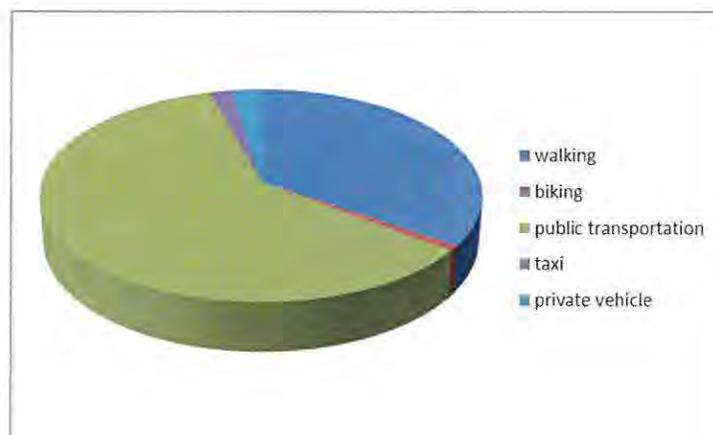
As previously discussed, a student survey was made available to students in order to better estimate trip generation and parking needs for the future EF school at the Cabrillo Hospital Site. The survey asked students what their primary mode of transportation to campus was. The surveys were provided to students at various EF campuses within the United States. Students returned results online between 9/16/14 and 10/5/14. The survey results were reported to Urban Systems via an online portal with a link provided only to EF students. A separate link was provided to students who lived on campus (resident students) versus students who commute to campus. Two hundred and twenty nine responses were gathered from students at multiple US campuses. A summary of this survey is provided below. Additional survey information is provided in **Attachment 2**.

**EF Total Student Survey Results**

*What is your primary mode of transportation to campus?*

Answers

|                    | walking    | biking | public transportation | taxi | private vehicle |
|--------------------|------------|--------|-----------------------|------|-----------------|
|                    | 79         | 2      | 138                   | 4    | 6               |
| Percentage by mode | 34.5%      | 0.9%   | 60.3%                 | 1.7% | 2.6%            |
| Total              | <b>229</b> |        |                       |      |                 |



Based on survey results, it is estimated that 2.6% of students use a private vehicle. This result closely mirrors data from traffic studies at other schools as well as information provided by EF facility managers who estimated “less than five percent” of EF students have access to private vehicles and/or drive to campus.

Additional information regarding EF specific trip generation characteristics was gathered from other sources including studies done for EC language school in San Diego and the SDSU Redevelopment EIR in San Diego (See **Attachment 3** for excerpts). Together, this dataset provided information to more accurately estimate trip generation and parking for the planned EF school at the Cabrillo Hospital Site. The resulting trip generation based on these studies is shown below.

### PROJECT TRIP GENERATION

| Use                           | Intensity |       | Rate                   | EF Survey Adjustment | ADT        | AM                  |           |           |           |          |     | PM                  |           |           |           |    |     |
|-------------------------------|-----------|-------|------------------------|----------------------|------------|---------------------|-----------|-----------|-----------|----------|-----|---------------------|-----------|-----------|-----------|----|-----|
|                               |           |       |                        |                      |            | Peak % <sup>3</sup> | Vol.      | In %      | Out%      | In       | Out | Peak % <sup>3</sup> | Vol.      | In %      | Out%      | In | Out |
| <b>Proposed Use</b>           |           |       |                        |                      |            |                     |           |           |           |          |     |                     |           |           |           |    |     |
| Commuter Students             | 800       | Std.  | 0.31 /St. <sup>1</sup> | 100%                 | 248        | 12%                 | 30        | 90% : 10% | 27        | 3        | 8%  | 20                  | 30% : 70% | 6         | 14        |    |     |
| Adult Education-Faculty/Staff | 100       | Staff | 2.25 /staff            | 100%                 | 225        | 12%                 | 27        | 90% : 10% | 24        | 3        | 8%  | 18                  | 30% : 70% | 5         | 13        |    |     |
| Resident Students             | 700       | Bed   | 2.22 /bed <sup>2</sup> | 3%                   | 47         | 8%                  | 4         | 20% : 80% | 1         | 3        | 11% | 5                   | 70% : 30% | 4         | 2         |    |     |
| Single-Family Residence       | 1         | Unit  | 10 /Unit               | 100%                 | 10         | 8%                  | 1         | 20% : 80% | 0         | 1        | 10% | 1                   | 70% : 30% | 1         | 0         |    |     |
| <b>TOTAL</b>                  |           |       |                        |                      | <b>530</b> |                     | <b>61</b> |           | <b>52</b> | <b>9</b> |     | <b>44</b>           |           | <b>16</b> | <b>28</b> |    |     |

**Source:**

Rates taken from the EF campus surveys and studies of other foreign language schools unless otherwise noted.

**Note:**

St.= student ADT= Average Daily Trips  
KSF = 1,000 Square Feet

<sup>1</sup>= trip rate taken from EC Language School Study

<sup>2</sup>= trip rates for Daily and Peak hour were taken from the SDSU Redevelopment EIR. The original ADT rate was converted to a per bed basis (divided by two) to account for double occupancy rooms assumed in the Redevelopment EIR.

<sup>3</sup>= Peak hour percentages and splits taken from City of San Diego, Trip Generation Manual for Community College or SDSU Redevelopment EIR

### Study Requirements

Based on the trip generation discussed above as well as consultation with City Staff, no traffic study would be required for the conversion of the Cabrillo Hospital to an EF education facility. Figure 1 of the City of San Diego, Traffic Impact Study Manual contains a flow chart discussing requirements for traffic impact studies. The Cabrillo Hospital site is currently designated in the Community Plan as an institutional use. Conversion of the hospital to a school would maintain the institutional use with the school generating less than 1,000 ADT and less than 100 peak hour trips as discussed above. Therefore, no traffic impact study would be required.

### Parking Requirements

Parking requirements for the proposed EF school is complicated by an existing adjacent medical office building and shared parking facilities. As a result of these circumstances, shared parking requirements apply per Section

142.0545 of the Municipal Code. In order to qualify for shared parking, five requirements must be met as shown below:

1. Two or more different land uses must be located adjacent to one another.
2. All shared parking facilities must be located within a 600-foot horizontal distance of the uses served.
3. Parties involved in the shared use shall provide an agreement for the shared use in a form acceptable to the City Attorney.
4. Shared parking facilities shall provide signs indicating the availability of the facility for patrons of the participating uses
5. Modifications to the structure in which the uses are located or changes in tenant occupancy require review by the City Manager.

All of these requirements are met for the Cabrillo Hospital site. Therefore, pursuant to Municipal Code Section 142.0545 (b)(7), the applicant may request approval of shared parking based on the latest Urban Land Institute Parking Study or equivalent study as an alternative to standard shared parking rates based on evidence provided. In the case of the EF school use, the municipal code and ULI do not provide rates accurately reflecting the EF use. However, standard Municipal Code rates can be used for the adjacent medical office building. Per Diagram 132-10A in the Municipal Code, the Cabrillo Hospital site is located within the Transit Area Overlay Zone. Therefore, the following parking calculation is suggested:

- Existing 47,880 square foot medical office building with peak parking demand on a weekday at 3.4 spaces per 1,000 square feet per Table 142-05I of the Municipal Code. Total peak parking demand equals 163 spaces at 11 AM on a weekday.
- EF School- Up to 1,500 students with peak parking demand 0.0255 spaces per student based on Table 142-05G (Vocational/trade schools rate of 85% of 1 space per student for projects within a transit area multiplied by 3% student vehicle usage rate established for trip generation purposes). Total peak parking demand equals 38 spaces.
- EF Faculty/Staff- Up to 100 staff members with a peak parking demand of 0.85 spaces per staff member based on Table 142-05G (Vocational/trade school rate in a transit area). Total peak parking demand equals 85 spaces.
- Single Family Home- 2 spaces per dwelling unit based on Table 142-05B. Total peak parking demand equals 2 spaces.

The total parking demand estimated for the EF school is therefore 288 spaces. Additionally, 7 standard and 2 van accessible parking stalls are required along with 5 motorcycle parking stalls. In order to meet these requirements, 292 total parking spaces, including the 2 spaces for the single-family home which exist and will remain, are proposed with 7 standard and 2 van accessible handicapped parking stalls along with 5 motorcycle parking stalls. Approximately 150 bicycle parking places will be provided inside a secured room within the EF school building with additional bicycle parking outside the building. This parking will be shared with the adjacent Medical Office facility.

### **Transportation Demand Management Measures**

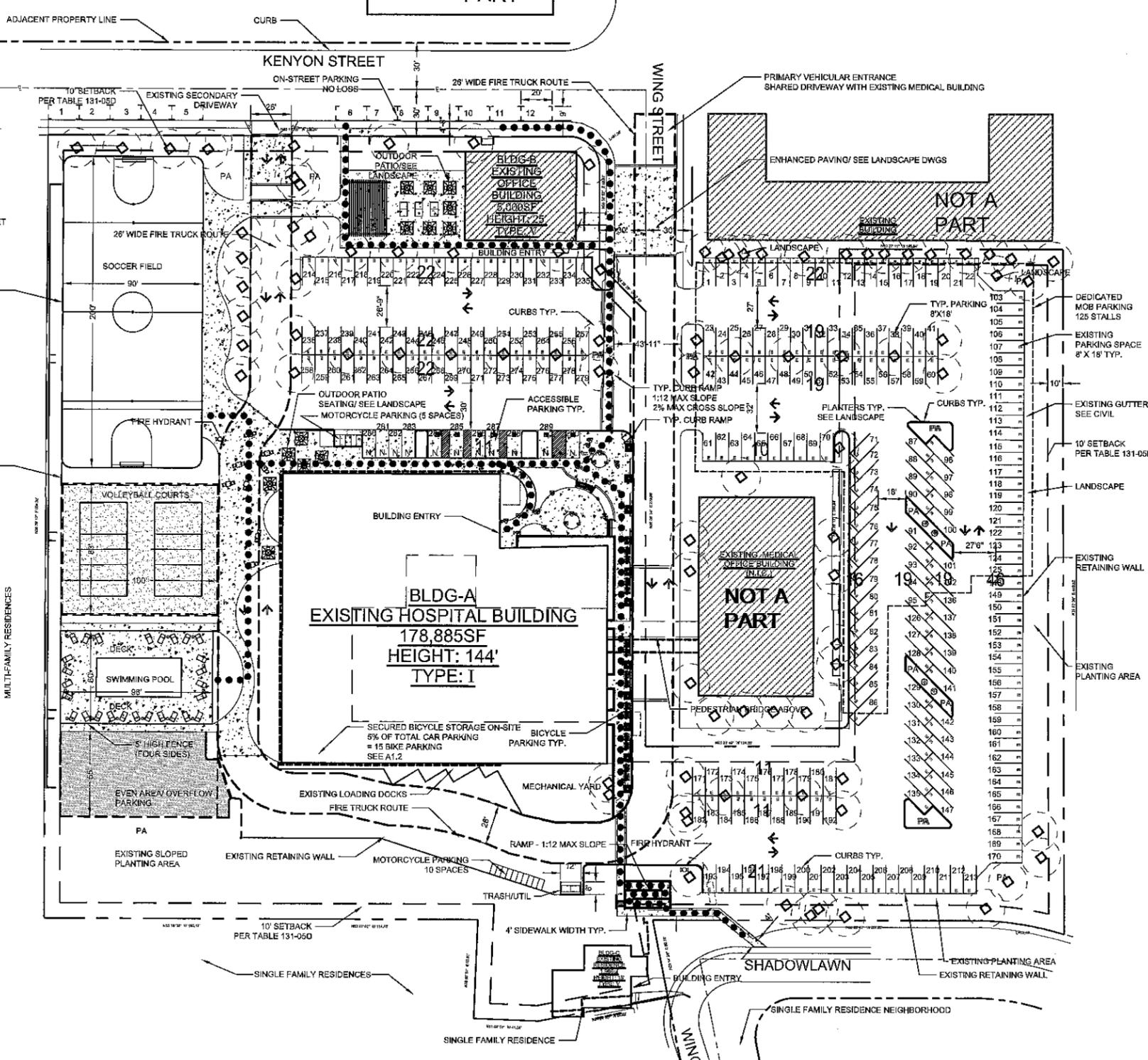
As discussed previously, it is expected that a significant majority of the students will use other modes of transportation besides a private vehicle. In order to facilitate the use of other modes of transportation, the following Transportation Demand Management measures will be implemented at the Cabrillo Hospital site.

- Contribute \$10,000 to Circulate San Diego to assist with bay-to-bay bicycle plan and advanced planning for bike lanes on Midway/Rosecrans if feasible
- Secured bicycle storage on-site (up to 150 bicycles will be accommodated inside with additional bicycle storage outside for peak periods)
- Shower facilities will be provided on the residential floors of the EF school building
- Storage lockers (up to 150 lockers or secured storage spaces) for non-resident students will be provided adjacent to the bicycle storage area
- TDM coordinator on-site with responsibility for coordinating the TDM measures
- Transit/bicycle information made available to students via monthly newsletter
- Bulletin boards at strategic locations showing regional bike routes and transit service information
- Transit subsidies for students via a program such as EcoPass coordinated with MTS
- Carpool priority spaces for students and faculty/staff
- Coordinate with Decobike bikeshare program to place a station onsite or adjacent to the project site
- Provide a pickup/drop-off location for taxi and car services such as Uber and Lyft
- Coordinate with Uber to provide reduced cost promotion to students
- Coordinate with MTS to provide enhanced bus shelter/seating if determined feasible by MTS at the existing bus stop at the intersection of Midway Drive and Fordham Street
- Coordinate with MTS to improve bus stop location if possible
- Provide easement or right of access through site for bay-to-bay bike path
- Host a “EF Campus Bike Day” twice per year for up to five years inviting local bicycle shops and advocates to come to talk to students and sell merchandise which will encourage biking to campus
- Facilitate a bicycle resale program among students to pass along recently purchased bicycles to the next group of students
- Provide up to \$25,000 to the Midway Community Planning Group to improve bicycle striping, visibility and safety on Kenyon and Wing Streets if acceptable to the City of San Diego

# **Attachment 1**

## Site Plan and Title Sheet

- NOTES:**
- FOR EXISTING CONDITIONS SEE SHEET C1.00 - EXISTING CONDITIONS
  - SEE LANDSCAPE L1.00 FOR FURTHER DETAIL
  - SEE SHEET C1.01 FOR EXISTING AND PROPOSED EASEMENTS
  - SEE SHEET C1.01 FOR EXISTING STREET IMPROVEMENTS AND UTILITIES



**LEGEND**

- ACCESSIBLE PATH OF TRAVEL (2% MAX SLOPE / CROSS SLOPE TYP.)
- 28' WIDE FIRE TRUCK ROUTE
- FIRE HYDRANT
- PARKING: EXISTING, PROPOSED/NEW, PARKING REMOVAL
- P.A. PLANTER AREA

**PARKING SUMMARY:**

PARKING REQUIRED (PER USA MEMO)

288 STALLS TOTAL  
 183 STALLS TOTAL (MOB)  
 38 STALLS (EF STUDENTS)  
 85 STALLS (EF FACULTY/STAFF)  
 2 STALLS (SINGLE FAMILY HOME)  
 7 ADA  
 8 MOTORCYCLE (2%)  
 8 BICYCLE (2% AUTO)

PARKING PROVIDED (SHARED W/ MOB):

292 STALL TOTAL  
 283 STANDARD  
 7 ADA (REQUIRED 201 - 300)  
 15 MOTORCYCLE (5%)  
 150+ BICYCLE  
 15 BICYCLE INDOOR ON-SITE SECURED SPACES PROVIDED (5%)

**PARKING CALCULATIONS**

**MEDICAL OFFICE BUILDING PEAK PARKING CALCULATIONS**  
 PARKING REQUIRED = GSF/1000 X PPD (3.4) - PER 142-051

|     | GSF/1000              | PEAK PARKING DEMAND | PARKING STALLS REQUIRED |
|-----|-----------------------|---------------------|-------------------------|
| MOB | 47,880SF/1000 = 47.88 | X 3.4               | = 163                   |

**EF STUDENT PEAK PARKING CALCULATIONS**  
 PARKING REQUIRED = [85% OF MINIMUM] X [REDUCTION RATE PER USA SURVEY]

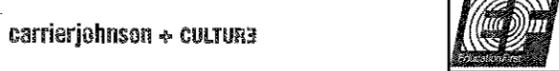
| EF STUDENTS AT PEAK | 85% OF THE MINIMUM REQUIRED IN A TRANSIT ZONE | REDUCTION RATE | PARKING REQUIRED PER STUDENT | TOTAL PARKING REQUIRED |
|---------------------|---|----------------|------------------------------|------------------------|
| 1500                | .85   | X 3%           | = .0255                      | X 1500 = 38 SPACES     |

**EF FACULTY/STAFF PEAK PARKING CALCULATIONS**  
 PARKING REQUIRED = (85% OF MINIMUM)

| EF FACULTY/STAFF AT PEAK | 85% OF MINIMUM IN TRANSIT AREA | TOTAL PARKING REQUIRED |
|--------------------------|--------------------------------|------------------------|
| 100                      | X .85                          | = 85 SPACES            |

**SINGLE FAMILY HOME PARKING CALCULATIONS**  
 PARKING REQUIRED = 2 SPACES PER DWELLING UNIT

| DWELLING UNITS | 2 SPACES PER DWELLING UNIT | TOTAL PARKING REQUIRED |
|----------------|----------------------------|------------------------|
| 1              | X 2                        | = 2                    |



**EF EDUCATION FIRST**  
 3455 KENYON ST, San Diego, CA 92106

**SITE PLAN**  
 SCALE: 1"=30'

JANUARY 20th, 2015

Name: CARRIER JOHNSON  
 Address: 1301 THIRD AVENUE  
 SAN DIEGO, CA 92101  
 Phone: (619) 239-2353  
 Project Address: 3455 KENYON STREET  
 SAN DIEGO, CA 92106  
 A.P.N. 441225-24  
 Project Name: EF EDUCATION FIRST CUP  
 Sheet Title: **A1.01**

Revision 04: 02/12/15  
 Revision 03: 01/20/15  
 Revision 02: 12/12/14  
 Revision 01: 10/08/14  
 Original Date: 10/08/14  
 Sheet 2 of 16  
 DEP#

## Attachment 2

### EF Student Survey

EF Campus Resident Survey

| Entries ID | Date Submitted  | What is your primary mode of transportation from campus?       | if you share a ride with other students, how many students do you typically travel to campus with? | How long do you leave campus on a typical day?     | if you drive to campus, do you ever have trouble finding a parking spot? | How often do you leave the campus? yes, how often? if I'm living on campus | Do you have guests who are not other EF students who visit you on campus? |
|------------|-----------------|--|--|--|--|--|---|
| 3          | 9/16/2014 15:46 | Walking  | One  | Less than two hours                                | No   | 2 times per week   | No  |
| 4          | 9/16/2014 15:46 | Walking  | Three  | More than four hours but less than six hours       | No   | 4 times per week   | No  |
| 7          | 9/16/2014 16:19 | Public Transportation  | Three  | Less than two hours                                | No   | Every Day  | No  |
| 12         | 9/16/2014 17:25 | Public Transportation  | One  | More than six hours                                | No   | Every Day  | No  |
| 13         | 9/16/2014 17:28 | Walking  | Two  | Less than two hours                                | No   | Every Day  | No  |
| 14         | 9/16/2014 17:34 | Public Transportation  | Two  | Less than two hours                                | No   | 2 times per week   | Keep doing it   |
| 15         | 9/16/2014 17:48 | Walking  | More than three  | More than four hours but less than six hours       | Yes  | 2 times per week   | No, I don't have guest  |
| 16         | 9/16/2014 17:53 | Walking  | One  | More than four hours but less than six hours       | No   | 5 times per week   | no  |
| 18         | 9/16/2014 18:01 | Public Transportation  | Three  | More than two hours but less than four hours       | No   | Every Day  | No  |
| 20         | 9/16/2014 18:12 | Public Transportation  | One, Two, Three  | Less than two hours                                | No   | Every Day  | No  |
| 21         | 9/16/2014 18:14 | Walking, Public Transportation                                 | More than three  | More than two hours but less than four hours       | No   | 4 times per week   | No  |
| 22         | 9/16/2014 18:14 | Walking, Public Transportation                                 | One, Two, Three  | More than two hours but less than four hours       | No   | Every Day  | No  |
| 23         | 9/16/2014 18:20 | Walking  | Three  | More than two hours but less than four hours       | No   | 5 times per week   | No  |
| 24         | 9/16/2014 18:43 | Walking  | More than three  | More than four hours but less than six hours       | No   | 6 times per week   | Not yet   |
| 25         | 9/16/2014 18:48 | Walking  | One  | Less than two hours                                | No   | 5 times per week   | No  |
| 26         | 9/16/2014 18:48 | Walking  | One  | Less than two hours                                | No   | 5 times per week   | No  |
| 27         | 9/16/2014 18:53 | Walking, Public Transportation                                 | One  | More than two hours but less than four hours       | No   | Never  | I don't.  |
| 28         | 9/16/2014 19:09 | Public Transportation  | More than three  | More than four hours but less than six hours       | No   | 6 times per week   | No  |
| 30         | 9/16/2014 19:18 | Walking  | Two  | More than six hours                                | No   | Every Day  | No  |
| 33         | 9/16/2014 19:56 | Walking  | Three  | More than six hours                                | No   | Every Day  | no I don't  |
| 36         | 9/16/2014 21:04 | Walking, Public Transportation                                 | Two  | More than six hours                                | No   | Every Day  | no I don't  |
| 37         | 9/16/2014 21:14 | Walking, Public Transportation                                 | More than three  | More than two hours but less than four hours, More | No   | 4 times per week, 3 I don't have any guest                                 |   |
| 38         | 9/16/2014 21:18 | Walking, Public Transportation                                 | More than three  | More than six hours                                | No   | 6 times per week, 5 No   |   |
| 39         | 9/16/2014 21:45 | Walking, Public Transportation                                 | More than three  | Less than two hours                                | No   | Every Day  | No  |
| 40         | 9/16/2014 21:55 | Public Transportation  | One  | Less than two hours                                | No   | Every Day  | No, never.  |
| 41         | 9/16/2014 22:11 | Public Transportation  | Two  | More than two hours                                | No   | 2 times per week   | I have had any guests   |
| 43         | 9/16/2014 22:21 | Walking  | One  | Less than two hours                                | No   | 6 times per week   | No  |
| 44         | 9/16/2014 22:24 | Walking  | More than three  | Less than two hours                                | Yes, No  | Every Day  | Yes I have, they visit n  |
| 45         | 9/16/2014 22:41 | Walking  | Three  | More than two hours but less than four hours, More | No   | 2 times per week, 4 No   |   |
| 49         | 9/17/2014 0:13  | Walking, Public Transportation, Ride with other students (ride | Three, More than three   | More than two hours but less than four hours       | No   | Every Day, 5 times i've never had guest                                    |   |
| 50         | 9/17/2014 0:33  | Walking, Public Transportation                                 | More than three  | Less than two hours                                | No   | Every Day  | No  |
| 52         | 9/17/2014 2:10  | Walking  | More than three  | More than two hours but less than four hours       | No   | Once per week  | No, i don't   |
| 53         | 9/17/2014 2:37  | Public Transportation  | Two  | More than six hours                                | No   | Every Day  | No, I usually don't.  |
| 54         | 9/17/2014 3:23  | Walking  | Three  | More than six hours                                | No   | 2 times per week   | No.   |
| 55         | 9/17/2014 3:58  | Walking, Public Transportation                                 | Two  | More than six hours                                | No   | Every Day  | no, never   |
| 56         | 9/17/2014 4:32  | Walking  | More than three  | More than four hours but less than six hours       | No   | Every Day  | No  |
| 113        | 9/17/2014 17:31 | Public Transportation  | One  | More than two hours but less than four hours       | No   | 4 times per week   | No  |
| 120        | 9/17/2014 23:07 | Public Transportation  | One  | More than two hours but less than four hours       | Yes  | Every Day  | No  |
| 125        | 9/18/2014 22:23 | Walking  | More than three  | Less than two hours                                | No   | 2 times per week   | No  |
| 139        | 9/19/2014 4:44  | Walking, Public Transportation, Taxi                           | Two, More than three   | More than six hours                                | No   | 2 times per week   | No  |
| 144        | 9/19/2014 12:44 | Walking  | Three  | More than four hours but less than six hours       | No   | Never  | No, I don't.  |
| 146        | 9/19/2014 12:46 | Walking  | One  | More than six hours                                | No   | Every Day  | No  |
| 152        | 9/19/2014 12:53 | Public Transportation  | Two  | More than four hours but less than six hours       | No   | Every Day  | No  |

|     |                 |                                |                        |  |     |                        |                         |
|-----|-----------------|--------------------------------|------------------------|--|-----|------------------------|-------------------------|
| 155 | 9/19/2014 13:07 | Walking                        | More than three        | More than four hours but less than six hours | No  | 5 times per week       | no, I don't have, but I |
| 157 | 9/19/2014 13:25 | Public Transportation          | Three                  | More than two hours but less than four hours | No  | Every Day              | No                      |
| 161 | 9/19/2014 13:34 | Public Transportation          | More than three        | More than two hours but less than four hours | No  | Every Day              | No                      |
| 165 | 9/19/2014 13:46 | Public Transportation          | One                    | More than six hours                          | No  | Every Day              | No. But my friends fro  |
| 168 | 9/19/2014 13:54 | Public Transportation          | One                    | More than four hours but less than six hours | No  | 5 times per week       | I do not have a guest.  |
| 169 | 9/19/2014 13:55 | Walking                        | Two                    | Less than two hours                          | No  | 5 times per week       | No.                     |
| 173 | 9/19/2014 14:12 | Walking                        | Three                  | More than four hours but less than six hours | No  | Every Day              | No.                     |
| 174 | 9/19/2014 14:12 | Walking                        | Three                  | More than six hours                          | No  | Every Day              | No.                     |
| 179 | 9/19/2014 14:38 | Public Transportation          | More than three        | More than four hours but less than six hours | No  | Every Day              | No.                     |
| 181 | 9/19/2014 15:07 | Public Transportation          | One                    | More than two hours but less than four hours | Yes | 5 times per week       | No                      |
| 182 | 9/19/2014 15:09 | Public Transportation          | More than three        | More than four hours but less than six hours | No  | Every Day              | No                      |
| 183 | 9/19/2014 15:18 | Walking                        | One                    | More than four hours but less than six hours | No  | Every Day              | No                      |
| 184 | 9/19/2014 15:44 | Public Transportation          | One                    | More than six hours                          | No  | Every Day              | No                      |
| 185 | 9/19/2014 16:08 | Walking                        | Two                    | More than four hours but less than six hours | No  | 6 times per week       | no                      |
| 187 | 9/19/2014 16:18 | Public Transportation          | Two                    | Less than two hours                          | No  | 3 times per week       | I dont have             |
| 188 | 9/19/2014 16:28 | Walking                        | One                    | More than four hours but less than six hours | No  | Once per week          | may be once a week      |
| 189 | 9/19/2014 17:31 | Walking                        | Two                    | More than two hours                          | No  | 2 times per week       | No                      |
| 194 | 9/19/2014 18:32 | Walking                        | One, Two               | More than four hours but less than six hours | No  | Every Day              | No                      |
| 195 | 9/19/2014 18:35 | Walking                        | One                    | Less than two hours                          | No  | 5 times per week       | No                      |
| 196 | 9/19/2014 18:43 | Public Transportation          | Three                  | More than two hours but less than four hours | No  | Every Day              | once ever.              |
| 200 | 9/19/2014 19:59 | Taxi                           | One, Two               | Less than two hours                          | No  | 4 times per week       | No                      |
| 207 | 9/19/2014 23:26 | Public Transportation          | One                    | More than six hours                          | No  | Every Day              | NO.                     |
| 208 | 9/19/2014 23:46 | Walking                        | More than three        | More than two hours but less than four hours | No  | 5 times per week       | no                      |
| 225 | 9/20/2014 17:43 | Walking                        | Two                    | Less than two hours                          | No  | Once per week          | no. i don't have any gi |
| 232 | 9/21/2014 17:36 | Public Transportation          | Two                    | Less than two hours                          | Yes | 4 times per week       | Yes, sometimes          |
| 236 | 9/22/2014 20:16 | Public Transportation          | Three                  | Less than two hours                          | Yes | Every Day              | No                      |
| 240 | 9/23/2014 15:43 | Walking, Public Transportation | One                    | More than two hours                          | No  | 5 times per week       | no                      |
| 244 | 9/28/2014 14:42 | Walking                        | Two                    | More than six hours                          | Yes | 3 times per week, 2 NO | No                      |
| 246 | 10/5/2014 19:38 | Public Transportation, Taxi    | Three, More than three | More than four hours but less than six hours | No  | Every Day              | Yes, students from Bo   |

# Attachment 3

Excerpts from previous studies

### 3.12.5.3 Trip Generation

The Proposed Project consists of two traffic generating components -- student housing and university/community-serving retail uses. As further explained below, for the student housing component, trip generation rates published in the *College Community Redevelopment Project EIR* (1993; SCH No. 92091036) ("*Redevelopment EIR*") and *The Paseo at San Diego State University EIR* (2005; SCH No. 2003061060) ("*Paseo EIR*") were reviewed, and the trip generation rate utilized in this analysis is based upon the higher *Redevelopment EIR* rate. For the university/community-serving retail component of the Project, the trip generation rates utilized in this analysis are based on the retail trip rates utilized in both the *Redevelopment EIR* and *Paseo EIR*.

The proposed uses would replace existing land uses presently located on the development site. In order to accurately assess the Project's impacts, the traffic generated by these existing uses was subtracted from the gross traffic volumes to be generated by the student housing and university/community-serving retail uses to yield the amount of additional traffic that would be added to the area roadways as a result of Project development. Each of these trip generating components is addressed separately below.

#### 3.12.5.3.1 Student Housing Trip Generation

Student housing trip generation is unique among the trip rates associated with the various types of residential projects (e.g., single family, apartment, condominium, etc). Student housing and apartment/condominium land uses have some similarities (high density, low trip generation), but trip rates for student housing are lower than typical multi-family rates. This is because unlike other multi-family dwellings (such as apartments), many students do not have cars, and those who do tend to make fewer trips since many trip ends associated with students lie within the sphere of the campus area. These trips include work (school) and pleasure trips (gym, sports fields), as well as trips to grocery stores, laundromats, drug stores, etc. Bike and walk trips are also easy and convenient within the sphere of the campus area.

In determining the trip rates associated with the student housing component of the Project, the Project's traffic engineer reviewed the trip generation rates published in both the *Redevelopment EIR* and the *Paseo EIR*, two mixed-use development projects previously planned for development in the Project vicinity. The *Paseo EIR* utilized a trip generation rate of 3.1 trips per unit for high density residential use, a rate approved by City staff for use in that document. The *Redevelopment EIR* utilized residential rates of 4.44 trips/unit. Based upon a review of the Proposed Project's density and location, the traffic engineer determined to utilize the higher

(i.e., more conservative) trip rate of 4.44 trips per unit in conducting the analysis for the Proposed Project.

Importantly, the inclusion of student housing as a Project component effectively eliminates the need for those students who will live in the housing to otherwise drive to campus. Accordingly, development of the Proposed Project is expected to result in a net decrease in commuter trips on I-8, and other regional roadways in the area. This is because the student housing component will allow students who would have otherwise commuted to campus to be located immediately adjacent to SDSU, essentially translating a regional peak hour vehicle trip into a walk or bike trip. The Proposed Project is not increasing the enrolled number of students or faculty, so no new "to/from SDSU" school trips would occur; to the contrary, the Project would eliminate trips that otherwise would have occurred.

#### 3.12.5.3.2 University/Community-Serving Retail Trip Generation

At this time, the specific tenants that would lease the university/community-serving retail component of the Proposed Project are unknown. However, for purposes of the analysis, the demographic for these uses is assumed to include both students and non-students living in the College Area neighborhood, as well as residents of adjacent communities. Additionally, the 90,000 gross square feet of retail development was assumed to include equal amounts of higher trip-generating retail uses (grocery and restaurant, for example) and lower trip-generating retail uses (general retail, bike shop, dry cleaners, etc.). Approximately one half of the square feet (44,000 sf) was assessed using a higher trip generation rate, while the other half (46,000 sf) was assessed using a lower rate.

