AGN. NO.

MOTION BY SUPERVISOR MARK RIDLEY-THOMAS JULY 30, 2019

Authorizing an Option to Lease for the Carol Kimmelman Athletic and Academic Campus in Carson

On November 21, 2017, the Los Angeles County (County) Board of Supervisors (Board) authorized an Exclusive Negotiation Agreement (ENA) with the Doug Kimmelman Foundation (Kimmelman Foundation), to explore redevelopment of a portion of the approximately 170-acre Victoria Golf Course (Site), located at 340 Martin Luther King, Jr. Street (formerly known as 340 East 192nd Street) in the City of Carson (City), due to years of financial, environmental, and operational challenges associated with the golf course operation at the Site.

The County's Department of Parks and Recreation's (DPR) 2016 Los Angeles Countywide Comprehensive Parks and Recreation Needs Assessment identifies the City as an area with a high park need, given that it has only 1.5 park acres per 1,000 residents compared to the County average of 3.3 park acres per 1,000 residents. Therefore, it was deemed appropriate to explore alternative public benefit uses for the Site, with the objective of potentially converting the Site into a more accessible and enhanced recreational facility.

The Kimmelman Foundation has proposed to construct the Carol Kimmelman Athletic and Academic Campus (Kimmelman Project or Kimmelman Site) on approximately 80 acres of the Site. The Kimmelman Project would include a tennis

MOTION	
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BARGER	_____
HAHN	_____

center, sports fields and a youth-focused learning center. The tennis center, which the United States Tennis Association (USTA) Foundation or a related entity will operate, will include, at full build-out, 62 tennis courts, with 52 courts built initially, as well as a tennis exhibition court, player development building, tournament building, and administration building. The sport fields will be operated by the LA Galaxy Foundation or a related entity and will include, at full-build out, up to eight soccer fields, and two multi-use fields, with a minimum of 5 fields built initially, as well as associated maintenance, storage, and restroom facilities. The up to 25,000 square feet youth-focused learning center, which also includes two basketball courts, will be operated by the Tiger Woods Foundation. The Site incorporates approximately 77 acres of the existing Victoria Golf Course property, as well as approximately 3 acres of existing tennis courts, currently operated by DPR, which are proposed to be incorporated into the Kimmelman Project.

Also in November 2017, the Board authorized an ENA with the current Lessee and operator of the Site, Plenitude Holdings, LLC (Plenitude) to explore a separate development of the balance of the Site. Plenitude has proposed a variety of recreational and complimentary uses including an enhanced driving range experience, an approximately 10-acre “pitch and put” public golf amenity, an indoor multi-purpose sports facility, a youth learning center, an indoor sky diving experience, a sports wellness center, and various outdoor recreational and community spaces along with other auxiliary community and retail uses (Plenitude Project). Specifically, the golf elements were developed with input from local golf stakeholders to facilitate a new, meaningful, and accessible golf element. The recreational and auxiliary uses proposed as part of the Plenitude Project are expected to generate substantially more revenue for DPR compared to what is currently received from Plenitude from its golf course operations. The terms of the Plenitude Project continue to be negotiated. The Director of DPR has authority to extend the term of the ENA with Plenitude for an additional six month pursuant to the Board’s November 2017 action.

The County has prepared an Environmental Impact Report for the Kimmelman Project and there has been extensive community outreach since the Board's November 2017 action authorizing the ENA. The terms of a proposed Option to Lease Agreement and subsequent Ground Lease have been negotiated with the Kimmelman Foundation. The Option to Lease Agreement and Ground Lease will provide significant community benefits with the objective of creating an affordable and accessible recreational and academic amenity that creates unprecedented opportunities to the surrounding community and region at large. Specifically, DPR will have oversight over the Kimmelman Project's community benefits, including approval rights of an annual public access schedule, community outreach plan, and fee structure. The public will have regularly scheduled free access to the recreational facilities, educational programming, community health and fitness programs, low-cost tennis training, as well as collaborations with the surrounding local public schools. Moreover, DPR and the City will have the right to use the facility for a combined total of up to 18 days per year without being charged a rental fee.

The County has worked with the City to ensure that the Kimmelman Project enhances the surrounding community, and minimizes any potential adverse impacts on the City. The City has agreed to collaborate with the County and support the Kimmelman Project. The terms of this collaborative effort are memorialized in a Memorandum of Agreement (Exhibit A).

The Kimmelman Project's construction and operation will be funded by the Kimmelman Foundation, the USTA Foundation, the Galaxy Foundation, the Tiger Woods Foundation, and other philanthropic sources. While the Kimmelman Project is structured as a "gratis" lease, the County will contribute by investing up to $5.25 million in Measure M Local Return and/or Measure R Local Return Funds available to the Second Supervisorial District to support a road improvement project on Martin Luther King, Jr. Street (at an estimated cost between $4.5 million and $4.75 million), and other

related road and traffic improvements adjacent to the Site on dedicated public roadways (at an estimated cost of $500,000).

The Kimmelman Project represents an unprecedented opportunity to facilitate high-quality sports training, instruction, and competition activities, as well as health and youth education, while simultaneously creating a destination for recreation, community gatherings, and entertainment. To move the Kimmelman Project forward at this time, it is appropriate for the County to authorize the execution of an Option to Lease and 45-year Ground Lease with two 10-year extension options, and other related documents, with the Carol Kimmelman Athletic and Academic Campus, Inc., a California non-profit public benefit corporation, or related entity. The Board is authorized to approve such agreements pursuant to Government Code Section 25907.

I THEREFORE MOVE THAT THE BOARD OF SUPERVISORS:

1. Authorize the Director of the Los Angeles County (County) Department of Parks and Recreation (DPR), or his designee, to execute a Memorandum of Agreement with the City of Carson, in form substantially similar to Exhibit A attached hereto and approved as to form by County Counsel, that memorializes certain terms and conditions between the City of Carson (City) and the County regarding development and operation of the Carol Kimmelman Athletic and Academic Campus (Project);
2. Certify that the Final Environmental Impact Report for the Project has been completed in compliance with the California Environmental Quality Act and reflects the independent judgment and analysis of the County; find that the Board has reviewed and considered the information contained in the Final Environmental Impact Report prior to approving the Project; adopt the Mitigation Monitoring and Reporting Program; find that the Mitigation Monitoring and Reporting Program is adequately designed to ensure compliance with the mitigation measures during Project implementation; and determine that the significant adverse effects of the Project have been either

reduced to an acceptable level or are outweighed by the specific overriding considerations of the Project, as outlined in the Environmental Findings of Fact and Statement of Overriding Considerations, attached as Exhibit B, which findings are adopted and incorporated by reference;

3. Approve the Project;
4. Authorize the Director of the Department of Parks and Recreation, or his designee, in consultation with the County's Chief Executive Officer and approval as to form by County Counsel, to execute the Option to Lease Agreement and Ground Lease, upon satisfaction of the conditions set forth in the Option to Lease Agreement, as well as any other documents consistent with and/or necessary for the implementation of the foregoing approvals, with the Carol Kimmelman Athletic and Academic Campus, Inc., a California non-profit public benefit corporation, or related entity, related to the lease of approximately 80 acres of the Victoria Golf Course site, located at 340 Martin Luther King, Jr. Street in the City of Carson (Site) for the development of the Project;
5. Authorize the Director of Department of Public Works, or his designee, to enter into a funding agreement with the Carol Kimmelman Athletic and Academic Campus, Inc., or related entity, for up to $5.25 Million of Measure M Local Return and/or Measure R Local Return Funds available to the Second Supervisorial District to support a road improvement project on Martin Luther King, Jr. Street, and other related road and traffic improvements adjacent to the Project Site subject to any special provisions as may be required by Metro or State law, and a condition by the City of Carson to have Martin Luther King, Jr. Street, and other related public road and traffic improvements adjacent to the Site dedicated for public use; and
6. Approve the attached recommended appropriation adjustment to transfer $4,000,000 from Measure M Local Return Fund (CN2) Services and Supplies

to Other Charges and $1,250,000 from Measure R Local Return Fund (CN5) Services and Supplies to Other Charges to provide sufficient funding in the Second Supervisorial District's Transportation Improvement Program in the Measure M Local Return and Measure R Local Return Funds Fiscal Year 2019-20 Budgets.

# # # #

(KK/CG)

EXHIBIT A

MEMORANDUM OF AGREEMENT
BETWEEN
THE CITY OF CARSON
AND
COUNTY OF LOS ANGELES DEPARTMENT OF PARKS AND RECREATION
FOR
CAROL KIMMELMAN ATHLETIC AND ACADEMIC CAMPUS

This Memorandum of Agreement (the "Agreement") is made and entered into as of July ___, 2019, between the City of Carson ("City") and the County of Los Angeles Department of Parks and Recreation ("County") regarding the design, construction and operation of the Carol Kimmelman Athletic and Academic Campus (the "Development" or "CKAAC"). The County and the City shall also sometimes be referred to herein as the "Parties".

WITNESSETH

WHEREAS, the County is the owner of the property located on 340 East Martin Luther King Jr. Street ("MLK"), City of Carson known as the Victoria Golf Course, consisting of approximately one hundred eighty seven (187) acres (the "Site"); and

WHEREAS, the Site is located within the City of Carson, and the City is committed to providing its residents with recreational opportunities and services; and

WHEREAS, the Site is in the process of undergoing a comprehensive redevelopment, whereby the Carol Kimmelman Athletic and Academic Campus, Inc., a non-profit entity, (the "Foundation") will be developing approximately eighty (80) acres of the Site ("Kimmelman Project Site"), which will include a tennis center, sports fields, and a youth-focused learning center. The tennis center, which will be operated by the United States Tennis Association Foundation or a related entity, will include, at full build-out, 62 tennis courts, as well as a tennis exhibition court, player development building, tournament building, and administration building. The sport fields component will be operated by LA Galaxy Foundation or a related entity, and include, at full-build out, up to eight soccer fields, two multi-use fields, and associated maintenance, storage, and restroom facilities. The up to 25,000 square feet youth-focused learning center, which also includes 2 basketball courts, will be operated by the Tiger Woods Foundation (collectively, the "Development"); and

WHEREAS, the City supports the Development in concept and is committed to joining the County and the Foundation in making this Development a reality but has raised concerns regarding its assertion of a lack of certain critical analysis in the Draft Environmental Impact Report released on May 15, 2019 ("DEIR"), and the City has enumerated its concerns in its comment letters to the Initial Study and DEIR for the Development, dated August 31, 2018 and June 26, 2019; and

WHEREAS, the City, has further continually asserted its right to be the proper permitting and approval authority over the Development, given the fact that the Development site is located in the City and that the City asserts that the Development will have direct impacts on the City's public infrastructure, public services, and residents, and that the City asserts that it

is in the best position to understand the full scope and scale of the environmental impacts posed by the Development; and

WHEREAS, the County disagrees with the City's assertions, including regarding the DEIR, the alleged effects on City infrastructure and services and that the City is the proper permitting and approval authority over the Development; and

WHEREAS, because the Parties have the common goal of success for the Development and mitigation of impacts of the Development on the surrounding community (including public safety and sustainable infrastructure), the Parties have engaged in discussions and although the County disputes the City's assertions, the Parties have reached agreement on the terms and conditions contained within this Agreement to address the City's concerns; and

WHEREAS, the City agrees to support the Development and not challenge the Development and the Final Environmental Impact Report; and

WHEREAS, the City reserves the right to enforce violations of the Agreement and violations of applicable law and City's code provisions and regulations except as expressly set forth herein; and

WHEREAS, nothing in this agreement limits or waives the City's legal arguments and/or right to comment on and challenge the Draft and Final Environmental Reports for the Creek at Dominguez Hills Project (State Clearinghouse # 2018081078); and

WHEREAS, the terms and conditions set forth in this Agreement shall be included in the Ground Lease to be entered into between the County and the Foundation (the "Lease Agreement" or "Ground Lease"), and the County shall perform its obligations pursuant to this Agreement regardless of the Foundation's performance under the Ground Lease; and

NOW, **THEREFORE**, in consideration of the mutual covenants herein set forth and the mutual benefits to be derived therefrom, the Parties hereby agree as follows:

I. PURPOSE

The purpose of this Agreement is to set out the terms and conditions under which the City and County agree to cooperatively work together to address the Development matters for the mutual benefit of the County and City. Notwithstanding anything to the contrary contained in this Agreement, the Parties agree that the County shall be fully responsible and liable to the City for performance of all of its own obligations under this Agreement and the monetary obligations of the Foundation enumerated in this Agreement. Further, the County agrees to include in the Ground Lease the non-monetary obligations of the Foundation enumerated in this Agreement and use its best efforts to enforce such provisions of the Ground Lease.

II. DEVELOPMENT

The Development will include and provide the following:

A. Recreational and Community Programming

1. State-of-the-Art Recreational Facilities that prioritize public access, including:

(a) Access for City and County for special events and tournaments for up to 18 days per year, with City having an allocation of 9 of such days. The reservation of such days for City and County events shall not conflict with CKAAC scheduled events; City and County will provide not less than 90 days prior notice for requested use of CKAAC facilities for events; not more than 6 days of the City's or County's respective 9 day annual allocation may be used on Friday, Saturday and Sunday; not more than 6 days of the 18 day allocation may be used in any quarter period in a year; City and County shall be responsible for costs (including damage to facilities (normal wear and tear excepted)) associated with such events but shall not be charged any fee for use of the CKAAC facilities.

(b) Designated availability for free and low cost public access to tennis courts, soccer fields, multi-purpose fields, sprint track and training turf.

(c) Health and Fitness Programming for all ages.

(d) Health and Fitness Programs with local schools.

(e) High quality tennis training for all skills levels and ages.

(f) Net generation free tennis equipment/curriculum to local schools.

(g) Free parking on the Kimmelman Project Site, except for "major events" as defined in the Lease Agreement, which parking fees will be used to control traffic, crowd control, etc.

(h) Outdoor space for community events provided that such community events do not conflict with scheduled CKAAC events.

(i) Recruitment from the surrounding community for enrollment in programs provided by the 25,000 square foot Tiger Woods Foundation learning center (which may include, for example, theater, collaborative learning space, classrooms, student lounge, video production/animation room, workshop rooms, conference room and ancillary spaces), which will include after school programs, field trips to the learning center, college access programming, educator professional development, and basketball courts.

(j) The County will request that the Foundation provide a percentage discount to City residents for all fee-based programs. The amount of the percentage discount to be determined at a later time but prior to the completion of the Development.

B. Branding and Wayfinding Programs

1. The County shall ensure that the Foundation works collaboratively with the City and County to develop and implement a branding program along MLK, focused on civil

rights leaders, and along Avalon Boulevard ("Avalon Blvd"), focused on exemplary athletes, which shall highlight the City as a "partner" for the Development. The Foundation shall contribute $100,000 to fund the finalized improvements and programs, which may include street banners, utility wraps, and civic art. The focus of the program will be around the perimeter of the Kimmelman Project Site, however, within reason, it may include off-site wayfinding approaches.

2. The City will also be acknowledged on all construction signage, along with the County.

C. <u>Infrastructure Investments/Improvements</u>

In addition to the improvements to traffic circulation required by the Final Environmental Impact Report for the Development ("EIR"), the County shall complete or cause to complete the following road improvements at the sole cost and expense of the County:

1. Reconstruction of MLK from Avalon Blvd to Main Street ("Main St") with funds made available through the Second Supervisorial District (the County estimates the improvements to be $4.5M) as follows:

(a) "Base Road Reconstruction" of MLK shall include all plans, studies, permitting, mitigation, monitoring and construction work for the reconstruction and repavement of MLK from Avalon Blvd to Main St and the installation of a sidewalk on both sides of the street where not present currently or as City reasonably deems not in good condition, together with curbs and gutters (collectively, the "Base Road Reconstruction" or "Base Road Reconstruction Improvements"). Existing improvements to the extent recommended by a geotechnical study approved by the City may be preserved and repaired if reasonably necessary.

(b) In addition to the Base Road Reconstruction set forth in Section II.C.1.a above, the City seeks the following additional improvements in connection with the reconstruction of MLK:

(1) Incorporation of bike lanes consistent with City bike plan

(2) Removal of unnecessary utility lines (subject to utilities approval)

(3) Installation of streetlights on both sides of the street

(c) Existing improvements to the extent recommended by the geotechnical study approved by the City may be preserved and repaired if reasonably necessary, and the Parties and the Foundation shall endeavor to reduce the construction costs for the Base Road Reconstruction Improvements as much as reasonably possible to construct the improvements enumerated in Section II.c.1.b of this Agreement.

(d) In the event that the Base Road Reconstruction exceeds $4.5M, the County shall solely fund all additional costs to complete the Base Road Reconstruction regardless of the costs.

(e) Should the costs of the Base Road Reconstruction be below the County's estimated $4.5M, then the City can request additional road or sidewalk related improvements on MLK or Avalon Blvd (including the improvements enumerated in section II.C.1.b. of this Agreement or improvements to the landscaping or the wall on the east side of Avalon Blvd) but limited to the $4.5M cap.

(f) Notwithstanding anything to the contrary under this Agreement, the County and Foundation shall each provide funding in the amount of $250,000 (i.e., $500,000 collectively) for the installation of streetlights on both sides of MLK subject to approval of the City's public works department.

(g) The City shall have the right to prioritize areas of additional road related improvements to ensure that the most critical infrastructure investments are made, as determined by the City. In addition, the City shall have the right to review, require changes to, and reasonably approve, all improvement plans for MLK prior to commencement of the Base Road Reconstruction Improvements, including a geotechnical study with recommendations for the reconstruction and re-pavement of MLK. City shall have inspection rights over all improvements to ensure conformance with the City's generally applicable street plans/standards.

2. Improvements to Avalon Blvd adjacent to the Kimmelman Project Site shall include:

(a) Bike lane improvements consistent with the City's Master Plan of Bikeways, including a buffer between the bike lane and roadway, provided that they are limited to painting and do not require road construction/reconstruction.

(b) Gutter and sidewalk repairs (including repairs to all trees causing lifting of sidewalks being replaced along the boundary of the Kimmelman Project Site) at a cost not to exceed $42,000 (consistent with the City's estimate), which improvements shall be made in the manner prioritized by the City.

(c) The Foundation will not be required to install underground high voltage power lines on Avalon Blvd.

(d) The Foundation shall contribute $160,000 to the City to assist the City in upgrading 16 light poles on the portion of Avalon Blvd adjacent to the Kimmelman Project Site.

(e) The Foundation will install landscaping on the west side of Avalon Blvd along the entirety of the Kimmelman Project Site. The County and the Foundation will meet and consult with the City regarding the proposed landscaping plan prior to installation. Landscaping plans on the west side of Avalon which are in the City's right of way are subject to approval by the City prior to implementation.

(f) The County and the Foundation understand that the City is studying landscaping and beautification options along the east side of Avalon Blvd. The County and the Foundation will meet with the City prior to the commencement of construction of the Development and will work in good faith with the City to collaborate on opportunities and to

possibly contribute towards reasonable plans on beautification of the exterior fencing on the east side of Avalon Blvd which could possibly then be implemented during construction of the Development.

3. Development of a private access road from MLK within the Development, which would include a bike lane, and which will be maintained by Developer at no cost to City or County.

4. The County shall cause the Foundation to prepare improvement plans for all work to be performed in the Avalon Blvd public right of way consistent with the City's generally applicable street standards and all applicable State and Federal requirements for such improvements. The plans shall be submitted to the City, reviewed, and approved by the City consistent with its general street improvement standards prior to start of construction of improvements in the public right of way. City shall inspect all improvements within the Avalon Blvd right of way to ensure they are built per the City's general street plans and standards prior to accepting the improvements. The City will commit to review and process all permits in a timely fashion. The City also understands and commits to in good faith and in reasonable time frames to review and approve matters on which the City has the right to prioritize under this Agreement.

5. The County shall use commercially reasonable efforts to substantially complete the Base Road Reconstruction prior to the opening of the Development, but regardless, MLK shall be capable of being used for transportation purposes at the time of the opening of the Development to the public. The City will commit to review and process all permits, plans, inspections and approvals in a timely fashion. The City also understands and commits to in good faith and in reasonable time frames to review and approve matters on which the City has the right to prioritize per Section II.C.1 above.

D. Municipal Services

1. **Fire Services**: The County, City and the Foundation understand and acknowledge that the Fire Department has worked with the City to propose a $0.87 cent per square foot "mitigation fee" per square foot of building area that would apply to construction of new building structures throughout the service area. While the County maintains that this is not a legal requirement for the Development, the Foundation will contribute the commensurate amount of funding based upon the actual square footage of the occupiable building structure constructed within the Development.

2. **Sheriff/Public Safety**: The Sheriff/Public Safety plan shall be as follows:

a. During construction, the Foundation shall institute commercially reasonable security measures to provide for the safety and security of the Development area. Following the opening of the Development for public patronage, the Foundation shall provide (either directly or through contracting with a reputable third-party security company) commercially reasonable security for the Development in a manner comparable to such security services as are provided for comparable facilities in Los Angeles County. The Foundation shall prepare and present to the County a security operation plan and an evacuation plan for the

Development, which shall take into consideration any potential "spill over impacts from the Development" into the City ("Security Plan"). The Foundation shall meet with the Los Angeles County Sheriff's Department, including the Captain for the City (LASD), the Los Angeles County Fire Department (Fire Department), and City representatives to obtain input on the draft Security Plan. Ninety (90) days prior to the opening of the Development for public patronage, the Foundation shall submit to County the Security Plan, which shall be subject to review and reasonable approval by the LASD (including input from the Sheriff's Captain for the City), and the Fire Department, respectively. Ninety (90) days prior to the opening of the Development for public patronage, the Foundation shall also provide to the City a copy of the Security Plan.

All reasonable changes, amendments or recommendations to the Security Plan that are requested or required by LASD (including the Captain for the City) and the Fire Department shall be implemented by the Foundation prior to the opening of the Development for pubic patronage. The Foundation shall, in good faith also consider any recommendations by the City to the Security Plan. The final Security Plan shall address any potential "spill-over impacts from the Development" into the City.

c. For Special Events (as defined in the Ground Lease) requiring additional coverage from LASD for security, traffic control, or additional coverage from the Fire Department for emergency response as set forth in the Security Plan, the Foundation shall notify the LASD (including the Captain for the City) and the Fire Department thirty (30) days prior to the commencement of each Special Event. If additional law enforcement officers or Fire Department personnel are required by LASD or the Fire Department pursuant to the Security Plan, the Foundation shall reimburse the LASD and the Fire Department within thirty (30) days following receipt of request for payment for services. The Foundation shall pay the cost for extraordinary services incurred due to any major disorders requiring support from LASD and the Fire Department.

d. The County, the Foundation, the LASD (including the Captain for the City), the Fire Department and City representatives shall meet annually to discuss the Security Plan. Based on these meetings, if there is a necessity to revise the Security Plan, the Foundation shall prepare a revised Security Plan, which shall be subject to reasonable approval by the LASD, including the Captain for the City, and the Fire Department. Further, if the Foundation or the County propose any material changes to the Security Plan after its adoption, the LASD, including the Captain for the City, the Fire Department, and City representatives shall be immediately notified by the Foundation and the County. The Foundation and the County shall discuss in good faith with the City representatives any new terms to the Security Plan and consider the City's comments. Any proposed amendments after adoption of the Security Plan shall continue addressing any potential "spill-over impacts from the Development" into the City, which shall be subject to review and reasonable approval of LASD (including the Captain for the City) and the Fire Department.

3. All maintenance for the Development will be the Foundation's responsibility, which the County shall ensure is performed in accordance with the Lease Agreement. The County shall pay annually the sum of $80,000 (with reasonable increases based on CPI) to the City commencing with the start of operations of the Development to cover parking and traffic enforcement, street maintenance, street sweeping, landscape maintenance, code

enforcement, maintenance of sidewalks, traffic signals, and other public facilities that serve the Kimmelman Project Site. The County will separately, through the Ground Lease, pass through all associated costs for this payment from the Foundation, and the Foundation, through the Ground Lease, will agree to reimburse the County for this payment from the Foundation. The County shall be liable to the City for the performance of this provision regardless of the Foundation's performance under the Ground Lease.

E. City Contributions

1. The City acknowledges the non-profit nature of the Development and the wide range of benefits that the Development brings to the City, including creation of world-class recreational amenities that will be available to the surrounding community. City further acknowledges the commitment of the County and the Developer to partner with the City to brand the Development and surrounding roadways creating a unique character that does not currently exist. Accordingly, in an effort to positively contribute toward the Development and making it more financially feasible, the City hereby agrees to waive any right to seek any type of development or impact fees for this Development.

F. Development Permitting

1. The Development shall be permitted directly by the County (except with respect to improvements within the City's public right-of-way, which shall be subject to the City's municipal code requirements). The County will only require reimbursement by the Foundation for actual permitting costs, and the County will absorb other related costs. City waives any rights the City may have, if any, to act as the permitting or lead agency for the Development.

2. The County will work with the City to provide that the City can advertise the Development as part of the City's economic development growth.

3. The Development will be authorized under Government Code Sections 25907 and 26227 that allow for leasing County real property to a non-profit entity for recreational and athletic, purposes. Any change to the use of the Kimmelman Project Site or the corporate structure of the Foundation as required in the Ground Lease shall require Board of Supervisors' prior approval. Pursuant to the terms of the Ground Lease, the Development shall not be a profit-generating enterprise, and all revenue generated at the Development must be utilized to cover the operations and maintenance of the Development. The County understands that the Agreement does not alter any obligations the County may have under the California Environmental Quality Act (CEQA) with respect to future changes in use beyond the Development that may require future discretionary actions and additional environmental review pursuant to CEQA.

III. CITY APPROVAL

In consideration for the Foundation's and County's commitments, covenants and obligations set forth in this Agreement, the City hereby agrees to: (i) support the Development in all respects; (ii) withdraw in writing its prior comments and questions on the environmental review and approvals for the Development, including those certain letters dated August 31, 2018

and June 26, 2019, respectively, submitted by the City to the County with respect to certain objections to the Development; and (iii) not oppose or challenge in any way the EIR, or the County's approval of the Development; (iv) not oppose or challenge in any way any other agencies' approvals needed for the implementation of the development of the Development.

IV. THE CREEK AT DOMINGUEZ HILLS

The Parties acknowledge that Plenitude Holdings, LLC ("Plenitude"), the current Lessee and operator of the Site, is developing the adjacent 80 acres of the Site, called "The Creek of at Dominguez Hills" (the "Plenitude Project"). The Plenitude Project includes an enhanced driving range experience, a "pitch and put" public golf amenity, an in-door multi-purpose sports facility, a youth learning center, an indoor sky diving experience, a sports wellness center, and various outdoor recreational and community area, along with auxiliary and retail uses. The Plentitude Project is still in the pre-development stages and the County is continuing to work with Plenitude to negotiate the lease terms and proposed uses. The Parties hereby acknowledge and confirm that nothing in this Agreement shall be deemed to waive or diminish either the County's or the City's rights and remedies with respect to the Plenitude Project or the terms set forth in the ground lease between the County and Plenitude.

V. CONFORMANCE WITH THE FINAL ENVIRONMENTAL IMPACT REPORT FOR THE DEVELOPMENT

The County will fully implement, comply with, and enforce all of the mitigation measures set forth in the Final Environmental Impact Report for the Development to the extent required by law. The requirements of this Agreement should be considered additive to and not in place of such mitigation measures. In the event of a conflict in the requirements of the two documents, the more stringent requirement will apply.

VI. QUARTERLY COMMUNITY MEETINGS

The County shall meet quarterly with City representatives to insure ongoing compliance with the terms set forth in this Agreement. The County will request that the Foundation participate as needed. These meetings shall continue until they are jointly determined to no longer be necessary by the County, City, and the Foundation.

As the implementation of the Development or project occurs, if the County or City finds that the terms of this Agreement need any adjustment or revision, the County commits to meet and confer in good faith with the City on any proposed changes.

VII. AMENDMENTS

This Agreement may only be amended by mutual consent of the City and County. Neither verbal agreements nor conversation by any officers, employees and/or representatives of either party shall affect or modify any of the terms and conditions of the Agreement.

VIII. GENERAL PROVISIONS

A. Applicable Law

The terms of this Agreement shall be interpreted according to the laws of the State of California. If litigation arises with respect to this Agreement, the venue shall be in the Superior Court of Los Angeles County. The Parties hereto shall be bound by all federal, state and local laws, ordinances, regulations, and directives pertaining to the services to be performed hereunder.

B. Rights and Remedies Are Cumulative

Except as otherwise expressly stated herein, the rights and remedies of the Parties are cumulative, and the exercise by a party of one or more of such rights or remedies shall not preclude the exercise by it, at the same time or different times, of any other rights or remedies for the same default or any other default by the other party. Except as otherwise expressly stated herein, neither party is waiving any rights or remedies it may have under applicable law, and no such waiver will be implied or inferred in the absences of express language of any such waiver.

C. Attorneys's Fees

Each party shall bear its own attorneys' fees and other costs in any legal action or other proceeding or an action for declaratory relief brought between the Parties to enforce this Agreement or because of a dispute, breach, default, or misrepresentation in connection with this Agreement.

D. Further Acts

Each party hereto shall execute such further documents and do such further acts as may be reasonably required to effectuate the Parties' intent and carry out the terms of this Agreement.

E. Severability

If any clause, provision or section of this Agreement shall be ruled invalid by any court of competent jurisdiction, the invalidity of such clause, provision or section shall not affect any of the remaining provisions.

F. Authority

Contingent upon approval of the respective governing bodies, each person executing this Agreement on behalf of a party hereby represents and warrants that (i) the signatory hereto has authority to sign on behalf of the stated party, (ii) such authority has been duly and validly conferred by that party's governing body, and (iii) said entity has full authority to enter into this Agreement.

G. Term

This Agreement shall be effective upon execution by both Parties. It shall remain in full force and effect for the life of the Development, unless terminated sooner by: (i) the mutual written agreement by the Parties, or (ii) the decision by the Foundation not to proceed with the Development, or (iii) the County disapproving the Development.

[SIGNATURE PAGE FOLLOWS]

EXHIBIT A

IN WITNESS WHEREOF, the City of Carson and the County of Los Angeles Department of Parks and Recreation hereto have executed this Agreement effective as of the day, month, and year first written above.

CITY OF CARSON

By: _____
Name/Title: Albert C. Robles, Mayor

Date: _____

COUNTY OF LOS ANGELES DEPARTMENT OF PARKS AND RECREATION

By:_____
Name/Title:

Date: _____

APPROVED AS TO FORM:

County Counsel

By:_____ Date:_____

City of Carson, City Attorney

By:_____ Date:_____

EXHIBIT B

Carol Kimmelman Athletic and Academic Campus Final EIR

State Clearinghouse No. 2018071074

Prepared for:

County of Los Angeles
Department of Public Works
Project Management Division II
900 S. Fremont Avenue, 5th Floor
Alhambra, California 91803
Contact: Ryan Kristan

Prepared by:

DUDEK
38 North Marengo Avenue
Pasadena, California 91101
Contact: Nicole Cobleigh

JULY 2019

Printed on 30% post-consumer recycled material.

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CHAPTER 1
PREFACE

1.1 PURPOSE

This Final Environmental Impact Report (EIR) has been prepared by the County of Los Angeles (County) for the Carol Kimmelman Athletic and Academic Campus Project (proposed project). This Final EIR has been prepared in conformance with the California Environmental Quality Act of 1970 (CEQA) statutes (Cal. Pub. Res. Code, Section 21000 et. seq., as amended) and implementing guidelines (Cal. Code Regs., Title 14, Section 15000 et. seq.).

Before approving a project, CEQA requires the lead agency to prepare and certify a Final EIR. The County has the principal responsibility for approval of the proposed project and is therefore considered the lead agency under CEQA Section 21067. According to the CEQA Guidelines, Section 15132, the Final EIR shall consist of:

- The Draft EIR or a revision of the Draft;
- Comments and recommendations received on the Draft EIR either verbatim or in summary;
- A list of persons, organizations, and public agencies commenting on the Draft EIR;
- The responses of the lead agency to significant environmental points raised in the review and consultation process; and
- Any other information added by the lead agency.

1.2 FORMAT OF THE FINAL EIR

This Final EIR consists of the May 2019 Draft EIR and the following four chapters:

Chapter 1 – Preface. This chapter summarizes the contents of the Final EIR, the environmental review process, and minor updates that occurred in the Draft EIR subsequent to the release of the Draft EIR for public review.

Chapter 2 – Response to Comments. During the public review period for the Draft EIR, written comment letters were received by the County. This chapter contains a copy of comment letters received and the County's responses to the comments.

Chapter 3 – Errata. Comments that are addressed in Chapter 2.0 resulted in minor revisions to the information contained in the May 2019 Draft EIR. Other revisions have been made to correct typographical errors. These revisions are shown in strikeout and underline text in this chapter.

Chapter 4 – Mitigation Monitoring and Reporting Program. This section of the Final EIR provides the mitigation monitoring and reporting program (MMRP) for the proposed project. The MMRP is presented in table format and identifies mitigation measures for the proposed project, the implementation period for each measure, the monitoring period for each measure, and the enforcing agency. The MMRP also provides a section for recordation of mitigation reporting.

1.3 ENVIRONMENTAL REVIEW PROCESS

1.3.1 Notice of Preparation

The County determined that an EIR would be required for the proposed project and issued a Notice of Preparation (NOP), which was distributed to the State Clearinghouse, interested agencies, individuals, and groups on July 31, 2018. Pursuant to Section 15082 of the CEQA Guidelines, recipients of the NOP were requested to provide responses during the public review period after their receipt of the NOP. The NOP public review period ended August 31, 2018. Comments received during the NOP public review period were considered during the preparation of this EIR. The NOP and NOP comments are included in Appendix A of the Draft EIR.

A public agency scoping meeting was held at the Victoria Community Regional Park, 419 Martin Luther King Jr. Street on August 14, 2018. The purpose of this meeting was to seek input from public agencies and the general public regarding the environmental issues and concerns that may potentially result from the proposed project. Approximately 35 people attended the scoping meeting. A list of attendees and copies of comment cards submitted at the public scoping meeting are included in Appendix A of the Draft EIR.

1.3.2 Noticing and Availability of the Draft EIR

The Draft EIR was made available for public review and comment pursuant to CEQA Guidelines Section 15087. The public review period for the Draft EIR started on May 15, 2019. The public review period ended on July 1, 2019. At the beginning of the public review period, 15 copies of the Draft EIR and one copy of the Notice of Completion (NOC) were submitted to the State Clearinghouse. A Notice of Availability (NOA) and an electronic copy of the Draft EIR was mailed to a total of 1,931 agencies, organizations, and property owners and occupants within a 500-foot radius of the project site. An NOA was also sent to individuals who had previously requested such notice in writing. The NOA was filed with the Los Angeles County Clerk and published in the Los Angeles Times on May 15, 2019. The NOA described where the document was available and how to submit comments on the Draft EIR. The NOA and Draft EIR were also made available for public review at the County of Los Angeles Department of Public Works, Project Management Division II (900 South Fremont Avenue, 5th Floor, Alhambra, California 91803), at the Dr. Martin Luther King Jr. Library (17906 South Avalon Boulevard, Carson, California 90746), and on the County's Department of Parks and Recreation website. The public

review period provided interested public agencies, groups, and individuals the opportunity to comment on the contents of the Draft EIR.

1.3.3 Final EIR

The Final EIR addresses comments received during the public review period and includes minor changes to the text of the Draft EIR in accordance with comments that necessitated revisions. This Final EIR will be presented to the County Board of Supervisors for potential certification as the environmental document for the proposed project. All persons who commented on the Draft EIR will be notified of the availability of the Final EIR prior to the Board of Supervisors hearing, and all agencies who commented on the Draft EIR will be provided with a copy of the Final EIR at least 10 days before the Board considers certifying the EIR, pursuant to CEQA Guidelines Section 15088(b). The Final EIR will also be posted on the County's Department of Parks and Recreation website: at http://parks.lacounty.gov/environmental-documents/.

Pursuant to CEQA Guidelines Section 15091, the County shall make findings for each of the significant effects identified in this EIR and shall support the findings with substantial evidence in the record. After considering the Final EIR in conjunction with making findings under Section 15091, the lead agency may decide whether or how to approve or carry out the project. The Final EIR for the proposed project identified potentially significant effects that could result from project implementation, specifically related to construction air quality, operational air quality, construction noise, and operational transportation impacts. However, the County finds that the inclusion of certain mitigation measures as part of project approval will reduce all other potentially significant effects to less than significant. As such, a statement of overriding considerations prepared pursuant to CEQA Guidelines Section 15093 is required for this project.

In addition, when approving a project, public agencies must also adopt a mitigation monitoring and reporting program describing the changes that were incorporated into the proposed project or made a condition of project approval in order to mitigate or avoid significant effects on the environment (CEQA Guidelines Section 15097). The mitigation monitoring and reporting program is adopted at the time of project approval and is designed to ensure compliance during project implementation. Upon approval of the proposed project, the County will be responsible for implementation of the proposed project's mitigation monitoring and reporting program.

1.4 REVISIONS TO THE DRAFT EIR

The comments received during the public review period for the Draft EIR resulted in minor clarifications and modifications in the text of the May 2019 Draft EIR. In addition, minor editorial corrections have been made in sections of the Draft EIR. These changes are included as part of the Final EIR, to be presented to Board of Supervisors as the County decision makers prior to certification and project approval.

CEQA Guidelines Section 15088.5 sets forth requirements for when a lead agency must recirculate an EIR. A lead agency is required to recirculate an EIR when significant new information is added to the EIR after public notice is given of the availability of the Draft EIR but before certification of the Final EIR. New information may include changes in the project or environmental setting as well as additional data or other information. New information added to an EIR is not considered significant unless the EIR is changed in a way that deprives the public of a meaningful opportunity to comment upon a substantial adverse environmental effect of the project or a feasible way to mitigate or avoid such an effect (including a feasible project alternative) that the project's proponents have declined to implement. As defined in CEQA Guidelines Section 15088.5(a), significant new information requiring recirculation includes the following:

1. A new significant environmental impact would result from the project or from a new mitigation measure proposed to be implemented.
2. A substantial increase in the severity of an environmental impact would result unless mitigation measures are adopted that reduce the impact to a level of insignificance.
3. A feasible project alternative or mitigation measure considerably different from others previously analyzed would clearly lessen the environmental impacts of the project, but the project's proponents decline to adopt it.
4. The draft EIR was so fundamentally and basically inadequate and conclusory in nature that meaningful public review and comment were precluded.

The minor clarifications, modifications, and editorial corrections that were made to the Draft EIR are shown in Chapter 3.0 of this Final EIR. None of the revisions that have been made to the EIR resulted in new significant impacts; none of the revisions resulted in a substantial increase in the severity of an environmental impact identified in the Draft EIR; and none of the revisions introduced a feasible project alternative or mitigation measure that is considerably different from those set forth in the Draft EIR. Furthermore, the revisions do not cause the Draft EIR to be so fundamentally flawed that it precludes meaningful public review. As none of the CEQA criteria for recirculation have been met, recirculation of the EIR is not warranted. As stated in CEQA Guidelines Section 15088.5(b), "recirculation is not required where the new information added to the EIR merely clarifies or amplifies or makes insignificant modifications in an adequate EIR."

CHAPTER 2
RESPONSE TO COMMENTS

A draft version of the Environmental Impact Report (EIR) for the proposed Project was circulated for public review from May 15, 2019, to July 1 2019. This chapter of the Final EIR includes a copy of comment letters provided during the 45-day public review period for the Draft EIR. The County of Los Angeles (County) has prepared responses to the comments, which are included in this chapter. The comments are ordered numerically, and the individual issues within each comment letter are bracketed and numbered. The County's responses to comments on the Draft EIR represent a good-faith, reasoned effort to address the environmental issues identified by the comments. Under the CEQA Guidelines, the Lead Agency is required to evaluate and provide written responses to comments received on the Draft EIR (CEQA Guidelines, Section 15088).

As shown in Table 2-1, the County received comment letters from eight agencies: State of California Governor's Office of Planning and Research, State of California Department of Toxic Substances Control (DTSC), State of California Department of Transportation (Caltrans), South Coast Air Quality Management District (SCAQMD), Goodyear Airship Operations, County Sanitation Districts of Los Angeles County, County of Los Angeles, Public Health, and Los Angeles Unified School District (LAUSD). Additionally, eight organizations and three individuals submitted comments on the Draft EIR. To finalize the EIR for the proposed project, responses have been prepared to comments that were received during the public review period. In accordance with the requirements of CEQA Guidelines Section 15088(b), the County will provide a written response on comments submitted by public agencies to each respective public agency at least 10 days prior to certifying the Final EIR.

Table 2-1
List of Commenters

Comment Letter	Name	Address
Agencies		
1	State of California, Governor's Office of Planning and Research	1400 Tenth Street PO Box 3044 Sacramento, California 95812-3044
2	State of California, Department of Toxic Substances Control	9211 Oakdale Avenue Chatsworth, California 91311
3	State of California, Department of Transportation, District 7	100 South Main Street, MS 16 Los Angeles, California 90012
4	South Coast Air Quality Management District	21865 Copley Drive Diamond Bar, California 91765-4178
5	Goodyear Airship Operations	19200 South Main Street Gardena, California 90248
6	County Sanitation Districts of Los Angeles County	1955 Workman Mill Road Whittier, California 90607-4998

Table 2-1
List of Commenters

Comment Letter	Name	Address
7	County of Los Angeles Public Health	5050 Commerce Drive Baldwin Park, California 91706
8	Los Angeles Unified School District, Office of Environmental Health and Safety	333 South Beaudry Avenue, 21st Floor Los Angeles, California 90017
Organizations		
9	La Jolla Beach and Tennis Club	2000 Spindrift Drive La Jolla, California 92037
10	Let's Teach	479 South Marengo Avenue Pasadena, California 91101
11	First Break Academy	18400 Avalon Boulevard Carson, California 90746
12	Sloane Stephens Foundation	5109 Nagle Avenue Sherman Oaks, California 91423
13	Pasadena Tennis Association	P.O. Box 50606 Pasadena, California 91115
14	Pete Brown Jr. Tennis Program	P.O. Box 8114 Los Angeles, California 90008
15	CT Corporation System	1999 Bryan Street, Suite 900 Dallas, Texas 75201
16	CT Corporation System	1999 Bryan Street, Suite 900 Dallas, Texas 75201
Individuals		
17	Vincent Goshi	vincegoshi@cox.net
18	Richard Chang	rchang@rca4results.com
19	Vivian Hatcher	vhatch11@gmail.com

Comment Letter 1

STATE OF CALIFORNIA
Governor's Office of Planning and Research
State Clearinghouse and Planning Unit

Gavin Newsom
Governor

Kate Gordon
Director

July 2, 2019

Ryan Kristan
Los Angeles County
900 S. Fremont Avenue , 5th Floor
Alhambra, CA 91803

Subject: Carol Kimmelman Athletic and Academic Campus
SCH#: 2018071074

Dear Ryan Kristan:

The State Clearinghouse submitted the above named EIR to selected state agencies for review. On the enclosed Document Details Report please note that the Clearinghouse has listed the state agencies that reviewed your document. The review period closed on 7/1/2019, and the comments from the responding agency (ies) is (are) available on the CEQA database for your retrieval and use. If this comment package is not in order, please notify the State Clearinghouse immediately. Please refer to the project's ten-digit State Clearinghouse number in future correspondence so that we may respond promptly.

Please note that Section 21104(c) of the California Public Resources Code states that:

> "A responsible or other public agency shall only make substantive comments regarding those activities involved in a project which are within an area of expertise of the agency or which are required to be carried out or approved by the agency. Those comments shall be supported by specific documentation."

Check the CEQA database for submitted comments for use in preparing your final environmental document: https://ceqanet.opr.ca.gov/2018071074/2 . Should you need more information or clarification of the comments, **we recommend that you contact the commenting agency directly**.

This letter acknowledges that you have complied with the State Clearinghouse review requirements for draft environmental documents, pursuant to the California Environmental Quality Act. Please contact the State Clearinghouse at (916) 445-0613 if you have any questions regarding the environmental review process.

1-1

Sincerely,

Scott Morgan
Director, State Clearinghouse

cc: Resources Agency

RECEIVED
JUL 09 2019
PROJECT MANAGEMENT DIVISION II
DEPARTMENT OF PUBLIC WORKS

1400 TENTH STREET P.O. BOX 3044 SACRAMENTO, CALIFORNIA 95812-3044
TEL 1-916-445-0613 state.clearinghouse@opr.ca.gov www.opr.ca.gov

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Response to Comment Letter 1
State of California, Governor's Office of Planning and Research
July 1, 2019

1-1 This letter acknowledges the closure of the public review period for the Draft EIR and identifies how to obtain comment letters submitted by State Agencies. The County has visited the website referenced by the commenter and confirmed that comment letters from the State of California Department of Toxic Substances Control (DTSC) and State of California, Department of Transportation (Caltrans) were submitted to the County during the public review period for the Draft EIR. The comment letter from DTSC, and responses to those comments, are included in Letter 2, and the comment letter from Caltrans, and responses to those comments, are included in Letter 3 within this Final EIR. This letter is noted for the record and has been incorporated into the Final EIR for review and consideration by the decision-makers prior to any action on the project.

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Comment Letter 2

Department of Toxic Substances Control

Jared Blumenfeld
Secretary for
Environmental Protection

Meredith Williams, Ph.D.
Acting Director
9211 Oakdale Avenue
Chatsworth, California 91311

Gavin Newsom
Governor

June 7, 2019

RECEIVED
JUN 19 2019
PROJECT MANAGEMENT DIVISION II
DEPARTMENT OF PUBLIC WORKS

Ryan Kristan
County of Los Angeles
Department of Public Works
Project Management Division II
900 S. Fremont Avenue, 5th Floor
Alhambra, California 91803

NOTICE OF AVAILABILITY OF AN ENVIRONMENTAL DOCUMENT FOR THE CAROL KIMMELMAN ATHLETIC AND ACADEMIC CAMPUS PROJECT (PROJECT)

Dear Mr. Kristan:

The Department of Toxic Substances Control (DTSC) has received the document for the above-mentioned project.

Based on the review of the document, the DTSC comments are as follows:

1) The document needs to identify and determine whether current or historic uses at the project site have resulted in any release of hazardous wastes/substances at the project area. 2-1

2) The document needs to identify any known or potentially contaminated site within the proposed project area. For all identified sites, the document needs to evaluate whether conditions at the site pose a threat to human health or the environment. 2-2

3) The document should identify the mechanism to initiate any required investigation and/or remediation for any site that may require remediation, and which government agency will provide appropriate regulatory oversight. 2-3

4) If during construction of the project, soil contamination is suspected, construction in the area should stop and appropriate health and safety procedures should be implemented. If it is determined that contaminated soil exists, the document should identify how any required investigation or remediation will be conducted, and which government agency will provide appropriate regulatory oversight. 2-4

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DTSC provides guidance for Preliminary Endangerment Assessment (PEA) preparation, and cleanup oversight through the Voluntary Cleanup Program (VCP). For additional information on the VCP, please visit DTSC's web site at www.dtsc.ca.gov. If you would like to meet and discuss this matter further, please contact me at (818) 717-6555 or Pete.Cooke@dtsc.ca.gov.

2-5

Sincerely,

Pete Cooke
Site Mitigation and Restoration Program - Chatsworth Office

cc: Governor's Office of Planning and Research
State Clearinghouse
P.O. Box 3044
Sacramento, California 95812-3044

Dave Kereazis
Hazardous Waste Management Program, Permitting Division
CEQA Tracking
Department of Toxic Substances Control
P.O. Box 806
Sacramento, California 95812-0806

Response to Comment Letter 2
State of California, Department of Toxic Substances Control
June 7, 2019

2-1 The historical uses at the project site, and impacts due to hazardous wastes and substances in the project area, are discussed in Section 4.8, Hazards and Hazardous Materials of the Draft EIR. Specifically, pages 4.8-3 through 4.8-6 discuss the previous land uses and the Remedial Action Plan associated with former landfill operations at the project site.

2-2 Pages 4.8-3 through 4.8-6 discuss known contamination on the project site related to historical uses of the project site. Mitigation measures have been developed to reduce impacts of these conditions, including consultation with the Department of Toxic Substances Control (DTSC) prior to excavation or grading and soil screening during excavation in areas with known contamination, as discussed in Section 4.8.4 Impact Analysis, pages 4.8-17 through 4.8-25, and Section 4.8.5, Project Design Features and Mitigation Measures, pages 4.8-25 and 4.8-26 of the Draft EIR.

2-3 The site is a former landfill, as discussed on pages 4.8-3 through 4.8-6 of the Draft EIR. Remediation activities at the site are under regulatory oversight by DTSC, as discussed in the Site-Specific Regulatory Oversight section, page 4.8-6 of the Draft EIR. See also Response 2-4 below.

2-4 DTSC already oversees the remediation of the landfill, which encompasses the project site. As discussed in Response 2-3 and outlined in MM-HAZ-1, the DTSC will be consulted prior to excavation or grading. In addition, as outlined in MM-HAZ-2, an environmental professional will assist in the identification and management of contaminated soils, should they be encountered during construction on the project site.

2-5 The County acknowledges the comment and notes that it provides concluding remarks and contact information for questions. The comment does not raise new environmental issues concerning the adequacy of the Draft EIR. This comment is included in the Final EIR for review and consideration by the decision-makers prior to a final decision on the proposed project.

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Comment Letter 3

STATE OF CALIFORNIA—CALIFORNIA STATE TRANSPORTATION AGENCY Gavin Newsom, Governor

DEPARTMENT OF TRANSPORTATION
DISTRICT 7 – Office of Regional Planning
100 S. MAIN STREET, MS 16
LOS ANGELES, CA 90012
PHONE (213) 897-9140
FAX (213) 897-1337
TTY 711
www.dot.ca.gov

Making Conservation a California Way of Life.

June 27, 2019

Mr. Ryan Kristan
County of Los Angeles
900 South Fremont Ave, 5th Floor
Alhambra, CA 91803

RE: Carol Kimmelman Athletic and Academic Campus – Draft Environmental Impact Report (DEIR)
SCH # 2018071074
GTS # 07-LA-2018-02469
LA-405/PM: 12.238

Dear Mr. Ryan Kristan:

Thank you for including the California Department of Transportation (Caltrans) in the environmental review process for the above-mentioned Draft Environmental Impact Report (DEIR). The proposed project involves the development of the Carol Kimmelman Sports and Academic Campus on a site located at 340 Marin Luther King Jr. Street in the City of Carson, CA consisting of approx. 87 acres in the northeastern portion of the existing Victoria Golf Course and adjacent tennis courts (the Project Site). The Project Site is located northeast of the Dominguez Channel and east of the junction of the 405 and 110 Freeways. The Project site is bounded by Martin Luther King Jr. Street to the north, Avalon Blvd to the east, and the balance of the Victoria Golf Course property to the south and west. The proposed Project includes a tennis center and soccer center for underserved youth as well as programs for adults. The tennis center component would be a learning center that would provide academic counseling, mentorship, and enrichment services. The soccer center component would include soccer fields, multi-purpose fields and support buildings. The project site would be developed with up to approx. 75,000 sq. ft. of buildings, with possible expansion space for an additional 22,000 sq. ft. of buildings. Up to an additional 5,000 sq. ft. of miscellaneous support buildings, including maintenance facilities, restrooms, and sheds, would be constructed throughout the project. 3-1

After reviewing the DEIR Caltrans has the following comments:

1. Please consider providing the queuing analysis worksheets for verification. 3-2
2. Please consider including a scenario for Saturday Peak Hour Volume in the Queuing analysis. 3-3
3. The mitigation measure proposed for Intersection No. 16, I-405 SB Ramps at Avalon Blvd, to include right-turn overlap signal phasing will not enhance the operation at this location. Since 3-4

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the existing right turn movement is not prohibited on red, with or without the overlap phase, vehicles will be able to turn right, onto the southbound on-ramp continuously. Please consider investigating other appropriate mitigation measures. 3-4 Cont.

4. On Appendix C, please correct the city name as some of the reports show the city name as Bakersfield, CA. 3-5

Further information included for your consideration;

Caltrans seeks to promote safe, accessible multimodal transportation. Methods to reduce pedestrian and bicyclist exposure to vehicles improve safety by lessening the time that the user is in the likely path of a motor vehicle. These methods include the construction of physically separated facilities such as sidewalks, raised medians, refuge islands, and off-road paths and trails, or a reduction in crossing distances through roadway narrowing. 3-6

Caltrans recommends the project to consider the use of methods such as, but not limited to, pedestrian and bicyclist warning signage, flashing beacons, crosswalks, signage and striping, be used to indicate to motorists that they should expect to see and yield to pedestrians and bicyclists. Visual indication from signage can be reinforced by road design features such as lane widths, landscaping, street furniture, and other design elements. 3-7

As a reminder, any transportation of heavy construction equipment and/or materials which requires use of oversized-transport vehicles on State highways will need a Caltrans transportation permit. We recommend large size truck trips be limited to off-peak commute periods. 3-8

If you have any questions, please contact Reece Allen, the project coordinator, at reece.allen@dot.ca.gov, and refer to GTS # 07-LA-2018-02469

Sincerely,

MIYA EDMONSON
IGR/CEQA Branch Chief
cc: Scott Morgan, State Clearinghouse

"Provide a safe, sustainable, integrated and efficient transportation system to enhance California's economy and livability"

Response to Comment Letter 3
State of California, Department of Transportation
June 27, 2019

3-1 The County acknowledges the comment as an introduction to the comments that follow. The comment restates information contained in the Draft EIR and does not raise any environmental issues requiring responses. This comment is included in the Final EIR for review and consideration by the decision-makers prior to a final decision on the proposed project.

3-2 Caltrans is requesting that the queuing analysis worksheets be provided for verification. The queuing analysis worksheets are available as part of the Draft EIR; the worksheets are included within Appendix K, Traffic Study for the Carol Kimmelman Athletic and Academic Campus, of the Draft EIR. Specifically, the queuing analysis worksheets are included within Appendix H, Caltrans Analysis, within the Draft EIR's Appendix K. In preparing the response to this comment, the County noticed that the queue values provided as part of the Traffic Impact Study in Appendix K of the Draft EIR, Tables 21 and 22, as published in Traffic Impact Study, do not represent the most current data at Locations Q-3 and Q-8. As such, the values for Locations Q-3 and Q-8 have been updated in the tables included in Attachment 1 to these responses to the Caltrans comment letter and included within Section 3, Errata, of this Final EIR. The queue values of certain lane groupings have updated. The overall findings of the queuing analysis are not materially changed and the conclusions stated in the Draft EIR remain the same.

3-3 Caltrans suggested considering the inclusion of a Saturday peak hour volume queuing analysis within the EIR. A weekend operational queuing analysis was performed to correspond to the weekday queuing analyses presented in Appendix K, Traffic Study for the Carol Kimmelman Athletic and Academic Campus, of the Draft EIR. Within the Traffic Impact Study, the following conditions were analyzed: Existing Year conditions (Year 2018) and Future Operating conditions (Year 2020), consistent with those queuing analyses already presented in Appendix K of the Draft EIR; the analyses was performed at locations with available Saturday count data (Locations: Q-1, Q-2, Q-3, Q-4, Q-5, and Q-8).

As shown in the Existing Conditions analysis included within Attachment 2 to these responses to the Caltrans comment letter, without and with the addition of project traffic, the analyzed locations operate without exceeding the available queue storage within the marked lane or along the ramp. Similarly, the Future Conditions analysis

(Year 2020) also did not project operation that exceeded the available queue storage within the marked lane or along the ramp.

3-4 Caltrans indicates that the mitigation measure proposed for Intersection No. 16, Interstate 405 (I-405) southbound (SB) ramps at Avalon Boulevard, to include right-turn overlap signal phasing will not enhance operation at this location. Intersection No. 16, I-405 SB ramps at Avalon Boulevard was identified as cumulatively impacted using the Los Angeles County Department of Public Works' (LACDPW) Intersection Capacity Utilization methodology for Saturday conditions; no cumulative impact was identified during the weekday peak hours. The proposed mitigation was developed to address the projected cumulative impact for Saturday conditions. Based on the LACDPW methodology, the effects of the cumulative impact at 1.113 volume to capacity (V/C) ratio, level of service (LOS) F are projected to be reduced to 0.912 V/C ratio, LOS E with implementation of the southbound right-turn overlap phase. This is a projected operational improvement equivalent to approximately two levels of services (V/C ratio reduction of 0.201).

Using the Caltrans' Highway Capacity Manual methodology, this intersection is projected to operate at LOS A (9.3 seconds delay) in the AM peak hour, LOS A (9.7 seconds delay) in the PM peak hour, and LOS C (22.6 seconds delay) on the Saturday mid-day with the addition of project traffic. The implementation of the proposed mitigation is projected to result in operation at LOS A (8.8 seconds delay) in the AM peak hour, LOS A (9.9 seconds delay) in the PM peak hour, and LOS C (22.9 seconds delay) on the Saturday mid-day. While the proposed mitigation has minimal effect to the intersection delay/LOS, this intersection is projected to operate at acceptable levels of service, as shown in the table below, during all analyzed periods before and after implementation of the proposed mitigation.

No.	Intersection	Peak Hour	Future without Project Conditions		Future with Project Conditions		Future with Project with Mitigation Conditions	
			Delay	*LOS*	*Delay*	*LOS*	*Delay*	*LOS*
S-5.	Avalon Boulevard & I-405 SB Ramps (Intersection #16)	A.M.	9.3	A	9.3	A	8.8	A
		P.M.	9.6	A	9.7	A	9.9	A
		SAT.	21.6	C	22.6	C	22.9	C

In preparing the response to Caltrans Comment 2-4, a discrepancy in Traffic Impact Study Tables 19A and 20A, as published in Appendix K of the Draft EIR, was discovered. The LOS values during the AM peak hour at Locations S-4 and S-5 did not correctly reference the corresponding LOS values from the LOS worksheets provided

in Traffic Impact Study's Appendix H. The LOS values for Locations S-4 and S-5 are now updated in the tables included in Attachment 3 to these responses to the Caltrans comment letter and Section 3, Errata, of this Final EIR. While the intersection delay and LOS are updated at these locations, the overall findings of the affected AM peak hour LOS analyses are not materially changed and the conclusions stated in the Draft EIR remain the same.

3-5 In response to Caltrans' comment, the city names of the intersection count locations have been corrected to the appropriate location in Appendix C, Traffic Counts, within Appendix K, Traffic Impact Study, of the Draft EIR. The corrections are included in Attachment 4 to these responses to the Caltrans comment letter and Section 3, Errata, of this Final EIR.

3-6 The proposed project site would be accessible to pedestrians and cyclists via sidewalks and bike routes on the surrounding street system and is well served by transit. The existing sidewalks that serve as routes to the project site provide proper connectivity and adequate widths for a comfortable and safe pedestrian environment. The sidewalks provide connectivity to pedestrian crossings at intersections within the study area. The site-adjacent signalized intersections provide pedestrian phasing, crosswalk striping, and Americans with Disabilities Act (ADA) wheelchair ramps. Avalon Boulevard includes an existing raised median. Further, the proposed project would include the addition of a sidewalk on the south side of Martin Luther King Jr. Street along the proposed project frontage to increase accessibility for pedestrians and would have safe and convenient bicycle parking. The school children attending the Learning Center will be arriving via bus. Teams competing at the tennis center and soccer center generally will be arriving via bus or carpool. The proposed project will include bus turn-out and parking areas to facilitate such bus travel to and from the site. In addition, the overall athletic and academic campus would include off-street recreational areas.

3-7 The project applicant will work with the County and other applicable jurisdictions in implementing the street improvements identified in Section 4.13, Transportation, of the Draft EIR to include pedestrian and bicyclist warning signage and striping, etc., as warranted with the street improvement.

3-8 To lessen the impact of traffic temporarily generated by project-related construction activities, the proposed project will implement Project Design Feature PDF-TRAF-2 – Construction Traffic Management Plan. Prior to issuance of a grading permit, a Construction Traffic Management Plan will be developed for construction activities that would impact public streets, and will include appropriate elements such as: "*Establish truck access and staging areas, and review haul route approved with the*

project", which includes obtaining a Caltrans transportation permit for oversized-transport vehicles on State highways. And, the element of "*Scheduling of construction-related deliveries, haul trips, etc., so as to occur outside the commuter peak hours to the extent feasible…*" to limit large size truck trips to off-peak commute periods.

Attachment 1
Table 21 and Table 22

TABLE 21
EXISTING OPERATING CONDITIONS (YEAR 2018)
FREEWAY OFF-RAMP QUEUE ANALYSIS

ID	Freeway Off-Ramp	Ramp and Lane Description	Adjusted Vehicle Storage Capcity [a]	Existing Conditions				Existing with Project Conditions			
				AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
				Vehicle Queue Length [b]	Exceeds Capacity?	Vehicle Queue Length [b]	Exceeds Capacity?	Vehicle Queue Length [b]	Exceeds Capacity?	Vehicle Queue Length [b]	Exceeds Capacity?
Q-1.	I-405 Northbound Off-Ramp to	I-405 Northbound Off-Ramp									
	Main Street	Shared Left/Through	405	94		64		98		66	
	(Intersection #2)	Shared Through/Right	405	79		96		82		106	
		Ramp	400	0	NO	0	NO	0	NO	0	NO
Q-2.	I-405 Northbound Off-Ramp to	I-405 Northbound Off-Ramp									
	Avalon Boulevard	Left	150	9		15		9		15	
	(Intersection #15)	Shared Left/Through	125	9		15		9		15	
		Right (Channelized)	125	0		0		0		0	
		Ramp	455	0	NO	0	NO	0	NO	0	NO
Q-3.	I-405 Southbound Off-Ramp to	I-405 Southbound Off-Ramp									
	Avalon Boulevard	Left	385	35		29		36		30	
	(Intersection #16)	Left	925	35		29		36		30	
		Through	925	1		~~0~~ 19		~~0~~ 1		~~0~~ 19	
		Through	250	1		~~0~~ 19		~~0~~ 1		~~0~~ 19	
		Right (Channelized)	--	0		0		0		0	
		Ramp	885	0	NO	0	NO	0	NO	0	NO
Q-4.	SR 91 Westbound Off-Ramp to	SR 91 Westbound Off-Ramp									
	Main Street	Left	490	134		61		138		65	
	(Intersection #17)	Right	490	118		97		120		100	
		Ramp	1,035	0	NO	0	NO	0	NO	0	NO
Q-5.	I-110 Southbound Off-Ramp to	I-110 Southbound Off-Ramp									
	190th Street	Left	295	34		101		36		110	
	(Interseciton #22)	Right	295	208		189		212		194	
		Ramp	2,235	0	NO	0	NO	0	NO	0	NO
Q-6.	I-110 Southbound Off-Ramp to	I-110 Southbound Off-Ramp									
	Hamilton Avenue	Left	355	324		57		326		57	
	(Interseciton #25)	Shared Left/Right	355	265		50		267		50	
		Ramp	540	0	NO	0	NO	0	NO	0	NO
Q-7.	I-110 Northbound Off-Ramp to	I-110 Northbound Off-Ramp									
	Figueroa Street	Left	300	168		121		170		127	
	(Intersection #27)	Shared Left/Right	355	164		114		166		120	
		Ramp	550	0	NO	0	NO	0	NO	0	NO
Q-8.	SR 91 Eastbound Off-Ramp to	SR 91 Eastbound Off-Ramp									
	Albertoni Street	Left	885	79		~~197~~ 114		~~197~~ 79		~~197~~ 114	
	(Intersection #28)	Right	885	63		~~197~~ 114		~~197~~ 68		~~197~~ 83	
		Ramp	350	0	NO	0	NO	0	NO	0	NO

[a] Storage length capacity is the distance from the freeway mainline gore point to the terminus of the off-ramp, expressed in feet.

[b] 95th Percentile queue results per Vistro 5 (HCM 6th Edition Methodology).

TABLE 22
FUTURE OPERATING CONDITIONS (YEAR 2020)
FREEWAY OFF-RAMP QUEUE ANALYSIS

ID	Freeway Off-Ramp	Ramp and Lane Description	Adjusted Vehicle Storage Capcity [a]	Future without Project Conditions				Future with Project Conditions			
				AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
				Vehicle Queue Length [b]	Exceeds Capacity?	Vehicle Queue Length [b]	Exceeds Capacity?	Vehicle Queue Length [b]	Exceeds Capacity?	Vehicle Queue Length [b]	Exceeds Capacity?
Q-1.	I-405 Northbound Off-Ramp to	I-405 Northbound Off-Ramp									
	Main Street	Shared Left/Through	405	107		90		111		94	
	(Intersection #2)	Shared Through/Right	405	90		125		93		137	
		Ramp	400	0	NO	0	NO	0	NO	0	NO
Q-2.	I-405 Northbound Off-Ramp to	I-405 Northbound Off-Ramp									
	Avalon Boulevard	Left	150	16		43		16		43	
	(Intersection #15)	Shared Left/Through	125	16		43		16		43	
		Right (Channelized)	125	0		0		0		0	
		Ramp	455	0	NO	0	NO	0	NO	0	NO
Q-3.	I-405 Southbound Off-Ramp to	I-405 Southbound Off-Ramp									
	Avalon Boulevard	Left	385	51		58		51		59	
	(Intersection #16)	Left	925	51		58		51		59	
		Through	925	3		~~0~~ 36		~~0~~ 3		~~0~~ 36	
		Through	250	3		~~0~~ 36		~~0~~ 3		~~0~~ 36	
		Right (Channelized)	--	0		0		0		0	
		Ramp	885	0	NO	0	NO	0	NO	0	NO
Q-4.	SR 91 Westbound Off-Ramp to	SR 91 Westbound Off-Ramp									
	Main Street	Left	490	153		73		158		76	
	(Intersection #17)	Right	490	127		108		129		111	
		Ramp	1,035	0	NO	0	NO	0	NO	0	NO
Q-5.	I-110 Southbound Off-Ramp to	I-110 Southbound Off-Ramp									
	190th Street	Left	295	50		153		52		164	
	(Interseciton #22)	Right	295	262		215		267		219	
		Ramp	2,235	0	NO	0	NO	0	NO	0	NO
Q-6.	I-110 Southbound Off-Ramp to	I-110 Southbound Off-Ramp									
	Hamilton Avenue	Left	355	355		123		355		123	
	(Interseciton #25)	Shared Left/Right	355	355		95		355		95	
		Ramp	540	95	NO	0	NO	99	NO	0	NO
Q-7.	I-110 Northbound Off-Ramp to	I-110 Northbound Off-Ramp									
	Figueroa Street	Left	300	198		159		200		165	
	(Intersection #27)	Shared Left/Right	355	196		151		199		158	
		Ramp	550	0	NO	0	NO	0	NO	0	NO
Q-8.	SR 91 Eastbound Off-Ramp to	SR 91 Eastbound Off-Ramp									
	Albertoni Street	Left	885	83		~~197~~ 117		~~197~~ 81		~~197~~ 117	
	(Intersection #28)	Right	885	85		~~197~~ 89		~~197~~ 81		~~197~~ 98	
		Ramp	350	0	NO	0	NO	0	NO	0	NO

[a] Storage length capacity is the distance from the freeway mainline gore point to the terminus of the off-ramp, expressed in feet.

[b] 95th Percentile queue results per Vistro 5 (HCM 6th Edition Methodology).

Attachment 2
Saturday Queuing Analysis

TABLE A
EXISTING OPERATING WEEKEND CONDITIONS (YEAR 2018)
FREEWAY OFF-RAMP QUEUE ANALYSIS

ID	Freeway Off-Ramp	Ramp and Lane Description	Adjusted Vehicle Storage Capcity [a]	Existing Conditions		Existing with Project Conditions	
				Saturday Peak Hour		Saturday Peak Hour	
				Vehicle Queue Length [b]	Exceeds Capacity?	Vehicle Queue Length [b]	Exceeds Capacity?
Q-1.	I-405 Northbound Off-Ramp to	I-405 Northbound Off-Ramp					
	Main Street	Shared Left/Through	405	19		23	
	(Intersection #2)	Shared Through/Right	405	18		22	
		Ramp	400	0	NO	0	NO
Q-2.	I-405 Northbound Off-Ramp to	I-405 Northbound Off-Ramp					
	Avalon Boulevard	Left	150	15		15	
	(Intersection #15)	Shared Left/Through	125	15		15	
		Right (Channelized)	125	0		0	
		Ramp	455	0	NO	0	NO
Q-3.	I-405 Southbound Off-Ramp to	I-405 Southbound Off-Ramp					
	Avalon Boulevard	Left	385	71		77	
	(Intersection #16)	Left	925	71		77	
		Through	925	2		2	
		Through	250	2		2	
		Right (Channelized)	--	0		0	
		Ramp	885	0	NO	0	NO
Q-4.	SR 91 Westbound Off-Ramp to	SR 91 Westbound Off-Ramp					
	Main Street	Left	490	15		16	
	(Intersection #17)	Right	490	15		15	
		Ramp	1,035	0	NO	0	NO
Q-5.	I-110 Southbound Off-Ramp to	I-110 Southbound Off-Ramp					
	190th Street	Left	295	35		42	
	(Interseciton #22)	Right	295	65		69	
		Ramp	2,235	0	NO	0	NO
Q-8.	SR 91 Eastbound Off-Ramp to	SR 91 Eastbound Off-Ramp					
	Albertoni Street	Left	885	45		45	
	(Intersection #28)	Right	885	23		31	
		Ramp	350	0	NO	0	NO

[a] Storage length capacity is the distance from the freeway mainline gore point to the terminus of the off-ramp, expressed in feet.

[b] 95th Percentile queue results per Vistro 5 (HCM 6th Edition Methodology).

Data not available for intersections #25 & #27

TABLE B
FUTURE OPERATING WEEKEND CONDITIONS (YEAR 2020)
FREEWAY OFF-RAMP QUEUE ANALYSIS

ID	Freeway Off-Ramp	Ramp and Lane Description	Adjusted Vehicle Storage Capcity [a]	Future without Project Conditions		Future with Project Conditions	
				Saturday Peak Hour		Saturday Peak Hour	
				Vehicle Queue Length [b]	Exceeds Capacity?	Vehicle Queue Length [b]	Exceeds Capacity?
Q-1.	I-405 Northbound Off-Ramp to	I-405 Northbound Off-Ramp					
	Main Street	Shared Left/Through	405	50		58	
	(Intersection #2)	Shared Through/Right	405	45		51	
		Ramp	400	0	NO	0	NO
Q-2.	I-405 Northbound Off-Ramp to	I-405 Northbound Off-Ramp					
	Avalon Boulevard	Left	150	120		125	
	(Intersection #15)	Shared Left/Through	125	120		125	
		Right (Channelized)	125	0		0	
		Ramp	455	0	NO	0	NO
Q-3.	I-405 Southbound Off-Ramp to	I-405 Southbound Off-Ramp					
	Avalon Boulevard	Left	385	286		308	
	(Intersection #16)	Left	925	286		308	
		Through	925	78		81	
		Through	250	78		81	
		Right (Channelized)	--	0		0	
		Ramp	885	0	NO	0	NO
Q-4.	SR 91 Westbound Off-Ramp to	SR 91 Westbound Off-Ramp					
	Main Street	Left	490	20		23	
	(Intersection #17)	Right	490	18		18	
		Ramp	1,035	0	NO	0	NO
Q-5.	I-110 Southbound Off-Ramp to	I-110 Southbound Off-Ramp					
	190th Street	Left	295	63		74	
	(Interseciton #22)	Right	295	78		82	
		Ramp	2,235	0	NO	0	NO
Q-8.	SR 91 Eastbound Off-Ramp to	SR 91 Eastbound Off-Ramp					
	Albertoni Street	Left	885	45		46	
	(Intersection #28)	Right	885	35		44	
		Ramp	350	0	NO	0	NO

[a] Storage length capacity is the distance from the freeway mainline gore point to the terminus of the off-ramp, expressed in feet.

[b] 95th Percentile queue results per Vistro 5 (HCM 6th Edition Methodology).

Data not available for intersections #25 & #27

Intersection Level Of Service Report
Intersection 2: Main Street & I-405 NB Off-Ramp

Control Type:	Signalized	Delay (sec / veh):	7.8
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.423

Intersection Setup

Name	Main Street			Main Street			I-405 NB Off-Ramp			I-405 NB Off-Ramp		
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]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No						No		
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Main Street			Main Street			I-405 NB Off-Ramp			I-405 NB Off-Ramp		
Base Volume Input [veh/h]	14	296	0	0	398	26	0	0	0	61	92	101
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 Rate	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
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	14	296	0	0	398	26	0	0	0	61	92	101
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]	4	74	0	0	100	7	0	0	0	15	23	25
Total Analysis Volume [veh/h]	14	296	0	0	398	26	0	0	0	61	92	101
Presence of On-Street Parking	No		No	No		No				No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	7	4	0	0	8	0	0	0	0	0	2	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	5	5	0	0	5	0	0	0	0	0	5	0
Maximum Green [s]	30	30	0	0	30	0	0	0	0	0	30	0
Amber [s]	3.5	3.5	0.0	0.0	3.5	0.0	0.0	0.0	0.0	0.0	3.5	0.0
All red [s]	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0
Split [s]	9	35	0	0	26	0	0	0	0	0	25	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	0	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	0	0	0	10	0
Rest In Walk		No			No						No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.5	2.5	0.0	0.0	2.5	0.0	0.0	0.0	0.0	0.0	2.5	0.0
Minimum Recall	No	No			No						No	
Maximum Recall	No	No			No						No	
Pedestrian Recall	No	No			No						No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	C		C	C
C, Cycle Length [s]	23	23	23	23		23	23
L, Total Lost Time per Cycle [s]	4.50	4.50	4.50	4.50		4.50	4.50
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00		0.00	0.00
l2, Clearance Lost Time [s]	2.50	2.50	2.50	2.50		2.50	2.50
g_i, Effective Green Time [s]	0	10	5	5		4	4
g / C, Green / Cycle	0.02	0.43	0.22	0.22		0.18	0.18
(v / s)_i Volume / Saturation Flow Rate	0.01	0.08	0.11	0.12		0.07	0.08
s, saturation flow rate [veh/h]	1781	3560	1870	1830		1829	1477
c, Capacity [veh/h]	37	1547	411	403		325	263
d1, Uniform Delay [s]	11.22	4.05	7.97	7.99		8.48	8.52
k, delay calibration	0.11	0.11	0.11	0.11		0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00		1.00	1.00
d2, Incremental Delay [s]	6.26	0.06	1.00	1.07		0.86	1.19
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00		0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00		1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00		1.00	1.00

Lane Group Results

X, volume / capacity	0.38	0.19	0.52	0.53		0.42	0.45
d, Delay for Lane Group [s/veh]	17.48	4.11	8.97	9.06		9.34	9.72
Lane Group LOS	B	A	A	A		A	A
Critical Lane Group	Yes	No	No	Yes		No	Yes
50th-Percentile Queue Length [veh]	0.11	0.13	0.62	0.63		0.43	0.39
50th-Percentile Queue Length [ft]	2.81	3.34	15.57	15.73		10.77	9.80
95th-Percentile Queue Length [veh]	0.20	0.24	1.12	1.13		0.78	0.71
95th-Percentile Queue Length [ft]	5.05	6.01	28.02	28.32		19.38	17.63

Movement, Approach, & Intersection Results

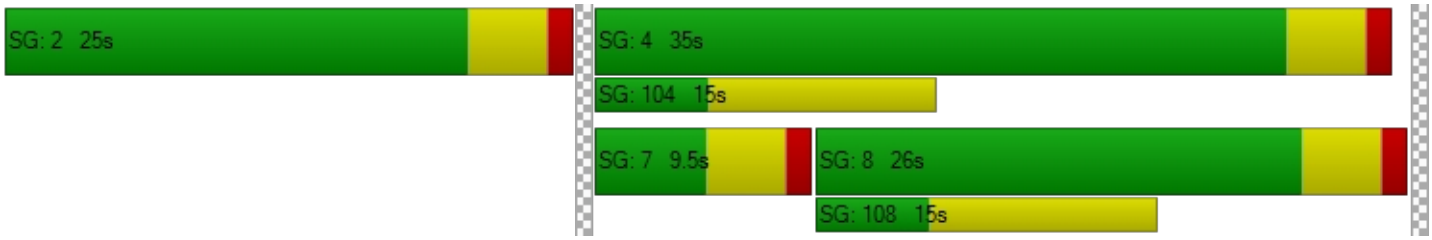
d_M, Delay for Movement [s/veh]	17.48	4.11	0.00	0.00	9.01	9.06	0.00	0.00	0.00	9.34	9.41	9.72
Movement LOS	B	A			A	A				A	A	A
d_A, Approach Delay [s/veh]	4.71			9.01			0.00			9.51		
Approach LOS	A			A			A			A		
d_I, Intersection Delay [s/veh]	7.79											
Intersection LOS	A											
Intersection V/C	0.423											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	21.68	21.68
l_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	1.760	1.819
Crosswalk LOS	F	F	A	A
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1017	717	0	683
d_b, Bicycle Delay [s]	7.25	12.35	30.00	13.00
l_b,int, Bicycle LOS Score for Intersection	1.815	1.909	4.132	1.769
Bicycle LOS	A	A	D	A

Sequence

Ring 1	-	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 15: Avalon Boulevard & I-405 NB Ramps

Control Type:	Signalized	Delay (sec / veh):	7.3
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.603

Intersection Setup

Name	Avalon Boulevard			Avalon Boulevard			I-405 NB Ramps			I-405 NB Ramps		
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]		30.00			30.00			30.00			30.00	
Grade [%]		0.00			0.00			0.00			0.00	
Curb Present		No			No						No	
Crosswalk		No			No			Yes			Yes	

Volumes

Name	Avalon Boulevard			Avalon Boulevard			I-405 NB Ramps			I-405 NB Ramps		
Base Volume Input [veh/h]	294	1272	0	0	1066	613	0	0	0	98	0	395
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 Rate	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
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	294	1272	0	0	1066	613	0	0	0	98	0	395
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]	74	318	0	0	267	153	0	0	0	25	0	99
Total Analysis Volume [veh/h]	294	1272	0	0	1066	613	0	0	0	98	0	395
Presence of On-Street Parking	No		No	No		No				No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing		0			0			0			0	
v_di, Inbound Pedestrian Volume crossing m		0			0			0			0	
v_co, Outbound Pedestrian Volume crossing		0			0			0			0	
v_ci, Inbound Pedestrian Volume crossing mi		0			0			0			0	
v_ab, Corner Pedestrian Volume [ped/h]		0			0			0			0	
Bicycle Volume [bicycles/h]		0			0			0			0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Unsigna	Permiss	Permiss	Permiss	Permiss	Permiss	Unsigna
Signal group	7	4	0	0	8	0	0	0	0	0	2	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	5	5	0	0	5	0	0	0	0	0	5	0
Maximum Green [s]	30	30	0	0	30	0	0	0	0	0	30	0
Amber [s]	3.5	3.5	0.0	0.0	3.5	0.0	0.0	0.0	0.0	0.0	3.5	0.0
All red [s]	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0
Split [s]	14	33	0	0	19	0	0	0	0	0	27	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	0	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	0	0	0	10	0
Rest In Walk		No			No						No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.5	2.5	0.0	0.0	2.5	0.0	0.0	0.0	0.0	0.0	2.5	0.0
Minimum Recall	No	No			No						No	
Maximum Recall	No	No			No						No	
Pedestrian Recall	No	No			No						No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C		L	C
C, Cycle Length [s]	33	33	33		33	33
L, Total Lost Time per Cycle [s]	4.50	4.50	4.50		4.50	4.50
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00		0.00	0.00
l2, Clearance Lost Time [s]	2.50	2.50	2.50		2.50	2.50
g_i, Effective Green Time [s]	5	21	12		3	3
g / C, Green / Cycle	0.15	0.64	0.35		0.09	0.09
(v / s)_i Volume / Saturation Flow Rate	0.09	0.36	0.21		0.03	0.03
s, saturation flow rate [veh/h]	3459	3560	5094		1781	1781
c, Capacity [veh/h]	534	2273	1776		162	162
d1, Uniform Delay [s]	12.99	3.38	8.92		14.13	14.13
k, delay calibration	0.11	0.11	0.11		0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00		1.00	1.00
d2, Incremental Delay [s]	0.89	0.22	0.33		1.04	1.04
d3, Initial Queue Delay [s]	0.00	0.00	0.00		0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00		1.00	1.00
PF, progression factor	1.00	1.00	1.00		1.00	1.00

Lane Group Results

X, volume / capacity	0.55	0.56	0.60		0.30	0.30
d, Delay for Lane Group [s/veh]	13.87	3.60	9.25		15.17	15.17
Lane Group LOS	B	A	A		B	B
Critical Lane Group	No	Yes	No		Yes	No
50th-Percentile Queue Length [veh]	0.85	0.51	1.45		0.32	0.32
50th-Percentile Queue Length [ft]	21.35	12.81	36.36		8.09	8.09
95th-Percentile Queue Length [veh]	1.54	0.92	2.62		0.58	0.58
95th-Percentile Queue Length [ft]	38.42	23.06	65.45		14.55	14.55

Movement, Approach, & Intersection Results

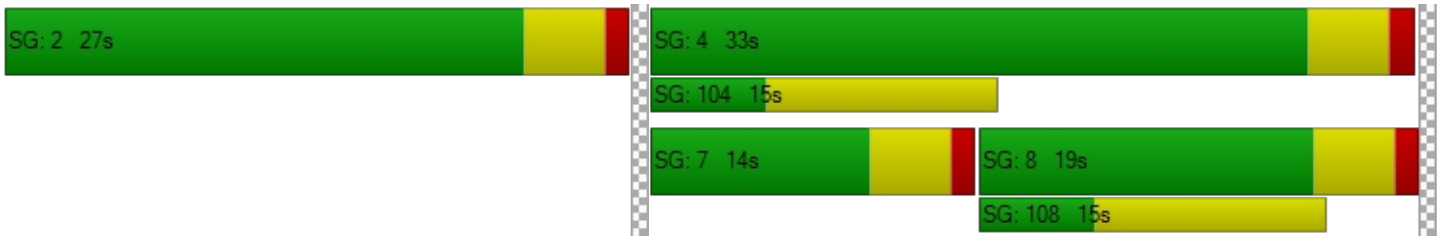
d_M, Delay for Movement [s/veh]	13.87	3.60	0.00	0.00	9.25	0.00	0.00	0.00	0.00	15.17	15.17	0.00
Movement LOS	B	A			A					B	B	
d_A, Approach Delay [s/veh]	5.53			9.25			0.00			15.17		
Approach LOS	A			A			A			B		
d_I, Intersection Delay [s/veh]	7.33											
Intersection LOS	A											
Intersection V/C	0.603											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	21.68	21.68
l_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	1.839	1.953
Crosswalk LOS	F	F	A	A
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	950	483	0	750
d_b, Bicycle Delay [s]	8.27	17.25	30.00	11.72
l_b,int, Bicycle LOS Score for Intersection	2.852	2.146	4.132	1.721
Bicycle LOS	C	B	D	A

Sequence

Ring 1	-	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 16: Avalon Boulevard & I-405 SB Ramps

Control Type:	Signalized	Delay (sec / veh):	9.7
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.738

Intersection Setup

Name	Avalon Boulevard			Avalon Boulevard			I-405 SB Ramps			I-405 SB Ramps		
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]		30.00			30.00			30.00			30.00	
Grade [%]		0.00			0.00			0.00			0.00	
Curb Present		No			No			No				
Crosswalk		Yes			No			Yes			Yes	

Volumes

Name	Avalon Boulevard			Avalon Boulevard			I-405 SB Ramps			I-405 SB Ramps		
Base Volume Input [veh/h]	0	984	129	0	840	302	603	15	368	0	0	0
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 Rate	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
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	984	129	0	840	302	603	15	368	0	0	0
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	246	32	0	210	76	151	4	92	0	0	0
Total Analysis Volume [veh/h]	0	984	129	0	840	302	603	15	368	0	0	0
Presence of On-Street Parking	No		No	No		No	No		No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing		0			0			0			0	
v_di, Inbound Pedestrian Volume crossing m		0			0			0			0	
v_co, Outbound Pedestrian Volume crossing		0			0			0			0	
v_ci, Inbound Pedestrian Volume crossing mi		0			0			0			0	
v_ab, Corner Pedestrian Volume [ped/h]		0			0			0			0	
Bicycle Volume [bicycles/h]		0			0			0			0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Unsigna	Permiss	Permiss	Unsigna	Permiss	Permiss	Permiss
Signal group	7	4	0	0	8	0	0	6	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	5	5	0	0	5	0	0	5	0	0	0	0
Maximum Green [s]	30	30	0	0	30	0	0	30	0	0	0	0
Amber [s]	3.5	3.5	0.0	0.0	3.5	0.0	0.0	3.5	0.0	0.0	0.0	0.0
All red [s]	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0
Split [s]	9	28	0	0	19	0	0	32	0	0	0	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	0	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	0	0
Rest In Walk		No			No			No				
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	2.5	2.5	0.0	0.0	2.5	0.0	0.0	2.5	0.0	0.0	0.0	0.0
Minimum Recall	No	No			No			No				
Maximum Recall	No	No			No			No				
Pedestrian Recall	No	No			No			No				
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	C	L	C	
C, Cycle Length [s]	34	34	34	34	34	34	
L, Total Lost Time per Cycle [s]	4.50	4.50	4.50	4.50	4.50	4.50	
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	
l2, Clearance Lost Time [s]	2.50	2.50	2.50	2.50	2.50	2.50	
g_i, Effective Green Time [s]	0	16	16	11	9	9	
g / C, Green / Cycle	0.00	0.47	0.47	0.33	0.27	0.27	
(v / s)_i Volume / Saturation Flow Rate	0.00	0.30	0.30	0.24	0.17	0.00	
s, saturation flow rate [veh/h]	1781	1870	1795	3560	3459	3560	
c, Capacity [veh/h]	1	874	839	1194	934	962	
d1, Uniform Delay [s]	0.00	6.98	6.99	9.90	11.05	9.16	
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	
d2, Incremental Delay [s]	0.00	0.82	0.86	0.77	0.75	0.01	
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	

Lane Group Results

X, volume / capacity	0.00	0.65	0.65	0.70	0.65	0.02	
d, Delay for Lane Group [s/veh]	0.00	7.81	7.84	10.67	11.81	9.17	
Lane Group LOS	A	A	A	B	B	A	
Critical Lane Group	No	No	Yes	No	Yes	No	
50th-Percentile Queue Length [veh]	0.00	1.96	1.90	2.01	1.57	0.03	
50th-Percentile Queue Length [ft]	0.00	49.10	47.39	50.14	39.27	0.78	
95th-Percentile Queue Length [veh]	0.00	3.54	3.41	3.61	2.83	0.06	
95th-Percentile Queue Length [ft]	0.00	88.38	85.31	90.25	70.68	1.41	

Movement, Approach, & Intersection Results

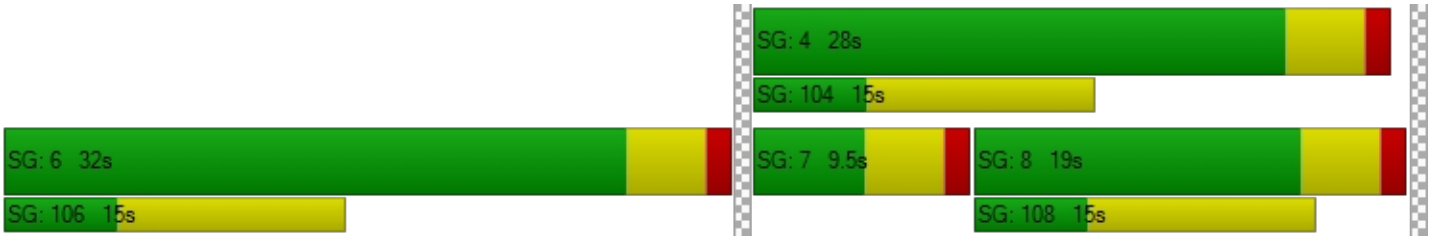
d_M, Delay for Movement [s/veh]	0.00	7.82	7.84	0.00	10.67	0.00	11.81	9.17	0.00	0.00	0.00	0.00
Movement LOS	A	A	A		B		B	A				
d_A, Approach Delay [s/veh]	7.82			10.67			11.74			0.00		
Approach LOS	A			B			B			A		
d_I, Intersection Delay [s/veh]	9.70											
Intersection LOS	A											
Intersection V/C	0.738											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	0.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	21.68	0.00	21.68	21.68
l_p,int, Pedestrian LOS Score for Intersection	2.661	0.000	2.534	1.766
Crosswalk LOS	B	F	B	A
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	783	483	917	0
d_b, Bicycle Delay [s]	11.10	17.25	8.80	30.00
l_b,int, Bicycle LOS Score for Intersection	2.478	2.253	2.069	4.132
Bicycle LOS	B	B	B	D

Sequence

Ring 1	-	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 17: Main Street & SR 91 WB Ramps

Control Type:	Signalized	Delay (sec / veh):	8.8
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.363

Intersection Setup

Name	Main Street			Main Street			SR-91 WB Ramps			SR-91 WB Ramps		
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]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No						No		
Crosswalk	No			No			No			Yes		

Volumes

Name	Main Street			Main Street			SR-91 WB Ramps			SR-91 WB Ramps		
Base Volume Input [veh/h]	0	185	96	35	202	0	0	0	0	108	0	107
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 Rate	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
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	185	96	35	202	0	0	0	0	108	0	107
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	46	24	9	51	0	0	0	0	27	0	27
Total Analysis Volume [veh/h]	0	185	96	35	202	0	0	0	0	108	0	107
Presence of On-Street Parking	No		No	No		No				No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	7	4	0	3	8	0	0	0	0	2	0	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	Lead	-	-
Minimum Green [s]	5	5	0	5	5	0	0	0	0	5	0	0
Maximum Green [s]	30	30	0	30	30	0	0	0	0	30	0	0
Amber [s]	3.5	3.5	0.0	3.5	3.5	0.0	0.0	0.0	0.0	3.5	0.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0
Split [s]	9	22	0	9	22	0	0	0	0	29	0	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0
Walk [s]	0	5	0	0	5	0	0	0	0	5	0	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	0	0	10	0	0
Rest In Walk		No			No					No		
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
I2, Clearance Lost Time [s]	2.5	2.5	0.0	2.5	2.5	0.0	0.0	0.0	0.0	2.5	0.0	0.0
Minimum Recall	No	No		No	No					No		
Maximum Recall	No	No		No	No					No		
Pedestrian Recall	No	No		No	No					No		
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C		L	R
C, Cycle Length [s]	22	22	22	22	22		22	22
L, Total Lost Time per Cycle [s]	4.50	4.50	4.50	4.50	4.50		4.50	4.50
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00		0.00	0.00
l2, Clearance Lost Time [s]	2.50	2.50	2.50	2.50	2.50		2.50	2.50
g_i, Effective Green Time [s]	0	4	4	1	5		4	4
g / C, Green / Cycle	0.00	0.19	0.19	0.05	0.23		0.17	0.17
(v / s)_i Volume / Saturation Flow Rate	0.00	0.08	0.08	0.02	0.06		0.06	0.07
s, saturation flow rate [veh/h]	1781	1870	1663	1781	3560		1781	1589
c, Capacity [veh/h]	2	351	312	83	829		300	267
d1, Uniform Delay [s]	0.00	8.08	8.12	10.47	7.05		8.32	8.38
k, delay calibration	0.11	0.11	0.11	0.11	0.11		0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00
d2, Incremental Delay [s]	0.00	0.78	0.97	3.34	0.15		0.73	0.97
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00		0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00		1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00

Lane Group Results

X, volume / capacity	0.00	0.41	0.44	0.42	0.24		0.36	0.40
d, Delay for Lane Group [s/veh]	0.00	8.86	9.09	13.81	7.20		9.05	9.34
Lane Group LOS	A	A	A	B	A		A	A
Critical Lane Group	No	No	Yes	Yes	No		No	Yes
50th-Percentile Queue Length [veh]	0.00	0.42	0.41	0.19	0.22		0.33	0.34
50th-Percentile Queue Length [ft]	0.00	10.49	10.23	4.67	5.55		8.17	8.43
95th-Percentile Queue Length [veh]	0.00	0.76	0.74	0.34	0.40		0.59	0.61
95th-Percentile Queue Length [ft]	0.00	18.88	18.41	8.41	10.00		14.70	15.17

Movement, Approach, & Intersection Results

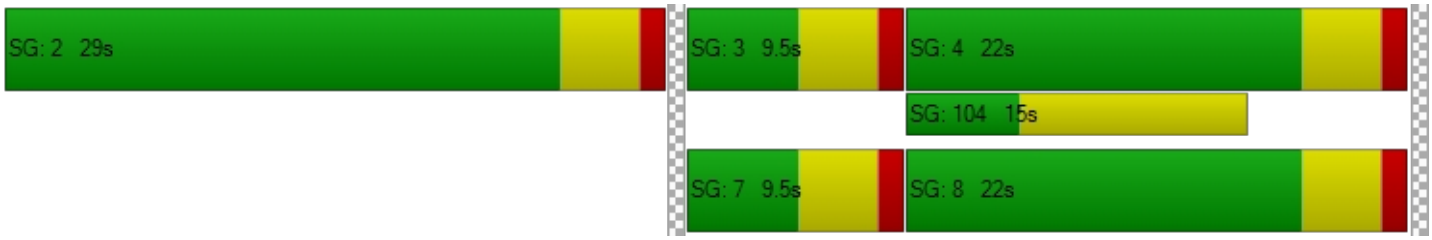
d_M, Delay for Movement [s/veh]	0.00	8.91	9.09	13.81	7.20	0.00	0.00	0.00	0.00	9.05	0.00	9.34
Movement LOS	A	A	A	B	A					A		A
d_A, Approach Delay [s/veh]	8.97			8.17			0.00			9.20		
Approach LOS	A			A			A			A		
d_I, Intersection Delay [s/veh]	8.78											
Intersection LOS	A											
Intersection V/C	0.363											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	0.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	0.00	21.68
l_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	0.000	2.033
Crosswalk LOS	F	F	F	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	583	583	0	0
d_b, Bicycle Delay [s]	15.05	15.05	30.00	30.00
l_b,int, Bicycle LOS Score for Intersection	1.791	1.755	4.132	4.132
Bicycle LOS	A	A	D	D

Sequence

Ring 1	-	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 22: I-110 SB Off-Ramp & 190th Street

Control Type:	Signalized	Delay (sec / veh):	8.2
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.657

Intersection Setup

Name	I-110 SB Off-Ramp		190th Street		190th Street	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	Yes		No		No	

Volumes

Name	I-110 SB Off-Ramp		190th Street		190th Street	
Base Volume Input [veh/h]	232	355	0	900	472	0
Base Volume Adjustment Factor	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
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	232	355	0	900	472	0
Peak Hour Factor	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
Total 15-Minute Volume [veh/h]	58	89	0	225	118	0
Total Analysis Volume [veh/h]	232	355	0	900	472	0
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal group	8	0	0	6	2	0
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	-	-
Minimum Green [s]	5	0	0	5	5	0
Maximum Green [s]	30	0	0	30	30	0
Amber [s]	3.5	0.0	0.0	3.5	3.5	0.0
All red [s]	1.0	0.0	0.0	1.0	1.0	0.0
Split [s]	40	0	0	20	20	0
Vehicle Extension [s]	3.0	0.0	0.0	3.0	3.0	0.0
Walk [s]	5	0	0	5	5	0
Pedestrian Clearance [s]	10	0	0	10	10	0
Rest In Walk	No			No	No	
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.5	0.0	0.0	2.5	2.5	0.0
Minimum Recall	No			No	No	
Maximum Recall	No			No	No	
Pedestrian Recall	No			No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R	C	C
C, Cycle Length [s]	29	29	29	29
L, Total Lost Time per Cycle [s]	4.50	4.50	4.50	4.50
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.50	2.50	2.50	2.50
g_i, Effective Green Time [s]	9	9	11	11
g / C, Green / Cycle	0.32	0.32	0.37	0.37
(v / s)_i Volume / Saturation Flow Rate	0.13	0.22	0.25	0.09
s, saturation flow rate [veh/h]	1781	1589	3560	5094
c, Capacity [veh/h]	568	507	1327	1899
d1, Uniform Delay [s]	7.78	8.72	7.69	6.33
k, delay calibration	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.47	1.77	0.61	0.07
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.41	0.70	0.68	0.25
d, Delay for Lane Group [s/veh]	8.26	10.48	8.30	6.40
Lane Group LOS	A	B	A	A
Critical Lane Group	No	Yes	Yes	No
50th-Percentile Queue Length [veh]	0.77	1.45	1.43	0.39
50th-Percentile Queue Length [ft]	19.34	36.17	35.75	9.78
95th-Percentile Queue Length [veh]	1.39	2.60	2.57	0.70
95th-Percentile Queue Length [ft]	34.81	65.11	64.35	17.60

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	8.26	10.48	0.00	8.30	6.40	0.00
Movement LOS	A	B		A	A	
d_A, Approach Delay [s/veh]	9.60		8.30		6.40	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	8.23					
Intersection LOS	A					
Intersection V/C	0.657					

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	21.68	0.00	0.00
I_p,int, Pedestrian LOS Score for Intersection	1.982	0.000	0.000
Crosswalk LOS	A	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	0	0
d_b, Bicycle Delay [s]	30.00	30.00	30.00
I_b,int, Bicycle LOS Score for Intersection	4.132	4.875	4.392
Bicycle LOS	D	E	E

Sequence

Ring 1	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 28: SR 91 EB Ramps & Albertoni Street

Control Type:	Signalized	Delay (sec / veh):	10.2
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.508

Intersection Setup

Name	SR 91 EB Ramps		Albertoni Street		Albertoni Street	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	Yes		No		No	

Volumes

Name	SR 91 EB Ramps		Albertoni Street		Albertoni Street	
Base Volume Input [veh/h]	208	118	268	263	284	67
Base Volume Adjustment Factor	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
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	208	118	268	263	284	67
Peak Hour Factor	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
Total 15-Minute Volume [veh/h]	52	30	67	66	71	17
Total Analysis Volume [veh/h]	208	118	268	263	284	67
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permissive	Permissive	Protected	Permissive	Permissive	Permissive
Signal group	8	0	1	6	2	0
Auxiliary Signal Groups						
Lead / Lag	Lead	-	Lead	-	-	-
Minimum Green [s]	5	0	5	5	5	0
Maximum Green [s]	30	0	30	30	30	0
Amber [s]	3.5	0.0	3.5	3.5	3.5	0.0
All red [s]	1.0	0.0	1.0	1.0	1.0	0.0
Split [s]	23	0	14	37	23	0
Vehicle Extension [s]	3.0	0.0	3.0	3.0	3.0	0.0
Walk [s]	5	0	0	5	5	0
Pedestrian Clearance [s]	10	0	0	10	10	0
Rest In Walk	No			No	No	
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.5	0.0	2.5	2.5	2.5	0.0
Minimum Recall	No		No	No	No	
Maximum Recall	No		No	No	No	
Pedestrian Recall	No		No	No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R	L	C	C	C
C, Cycle Length [s]	29	29	29	29	29	29
L, Total Lost Time per Cycle [s]	4.50	4.50	4.50	4.50	4.50	4.50
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.50	2.50	2.50	2.50	2.50	2.50
g_i, Effective Green Time [s]	5	5	4	14	5	5
g / C, Green / Cycle	0.19	0.19	0.16	0.49	0.18	0.18
(v / s)_i Volume / Saturation Flow Rate	0.12	0.07	0.08	0.07	0.09	0.10
s, saturation flow rate [veh/h]	1781	1589	3459	3560	1870	1752
c, Capacity [veh/h]	343	306	539	1756	337	316
d1, Uniform Delay [s]	10.58	10.09	11.07	3.97	10.62	10.70
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.73	0.79	0.71	0.04	1.24	1.53
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.61	0.39	0.50	0.15	0.52	0.56
d, Delay for Lane Group [s/veh]	12.30	10.88	11.78	4.01	11.87	12.22
Lane Group LOS	B	B	B	A	B	B
Critical Lane Group	Yes	No	Yes	No	No	Yes
50th-Percentile Queue Length [veh]	0.99	0.52	0.61	0.17	0.82	0.84
50th-Percentile Queue Length [ft]	24.84	12.90	15.15	4.26	20.42	20.98
95th-Percentile Queue Length [veh]	1.79	0.93	1.09	0.31	1.47	1.51
95th-Percentile Queue Length [ft]	44.71	23.23	27.26	7.67	36.76	37.76

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	12.30	10.88	11.78	4.01	12.00	12.22
Movement LOS	B	B	B	A	B	B
d_A, Approach Delay [s/veh]	11.79		7.93		12.05	
Approach LOS	B		A		B	
d_I, Intersection Delay [s/veh]	10.17					
Intersection LOS	B					
Intersection V/C	0.508					

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	21.68	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersection	2.273	0.000	0.000
Crosswalk LOS	B	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	0	0
d_b, Bicycle Delay [s]	30.00	30.00	30.00
l_b,int, Bicycle LOS Score for Intersection	4.132	4.570	4.422
Bicycle LOS	D	E	E

Sequence

Ring 1	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 2: Main Street & I-405 NB Off-Ramp

Control Type:	Signalized	Delay (sec / veh):	8.0
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.460

Intersection Setup

Name	Main Street			Main Street			I-405 NB Off-Ramp			I-405 NB Off-Ramp		
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]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No						No		
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Main Street			Main Street			I-405 NB Off-Ramp			I-405 NB Off-Ramp		
Base Volume Input [veh/h]	14	336	0	0	453	26	0	0	0	61	92	132
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 Rate	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
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	14	336	0	0	453	26	0	0	0	61	92	132
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]	4	84	0	0	113	7	0	0	0	15	23	33
Total Analysis Volume [veh/h]	14	336	0	0	453	26	0	0	0	61	92	132
Presence of On-Street Parking	No		No	No		No				No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	7	4	0	0	8	0	0	0	0	0	2	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	5	5	0	0	5	0	0	0	0	0	5	0
Maximum Green [s]	30	30	0	0	30	0	0	0	0	0	30	0
Amber [s]	3.5	3.5	0.0	0.0	3.5	0.0	0.0	0.0	0.0	0.0	3.5	0.0
All red [s]	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0
Split [s]	9	35	0	0	26	0	0	0	0	0	25	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	0	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	0	0	0	10	0
Rest In Walk		No			No						No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.5	2.5	0.0	0.0	2.5	0.0	0.0	0.0	0.0	0.0	2.5	0.0
Minimum Recall	No	No			No						No	
Maximum Recall	No	No			No						No	
Pedestrian Recall	No	No			No						No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	C		C	C
C, Cycle Length [s]	24	24	24	24		24	24
L, Total Lost Time per Cycle [s]	4.50	4.50	4.50	4.50		4.50	4.50
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00		0.00	0.00
l2, Clearance Lost Time [s]	2.50	2.50	2.50	2.50		2.50	2.50
g_i, Effective Green Time [s]	0	11	6	6		4	4
g / C, Green / Cycle	0.02	0.44	0.24	0.24		0.18	0.18
(v / s)_i Volume / Saturation Flow Rate	0.01	0.09	0.13	0.13		0.08	0.09
s, saturation flow rate [veh/h]	1781	3560	1870	1835		1833	1446
c, Capacity [veh/h]	37	1587	446	437		332	262
d1, Uniform Delay [s]	11.65	4.09	8.02	8.04		8.82	8.90
k, delay calibration	0.11	0.11	0.11	0.11		0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00		1.00	1.00
d2, Incremental Delay [s]	6.31	0.07	1.01	1.07		1.00	1.50
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00		0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00		1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00		1.00	1.00

Lane Group Results

X, volume / capacity	0.38	0.21	0.54	0.55		0.46	0.50
d, Delay for Lane Group [s/veh]	17.96	4.16	9.03	9.12		9.82	10.40
Lane Group LOS	B	A	A	A		A	B
Critical Lane Group	Yes	No	No	Yes		No	Yes
50th-Percentile Queue Length [veh]	0.12	0.17	0.73	0.73		0.52	0.48
50th-Percentile Queue Length [ft]	2.90	4.13	18.20	18.37		13.03	12.06
95th-Percentile Queue Length [veh]	0.21	0.30	1.31	1.32		0.94	0.87
95th-Percentile Queue Length [ft]	5.22	7.44	32.75	33.06		23.45	21.71

Movement, Approach, & Intersection Results

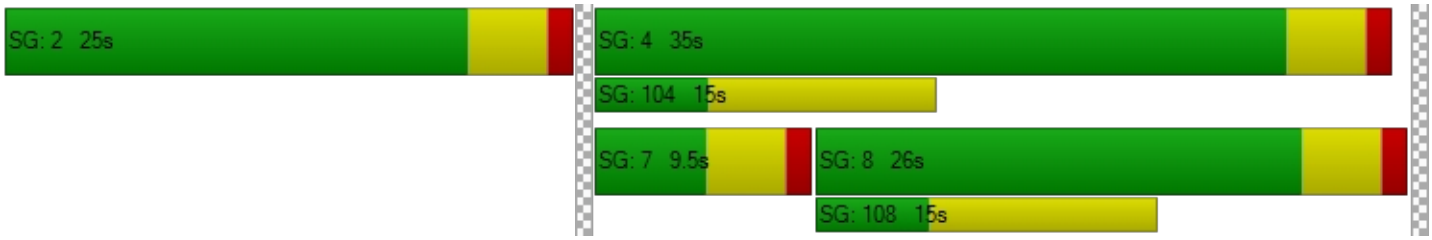
d_M, Delay for Movement [s/veh]	17.96	4.16	0.00	0.00	9.07	9.12	0.00	0.00	0.00	9.82	9.82	10.40
Movement LOS	B	A			A	A				A	A	B
d_A, Approach Delay [s/veh]	4.71			9.07			0.00			10.09		
Approach LOS	A			A			A			B		
d_I, Intersection Delay [s/veh]	7.96											
Intersection LOS	A											
Intersection V/C	0.460											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	21.68	21.68
l_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	1.760	1.834
Crosswalk LOS	F	F	A	A
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1017	717	0	683
d_b, Bicycle Delay [s]	7.25	12.35	30.00	13.00
l_b,int, Bicycle LOS Score for Intersection	1.848	1.955	4.132	1.795
Bicycle LOS	A	A	D	A

Sequence

Ring 1	-	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 15: Avalon Boulevard & I-405 NB Ramps

Control Type:	Signalized	Delay (sec / veh):	7.4
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.616

Intersection Setup

Name	Avalon Boulevard			Avalon Boulevard			I-405 NB Ramps			I-405 NB Ramps		
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]		30.00			30.00			30.00			30.00	
Grade [%]		0.00			0.00			0.00			0.00	
Curb Present		No			No						No	
Crosswalk		No			No			Yes			Yes	

Volumes

Name	Avalon Boulevard			Avalon Boulevard			I-405 NB Ramps			I-405 NB Ramps		
Base Volume Input [veh/h]	294	1321	0	0	1121	641	0	0	0	98	0	453
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 Rate	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
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	294	1321	0	0	1121	641	0	0	0	98	0	453
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]	74	330	0	0	280	160	0	0	0	25	0	113
Total Analysis Volume [veh/h]	294	1321	0	0	1121	641	0	0	0	98	0	453
Presence of On-Street Parking	No		No	No		No				No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing		0			0			0			0	
v_di, Inbound Pedestrian Volume crossing m		0			0			0			0	
v_co, Outbound Pedestrian Volume crossing		0			0			0			0	
v_ci, Inbound Pedestrian Volume crossing mi		0			0			0			0	
v_ab, Corner Pedestrian Volume [ped/h]		0			0			0			0	
Bicycle Volume [bicycles/h]		0			0			0			0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Unsigna	Permiss	Permiss	Permiss	Permiss	Permiss	Unsigna
Signal group	7	4	0	0	8	0	0	0	0	0	2	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	5	5	0	0	5	0	0	0	0	0	5	0
Maximum Green [s]	30	30	0	0	30	0	0	0	0	0	30	0
Amber [s]	3.5	3.5	0.0	0.0	3.5	0.0	0.0	0.0	0.0	0.0	3.5	0.0
All red [s]	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0
Split [s]	14	33	0	0	19	0	0	0	0	0	27	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	0	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	0	0	0	10	0
Rest In Walk		No			No						No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.5	2.5	0.0	0.0	2.5	0.0	0.0	0.0	0.0	0.0	2.5	0.0
Minimum Recall	No	No			No						No	
Maximum Recall	No	No			No						No	
Pedestrian Recall	No	No			No						No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C		L	C
C, Cycle Length [s]	34	34	34		34	34
L, Total Lost Time per Cycle [s]	4.50	4.50	4.50		4.50	4.50
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00		0.00	0.00
l2, Clearance Lost Time [s]	2.50	2.50	2.50		2.50	2.50
g_i, Effective Green Time [s]	5	22	12		3	3
g / C, Green / Cycle	0.15	0.65	0.36		0.09	0.09
(v / s)_i Volume / Saturation Flow Rate	0.09	0.37	0.22		0.03	0.03
s, saturation flow rate [veh/h]	3459	3560	5094		1781	1781
c, Capacity [veh/h]	530	2302	1842		160	160
d1, Uniform Delay [s]	13.38	3.39	8.92		14.54	14.54
k, delay calibration	0.11	0.11	0.11		0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00		1.00	1.00
d2, Incremental Delay [s]	0.91	0.23	0.33		1.07	1.07
d3, Initial Queue Delay [s]	0.00	0.00	0.00		0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00		1.00	1.00
PF, progression factor	1.00	1.00	1.00		1.00	1.00

Lane Group Results

X, volume / capacity	0.55	0.57	0.61		0.31	0.31
d, Delay for Lane Group [s/veh]	14.29	3.62	9.25		15.61	15.61
Lane Group LOS	B	A	A		B	B
Critical Lane Group	No	Yes	No		Yes	No
50th-Percentile Queue Length [veh]	0.89	0.56	1.57		0.34	0.34
50th-Percentile Queue Length [ft]	22.27	13.95	39.20		8.40	8.40
95th-Percentile Queue Length [veh]	1.60	1.00	2.82		0.60	0.60
95th-Percentile Queue Length [ft]	40.08	25.11	70.57		15.12	15.12

Movement, Approach, & Intersection Results

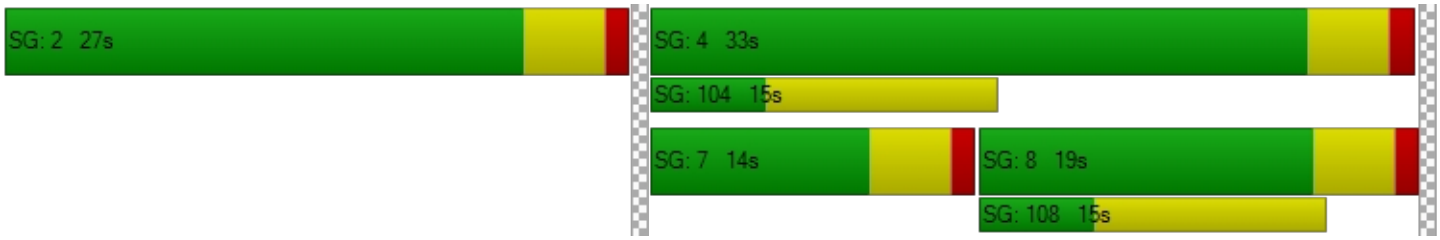
d_M, Delay for Movement [s/veh]	14.29	3.62	0.00	0.00	9.25	0.00	0.00	0.00	0.00	15.61	15.61	0.00
Movement LOS	B	A			A					B	B	
d_A, Approach Delay [s/veh]	5.56			9.25			0.00			15.61		
Approach LOS	A			A			A			B		
d_I, Intersection Delay [s/veh]	7.37											
Intersection LOS	A											
Intersection V/C	0.616											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	21.68	21.68
l_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	1.839	1.953
Crosswalk LOS	F	F	A	A
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	950	483	0	750
d_b, Bicycle Delay [s]	8.27	17.25	30.00	11.72
l_b,int, Bicycle LOS Score for Intersection	2.892	2.176	4.132	1.721
Bicycle LOS	C	B	D	A

Sequence

Ring 1	-	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 16: Avalon Boulevard & I-405 SB Ramps

Control Type:	Signalized	Delay (sec / veh):	10.0
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.750

Intersection Setup

Name	Avalon Boulevard			Avalon Boulevard			I-405 SB Ramps			I-405 SB Ramps		
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]		30.00			30.00			30.00			30.00	
Grade [%]		0.00			0.00			0.00			0.00	
Curb Present		No			No			No				
Crosswalk		Yes			No			Yes			Yes	

Volumes

Name	Avalon Boulevard			Avalon Boulevard			I-405 SB Ramps			I-405 SB Ramps		
Base Volume Input [veh/h]	0	997	129	0	850	347	639	15	368	0	0	0
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 Rate	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
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	997	129	0	850	347	639	15	368	0	0	0
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	249	32	0	213	87	160	4	92	0	0	0
Total Analysis Volume [veh/h]	0	997	129	0	850	347	639	15	368	0	0	0
Presence of On-Street Parking	No		No	No		No	No		No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing		0			0			0			0	
v_di, Inbound Pedestrian Volume crossing m		0			0			0			0	
v_co, Outbound Pedestrian Volume crossing		0			0			0			0	
v_ci, Inbound Pedestrian Volume crossing mi		0			0			0			0	
v_ab, Corner Pedestrian Volume [ped/h]		0			0			0			0	
Bicycle Volume [bicycles/h]		0			0			0			0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Unsigna	Permiss	Permiss	Unsigna	Permiss	Permiss	Permiss
Signal group	7	4	0	0	8	0	0	6	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	5	5	0	0	5	0	0	5	0	0	0	0
Maximum Green [s]	30	30	0	0	30	0	0	30	0	0	0	0
Amber [s]	3.5	3.5	0.0	0.0	3.5	0.0	0.0	3.5	0.0	0.0	0.0	0.0
All red [s]	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0
Split [s]	9	28	0	0	19	0	0	32	0	0	0	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	0	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	0	0
Rest In Walk		No			No			No				
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	2.5	2.5	0.0	0.0	2.5	0.0	0.0	2.5	0.0	0.0	0.0	0.0
Minimum Recall	No	No			No			No				
Maximum Recall	No	No			No			No				
Pedestrian Recall	No	No			No			No				
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	C	L	C	
C, Cycle Length [s]	35	35	35	35	35	35	
L, Total Lost Time per Cycle [s]	4.50	4.50	4.50	4.50	4.50	4.50	
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	
l2, Clearance Lost Time [s]	2.50	2.50	2.50	2.50	2.50	2.50	
g_i, Effective Green Time [s]	0	16	16	12	10	10	
g / C, Green / Cycle	0.00	0.46	0.46	0.33	0.28	0.28	
(v / s)_i Volume / Saturation Flow Rate	0.00	0.31	0.31	0.24	0.18	0.00	
s, saturation flow rate [veh/h]	1781	1870	1796	3560	3459	3560	
c, Capacity [veh/h]	0	867	833	1194	966	994	
d1, Uniform Delay [s]	0.00	7.26	7.27	10.17	11.16	9.14	
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	
d2, Incremental Delay [s]	0.00	0.87	0.91	0.80	0.78	0.01	
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	

Lane Group Results

X, volume / capacity	0.00	0.66	0.66	0.71	0.66	0.02	
d, Delay for Lane Group [s/veh]	0.00	8.14	8.18	10.97	11.95	9.14	
Lane Group LOS	A	A	A	B	B	A	
Critical Lane Group	No	No	Yes	No	Yes	No	
50th-Percentile Queue Length [veh]	0.00	2.13	2.06	2.12	1.72	0.03	
50th-Percentile Queue Length [ft]	0.00	53.24	51.42	53.12	42.90	0.79	
95th-Percentile Queue Length [veh]	0.00	3.83	3.70	3.82	3.09	0.06	
95th-Percentile Queue Length [ft]	0.00	95.83	92.55	95.61	77.22	1.43	

Movement, Approach, & Intersection Results

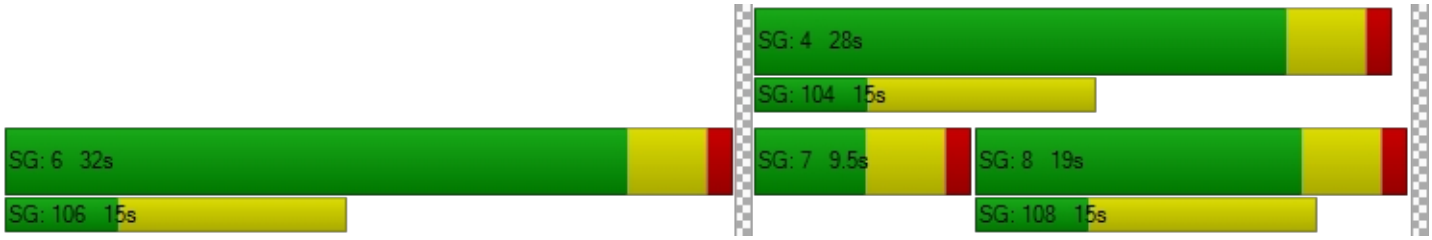
d_M, Delay for Movement [s/veh]	0.00	8.15	8.18	0.00	10.97	0.00	11.95	9.14	0.00	0.00	0.00	0.00
Movement LOS	A	A	A		B		B	A				
d_A, Approach Delay [s/veh]	8.16			10.97			11.88			0.00		
Approach LOS	A			B			B			A		
d_I, Intersection Delay [s/veh]	9.99											
Intersection LOS	A											
Intersection V/C	0.750											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	0.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	21.68	0.00	21.68	21.68
l_p,int, Pedestrian LOS Score for Intersection	2.666	0.000	2.540	1.766
Crosswalk LOS	B	F	B	A
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	783	483	917	0
d_b, Bicycle Delay [s]	11.10	17.25	8.80	30.00
l_b,int, Bicycle LOS Score for Intersection	2.489	2.261	2.099	4.132
Bicycle LOS	B	B	B	D

Sequence

Ring 1	-	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 17: Main Street & SR 91 WB Ramps

Control Type:	Signalized	Delay (sec / veh):	8.9
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.382

Intersection Setup

Name	Main Street			Main Street			SR-91 WB Ramps			SR-91 WB Ramps		
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]		30.00			30.00			30.00			30.00	
Grade [%]		0.00			0.00			0.00			0.00	
Curb Present		No			No						No	
Crosswalk		No			No			No			Yes	

Volumes

Name	Main Street			Main Street			SR-91 WB Ramps			SR-91 WB Ramps		
Base Volume Input [veh/h]	0	199	120	35	220	0	0	0	0	117	0	107
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 Rate	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
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	199	120	35	220	0	0	0	0	117	0	107
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	50	30	9	55	0	0	0	0	29	0	27
Total Analysis Volume [veh/h]	0	199	120	35	220	0	0	0	0	117	0	107
Presence of On-Street Parking	No		No	No		No				No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing		0			0			0			0	
v_di, Inbound Pedestrian Volume crossing m		0			0			0			0	
v_co, Outbound Pedestrian Volume crossing		0			0			0			0	
v_ci, Inbound Pedestrian Volume crossing mi		0			0			0			0	
v_ab, Corner Pedestrian Volume [ped/h]		0			0			0			0	
Bicycle Volume [bicycles/h]		0			0			0			0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	7	4	0	3	8	0	0	0	0	2	0	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	Lead	-	-
Minimum Green [s]	5	5	0	5	5	0	0	0	0	5	0	0
Maximum Green [s]	30	30	0	30	30	0	0	0	0	30	0	0
Amber [s]	3.5	3.5	0.0	3.5	3.5	0.0	0.0	0.0	0.0	3.5	0.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0
Split [s]	9	22	0	9	22	0	0	0	0	29	0	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0
Walk [s]	0	5	0	0	5	0	0	0	0	5	0	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	0	0	10	0	0
Rest In Walk		No			No					No		
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
I2, Clearance Lost Time [s]	2.5	2.5	0.0	2.5	2.5	0.0	0.0	0.0	0.0	2.5	0.0	0.0
Minimum Recall	No	No		No	No					No		
Maximum Recall	No	No		No	No					No		
Pedestrian Recall	No	No		No	No					No		
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C		L	R
C, Cycle Length [s]	23	23	23	23	23		23	23
L, Total Lost Time per Cycle [s]	4.50	4.50	4.50	4.50	4.50		4.50	4.50
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00		0.00	0.00
l2, Clearance Lost Time [s]	2.50	2.50	2.50	2.50	2.50		2.50	2.50
g_i, Effective Green Time [s]	0	4	4	1	5		4	4
g / C, Green / Cycle	0.00	0.19	0.19	0.05	0.24		0.17	0.17
(v / s)_i Volume / Saturation Flow Rate	0.00	0.09	0.09	0.02	0.06		0.07	0.07
s, saturation flow rate [veh/h]	1781	1870	1644	1781	3560		1781	1589
c, Capacity [veh/h]	2	362	318	83	852		303	270
d1, Uniform Delay [s]	0.00	8.17	8.21	10.62	7.07		8.44	8.46
k, delay calibration	0.11	0.11	0.11	0.11	0.11		0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00
d2, Incremental Delay [s]	0.00	0.90	1.13	3.35	0.16		0.81	0.94
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00		0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00		1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00

Lane Group Results

X, volume / capacity	0.00	0.46	0.48	0.42	0.26		0.39	0.40
d, Delay for Lane Group [s/veh]	0.00	9.06	9.35	13.97	7.22		9.25	9.40
Lane Group LOS	A	A	A	B	A		A	A
Critical Lane Group	No	No	Yes	Yes	No		No	Yes
50th-Percentile Queue Length [veh]	0.00	0.49	0.48	0.19	0.25		0.36	0.34
50th-Percentile Queue Length [ft]	0.00	12.33	11.92	4.75	6.15		9.12	8.57
95th-Percentile Queue Length [veh]	0.00	0.89	0.86	0.34	0.44		0.66	0.62
95th-Percentile Queue Length [ft]	0.00	22.19	21.46	8.55	11.07		16.42	15.42

Movement, Approach, & Intersection Results

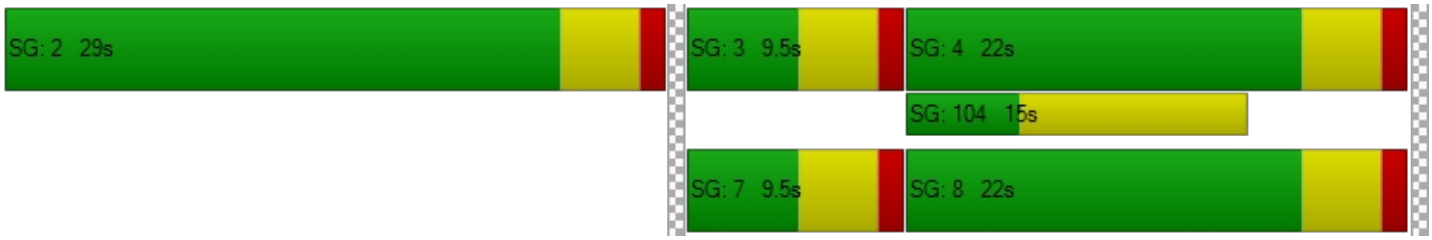
d_M, Delay for Movement [s/veh]	0.00	9.11	9.35	13.97	7.22	0.00	0.00	0.00	0.00	9.25	0.00	9.40
Movement LOS	A	A	A	B	A					A		A
d_A, Approach Delay [s/veh]	9.20			8.15			0.00			9.32		
Approach LOS	A			A			A			A		
d_I, Intersection Delay [s/veh]	8.90											
Intersection LOS	A											
Intersection V/C	0.382											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	0.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	0.00	21.68
l_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	0.000	2.044
Crosswalk LOS	F	F	F	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	583	583	0	0
d_b, Bicycle Delay [s]	15.05	15.05	30.00	30.00
l_b,int, Bicycle LOS Score for Intersection	1.823	1.770	4.132	4.132
Bicycle LOS	A	A	D	D

Sequence

Ring 1	-	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 22: I-110 SB Off-Ramp & 190th Street

Control Type:	Signalized	Delay (sec / veh):	8.4
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.663

Intersection Setup

Name	I-110 SB Off-Ramp		190th Street		190th Street	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	Yes		No		No	

Volumes

Name	I-110 SB Off-Ramp		190th Street		190th Street	
Base Volume Input [veh/h]	259	355	0	936	500	0
Base Volume Adjustment Factor	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
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	259	355	0	936	500	0
Peak Hour Factor	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
Total 15-Minute Volume [veh/h]	65	89	0	234	125	0
Total Analysis Volume [veh/h]	259	355	0	936	500	0
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal group	8	0	0	6	2	0
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	-	-
Minimum Green [s]	5	0	0	5	5	0
Maximum Green [s]	30	0	0	30	30	0
Amber [s]	3.5	0.0	0.0	3.5	3.5	0.0
All red [s]	1.0	0.0	0.0	1.0	1.0	0.0
Split [s]	40	0	0	20	20	0
Vehicle Extension [s]	3.0	0.0	0.0	3.0	3.0	0.0
Walk [s]	5	0	0	5	5	0
Pedestrian Clearance [s]	10	0	0	10	10	0
Rest In Walk	No			No	No	
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.5	0.0	0.0	2.5	2.5	0.0
Minimum Recall	No			No	No	
Maximum Recall	No			No	No	
Pedestrian Recall	No			No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R	C	C
C, Cycle Length [s]	30	30	30	30
L, Total Lost Time per Cycle [s]	4.50	4.50	4.50	4.50
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.50	2.50	2.50	2.50
g_i, Effective Green Time [s]	10	10	11	11
g / C, Green / Cycle	0.32	0.32	0.38	0.38
(v / s)_i Volume / Saturation Flow Rate	0.15	0.22	0.26	0.10
s, saturation flow rate [veh/h]	1781	1589	3560	5094
c, Capacity [veh/h]	568	507	1361	1947
d1, Uniform Delay [s]	8.17	8.99	7.79	6.37
k, delay calibration	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.57	1.78	0.63	0.07
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.46	0.70	0.69	0.26
d, Delay for Lane Group [s/veh]	8.74	10.77	8.42	6.44
Lane Group LOS	A	B	A	A
Critical Lane Group	No	Yes	Yes	No
50th-Percentile Queue Length [veh]	0.94	1.53	1.55	0.43
50th-Percentile Queue Length [ft]	23.40	38.13	38.85	10.76
95th-Percentile Queue Length [veh]	1.69	2.75	2.80	0.77
95th-Percentile Queue Length [ft]	42.13	68.64	69.94	19.36

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	8.74	10.77	0.00	8.42	6.44	0.00
Movement LOS	A	B		A	A	
d_A, Approach Delay [s/veh]	9.91		8.42		6.44	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	8.38					
Intersection LOS	A					
Intersection V/C	0.663					

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	21.68	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersection	1.995	0.000	0.000
Crosswalk LOS	A	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	0	0
d_b, Bicycle Delay [s]	30.00	30.00	30.00
l_b,int, Bicycle LOS Score for Intersection	4.132	4.905	4.407
Bicycle LOS	D	E	E

Sequence

Ring 1	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 28: SR 91 EB Ramps & Albertoni Street

Control Type:	Signalized	Delay (sec / veh):	10.3
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.510

Intersection Setup

Name	SR 91 EB Ramps		Albertoni Street		Albertoni Street	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	Yes		No		No	

Volumes

Name	SR 91 EB Ramps		Albertoni Street		Albertoni Street	
Base Volume Input [veh/h]	208	149	275	272	291	67
Base Volume Adjustment Factor	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
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	208	149	275	272	291	67
Peak Hour Factor	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
Total 15-Minute Volume [veh/h]	52	37	69	68	73	17
Total Analysis Volume [veh/h]	208	149	275	272	291	67
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permissive	Permissive	Protected	Permissive	Permissive	Permissive
Signal group	8	0	1	6	2	0
Auxiliary Signal Groups						
Lead / Lag	Lead	-	Lead	-	-	-
Minimum Green [s]	5	0	5	5	5	0
Maximum Green [s]	30	0	30	30	30	0
Amber [s]	3.5	0.0	3.5	3.5	3.5	0.0
All red [s]	1.0	0.0	1.0	1.0	1.0	0.0
Split [s]	23	0	14	37	23	0
Vehicle Extension [s]	3.0	0.0	3.0	3.0	3.0	0.0
Walk [s]	5	0	0	5	5	0
Pedestrian Clearance [s]	10	0	0	10	10	0
Rest In Walk	No			No	No	
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.5	0.0	2.5	2.5	2.5	0.0
Minimum Recall	No		No	No	No	
Maximum Recall	No		No	No	No	
Pedestrian Recall	No		No	No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R	L	C	C	C
C, Cycle Length [s]	29	29	29	29	29	29
L, Total Lost Time per Cycle [s]	4.50	4.50	4.50	4.50	4.50	4.50
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.50	2.50	2.50	2.50	2.50	2.50
g_i, Effective Green Time [s]	6	6	4	14	5	5
g / C, Green / Cycle	0.20	0.20	0.16	0.49	0.18	0.18
(v / s)_i Volume / Saturation Flow Rate	0.12	0.09	0.08	0.08	0.10	0.10
s, saturation flow rate [veh/h]	1781	1589	3459	3560	1870	1754
c, Capacity [veh/h]	352	314	538	1755	341	320
d1, Uniform Delay [s]	10.60	10.33	11.25	4.05	10.74	10.82
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.59	1.12	0.75	0.04	1.25	1.53
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.59	0.47	0.51	0.16	0.53	0.56
d, Delay for Lane Group [s/veh]	12.19	11.44	12.00	4.09	12.00	12.35
Lane Group LOS	B	B	B	A	B	B
Critical Lane Group	Yes	No	Yes	No	No	Yes
50th-Percentile Queue Length [veh]	1.00	0.68	0.64	0.19	0.85	0.87
50th-Percentile Queue Length [ft]	24.90	17.10	15.97	4.64	21.23	21.80
95th-Percentile Queue Length [veh]	1.79	1.23	1.15	0.33	1.53	1.57
95th-Percentile Queue Length [ft]	44.81	30.79	28.74	8.35	38.21	39.24

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	12.19	11.44	12.00	4.09	12.13	12.35
Movement LOS	B	B	B	A	B	B
d_A, Approach Delay [s/veh]	11.88		8.07		12.17	
Approach LOS	B		A		B	
d_I, Intersection Delay [s/veh]	10.31					
Intersection LOS	B					
Intersection V/C	0.510					

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	21.68	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersection	2.282	0.000	0.000
Crosswalk LOS	B	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	0	0
d_b, Bicycle Delay [s]	30.00	30.00	30.00
l_b,int, Bicycle LOS Score for Intersection	4.132	4.584	4.428
Bicycle LOS	D	E	E

Sequence

Ring 1	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 2: Main Street & I-405 NB Off-Ramp

Control Type:	Signalized	Delay (sec / veh):	9.4
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.552

Intersection Setup

Name	Main Street			Main Street			I-405 NB Off-Ramp			I-405 NB Off-Ramp		
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]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No						No		
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Main Street			Main Street			I-405 NB Off-Ramp			I-405 NB Off-Ramp		
Base Volume Input [veh/h]	14	395	0	0	556	26	0	0	0	259	93	148
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 Rate	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
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	14	395	0	0	556	26	0	0	0	259	93	148
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]	4	99	0	0	139	7	0	0	0	65	23	37
Total Analysis Volume [veh/h]	14	395	0	0	556	26	0	0	0	259	93	148
Presence of On-Street Parking	No		No	No		No				No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	7	4	0	0	8	0	0	0	0	0	2	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	5	5	0	0	5	0	0	0	0	0	5	0
Maximum Green [s]	30	30	0	0	30	0	0	0	0	0	30	0
Amber [s]	3.5	3.5	0.0	0.0	3.5	0.0	0.0	0.0	0.0	0.0	3.5	0.0
All red [s]	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0
Split [s]	10	35	0	0	25	0	0	0	0	0	25	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	0	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	0	0	0	10	0
Rest In Walk		No			No						No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.5	2.5	0.0	0.0	2.5	0.0	0.0	0.0	0.0	0.0	2.5	0.0
Minimum Recall	No	No			No						No	
Maximum Recall	No	No			No						No	
Pedestrian Recall	No	No			No						No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	C		C	C
C, Cycle Length [s]	28	28	28	28		28	28
L, Total Lost Time per Cycle [s]	4.50	4.50	4.50	4.50		4.50	4.50
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00		0.00	0.00
l2, Clearance Lost Time [s]	2.50	2.50	2.50	2.50		2.50	2.50
g_i, Effective Green Time [s]	1	12	7	7		7	7
g / C, Green / Cycle	0.02	0.44	0.26	0.26		0.25	0.25
(v / s)_i Volume / Saturation Flow Rate	0.01	0.11	0.16	0.16		0.15	0.15
s, saturation flow rate [veh/h]	1781	3560	1870	1841		1784	1530
c, Capacity [veh/h]	35	1551	482	475		442	379
d1, Uniform Delay [s]	13.77	5.09	9.27	9.30		9.46	9.49
k, delay calibration	0.11	0.11	0.11	0.11		0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00		1.00	1.00
d2, Incremental Delay [s]	7.33	0.09	1.22	1.29		1.34	1.61
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00		0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00		1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00		1.00	1.00

Lane Group Results

X, volume / capacity	0.40	0.25	0.60	0.61		0.61	0.61
d, Delay for Lane Group [s/veh]	21.11	5.18	10.49	10.59		10.80	11.10
Lane Group LOS	C	A	B	B		B	B
Critical Lane Group	Yes	No	No	Yes		No	Yes
50th-Percentile Queue Length [veh]	0.14	0.36	1.18	1.19		1.12	1.00
50th-Percentile Queue Length [ft]	3.47	9.09	29.53	29.77		27.98	25.04
95th-Percentile Queue Length [veh]	0.25	0.65	2.13	2.14		2.01	1.80
95th-Percentile Queue Length [ft]	6.25	16.37	53.16	53.59		50.37	45.07

Movement, Approach, & Intersection Results

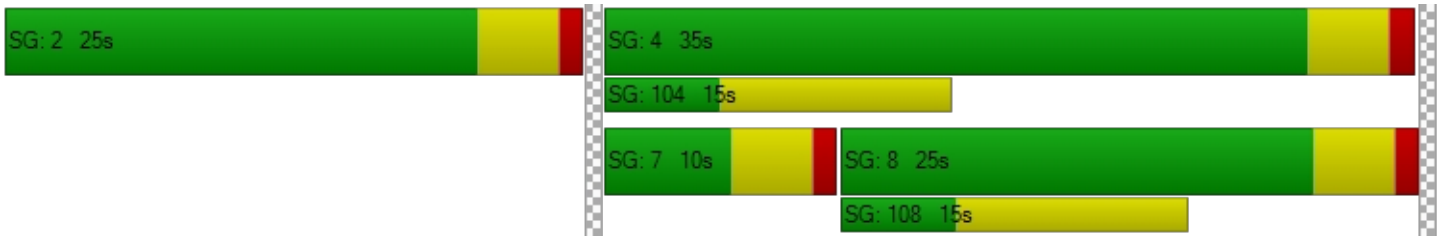
d_M, Delay for Movement [s/veh]	21.11	5.18	0.00	0.00	10.54	10.59	0.00	0.00	0.00	10.80	11.07	11.10
Movement LOS	C	A			B	B				B	B	B
d_A, Approach Delay [s/veh]	5.72			10.54			0.00			10.94		
Approach LOS	A			B			A			B		
d_I, Intersection Delay [s/veh]	9.35											
Intersection LOS	A											
Intersection V/C	0.552											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	21.68	21.68
l_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	1.760	1.939
Crosswalk LOS	F	F	A	A
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1017	683	0	683
d_b, Bicycle Delay [s]	7.25	13.00	30.00	13.00
l_b,int, Bicycle LOS Score for Intersection	1.897	2.040	4.132	1.972
Bicycle LOS	A	B	D	A

Sequence

Ring 1	-	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 15: Avalon Boulevard & I-405 NB Ramps

Control Type:	Signalized	Delay (sec / veh):	13.5
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.705

Intersection Setup

Name	Avalon Boulevard			Avalon Boulevard			I-405 NB Ramps			I-405 NB Ramps		
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]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No						No		
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Avalon Boulevard			Avalon Boulevard			I-405 NB Ramps			I-405 NB Ramps		
Base Volume Input [veh/h]	529	1512	0	0	1424	686	0	0	0	427	0	590
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 Rate	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
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	529	1512	0	0	1424	686	0	0	0	427	0	590
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]	132	378	0	0	356	172	0	0	0	107	0	148
Total Analysis Volume [veh/h]	529	1512	0	0	1424	686	0	0	0	427	0	590
Presence of On-Street Parking	No		No	No		No				No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Unsigna	Permiss	Permiss	Permiss	Permiss	Permiss	Unsigna
Signal group	7	4	0	0	8	0	0	0	0	0	2	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	5	5	0	0	5	0	0	0	0	0	5	0
Maximum Green [s]	30	30	0	0	30	0	0	0	0	0	30	0
Amber [s]	3.5	3.5	0.0	0.0	3.5	0.0	0.0	0.0	0.0	0.0	3.5	0.0
All red [s]	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0
Split [s]	14	34	0	0	20	0	0	0	0	0	26	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	0	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	0	0	0	10	0
Rest In Walk		No			No						No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.5	2.5	0.0	0.0	2.5	0.0	0.0	0.0	0.0	0.0	2.5	0.0
Minimum Recall	No	No			No						No	
Maximum Recall	No	No			No						No	
Pedestrian Recall	No	No			No						No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C		L	C
C, Cycle Length [s]	55	55	55		55	55
L, Total Lost Time per Cycle [s]	4.50	4.50	4.50		4.50	4.50
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00		0.00	0.00
l2, Clearance Lost Time [s]	2.50	2.50	2.50		2.50	2.50
g_i, Effective Green Time [s]	11	37	21		9	9
g / C, Green / Cycle	0.21	0.67	0.38		0.17	0.17
(v / s)_i Volume / Saturation Flow Rate	0.15	0.42	0.28		0.12	0.12
s, saturation flow rate [veh/h]	3459	3560	5094		1781	1781
c, Capacity [veh/h]	719	2386	1941		299	299
d1, Uniform Delay [s]	20.55	5.25	14.74		21.83	21.83
k, delay calibration	0.11	0.11	0.11		0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00		1.00	1.00
d2, Incremental Delay [s]	1.49	0.28	0.55		3.19	3.19
d3, Initial Queue Delay [s]	0.00	0.00	0.00		0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00		1.00	1.00
PF, progression factor	1.00	1.00	1.00		1.00	1.00

Lane Group Results

X, volume / capacity	0.74	0.63	0.73		0.72	0.72
d, Delay for Lane Group [s/veh]	22.04	5.53	15.29		25.02	25.02
Lane Group LOS	C	A	B		C	C
Critical Lane Group	Yes	No	Yes		Yes	No
50th-Percentile Queue Length [veh]	3.05	2.97	4.47		2.67	2.67
50th-Percentile Queue Length [ft]	76.32	74.32	111.74		66.76	66.76
95th-Percentile Queue Length [veh]	5.50	5.35	7.94		4.81	4.81
95th-Percentile Queue Length [ft]	137.38	133.77	198.42		120.17	120.17

Movement, Approach, & Intersection Results

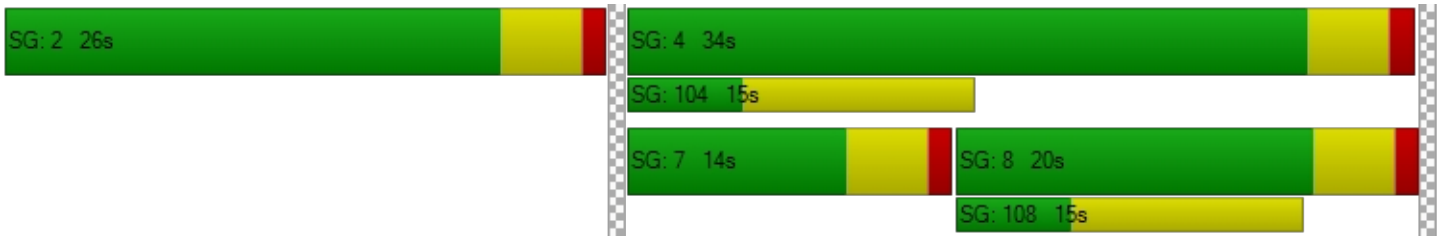
d_M, Delay for Movement [s/veh]	22.04	5.53	0.00	0.00	15.29	0.00	0.00	0.00	0.00	25.02	25.02	0.00
Movement LOS	C	A			B					C	C	
d_A, Approach Delay [s/veh]	9.81			15.29			0.00			25.02		
Approach LOS	A			B			A			C		
d_I, Intersection Delay [s/veh]	13.48											
Intersection LOS	B											
Intersection V/C	0.705											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	21.68	21.68
l_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	1.953	2.060
Crosswalk LOS	F	F	A	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	983	517	0	717
d_b, Bicycle Delay [s]	7.75	16.50	30.00	12.35
l_b,int, Bicycle LOS Score for Intersection	3.243	2.343	4.132	2.264
Bicycle LOS	C	B	D	B

Sequence

Ring 1	-	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 16: Avalon Boulevard & I-405 SB Ramps

Control Type:	Signalized	Delay (sec / veh):	21.6
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.834

Intersection Setup

Name	Avalon Boulevard			Avalon Boulevard			I-405 SB Ramps			I-405 SB Ramps		
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]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No					
Crosswalk	Yes			No			Yes			Yes		

Volumes

Name	Avalon Boulevard			Avalon Boulevard			I-405 SB Ramps			I-405 SB Ramps		
Base Volume Input [veh/h]	278	1183	178	0	1030	796	879	273	683	0	0	0
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 Rate	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
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	278	1183	178	0	1030	796	879	273	683	0	0	0
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]	70	296	45	0	258	199	220	68	171	0	0	0
Total Analysis Volume [veh/h]	278	1183	178	0	1030	796	879	273	683	0	0	0
Presence of On-Street Parking	No		No	No		No	No		No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Unsigna	Permiss	Permiss	Unsigna	Permiss	Permiss	Permiss
Signal group	7	4	0	0	8	0	0	6	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	5	5	0	0	5	0	0	5	0	0	0	0
Maximum Green [s]	30	30	0	0	30	0	0	30	0	0	0	0
Amber [s]	3.5	3.5	0.0	0.0	3.5	0.0	0.0	3.5	0.0	0.0	0.0	0.0
All red [s]	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0
Split [s]	10	30	0	0	20	0	0	30	0	0	0	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	0	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	0	0
Rest In Walk		No			No			No				
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	2.5	2.5	0.0	0.0	2.5	0.0	0.0	2.5	0.0	0.0	0.0	0.0
Minimum Recall	No	No			No			No				
Maximum Recall	No	No			No			No				
Pedestrian Recall	No	No			No			No				
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	C	L	C	
C, Cycle Length [s]	75	75	75	75	75	75	
L, Total Lost Time per Cycle [s]	4.50	4.50	4.50	4.50	4.50	4.50	
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	
l2, Clearance Lost Time [s]	2.50	2.50	2.50	2.50	2.50	2.50	
g_i, Effective Green Time [s]	14	43	43	25	23	23	
g / C, Green / Cycle	0.19	0.58	0.58	0.33	0.30	0.30	
(v / s)_i Volume / Saturation Flow Rate	0.16	0.37	0.38	0.29	0.25	0.08	
s, saturation flow rate [veh/h]	1781	1870	1786	3560	3459	3560	
c, Capacity [veh/h]	331	1079	1030	1178	1048	1079	
d1, Uniform Delay [s]	29.38	10.61	10.74	23.56	24.36	19.68	
k, delay calibration	0.11	0.38	0.39	0.11	0.11	0.11	
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	
d2, Incremental Delay [s]	5.74	2.22	2.55	2.21	1.89	0.12	
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	

Lane Group Results

X, volume / capacity	0.84	0.64	0.65	0.87	0.84	0.25	
d, Delay for Lane Group [s/veh]	35.12	12.82	13.29	25.77	26.25	19.80	
Lane Group LOS	D	B	B	C	C	B	
Critical Lane Group	Yes	No	No	Yes	Yes	No	
50th-Percentile Queue Length [veh]	5.14	7.09	7.08	8.33	7.09	1.73	
50th-Percentile Queue Length [ft]	128.48	177.28	176.99	208.14	177.29	43.22	
95th-Percentile Queue Length [veh]	8.86	11.46	11.44	13.06	11.46	3.11	
95th-Percentile Queue Length [ft]	221.42	286.46	286.09	326.44	286.47	77.79	

Movement, Approach, & Intersection Results

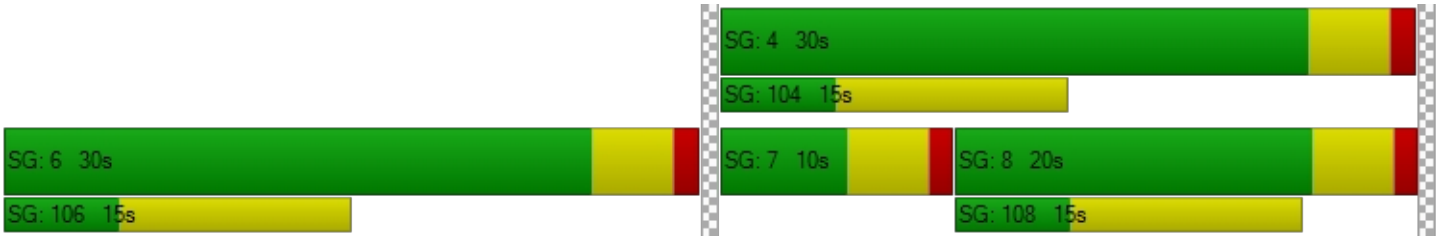
d_M, Delay for Movement [s/veh]	35.12	13.02	13.29	0.00	25.77	0.00	26.25	19.80	0.00	0.00	0.00	0.00
Movement LOS	D	B	B		C		C	B				
d_A, Approach Delay [s/veh]	16.80			25.77			24.72			0.00		
Approach LOS	B			C			C			A		
d_I, Intersection Delay [s/veh]	21.61											
Intersection LOS	C											
Intersection V/C	0.834											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	0.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	21.68	0.00	21.68	21.68
l_p,int, Pedestrian LOS Score for Intersection	2.801	0.000	2.666	1.915
Crosswalk LOS	C	F	B	A
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	850	517	850	0
d_b, Bicycle Delay [s]	9.92	16.50	9.92	30.00
l_b,int, Bicycle LOS Score for Intersection	2.912	2.409	2.510	4.132
Bicycle LOS	C	B	B	D

Sequence

Ring 1	-	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 17: Main Street & SR 91 WB Ramps

Control Type:	Signalized	Delay (sec / veh):	9.0
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.436

Intersection Setup

Name	Main Street			Main Street			SR-91 WB Ramps			SR-91 WB Ramps		
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]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No						No		
Crosswalk	No			No			No			Yes		

Volumes

Name	Main Street			Main Street			SR-91 WB Ramps			SR-91 WB Ramps		
Base Volume Input [veh/h]	0	312	138	35	333	0	0	0	0	126	0	108
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 Rate	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
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	312	138	35	333	0	0	0	0	126	0	108
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	78	35	9	83	0	0	0	0	32	0	27
Total Analysis Volume [veh/h]	0	312	138	35	333	0	0	0	0	126	0	108
Presence of On-Street Parking	No		No	No		No				No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	7	4	0	3	8	0	0	0	0	2	0	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	Lead	-	-
Minimum Green [s]	5	5	0	5	5	0	0	0	0	5	0	0
Maximum Green [s]	30	30	0	30	30	0	0	0	0	30	0	0
Amber [s]	3.5	3.5	0.0	3.5	3.5	0.0	0.0	0.0	0.0	3.5	0.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0
Split [s]	10	22	0	10	22	0	0	0	0	28	0	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0
Walk [s]	0	5	0	0	5	0	0	0	0	5	0	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	0	0	10	0	0
Rest In Walk		No			No					No		
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
I2, Clearance Lost Time [s]	2.5	2.5	0.0	2.5	2.5	0.0	0.0	0.0	0.0	2.5	0.0	0.0
Minimum Recall	No	No		No	No					No		
Maximum Recall	No	No		No	No					No		
Pedestrian Recall	No	No		No	No					No		
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C		L	R
C, Cycle Length [s]	24	24	24	24	24		24	24
L, Total Lost Time per Cycle [s]	4.50	4.50	4.50	4.50	4.50		4.50	4.50
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00		0.00	0.00
l2, Clearance Lost Time [s]	2.50	2.50	2.50	2.50	2.50		2.50	2.50
g_i, Effective Green Time [s]	0	6	6	1	7		4	4
g / C, Green / Cycle	0.00	0.23	0.23	0.04	0.27		0.17	0.17
(v / s)_i Volume / Saturation Flow Rate	0.00	0.12	0.13	0.02	0.09		0.07	0.07
s, saturation flow rate [veh/h]	1781	1870	1681	1781	3560		1781	1589
c, Capacity [veh/h]	1	434	390	80	984		296	264
d1, Uniform Delay [s]	0.00	8.17	8.21	11.27	7.00		9.07	9.04
k, delay calibration	0.11	0.11	0.11	0.11	0.11		0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00
d2, Incremental Delay [s]	0.00	1.04	1.24	3.68	0.20		0.97	1.02
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00		0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00		1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00