To determine the appropriate trip generation rates, the traffic engineer reviewed the rates utilized in both the *Redevelopment EIR* and *Paseo EIR* for retail uses. The rates utilized in both EIRs were comparable, at 31.4 trips per 1,000 square feet (sf) of "retail" uses. The *Paseo EIR* included an additional trip rate of 100 trips per 1,000 sf for "restaurant" uses. Based on these City-approved rates, the EIR traffic engineer applied a trip generation rate of 100 trips/1,000 sf to 44,000 sf of the project square footage, which is assumed to be developed as higher trip-generating retail uses, including high-turnover sit-down restaurants and grocery stores (e.g., national chains). While the *Paseo* traffic study refers to the 100 trips/1,000 sf trip rate as "restaurant," this rate also covers grocery stores/supermarkets since the City of San Diego's published cumulative trip rate is higher for sit-down restaurants than for grocery stores (104 trips/1,000 sf v. 90 trips/1,000 sf, respectively). A combined pass-by/diverted/mixed use reduction of 48% was applied to this square footage, based on the percentage used in the *Paseo*

Table 3.12-9  
Proposed Project Gross Trip Generation

| Location   | Use <sup>a</sup> | Size <sup>b</sup> | Daily Rate        | ADT  | AM Peak Hour |        |       |    |     | PM Peak Hour |      |        |       |    |     |       |
|------------|------------------|-------------------|-------------------|------|--------------|--------|-------|----|-----|--------------|------|--------|-------|----|-----|-------|
|            |                  |                   |                   |      | % PM         | In:Out | Split | In | Out | Total        | % PM | In:Out | Split | In | Out | Total |
| Building 1 | a. Residential   | 90 du             | 4.44/ du          | 400  | 8%           | 20%    | 80%   | 6  | 26  | 32           | 11%  | 70%    | 30%   | 31 | 13  | 44    |
|            | b. Retail        | 12.5 ksf          | 31.4/ ksf         | 393  | 4%           | 60%    | 40%   | 9  | 6   | 15           | 11%  | 50%    | 50%   | 22 | 22  | 44    |
|            | c. Retail        | 12.5 ksf          | 100 (.52)/ ksf    | 650  | 8%           | 50%    | 50%   | 26 | 26  | 52           | 8%   | 60%    | 40%   | 31 | 21  | 52    |
|            |                  |                   | Subtotal - Bldg 1 | 1440 |              |        |       | 41 | 58  | 99           |      |        |       | 84 | 56  | 140   |
| Building 2 | a. Residential   | 60 du             | 4.44/ du          | 266  | 8%           | 20%    | 80%   | 4  | 17  | 21           | 11%  | 70%    | 30%   | 21 | 9   | 30    |
|            | b. Retail        | 10 ksf            | 31.4/ ksf         | 314  | 4%           | 60%    | 40%   | 8  | 5   | 13           | 11%  | 50%    | 50%   | 17 | 17  | 34    |
|            | c. Retail        | 10 ksf            | 100 (.52)/ ksf    | 520  | 8%           | 50%    | 50%   | 21 | 21  | 42           | 8%   | 60%    | 40%   | 25 | 17  | 42    |
|            |                  |                   | Subtotal - Bldg 2 | 1100 |              |        |       | 33 | 43  | 76           |      |        |       | 63 | 43  | 106   |
| Building 3 | a. Retail        | 2 ksf             | 31.4/ ksf         | 63   | 4%           | 60%    | 40%   | 2  | 1   | 3            | 11%  | 50%    | 50%   | 3  | 3   | 6     |
| Building 4 | a. Residential   | 60 du             | 4.44/ du          | 266  | 8%           | 20%    | 80%   | 4  | 17  | 21           | 11%  | 70%    | 30%   | 21 | 9   | 30    |
|            | b. Retail        | 10 ksf            | 31.4/ ksf         | 314  | 4%           | 60%    | 40%   | 8  | 5   | 13           | 11%  | 50%    | 50%   | 17 | 17  | 34    |
|            | c. Retail        | 10 ksf            | 100 (.52)/ ksf    | 520  | 8%           | 50%    | 50%   | 21 | 21  | 42           | 8%   | 60%    | 40%   | 25 | 17  | 42    |
|            |                  |                   | Subtotal - Bldg 4 | 1100 |              |        |       | 33 | 43  | 76           |      |        |       | 63 | 43  | 106   |
| Building 5 | a. residential   | 90 du             | 4.44/ du          | 400  | 8%           | 20%    | 80%   | 6  | 26  | 32           | 11%  | 70%    | 30%   | 31 | 13  | 44    |
|            | b. retail        | 11.5 ksf          | 31.4/ du          | 361  | 4%           | 60%    | 40%   | 9  | 6   | 15           | 11%  | 50%    | 50%   | 20 | 20  | 40    |
|            | c. retail        | 11.5 ksf          | 100 (.52)/ ksf    | 598  | 8%           | 50%    | 50%   | 24 | 24  | 48           | 8%   | 60%    | 40%   | 29 | 19  | 48    |
|            |                  |                   | Subtotal - Bldg 5 | 1359 |              |        |       | 39 | 56  | 95           |      |        |       | 80 | 52  | 132   |



**LOS Engineering, Inc.**  
**Traffic and Transportation**

11622 El Camino Real, Suite 100, San Diego, CA 92130  
Phone 619-890-1253, Fax 619-374-7247; E-mail:Justin@LOSEngineering.com

October 18, 2012

Ms. Martha Delgadillo  
EC San Diego Language Center  
1012 Prospect Street, Suite 200  
La Jolla, CA 92037

Subject: EC English Language School Trip Generation Analysis (Special Use Permit #93-0685)

Dear Ms. Delgadillo:

The purpose of this letter is to document the existing and future trip generation for the EC English Language School located at 1012 Prospect Street, La Jolla California in order to determine if a Traffic Impact Analysis (TIA) is required per the City of San Diego guidelines. The existing trip generation is based on attendance data and field surveys. The future trip generation is based on existing rates applied to the proposed expansion from 65 students and 10 staff members to 300 students and 25 staff members – an increase of 235 students and 15 staff members.

Student Demographics

The EC English Language School caters to foreign students and foreign professionals. As documented on the EC English School website, various classes are offered that include English Courses, Business English, University Preparation, and Exam Preparation (a screen shot of their web site is included in **Attachment A**). Their website also has links for accommodations within a 30 to 90 minute journey by public transportation due to the temporary attendance of the students (web page screen shot included in **Attachment B**).

From January 2011 through current 2012, a total of 1,323 students attended the EC English Language School with an average age of 23 and an average stay of 89 days. During this period, only three of the 1,323 students were listed with American nationality, thus almost all students are visiting to learning English from 17 different countries.

Trip Generation

Trip generation is typically determined using rates documented in the City of San Diego *Trip Generation Manual*, May 2003 or from the Institute of Transportation Engineers (ITE) *Trip Generation Manual 9<sup>th</sup> Edition*, 2012. However, both sources do not have trip generation rates for private language schools, thus site specific data is needed to determine the private language school trip generation.

The student trip generation is based on the type and time of class, and a survey of their mode of travel. The surveys were conducted by the teachers (through a show of hands) asking what transportation mode was used to reach the school (results included in **Attachment C**). About 80% of the surveyed students use public transportation, walk, and/or bike to school. Only 20% use a car and of that 20%, half carpool. Based on the survey, the student trip generation is calculated at 0.31 Average Daily Trips (ADT) per student (20% of 65 students drive = 13 vehicles of which 7 drive solo and 6 carpool [3 vehicles at 2 person occupancy] for a total of 10 vehicles [7+3] for 65 students). With 10 inbound and 10 outbound vehicles, the ADT is 20; thus the rate is 20 ADT/65 Students or 0.31 ADT/Student. The future student trip rate is based on the current survey rate because the school expansion will cater to the same type of students.

The staff trip generation is based on a survey of current modes of travel where 4 staff members bike, 1 uses transit, and the remaining 5 drive. This results in a rate of 1 daily trip per staff member (10 ADT/10 staff members). To account for errands and lunch runs, a 50% increase was applied making the existing rate 1.5 ADT/staff member. The future staff trip rate is assumed to have a higher rate of drivers due to the unknown characteristics of future employees. Thus, the future staff rate is calculated with a 50% increase in single vehicle usage or 2.25 ADT/staff member. The existing AM inbound and PM outbound trips are equal to 5 to match the current employee survey while the future AM inbound and PM outbound are equal to 19 (75% of 25 staff anticipated to drive or not arrive/depart during a peak hour).

The overall trip generation is from the combination of student and staff trips based on the different type and time of the various classes. There are three types of classes – Core A, Cambridge, and Core B. Core A starts at 8:15am and ends at 1:05pm while Cambridge starts at 8:15am and ends at 2:40pm. For trip generation purposes, Core A and Cambridge are grouped together as they both contribute to the AM peak hour. Sixty five percent of the students take Core A and Cambridge classes. Core B starts and 1:10pm and ends at 6pm and makes up the remainder 35% of the students. The trip generation of students based on class start and end times and staff for the existing use, proposed use, and net increase are summarized in **Table 1**.

**Table 1: Existing, Proposed, and Net Increase in Trip Generation**

| Proposed<br>Land Use                                | Driveway Rate<br>from Survey | Size & Units | ADT        | AM Pk Hr btw 7-9 |          | PM Pk Hr btw 4-6 |           |  |
|---|------------------------------|--------------|------------|------------------|----------|------------------|-----------|--|
|   |                              |              |            | IN               | OUT      | IN               | OUT       |  |
| <u>Existing School Users</u>                        |                              |              |            |                  |          |                  |           |  |
| Students (classes from 8:15am to 1:05pm or 2:40pm)  | 0.31 /Student                | 42 Students  | 13         | 7                | 0        | 0                | 0         |  |
| Students (classes from 1:10pm to 6:00pm)            | 0.31 /Student                | 23 Students  | 7          | 0                | 0        | 0                | 0         |  |
| <i>Student Subtotal</i>                             |                              | 65 Students  |            |                  |          |                  |           |  |
| Staff   | 1.50 /Staff                  | 10 Staff     | 15         | 5                | 0        | 0                | 5         |  |
| <i>Subtotal</i>                                     |                              |              | 35         | 12               | 0        | 0                | 5         |  |
| <u>Proposed School Users</u>                        |                              |              |            |                  |          |                  |           |  |
| Students (classes from 8:15am to 1:05pm or 2:40pm)  | 0.31 /Student                | 195 Students | 60         | 30               | 0        | 0                | 0         |  |
| Students (classes from 1:10pm to 6:00pm)            | 0.31 /Student                | 105 Students | 33         | 0                | 0        | 0                | 0         |  |
| <i>Student Subtotal</i>                             |                              | 300 Students |            |                  |          |                  |           |  |
| Staff   | 2.25 /Staff                  | 25 Staff     | 56         | 19               | 0        | 0                | 19        |  |
| <i>Subtotal</i>                                     |                              |              | 149        | 49               | 0        | 0                | 19        |  |
| <b>Net Traffic Increase Over Current Conditions</b> |                              |              | <b>114</b> | <b>37</b>        | <b>0</b> | <b>0</b>         | <b>14</b> |  |

Notes: School student data and surveys used to calculate daily and peak hour volumes. ADT: Average Daily Traffic.

# Attachment 2

Date: ###-##-##

CITY: San Diego

PROJECT:

Driveway Location: North Driveway, CAM 1

Note: Vehicle Counts

| AM Period  | (out) | (in) | EB (out) | WB (in) | PM Period | (out) | (in) | EB (out) | WB (in) |
|------------|-------|------|----------|---------|-----------|-------|------|----------|---------|
| 00:00      | 3     | 6    |          |         | 12:00     | 8     | 4    |          |         |
| 00:15      | 1     | 2    |          |         | 12:15     | 4     | 3    |          |         |
| 00:30      | 4     | 3    |          |         | 12:30     | 7     | 10   |          |         |
| 00:45      | 2     | 1    | 12       |         | 12:45     | 3     | 3    | 20       |         |
| 01:00      | 2     | 1    |          |         | 13:00     | 6     | 8    |          | 42      |
| 01:15      | 0     | 1    |          |         | 13:15     | 5     | 5    |          |         |
| 01:30      | 2     | 1    |          |         | 13:30     | 4     | 2    |          |         |
| 01:45      | 3     | 7    | 2        | 5       | 13:45     | 6     | 7    | 22       | 43      |
| 02:00      | 1     | 3    |          |         | 14:00     | 5     | 2    |          |         |
| 02:15      | 1     | 0    |          |         | 14:15     | 5     | 2    |          |         |
| 02:30      | 0     | 1    |          |         | 14:30     | 2     | 4    |          |         |
| 02:45      | 0     | 2    | 0        | 4       | 14:45     | 1     | 13   | 9        | 22      |
| 03:00      | 0     | 0    |          |         | 15:00     | 3     | 3    |          |         |
| 03:15      | 0     | 0    |          |         | 15:15     | 4     | 4    |          |         |
| 03:30      | 2     | 1    |          |         | 15:30     | 2     | 1    |          |         |
| 03:45      | 0     | 2    | 2        | 3       | 15:45     | 4     | 13   | 14       | 27      |
| 04:00      | 0     | 1    |          |         | 16:00     | 3     | 5    |          |         |
| 04:15      | 0     | 0    |          |         | 16:15     | 3     | 7    |          |         |
| 04:30      | 0     | 0    |          |         | 16:30     | 2     | 2    |          |         |
| 04:45      | 1     | 1    | 0        | 1       | 16:45     | 5     | 13   | 2        | 16      |
| 05:00      | 0     | 0    |          |         | 17:00     | 5     | 5    |          |         |
| 05:15      | 0     | 0    |          |         | 17:15     | 4     | 6    |          |         |
| 05:30      | 0     | 0    |          |         | 17:30     | 3     | 5    |          |         |
| 05:45      | 0     | 0    | 0        |         | 17:45     | 5     | 17   | 3        | 19      |
| 06:00      | 0     | 0    |          |         | 18:00     | 9     | 8    |          | 36      |
| 06:15      | 0     | 0    |          |         | 18:15     | 4     | 4    |          |         |
| 06:30      | 0     | 0    |          |         | 18:30     | 3     | 4    |          |         |
| 06:45      | 0     | 0    | 0        | 0       | 18:45     | 2     | 18   | 2        | 18      |
| 07:00      | 0     | 0    |          |         | 19:00     | 4     | 6    |          |         |
| 07:15      | 0     | 0    |          |         | 19:15     | 6     | 5    |          |         |
| 07:30      | 0     | 0    |          |         | 19:30     | 6     | 3    |          |         |
| 07:45      | 1     | 1    | 4        | 4       | 19:45     | 2     | 18   | 1        | 15      |
| 08:00      | 2     | 4    |          |         | 20:00     | 4     | 2    |          |         |
| 08:15      | 2     | 6    |          |         | 20:15     | 5     | 6    |          |         |
| 08:30      | 1     | 2    |          |         | 20:30     | 4     | 3    |          |         |
| 08:45      | 0     | 5    | 1        | 13      | 20:45     | 5     | 18   | 6        | 17      |
| 09:00      | 0     | 1    |          |         | 21:00     | 1     | 1    |          |         |
| 09:15      | 2     | 1    |          |         | 21:15     | 4     | 3    |          |         |
| 09:30      | 0     | 1    |          |         | 21:30     | 4     | 3    |          |         |
| 09:45      | 1     | 3    | 1        | 4       | 21:45     | 4     | 13   | 2        | 9       |
| 10:00      | 4     | 10   |          |         | 22:00     | 2     | 3    |          |         |
| 10:15      | 2     | 0    |          |         | 22:15     | 3     | 6    |          |         |
| 10:30      | 0     | 1    |          |         | 22:30     | 4     | 1    |          |         |
| 10:45      | 6     | 12   | 5        | 16      | 22:45     | 1     | 10   | 3        | 13      |
| 11:00      | 4     | 1    |          |         | 23:00     | 2     | 3    |          |         |
| 11:15      | 3     | 4    |          |         | 23:15     | 1     | 2    |          |         |
| 11:30      | 3     | 2    |          |         | 23:30     | 4     | 2    |          |         |
| 11:45      | 6     | 16   | 4        | 11      | 23:45     | 1     | 8    | 3        | 10      |
| Total Vol. | 59    | 73   |          |         | 132       |       | 184  | 182      | 366     |

| Daily Totals |     |    |     |
|--------------|-----|----|-----|
| IN           | OUT | EB | WB  |
| 243          | 255 |    | 498 |

|                  | AM    |       |       | PM    |       |       |
|------------------|-------|-------|-------|-------|-------|-------|
| Split %          | 44.7% | 55.3% | 26.5% | 50.3% | 49.7% | 73.5% |
| Peak Hour Volume |       |       |       |       |       |       |
| P.H.F.           |       |       |       |       |       |       |

Urban Systems

Date: ###-##-##

CITY: San Diego

PROJECT:

Driveway Location: North Driveway, CAM 1

Note: Vehicle Counts

| AM Period  | (out) | (in) | EB (out) | WB (in) | PM Period | (out) | (in) | EB (out) | WB (in) |
|------------|-------|------|----------|---------|-----------|-------|------|----------|---------|
| 00:00      | 5     | 3    |          |         | 12:00     | 3     | 1    |          |         |
| 00:15      | 0     | 2    |          |         | 12:15     | 2     | 3    |          |         |
| 00:30      | 0     | 1    |          |         | 12:30     | 2     | 0    |          |         |
| 00:45      | 0     | 5    | 1        | 7       | 12:45     | 3     | 10   | 0        | 4       |
| 01:00      | 1     | 0    |          |         | 13:00     | 1     | 1    |          | 14      |
| 01:15      | 0     | 0    |          |         | 13:15     | 4     | 3    |          |         |
| 01:30      | 0     | 0    |          |         | 13:30     | 4     | 4    |          |         |
| 01:45      | 0     | 1    | 1        | 1       | 13:45     | 3     | 12   | 3        | 11      |
| 02:00      | 0     | 0    |          |         | 14:00     | 4     | 0    |          |         |
| 02:15      | 0     | 3    |          |         | 14:15     | 1     | 4    |          |         |
| 02:30      | 1     | 3    |          |         | 14:30     | 5     | 4    |          |         |
| 02:45      | 0     | 1    | 0        | 6       | 14:45     | 4     | 14   | 6        | 14      |
| 03:00      | 3     | 1    |          |         | 15:00     | 6     | 4    |          |         |
| 03:15      | 1     | 0    |          |         | 15:15     | 4     | 5    |          |         |
| 03:30      | 0     | 0    |          |         | 15:30     | 3     | 0    |          |         |
| 03:45      | 0     | 4    | 0        | 1       | 15:45     | 6     | 19   | 6        | 15      |
| 04:00      | 0     | 2    |          |         | 16:00     | 2     | 1    |          | 34      |
| 04:15      | 0     | 0    |          |         | 16:15     | 4     | 5    |          |         |
| 04:30      | 0     | 0    |          |         | 16:30     | 2     | 6    |          |         |
| 04:45      | 0     | 0    | 0        | 2       | 16:45     | 0     | 8    | 2        | 14      |
| 05:00      | 0     | 0    |          |         | 17:00     | 1     | 3    |          |         |
| 05:15      | 0     | 0    |          |         | 17:15     | 9     | 7    |          |         |
| 05:30      | 0     | 1    |          |         | 17:30     | 8     | 6    |          |         |
| 05:45      | 0     | 0    | 0        | 1       | 17:45     | 6     | 24   | 4        | 20      |
| 06:00      | 0     | 0    |          |         | 18:00     | 4     | 5    |          | 44      |
| 06:15      | 0     | 0    |          |         | 18:15     | 9     | 7    |          |         |
| 06:30      | 1     | 0    |          |         | 18:30     | 9     | 7    |          |         |
| 06:45      | 1     | 2    | 2        | 2       | 18:45     | 3     | 25   | 7        | 26      |
| 07:00      | 1     | 1    |          |         | 19:00     | 2     | 2    |          |         |
| 07:15      | 2     | 0    |          |         | 19:15     | 2     | 1    |          |         |
| 07:30      | 0     | 1    |          |         | 19:30     | 2     | 2    |          |         |
| 07:45      | 2     | 5    | 3        | 5       | 19:45     | 1     | 7    | 1        | 6       |
| 08:00      | 1     | 2    |          |         | 20:00     | 10    | 6    |          |         |
| 08:15      | 0     | 0    |          |         | 20:15     | 3     | 3    |          |         |
| 08:30      | 0     | 2    |          |         | 20:30     | 2     | 5    |          |         |
| 08:45      | 0     | 1    | 1        | 5       | 20:45     | 7     | 22   | 4        | 18      |
| 09:00      | 0     | 0    |          |         | 21:00     | 7     | 2    |          | 40      |
| 09:15      | 0     | 0    |          |         | 21:15     | 8     | 6    |          |         |
| 09:30      | 3     | 2    |          |         | 21:30     | 5     | 11   |          |         |
| 09:45      | 5     | 8    | 1        | 3       | 21:45     | 6     | 26   | 4        | 23      |
| 10:00      | 2     | 6    |          |         | 22:00     | 3     | 5    |          | 49      |
| 10:15      | 0     | 3    |          |         | 22:15     | 3     | 3    |          |         |
| 10:30      | 5     | 2    |          |         | 22:30     | 4     | 5    |          |         |
| 10:45      | 0     | 7    | 4        | 15      | 22:45     | 5     | 15   | 2        | 15      |
| 11:00      | 5     | 4    |          |         | 23:00     | 2     | 2    |          | 30      |
| 11:15      | 0     | 1    |          |         | 23:15     | 7     | 6    |          |         |
| 11:30      | 3     | 0    |          |         | 23:30     | 0     | 1    |          |         |
| 11:45      | 1     | 9    | 1        | 6       | 23:45     | 1     | 10   | 0        | 9       |
| Total Vol. | 43    | 54   |          |         | 97        |       | 192  | 175      | 367     |

| Daily Totals |     |    |     |
|--------------|-----|----|-----|
| IN           | OUT | EB | WB  |
| 235          | 229 |    | 464 |

| Split %                 | AM    |       |       | PM    |       |       |
|-------------------------|-------|-------|-------|-------|-------|-------|
|                         | 44.3% | 55.7% | 20.9% | 52.3% | 47.7% | 79.1% |
| Peak Hour Volume P.H.F. |       |       |       |       |       |       |

Urban Systems

Date ###

CITY: San Diego

PROJECT:

Driveway Location: North Driveway, CAM 1

Note: Pedestrian Counts

| AM Period  | NB (out) | SB (in) | EB (out) | WB (in) | PM Period | NB (out) | SB (in) | EB (out)     | WB (in) |    |          |
|------------|----------|---------|----------|---------|-----------|----------|---------|--------------|---------|----|----------|
| 00:00      | 4        | 10      |          |         | 12:00     | 19       | 13      |              |         |    |          |
| 00:15      | 0        | 3       |          |         | 12:15     | 25       | 14      |              |         |    |          |
| 00:30      | 3        | 0       |          |         | 12:30     | 19       | 26      |              |         |    |          |
| 00:45      | 1        | 8       | 2        | 15      | 23 12:45  | 29       | 92      | 32           | 85      |    |          |
| 01:00      | 3        | 10      |          |         | 13:00     | 41       | 37      |              | 177     |    |          |
| 01:15      | 2        | 2       |          |         | 13:15     | 24       | 23      |              |         |    |          |
| 01:30      | 0        | 2       |          |         | 13:30     | 9        | 8       |              |         |    |          |
| 01:45      | 0        | 5       | 3        | 17      | 22 13:45  | 24       | 98      | 10           | 78      |    |          |
| 02:00      | 2        | 5       |          |         | 14:00     | 12       | 30      |              | 176     |    |          |
| 02:15      | 0        | 0       |          |         | 14:15     | 15       | 14      |              |         |    |          |
| 02:30      | 0        | 3       |          |         | 14:30     | 17       | 25      |              |         |    |          |
| 02:45      | 0        | 2       | 0        | 8       | 10 14:45  | 16       | 60      | 7            | 76      |    |          |
| 03:00      | 0        | 0       |          |         | 15:00     | 10       | 18      |              |         |    |          |
| 03:15      | 0        | 1       |          |         | 15:15     | 10       | 12      |              |         |    |          |
| 03:30      | 0        | 1       |          |         | 15:30     | 6        | 10      |              |         |    |          |
| 03:45      | 0        | 0       | 2        | 4       | 4 15:45   | 8        | 34      | 8            | 48      |    |          |
| 04:00      | 0        | 0       |          |         | 16:00     | 14       | 13      |              | 82      |    |          |
| 04:15      | 0        | 0       |          |         | 16:15     | 6        | 9       |              |         |    |          |
| 04:30      | 0        | 2       |          |         | 16:30     | 3        | 5       |              |         |    |          |
| 04:45      | 3        | 3       | 0        | 2       | 5 16:45   | 8        | 31      | 6            | 33      |    |          |
| 05:00      | 0        | 0       |          |         | 17:00     | 9        | 10      |              |         |    |          |
| 05:15      | 0        | 0       |          |         | 17:15     | 8        | 19      |              |         |    |          |
| 05:30      | 2        | 1       |          |         | 17:30     | 20       | 7       |              |         |    |          |
| 05:45      | 0        | 2       | 0        | 1       | 3 17:45   | 14       | 51      | 9            | 45      |    |          |
| 06:00      | 1        | 0       |          |         | 18:00     | 18       | 19      |              | 96      |    |          |
| 06:15      | 0        | 2       |          |         | 18:15     | 10       | 15      |              |         |    |          |
| 06:30      | 0        | 1       |          |         | 18:30     | 6        | 19      |              |         |    |          |
| 06:45      | 2        | 3       | 0        | 3       | 6 18:45   | 20       | 54      | 12           | 65      |    |          |
| 07:00      | 0        | 0       |          |         | 19:00     | 9        | 10      |              | 119     |    |          |
| 07:15      | 2        | 5       |          |         | 19:15     | 5        | 4       |              |         |    |          |
| 07:30      | 1        | 5       |          |         | 19:30     | 1        | 8       |              |         |    |          |
| 07:45      | 0        | 3       | 9        | 19      | 22 19:45  | 9        | 24      | 17           | 39      |    |          |
| 08:00      | 1        | 9       |          |         | 20:00     | 5        | 9       |              | 63      |    |          |
| 08:15      | 1        | 6       |          |         | 20:15     | 6        | 11      |              |         |    |          |
| 08:30      | 4        | 0       |          |         | 20:30     | 12       | 1       |              |         |    |          |
| 08:45      | 18       | 24      | 2        | 17      | 41 20:45  | 17       | 40      | 12           | 33      |    |          |
| 09:00      | 7        | 3       |          |         | 21:00     | 17       | 17      |              | 73      |    |          |
| 09:15      | 14       | 5       |          |         | 21:15     | 11       | 8       |              |         |    |          |
| 09:30      | 10       | 8       |          |         | 21:30     | 7        | 18      |              |         |    |          |
| 09:45      | 3        | 34      | 5        | 21      | 55 21:45  | 14       | 49      | 16           | 59      |    |          |
| 10:00      | 3        | 3       |          |         | 22:00     | 5        | 9       |              | 108     |    |          |
| 10:15      | 5        | 7       |          |         | 22:15     | 1        | 10      |              |         |    |          |
| 10:30      | 9        | 4       |          |         | 22:30     | 13       | 3       |              |         |    |          |
| 10:45      | 3        | 20      | 10       | 24      | 44 22:45  | 5        | 24      | 4            | 26      |    |          |
| 11:00      | 18       | 9       |          |         | 23:00     | 2        | 14      |              | 50      |    |          |
| 11:15      | 14       | 8       |          |         | 23:15     | 2        | 10      |              |         |    |          |
| 11:30      | 26       | 6       |          |         | 23:30     | 1        | 6       |              |         |    |          |
| 11:45      | 23       | 81      | 9        | 32      | 113 23:45 | 1        | 6       | 9            | 39      |    |          |
| Total Vol. | 185      | 163     |          |         | 348       |          | 563     | 626          | 1189    |    |          |
|            |          |         |          |         |           |          |         | Daily Totals |         |    |          |
|            |          |         |          |         |           |          | NB      | SB           | EB      | WB | Combined |
|            |          |         |          |         |           |          | 748     | 789          |         |    | 1537     |
|            |          |         |          |         |           |          |         |              | PM      |    |          |
| Split %    | 53.2%    | 46.8%   |          |         | 22.6%     |          | 47.4%   | 52.6%        |         |    | 77.4%    |
| Peak Hour  |          |         |          |         |           |          |         |              |         |    |          |
| Volume     |          |         |          |         |           |          |         |              |         |    |          |
| P.H.F.     |          |         |          |         |           |          |         |              |         |    |          |

Urban Systems

Date ###

CITY: San Diego

PROJECT:

Driveway Location: North Driveway, CAM 1

Note: Pedestrian Counts

| AM Period  | NB (out) | SB (in) | EB (out) | WB (in) | PM Period | NB (out) | SB (in) | EB (out) | WB (in) |
|------------|----------|---------|----------|---------|-----------|----------|---------|----------|---------|
| 00:00      | 4        | 13      |          |         | 12:00     | 20       |         |          | 12      |
| 00:15      | 4        | 0       |          |         | 12:15     | 10       |         |          | 8       |
| 00:30      | 0        | 2       |          |         | 12:30     | 22       |         |          | 9       |
| 00:45      | 2        | 10      | 12       | 27      | 12:45     | 18       | 70      |          | 8       |
| 01:00      | 3        | 6       |          |         | 13:00     | 32       |         |          | 18      |
| 01:15      | 2        | 7       |          |         | 13:15     | 18       |         |          | 18      |
| 01:30      | 2        | 3       |          |         | 13:30     | 32       |         |          | 20      |
| 01:45      | 4        | 11      | 0        | 16      | 13:45     | 17       | 99      |          | 22      |
| 02:00      | 6        | 5       |          |         | 14:00     | 10       |         |          | 21      |
| 02:15      | 0        | 1       |          |         | 14:15     | 10       |         |          | 16      |
| 02:30      | 0        | 3       |          |         | 14:30     | 15       |         |          | 2       |
| 02:45      | 1        | 7       | 1        | 10      | 14:45     | 7        | 42      |          | 15      |
| 03:00      | 0        | 5       |          |         | 15:00     | 13       |         |          | 12      |
| 03:15      | 1        | 1       |          |         | 15:15     | 10       |         |          | 10      |
| 03:30      | 1        | 0       |          |         | 15:30     | 11       |         |          | 6       |
| 03:45      | 0        | 2       | 0        | 6       | 15:45     | 11       | 45      |          | 8       |
| 04:00      | 0        | 0       |          |         | 16:00     | 17       |         |          | 8       |
| 04:15      | 4        | 0       |          |         | 16:15     | 4        |         |          | 13      |
| 04:30      | 0        | 0       |          |         | 16:30     | 15       |         |          | 8       |
| 04:45      | 0        | 4       | 0        | 0       | 16:45     | 2        | 38      |          | 4       |
| 05:00      | 0        | 0       |          |         | 17:00     | 4        |         |          | 13      |
| 05:15      | 3        | 0       |          |         | 17:15     | 12       |         |          | 9       |
| 05:30      | 0        | 0       |          |         | 17:30     | 7        |         |          | 16      |
| 05:45      | 0        | 3       | 1        | 1       | 17:45     | 5        | 28      |          | 22      |
| 06:00      | 0        | 0       |          |         | 18:00     | 12       |         |          | 12      |
| 06:15      | 0        | 0       |          |         | 18:15     | 3        |         |          | 11      |
| 06:30      | 0        | 2       |          |         | 18:30     | 5        |         |          | 13      |
| 06:45      | 2        | 2       | 0        | 2       | 18:45     | 3        | 23      |          | 17      |
| 07:00      | 1        | 1       |          |         | 19:00     | 4        |         |          | 3       |
| 07:15      | 1        | 1       |          |         | 19:15     | 4        |         |          | 6       |
| 07:30      | 0        | 2       |          |         | 19:30     | 8        |         |          | 5       |
| 07:45      | 1        | 3       | 9        | 13      | 19:45     | 2        | 18      |          | 9       |
| 08:00      | 1        | 11      |          |         | 20:00     | 6        |         |          | 3       |
| 08:15      | 4        | 1       |          |         | 20:15     | 7        |         |          | 12      |
| 08:30      | 0        | 1       |          |         | 20:30     | 5        |         |          | 7       |
| 08:45      | 0        | 5       | 1        | 14      | 20:45     | 7        | 25      |          | 5       |
| 09:00      | 1        | 2       |          |         | 21:00     | 6        |         |          | 4       |
| 09:15      | 9        | 4       |          |         | 21:15     | 4        |         |          | 13      |
| 09:30      | 12       | 7       |          |         | 21:30     | 1        |         |          | 9       |
| 09:45      | 5        | 27      | 0        | 13      | 21:45     | 5        | 16      |          | 0       |
| 10:00      | 7        | 1       |          |         | 22:00     | 16       |         |          | 8       |
| 10:15      | 8        | 3       |          |         | 22:15     | 7        |         |          | 8       |
| 10:30      | 6        | 12      |          |         | 22:30     | 7        |         |          | 15      |
| 10:45      | 2        | 23      | 6        | 22      | 22:45     | 0        | 30      |          | 9       |
| 11:00      | 25       | 8       |          |         | 23:00     | 3        |         |          | 12      |
| 11:15      | 8        | 3       |          |         | 23:15     | 4        |         |          | 1       |
| 11:30      | 4        | 8       |          |         | 23:30     | 0        |         |          | 7       |
| 11:45      | 6        | 43      | 11       | 30      | 23:45     | 0        | 7       |          | 5       |
| Total Vol. | 140      | 154     |          |         | 294       | 441      | 492     |          | 933     |

| Daily Totals |     |    |      |
|--------------|-----|----|------|
| NB           | SB  | EB | WB   |
| 581          | 646 |    | 1227 |
| Combined     |     |    |      |
| 1227         |     |    |      |

| Split %          | AM    |       |       | PM    |       |       |
|------------------|-------|-------|-------|-------|-------|-------|
|                  | 47.6% | 52.4% | 24.0% | 47.3% | 52.7% | 76.0% |
| Peak Hour Volume |       |       |       |       |       |       |
| P.H.F.           |       |       |       |       |       |       |