Lane Group Results

X, volume / capacity	0.00	0.54	0.56	0.44	0.34		0.43	0.41
d, Delay for Lane Group [s/veh]	0.00	9.22	9.45	14.95	7.20		10.04	10.06
Lane Group LOS	A	A	A	B	A		B	B
Critical Lane Group	No	No	Yes	Yes	No		Yes	No
50th-Percentile Queue Length [veh]	0.00	0.73	0.70	0.21	0.39		0.45	0.39
50th-Percentile Queue Length [ft]	0.00	18.32	17.46	5.20	9.77		11.19	9.72
95th-Percentile Queue Length [veh]	0.00	1.32	1.26	0.37	0.70		0.81	0.70
95th-Percentile Queue Length [ft]	0.00	32.97	31.43	9.35	17.59		20.14	17.49

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	9.27	9.45	14.95	7.20	0.00	0.00	0.00	0.00	10.04	0.00	10.06
Movement LOS	A	A	A	B	A					B		B
d_A, Approach Delay [s/veh]	9.33			7.94			0.00			10.05		
Approach LOS	A			A			A			B		
d_I, Intersection Delay [s/veh]	9.00											
Intersection LOS	A											
Intersection V/C	0.436											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	0.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	0.00	21.68
l_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	0.000	2.053
Crosswalk LOS	F	F	F	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	583	583	0	0
d_b, Bicycle Delay [s]	15.05	15.05	30.00	30.00
l_b,int, Bicycle LOS Score for Intersection	1.931	1.863	4.132	4.132
Bicycle LOS	A	A	D	D

Sequence

Ring 1	-	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 22: I-110 SB Off-Ramp & 190th Street

Control Type:	Signalized	Delay (sec / veh):	8.8
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.678

Intersection Setup

Name	I-110 SB Off-Ramp		190th Street		190th Street	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	Yes		No		No	

Volumes

Name	I-110 SB Off-Ramp		190th Street		190th Street	
Base Volume Input [veh/h]	329	364	0	992	557	0
Base Volume Adjustment Factor	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
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	329	364	0	992	557	0
Peak Hour Factor	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
Total 15-Minute Volume [veh/h]	82	91	0	248	139	0
Total Analysis Volume [veh/h]	329	364	0	992	557	0
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal group	8	0	0	6	2	0
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	-	-
Minimum Green [s]	5	0	0	5	5	0
Maximum Green [s]	30	0	0	30	30	0
Amber [s]	3.5	0.0	0.0	3.5	3.5	0.0
All red [s]	1.0	0.0	0.0	1.0	1.0	0.0
Split [s]	39	0	0	21	21	0
Vehicle Extension [s]	3.0	0.0	0.0	3.0	3.0	0.0
Walk [s]	5	0	0	5	5	0
Pedestrian Clearance [s]	10	0	0	10	10	0
Rest In Walk	No			No	No	
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.5	0.0	0.0	2.5	2.5	0.0
Minimum Recall	No			No	No	
Maximum Recall	No			No	No	
Pedestrian Recall	No			No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R	C	C
C, Cycle Length [s]	32	32	32	32
L, Total Lost Time per Cycle [s]	4.50	4.50	4.50	4.50
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.50	2.50	2.50	2.50
g_i, Effective Green Time [s]	10	10	13	13
g / C, Green / Cycle	0.32	0.32	0.39	0.39
(v / s)_i Volume / Saturation Flow Rate	0.18	0.23	0.28	0.11
s, saturation flow rate [veh/h]	1781	1589	3560	5094
c, Capacity [veh/h]	577	515	1406	2012
d1, Uniform Delay [s]	8.97	9.49	8.13	6.58
k, delay calibration	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.89	1.79	0.66	0.07
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.57	0.71	0.71	0.28
d, Delay for Lane Group [s/veh]	9.86	11.28	8.79	6.66
Lane Group LOS	A	B	A	A
Critical Lane Group	No	Yes	Yes	No
50th-Percentile Queue Length [veh]	1.40	1.72	1.83	0.53
50th-Percentile Queue Length [ft]	34.93	43.11	45.86	13.27
95th-Percentile Queue Length [veh]	2.51	3.10	3.30	0.96
95th-Percentile Queue Length [ft]	62.87	77.60	82.55	23.89

Movement, Approach, & Intersection Results

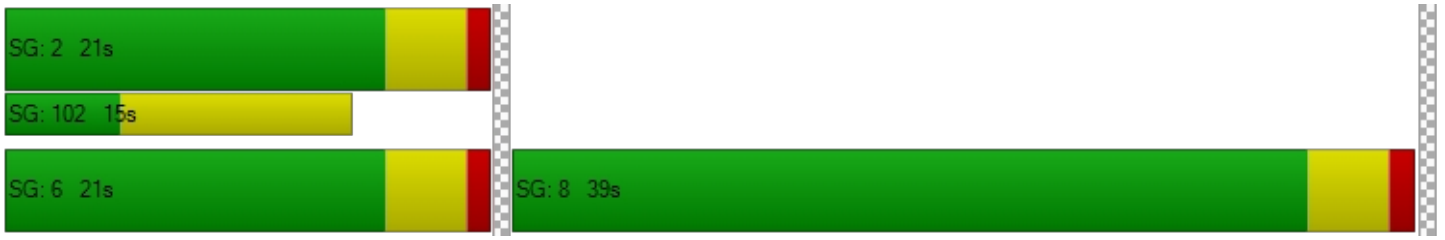
d_M, Delay for Movement [s/veh]	9.86	11.28	0.00	8.79	6.66	0.00
Movement LOS	A	B		A	A	
d_A, Approach Delay [s/veh]	10.61		8.79		6.66	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	8.82					
Intersection LOS	A					
Intersection V/C	0.678					

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	21.68	0.00	0.00
I_p,int, Pedestrian LOS Score for Intersection	2.033	0.000	0.000
Crosswalk LOS	B	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	0	0
d_b, Bicycle Delay [s]	30.00	30.00	30.00
I_b,int, Bicycle LOS Score for Intersection	4.132	4.951	4.439
Bicycle LOS	D	E	E

Sequence

Ring 1	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 28: SR 91 EB Ramps & Albertoni Street

Control Type:	Signalized	Delay (sec / veh):	10.5
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.514

Intersection Setup

Name	SR 91 EB Ramps		Albertoni Street		Albertoni Street	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	Yes		No		No	

Volumes

Name	SR 91 EB Ramps		Albertoni Street		Albertoni Street	
Base Volume Input [veh/h]	209	164	288	266	287	68
Base Volume Adjustment Factor	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
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	209	164	288	266	287	68
Peak Hour Factor	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
Total 15-Minute Volume [veh/h]	52	41	72	67	72	17
Total Analysis Volume [veh/h]	209	164	288	266	287	68
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permissive	Permissive	Protected	Permissive	Permissive	Permissive
Signal group	8	0	1	6	2	0
Auxiliary Signal Groups						
Lead / Lag	Lead	-	Lead	-	-	-
Minimum Green [s]	5	0	5	5	5	0
Maximum Green [s]	30	0	30	30	30	0
Amber [s]	3.5	0.0	3.5	3.5	3.5	0.0
All red [s]	1.0	0.0	1.0	1.0	1.0	0.0
Split [s]	23	0	14	37	23	0
Vehicle Extension [s]	3.0	0.0	3.0	3.0	3.0	0.0
Walk [s]	5	0	0	5	5	0
Pedestrian Clearance [s]	10	0	0	10	10	0
Rest In Walk	No			No	No	
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.5	0.0	2.5	2.5	2.5	0.0
Minimum Recall	No		No	No	No	
Maximum Recall	No		No	No	No	
Pedestrian Recall	No		No	No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R	L	C	C	C
C, Cycle Length [s]	29	29	29	29	29	29
L, Total Lost Time per Cycle [s]	4.50	4.50	4.50	4.50	4.50	4.50
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.50	2.50	2.50	2.50	2.50	2.50
g_i, Effective Green Time [s]	6	6	5	14	5	5
g / C, Green / Cycle	0.20	0.20	0.16	0.49	0.18	0.18
(v / s)_i Volume / Saturation Flow Rate	0.12	0.10	0.08	0.07	0.09	0.10
s, saturation flow rate [veh/h]	1781	1589	3459	3560	1870	1752
c, Capacity [veh/h]	355	316	547	1753	337	315
d1, Uniform Delay [s]	10.60	10.43	11.28	4.06	10.84	10.92
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.56	1.31	0.79	0.04	1.28	1.58
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.59	0.52	0.53	0.15	0.53	0.56
d, Delay for Lane Group [s/veh]	12.16	11.75	12.06	4.10	12.12	12.49
Lane Group LOS	B	B	B	A	B	B
Critical Lane Group	Yes	No	Yes	No	No	Yes
50th-Percentile Queue Length [veh]	1.00	0.77	0.67	0.18	0.85	0.88
50th-Percentile Queue Length [ft]	25.08	19.29	16.87	4.62	21.33	21.92
95th-Percentile Queue Length [veh]	1.81	1.39	1.21	0.33	1.54	1.58
95th-Percentile Queue Length [ft]	45.14	34.71	30.37	8.31	38.40	39.46

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	12.16	11.75	12.06	4.10	12.26	12.49
Movement LOS	B	B	B	A	B	B
d_A, Approach Delay [s/veh]	11.98		8.24		12.31	
Approach LOS	B		A		B	
d_I, Intersection Delay [s/veh]	10.45					
Intersection LOS	B					
Intersection V/C	0.514					

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	21.68	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersection	2.289	0.000	0.000
Crosswalk LOS	B	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	0	0
d_b, Bicycle Delay [s]	30.00	30.00	30.00
l_b,int, Bicycle LOS Score for Intersection	4.132	4.589	4.425
Bicycle LOS	D	E	E

Sequence

Ring 1	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 2: Main Street & I-405 NB Off-Ramp

Control Type:	Signalized	Delay (sec / veh):	9.7
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.576

Intersection Setup

Name	Main Street			Main Street			I-405 NB Off-Ramp			I-405 NB Off-Ramp		
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]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No						No		
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Main Street			Main Street			I-405 NB Off-Ramp			I-405 NB Off-Ramp		
Base Volume Input [veh/h]	14	435	0	0	611	26	0	0	0	259	93	179
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 Rate	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
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	14	435	0	0	611	26	0	0	0	259	93	179
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]	4	109	0	0	153	7	0	0	0	65	23	45
Total Analysis Volume [veh/h]	14	435	0	0	611	26	0	0	0	259	93	179
Presence of On-Street Parking	No		No	No		No				No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	7	4	0	0	8	0	0	0	0	0	2	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	5	5	0	0	5	0	0	0	0	0	5	0
Maximum Green [s]	30	30	0	0	30	0	0	0	0	0	30	0
Amber [s]	3.5	3.5	0.0	0.0	3.5	0.0	0.0	0.0	0.0	0.0	3.5	0.0
All red [s]	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0
Split [s]	10	35	0	0	25	0	0	0	0	0	25	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	0	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	0	0	0	10	0
Rest In Walk		No			No						No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.5	2.5	0.0	0.0	2.5	0.0	0.0	0.0	0.0	0.0	2.5	0.0
Minimum Recall	No	No			No						No	
Maximum Recall	No	No			No						No	
Pedestrian Recall	No	No			No						No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	C		C	C
C, Cycle Length [s]	30	30	30	30		30	30
L, Total Lost Time per Cycle [s]	4.50	4.50	4.50	4.50		4.50	4.50
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00		0.00	0.00
l2, Clearance Lost Time [s]	2.50	2.50	2.50	2.50		2.50	2.50
g_i, Effective Green Time [s]	1	13	8	8		8	8
g / C, Green / Cycle	0.02	0.44	0.27	0.27		0.26	0.26
(v / s)_i Volume / Saturation Flow Rate	0.01	0.12	0.17	0.17		0.16	0.16
s, saturation flow rate [veh/h]	1781	3560	1870	1843		1789	1507
c, Capacity [veh/h]	35	1572	507	500		459	387
d1, Uniform Delay [s]	14.46	5.30	9.55	9.57		9.81	9.84
k, delay calibration	0.11	0.11	0.11	0.11		0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00		1.00	1.00
d2, Incremental Delay [s]	7.41	0.09	1.28	1.35		1.39	1.71
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00		0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00		1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00		1.00	1.00

Lane Group Results

X, volume / capacity	0.40	0.28	0.63	0.64		0.62	0.63
d, Delay for Lane Group [s/veh]	21.86	5.39	10.83	10.93		11.20	11.55
Lane Group LOS	C	A	B	B		B	B
Critical Lane Group	Yes	No	No	Yes		No	Yes
50th-Percentile Queue Length [veh]	0.14	0.45	1.38	1.39		1.29	1.13
50th-Percentile Queue Length [ft]	3.62	11.19	34.56	34.82		32.13	28.35
95th-Percentile Queue Length [veh]	0.26	0.81	2.49	2.51		2.31	2.04
95th-Percentile Queue Length [ft]	6.51	20.14	62.20	62.68		57.83	51.04

Movement, Approach, & Intersection Results

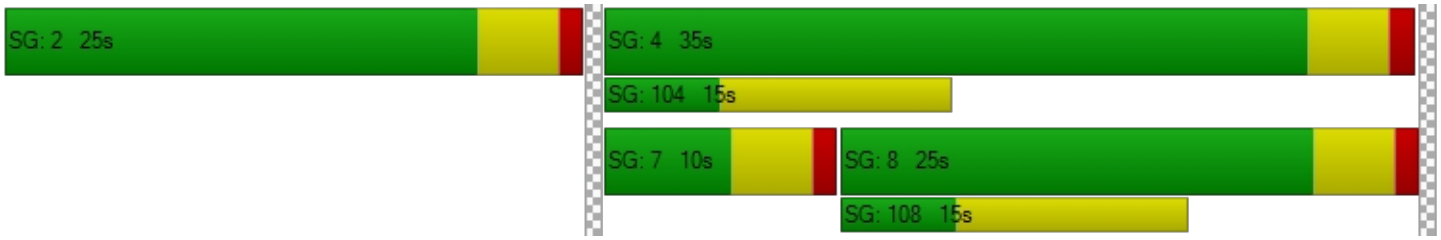
d_M, Delay for Movement [s/veh]	21.86	5.39	0.00	0.00	10.87	10.93	0.00	0.00	0.00	11.20	11.45	11.55
Movement LOS	C	A			B	B				B	B	B
d_A, Approach Delay [s/veh]	5.91			10.88			0.00			11.36		
Approach LOS	A			B			A			B		
d_I, Intersection Delay [s/veh]	9.66											
Intersection LOS	A											
Intersection V/C	0.576											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	21.68	21.68
l_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	1.760	1.954
Crosswalk LOS	F	F	A	A
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1017	683	0	683
d_b, Bicycle Delay [s]	7.25	13.00	30.00	13.00
l_b,int, Bicycle LOS Score for Intersection	1.930	2.085	4.132	1.998
Bicycle LOS	A	B	D	A

Sequence

Ring 1	-	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 15: Avalon Boulevard & I-405 NB Ramps

Control Type:	Signalized	Delay (sec / veh):	13.7
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.713

Intersection Setup

Name	Avalon Boulevard			Avalon Boulevard			I-405 NB Ramps			I-405 NB Ramps		
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]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No						No		
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Avalon Boulevard			Avalon Boulevard			I-405 NB Ramps			I-405 NB Ramps		
Base Volume Input [veh/h]	529	1561	0	0	1479	714	0	0	0	427	0	648
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 Rate	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
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	529	1561	0	0	1479	714	0	0	0	427	0	648
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]	132	390	0	0	370	179	0	0	0	107	0	162
Total Analysis Volume [veh/h]	529	1561	0	0	1479	714	0	0	0	427	0	648
Presence of On-Street Parking	No		No	No		No				No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Unsigna	Permiss	Permiss	Permiss	Permiss	Permiss	Unsigna
Signal group	7	4	0	0	8	0	0	0	0	0	2	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	5	5	0	0	5	0	0	0	0	0	5	0
Maximum Green [s]	30	30	0	0	30	0	0	0	0	0	30	0
Amber [s]	3.5	3.5	0.0	0.0	3.5	0.0	0.0	0.0	0.0	0.0	3.5	0.0
All red [s]	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0
Split [s]	14	34	0	0	20	0	0	0	0	0	26	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	0	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	0	0	0	10	0
Rest In Walk		No			No						No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.5	2.5	0.0	0.0	2.5	0.0	0.0	0.0	0.0	0.0	2.5	0.0
Minimum Recall	No	No			No						No	
Maximum Recall	No	No			No						No	
Pedestrian Recall	No	No			No						No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C		L	C
C, Cycle Length [s]	57	57	57		57	57
L, Total Lost Time per Cycle [s]	4.50	4.50	4.50		4.50	4.50
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00		0.00	0.00
l2, Clearance Lost Time [s]	2.50	2.50	2.50		2.50	2.50
g_i, Effective Green Time [s]	12	39	22		9	9
g / C, Green / Cycle	0.21	0.68	0.39		0.17	0.17
(v / s)_i Volume / Saturation Flow Rate	0.15	0.44	0.29		0.12	0.12
s, saturation flow rate [veh/h]	3459	3560	5094		1781	1781
c, Capacity [veh/h]	713	2407	1992		296	296
d1, Uniform Delay [s]	21.23	5.33	14.91		22.54	22.54
k, delay calibration	0.11	0.11	0.11		0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00		1.00	1.00
d2, Incremental Delay [s]	1.55	0.30	0.56		3.31	3.31
d3, Initial Queue Delay [s]	0.00	0.00	0.00		0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00		1.00	1.00
PF, progression factor	1.00	1.00	1.00		1.00	1.00

Lane Group Results

X, volume / capacity	0.74	0.65	0.74		0.72	0.72
d, Delay for Lane Group [s/veh]	22.78	5.63	15.47		25.85	25.85
Lane Group LOS	C	A	B		C	C
Critical Lane Group	Yes	No	Yes		Yes	No
50th-Percentile Queue Length [veh]	3.18	3.22	4.80		2.77	2.77
50th-Percentile Queue Length [ft]	79.42	80.48	119.90		69.35	69.35
95th-Percentile Queue Length [veh]	5.72	5.79	8.39		4.99	4.99
95th-Percentile Queue Length [ft]	142.95	144.87	209.69		124.83	124.83

Movement, Approach, & Intersection Results

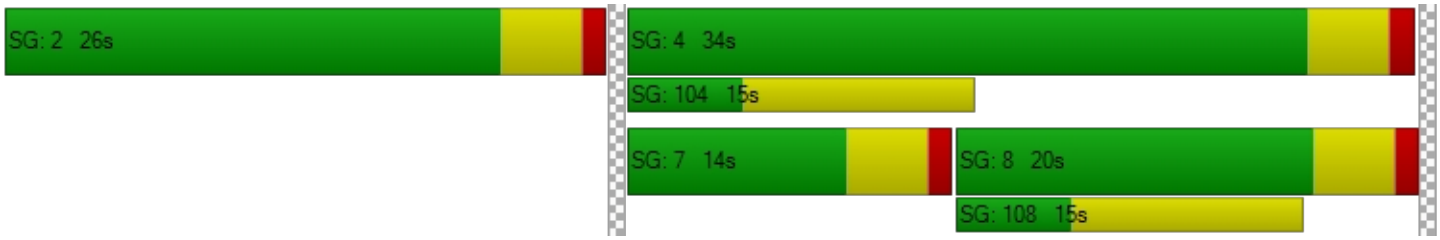
d_M, Delay for Movement [s/veh]	22.78	5.63	0.00	0.00	15.47	0.00	0.00	0.00	0.00	25.85	25.85	0.00
Movement LOS	C	A			B					C	C	
d_A, Approach Delay [s/veh]	9.97			15.47			0.00			25.85		
Approach LOS	A			B			A			C		
d_I, Intersection Delay [s/veh]	13.70											
Intersection LOS	B											
Intersection V/C	0.713											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	21.68	21.68
l_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	1.953	2.060
Crosswalk LOS	F	F	A	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	983	517	0	717
d_b, Bicycle Delay [s]	7.75	16.50	30.00	12.35
l_b,int, Bicycle LOS Score for Intersection	3.284	2.373	4.132	2.264
Bicycle LOS	C	B	D	B

Sequence

Ring 1	-	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 16: Avalon Boulevard & I-405 SB Ramps

Control Type:	Signalized	Delay (sec / veh):	22.6
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.843

Intersection Setup

Name	Avalon Boulevard			Avalon Boulevard			I-405 SB Ramps			I-405 SB Ramps		
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]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No					
Crosswalk	Yes			No			Yes			Yes		

Volumes

Name	Avalon Boulevard			Avalon Boulevard			I-405 SB Ramps			I-405 SB Ramps		
Base Volume Input [veh/h]	278	1196	178	0	1040	841	915	273	683	0	0	0
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 Rate	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
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	278	1196	178	0	1040	841	915	273	683	0	0	0
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]	70	299	45	0	260	210	229	68	171	0	0	0
Total Analysis Volume [veh/h]	278	1196	178	0	1040	841	915	273	683	0	0	0
Presence of On-Street Parking	No		No	No		No	No		No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Unsigna	Permiss	Permiss	Unsigna	Permiss	Permiss	Permiss
Signal group	7	4	0	0	8	0	0	6	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	5	5	0	0	5	0	0	5	0	0	0	0
Maximum Green [s]	30	30	0	0	30	0	0	30	0	0	0	0
Amber [s]	3.5	3.5	0.0	0.0	3.5	0.0	0.0	3.5	0.0	0.0	0.0	0.0
All red [s]	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0
Split [s]	10	30	0	0	20	0	0	30	0	0	0	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	0	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	0	0
Rest In Walk		No			No			No				
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	2.5	2.5	0.0	0.0	2.5	0.0	0.0	2.5	0.0	0.0	0.0	0.0
Minimum Recall	No	No			No			No				
Maximum Recall	No	No			No			No				
Pedestrian Recall	No	No			No			No				
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	C	L	C	
C, Cycle Length [s]	78	78	78	78	78	78	
L, Total Lost Time per Cycle [s]	4.50	4.50	4.50	4.50	4.50	4.50	
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	
l2, Clearance Lost Time [s]	2.50	2.50	2.50	2.50	2.50	2.50	
g_i, Effective Green Time [s]	14	45	45	26	24	24	
g / C, Green / Cycle	0.18	0.57	0.57	0.33	0.31	0.31	
(v / s)_i Volume / Saturation Flow Rate	0.16	0.37	0.38	0.29	0.26	0.08	
s, saturation flow rate [veh/h]	1781	1870	1787	3560	3459	3560	
c, Capacity [veh/h]	330	1073	1026	1178	1073	1105	
d1, Uniform Delay [s]	30.61	11.24	11.39	24.61	25.17	20.05	
k, delay calibration	0.11	0.41	0.43	0.11	0.11	0.11	
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	
d2, Incremental Delay [s]	5.82	2.51	2.89	2.38	2.03	0.12	
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	

Lane Group Results

X, volume / capacity	0.84	0.65	0.66	0.88	0.85	0.25	
d, Delay for Lane Group [s/veh]	36.43	13.75	14.28	26.98	27.20	20.16	
Lane Group LOS	D	B	B	C	C	C	
Critical Lane Group	Yes	No	No	Yes	Yes	No	
50th-Percentile Queue Length [veh]	5.37	7.72	7.72	8.86	7.75	1.79	
50th-Percentile Queue Length [ft]	134.22	192.92	193.02	221.53	193.86	44.71	
95th-Percentile Queue Length [veh]	9.17	12.27	12.28	13.74	12.32	3.22	
95th-Percentile Queue Length [ft]	229.22	306.82	306.95	343.58	308.04	80.49	

Movement, Approach, & Intersection Results

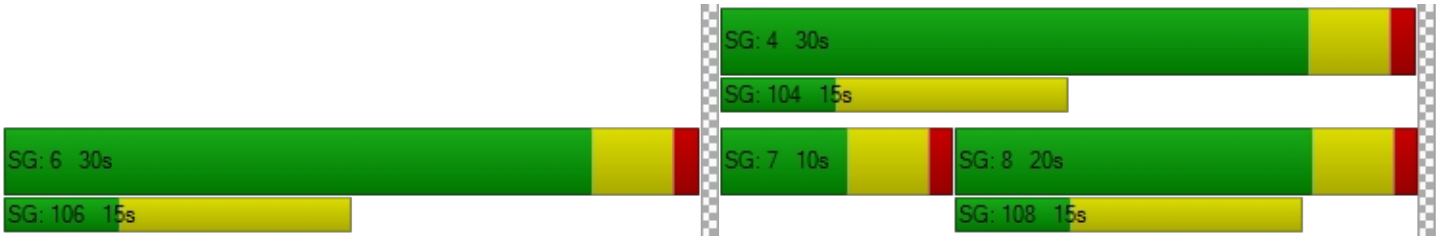
d_M, Delay for Movement [s/veh]	36.43	13.97	14.28	0.00	26.98	0.00	27.20	20.16	0.00	0.00	0.00	0.00
Movement LOS	D	B	B		C		C	C				
d_A, Approach Delay [s/veh]	17.78			26.98			25.58			0.00		
Approach LOS	B			C			C			A		
d_I, Intersection Delay [s/veh]	22.64											
Intersection LOS	C											
Intersection V/C	0.843											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	0.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	21.68	0.00	21.68	21.68
l_p,int, Pedestrian LOS Score for Intersection	2.805	0.000	2.672	1.915
Crosswalk LOS	C	F	B	A
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	850	517	850	0
d_b, Bicycle Delay [s]	9.92	16.50	9.92	30.00
l_b,int, Bicycle LOS Score for Intersection	2.923	2.418	2.540	4.132
Bicycle LOS	C	B	B	D

Sequence

Ring 1	-	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 17: Main Street & SR 91 WB Ramps

Control Type:	Signalized	Delay (sec / veh):	9.1
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.457

Intersection Setup

Name	Main Street			Main Street			SR-91 WB Ramps			SR-91 WB Ramps		
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]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No						No		
Crosswalk	No			No			No			Yes		

Volumes

Name	Main Street			Main Street			SR-91 WB Ramps			SR-91 WB Ramps		
Base Volume Input [veh/h]	0	326	162	35	351	0	0	0	0	135	0	108
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 Rate	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
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	326	162	35	351	0	0	0	0	135	0	108
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	82	41	9	88	0	0	0	0	34	0	27
Total Analysis Volume [veh/h]	0	326	162	35	351	0	0	0	0	135	0	108
Presence of On-Street Parking	No		No	No		No				No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	7	4	0	3	8	0	0	0	0	2	0	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	Lead	-	-
Minimum Green [s]	5	5	0	5	5	0	0	0	0	5	0	0
Maximum Green [s]	30	30	0	30	30	0	0	0	0	30	0	0
Amber [s]	3.5	3.5	0.0	3.5	3.5	0.0	0.0	0.0	0.0	3.5	0.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0
Split [s]	10	22	0	10	22	0	0	0	0	28	0	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0
Walk [s]	0	5	0	0	5	0	0	0	0	5	0	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	0	0	10	0	0
Rest In Walk		No			No					No		
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
I2, Clearance Lost Time [s]	2.5	2.5	0.0	2.5	2.5	0.0	0.0	0.0	0.0	2.5	0.0	0.0
Minimum Recall	No	No		No	No					No		
Maximum Recall	No	No		No	No					No		
Pedestrian Recall	No	No		No	No					No		
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C		L	R
C, Cycle Length [s]	25	25	25	25	25		25	25
L, Total Lost Time per Cycle [s]	4.50	4.50	4.50	4.50	4.50		4.50	4.50
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00		0.00	0.00
l2, Clearance Lost Time [s]	2.50	2.50	2.50	2.50	2.50		2.50	2.50
g_i, Effective Green Time [s]	0	6	6	1	7		4	4
g / C, Green / Cycle	0.00	0.24	0.24	0.04	0.29		0.17	0.17
(v / s)_i Volume / Saturation Flow Rate	0.00	0.14	0.14	0.02	0.10		0.08	0.07
s, saturation flow rate [veh/h]	1781	1870	1666	1781	3560		1781	1589
c, Capacity [veh/h]	1	459	409	80	1032		296	264
d1, Uniform Delay [s]	0.00	8.19	8.22	11.56	6.95		9.35	9.27
k, delay calibration	0.11	0.11	0.11	0.11	0.11		0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00
d2, Incremental Delay [s]	0.00	1.05	1.25	3.71	0.19		1.10	1.02
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00		0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00		1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00

Lane Group Results

X, volume / capacity	0.00	0.55	0.57	0.44	0.34		0.46	0.41
d, Delay for Lane Group [s/veh]	0.00	9.24	9.48	15.26	7.14		10.45	10.28
Lane Group LOS	A	A	A	B	A		B	B
Critical Lane Group	No	No	Yes	Yes	No		Yes	No
50th-Percentile Queue Length [veh]	0.00	0.81	0.77	0.21	0.42		0.51	0.40
50th-Percentile Queue Length [ft]	0.00	20.36	19.21	5.35	10.46		12.66	10.12
95th-Percentile Queue Length [veh]	0.00	1.47	1.38	0.39	0.75		0.91	0.73
95th-Percentile Queue Length [ft]	0.00	36.66	34.58	9.63	18.82		22.80	18.21

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	9.29	9.48	15.26	7.14	0.00	0.00	0.00	0.00	10.45	0.00	10.28
Movement LOS	A	A	A	B	A					B		B
d_A, Approach Delay [s/veh]	9.35			7.88			0.00			10.37		
Approach LOS	A			A			A			B		
d_I, Intersection Delay [s/veh]	9.06											
Intersection LOS	A											
Intersection V/C	0.457											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	0.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	0.00	21.68
l_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	0.000	2.064
Crosswalk LOS	F	F	F	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	583	583	0	0
d_b, Bicycle Delay [s]	15.05	15.05	30.00	30.00
l_b,int, Bicycle LOS Score for Intersection	1.962	1.878	4.132	4.132
Bicycle LOS	A	A	D	D

Sequence

Ring 1	-	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 22: I-110 SB Off-Ramp & 190th Street

Control Type:	Signalized	Delay (sec / veh):	9.0
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.684

Intersection Setup

Name	I-110 SB Off-Ramp		190th Street		190th Street	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	Yes		No		No	

Volumes

Name	I-110 SB Off-Ramp		190th Street		190th Street	
Base Volume Input [veh/h]	356	364	0	1028	585	0
Base Volume Adjustment Factor	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
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	356	364	0	1028	585	0
Peak Hour Factor	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
Total 15-Minute Volume [veh/h]	89	91	0	257	146	0
Total Analysis Volume [veh/h]	356	364	0	1028	585	0
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal group	8	0	0	6	2	0
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	-	-
Minimum Green [s]	5	0	0	5	5	0
Maximum Green [s]	30	0	0	30	30	0
Amber [s]	3.5	0.0	0.0	3.5	3.5	0.0
All red [s]	1.0	0.0	0.0	1.0	1.0	0.0
Split [s]	39	0	0	21	21	0
Vehicle Extension [s]	3.0	0.0	0.0	3.0	3.0	0.0
Walk [s]	5	0	0	5	5	0
Pedestrian Clearance [s]	10	0	0	10	10	0
Rest In Walk	No			No	No	
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.5	0.0	0.0	2.5	2.5	0.0
Minimum Recall	No			No	No	
Maximum Recall	No			No	No	
Pedestrian Recall	No			No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R	C	C
C, Cycle Length [s]	33	33	33	33
L, Total Lost Time per Cycle [s]	4.50	4.50	4.50	4.50
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.50	2.50	2.50	2.50
g_i, Effective Green Time [s]	11	11	13	13
g / C, Green / Cycle	0.32	0.32	0.40	0.40
(v / s)_i Volume / Saturation Flow Rate	0.20	0.23	0.29	0.11
s, saturation flow rate [veh/h]	1781	1589	3560	5094
c, Capacity [veh/h]	576	514	1439	2059
d1, Uniform Delay [s]	9.45	9.81	8.24	6.62
k, delay calibration	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.09	1.82	0.67	0.07
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.62	0.71	0.71	0.28
d, Delay for Lane Group [s/veh]	10.54	11.62	8.91	6.69
Lane Group LOS	B	B	A	A
Critical Lane Group	No	Yes	Yes	No
50th-Percentile Queue Length [veh]	1.64	1.82	1.99	0.58
50th-Percentile Queue Length [ft]	41.08	45.45	49.63	14.46
95th-Percentile Queue Length [veh]	2.96	3.27	3.57	1.04
95th-Percentile Queue Length [ft]	73.95	81.82	89.33	26.03

Movement, Approach, & Intersection Results

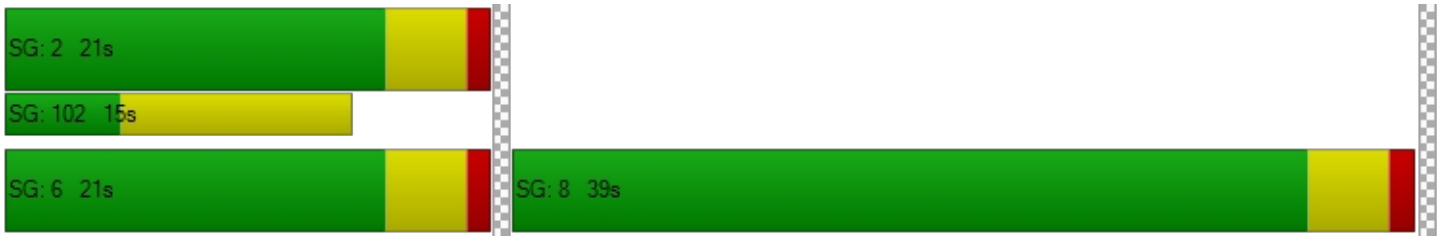
d_M, Delay for Movement [s/veh]	10.54	11.62	0.00	8.91	6.69	0.00
Movement LOS	B	B		A	A	
d_A, Approach Delay [s/veh]	11.09		8.91		6.69	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	9.03					
Intersection LOS	A					
Intersection V/C	0.684					

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	21.68	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersection	2.047	0.000	0.000
Crosswalk LOS	B	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	0	0
d_b, Bicycle Delay [s]	30.00	30.00	30.00
l_b,int, Bicycle LOS Score for Intersection	4.132	4.981	4.454
Bicycle LOS	D	E	E

Sequence

Ring 1	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 28: SR 91 EB Ramps & Albertoni Street

Control Type:	Signalized	Delay (sec / veh):	10.7
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.521

Intersection Setup

Name	SR 91 EB Ramps		Albertoni Street		Albertoni Street	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	Yes		No		No	

Volumes

Name	SR 91 EB Ramps		Albertoni Street		Albertoni Street	
Base Volume Input [veh/h]	209	195	295	275	294	68
Base Volume Adjustment Factor	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
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	209	195	295	275	294	68
Peak Hour Factor	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
Total 15-Minute Volume [veh/h]	52	49	74	69	74	17
Total Analysis Volume [veh/h]	209	195	295	275	294	68
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permissive	Permissive	Protected	Permissive	Permissive	Permissive
Signal group	8	0	1	6	2	0
Auxiliary Signal Groups						
Lead / Lag	Lead	-	Lead	-	-	-
Minimum Green [s]	5	0	5	5	5	0
Maximum Green [s]	30	0	30	30	30	0
Amber [s]	3.5	0.0	3.5	3.5	3.5	0.0
All red [s]	1.0	0.0	1.0	1.0	1.0	0.0
Split [s]	23	0	14	37	23	0
Vehicle Extension [s]	3.0	0.0	3.0	3.0	3.0	0.0
Walk [s]	5	0	0	5	5	0
Pedestrian Clearance [s]	10	0	0	10	10	0
Rest In Walk	No			No	No	
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.5	0.0	2.5	2.5	2.5	0.0
Minimum Recall	No		No	No	No	
Maximum Recall	No		No	No	No	
Pedestrian Recall	No		No	No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R	L	C	C	C
C, Cycle Length [s]	30	30	30	30	30	30
L, Total Lost Time per Cycle [s]	4.50	4.50	4.50	4.50	4.50	4.50
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.50	2.50	2.50	2.50	2.50	2.50
g_i, Effective Green Time [s]	6	6	5	15	5	5
g / C, Green / Cycle	0.21	0.21	0.16	0.49	0.18	0.18
(v / s)_i Volume / Saturation Flow Rate	0.12	0.12	0.09	0.08	0.10	0.10
s, saturation flow rate [veh/h]	1781	1589	3459	3560	1870	1754
c, Capacity [veh/h]	368	329	554	1752	339	318
d1, Uniform Delay [s]	10.65	10.72	11.52	4.18	11.09	11.17
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.38	1.71	0.80	0.04	1.31	1.61
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.57	0.59	0.53	0.16	0.53	0.57
d, Delay for Lane Group [s/veh]	12.03	12.43	12.31	4.22	12.40	12.77
Lane Group LOS	B	B	B	A	B	B
Critical Lane Group	No	Yes	Yes	No	No	Yes
50th-Percentile Queue Length [veh]	1.01	0.97	0.72	0.21	0.90	0.93
50th-Percentile Queue Length [ft]	25.30	24.35	17.92	5.17	22.57	23.18
95th-Percentile Queue Length [veh]	1.82	1.75	1.29	0.37	1.63	1.67
95th-Percentile Queue Length [ft]	45.55	43.84	32.25	9.31	40.63	41.72

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	12.03	12.43	12.31	4.22	12.54	12.77
Movement LOS	B	B	B	A	B	B
d_A, Approach Delay [s/veh]	12.22		8.41		12.59	
Approach LOS	B		A		B	
d_I, Intersection Delay [s/veh]	10.69					
Intersection LOS	B					
Intersection V/C	0.521					

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	21.68	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersection	2.299	0.000	0.000
Crosswalk LOS	B	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	0	0
d_b, Bicycle Delay [s]	30.00	30.00	30.00
l_b,int, Bicycle LOS Score for Intersection	4.132	4.603	4.431
Bicycle LOS	D	E	E

Sequence

Ring 1	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Attachment 3
Tables 19 and 20

TABLE 19A
EXISTING WITH PROJECT CONDITIONS (YEAR 2018)
SIGNALIZED INTERSECTION LEVELS OF SERVICE ANALYSIS

No.	Intersection	Peak Hour	Existing Conditions		Existing with Project Conditions	
			Delay	LOS	Delay	LOS
S-1.	Main Street & I-405 NB Off-Ramp (Intersection #2)	A.M. P.M.	11.0 11.5	B B	11.1 12.0	B B
S-2.	Main Street & I-405 SB On-Ramp (Intersection #3)	A.M. P.M.	7.7 13.0	A B	7.8 13.3	A B
S-3.	Avalon Boulevard & SR-91 WB On-Ramp (Intersection #6)	A.M. P.M.	8.7 8.2	A A	8.8 8.2	A A
S-4.	Avalon Boulevard & I-405 NB Ramps (Intersection #15)	A.M. P.M.	~~15.4~~ 7.1 7.7	~~B~~ A A	~~15.5~~ 7.1 7.7	~~B~~ A A
S-5.	Avalon Boulevard & I-405 SB Ramps (Intersection #16)	A.M. P.M.	~~13.7~~ 8.3 7.6	~~B~~ A A	~~13.7~~ 8.3 7.6	~~B~~ A A
S-6.	Main Street & SR-91 WB Ramps (Intersection #17)	A.M. P.M.	13.7 12.9	B B	13.8 13.1	B B
S-7.	I-110 NB On-Ramp & 190th Street (Intersection #21)	A.M. P.M.	6.7 7.5	A A	6.7 7.5	A A
S-8.	I-110 SB Off-Ramp & 190th Street (Intersection #22)	A.M. P.M.	13.1 12.1	B B	13.3 12.3	B B
S-9.	Figueroa Street & I-110 NB Ramps (Intersection #27)	A.M. P.M.	15.8 15.7	B B	15.9 15.9	B B
S-10.	SR-91 EB Ramps & Albertoni Street (Intersection #28)	A.M. P.M.	12.3 11.7	B B	12.4 11.8	B B

Notes

Delay is measured in seconds per vehicle

LOS = Level of service

Results per Vistro 5 (HCM 6th Edition methodology).

TABLE 20A
FUTURE WITH PROJECT CONDITIONS (YEAR 2020)
SIGNALIZED INTERSECTION LEVELS OF SERVICE ANALYSIS

No.	Intersection	Peak Hour	Future without Project Conditions		Future with Project Conditions	
			Delay	LOS	Delay	LOS
S-1.	Main Street & I-405 NB Off-Ramp (Intersection #2)	A.M. P.M.	11.4 13.4	B B	11.6 14.3	B B
S-2.	Main Street & I-405 SB On-Ramp (Intersection #3)	A.M. P.M.	7.9 14.2	A B	8.0 14.6	A B
S-3.	Avalon Boulevard & SR-91 WB On-Ramp (Intersection #6)	A.M. P.M.	9.3 8.8	A A	9.3 8.9	A A
S-4.	Avalon Boulevard & I-405 NB Ramps (Intersection #15)	A.M. P.M.	~~20.4~~ 8.0 9.3	~~C~~ A A	~~20.6~~ 8.0 9.3	~~C~~ A A
S-5.	Avalon Boulevard & I-405 SB Ramps (Intersection #16)	A.M. P.M.	~~17.8~~ 9.3 9.6	~~B~~ A A	~~17.8~~ 9.3 9.7	~~B~~ A A
S-6.	Main Street & SR-91 WB Ramps (Intersection #17)	A.M. P.M.	14.3 13.4	B B	14.4 13.6	B B
S-7.	I-110 NB On-Ramp & 190th Street (Intersection #21)	A.M. P.M.	6.8 7.7	A A	6.8 7.8	A A
S-8.	I-110 SB Off-Ramp & 190th Street (Intersection #22)	A.M. P.M.	14.9 13.3	B B	15.1 13.5	B B
S-9.	Figueroa Street & I-110 NB Ramps (Intersection #27)	A.M. P.M.	17.4 17.3	B B	17.5 17.6	B B
S-10.	SR-91 EB Ramps & Albertoni Street (Intersection #28)	A.M. P.M.	12.6 11.9	B B	12.8 12.0	B B

Notes

Delay is measured in seconds per vehicle

LOS = Level of service

Results per Vistro 5 (HCM 6th Edition methodology).

Attachment 4
Updated Appendix C of the Traffic Impact Study

National Data & Surveying Services Intersection Turning Movement Count

Location: Main St & 192nd St
City: Carson
Control: Signalized

Project ID: 18-05081-001
Date: 2/1/2018

Total

NS/EW Streets:	Main St				Main St				192nd St				192nd St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	2	0	0	1	2	0	0	0	1	0	0	2	0	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	73	8	0	8	94	0	0	0	0	0	0	27	0	20	0	230
7:15 AM	1	72	20	0	13	155	0	0	0	0	1	0	40	0	26	0	328
7:30 AM	1	123	25	0	8	175	0	0	0	0	0	0	41	0	29	0	402
7:45 AM	1	119	37	0	33	115	0	0	0	0	0	0	43	0	31	0	379
8:00 AM	1	141	54	0	14	95	0	0	1	0	2	0	35	0	33	0	376
8:15 AM	0	115	26	0	16	81	1	0	0	0	1	0	25	0	30	0	295
8:30 AM	0	81	43	0	11	91	1	0	0	0	0	0	20	0	20	0	267
8:45 AM	2	81	24	0	8	92	0	0	0	0	0	0	15	0	21	0	243
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	6	805	237	0	111	898	2	0	1	0	4	0	246	0	210	0	2520
APPROACH %'s :	0.57%	76.81%	22.61%	0.00%	10.98%	88.82%	0.20%	0.00%	20.00%	0.00%	80.00%	0.00%	53.95%	0.00%	46.05%	0.00%	
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	4	455	136	0	68	540	0	0	1	0	3	0	159	0	119	0	1485
PEAK HR FACTOR :	1.000	0.807	0.630	0.000	0.515	0.771	0.000	0.000	0.250	0.000	0.375	0.000	0.924	0.000	0.902	0.000	0.924
		0.759				0.831				0.333				0.939			

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	2	0	0	1	2	0	0	0	1	0	0	2	0	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	106	43	0	27	138	0	0	0	0	1	0	23	0	20	0	358
4:15 PM	0	128	43	0	52	148	1	0	0	0	1	0	22	0	21	0	416
4:30 PM	0	125	43	0	58	151	0	0	0	0	0	0	28	0	20	0	425
4:45 PM	1	146	50	0	46	125	0	0	0	0	0	0	22	0	17	0	407
5:00 PM	2	132	66	0	50	181	0	0	0	0	0	0	25	0	25	0	481
5:15 PM	0	134	52	0	60	149	0	0	0	0	1	0	24	0	20	0	440
5:30 PM	0	116	61	0	47	191	0	0	0	0	2	0	26	0	18	0	461
5:45 PM	0	136	57	0	58	137	0	0	0	0	0	0	20	0	14	0	422
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	3	1023	415	0	398	1220	1	0	0	0	5	0	190	0	155	0	3410
APPROACH %'s :	0.21%	70.99%	28.80%	0.00%	24.58%	75.36%	0.06%	0.00%	0.00%	0.00%	100.00%	0.00%	55.07%	0.00%	44.93%	0.00%	
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	2	518	236	0	215	658	0	0	0	0	3	0	95	0	77	0	1804
PEAK HR FACTOR :	0.250	0.952	0.894	0.000	0.896	0.861	0.000	0.000	0.000	0.000	0.375	0.000	0.913	0.000	0.770	0.000	0.938
		0.945				0.917				0.375				0.860			

Prepared by National Data & Surveying Services

Main St & 192nd St

Peak Hour Turning Movement Count

ID: 18-05081-001
City: Carson

Day: Thursday
Date: 02/01/2018

PEAK HOURS	COUNT PERIODS
07:15 AM - 08:15 AM	07:00 AM - 09:00 AM
NONE	NONE
05:00 PM - 06:00 PM	04:00 PM - 06:00 PM

SOUTHBOUND (Main St)

AM	0	540	68	0	575	AM
NOON	0	0	0	0	0	NOON
PM	0	658	215	0	595	PM

EASTBOUND (192nd St)

AM	NOON	PM	
4	0	2	⇦
0	0	0	0
1	0	0	0
0	0	0	1
3	0	3	0
AM	NOON	PM	

WESTBOUND (192nd St)

PM	NOON	AM	
77	0	119	1
0	0	0	0
95	0	159	2
0	0	0	0
451	0	204	⇨
PM	NOON	AM	

NORTHBOUND (Main St)

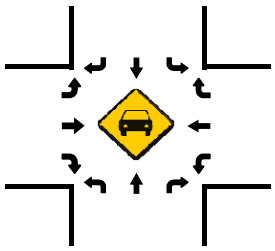
PM	756	0	2	518	236	PM
NOON	0	0	0	0	0	NOON
AM	702	0	4	455	136	AM

CONTROL

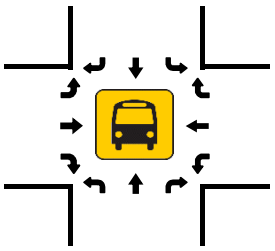
Signalized

TEV	1485 AM	0 NOON	1804 PM
PHF	0.92		0.94

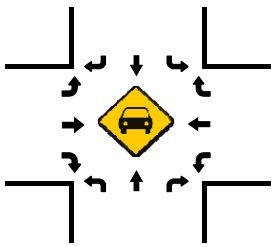
Total Vehicles (AM)



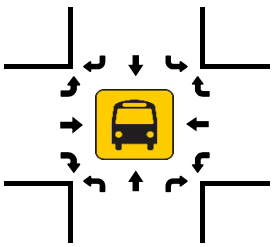
Total Vehicles (AM)



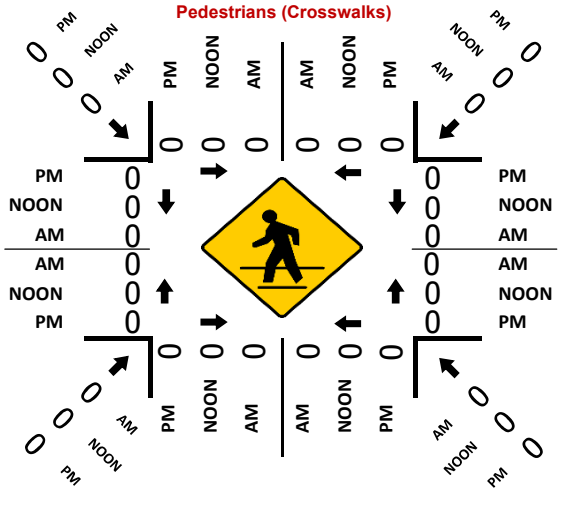
Total Vehicles (NOON)



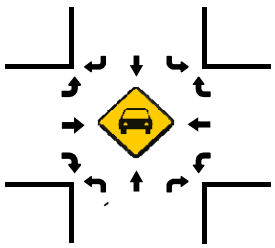
Total Vehicles (NOON)



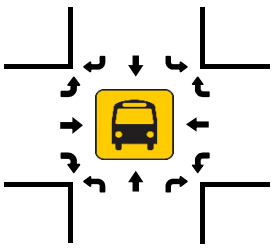
Pedestrians (Crosswalks)



Total Vehicles (PM)



Total Vehicles (PM)



National Data & Surveying Services Intersection Turning Movement Count

Location: Main St & I-405 NB Off Ramp
City: Carson
Control: Signalized

Project ID: 18-05081-002
Date: 2/1/2018

Total

NS/EW Streets:	Main St				Main St				I-405 NB Off Ramp				I-405 NB Off Ramp				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	0	0	0	1.5	0.5	0	0	0	0	0	0	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	81	0	0	0	135	17	0	0	0	0	0	14	71	44	0	362
7:15 AM	7	90	0	0	0	189	22	0	0	0	0	0	13	81	37	0	439
7:30 AM	8	143	0	0	0	240	23	0	0	0	0	0	17	78	56	0	565
7:45 AM	5	174	0	0	0	208	19	0	0	0	0	0	32	82	67	0	587
8:00 AM	6	189	0	0	0	142	16	0	0	0	0	0	21	88	56	0	518
8:15 AM	9	151	0	0	0	134	12	0	0	0	0	0	17	76	53	0	452
8:30 AM	6	129	0	0	0	125	13	0	0	0	0	0	23	69	55	0	420
8:45 AM	2	118	0	0	0	128	13	0	0	0	0	0	16	83	52	0	412
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	43	1075	0	0	0	1301	135	0	0	0	0	0	153	628	420	0	3755
APPROACH %'s :	3.85%	96.15%	0.00%	0.00%	0.00%	90.60%	9.40%	0.00%					12.74%	52.29%	34.97%	0.00%	
PEAK HR :	**07:30 AM - 08:30 AM**																TOTAL
PEAK HR VOL :	28	657	0	0	0	724	70	0	0	0	0	0	87	324	232	0	2122
PEAK HR FACTOR :	0.778	0.869	0.000	0.000	0.000	0.754	0.761	0.000	0.000	0.000	0.000	0.000	0.680	0.920	0.866	0.000	0.904
	0.878				0.755								0.888				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	0	0	0	1.5	0.5	0	0	0	0	0	0	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	4	149	0	0	0	247	16	0	0	0	0	0	13	33	53	0	515
4:15 PM	4	173	0	0	0	302	13	0	0	0	0	0	22	29	46	0	589
4:30 PM	7	145	0	0	0	283	23	0	0	0	0	0	14	26	50	0	548
4:45 PM	3	180	0	0	0	252	17	0	0	0	0	0	22	26	69	0	569
5:00 PM	5	181	0	0	0	333	20	0	0	0	0	0	12	31	53	0	635
5:15 PM	3	175	0	0	0	322	12	0	0	0	0	0	9	31	61	0	613
5:30 PM	7	160	0	0	0	300	34	0	0	0	0	0	26	32	62	0	621
5:45 PM	6	158	0	0	0	280	26	0	0	0	0	0	14	27	60	0	571
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	39	1321	0	0	0	2319	161	0	0	0	0	0	132	235	454	0	4661
APPROACH %'s :	2.87%	97.13%	0.00%	0.00%	0.00%	93.51%	6.49%	0.00%					16.08%	28.62%	55.30%	0.00%	
PEAK HR :	**05:00 PM - 06:00 PM**																TOTAL
PEAK HR VOL :	21	674	0	0	0	1235	92	0	0	0	0	0	61	121	236	0	2440
PEAK HR FACTOR :	0.750	0.931	0.000	0.000	0.000	0.927	0.676	0.000	0.000	0.000	0.000	0.000	0.587	0.945	0.952	0.000	0.961
	0.934				0.940								0.871				

Prepared by National Data & Surveying Services

Main St & I-405 NB Off Ramp

Peak Hour Turning Movement Count

ID: 18-05081-002
City: Carson

Day: Thursday
Date: 02/01/2018

PEAK HOURS

AM	07:30 AM - 08:30 AM
NOON	NONE
PM	05:00 PM - 06:00 PM

COUNT PERIODS

AM	07:00 AM - 09:00 AM
NOON	NONE
PM	04:00 PM - 06:00 PM

Main St — SOUTHBOUND

AM	70	724	0	0	889	AM
NOON	0	0	0	0	0	NOON
PM	92	1235	0	0	910	PM

I-405 NB Off Ramp — EASTBOUND

AM	NOON	PM	
422	0	234	⇦
0	0	0	0 ↶
0	0	0	0 ↱
0	0	0	0 →
0	0	0	0 ↷

I-405 NB Off Ramp — WESTBOUND

PM	NOON	AM	
236	0	232	0 ↶
121	0	324	2 ←
61	0	87	0 ↰
0	0	0	0 ↷
0	0	0	⇨

Main St — NORTHBOUND

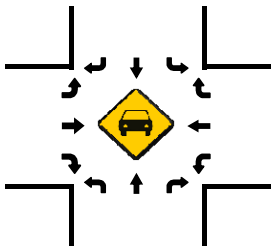
PM	1296	0	21	674	0	PM
NOON	0	0	0	0	0	NOON
AM	811	0	28	657	0	AM

0.5	1.5	0	0	
				⇧
0	1	2	0	

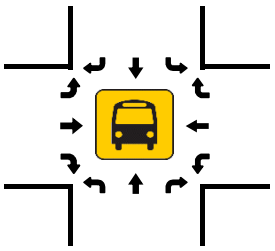
CONTROL: Signalized

TEV	2122 AM	0 NOON	2440 PM
PHF	0.90		0.96

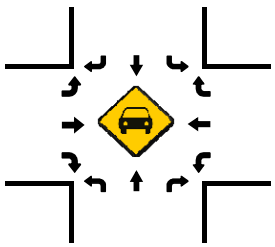
Total Vehicles (AM)



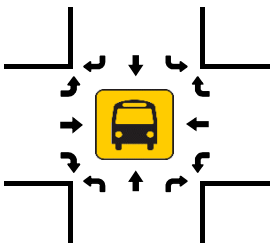
Total Vehicles (AM)



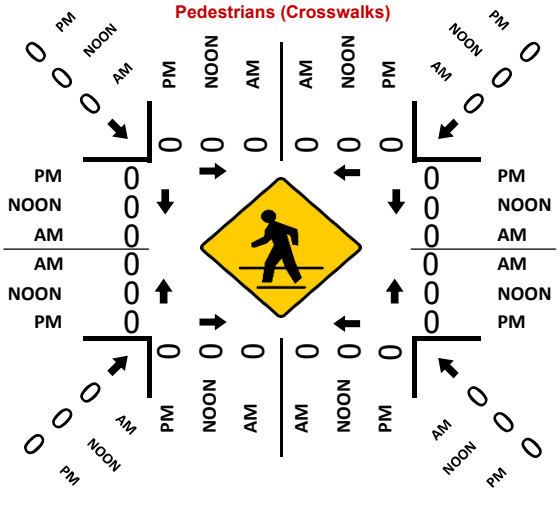
Total Vehicles (NOON)



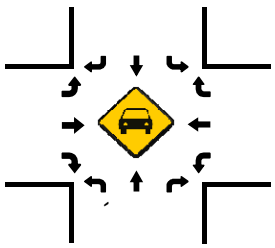
Total Vehicles (NOON)



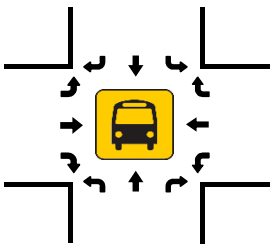
Pedestrians (Crosswalks)



Total Vehicles (PM)



Total Vehicles (PM)



National Data & Surveying Services Intersection Turning Movement Count

Location: Main St & I-405 SB On Ramp
City: Carson
Control: Signalized

Project ID: 18-05081-003
Date: 2/1/2018

Total

NS/EW Streets:	Main St				Main St				I-405 SB On Ramp				I-405 SB On Ramp				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1.5	0.5	0	1	2	0	0	1	0.5	0.5	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	77	16	0	27	127	0	0	3	20	2	0	0	0	0	0	272
7:15 AM	0	100	11	0	37	166	0	0	9	19	3	0	0	0	0	0	345
7:30 AM	0	134	11	0	45	206	0	0	7	19	10	0	0	0	0	0	432
7:45 AM	0	175	16	0	29	216	0	0	5	18	4	0	0	0	0	0	463
8:00 AM	0	190	14	0	34	135	0	1	8	15	4	0	0	0	0	0	401
8:15 AM	0	149	10	0	24	119	0	0	9	19	5	0	0	0	0	0	335
8:30 AM	0	125	11	0	29	128	0	0	9	16	3	0	0	0	0	0	321
8:45 AM	0	113	16	0	30	111	0	1	6	21	3	0	0	0	0	0	301
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	1063	105	0	255	1208	0	2	56	147	34	0	0	0	0	0	2870
APPROACH %'s :	0.00%	91.01%	8.99%	0.00%	17.41%	82.46%	0.00%	0.14%	23.63%	62.03%	14.35%	0.00%					
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	0	599	52	0	145	723	0	1	29	71	21	0	0	0	0	0	1641
PEAK HR FACTOR :	0.000	0.788	0.813	0.000	0.806	0.837	0.000	0.250	0.806	0.934	0.525	0.000	0.000	0.000	0.000	0.000	0.886
		0.798				0.866				0.840							

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1.5	0.5	0	1	2	0	0	1	0.5	0.5	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	138	26	0	53	195	0	1	16	56	7	0	0	0	0	0	492
4:15 PM	0	148	24	0	64	267	0	1	23	65	11	0	0	0	0	0	603
4:30 PM	0	145	26	0	58	231	0	3	10	93	5	0	0	0	0	0	571
4:45 PM	0	162	19	0	66	205	0	2	18	62	13	0	0	0	0	0	547
5:00 PM	0	168	30	0	68	276	0	0	17	68	11	0	0	0	0	0	638
5:15 PM	0	161	29	0	72	251	0	1	16	77	9	0	0	0	0	0	616
5:30 PM	0	156	27	0	62	274	0	0	16	69	16	0	0	0	0	0	620
5:45 PM	0	154	23	0	69	224	0	0	12	62	6	0	0	0	0	0	550
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	1232	204	0	512	1923	0	8	128	552	78	0	0	0	0	0	4637
APPROACH %'s :	0.00%	85.79%	14.21%	0.00%	20.96%	78.71%	0.00%	0.33%	16.89%	72.82%	10.29%	0.00%					
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	0	639	109	0	271	1025	0	1	61	276	42	0	0	0	0	0	2424
PEAK HR FACTOR :	0.000	0.951	0.908	0.000	0.941	0.928	0.000	0.250	0.897	0.896	0.656	0.000	0.000	0.000	0.000	0.000	0.950
		0.944				0.943				0.929							

Prepared by National Data & Surveying Services

Main St & I-405 SB On Ramp

Peak Hour Turning Movement Count

ID: 18-05081-003
City: Carson

Day: Thursday
Date: 02/01/2018

PEAK HOURS	COUNT PERIODS
07:15 AM - 08:15 AM	07:00 AM - 09:00 AM
NONE	NONE
05:00 PM - 06:00 PM	04:00 PM - 06:00 PM

Main St — SOUTHBOUND

AM	0	723	145	1	629	AM
NOON	0	0	0	0	0	NOON
PM	0	1025	271	1	701	PM

I-405 SB On Ramp — EASTBOUND

AM	NOON	PM	
0	0	0	
0	0	0	0
29	0	61	1
71	0	276	0.5
21	0	42	0.5
AM	NOON	PM	

I-405 SB On Ramp — WESTBOUND

PM	NOON	AM	
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
656	0	268	
PM	NOON	AM	

Main St — NORTHBOUND

PM	1067	0	0	639	109	PM
NOON	0	0	0	0	0	NOON
AM	744	0	0	599	52	AM

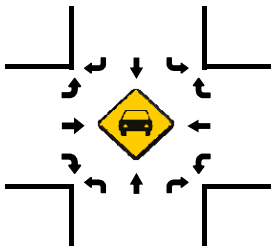
0	2	1	0	
			0	0	1.5	0.5

CONTROL

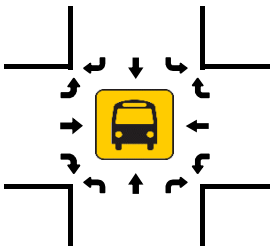
Signalized

TEV	1641 AM	0 NOON	2424 PM
PHF	0.89		0.95

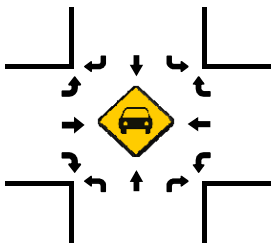
Total Vehicles (AM)



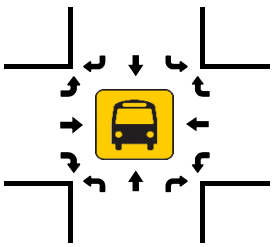
Total Vehicles (AM)



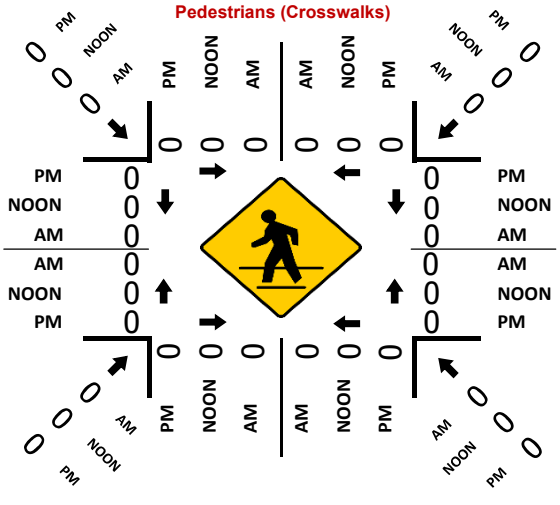
Total Vehicles (NOON)



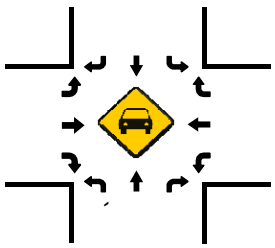
Total Vehicles (NOON)



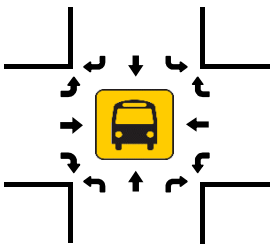
Pedestrians (Crosswalks)



Total Vehicles (PM)



Total Vehicles (PM)



National Data & Surveying Services Intersection Turning Movement Count

Location: Main St & Del Amo Blvd
City: Carson
Control: Signalized

Project ID: 18-05081-004
Date: 2/1/2018

Total

NS/EW Streets:	Main St				Main St				Del Amo Blvd				Del Amo Blvd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	0	0	1	2	0	0	1	3	0	0	1	3	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	13	59	38	0	3	64	42	0	22	79	6	0	35	243	10	0	614
7:15 AM	17	83	43	0	7	104	30	0	19	89	8	0	55	277	11	0	743
7:30 AM	15	118	58	0	9	170	47	0	25	107	6	0	62	266	12	1	896
7:45 AM	15	136	82	0	11	158	46	0	32	164	14	0	70	214	17	0	959
8:00 AM	17	169	82	1	7	104	28	0	43	138	7	0	52	210	11	0	869
8:15 AM	25	126	87	0	12	83	22	0	19	170	7	0	46	228	9	0	834
8:30 AM	9	95	56	0	7	68	43	0	26	120	8	0	41	183	12	0	668
8:45 AM	11	92	43	1	8	71	29	0	26	104	9	0	26	159	12	0	591
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	122	878	489	2	64	822	287	0	212	971	65	0	387	1780	94	1	6174
APPROACH %'s :	8.18%	58.89%	32.80%	0.13%	5.46%	70.08%	24.47%	0.00%	16.99%	77.80%	5.21%	0.00%	17.11%	78.69%	4.16%	0.04%	
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	72	549	309	1	39	515	143	0	119	579	34	0	230	918	49	1	3558
PEAK HR FACTOR :	0.720	0.812	0.888	0.250	0.813	0.757	0.761	0.000	0.692	0.851	0.607	0.000	0.821	0.863	0.721	0.250	0.928
	0.865				0.771				0.871				0.878				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	0	0	1	2	0	0	1	3	0	0	1	3	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	6	103	95	0	19	131	40	0	52	234	21	0	63	154	12	0	930
4:15 PM	8	111	84	0	36	205	47	0	43	264	23	0	58	147	6	0	1032
4:30 PM	8	101	79	0	29	171	39	0	52	257	28	0	54	142	15	0	975
4:45 PM	5	115	78	0	29	158	36	0	40	266	24	0	45	153	15	0	964
5:00 PM	8	111	77	0	25	224	45	0	65	255	27	0	64	130	15	0	1046
5:15 PM	5	124	107	0	21	214	42	0	57	281	27	0	74	218	13	0	1183
5:30 PM	15	104	83	0	30	198	39	0	52	290	29	1	77	194	18	1	1131
5:45 PM	6	118	75	1	24	185	48	0	43	266	19	0	75	157	15	1	1033
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	61	887	678	1	213	1486	336	0	404	2113	198	1	510	1295	109	2	8294
APPROACH %'s :	3.75%	54.52%	41.67%	0.06%	10.47%	73.02%	16.51%	0.00%	14.87%	77.80%	7.29%	0.04%	26.62%	67.59%	5.69%	0.10%	
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	34	457	342	1	100	821	174	0	217	1092	102	1	290	699	61	2	4393
PEAK HR FACTOR :	0.567	0.921	0.799	0.250	0.833	0.916	0.906	0.000	0.835	0.941	0.879	0.250	0.942	0.802	0.847	0.500	0.928
	0.883				0.931				0.949				0.862				

Prepared by National Data & Surveying Services

Main St & Del Amo Blvd

Peak Hour Turning Movement Count

ID: 18-05081-004
City: Carson

Day: Thursday
Date: 02/01/2018

PEAK HOURS

AM	07:30 AM - 08:30 AM
NOON	NONE
PM	05:00 PM - 06:00 PM

COUNT PERIODS

AM	07:00 AM - 09:00 AM
NOON	NONE
PM	04:00 PM - 06:00 PM

Main St — SOUTHBOUND

AM	143	515	39	0	717	AM
NOON	0	0	0	0	0	NOON
PM	174	821	100	0	735	PM
	0	2	1	0		

Del Amo Blvd — EASTBOUND

AM	NOON	PM		
1133	0	908	⇦	
0	0	1	↶	0
119	0	217	↱	1
579	0	1092	→	3
34	0	102	↳	0
AM	NOON	PM		

CONTROL

Signalized

TEV	3558 AM	0 NOON	4393 PM
PHF	0.93		0.93

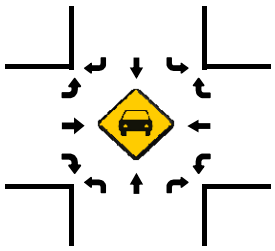
Del Amo Blvd — WESTBOUND

PM	NOON	AM		
61	0	49	↰	0
699	0	918	←	3
290	0	230	↰	1
2	0	1	↶	0
1536	0	928	⇨	
PM	NOON	AM		

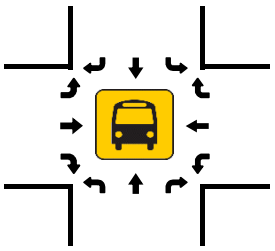
Main St — NORTHBOUND

PM	1214	1	34	457	342	PM
NOON	0	0	0	0	0	NOON
AM	780	1	72	549	309	AM
		0	1	2	0	

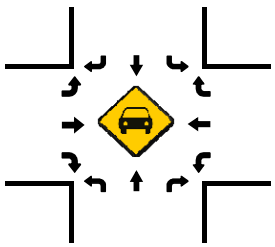
Total Vehicles (AM)



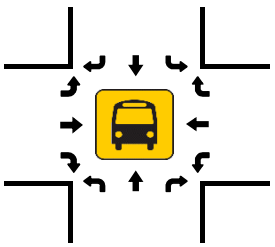
Total Vehicles (AM)



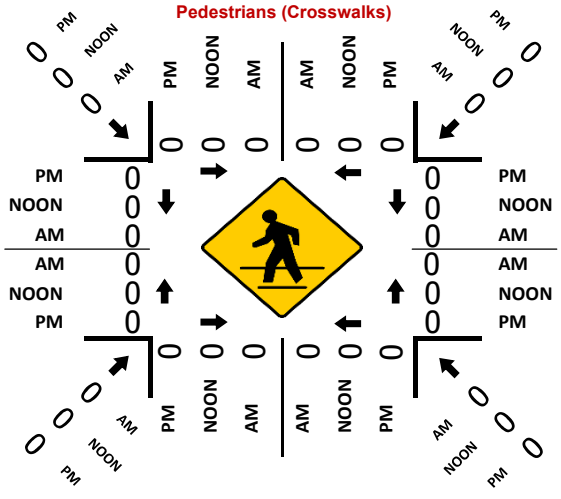
Total Vehicles (NOON)



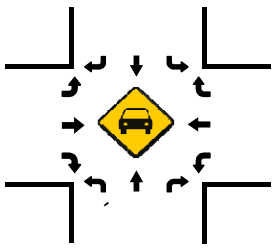
Total Vehicles (NOON)



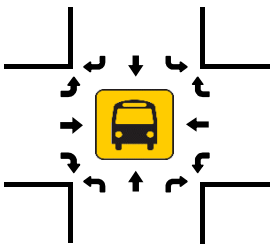
Pedestrians (Crosswalks)



Total Vehicles (PM)



Total Vehicles (PM)



National Data & Surveying Services Intersection Turning Movement Count

Location: Main St & Torrance Blvd
City: Carson
Control: Signalized

Project ID: 18-05081-005
Date: 2/1/2018

Total

NS/EW Streets:	Main St				Main St				Torrance Blvd				Torrance Blvd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	2	2	0	0	1	2	1	0	0.5	0.5	1	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	64	85	0	0	1	65	42	1	31	2	30	0	1	19	12	0	353
7:15 AM	71	99	0	0	2	131	53	1	28	3	36	0	0	16	4	0	444
7:30 AM	85	138	0	0	2	156	72	0	60	7	41	0	6	24	6	0	597
7:45 AM	76	173	1	0	3	187	61	1	61	1	58	1	4	10	14	0	651
8:00 AM	89	160	5	0	3	113	52	1	88	6	43	0	2	9	9	0	580
8:15 AM	59	139	1	0	1	82	46	2	68	4	39	0	1	11	3	0	456
8:30 AM	47	100	1	0	2	77	40	0	67	7	29	0	2	13	8	0	393
8:45 AM	58	92	1	1	1	63	48	0	46	5	34	0	2	10	4	0	365
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	549	986	9	1	15	874	414	6	449	35	310	1	18	112	60	0	3839
APPROACH %'s :	35.53%	63.82%	0.58%	0.06%	1.15%	66.77%	31.63%	0.46%	56.48%	4.40%	38.99%	0.13%	9.47%	58.95%	31.58%	0.00%	
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	309	610	7	0	9	538	231	4	277	18	181	1	13	54	32	0	2284
PEAK HR FACTOR :	0.868	0.882	0.350	0.000	0.750	0.719	0.802	0.500	0.787	0.643	0.780	0.250	0.542	0.563	0.571	0.000	0.877
	0.911				0.776				0.870				0.688				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	2	2	0	0	1	2	1	0	0.5	0.5	1	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	48	101	0	1	6	145	65	2	81	11	118	0	0	9	5	0	592
4:15 PM	56	113	2	0	9	190	92	0	83	12	124	0	0	9	3	0	693
4:30 PM	50	100	3	0	11	194	62	0	106	12	105	0	1	10	2	0	656
4:45 PM	49	107	5	0	9	177	52	0	99	15	117	0	2	8	3	0	643
5:00 PM	43	111	4	0	7	222	78	0	86	9	134	0	2	7	5	0	708
5:15 PM	43	102	2	0	12	209	72	1	113	18	110	0	1	3	6	0	692
5:30 PM	51	109	2	0	8	209	93	1	98	17	116	0	1	4	7	0	716
5:45 PM	49	108	3	0	7	189	66	2	82	13	118	0	2	3	9	0	651
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	389	851	21	1	69	1535	580	6	748	107	942	0	9	53	40	0	5351
APPROACH %'s :	30.82%	67.43%	1.66%	0.08%	3.15%	70.09%	26.48%	0.27%	41.62%	5.95%	52.42%	0.00%	8.82%	51.96%	39.22%	0.00%	
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	186	430	11	0	34	829	309	4	379	57	478	0	6	17	27	0	2767
PEAK HR FACTOR :	0.912	0.968	0.688	0.000	0.708	0.934	0.831	0.500	0.838	0.792	0.892	0.000	0.750	0.607	0.750	0.000	0.966
	0.968				0.945				0.948				0.893				

Prepared by National Data & Surveying Services

Main St & Torrance Blvd

Peak Hour Turning Movement Count

ID: 18-05081-005
City: Carson

Day: Thursday
Date: 02/01/2018

PEAK HOURS

AM: 07:30 AM - 08:30 AM
NOON: NONE
PM: 05:00 PM - 06:00 PM

COUNT PERIODS

AM: 07:00 AM - 09:00 AM
NOON: NONE
PM: 04:00 PM - 06:00 PM

Main St — SOUTHBOUND

AM	231	538	9	4	923	AM
NOON	0	0	0	0	0	NOON
PM	309	829	34	4	840	PM

Torrance Blvd — EASTBOUND

AM	NOON	PM		
595	0	512	⇦	
1	0	0	↶	0
277	0	379	↱	0.5
18	0	57	→	0.5
181	0	478	↴	1
AM	NOON	PM		

Torrance Blvd — WESTBOUND

PM	NOON	AM		
27	0	32	↰	0
17	0	54	←	1
6	0	13	↰	0
0	0	0	↰	0
102	0	34	⇨	
PM	NOON	AM		

CONTROL: Signalized

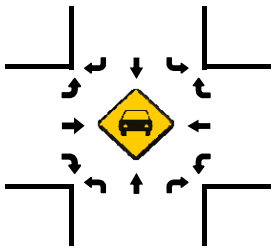
TEV	2284 AM	0 NOON	2767 PM
PHF	0.88		0.97

Main St — NORTHBOUND

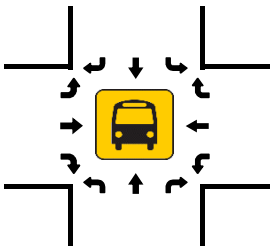
PM	1313	0	186	430	11	PM
NOON	0	0	0	0	0	NOON
AM	732	0	309	610	7	AM

1 2 1 0 — 0 2 2 0

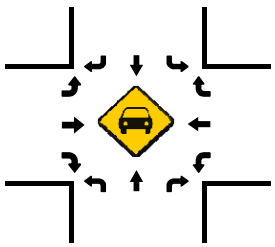
Total Vehicles (AM)



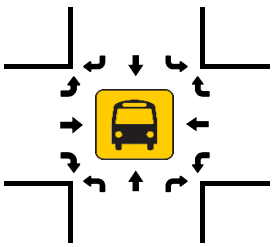
Total Vehicles (AM)



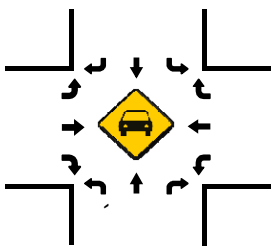
Total Vehicles (NOON)



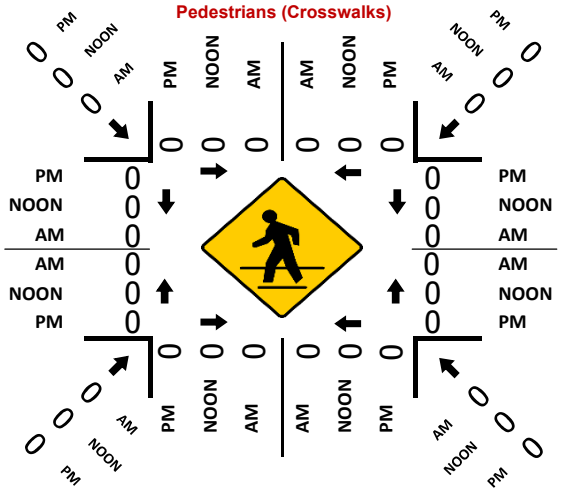
Total Vehicles (NOON)



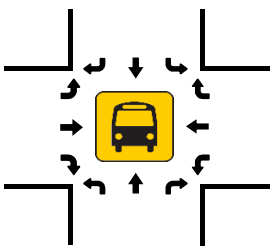
Total Vehicles (PM)



Pedestrians (Crosswalks)



Total Vehicles (PM)



National Data & Surveying Services Intersection Turning Movement Count

Location: Avalon Blvd & Artesia Blvd/SR 91 WB On Ramp
City: Carson
Control: Signalized

Project ID: 18-05081-006
Date: 2/1/2018

Total

NS/EW Streets:	Avalon Blvd				Avalon Blvd				Artesia Blvd/SR 91 WB On Ramp				Artesia Blvd/SR 91 WB On Ramp				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	3	1	0	2	3	0	0	0	0	0	0	1.5	0	1.5	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	160	27	0	24	152	0	0	0	0	0	0	92	0	146	0	601
7:15 AM	0	184	33	0	48	219	0	0	0	0	0	0	73	0	117	0	674
7:30 AM	0	196	39	0	47	264	0	0	0	0	0	0	95	0	170	0	811
7:45 AM	0	312	43	0	40	302	0	0	0	0	0	0	82	0	177	0	956
8:00 AM	0	220	45	0	42	303	0	0	0	0	0	0	84	0	136	0	830
8:15 AM	0	206	50	0	28	194	0	0	0	0	0	0	71	0	113	1	663
8:30 AM	0	201	51	0	36	208	0	0	0	0	0	0	78	0	117	0	691
8:45 AM	0	165	35	0	26	174	0	0	0	0	0	0	77	0	139	2	618
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	1644	323	0	291	1816	0	0	0	0	0	0	652	0	1115	3	5844
APPROACH %'s :	0.00%	83.58%	16.42%	0.00%	13.81%	86.19%	0.00%	0.00%					36.84%	0.00%	62.99%	0.17%	
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	0	912	160	0	177	1088	0	0	0	0	0	0	334	0	600	0	3271
PEAK HR FACTOR :	0.000	0.731	0.889	0.000	0.922	0.898	0.000	0.000	0.000	0.000	0.000	0.000	0.879	0.000	0.847	0.000	0.855
		0.755				0.917								0.881			

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	3	1	0	2	3	0	0	0	0	0	0	1.5	0	1.5	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	296	84	1	48	279	0	0	0	0	0	0	62	0	95	0	865
4:15 PM	0	241	46	0	45	240	0	0	0	0	0	0	88	0	163	2	825
4:30 PM	0	236	36	0	42	276	0	0	0	0	0	0	89	0	101	0	780
4:45 PM	0	289	50	1	38	227	0	0	0	0	0	0	81	0	125	1	812
5:00 PM	0	267	58	0	51	315	0	0	0	0	0	0	72	0	112	0	875
5:15 PM	0	324	54	0	40	273	0	0	0	0	0	0	112	0	114	3	920
5:30 PM	0	299	55	0	34	243	0	0	0	0	0	0	85	0	98	0	814
5:45 PM	0	248	31	0	36	230	0	0	0	0	0	0	74	0	83	0	702
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	2200	414	2	334	2083	0	0	0	0	0	0	663	0	891	6	6593
APPROACH %'s :	0.00%	84.10%	15.83%	0.08%	13.82%	86.18%	0.00%	0.00%					42.50%	0.00%	57.12%	0.38%	
PEAK HR :	04:45 PM - 05:45 PM																TOTAL
PEAK HR VOL :	0	1179	217	1	163	1058	0	0	0	0	0	0	350	0	449	4	3421
PEAK HR FACTOR :	0.000	0.910	0.935	0.250	0.799	0.840	0.000	0.000	0.000	0.000	0.000	0.000	0.781	0.000	0.898	0.333	0.930
		0.924				0.834								0.877			

Prepared by National Data & Surveying Services

Avalon Blvd & Artesia Blvd/SR 91 WB On Ramp

Peak Hour Turning Movement Count

ID: 18-05081-006
City: Carson

Day: Thursday
Date: 02/01/2018

PEAK HOURS

AM: 07:15 AM - 08:15 AM
NOON: NONE
PM: 04:45 PM - 05:45 PM

COUNT PERIODS

AM: 07:00 AM - 09:00 AM
NOON: NONE
PM: 04:00 PM - 06:00 PM

SOUTHBOUND — Avalon Blvd

AM	0	1088	177	0	1512	AM
NOON	0	0	0	0	0	NOON
PM	0	1058	163	0	1628	PM

EASTBOUND — Artesia Blvd/SR 91 WB On Ramp

AM	NOON	PM		
0	0	0		
0	0	0		0
0	0	0		0
0	0	0		0
0	0	0		0
AM	NOON	PM		

WESTBOUND — Artesia Blvd/SR 91 WB On Ramp

PM	NOON	AM		
449	0	600		1.5
0	0	0		0
350	0	334		1.5
4	0	0		0
384	0	337		
PM	NOON	AM		

NORTHBOUND — Avalon Blvd

PM	1409	1	0	1179	217	PM
NOON	0	0	0	0	0	NOON
AM	1422	0	0	912	160	AM

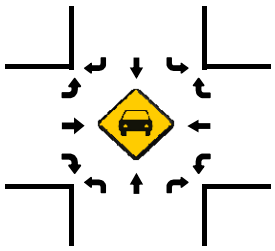
	0	3	2	0
	0	0	3	1

CONTROL

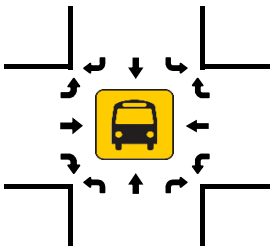
Signalized

TEV	3271 AM	0 NOON	3421 PM
PHF	0.86		0.93

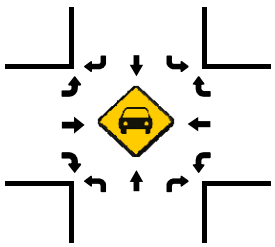
Total Vehicles (AM)



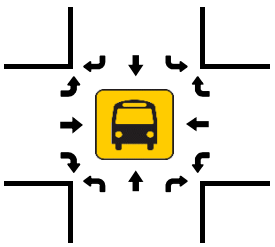
Total Vehicles (AM)



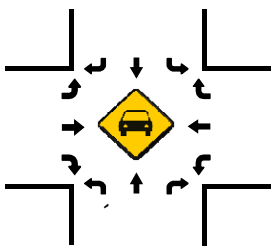
Total Vehicles (NOON)



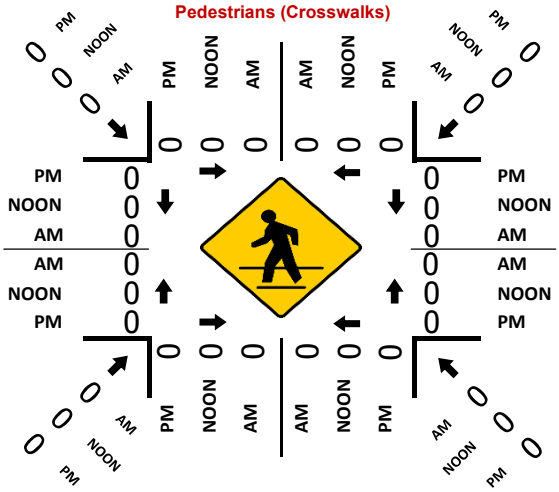
Total Vehicles (NOON)



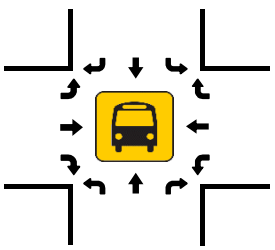
Total Vehicles (PM)



Pedestrians (Crosswalks)



Total Vehicles (PM)



National Data & Surveying Services Intersection Turning Movement Count

Location: Avalon Blvd & Albertoni St
City: Carson
Control: Signalized

Project ID: 18-05081-007
Date: 2/1/2018

Total

NS/EW Streets:	Avalon Blvd				Avalon Blvd				Albertoni St				Albertoni St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	3	1	0	1	3	0	0	1	1.5	1.5	0	1	1.5	1.5	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	44	119	37	1	67	88	74	4	19	24	23	0	8	2	47	2	559
7:15 AM	51	143	39	1	65	130	84	2	28	22	36	0	12	4	42	1	660
7:30 AM	40	167	40	1	77	150	109	5	37	26	45	0	17	5	39	1	759
7:45 AM	41	214	38	0	67	188	101	11	64	25	78	0	20	5	83	0	935
8:00 AM	53	166	32	1	90	192	96	6	44	42	96	0	20	7	63	1	909
8:15 AM	43	168	40	2	77	126	70	6	36	34	92	0	20	3	50	1	768
8:30 AM	47	155	40	0	70	120	79	7	40	27	77	1	12	2	54	1	732
8:45 AM	27	133	41	3	57	98	77	1	41	32	64	0	15	5	42	0	636
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	346	1265	307	9	570	1092	690	42	309	232	511	1	124	33	420	7	5958
APPROACH %'s :	17.96%	65.65%	15.93%	0.47%	23.81%	45.61%	28.82%	1.75%	29.34%	22.03%	48.53%	0.09%	21.23%	5.65%	71.92%	1.20%	
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	177	715	150	4	311	656	376	28	181	127	311	0	77	20	235	3	3371
PEAK HR FACTOR :	0.835	0.835	0.938	0.500	0.864	0.854	0.862	0.636	0.707	0.756	0.810	0.000	0.963	0.714	0.708	0.750	0.901
	0.892				0.893				0.850				0.775				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	3	1	0	1	3	0	0	1	1.5	1.5	0	1	1.5	1.5	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	57	220	43	5	73	183	61	5	64	163	121	0	27	8	65	5	1100
4:15 PM	50	207	40	3	58	201	57	2	54	166	129	0	23	6	40	6	1042
4:30 PM	46	148	41	0	67	221	50	2	65	185	140	0	26	10	52	3	1056
4:45 PM	57	209	37	3	47	202	65	4	68	193	157	0	19	3	54	7	1125
5:00 PM	53	208	31	3	70	205	70	4	71	201	142	0	28	7	47	6	1146
5:15 PM	68	240	38	1	64	244	57	3	77	203	131	0	22	5	48	2	1203
5:30 PM	58	240	41	0	61	240	71	8	71	190	156	0	12	6	40	7	1201
5:45 PM	50	162	38	2	63	182	38	5	59	189	126	0	27	13	58	3	1015
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	439	1634	309	17	503	1678	469	33	529	1490	1102	0	184	58	404	39	8888
APPROACH %'s :	18.30%	68.11%	12.88%	0.71%	18.75%	62.54%	17.48%	1.23%	16.95%	47.74%	35.31%	0.00%	26.86%	8.47%	58.98%	5.69%	
PEAK HR :	04:45 PM - 05:45 PM																TOTAL
PEAK HR VOL :	236	897	147	7	242	891	263	19	287	787	586	0	81	21	189	22	4675
PEAK HR FACTOR :	0.868	0.934	0.896	0.583	0.864	0.913	0.926	0.594	0.932	0.969	0.933	0.000	0.723	0.750	0.875	0.786	0.972
	0.927				0.931				0.993				0.889				

Prepared by National Data & Surveying Services

Avalon Blvd & Albertoni St

Peak Hour Turning Movement Count

ID: 18-05081-007
City: Carson

Day: Thursday
Date: 02/01/2018

PEAK HOURS

AM: 07:30 AM - 08:30 AM
NOON: NONE
PM: 04:45 PM - 05:45 PM

COUNT PERIODS

AM: 07:00 AM - 09:00 AM
NOON: NONE
PM: 04:00 PM - 06:00 PM

SOUTHBOUND (Avalon Blvd)

AM	376	656	311	28	1159	AM
NOON	0	0	0	0	0	NOON
PM	263	891	242	19	1392	PM
	0	3	1	0		

EASTBOUND (Albertoni St)

AM	NOON	PM		
573	0	520		
0	0	0	0	
181	0	287	1	
127	0	787	1.5	
311	0	586	1.5	

WESTBOUND (Albertoni St)

PM	NOON	AM	
189	0	235	1.5
21	0	20	1.5
81	0	77	1
22	0	3	0
1198	0	591	

CONTROL

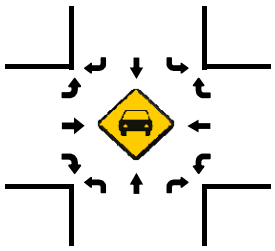
Signalized

TEV	3371 AM	0 NOON	4675 PM
PHF	0.90		0.97

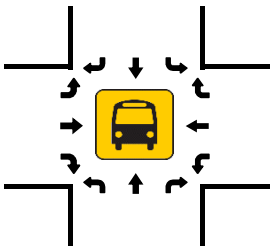
NORTHBOUND (Avalon Blvd)

PM	1565	7	236	897	147	PM
NOON	0	0	0	0	0	NOON
AM	1048	4	177	715	150	AM
		0	1	3	1	

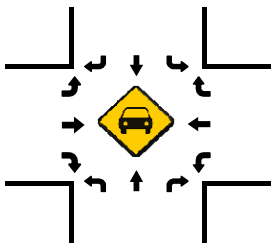
Total Vehicles (AM)



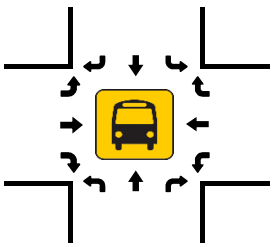
Total Vehicles (AM)



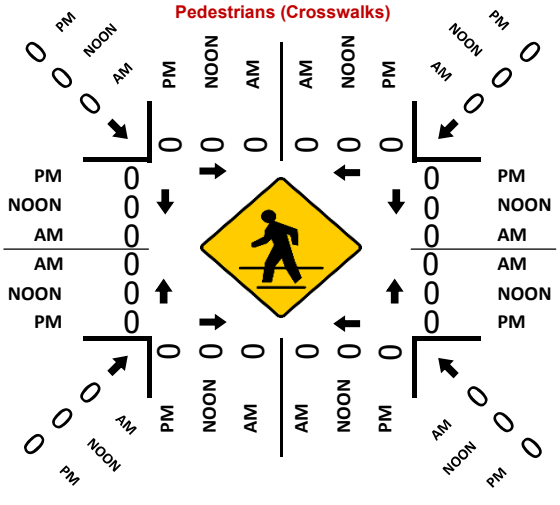
Total Vehicles (NOON)



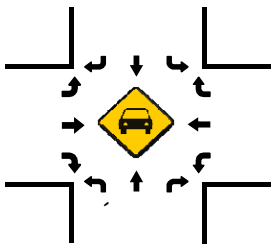
Total Vehicles (NOON)



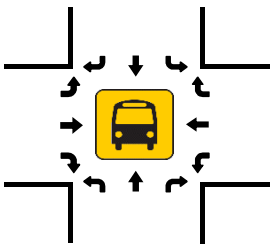
Pedestrians (Crosswalks)



Total Vehicles (PM)



Total Vehicles (PM)



National Data & Surveying Services Intersection Turning Movement Count

Location: Avalon Blvd & Victoria St
City: Carson
Control: Signalized

Project ID: 18-05081-008
Date: 2/1/2018

Total

NS/EW Streets:	Avalon Blvd				Avalon Blvd				Victoria St				Victoria St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	3	1	0	2	3	0	0	1	2	1	0	1	2	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	16	123	15	3	21	74	29	1	20	46	4	0	8	111	39	0	510
7:15 AM	23	148	24	2	30	122	18	3	31	49	17	0	17	125	41	0	650
7:30 AM	34	136	28	0	45	164	27	3	21	87	23	0	23	147	55	0	793
7:45 AM	36	211	36	2	82	200	17	2	20	111	27	0	20	88	64	0	916
8:00 AM	33	163	71	3	112	172	13	3	21	150	15	0	23	90	52	0	921
8:15 AM	27	175	66	1	130	149	21	2	23	149	16	0	31	91	50	0	931
8:30 AM	21	141	42	1	74	116	23	7	19	81	20	0	31	98	63	0	737
8:45 AM	24	129	34	3	58	115	19	2	23	93	17	0	26	82	38	0	663
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	214	1226	316	15	552	1112	167	23	178	766	139	0	179	832	402	0	6121
APPROACH %'s :	12.08%	69.23%	17.84%	0.85%	29.77%	59.98%	9.01%	1.24%	16.44%	70.73%	12.83%	0.00%	12.67%	58.88%	28.45%	0.00%	
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	130	685	201	6	369	685	78	10	85	497	81	0	97	416	221	0	3561
PEAK HR FACTOR :	0.903	0.812	0.708	0.500	0.710	0.856	0.722	0.833	0.924	0.828	0.750	0.000	0.782	0.707	0.863	0.000	0.956
	0.896				0.945				0.882				0.816				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	3	1	0	2	3	0	0	1	2	1	0	1	2	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	30	183	41	5	75	215	21	2	27	115	45	0	60	165	94	0	1078
4:15 PM	21	205	57	4	83	260	20	8	35	113	35	0	41	88	54	0	1024
4:30 PM	32	160	56	8	85	221	14	5	24	128	41	0	35	128	52	0	989
4:45 PM	28	226	64	3	110	285	22	5	18	135	23	0	32	89	64	0	1104
5:00 PM	29	183	51	10	103	189	16	4	31	189	37	0	53	185	83	0	1163
5:15 PM	30	230	65	7	111	276	20	7	32	159	49	0	47	213	116	0	1362
5:30 PM	34	189	47	8	85	230	27	2	33	154	33	0	54	198	90	0	1184
5:45 PM	32	189	70	3	84	270	17	3	22	131	45	0	43	120	46	0	1075
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	236	1565	451	48	736	1946	157	36	222	1124	308	0	365	1186	599	0	8979
APPROACH %'s :	10.26%	68.04%	19.61%	2.09%	25.60%	67.69%	5.46%	1.25%	13.42%	67.96%	18.62%	0.00%	16.98%	55.16%	27.86%	0.00%	
PEAK HR :	04:45 PM - 05:45 PM																TOTAL
PEAK HR VOL :	121	828	227	28	409	980	85	18	114	637	142	0	186	685	353	0	4813
PEAK HR FACTOR :	0.890	0.900	0.873	0.700	0.921	0.860	0.787	0.643	0.864	0.843	0.724	0.000	0.861	0.804	0.761	0.000	0.883
	0.907				0.884				0.869				0.814				

Prepared by National Data & Surveying Services

Avalon Blvd & Victoria St

Peak Hour Turning Movement Count

ID: 18-05081-008
City: Carson

Day: Thursday
Date: 02/01/2018

PEAK HOURS

AM: 07:30 AM - 08:30 AM
NOON: NONE
PM: 04:45 PM - 05:45 PM

COUNT PERIODS

AM: 07:00 AM - 09:00 AM
NOON: NONE
PM: 04:00 PM - 06:00 PM

SOUTHBOUND (Avalon Blvd)

AM	78	685	369	10	1001	AM
NOON	0	0	0	0	0	NOON
PM	85	980	409	18	1313	PM
	0	3	2	0		

EASTBOUND (Victoria St)

AM	NOON	PM	
624	0	891	
0	0	0	0
85	0	114	1
497	0	637	2
81	0	142	1
AM	NOON	PM	

WESTBOUND (Victoria St)

PM	NOON	AM	
353	0	221	1
685	0	416	2
186	0	97	1
0	0	0	0
1273	0	1067	
PM	NOON	AM	

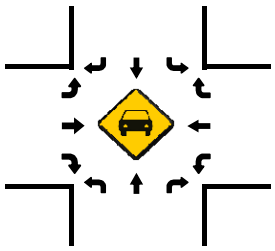
CONTROL: Signalized

TEV	3561 AM	0 NOON	4813 PM
PHF	0.96		0.88

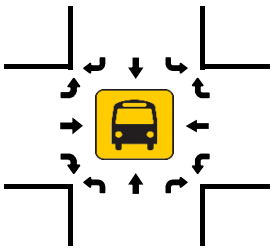
NORTHBOUND (Avalon Blvd)

PM	1336	28	121	828	227	PM
NOON	0	0	0	0	0	NOON
AM	869	6	130	685	201	AM
		0	1	3	1	

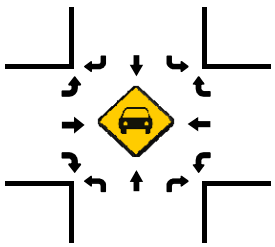
Total Vehicles (AM)



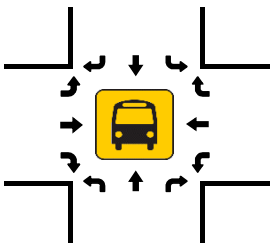
Total Vehicles (AM)



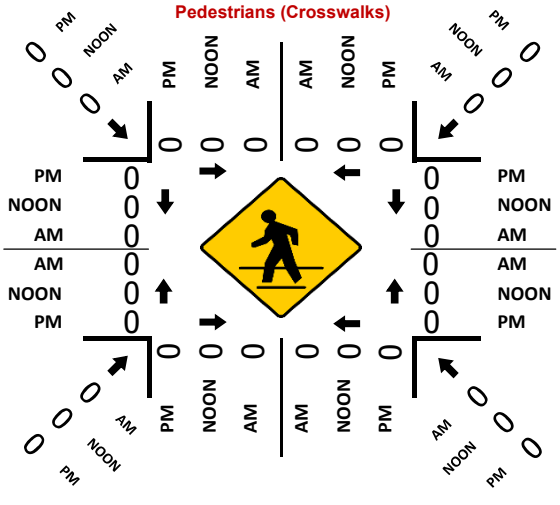
Total Vehicles (NOON)



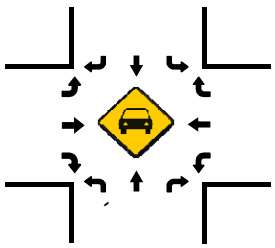
Total Vehicles (NOON)



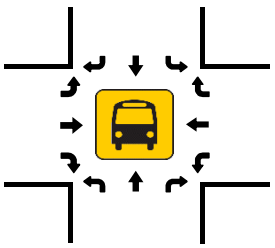
Pedestrians (Crosswalks)



Total Vehicles (PM)



Total Vehicles (PM)



National Data & Surveying Services Intersection Turning Movement Count

Location: Avalon Blvd & 184th St/StubHub Center Gate
City: Carson
Control: Signalized

Project ID: 18-05081-009
Date: 2/1/2018

Total

NS/EW Streets:	Avalon Blvd				Avalon Blvd				184th St/StubHub Center Gate				184th St/StubHub Center Gate				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	3	1	0	1	3	0	0	0.5	0	0.5	0	1.5	0	1.5	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	2	167	5	1	6	99	0	0	9	0	6	0	1	0	2	0	298
7:15 AM	2	192	9	0	7	147	1	0	11	0	6	0	0	0	1	0	376
7:30 AM	7	207	11	0	9	229	2	0	11	0	18	0	0	0	2	0	496
7:45 AM	0	255	20	0	13	225	1	0	11	0	13	0	1	0	0	0	539
8:00 AM	4	276	19	2	7	202	2	0	16	0	6	0	3	0	6	0	543
8:15 AM	5	229	12	1	8	174	3	0	19	0	8	0	4	0	3	0	466
8:30 AM	4	193	23	0	17	162	2	1	6	0	5	0	2	0	7	0	422
8:45 AM	3	185	24	2	16	117	2	0	9	0	5	0	1	0	2	0	366
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	27	1704	123	6	83	1355	13	1	92	0	67	0	12	0	23	0	3506
APPROACH %'s :	1.45%	91.61%	6.61%	0.32%	5.72%	93.32%	0.90%	0.07%	57.86%	0.00%	42.14%	0.00%	34.29%	0.00%	65.71%	0.00%	
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	16	967	62	3	37	830	8	0	57	0	45	0	8	0	11	0	2044
PEAK HR FACTOR :	0.571	0.876	0.775	0.375	0.712	0.906	0.667	0.000	0.750	0.000	0.625	0.000	0.500	0.000	0.458	0.000	0.941
		0.870				0.911				0.879				0.528			

	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
PM	1	3	1	0	1	3	0	0	0.5	0	0.5	0	1.5	0	1.5	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	8	282	15	3	29	277	10	1	12	0	8	0	17	0	17	0	679
4:15 PM	5	236	16	2	32	288	4	2	16	0	8	0	19	0	14	0	642
4:30 PM	6	266	8	3	8	319	15	0	14	0	12	0	22	0	14	0	687
4:45 PM	10	244	6	2	11	294	5	0	20	0	6	0	10	0	9	0	617
5:00 PM	9	263	7	3	3	277	11	0	17	0	4	0	15	0	16	0	625
5:15 PM	4	276	9	1	12	334	5	0	21	0	6	0	14	0	13	0	695
5:30 PM	4	257	10	0	15	274	7	2	19	0	13	0	12	0	9	0	622
5:45 PM	11	284	13	2	23	342	10	0	16	0	7	0	9	0	10	0	727
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	57	2108	84	16	133	2405	67	5	135	0	64	0	118	0	102	0	5294
APPROACH %'s :	2.52%	93.07%	3.71%	0.71%	5.10%	92.15%	2.57%	0.19%	67.84%	0.00%	32.16%	0.00%	53.64%	0.00%	46.36%	0.00%	
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	28	1080	39	6	53	1227	33	2	73	0	30	0	50	0	48	0	2669
PEAK HR FACTOR :	0.636	0.951	0.750	0.500	0.576	0.897	0.750	0.250	0.869	0.000	0.577	0.000	0.833	0.000	0.750	0.000	0.918
		0.930				0.877				0.805				0.790			

Prepared by National Data & Surveying Services

Avalon Blvd & 184th St/StubHub Center Gate

Peak Hour Turning Movement Count

ID: 18-05081-009
City: Carson

Day: Thursday
Date: 02/01/2018

PEAK HOURS	COUNT PERIODS
07:30 AM - 08:30 AM	07:00 AM - 09:00 AM
NONE	NONE
05:00 PM - 06:00 PM	04:00 PM - 06:00 PM

SOUTHBOUND (Avalon Blvd)

	Left	Thru	Right	U-Turn	Total	
AM	8	830	37	0	1035	AM
NOON	0	0	0	0	0	NOON
PM	33	1227	53	2	1203	PM

EASTBOUND (184th St/StubHub Center Gate)

AM	NOON	PM	
24	0	61	
0	0	0	0
57	0	73	0.5
0	0	0	0
45	0	30	0.5

WESTBOUND (184th St/StubHub Center Gate)

PM	NOON	AM	
48	0	11	1.5
0	0	0	0
50	0	8	1.5
0	0	0	0
92	0	99	

NORTHBOUND (Avalon Blvd)

	Left	Thru	Thru	Right	Total	
PM	6	28	1080	39	1313	PM
NOON	0	0	0	0	0	NOON
AM	3	16	967	62	886	AM

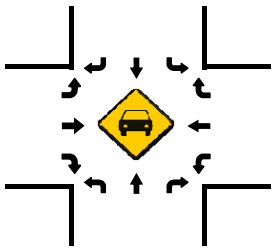
	0	3	1	0
	0	1	3	1

CONTROL

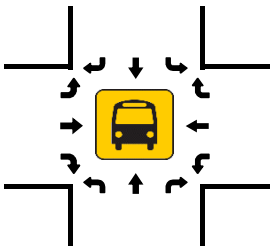
Signalized

TEV	2044 AM	0 NOON	2669 PM
PHF	0.94		0.92

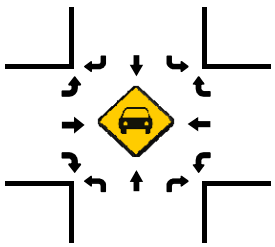
Total Vehicles (AM)



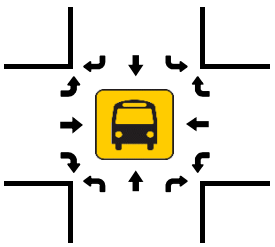
Total Vehicles (AM)



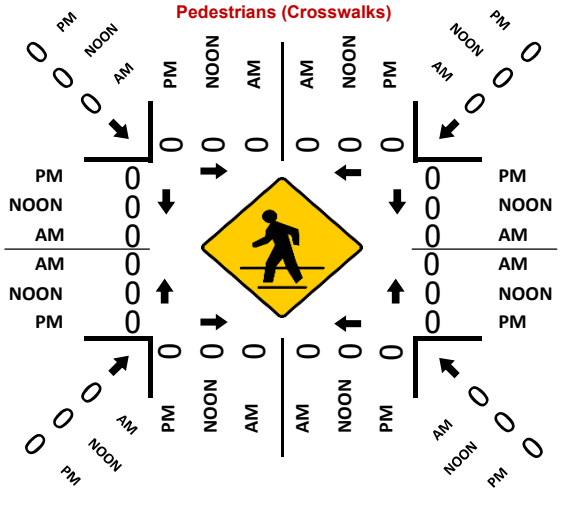
Total Vehicles (NOON)



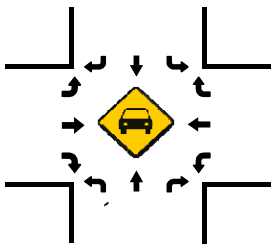
Total Vehicles (NOON)



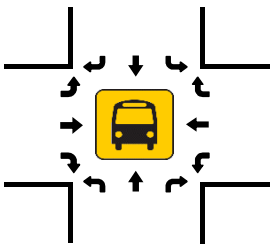
Pedestrians (Crosswalks)



Total Vehicles (PM)



Total Vehicles (PM)



National Data & Surveying Services Intersection Turning Movement Count

Location: Avalon Blvd & University Dr
City: Carson
Control: Signalized

Project ID: 18-05081-010
Date: 2/1/2018

Total

NS/EW Streets:	Avalon Blvd				Avalon Blvd				University Dr				University Dr				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	3	1	0	2	3	0	0	0	0	0	0	1	0	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	117	25	0	11	114	0	1	0	0	0	0	35	0	54	1	358
7:15 AM	0	128	54	0	32	111	0	4	0	0	0	0	40	0	70	0	439
7:30 AM	0	142	59	0	47	208	0	3	0	0	0	0	42	0	78	0	579
7:45 AM	0	210	94	0	83	184	0	4	0	0	0	0	48	0	84	0	707
8:00 AM	0	251	105	0	71	164	0	14	0	0	0	0	49	0	78	0	732
8:15 AM	0	188	134	0	52	134	0	15	0	0	0	0	68	0	55	0	646
8:30 AM	0	180	143	0	41	112	0	9	0	0	0	0	82	0	54	0	621
8:45 AM	0	167	78	0	33	99	0	12	0	0	0	0	57	0	44	0	490
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	1383	692	0	370	1126	0	62	0	0	0	0	421	0	517	1	4572
APPROACH %'s :	0.00%	66.65%	33.35%	0.00%	23.75%	72.27%	0.00%	3.98%					44.83%	0.00%	55.06%	0.11%	
PEAK HR :	**07:45 AM - 08:45 AM**																TOTAL
PEAK HR VOL :	0	829	476	0	247	594	0	42	0	0	0	0	247	0	271	0	2706
PEAK HR FACTOR :	0.000	0.826	0.832	0.000	0.744	0.807	0.000	0.700	0.000	0.000	0.000	0.000	0.753	0.000	0.807	0.000	0.924
		0.916				0.815								0.952			

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	3	1	0	2	3	0	0	0	0	0	0	1	0	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	237	63	0	48	243	0	29	0	0	0	0	152	0	56	0	828
4:15 PM	0	237	94	0	65	237	0	24	0	0	0	0	89	0	40	0	786
4:30 PM	0	211	80	0	62	256	0	27	0	0	0	0	84	0	52	0	772
4:45 PM	0	238	95	0	61	241	0	20	0	0	0	0	76	0	47	0	778
5:00 PM	0	236	88	0	58	231	0	21	0	0	0	0	101	0	51	0	786
5:15 PM	0	241	101	0	66	281	0	28	0	0	0	0	136	0	60	0	913
5:30 PM	0	241	79	0	62	243	0	22	0	0	0	0	131	0	63	0	841
5:45 PM	0	243	62	0	76	278	0	18	0	0	0	0	103	0	59	0	839
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	1884	662	0	498	2010	0	189	0	0	0	0	872	0	428	0	6543
APPROACH %'s :	0.00%	74.00%	26.00%	0.00%	18.46%	74.53%	0.00%	7.01%					67.08%	0.00%	32.92%	0.00%	
PEAK HR :	**05:00 PM - 06:00 PM**																TOTAL
PEAK HR VOL :	0	961	330	0	262	1033	0	89	0	0	0	0	471	0	233	0	3379
PEAK HR FACTOR :	0.000	0.989	0.817	0.000	0.862	0.919	0.000	0.795	0.000	0.000	0.000	0.000	0.866	0.000	0.925	0.000	0.925
		0.944				0.923								0.898			

Prepared by National Data & Surveying Services

Avalon Blvd & University Dr

Peak Hour Turning Movement Count

ID: 18-05081-010
City: Carson

Day: Thursday
Date: 02/01/2018

PEAK HOURS

AM: 07:45 AM - 08:45 AM
NOON: NONE
PM: 05:00 PM - 06:00 PM

COUNT PERIODS

AM: 07:00 AM - 09:00 AM
NOON: NONE
PM: 04:00 PM - 06:00 PM

Avalon Blvd — SOUTHBOUND

AM	0	594	247	42	1142	AM
NOON	0	0	0	0	0	NOON
PM	0	1033	262	89	1283	PM

University Dr — EASTBOUND

AM	NOON	PM	
0	0	0	
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
AM	NOON	PM	

WESTBOUND — University Dr

PM	NOON	AM	
233	0	271	1
0	0	0	0
471	0	247	1
0	0	0	0
592	0	723	
PM	NOON	AM	

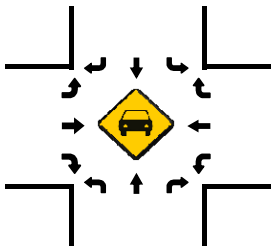
CONTROL: Signalized

TEV	2706	0	3379
	AM	NOON	PM
PHF	0.92		0.93

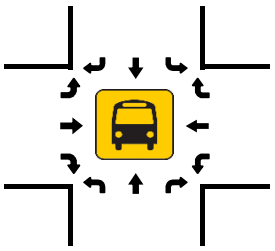
Avalon Blvd — NORTHBOUND

PM	1504	0	0	961	330	PM
NOON	0	0	0	0	0	NOON
AM	841	0	0	829	476	AM

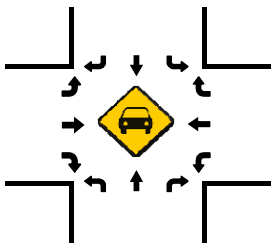
Total Vehicles (AM)



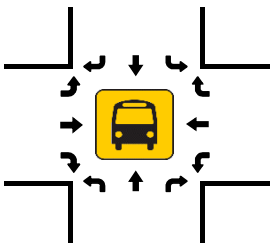
Total Vehicles (AM)



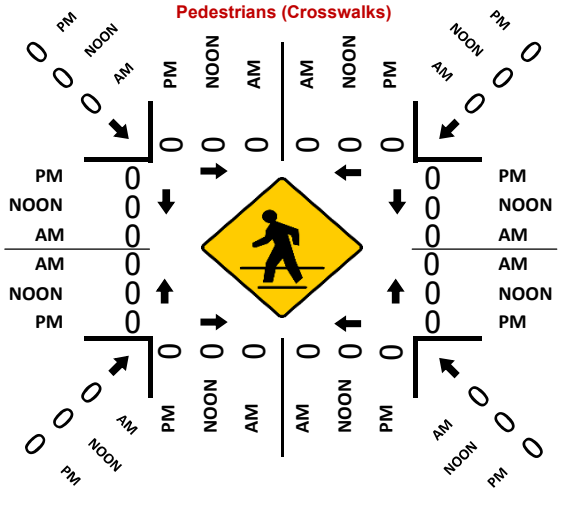
Total Vehicles (NOON)



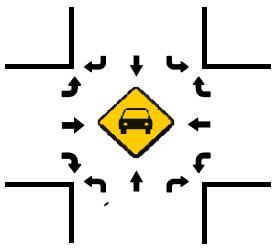
Total Vehicles (NOON)



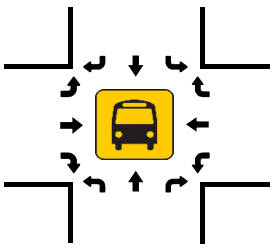
Pedestrians (Crosswalks)



Total Vehicles (PM)



Total Vehicles (PM)



National Data & Surveying Services Intersection Turning Movement Count

Location: Avalon Blvd & 192nd St
City: Carson
Control: Signalized

Project ID: 18-05081-011
Date: 2/1/2018

Total

NS/EW Streets:	Avalon Blvd				Avalon Blvd				192nd St				192nd St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	3	0	0	0	3	0	0	1	0	1	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	16	133	0	0	0	119	13	0	7	0	6	0	0	0	0	0	294
7:15 AM	17	183	0	0	0	143	25	0	16	0	14	0	0	0	0	0	398
7:30 AM	21	179	0	0	0	210	25	0	15	0	17	0	0	0	0	0	467
7:45 AM	39	275	0	1	0	201	29	0	31	0	21	0	0	0	0	0	597
8:00 AM	41	324	0	2	0	173	31	0	23	0	14	0	0	0	0	0	608
8:15 AM	20	300	0	0	0	180	21	0	22	0	9	0	0	0	0	0	552
8:30 AM	13	305	0	1	0	173	19	0	31	0	11	0	0	0	0	0	553
8:45 AM	21	198	0	0	0	151	16	0	19	0	10	0	0	0	0	0	415
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	188	1897	0	4	0	1350	179	0	164	0	102	0	0	0	0	0	3884
APPROACH %'s :	9.00%	90.81%	0.00%	0.19%	0.00%	88.29%	11.71%	0.00%	61.65%	0.00%	38.35%	0.00%					
PEAK HR :	07:45 AM - 08:45 AM																TOTAL
PEAK HR VOL :	113	1204	0	4	0	727	100	0	107	0	55	0	0	0	0	0	2310
PEAK HR FACTOR :	0.689	0.929	0.000	0.500	0.000	0.904	0.806	0.000	0.863	0.000	0.655	0.000	0.000	0.000	0.000	0.000	0.950
	0.900				0.899				0.779								

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	3	0	0	0	3	0	0	1	0	1	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	17	278	0	0	0	368	14	0	27	0	33	0	0	0	0	0	737
4:15 PM	25	265	0	1	0	300	21	0	46	0	38	0	0	0	0	0	696
4:30 PM	17	250	0	0	0	328	24	0	44	0	38	0	0	0	0	0	701
4:45 PM	12	302	0	0	0	295	13	0	41	0	47	0	0	0	0	0	710
5:00 PM	21	247	0	1	0	300	26	0	55	0	40	0	0	0	0	0	690
5:15 PM	14	307	0	0	0	397	21	0	45	0	45	0	0	0	0	0	829
5:30 PM	29	274	0	0	0	355	18	0	54	0	41	0	0	0	0	0	771
5:45 PM	21	250	0	2	0	366	19	0	44	0	42	0	0	0	0	0	744
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	156	2173	0	4	0	2709	156	0	356	0	324	0	0	0	0	0	5878
APPROACH %'s :	6.69%	93.14%	0.00%	0.17%	0.00%	94.55%	5.45%	0.00%	52.35%	0.00%	47.65%	0.00%					
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	85	1078	0	3	0	1418	84	0	198	0	168	0	0	0	0	0	3034
PEAK HR FACTOR :	0.733	0.878	0.000	0.375	0.000	0.893	0.808	0.000	0.900	0.000	0.933	0.000	0.000	0.000	0.000	0.000	0.915
	0.908				0.898				0.963								

Prepared by National Data & Surveying Services

Avalon Blvd & 192nd St

Peak Hour Turning Movement Count

ID: 18-05081-011
City: Carson

Day: Thursday
Date: 02/01/2018

PEAK HOURS

AM	07:45 AM - 08:45 AM
NOON	NONE
PM	05:00 PM - 06:00 PM

COUNT PERIODS

AM	07:00 AM - 09:00 AM
NOON	NONE
PM	04:00 PM - 06:00 PM

Avalon Blvd

SOUTHBOUND

AM	100	727	0	0	1311	AM
NOON	0	0	0	0	0	NOON
PM	84	1418	0	0	1276	PM

0 3 0 0

EASTBOUND (192nd St)

AM	NOON	PM	
213	0	169	
0	0	0	0
107	0	198	1
0	0	0	0
55	0	168	1

AM NOON PM

CONTROL

Signalized

TEV	2310 AM	0 NOON	3034 PM
PHF	0.95		0.91

WESTBOUND (192nd St)

PM	NOON	AM	
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	

PM NOON AM

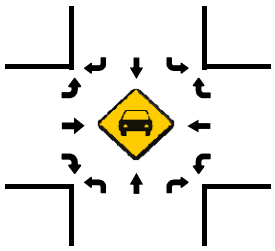
0 1 3 0

NORTHBOUND

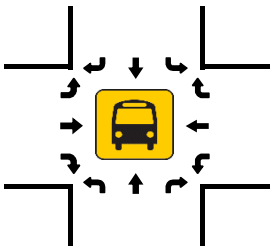
PM	1589	3	85	1078	0	PM
NOON	0	0	0	0	0	NOON
AM	786	4	113	1204	0	AM

Avalon Blvd

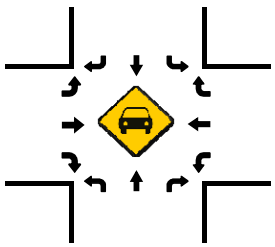
Total Vehicles (AM)



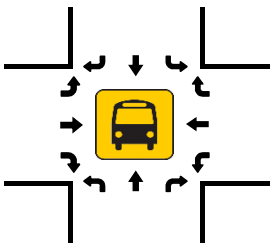
Total Vehicles (AM)



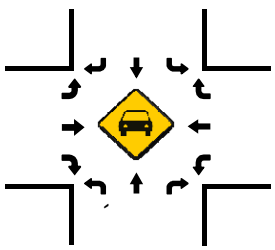
Total Vehicles (NOON)



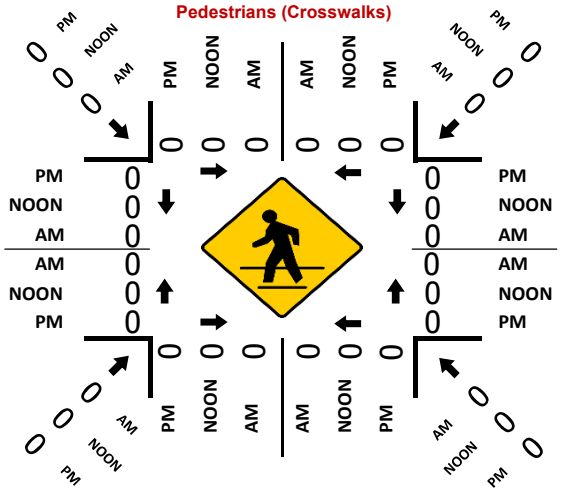
Total Vehicles (NOON)



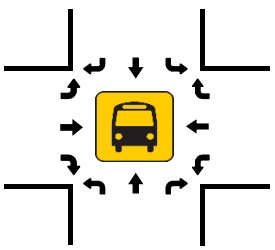
Total Vehicles (PM)



Pedestrians (Crosswalks)



Total Vehicles (PM)



National Data & Surveying Services Intersection Turning Movement Count

Location: Avalon Blvd & Elsmere Dr
City: Carson
Control: Signalized

Project ID: 18-05081-012
Date: 2/1/2018

Total

NS/EW Streets:	Avalon Blvd				Avalon Blvd				Elsmere Dr				Elsmere Dr				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	3	0	0	1	3	0	0	0	0	0	0	1	0	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	134	5	0	6	125	0	0	0	0	0	0	10	0	13	0	293
7:15 AM	0	173	5	0	5	142	0	0	0	0	0	0	15	0	16	0	356
7:30 AM	0	190	7	0	7	222	0	0	0	0	0	0	20	0	7	0	453
7:45 AM	0	304	27	0	17	207	0	1	0	0	0	0	30	0	12	0	598
8:00 AM	0	343	17	0	11	185	0	0	0	0	0	0	38	0	14	0	608
8:15 AM	0	327	13	0	4	189	0	0	0	0	0	0	14	0	7	0	554
8:30 AM	0	294	6	0	1	174	0	0	0	0	0	0	14	0	7	0	496
8:45 AM	0	235	6	0	2	174	0	1	0	0	0	0	14	0	7	0	439
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	2000	86	0	53	1418	0	2	0	0	0	0	155	0	83	0	3797
APPROACH %'s :	0.00%	95.88%	4.12%	0.00%	3.60%	96.27%	0.00%	0.14%					65.13%	0.00%	34.87%	0.00%	
PEAK HR :	07:45 AM - 08:45 AM																TOTAL
PEAK HR VOL :	0	1268	63	0	33	755	0	1	0	0	0	0	96	0	40	0	2256
PEAK HR FACTOR :	0.000	0.924	0.583	0.000	0.485	0.912	0.000	0.250	0.000	0.000	0.000	0.000	0.632	0.000	0.714	0.000	0.928
		0.924				0.877								0.654			

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	3	0	0	1	3	0	0	0	0	0	0	1	0	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	281	7	0	17	429	0	1	0	0	0	0	9	0	6	0	750
4:15 PM	0	307	9	0	10	328	0	0	0	0	0	0	6	0	4	0	664
4:30 PM	0	262	19	1	12	330	0	1	0	0	0	0	11	0	5	0	641
4:45 PM	0	296	11	0	16	339	0	1	0	0	0	0	9	0	5	0	677
5:00 PM	0	285	19	0	16	322	0	0	0	0	0	0	4	0	8	0	654
5:15 PM	0	299	17	0	9	428	0	1	0	0	0	0	7	0	8	0	769
5:30 PM	0	283	14	0	12	391	0	1	0	0	0	0	8	0	10	0	719
5:45 PM	0	275	15	0	20	385	0	0	0	0	0	0	9	0	9	0	713
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	2288	111	1	112	2952	0	5	0	0	0	0	63	0	55	0	5587
APPROACH %'s :	0.00%	95.33%	4.63%	0.04%	3.65%	96.19%	0.00%	0.16%					53.39%	0.00%	46.61%	0.00%	
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	0	1142	65	0	57	1526	0	2	0	0	0	0	28	0	35	0	2855
PEAK HR FACTOR :	0.000	0.955	0.855	0.000	0.713	0.891	0.000	0.500	0.000	0.000	0.000	0.000	0.778	0.000	0.875	0.000	0.928
		0.955				0.905								0.875			

Prepared by National Data & Surveying Services

Avalon Blvd & Elsmere Dr

Peak Hour Turning Movement Count

ID: 18-05081-012
City: Carson

Day: Thursday
Date: 02/01/2018

PEAK HOURS		COUNT PERIODS
AM	07:45 AM - 08:45 AM	07:00 AM - 09:00 AM
NOON	NONE	NONE
PM	05:00 PM - 06:00 PM	04:00 PM - 06:00 PM

Avalon Blvd — SOUTHBOUND

	U-turn	Left	Through	Right	Approach
AM	0	755	33	1	1309
NOON	0	0	0	0	0
PM	0	1526	57	2	1179
(red)	0	3	1	0	

Elsmere Dr — EASTBOUND

	AM	NOON	PM	(red)
Exit	0	0	0	
U-turn	0	0	0	0
Left	0	0	0	0
Through	0	0	0	0
Right	0	0	0	0

Elsmere Dr — WESTBOUND

	(red)	PM	NOON	AM
Right	1	35	0	40
Through	0	0	0	0
Left	1	28	0	96
U-turn	0	0	0	0
Exit		122	0	96

CONTROL

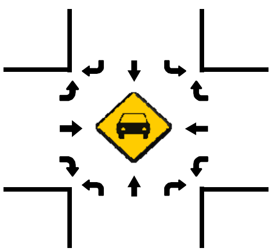
Signalized

	AM	NOON	PM
TEV	2256	0	2855
PHF	0.93		0.93

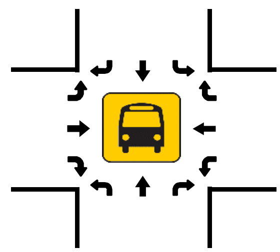
Avalon Blvd — NORTHBOUND

	Approach	U-turn	Left	Through	Right
(red)		0	0	3	0
PM	1554	0	0	1142	65
NOON	0	0	0	0	0
AM	851	0	0	1268	63

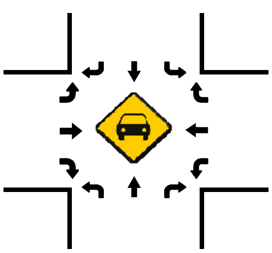
Total Vehicles (AM)



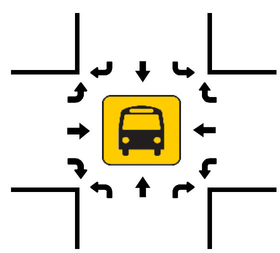
Total Vehicles (AM)



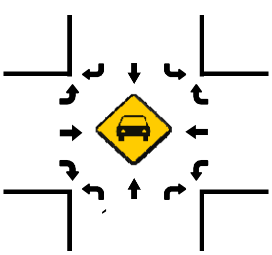
Total Vehicles (NOON)



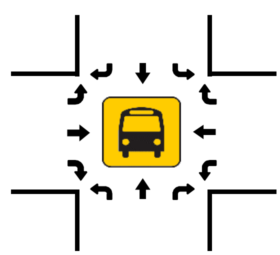
Total Vehicles (NOON)



Total Vehicles (PM)



Total Vehicles (PM)



Pedestrians (Crosswalks)

Crosswalk	AM	NOON	PM
North leg (west side)	0	0	0
North leg (east side)	0	0	0
West leg (north side)	0	0	0
West leg (south side)	0	0	0
East leg (north side)	0	0	0
East leg (south side)	0	0	0
South leg (west side)	0	0	0
South leg (east side)	0	0	0
NW corner diagonal	0	0	0
NE corner diagonal	0	0	0
SW corner diagonal	0	0	0
SE corner diagonal	0	0	0

National Data & Surveying Services Intersection Turning Movement Count

Location: Avalon Blvd & Turmont St
City: Carson
Control: Signalized

Project ID: 18-05081-013
Date: 2/1/2018

Total

NS/EW Streets:	Avalon Blvd				Avalon Blvd				Turmont St				Turmont St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	3	0	0	1	3	0	0	0	0	0	0	1	0	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	143	16	3	10	136	0	0	0	0	0	0	52	0	18	0	378
7:15 AM	0	176	18	5	7	181	0	0	0	0	0	0	52	0	19	0	458
7:30 AM	0	181	22	12	10	197	0	0	0	0	0	0	53	0	26	0	501
7:45 AM	0	310	38	5	30	198	0	1	0	0	0	0	59	0	41	0	682
8:00 AM	0	325	25	7	17	202	0	0	0	0	0	0	42	0	34	0	652
8:15 AM	0	336	21	5	12	187	0	0	0	0	0	0	32	0	9	0	602
8:30 AM	0	246	30	3	8	203	0	0	0	0	0	0	27	0	18	0	535
8:45 AM	0	216	22	3	5	157	0	0	0	0	0	0	29	0	11	0	443
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	1933	192	43	99	1461	0	1	0	0	0	0	346	0	176	0	4251
APPROACH %'s :	0.00%	89.16%	8.86%	1.98%	6.34%	93.59%	0.00%	0.06%					66.28%	0.00%	33.72%	0.00%	
PEAK HR :	07:45 AM - 08:45 AM																TOTAL
PEAK HR VOL :	0	1217	114	20	67	790	0	1	0	0	0	0	160	0	102	0	2471
PEAK HR FACTOR :	0.000	0.906	0.750	0.714	0.558	0.973	0.000	0.250	0.000	0.000	0.000	0.000	0.678	0.000	0.622	0.000	0.906
		0.933				0.937								0.655			

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	3	0	0	1	3	0	0	0	0	0	0	1	0	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	300	59	5	17	375	0	0	0	0	0	0	11	0	14	0	781
4:15 PM	0	273	43	12	26	319	0	0	0	0	0	0	27	0	11	0	711
4:30 PM	0	261	37	6	21	338	0	0	0	0	0	0	23	0	15	0	701
4:45 PM	0	313	38	7	20	303	0	0	0	0	0	0	23	0	15	0	719
5:00 PM	0	293	41	9	25	338	0	0	0	0	0	0	14	0	22	0	742
5:15 PM	0	288	40	10	25	405	0	0	0	0	0	0	21	0	11	0	800
5:30 PM	0	292	63	11	24	373	0	0	0	0	0	0	29	0	13	0	805
5:45 PM	0	262	49	6	27	357	0	2	0	0	0	0	20	0	14	0	737
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	2282	370	66	185	2808	0	2	0	0	0	0	168	0	115	0	5996
APPROACH %'s :	0.00%	83.96%	13.61%	2.43%	6.18%	93.76%	0.00%	0.07%					59.36%	0.00%	40.64%	0.00%	
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	0	1135	193	36	101	1473	0	2	0	0	0	0	84	0	60	0	3084
PEAK HR FACTOR :	0.000	0.968	0.766	0.818	0.935	0.909	0.000	0.250	0.000	0.000	0.000	0.000	0.724	0.000	0.682	0.000	0.958
		0.932				0.916								0.857			

Prepared by National Data & Surveying Services

Avalon Blvd & Turmont St

Peak Hour Turning Movement Count

ID: 18-05081-013
City: Carson

Day: Thursday
Date: 02/01/2018

PEAK HOURS

AM: 07:45 AM - 08:45 AM
NOON: NONE
PM: 05:00 PM - 06:00 PM

COUNT PERIODS

AM: 07:00 AM - 09:00 AM
NOON: NONE
PM: 04:00 PM - 06:00 PM

Avalon Blvd

SOUTHBOUND

AM	0	790	67	1	1320	AM
NOON	0	0	0	0	0	NOON
PM	0	1473	101	2	1197	PM

0 3 1 0

EASTBOUND

AM	NOON	PM	
0	0	0	
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
AM	NOON	PM	

CONTROL

Signalized

TEV	2471 AM	0 NOON	3084 PM
PHF	0.91		0.96

WESTBOUND

	PM	NOON	AM
1	60	0	102
0	0	0	0
1	84	0	160
0	0	0	0
	294	0	181
	PM	NOON	AM

0 1 3 0

PM	1593	36	0	1135	193	PM
NOON	0	0	0	0	0	NOON
AM	970	20	0	1217	114	AM

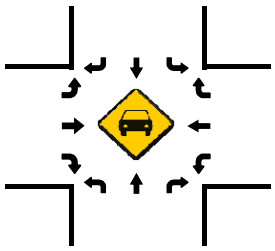
NORTHBOUND

Avalon Blvd

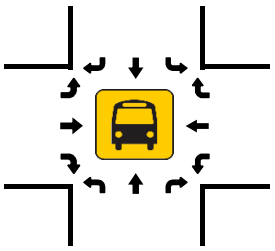
Turmont St

Turmont St

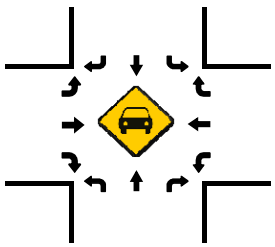
Total Vehicles (AM)



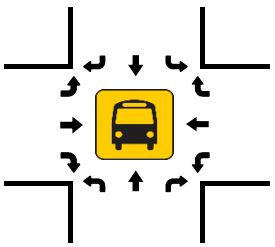
Total Vehicles (AM)



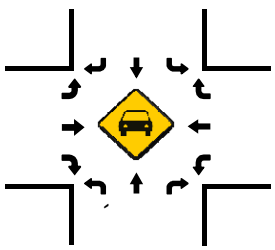
Total Vehicles (NOON)



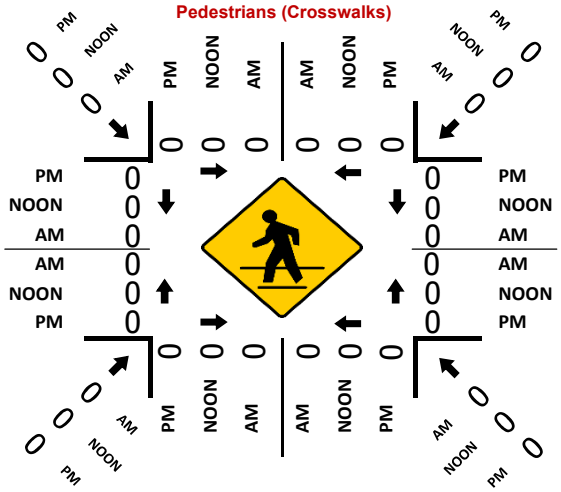
Total Vehicles (NOON)



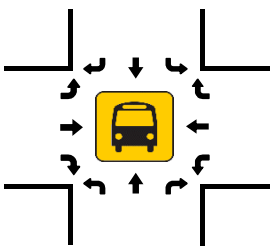
Total Vehicles (PM)



Pedestrians (Crosswalks)



Total Vehicles (PM)



National Data & Surveying Services Intersection Turning Movement Count

Location: Avalon Blvd & Del Amo Blvd
City: Carson
Control: Signalized

Project ID: 18-05081-014
Date: 2/1/2018

Total

NS/EW Streets:	Avalon Blvd				Avalon Blvd				Del Amo Blvd				Del Amo Blvd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	3	1	0	2	3	0	0	1	2	1	0	1	2	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	31	97	20	7	19	91	54	19	24	70	12	1	36	222	18	8	729
7:15 AM	27	132	30	9	25	121	71	6	32	94	14	2	36	260	27	8	894
7:30 AM	23	126	29	11	23	179	61	23	50	110	18	3	46	262	17	6	987
7:45 AM	34	246	42	9	26	164	67	17	57	154	16	3	30	190	21	9	1085
8:00 AM	26	219	33	8	28	151	56	17	65	131	25	4	40	217	31	5	1056
8:15 AM	27	251	30	7	27	127	62	25	72	139	26	3	41	180	25	7	1049
8:30 AM	15	192	30	11	22	117	56	16	76	92	21	2	41	163	23	5	882
8:45 AM	20	156	21	10	29	128	51	8	51	75	22	2	39	128	22	5	767
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	203	1419	235	72	199	1078	478	131	427	865	154	20	309	1622	184	53	7449
APPROACH %'s :	10.52%	73.56%	12.18%	3.73%	10.55%	57.16%	25.34%	6.95%	29.13%	59.00%	10.50%	1.36%	14.25%	74.82%	8.49%	2.44%	
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	110	842	134	35	104	621	246	82	244	534	85	13	157	849	94	27	4177
PEAK HR FACTOR :	0.809	0.839	0.798	0.795	0.929	0.867	0.918	0.820	0.847	0.867	0.817	0.813	0.853	0.810	0.758	0.750	0.962
	0.847				0.920				0.913				0.851				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	3	1	0	2	3	0	0	1	2	1	0	1	2	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	19	214	54	7	52	261	79	24	55	230	54	1	48	138	33	12	1281
4:15 PM	33	232	47	5	53	220	61	22	55	200	61	0	61	116	42	6	1214
4:30 PM	34	225	57	6	57	228	75	15	46	258	50	3	30	115	28	8	1235
4:45 PM	20	242	45	4	50	223	56	14	53	221	50	4	61	126	47	7	1223
5:00 PM	26	244	39	9	52	177	72	24	40	228	53	1	57	137	27	11	1197
5:15 PM	36	236	44	4	52	277	86	19	45	243	48	0	57	173	31	12	1363
5:30 PM	33	239	51	7	67	247	87	11	56	258	59	0	44	174	41	4	1378
5:45 PM	36	210	51	5	75	227	70	16	37	197	53	2	50	128	41	7	1205
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	237	1842	388	47	458	1860	586	145	387	1835	428	11	408	1107	290	67	10096
APPROACH %'s :	9.43%	73.27%	15.43%	1.87%	15.02%	61.00%	19.22%	4.76%	14.54%	68.96%	16.08%	0.41%	21.79%	59.13%	15.49%	3.58%	
PEAK HR :	04:45 PM - 05:45 PM																TOTAL
PEAK HR VOL :	115	961	179	24	221	924	301	68	194	950	210	5	219	610	146	34	5161
PEAK HR FACTOR :	0.799	0.985	0.877	0.667	0.825	0.834	0.865	0.708	0.866	0.921	0.890	0.313	0.898	0.876	0.777	0.708	0.936
	0.969				0.872				0.911				0.924				

Prepared by National Data & Surveying Services

Avalon Blvd & Del Amo Blvd

Peak Hour Turning Movement Count

ID: 18-05081-014
City: Carson

Day: Thursday
Date: 02/01/2018

PEAK HOURS

AM: 07:30 AM - 08:30 AM
NOON: NONE
PM: 04:45 PM - 05:45 PM

COUNT PERIODS

AM: 07:00 AM - 09:00 AM
NOON: NONE
PM: 04:00 PM - 06:00 PM

SOUTHBOUND (Avalon Blvd)

AM	246	621	104	82	1262	AM
NOON	0	0	0	0	0	NOON
PM	301	924	221	68	1369	PM
	0	3	2	0		

EASTBOUND (Del Amo Blvd)

AM	NOON	PM		
1218	0	1031		
13	0	5	0	
244	0	194	1	
534	0	950	2	
85	0	210	1	
AM	NOON	PM		

CONTROL

Signalized

TEV	4177 AM	0 NOON	5161 PM
PHF	0.96		0.94

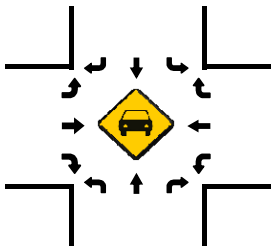
WESTBOUND (Del Amo Blvd)

	PM	NOON	AM
1	146	0	94
2	610	0	849
1	219	0	157
0	34	0	27
	1384	0	799
	PM	NOON	AM

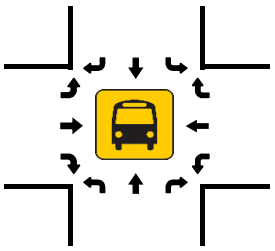
NORTHBOUND (Avalon Blvd)

PM	1377	24	115	961	179	PM
NOON	0	0	0	0	0	NOON
AM	898	35	110	842	134	AM
		0	1	3	1	

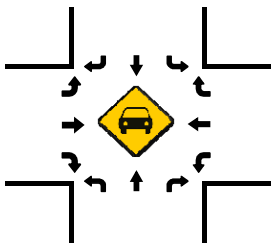
Total Vehicles (AM)



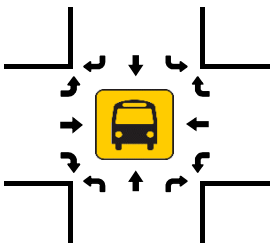
Total Vehicles (AM)



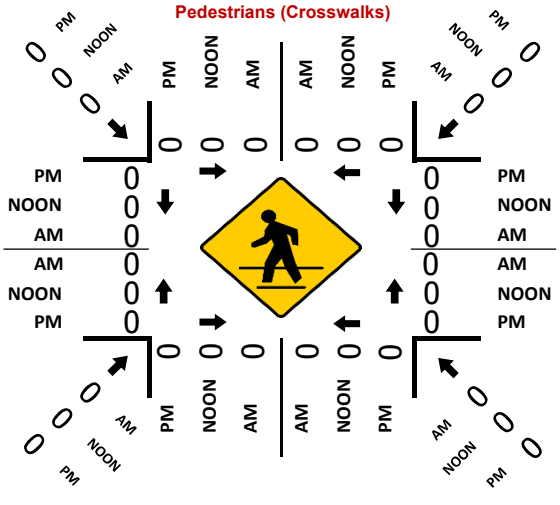
Total Vehicles (NOON)



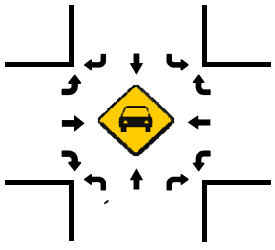
Total Vehicles (NOON)



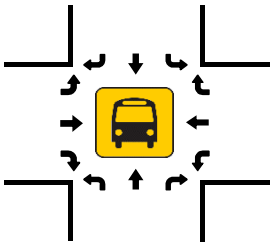
Pedestrians (Crosswalks)



Total Vehicles (PM)



Total Vehicles (PM)



National Data & Surveying Services Intersection Turning Movement Count

Location: Avalon Blvd & I-405 NB Ramps
City: Carson
Control: Signalized

Project ID: 18-05081-015
Date: 2/1/2018

Total

NS/EW Streets:	Avalon Blvd				Avalon Blvd				I-405 NB Ramps				I-405 NB Ramps				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	2	2	0	0	0	3	1	0	0	0	0	0	1.5	0.5	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	67	136	0	0	0	144	48	0	0	0	0	0	17	0	77	0	489
7:15 AM	87	170	0	0	0	171	57	0	0	0	0	0	20	0	83	0	588
7:30 AM	100	261	0	0	0	199	76	0	0	0	0	0	14	0	76	0	726
7:45 AM	122	289	0	0	0	210	53	0	0	0	0	0	16	0	102	0	792
8:00 AM	104	308	0	0	0	181	65	0	0	0	0	0	19	0	120	0	797
8:15 AM	88	259	0	0	0	179	63	0	0	0	0	0	17	0	122	0	728
8:30 AM	70	226	0	0	0	184	58	0	0	0	0	0	10	0	96	0	644
8:45 AM	56	231	0	0	0	182	62	0	0	0	0	0	22	0	105	0	658
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	694	1880	0	0	0	1450	482	0	0	0	0	0	135	0	781	0	5422
APPROACH %'s :	26.96%	73.04%	0.00%	0.00%	0.00%	75.05%	24.95%	0.00%					14.74%	0.00%	85.26%	0.00%	
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	414	1117	0	0	0	769	257	0	0	0	0	0	66	0	420	0	3043
PEAK HR FACTOR :	0.848	0.907	0.000	0.000	0.000	0.915	0.845	0.000	0.000	0.000	0.000	0.000	0.868	0.000	0.861	0.000	0.955
	0.929				0.933								0.874				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	2	2	0	0	0	3	1	0	0	0	0	0	1.5	0.5	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	67	256	0	0	0	357	132	0	0	0	0	0	24	0	103	0	939
4:15 PM	98	218	0	0	0	311	127	0	0	0	0	0	24	0	112	0	890
4:30 PM	68	228	0	0	0	313	131	0	0	0	0	0	21	0	85	0	846
4:45 PM	60	238	0	0	0	298	105	0	0	0	0	0	21	2	86	0	810
5:00 PM	69	261	0	0	0	342	126	0	0	0	0	0	16	0	99	0	913
5:15 PM	77	261	0	0	0	354	120	0	0	0	0	0	27	0	110	0	949
5:30 PM	82	277	0	0	0	344	144	0	0	0	0	0	18	2	82	0	949
5:45 PM	73	281	0	0	0	293	91	0	0	0	0	0	21	0	95	0	854
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	594	2020	0	0	0	2612	976	0	0	0	0	0	172	4	772	0	7150
APPROACH %'s :	22.72%	77.28%	0.00%	0.00%	0.00%	72.80%	27.20%	0.00%					18.14%	0.42%	81.43%	0.00%	
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	301	1080	0	0	0	1333	481	0	0	0	0	0	82	2	386	0	3665
PEAK HR FACTOR :	0.918	0.961	0.000	0.000	0.000	0.941	0.835	0.000	0.000	0.000	0.000	0.000	0.759	0.250	0.877	0.000	0.965
	0.962				0.929								0.858				

Prepared by National Data & Surveying Services

Avalon Blvd & I-405 NB Ramps

Peak Hour Turning Movement Count

ID: 18-05081-015
City: Carson

Day: Thursday
Date: 02/01/2018

PEAK HOURS

AM	07:30 AM - 08:30 AM
NOON	NONE
PM	05:00 PM - 06:00 PM

COUNT PERIODS

AM	07:00 AM - 09:00 AM
NOON	NONE
PM	04:00 PM - 06:00 PM

Avalon Blvd — SOUTHBOUND

AM	257	769	0	0	1537	AM
NOON	0	0	0	0	0	NOON
PM	481	1333	0	0	1466	PM
	1	3	0	0		

I-405 NB Ramps — EASTBOUND

AM	NOON	PM	
671	0	784	⇦
0	0	0	↶ 0
0	0	0	↱ 0
0	0	0	→ 0
0	0	0	↷ 0
AM	NOON	PM	

CONTROL

Signalized

TEV	3043 AM	0 NOON	3665 PM
PHF	0.95		0.97

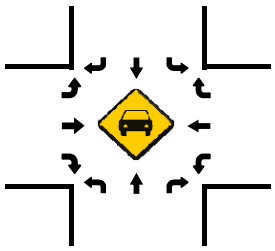
I-405 NB Ramps — WESTBOUND

PM	NOON	AM	
386	0	420	1 ↰
2	0	0	0.5 ←
82	0	66	1.5 ↶
0	0	0	0 ↩
0	0	0	⇨
PM	NOON	AM	

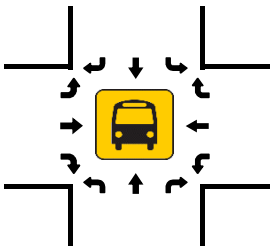
Avalon Blvd — NORTHBOUND

PM	1415	0	301	1080	0	PM
NOON	0	0	0	0	0	NOON
AM	835	0	414	1117	0	AM
		0	2	2	0	

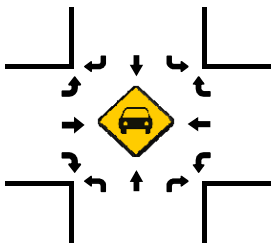
Total Vehicles (AM)



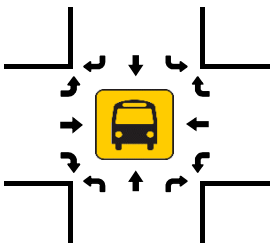
Total Vehicles (AM)



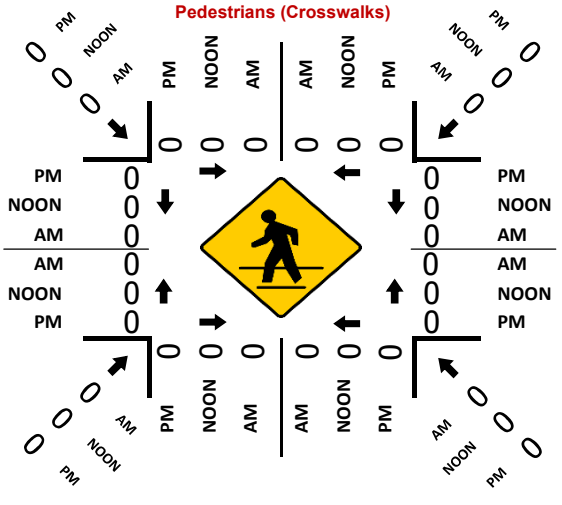
Total Vehicles (NOON)



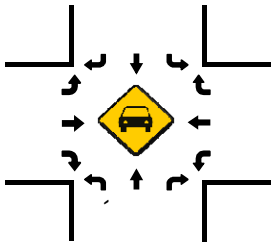
Total Vehicles (NOON)



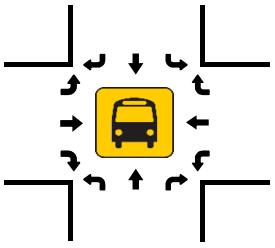
Pedestrians (Crosswalks)



Total Vehicles (PM)



Total Vehicles (PM)