Urban Systems

Date 10/24/2018

CITY: San Diego

PROJECT:

Driveway Location: North Driveway, CAM 1

Note: Ride-share Vehicles

| AM Period         | Out      | IN        | EB (out) | WB (in) | PM Period | Out      | IN         | EB (out) | WB (in)    |
|-------------------|----------|-----------|----------|---------|-----------|----------|------------|----------|------------|
| 00:00             | 1        | 0         |          |         | 12:00     | 0        | 1          |          |            |
| 00:15             | 0        | 0         |          |         | 12:15     | 0        | 4          |          |            |
| 00:30             | 0        | 0         |          |         | 12:30     | 0        | 1          |          |            |
| 00:45             | 0        | 1         | 0        |         | 12:45     | 0        | 3          | 9        | 9          |
| 01:00             | 0        | 1         |          |         | 13:00     | 0        | 5          |          |            |
| 01:15             | 0        | 0         |          |         | 13:15     | 0        | 5          |          |            |
| 01:30             | 0        | 0         |          |         | 13:30     | 0        | 3          |          |            |
| 01:45             | 0        | 0         | 2        |         | 13:45     | 1        | 3          | 16       | 17         |
| 02:00             | 0        | 0         |          |         | 14:00     | 0        | 5          |          |            |
| 02:15             | 0        | 1         |          |         | 14:15     | 0        | 6          |          |            |
| 02:30             | 0        | 1         |          |         | 14:30     | 0        | 5          |          |            |
| 02:45             | 0        | 1         | 3        |         | 14:45     | 0        | 4          | 20       | 20         |
| 03:00             | 0        | 0         |          |         | 15:00     | 0        | 3          |          |            |
| 03:15             | 0        | 0         |          |         | 15:15     | 0        | 2          |          |            |
| 03:30             | 0        | 0         |          |         | 15:30     | 0        | 4          |          |            |
| 03:45             | 0        | 1         | 1        |         | 15:45     | 0        | 2          | 11       | 11         |
| 04:00             | 0        | 0         |          |         | 16:00     | 0        | 4          |          |            |
| 04:15             | 0        | 0         |          |         | 16:15     | 0        | 3          |          |            |
| 04:30             | 0        | 0         |          |         | 16:30     | 0        | 5          |          |            |
| 04:45             | 0        | 0         | 0        |         | 16:45     | 0        | 2          | 14       | 14         |
| 05:00             | 0        | 0         |          |         | 17:00     | 0        | 3          |          |            |
| 05:15             | 0        | 0         |          |         | 17:15     | 0        | 1          |          |            |
| 05:30             | 0        | 0         |          |         | 17:30     | 0        | 4          |          |            |
| 05:45             | 0        | 1         | 1        |         | 17:45     | 0        | 2          | 10       | 10         |
| 06:00             | 0        | 0         |          |         | 18:00     | 0        | 0          |          |            |
| 06:15             | 0        | 0         |          |         | 18:15     | 0        | 1          |          |            |
| 06:30             | 0        | 0         |          |         | 18:30     | 0        | 0          |          |            |
| 06:45             | 0        | 0         | 0        |         | 18:45     | 0        | 4          | 5        | 5          |
| 07:00             | 0        | 0         |          |         | 19:00     | 0        | 0          |          |            |
| 07:15             | 0        | 0         |          |         | 19:15     | 0        | 2          |          |            |
| 07:30             | 0        | 0         |          |         | 19:30     | 0        | 3          |          |            |
| 07:45             | 0        | 0         | 0        |         | 19:45     | 0        | 0          | 5        | 5          |
| 08:00             | 0        | 0         |          |         | 20:00     | 0        | 1          |          |            |
| 08:15             | 0        | 0         |          |         | 20:15     | 0        | 5          |          |            |
| 08:30             | 0        | 1         |          |         | 20:30     | 0        | 0          |          |            |
| 08:45             | 0        | 0         | 1        |         | 20:45     | 0        | 1          | 7        | 7          |
| 09:00             | 0        | 0         |          |         | 21:00     | 0        | 1          |          |            |
| 09:15             | 0        | 0         |          |         | 21:15     | 0        | 3          |          |            |
| 09:30             | 0        | 0         |          |         | 21:30     | 0        | 2          |          |            |
| 09:45             | 0        | 0         | 0        |         | 21:45     | 0        | 0          | 6        | 6          |
| 10:00             | 0        | 0         |          |         | 22:00     | 0        | 5          |          |            |
| 10:15             | 0        | 3         |          |         | 22:15     | 0        | 0          |          |            |
| 10:30             | 0        | 1         |          |         | 22:30     | 0        | 0          |          |            |
| 10:45             | 0        | 0         | 4        |         | 22:45     | 0        | 0          | 5        | 5          |
| 11:00             | 0        | 0         |          |         | 23:00     | 0        | 0          |          |            |
| 11:15             | 0        | 1         |          |         | 23:15     | 0        | 0          |          |            |
| 11:30             | 0        | 3         |          |         | 23:30     | 0        | 0          |          |            |
| 11:45             | 0        | 0         | 4        |         | 23:45     | 0        | 0          | 0        | 0          |
| <b>Total Vol.</b> | <b>1</b> | <b>16</b> |          |         | <b>17</b> | <b>1</b> | <b>108</b> |          | <b>109</b> |

| Daily Totals    |     |    |    |
|-----------------|-----|----|----|
| NB              | SB  | EB | WB |
| 2               | 124 |    |    |
| <b>Combined</b> |     |    |    |
| 126             |     |    |    |

|                  | AM      |      |       | PM    |      |       |
|------------------|---------|------|-------|-------|------|-------|
|                  | Split % | 5.9% | 94.1% | 13.5% | 0.9% | 99.1% |
| Peak Hour Volume |         |      |       |       |      |       |
| P.H.F.           |         |      |       |       |      |       |
|                  |         |      |       |       |      | 86.5% |

Urban Systems

Date 10/24/2018

CITY: San Diego

PROJECT:

Driveway Location: North Driveway, CAM 1

Note: Ride-share Vehicles

| AM Period         | Out      | IN        | EB (out) | WB (in)   | PM Period | Out      | IN        | EB (out) | WB (in)   |
|-------------------|----------|-----------|----------|-----------|-----------|----------|-----------|----------|-----------|
| 00:00             | 0        | 1         |          |           | 12:00     | 0        | 1         |          |           |
| 00:15             | 1        | 0         |          |           | 12:15     | 0        | 1         |          |           |
| 00:30             | 0        | 0         |          |           | 12:30     | 1        | 1         |          |           |
| 00:45             | 0        | 1         | 2        |           | 12:45     | 0        | 1         | 3        | 4         |
| 01:00             | 0        | 0         |          |           | 13:00     | 0        | 4         |          |           |
| 01:15             | 0        | 0         |          |           | 13:15     | 0        | 3         |          |           |
| 01:30             | 1        | 0         |          |           | 13:30     | 0        | 0         |          |           |
| 01:45             | 0        | 1         | 0        | 1         | 13:45     | 1        | 2         | 9        | 10        |
| 02:00             | 0        | 0         |          |           | 14:00     | 0        | 2         |          |           |
| 02:15             | 0        | 0         |          |           | 14:15     | 0        | 0         |          |           |
| 02:30             | 0        | 0         |          |           | 14:30     | 0        | 3         |          |           |
| 02:45             | 0        | 0         | 0        |           | 14:45     | 0        | 2         | 7        | 7         |
| 03:00             | 0        | 0         |          |           | 15:00     | 0        | 3         |          |           |
| 03:15             | 0        | 0         |          |           | 15:15     | 0        | 6         |          |           |
| 03:30             | 0        | 0         |          |           | 15:30     | 1        | 3         |          |           |
| 03:45             | 0        | 0         | 0        |           | 15:45     | 0        | 4         | 16       | 17        |
| 04:00             | 0        | 0         |          |           | 16:00     | 0        | 2         |          |           |
| 04:15             | 0        | 0         |          |           | 16:15     | 0        | 3         |          |           |
| 04:30             | 0        | 0         |          |           | 16:30     | 0        | 5         |          |           |
| 04:45             | 0        | 0         | 0        |           | 16:45     | 0        | 0         | 10       | 10        |
| 05:00             | 0        | 0         |          |           | 17:00     | 0        | 2         |          |           |
| 05:15             | 0        | 0         |          |           | 17:15     | 0        | 1         |          |           |
| 05:30             | 0        | 0         |          |           | 17:30     | 0        | 1         |          |           |
| 05:45             | 0        | 0         | 0        |           | 17:45     | 0        | 1         | 5        | 5         |
| 06:00             | 0        | 0         |          |           | 18:00     | 0        | 2         |          |           |
| 06:15             | 0        | 0         |          |           | 18:15     | 0        | 5         |          |           |
| 06:30             | 0        | 0         |          |           | 18:30     | 0        | 4         |          |           |
| 06:45             | 0        | 0         | 0        |           | 18:45     | 0        | 2         | 13       | 13        |
| 07:00             | 0        | 0         |          |           | 19:00     | 0        | 3         |          |           |
| 07:15             | 0        | 0         |          |           | 19:15     | 0        | 3         |          |           |
| 07:30             | 0        | 1         |          |           | 19:30     | 0        | 0         |          |           |
| 07:45             | 0        | 0         | 1        | 1         | 19:45     | 0        | 1         | 7        | 7         |
| 08:00             | 0        | 2         |          |           | 20:00     | 0        | 4         |          |           |
| 08:15             | 0        | 0         |          |           | 20:15     | 0        | 4         |          |           |
| 08:30             | 0        | 1         |          |           | 20:30     | 0        | 2         |          |           |
| 08:45             | 0        | 0         | 3        | 3         | 20:45     | 0        | 3         | 13       | 13        |
| 09:00             | 0        | 0         |          |           | 21:00     | 0        | 3         |          |           |
| 09:15             | 0        | 0         |          |           | 21:15     | 0        | 3         |          |           |
| 09:30             | 0        | 0         |          |           | 21:30     | 0        | 1         |          |           |
| 09:45             | 0        | 0         | 2        | 2         | 21:45     | 0        | 2         | 9        | 9         |
| 10:00             | 0        | 0         |          |           | 22:00     | 0        | 1         |          |           |
| 10:15             | 0        | 0         |          |           | 22:15     | 0        | 2         |          |           |
| 10:30             | 0        | 1         |          |           | 22:30     | 0        | 0         |          |           |
| 10:45             | 0        | 0         | 1        | 1         | 22:45     | 0        | 0         | 3        | 3         |
| 11:00             | 0        | 0         |          |           | 23:00     | 0        | 0         |          |           |
| 11:15             | 0        | 0         |          |           | 23:15     | 0        | 0         |          |           |
| 11:30             | 0        | 1         |          |           | 23:30     | 0        | 0         |          |           |
| 11:45             | 0        | 0         | 3        | 3         | 23:45     | 0        | 0         | 0        | 0         |
| <b>Total Vol.</b> | <b>2</b> | <b>12</b> |          | <b>14</b> |           | <b>3</b> | <b>95</b> |          | <b>98</b> |

Daily Totals

|    |     |    |    |          |
|----|-----|----|----|----------|
| NB | SB  | EB | WB | Combined |
| 5  | 107 |    |    | 112      |

AM

PM

|                  |       |       |       |      |       |       |
|------------------|-------|-------|-------|------|-------|-------|
| Split %          | 14.3% | 85.7% | 12.5% | 3.1% | 96.9% | 87.5% |
| Peak Hour Volume |       |       |       |      |       |       |
| P.H.F.           |       |       |       |      |       |       |

Urban Systems

Date: 10/24/2018

CITY: San Diego

PROJECT:

Driveway Location: North Driveway, CAM 1

| AM Period  | NB | SB | EB (out) | WB (in) | PM Period | NB | SB | EB (out) | WB (in) |
|------------|----|----|----------|---------|-----------|----|----|----------|---------|
| 00:00      | 0  | 0  |          |         | 12:00     | 0  | 0  |          |         |
| 00:15      | 0  | 0  |          |         | 12:15     | 0  | 0  |          |         |
| 00:30      | 0  | 0  |          |         | 12:30     | 0  | 1  |          |         |
| 00:45      | 0  | 0  | 0        |         | 12:45     | 0  | 1  | 2        | 2       |
| 01:00      | 0  | 0  |          |         | 13:00     | 0  | 0  |          |         |
| 01:15      | 0  | 0  |          |         | 13:15     | 0  | 0  |          |         |
| 01:30      | 0  | 0  |          |         | 13:30     | 0  | 0  |          |         |
| 01:45      | 0  | 0  | 0        |         | 13:45     | 0  | 0  | 0        |         |
| 02:00      | 0  | 0  |          |         | 14:00     | 0  | 1  |          |         |
| 02:15      | 0  | 0  |          |         | 14:15     | 0  | 0  |          |         |
| 02:30      | 0  | 0  |          |         | 14:30     | 0  | 0  |          |         |
| 02:45      | 0  | 0  | 0        |         | 14:45     | 1  | 0  | 1        | 2       |
| 03:00      | 0  | 0  |          |         | 15:00     | 2  | 0  |          |         |
| 03:15      | 0  | 0  |          |         | 15:15     | 0  | 0  |          |         |
| 03:30      | 0  | 0  |          |         | 15:30     | 0  | 0  |          |         |
| 03:45      | 0  | 0  | 0        |         | 15:45     | 1  | 1  | 1        | 4       |
| 04:00      | 0  | 0  |          |         | 16:00     | 0  | 0  |          |         |
| 04:15      | 0  | 0  |          |         | 16:15     | 0  | 1  |          |         |
| 04:30      | 0  | 0  |          |         | 16:30     | 1  | 0  |          |         |
| 04:45      | 0  | 0  | 0        |         | 16:45     | 0  | 0  | 1        | 2       |
| 05:00      | 0  | 0  |          |         | 17:00     | 0  | 0  |          |         |
| 05:15      | 0  | 0  |          |         | 17:15     | 0  | 2  |          |         |
| 05:30      | 0  | 0  |          |         | 17:30     | 1  | 1  |          |         |
| 05:45      | 0  | 0  | 0        |         | 17:45     | 4  | 1  | 4        | 9       |
| 06:00      | 0  | 0  |          |         | 18:00     | 1  | 0  |          |         |
| 06:15      | 0  | 0  |          |         | 18:15     | 0  | 5  |          |         |
| 06:30      | 0  | 0  |          |         | 18:30     | 0  | 0  |          |         |
| 06:45      | 0  | 1  | 1        |         | 18:45     | 0  | 1  | 6        | 7       |
| 07:00      | 0  | 0  |          |         | 19:00     | 0  | 0  |          |         |
| 07:15      | 0  | 0  |          |         | 19:15     | 0  | 4  |          |         |
| 07:30      | 0  | 1  |          |         | 19:30     | 0  | 2  |          |         |
| 07:45      | 0  | 0  | 1        |         | 19:45     | 0  | 0  | 6        | 6       |
| 08:00      | 0  | 0  |          |         | 20:00     | 0  | 0  |          |         |
| 08:15      | 0  | 0  |          |         | 20:15     | 0  | 0  |          |         |
| 08:30      | 0  | 0  |          |         | 20:30     | 3  | 0  |          |         |
| 08:45      | 0  | 0  | 0        |         | 20:45     | 0  | 4  | 4        | 7       |
| 09:00      | 0  | 0  |          |         | 21:00     | 2  | 0  |          |         |
| 09:15      | 0  | 0  |          |         | 21:15     | 0  | 0  |          |         |
| 09:30      | 0  | 0  |          |         | 21:30     | 0  | 0  |          |         |
| 09:45      | 0  | 0  | 0        |         | 21:45     | 0  | 0  | 0        | 2       |
| 10:00      | 0  | 0  |          |         | 22:00     | 1  | 0  |          |         |
| 10:15      | 0  | 0  |          |         | 22:15     | 0  | 0  |          |         |
| 10:30      | 0  | 0  |          |         | 22:30     | 0  | 0  |          |         |
| 10:45      | 0  | 0  | 0        |         | 22:45     | 0  | 0  | 0        | 1       |
| 11:00      | 0  | 0  |          |         | 23:00     | 0  | 0  |          |         |
| 11:15      | 0  | 0  |          |         | 23:15     | 0  | 0  |          |         |
| 11:30      | 0  | 0  |          |         | 23:30     | 0  | 0  |          |         |
| 11:45      | 0  | 2  | 2        |         | 23:45     | 0  | 0  | 0        |         |
| Total Vol. |    | 4  |          |         | 4         |    | 17 | 25       | 42      |

| Daily Totals |    | EB |    | WB |    | Combined |
|--------------|----|----|----|----|----|----------|
| NB           | SB | EB | WB | WB | WB | Combined |
|              | 29 |    |    |    |    | 46       |

| Split %                 | AM     |      | PM    |       | Combined |
|-------------------------|--------|------|-------|-------|----------|
|                         | 100.0% | 8.7% | 40.5% | 59.5% |          |
| Peak Hour Volume P.H.F. |        |      |       |       |          |

Urban Systems

Date: 10/24/2018

CITY: San Diego

PROJECT:

Driveway Location: North Driveway, CAM 1

| AM Period  | NB | SB | EB (out) | WB (in) | PM Period | NB | SB | EB (out) | WB (in) |
|------------|----|----|----------|---------|-----------|----|----|----------|---------|
| 00:00      | 0  | 0  |          |         | 12:00     | 0  | 0  |          |         |
| 00:15      | 0  | 0  |          |         | 12:15     | 0  | 0  |          |         |
| 00:30      | 0  | 0  |          |         | 12:30     | 0  | 0  |          |         |
| 00:45      | 0  | 0  | 0        |         | 12:45     | 0  | 0  | 0        |         |
| 01:00      | 0  | 0  |          |         | 13:00     | 0  | 0  |          |         |
| 01:15      | 0  | 0  |          |         | 13:15     | 0  | 2  |          |         |
| 01:30      | 0  | 0  |          |         | 13:30     | 2  | 1  |          |         |
| 01:45      | 0  | 0  | 0        |         | 13:45     | 1  | 3  | 3        | 6       |
| 02:00      | 0  | 0  |          |         | 14:00     | 0  | 0  |          |         |
| 02:15      | 0  | 0  |          |         | 14:15     | 0  | 0  |          |         |
| 02:30      | 0  | 0  |          |         | 14:30     | 1  | 0  |          |         |
| 02:45      | 0  | 0  | 0        |         | 14:45     | 0  | 1  | 0        | 1       |
| 03:00      | 0  | 0  |          |         | 15:00     | 0  | 0  |          |         |
| 03:15      | 0  | 0  |          |         | 15:15     | 0  | 2  |          |         |
| 03:30      | 0  | 0  |          |         | 15:30     | 0  | 0  |          |         |
| 03:45      | 0  | 0  | 0        |         | 15:45     | 0  | 1  | 3        | 3       |
| 04:00      | 0  | 0  |          |         | 16:00     | 0  | 0  |          |         |
| 04:15      | 0  | 0  |          |         | 16:15     | 0  | 0  |          |         |
| 04:30      | 0  | 0  |          |         | 16:30     | 1  | 0  |          |         |
| 04:45      | 0  | 0  | 0        |         | 16:45     | 0  | 1  | 0        | 1       |
| 05:00      | 0  | 0  |          |         | 17:00     | 0  | 0  |          |         |
| 05:15      | 0  | 0  |          |         | 17:15     | 0  | 1  |          |         |
| 05:30      | 0  | 0  |          |         | 17:30     | 0  | 4  |          |         |
| 05:45      | 0  | 0  | 0        |         | 17:45     | 0  | 0  | 5        | 5       |
| 06:00      | 0  | 0  |          |         | 18:00     | 0  | 0  |          |         |
| 06:15      | 0  | 0  |          |         | 18:15     | 2  | 0  |          |         |
| 06:30      | 0  | 0  |          |         | 18:30     | 1  | 0  |          |         |
| 06:45      | 0  | 1  | 1        |         | 18:45     | 0  | 3  | 0        | 3       |
| 07:00      | 0  | 0  |          |         | 19:00     | 0  | 0  |          |         |
| 07:15      | 0  | 0  |          |         | 19:15     | 1  | 6  |          |         |
| 07:30      | 0  | 0  |          |         | 19:30     | 0  | 0  |          |         |
| 07:45      | 0  | 0  | 0        |         | 19:45     | 2  | 3  | 6        | 9       |
| 08:00      | 0  | 0  |          |         | 20:00     | 1  | 2  |          |         |
| 08:15      | 0  | 0  |          |         | 20:15     | 2  | 2  |          |         |
| 08:30      | 0  | 0  |          |         | 20:30     | 1  | 1  |          |         |
| 08:45      | 0  | 0  | 0        |         | 20:45     | 0  | 4  | 5        | 9       |
| 09:00      | 0  | 0  |          |         | 21:00     | 2  | 1  |          |         |
| 09:15      | 0  | 0  |          |         | 21:15     | 0  | 0  |          |         |
| 09:30      | 0  | 0  |          |         | 21:30     | 0  | 1  |          |         |
| 09:45      | 0  | 1  | 1        |         | 21:45     | 0  | 2  | 2        | 4       |
| 10:00      | 0  | 0  |          |         | 22:00     | 0  | 0  |          |         |
| 10:15      | 0  | 0  |          |         | 22:15     | 0  | 0  |          |         |
| 10:30      | 0  | 0  |          |         | 22:30     | 0  | 0  |          |         |
| 10:45      | 0  | 0  | 0        |         | 22:45     | 0  | 0  | 0        |         |
| 11:00      | 0  | 0  |          |         | 23:00     | 0  | 0  |          |         |
| 11:15      | 1  | 0  |          |         | 23:15     | 0  | 0  |          |         |
| 11:30      | 0  | 0  |          |         | 23:30     | 0  | 0  |          |         |
| 11:45      | 0  | 1  | 0        |         | 23:45     | 0  | 0  | 0        |         |
| Total Vol. | 1  | 2  |          |         | 3         | 17 | 24 |          | 41      |

|                  | AM    |       |    |      | PM    |       |    |       |
|------------------|-------|-------|----|------|-------|-------|----|-------|
|                  | NB    | SB    | EB | WB   | NB    | SB    | EB | WB    |
| Split %          | 33.3% | 66.7% |    |      | 41.5% | 58.5% |    |       |
| Peak Hour Volume |       |       |    | 6.8% |       |       |    | 93.2% |
| P.H.F.           |       |       |    |      |       |       |    |       |

Urban Systems

MEMORANDUM

To: Shawna Marino  
EF Education First

Date: February 8, 2019

---

From: Trissa de Jesus Allen, P.E.  
LLG, Engineers

LLG Ref: 2.18.4031.1

---

Subject: EF Costa Mesa: Responses to City Comments

Engineers & Planners  
Traffic  
Transportation  
Parking

**Linscott, Law &  
Greenspan, Engineers**  
2 Executive Circle  
Suite 250  
Irvine, CA 92614  
949.825.6175 T  
949.825.6173 F  
www.llgengineers.com

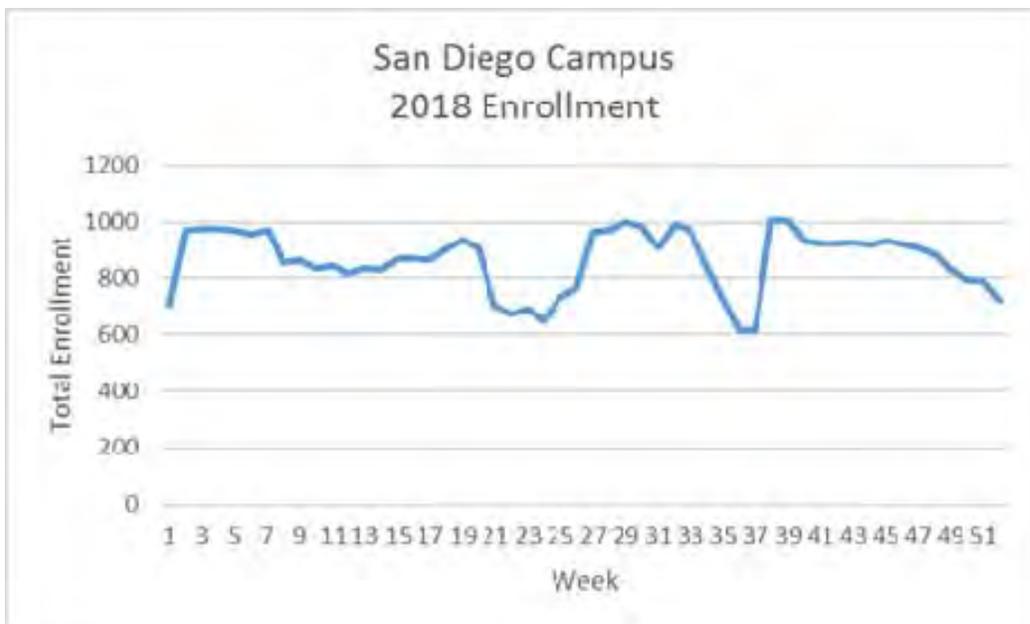
Pasadena  
Irvine  
San Diego  
Woodland Hills

As follow up to our December 17, 2018 meeting with City staff, we have prepared this technical memorandum to address comments provided by City staff with regards to the following:

**a. EF San Diego Enrollment/Occupancy During Traffic Data Collection:**

EF San Diego has an entitlement for up to 800 commuter students and 700 beds, for a total enrollment allowance of 1,500 students; however, due to seasonal fluctuations inherent in a school of this type, full enrollment is rarely (if ever) achieved. This is similar to trip generation for other uses where occupancy of 75% to 85% is considered the typical condition for trip generation purposes, as specified in ITE’s *Trip Generation Handbook*, 3<sup>rd</sup> Edition.

According to 2018 enrollment data for the EF San Diego campus, the maximum enrollment was 1,007 total students with 698 resident students, and the average enrollment was 865 total students with 628 resident students. In October 2018, when the traffic counts were conducted, the total enrollment was between 924-927 students with 678-679 resident students. The enrollment is plotted below:



Based on the above information and the ITE recommendations, the EF San Diego campus had been fully occupied for at least two years prior to the date of the most recent counts. The site is considered successful and occupancy was typical at the time of the counts; therefore, no adjustment to count data is necessary.

**b. EF San Diego Employee Tripmaking Characteristics:**

With respect to the Faculty population, 80 staff are currently employed at EF San Diego. A previous staff survey in San Diego yielded 27 responses, which indicated that 60% of staff members reported commuting more than five kilometers, 33% of staff members commute between one and five kilometers, and 7% commute less than one kilometer.

In addition, 74% of staff members reported using public transportation, 15% reported driving a personal vehicle to campus, and the remaining 11% either walk or bike to campus.

**c. EF San Diego Hourly Traffic Counts**

Hours of operation are 7:30/8:00 AM to 5:30/6:00 PM. *Figures A and B* illustrate the hourly breakdown of the October 2018 vehicle traffic counts collected at EF Sand Diego. Based on the commute peak periods of 7:00 AM to 9:00 AM, and 4:00 PM to 6:00 PM, at most 18 AM peak hour trips and 44 PM peak hour trips were observed.

**d. EF Costa Mesa Host Family Selection Criteria**

Consistent with EF's programming for existing campuses in the US, including the San Diego and Santa Barbara schools, commuter students for the proposed Costa Mesa campus would live in the surrounding community with host families that are selected based on proximity to campus and accessibility to public transportation, bike facilities, and pedestrian connections. The attached maps illustrate the OCTA bus lines and targeted host family service area. As indicated in the trip generation letter, to supplement existing public transportation facilities, EF will be providing a shuttle service for the use of all students. This shuttle service will operate in a loop to connect the EF Costa Mesa campus to OCTA bus stops, the South Coast Plaza/Metro area, The Lab/The Camp area, and the beach. In addition, EF will be coordinating with OCTA to re-establish previously discontinued bus routes and/or install a bus stop closer to the campus.

**e. EF Costa Mesa Employees Living On Site**

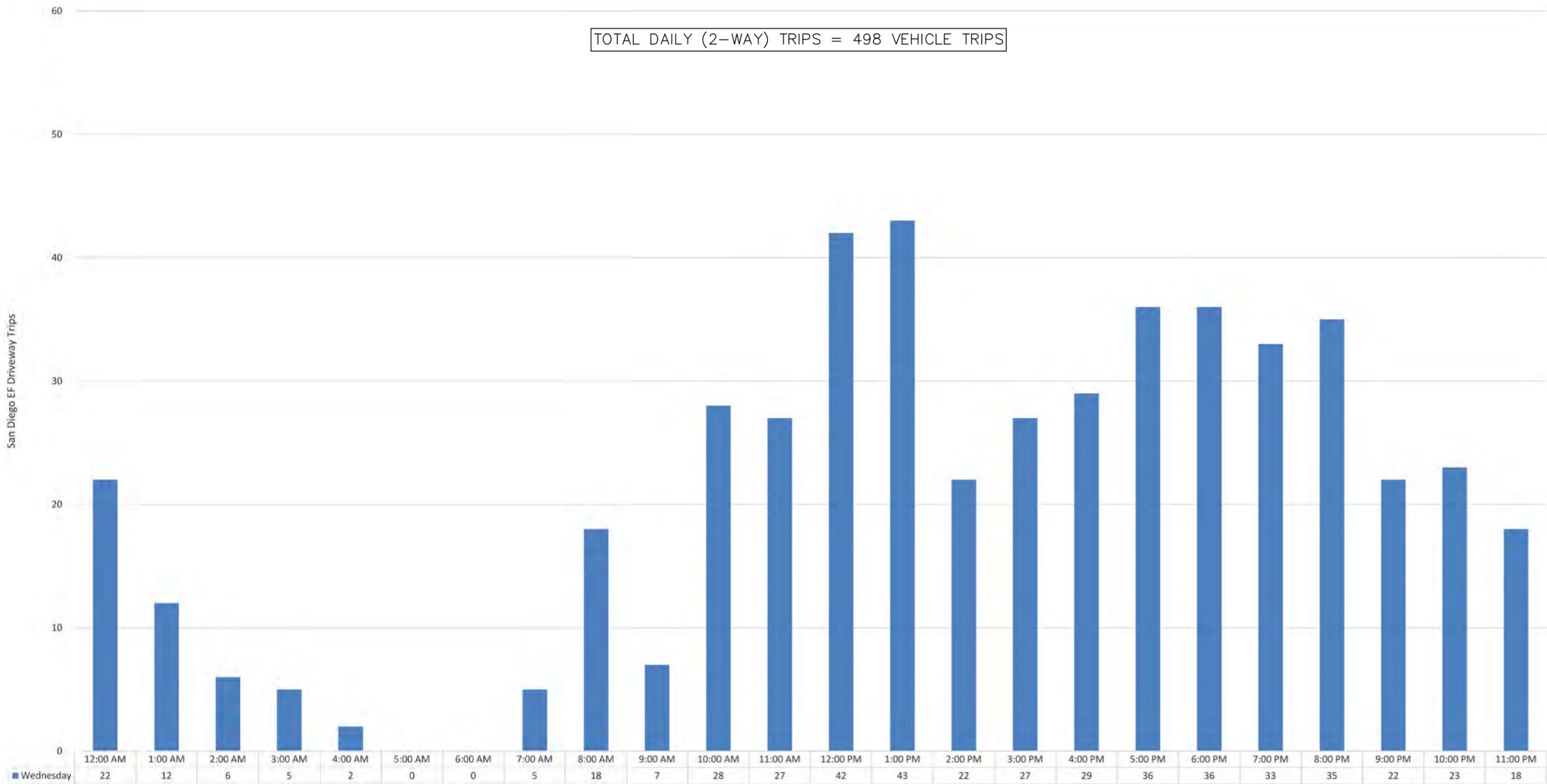
During the near-term phase, up to 6 employees (RAs) would live on site, and up to 16 RAs would reside on site under project buildout conditions.

**f. EF Costa Mesa Peak Hour Traffic Counts and Existing Intersection Peak Hour LOS**

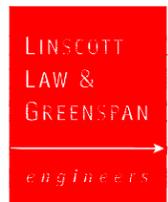
Please find attached the traffic counts (*Appendix A*) and existing LOS tables and worksheets (*Appendix B*). These will provide the basis for the traffic impact study to be prepared by LLG (see below)

- g. **EF Costa Mesa Traffic Impact Study** to be prepared by LLG, and provided to the City when complete
- h. **EF Costa Mesa Parking Study** to be prepared by LLG, and provided to the City when complete

Please call me at 949.825.6175 if you have any questions or comments about this technical memorandum. Thank you.