National Data & Surveying Services Intersection Turning Movement Count

Location: Avalon Blvd & I-405 SB Ramps
City: Carson
Control: Signalized

Project ID: 18-05081-016
Date: 2/1/2018

Total

NS/EW Streets:	Avalon Blvd				Avalon Blvd				I-405 SB Ramps				I-405 SB Ramps				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	0	0	0	2	1	0	2	2	1	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	151	44	0	0	102	63	0	81	1	80	0	0	0	0	0	522
7:15 AM	0	200	17	0	0	138	72	0	80	0	136	0	0	0	0	0	643
7:30 AM	0	270	29	0	0	175	64	0	125	0	136	0	0	0	0	0	799
7:45 AM	0	274	31	0	0	145	59	0	107	6	140	0	0	0	0	0	762
8:00 AM	0	271	23	0	0	112	73	0	130	7	142	0	0	0	0	0	758
8:15 AM	0	196	25	0	0	136	54	0	122	2	90	0	0	0	0	0	625
8:30 AM	0	205	26	0	0	131	48	0	114	0	74	0	0	0	0	0	598
8:45 AM	0	167	28	0	0	136	53	0	98	4	71	0	0	0	0	0	557
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	1734	223	0	0	1075	486	0	857	20	869	0	0	0	0	0	5264
APPROACH %'s :	0.00%	88.61%	11.39%	0.00%	0.00%	68.87%	31.13%	0.00%	49.08%	1.15%	49.77%	0.00%					
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	0	1015	100	0	0	570	268	0	442	13	554	0	0	0	0	0	2962
PEAK HR FACTOR :	0.000	0.926	0.806	0.000	0.000	0.814	0.918	0.000	0.850	0.464	0.975	0.000	0.000	0.000	0.000	0.000	0.927
		0.914				0.877				0.904							

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	0	0	0	2	1	0	2	2	1	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	304	47	0	0	252	103	0	46	32	68	0	0	0	0	0	852
4:15 PM	0	238	34	0	0	211	94	0	58	40	66	0	0	0	0	0	741
4:30 PM	0	267	39	0	0	249	103	0	57	30	77	0	0	0	0	0	822
4:45 PM	0	254	57	0	0	250	83	0	63	48	82	0	0	0	0	0	837
5:00 PM	0	298	47	0	0	253	89	0	50	45	97	0	0	0	0	0	879
5:15 PM	0	290	42	0	0	249	105	0	63	41	83	0	0	0	0	0	873
5:30 PM	0	259	35	0	0	303	87	0	69	35	83	0	0	0	0	0	871
5:45 PM	0	261	40	0	0	252	79	0	68	25	105	0	0	0	0	0	830
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	2171	341	0	0	2019	743	0	474	296	661	0	0	0	0	0	6705
APPROACH %'s :	0.00%	86.43%	13.57%	0.00%	0.00%	73.10%	26.90%	0.00%	33.12%	20.68%	46.19%	0.00%					
PEAK HR :	04:45 PM - 05:45 PM																TOTAL
PEAK HR VOL :	0	1101	181	0	0	1055	364	0	245	169	345	0	0	0	0	0	3460
PEAK HR FACTOR :	0.000	0.924	0.794	0.000	0.000	0.870	0.867	0.000	0.888	0.880	0.889	0.000	0.000	0.000	0.000	0.000	0.984
		0.929				0.910				0.983							

Prepared by National Data & Surveying Services

Avalon Blvd & I-405 SB Ramps

Peak Hour Turning Movement Count

ID: 18-05081-016
City: Carson

Day: Thursday
Date: 02/01/2018

PEAK HOURS

AM: 07:15 AM - 08:15 AM
NOON: NONE
PM: 04:45 PM - 05:45 PM

COUNT PERIODS

AM: 07:00 AM - 09:00 AM
NOON: NONE
PM: 04:00 PM - 06:00 PM

Avalon Blvd — SOUTHBOUND

AM	268	570	0	0	1457	AM
NOON	0	0	0	0	0	NOON
PM	364	1055	0	0	1346	PM

I-405 SB Ramps — EASTBOUND

AM	NOON	PM	
268	0	364	⇦
0	0	0	↶ 0
442	0	245	↱ 2
13	0	169	→ 2
554	0	345	↴ 1
AM	NOON	PM	

CONTROL

Signalized

TEV	2962 AM	0 NOON	3460 PM
PHF	0.93		0.98

I-405 SB Ramps — WESTBOUND

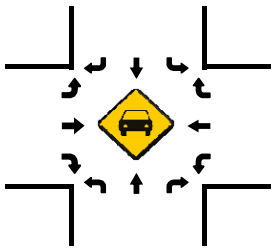
PM	NOON	AM	
0	0	0	↶ 0
0	0	0	← 0
0	0	0	↰ 0
0	0	0	↩ 0
350	0	113	⇨
PM	NOON	AM	

Avalon Blvd — NORTHBOUND

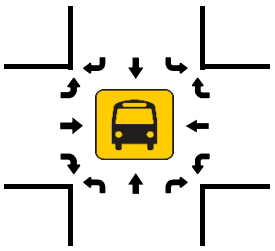
PM	1400	0	0	1101	181	PM
NOON	0	0	0	0	0	NOON
AM	1124	0	0	1015	100	AM

0 1 2 0

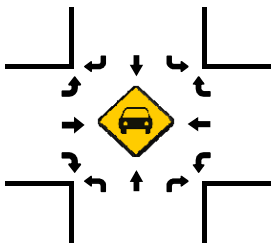
Total Vehicles (AM)



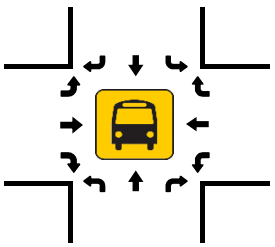
Total Vehicles (AM)



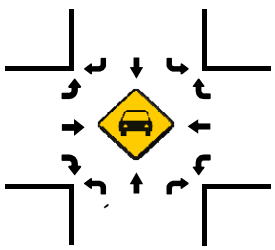
Total Vehicles (NOON)



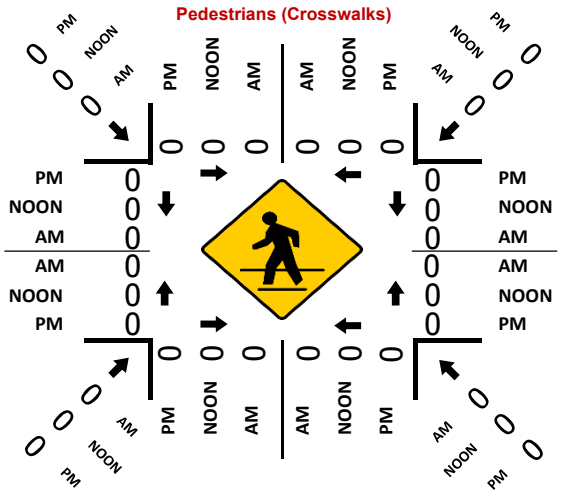
Total Vehicles (NOON)



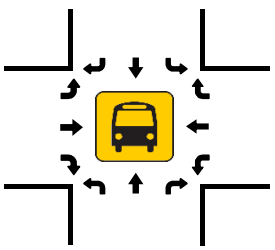
Total Vehicles (PM)



Pedestrians (Crosswalks)



Total Vehicles (PM)



Turning Movement Count Report AM

Location ID: 17
North/South: Main St
East/West: WB SR-91 ramps

Date: 05/01/18
City: Carson, CA

	Southbound			*Westbound*			*Northbound*			*Eastbound*			
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	Totals:
Movements:	R	T	L	R	T	L	R	T	L	R	T	L	
7:00	0	101	15	96	0	79	27	94	0	0	0	0	412
7:15	0	120	10	98	0	90	18	108	0	0	0	0	444
7:30	0	103	20	90	0	126	26	122	0	0	0	0	487
7:45	0	146	15	126	0	127	27	176	0	0	0	0	617
8:00	0	117	20	91	0	118	22	127	0	0	0	0	495
8:15	0	99	19	90	0	98	12	105	1	0	0	0	424
8:30	0	92	19	99	0	79	20	120	1	0	0	0	430
8:45	0	108	19	104	0	88	21	141	0	0	0	0	481
Total Volume:	0	886	137	794	0	805	173	993	2	0	0	0	3790
Approach %	0%	87%	13%	50%	0%	50%	15%	85%	0%	0%	0%	0%	
Peak Hr Begin:	7:15												
PHV	0	486	65	405	0	461	93	533	0	0	0	0	2043
PHF	0.856			0.856			0.771			0.000			0.828

Turning Movement Count Report PM

Location ID: 17
North/South: Main St
East/West: WB SR-91 ramps

Date: 05/01/18
City: Carson, CA

	Southbound			*Westbound*			*Northbound*			*Eastbound*			
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	Totals:
Movements:	R	T	L	R	T	L	R	T	L	R	T	L	
16:00	0	187	32	78	0	54	26	157	0	0	0	0	534
16:15	0	134	37	60	0	66	27	125	0	0	0	0	449
16:30	0	195	20	74	0	47	25	146	1	0	0	0	508
16:45	0	162	22	115	0	60	22	136	0	0	0	0	517
17:00	0	220	47	79	0	69	30	146	0	0	0	0	591
17:15	0	149	19	58	0	64	21	146	0	0	0	0	457
17:30	0	151	18	51	0	43	13	121	0	0	0	0	397
17:45	0	120	17	59	0	43	14	110	0	0	0	0	363
Total Volume:	0	1318	212	574	0	446	178	1087	1	0	0	0	3816
Approach %	0%	86%	14%	56%	0%	44%	14%	86%	0%	0%	0%	0%	
Peak Hr Begin:	16:30												
PHV	0	726	108	326	0	240	98	574	1	0	0	0	2073
PHF	0.781			0.809			0.956			0.000			0.877

Pedestrian/Bicycle Count Report

Location ID: 17
North/South: Main St
East/West: WB SR-91 ramps

Date: 05/01/18
City: Carson, CA

	North		East		South		West	
Leg:	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*
7:00	0	0	0	0	0	0	0	0
7:15	0	0	0	0	0	0	0	0
7:30	0	0	0	0	0	0	0	0
7:45	0	0	0	0	0	0	0	0
8:00	0	0	1	0	0	0	0	0
8:15	0	0	0	0	0	0	0	0
8:30	0	0	0	0	0	0	0	0
8:45	0	0	0	0	0	0	0	0

	North		East		South		West	
Leg:	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*
16:00	0	0	0	0	0	0	0	0
16:15	0	0	0	1	0	0	0	0
16:30	0	0	0	0	0	0	0	0
16:45	0	0	1	0	0	0	0	0
17:00	0	0	1	0	0	0	0	0
17:15	0	0	0	0	0	0	0	0
17:30	0	0	0	0	0	0	0	0
17:45	0	0	0	0	0	0	0	0

Turning Movement Count Report AM

Location ID: 18
North/South: Main St
East/West: Albertoni Street

Date: 05/01/18
City: Carson, CA

	Southbound			*Westbound*			*Northbound*			*Eastbound*			
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	Totals:
Movements:	R	T	L	R	T	L	R	T	L	R	T	L	
7:00	59	89	29	42	80	20	26	69	35	7	53	11	520
7:15	77	91	32	41	116	23	23	66	27	20	85	5	606
7:30	70	121	40	53	108	29	34	93	28	10	66	6	658
7:45	43	87	44	75	110	25	37	116	27	25	80	14	683
8:00	87	117	36	57	85	36	27	85	29	18	71	7	655
8:15	85	82	32	45	77	25	28	63	23	15	76	8	559
8:30	45	85	48	57	85	27	27	66	25	19	77	14	575
8:45	61	95	43	55	84	37	29	89	27	15	67	17	619
Total Volume:	527	767	304	425	745	222	231	647	221	129	575	82	4875
Approach %	33%	48%	19%	31%	54%	16%	21%	59%	20%	16%	73%	10%	
Peak Hr Begin:	7:15												
PHV	277	416	152	226	419	113	121	360	111	73	302	32	2602
PHF	0.880			0.902			0.822			0.855			0.952

Turning Movement Count Report PM

Location ID: 18
North/South: Main St
East/West: Albertoni Street

Date: 05/01/18
City: Carson, CA

	Southbound			*Westbound*			*Northbound*			*Eastbound*			
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	Totals:
Movements:	R	T	L	R	T	L	R	T	L	R	T	L	
16:00	34	114	85	60	68	28	43	93	19	27	160	23	754
16:15	29	100	58	46	67	25	26	94	27	43	159	22	696
16:30	43	148	60	63	63	29	43	91	25	35	161	12	773
16:45	39	125	46	60	52	23	36	88	17	34	134	15	669
17:00	50	181	74	57	73	29	30	100	34	36	157	19	840
17:15	38	139	40	46	59	26	26	104	27	38	196	12	751
17:30	25	127	48	39	74	22	27	77	23	40	145	13	660
17:45	26	108	20	37	54	32	32	82	31	44	137	6	609
Total Volume:	284	1042	431	408	510	214	263	729	203	297	1249	122	5752
Approach %	16%	59%	25%	36%	45%	19%	22%	61%	17%	18%	75%	7%	
Peak Hr Begin:	16:30												
PHV	170	593	220	226	247	107	135	383	103	143	648	58	3033
PHF	0.806			0.912			0.947			0.863			0.903

Pedestrian/Bicycle Count Report

Location ID: 18
North/South: Main St
East/West: Albertoni Street

Date: 05/01/18
City: Carson, CA

	North		East		South		West	
Leg:	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*
7:00	1	0	0	0	0	0	0	0
7:15	0	0	0	0	0	0	0	0
7:30	0	0	0	0	0	0	0	0
7:45	0	0	0	0	0	0	0	0
8:00	1	0	0	0	0	0	0	0
8:15	0	1	0	0	0	0	0	1
8:30	0	0	1	0	0	0	0	0
8:45	0	0	1	0	1	0	1	1

	North		East		South		West	
Leg:	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*
16:00	1	0	0	0	0	0	0	0
16:15	2	0	0	0	0	0	0	0
16:30	2	1	0	0	0	0	0	0
16:45	3	1	1	0	0	0	1	0
17:00	1	0	0	0	0	0	0	0
17:15	1	1	0	0	0	0	0	0
17:30	0	0	0	0	1	1	0	1
17:45	0	1	0	0	0	0	0	0

Turning Movement Count Report AM

Location ID: 19
North/South: Main St
East/West: Victoria Street

Date: 05/01/18
City: Carson, CA

	Southbound			*Westbound*			*Northbound*			*Eastbound*			
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	Totals:
Movements:	R	T	L	R	T	L	R	T	L	R	T	L	
7:00	28	66	8	34	116	40	9	78	10	8	50	14	461
7:15	24	86	12	32	132	50	21	60	13	6	93	17	546
7:30	20	109	16	35	147	60	22	117	13	8	76	19	642
7:45	28	91	16	30	130	47	34	119	12	9	107	14	637
8:00	23	71	18	23	120	27	40	98	12	9	132	18	591
8:15	21	72	14	16	106	26	30	74	10	6	130	20	525
8:30	20	77	17	28	116	23	21	76	12	10	98	12	510
8:45	34	59	13	22	84	23	26	76	12	14	86	15	464
Total Volume:	198	631	114	220	951	296	203	698	94	70	772	129	4376
Approach %	21%	67%	12%	15%	65%	20%	20%	70%	9%	7%	80%	13%	
Peak Hr Begin:	7:15												
PHV	95	357	62	120	529	184	117	394	50	32	408	68	2416
PHF	0.886			0.861			0.850			0.799			0.941

Turning Movement Count Report PM

Location ID: 19
North/South: Main St
East/West: Victoria Street

Date: 05/01/18
City: Carson, CA

	Southbound			*Westbound*			*Northbound*			*Eastbound*			
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	Totals:
Movements:	R	T	L	R	T	L	R	T	L	R	T	L	
16:00	23	130	35	20	128	20	44	71	16	16	218	23	744
16:15	15	113	50	23	106	24	38	72	10	17	258	29	755
16:30	31	130	44	32	143	35	46	74	6	22	248	17	828
16:45	17	135	40	27	122	22	34	77	15	20	243	24	776
17:00	26	173	45	32	168	35	42	98	7	16	250	23	915
17:15	12	130	34	45	171	35	39	64	17	17	222	17	803
17:30	14	138	44	31	148	26	45	79	12	16	222	22	797
17:45	16	107	41	22	103	18	29	63	7	16	210	15	647
Total Volume:	154	1056	333	232	1089	215	317	598	90	140	1871	170	6265
Approach %	10%	68%	22%	15%	71%	14%	32%	60%	9%	6%	86%	8%	
Peak Hr Begin:	16:30												
PHV	86	568	163	136	604	127	161	313	45	75	963	81	3322
PHF	0.837			0.864			0.883			0.968			0.908

Pedestrian/Bicycle Count Report

Location ID: 19
North/South: Main St
East/West: Victoria Street

Date: 05/01/18
City: Carson, CA

	North		East		South		West	
Leg:	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*
7:00	1	0	1	0	0	0	0	1
7:15	0	0	0	0	1	0	0	0
7:30	0	0	0	0	0	1	0	1
7:45	2	0	2	1	0	0	1	0
8:00	0	0	0	0	0	0	0	1
8:15	0	0	0	0	0	0	0	0
8:30	1	0	1	0	1	1	2	1
8:45	0	0	0	0	0	0	0	0

	North		East		South		West	
Leg:	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*
16:00	0	1	0	0	0	0	0	1
16:15	0	0	0	1	0	0	0	0
16:30	0	0	0	0	0	0	1	0
16:45	1	1	0	0	0	0	0	0
17:00	1	0	0	0	0	0	1	0
17:15	0	0	0	0	0	0	3	0
17:30	1	2	1	1	2	0	0	0
17:45	0	0	0	0	0	0	0	0

Turning Movement Count Report AM

Location ID: 20
North/South: Figueroa St
East/West: Victoria Street

Date: 05/01/18
City: Carson, CA

	Southbound			*Westbound*			*Northbound*			*Eastbound*			
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	Totals:
Movements:	R	T	L	R	T	L	R	T	L	R	T	L	
7:00	16	70	7	14	116	20	19	114	38	23	82	25	544
7:15	27	107	6	22	115	13	13	120	39	38	102	23	625
7:30	26	124	6	28	139	14	16	123	33	29	82	26	646
7:45	44	123	12	15	119	17	26	162	27	34	107	35	721
8:00	25	88	13	16	123	20	24	143	37	39	140	40	708
8:15	25	65	12	13	117	9	23	141	54	42	129	50	680
8:30	27	77	13	21	98	14	25	109	39	40	110	52	625
8:45	18	68	7	16	103	7	20	119	45	24	122	31	580
Total Volume:	208	722	76	145	930	114	166	1031	312	269	874	282	5129
Approach %	21%	72%	8%	12%	78%	10%	11%	68%	21%	19%	61%	20%	
Peak Hr Begin:	7:30												
PHV	120	400	43	72	498	60	89	569	151	144	458	151	2755
PHF	0.786			0.870			0.928			0.852			0.955

Turning Movement Count Report PM

Location ID: 20
North/South: Figueroa St
East/West: Victoria Street

Date: 05/01/18
City: Carson, CA

	Southbound			*Westbound*			*Northbound*			*Eastbound*			
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	Totals:
Movements:	R	T	L	R	T	L	R	T	L	R	T	L	
16:00	18	139	23	14	143	11	30	112	33	42	166	25	756
16:15	26	141	19	12	117	15	34	104	19	64	232	37	820
16:30	33	155	14	13	133	10	40	119	32	61	224	26	860
16:45	21	156	9	23	151	18	36	116	29	55	248	30	892
17:00	29	190	17	21	174	19	39	137	21	45	191	29	912
17:15	26	176	21	21	150	20	33	134	35	54	213	36	919
17:30	31	193	20	15	186	10	36	113	20	65	193	19	901
17:45	29	131	15	14	120	5	24	61	29	48	203	21	700
Total Volume:	213	1281	138	133	1174	108	272	896	218	434	1670	223	6760
Approach %	13%	78%	8%	9%	83%	8%	20%	65%	16%	19%	72%	10%	
Peak Hr Begin:	16:45												
PHV	107	715	67	80	661	67	144	500	105	219	845	114	3624
PHF	0.911			0.944			0.927			0.884			0.986

Pedestrian/Bicycle Count Report

Location ID: 20
North/South: Figueroa St
East/West: Victoria Street

Date: 05/01/18
City: Carson, CA

	North		East		South		West	
Leg:	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*
7:00	0	0	0	0	0	0	2	0
7:15	0	0	1	0	3	0	0	0
7:30	0	0	0	0	0	0	2	0
7:45	0	0	0	1	0	0	3	0
8:00	1	0	1	0	2	0	3	0
8:15	0	0	2	0	2	0	2	0
8:30	0	0	3	0	4	1	1	0
8:45	0	0	1	0	1	0	1	0

	North		East		South		West	
Leg:	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*
16:00	0	0	4	0	1	0	6	0
16:15	0	0	1	0	0	0	4	0
16:30	0	0	0	0	1	1	5	0
16:45	2	0	1	0	1	0	2	0
17:00	1	0	0	0	0	0	1	0
17:15	0	0	0	1	1	0	2	0
17:30	0	0	0	0	1	0	4	0
17:45	0	0	0	0	3	0	11	0

Turning Movement Count Report AM

Location ID: 21
North/South: I-110 NB ramp
East/West: 190th St

Date: 05/01/18
City: Carson, CA

	Southbound			*Westbound*			*Northbound*			*Eastbound*			
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	Totals:
Movements:	R	T	L	R	T	L	R	T	L	R	T	L	
7:00	0	0	0	54	118	0	0	0	0	0	139	24	335
7:15	0	0	0	53	138	0	0	0	0	0	156	28	375
7:30	0	0	0	28	158	0	0	0	0	0	144	22	352
7:45	0	0	0	45	159	0	0	0	0	0	176	35	415
8:00	0	0	0	43	127	0	0	0	0	0	209	33	412
8:15	0	0	0	59	147	0	0	0	0	0	237	46	489
8:30	0	0	0	51	122	0	0	0	0	0	188	44	405
8:45	0	0	0	28	126	0	0	0	0	0	195	38	387
Total Volume:	0	0	0	361	1095	0	0	0	0	0	1444	270	3170
Approach %	0%	0%	0%	25%	75%	0%	0%	0%	0%	0%	84%	16%	
Peak Hr Begin:	7:45												
PHV	0	0	0	198	555	0	0	0	0	0	810	158	1721
PHF	0.000			0.914			0.000			0.855			0.880

Turning Movement Count Report PM

Location ID: 21
North/South: I-110 NB ramp
East/West: 190th St

Date: 05/01/18
City: Carson, CA

	Southbound			*Westbound*			*Northbound*			*Eastbound*			
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	Totals:
Movements:	R	T	L	R	T	L	R	T	L	R	T	L	
16:00	0	0	0	54	163	0	0	0	0	0	293	113	623
16:15	0	0	0	53	99	0	0	0	0	0	314	105	571
16:30	0	0	0	56	136	0	0	0	0	0	315	102	609
16:45	0	0	0	46	152	0	0	0	0	0	335	92	625
17:00	0	0	0	64	162	0	0	0	0	0	284	108	618
17:15	0	0	0	67	170	0	0	0	0	0	309	131	677
17:30	0	0	0	64	192	0	0	0	0	0	260	104	620
17:45	0	0	0	53	135	0	0	0	0	0	276	100	564
Total Volume:	0	0	0	457	1209	0	0	0	0	0	2386	855	4907
Approach %	0%	0%	0%	27%	73%	0%	0%	0%	0%	0%	74%	26%	
Peak Hr Begin:	16:45												
PHV	0	0	0	241	676	0	0	0	0	0	1188	435	2540
PHF	0.000			0.896			0.000			0.922			0.938

Pedestrian/Bicycle Count Report

Location ID: 21
North/South: I-110 NB ramp
East/West: 190th St

Date: 05/01/18
City: Carson, CA

	North		East		South		West	
Leg:	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*
7:00	0	0	0	0	0	0	0	0
7:15	0	0	0	0	0	0	0	0
7:30	0	0	0	0	0	0	0	0
7:45	0	0	0	0	0	0	0	0
8:00	0	0	0	0	0	0	0	0
8:15	0	0	0	0	0	0	0	0
8:30	0	0	0	0	0	0	0	0
8:45	0	0	0	0	0	0	0	0

	North		East		South		West	
Leg:	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*
16:00	0	0	0	0	0	0	0	0
16:15	0	0	0	0	0	0	0	0
16:30	0	0	0	0	0	0	0	0
16:45	0	0	0	0	0	0	0	0
17:00	0	0	0	0	0	0	0	0
17:15	0	0	0	0	0	0	0	0
17:30	0	0	0	0	0	0	0	0
17:45	0	0	0	0	0	0	0	0

Prepared by City Count, LLC. (www.citycount.com)

Turning Movement Count Report AM

Location ID: 22
North/South: I-110 SB ramp
East/West: 190th St

Date: 05/01/18
City: Carson, CA

	Southbound			*Westbound*			*Northbound*			*Eastbound*			
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	Totals:
Movements:	R	T	L	R	T	L	R	T	L	R	T	L	
7:00	166	0	50	0	116	0	0	0	0	0	97	0	429
7:15	174	0	57	0	159	0	0	0	0	0	150	0	540
7:30	187	0	53	0	150	0	0	0	0	0	130	0	520
7:45	197	0	58	0	138	0	0	0	0	0	163	0	556
8:00	156	0	62	0	158	0	0	0	0	0	202	0	578
8:15	178	0	55	0	134	0	0	0	0	0	209	0	576
8:30	155	0	55	0	113	0	0	0	0	0	185	0	508
8:45	145	0	57	0	134	0	0	0	0	0	144	0	480
Total Volume:	1358	0	447	0	1102	0	0	0	0	0	1280	0	4187
Approach %	75%	0%	25%	0%	100%	0%	0%	0%	0%	0%	100%	0%	
Peak Hr Begin:	7:30												
PHV	718	0	228	0	580	0	0	0	0	0	704	0	2230
PHF	0.927			0.918			0.000			0.842			0.965

Prepared by City Count, LLC. (www.citycount.com)

Turning Movement Count Report PM

Location ID: 22
North/South: I-110 SB ramp
East/West: 190th St

Date: 05/01/18
City: Carson, CA

	Southbound			*Westbound*			*Northbound*			*Eastbound*			
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	Totals:
Movements:	R	T	L	R	T	L	R	T	L	R	T	L	
16:00	106	0	81	0	140	0	0	0	0	0	361	0	688
16:15	109	0	64	0	114	0	0	0	0	0	335	0	622
16:30	113	0	72	0	150	0	0	0	0	0	363	0	698
16:45	111	0	76	0	135	0	0	0	0	0	328	0	650
17:00	98	0	72	0	184	0	0	0	0	0	377	0	731
17:15	115	0	70	0	170	0	0	0	0	0	326	0	681
17:30	137	0	91	0	181	0	0	0	0	0	292	0	701
17:45	106	0	75	0	127	0	0	0	0	0	301	0	609
Total Volume:	895	0	601	0	1201	0	0	0	0	0	2683	0	5380
Approach %	60%	0%	40%	0%	100%	0%	0%	0%	0%	0%	100%	0%	
Peak Hr Begin:	16:45												
PHV	461	0	309	0	670	0	0	0	0	0	1323	0	2763
PHF	0.844			0.910			0.000			0.877			0.945

Pedestrian/Bicycle Count Report

Location ID: 22
North/South: I-110 SB ramp
East/West: 190th St

Date: 05/01/18
City: Carson, CA

	North		East		South		West	
Leg:	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*
7:00	0	0	0	0	0	0	0	0
7:15	0	0	0	0	0	0	0	0
7:30	0	0	0	0	0	0	0	0
7:45	0	0	0	0	0	0	0	0
8:00	1	0	0	0	0	0	0	0
8:15	0	0	0	0	0	0	0	0
8:30	0	0	0	0	0	0	0	0
8:45	0	0	0	0	0	0	0	0

	North		East		South		West	
Leg:	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*
16:00	0	0	0	0	0	0	0	0
16:15	0	0	0	0	0	0	0	0
16:30	1	0	0	0	0	0	0	0
16:45	0	0	0	0	0	0	0	0
17:00	1	0	0	0	0	0	0	0
17:15	0	0	0	0	0	0	0	0
17:30	0	0	0	0	0	0	0	0
17:45	0	0	0	0	0	0	0	0

National Data & Surveying Services

Intersection Turning Movement Count

Location: Central Ave & Victoria St
City: Carson
Control: Signalized

Project ID: 18-05553-005
Date: 8/28/2018

Total

NS/EW Streets:	Central Ave				Central Ave				Victoria St				Victoria St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	1	0	2	2	1	0	2	2	0	0	1	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	22	114	6	0	40	116	74	0	30	38	11	0	1	37	19	0	508
7:15 AM	22	114	1	0	35	139	100	0	25	37	10	0	5	58	27	0	573
7:30 AM	26	120	4	0	52	178	147	0	52	44	27	0	3	51	27	0	731
7:45 AM	31	140	4	1	41	207	153	0	34	61	44	0	4	53	32	0	805
8:00 AM	38	157	8	0	59	180	196	0	58	50	34	0	9	74	26	0	889
8:15 AM	30	113	7	0	42	169	177	0	77	48	18	0	7	99	32	0	819
8:30 AM	24	95	4	1	50	145	143	0	69	40	24	0	2	55	31	0	683
8:45 AM	15	100	5	0	36	116	83	0	43	34	15	1	4	55	24	0	531
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	208	953	39	2	355	1250	1073	0	388	352	183	1	35	482	218	0	5539
APPROACH %'s :	17.30%	79.28%	3.24%	0.17%	13.26%	46.68%	40.07%	0.00%	41.99%	38.10%	19.81%	0.11%	4.76%	65.58%	29.66%	0.00%	
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	125	530	23	1	194	734	673	0	221	203	123	0	23	277	117	0	3244
PEAK HR FACTOR :	0.822	0.844	0.719	0.250	0.822	0.886	0.858	0.000	0.718	0.832	0.699	0.000	0.639	0.699	0.914	0.000	0.912
	0.836				0.920				0.956				0.755				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	1	0	2	2	1	0	2	2	0	0	1	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	34	114	14	0	45	137	63	1	148	169	47	0	4	68	64	0	908
4:15 PM	24	152	9	0	50	157	71	0	98	148	37	0	2	34	36	0	818
4:30 PM	38	116	8	1	27	139	74	0	112	131	41	1	4	71	45	0	808
4:45 PM	28	140	9	0	47	174	90	0	107	159	47	0	1	62	37	0	901
5:00 PM	35	138	8	1	42	144	93	1	130	160	49	0	8	108	70	0	987
5:15 PM	22	126	9	0	25	181	98	1	127	178	54	0	6	88	63	0	978
5:30 PM	39	120	9	0	58	149	55	0	140	188	40	0	3	84	41	0	926
5:45 PM	28	160	11	0	27	157	56	0	83	163	42	0	2	71	37	0	837
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	248	1066	77	2	321	1238	600	3	945	1296	357	1	30	586	393	0	7163
APPROACH %'s :	17.80%	76.53%	5.53%	0.14%	14.85%	57.26%	27.75%	0.14%	36.36%	49.87%	13.74%	0.04%	2.97%	58.08%	38.95%	0.00%	
PEAK HR :	04:45 PM - 05:45 PM																TOTAL
PEAK HR VOL :	124	524	35	1	172	648	336	2	504	685	190	0	18	342	211	0	3792
PEAK HR FACTOR :	0.795	0.936	0.972	0.250	0.741	0.895	0.857	0.500	0.900	0.911	0.880	0.000	0.563	0.792	0.754	0.000	0.960
	0.940				0.931				0.937				0.767				

Prepared by National Data & Surveying Services

Central Ave & Victoria St

Peak Hour Turning Movement Count

ID: 18-05553-005
City: Carson

Day: Tuesday
Date: 08/28/2018

PEAK HOURS	COUNT PERIODS
07:30 AM - 08:30 AM	07:00 AM - 09:00 AM
NONE	NONE
04:45 PM - 05:45 PM	04:00 PM - 06:00 PM

Central Ave — SOUTHBOUND

AM	673	734	194	0	868	AM
NOON	0	0	0	0	0	NOON
PM	336	648	172	2	1241	PM

Victoria St — EASTBOUND

AM	NOON	PM		
1076	0	803	⇦	
1	0	1	↶	0
221	0	504	↱	2
203	0	685	→	2
123	0	190	↷	0
AM	NOON	PM		

WESTBOUND — Victoria St

PM	NOON	AM		
211	0	117	↶	0
342	0	277	←	2
18	0	23	↰	1
0	0	0	↰	0
892	0	420	⇨	
PM	NOON	AM		

	1	2	2	0
	0	1	2	1

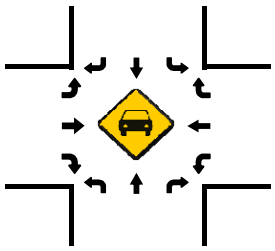
CONTROL: Signalized

TEV	3245 AM	0 NOON	3793 PM
PHF	0.91		0.96

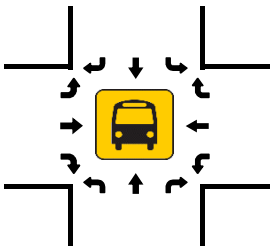
Central Ave — NORTHBOUND

PM	857	1	124	524	35	PM
NOON	0	0	0	0	0	NOON
AM	881	1	125	530	23	AM

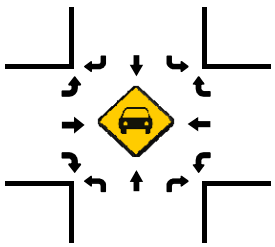
Total Vehicles (AM)



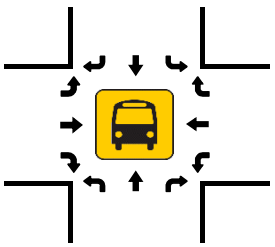
Total Vehicles (AM)



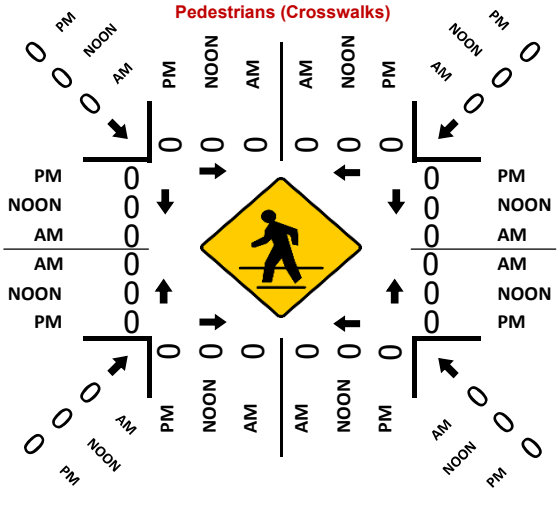
Total Vehicles (NOON)



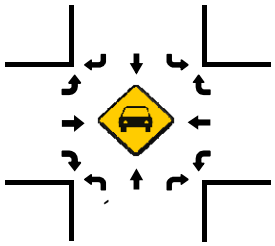
Total Vehicles (NOON)



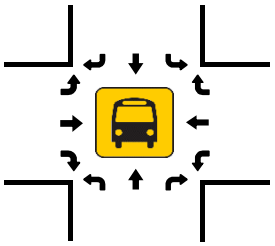
Pedestrians (Crosswalks)



Total Vehicles (PM)



Total Vehicles (PM)



National Data & Surveying Services

Intersection Turning Movement Count

Location: Hamilton Ave & Del Amo Blvd
City: Torrance
Control: 4-Way Stop

Project ID: 18-05553-001
Date: 8/28/2018

Total

NS/EW Streets:	Hamilton Ave				Hamilton Ave				Del Amo Blvd				Del Amo Blvd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	0	0	1	2	0	0	1	2	0	0	1	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	11	21	19	0	8	6	5	0	6	53	21	1	86	135	48	0	420
7:15 AM	12	23	12	0	8	12	0	0	6	51	21	0	108	161	85	0	499
7:30 AM	15	29	10	0	13	25	5	0	4	60	20	0	104	167	75	0	527
7:45 AM	10	42	23	0	11	14	6	0	10	83	20	0	89	204	105	0	617
8:00 AM	21	36	21	0	18	12	3	0	17	69	19	0	75	174	87	1	553
8:15 AM	14	40	22	0	8	9	4	0	14	59	24	0	66	156	60	1	477
8:30 AM	11	43	25	0	19	17	11	0	13	47	21	0	90	157	70	1	525
8:45 AM	17	50	16	0	27	11	7	0	9	55	15	1	75	116	57	0	456
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	111	284	148	0	112	106	41	0	79	477	161	2	693	1270	587	3	4074
APPROACH %'s :	20.44%	52.30%	27.26%	0.00%	43.24%	40.93%	15.83%	0.00%	10.99%	66.34%	22.39%	0.28%	27.14%	49.75%	22.99%	0.12%	
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	58	130	66	0	50	63	14	0	37	263	80	0	376	706	352	1	2196
PEAK HR FACTOR :	0.690	0.774	0.717	0.000	0.694	0.630	0.583	0.000	0.544	0.792	0.952	0.000	0.870	0.865	0.838	0.250	0.890
	0.814				0.738				0.841				0.901				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	0	0	1	2	0	0	1	2	0	0	1	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	8	18	18	0	73	59	15	0	5	151	49	0	77	109	23	1	606
4:15 PM	3	15	32	1	63	44	12	0	2	131	39	0	80	103	32	0	557
4:30 PM	4	14	29	0	68	55	15	0	5	135	60	0	63	96	25	0	569
4:45 PM	9	9	24	0	69	70	7	0	3	151	40	0	73	116	23	0	594
5:00 PM	8	6	32	0	78	99	29	0	2	134	51	0	61	104	20	0	624
5:15 PM	2	5	39	1	77	91	11	0	3	153	46	0	70	123	29	0	650
5:30 PM	2	3	36	0	66	70	18	0	1	130	52	0	59	95	18	0	550
5:45 PM	1	5	27	0	73	93	10	0	0	145	48	0	73	103	20	0	598
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	37	75	237	2	567	581	117	0	21	1130	385	0	556	849	190	1	4748
APPROACH %'s :	10.54%	21.37%	67.52%	0.57%	44.82%	45.93%	9.25%	0.00%	1.37%	73.57%	25.07%	0.00%	34.84%	53.20%	11.90%	0.06%	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	23	34	124	1	292	315	62	0	13	573	197	0	267	439	97	0	2437
PEAK HR FACTOR :	0.639	0.607	0.795	0.250	0.936	0.795	0.534	0.000	0.650	0.936	0.821	0.000	0.914	0.892	0.836	0.000	0.937
	0.968				0.812				0.969				0.904				

Prepared by National Data & Surveying Services

Hamilton Ave & Del Amo Blvd

Peak Hour Turning Movement Count

ID: 18-05553-001
City: Torrance

Day: Tuesday
Date: 08/28/2018

PEAK HOURS	COUNT PERIODS
07:15 AM - 08:15 AM	07:00 AM - 09:00 AM
NONE	NONE
04:30 PM - 05:30 PM	04:00 PM - 06:00 PM

Hamilton Ave — SOUTHBOUND

AM	14	63	50	0	519	AM
NOON	0	0	0	0	0	NOON
PM	62	315	292	0	144	PM

Del Amo Blvd — EASTBOUND

AM	NOON	PM		
778	0	524	⇦	
0	0	0	↶	0
37	0	13	↱	1
263	0	573	→	2
80	0	197	↴	0
AM	NOON	PM		

Del Amo Blvd — WESTBOUND

PM	NOON	AM		
97	0	352	↰	0
439	0	706	←	2
267	0	376	↰	1
0	0	1	↶	0
989	0	380	⇨	
PM	NOON	AM		

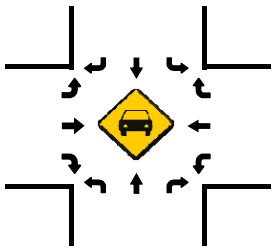
Hamilton Ave — NORTHBOUND

PM	780	1	23	34	124	PM
NOON	0	0	0	0	0	NOON
AM	519	0	58	130	66	AM

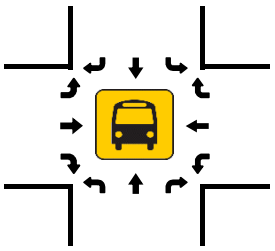
⇩	↶	↰	↑	↱
	0	1	2	0

CONTROL			
4-Way Stop			
TEV	2196 AM	0 NOON	2437 PM
PHF	0.89		0.94

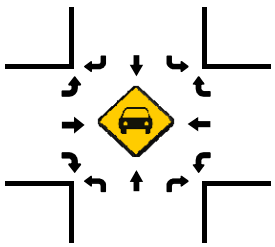
Total Vehicles (AM)



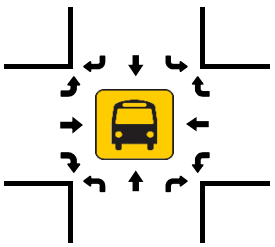
Total Vehicles (AM)



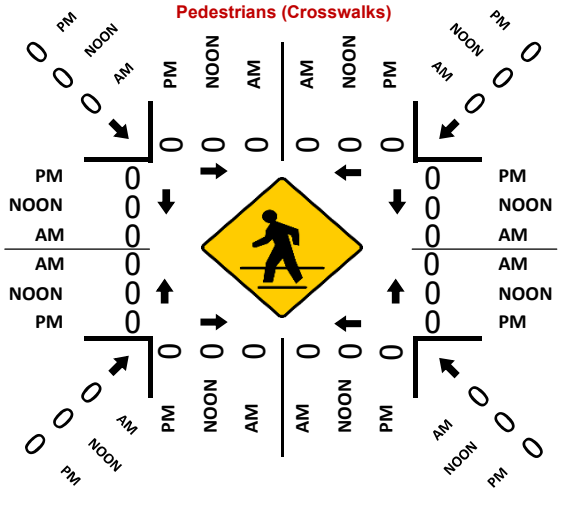
Total Vehicles (NOON)



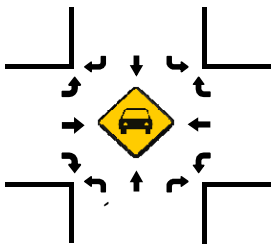
Total Vehicles (NOON)



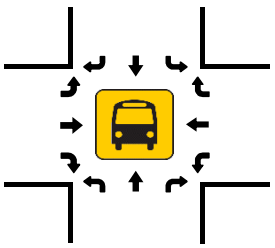
Pedestrians (Crosswalks)



Total Vehicles (PM)



Total Vehicles (PM)



National Data & Surveying Services

Intersection Turning Movement Count

Location: Hamilton Ave & I-110 SB Ramps
City: Torrance
Control: 3-Way Stop (NB/SB/WB)

Project ID: 18-05553-002
Date: 8/28/2018

Total

NS/EW Streets:	Hamilton Ave				Hamilton Ave				I-110 SB Ramps				I-110 SB Ramps				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	1	0	0	2	0	0	0	0	0	0	2	0	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	11	32	0	92	17	0	0	0	0	0	0	143	0	38	0	333
7:15 AM	0	12	45	0	123	17	0	0	0	0	0	0	158	0	33	0	388
7:30 AM	0	22	55	0	125	20	0	0	0	0	0	0	137	0	36	0	395
7:45 AM	0	26	35	0	106	22	0	0	0	0	0	0	174	0	50	0	413
8:00 AM	0	18	31	0	79	21	0	0	0	0	0	0	186	0	59	0	394
8:15 AM	0	23	23	0	72	28	0	0	0	0	0	0	181	0	52	0	379
8:30 AM	0	14	28	0	96	26	0	0	0	0	0	0	191	0	62	0	417
8:45 AM	0	24	28	0	84	20	0	0	0	0	0	0	206	0	61	0	423
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	150	277	0	777	171	0	0	0	0	0	0	1376	0	391	0	3142
APPROACH %'s :	0.00%	35.13%	64.87%	0.00%	81.96%	18.04%	0.00%	0.00%					77.87%	0.00%	22.13%	0.00%	
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	0	79	110	0	331	95	0	0	0	0	0	0	764	0	234	0	1613
PEAK HR FACTOR :	0.000	0.823	0.887	0.000	0.862	0.848	0.000	0.000	0.000	0.000	0.000	0.000	0.927	0.000	0.944	0.000	0.953
	0.909				0.873								0.934				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	1	0	0	2	0	0	0	0	0	0	2	0	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	11	80	0	149	29	0	0	0	0	0	0	76	0	33	0	378
4:15 PM	0	20	105	0	153	25	0	0	0	0	0	0	80	0	31	0	414
4:30 PM	0	17	88	0	145	21	0	0	0	0	0	0	87	0	33	0	391
4:45 PM	0	13	133	0	162	17	0	0	0	0	0	0	71	0	27	0	423
5:00 PM	0	17	106	0	165	39	0	0	0	0	0	0	67	0	25	0	419
5:15 PM	0	20	183	0	152	47	0	0	0	0	0	0	69	0	29	0	500
5:30 PM	0	14	118	0	144	41	0	0	0	0	0	0	86	0	24	0	427
5:45 PM	0	10	127	0	173	42	0	0	0	0	0	0	74	0	24	0	450
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	122	940	0	1243	261	0	0	0	0	0	0	610	0	226	0	3402
APPROACH %'s :	0.00%	11.49%	88.51%	0.00%	82.65%	17.35%	0.00%	0.00%					72.97%	0.00%	27.03%	0.00%	
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	0	61	534	0	634	169	0	0	0	0	0	0	296	0	102	0	1796
PEAK HR FACTOR :	0.000	0.763	0.730	0.000	0.916	0.899	0.000	0.000	0.000	0.000	0.000	0.000	0.860	0.000	0.879	0.000	0.898
	0.733				0.934								0.905				

Prepared by National Data & Surveying Services

Hamilton Ave & I-110 SB Ramps

Peak Hour Turning Movement Count

ID: 18-05553-002
City: Torrance

Day: Tuesday
Date: 08/28/2018

PEAK HOURS	COUNT PERIODS
08:00 AM - 09:00 AM	07:00 AM - 09:00 AM
NONE	NONE
05:00 PM - 06:00 PM	04:00 PM - 06:00 PM

Hamilton Ave — SOUTHBOUND

AM	0	95	331	0	313	AM
NOON	0	0	0	0	0	NOON
PM	0	169	634	0	163	PM

I-110 SB Ramps — EASTBOUND

AM	NOON	PM		
0	0	0	⇦	
0	0	0	↶	0
0	0	0	↱	0
0	0	0	→	0
0	0	0	↴	0
AM	NOON	PM		

I-110 SB Ramps — WESTBOUND

PM	NOON	AM		
102	0	234	↰	1
0	0	0	←	0
296	0	764	↰	2
0	0	0	↶	0
1168	0	441	⇨	
PM	NOON	AM		

	↰	←	↑	↱	
	0	0	1	1	
PM	465	0	0	61	534	PM
NOON	0	0	0	0	0	NOON
AM	859	0	0	79	110	AM

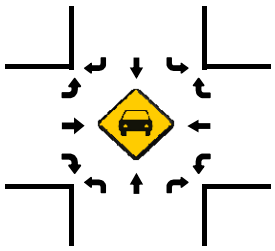
Hamilton Ave — NORTHBOUND

CONTROL

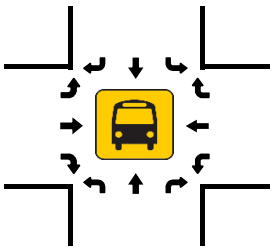
3-Way Stop (NB/SB/WB)

TEV	1613	0	1796
	AM	NOON	PM
PHF	0.95		0.90

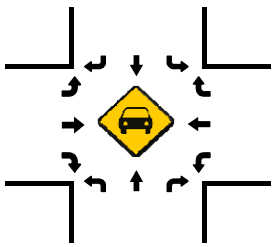
Total Vehicles (AM)



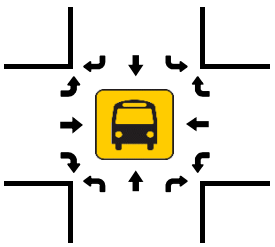
Total Vehicles (AM)



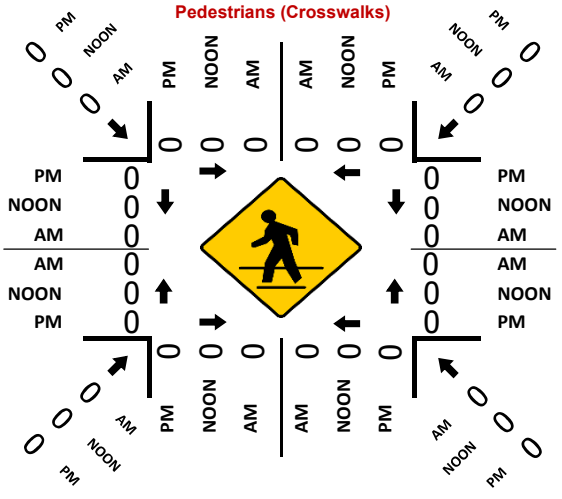
Total Vehicles (NOON)



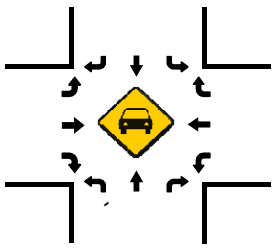
Total Vehicles (NOON)



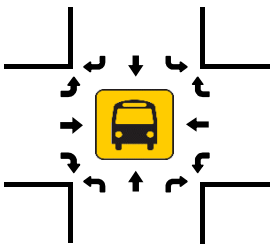
Pedestrians (Crosswalks)



Total Vehicles (PM)



Total Vehicles (PM)



National Data & Surveying Services

Intersection Turning Movement Count

Location: Figueroa St & Del Amo Blvd
City: Carson
Control: Signalized

Project ID: 18-05553-003
Date: 8/28/2018

Total

NS/EW Streets:	Figueroa St				Figueroa St				Del Amo Blvd				Del Amo Blvd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	1	0	1	2	1	0	1	2	0	0	1	2	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	27	131	52	0	9	41	68	0	14	43	20	2	31	174	29	1	642
7:15 AM	36	124	49	0	5	69	80	0	10	49	16	0	25	248	41	0	752
7:30 AM	32	133	69	0	14	103	96	0	12	60	10	0	23	219	24	0	795
7:45 AM	54	173	94	0	12	80	111	0	16	75	23	0	31	235	26	0	930
8:00 AM	55	153	84	0	10	79	71	1	15	66	25	1	34	194	27	0	815
8:15 AM	50	182	73	2	13	85	71	0	12	59	19	0	17	172	20	0	775
8:30 AM	46	133	63	0	9	45	70	0	16	51	23	0	31	197	18	0	702
8:45 AM	32	111	50	0	8	37	56	1	15	69	23	0	20	153	13	0	588
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	332	1140	534	2	80	539	623	2	110	472	159	3	212	1592	198	1	5999
APPROACH %'s :	16.53%	56.77%	26.59%	0.10%	6.43%	43.33%	50.08%	0.16%	14.78%	63.44%	21.37%	0.40%	10.58%	79.48%	9.89%	0.05%	
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	191	641	320	2	49	347	349	1	55	260	77	1	105	820	97	0	3315
PEAK HR FACTOR :	0.868	0.880	0.851	0.250	0.875	0.842	0.786	0.250	0.859	0.867	0.770	0.250	0.772	0.872	0.898	0.000	0.891
	0.899				0.876				0.862				0.875				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	1	0	1	2	1	0	1	2	0	0	1	2	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	12	105	69	0	40	110	45	2	17	186	40	1	29	161	23	0	840
4:15 PM	22	82	68	1	23	107	49	1	18	179	35	0	31	129	21	0	766
4:30 PM	18	116	75	0	32	108	54	1	13	178	28	0	34	123	21	0	801
4:45 PM	23	96	67	3	49	131	56	1	20	199	35	0	30	133	27	0	870
5:00 PM	12	114	90	0	38	178	58	0	19	200	35	0	51	120	19	0	934
5:15 PM	15	113	78	1	43	221	50	0	16	209	31	0	50	150	24	0	1001
5:30 PM	8	84	72	1	53	163	42	1	13	199	31	0	62	130	17	0	876
5:45 PM	4	75	71	0	37	181	57	0	12	220	18	0	45	125	12	0	857
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	114	785	590	6	315	1199	411	6	128	1570	253	1	332	1071	164	0	6945
APPROACH %'s :	7.63%	52.51%	39.46%	0.40%	16.31%	62.09%	21.28%	0.31%	6.56%	80.43%	12.96%	0.05%	21.19%	68.35%	10.47%	0.00%	
PEAK HR :	04:45 PM - 05:45 PM																TOTAL
PEAK HR VOL :	58	407	307	5	183	693	206	2	68	807	132	0	193	533	87	0	3681
PEAK HR FACTOR :	0.630	0.893	0.853	0.417	0.863	0.784	0.888	0.500	0.850	0.965	0.943	0.000	0.778	0.888	0.806	0.000	0.919
	0.899				0.863				0.983				0.907				

Prepared by National Data & Surveying Services

Figueroa St & Del Amo Blvd

Peak Hour Turning Movement Count

ID: 18-05553-003
City: Carson

Day: Tuesday
Date: 08/28/2018

PEAK HOURS

AM	07:30 AM - 08:30 AM
NOON	NONE
PM	04:45 PM - 05:45 PM

COUNT PERIODS

AM	07:00 AM - 09:00 AM
NOON	NONE
PM	04:00 PM - 06:00 PM

SOUTHBOUND — Figueroa St

AM	349	347	49	1	794	AM
NOON	0	0	0	0	0	NOON
PM	206	693	183	2	564	PM
	1	2	1	0		

EASTBOUND — Del Amo Blvd

AM	NOON	PM	
1361	0	797	⇦
1	0	0	0
55	0	68	1
260	0	807	2
77	0	132	0
AM	NOON	PM	

WESTBOUND — Del Amo Blvd

PM	NOON	AM	
87	0	97	1
533	0	820	2
193	0	105	1
0	0	0	0
1297	0	629	⇨
PM	NOON	AM	

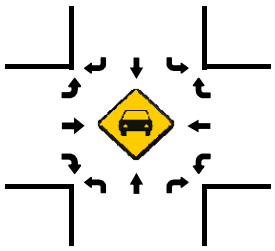
CONTROL: Signalized

TEV	3315 AM	0 NOON	3681 PM
PHF	0.89		0.92

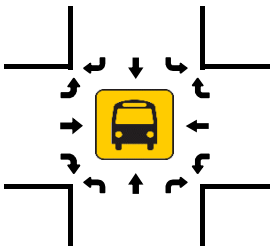
NORTHBOUND — Figueroa St

PM	1023	5	58	407	307	PM
NOON	0	0	0	0	0	NOON
AM	531	2	191	641	320	AM
		0	1	2	1	

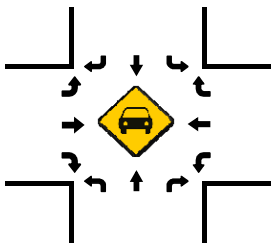
Total Vehicles (AM)



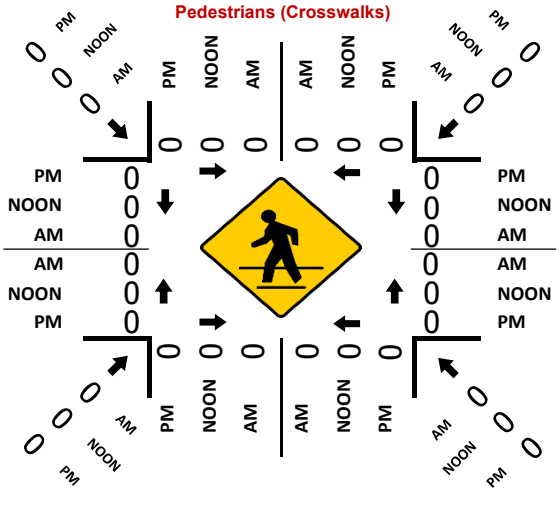
Total Vehicles (AM)



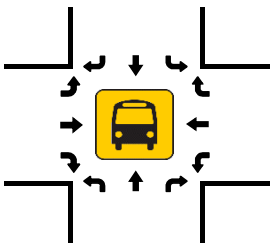
Total Vehicles (NOON)



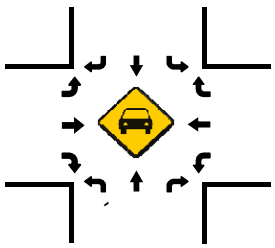
Pedestrians (Crosswalks)



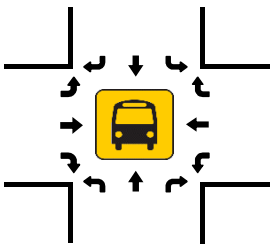
Total Vehicles (NOON)



Total Vehicles (PM)



Total Vehicles (PM)



National Data & Surveying Services

Intersection Turning Movement Count

Location: Figueroa St & I-110 NB Ramps
City: Carson
Control: Signalized

Project ID: 18-05553-004
Date: 8/28/2018

Total

NS/EW Streets:	Figueroa St				Figueroa St				I-110 NB Ramps				I-110 NB Ramps				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	2	2	0	0	0	2	1	0	1.5	0	0.5	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	167	107	0	0	0	64	29	0	102	0	44	0	0	0	0	0	513
7:15 AM	154	117	0	0	0	89	24	0	103	0	45	0	0	0	0	0	532
7:30 AM	168	154	0	0	0	111	32	0	78	0	42	0	0	0	0	0	585
7:45 AM	179	157	0	0	0	99	32	0	165	0	68	0	0	0	0	0	700
8:00 AM	163	136	0	0	0	97	35	0	166	0	57	0	0	0	0	0	654
8:15 AM	147	152	0	0	0	104	27	0	140	0	56	0	0	0	0	0	626
8:30 AM	140	145	0	0	0	59	31	0	111	0	62	0	0	0	0	0	548
8:45 AM	155	87	0	0	0	55	32	0	108	0	61	0	0	0	0	0	498
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	1273	1055	0	0	0	678	242	0	973	0	435	0	0	0	0	0	4656
APPROACH %'s :	54.68%	45.32%	0.00%	0.00%	0.00%	73.70%	26.30%	0.00%	69.11%	0.00%	30.89%	0.00%					
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	657	599	0	0	0	411	126	0	549	0	223	0	0	0	0	0	2565
PEAK HR FACTOR :	0.918	0.954	0.000	0.000	0.000	0.926	0.900	0.000	0.827	0.000	0.820	0.000	0.000	0.000	0.000	0.000	0.916
	0.935				0.939				0.828								

NS/EW Streets:	Figueroa St				Figueroa St				I-110 NB Ramps				I-110 NB Ramps				
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	2	2	0	0	0	2	1	0	1.5	0	0.5	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	152	89	0	0	0	131	44	1	91	0	30	0	0	0	0	0	538
4:15 PM	106	71	0	1	0	140	36	0	101	0	26	0	0	0	0	0	481
4:30 PM	155	115	0	0	0	120	49	0	85	0	35	1	0	0	0	0	560
4:45 PM	132	106	0	0	0	164	32	0	95	0	45	0	0	0	0	0	574
5:00 PM	117	115	0	0	0	224	38	0	93	0	31	0	0	0	0	0	618
5:15 PM	126	117	0	0	0	277	37	0	91	0	34	0	0	0	0	0	682
5:30 PM	124	82	0	0	0	223	40	0	78	0	28	0	0	0	0	0	575
5:45 PM	126	70	0	0	0	208	37	0	77	0	28	0	0	0	0	0	546
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	1038	765	0	1	0	1487	313	1	711	0	257	1	0	0	0	0	4574
APPROACH %'s :	57.54%	42.41%	0.00%	0.06%	0.00%	82.57%	17.38%	0.06%	73.37%	0.00%	26.52%	0.10%					
PEAK HR :	04:45 PM - 05:45 PM																TOTAL
PEAK HR VOL :	499	420	0	0	0	888	147	0	357	0	138	0	0	0	0	0	2449
PEAK HR FACTOR :	0.945	0.897	0.000	0.000	0.000	0.801	0.919	0.000	0.939	0.000	0.767	0.000	0.000	0.000	0.000	0.000	0.898
	0.945				0.824				0.884								

Prepared by National Data & Surveying Services

Figueroa St & I-110 NB Ramps

Peak Hour Turning Movement Count

ID: 18-05553-004
City: Carson

Day: Tuesday
Date: 08/28/2018

PEAK HOURS

AM	07:30 AM - 08:30 AM
NOON	NONE
PM	04:45 PM - 05:45 PM

COUNT PERIODS

AM	07:00 AM - 09:00 AM
NOON	NONE
PM	04:00 PM - 06:00 PM

SOUTHBOUND — Figueroa St

AM	126	411	0	0	1148	AM
NOON	0	0	0	0	0	NOON
PM	147	888	0	0	777	PM
	1	2	0	0		

EASTBOUND — I-110 NB Ramps

AM	NOON	PM		
783	0	646		
0	0	0	0	
549	0	357	1.5	
0	0	0	0	
223	0	138	0.5	
AM	NOON	PM		

WESTBOUND — I-110 NB Ramps

0		0	0	PM
0		0	0	NOON
0		0	0	AM
0		0	0	AM
		0	0	NOON
		0	0	PM

CONTROL

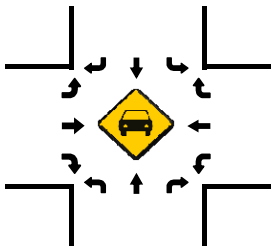
Signalized

TEV	2565	0	2450
	AM	NOON	PM
PHF	0.92		0.90

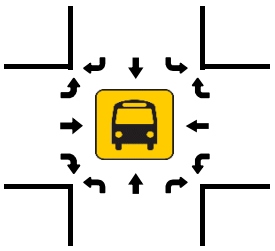
NORTHBOUND — Figueroa St

PM	1027	1	499	420	0	PM
NOON	0	0	0	0	0	NOON
AM	634	0	657	599	0	AM
		0	2	2	0	

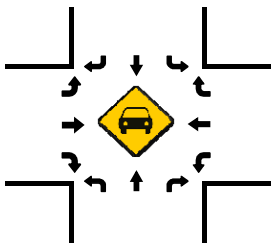
Total Vehicles (AM)



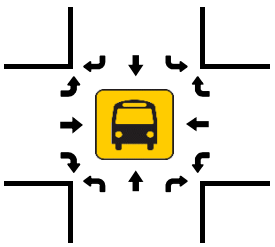
Total Vehicles (AM)



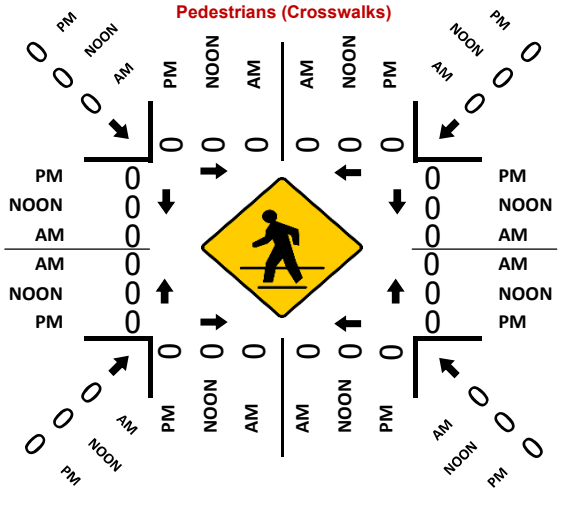
Total Vehicles (NOON)



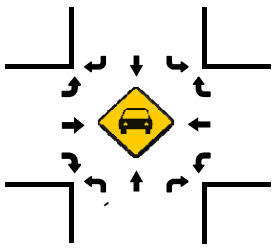
Total Vehicles (NOON)



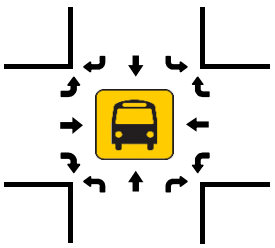
Pedestrians (Crosswalks)



Total Vehicles (PM)



Total Vehicles (PM)



Turning Movement Count Report AM

Location ID: 2
North/South: Albertoni Street
East/West: SR-91 ramps

Date: 09/27/18
City: Carson, CA

	Southbound			*Westbound*			*Northbound*			*Eastbound*			
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	Totals:
Movements:	R	T	L	R	T	L	R	T	L	R	T	L	
7:00	46	0	24	13	104	0	0	0	0	0	48	66	301
7:15	36	0	44	23	120	1	0	0	0	0	50	52	326
7:30	37	0	43	16	133	0	0	0	0	0	70	68	367
7:45	70	0	72	18	136	0	0	0	0	0	72	63	431
8:00	63	0	105	30	118	0	0	0	0	0	95	77	488
8:15	56	0	58	24	108	0	0	0	0	0	91	67	404
8:30	51	0	59	15	97	0	0	0	0	0	62	71	355
8:45	64	0	59	9	98	0	0	0	0	0	63	49	342
Total Volume:	423	0	464	148	914	1	0	0	0	0	551	513	3014
Approach %	48%	0%	52%	14%	86%	0%	0%	0%	0%	0%	52%	48%	
Peak Hr Begin:	7:30												
PHV	226	0	278	88	495	0	0	0	0	0	328	275	1690
PHF	0.750			0.946			0.000			0.876			0.866

Prepared by City Count, LLC. (www.citycount.com)

Turning Movement Count Report PM

Location ID: 2
North/South: Albertoni Street
East/West: SR-91 ramps

Date: 09/27/18
City: Carson, CA

	Southbound			*Westbound*			*Northbound*			*Eastbound*			
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	Totals:
Movements:	R	T	L	R	T	L	R	T	L	R	T	L	
16:00	72	0	97	15	100	0	0	0	0	0	209	49	542
16:15	97	0	118	19	81	0	0	0	0	0	235	43	593
16:30	67	0	98	13	94	1	0	0	0	0	176	65	514
16:45	68	0	113	15	76	0	0	0	0	0	195	57	524
17:00	39	0	102	9	92	0	0	0	0	0	211	73	526
17:15	53	0	109	18	108	0	0	0	0	0	191	58	537
17:30	56	0	123	10	111	0	0	0	0	0	187	57	544
17:45	52	0	88	3	67	0	0	0	0	0	146	48	404
Total Volume:	504	0	848	102	729	1	0	0	0	0	1550	450	4184
Approach %	37%	0%	63%	12%	88%	0%	0%	0%	0%	0%	78%	23%	
Peak Hr Begin:	16:00												
PHV	304	0	426	62	351	1	0	0	0	0	815	214	2173
PHF	0.849			0.900			0.000			0.925			0.916

Pedestrian/Bicycle Count Report

Location ID: 2
North/South: Albertoni Street
East/West: SR-91 ramps

Date: 09/27/18
City: Carson, CA

	North		East		South		West	
Leg:	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*
7:00	1	0	0	0	0	0	0	0
7:15	1	0	1	0	0	0	0	0
7:30	1	2	0	0	0	0	0	0
7:45	0	0	0	0	0	0	0	0
8:00	0	0	0	0	0	0	0	0
8:15	0	0	0	0	0	0	0	0
8:30	0	0	0	0	0	0	0	0
8:45	1	0	0	0	0	0	0	0

	North		East		South		West	
Leg:	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*
16:00	1	0	0	0	0	0	0	0
16:15	2	1	0	0	0	0	0	0
16:30	1	0	0	0	0	0	0	0
16:45	3	1	0	0	0	0	0	0
17:00	0	1	0	0	0	0	0	0
17:15	0	0	0	0	0	0	0	0
17:30	0	0	0	0	0	0	0	0
17:45	2	0	0	0	0	0	0	0

Turning Movement Count Report AM

Location ID: 1
North/South: Main Street
East/West: Broadway Street

Date: 09/27/18
City: Carson, CA

	Southbound			*Westbound*			*Northbound*			*Eastbound*			
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	Totals:
Movements:	R	T	L	R	T	L	R	T	L	R	T	L	
7:00	3	113	0	0	0	0	0	98	44	38	0	0	296
7:15	4	142	0	0	0	0	0	88	53	38	0	0	325
7:30	0	246	0	0	0	0	0	144	57	49	0	0	496
7:45	1	170	0	0	0	0	0	189	84	50	0	0	494
8:00	2	140	0	0	0	0	0	163	59	43	0	0	407
8:15	2	124	0	0	0	0	0	172	69	42	0	0	409
8:30	2	93	0	0	0	0	0	132	48	37	0	0	312
8:45	3	85	0	0	0	0	0	97	41	37	0	0	263
Total Volume:	17	1113	0	0	0	0	0	1083	455	334	0	0	3002
Approach %	2%	98%	0%	0%	0%	0%	0%	70%	30%	100%	0%	0%	

Peak Hr Begin:	7:30												
PHV	5	680	0	0	0	0	0	668	269	184	0	0	1806
PHF	0.696			0.000			0.858			0.920			0.910

Turning Movement Count Report PM

Location ID: 1
North/South: Main Street
East/West: Broadway Street

Date: 09/27/18
City: Carson, CA

	Southbound			*Westbound*			*Northbound*			*Eastbound*			
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	Totals:
Movements:	R	T	L	R	T	L	R	T	L	R	T	L	
16:00	1	169	2	0	0	0	0	149	56	119	0	0	496
16:15	2	145	0	0	0	0	0	147	30	98	0	0	422
16:30	4	187	0	0	0	0	0	151	54	123	0	0	519
16:45	4	150	0	0	0	0	0	186	61	102	0	0	503
17:00	6	187	0	0	0	0	0	171	48	148	0	0	560
17:15	4	159	0	0	0	0	0	170	52	117	0	0	502
17:30	3	161	0	0	0	0	0	166	43	127	0	0	500
17:45	0	143	0	0	0	0	0	128	33	98	0	0	402
Total Volume:	24	1301	2	0	0	0	0	1268	377	932	0	0	3904
Approach %	2%	98%	0%	0%	0%	0%	0%	77%	23%	100%	0%	0%	
Peak Hr Begin:	16:30												
PHV	18	683	0	0	0	0	0	678	215	490	0	0	2084
PHF	0.908			0.000			0.904			0.828			0.930

Pedestrian/Bicycle Count Report

Location ID: 1
North/South: Main Street
East/West: Broadway Street

Date: 09/27/18
City: Carson, CA

	North		East		South		West	
Leg:	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*
7:00	0	0	0	0	0	0	0	0
7:15	0	0	0	0	0	0	0	0
7:30	0	0	0	0	0	0	0	0
7:45	0	0	0	0	0	0	0	0
8:00	0	0	0	0	0	0	0	0
8:15	0	0	0	0	0	0	0	0
8:30	0	0	0	0	0	0	0	0
8:45	0	0	0	0	0	0	0	0

	North		East		South		West	
Leg:	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*
16:00	0	0	0	0	0	0	0	0
16:15	0	0	0	0	0	0	0	0
16:30	0	0	0	0	0	0	0	0
16:45	0	0	0	0	0	0	0	0
17:00	0	0	0	0	0	0	0	0
17:15	0	0	0	0	0	0	0	0
17:30	0	0	0	0	0	0	0	0
17:45	0	0	0	0	0	0	0	0

Turning Movement Count Report AM

Location ID: 1
North/South: Main Street
East/West: MLK Jr Street

Date: 05/05/18
City: Carson, CA

	Southbound			*Westbound*			*Northbound*			*Eastbound*			
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	Totals:
Movements:	R	T	L	R	T	L	R	T	L	R	T	L	
8:00	0	41	8	7	0	17	18	42	0	0	0	0	133
8:15	0	38	16	7	0	12	28	48	0	0	0	0	149
8:30	0	53	17	8	0	8	21	39	0	0	0	0	146
8:45	0	47	9	6	0	18	21	45	0	0	0	0	146
9:00	0	36	13	15	0	19	17	38	0	0	0	0	138
9:15	0	41	11	7	0	16	18	33	0	0	0	0	126
9:30	0	37	14	10	0	13	16	42	0	0	0	0	132
9:45	0	59	15	12	0	14	17	40	0	0	0	0	157
Total Volume:	0	352	103	72	0	117	156	327	0	0	0	0	1127
Approach %	0%	77%	23%	38%	0%	62%	32%	68%	0%	0%	0%	0%	
Peak Hr Begin:	8:15												
PHV	0	174	55	36	0	57	87	170	0	0	0	0	579
PHF	0.818			0.684			0.845			0.000			0.971

Turning Movement Count Report PM

Location ID: 1
North/South: Main Street
East/West: MLK Jr Street

Date: 05/05/18
City: Carson, CA

	Southbound			*Westbound*			*Northbound*			*Eastbound*			
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	Totals:
Movements:	R	T	L	R	T	L	R	T	L	R	T	L	
16:00	0	60	18	25	0	14	21	60	0	0	0	0	198
16:15	0	60	23	19	0	13	27	55	0	0	0	0	197
16:30	0	46	20	13	0	21	23	45	0	0	0	0	168
16:45	0	44	19	17	0	22	28	46	0	0	0	0	176
17:00	0	46	13	17	0	13	26	58	0	0	0	0	173
17:15	0	45	19	12	0	17	23	56	0	0	0	0	172
17:30	0	43	16	9	0	18	18	64	0	0	0	0	168
17:45	0	37	21	14	0	11	20	54	0	0	0	0	157
Total Volume:	0	381	149	126	0	129	186	438	0	0	0	0	1409
Approach %	0%	72%	28%	49%	0%	51%	30%	70%	0%	0%	0%	0%	
Peak Hr Begin:	16:00												
PHV	0	210	80	74	0	70	99	206	0	0	0	0	739
PHF	0.873			0.923			0.930			0.000			0.933

Pedestrian/Bicycle Count Report

Location ID: 1
North/South: Main Street
East/West: MLK Jr Street

Date: 05/05/18
City: Carson, CA

	North		East		South		West	
Leg:	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*
8:00	0	0	0	0	0	0	0	0
8:15	0	0	0	0	0	0	0	0
8:30	0	0	0	0	0	0	0	0
8:45	0	0	0	0	0	0	0	0
9:00	0	0	0	0	0	0	0	0
9:15	0	0	0	0	0	0	0	0
9:30	0	0	0	0	0	0	0	0
9:45	0	0	0	0	0	0	0	0

	North		East		South		West	
Leg:	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*
16:00	0	0	0	0	0	0	0	0
16:15	0	0	0	0	0	0	0	0
16:30	0	0	0	0	0	0	0	0
16:45	0	0	0	0	0	0	0	0
17:00	0	0	0	0	0	0	0	0
17:15	0	0	0	1	0	0	0	0
17:30	0	0	0	0	0	0	0	0
17:45	0	0	2	0	0	0	0	0

Turning Movement Count Report Mid-Day

Location ID: 4
North/South: Main Street
East/West: I-405 NB Ramps

Date: 09/22/18
City: Carson, CA

	Southbound			*Westbound*			*Northbound*			*Eastbound*			
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	Totals:
Movements:	R	T	L	R	T	L	R	T	L	R	T	L	
11:00	10	117	0	13	11	13	0	71	2	0	0	0	237
11:15	9	91	0	36	22	18	0	62	3	0	0	0	241
11:30	8	99	0	15	35	15	0	74	3	0	0	0	249
11:45	4	101	2	26	11	19	0	83	3	0	0	0	249
12:00	5	104	1	24	24	9	0	77	5	0	0	0	249
12:15	4	95	0	25	15	8	0	69	3	0	0	0	219
12:30	13	108	0	24	18	19	0	73	5	0	0	0	260
12:45	6	89	0	17	18	12	0	68	6	0	0	0	216
Total Volume:	59	804	3	180	154	113	0	577	30	0	0	0	1920
Approach %	7%	93%	0%	40%	34%	25%	0%	95%	5%	0%	0%	0%	
Peak Hr Begin:	11:15												
PHV	26	395	3	101	92	61	0	296	14	0	0	0	988
PHF	0.964			0.836			0.901			0.000			0.992

Pedestrian/Bicycle Count Report

Location ID: 4
North/South: Main Street
East/West: I-405 NB Ramps

Date: 09/22/18
City: Carson, CA

	North		*East*		*South*		*West*	
Leg:	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*
11:00	0	0	0	0	0	0	0	0
11:15	0	0	0	0	0	0	0	0
11:30	0	0	0	0	0	0	0	0
11:45	0	0	0	0	0	0	0	0
12:00	0	0	0	0	0	0	0	0
12:15	0	0	0	0	0	0	0	0
12:30	0	0	0	0	0	0	0	0
12:45	0	0	0	1	0	0	0	0

Turning Movement Count Report Mid-Day

Location ID: 5
North/South: Main Street
East/West: I-405 SB Ramps

Date: 09/22/18
City: Carson, CA

	Southbound			*Westbound*			*Northbound*			*Eastbound*			
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	Totals:
Movements:	R	T	L	R	T	L	R	T	L	R	T	L	
11:00	0	91	37	0	0	0	13	64	0	1	20	6	232
11:15	0	82	25	0	0	0	8	58	0	10	17	0	200
11:30	0	100	13	0	0	0	6	74	0	5	14	8	220
11:45	0	97	22	0	0	0	7	76	0	6	18	7	233
12:00	0	87	23	0	0	0	13	85	0	3	19	1	231
12:15	0	72	31	0	0	0	19	72	0	2	26	2	224
12:30	0	110	16	0	0	0	25	66	0	4	14	9	244
12:45	0	83	15	0	0	0	15	72	1	4	19	3	212
Total Volume:	0	722	182	0	0	0	106	567	1	35	147	36	1796
Approach %	0%	80%	20%	0%	0%	0%	16%	84%	0%	16%	67%	17%	
Peak Hr Begin:	11:45												
PHV	0	366	92	0	0	0	64	299	0	15	77	19	932
PHF	0.909			0.000			0.926			0.895			0.955

Pedestrian/Bicycle Count Report

Location ID: 5
North/South: Main Street
East/West: I-405 SB Ramps

Date: 09/22/18
City: Carson, CA

	North		*East*		*South*		*West*	
Leg:	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*
11:00	0	0	0	0	0	0	0	1
11:15	0	0	0	0	0	0	0	0
11:30	0	0	0	0	0	0	0	0
11:45	0	0	0	0	0	0	0	0
12:00	0	0	0	0	0	0	0	0
12:15	0	0	0	0	0	0	0	1
12:30	0	0	0	0	0	0	0	0
12:45	0	0	0	0	0	0	0	0

Turning Movement Count Report AM

Location ID: 6
North/South: Avalon Blvd
East/West: SR-91 WB On-Ramp

Date: 05/05/18
City: Carson, CA

	Southbound			*Westbound*			*Northbound*			*Eastbound*			
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	Totals:
Movements:	R	T	L	R	T	L	R	T	L	R	T	L	
8:00	0	104	27	40	0	44	34	70	1	0	0	0	320
8:15	0	120	29	40	0	44	33	60	0	0	0	0	326
8:30	0	111	33	45	0	51	41	66	1	0	0	0	348
8:45	0	134	41	56	0	50	45	102	0	0	0	0	428
9:00	0	114	26	51	0	53	43	83	0	0	0	0	370
9:15	0	157	26	48	0	39	54	87	1	0	0	0	412
9:30	0	130	36	54	0	47	50	112	1	0	0	0	430
9:45	0	152	43	41	0	48	58	93	2	0	0	0	437
Total Volume:	0	1022	261	375	0	376	358	673	6	0	0	0	3071
Approach %	0%	80%	20%	50%	0%	50%	35%	65%	1%	0%	0%	0%	
Peak Hr Begin:	9:00												
PHV	0	553	131	194	0	187	205	375	4	0	0	0	1649
PHF	0.877			0.916			0.896			0.000			0.943

Turning Movement Count Report PM

Location ID: 6
North/South: Avalon Blvd
East/West: SR-91 WB On-Ramp

Date: 05/05/18
City: Carson, CA

	Southbound			*Westbound*			*Northbound*			*Eastbound*			
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	Totals:
Movements:	R	T	L	R	T	L	R	T	L	R	T	L	
16:00	0	168	21	55	0	85	37	164	0	0	0	0	530
16:15	0	155	25	49	0	99	55	142	1	0	0	0	526
16:30	0	144	27	54	0	76	58	139	1	0	0	0	499
16:45	0	173	25	63	0	96	51	170	2	0	0	0	580
17:00	0	158	19	57	0	85	69	164	0	0	0	0	552
17:15	0	148	27	34	0	83	63	156	1	0	0	0	512
17:30	0	143	35	50	0	96	55	140	3	0	0	0	522
17:45	0	121	23	52	0	73	64	144	0	0	0	0	477
Total Volume:	0	1210	202	414	0	693	452	1219	8	0	0	0	4198
Approach %	0%	86%	14%	37%	0%	63%	27%	73%	0%	0%	0%	0%	
Peak Hr Begin:	16:45												
PHV	0	622	106	204	0	360	238	630	6	0	0	0	2166
PHF	0.919			0.887			0.938			0.000			0.934

Pedestrian/Bicycle Count Report

Location ID: 6
North/South: Avalon Blvd
East/West: SR-91 WB On-Ramp

Date: 05/05/18
City: Carson, CA

	North		East		South		West	
Leg:	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*
8:00	0	0	0	0	0	0	0	0
8:15	0	0	1	1	0	0	0	0
8:30	0	0	0	0	0	0	0	0
8:45	0	0	0	1	0	0	0	0
9:00	0	0	2	1	0	0	0	0
9:15	0	0	0	0	0	0	0	0
9:30	0	0	0	0	0	0	0	0
9:45	0	0	0	1	0	0	0	0

	North		East		South		West	
Leg:	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*
16:00	0	0	0	0	1	0	0	0
16:15	0	0	1	1	0	0	0	0
16:30	0	0	0	0	0	0	0	0
16:45	0	0	0	1	0	0	0	0
17:00	0	0	2	1	0	0	0	0
17:15	0	0	0	0	0	0	0	0
17:30	0	0	0	0	0	0	0	0
17:45	0	0	0	1	0	0	0	0

Turning Movement Count Report AM

Location ID: 11
North/South: Avalon Blvd
East/West: MLK Jr Street

Date: 05/05/18
City: Carson, CA

	Southbound			*Westbound*			*Northbound*			*Eastbound*			
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	Totals:
Movements:	R	T	L	R	T	L	R	T	L	R	T	L	
8:00	6	106	0	0	0	0	0	112	7	6	0	9	246
8:15	9	127	0	0	0	0	0	125	9	11	0	12	293
8:30	7	147	0	0	0	0	0	140	14	10	0	8	326
8:45	8	163	1	0	0	0	0	158	8	8	0	3	349
9:00	14	167	0	0	0	0	0	137	16	14	0	6	354
9:15	8	174	0	0	0	0	0	116	11	19	0	4	332
9:30	11	186	0	0	0	0	0	146	8	8	0	12	371
9:45	7	169	0	0	0	0	0	142	13	17	0	1	349
Total Volume:	70	1239	1	0	0	0	0	1076	86	93	0	55	2620
Approach %	5%	95%	0%	0%	0%	0%	0%	93%	7%	63%	0%	37%	

Peak Hr Begin:	8:45												
PHV	41	690	1	0	0	0	0	557	43	49	0	25	1406
PHF	0.929			0.000			0.904			0.804			0.947

Turning Movement Count Report PM

Location ID: 11
North/South: Avalon Blvd
East/West: MLK Jr Street

Date: 05/05/18
City: Carson, CA

	Southbound			*Westbound*			*Northbound*			*Eastbound*			
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	Totals:
Movements:	R	T	L	R	T	L	R	T	L	R	T	L	
16:00	11	192	0	0	0	0	0	212	23	14	0	20	472
16:15	11	220	0	0	0	0	0	218	19	20	0	18	506
16:30	13	211	0	0	0	0	0	251	17	19	0	14	525
16:45	13	211	0	0	0	0	0	202	15	18	0	21	480
17:00	10	218	0	0	0	0	0	222	21	17	0	15	503
17:15	5	200	0	0	0	0	0	238	20	17	0	27	507
17:30	13	179	1	0	0	0	0	229	11	12	0	9	454
17:45	8	204	0	0	0	0	0	203	21	22	0	11	469
Total Volume:	84	1635	1	0	0	0	0	1775	147	139	0	135	3916
Approach %	5%	95%	0%	0%	0%	0%	0%	92%	8%	51%	0%	49%	
Peak Hr Begin:	16:30												
PHV	41	840	0	0	0	0	0	913	73	71	0	77	2015
PHF	0.966			0.000			0.920			0.841			0.960

Pedestrian/Bicycle Count Report

Location ID: 11
North/South: Avalon Blvd
East/West: MLK Jr Street

Date: 05/05/18
City: Carson, CA

	North		East		South		West	
Leg:	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*
8:00	0	0	0	0	0	0	0	0
8:15	0	0	0	0	1	0	1	0
8:30	0	0	0	0	0	0	0	1
8:45	0	0	0	0	1	0	0	0
9:00	0	0	0	0	0	0	0	0
9:15	0	0	0	0	0	0	0	0
9:30	0	0	0	0	0	1	0	0
9:45	0	0	0	0	0	0	0	0

	North		East		South		West	
Leg:	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*
16:00	0	0	0	0	0	0	0	0
16:15	0	0	0	0	0	0	0	0
16:30	0	0	0	0	0	0	0	0
16:45	0	0	0	0	0	0	0	0
17:00	0	0	0	0	0	0	0	0
17:15	0	0	0	0	0	0	0	0
17:30	0	0	0	0	0	0	0	1
17:45	0	0	0	0	0	0	0	0

Turning Movement Count Report AM

Location ID: 12
North/South: Avalon Blvd
East/West: Elsmere Drive

Date: 05/05/18
City: Carson, CA

	Southbound			*Westbound*			*Northbound*			*Eastbound*			
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	Totals:
Movements:	R	T	L	R	T	L	R	T	L	R	T	L	
8:00	0	107	5	5	0	10	4	107	0	0	0	0	238
8:15	0	130	3	3	0	10	3	128	0	0	0	0	277
8:30	0	153	6	5	0	1	6	150	0	0	0	0	321
8:45	0	171	2	7	0	11	6	158	1	0	0	0	356
9:00	0	164	7	8	0	10	7	147	1	0	0	0	344
9:15	0	180	12	7	0	11	4	127	0	0	0	0	341
9:30	0	177	6	5	0	9	7	141	0	0	0	0	345
9:45	0	187	7	8	0	14	15	147	1	0	0	0	379
Total Volume:	0	1269	48	48	0	76	52	1105	3	0	0	0	2601
Approach %	0%	96%	4%	39%	0%	61%	4%	95%	0%	0%	0%	0%	
Peak Hr Begin:	9:00												
PHV	0	708	32	28	0	44	33	562	2	0	0	0	1409
PHF	0.954			0.818			0.916			0.000			0.929

Turning Movement Count Report PM

Location ID: 13
North/South: Avalon Blvd
East/West: Turmont Street

Date: 05/05/18
City: Carson, CA

	Southbound			*Westbound*			*Northbound*			*Eastbound*			
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	Totals:
Movements:	R	T	L	R	T	L	R	T	L	R	T	L	
16:00	0	216	9	7	0	16	6	220	1	0	0	0	475
16:15	0	217	13	3	0	11	12	227	0	0	0	0	483
16:30	0	221	11	10	0	7	11	250	0	0	0	0	510
16:45	0	220	12	7	0	10	12	204	0	0	0	0	465
17:00	0	219	17	6	0	11	13	246	0	0	0	0	512
17:15	0	188	8	9	0	9	13	255	1	0	0	0	483
17:30	0	205	5	4	0	12	10	222	0	0	0	0	458
17:45	0	217	10	10	0	10	13	220	1	0	0	0	481
Total Volume:	0	1703	85	56	0	86	90	1844	3	0	0	0	3867
Approach %	0%	95%	5%	39%	0%	61%	5%	95%	0%	0%	0%	0%	
Peak Hr Begin:	16:15												
PHV	0	877	53	26	0	39	48	927	0	0	0	0	1970
PHF	0.985			0.956			0.934			0.000			0.962

Prepared by City Count, LLC. (www.citycount.com)

Pedestrian/Bicycle Count Report

Location ID: 13
North/South: Avalon Blvd
East/West: Turmont Street

Date: 05/05/18
City: Carson, CA

	North		East		South		West	
Leg:	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*
8:00	0	0	3	1	1	0	0	0
8:15	0	0	6	1	0	0	0	0
8:30	0	0	0	0	0	0	0	0
8:45	0	0	3	1	0	0	0	0
9:00	0	0	0	0	0	0	0	0
9:15	0	0	1	0	0	1	0	0
9:30	0	0	1	0	0	0	0	0
9:45	0	0	2	2	0	0	0	0

	North		East		South		West	
Leg:	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*
16:00	0	0	2	0	1	0	0	0
16:15	0	0	0	0	0	0	0	0
16:30	0	0	1	2	1	0	0	0
16:45	0	0	0	0	0	0	0	0
17:00	0	0	0	0	0	0	0	0
17:15	0	0	0	1	0	0	0	0
17:30	0	0	1	0	2	0	0	0
17:45	0	0	0	0	0	1	0	0

Turning Movement Count Report AM

Location ID: 13
North/South: Avalon Blvd
East/West: Turmont Street

Date: 05/05/18
City: Carson, CA

	Southbound			*Westbound*			*Northbound*			*Eastbound*			
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	Totals:
Movements:	R	T	L	R	T	L	R	T	L	R	T	L	
8:00	0	113	1	6	0	28	13	96	5	0	0	0	262
8:15	0	143	3	7	0	14	33	129	7	0	0	0	336
8:30	0	148	5	10	0	32	24	146	3	0	0	0	368
8:45	0	177	7	16	0	36	26	143	10	0	0	0	415
9:00	0	162	5	6	0	32	33	144	6	0	0	0	388
9:15	0	201	7	6	0	33	24	120	6	0	0	0	397
9:30	0	182	7	3	0	34	30	155	7	0	0	0	418
9:45	0	194	6	9	0	30	41	160	6	0	0	0	446
Total Volume:	0	1320	41	63	0	239	224	1093	50	0	0	0	3030
Approach %	0%	97%	3%	21%	0%	79%	16%	80%	4%	0%	0%	0%	
Peak Hr Begin:	9:00												
PHV	0	739	25	24	0	129	128	579	25	0	0	0	1649
PHF	0.918			0.981			0.884			0.000			0.924

Prepared by City Count, LLC. (www.citycount.com)

Turning Movement Count Report PM

Location ID: 12
North/South: Avalon Blvd
East/West: Elsmere Drive

Date: 05/05/18
City: Carson, CA

	Southbound			*Westbound*			*Northbound*			*Eastbound*			
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	Totals:
Movements:	R	T	L	R	T	L	R	T	L	R	T	L	
16:00	0	205	11	4	0	32	42	204	3	0	0	0	501
16:15	0	234	9	11	0	25	49	251	6	0	0	0	585
16:30	0	225	5	10	0	28	52	236	4	0	0	0	560
16:45	0	216	15	5	0	28	40	222	7	0	0	0	533
17:00	0	201	16	11	0	16	43	237	8	0	0	0	532
17:15	0	218	8	7	0	18	36	260	1	0	0	0	548
17:30	0	191	11	10	0	18	38	203	10	0	0	0	481
17:45	0	206	15	12	0	22	45	251	6	0	0	0	557
Total Volume:	0	1696	90	70	0	187	345	1864	45	0	0	0	4297
Approach %	0%	95%	5%	27%	0%	73%	15%	83%	2%	0%	0%	0%	
Peak Hr Begin:	16:15												
PHV	0	876	45	37	0	97	184	946	25	0	0	0	2210
PHF	0.948			0.882			0.944			0.000			0.944

Prepared by City Count, LLC. (www.citycount.com)

Pedestrian/Bicycle Count Report

Location ID: 12
North/South: Avalon Blvd
East/West: Elsmere Drive

Date: 05/05/18
City: Carson, CA

	North		East		South		West	
Leg:	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*
8:00	0	0	3	1	0	0	0	0
8:15	0	0	1	2	0	0	0	0
8:30	0	0	0	0	0	0	0	0
8:45	0	0	3	1	0	0	0	0
9:00	0	0	4	0	0	0	0	0
9:15	0	0	3	0	0	0	0	0
9:30	0	0	1	0	0	0	0	0
9:45	0	0	4	1	0	0	0	0

	North		East		South		West	
Leg:	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*
16:00	0	0	1	0	0	0	0	0
16:15	0	0	5	0	0	0	0	0
16:30	0	0	0	2	0	0	0	0
16:45	0	0	2	0	0	0	0	0
17:00	0	0	0	0	0	0	0	0
17:15	0	0	0	2	0	0	0	0
17:30	0	1	1	0	0	0	0	0
17:45	1	0	0	2	0	0	0	0

Turning Movement Count Report AM

Location ID: 14
North/South: Avalon Blvd
East/West: Del Amo Blvd

Date: 05/05/18
City: Carson, CA

	Southbound			*Westbound*			*Northbound*			*Eastbound*			
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	Totals:
Movements:	R	T	L	R	T	L	R	T	L	R	T	L	
8:00	17	108	28	10	55	61	13	79	8	9	39	15	442
8:15	25	104	38	18	57	54	15	110	12	9	60	39	541
8:30	29	120	42	22	47	57	35	119	18	22	48	35	594
8:45	27	148	43	9	75	53	25	114	13	14	49	38	608
9:00	29	134	45	14	51	55	25	143	25	22	38	33	614
9:15	36	142	55	22	59	62	32	101	23	24	66	16	638
9:30	27	154	52	24	72	58	31	142	22	20	68	30	700
9:45	30	118	63	25	74	57	27	144	20	15	49	29	651
Total Volume:	220	1028	366	144	490	457	203	952	141	135	417	235	4788
Approach %	14%	64%	23%	13%	45%	42%	16%	73%	11%	17%	53%	30%	
Peak Hr Begin:	9:00												
PHV	122	548	215	85	256	232	115	530	90	81	221	108	2603
PHF	0.950			0.918			0.942			0.869			0.930

Turning Movement Count Report PM

Location ID: 14
North/South: Avalon Blvd
East/West: Del Amo Blvd

Date: 05/05/18
City: Carson, CA

	Southbound			*Westbound*			*Northbound*			*Eastbound*			
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	Totals:
Movements:	R	T	L	R	T	L	R	T	L	R	T	L	
16:00	29	148	54	30	70	45	40	165	18	32	73	34	738
16:15	39	172	62	30	60	48	44	205	23	18	74	32	807
16:30	33	158	68	18	58	44	35	231	17	32	96	33	823
16:45	24	159	57	27	71	55	41	178	33	16	57	37	755
17:00	30	174	54	31	66	55	30	203	16	20	84	37	800
17:15	29	148	57	27	69	51	44	223	26	7	55	30	766
17:30	34	136	61	18	77	32	35	210	14	27	72	42	758
17:45	23	138	47	25	45	58	31	196	22	22	74	43	724
Total Volume:	241	1233	460	206	516	388	300	1611	169	174	585	288	6171
Approach %	12%	64%	24%	19%	46%	35%	14%	77%	8%	17%	56%	28%	
Peak Hr Begin:	16:15												
PHV	126	663	241	106	255	202	150	817	89	86	311	139	3185
PHF	0.943			0.920			0.933			0.832			0.967

Pedestrian/Bicycle Count Report

Location ID: 14
North/South: Avalon Blvd
East/West: Del Amo Blvd

Date: 05/05/18
City: Carson, CA

	North		East		South		West	
Leg:	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*
8:00	1	0	4	1	1	0	0	0
8:15	1	0	5	1	1	0	0	0
8:30	2	0	5	0	2	0	1	0
8:45	1	0	4	0	1	0	1	0
9:00	1	0	12	0	3	1	2	0
9:15	3	1	4	1	2	0	2	0
9:30	0	0	4	1	3	0	0	0
9:45	1	0	5	0	0	0	1	0

	North		East		South		West	
Leg:	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*
16:00	2	0	7	0	1	0	1	0
16:15	0	0	10	3	1	0	1	0
16:30	0	0	6	1	2	0	2	0
16:45	0	0	4	1	0	0	0	0
17:00	2	0	4	0	1	0	1	0
17:15	1	0	9	2	4	0	0	1
17:30	1	0	9	0	2	0	0	1
17:45	0	0	5	1	2	0	1	0

Turning Movement Count Report AM

Location ID: 15
North/South: Avalon Blvd
East/West: I-405 NB Ramps

Date: 05/05/18
City: Carson, CA

	Southbound			*Westbound*			*Northbound*			*Eastbound*			
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	Totals:
Movements:	R	T	L	R	T	L	R	T	L	R	T	L	
8:00	70	128	0	38	1	24	0	160	56	0	0	0	477
8:15	53	145	0	60	0	15	0	182	93	0	0	0	548
8:30	56	149	0	76	0	17	0	170	86	0	0	0	554
8:45	61	167	0	71	0	20	0	260	87	0	0	0	666
9:00	59	159	0	65	0	15	0	209	74	0	0	0	581
9:15	69	167	0	67	0	18	0	244	73	0	0	0	638
9:30	78	171	0	63	0	17	0	248	79	0	0	0	656
9:45	71	151	0	105	0	20	0	273	63	0	0	0	683
Total Volume:	517	1237	0	545	1	146	0	1746	611	0	0	0	4803
Approach %	29%	71%	0%	79%	0%	21%	0%	74%	26%	0%	0%	0%	
Peak Hr Begin:	9:00												
PHV	277	648	0	300	0	70	0	974	289	0	0	0	2558
PHF	0.929			0.740			0.940			0.000			0.936

Turning Movement Count Report PM

Location ID: 15
North/South: Avalon Blvd
East/West: I-405 NB Ramps

Date: 05/05/18
City: Carson, CA

	Southbound			*Westbound*			*Northbound*			*Eastbound*			
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	Totals:
Movements:	R	T	L	R	T	L	R	T	L	R	T	L	
16:00	119	260	0	103	0	25	0	293	68	0	0	0	868
16:15	156	260	0	83	0	27	0	298	62	0	0	0	886
16:30	151	226	0	106	0	22	0	309	62	0	0	0	876
16:45	147	250	0	77	0	18	0	289	83	0	0	0	864
17:00	146	234	0	87	0	19	0	294	83	0	0	0	863
17:15	139	256	0	80	1	19	0	278	83	0	0	0	856
17:30	128	205	0	94	0	13	0	275	68	0	0	0	783
17:45	121	203	0	74	0	17	0	231	65	0	0	0	711
Total Volume:	1107	1894	0	704	1	160	0	2267	574	0	0	0	6707
Approach %	37%	63%	0%	81%	0%	18%	0%	80%	20%	0%	0%	0%	
Peak Hr Begin:	16:00												
PHV	573	996	0	369	0	92	0	1189	275	0	0	0	3494
PHF	0.943			0.900			0.984			0.000			0.986

Pedestrian/Bicycle Count Report

Location ID: 15
North/South: Avalon Blvd
East/West: I-405 NB Ramps

Date: 05/05/18
City: Carson, CA

	North		East		South		West	
Leg:	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*
8:00	0	0	2	1	1	0	0	0
8:15	0	0	0	0	1	0	0	0
8:30	0	0	1	0	2	0	1	0
8:45	0	0	2	0	1	0	1	0
9:00	0	0	2	0	3	0	2	0
9:15	0	0	2	1	2	0	0	0
9:30	0	0	0	0	3	0	0	0
9:45	0	0	0	0	0	0	0	0

	North		East		South		West	
Leg:	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*
16:00	0	0	2	0	1	0	0	0
16:15	0	0	0	2	1	0	0	0
16:30	0	0	1	1	2	0	2	0
16:45	0	0	1	0	0	0	0	0
17:00	0	0	1	0	1	0	0	0
17:15	0	0	2	0	4	0	0	0
17:30	0	0	0	1	2	0	0	0
17:45	0	0	3	0	2	0	0	0

Turning Movement Count Report AM

Location ID: 16
North/South: Avalon Blvd
East/West: I-405 SB Ramps

Date: 05/05/18
City: Carson, CA

	Southbound			*Westbound*			*Northbound*			*Eastbound*			
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	Totals:
Movements:	R	T	L	R	T	L	R	T	L	R	T	L	
8:00	27	101	0	0	0	0	15	132	0	82	1	91	449
8:15	42	136	0	0	0	0	15	156	0	78	0	103	530
8:30	23	123	0	0	0	0	20	132	0	66	1	127	492
8:45	34	133	0	0	0	0	18	194	0	88	0	138	605
9:00	42	139	0	0	0	0	24	190	0	95	1	108	599
9:15	46	150	0	0	0	0	22	210	0	74	1	95	598
9:30	35	135	0	0	0	0	31	193	0	78	2	116	590
9:45	37	147	0	0	0	0	38	230	0	63	1	115	631
Total Volume:	286	1064	0	0	0	0	183	1437	0	624	7	893	4494
Approach %	21%	79%	0%	0%	0%	0%	11%	89%	0%	41%	0%	59%	
Peak Hr Begin:	9:00												
PHV	160	571	0	0	0	0	115	823	0	310	5	434	2418
PHF	0.932			0.000			0.875			0.918			0.958

Turning Movement Count Report PM

Location ID: 16
North/South: Avalon Blvd
East/West: I-405 SB Ramps

Date: 05/05/18
City: Carson, CA

	Southbound			*Westbound*			*Northbound*			*Eastbound*			
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	Totals:
Movements:	R	T	L	R	T	L	R	T	L	R	T	L	
16:00	83	194	0	0	0	0	28	238	0	97	0	127	767
16:15	71	192	0	0	0	0	21	227	0	83	1	122	717
16:30	71	218	0	0	0	0	26	245	0	100	4	147	811
16:45	59	188	0	0	0	0	40	202	0	77	5	136	707
17:00	66	195	0	0	0	0	29	261	0	85	1	143	780
17:15	86	184	0	0	0	0	26	212	0	82	4	138	732
17:30	63	169	0	0	0	0	22	207	0	88	1	121	671
17:45	63	169	0	0	0	0	25	203	0	73	2	124	659
Total Volume:	562	1509	0	0	0	0	217	1795	0	685	18	1058	5844
Approach %	27%	73%	0%	0%	0%	0%	11%	89%	0%	39%	1%	60%	
Peak Hr Begin:	16:30												
PHV	282	785	0	0	0	0	121	920	0	344	14	564	3030
PHF	0.923			0.000			0.897			0.918			0.934

Pedestrian/Bicycle Count Report

Location ID: 16
North/South: Avalon Blvd
East/West: I-405 SB Ramps

Date: 05/05/18
City: Carson, CA

	North		East		South		West	
Leg:	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*
8:00	0	0	2	2	1	0	0	0
8:15	0	0	0	0	1	0	0	0
8:30	0	0	0	0	2	0	1	0
8:45	0	0	0	0	1	0	1	1
9:00	0	0	3	1	3	0	2	0
9:15	0	0	3	1	2	0	0	0
9:30	0	0	1	1	3	0	0	0
9:45	0	0	2	0	0	0	0	0

	North		East		South		West	
Leg:	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*
16:00	0	0	2	1	1	0	0	0
16:15	0	0	2	2	1	1	0	0
16:30	0	0	1	1	2	0	2	0
16:45	0	0	1	0	0	0	0	0
17:00	0	0	0	0	1	0	0	0
17:15	0	0	0	0	4	0	0	0
17:30	0	0	2	1	2	0	0	0
17:45	0	0	2	0	2	0	0	0

Turning Movement Count Report AM

Location ID: 17
North/South: Main Street
East/West: WB SR-91 Ramps

Date: 05/05/18
City: Carson, CA

	Southbound			*Westbound*			*Northbound*			*Eastbound*			
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	Totals:
Movements:	R	T	L	R	T	L	R	T	L	R	T	L	
8:00	0	39	18	27	0	28	13	34	0	0	0	0	159
8:15	0	39	9	34	0	22	21	53	1	0	0	0	179
8:30	0	52	13	33	0	30	22	45	0	0	0	0	195
8:45	0	33	9	27	0	28	28	34	1	0	0	0	160
9:00	0	35	11	26	0	16	28	36	0	0	0	0	152
9:15	0	48	12	33	0	25	34	38	0	0	0	0	190
9:30	0	46	17	26	0	30	31	50	1	0	0	0	201
9:45	0	51	8	31	0	34	28	45	0	0	0	0	197
Total Volume:	0	343	97	237	0	213	205	335	3	0	0	0	1433
Approach %	0%	78%	22%	53%	0%	47%	38%	62%	1%	0%	0%	0%	
Peak Hr Begin:	9:00												
PHV	0	180	48	116	0	105	121	169	1	0	0	0	740
PHF	0.905			0.850			0.887			0.000			0.920

Turning Movement Count Report PM

Location ID: 17
North/South: Main Street
East/West: WB SR-91 Ramps

Date: 05/05/18
City: Carson, CA

	Southbound			*Westbound*			*Northbound*			*Eastbound*			
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	Totals:
Movements:	R	T	L	R	T	L	R	T	L	R	T	L	
16:00	0	54	8	45	0	27	26	29	0	0	0	0	189
16:15	0	57	9	13	0	22	22	47	0	0	0	0	170
16:30	0	42	8	21	0	23	19	59	0	0	0	0	172
16:45	0	36	8	21	0	29	23	37	1	0	0	0	155
17:00	0	44	5	36	0	21	22	60	1	0	0	0	189
17:15	0	44	9	20	0	22	20	51	1	0	0	0	167
17:30	0	43	6	17	0	20	18	44	1	0	0	0	149
17:45	0	34	7	42	0	16	20	31	0	0	0	0	150
Total Volume:	0	354	60	215	0	180	170	358	4	0	0	0	1341
Approach %	0%	86%	14%	54%	0%	46%	32%	67%	1%	0%	0%	0%	
Peak Hr Begin:	16:00												
PHV	0	189	33	100	0	101	90	172	1	0	0	0	686
PHF	0.841			0.698			0.843			0.000			0.907

Pedestrian/Bicycle Count Report

Location ID: 17
North/South: Main Street
East/West: WB SR-91 Ramps

Date: 05/05/18
City: Carson, CA

	North		East		South		West	
Leg:	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*
8:00	0	0	0	0	1	0	0	0
8:15	0	0	0	0	1	0	0	0
8:30	0	0	0	0	2	0	1	0
8:45	0	0	0	0	1	0	1	0
9:00	0	0	0	0	3	0	2	0
9:15	0	0	0	0	2	0	0	0
9:30	0	0	0	0	3	0	0	0
9:45	0	0	0	0	0	0	0	0

	North		East		South		West	
Leg:	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*
16:00	0	0	0	0	1	0	0	0
16:15	0	0	0	0	1	0	0	0
16:30	0	0	0	0	2	0	2	0
16:45	0	0	1	0	1	0	0	0
17:00	0	0	0	0	1	0	0	0
17:15	0	0	0	0	4	0	0	0
17:30	0	0	0	2	2	0	0	0
17:45	0	0	0	0	2	0	0	0

Turning Movement Count Report Midday

Location ID: 1
North/South: I-110 NB On-Ramp
East/West: 190th Street

Date: 10/06/18
City: Carson, CA

	Southbound			*Westbound*			*Northbound*			*Eastbound*			
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	Totals:
Movements:	R	T	L	R	T	L	R	T	L	R	T	L	
11:00	0	0	0	36	98	0	0	0	0	0	148	80	362
11:15	0	0	0	38	118	1	0	0	0	0	155	85	397
11:30	0	0	0	44	100	2	0	0	0	0	162	85	393
11:45	0	0	0	47	126	2	0	0	0	0	163	89	427
12:00	0	0	0	44	111	0	0	0	0	0	150	98	403
12:15	0	0	0	48	96	0	0	0	0	0	160	104	408
12:30	0	0	0	31	107	0	0	0	0	0	121	92	351
12:45	0	0	0	40	78	0	0	0	0	0	147	100	365
Total Volume:	0	0	0	328	834	5	0	0	0	0	1206	733	3106
Approach %	0%	0%	0%	28%	71%	0%	0%	0%	0%	0%	62%	38%	
Peak Hr Begin:	11:30												
PHV	0	0	0	183	433	4	0	0	0	0	635	376	1631
PHF	0.000			0.886			0.000			0.957			0.955

Prepared by City Count, LLC. (www.citycount.com)

Pedestrian/Bicycle Count Report

Location ID: 1
North/South: I-110 NB On-Ramp
East/West: 190th Street

Date: 10/06/18
City: Carson, CA

	North		East		South		West	
Leg:	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*
11:00	0	1	0	0	0	0	0	0
11:15	0	0	0	0	0	0	0	0
11:30	0	0	0	0	0	0	0	0
11:45	0	0	0	0	0	0	0	0
12:00	0	3	0	0	0	0	0	0
12:15	0	0	0	0	0	0	0	0
12:30	0	0	0	0	0	0	0	0
12:45	0	0	0	0	0	0	0	0

Turning Movement Count Report Mid-Day

Location ID: 6
North/South: SR-110 SB Off-Ramp
East/West: W 190th Street

Date: 09/29/18
City: Carson, CA

	Southbound			*Westbound*			*Northbound*			*Eastbound*			
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	Totals:
Movements:	R	T	L	R	T	L	R	T	L	R	T	L	
11:00	59	0	43	0	101	0	0	0	0	0	178	0	381
11:15	63	0	29	0	85	0	0	0	0	0	211	0	388
11:30	65	0	43	0	102	0	0	0	0	0	174	0	384
11:45	59	0	35	0	122	0	0	0	0	0	180	0	396
12:00	56	0	35	0	137	0	0	0	0	0	210	0	438
12:15	77	0	37	0	121	0	0	0	0	0	235	0	470
12:30	90	0	58	0	116	0	0	0	0	0	220	0	484
12:45	132	0	102	0	98	0	0	0	0	0	235	0	567
Total Volume:	601	0	382	0	882	0	0	0	0	0	1643	0	3508
Approach %	61%	0%	39%	0%	100%	0%	0%	0%	0%	0%	100%	0%	
Peak Hr Begin:	12:00												
PHV	355	0	232	0	472	0	0	0	0	0	900	0	1959
PHF	0.627			0.861			0.000			0.957			0.864

Pedestrian/Bicycle Count Report

Location ID: 6
North/South: SR-110 SB Off-Ramp
East/West: W 190th Street

Date: 09/29/18
City: Carson, CA

	North		*East*		*South*		*West*	
Leg:	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*
11:00	0	0	0	0	0	0	0	0
11:15	0	1	0	0	0	0	0	0
11:30	0	2	0	0	0	0	0	0
11:45	1	0	0	0	0	0	0	0
12:00	0	0	0	0	0	0	0	0
12:15	0	0	0	0	0	0	2	0
12:30	0	0	0	0	0	0	0	0
12:45	0	0	0	0	0	0	0	0

Turning Movement Count Report Mid-Day

Location ID: 1
North/South: Albertoni Street
East/West: SR-91 ramps

Date: 09/22/18
City: Carson, CA

	Southbound			*Westbound*			*Northbound*			*Eastbound*			
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	Totals:
Movements:	R	T	L	R	T	L	R	T	L	R	T	L	
11:00	25	0	58	22	63	0	0	0	0	0	64	92	324
11:15	31	0	63	14	69	0	0	0	0	0	59	39	275
11:30	28	0	48	13	78	0	0	0	0	0	62	58	287
11:45	22	0	49	25	57	0	0	0	0	0	52	57	262
12:00	28	0	59	12	70	0	0	0	0	0	71	72	312
12:15	33	0	64	18	68	1	0	0	0	0	64	67	315
12:30	24	0	38	20	78	0	0	0	0	0	61	74	295
12:45	33	0	47	17	67	0	0	0	0	0	67	55	286
Total Volume:	224	0	426	141	550	1	0	0	0	0	500	514	2356
Approach %	34%	0%	66%	20%	79%	0%	0%	0%	0%	0%	49%	51%	
Peak Hr Begin:	12:00												
PHV	118	0	208	67	283	1	0	0	0	0	263	268	1208
PHF	0.840			0.895			0.000			0.928			0.959

Prepared by City Count, LLC. (www.citycount.com)

Pedestrian/Bicycle Count Report

Location ID: 1
North/South: Albertoni Street
East/West: SR-91 ramps

Date: 09/22/18
City: Carson, CA

	North		*East*		*South*		*West*	
Leg:	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*	*Peds*	*Bicycle*
11:00	1	0	0	0	0	0	0	0
11:15	1	0	0	0	0	0	0	0
11:30	0	0	0	0	0	0	0	0
11:45	5	0	0	0	0	0	0	0
12:00	2	1	0	0	0	0	0	0
12:15	0	0	0	0	0	0	0	0
12:30	0	0	0	0	0	0	0	0
12:45	1	0	0	0	0	0	0	0

Comment Letter 4

South Coast
Air Quality Management District
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June 25, 2019

Draft Environmental Impact Report (Draft EIR) for the Proposed Carol Kimmelman Athletic and Academic Campus (SCH No.: 2018071074)

South Coast Air Quality Management District (South Coast AQMD) staff appreciates the opportunity to comment on the above-mentioned document. The following comments are meant as guidance for the Lead Agency and should be incorporated into the Final EIR. 4-1

South Coast AQMD Staff's Summary of Project Description

The Lead Agency proposes to construct a 25,000-square-foot learning center, a 62-court tennis center, and eight soccer fields on 87 acres (Proposed Project). The Proposed Project is located at 340 Martin Luther King Jr. Street on the southwest corner of South Avalon Boulevard and Martin Luther King Jr. Street within the City of Carson. Construction of the Proposed Project will last 12 to 15 months, beginning in Summer/Fall of 2019 with an anticipated completion date of Summer/Fall of 2020[1]. The Proposed Project will incorporate design features such as Energy Star rated appliances, high-efficiency lightbulbs, and U.S. Green Building Code cool roof standards[2]. Sensitive receptors are located within 150 feet of the Project Proposed[3]. 4-2

South Coast AQMD Staff's Summary of Air Quality Analysis

In the Air Quality Analysis section, the Lead Agency quantified the Proposed Project's construction emissions and compared those emissions to South Coast AQMD's recommended regional and localized air quality CEQA significance thresholds. Based on the analyses, the Lead Agency found that the Proposed Project's regional construction air quality impacts would be significant for NOx emissions at 239 pounds/per day (lbs/day)[4]. After the implementation of Mitigation Measures (MM)-AQ-1 and MM-AQ-2, the Proposed Project's regional construction NOx emissions would remain significant and unavoidable at 111 lbs/day[5]. MM-AQ-1 through MM-AQ-2[6] require off-road construction equipment that meets Tier 4 emission standards, as available, and a Fugitive Dust Plan to demonstrate compliance with South Coast AQMD Rule 403 – Fugitive Dust[7]. The Lead Agency also found that operational NOx emissions will be significant and unavoidable at 57 lbs/day, with the implementation of MM-AQ-3 which requires infrastructure for electric vehicle (EV) charging[8]. Additionally, the Lead Agency discussed South 4-3

[1] Draft EIR. Section 4.2 Air Quality. Page 4.2-26.
[2] *Ibid.* Section 1 Summary. Pages 1-12 through 1-13.
[3] *Ibid.* Section 4.2 Air Quality. Page 4.2-8.
[4] *Ibid.* Section 3 Project Description. Page 3.2-28.
[5] *Ibid.* Section 4.2 Air Quality. Page 4.2-44.
[6] *Ibid.* Pages 4.2-41 through 4.2-44.
[7] South Coast AQMD. Rule 403 – Fugitive Dust. Accessed at: https://www.aqmd.gov/docs/default-source/rule-book/rule-iv/rule-403.pdf.
[8] *Ibid.* Section 4.2 Air Quality. Page 4.2-44.

Coast AQMD Rules specific to the Proposed Project, such as Rule 402 – Nuisance[9] and Rule 1403 – Asbestos Emissions from Demolition/Renovation Activities[10].

4-3Cont.

South Coast AQMD's 2016 Air Quality Management Plan

On March 3, 2017, South Coast AQMD's Governing Board adopted the 2016 AQMP[11], which was later approved by the California Air Resources Board (CARB) on March 23, 2017. Built upon the progress in implementing the 2007 and 2012 AQMPs, the 2016 AQMP provides a regional perspective on air quality and the challenges facing the South Coast Air Basin. The most significant air quality challenge in the Basin is to achieve an additional 45 percent reduction in nitrogen oxide (NOx) emissions in 2023 and an additional 55 percent NOx reduction beyond 2031 levels for ozone attainment.

4-4

South Coast AQMD Staff's General Comments

As described in the 2016 AQMP, achieving NOx emissions reductions in a timely manner is critical to attaining the National Ambient Air Quality Standard (NAAQS) for ozone before the 2023 and 2031 deadlines. South Coast AQMD is committed to attaining the ozone NAAQS as expeditiously as practicable. The Proposed Project plays an important role in contributing to additional NOx emissions during the 12- to 15-month construction period and operations thereafter. Therefore, South Coast AQMD staff recommends that the Lead Agency revise the existing MM-AQ-3 and incorporate additional recommended mitigation measures in the Final EIR to further reduce the Proposed Project's significant and unavoidable NOx emissions. Please see the attachment for more information.

4-5

South Coast AQMD Rules and Regulations

Since the Proposed Project will be developed on a former Class II municipal solid waste landfill site[12], the Lead Agency should incorporate a discussion to demonstrate compliance with South Coast AQMD Rules, including but not limited to, Rule 1150 – Excavation of Landfill Sites[13], Rule 1166 – Volatile Organic Compound Emissions form Decontamination of Soil[14], and Rule 1466 - Control of Particulate Emissions from Soils with Toxic Air Contaminants[15]. Additionally, it is recommended that the Lead Agency consult with South Coast AQMD's Engineering and Permitting staff to determine if additional South Coast AQMD rules and regulations would apply, and if permits or plans such as an odor management plan would be required and should be discussed in the Air Quality Section of the Final EIR. If implementation of the Proposed Project requires an air permit from South Coat AQMD, the Final EIR should identify South Coast AQMD as a Responsible Agency for the Proposed Project. Questions on permits and applicable South Coast AQMD rules can directed to South Coast AQMD's Engineering and Permitting staff at (909) 396-3385. If there is any information in the permitting process suggesting that the Proposed Project would result in significant adverse air quality impacts not analyzed in the Final EIR or substantially more severe air quality impacts than those analyzed in the Final EIR, the Lead Agency should commit to reevaluating the Proposed Project's air quality and health risks impacts through a CEQA process (CEQA Guidelines Section 15162). For more general information on permits, please visit SCAQMD's webpage at: http://www.aqmd.gov/home/permits.

4-6

4-7

[9] South Coast AQMD. Rule 402 – Nuisance. Accessed at: http://www.aqmd.gov/docs/default-source/rule-book/rule-iv/rule-402.pdf

[10] South Coast AQMD. Rule 1403 – Asbestos Emissions from Demolition/Renovation Activities. Accessed at: http://www.aqmd.gov/docs/default-source/rule-book/reg-xiv/rule-1403.pdf.

[11] South Coast AQMD. March 3, 2017. *2016 Air Quality Management Plan*. Accessed at: http://www.aqmd.gov/home/library/clean-air-plans/air-quality-mgt-plan.

[12] Draft EIR. Section 3 Project Description. Pages 3-3 through 3-5.

[13] South Coast AQMD. Rule 1150 – Excavation of Landfill Sites. Accessed at: http://www.aqmd.gov/docs/default-source/rule-book/reg-xi/rule-1150.pdf.

[14] South Coast AQMD. Rule 1166 – Volatile Organic Compound Emissions from Decontamination of Soil. Accessed at: http://www.aqmd.gov/docs/default-source/rule-book/reg-xi/rule-1166.pdf.

[15] South Coast AQMD. Rule 1466 - Control of Particulate Emissions from Soils with Toxic Air Contaminants. Accessed at: https://www.aqmd.gov/docs/default-source/rule-book/reg-xiv/rule-1466.pdf.

Ryan Kristan June 25, 2019

Conclusion

Pursuant to California Public Resources Code Section 21092.5(a) and CEQA Guidelines Section 15088(b), South Coast AQMD staff requests that the Lead Agency provide South Coast AQMD staff with written responses to all comments contained herein prior to the certification of the Final EIR. In addition, issues raised in the comments should be addressed in detail giving reasons why specific comments and suggestions are not accepted. There should be good faith, reasoned analysis in response. Conclusory statements unsupported by factual information will not suffice (CEQA Guidelines Section 15088(c)). Conclusory statements do not facilitate the purpose and goal of CEQA on public disclosure and are not meaningful, informative, or useful to decision makers and to the public who are interested in the Proposed Project. Further, when the Lead Agency makes the finding that the recommended revisions to existing MM-AQ-3 and additional recommended mitigation measures are not feasible, the Lead Agency should describe the specific reasons for rejecting them in the Final EIR (CEQA Guidelines Section 15091).

4-8

South Coast AQMD staff is available to work with the Lead Agency to address any air quality questions that may arise from this comment letter. Please contact Alina Mullins, Assistant Air Quality Specialist, at amullins@aqmd.gov or (909) 396-2402, should you have any questions.

Sincerely,

Lijin Sun

Lijin Sun, J.D.
Program Supervisor, CEQA IGR
Planning, Rule Development & Area Sources

Attachment
LS:AM
LAC190516-02
Control Number

3

Ryan Kristan June 25, 2019

ATTACHMENT

Recommended Revisions to Existing MM-AQ-3

1. The Lead Agency has committed to implementing MM-AQ-3, which requires that the Proposed Project will develop up to two percent of available parking spaces for on-site electric vehicle (EV) charging stations. South Coast AQMD staff recommends that the Lead Agency commit to developing at least five percent of the available parking spaces for on-site EV charging station. This recommendation will further reduce the Proposed Project's operational NOx emissions, and facilitate the achievement of the 2016 AQMP's goals and timelines for attaining NAAQS for ozone by promoting the use of the lowest emission technologies such as EV at the Proposed Project. It will also facilitate the implementation of nonresidential mandatory measures of the California Buildings Standards (Title 24, Part 11) regarding EV charging stations or designated spaces capable of supporting future charging stations based on the total number of actual parking spaces[16]. Therefore, South Coast AQMD staff recommends that the Lead Agency include the following revisions to MM-AQ-3 in the Final EIR.

   MM-AQ-3
   The proposed project shall provide circuitry and capacity for installation of electric vehicle (EV) charging stations consistent with the County of Los Angeles criteria. The proposed project shall develop up to ~~2%~~ 5% of the available parking spaces on site as EV charging stations.

Additional Recommended Mitigation Measures

2. CEQA requires that all feasible mitigation measures that go beyond what is required by law be utilized to minimize or eliminate any significant adverse air quality impacts. To further reduce the Proposed Project's significant and unavoidable air quality impacts form NOx emissions during construction and operation, South Coast AQMD staff recommends the following mitigation measures as suggested resources and guidance that the Lead Agency should review for incorporation in the Final EIR.

   Mitigation Measures for Construction Air Quality Impacts

   - The Proposed Project will include an estimated 22,136 haul trips during construction[17], contributing to the Proposed Project's significant and unavoidable construction NOx emissions. Therefore, South Coast AQMD staff recommends that the Lead Agency require the use of zero-emission (ZE) or near-zero emission (NZE) on-road construction haul trucks (e.g., material delivery trucks and soil import/export) such as heavy-duty trucks with natural gas engines that meet the California Air Resources Board (CARB)'s adopted optional NOx emission standard at 0.02 grams per brake horsepower-hour (g/bhp-hr), or at a minimum, require that construction vendors, contractors, and/or haul truck operators commit to using 2010 model year[18] haul trucks. When requiring ZE or NZE on-road haul trucks, the Lead Agency should include analyses to evaluate and identify sufficient power and supportive infrastructure available for ZE/NZE trucks in the Energy and Utilities and Service Systems Sections of the Final EIR, where appropriate.

[16] For a nonresidential development with 201 spaces or more, 6% percent of total parking spaces are required to be equip with EV. 2016 California Green Building Standards Code California Code of Regulations, Title 24, Part 11. *California Building Standards Commission*. January 1, 2017. Page 35. Accessed at: https://www.ladbs.org/docs/default-source/publications/code-amendments/2016-calgreen_complete.pdf.

[17] *Ibid.* Section 4.2 Air Quality. Pages 4.2-28 through 29.

[18] CARB adopted the statewide On-Road Truck and Bus Regulation in 2010. The Regulation requires diesel trucks and buses that operate in California to be upgraded to reduce emissions. Newer heavier trucks and buses must meet particulate matter filter requirements beginning January 1, 2012. Lighter and older heavier trucks must be replaced starting January 1, 2015. By January 1, 2023, nearly all trucks and buses will need to have 2010 model year engines or equivalent. More information on the CARB's Truck and Bus Regulations is available here: https://www.arb.ca.gov/msprog/onrdiesel/onrdiesel.htm.

To monitor and ensure ZE, NZE, or 2010 model year trucks are used at the Proposed Project, the Lead Agency should require that operators maintain records of all trucks associated with the Proposed Project's construction and make these records available to the Lead Agency upon request. The records will serve as evidence to prove that each truck called to the Proposed Project during construction meets the minimum 2010 model year engine emission standards. Alternatively, the Lead Agency should require periodic reporting and provision of written records by contractors, and conduct regular inspections of the records to the maximum extent feasible and practicable.

- Encourage construction contractors to apply for South Coast AQMD "SOON" funds. The "SOON" program provides funds to applicable fleets for the purchase of commercially-available low-emission heavy-duty engines to achieve near-term reduction of NOx emissions from in-use off-road diesel vehicles. More information on this program can be found at South Coast AQMD's website: http://www.aqmd.gov/home/programs/business/business-detail?title=off-road-diesel-engines

Mitigation Measures for Operational Air Quality Impacts

- Since the Proposed Project includes operation of a learning and recreation center with a focus on elementary, middle, and high school students and community programs, the Lead Agency should take this opportunity to encourage operators of school bus fleets that would regularly visit the Proposed Project to seek funding opportunities to replace older diesel buses with cleaner school buses. South Coast AQMD's Lower-Emission School Bus Program provides funding to applicable fleets for the purchase of alternatively fueled buses or retrofits for older diesel buses. More information on this program can be found at South Coast AQMD's website: https://www.aqmd.gov/home/programs/business/lower-emission-school-bus-program

  Funding opportunities are also available through the California Air Resources Board's (CARB) administration of the Volkswagen Environmental Mitigation Trust for California for Zero-Emission Transit, School, and Shuttle Buses, which is anticipated to become available fall of 2019. More information on funding opportunities through the CARB's program can be found at: https://ww2.arb.ca.gov/our-work/programs/volkswagen-environmental-mitigation-trust-california/about.

- Require the use of electric landscaping equipment, such as lawn mowers and leaf blowers.

- Require the use of electric or alternatively fueled sweepers with HEPA filters.

- Maximize the planting of trees in landscaping and parking lots.

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Response to Comment Letter 4
South Coast Air Quality Management District
June 25, 2019

4-1 The County acknowledges the comment as an introduction to comments that follow. This comment is included in the Final EIR for review and consideration by the decision-makers prior to a final decision on the proposed project. No further response is required or necessary because the comment does not raise any environmental issues.

4-2 The County acknowledges the comment as a summary of the Project Description. The comment restates information contained in the Draft EIR and does not raise any environmental issues requiring responses. This comment is included in the Final EIR for review and consideration by the decision-makers prior to a final decision on the proposed project.

4-3 The County acknowledges the comment as a summary of the proposed project's air quality analysis. The comment restates information contained in the Draft EIR and does not raise any environmental issues requiring responses. This comment is included in the Final EIR for review and consideration by the decision-makers prior to the final decision of the proposed project.

4-4 The County acknowledges the comment as a summary of the South Coast Air Quality Management District's 2016 Air Quality Management Plan. The comment restates information contained in the Draft EIR and does not raise any environmental issues requiring responses. This comment is included in the Final EIR for review and consideration by the decision-makers prior to the final decision of the proposed project.

4-5 In response to the SCAQMD's comment, the text on page 4.2-43 will be revised to include their recommended mitigation measures.

> **MM-AQ-3**. The proposed project shall provide circuitry and capacity for installation of electric vehicles (EV) charging stations consistent with the County of Los Angeles criteria. The proposed project shall develop up to ~~2%~~ 5% of the available parking spaces on site as EV charging stations.
>
> **MM-AQ-4.** The construction contractor shall require that construction vendors, contractors, and/or haul truck operators commit to using 2010 model year or newer diesel haul trucks. All construction truck operators shall maintain truck records and make these records available to the County upon request.

MM-AQ-5. The construction contractor shall encourage its construction contractors and vendors to apply for South Coast Air Quality Management Surplus Off-Road Opt-In for NOx ("SOON") funds to the extent available, which provide funds to applicable fleets for the purchase of commercially available low-emission heavy-duty engines to achieve near-term reduction of NO_x emissions from in-use off-road diesel vehicles.

MM-AQ-6. During operations, the operator of the Learning Center shall encourage school bus fleets under contract with the Learning Center to seek funding opportunities through the South Coast Air Quality Management District's Lower-Emission School Bus Program, to the extent available, to replace older diesel busses with cleaner school buses.

MM-AQ-7. During operations, electric landscape equipment, such as lawn mowers and leaf blowers, shall be used to the extent commercially available.

MM-AQ-8. During operations, the project shall utilize electric or alternatively fueled parking lot sweepers with HEPA filters.

As discussed in the Project Description in the Draft EIR, page 3-7, the landscape design for the project will include shade trees along pedestrian pathways; evergreen material to buffer and windbreak the courts, play fields, and site perimeter; and signature trees to act as wayfinding elements at site and building entries. The former landfill conditions of the project and relate remediation actions may constrain the type and location of trees at the project site, therefore, the proposed mitigation measure to maximize trees in certain project site areas was not included.

4-6 The text on page 4.2-17 and 4.2-18 will be revised to include the following discussion of SCAQMD Rules 1150, 1166 and 1466.

- **Rule 1150** – Excavation of Landfill Sites: This rule generally requires that an Excavation Management Plan approved by the Executive Officer be obtained from the SCAQMD prior to the excavation of an active or inactive landfill.
- **Rule 1166** – Volatile Organic Compound Emissions from Decontamination of Soil: This rule that generally requires an approved mitigation plan be obtained from the SCAQMD prior to the handling of VOC-contaminated soil at or from an excavation or grading site.
- **Rule 1466** – Control of Particulate Emissions from Soils with Toxic Air Contaminants: This rule generally requires any owner or operator

conducting earth-moving activities of soil with applicable toxic air containments (TACs) at certain sites to preform specified particulate matter monitoring and control measures.

Additionally, the text on page 4.2-28 will be updated to read as follows:

During construction, the project would comply with SCAQMD Rule 1150, 1166 and 1466 to the extent applicable.

4-7 The Project Description of the Draft EIR, page 3-13, identifies that other actions may be required by other local, regional and state agencies, including the SCAQMD among others. The text on page 3-13 of the Draft EIR be revised to identify SCAQMD as a potential Responsible Agency and now reads as follows:

- Other actions as may be required by other local, regional and state agencies including, but not limited to the City of Carson, the Department of Toxic Substances Control, the Los Angeles Regional Water Quality Control Board, Caltrans, and the South Coast Air Quality Management District (SCAQMD). Therefore, these agencies may be responsible agencies under CEQA.

4-8 The County acknowledges the comment as a summary of the CEQA Guidelines regarding public disclosure and the SCAQMD requesting written responses to their comments on the Draft EIR. The comment does not raise any environmental issues requiring responses. This comment is included in the Final EIR for review and consideration by the decision-makers prior to the final decision of the proposed project.

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Comment Letter 5

From: William Bayliss <william_bayliss@goodyear.com>
Sent: Monday, May 20, 2019 10:10 AM
To: Ryan Kristan (Consultant) <rkristan@dpw.lacounty.gov>
Cc: Kenny Rogers <kenny_rogers@goodyear.com>; Tony Sanico <tony_sanico@goodyear.com>; Jeff Sussman <jeff_sussman@goodyear.com>
Subject: Carson EIR - Blimp Base

Good morning Ryan,

After reviewing the EIR for the Dominguez Hills Project, the concern we have here for safe operation of our airship is compliance with 14 CFR 77.9. Attached is a powerpoint outlining some of the basics if you are not familiar. 5-1

Any questions feel free to contact me.

Regards,

Bill

****
** *William Bayliss*
** *Chief Pilot Wingfoot Two*
** *Goodyear Airship Operations*
** *19200 South Main Street*
** *Gardena, CA 90248*
** *office: (310) 327-6565*
** *mobile: (310) 386-7960*
** *facsimile: (310) 768-8516*
** *e-mail: william_bayliss@goodyear.com*
****

Objects affecting navigable airspace
1. 14 CFR (Code of Federal Regulations) PART 77.9
2. Instrument Approaches
3. Instrument Departures
4. United States Standard for Terminal Instrument Procedures
1

References

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION
AIR TRAFFIC ORGANIZATION POLICY
ORDER JO 7400.2K. "Procedures for Handling Airspace Matters."

FEDERAL AVIATION ADMINISTRATION
NOTICE CRITERIA TOOL – Desk Reference Guide V_2014.2.0
https://oeaaa.faa.gov/oeaaa/external/gisTools/gisAction.jsp?action=showNoNoticeRequiredToolForm

FEDERAL AVIATION ADMINISTRATION
AERONAUTICAL INFORMATION MANUAL
Official Guide to Basic Flight Information and ATC Procedures

2

References
FEDERAL AVIATION ADMINISTRATION
INSTRUMENT PROCEDURES HANDBOOK
U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION
ORDER 8260.3C.
"United States Standard for Terminal Instrument Procedures"
3

14 CFR 77.9
NOTICE OF PROPOSED CONSTRUCTION OR ALTERATION
§ 77.7 Form and time of notice.
(a) If you are required to file notice under §77.9, you must submit to the FAA a completed FAA Form 7460–1, Notice of Proposed Construction or Alteration. FAA Form 7460–1 is available at FAA regional offices and on the Internet.
(b) You must submit this form at least 45 days before the start date of the proposed construction or alteration or the date an application for a construction permit is filed, whichever is earliest.
(c) If you propose construction or alteration that is also subject to the licensing requirements of the Federal Communications Commission (FCC), you must submit notice to the FAA on or before the date that the application is filed with the FCC.
(d) If you propose construction or alteration to an existing structure that exceeds 2,000 ft. in height above ground level (AGL), the FAA presumes it to be a hazard to air navigation that results in an inefficient use of airspace. You must include details explaining both why the proposal would not constitute a hazard to air navigation and why it would not cause an inefficient use of airspace.
(e) The 45-day advance notice requirement is waived if immediate construction or alteration is required because of an emergency involving essential public services, public health, or public safety. You may provide notice to the FAA by any available, expeditious means. You must file a completed FAA Form 7460–1 within 5 days of the initial notice to the FAA. Outside normal business hours, the nearest flight service station will accept emergency notices.
§ 77.9 Construction or alteration requiring notice.
If requested by the FAA, or if you propose any of the following types of construction or alteration, you must file notice with the FAA of:
(a) Any construction or alteration that is more than 200 ft. AGL at its site.
(b) Any construction or alteration that exceeds an imaginary surface extending outward and upward at any of the following slopes:
(1) 100 to 1 for a horizontal distance of 20,000 ft. from the nearest point of the nearest runway of each airport described in paragraph (d) of this section with its longest runway more than 3,200 ft. in actual length, excluding heliports.
(2) 50 to 1 for a horizontal distance of 10,000 ft. from the nearest point of the nearest runway of each airport described in paragraph (d) of this section with its longest runway no more than 3,200 ft. in actual length, excluding heliports.
(3) 25 to 1 for a horizontal distance of 5,000 ft. from the nearest point of the nearest landing and takeoff area of each heliport described in paragraph (d) of this section.
(c) Any highway, railroad, or other traverse way for mobile objects, of a height which, if adjusted upward 17 feet for an Interstate Highway that is part of the National System of Military and Interstate Highways where overcrossings are designed for a minimum of 17 feet vertical distance, 15 feet for any other public roadway, 10 feet or the height of the highest mobile object that would normally traverse the road, whichever is greater, for a private road, 23 feet for a railroad, and for a waterway or any other traverse way not previously mentioned, an amount equal to the height of the highest mobile object that would normally traverse it, would exceed a standard of paragraph (a) or (b) of this section.
(d) Any construction or alteration on any of the following airports and heliports:
(1) A public use airport listed in the Airport/Facility Directory, Alaska Supplement, or Pacific Chart Supplement of the U.S. Government Flight Information Publications;
(2) A military airport under construction, or an airport under construction that will be available for public use;
(3) An airport operated by a Federal agency or the DOD.
(4) An airport or heliport with at least one FAA-approved instrument approach procedure.
(e) You do not need to file notice for construction or alteration of:
(1) Any object that will be shielded by existing structures of a permanent and substantial nature or by natural terrain or topographic features of equal or greater height, and will be located in the congested area of a city, town, or settlement where the shielded structure will not adversely affect safety in air navigation;
(2) Any air navigation facility, airport visual approach or landing aid, aircraft arresting device, or meteorological device meeting FAA-approved siting criteria or an appropriate military service siting criteria on military airports, the location and height of which are fixed by its functional purpose;
(3) Any construction or alteration for which notice is required by any other FAA regulation.
(4) Any antenna structure of 20 feet or less in height, except one that would increase the height of another antenna structure.
4

14 CFR 77.9

INSTRUCTIONS FOR COMPLETING FAA FORM 7460-1

PLEASE TYPE or PRINT

ITEM #1. Please include the name, address and phone number of a personal contact point as well as the company name.

ITEM #2. Please include the name, address and phone number of a personal contact point as well as the company name.

ITEM #3. New Construction would be a structure that has not yet been built.

Alteration is a change to an existing structure such as the addition of a side mounted antenna, a change to the marking and lighting, a change to power and/or frequency, or a change to the height. The nature of the alteration shall be included in ITEM #21 "Complete Description of Proposal".

Existing would be a correction to the latitude and/or longitude, a correction to the height, or if filing on an existing structure which has never been studied by the FAA. The reason for the notice shall be included in ITEM #21 "Complete Description of Proposal".

ITEM #4. If Permanent, so indicate. If Temporary, such as a crane or drilling derrick, enters the estimated length of time the temporary structure will be up.

ITEM #5. Enter the date that construction is expected to start and the date that construction should be completed.

ITEM #6. Please indicate the type of structure. DO NOT LEAVE BLANK.

ITEM #7. In the event that obstruction marking and lighting is required, please indicate type desired. If no preference, check "other" and indicate "no preference" DO NOT LEAVE BLANK. NOTE: High Intensity lighting shall be used only for structures over 500' AGL. In the absence of high intensity lighting for structures over 500' AGL, marking is also required.

ITEM #8. If this is an existing tower that has been registered with the FCC, enter the FCC Antenna Structure Registration number here.

ITEM #9 and #10. Latitude and longitude must be geographic coordinates, accurate to within the nearest second or to the nearest hundredth of a second if known. Latitude and longitude derived solely from a hand-held G P S instrument is NOT acceptable. A hand-held GPS is only accurate to within 100 meters (328 feet) 95 percent of the time. This data, when plotted, should match the site depiction submitted under ITEM #20.

ITEM #11. NAD 83 is preferred; however, latitude and longitude may be submitted in NAD 27. Also, in some geographic areas where NAD 27 and NAD 83 are not available other datum may be used. It is important to know which datum is used. DO NOT LEAVE BLANK.
ITEM #12. Enter the name of the nearest city and state to the site. If the structure is or will be in a city, enter the name of that city and state.

ITEM #13. Enter the full name of the nearest public-use (not private-use) airport or heliport or military airport or heliport to the site.

ITEM #14. Enter the distance from the airport or heliport listed in #13 to the structure.

ITEM #15. Enter the direction from the airport or heliport listed in #13 to the structure.

ITEM #16. Enter the site elevation above mean sea level and expressed in whole feet rounded to the nearest foot (e.g. 17'3" rounds to 17', 17'6" rounds to 18'). This data should match the ground contour elevations for site depiction submitted under ITEM #20.
ITEM #17. Enter the total structure height above ground level in whole feet rounded to the next highest foot (e.g. 17'3" rounds to 18'). The total structure height shall include anything mounted on top of the structure, such as antennas, obstruction lights, lightning rods, etc.

ITEM #18. Enter the overall height above mean sea level and expressed in whole feet. This will be the total of ITEM #16 + ITEM #17.

ITEM #19. If an FAA aeronautical study was previously conducted, enter the previous study number.

ITEM #20. Enter the relationship of the structure to roads, airports, prominent terrain, existing structures, etc. Attach an 8-1/2" x 11" non-reduced copy of the appropriate 7.5 minute U.S. Geological Survey (USGS) Quadrangle Map MARKED WITH A PRECISE INDICATION OF THE SITE LOCATION. To obtain maps, contact USGS at 1-888-275-8747 or via internet at "http://store.usgs.gov". If available, attach a copy of a documented site survey with the surveyor's certification stating the amount of vertical and horizontal accuracy in feet.

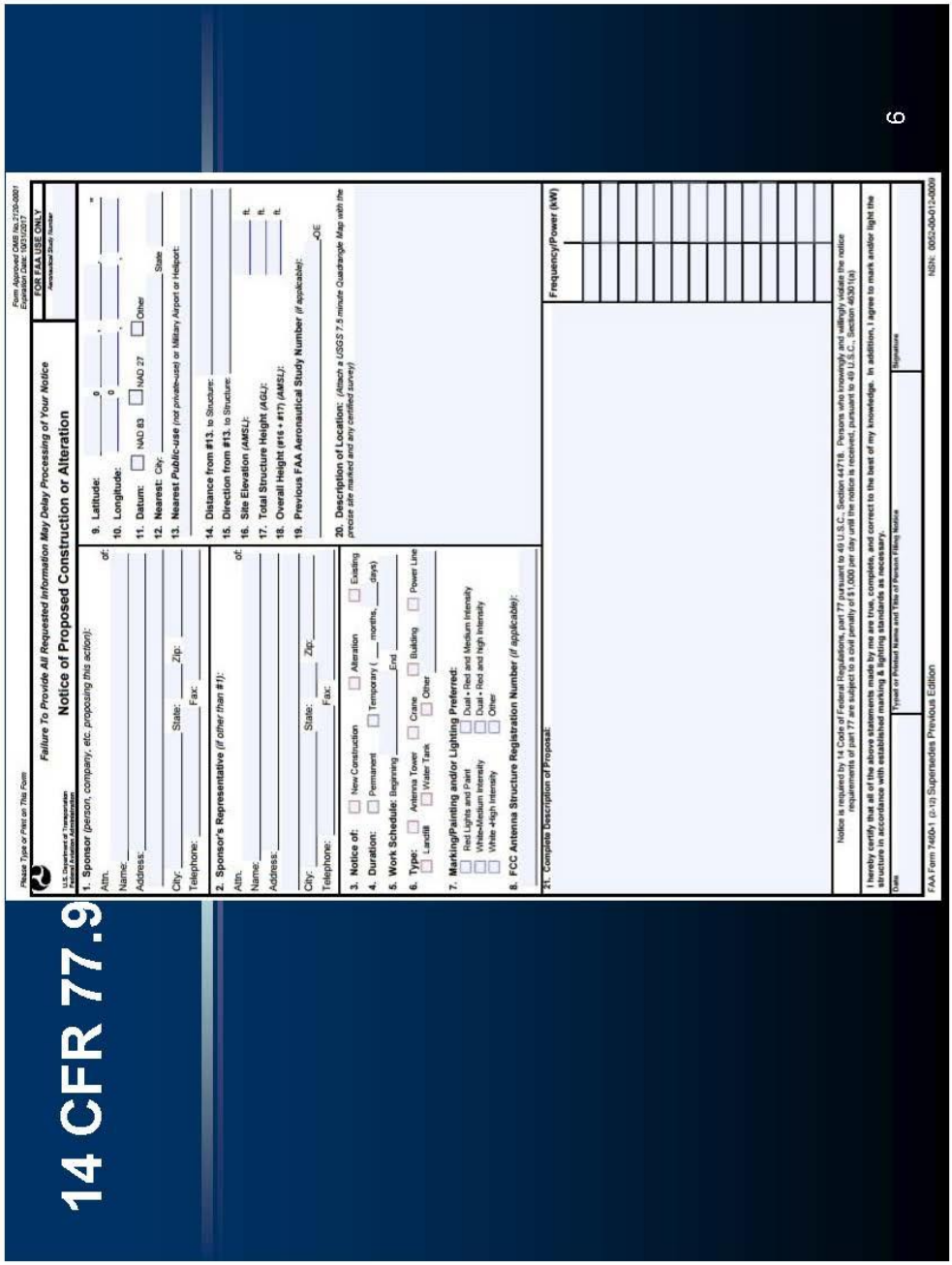
ITEM #21.
- For transmitting stations, include maximum effective radiated power (ERP) and all frequencies.
- For antennas, include the type of antenna and center of radiation (Attach the antenna pattern, if available).
- For microwave, include azimuth relative to true north.
- For overhead wires or transmission lines, include size and configuration of wires and their supporting structures (Attach depiction).
- For each pole/support, include coordinates, site elevation, and structure height above ground level or water.
- For buildings, include site orientation, coordinates of each corner, dimensions, and construction materials.
- For alterations, explain the alteration thoroughly.
- For existing structures, thoroughly explain the reason for notifying the FAA (e.g. corrections, no record or previous study, etc.).

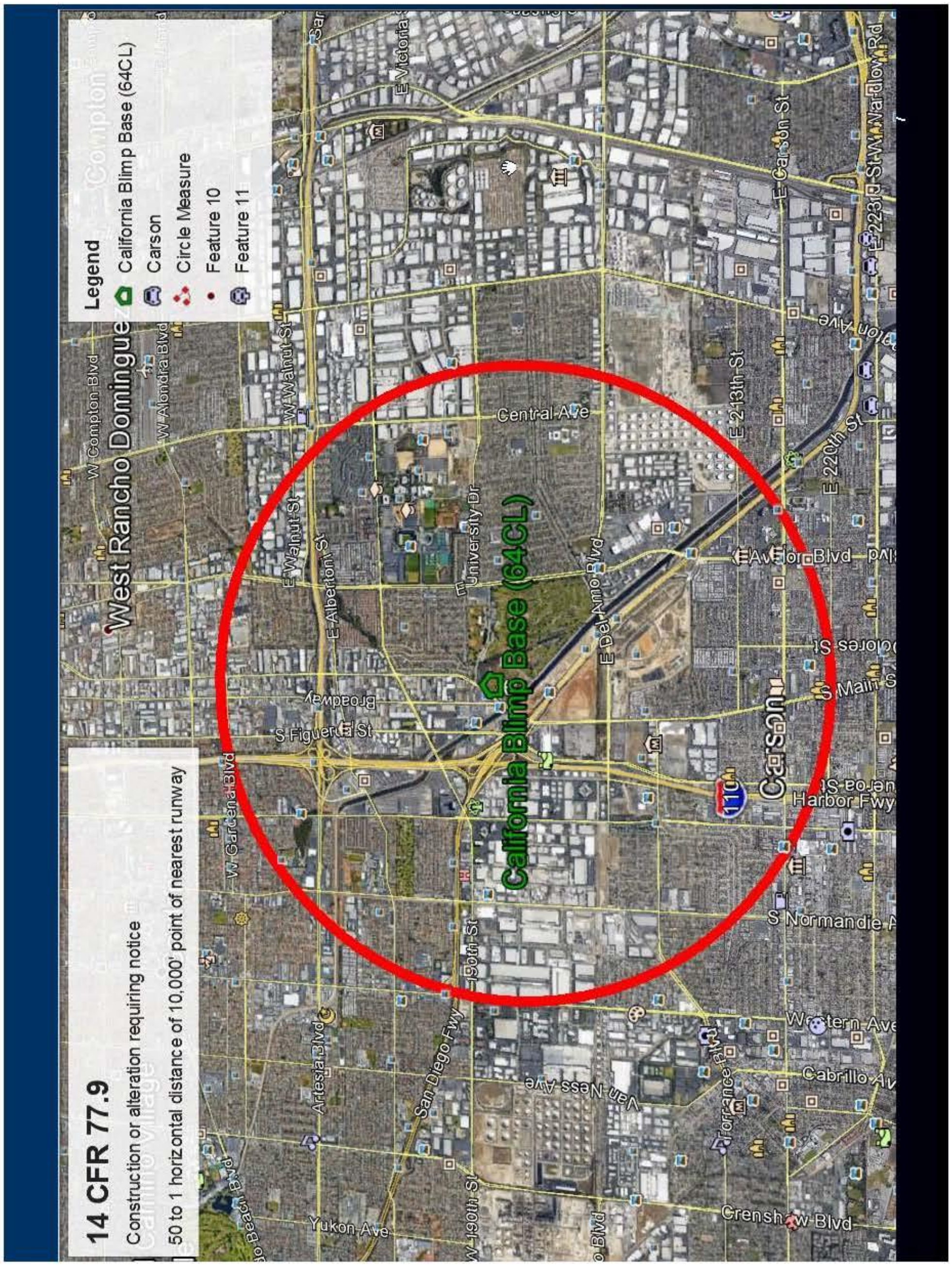
Filing this information with the FAA does not relieve the sponsor of this construction or alteration from complying with any other federal, state or local rules or regulations. If you are not sure what other rules or regulations apply to your proposal, contact local/state aviation's and zoning authorities.

Paperwork Reduction Work Act Statement: This information is collected to evaluate the effect of proposed construction or alteration on air navigation and is not confidential. Providing this information is mandatory for anyone proposing construction or alteration that meets or exceeds the criteria contained in 14 CFR, part 77. We estimate that the burden of this collection is an average 19 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, completing and reviewing the collection of information. A federal agency may not conduct or sponsor, and a person is not required to respond to, nor shall a person be subject to a penalty for failure to comply with a collection of information subject to the requirements of the Paperwork Reduction Act unless that collection of information displays a currently valid OMB Control Number. The OMB control number associated with this collection is 2120-0001. Comments concerning the accuracy of this burden and suggestions for reducing the burden should be directed to the FAA at: 800 Independence Ave SW, Washington, DC 20591, Attn: Information Collection Clearance Officer, AES-200.