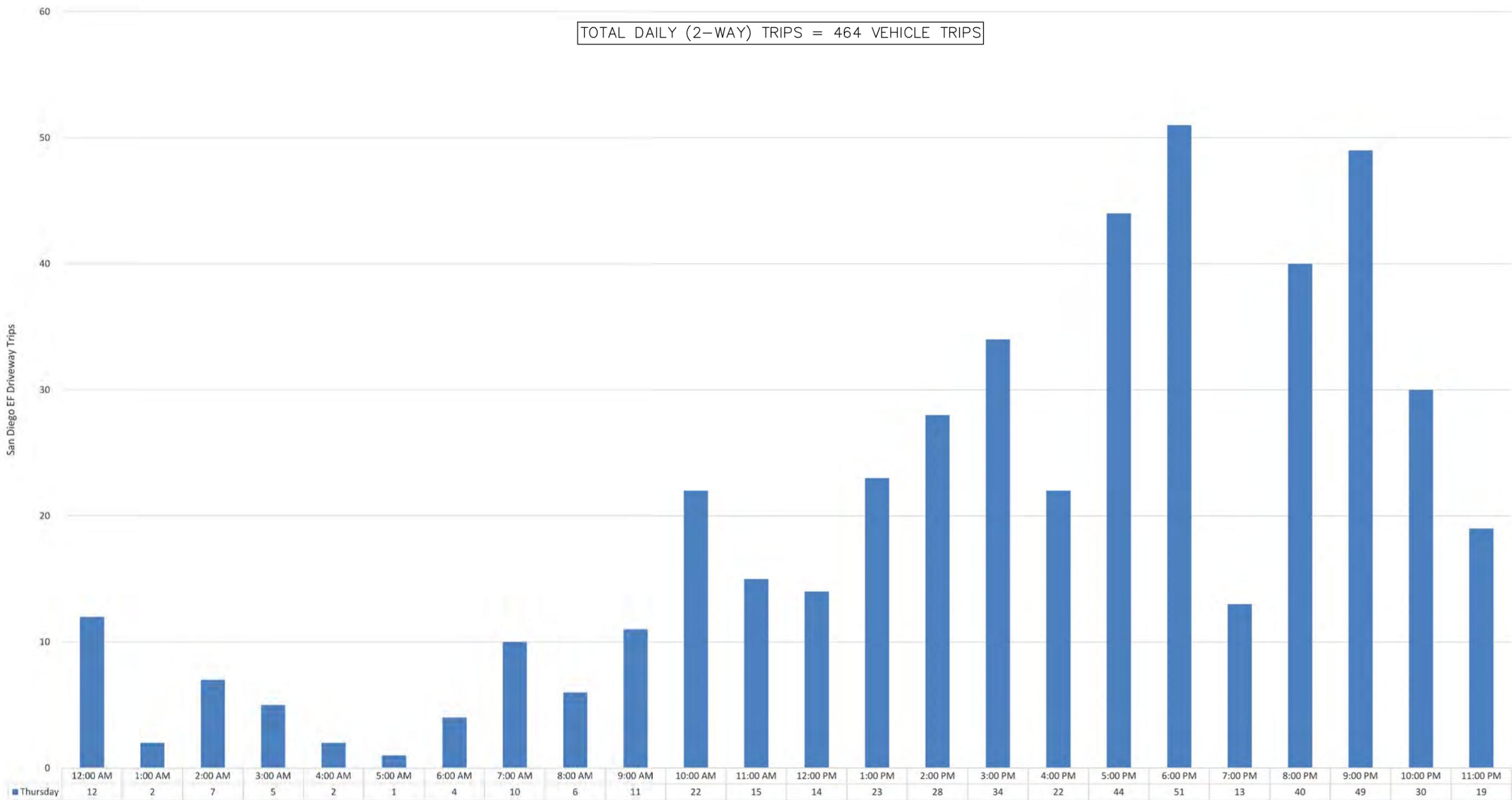


n:\4000\2184031 - ef education first, costa mesa\dwg\2-5-19\4031 f-a new.dwg LDP 11:23:38 05-07-2019 mempin

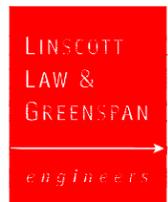


**FIGURE A**

**WEDNESDAY, OCTOBER 24, 2018**  
**EF SAN DIEGO 2-WAY VEHICLE TRAFFIC COUNTS BY HOUR**  
 EF EDUCATION FIRST, COSTA MESA



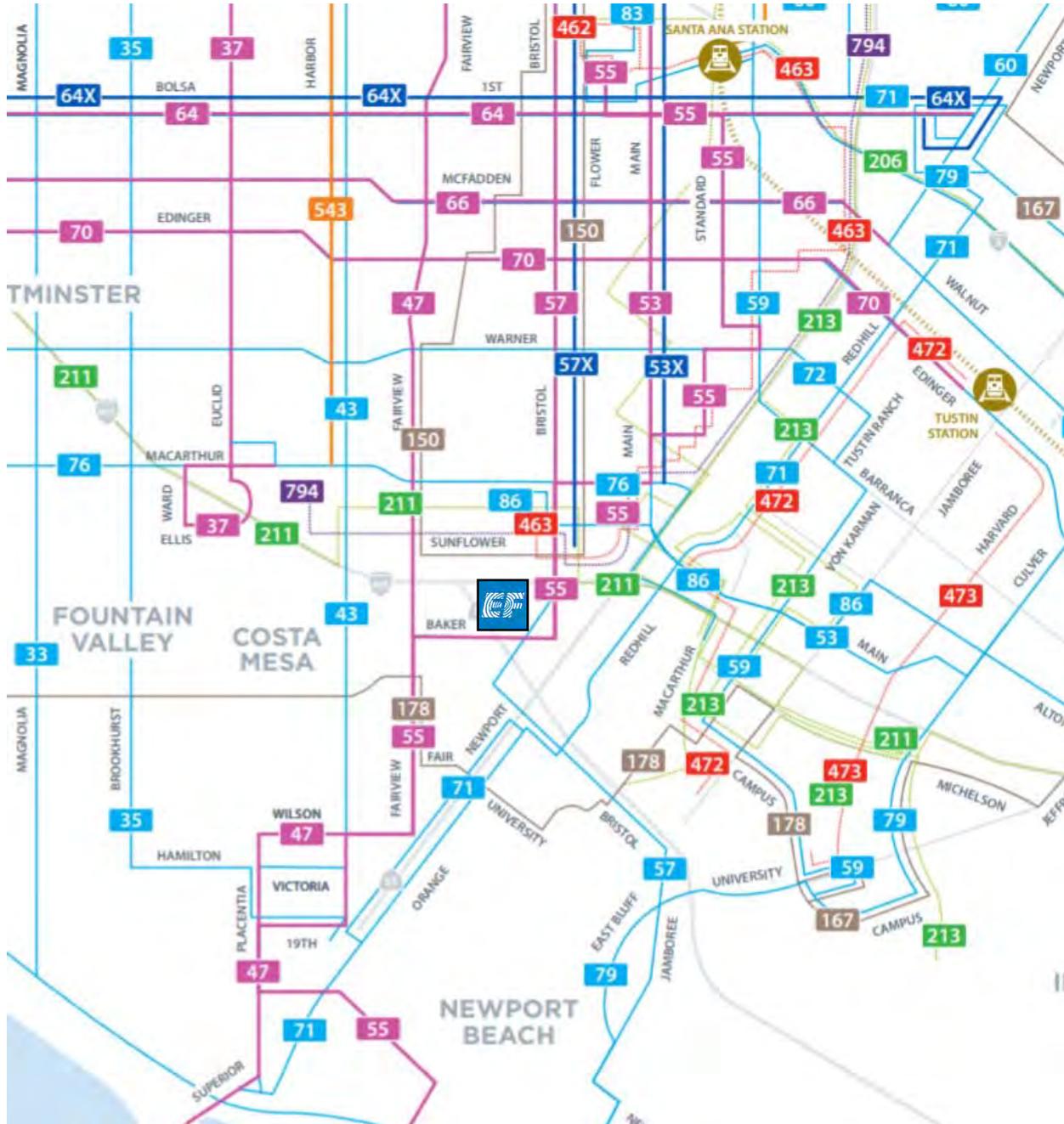
n:\4000\2184031 - ef education first, costa mesa\dwg\2-5-19\4031 f-b new.dwg LDP 11:24:04 05-07-2019 mempin



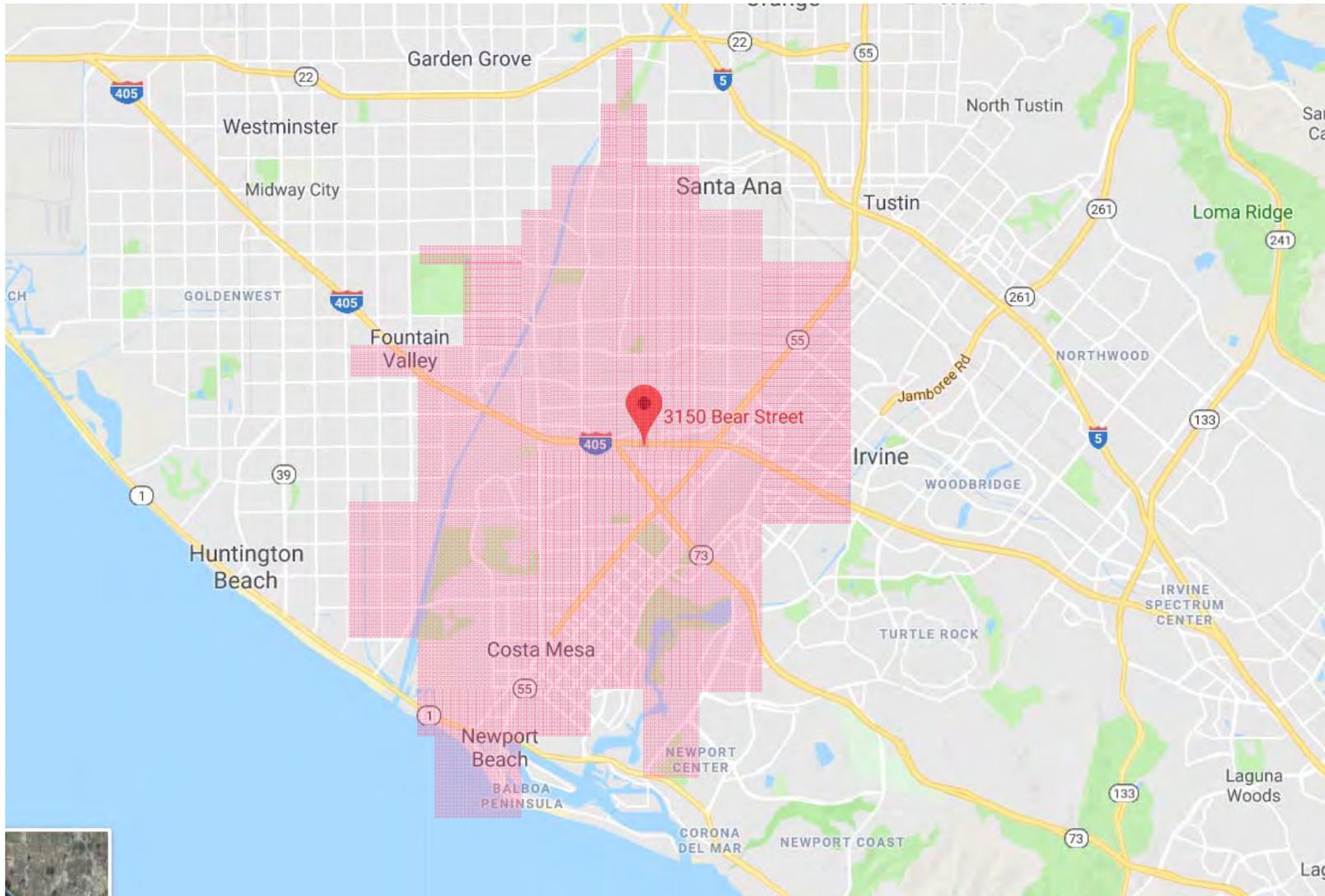
**FIGURE B**

**THURSDAY, OCTOBER 25, 2018**  
**EF SAN DIEGO 2-WAY VEHICLE TRAFFIC COUNTS BY HOUR**  
 EF EDUCATION FIRST, COSTA MESA

# Orange County Busses



# 45-min – 1 hr\* bus zone (Weekday)



\*This is a range based on peak/non-peak periods and reflects a variation in OCTA bus service

**APPENDIX A**  
**EXISTING TRAFFIC COUNT DATA**

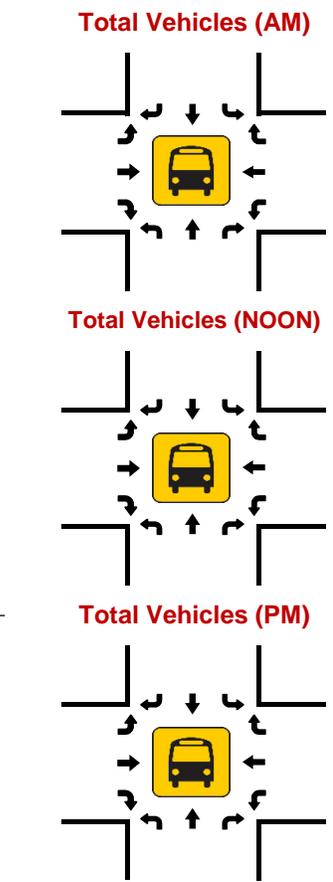
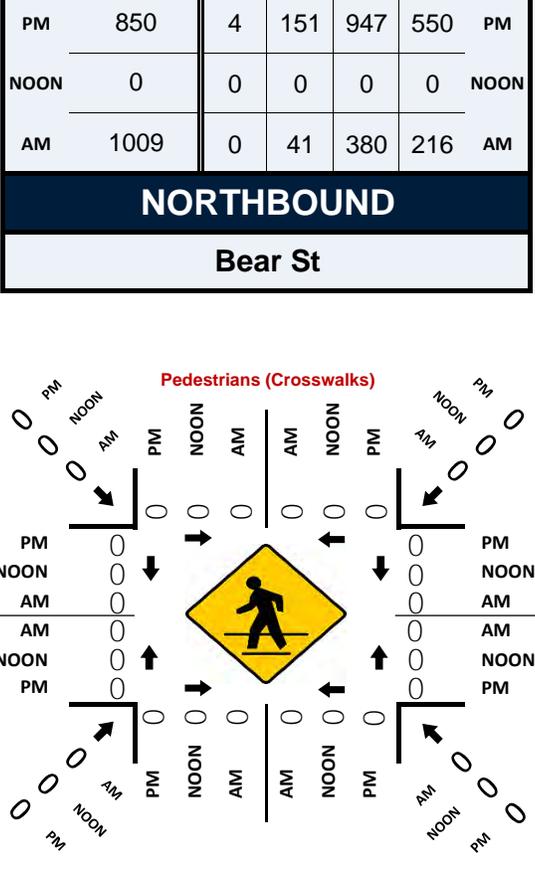
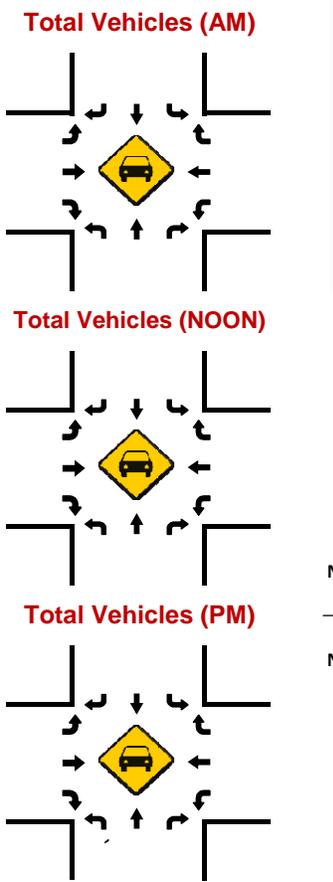
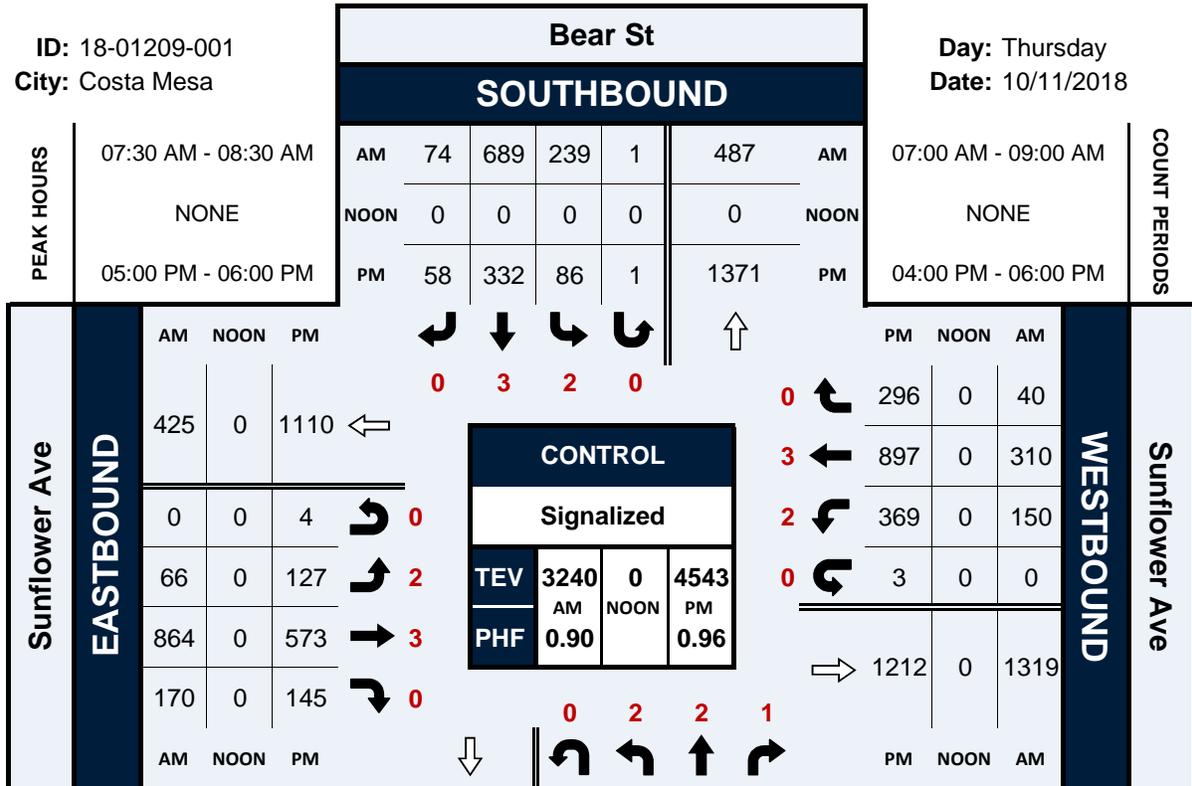
*APPENDIX A-1*  
**INTERSECTION COUNTS**

# Bear St & Sunflower Ave

## Peak Hour Turning Movement Count

ID: 18-01209-001  
City: Costa Mesa

Day: Thursday  
Date: 10/11/2018



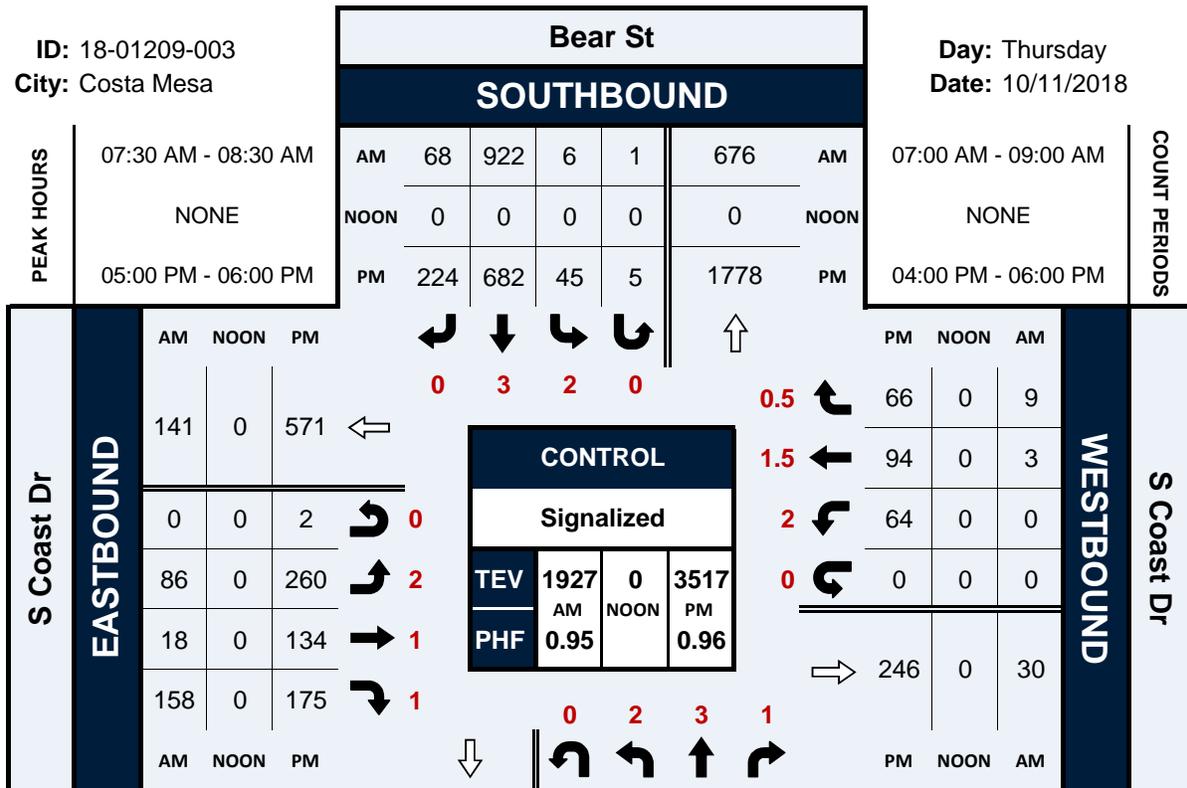


# Bear St & S Coast Dr

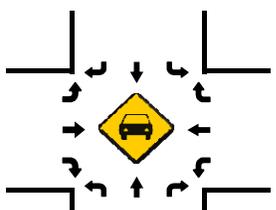
## Peak Hour Turning Movement Count

ID: 18-01209-003  
City: Costa Mesa

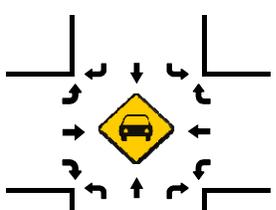
Day: Thursday  
Date: 10/11/2018



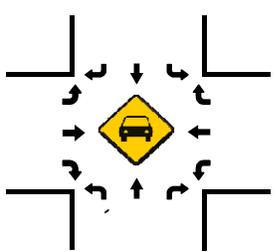
Total Vehicles (AM)



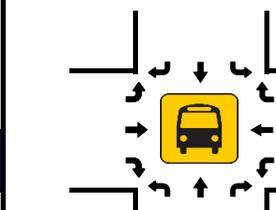
Total Vehicles (NOON)



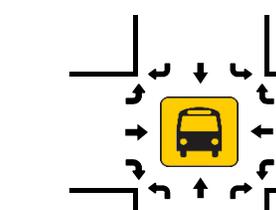
Total Vehicles (PM)



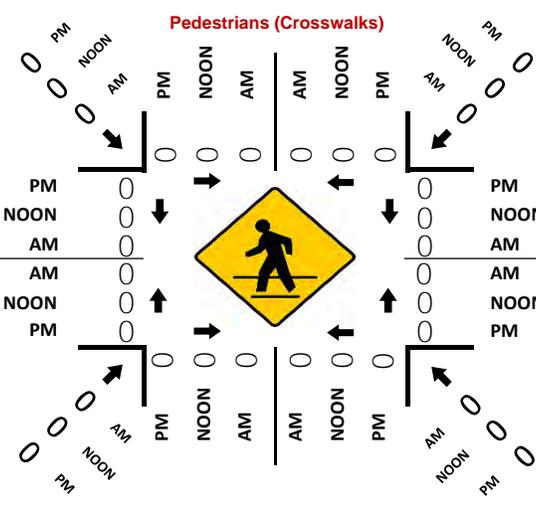
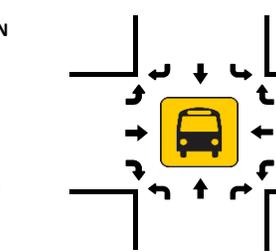
Total Vehicles (AM)



Total Vehicles (NOON)



Total Vehicles (PM)

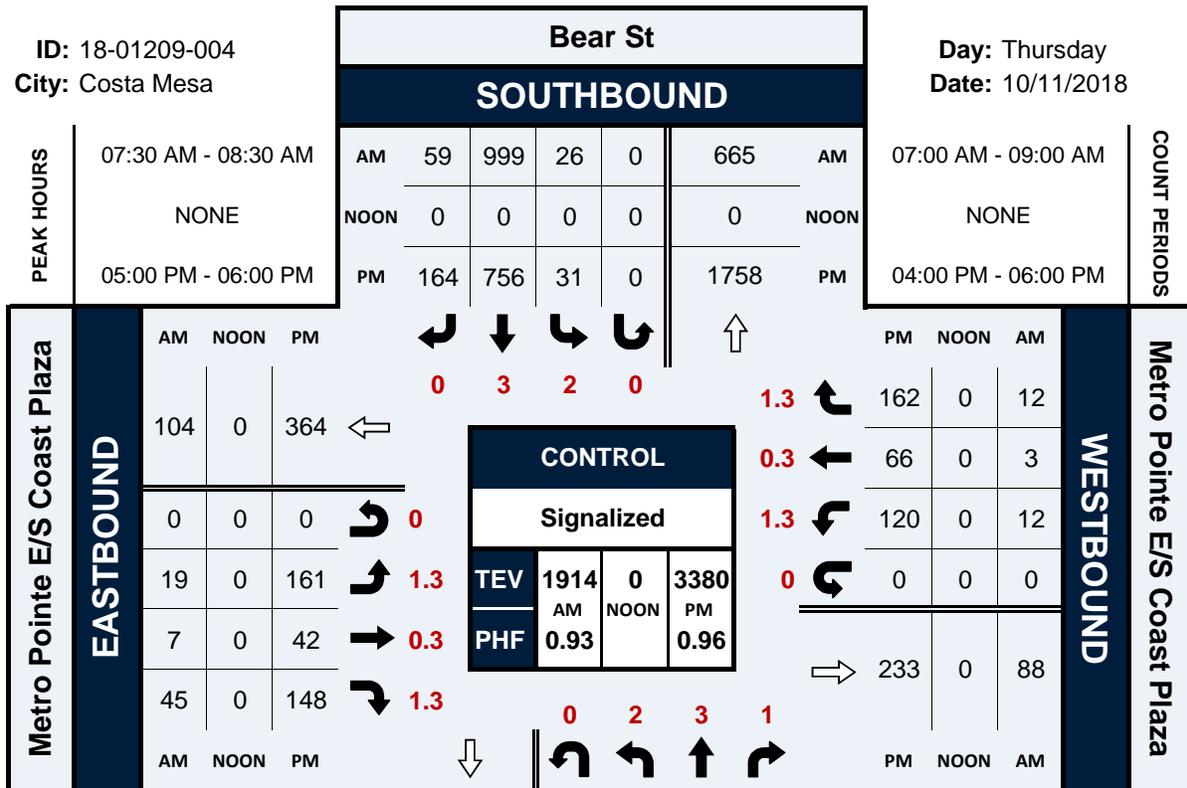


# Bear St & Metro Pointe E/S Coast Plaza

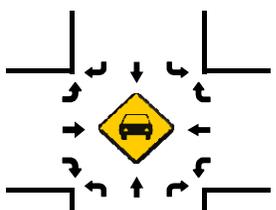
## Peak Hour Turning Movement Count

ID: 18-01209-004  
City: Costa Mesa

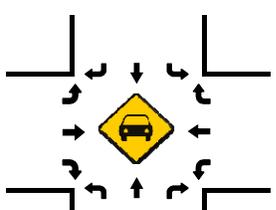
Day: Thursday  
Date: 10/11/2018



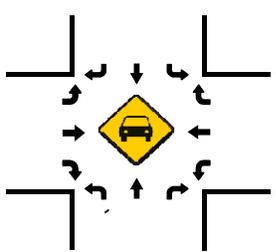
Total Vehicles (AM)



Total Vehicles (NOON)



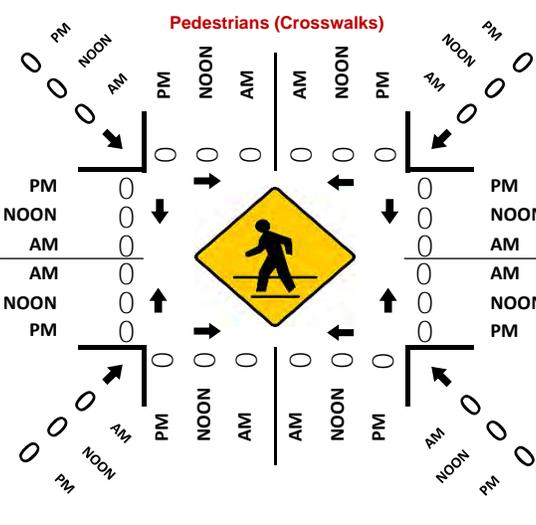
Total Vehicles (PM)



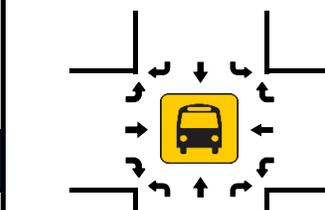
|      |      |   |     |      |     |      |
|------|------|---|-----|------|-----|------|
| PM   | 1025 | 1 | 134 | 1435 | 160 | PM   |
| NOON | 0    | 0 | 0   | 0    | 0   | NOON |
| AM   | 1057 | 1 | 42  | 634  | 55  | AM   |

### NORTHBOUND

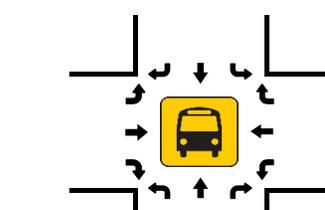
Bear St



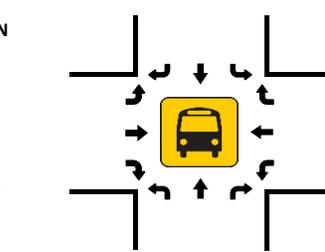
Total Vehicles (AM)



Total Vehicles (NOON)



Total Vehicles (PM)

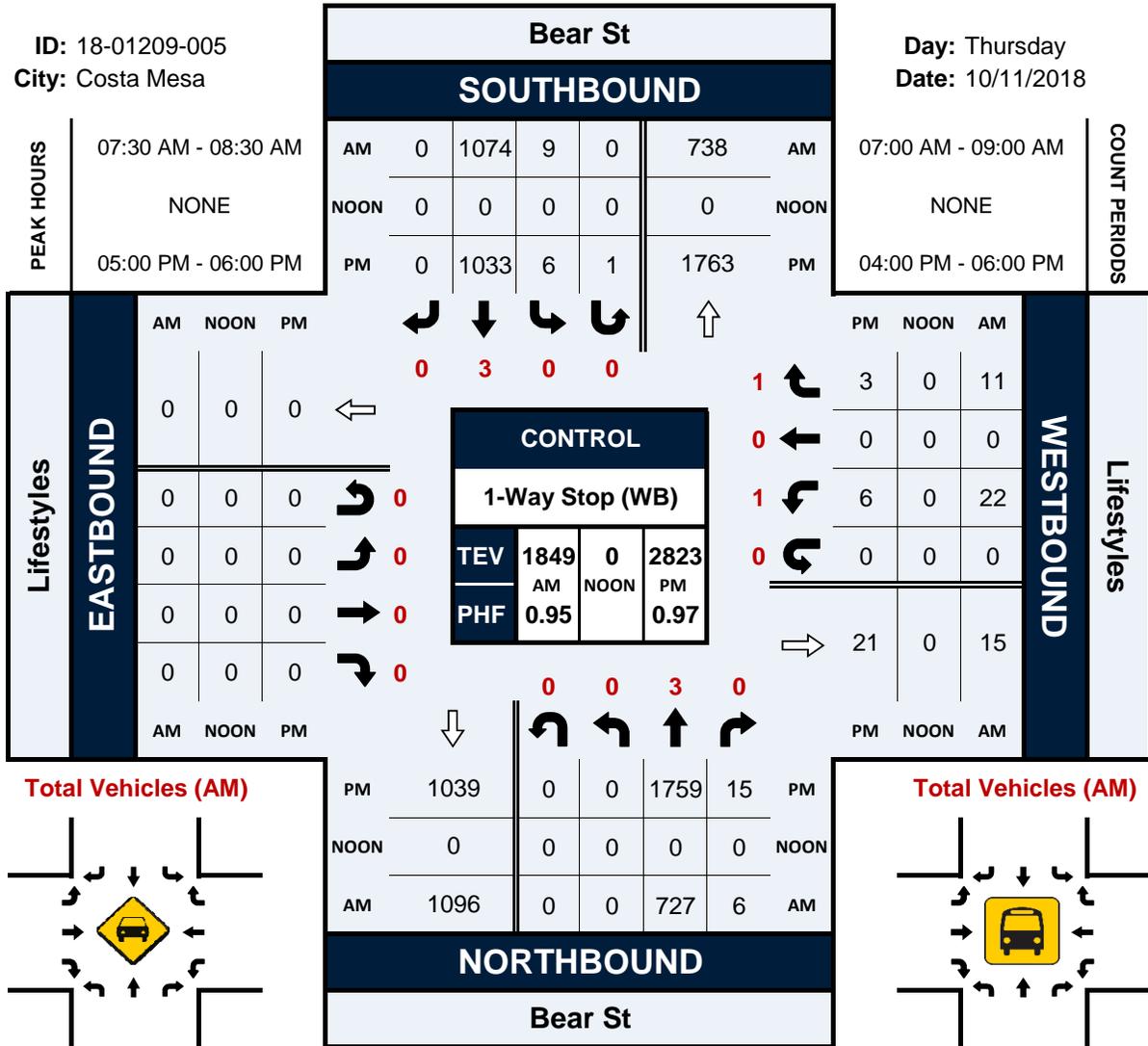


# Bear St & Lifestyles

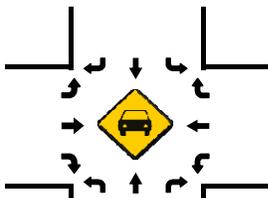
## Peak Hour Turning Movement Count

ID: 18-01209-005  
City: Costa Mesa

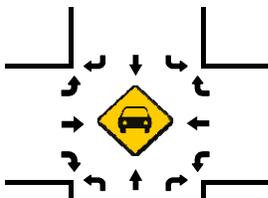
Day: Thursday  
Date: 10/11/2018



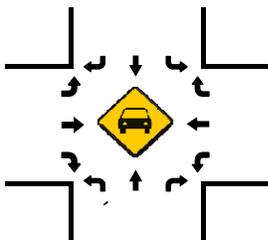
Total Vehicles (AM)