Form 7460-1 (2-12) Superseded Previous Edition | Electronic Version (Adobe) | NSN: 0052-00-012-0009

5


14 CFR 77.9
Please Type or Print on This Form
Form Approved OMB No. 2120-0001
Expiration Date: 10/31/2017
U.S. Department of Transportation
Federal Aviation Administration
Failure To Provide All Requested Information May Delay Processing of Your Notice
Notice of Proposed Construction or Alteration
FOR FAA USE ONLY
Aeronautical Study Number
1. Sponsor (person, company, etc. proposing this action):
Attn.
of:
Name:
Address:
City:
State:
Zip:
Telephone:
Fax:
2. Sponsor's Representative (if other than #1):
Attn.
of:
Name:
Address:
City:
State:
Zip:
Telephone:
Fax:
3. Notice of: New Construction Alteration Existing
4. Duration: Permanent Temporary (___ months, ___ days)
5. Work Schedule: Beginning _____ End _____
6. Type: Antenna Tower Crane Building Power Line
Landfill Water Tank Other _____
7. Marking/Painting and/or Lighting Preferred:
Red Lights and Paint Dual - Red and Medium Intensity
White-Medium Intensity Dual - Red and High Intensity
White -High Intensity Other
8. FCC Antenna Structure Registration Number (if applicable):
9. Latitude: _____ 0 _____ ' _____ ' _____ "
10. Longitude: _____ 0 _____ ' _____ ' _____ "
11. Datum: NAD 83 NAD 27 Other
12. Nearest: City: _____ State: _____
13. Nearest Public-use (not private-use) or Military Airport or Heliport:
14. Distance from #13. to Structure:
15. Direction from #13. to Structure:
16. Site Elevation (AMSL): _____ ft.
17. Total Structure Height (AGL): _____ ft.
18. Overall Height (#16 + #17) (AMSL): _____ ft.
19. Previous FAA Aeronautical Study Number (if applicable):
_____ OE
20. Description of Location: (Attach a USGS 7.5 minute Quadrangle Map with the precise site marked and any certified survey)
21. Complete Description of Proposal:
Frequency/Power (kW)
Notice is required by 14 Code of Federal Regulations, part 77 pursuant to 49 U.S.C., Section 44718. Persons who knowingly and willingly violate the notice requirements of part 77 are subject to a civil penalty of $1,000 per day until the notice is received, pursuant to 49 U.S.C., Section 46301(a)
I hereby certify that all of the above statements made by me are true, complete, and correct to the best of my knowledge. In addition, I agree to mark and/or light the structure in accordance with established marking & lighting standards as necessary.
Date
Typed or Printed Name and Title of Person Filing Notice
Signature
FAA Form 7460-1 (2-10) Supersedes Previous Edition
NSN: 0052-00-012-0009
6

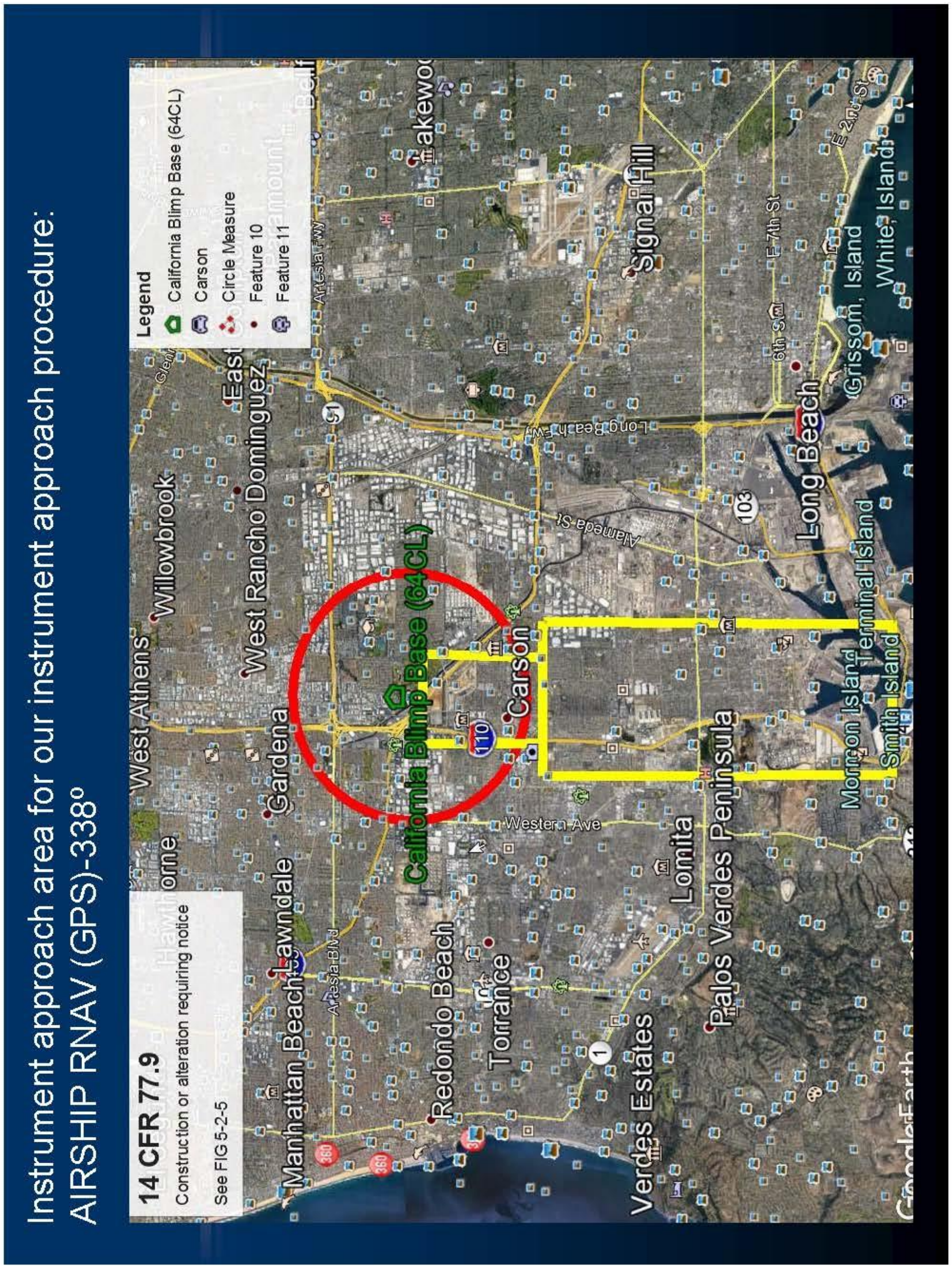

14 CFR 77.9
Construction or alteration requiring notice
50 to 1 horizontal distance of 10,000' point of nearest runway
Legend
California Blimp Base (64CL)
Carson
Circle Measure
Feature 10
Feature 11
California Blimp Base (64CL)
West Rancho Dominguez
Carson
Compton
Central Ave
University Dr
E Del Amo Blvd
Broadway
S Figueroa St
Harbor Fwy
S Normandie Ave
Western Ave
Cabrillo Ave
Van Ness Ave
Crenshaw Blvd
San Diego Fwy
Yukon Ave
Artesia Blvd
E 213th St
E 220th St
E Carson St
W Compton Blvd
W Alondra Blvd
W Walnut St
E Victoria St

64CL
(California Blimp Base)
FAA Approved
Instrument Approach
Procedure
AIRSHIP RNAV
(GPS)-338°
This example shows
examples with
varying runway
lengths
We would be
considered in 50:1
range for a "runway"
length of about 1500'
8
FIG 5-2-2
NOTICE REQUIREMENT RELATED TO AIRPORTS
Notice Required
Notice Required
Notice Required
Notice Required
Notice Required
Notice Not Required
Notice Not Required
Notice Not Required
Notice Required
Notice Required
30
Runway
Z1
Imaginary "Notice" Surface (100:1 or 50:1)
Elevation of Nearest Point of Runway
NOTE:
Each airport must be available for public use and listed in the Chart Supplement U.S. or in either the Chart Supplement Alaska or Pacific; under construction and the subject of a notice or proposal on file with FAA, and except for DOD airports, it is clearly indicated that airport will be available for public use or for private use which has at least one FAA approved instrument approach procedure, or operated by a Federal agency or the DOD. (Heliports without specified boundaries and seaplane bases without marked sea lanes are excluded.)
§77.9(b) – Any construction or alteration that exceeds an imaginary surface extending outward and upward at any of the following slopes:
(1) 100:1 for a horizontal distance of 20,000 feet from the nearest point of the nearest runway of each airport described in §77.9(d) with its longest runway more than 3,200 feet in actual length, excluding heliports.
(2) 50:1 for a horizontal distance of 10,000 feet from the nearest point of the nearest runway of each airport described in §77.9(d) with its longest runway not more than 3,200 feet in actual length, excluding heliports.
§77.9(d) – Any construction or alteration on any of the following airports and heliports:
(1) A public use airport in the Chart Supplement U.S., Chart Supplement Alaska, or Chart Supplement Pacific of the U.S. Government Flight Information Publications;
(2) A military airport under construction, or an airport under construction that will be available for public use;
(3) An airport operated by a Federal agency or the Department of Defense;
(4) An airport or heliport with at least one FAA-approved instrument approach procedure. At private use airports with an FAA-approved instrument approach procedure, only the instrument approach procedure will be considered.

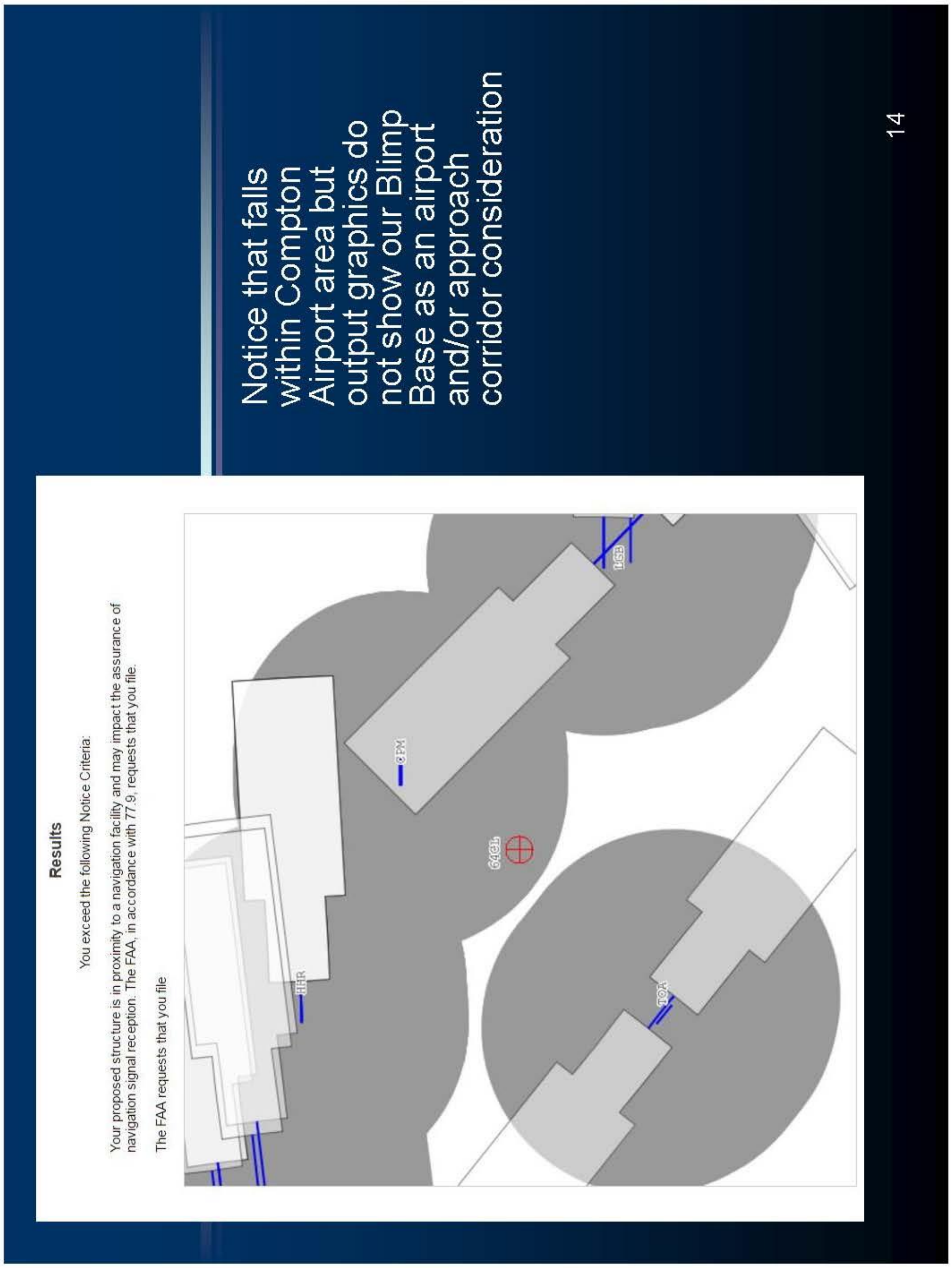
FIG 5-2-3
NOTICE REQUIREMENT RELATED TO HELIPORTS
Arrival and Departure Paths
Safety Barrier
Approach Surface
Width 500 feet at 4,000 feet from end of primary surface
Notice Not Required
Notice Required
Landing and Takeoff Area (primary surface)
Nearest point of Landing & Takeoff Area
Imaginary "Notice Surface" (25:1) Out to 5,000 feet
Imaginary "Notice Surface" (25:1) Out to 5,000 feet
Note: Use elevation of nearest point of Landing and Takeoff Area
Subpart B – Notice of Construction or Alteration
§77.9(b) – Any construction or alteration that exceeds an imaginary surface extending outward and upward at any one of the following slopes:
(1) 25:1 for a horizontal distance of 5,000 feet from the nearest point of the nearest landing and takeoff area of each heliport described in paragraph d of this section.
6

FIG 5-2-4
NOTICE REQUIREMENT RELATED TO TRAVERSE WAYS
Roads
Runway
30
12
Imaginary "Notice" Surface (100:1 or 50:1)
Apply 10', 15', or 17'
23'
23'
Elevation of Nearest Point of Runway
Traverse Way Types and Heights
oeaaa.faa.gov
Interstate Highway 17 feet
Public Road 15 feet
Private Road 10 feet
Railroad 23 feet
Waterway Tallest Object
Subpart B – Notice of Construction or Alteration
§77.9 – Construction or alteration requiring notice. (c) Any highway, railroad, or other traverse way for mobile objects, of a height which, if adjusted upward 17 feet for an Interstate Highway that is part of the National System of Military and Interstate Highways where overcrossings are designed for a minimum of 17 feet vertical distance, 15 feet for any other public roadway, 10 feet or the height of the highest mobile object that would normally traverse the road, whichever is greater, for a private road, 23 feet for a railroad, and for a waterway or any other traverse way not previously mentioned, an amount equal to the height of the highest mobile object that would normally traverse it, would exceed a standard of paragraph (a) or (b) of this section.
10

Profile and plan view for instrument approach area
11
FIG 5-2-5
NOTICE REQUIREMENT RELATED TO AIRPORT INSTRUMENT APPROACH AREA
Notice of Construction or Alteration
10,000 feet
100:1 Slope
200 AGL/20,000 feet
100 feet
Runway
6,000 feet
6.0 nm
1.0 nm 6076.0 feet
0.6 nm 3645.6 feet
1.0 nm 6076.0 feet
0.6 nm 3645.6 feet
Runway
not to scale
1 Runway threshold to 6,000 feet any structure above the runway threshold elevation, within 3,645.6 feet perpendicular to runway centerline
2 6,000 to 10,000 feet any structure exceeding 100:1 slope from runway threshold, within 3,645.6 feet perpendicular to runway centerline
3 10,000 to 36,457 feet any structure greater than 100 feet above runway threshold within 6,076 feet perpendicular to runway centerline.
Beyond 36,457 feet (6 nm) 200 feet above ground level
§ 77.9 Construction or alteration requiring notice.
If requested by the FAA


Instrument approach area for our instrument approach procedure:
AIRSHIP RNAV (GPS)-338°
14 CFR 77.9
Construction or alteration requiring notice
See FIG 5-2-5
Legend
California Blimp Base (64CL)
Carson
Circle Measure
Feature 10
Feature 11
California Blimp Base (64CL)
Carson
Willowbrook
West Athens
West Rancho Dominguez
Gardena
Manhattan Beach
Lawndale
Redondo Beach
Torrance
Lomita
Palos Verdes Peninsula
Verdes Estates
Signal Hill
Long Beach
Western Ave
Alameda St
Mormon Island
Terminal Island
Smith Island
Grissom Island
White Island
E 7th St
6th St

The requirements for filing with the Federal Aviation Administration for proposed structures vary based on a number of factors: height, proximity to an airport, location, and frequencies emitted from the structure, etc. For more details, please reference CFR Title 14 Part 77.9.
You must file with the FAA at least 45 days prior to construction if:
your structure will exceed 200ft above ground level
your structure will be in proximity to an airport and will exceed the slope ratio
your structure involves construction of a traverseway (i.e. highway, railroad, waterway etc...) and once adjusted upward with the appropriate vertical distance would exceed a standard of 77.9(a) or (b)
your structure will emit frequencies, and does not meet the conditions of the FAA Co-location Policy
your structure will be in an instrument approach area and might exceed part 77 Subpart C
your proposed structure will be in proximity to a navigation facility and may impact the assurance of navigation signal reception
your structure will be on an airport or heliport
filing has been requested by the FAA
If you require additional information regarding the filing requirements for your structure, please identify and contact the appropriate FAA representative using the Air Traffic Areas of Responsibility map for Off Airport construction, or contact the FAA Airports Region / District Office for On Airport construction.
The tool below will assist in applying Part 77 Notice Criteria.
Latitude:
33 Deg 51 M 1.23 S N
Longitude:
118 Deg 16 M 29.74 S W
Horizontal Datum:
NAD83
Site Elevation (SE):
22 (nearest foot)
Structure Height :
60 (nearest foot)
Traverseway:
No Traverseway
(Additional height is added to certain structures under 77.9(c))
User can increase the default height adjustment for
Traverseway, Private Roadway and Waterway
Is structure on airport:
No
Yes
Submit
Example of using FAA Notice Criteria Tool for location, site elevation and structure height.
These inputs show proposing a 60' structure between 405 freeway and Dominguez Channel just south of our base.
13


Results
You exceed the following Notice Criteria:
Your proposed structure is in proximity to a navigation facility and may impact the assurance of navigation signal reception. The FAA, in accordance with 77.9, requests that you file.
The FAA requests that you file
Notice that falls within Compton Airport area but output graphics do not show our Blimp Base as an airport and/or approach corridor consideration
14

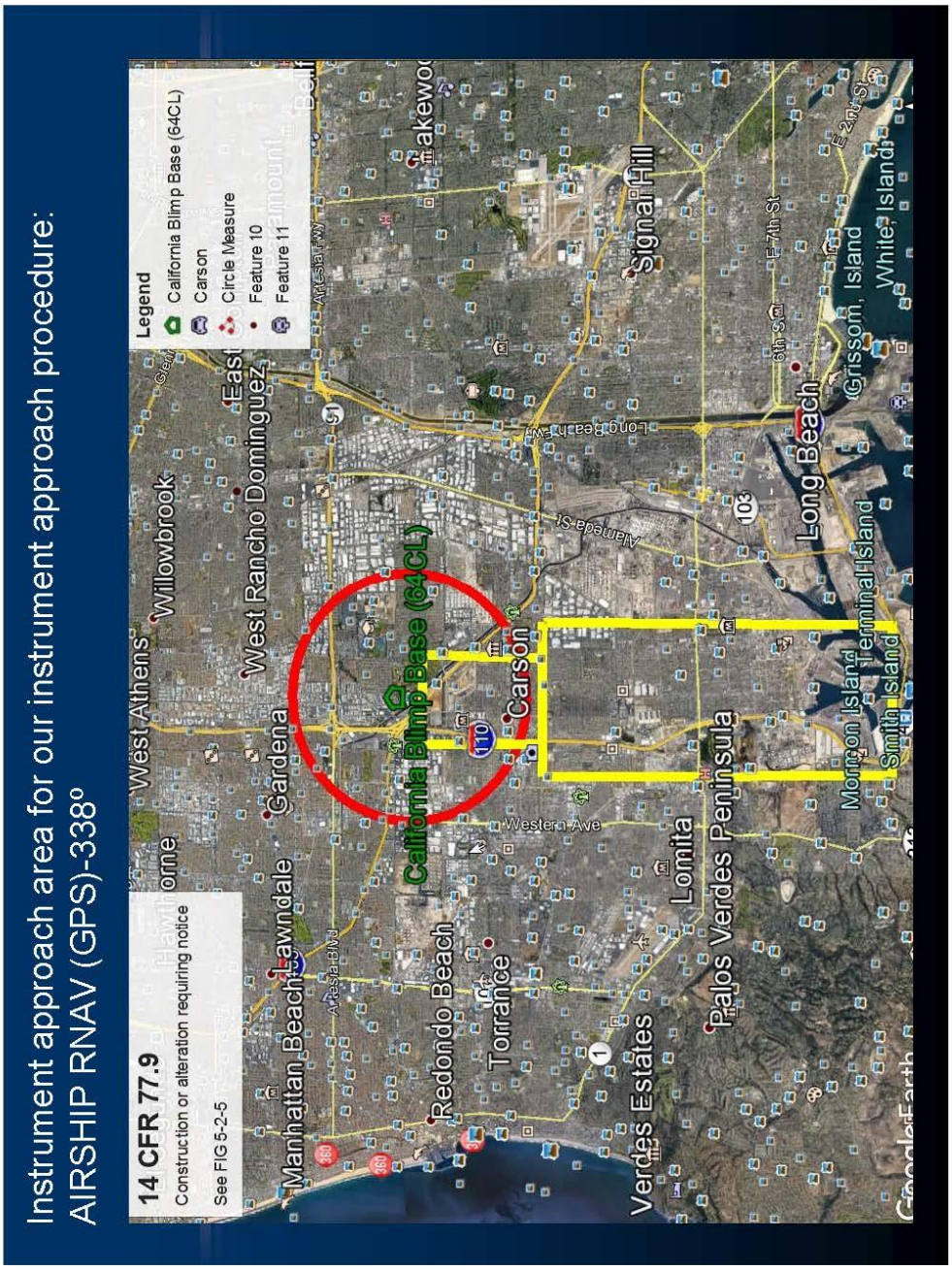

Instrument approach area for our instrument approach procedure:
AIRSHIP RNAV (GPS)-338°
14 CFR 77.9
Construction or alteration requiring notice
See FIG 5-2-5
Legend
California Blimp Base (64CL)
Carson
Circle Measure
Feature 10
Feature 11
West Athens
Willowbrook
West Rancho Dominguez
Gardena
Lawndale
Manhattan Beach
Redondo Beach
Torrance
Carson
California Blimp Base (64 CL)
Western Ave
Lomita
Palos Verdes Peninsula
Verdes Estates
Signal Hill
Long Beach
Alameda St
Terminal Island
Mormon Island
Smith Island
Grissom Island
White Islands
E 7th St
E 2nd St

FIG 5-4-27
Final Approach Obstacle Clearance

NOTE–
Circling approach area radii vary according to approach category and MSL circling altitude due to TAS changes – see FIG 5-4-28.

FIG 5-4-28
Standard and Expanded Circling Approach Radii in the U.S. TPP

STANDARD CIRCLING APPROACH MANEUVERING RADIUS

Circling approach protected areas developed prior to late 2012 used the radius distances shown in the following table, expressed in nautical miles (NM), dependent on aircraft approach category. The approaches using standard circling approach areas can be identified by the absence of the **C** symbol on the circling line of minima.

Circling MDA in feet MSL	Approach Category and Circling Radius (NM)				
	CAT A	CAT B	CAT C	CAT D	CAT E
All Altitudes	1.3	1.5	1.7	2.3	4.5

C EXPANDED CIRCLING APPROACH MANEUVERING AIRSPACE RADIUS

Circling approach protected areas developed after late 2012 use the radius distance shown in the following table, expressed in nautical miles (NM), dependent on aircraft approach category, and the altitude of the circling MDA, which accounts for true airspeed increase with altitude. The approaches using expanded circling approach areas can be identified by the presence of the **C** symbol on the circling line of minima.

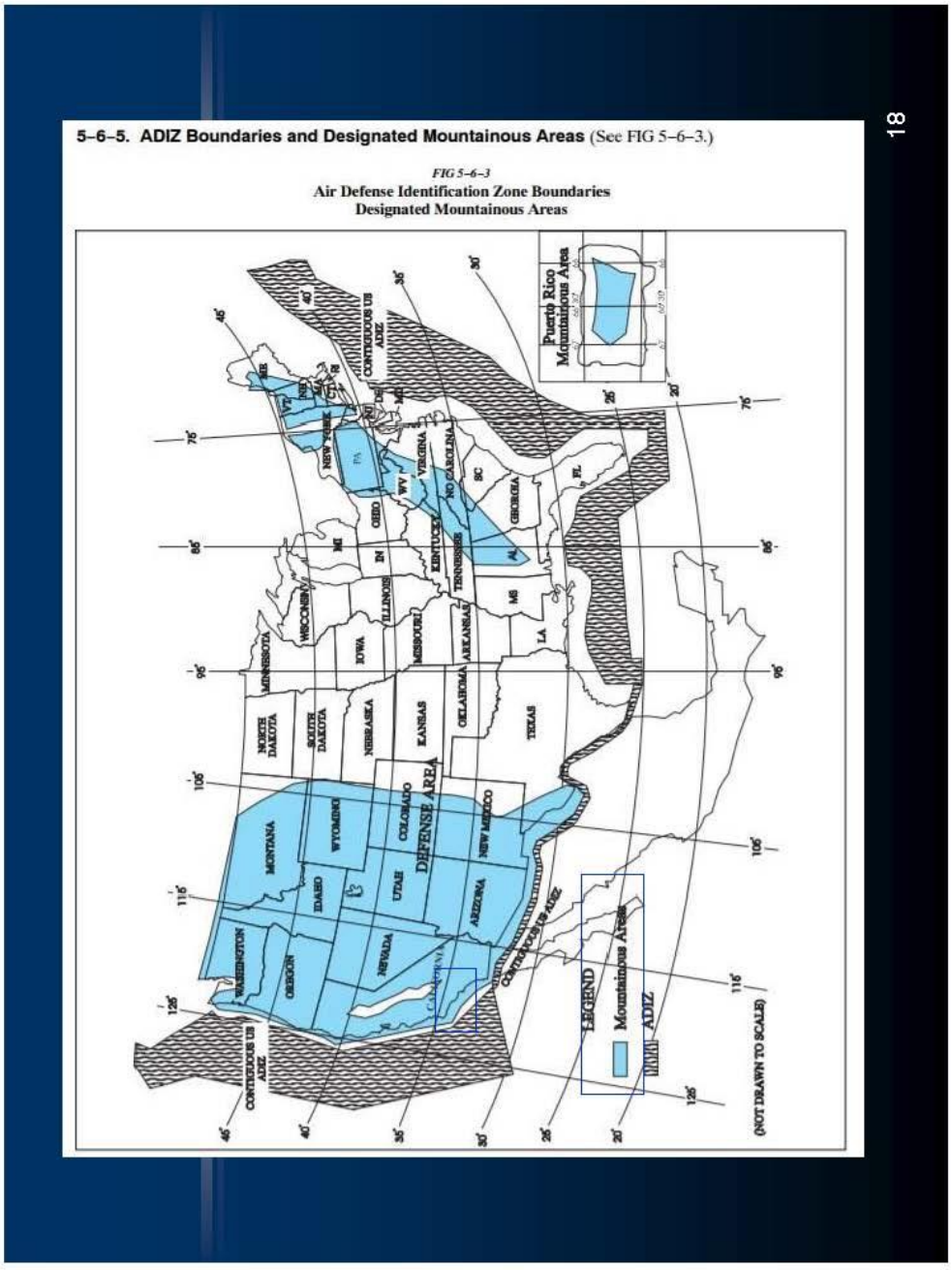
Circling MDA in feet MSL	Approach Category and Circling Radius (NM)				
	CAT A	CAT B	CAT C	CAT D	CAT E
1000 or less	1.3	1.7	2.7	3.6	4.5
1001-3000	1.3	1.8	2.8	3.7	4.6
3001-5000	1.3	1.8	2.9	3.8	4.8
5001-7000	1.3	1.9	3.0	4.0	5.0
7001-9000	1.4	2.0	3.2	4.2	5.3
9001 and above	1.4	2.1	3.3	4.4	5.5

Upon completion of an instrument approach an aircraft must remain clear of obstacles within a set distance at the minimum descent altitude.

Airship is Category A which is at a speed of less than 91 knots.

16

An instrument departure like ours requires a diverse departure obstacle assessment which allows for obstacle clearance.
Design criteria is leaving departure end of runway at 35' and maintaining the required 200 FPNM climb gradient out to 46 NM in mountainous areas.
17
FIG 5-2-1
Diverse Departure Obstacle Assessment to 25/46 NM
Aircraft reaches en route obstacle clearance of 1,000' (nonmountainous areas) or 2,000' (in mountainous areas).
Beyond the diverse obstacle assessment area (25/46 NM) there might be significantly higher obstacles.
25/46 NM
4 NM
TERPS Design CG of 200 FPNM
40:1 OIS at 152 FPNM
Departure End of Runway (DER)
Runway


18
5–6–5. ADIZ Boundaries and Designated Mountainous Areas (See FIG 5–6–3.)
FIG 5–6–3
Air Defense Identification Zone Boundaries
Designated Mountainous Areas
Puerto Rico Mountainous Area
CONTIGUOUS US ADIZ
DEFENSE AREA
LEGEND
Mountainous Areas
ADIZ
(NOT DRAWN TO SCALE)

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Response to Comment Letter 5
Goodyear Airship Operations
May 20, 2019

5-1 The comment provides information regarding Federal Aviation Administration (FAA) regulations related to effects on navigable airspace. The information is included in the Final EIR for review and consideration by the decision-makers prior to a final decision on the proposed project. As discussed in Section 4.8, Hazards and Hazardous Materials, of the Draft EIR, the proposed project buildings and lighting are not expected to exceed approximately 60 feet in height. Specifically, the project athletic lighting that may be up to 60 feet in height with project buildings being one- to two- stories in height. The proposed project development would be more than 1,000 feet from the Airship Base landing pad. As outlined in the Draft EIR, the applicant will comply with all applicable requirements imposed by the FAA. As such, impacts would be less than significant.

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Comment Letter 6

COUNTY SANITATION DISTRICTS
OF LOS ANGELES COUNTY

1955 Workman Mill Road, Whittier, CA 90601-1400
Mailing Address: P.O. Box 4998, Whittier, CA 90607-4998
Telephone: (562) 699-7411, FAX: (562) 699-5422
www.lacsd.org

GRACE ROBINSON HYDE
Chief Engineer and General Manager

July 1, 2019

Ref. DOC 5135539

Mr. Ryan Kristan
County of Los Angeles
Department of Public Works
900 South Fremont Avenue
Alhambra, CA 91803

Dear Mr. Kristan:

DEIR Response to the Carol Kimmelman Athletic and Academic Campus

The Sanitation Districts of Los Angeles County (Districts) received a Draft Environmental Impact Report (DEIR) for the subject project on May 16, 2019. The proposed project is located within the jurisdictional boundaries of District No. 8. We offer the following comments:

1. 4.15.1 Existing Conditions, *page 4.15-1*, Sewer Service first paragraph – The two parallel sewers within South Avalon Boulevard connect to the LACSD 24-inch diameter Del Amo Trunk Sewer. Just downstream of that discharge point, the Del Amo Trunk Sewer's diameter increases to 27-inches. 6-1

2. 4.15.4 Impact Analysis, *page 4.15-18*, Wastewater Treatment Facilities second paragraph – Based on the approximate 80,000 square feet of structure proposed and the proposed characteristics described in section 3.4 of the report, the expected average wastewater flow from the project is 25,300 gallons per day. 6-2

All other information concerning Districts' facilities and sewerage service contained in the document is current. If you have any questions, please contact the undersigned at (562) 908-4288, extension 2717.

Very truly yours,

Adriana Raza
Customer Service Specialist
Facilities Planning Department

AR:ar

cc: A. Schmidt
A. Howard

DOC 5210003.D08

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Response to Comment Letter 6
County Sanitation Districts of Los Angeles County
July 1, 2019

6-1 In response to the comment from the County Sanitation Districts of Los Angeles County (Districts) providing clarifying information, the text on page 4.15-1 of the Draft EIR will be revised to reflect the correct sewer configuration. The EIR will now read as follows:

> The two parallel sewers within South Avalon Boulevard connect to the LACSD 24~~7~~-inch-diameter Del Amo trunk sewer, located in South Avalon Boulevard south of Del Amo Boulevard, approximately 0.4 miles southeast of the project site. This trunk sewer, which increases in diameter to 27 inches just downstream of the parallel sewer discharge points, ~~is 24 inches in diameter,~~ has a capacity of 3.7 million gallons per day (mgd), and was conveying a peak flow of 2.4 mgd when last measured in 2015 (Appendix L; LACSD 2018a; 2019).

6-2 The analysis in Section 4.15, Utilities and Service Systems, of the Draft EIR identified that the proposed project would increase the amount of wastewater that is generated on the project site. The project site currently produces and average wastewater flow of approximately 4,542 gallons per day (gpd) with a peak flow of 0.017 cubic feet per second (cfs). Based on calculations included in Appendix L of the Draft EIR, the project is expected to generate an average flow of approximately 19,700 gpd of wastewater. This calculation was determined by multiplying the total building area for each project component (e.g., Leaning Center, Welcome Center) by average wastewater generation factors established by the Los Angeles County Sanitation District (see Table 1, *Loadings for Each Class of Land Use*, of Appendix E, *County of Los Angeles Sanitation District – Sanitary Sewer Discharge Table*, of Appendix L, *Utility Report*, of the Draft EIR).

Based on this comment letter, the County Sanitation Districts indicates that the proposed project is expected to generate 25,300 gpd of wastewater; however, no background or supporting information identifying how this number was derived is provided. This wastewater generation quantity would result in an increase in average daily wastewater generation (over existing conditions) of 20,758 gpd. This increase represents 1.6% of the remaining capacity of the Del Amo Trunk Sewer capacity and 0.01% of the remaining capacity of LACSD's JWPCP in Carson.

Similarly, the Draft EIR states that the project would generate 19,700 gpd of wastewater, which represents 1.5% of the remaining capacity of the Del Amo Trunk Sewer capacity and 0.01% of the remaining capacity of LACSD's JWPCP in Carson. Based on these calculations, the discrepancy in wastewater generation numbers between the project wastewater analysis and the quantity supplied by the County Sanitation District in the comment letter is negligible with respect to the available sewage transmission and treatment capacity. Impacts would remain less than significant, and the conclusions within Section 4.15 of the Draft EIR would not change.

Comment Letter 7

COUNTY OF LOS ANGELES
Public Health
LOS ANGELES COUNTY HEALTH AGENCY

BARBARA FERRER, Ph.D., M.P.H., M.Ed.
Director

MUNTU DAVIS, M.D., M.P.H.
Health Officer

CYNTHIA A. HARDING, M.P.H.
Chief Deputy Director

ANGELO J. BELLOMO, MS, REHS, QEP
Deputy Director, Health Protection

LIZA FRIAS, REHS
Director of Environmental Health

BRENDA J. LOPEZ, REHS
Assistant Director of Environmental Health

5050 Commerce Drive
Baldwin Park, California 91706
TEL (626) 430-5374 • FAX (626) 813-3000

www.publichealth.lacounty.gov/eh/

June 27, 2019

Mr. Ryan Kristan
County of Los Angeles Department of Public Works
Project Management Division II
900 South Fremont Avenue, 5th Floor
Alhambra, California 91803
Email: rkristan@dpw.lacounty.gov

SUBJECT: DEIR (SCH# 2018071074) RESPONSE FOR THE CAROL KIMMELMAN ATHLETIC AND ACADEMIC CAMPUS PROJECT AT THE FORMER BKK LANDFILL, CARSON (SWIS #19-AQ-0014)

Dear Mr. Kristan,

Thank you for allowing the Los Angeles County Department of Public Health's Solid Waste Management Program, acting as Local Enforcement Agency (LEA), to provide comments on the proposed project and for your agency's consideration of these comments as part of the California Environmental Quality Act (CEQA) process. 7-1

Project Description

The Carol Kimmelman Center, LLC, is proposing to develop an athletic and academic venue to include three primary centers:

The Learning Center would include approximately 25,000 square feet of building accessed via Martin Luther King, Jr. street. The Learning Center would host after-school and summer programs. Two basketball courts would be adjacent to the building and surface parking would be located to the south of the building. 7-2

The Tennis Center would be located in the northern approximately 28 acres of the site and would include up to 62 tennis courts, a tennis exhibition court, welcome center, player development building, tournament/league administration building, maintenance buildings, and other recreational amenities. There will also be associated restrooms, storage facilities, and parking.

The Soccer Center will include up to eight soccer fields, two multi-purpose fields, maintenance buildings, associated restrooms, storage, and parking on approximately 58 acres.

7-2 Cont.

Comments

Post-Closure land use plans, complying with Title 27 of the California Code of Regulations (CCR) Section 21190, must be submitted to the LEA for approval prior to any development activity. Maintaining the integrity of the landfill cover layer is of utmost importance and the plans should include details of any potential landfill cover impacts.

7-3

Landfill methane gas monitoring and controls must comply with 27 CCR Sections 20921 – 20945. Any destruction of existing methane gas monitoring wells or the installation of new methane gas monitoring wells must have prior LEA and CalRecycle approvals.

7-4

Please provide the LEA with copies of all future correspondence, notices, or subsequent CEQA documents. A minimum of 10 days prior notification of public hearings would be appreciated.

7-5

If you have any questions regarding these comments, please contact me at 626.430.5540 or curbach@ph.lacounty.gov.

Sincerely,

P. Christine Urbach, MPH REHS
Environmental Health Specialist III
LA County LEA Permitting and Investigations

Response to Comment Letter 7
County of Los Angeles Public Health
June 27, 2019

7-1 The County acknowledges the comment as an introduction to comments that follow. This comment is included in the Final EIR for review and consideration by the decision-makers prior to a final decision on the proposed project. In addition, the comment notes that the Los Angeles County Department of Public Health's Solid Waste Management Division is the Local Enforcement Agency. In response to this comment Section 4.8.2, Relevant Plans, Policies and Ordinances of the Draft EIR will be revised as follows:

> The California Department of Resources Recycling and Recovery (CalRecycle) regulates landfills under Title 27 of the California Code of Regulations (Title 27). State law provides that CalRecycle operate locally through a Local Enforcement Agency (LEA). The LEA for the former BKK Landfill is the Los Angeles County Department of ~~Health and Services~~ Public Health's Solid Waste Management Division.

7-2 The County acknowledges the comment as a summary of the proposed project. The comment restates information contained in the Draft EIR and does not raise any environmental issues requiring responses. This comment is included in the Final EIR for review and consideration by the decision-makers prior to a final decision on the proposed project.

7-3 The comment requests that post-closure land use plans, complying with Title 27 of the California Code of Regulations (CCR) Section 21190, be submitted to the Local Enforcement Agency (LEA) for approval prior to any development activity. The requirements of Title 22 of the CCR are discussed in Section 4.8.2, Relevant Plans, Policies, and Ordinances of the Draft EIR. In addition, Section 4.8.4, Impact Analysis, HAZ-1 on page 4.8-18 provides that existing local, state and federal laws, such as those listed under Section 4.8.2, would be enforced for the project site.

7-4 The comment states that landfill methane gas monitoring and controls must comply with 27 CCR Sections 20921-20945 and that any destruction of existing methane gas monitoring wells or the installation of new methane gas monitoring wells must have prior LEA and CalRecycle approvals. The requirements of Title 22 of the CCR are discussed in Section 4.8.2, Relevant Plans, Policies, and Ordinances of the Draft EIR. In addition, Section 4.8.4, Impact Analysis, HAZ-1 on page 4.8-18 provides that existing local, state and federal laws, such as those listed under Section 4.8.2, would be

enforced for the project site, including applicable County requirements for landfill gas monitoring and building protection systems.

7-5 The County acknowledges the comment and notes that it provides concluding remarks and providing contact information for questions. The comment requests that the LEA be included in all future correspondence, notices, or subsequent CEQA documents. Upon this request, going forward, the LEA will be added to all future mailing lists and included on correspondence related to topics contained in Comments and Responses 6-1 through 6-4 for this project. The comment does not raise new or additional environmental issues concerning the adequacy of the Draft EIR. This comment is included in the Final EIR for review and consideration by the decision-makers prior to a final decision on the proposed project.

Comment Letter 8

Los Angeles Unified School District

Office of Environmental Health and Safety

June 28, 2019

Ryan Kristan, Project Manager
County of Los Angeles, Kenneth Hahn Hall of Administration
500 W. Temple Street
Los Angeles, CA, 90012

SUBJECT: PROJECT NAME: Kimmelman Athletic and Academic Campus & The Creek
PROJECT LOCATION: 340 Martin Luther King, Jr. Street, Carson, 90746
CLEARINGHOUSE NUMBER: 2018071074, 2018081078

Presented below are comments submitted on behalf of the Los Angeles Unified School District (LAUSD) regarding the project located at 340 Martin Luther King, Jr. Street, Carson, 90746

Based on the extent/location of the proposed development, it is our opinion that significant environmental impacts on the surrounding community (air quality, hazards, noise, traffic, pedestrian safety) will occur. Due to the fact that Towne Avenue Elementary School is located across the street from the proposed project site, LAUSD is concerned about the potential negative impacts of the development to our students, staff and parents traveling to and from the referenced campuses. Since the project will have a significant impact on LAUSD schools, mitigation measures designed to help reduce or eliminate such impacts are included in this response. 8-1

Air Quality
District students and school staff should be considered sensitive receptors to air pollution impacts. Construction activities for the proposed project would result in short term impacts on ambient air quality in the area resulting from equipment emissions and fugitive dust. To ensure that effective mitigation is applied to reduce construction air pollutant impacts on the schools, we ask that the following language be included as a mitigation measure for air quality impacts 8-2

- If the proposed mitigation measures do not reduce air quality impacts to a level of insignificance, the project applicant shall develop new and appropriate measures to effectively mitigate construction related air emissions at the affected schools. Provisions shall be made to allow the school and or designated representative(s) to notify the project applicant when such measures are warranted.

Hazards Section
The Environmental Conditions Summary, dated February 27, 2019 and completed by Roux Associates, Inc., reported that operation of the former landfill may have impacted shallow groundwater quality, vadose zone and near-surface soils, and is a contributor to volatile organic compounds (VOCs) and methane in soil gas. Grading plans by TAIT (2018) include preliminary estimates on grading volumes that include about 140,000 cubic yards of cut/fill/import material, which could exposure hazard to the students and staff at the Towne Avenue Elementary School during construction. LAUSD recommends that SCAQMD Rule 1166 be strictly followed to prevent any hydrocarbon exposure during the excavation, soil handling and soil transport activities during construction. Furthermore, plans should be completed for notifications of complaints and to shut down construction if there are complaints at the LAUSD school facility. 8-3

333 South Beaudry Avenue, 21st Floor, Los Angeles, CA 90017 • Telephone (213) 241-3199 • Fax (213) 241-6816

Our Mission: To ensure a safe and healthy environment for students to learn, teachers to teach, and employees to work.
Our Vision: To eliminate all environmental, health, and safety risks at schools.

(2018071074, 2018081078)

Noise
Noise created by construction activities may affect the school in proximity to the proposed project site. These construction activities include grading, earth moving, hauling, and use of heavy equipment. The California Environmental Quality Act requires that such impacts be quantified and eliminated or reduced to a level of insignificance.

LAUSD established maximum allowable noise levels to protect students and staff from noise impacts. These standards were established based on regulations set forth by the California Department of Transportation and the City of Los Angeles. LAUSD's exterior noise standard is 67 dBA Leq and the interior noise standard is 45 dBA Leq. A noise level increase of 3 dBA or more over ambient noise levels is considered significant for existing schools and would require mitigation to achieve levels within 2 dBA of pre-project ambient level. To ensure that effective mitigations are employed to reduce construction related noise impacts on District sites, we ask that the following language be included in the mitigation measures for noise impacts: 8-4

If the proposed mitigation measures do not reduce noise impacts to a level of insignificance, the project applicant shall develop new and appropriate measures to effectively mitigate construction related noise at the affected schools. Provisions shall be made to allow the school and or designated representative(s) to notify the project applicant when such measures are warranted.

Traffic/Transportation
LAUSD's Transportation Branch **must be contacted** at (213) 580-2950 regarding the potential impact upon existing school bus routes. The Project Manager or designee will have to notify the LAUSD Transportation Branch of the expected start and ending dates for various portions of the project that may affect traffic within nearby school areas. To ensure that effective mitigations are employed to reduce construction and operation related transportation impacts on District sites, we ask that the following language be included in the mitigation measures for traffic impacts:

- During the construction phase, truck traffic and construction vehicles may not cause traffic delays for our transported students.
- During and after construction changed traffic patterns, lane adjustment, traffic light patterns, and altered bus stops may not affect school buses' on-time performance and passenger safety. 8-5
- Construction trucks and other vehicles are required to stop when encountering school buses using red-flashing-lights must-stop-indicators per the California Vehicle Code.
- Contractors must install and maintain appropriate traffic controls (signs and signals) to ensure vehicular safety.
- Contractors must maintain ongoing communication with LAUSD school administrators, providing sufficient notice to forewarn children and parents when existing vehicle routes to school may be impacted.

Pedestrian Safety
Construction activities that include street closures, the presence of heavy equipment and increased truck trips to haul materials on and off the project site can lead to safety hazards for people walking in the vicinity of the construction site. To ensure that effective mitigations are employed to reduce construction and 8-6

Page 2 of 3

(2018071074, 2018081078)

operation related pedestrian safety impacts on District sites, we ask that the following language be included in the mitigation measures for pedestrian safety impacts:

- Contractors must maintain ongoing communication with LAUSD school administrators, providing sufficient notice to forewarn children and parents when existing pedestrian routes to school may be impacted.
- Contractors must maintain safe and convenient pedestrian routes to all nearby schools. The District will provide School Pedestrian Route Maps upon your request.
- Contractors must install and maintain appropriate traffic controls (signs and signals) to ensure pedestrian and vehicular safety.
- Haul routes are not to pass by ***any*** school, except when school is ***not*** in session.
- No staging or parking of construction-related vehicles, including worker-transport vehicles, will occur on or adjacent to a school property.
- Funding for crossing guards at the contractor's expense is required when safety of children may be compromised by construction-related activities at impacted school crossings.
- Barriers and/or fencing must be installed to secure construction equipment and to minimize trespassing, vandalism, short-cut attractions, and attractive nuisances.
- Contractor's are required to provide security patrols (at their expense) to minimize trespassing, vandalism, and short-cut attractions.

8-6 Cont.

The District's charge is to protect the health and safety of students and staff, and the integrity of the learning environment. The comments presented above identify potential environmental impacts related to the proposed project that must be addressed to ensure the welfare of the students attending Towne Avenue Elementary School their teachers and the staff, as well as to assuage the concerns of the parents of these students. Therefore, the measures set forth in these comments should be adopted as conditions of project approval to offset unmitigated impacts on the affected school students and staff.

8-7

Thank you for your attention to this matter. If you need additional information please contact me at (213) 241-4210.

Regards,

Alex Campbell
Assistant CEQA Project Manager

Page 3 of 3

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Response to Comment Letter 8
Los Angeles Unified School District, Office of Environmental Health and Safety
June 28, 2019

8-1 The comment addresses the general subject areas of air quality, hazards, noise, traffic, pedestrian safety that received extensive analysis in Sections 4.2 Air Quality, 4.8 Hazards and Hazardous Materials, 4.11 Noise, and 4.13 Transportation, of the Draft EIR. The comment expresses concern with the project's proximity to Towne Avenue Elementary School. As discussed in Section 4.2, Air Quality, Towne Avenue Elementary was identified as one of the nearest sensitive-receptors to the project site and a Localized Significance Threshold (LST) analysis was prepared consistent with South Coast Air Quality Management District (SCAQMD) guidelines to determine potential impacts to nearby sensitive receptors during construction of the project, including Towne Avenue Elementary. As indicated in Section 4.2.3, the SCAQMD recommends the evaluation of localized NO_2, CO, PM_{10}, and $PM_{2.5}$ impacts to sensitive receptors in the immediate vicinity of the project site that would occur as a result of construction activities. Section 4.2.4 concludes that construction activities would not exceed site-specific LSTs for all pollutants and, thus, impacts would be less than significant. See Response 8-2 for further discussions of this topic.

As concluded in Section 4.8, Hazards and Hazardous Materials, there is the potential for project construction activities to handle hazardous materials within one-quarter mile of two elementary schools. However, regulations are in place regarding the handling of hazardous materials. With compliance with MM-HAZ-1, MM-HAZ-2 and existing regulations, project construction would not emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school such that significant impacts would occur. See Response 8-3 for further discussions of this topic.

As discussed in Section 4.11, Noise, with adherence to MM-NOI-1 through MM-NOI-4, temporary construction noise impacts as a result of the proposed project would be minimized. However, it may not be technically feasible to use sonic pile driving for the installation of piles at the project site, therefore it was conservatively concluded that short-term construction noise impacts would remain significant and unavoidable after mitigation. See Response 8-4 below for further discussion of this issue.

As discussed in Section 4.13, Transportation, a Construction Traffic Management Plan shall be implemented, providing advanced notification to adjacent property owners and occupants, as well as nearby schools, of upcoming construction activities, including

durations and daily hours of construction. See Response 8-5 below for further discussion of this issue.

8-2 This comment states that Los Angeles Unified School District (LAUSD) students and staff should be considered sensitive receptors to air pollution impact and include additional mitigation measures to reduce impacts to air quality.

As discussed in Section 4.2 Air Quality, the analysis did include the nearby Towne Avenue Elementary School as a sensitive receptor, and the proposed project did not exceed the SCAQMD's LSTs for any pollutant. Additionally, as requested by the SCAQMD the project is adding six additional mitigation measures to further reduce criteria air pollutant emissions from both construction and operation of the project. These five new mitigation measures, MM-AQ-4 through MM-AQ-8 read as follows:

> **MM-AQ-4.** The construction contractor shall require that construction vendors, contractors, and/or haul truck operators commit to using 2010 model year or newer diesel haul trucks. All construction truck operators shall maintain truck records and make these records available to the County upon request.
>
> **MM-AQ-5.** The construction contractor shall encourage its construction contractors and vendors to apply for South Coast Air Quality Management Surplus Off-Road Opt-In for NOx ("SOON") funds to the extent available, which provide funds to applicable fleets for the purchase of commercially available low-emission heavy-duty engines to achieve near-term reduction of NO_x emissions from in-use off-road diesel vehicles.
>
> **MM-AQ-6.** During operations, the operator of the Learning Center shall encourage school bus fleets under contract with the Learning Center to seek funding opportunities through the South Coast Air Quality Management District's Lower-Emission School Bus Program, to the extent available, to replace older diesel busses with cleaner school buses.
>
> **MM-AQ-7.** During operations, electric landscape equipment, such as lawn mowers and leaf blowers, shall be used to the extent commercially available.
>
> **MM-AQ-8.** During operations, the project shall utilize electric or alternatively fueled parking lot sweepers with HEPA filters.

8-3 This comment requests that SCAQMD Rule 1166 be strictly followed to prevent any hydrocarbon exposure during the excavation, soil handling and soil transport activities

during construction. As discussed in Section 4.2, Air Quality of the Draft EIR, the project will comply with all applicable regulations, including SCAQMD regulations, during project construction. Additionally, in response to comments submitted by SCAQMD (see Comments and Responses 4-1 through 4-8), the following has been added into Section 4.2, Air Quality, within in the Draft EIR:

- **Rule 1150** – Excavation of Landfill Sites: This rule generally requires that an Excavation Management Plan approved by the Executive Officer be obtained from the SCAQMD prior to the excavation of an active or inactive landfill.
- **Rule 1166** – Volatile Organic Compound Emissions from Decontamination of Soil: This rule that generally requires an approved mitigation plan be obtained from the SCAQMD prior to the handling of VOC-contaminated soil at or from an excavation or grading site.
- **Rule 1466** – Control of Particulate Emissions from Soils with Toxic Air Contaminants: This rule generally requires any owner or operator conducting earth-moving activities of soil with applicable toxic air containments (TACs) at certain sites to preform specified particulate matter monitoring and control measures.

8-4 This comment addresses potential construction-related noise impacts at the nearby Towne Avenue Elementary School. The comment provides citation of LAUSD's established maximum allowable noise levels to protect students and staff from noise impacts, namely an exterior noise standard is 67 dBA Leq and an interior noise standard of 45 dBA Leq. Exposure limits of this type are generally applied to long-term exposure rather than to short-term events such as construction noise. Potential construction-related noise impacts at the school were evaluated in the Draft EIR, and all feasible mitigation to reduce potential construction noise impacts was incorporated. As discussed in Section 4.11, Noise, with adherence to MM-NOI-1 through MM-NOI-4, temporary construction noise impacts as a result of the proposed project would be minimized. However, it may not be technically feasible to use sonic pile driving for the installation of piles at the project site, therefore it was conservatively concluded that short-term construction noise impacts would remain significant and unavoidable after mitigation. MM-NOI-4 outlines conditions that the construction contractor must adhere to throughout construction, including providing contact information for the contractor to address construction related issues. In response to the request made by LAUSD, the following mitigation language has been added to MM-NOI-4.

MM-NOI-4 **Construction Noise Reduction**

The County of Los Angeles shall require the contractor to adhere to the following measures as a condition of granting a grading permit to the contractor:

- All construction equipment, fixed or mobile, shall be equipped with properly operating and maintained mufflers.
- Construction noise reduction methods such as shutting off idling equipment, construction of a temporary noise barrier, maximizing the distance between construction equipment staging areas and adjacent residences, and use of electric air compressors and similar power tools, rather than diesel equipment, shall be used where feasible.
- During construction, stationary construction equipment shall be placed such that emitted noise is directed away from or shielded from sensitive receptors.
- Construction hours, allowable workdays, and the phone number of the job superintendent shall be clearly posted at all construction entrances.
- <u>At the request of the school administration for Towne Avenue Elementary School, the contractor will meet with the school principal or other representative each week to discuss anticipated upcoming construction activities and applicable noise reduction measures.</u>

8-5 The proposed project will implement Project Design Feature PDF-TRAF-2 – Construction Traffic Management Plan to reduce potential traffic impacts related to construction traffic. Some of the measures requested by the LAUSD are already addressed in PDF-TRAF-2. Per the request of LAUSD, PDF-TRAF-2, as shown in pages 4.13-68 and 4.13-69 of the Draft EIR, will be modified to include the following additional items:

PDF-TRAF-2 Prior to issuance of a grading permit, the proposed project will develop a Construction Traffic Management Plan for construction activities that would impact public streets.

The Construction Traffic Management Plan shall be based on the nature and timing of the specific construction and

other projects in the vicinity of the project site and shall include the following elements as appropriate:

- Advance notification to adjacent property owners and occupants, as well as, nearby schools, of upcoming construction activities, including durations and daily hours of construction.
- The project's construction manager shall contact LAUSD's Transportation Branch at (213) 580-2950 regarding the potential impact upon existing school bus routes, and the expected start and ending dates for various portions of the project construction that may affect traffic within nearby school areas.
- Prohibition of construction worker parking on adjacent residential streets, and identify construction employee parking locations and protocols.
- Temporary traffic control during all construction activities adjacent to public rights-of-way to improve traffic flow on public roadways (e.g., flag men flagmen). The temporary traffic controls shall minimize traffic delays for LAUSD transported students.
- Prohibition of construction-related vehicle parking on surrounding public streets.
- Safety precautions for pedestrian and bicyclists through such measures as alternate routing and protection barriers as appropriate, including along all identified Los Angeles Unified School District (LAUSD) and Compton Unified School District (CUSD) pedestrian routes to nearby schools.
- Scheduling of construction-related deliveries, haul trips, etc., so as to occur outside the commuter peak hours to the extent feasible, and so as to not impede school drop-off and pick-up activities and students using LAUSD/CUSD's identified pedestrian routes to nearby schools.

- Coordination with public transit agencies to provide advanced notifications of any anticipated stop relocations and durations.
- Provision of advanced notification of any temporary on-street parking removals and duration of removals.
- Establish construction hours that are in compliance with Carson Municipal Code (CMC).
- Establish a construction phone number which shall be posted on the site, and appoint a construction liaison officer to respond to concerns or inquiries regarding project construction.
- Construction trucks and other vehicles are required to stop when encountering school buses using red-flashing-lights must-stop-indicators per the California Vehicle Code.
- Contractors shall install and maintain appropriate traffic controls (signs and signals) for vehicular safety.
- Contractors shall maintain ongoing communication with LAUSD school administrators, for the school to provided sufficient notice to children and parents when existing vehicle and pedestrian routes to school may be impacted.
- Maintain unimpeded emergency access to the project site and nearby properties.
- Establish truck access and staging areas, and review haul route approved with the project.
- Provide construction site security.
- Prohibition of staging or parking of construction-related vehicles, including worker-transport vehicles, on or adjacent to a school property without the express written permission of the applicable school district.
- Funding for crossing guards at the contractor's expense to the extent required when safety of children may be compromised by construction-related activities at impacted school crossings.

8-6 See Response 8-5 above.

8-7 The comment reiterates the concerns expressed in the comments above and requests that the measures provided in the letter be adopted as conditions of project approval. Please refer to Responses 8-2 through 8-6 for discussion of the recommended measures. The comment provides concluding remarks that do not raise new or additional environmental issues concerning the adequacy of the Draft EIR; as such, no further response to this comment is provided.

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Comment Letter 9

LA JOLLA
BEACH & TENNIS CLUB

June 25, 2019

Ryan Kristan
County of Los Angeles
Department of Public Works
Project Management Division II
900 S. Fremont Avenue, 5th Floor
Alhambra, California 91803
rkristan@dpw.lacounty.gov

Dear Mr. Kristan:

The proposed Carol Kimmelman Athletic and Academic Campus will make a tremendous contribution to Southern California. Please support this project.

Whether you're playing on a team or cheering from the sidelines, I've seen firsthand how sports can connect people. The Kimmelman campus is an important opportunity for us to bring the community closer together through the magic of sports.

I've been playing tennis my whole life and look forward to seeing the next generation get the benefit of the fun activities and professional-level instruction that will be made available to them at this amazing site. Tennis can give kids the discipline, drive and sportsmanship skills that will serve them well on and off the court.

Additionally, the scale of this campus and investment that it brings will be an economic boost to our region.

I'm eager to see County of Los Angeles approve the project so it can move forward.

9-1

Yours respectfully,

William J. Kellogg

William J. Kellogg
President, La Jolla Beach & Tennis Club
Past President of the Southern California Tennis Association

2000 Spindrift Drive, La Jolla, CA 92037 858-454-7126 Fax: 858-456-3805

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Response to Comment Letter 9
La Jolla Beach and Tennis Club
June 25, 2019

9-1 This letter indicating support for the project is noted for the record and has been incorporated into the Final EIR for review and consideration by the decision-makers prior to any action on the project.

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Comment Letter 10

From: Ryan Kristan (Consultant) <rkristan@dpw.lacounty.gov>
Sent: Thursday, June 27, 2019 1:04 PM
To: Nicole Cobleigh
Subject: Fwd: Carol Kimmelman Athletic and Academic Campus

Begin forwarded message:

From: Giles Austin <giles@lets-teach.org>
Date: June 27, 2019 at 11:12:04 PDT
To: rkristan@dpw.lacounty.gov
Subject: Carol Kimmelman Athletic and Academic Campus

Dear Mr. Kristan:

My organization, Let's Teach, works tirelessly to make a positive impact on our Southern California youth. It's important we have more community partners, like the Carol Kimmelman Athletic and Academic Campus. Through its incredible proposed facilities and vision for programming, the Center can help us reach more of our youth, helping them fulfill their potential academically and athletically. It takes a village, as they say, and this campus and the resources it will offer will help make our village stronger.

My team is ready to put in the hard work, and work with Kimmelman and community to make this happen. Please do not let this opportunity pass us by.

10-1

Respectfully,

Giles Austin
Executive Director
Let's Teach, Inc.
www.lets-teach.org
(217) 369-5227 (cell)

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2

Response to Comment Letter 10
Let's Teach
June 27, 2019

10-1 This letter indicating support for the project is noted for the record and has been incorporated into the Final EIR for review and consideration by the decision-makers prior to any action on the project.

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Comment Letter 11

Begin forwarded message:

From: <jerome@first1break.com>
Date: June 27, 2019 at 13:32:21 PDT
To: <rkristan@dpw.lacounty.gov>
Subject: Carol Kimmelman Athletic & Academic Campus

Dear Mr. Kristan:

This email is in regards to the Carol Kimmelman Athletic & Academic Campus.

The First Break Academy runs a Tennis/Academic/Life skills program in Carson, CA. at the Dignity Health Sports Park. We service hundreds of youth from Carson as well as surrounding communities. Throughout the six years we've been in existence, 1000's of youth have matriculated through our program.

It's exciting to see a new place like the Kimmelman Campus being built in the South Bay/Carson. This will be an important center for everyone - people young and old, people at all skill levels and with different needs. In addition to all the sports and academic options, I'm impressed that the project will also aim to bring other members of the community in by offering a large, accessible outdoor space that can be used by community members of all ages. This would be a wonderful way to really bring the neighborhood together!

It's one of the most exciting and groundbreaking developments to come to our area in years, and we need to make this happen. I fully support this project, and I hope that county officials do the same.

Thank you for your consideration.

Jerome Jones
Executive Director
First Break Academy

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11-1

310-415-4442
www.first1break.com

Response to Comment Letter 11
First Break Academy
June 27, 2019

11-1 This letter indicating support for the project is noted for the record and has been incorporated into the Final EIR for review and consideration by the decision-makers prior to any action on the project.

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Comment Letter 12

SLOANE STEPHENS
FOUNDATION

June 27, 2019

Dear Mr. Kristan:

The Sloane Stephens Foundation works tirelessly to make a positive impact on our Southern California youth. Partners like the Carol Kimmelman Athletic and Academic Campus are essential to the growth of our program and other programs serving Southern California youth. Through its incredible proposed facilities and vision for programming, the Center will help us reach more of our youth, helping them fulfill their potential academically and athletically.

Our community knows it takes a village to raise a child. The resources offered at the Carol Kimmelman Athletic and Academic Campus will help make our village stronger.

My team is ready to put in the hard work with the Kimmelman community to make this happen. Please do not let this opportunity pass us by.

12-1

Respectfully,

Sybil Smith, Ed.D
Executive Director

5109 Nagle Avenue, Sherman Oaks, CA 91423
Phone (559) 250.6393 FAX (310) 943.2324
www.SloaneStephensFoundation.org

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Response to Comment Letter 12
Sloane Stephens Foundation
June 27, 2019

12-1 This letter indicating support for the project is noted for the record and has been incorporated into the Final EIR for review and consideration by the decision-makers prior to any action on the project.

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Comment Letter 13

Pasadena Tennis Association

June 27, 2019

Ryan Kristan
County of Los Angeles
Department of Public Works

Dear Mr. Kristan,

My organization Pasadena Tennis Association is dedicated to supporting the well-being of our local youth and providing them with the resources and services to live a happy, healthy and successful life. I believe the team behind the new Carol Kimmelman Athletic and Academic Campus share in these values and goals and will be an important asset to our community.

This incredible campus will foster an active, healthier lifestyle through its state-of-the-art facilities, sports instruction and rich programming. And they're doing it right by reaching out and working with national partners, community partners like Pasadena Tennis Association, and local leaders to ensure that they are serving the community's best interests and needs.

We are excited to welcome them to Southern California and support their efforts to expand opportunity for our local youth, especially those who are most at-risk.

13-1

Cordially,
Esther Hendershott

Esther Hendershott

Executive Director
Pasadena Tennis Association
USTA NJTL Chapter

"Creating change in and through the sport of tennis"

P.O. Box 50606, Pasadena CA 91115
(626) 598-1170
www.tennispasadena.com

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Response to Comment Letter 13
Pasadena Tennis Association
June 27, 2019

13-1 This letter indicating support for the project is noted for the record and has been incorporated into the Final EIR for review and consideration by the decision-makers prior to any action on the project.

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Comment Letter 14

From: Marty Woods <pbsf2009@aol.com>
Sent: Friday, June 28, 2019 8:56 AM
To: Ryan Kristan (Consultant) <rkristan@dpw.lacounty.gov>
Cc: pbsf2009@aol.com
Subject: Kimmelman Campus

Dear Mr. Kristan:

My organization Pete Brown Jr Tennis Program works tirelessly to make a positive impact on our Southern California youth. It's important we have more community partners, like the Carol Kimmelman Athletic and Academic Campus. Through its incredible proposed facilities and vision for programming, the Center can help us reach more of our youth, helping them fulfill their potential academically and athletically. It takes a village, as they say, and this campus and the resources it will offer will help make our village stronger. 14-1

My team is ready to put in the hard work, and work with Kimmelman and community to make this happen. Please do not let this opportunity pass us by.

Respectfully,
Marty Woods CEO Pete Brown Jr Tennis Program

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Response to Comment Letter 14
Pete Brown Jr. Tennis Program
June 28, 2019

14-1 This letter indicating support for the project is noted for the record and has been incorporated into the Final EIR for review and consideration by the decision-makers prior to any action on the project.

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Comment Letter 15

CT

May 16, 2019

Ryan Kristan
County of Los Angeles Department of Public Works
Project Management Division II,
900 South Fremont Avenue, 5th Floor,
Alhambra, CA 91803

Re: Notice of Completion and Availability of a Draft Environmental Impact Report // To: 3M Company

Case No.

Dear Sir/Madam:

After checking our records and the records of the State of CA, it has been determined that C T Corporation System is not the registered agent for an entity by the name of 3M Company. 15-1

CT was unable to forward.

Very truly yours,

C T Corporation System

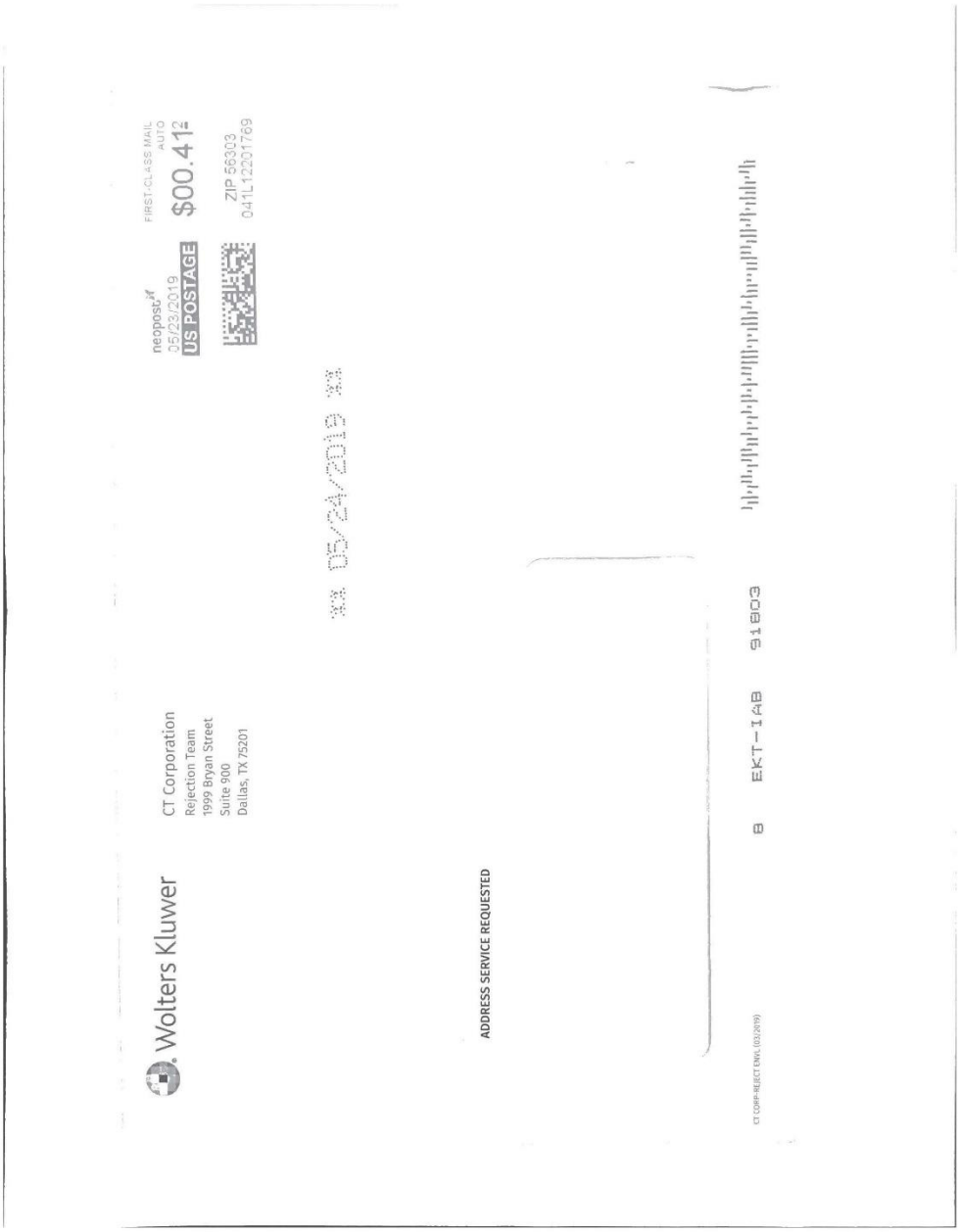
Log# 535494801

Sent By Regular Mail

cc: --

(Returned To)

Ryan Kristan
County of Los Angeles Department of Public Works
Project Management Division II,
900 South Fremont Avenue, 5th Floor,
Alhambra, CA 91803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CT Corporation
Rejection Team
1999 Bryan Street
Suite 900
Dallas, TX 75201
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B EKT-14B 91803

Response to Comment Letter 15
CT Corporation
May 16, 2019

15-1 The comment is in response to receiving a Notice of Completion and Availability for the Draft EIR addressed to 3M Company. The comment indicates that CT Corporation System is not the registered agency for the entity of 3M Company. The Notice of Completion and Notice of Availability were sent to all entities provided within the Department of Toxic Substance Control (DTSC)'s mailing list as well as all property owners and occupants within a 500-foot radius of the project site for the proposed project, among others. The County notes the comment and will remove the address for future mailings.

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Comment Letter 16

CT

RECEIVED
MAY 30 2019
PROJECT MANAGEMENT DIVISION II
DEPARTMENT OF PUBLIC WORKS

May 16, 2019

Ryan Kristan
County of Los Angeles Department of Public Works
900 South Fremont Avenue, 5th Floor,
Alhambra, CA 91803

Re: 340 Martin Luther King Jr. Street, Carson // To: 3M Company

Case No.

Dear Sir/Madam:

After checking our records and the records of the State of CA, it has been determined that C T Corporation System is not the registered agent for an entity by the name of 3M Company. 16-1

CT was unable to forward.

Very truly yours,

C T Corporation System

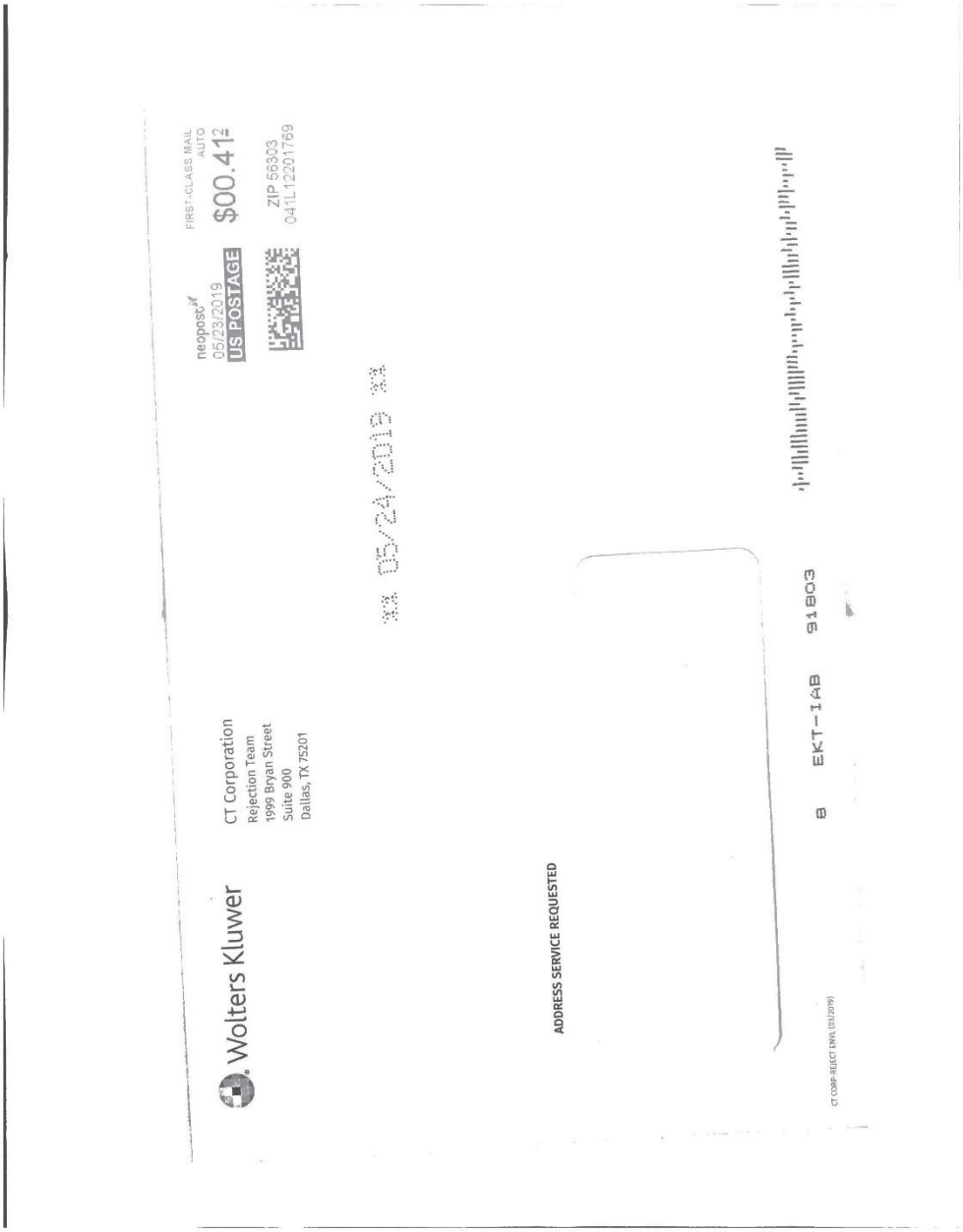
Log# 535495217

Sent By Regular Mail

cc: --

(Returned To)

Ryan Kristan
County of Los Angeles Department of Public Works
900 South Fremont Avenue, 5th Floor,
Alhambra, CA 91803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CT Corporation
Rejection Team
1999 Bryan Street
Suite 900
Dallas, TX 75201
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US POSTAGE
ZIP 56303
041L12201769
05/24/2019
B EKT-14B 91803
CT CORP-REJECT ENVL (03/2019)

Response to Comment Letter 16
CT Corporation
May 16, 2019

16-1 The comment is in response to receiving a Notice of Completion and Availability for the Draft EIR addressed to 3M Company. The comment indicates that CT Corporation System is not the registered agency for the entity of 3M Company. The Notice of Completion and Notice of Availability were sent to all entities provided within the Department of Toxic Substance Control (DTSC)'s mailing list as well as all property owners and occupants within a 500-foot radius of the project site for the proposed project, among others. The County notes the comment will remove the address for future mailings.