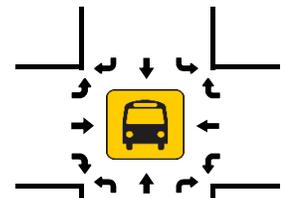
Total Vehicles (NOON)



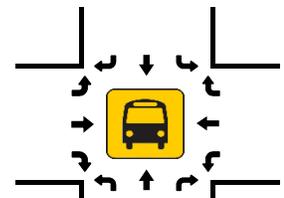
Total Vehicles (PM)



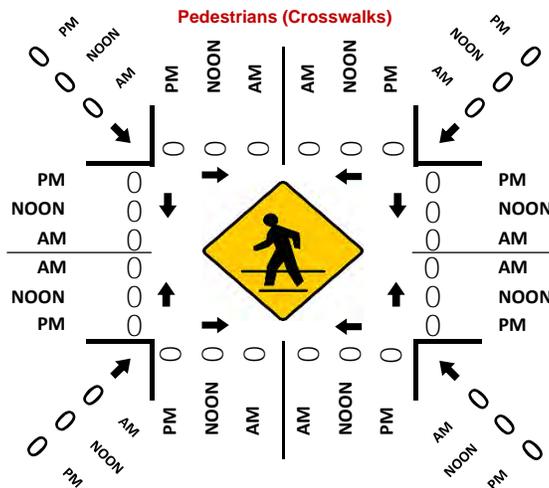
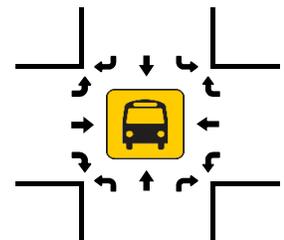
Total Vehicles (AM)



Total Vehicles (NOON)



Total Vehicles (PM)

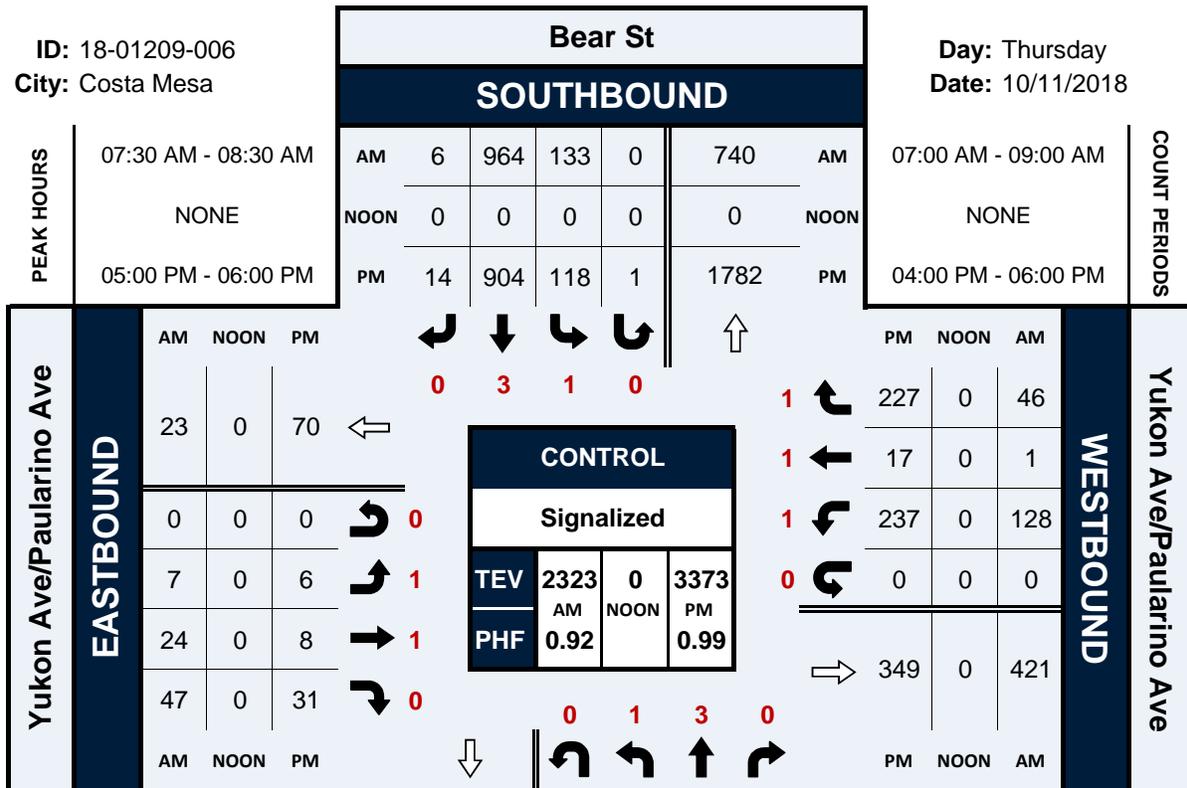


# Bear St & Yukon Ave/Paularino Ave

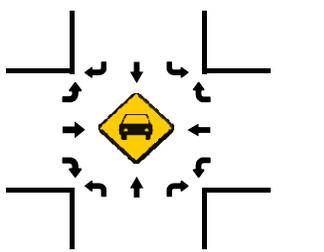
## Peak Hour Turning Movement Count

ID: 18-01209-006  
City: Costa Mesa

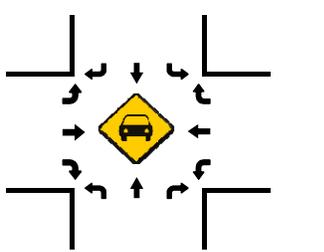
Day: Thursday  
Date: 10/11/2018



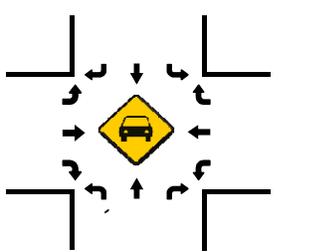
Total Vehicles (AM)



Total Vehicles (NOON)



Total Vehicles (PM)

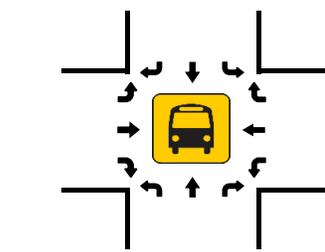


|      |      |   |    |      |     |      |
|------|------|---|----|------|-----|------|
| PM   | 1172 | 0 | 39 | 1548 | 223 | PM   |
| NOON | 0    | 0 | 0  | 0    | 0   | NOON |
| AM   | 1139 | 0 | 16 | 687  | 264 | AM   |

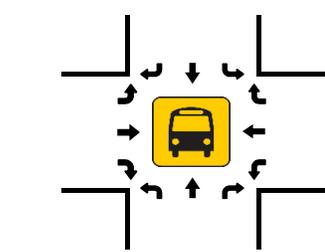
### NORTHBOUND

Bear St

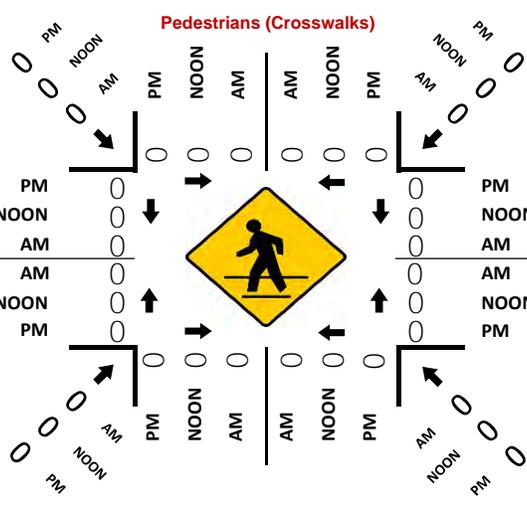
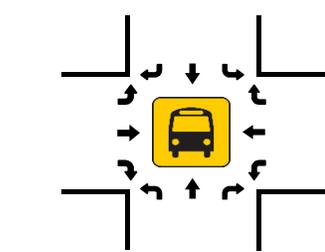
Total Vehicles (AM)



Total Vehicles (NOON)



Total Vehicles (PM)

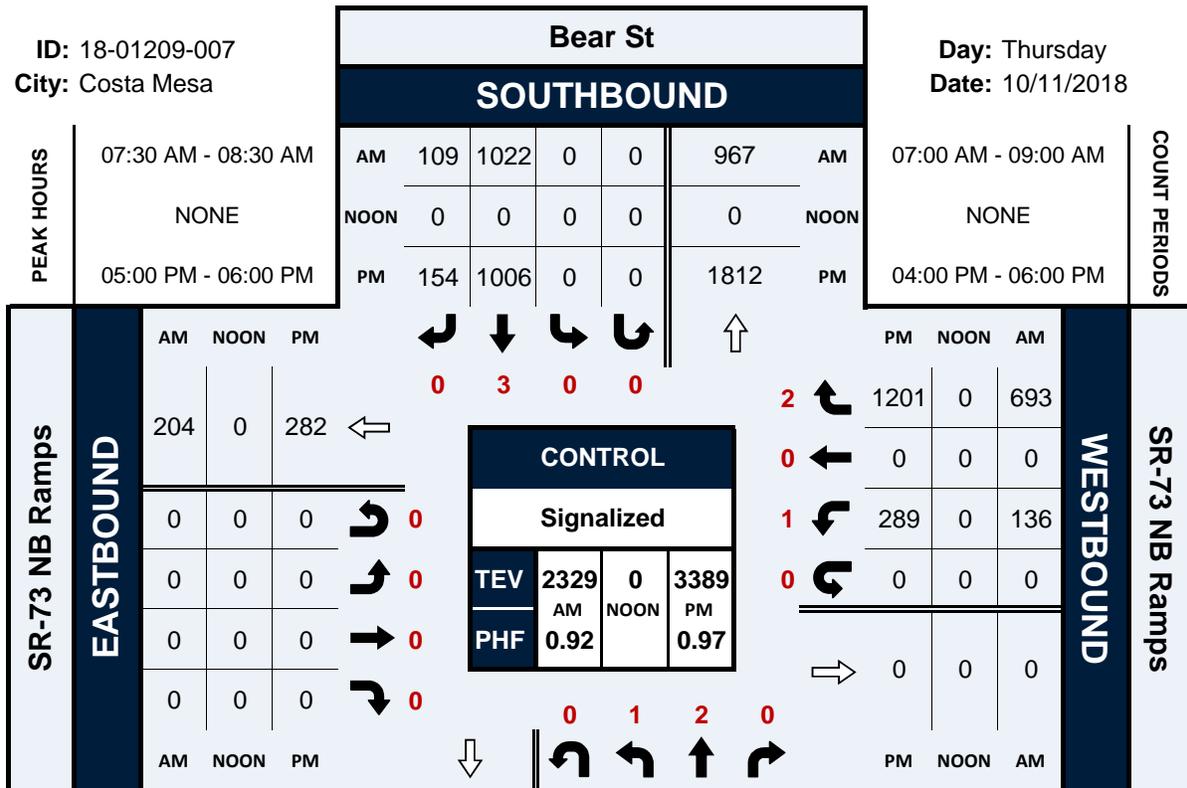


# Bear St & SR-73 NB Ramps

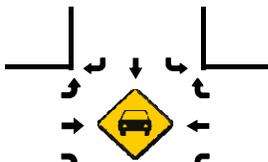
## Peak Hour Turning Movement Count

ID: 18-01209-007  
City: Costa Mesa

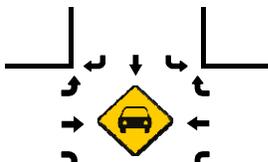
Day: Thursday  
Date: 10/11/2018



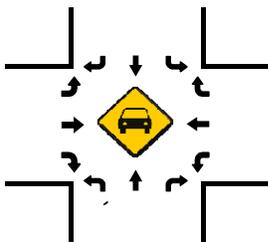
Total Vehicles (AM)



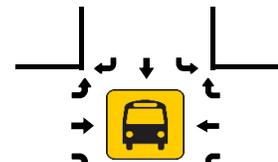
Total Vehicles (NOON)



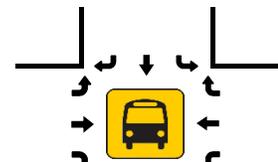
Total Vehicles (PM)



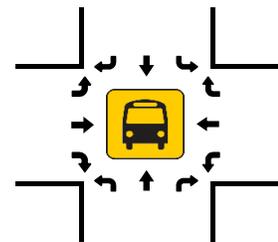
Total Vehicles (AM)



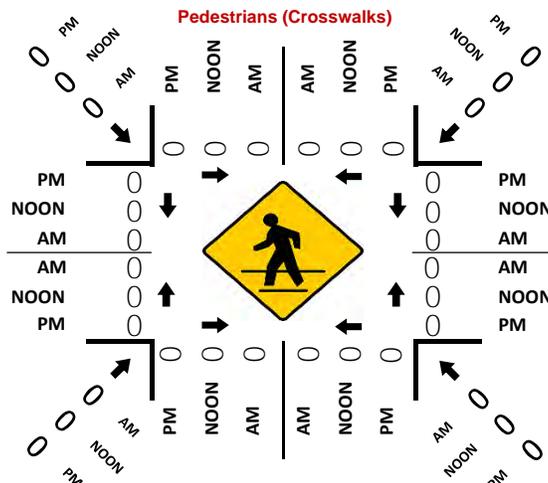
Total Vehicles (NOON)



Total Vehicles (PM)



### Pedestrians (Crosswalks)

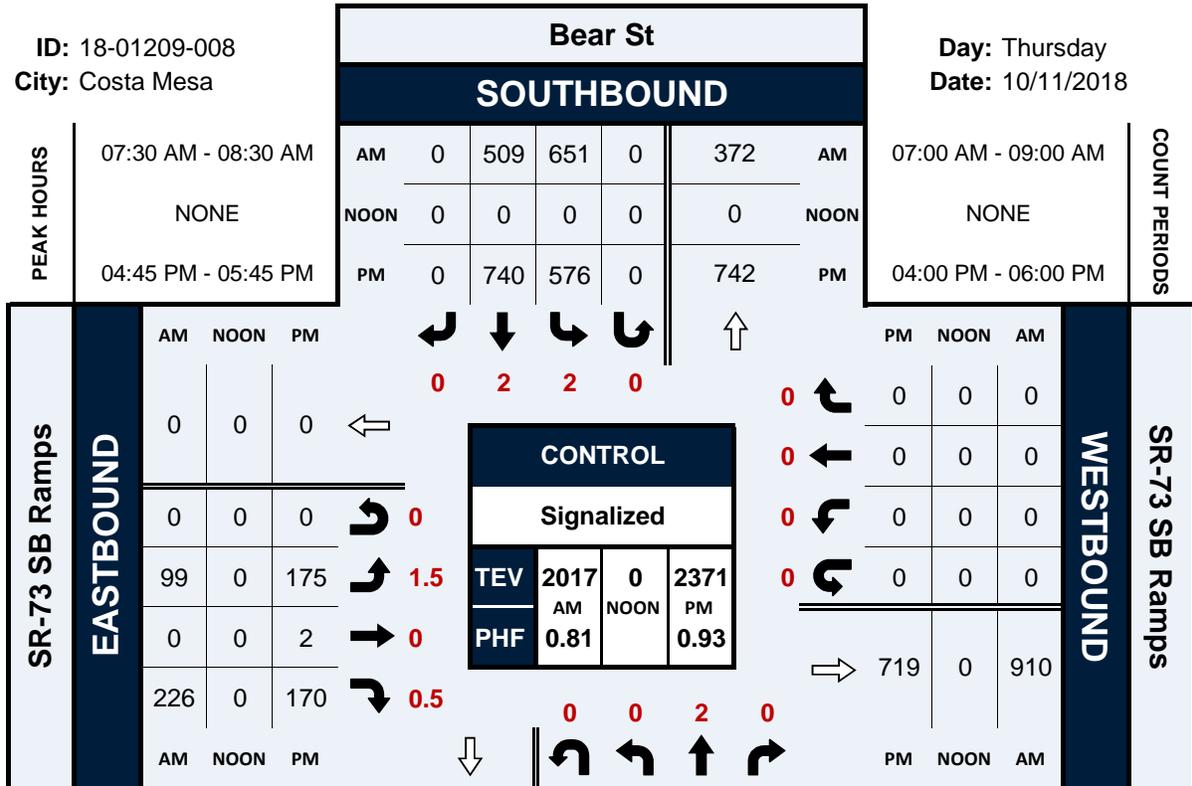


# Bear St & SR-73 SB Ramps

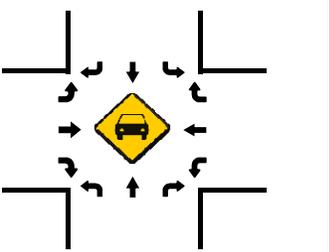
## Peak Hour Turning Movement Count

ID: 18-01209-008  
City: Costa Mesa

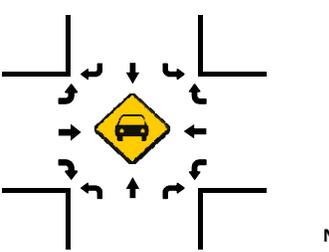
Day: Thursday  
Date: 10/11/2018



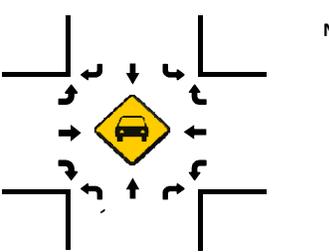
Total Vehicles (AM)



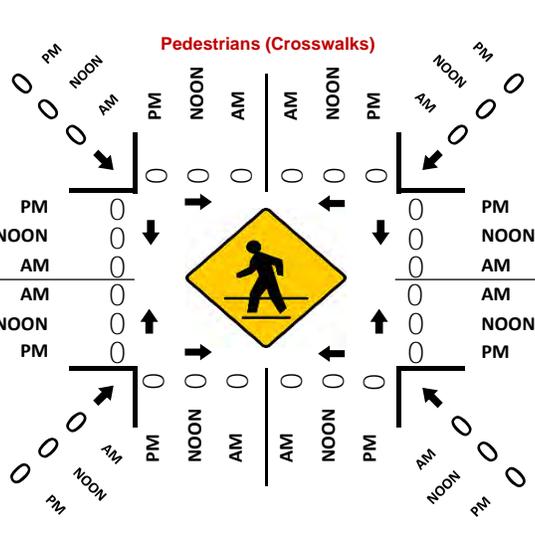
Total Vehicles (NOON)



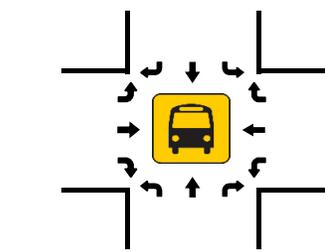
Total Vehicles (PM)



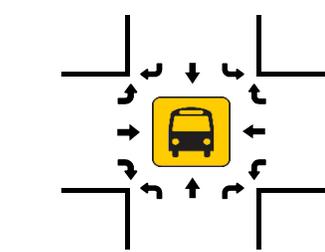
Pedestrians (Crosswalks)



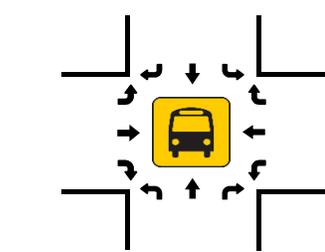
Total Vehicles (AM)



Total Vehicles (NOON)



Total Vehicles (PM)

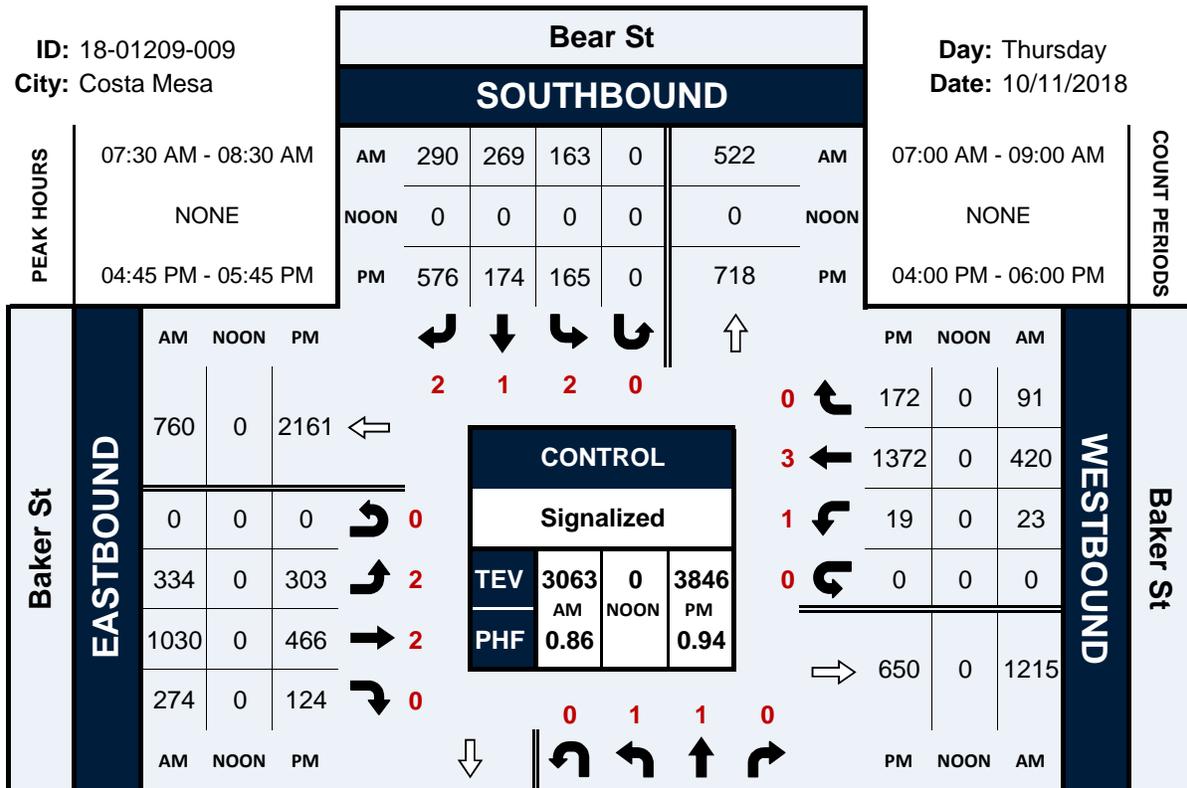


# Bear St & Baker St

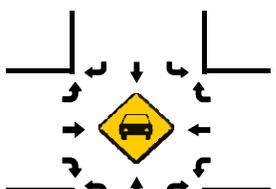
## Peak Hour Turning Movement Count

ID: 18-01209-009  
City: Costa Mesa

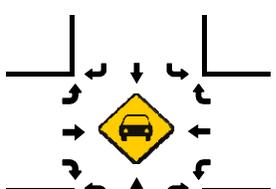
Day: Thursday  
Date: 10/11/2018



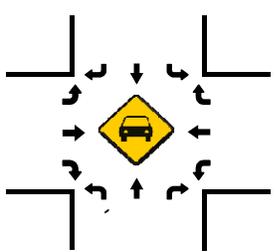
Total Vehicles (AM)



Total Vehicles (NOON)

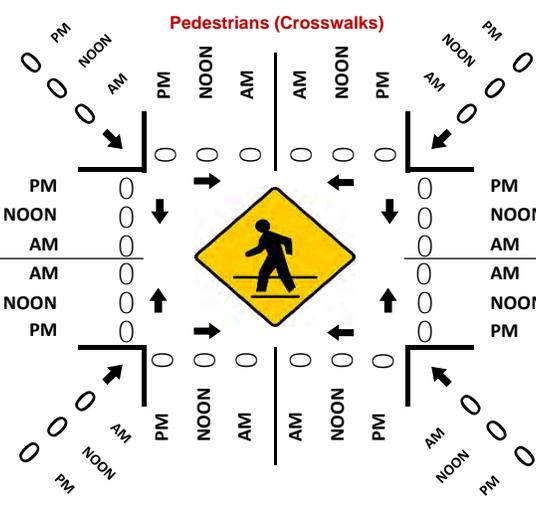


Total Vehicles (PM)

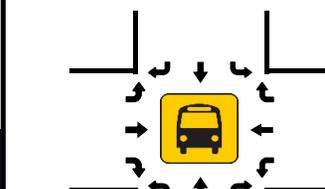


|      |     |   |     |     |    |      |
|------|-----|---|-----|-----|----|------|
| PM   | 317 | 0 | 213 | 243 | 19 | PM   |
| NOON | 0   | 0 | 0   | 0   | 0  | NOON |
| AM   | 566 | 0 | 50  | 97  | 22 | AM   |

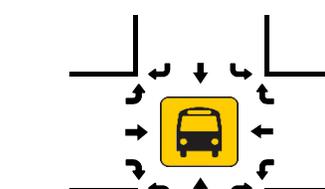
**Bear St NORTHBOUND**



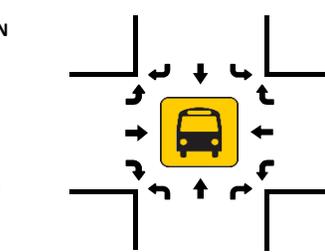
Total Vehicles (AM)



Total Vehicles (NOON)



Total Vehicles (PM)



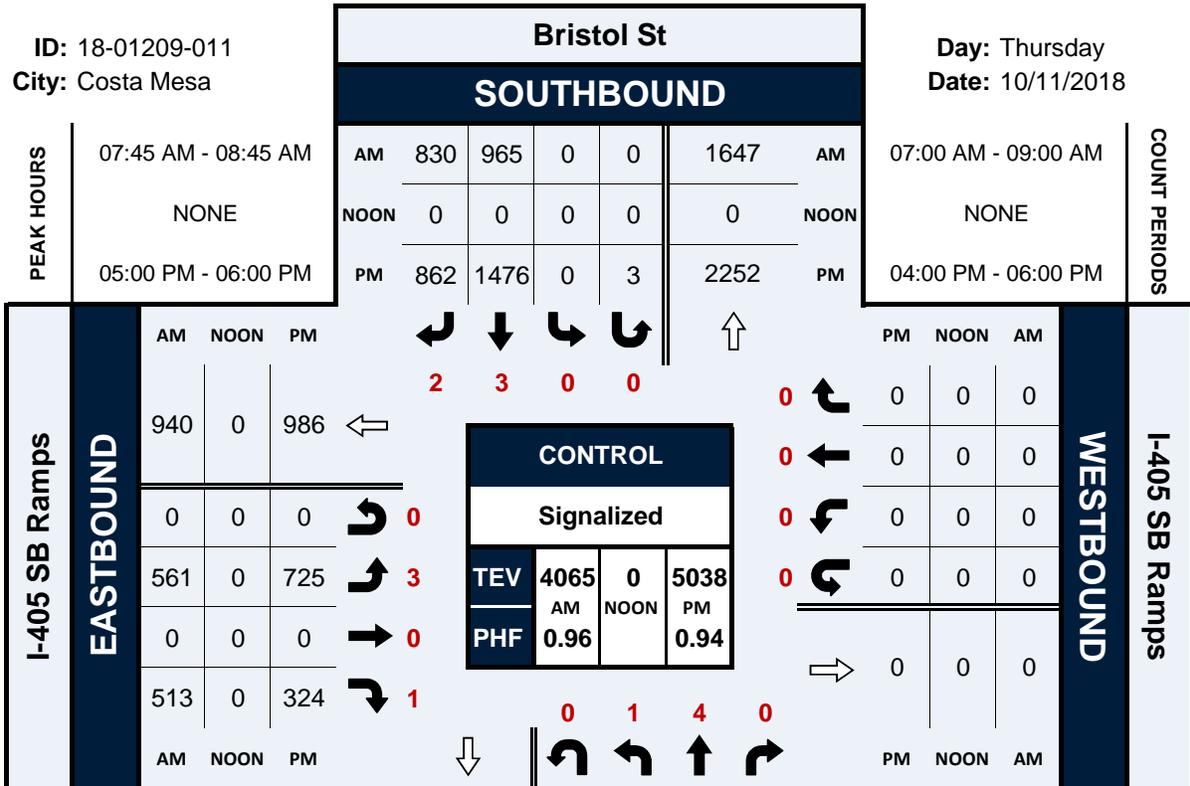


# Bristol St & I-405 SB Ramps

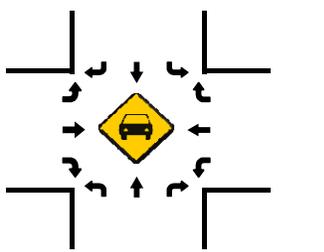
## Peak Hour Turning Movement Count

ID: 18-01209-011  
City: Costa Mesa

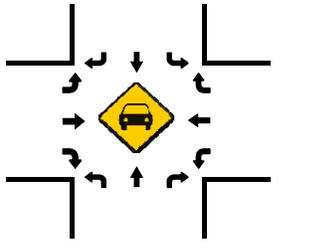
Day: Thursday  
Date: 10/11/2018



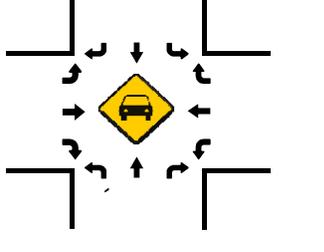
Total Vehicles (AM)



Total Vehicles (NOON)



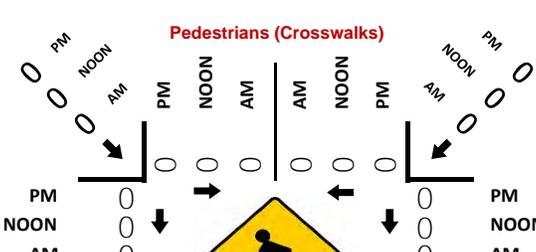
Total Vehicles (PM)



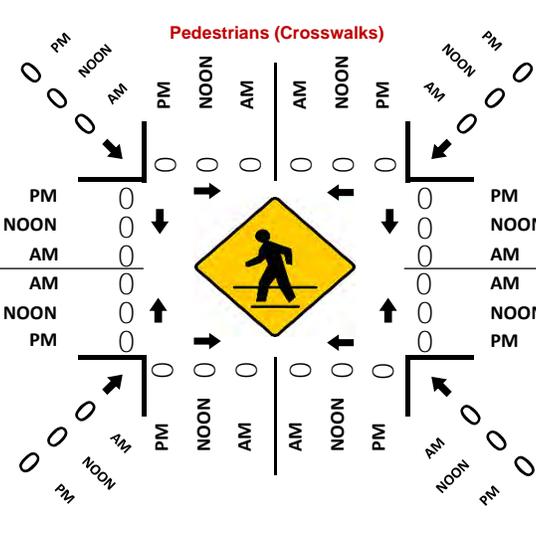
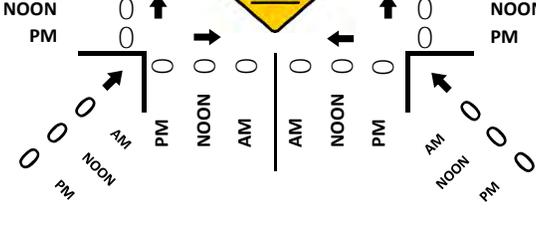
|      |      |   |     |      |   |      |
|------|------|---|-----|------|---|------|
| PM   | 1800 | 0 | 124 | 1524 | 0 | PM   |
| NOON | 0    | 0 | 0   | 0    | 0 | NOON |
| AM   | 1478 | 0 | 110 | 1086 | 0 | AM   |

### Bristol St NORTHBOUND

Total Vehicles (AM)



Total Vehicles (NOON)

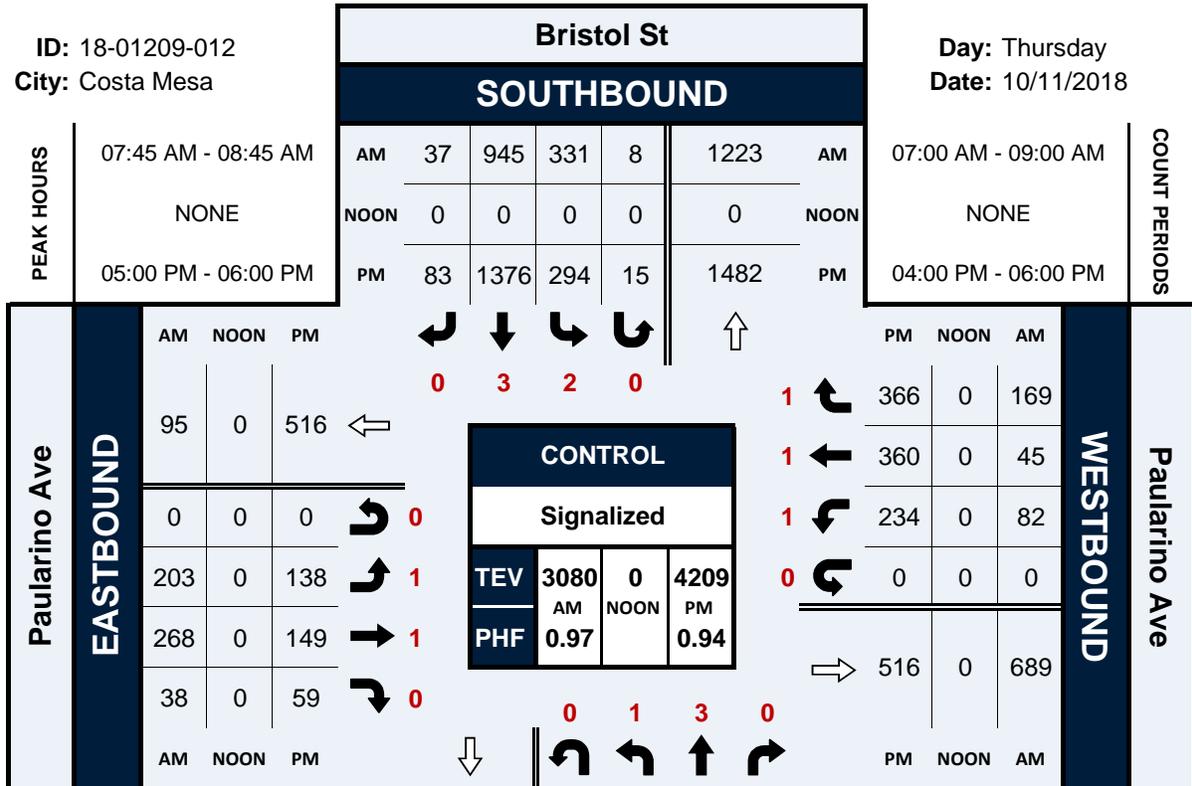


# Bristol St & Paularino Ave

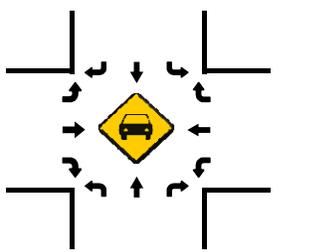
## Peak Hour Turning Movement Count

ID: 18-01209-012  
City: Costa Mesa

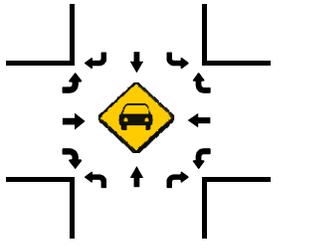
Day: Thursday  
Date: 10/11/2018



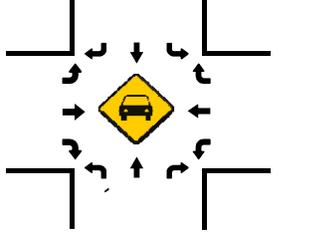
Total Vehicles (AM)



Total Vehicles (NOON)

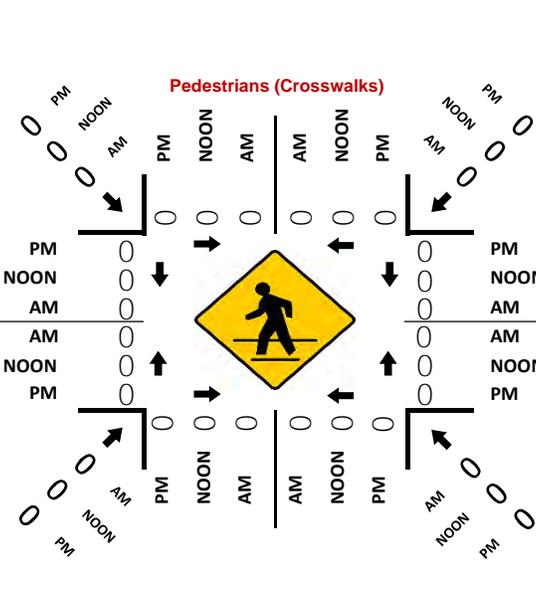


Total Vehicles (PM)

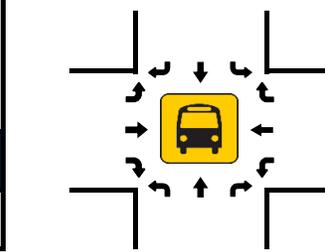


|      |      |    |    |     |    |      |
|------|------|----|----|-----|----|------|
| PM   | 1695 | 26 | 73 | 963 | 73 | PM   |
| NOON | 0    | 0  | 0  | 0   | 0  | NOON |
| AM   | 1073 | 8  | 13 | 843 | 90 | AM   |

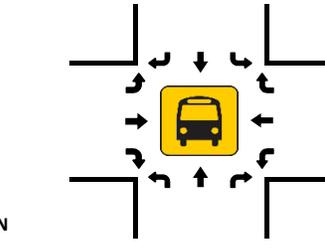
### Bristol St NORTHBOUND



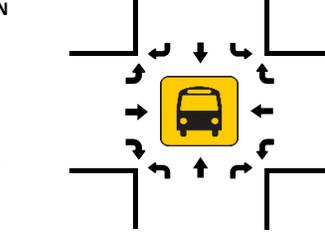
Total Vehicles (AM)



Total Vehicles (NOON)



Total Vehicles (PM)



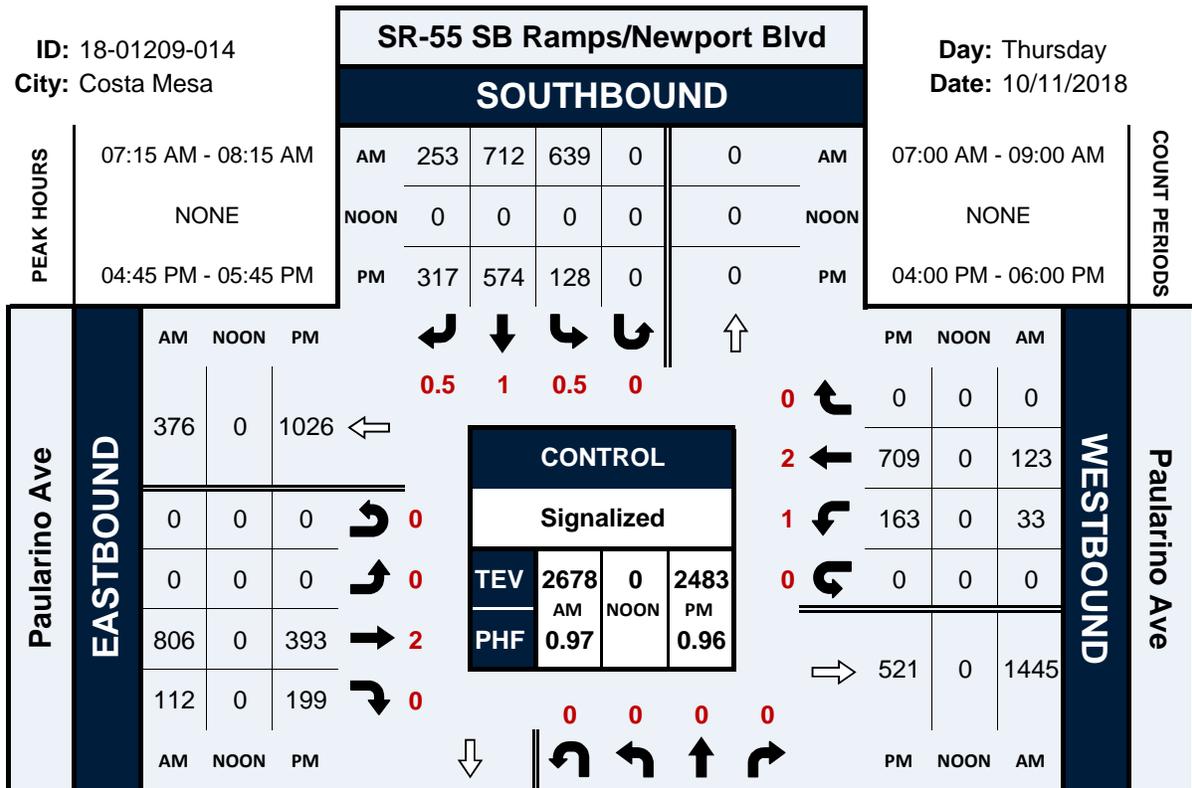


# SR-55 SB Ramps/Newport Blvd & Paularino Ave

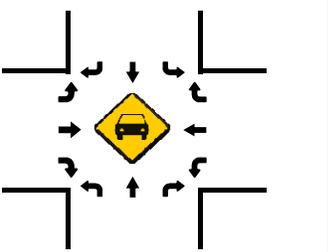
## Peak Hour Turning Movement Count

ID: 18-01209-014  
City: Costa Mesa

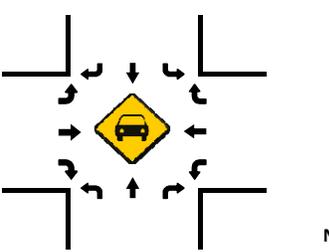
Day: Thursday  
Date: 10/11/2018



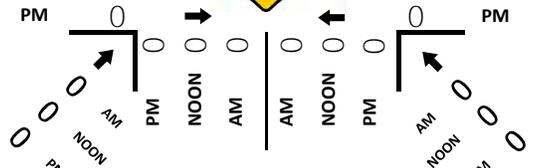
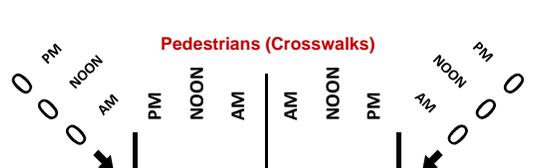
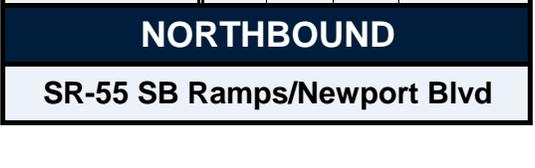
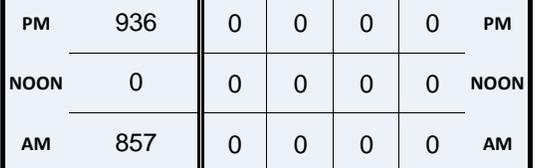
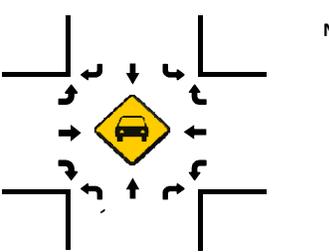
Total Vehicles (AM)



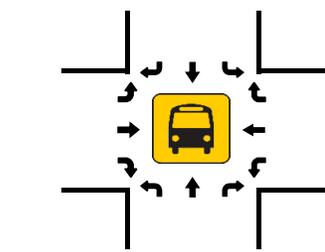
Total Vehicles (NOON)



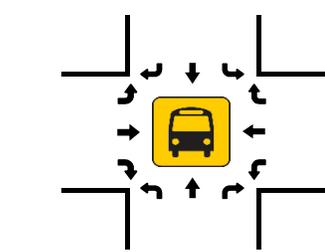
Total Vehicles (PM)



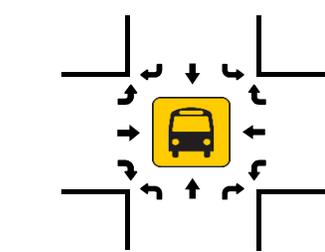
Total Vehicles (AM)



Total Vehicles (NOON)



Total Vehicles (PM)

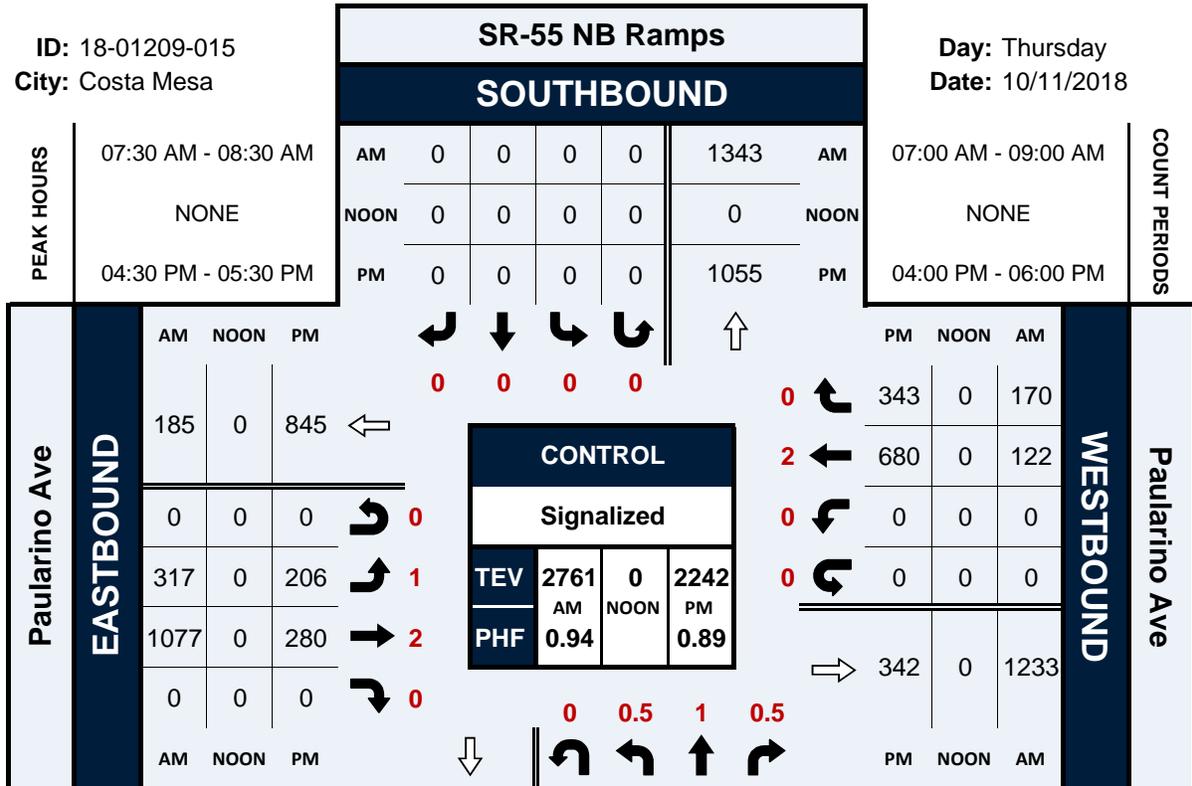


# SR-55 NB Ramps & Paularino Ave

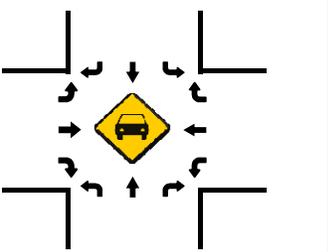
## Peak Hour Turning Movement Count

ID: 18-01209-015  
City: Costa Mesa

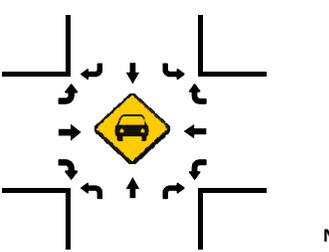
Day: Thursday  
Date: 10/11/2018



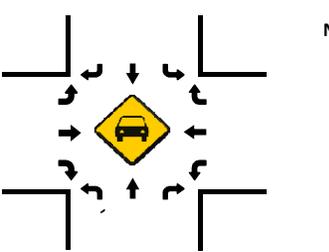
Total Vehicles (AM)



Total Vehicles (NOON)

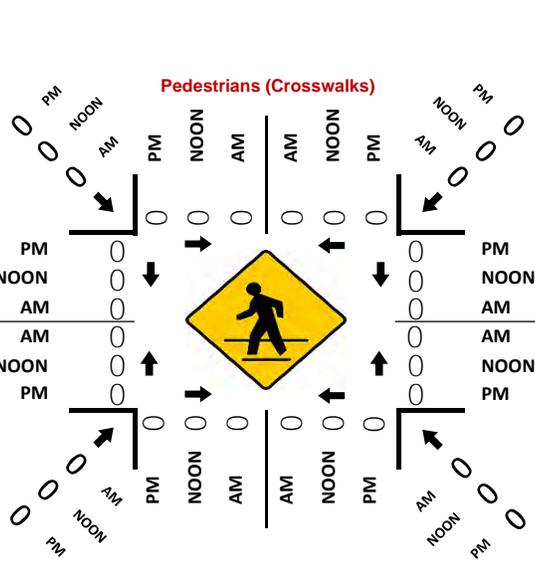


Total Vehicles (PM)

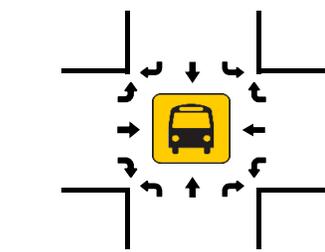


|      |   |   |     |     |     |      |
|------|---|---|-----|-----|-----|------|
| PM   | 0 | 0 | 165 | 506 | 62  | PM   |
| NOON | 0 | 0 | 0   | 0   | 0   | NOON |
| AM   | 0 | 0 | 63  | 856 | 156 | AM   |

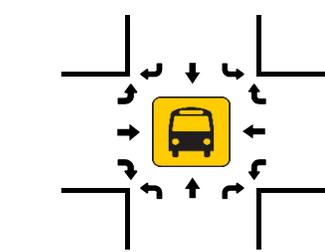
### NORTHBOUND SR-55 NB Ramps



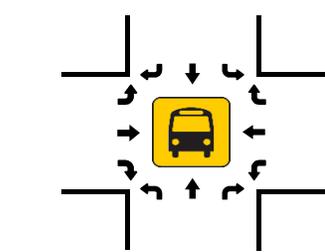
Total Vehicles (AM)



Total Vehicles (NOON)



Total Vehicles (PM)



*APPENDIX A-II*

**ROADWAY SEGMENT COUNTS**

# VOLUME

Bear St N/O Lifestyles

Day: Thursday  
Date: 10/11/2018

City: Costa Mesa  
Project #: CA18\_1210\_001

| DAILY TOTALS   |       |       |     |      | NB           | SB             |       |       |     |      | EB           | WB | Total  |
|----------------|-------|-------|-----|------|--------------|----------------|-------|-------|-----|------|--------------|----|--------|
|                |       |       |     |      | 15,060       | 15,153         |       |       |     |      | 0            | 0  | 30,213 |
| AM Period      | NB    | SB    | EB  | WB   | TOTAL        | PM Period      | NB    | SB    | EB  | WB   | TOTAL        |    |        |
| 00:00          | 11    | 9     |     |      | 20           | 12:00          | 283   | 276   |     |      | 559          |    |        |
| 00:15          | 15    | 7     |     |      | 22           | 12:15          | 280   | 323   |     |      | 603          |    |        |
| 00:30          | 14    | 10    |     |      | 24           | 12:30          | 270   | 329   |     |      | 599          |    |        |
| 00:45          | 9     | 49    | 7   | 33   | 16 82        | 12:45          | 264   | 1097  | 353 | 1281 | 617 2378     |    |        |
| 01:00          | 9     | 11    |     |      | 20           | 13:00          | 275   | 301   |     |      | 576          |    |        |
| 01:15          | 10    | 4     |     |      | 14           | 13:15          | 278   | 301   |     |      | 579          |    |        |
| 01:30          | 5     | 3     |     |      | 8            | 13:30          | 260   | 356   |     |      | 616          |    |        |
| 01:45          | 8     | 32    | 6   | 24   | 14 56        | 13:45          | 229   | 1042  | 314 | 1272 | 543 2314     |    |        |
| 02:00          | 2     | 2     |     |      | 4            | 14:00          | 261   | 268   |     |      | 529          |    |        |
| 02:15          | 8     | 3     |     |      | 11           | 14:15          | 281   | 261   |     |      | 542          |    |        |
| 02:30          | 4     | 4     |     |      | 8            | 14:30          | 301   | 306   |     |      | 607          |    |        |
| 02:45          | 5     | 19    | 5   | 14   | 10 33        | 14:45          | 291   | 1134  | 277 | 1112 | 568 2246     |    |        |
| 03:00          | 4     | 4     |     |      | 8            | 15:00          | 284   | 269   |     |      | 553          |    |        |
| 03:15          | 0     | 2     |     |      | 2            | 15:15          | 312   | 309   |     |      | 621          |    |        |
| 03:30          | 4     | 5     |     |      | 9            | 15:30          | 397   | 223   |     |      | 620          |    |        |
| 03:45          | 9     | 17    | 9   | 20   | 18 37        | 15:45          | 339   | 1332  | 252 | 1053 | 591 2385     |    |        |
| 04:00          | 4     | 5     |     |      | 9            | 16:00          | 366   | 271   |     |      | 637          |    |        |
| 04:15          | 5     | 15    |     |      | 20           | 16:15          | 373   | 244   |     |      | 617          |    |        |
| 04:30          | 9     | 18    |     |      | 27           | 16:30          | 392   | 278   |     |      | 670          |    |        |
| 04:45          | 17    | 35    | 27  | 65   | 44 100       | 16:45          | 396   | 1527  | 249 | 1042 | 645 2569     |    |        |
| 05:00          | 12    | 22    |     |      | 34           | 17:00          | 403   | 274   |     |      | 677          |    |        |
| 05:15          | 11    | 20    |     |      | 31           | 17:15          | 413   | 231   |     |      | 644          |    |        |
| 05:30          | 21    | 51    |     |      | 72           | 17:30          | 443   | 294   |     |      | 737          |    |        |
| 05:45          | 36    | 80    | 57  | 150  | 93 230       | 17:45          | 440   | 1699  | 239 | 1038 | 679 2737     |    |        |
| 06:00          | 41    | 68    |     |      | 109          | 18:00          | 372   | 216   |     |      | 588          |    |        |
| 06:15          | 34    | 92    |     |      | 126          | 18:15          | 346   | 246   |     |      | 592          |    |        |
| 06:30          | 39    | 96    |     |      | 135          | 18:30          | 327   | 225   |     |      | 552          |    |        |
| 06:45          | 71    | 185   | 151 | 407  | 222 592      | 18:45          | 290   | 1335  | 245 | 932  | 535 2267     |    |        |
| 07:00          | 72    | 156   |     |      | 228          | 19:00          | 271   | 243   |     |      | 514          |    |        |
| 07:15          | 81    | 225   |     |      | 306          | 19:15          | 167   | 199   |     |      | 366          |    |        |
| 07:30          | 115   | 315   |     |      | 430          | 19:30          | 171   | 218   |     |      | 389          |    |        |
| 07:45          | 167   | 435   | 308 | 1004 | 475 1439     | 19:45          | 148   | 757   | 175 | 835  | 323 1592     |    |        |
| 08:00          | 215   | 236   |     |      | 451          | 20:00          | 133   | 228   |     |      | 361          |    |        |
| 08:15          | 217   | 225   |     |      | 442          | 20:15          | 147   | 171   |     |      | 318          |    |        |
| 08:30          | 134   | 190   |     |      | 324          | 20:30          | 107   | 187   |     |      | 294          |    |        |
| 08:45          | 143   | 709   | 197 | 848  | 340 1557     | 20:45          | 80    | 467   | 180 | 766  | 260 1233     |    |        |
| 09:00          | 118   | 162   |     |      | 280          | 21:00          | 91    | 218   |     |      | 309          |    |        |
| 09:15          | 157   | 120   |     |      | 277          | 21:15          | 86    | 208   |     |      | 294          |    |        |
| 09:30          | 167   | 124   |     |      | 291          | 21:30          | 75    | 196   |     |      | 271          |    |        |
| 09:45          | 230   | 672   | 145 | 551  | 375 1223     | 21:45          | 69    | 321   | 130 | 752  | 199 1073     |    |        |
| 10:00          | 176   | 122   |     |      | 298          | 22:00          | 69    | 96    |     |      | 165          |    |        |
| 10:15          | 187   | 159   |     |      | 346          | 22:15          | 65    | 100   |     |      | 165          |    |        |
| 10:30          | 198   | 177   |     |      | 375          | 22:30          | 55    | 94    |     |      | 149          |    |        |
| 10:45          | 220   | 781   | 194 | 652  | 414 1433     | 22:45          | 39    | 228   | 39  | 329  | 78 557       |    |        |
| 11:00          | 246   | 197   |     |      | 443          | 23:00          | 40    | 35    |     |      | 75           |    |        |
| 11:15          | 222   | 213   |     |      | 435          | 23:15          | 34    | 26    |     |      | 60           |    |        |
| 11:30          | 254   | 199   |     |      | 453          | 23:30          | 29    | 21    |     |      | 50           |    |        |
| 11:45          | 257   | 979   | 256 | 865  | 513 1844     | 23:45          | 25    | 128   | 26  | 108  | 51 236       |    |        |
| <b>TOTALS</b>  | 3993  | 4633  |     |      | <b>8626</b>  | <b>TOTALS</b>  | 11067 | 10520 |     |      | <b>21587</b> |    |        |
| <b>SPLIT %</b> | 46.3% | 53.7% |     |      | <b>28.6%</b> | <b>SPLIT %</b> | 51.3% | 48.7% |     |      | <b>71.4%</b> |    |        |

| DAILY TOTALS    |       |       |       |       | NB     | SB              |       |       |       |       | EB    | WB | Total  |
|-----------------|-------|-------|-------|-------|--------|-----------------|-------|-------|-------|-------|-------|----|--------|
|                 |       |       |       |       | 15,060 | 15,153          |       |       |       |       | 0     | 0  | 30,213 |
| AM Peak Hour    | 11:45 | 11:45 |       |       | 11:45  | PM Peak Hour    | 17:00 | 12:45 |       |       | 17:00 |    |        |
| AM Pk Volume    | 1090  | 1184  |       |       | 2274   | PM Pk Volume    | 1699  | 1311  |       |       | 2737  |    |        |
| Pk Hr Factor    | 0.963 | 0.900 |       |       | 0.943  | Pk Hr Factor    | 0.959 | 0.921 |       |       | 0.928 |    |        |
| 7 - 9 Volume    | 1144  | 1852  | 0     | 0     | 2996   | 4 - 6 Volume    | 3226  | 2080  | 0     | 0     | 5306  |    |        |
| 7 - 9 Peak Hour | 07:45 | 07:15 |       |       | 07:30  | 4 - 6 Peak Hour | 17:00 | 16:45 |       |       | 17:00 |    |        |
| 7 - 9 Pk Volume | 733   | 1084  | 0     | 0     | 1798   | 4 - 6 Pk Volume | 1699  | 1048  | 0     | 0     | 2737  |    |        |
| Pk Hr Factor    | 0.844 | 0.860 | 0.000 | 0.000 | 0.946  | Pk Hr Factor    | 0.959 | 0.891 | 0.000 | 0.000 | 0.928 |    |        |

*APPENDIX A-II*

**RESPONSES TO CITY COMMENTS 8-1-19**

To: Daniel Inloes, AICP  
Development Services  
City of Costa Mesa

Date: August 1, 2019

---

From: Trissa de Jesus Allen, P.E.  
LLG, Engineers

LLG Ref: 2.18.4031.1

---

Subject: EF Costa Mesa: Responses to City Comments

---

Engineers & Planners  
Traffic  
Transportation  
Parking

Linscott, Law &  
Greenspan, Engineers

2 Executive Circle  
Suite 250  
Irvine, CA 92614  
949.825.6175 T  
949.825.6173 F  
www.llgengineers.com

Pasadena  
Irvine  
San Diego  
Woodland Hills

As follow up to our June 20, 2018 meeting, we wanted to thank City staff for working with us to understand the transportation characteristics of this unique project. As you know, the EF use has many uncommon characteristics which are not typical of most trip generators. Due to these unique characteristics, we have put a lot of time and effort into studying and establishing the appropriate trip rates and understanding the travel behavior of the different user groups which we anticipate will be present at the EF campus. With that in mind, we initially prepared a conservative estimate of trip generation for the site which, although conservative, we felt was reasonable and based on sound fundamentals. Further, we provided empirical data from other EF facilities, which have very similar or nearly identical characteristics. In particular, we provided empirical data from the EF San Diego campus, which is a close analogue being a Southern California campus with similar faculty and student characteristics. We believe that this establishes a very strong record on which to evaluate trip generation and appreciate that the City of Costa Mesa has taken that information and agreed to use it as a primary basis in our discussions.

At our meeting in June, we heard several comments, which indicate that the City of Costa Mesa may want to present even more conservative assumptions. We are providing these alternative calculations with the note and caution that the revised trip generation estimates will be much more conservative than what the empirical data we have provided for the record would indicate. Nonetheless, we will be able to explain to decision makers and the public that these estimates are likely very high with regard to estimating potential future traffic. That should provide a comfort level as long as they understand the conservative nature of the estimates. Therefore, we recommend that that be part of the documentation.

Based on our notes from the meeting with City staff, we have prepared the following response package. Please find attached the updated Trip Generation Estimates for the Project (**Table 5-1** for inclusion into the revised TIA), which reflect the revisions described below, and **Table A**, which compares the trip generation estimates from the attached **Table 5-1** and the prior estimates derived empirically from comprehensive traffic counts, data collection, surveys, and observations conducted at representative EF campuses.

- a) **Trip Generation for Prior Trinity Broadcasting Network Site:** ITE's trip rates for "Corporate Headquarters Buildings" were applied in the trip calculations for the prior TBN (instead of "General Office"). Please note that TBN is the previously approved use on the site with a long history of operating and should always be considered as a baseline comparison so that the community understands the net increase (or decrease) in trips for the site. Please also note that although we are using "Corporate Headquarters" for this use, the historic trip generation was far higher than what a typical corporate headquarters use would have. For example, TBN regularly welcomed visitors and even had a gift-shop onsite, which would have substantially increased the trip generation. The following link leads to an article by the Orange County Register which documents these characteristics:  
<https://www.ocregister.com/2016/07/18/very-clear-signs-of-trouble-at-trinity-broadcasting-network-as-revenue-shrinks-attractions-close/>

As a result, simply using "Corporate Headquarters" as the sole use on the TBN site does not fully reflect the historic range of uses and will lead to a conservatively low baseline estimate of historic generation. These facts should be noted and this conservative assumption should be understood when discussing net trip generation comparisons for the site.

- b) **Trip Generation for Commuter Students:** In order to provide more conservative estimates of project-generated vehicular trips for commuter students (by assuming a greater percentage of Uber/Lyft users and less public transit use), the daily trip rate of 0.310 trips per commuter student was increased by 10%, which results in an adjusted rate of 0.341 daily trips per commuter student.

Please note that this assumption is once again highly conservative since the data was derived from a school without a shuttle. In essence, we are both increasing the Uber/Lyft trips in order to be conservative while at the same time providing a shuttle service, which should drive down the number of students using Uber/Lyft. This leads to an estimate which is an order of magnitude higher than the likely scenario that Uber/Lyft trips will be at or below (due to the shuttle) what previous studies indicate. It is conservatively assumed that 50% of this increase would occur during each of the AM and PM peak hours. The resultant AM and PM peak hour trips for commuter students are in our opinion solid estimates, given EF's unique tripmaking characteristics and programming observed and empirically assessed at the EF San Diego campus, which is concluded to have the same traffic characteristics as the proposed EF Costa Mesa campus.

As previously emphasized in our prior discussions, commuter students are students who live with host families in the local area. Host families are not allowed to drive their students to school, and a host family is selected based on their home being within a 45-minute walking, biking or public transportation commute from school.

- c) **Trip Generation for Employees Living Off-Site:** In order to provide more conservative estimates of project-generated vehicular trips for employees living off site, a practical approach was undertaken based on anticipated EF employee types and work shifts. The following provides a breakdown of 50 employees living off site:

Administrative Staff (8:30 AM to 5:30 PM, Monday to Friday) = 15 employees  
Teachers, Full Time (8:30 AM to 5:30 PM, Monday to Friday) = 5 employees  
Teachers, Part Time (8:00 AM to 12:30 PM, Monday to Friday) = 15 employees  
Teachers, Part Time (12:30 PM to 5:30 PM, Monday to Friday) = 15 employees

The empirical ratio of 2.25 daily trips per off-site employee was applied. As a conservative measure, all 50 employees are assumed to arrive in single-occupant vehicles during the AM and PM peak hours, resulting in 35 inbound trips during the AM peak hour (15 administrative + 5 FT teachers + 15 PT teachers), and 35 outbound trips during the PM peak hour (15 administrative + 5 FT teachers + 15 PT teachers). We are taking a highly conservative view of employees' transportation characteristics. In our experience with our schools in San Diego, Santa Barbara and San Francisco, very few of our employees drive to campus in single-occupant vehicles. Many live within walking or biking distance, and there are a significant number of car poolers.

- d) **Trip Generation for Employees Living On-Site:** EF expects to have up to 20 employees living on site, performing RA duties in combination with facilities, kitchen, and security. In order to provide more conservative estimates of project-generated vehicular trips for RAs/employees living on site by assuming a greater percentage of Uber/Lyft users and less public transit use, the daily trip rate of 0.067 trips per RA/on-site employee was increased by 50%, which results in an adjusted rate of 0.101 daily trips per RA/on-site employee. It is assumed that 50% of this increase would occur during each of the AM and PM peak hours. Please note that this assumption is once again highly conservative since the data was derived from a school without a shuttle.
- e) **Trip Generation for Resident Students:** In order to provide more conservative estimates of project-generated vehicular trips for resident students (by assuming a greater percentage of Uber/Lyft users and less public transit use), the daily trip

rate of 0.067 trips per bed was increased by 5%, which results in an adjusted rate of 0.074 daily trips per bed. It is assumed that 50% of this increase would occur during each of the AM and PM peak hours. This 5% increase in the resident student daily trip rate is less than the 10% increase applied to commuter students because it is presumed that more resident students would be using the EF shuttle during the day compared to commuter students.

- f) **EF Shuttle Anticipated Operations:** As requested by City staff, attached are detailed information on the shuttle schedule (13 shuttle trips per day, translating to 26 daily trips) and bus routes. We developed this schedule based on known operations from other EF schools.
- g) **Walking Distances to Local Bus Stops:** As requested by City staff, attached are detailed maps showing walking distances between the project site and local bus stops. A vast majority of our students will use the OCTA bus lines to get to/from local amenities and their host families.
- h) **EF Costa Mesa Host Family Selection Criteria:** Consistent with EF's programming for existing campuses in the US, including the San Diego and Santa Barbara schools, commuter students for the proposed Costa Mesa campus would live in the surrounding community with host families that are selected based on proximity to campus and accessibility to public transportation, bike facilities, and pedestrian connections. As requested by City staff, the attached maps illustrate the OCTA bus lines and targeted host family service area.

Please refer to *Appendix C* of the TIA for a complete record of the data collected by Urban Systems Associates and reviewed for adequacy by LLG. Our opinion is that this empirical data represents the most accurate estimate of potential trip generation for the proposed EF use.

Please call me at 949.825.6175 if you have any questions or comments about this response package. Thank you.

TABLE 5-1 (FOR INCLUSION INTO THE REVISED TIA)  
TRIP GENERATION ESTIMATES FOR PROPOSED EF (BUILDOUT)  
EF Education First, Costa Mesa

| Project Component   | Units   | Daily<br>(2-Way) | AM Peak Hour |           |              | PM Peak Hour |             |              |
|---|---|------------------|--------------|-----------|--------------|--------------|-------------|--------------|
|   |   |                  | Enter        | Exit      | Total        | Enter        | Exit        | Total        |
| <b>Prior Site Development Trip Generation</b>   |   |                  |              |           |              |              |             |              |
| Corporate Headquarters Bldg.<br>(prior TBN)   | 68,000 SF   | 543              | 96           | 7         | 103          | 10           | 86          | 96           |
| <b>Project Trip Generation Rates [a]</b>  |   |                  |              |           |              |              |             |              |
| Commuter Students (trips per commuter student)  |   | 0.341            | 0.048        | 0.005     | 0.053        | 0.012        | 0.029       | 0.041        |
| Employees Living Off Site (trips per employee)  |   | 2.250            | 0.700        | 0.100     | 0.800        | 0.100        | 0.700       | 0.800        |
| RAs/Employees Living On Site  |   | 0.101            | 0.004        | 0.018     | 0.022        | 0.017        | 0.007       | 0.024        |
| Resident Students (trips per bed)   |   | 0.070            | 0.001        | 0.006     | 0.007        | 0.005        | 0.002       | 0.007        |
| <b>Project Trip Generation</b>  |   |                  |              |           |              |              |             |              |
| Commuter Students   | 720 students  | 246              | 35           | 4         | 39           | 9            | 21          | 30           |
| Employees Living Off Site   | 50 emp  | 113              | 35           | 5         | 40           | 5            | 35          | 40           |
| RAs/Employees Living On Site  | 20 beds   | 2                | 0            | 0         | 0            | 0            | 0           | 0            |
| Resident Students   | 627 beds  | 44               | 1            | 4         | 5            | 3            | 1           | 4            |
|   | Sub-Total Vehicle Trips:                            | 405              | 71           | 13        | 84           | 17           | 57          | 74           |
|   | Add Future EF Shuttle Trips:                        | 26               | 2            | 2         | 4            | 2            | 2           | 4            |
|   | <b>Future Gross Project Trips:</b>                  | <b>431</b>       | <b>73</b>    | <b>15</b> | <b>88</b>    | <b>19</b>    | <b>59</b>   | <b>78</b>    |
|   | Less Prior TBN Vehicle Trips (from above):          | (543)            | (96)         | (7)       | (103)        | (10)         | (86)        | (96)         |
|   | <b>Future Net Project Trips:</b>                    | <b>(112)</b>     | <b>(23)</b>  | <b>8</b>  | <b>(15)</b>  | <b>9</b>     | <b>(27)</b> | <b>(18)</b>  |
| <b>Project Trips vs. City's TIA Study Threshold [b]</b>                                 |   |                  |              |           |              |              |             |              |
|   | Future Net Project Trips (from above):              | --               | --           | --        | (15)         | --           | --          | (18)         |
|   | Less City's 100-peak hour trip TIA Study Threshold: | --               | --           | --        | (100)        | --           | --          | (100)        |
|   | <b>Threshold Met/TIA Required?</b>                  |                  |              |           | <b>(115)</b> |              |             | <b>(118)</b> |
|   |   |                  |              |           | <b>No</b>    |              |             | <b>No</b>    |
| <b>Total Project Daily Trip Rate Derivation</b>   |   |                  |              |           |              |              |             |              |
| Proposed Total Gross Floor Area   | 155,000 SF  |                  |              |           |              |              |             |              |
| Daily Trip Rate for EF (431 ADT / 155 KSF)<br>( < 3 ADT per KSF threshold for 0.75 FAR) |   | <b>2.78</b>      | --           | --        | --           | --           | --          | --           |

Notes:

- [a] Source: "EF Costa Mesa Campus Traffic Characteristics", prepared by Urban Systems Associates, Inc., November 30, 2018. The daily trip generation rates derived from empirical data (as described in Appendix C of the TIA) were further adjusted and increased by 10% for commuter students, 50% for RAs/employees living on site, and 5% for resident students. It is presumed that 50% of these increases would occur during each of the AM and PM peak hours, as a conservative measure. Anticipated employee/staffing number, types, and work shifts for the EF Costa Mesa campus, plus a conservative assumption that each employee drives alone, provided the basis for the AM and PM peak hour trips for employees living off-site.
- [b] Based on Section 13-275 (a): Development Project Review Procedures of the City's Municipal Code, a traffic impact study is required for all development projects generating 100 or more peak hour trips.

## MORNING SCHEDULE - PEAK ENROLLMENT

|                     |  |
|---------------------|--|
| Bus Stop Loop 1     | 7:30 AM EF: 3150 Bear Street<br>7:35 AM Sunflower - Bear Bus Stop<br>7:40 AM Bristol - Paularino Bus Stop<br>7:45 AM Baker - Bear Bus Stop<br>7:50 AM EF: 3150 Bear Street |
| Bus Stop Loop 2     | 7:55 AM EF: 3150 Bear Street<br>8:00 AM Sunflower - Bear Bus Stop<br>8:05 AM Bristol - Paularino Bus Stop<br>8:10 AM Baker - Bear Bus Stop<br>8:15 AM EF: 3150 Bear Street |
| Bus Stop Loop 3     | 8:20 AM EF: 3150 Bear Street<br>8:25 AM Sunflower - Bear Bus Stop<br>8:30 AM Bristol - Paularino Bus Stop<br>8:35 AM Baker - Bear Bus Stop<br>8:40 AM EF: 3150 Bear Street |
| Newport Beach Route | 9:00 AM EF: 3150 Bear Street<br>9:30 AM Newport Beach Pier<br>10:00 AM EF: 3150 Bear Street  |

## MID-DAY SCHEDULE - PEAK ENROLLMENT

|                     |   |
|---------------------|---|
| Bus Stop Loop 1     | 12 noon EF: 3150 Bear Street<br>12:05 PM Sunflower - Bear Bus Stop<br>12:10 PM Bristol - Paularino Bus Stop<br>12:15 PM Baker - Bear Bus Stop<br>12:20 PM EF: 3150 Bear Street  |
| Bus Stop Loop 2     | 12:25 PM EF: 3150 Bear Street<br>12:30 PM Sunflower - Bear Bus Stop<br>12:35 PM Bristol - Paularino Bus Stop<br>12:40 PM Baker - Bear Bus Stop<br>12:45 PM EF: 3150 Bear Street |
| Bus Stop Loop 3     | 12:50 PM EF: 3150 Bear Street<br>12:55 PM Sunflower - Bear Bus Stop<br>1:00 PM Bristol - Paularino Bus Stop<br>1:05 PM Baker - Bear Bus Stop<br>1:10 PM EF: 3150 Bear Street    |
| Newport Beach Route | 1:30 PM EF: 3150 Bear Street<br>2:00 PM Newport Beach Pier<br>2:30 PM EF: 3150 Bear Street  |

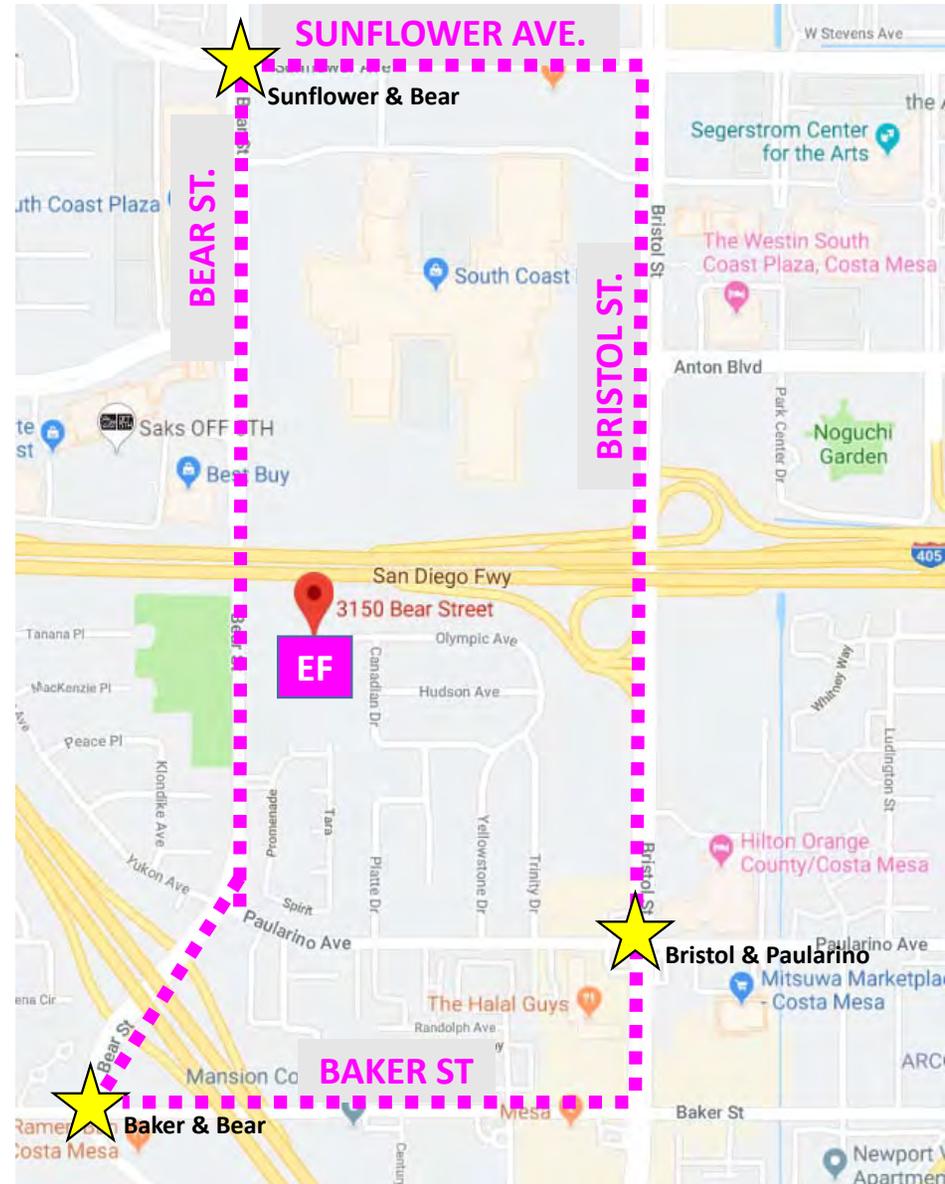
## EVENING SCHEDULE - PEAK ENROLLMENT

|                     |  |
|---------------------|--|
| Bus Stop Loop 1     | 5:00 PM EF: 3150 Bear Street<br>5:05 PM Sunflower - Bear Bus Stop<br>5:10 PM Bristol - Paularino Bus Stop<br>5:15 PM Baker - Bear Bus Stop<br>5:20 PM EF: 3150 Bear Street |
| Bus Stop Loop 2     | 5:25 PM EF: 3150 Bear Street<br>5:30 PM Sunflower - Bear Bus Stop<br>5:35 PM Bristol - Paularino Bus Stop<br>5:40 PM Baker - Bear Bus Stop<br>5:45 PM EF: 3150 Bear Street |
| Bus Stop Loop 3     | 5:50 PM EF: 3150 Bear Street<br>5:55 PM Sunflower - Bear Bus Stop<br>6:00 PM Bristol - Paularino Bus Stop<br>6:05 PM Baker - Bear Bus Stop<br>6:10 PM EF: 3150 Bear Street |
| Newport Beach Route | 6:30 PM EF: 3150 Bear Street<br>7:00 PM Newport Beach Pier<br>7:30 PM EF: 3150 Bear Street   |
| Newport Beach Route | 8:30 PM EF: 3150 Bear Street<br>9:00 PM Newport Beach Pier<br>9:30 PM EF: 3150 Bear Street   |

# EF Shuttle Bus Routes

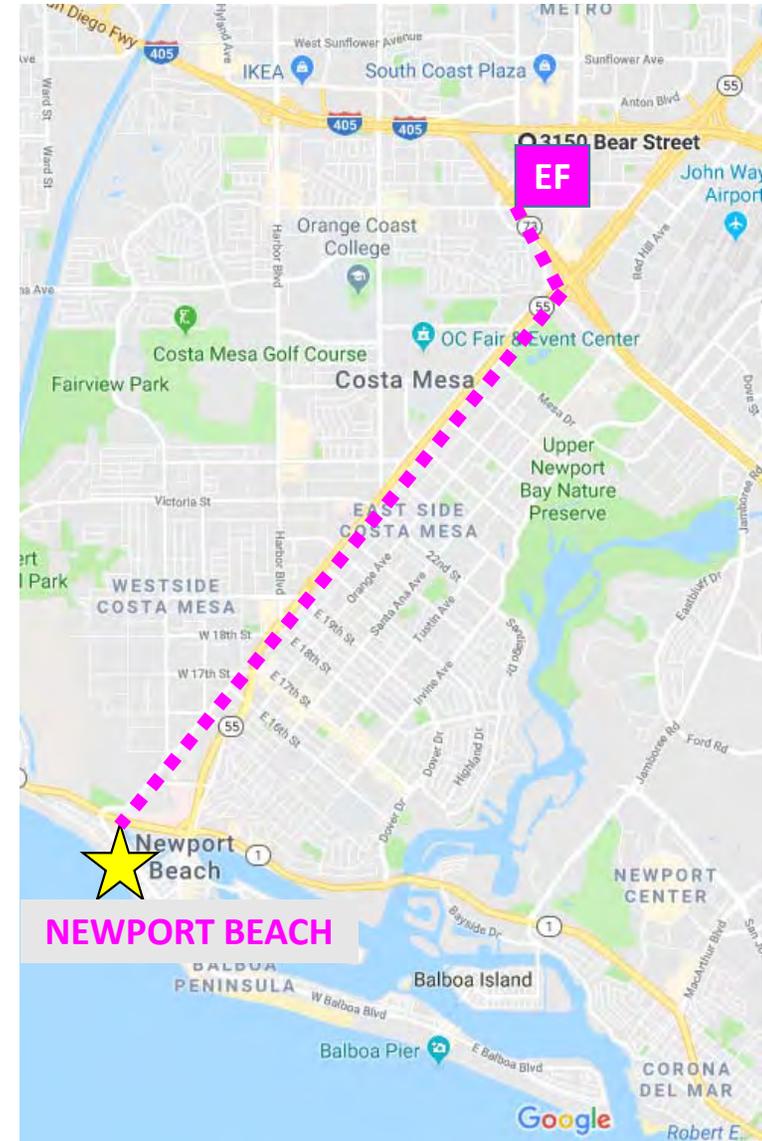
# Bus Stop Loop Route

- **Sunflower-Bear** – 0.8 miles, 15 min walk, served by OCTA 150, 211, 794
- **Bristol-Paularino** – 0.7 miles, 14-min walk, served by OCTA 55, 57, 52
- **Baker-Bear** – 0.6 miles, 12-min walk, served by OCTA 55, 22



# Newport Beach Route

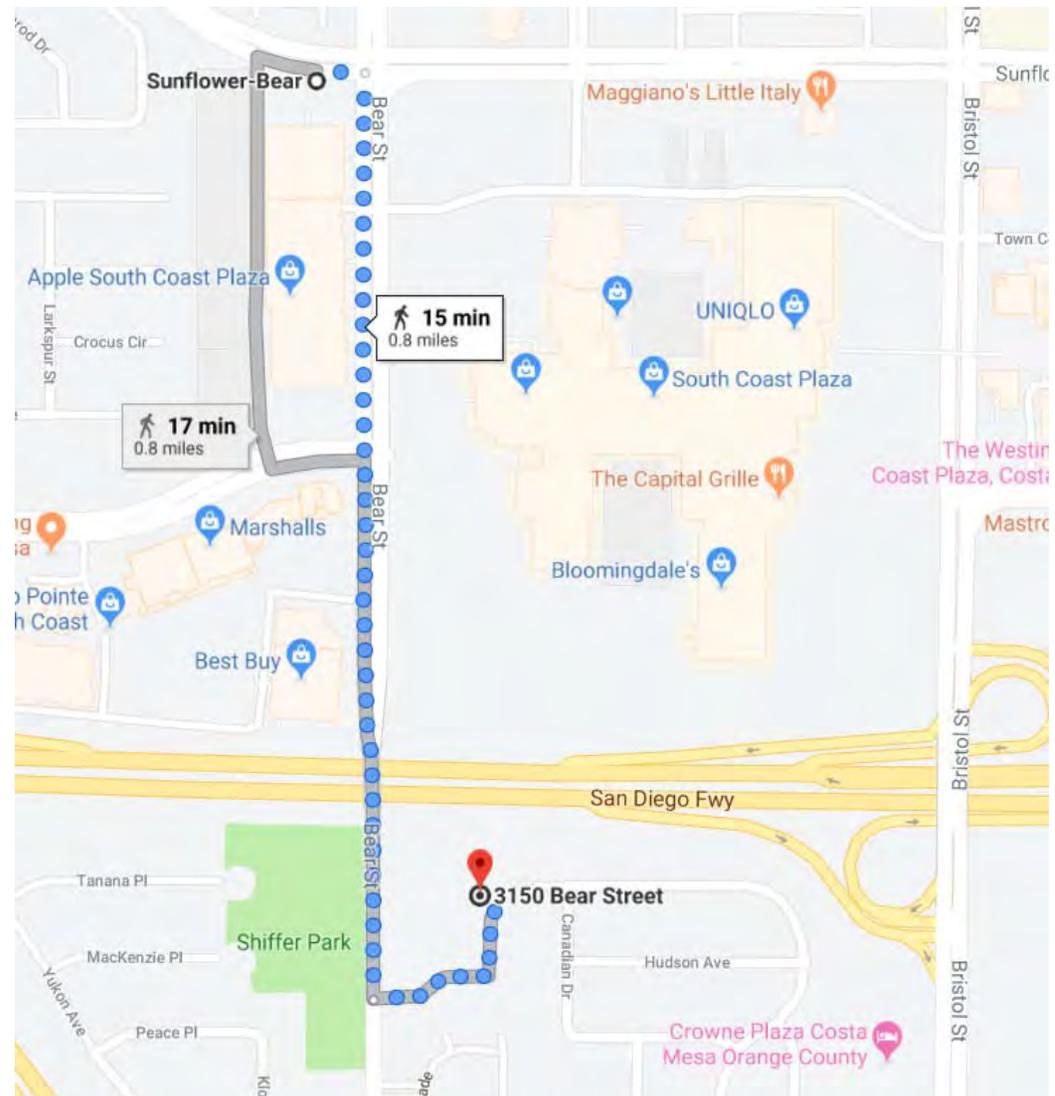
- **Newport Beach** – 6 miles, 40 min. bike ride



# Walking Distances to Local Bus Stops

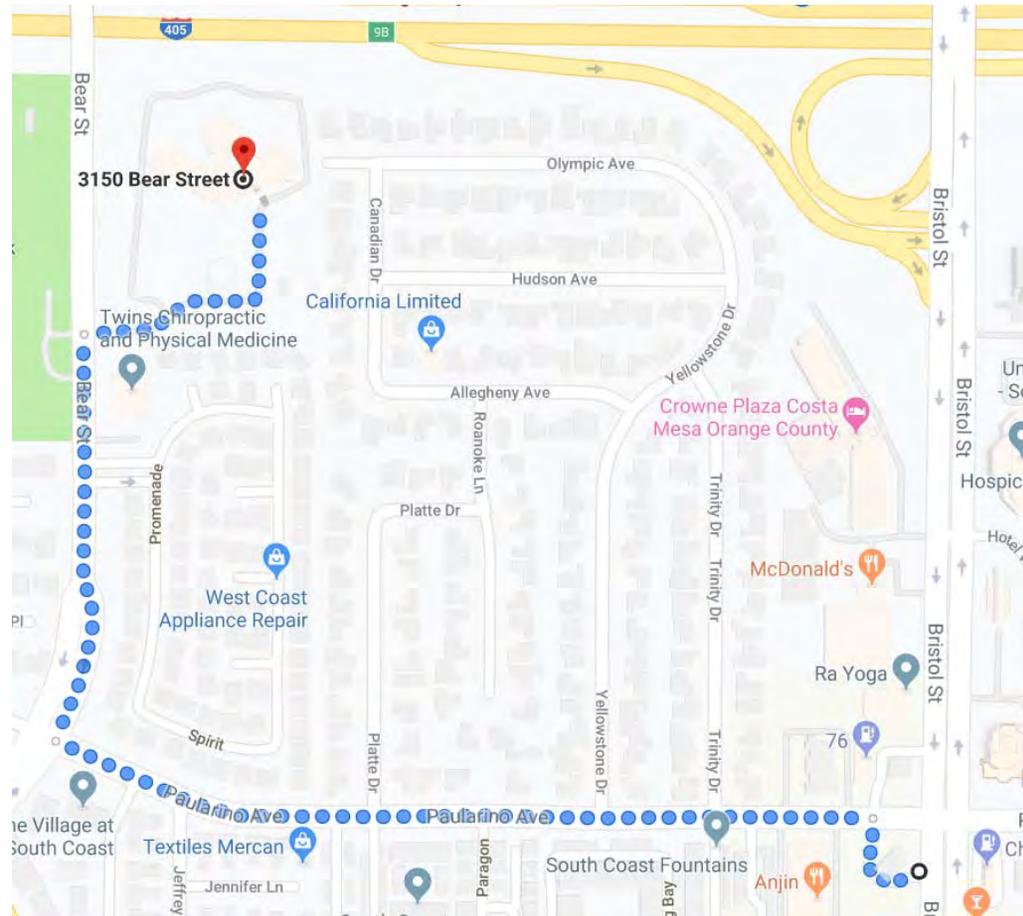
# Sunflower - Bear

- 0.8 miles / 15 min
- Bus 150, 211, 794



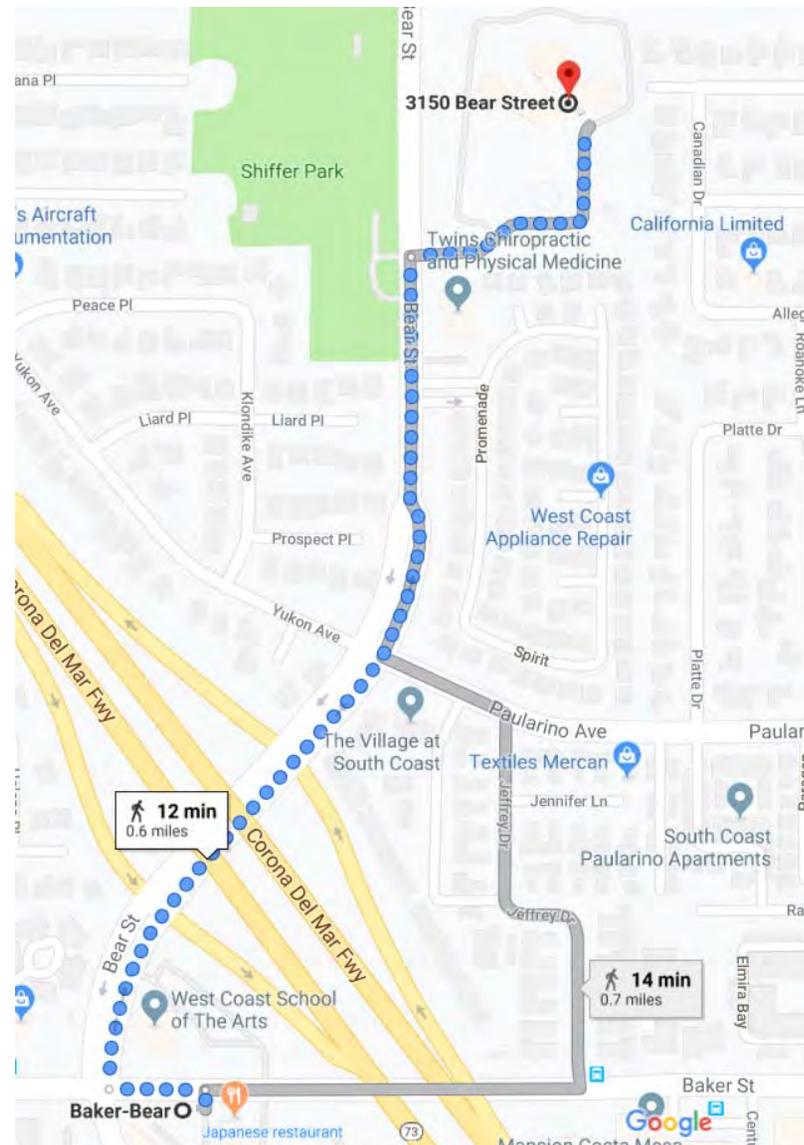
# Bristol – Paularino

- 0.7 miles / 14 min walk
- Bus 55, 57, 22



# Baker – Bear

- 0.6 miles / 12 min
- Bus 55, 22



# EF Costa Mesa Host Family Recruitment



# EF Host Family Recruitment Process

- Recruitment advertisements in local newspapers
- Accommodation sites
- Word of mouth/referrals
- Local community events and fairs
- Publicity events for new campus opening
- Local business partnerships
- Local school and church presentations

# EF Host Family Application process

- Complete Host Family Application form
- Arrange for a home inspection and interview
- Successfully complete security background check
- Read and agree to EF standards of hosting
- Meet all EF hosting criteria and standards
- Provide school with available dates
- Meet ongoing evaluation results
- Home must be within 45 minutes travel via walking, biking or public transportation

# EF Host Family Profile

- Enjoys learning about other cultures, meeting new people and sharing local culture
- Creates a home away from home environment where the student feels welcome and included in the family
- Sits down for meals with the student to support their language learning experience beyond the classroom
- All are welcome to apply subject to criteria being met:
  - Clean record and passes background security check
  - Provide a furnished guest bedroom, either twin or single occupancy
  - Provide breakfast and dinner Monday to Friday and all meals on the weekend
  - Fully completes application form and meets all housing requirements for safety and comfort
  - Agrees to initial home inspection and meeting with EF housing department
  - Agrees to annual re-visit from housing department
  - Supports the student on arrival with travel information and general welfare
  - School has 24 hour emergency support line for hosts requiring support
  - Reports any concerns urgently to school staff
  - Home location within 45 minutes travel to EF campus using public transportation, walking or biking
  - Either does student laundry or provides access to laundry facilities
  - Keeps a clean healthy environment, provides fresh bed linens and towels weekly
  - Notifies school staff in advance of all family vacations
  - Immediately notifies school if student does not return home at expected time
  - Meets ongoing evaluation requirements gathered from student experience (two or three times during course depending on course length)
  - Guidance to student on respect for community and involvement
  - English is the main language spoken within the home
  - Provides a profile of the family so EF housing department can try to match with students

# Student placement

School housing department places students with the most appropriate hosts and roommates in the dormitories using the following criteria:

Male/Female

Age

Nationality (Students are guaranteed to share rooms with different nationalities/languages)

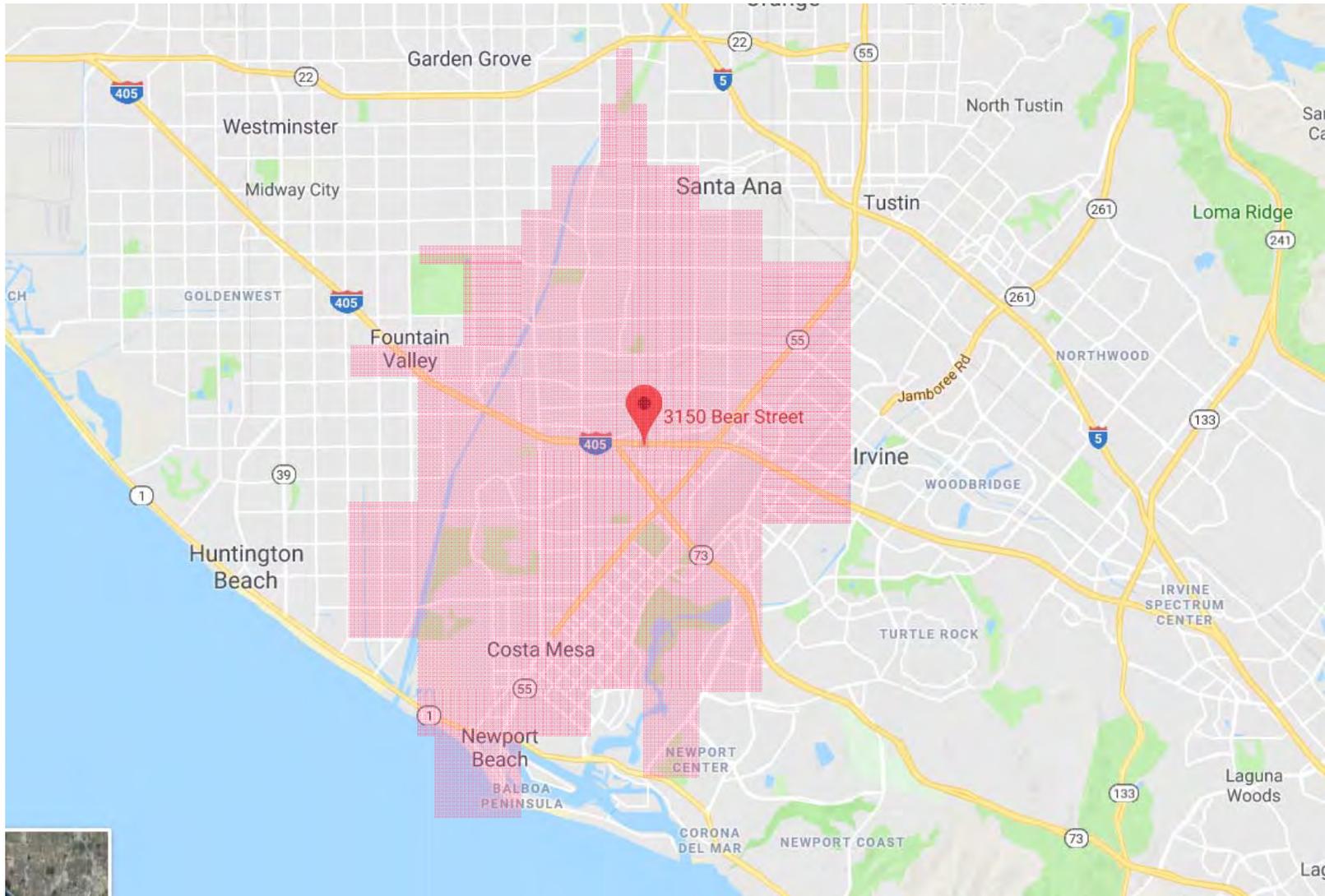
Course type and length of study

Matching notes of Host family profile

# Considerations for Recruiting Host Families in Close Proximity to EF Costa Mesa

- We see great potential for host family recruitment in the area surrounding the campus (mostly Costa Mesa, Santa Ana, Fountain Valley and Irvine)
- In summer 2018, we traveled along the bus routes to explore areas within 45 minutes – 1 hour commute.
- Santa Ana and northern Costa Mesa looked highly suitable for host family recruitment.
- Safe, modest-size homes in welcoming neighborhoods.
- Students will love to be close to Newport Beach/Balboa Peninsula and have access to the shopping and amenities at South Coast Plaza.

# 1-hour bus zone (Weekday, 1 PM)



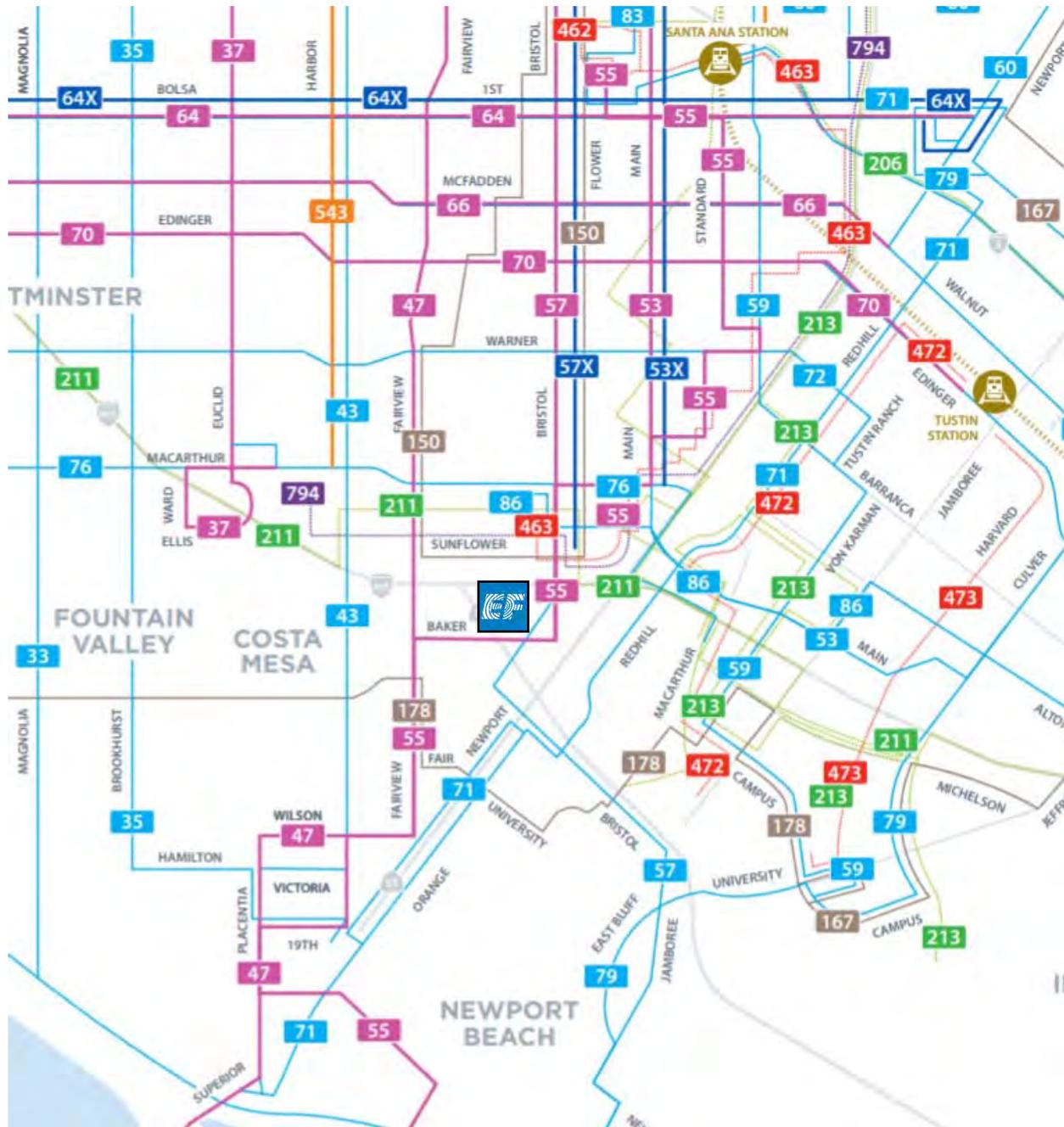


TABLE 5-1 (FOR INCLUSION INTO THE REVISED TIA)  
TRIP GENERATION ESTIMATES FOR PROPOSED EF (BUILDOUT)  
EF Education First, Costa Mesa

| Project Component   | Units   | Daily<br>(2-Way) | AM Peak Hour |           |              | PM Peak Hour |             |              |
|---|---|------------------|--------------|-----------|--------------|--------------|-------------|--------------|
|   |   |                  | Enter        | Exit      | Total        | Enter        | Exit        | Total        |
| <b>Prior Site Development Trip Generation</b>   |   |                  |              |           |              |              |             |              |
| Corporate Headquarters Bldg.<br>(prior TBN)   | 68,000 SF   | 543              | 96           | 7         | 103          | 10           | 86          | 96           |
| <b>Project Trip Generation Rates [a]</b>  |   |                  |              |           |              |              |             |              |
| Commuter Students (trips per commuter student)  |   | 0.341            | 0.048        | 0.005     | 0.053        | 0.012        | 0.029       | 0.041        |
| Employees Living Off Site (trips per employee)  |   | 2.250            | 0.700        | 0.100     | 0.800        | 0.100        | 0.700       | 0.800        |
| RAs/Employees Living On Site  |   | 0.101            | 0.004        | 0.018     | 0.022        | 0.017        | 0.007       | 0.024        |
| Resident Students (trips per bed)   |   | 0.070            | 0.001        | 0.006     | 0.007        | 0.005        | 0.002       | 0.007        |
| <b>Project Trip Generation</b>  |   |                  |              |           |              |              |             |              |
| Commuter Students   | 720 students  | 246              | 35           | 4         | 39           | 9            | 21          | 30           |
| Employees Living Off Site   | 50 emp  | 113              | 35           | 5         | 40           | 5            | 35          | 40           |
| RAs/Employees Living On Site  | 20 beds   | 12               | 0            | 0         | 0            | 0            | 0           | 0            |
| Resident Students   | 627 beds  | 44               | 1            | 4         | 5            | 3            | 1           | 4            |
|   | Sub-Total Vehicle Trips:                            | 415              | 71           | 13        | 84           | 17           | 57          | 74           |
|   | Add Future EF Shuttle Trips:                        | 40               | 2            | 2         | 4            | 2            | 2           | 4            |
|   | <b>Future Gross Project Trips:</b>                  | <b>455</b>       | <b>73</b>    | <b>15</b> | <b>88</b>    | <b>19</b>    | <b>59</b>   | <b>78</b>    |
|   | Less Prior TBN Vehicle Trips (from above):          | (543)            | (96)         | (7)       | (103)        | (10)         | (86)        | (96)         |
|   | <b>Future Net Project Trips:</b>                    | <b>(88)</b>      | <b>(23)</b>  | <b>8</b>  | <b>(15)</b>  | <b>9</b>     | <b>(27)</b> | <b>(18)</b>  |
| <b>Project Trips vs. City's TIA Study Threshold [b]</b>                                 |   |                  |              |           |              |              |             |              |
|   | Future Net Project Trips (from above):              | --               | --           | --        | (15)         | --           | --          | (18)         |
|   | Less City's 100-peak hour trip TIA Study Threshold: | --               | --           | --        | (100)        | --           | --          | (100)        |
|   | <b>Threshold Met/TIA Required?</b>                  |                  |              |           | <b>(115)</b> |              |             | <b>(118)</b> |
|   |   |                  |              |           | <b>No</b>    |              |             | <b>No</b>    |
| <b>Total Project Daily Trip Rate Derivation</b>   |   |                  |              |           |              |              |             |              |
| Proposed Total Gross Floor Area   | 155,000 SF  |                  |              |           |              |              |             |              |
| Daily Trip Rate for EF (455 ADT / 155 KSF)<br>( < 3 ADT per KSF threshold for 0.75 FAR) |   | <b>2.94</b>      | --           | --        | --           | --           | --          | --           |

Notes:

- [a] Source: "EF Costa Mesa Campus Traffic Characteristics", prepared by Urban Systems Associates, Inc., November 30, 2018. The daily trip generation rates derived from empirical data (as described in Appendix C of the TIA) were further adjusted and increased by 10% for commuter students, 50% for RAs/employees living on site, and 5% for resident students. It is presumed that 50% of these increases would occur during each of the AM and PM peak hours, as a conservative measure. Anticipated employee/staffing number, types, and work shifts for the EF Costa Mesa campus, plus a conservative assumption that each employee drives alone, provided the basis for the AM and PM peak hour trips for employees living off-site.
- [b] Based on Section 13-275 (a): Development Project Review Procedures of the City's Municipal Code, a traffic impact study is required for all development projects generating 100 or more peak hour trips.

## APPENDIX B

### PROJECT DRIVEWAY LEVEL OF SERVICE CALCULATION WORKSHEETS

**Intersection Level Of Service Report**  
**Intersection 16: Bear Street at Project Driveway**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Two-way stop    | Delay (sec / veh):        | 14.6  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | B     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.026 |

**Intersection Setup**

| Name                   | Bear Street |        |        | Bear Street |        |        | Park Driveway |        |        | Project Driveway |        |        |
|------------------------|-------------|--------|--------|-------------|--------|--------|---------------|--------|--------|------------------|--------|--------|
| Approach               | Northbound  |        |        | Southbound  |        |        | Eastbound     |        |        | Westbound        |        |        |
| Lane Configuration     | ↵↵↵         |        |        | ↵↵↵         |        |        | +             |        |        | ↵↵               |        |        |
| Turning Movement       | Left        | Thru   | Right  | Left        | Thru   | Right  | Left          | Thru   | Right  | Left             | Thru   | Right  |
| Lane Width [ft]        | 12.00       | 12.00  | 12.00  | 12.00       | 12.00  | 12.00  | 12.00         | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  |
| No. of Lanes in Pocket | 0           | 0      | 0      | 0           | 0      | 0      | 0             | 0      | 0      | 0                | 0      | 0      |
| Pocket Length [ft]     | 100.00      | 100.00 | 100.00 | 100.00      | 100.00 | 100.00 | 100.00        | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 |
| Speed [mph]            | 40.00       |        |        | 40.00       |        |        | 25.00         |        |        | 25.00            |        |        |
| Grade [%]              | 0.00        |        |        | 0.00        |        |        | 0.00          |        |        | 0.00             |        |        |
| Crosswalk              | No          |        |        | No          |        |        | Yes           |        |        | Yes              |        |        |

**Volumes**

| Name                                    | Bear Street |        |        | Bear Street |        |        | Park Driveway |        |        | Project Driveway |        |        |
|---|-------------|--------|--------|-------------|--------|--------|---------------|--------|--------|------------------|--------|--------|
| Base Volume Input [veh/h]               | 0           | 766    | 37     | 36          | 1118   | 0      | 0             | 0      | 0      | 7                | 0      | 8      |
| Base Volume Adjustment Factor           | 1.0000      | 1.0000 | 1.0000 | 1.0000      | 1.0000 | 1.0000 | 1.0000        | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00        | 2.00   | 2.00   | 2.00        | 2.00   | 2.00   | 2.00          | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   |
| Growth Factor                           | 1.00        | 1.00   | 1.00   | 1.00        | 1.00   | 1.00   | 1.00          | 1.00   | 1.00   | 1.00             | 1.00   | 1.00   |
| In-Process Volume [veh/h]               | 0           | 0      | 0      | 0           | 0      | 0      | 0             | 0      | 0      | 0                | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0           | 0      | 0      | 0           | 0      | 0      | 0             | 0      | 0      | 0                | 0      | 0      |
| Diverted Trips [veh/h]                  | 0           | 0      | 0      | 0           | 0      | 0      | 0             | 0      | 0      | 0                | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0           | 0      | 0      | 0           | 0      | 0      | 0             | 0      | 0      | 0                | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0           | 0      | 0      | 0           | 0      | 0      | 0             | 0      | 0      | 0                | 0      | 0      |
| Other Volume [veh/h]                    | 0           | 0      | 0      | 0           | 0      | 0      | 0             | 0      | 0      | 0                | 0      | 0      |
| Total Hourly Volume [veh/h]             | 0           | 766    | 37     | 36          | 1118   | 0      | 0             | 0      | 0      | 7                | 0      | 8      |
| Peak Hour Factor                        | 1.0000      | 1.0000 | 1.0000 | 1.0000      | 1.0000 | 1.0000 | 1.0000        | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000      | 1.0000 | 1.0000 | 1.0000      | 1.0000 | 1.0000 | 1.0000        | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 0           | 192    | 9      | 9           | 280    | 0      | 0             | 0      | 0      | 2                | 0      | 2      |
| Total Analysis Volume [veh/h]           | 0           | 766    | 37     | 36          | 1118   | 0      | 0             | 0      | 0      | 7                | 0      | 8      |
| Pedestrian Volume [ped/h]               | 0           |        |        | 0           |        |        | 0             |        |        | 0                |        |        |

**Intersection Settings**

|                                    |      |      |      |      |
|------------------------------------|------|------|------|------|
| Priority Scheme                    | Free | Free | Stop | Stop |
| Flared Lane                        |      |      | No   |      |
| Storage Area [veh]                 | 0    | 0    | 0    | 0    |
| Two-Stage Gap Acceptance           |      |      | Yes  | Yes  |
| Number of Storage Spaces in Median | 0    | 0    | 2    | 2    |

**Movement, Approach, & Intersection Results**

|                                       |       |      |      |      |      |      |       |       |       |       |      |       |
|---------------------------------------|-------|------|------|------|------|------|-------|-------|-------|-------|------|-------|
| V/C, Movement V/C Ratio               | 0.00  | 0.01 | 0.00 | 0.04 | 0.01 | 0.00 | 0.00  | 0.00  | 0.00  | 0.03  | 0.00 | 0.01  |
| d_M, Delay for Movement [s/veh]       | 10.80 | 0.00 | 0.00 | 9.61 | 0.00 | 0.00 | 25.49 | 23.04 | 12.62 | 18.64 | 0.00 | 11.10 |
| Movement LOS                          | B     | A    | A    | A    | A    | A    | D     | C     | B     | C     |      | B     |
| 95th-Percentile Queue Length [veh/ln] | 0.00  | 0.00 | 0.00 | 0.14 | 0.00 | 0.00 | 0.00  | 0.00  | 0.00  | 0.08  | 0.00 | 0.04  |
| 95th-Percentile Queue Length [ft/ln]  | 0.00  | 0.00 | 0.00 | 3.45 | 0.00 | 0.00 | 0.00  | 0.00  | 0.00  | 1.98  | 0.00 | 1.02  |
| d_A, Approach Delay [s/veh]           | 0.00  |      |      | 0.30 |      |      | 20.38 |       |       | 14.62 |      |       |
| Approach LOS                          | A     |      |      | A    |      |      | C     |       |       | B     |      |       |
| d_I, Intersection Delay [s/veh]       | 0.29  |      |      |      |      |      |       |       |       |       |      |       |
| Intersection LOS                      | C     |      |      |      |      |      |       |       |       |       |      |       |

**Intersection Level Of Service Report**  
**Intersection 16: Bear Street at Project Driveway**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Two-way stop    | Delay (sec / veh):        | 49.8  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | E     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.388 |

**Intersection Setup**

| Name                   | Bear Street |        |        | Bear Street |        |        | Park Driveway |        |        | Project Driveway |        |        |
|------------------------|-------------|--------|--------|-------------|--------|--------|---------------|--------|--------|------------------|--------|--------|
| Approach               | Northbound  |        |        | Southbound  |        |        | Eastbound     |        |        | Westbound        |        |        |
| Lane Configuration     | ↵↵↵         |        |        | ↵↵↵         |        |        | ⊕             |        |        | ↵↵               |        |        |
| Turning Movement       | Left        | Thru   | Right  | Left        | Thru   | Right  | Left          | Thru   | Right  | Left             | Thru   | Right  |
| Lane Width [ft]        | 12.00       | 12.00  | 12.00  | 12.00       | 12.00  | 12.00  | 12.00         | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  |
| No. of Lanes in Pocket | 0           | 0      | 0      | 0           | 0      | 0      | 0             | 0      | 0      | 0                | 0      | 0      |
| Pocket Length [ft]     | 100.00      | 100.00 | 100.00 | 100.00      | 100.00 | 100.00 | 100.00        | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 |
| Speed [mph]            | 40.00       |        |        | 40.00       |        |        | 25.00         |        |        | 25.00            |        |        |
| Grade [%]              | 0.00        |        |        | 0.00        |        |        | 0.00          |        |        | 0.00             |        |        |
| Crosswalk              | No          |        |        | No          |        |        | Yes           |        |        | Yes              |        |        |

**Volumes**

| Name                                    | Bear Street |        |        | Bear Street |        |        | Park Driveway |        |        | Project Driveway |        |        |
|---|-------------|--------|--------|-------------|--------|--------|---------------|--------|--------|------------------|--------|--------|
| Base Volume Input [veh/h]               | 0           | 1820   | 10     | 9           | 1078   | 0      | 0             | 0      | 0      | 29               | 0      | 30     |
| Base Volume Adjustment Factor           | 1.0000      | 1.0000 | 1.0000 | 1.0000      | 1.0000 | 1.0000 | 1.0000        | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00        | 2.00   | 2.00   | 2.00        | 2.00   | 2.00   | 2.00          | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   |
| Growth Factor                           | 1.00        | 1.00   | 1.00   | 1.00        | 1.00   | 1.00   | 1.00          | 1.00   | 1.00   | 1.00             | 1.00   | 1.00   |
| In-Process Volume [veh/h]               | 0           | 0      | 0      | 0           | 0      | 0      | 0             | 0      | 0      | 0                | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0           | 0      | 0      | 0           | 0      | 0      | 0             | 0      | 0      | 0                | 0      | 0      |
| Diverted Trips [veh/h]                  | 0           | 0      | 0      | 0           | 0      | 0      | 0             | 0      | 0      | 0                | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0           | 0      | 0      | 0           | 0      | 0      | 0             | 0      | 0      | 0                | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0           | 0      | 0      | 0           | 0      | 0      | 0             | 0      | 0      | 0                | 0      | 0      |
| Other Volume [veh/h]                    | 0           | 0      | 0      | 0           | 0      | 0      | 0             | 0      | 0      | 0                | 0      | 0      |
| Total Hourly Volume [veh/h]             | 0           | 1820   | 10     | 9           | 1078   | 0      | 0             | 0      | 0      | 29               | 0      | 30     |
| Peak Hour Factor                        | 1.0000      | 1.0000 | 1.0000 | 1.0000      | 1.0000 | 1.0000 | 1.0000        | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000      | 1.0000 | 1.0000 | 1.0000      | 1.0000 | 1.0000 | 1.0000        | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 0           | 455    | 3      | 2           | 270    | 0      | 0             | 0      | 0      | 7                | 0      | 8      |
| Total Analysis Volume [veh/h]           | 0           | 1820   | 10     | 9           | 1078   | 0      | 0             | 0      | 0      | 29               | 0      | 30     |
| Pedestrian Volume [ped/h]               | 0           |        |        | 0           |        |        | 0             |        |        | 0                |        |        |

**Intersection Settings**

|                                    |      |      |      |      |
|------------------------------------|------|------|------|------|
| Priority Scheme                    | Free | Free | Stop | Stop |
| Flared Lane                        |      |      | No   |      |
| Storage Area [veh]                 | 0    | 0    | 0    | 0    |
| Two-Stage Gap Acceptance           |      |      | Yes  | Yes  |
| Number of Storage Spaces in Median | 0    | 0    | 2    | 2    |

**Movement, Approach, & Intersection Results**

|                                       |       |      |      |       |      |      |       |       |       |       |      |       |
|---------------------------------------|-------|------|------|-------|------|------|-------|-------|-------|-------|------|-------|
| V/C, Movement V/C Ratio               | 0.00  | 0.02 | 0.00 | 0.03  | 0.01 | 0.00 | 0.00  | 0.00  | 0.00  | 0.39  | 0.00 | 0.11  |
| d_M, Delay for Movement [s/veh]       | 10.60 | 0.00 | 0.00 | 16.22 | 0.00 | 0.00 | 27.63 | 40.49 | 12.39 | 81.05 | 0.00 | 19.68 |
| Movement LOS                          | B     | A    | A    | C     | A    | A    | D     | E     | B     | F     |      | C     |
| 95th-Percentile Queue Length [veh/ln] | 0.00  | 0.00 | 0.00 | 0.08  | 0.00 | 0.00 | 0.00  | 0.00  | 0.00  | 1.51  | 0.00 | 0.36  |
| 95th-Percentile Queue Length [ft/ln]  | 0.00  | 0.00 | 0.00 | 2.10  | 0.00 | 0.00 | 0.00  | 0.00  | 0.00  | 37.69 | 0.00 | 9.07  |
| d_A, Approach Delay [s/veh]           | 0.00  |      |      | 0.13  |      |      | 26.84 |       |       | 49.84 |      |       |
| Approach LOS                          | A     |      |      | A     |      |      | D     |       |       | E     |      |       |
| d_I, Intersection Delay [s/veh]       | 1.04  |      |      |       |      |      |       |       |       |       |      |       |
| Intersection LOS                      | F     |      |      |       |      |      |       |       |       |       |      |       |

## APPENDIX C

### PROJECT DRIVEWAY SIGNAL WARRANT WORKSHEETS

## Signal Warrants Report For Intersection 16: Bear Street at Project Driveway

## Warrants Summary

| Warrant | Name                        | Met? |
|---------|-----------------------------|------|
| #1      | Eight Hour Vehicular Volume | No   |
| #2      | Four Hour Vehicular Volume  | No   |
| #3      | Peak Hour                   | No   |

## Intersection Warrants Parameters

|                     |      |
|---------------------|------|
| Major Approaches    | S, N |
| Minor Approaches    | E, W |
| Speed > 40mph       | No   |
| Population < 10,000 | No   |
| Warrant Factor      | 100% |

## Warrant Analysis Traffic Volumes

| Hour | Major Streets |      | Minor Streets |   |
|------|---------------|------|---------------|---|
|      | S             | N    | E             | W |
| 1    | 803           | 1154 | 15            | 0 |
| 2    | 771           | 1108 | 14            | 0 |
| 3    | 755           | 1085 | 14            | 0 |
| 4    | 642           | 923  | 12            | 0 |
| 5    | 610           | 877  | 11            | 0 |
| 6    | 546           | 785  | 10            | 0 |
| 7    | 506           | 727  | 9             | 0 |
| 8    | 482           | 692  | 9             | 0 |
| 9    | 385           | 554  | 7             | 0 |
| 10   | 361           | 519  | 7             | 0 |
| 11   | 361           | 519  | 7             | 0 |
| 12   | 345           | 496  | 6             | 0 |
| 13   | 313           | 450  | 6             | 0 |
| 14   | 289           | 415  | 5             | 0 |
| 15   | 289           | 415  | 5             | 0 |
| 16   | 281           | 404  | 5             | 0 |
| 17   | 161           | 231  | 3             | 0 |
| 18   | 88            | 127  | 2             | 0 |
| 19   | 80            | 115  | 2             | 0 |
| 20   | 32            | 46   | 1             | 0 |
| 21   | 24            | 35   | 0             | 0 |
| 22   | 24            | 35   | 0             | 0 |
| 23   | 16            | 23   | 0             | 0 |
| 24   | 16            | 23   | 0             | 0 |

### Warrant Analysis by Hour

| Hour      | Major Lanes |        | Minor Lanes |        | Warrant 1 Condition A |     |     |     | Warrant 1 Condition B |     |     |     | Warrant 2 | Warrant 3<br>Condition B |
|-----------|-------------|--------|-------------|--------|-----------------------|-----|-----|-----|-----------------------|-----|-----|-----|-----------|--------------------------|
|           | Number      | Volume | Number      | Volume | 100%                  | 80% | 70% | 56% | 100%                  | 80% | 70% | 56% |           |                          |
| 1         | 7           | 1957   | 3           | 15     | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 2         | 7           | 1879   | 3           | 14     | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 3         | 7           | 1840   | 3           | 14     | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 4         | 7           | 1565   | 3           | 12     | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 5         | 7           | 1487   | 3           | 11     | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 6         | 7           | 1331   | 3           | 10     | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 7         | 7           | 1233   | 3           | 9      | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 8         | 7           | 1174   | 3           | 9      | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 9         | 7           | 939    | 3           | 7      | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 10        | 7           | 880    | 3           | 7      | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 11        | 7           | 880    | 3           | 7      | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 12        | 7           | 841    | 3           | 6      | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 13        | 7           | 763    | 3           | 6      | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 14        | 7           | 704    | 3           | 5      | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 15        | 7           | 704    | 3           | 5      | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 16        | 7           | 685    | 3           | 5      | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 17        | 7           | 392    | 3           | 3      | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 18        | 7           | 215    | 3           | 2      | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 19        | 7           | 195    | 3           | 2      | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 20        | 7           | 78     | 3           | 1      | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 21        | 7           | 59     | 3           | 0      | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 22        | 7           | 59     | 3           | 0      | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 23        | 7           | 39     | 3           | 0      | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 24        | 7           | 39     | 3           | 0      | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| Hours Met |             |        |             |        | 0                     | 0   | 0   | 0   | 0                     | 0   | 0   | 0   | 0         | 0                        |

### Warrant 3 Condition A

| Orientation  | E         | W    |
|--|-----------|------|
| Total Stopped Delay Per Vehicle on Minor Approach (s)    | 14.6      | 20.4 |
| Number of Lanes on Minor Street Approach                 | 2         | 1    |
| VehicleHours of Stopped Delay on Minor Approach ([h]:mm) | 0:03      | 0:00 |
| Delay Condition Met                                      | No        | No   |
| Volume on Minor Street Approach During Same Hour         | 15        | 0    |
| High Minor Volume Condition Met                          | No        | No   |
| Total Entering Volume on All Approaches During Same Hour | 1972      | 1972 |
| Number of Approaches on Intersection                     | 4         | 4    |
| Total Volume Condition Met                               | Yes       | Yes  |
| Warrant Met for Approach                                 | No        | No   |
| <b>Warrant Met for Intersection</b>                      | <b>No</b> |      |

Signal Warrants Report For Intersection 16: Bear Street at Project Driveway

Warrants Summary

| Warrant | Name                        | Met? |
|---------|-----------------------------|------|
| #1      | Eight Hour Vehicular Volume | No   |
| #2      | Four Hour Vehicular Volume  | No   |
| #3      | Peak Hour                   | No   |

Intersection Warrants Parameters

|                     |      |
|---------------------|------|
| Major Approaches    | S, N |
| Minor Approaches    | E, W |
| Speed > 40mph       | No   |
| Population < 10,000 | No   |
| Warrant Factor      | 100% |

Warrant Analysis Traffic Volumes

| Hour | Major Streets |      | Minor Streets |   |
|------|---------------|------|---------------|---|
|      | S             | N    | E             | W |
| 1    | 1830          | 1087 | 59            | 0 |
| 2    | 1757          | 1044 | 57            | 0 |
| 3    | 1720          | 1022 | 55            | 0 |
| 4    | 1464          | 870  | 47            | 0 |
| 5    | 1391          | 826  | 45            | 0 |
| 6    | 1244          | 739  | 40            | 0 |
| 7    | 1153          | 685  | 37            | 0 |
| 8    | 1098          | 652  | 35            | 0 |
| 9    | 878           | 522  | 28            | 0 |
| 10   | 824           | 489  | 27            | 0 |
| 11   | 824           | 489  | 27            | 0 |
| 12   | 787           | 467  | 25            | 0 |
| 13   | 714           | 424  | 23            | 0 |
| 14   | 659           | 391  | 21            | 0 |
| 15   | 659           | 391  | 21            | 0 |
| 16   | 641           | 380  | 21            | 0 |
| 17   | 366           | 217  | 12            | 0 |
| 18   | 201           | 120  | 6             | 0 |
| 19   | 183           | 109  | 6             | 0 |
| 20   | 73            | 43   | 2             | 0 |
| 21   | 55            | 33   | 2             | 0 |
| 22   | 55            | 33   | 2             | 0 |
| 23   | 37            | 22   | 1             | 0 |
| 24   | 37            | 22   | 1             | 0 |

**Warrant Analysis by Hour**

| Hour      | Major Lanes |        | Minor Lanes |        | Warrant 1 Condition A |     |     |     | Warrant 1 Condition B |     |     |     | Warrant 2 | Warrant 3<br>Condition B |
|-----------|-------------|--------|-------------|--------|-----------------------|-----|-----|-----|-----------------------|-----|-----|-----|-----------|--------------------------|
|           | Number      | Volume | Number      | Volume | 100%                  | 80% | 70% | 56% | 100%                  | 80% | 70% | 56% |           |                          |
| 1         | 7           | 2917   | 3           | 59     | No                    | No  | No  | No  | No                    | No  | No  | Yes | No        | No                       |
| 2         | 7           | 2801   | 3           | 57     | No                    | No  | No  | No  | No                    | No  | No  | Yes | No        | No                       |
| 3         | 7           | 2742   | 3           | 55     | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 4         | 7           | 2334   | 3           | 47     | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 5         | 7           | 2217   | 3           | 45     | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 6         | 7           | 1983   | 3           | 40     | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 7         | 7           | 1838   | 3           | 37     | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 8         | 7           | 1750   | 3           | 35     | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 9         | 7           | 1400   | 3           | 28     | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 10        | 7           | 1313   | 3           | 27     | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 11        | 7           | 1313   | 3           | 27     | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 12        | 7           | 1254   | 3           | 25     | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 13        | 7           | 1138   | 3           | 23     | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 14        | 7           | 1050   | 3           | 21     | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 15        | 7           | 1050   | 3           | 21     | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 16        | 7           | 1021   | 3           | 21     | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 17        | 7           | 583    | 3           | 12     | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 18        | 7           | 321    | 3           | 6      | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 19        | 7           | 292    | 3           | 6      | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 20        | 7           | 116    | 3           | 2      | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 21        | 7           | 88     | 3           | 2      | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 22        | 7           | 88     | 3           | 2      | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 23        | 7           | 59     | 3           | 1      | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 24        | 7           | 59     | 3           | 1      | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| Hours Met |             |        |             |        | 0                     | 0   | 0   | 0   | 0                     | 0   | 0   | 2   | 0         | 0                        |

**Warrant 3 Condition A**

| Orientation   | E         | W    |
|---|-----------|------|
| Total Stopped Delay Per Vehicle on Minor Approach (s)     | 49.8      | 26.8 |
| Number of Lanes on Minor Street Approach                  | 2         | 1    |
| VehicleHours of Stopped Delay on Minor Approach ([h]h:mm) | 0:49      | 0:00 |
| Delay Condition Met                                       | No        | No   |
| Volume on Minor Street Approach During Same Hour          | 59        | 0    |
| High Minor Volume Condition Met                           | No        | No   |
| Total Entering Volume on All Approaches During Same Hour  | 2976      | 2976 |
| Number of Approaches on Intersection                      | 4         | 4    |
| Total Volume Condition Met                                | Yes       | Yes  |
| Warrant Met for Approach                                  | No        | No   |
| <b>Warrant Met for Intersection</b>                       | <b>No</b> |      |