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Comment Letter 17

From: vince goshi <vincegoshi@cox.net>
Sent: Thursday, May 16, 2019 3:32 PM
To: Ryan Kristan (Consultant) <rkristan@dpw.lacounty.gov>
Subject: EIR For Kimmelman and Plenitude Projects

Ryan:

I received your letters notifying that the EIR for the subjects, dated May 2019, are available for review. I downloaded both reports and did a quick scan of each looking at the impacts and mitigation of these projects on the existing golf recreation provided to the over 2000 people who regularly use the course. The Plenitude report says, basically, there are other courses nearby and does not discuss how this would impact Victoria's golfers as well as the golfers at the other courses who would be impacted. This appears to totally ignore the comments I made at the EIR scoping meeting. Kimmelman's report totally eliminated the paragraph on recreation impacts and does nothing to respond to the comments I submitted at the EIR scoping meeting.

17-1

17-2

This is very disappointing.

Vincent Goshi
310 303 9218 (cell)

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Response to Comment Letter 17
Vincent Goshi
May 16, 2019

17-1 The County acknowledges the comment as an introduction to the comments that follow. The comment restates information contained in the Draft EIR and does not raise any environmental issues requiring responses. This comment is included in the Final EIR for review and consideration by the decision-makers prior to a final decision on the proposed project.

17-2 This comment states that the EIR does not include a paragraph on recreation impacts and does not respond to the concerns expressed by the commenter at the EIR scoping meeting.

The Draft EIR addresses impacts to parks in Section 4.12, Public Services. Whether a project constitutes a potentially significant impact to public services (including parks) is determined by the following threshold, pursuant to CEQA Guidelines Appendix G: the project would result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, or the need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services (including parks).

The analysis in Section 4.12 of the Draft EIR describes the existing setting relative to parks and assesses the potential for the proposed project to trigger a need for new or physically altered park facilities. As explained in Section 4.12 of the Draft EIR, the proposed project is not expected to result in substantial, adverse physical impacts due to the need for new or physically altered park facilities in order to maintain acceptable service ratios. The need for new or expanded park facilities is usually caused when the residential population in a park's service area increases to the degree that a new or expanded park is required to meet the community's recreational and parkland needs. The proposed project would not involve construction of new homes, nor would the project result in substantial increases in employment at the project site or within the surrounding area, such that substantial population growth would occur. While the type of recreational use would change at the project site, the proposed project would not reduce the recreational resources that are available in the region. As such, the topic of impacts to recreation has not been omitted from the Draft EIR and is included in Section 4.12 of the Draft EIR.

The commenter also states that their input provided during the EIR scoping period was not considered. Scoping is used by agencies "in identifying the range of actions,

alternatives, mitigation measures, and significant effects to be analyzed in depth in an EIR and in eliminating from detailed study issues found not to be important" (CEQA Guidelines Section 15083(a)). In an effort to hone the scope of the EIR and to hear community concerns, the County gathered and considered comments from the public, agencies, and interested organizations during the scoping period at a scoping meeting and via written comment. During this time, the commenter provided several letters to the County, which are included in the Draft EIR as part of Appendix A. The County reviewed these letters and considered the comments in preparation of the EIR. The letters from the commenter expressed concerns regarding the change in recreational use at the site, potential effects to golfers (particularly senior golfers), and potential effects of construction on a former landfill (particularly the potential hazards that this could pose to nearby schools). The commenter included a list of senior golfers who use the existing course and also expressed concerns regarding the capabilities of nearby County golf courses to accommodate the seniors who golf in the early mornings at the Victoria Golf Course. Section 1.6 of the Draft EIR lists the areas of known controversy surrounding the project, as required by CEQA Guidelines Section 15123. This list includes concerns regarding the loss of the Golf Course and other recreational options, which were expressed by the commenter. This list also includes concerns related to the disturbance of the former landfill and potential effects on the remediation activities.

As described above, Section 4.12 of the Draft EIR included an analysis of the project's impacts to park facilities. As noted by the commenter, the change in recreational use at the project site would affect individuals who use the existing golf course. To the extent that the change in recreational use could have impacts on the environment, those impacts have been analyzed in the Draft EIR (e.g., effects from project construction, effects from changes in traffic patterns, effects from an increased intensity of use at the site). However, effects to individuals' recreational habits and choices would not be impacts on the environment. Nevertheless, the commenter's concerns involving the wellbeing of golfers that currently use the Victoria Golf Course and the information provided by the commenter regarding current usage of the Victoria Golf Course will be provided to decision makers for their review and consideration as part of this Final EIR.

Effects related to construction of the proposed project on a former landfill are addressed in Section 4.6, Geology and Soils, Section 4.8, Hazards and Hazardous Materials, and Section 4.9, Hydrology and Water Quality. Section 4.8 specifically discusses impacts related to hazardous emissions and substances near a school. While impacts were identified in association with construction of the project on a former landfill, they were determined to be less than significant or less than significant after mitigation, as described and substantiated in Sections 4.6, 4.8, and 4.9 of the Draft EIR.

Comment Letter 18

From: Richard Chang <rchang@rca4results.com>
Sent: Tuesday, June 25, 2019 4:47 PM
To: Ryan Kristan (Consultant) <rkristan@dpw.lacounty.gov>
Cc: Richard Chang <rchang@rca4results.com>
Subject: Letter of Endorsement for the Carol Kimmelman Atheletic and Academic Campus Development Project

Dear Mr. Kristan:

I'm an enthusiastic supporter of the Carol Kimmelman Athletic and Academic Campus. This is the kind of investment that will leave a lasting impact on our community! The project team is taking this long underutilized space and transforming it into a world-class sports and learning facility for everyone to enjoy and benefit.

I'm a longtime tennis player and fan and I'm especially excited about all the new tennis facilities, lessons and training that the campus is offering in conjunction with the U.S. Tennis Association. This kind of access to world-class tennis, together with all the other programs, will bring enormous value to my neighbors and to people throughout the area.

It's clear that the team behind the project are committed to the community. I hope it has your support.

18-1

Best regards,
Richard Chang
CEO, Richard Chang Associates, Inc.

Member of the Executive Committee, USTA Southern California Board of Directors
and Chair, USTA National Leadership and Team Development Committee

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Response to Comment Letter 18
Richard Chang
June 25, 2019

18-1 This letter indicating support for the project is noted for the record and has been incorporated into the Final EIR for review and consideration by the decision-makers prior to any action on the project.

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Comment Letter 19

From: Vivian Hatcher <vhatch11@gmail.com>
Sent: Monday, July 1, 2019 4:36 PM
To: Ryan Kristan (Consultant) <rkristan@dpw.lacounty.gov>
Subject: COMMENTS RE: EIRs FOR VICTORIA PARK DEVELOPMENT

Dear Mr. Kristan & Staff:

Thank you for this opportunity to comment on the Victoria Golf Park EIRs.

I am a resident of North Carson near this development. I perused the EIRs for the Carol Kimmelman Athletic and Academic Campus Project and the Creek at Dominguez Hills. 19-1

While I noticed that the EIRs mentioned many environmental concerns, my hope is that the developers and County have an adequate plan and will implement it in order to:

- Remediate the landfill gas, effectively address the soil/dust (during and after the construction), manage water contamination concerns, mitigate air pollution and minimize and/or eliminate noise, traffic congestion, lighting/glare nuisance from the location, and include education/signage to alert visitors that coyotes may be present. 19-2

Both developments will seemingly attract a large number of individuals. I hope the developers and the County:

- Contact the LA County Sheriffs and the LA County Fire Department to obtain their input regarding the security, health and safety of the facilities, staff and visitors to the project, 19-3
- Have plans to staff the projects in such a way that the project will be maintained, cleaned, secured and overseen to make them user friendly and well kept. (i.e. with full time housekeepers;, landkeepers/for grass, foliage, trails, paths, pet cleanup, information booths/gatekeepers, utility plant staff). 19-4

I hope the developers and County will:

- Establish a relationship with the Carson community to share feedback about the projects once they are fully developed. 19-5
- Be willing to hire local residents and to share tax revenues with the City of Carson. 19-6
- Engage in continuous quality improvement and environmental impact evaluations. The City of Carson has at least two major developments coming on line close to Victoria Park (North Carson). They are the Districts at South Bay (mall, shopping, restaurants, hotel, etc.), and the Union South Bay (357 multi-family residential apartment complex and commercial space. While we welcome having amenities, we are also concerned about the potential for traffic congestion and negative environmental conditions. 19-7

I applaud the Carol Kimmelman Foundation and Plenitude Holdings for wanting to help under served students and others by bringing athletic, wellness and educational activities to our city. I reached out to the Tiger Woods Foundation, philanthropists and dignitaries over 10 years ago and asked them to consider bringing a learning center to Carson. It did not materialize, so I am thrilled to hear that this project is in the works. 19-8

All the best to you, the foundations, the developers and the County of Los Angeles.

Sincerely,

(Ms.) Vivian Hatcher

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Response to Comment Letter 19
Vivian Hatch
July 1, 2019

19-1 The County acknowledges the comment as an introduction to the comments that follow. This comment is included in the Final EIR for review and consideration by the decision-makers prior to a final decision on the proposed project.

19-2 The comment expresses general concern for environmental concerns previously addressed in Sections 4.1, Aesthetics, 4.2, Air Quality, 4.3, Biological Resources, 4.8, Hazards and Hazardous Material, 4.9, Hydrology and Water Quality, 4.11, Noise, and 4.13, Transportation, which received extensive analysis in the Draft EIR. The comment does not raise any specific issues regarding the analysis contained in the Draft EIR and, therefore, no more specific response can be provided or is required. The County will include the comment as part of the Final EIR for review and consideration by the decision-makers prior to a final decision on the proposed project.

19-3 The commenter expresses a hope that the project developer and the County will contact the Los Angeles County Sheriff's Department and the Los Angeles County Fire Department to obtain input regarding the security, health, and safety of the facilities, staff, and visitors to the project.

As part of the EIR scoping process, the Los Angeles County Sheriff's Department and the Los Angeles County Fire Department were provided information about the project, the opportunity to comment on the project, and the opportunity to provide input on the scope of the EIR. These agencies were also alerted to the availability of the Draft EIR for public review and comment. Both agencies will remain on the mailing list for the proposed project, so that they are provided necessary updates regarding upcoming hearings and project status.

Information regarding the features of the project that would reduce the potential for crime or fire emergencies at the project site are described in Section 4.12, Public Services, in the Draft EIR. As stated in Section 4.12, the project would be designed and constructed in accordance with all applicable provisions of the fire code, which includes requirements for adequate fire flows, width of emergency access routes, turning radii, automatic sprinkler systems, fire alarms, and floor to sky height limits along emergency access routes. Compliance with fire code standards would be ensured through the plan check process prior to the issuance of building permits. As such, the Los Angeles County Fire Department would be involved in reviewing the project plans

and ensuring that the project is designed and constructed in accordance with fire protection requirements and specifications.

As further stated in Section 4.12, Public Services, in the Draft EIR, the proposed project would incorporate operational practices and design elements to increase on-site safety and to reduce the potential for crime to occur. During construction, the contractor would implement temporary security measures including security fencing, lighting, and locked entry. During operation, practices to increase safety could include, but would not be limited to, the following: on-site security services, wayfinding signage, security fences, alarms, and security cameras. Project design would employ defensible design, lighting, and landscaping to minimize secluded and nonvisible areas. These techniques would minimize spaces that are hidden from public view, which would help prevent loitering and crime. Building entries, parking areas, and walkways would be sufficiently lit, which would facilitate safe pedestrian movement and would be used to identify routes between parking areas and the different facilities within the project site. Additionally, during certain special events at the project site, an Event Management Plan would be put in place.

As stated above, the Los Angeles County Fire Department and the Los Angeles County Sheriff's Department will remain on the mailing list for the proposed project, so that they are provided with necessary updates regarding upcoming hearings and project status. In the event that the project is approved, coordination with both agencies would be ongoing to ensure that safety of facilities, staff, and visitors are maintained to the extent feasible during project construction and operation.

19-4 The commenter requests that the project be maintained, cleaned, secured and overseen to make the project site user friendly. The project as designed includes secure fencing around the site perimeter. Within the project itself, during project operations, the project would be staffed with maintenance workers, grounds keepers, and onsite security personnel to provide regular maintenance at the site. As discussed in Section 3, Project Description, the landscape design for the project will incorporate passive elements with unprogrammed open space consistent with a part aesthetic.

19-5 Public outreach efforts are conducted by the County where community feedback is welcomed and encouraged. The County acknowledges the comment and notes that it does not relate to any physical effect on the environment. The County will include the comment as part of the Final EIR for review and consideration by the decision-makers prior to a final decision on the proposed project. No further response is required because the comment does not raise an environmental issue.

19-6 The commenter requests that the project applicant be willing to hire local residents and to share tax revenues with the City of Carson. It is anticipated that the Lease Agreement for the proposed project will include a local hiring component. With regard to tax revenues, the project will operate as a non-profit project and is not expected to generate property tax revenues. The County acknowledges the comment and notes that it does not relate to any physical effect on the environment. The County will include the comment as part of the Final EIR for review and consideration by the decision-makers prior to a final decision on the proposed project. No further response is required because the comment does not raise an environmental issue.

19-7 The County shall continue to engage in the environmental review process, as required by the California Environmental Quality Act (CEQA). The County acknowledges and is aware of upcoming projects in the City of Carson, and the referenced projects in the City were considered related projects and incorporated into the cumulative impact analysis throughout the Draft EIR.

19-8 This comment indicating support for the project is noted for the record and has been incorporated into the Final EIR for review and consideration by the decision-makers prior to any action on the project.

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CHAPTER 3
ERRATA

The comments received by the County of Los Angeles (County) during the public review period for the Draft EIR included information that has resulted in several minor revisions to the text of the Draft EIR. These revisions are shown below and are categorized by section number and page number. Text from the Draft EIR that has been removed is shown in strikethrough (i.e., ~~strikethrough~~), and text that has been added as part of the Final EIR is shown as underlined (i.e., underline). Revisions are shown with surrounding sentences for context. This errata merely clarifies and corrects minor facts and does not constitute "substantial revisions" requiring recirculation of the Draft EIR, as set forth in CEQA Guidelines, Section 15073.5.

1.0 SUMMARY

1.5.3 Project Design Features

Page 1-14

PDF-TRAF-2 Prior to issuance of a grading permit, the proposed project will develop a Construction Traffic Management Plan for construction activities that would impact public streets.

The Construction Traffic Management Plan shall be based on the nature and timing of the specific construction and other projects in the vicinity of the project site and shall include the following elements as appropriate:

- Advance notification to adjacent property owners and occupants, as well as, nearby schools, of upcoming construction activities, including durations and daily hours of construction.
- The project's construction manager shall contact LAUSD's Transportation Branch at (213) 580-2950 regarding the potential impact upon existing school bus routes, and the expected start and ending dates for various portions of the project construction that may affect traffic within nearby school areas.
- Prohibition of construction worker parking on adjacent residential streets, and identify construction employee parking locations and protocols.
- Temporary traffic control during all construction activities adjacent to public rights-of-way to improve traffic flow on public roadways (e.g., flag men flagmen). The temporary traffic controls shall minimize traffic delays for LAUSD transported students.
- Prohibition of construction-related vehicle parking on surrounding public streets.

- Safety precautions for pedestrian and bicyclists through such measures as alternate routing and protection barriers as appropriate, including along all identified Los Angeles Unified School District (LAUSD) and Compton Unified School District (CUSD) pedestrian routes to nearby schools.
- Scheduling of construction-related deliveries, haul trips, etc., so as to occur outside the commuter peak hours to the extent feasible, and so as to not impede school drop-off and pick-up activities and students using LAUSD/CUSD's identified pedestrian routes to nearby schools.
- Coordination with public transit agencies to provide advanced notifications of any anticipated stop relocations and durations.
- Provision of advanced notification of any temporary on-street parking removals and duration of removals.
- Establish construction hours that are in compliance with Carson Municipal Code (CMC).
- Establish a construction phone number which shall be posted on the site, and appoint a construction liaison officer to respond to concerns or inquiries regarding project construction.
- Construction trucks and other vehicles are required to stop when encountering school buses using red-flashing-lights must-stop-indicators per the California Vehicle Code.
- Contractors shall install and maintain appropriate traffic controls (signs and signals) for vehicular safety.
- Contractors shall maintain ongoing communication with LAUSD school administrators, for the school to provided sufficient notice to children and parents when existing vehicle and pedestrian routes to school may be impacted.
- Maintain unimpeded emergency access to the project site and nearby properties.
- Establish truck access and staging areas, and review haul route approved with the project.
- Provide construction site security.
- Prohibition of staging or parking of construction-related vehicles, including worker-transport vehicles, on or adjacent to a school property without the express written permission of the applicable school district.
- Funding for crossing guards at the contractor's expense to the extent required when safety of children may be compromised by construction-related activities at impacted school crossings.

Page 1-18

Table 1-1
Summary of Environmental Impacts and Mitigation Measures

Mitigation Measure(s)	Level of Significance After Mitigation
Air Quality	
MM-AQ-3. The proposed project shall provide circuitry and capacity for installation of electric vehicle (EV) charging stations consistent with the County of Los Angeles criteria. The proposed project shall develop up to ~~2~~5% of the available parking spaces on site as EV charging stations. **MM-AQ-4**. The construction contractor shall require that construction vendors, contractors, and/or haul truck operators commit to using 2010 model year or newer diesel haul trucks. All construction truck operators shall maintain truck records and make these records available to the County upon request. **MM-AQ-5**. The construction contractor shall encourage its construction contractors and vendors to apply for South Coast Air Quality Management Surplus Off-Road Opt-In for NOx ("SOON") funds to the extent available, which provide funds to applicable fleets for the purchase of commercially available low-emission heavy-duty engines to achieve near-term reduction of NO_x emissions from in-use off-road diesel vehicles. **MM-AQ-6**. During operations, the operator of the Learning Center shall encourage school bus fleets under contract with the Learning Center to seek funding opportunities through the South Coast Air Quality Management District's Lower-Emission School Bus Program, to the extent available, to replace older diesel busses with cleaner school buses. **MM-AQ-7**. During operations, electric landscape equipment, such as lawn mowers and leaf blowers, shall be used to the extent commercially available. **MM-AQ-8**. During operations, the project shall utilize electric or alternatively fueled parking lot sweepers with HEPA filters.	Significant and Unavoidable
Noise	
MM-NOI-4. Construction Noise Reduction The County of Los Angeles shall require the contractor to adhere to the following measures as a condition of granting a grading permit to the contractor: • All construction equipment, fixed or mobile, shall be equipped with properly operating and maintained mufflers. • Construction noise reduction methods such as shutting off idling equipment, construction of a temporary noise barrier, maximizing the distance between construction equipment staging areas and adjacent residences, and use of electric air compressors and similar power tools, rather than diesel equipment, shall be used where feasible. • During construction, stationary construction equipment shall be placed such that emitted noise is directed away from or shielded from sensitive receptors. • Construction hours, allowable workdays, and the phone number of the job superintendent shall be clearly posted at all construction entrances. • At the request of the school administration for Towne Avenue Elementary School, the contractor will meet with the school principal or other representative each week to discuss anticipated upcoming construction activities and applicable noise reduction measures.	Significant and Unavoidable

3.0 PROJECT DESCRIPTION

3.7 Project Approvals Required

Page 3-13

- Other actions as may be required by other local, regional and state agencies including, but not limited to the City of Carson, the Department of Toxic Substances Control, the Los Angeles Regional Water Quality Control Board, Caltrans, and the South Coast Air Quality Management District (SCAQMD). Therefore, these agencies may be responsible agencies under CEQA.

4.2 AIR QUALITY

4.2.2 Relevant Plans, Policies, and Ordinances

Page 4.2-17 and 18

- **Rule 1113 – Architectural Coatings:** This rule requires manufacturers, distributors, and end users of architectural and industrial maintenance coatings to reduce VOC emissions from the use of these coatings, primarily by placing limits on the VOC content of various coating categories.
- **Rule 1150** – Excavation of Landfill Sites: This rule generally requires that an Excavation Management Plan approved by the Executive Officer be obtained from the SCAQMD prior to the excavation of an active or inactive landfill.
- **Rule 1166** – Volatile Organic Compound Emissions from Decontamination of Soil: This rule that generally requires an approved mitigation plan be obtained from the SCAQMD prior to the handling of VOC-contaminated soil at or from an excavation or grading site.
- **Rule 1466** – Control of Particulate Emissions from Soils with Toxic Air Contaminants: This rule generally requires any owner or operator conducting earth-moving activities of soil with applicable toxic air containments (TACs) at certain sites to preform specified particulate matter monitoring and control measures.

Page 4.2-28

…worker vehicles would result in emissions of VOCs, NO_x, CO, PM_{10}, and $PM_{2.5}$. The application of architectural coatings, such as exterior application/interior paint and other finishes, and asphalt pavement would also produce VOC emissions; however, the contractor is required to procure architectural coatings from a supplier in compliance with the requirements of SCAQMD's Rule 1113 (Architectural Coatings).

During construction, the project would comply with SCAQMD Rule 1150, 1166 and 1466 to the extent applicable.

Table 4.2-7 presents the estimated maximum daily construction emissions generated during construction of the project. The values shown are the maximum summer or winter daily emissions results from CalEEMod. Details of the emissions are provided in Appendix C.

4.2.5 Mitigation Measures

Page 4.2-43

MM-AQ-3 The proposed project shall provide circuitry and capacity for installation of electric vehicles (EV) charging stations consistent with the County of Los Angeles criteria. The proposed project shall develop up to ~~2%~~ 5% of the available parking spaces on site as EV charging stations.

MM-AQ-4 The construction contractor shall require that construction vendors, contractors, and/or haul truck operators commit to using 2010 model year or newer diesel haul trucks. All construction truck operators shall maintain truck records and make these records available to the County upon request.

MM-AQ-5 The construction contractor shall encourage its construction contractors and vendors to apply for South Coast Air Quality Management Surplus Off-Road Opt-In for NOx ("SOON") funds to the extent available, which provide funds to applicable fleets for the purchase of commercially available low-emission heavy-duty engines to achieve near-term reduction of NO_x emissions from in-use off-road diesel vehicles.

MM-AQ-6 During operations, the operator of the Learning Center shall encourage school bus fleets under contract with the Learning Center to seek funding opportunities through the South Coast Air Quality Management District's Lower-Emission School Bus Program, to the extent available, to replace older diesel busses with cleaner school buses.

MM-AQ-7 During operations, electric landscape equipment, such as lawn mowers and leaf blowers, shall be used to the extent commercially available.

MM-AQ-8 During operations, the project shall utilize electric or alternatively fueled parking lot sweepers with HEPA filters.

4.2.6 Level of Significance After Mitigation

Page 4.2-44

The construction of the proposed project would result in a potentially significant impact prior to mitigation. Table 4.2-13 shows the results of the mass emissions analysis for the proposed project after implementation of **MM-AQ-1** ~~and~~ through **MM-AQ-~~2~~5**. The detailed emissions assumptions and model outputs using CalEEMod are provided in Appendix C.

Table 4.2-13
Estimated Mitigated Maximum Daily Construction Criteria Air Pollutant Emissions

Year	VOC	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
	Pounds per Day					
2019	6.23	111.81	112.75	0.43	18.32	7.90
2020	29.0	13.18	54.29	0.10	1.40	0.47
Maximum Daily Emissions	**29.09**	**111.81**	**112.75**	**0.43**	**18.32**	**7.90**
SCAQMD Threshold	*75*	*100*	*550*	*150*	*150*	*55*
Threshold Exceeded?	**No**	**Yes**	**No**	**No**	**No**	**No**

Notes: VOC = volatile organic compound; NO_x = oxides of nitrogen; CO = carbon monoxide; SO_x = sulfur oxides; PM_{10} = coarse particulate matter; $PM_{2.5}$ = fine particulate matter; SCAQMD = South Coast Air Quality Management District.
See Appendix C for complete results.
The values shown are the maximum summer or winter daily emissions results from CalEEMod. These emissions reflect CalEEMod "mitigated" output, which accounts for compliance with SCAQMD Rule 403 (Fugitive Dust) and MM-AQ-1 and MM-AQ-2.

The mitigated results shown in Table 4.2-13 demonstrate that with implementation of **MM-AQ-1**~~,~~ ~~and~~ through **MM-AQ-~~2~~5**, NO_x emissions are substantially reduced, however, they would continue to exceed the SCAQMD's daily construction threshold. Therefore construction impacts would be **significant and unavoidable** for NO_x. Similarly, because emissions would still exceed the SCAQMD thresholds, the project would have a significant and unavoidable cumulative impact.

Page 4.2-46

As discussed in Section 4.2.5, the reductions from **MM-AQ-3** through **MM-AQ-5** were not quantified, due to the lack of clarity on the quantity of reductions associated with these mitigation measures. Therefore, air quality impacts associated with emission from NO_x during operation would be significant and unavoidable after the inclusion of mitigation.

4.8 HAZARDS AND HAZARDOUS MATERIALS

4.8.2 Relevant Plans, Policies, and Ordinances

Page 4.8-13

The California Department of Resources Recycling and Recovery (CalRecycle) regulates landfills under Title 27 of the California Code of Regulations (Title 27). State law provides that CalRecycle operate locally through a Local Enforcement Agency (LEA). The LEA for the former BKK Landfill is the Los Angeles County Department of ~~Health and Services~~ Public Health's Solid Waste Management Division.

4.11 NOISE

4.11.5 Mitigation Measures

Page 4.11-21

MM-NOI-4 Construction Noise Reduction

The County of Los Angeles shall require the contractor to adhere to the following measures as a condition of granting a grading permit to the contractor:

- All construction equipment, fixed or mobile, shall be equipped with properly operating and maintained mufflers.
- Construction noise reduction methods such as shutting off idling equipment, construction of a temporary noise barrier, maximizing the distance between construction equipment staging areas and adjacent residences, and use of electric air compressors and similar power tools, rather than diesel equipment, shall be used where feasible.
- During construction, stationary construction equipment shall be placed such that emitted noise is directed away from or shielded from sensitive receptors.
- Construction hours, allowable workdays, and the phone number of the job superintendent shall be clearly posted at all construction entrances.
- At the request of the school administration for Towne Avenue Elementary School, the contractor will meet with the school principal or other representative each week to discuss anticipated upcoming construction activities and applicable noise reduction measures.

4.13 TRANSPORTATION

4.13.5 Project Design Features and Mitigation Measures

Page 4.13-68

PDF-TRAF-2 Prior to issuance of a grading permit, the proposed project will develop a Construction Traffic Management Plan for construction activities that would impact public streets.

The Construction Traffic Management Plan shall be based on the nature and timing of the specific construction and other projects in the vicinity of the project site and shall include the following elements as appropriate:

- Advance notification to adjacent property owners and occupants, as well as, nearby schools, of upcoming construction activities, including durations and daily hours of construction.
- The project's construction manager shall contact LAUSD's Transportation Branch at (213) 580-2950 regarding the potential impact upon existing school bus routes, and the expected start and ending dates for various portions of the project construction that may affect traffic within nearby school areas.
- Prohibition of construction worker parking on adjacent residential streets, and identify construction employee parking locations and protocols.
- Temporary traffic control during all construction activities adjacent to public rights-of-way to improve traffic flow on public roadways (e.g., flag men flagmen). The temporary traffic controls shall minimize traffic delays for LAUSD transported students.
- Prohibition of construction-related vehicle parking on surrounding public streets.
- Safety precautions for pedestrian and bicyclists through such measures as alternate routing and protection barriers as appropriate, including along all identified Los Angeles Unified School District (LAUSD) and Compton Unified School District (CUSD) pedestrian routes to nearby schools.
- Scheduling of construction-related deliveries, haul trips, etc., so as to occur outside the commuter peak hours to the extent feasible, and so as to not impede school drop-off and pick-up activities and students using LAUSD/CUSD's identified pedestrian routes to nearby schools.
- Coordination with public transit agencies to provide advanced notifications of any anticipated stop relocations and durations.
- Provision of advanced notification of any temporary on-street parking removals and duration of removals.

- Establish construction hours that are in compliance with Carson Municipal Code (CMC).
- Establish a construction phone number which shall be posted on the site, and appoint a construction liaison officer to respond to concerns or inquiries regarding project construction.
- Construction trucks and other vehicles are required to stop when encountering school buses using red-flashing-lights must-stop-indicators per the California Vehicle Code.
- Contractors shall install and maintain appropriate traffic controls (signs and signals) for vehicular safety.
- Contractors shall maintain ongoing communication with LAUSD school administrators, for the school to provided sufficient notice to children and parents when existing vehicle and pedestrian routes to school may be impacted.
- Maintain unimpeded emergency access to the project site and nearby properties.
- Establish truck access and staging areas, and review haul route approved with the project.
- Provide construction site security.
- Prohibition of staging or parking of construction-related vehicles, including worker-transport vehicles, on or adjacent to a school property without the express written permission of the applicable school district.
- Funding for crossing guards at the contractor's expense to the extent required when safety of children may be compromised by construction-related activities at impacted school crossings.

4.15 UTILITIES AND SERVICE SYSTEMS

4.15.1 Existing Conditions

Page 4.15-1

The two parallel sewers within South Avalon Boulevard connect to the LACSD 24~~7~~-inch-diameter Del Amo trunk sewer, located in South Avalon Boulevard south of Del Amo Boulevard, approximately 0.4 miles southeast of the project site. This trunk sewer, which increases in diameter to 27 inches just downstream of the parallel sewer discharge points, ~~is 24 inches in diameter,~~ has a capacity of 3.7 million gallons per day (mgd), and was conveying a peak flow of 2.4 mgd when last measured in 2015 (Appendix L; LACSD 2018a; 2019).

4.15.8 References Cited

LACSD (Los Angeles County Sanitation District). 2019. *DEIR Response to the Carol Kimmelman Athletic and Academic Campus*. Letter to LACSD dated July 1, 2019.

APPENDIX K – TRAFFIC IMPACT STUDY

- Attachment 1 – Table 21 and Table 22
- Attachment 2 – Saturday Queuing Analysis
- Attachment 3 – Table 19 and Table 20
- Attachment 4 – Updated Appendix C of the Traffic Impact Study

APPENDIX K

Traffic Impact Study

ATTACHMENT 1

Table 21 and Table 22

TABLE 21
EXISTING OPERATING CONDITIONS (YEAR 2018)
FREEWAY OFF-RAMP QUEUE ANALYSIS

ID	Freeway Off-Ramp	Ramp and Lane Description	Adjusted Vehicle Storage Capcity [a]	Existing Conditions				Existing with Project Conditions			
				AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
				Vehicle Queue Length [b]	Exceeds Capacity?	Vehicle Queue Length [b]	Exceeds Capacity?	Vehicle Queue Length [b]	Exceeds Capacity?	Vehicle Queue Length [b]	Exceeds Capacity?
Q-1.	I-405 Northbound Off-Ramp to	I-405 Northbound Off-Ramp									
	Main Street	Shared Left/Through	405	94		64		98		66	
	(Intersection #2)	Shared Through/Right	405	79		96		82		106	
		Ramp	400	0	NO	0	NO	0	NO	0	NO
Q-2.	I-405 Northbound Off-Ramp to	I-405 Northbound Off-Ramp									
	Avalon Boulevard	Left	150	9		15		9		15	
	(Intersection #15)	Shared Left/Through	125	9		15		9		15	
		Right (Channelized)	125	0		0		0		0	
		Ramp	455	0	NO	0	NO	0	NO	0	NO
Q-3.	I-405 Southbound Off-Ramp to	I-405 Southbound Off-Ramp									
	Avalon Boulevard	Left	385	35		29		36		30	
	(Intersection #16)	Left	925	35		29		36		30	
		Through	925	1		~~0~~ 19		~~0~~ 1		~~0~~ 19	
		Through	250	1		~~0~~ 19		~~0~~ 1		~~0~~ 19	
		Right (Channelized)	--	0		0		0		0	
		Ramp	885	0	NO	0	NO	0	NO	0	NO
Q-4.	SR 91 Westbound Off-Ramp to	SR 91 Westbound Off-Ramp									
	Main Street	Left	490	134		61		138		65	
	(Intersection #17)	Right	490	118		97		120		100	
		Ramp	1,035	0	NO	0	NO	0	NO	0	NO
Q-5.	I-110 Southbound Off-Ramp to	I-110 Southbound Off-Ramp									
	190th Street	Left	295	34		101		36		110	
	(Interseciton #22)	Right	295	208		189		212		194	
		Ramp	2,235	0	NO	0	NO	0	NO	0	NO
Q-6.	I-110 Southbound Off-Ramp to	I-110 Southbound Off-Ramp									
	Hamilton Avenue	Left	355	324		57		326		57	
	(Interseciton #25)	Shared Left/Right	355	265		50		267		50	
		Ramp	540	0	NO	0	NO	0	NO	0	NO
Q-7.	I-110 Northbound Off-Ramp to	I-110 Northbound Off-Ramp									
	Figueroa Street	Left	300	168		121		170		127	
	(Intersection #27)	Shared Left/Right	355	164		114		166		120	
		Ramp	550	0	NO	0	NO	0	NO	0	NO
Q-8.	SR 91 Eastbound Off-Ramp to	SR 91 Eastbound Off-Ramp									
	Albertoni Street	Left	885	79		~~197~~ 114		~~197~~ 79		~~197~~ 114	
	(Intersection #28)	Right	885	63		~~197~~ 114		~~197~~ 68		~~197~~ 83	
		Ramp	350	0	NO	0	NO	0	NO	0	NO

[a] Storage length capacity is the distance from the freeway mainline gore point to the terminus of the off-ramp, expressed in feet.

[b] 95th Percentile queue results per Vistro 5 (HCM 6th Edition Methodology).

TABLE 22
FUTURE OPERATING CONDITIONS (YEAR 2020)
FREEWAY OFF-RAMP QUEUE ANALYSIS

ID	Freeway Off-Ramp	Ramp and Lane Description	Adjusted Vehicle Storage Capcity [a]	Future without Project Conditions				Future with Project Conditions			
				AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
				Vehicle Queue Length [b]	Exceeds Capacity?	Vehicle Queue Length [b]	Exceeds Capacity?	Vehicle Queue Length [b]	Exceeds Capacity?	Vehicle Queue Length [b]	Exceeds Capacity?
Q-1.	I-405 Northbound Off-Ramp to	I-405 Northbound Off-Ramp									
	Main Street	Shared Left/Through	405	107		90		111		94	
	(Intersection #2)	Shared Through/Right	405	90		125		93		137	
		Ramp	400	0	NO	0	NO	0	NO	0	NO
Q-2.	I-405 Northbound Off-Ramp to	I-405 Northbound Off-Ramp									
	Avalon Boulevard	Left	150	16		43		16		43	
	(Intersection #15)	Shared Left/Through	125	16		43		16		43	
		Right (Channelized)	125	0		0		0		0	
		Ramp	455	0	NO	0	NO	0	NO	0	NO
Q-3.	I-405 Southbound Off-Ramp to	I-405 Southbound Off-Ramp									
	Avalon Boulevard	Left	385	51		58		51		59	
	(Intersection #16)	Left	925	51		58		51		59	
		Through	925	3		~~0~~ 36		~~0~~ 3		~~0~~ 36	
		Through	250	3		~~0~~ 36		~~0~~ 3		~~0~~ 36	
		Right (Channelized)	--	0		0		0		0	
		Ramp	885	0	NO	0	NO	0	NO	0	NO
Q-4.	SR 91 Westbound Off-Ramp to	SR 91 Westbound Off-Ramp									
	Main Street	Left	490	153		73		158		76	
	(Intersection #17)	Right	490	127		108		129		111	
		Ramp	1,035	0	NO	0	NO	0	NO	0	NO
Q-5.	I-110 Southbound Off-Ramp to	I-110 Southbound Off-Ramp									
	190th Street	Left	295	50		153		52		164	
	(Interseciton #22)	Right	295	262		215		267		219	
		Ramp	2,235	0	NO	0	NO	0	NO	0	NO
Q-6.	I-110 Southbound Off-Ramp to	I-110 Southbound Off-Ramp									
	Hamilton Avenue	Left	355	355		123		355		123	
	(Interseciton #25)	Shared Left/Right	355	355		95		355		95	
		Ramp	540	95	NO	0	NO	99	NO	0	NO
Q-7.	I-110 Northbound Off-Ramp to	I-110 Northbound Off-Ramp									
	Figueroa Street	Left	300	198		159		200		165	
	(Intersection #27)	Shared Left/Right	355	196		151		199		158	
		Ramp	550	0	NO	0	NO	0	NO	0	NO
Q-8.	SR 91 Eastbound Off-Ramp to	SR 91 Eastbound Off-Ramp									
	Albertoni Street	Left	885	83		~~197~~ 117		~~197~~ 81		~~197~~ 117	
	(Intersection #28)	Right	885	85		~~197~~ 89		~~197~~ 81		~~197~~ 98	
		Ramp	350	0	NO	0	NO	0	NO	0	NO

[a] Storage length capacity is the distance from the freeway mainline gore point to the terminus of the off-ramp, expressed in feet.

[b] 95th Percentile queue results per Vistro 5 (HCM 6th Edition Methodology).

ATTACHMENT 2

Saturday Queuing Analysis

TABLE A
EXISTING OPERATING WEEKEND CONDITIONS (YEAR 2018)
FREEWAY OFF-RAMP QUEUE ANALYSIS

ID	Freeway Off-Ramp	Ramp and Lane Description	Adjusted Vehicle Storage Capcity [a]	Existing Conditions		Existing with Project Conditions	
				Saturday Peak Hour		Saturday Peak Hour	
				Vehicle Queue Length [b]	Exceeds Capacity?	Vehicle Queue Length [b]	Exceeds Capacity?
Q-1.	I-405 Northbound Off-Ramp to	I-405 Northbound Off-Ramp					
	Main Street	Shared Left/Through	405	19		23	
	(Intersection #2)	Shared Through/Right	405	18		22	
		Ramp	400	0	NO	0	NO
Q-2.	I-405 Northbound Off-Ramp to	I-405 Northbound Off-Ramp					
	Avalon Boulevard	Left	150	15		15	
	(Intersection #15)	Shared Left/Through	125	15		15	
		Right (Channelized)	125	0		0	
		Ramp	455	0	NO	0	NO
Q-3.	I-405 Southbound Off-Ramp to	I-405 Southbound Off-Ramp					
	Avalon Boulevard	Left	385	71		77	
	(Intersection #16)	Left	925	71		77	
		Through	925	2		2	
		Through	250	2		2	
		Right (Channelized)	--	0		0	
		Ramp	885	0	NO	0	NO
Q-4.	SR 91 Westbound Off-Ramp to	SR 91 Westbound Off-Ramp					
	Main Street	Left	490	15		16	
	(Intersection #17)	Right	490	15		15	
		Ramp	1,035	0	NO	0	NO
Q-5.	I-110 Southbound Off-Ramp to	I-110 Southbound Off-Ramp					
	190th Street	Left	295	35		42	
	(Interseciton #22)	Right	295	65		69	
		Ramp	2,235	0	NO	0	NO
Q-8.	SR 91 Eastbound Off-Ramp to	SR 91 Eastbound Off-Ramp					
	Albertoni Street	Left	885	45		45	
	(Intersection #28)	Right	885	23		31	
		Ramp	350	0	NO	0	NO

[a] Storage length capacity is the distance from the freeway mainline gore point to the terminus of the off-ramp, expressed in feet.

[b] 95th Percentile queue results per Vistro 5 (HCM 6th Edition Methodology).

Data not available for intersections #25 & #27

TABLE B
FUTURE OPERATING WEEKEND CONDITIONS (YEAR 2020)
FREEWAY OFF-RAMP QUEUE ANALYSIS

ID	Freeway Off-Ramp	Ramp and Lane Description	Adjusted Vehicle Storage Capcity [a]	Future without Project Conditions		Future with Project Conditions	
				Saturday Peak Hour		Saturday Peak Hour	
				Vehicle Queue Length [b]	Exceeds Capacity?	Vehicle Queue Length [b]	Exceeds Capacity?
Q-1.	I-405 Northbound Off-Ramp to	I-405 Northbound Off-Ramp					
	Main Street	Shared Left/Through	405	50		58	
	(Intersection #2)	Shared Through/Right	405	45		51	
		Ramp	400	0	NO	0	NO
Q-2.	I-405 Northbound Off-Ramp to	I-405 Northbound Off-Ramp					
	Avalon Boulevard	Left	150	120		125	
	(Intersection #15)	Shared Left/Through	125	120		125	
		Right (Channelized)	125	0		0	
		Ramp	455	0	NO	0	NO
Q-3.	I-405 Southbound Off-Ramp to	I-405 Southbound Off-Ramp					
	Avalon Boulevard	Left	385	286		308	
	(Intersection #16)	Left	925	286		308	
		Through	925	78		81	
		Through	250	78		81	
		Right (Channelized)	--	0		0	
		Ramp	885	0	NO	0	NO
Q-4.	SR 91 Westbound Off-Ramp to	SR 91 Westbound Off-Ramp					
	Main Street	Left	490	20		23	
	(Intersection #17)	Right	490	18		18	
		Ramp	1,035	0	NO	0	NO
Q-5.	I-110 Southbound Off-Ramp to	I-110 Southbound Off-Ramp					
	190th Street	Left	295	63		74	
	(Interseciton #22)	Right	295	78		82	
		Ramp	2,235	0	NO	0	NO
Q-8.	SR 91 Eastbound Off-Ramp to	SR 91 Eastbound Off-Ramp					
	Albertoni Street	Left	885	45		46	
	(Intersection #28)	Right	885	35		44	
		Ramp	350	0	NO	0	NO

[a] Storage length capacity is the distance from the freeway mainline gore point to the terminus of the off-ramp, expressed in feet.

[b] 95th Percentile queue results per Vistro 5 (HCM 6th Edition Methodology).

Data not available for intersections #25 & #27

Intersection Level Of Service Report
Intersection 2: Main Street & I-405 NB Off-Ramp

Control Type:	Signalized	Delay (sec / veh):	7.8
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.423

Intersection Setup

Name	Main Street			Main Street			I-405 NB Off-Ramp			I-405 NB Off-Ramp		
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]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No						No		
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Main Street			Main Street			I-405 NB Off-Ramp			I-405 NB Off-Ramp		
Base Volume Input [veh/h]	14	296	0	0	398	26	0	0	0	61	92	101
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 Rate	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
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	14	296	0	0	398	26	0	0	0	61	92	101
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]	4	74	0	0	100	7	0	0	0	15	23	25
Total Analysis Volume [veh/h]	14	296	0	0	398	26	0	0	0	61	92	101
Presence of On-Street Parking	No		No	No		No				No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	7	4	0	0	8	0	0	0	0	0	2	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	5	5	0	0	5	0	0	0	0	0	5	0
Maximum Green [s]	30	30	0	0	30	0	0	0	0	0	30	0
Amber [s]	3.5	3.5	0.0	0.0	3.5	0.0	0.0	0.0	0.0	0.0	3.5	0.0
All red [s]	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0
Split [s]	9	35	0	0	26	0	0	0	0	0	25	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	0	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	0	0	0	10	0
Rest In Walk		No			No						No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.5	2.5	0.0	0.0	2.5	0.0	0.0	0.0	0.0	0.0	2.5	0.0
Minimum Recall	No	No			No						No	
Maximum Recall	No	No			No						No	
Pedestrian Recall	No	No			No						No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	C		C	C
C, Cycle Length [s]	23	23	23	23		23	23
L, Total Lost Time per Cycle [s]	4.50	4.50	4.50	4.50		4.50	4.50
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00		0.00	0.00
l2, Clearance Lost Time [s]	2.50	2.50	2.50	2.50		2.50	2.50
g_i, Effective Green Time [s]	0	10	5	5		4	4
g / C, Green / Cycle	0.02	0.43	0.22	0.22		0.18	0.18
(v / s)_i Volume / Saturation Flow Rate	0.01	0.08	0.11	0.12		0.07	0.08
s, saturation flow rate [veh/h]	1781	3560	1870	1830		1829	1477
c, Capacity [veh/h]	37	1547	411	403		325	263
d1, Uniform Delay [s]	11.22	4.05	7.97	7.99		8.48	8.52
k, delay calibration	0.11	0.11	0.11	0.11		0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00		1.00	1.00
d2, Incremental Delay [s]	6.26	0.06	1.00	1.07		0.86	1.19
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00		0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00		1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00		1.00	1.00

Lane Group Results

X, volume / capacity	0.38	0.19	0.52	0.53		0.42	0.45
d, Delay for Lane Group [s/veh]	17.48	4.11	8.97	9.06		9.34	9.72
Lane Group LOS	B	A	A	A		A	A
Critical Lane Group	Yes	No	No	Yes		No	Yes
50th-Percentile Queue Length [veh]	0.11	0.13	0.62	0.63		0.43	0.39
50th-Percentile Queue Length [ft]	2.81	3.34	15.57	15.73		10.77	9.80
95th-Percentile Queue Length [veh]	0.20	0.24	1.12	1.13		0.78	0.71
95th-Percentile Queue Length [ft]	5.05	6.01	28.02	28.32		19.38	17.63

Movement, Approach, & Intersection Results

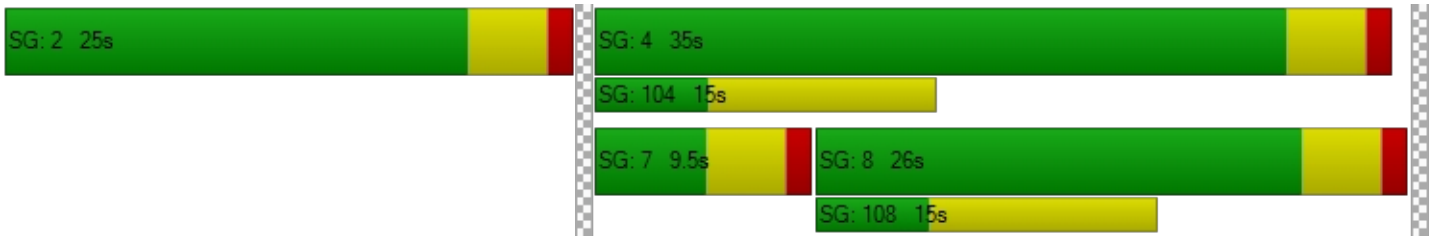
d_M, Delay for Movement [s/veh]	17.48	4.11	0.00	0.00	9.01	9.06	0.00	0.00	0.00	9.34	9.41	9.72
Movement LOS	B	A			A	A				A	A	A
d_A, Approach Delay [s/veh]	4.71			9.01			0.00			9.51		
Approach LOS	A			A			A			A		
d_I, Intersection Delay [s/veh]	7.79											
Intersection LOS	A											
Intersection V/C	0.423											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	21.68	21.68
l_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	1.760	1.819
Crosswalk LOS	F	F	A	A
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1017	717	0	683
d_b, Bicycle Delay [s]	7.25	12.35	30.00	13.00
l_b,int, Bicycle LOS Score for Intersection	1.815	1.909	4.132	1.769
Bicycle LOS	A	A	D	A

Sequence

Ring 1	-	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 15: Avalon Boulevard & I-405 NB Ramps

Control Type:	Signalized	Delay (sec / veh):	7.3
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.603

Intersection Setup

Name	Avalon Boulevard			Avalon Boulevard			I-405 NB Ramps			I-405 NB Ramps		
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]		30.00			30.00			30.00			30.00	
Grade [%]		0.00			0.00			0.00			0.00	
Curb Present		No			No						No	
Crosswalk		No			No			Yes			Yes	

Volumes

Name	Avalon Boulevard			Avalon Boulevard			I-405 NB Ramps			I-405 NB Ramps		
Base Volume Input [veh/h]	294	1272	0	0	1066	613	0	0	0	98	0	395
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 Rate	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
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	294	1272	0	0	1066	613	0	0	0	98	0	395
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]	74	318	0	0	267	153	0	0	0	25	0	99
Total Analysis Volume [veh/h]	294	1272	0	0	1066	613	0	0	0	98	0	395
Presence of On-Street Parking	No		No	No		No				No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing		0			0			0			0	
v_di, Inbound Pedestrian Volume crossing m		0			0			0			0	
v_co, Outbound Pedestrian Volume crossing		0			0			0			0	
v_ci, Inbound Pedestrian Volume crossing mi		0			0			0			0	
v_ab, Corner Pedestrian Volume [ped/h]		0			0			0			0	
Bicycle Volume [bicycles/h]		0			0			0			0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Unsigna	Permiss	Permiss	Permiss	Permiss	Permiss	Unsigna
Signal group	7	4	0	0	8	0	0	0	0	0	2	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	5	5	0	0	5	0	0	0	0	0	5	0
Maximum Green [s]	30	30	0	0	30	0	0	0	0	0	30	0
Amber [s]	3.5	3.5	0.0	0.0	3.5	0.0	0.0	0.0	0.0	0.0	3.5	0.0
All red [s]	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0
Split [s]	14	33	0	0	19	0	0	0	0	0	27	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	0	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	0	0	0	10	0
Rest In Walk		No			No						No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.5	2.5	0.0	0.0	2.5	0.0	0.0	0.0	0.0	0.0	2.5	0.0
Minimum Recall	No	No			No						No	
Maximum Recall	No	No			No						No	
Pedestrian Recall	No	No			No						No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C		L	C
C, Cycle Length [s]	33	33	33		33	33
L, Total Lost Time per Cycle [s]	4.50	4.50	4.50		4.50	4.50
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00		0.00	0.00
l2, Clearance Lost Time [s]	2.50	2.50	2.50		2.50	2.50
g_i, Effective Green Time [s]	5	21	12		3	3
g / C, Green / Cycle	0.15	0.64	0.35		0.09	0.09
(v / s)_i Volume / Saturation Flow Rate	0.09	0.36	0.21		0.03	0.03
s, saturation flow rate [veh/h]	3459	3560	5094		1781	1781
c, Capacity [veh/h]	534	2273	1776		162	162
d1, Uniform Delay [s]	12.99	3.38	8.92		14.13	14.13
k, delay calibration	0.11	0.11	0.11		0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00		1.00	1.00
d2, Incremental Delay [s]	0.89	0.22	0.33		1.04	1.04
d3, Initial Queue Delay [s]	0.00	0.00	0.00		0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00		1.00	1.00
PF, progression factor	1.00	1.00	1.00		1.00	1.00

Lane Group Results

X, volume / capacity	0.55	0.56	0.60		0.30	0.30
d, Delay for Lane Group [s/veh]	13.87	3.60	9.25		15.17	15.17
Lane Group LOS	B	A	A		B	B
Critical Lane Group	No	Yes	No		Yes	No
50th-Percentile Queue Length [veh]	0.85	0.51	1.45		0.32	0.32
50th-Percentile Queue Length [ft]	21.35	12.81	36.36		8.09	8.09
95th-Percentile Queue Length [veh]	1.54	0.92	2.62		0.58	0.58
95th-Percentile Queue Length [ft]	38.42	23.06	65.45		14.55	14.55

Movement, Approach, & Intersection Results

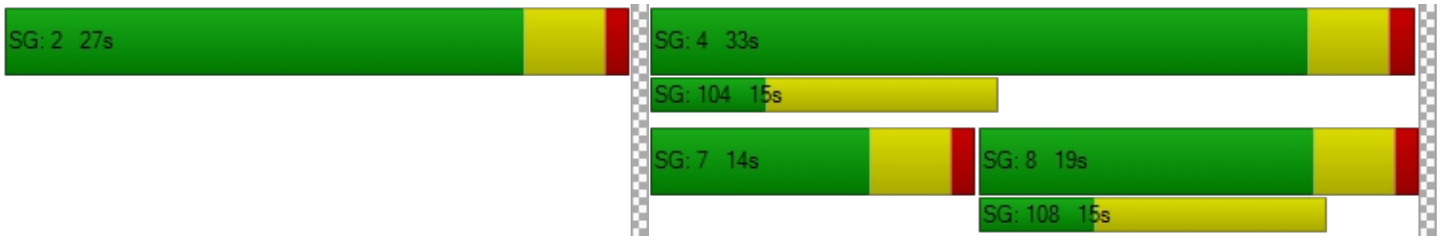
d_M, Delay for Movement [s/veh]	13.87	3.60	0.00	0.00	9.25	0.00	0.00	0.00	0.00	15.17	15.17	0.00
Movement LOS	B	A			A					B	B	
d_A, Approach Delay [s/veh]	5.53			9.25			0.00			15.17		
Approach LOS	A			A			A			B		
d_I, Intersection Delay [s/veh]	7.33											
Intersection LOS	A											
Intersection V/C	0.603											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	21.68	21.68
l_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	1.839	1.953
Crosswalk LOS	F	F	A	A
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	950	483	0	750
d_b, Bicycle Delay [s]	8.27	17.25	30.00	11.72
l_b,int, Bicycle LOS Score for Intersection	2.852	2.146	4.132	1.721
Bicycle LOS	C	B	D	A

Sequence

Ring 1	-	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 16: Avalon Boulevard & I-405 SB Ramps

Control Type:	Signalized	Delay (sec / veh):	9.7
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.738

Intersection Setup

Name	Avalon Boulevard			Avalon Boulevard			I-405 SB Ramps			I-405 SB Ramps		
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]		30.00			30.00			30.00			30.00	
Grade [%]		0.00			0.00			0.00			0.00	
Curb Present		No			No			No				
Crosswalk		Yes			No			Yes			Yes	

Volumes

Name	Avalon Boulevard			Avalon Boulevard			I-405 SB Ramps			I-405 SB Ramps		
Base Volume Input [veh/h]	0	984	129	0	840	302	603	15	368	0	0	0
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 Rate	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
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	984	129	0	840	302	603	15	368	0	0	0
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	246	32	0	210	76	151	4	92	0	0	0
Total Analysis Volume [veh/h]	0	984	129	0	840	302	603	15	368	0	0	0
Presence of On-Street Parking	No		No	No		No	No		No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing		0			0			0			0	
v_di, Inbound Pedestrian Volume crossing m		0			0			0			0	
v_co, Outbound Pedestrian Volume crossing		0			0			0			0	
v_ci, Inbound Pedestrian Volume crossing mi		0			0			0			0	
v_ab, Corner Pedestrian Volume [ped/h]		0			0			0			0	
Bicycle Volume [bicycles/h]		0			0			0			0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Unsigna	Permiss	Permiss	Unsigna	Permiss	Permiss	Permiss
Signal group	7	4	0	0	8	0	0	6	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	5	5	0	0	5	0	0	5	0	0	0	0
Maximum Green [s]	30	30	0	0	30	0	0	30	0	0	0	0
Amber [s]	3.5	3.5	0.0	0.0	3.5	0.0	0.0	3.5	0.0	0.0	0.0	0.0
All red [s]	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0
Split [s]	9	28	0	0	19	0	0	32	0	0	0	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	0	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	0	0
Rest In Walk		No			No			No				
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	2.5	2.5	0.0	0.0	2.5	0.0	0.0	2.5	0.0	0.0	0.0	0.0
Minimum Recall	No	No			No			No				
Maximum Recall	No	No			No			No				
Pedestrian Recall	No	No			No			No				
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	C	L	C	
C, Cycle Length [s]	34	34	34	34	34	34	
L, Total Lost Time per Cycle [s]	4.50	4.50	4.50	4.50	4.50	4.50	
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	
l2, Clearance Lost Time [s]	2.50	2.50	2.50	2.50	2.50	2.50	
g_i, Effective Green Time [s]	0	16	16	11	9	9	
g / C, Green / Cycle	0.00	0.47	0.47	0.33	0.27	0.27	
(v / s)_i Volume / Saturation Flow Rate	0.00	0.30	0.30	0.24	0.17	0.00	
s, saturation flow rate [veh/h]	1781	1870	1795	3560	3459	3560	
c, Capacity [veh/h]	1	874	839	1194	934	962	
d1, Uniform Delay [s]	0.00	6.98	6.99	9.90	11.05	9.16	
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	
d2, Incremental Delay [s]	0.00	0.82	0.86	0.77	0.75	0.01	
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	

Lane Group Results

X, volume / capacity	0.00	0.65	0.65	0.70	0.65	0.02	
d, Delay for Lane Group [s/veh]	0.00	7.81	7.84	10.67	11.81	9.17	
Lane Group LOS	A	A	A	B	B	A	
Critical Lane Group	No	No	Yes	No	Yes	No	
50th-Percentile Queue Length [veh]	0.00	1.96	1.90	2.01	1.57	0.03	
50th-Percentile Queue Length [ft]	0.00	49.10	47.39	50.14	39.27	0.78	
95th-Percentile Queue Length [veh]	0.00	3.54	3.41	3.61	2.83	0.06	
95th-Percentile Queue Length [ft]	0.00	88.38	85.31	90.25	70.68	1.41	

Movement, Approach, & Intersection Results

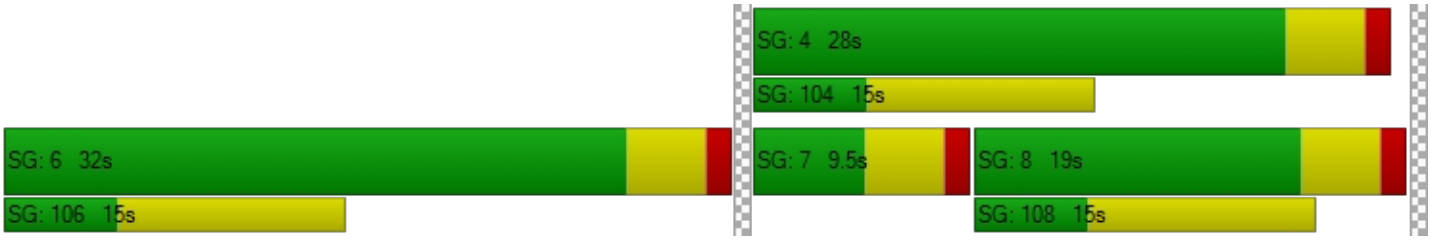
d_M, Delay for Movement [s/veh]	0.00	7.82	7.84	0.00	10.67	0.00	11.81	9.17	0.00	0.00	0.00	0.00
Movement LOS	A	A	A		B		B	A				
d_A, Approach Delay [s/veh]	7.82			10.67			11.74			0.00		
Approach LOS	A			B			B			A		
d_I, Intersection Delay [s/veh]	9.70											
Intersection LOS	A											
Intersection V/C	0.738											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	0.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	21.68	0.00	21.68	21.68
l_p,int, Pedestrian LOS Score for Intersection	2.661	0.000	2.534	1.766
Crosswalk LOS	B	F	B	A
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	783	483	917	0
d_b, Bicycle Delay [s]	11.10	17.25	8.80	30.00
l_b,int, Bicycle LOS Score for Intersection	2.478	2.253	2.069	4.132
Bicycle LOS	B	B	B	D

Sequence

Ring 1	-	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 17: Main Street & SR 91 WB Ramps

Control Type:	Signalized	Delay (sec / veh):	8.8
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.363

Intersection Setup

Name	Main Street			Main Street			SR-91 WB Ramps			SR-91 WB Ramps		
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]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No						No		
Crosswalk	No			No			No			Yes		

Volumes

Name	Main Street			Main Street			SR-91 WB Ramps			SR-91 WB Ramps		
Base Volume Input [veh/h]	0	185	96	35	202	0	0	0	0	108	0	107
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 Rate	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
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	185	96	35	202	0	0	0	0	108	0	107
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	46	24	9	51	0	0	0	0	27	0	27
Total Analysis Volume [veh/h]	0	185	96	35	202	0	0	0	0	108	0	107
Presence of On-Street Parking	No		No	No		No				No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	7	4	0	3	8	0	0	0	0	2	0	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	Lead	-	-
Minimum Green [s]	5	5	0	5	5	0	0	0	0	5	0	0
Maximum Green [s]	30	30	0	30	30	0	0	0	0	30	0	0
Amber [s]	3.5	3.5	0.0	3.5	3.5	0.0	0.0	0.0	0.0	3.5	0.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0
Split [s]	9	22	0	9	22	0	0	0	0	29	0	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0
Walk [s]	0	5	0	0	5	0	0	0	0	5	0	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	0	0	10	0	0
Rest In Walk		No			No					No		
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
I2, Clearance Lost Time [s]	2.5	2.5	0.0	2.5	2.5	0.0	0.0	0.0	0.0	2.5	0.0	0.0
Minimum Recall	No	No		No	No					No		
Maximum Recall	No	No		No	No					No		
Pedestrian Recall	No	No		No	No					No		
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C		L	R
C, Cycle Length [s]	22	22	22	22	22		22	22
L, Total Lost Time per Cycle [s]	4.50	4.50	4.50	4.50	4.50		4.50	4.50
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00		0.00	0.00
l2, Clearance Lost Time [s]	2.50	2.50	2.50	2.50	2.50		2.50	2.50
g_i, Effective Green Time [s]	0	4	4	1	5		4	4
g / C, Green / Cycle	0.00	0.19	0.19	0.05	0.23		0.17	0.17
(v / s)_i Volume / Saturation Flow Rate	0.00	0.08	0.08	0.02	0.06		0.06	0.07
s, saturation flow rate [veh/h]	1781	1870	1663	1781	3560		1781	1589
c, Capacity [veh/h]	2	351	312	83	829		300	267
d1, Uniform Delay [s]	0.00	8.08	8.12	10.47	7.05		8.32	8.38
k, delay calibration	0.11	0.11	0.11	0.11	0.11		0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00
d2, Incremental Delay [s]	0.00	0.78	0.97	3.34	0.15		0.73	0.97
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00		0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00		1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00

Lane Group Results

X, volume / capacity	0.00	0.41	0.44	0.42	0.24		0.36	0.40
d, Delay for Lane Group [s/veh]	0.00	8.86	9.09	13.81	7.20		9.05	9.34
Lane Group LOS	A	A	A	B	A		A	A
Critical Lane Group	No	No	Yes	Yes	No		No	Yes
50th-Percentile Queue Length [veh]	0.00	0.42	0.41	0.19	0.22		0.33	0.34
50th-Percentile Queue Length [ft]	0.00	10.49	10.23	4.67	5.55		8.17	8.43
95th-Percentile Queue Length [veh]	0.00	0.76	0.74	0.34	0.40		0.59	0.61
95th-Percentile Queue Length [ft]	0.00	18.88	18.41	8.41	10.00		14.70	15.17

Movement, Approach, & Intersection Results

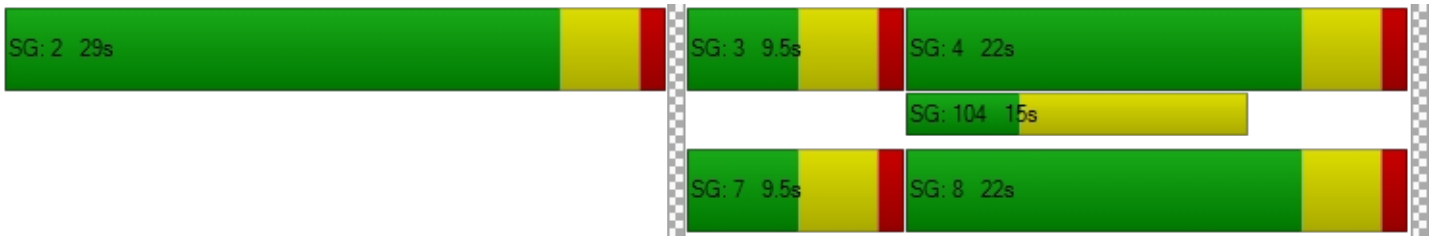
d_M, Delay for Movement [s/veh]	0.00	8.91	9.09	13.81	7.20	0.00	0.00	0.00	0.00	9.05	0.00	9.34
Movement LOS	A	A	A	B	A					A		A
d_A, Approach Delay [s/veh]	8.97			8.17			0.00			9.20		
Approach LOS	A			A			A			A		
d_I, Intersection Delay [s/veh]	8.78											
Intersection LOS	A											
Intersection V/C	0.363											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	0.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	0.00	21.68
l_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	0.000	2.033
Crosswalk LOS	F	F	F	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	583	583	0	0
d_b, Bicycle Delay [s]	15.05	15.05	30.00	30.00
l_b,int, Bicycle LOS Score for Intersection	1.791	1.755	4.132	4.132
Bicycle LOS	A	A	D	D

Sequence

Ring 1	-	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 22: I-110 SB Off-Ramp & 190th Street

Control Type:	Signalized	Delay (sec / veh):	8.2
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.657

Intersection Setup

Name	I-110 SB Off-Ramp		190th Street		190th Street	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	Yes		No		No	

Volumes

Name	I-110 SB Off-Ramp		190th Street		190th Street	
Base Volume Input [veh/h]	232	355	0	900	472	0
Base Volume Adjustment Factor	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
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	232	355	0	900	472	0
Peak Hour Factor	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
Total 15-Minute Volume [veh/h]	58	89	0	225	118	0
Total Analysis Volume [veh/h]	232	355	0	900	472	0
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal group	8	0	0	6	2	0
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	-	-
Minimum Green [s]	5	0	0	5	5	0
Maximum Green [s]	30	0	0	30	30	0
Amber [s]	3.5	0.0	0.0	3.5	3.5	0.0
All red [s]	1.0	0.0	0.0	1.0	1.0	0.0
Split [s]	40	0	0	20	20	0
Vehicle Extension [s]	3.0	0.0	0.0	3.0	3.0	0.0
Walk [s]	5	0	0	5	5	0
Pedestrian Clearance [s]	10	0	0	10	10	0
Rest In Walk	No			No	No	
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.5	0.0	0.0	2.5	2.5	0.0
Minimum Recall	No			No	No	
Maximum Recall	No			No	No	
Pedestrian Recall	No			No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R	C	C
C, Cycle Length [s]	29	29	29	29
L, Total Lost Time per Cycle [s]	4.50	4.50	4.50	4.50
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.50	2.50	2.50	2.50
g_i, Effective Green Time [s]	9	9	11	11
g / C, Green / Cycle	0.32	0.32	0.37	0.37
(v / s)_i Volume / Saturation Flow Rate	0.13	0.22	0.25	0.09
s, saturation flow rate [veh/h]	1781	1589	3560	5094
c, Capacity [veh/h]	568	507	1327	1899
d1, Uniform Delay [s]	7.78	8.72	7.69	6.33
k, delay calibration	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.47	1.77	0.61	0.07
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.41	0.70	0.68	0.25
d, Delay for Lane Group [s/veh]	8.26	10.48	8.30	6.40
Lane Group LOS	A	B	A	A
Critical Lane Group	No	Yes	Yes	No
50th-Percentile Queue Length [veh]	0.77	1.45	1.43	0.39
50th-Percentile Queue Length [ft]	19.34	36.17	35.75	9.78
95th-Percentile Queue Length [veh]	1.39	2.60	2.57	0.70
95th-Percentile Queue Length [ft]	34.81	65.11	64.35	17.60

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	8.26	10.48	0.00	8.30	6.40	0.00
Movement LOS	A	B		A	A	
d_A, Approach Delay [s/veh]	9.60		8.30		6.40	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	8.23					
Intersection LOS	A					
Intersection V/C	0.657					

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	21.68	0.00	0.00
I_p,int, Pedestrian LOS Score for Intersection	1.982	0.000	0.000
Crosswalk LOS	A	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	0	0
d_b, Bicycle Delay [s]	30.00	30.00	30.00
I_b,int, Bicycle LOS Score for Intersection	4.132	4.875	4.392
Bicycle LOS	D	E	E

Sequence

Ring 1	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 28: SR 91 EB Ramps & Albertoni Street

Control Type:	Signalized	Delay (sec / veh):	10.2
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.508

Intersection Setup

Name	SR 91 EB Ramps		Albertoni Street		Albertoni Street	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	Yes		No		No	

Volumes

Name	SR 91 EB Ramps		Albertoni Street		Albertoni Street	
Base Volume Input [veh/h]	208	118	268	263	284	67
Base Volume Adjustment Factor	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
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	208	118	268	263	284	67
Peak Hour Factor	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
Total 15-Minute Volume [veh/h]	52	30	67	66	71	17
Total Analysis Volume [veh/h]	208	118	268	263	284	67
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permissive	Permissive	Protected	Permissive	Permissive	Permissive
Signal group	8	0	1	6	2	0
Auxiliary Signal Groups						
Lead / Lag	Lead	-	Lead	-	-	-
Minimum Green [s]	5	0	5	5	5	0
Maximum Green [s]	30	0	30	30	30	0
Amber [s]	3.5	0.0	3.5	3.5	3.5	0.0
All red [s]	1.0	0.0	1.0	1.0	1.0	0.0
Split [s]	23	0	14	37	23	0
Vehicle Extension [s]	3.0	0.0	3.0	3.0	3.0	0.0
Walk [s]	5	0	0	5	5	0
Pedestrian Clearance [s]	10	0	0	10	10	0
Rest In Walk	No			No	No	
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.5	0.0	2.5	2.5	2.5	0.0
Minimum Recall	No		No	No	No	
Maximum Recall	No		No	No	No	
Pedestrian Recall	No		No	No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R	L	C	C	C
C, Cycle Length [s]	29	29	29	29	29	29
L, Total Lost Time per Cycle [s]	4.50	4.50	4.50	4.50	4.50	4.50
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.50	2.50	2.50	2.50	2.50	2.50
g_i, Effective Green Time [s]	5	5	4	14	5	5
g / C, Green / Cycle	0.19	0.19	0.16	0.49	0.18	0.18
(v / s)_i Volume / Saturation Flow Rate	0.12	0.07	0.08	0.07	0.09	0.10
s, saturation flow rate [veh/h]	1781	1589	3459	3560	1870	1752
c, Capacity [veh/h]	343	306	539	1756	337	316
d1, Uniform Delay [s]	10.58	10.09	11.07	3.97	10.62	10.70
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.73	0.79	0.71	0.04	1.24	1.53
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.61	0.39	0.50	0.15	0.52	0.56
d, Delay for Lane Group [s/veh]	12.30	10.88	11.78	4.01	11.87	12.22
Lane Group LOS	B	B	B	A	B	B
Critical Lane Group	Yes	No	Yes	No	No	Yes
50th-Percentile Queue Length [veh]	0.99	0.52	0.61	0.17	0.82	0.84
50th-Percentile Queue Length [ft]	24.84	12.90	15.15	4.26	20.42	20.98
95th-Percentile Queue Length [veh]	1.79	0.93	1.09	0.31	1.47	1.51
95th-Percentile Queue Length [ft]	44.71	23.23	27.26	7.67	36.76	37.76

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	12.30	10.88	11.78	4.01	12.00	12.22
Movement LOS	B	B	B	A	B	B
d_A, Approach Delay [s/veh]	11.79		7.93		12.05	
Approach LOS	B		A		B	
d_I, Intersection Delay [s/veh]	10.17					
Intersection LOS	B					
Intersection V/C	0.508					

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	21.68	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersection	2.273	0.000	0.000
Crosswalk LOS	B	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	0	0
d_b, Bicycle Delay [s]	30.00	30.00	30.00
l_b,int, Bicycle LOS Score for Intersection	4.132	4.570	4.422
Bicycle LOS	D	E	E

Sequence

Ring 1	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 2: Main Street & I-405 NB Off-Ramp

Control Type:	Signalized	Delay (sec / veh):	8.0
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.460

Intersection Setup

Name	Main Street			Main Street			I-405 NB Off-Ramp			I-405 NB Off-Ramp		
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]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No						No		
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Main Street			Main Street			I-405 NB Off-Ramp			I-405 NB Off-Ramp		
Base Volume Input [veh/h]	14	336	0	0	453	26	0	0	0	61	92	132
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 Rate	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
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	14	336	0	0	453	26	0	0	0	61	92	132
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]	4	84	0	0	113	7	0	0	0	15	23	33
Total Analysis Volume [veh/h]	14	336	0	0	453	26	0	0	0	61	92	132
Presence of On-Street Parking	No		No	No		No				No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	7	4	0	0	8	0	0	0	0	0	2	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	5	5	0	0	5	0	0	0	0	0	5	0
Maximum Green [s]	30	30	0	0	30	0	0	0	0	0	30	0
Amber [s]	3.5	3.5	0.0	0.0	3.5	0.0	0.0	0.0	0.0	0.0	3.5	0.0
All red [s]	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0
Split [s]	9	35	0	0	26	0	0	0	0	0	25	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	0	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	0	0	0	10	0
Rest In Walk		No			No						No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.5	2.5	0.0	0.0	2.5	0.0	0.0	0.0	0.0	0.0	2.5	0.0
Minimum Recall	No	No			No						No	
Maximum Recall	No	No			No						No	
Pedestrian Recall	No	No			No						No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	C		C	C
C, Cycle Length [s]	24	24	24	24		24	24
L, Total Lost Time per Cycle [s]	4.50	4.50	4.50	4.50		4.50	4.50
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00		0.00	0.00
l2, Clearance Lost Time [s]	2.50	2.50	2.50	2.50		2.50	2.50
g_i, Effective Green Time [s]	0	11	6	6		4	4
g / C, Green / Cycle	0.02	0.44	0.24	0.24		0.18	0.18
(v / s)_i Volume / Saturation Flow Rate	0.01	0.09	0.13	0.13		0.08	0.09
s, saturation flow rate [veh/h]	1781	3560	1870	1835		1833	1446
c, Capacity [veh/h]	37	1587	446	437		332	262
d1, Uniform Delay [s]	11.65	4.09	8.02	8.04		8.82	8.90
k, delay calibration	0.11	0.11	0.11	0.11		0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00		1.00	1.00
d2, Incremental Delay [s]	6.31	0.07	1.01	1.07		1.00	1.50
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00		0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00		1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00		1.00	1.00

Lane Group Results

X, volume / capacity	0.38	0.21	0.54	0.55		0.46	0.50
d, Delay for Lane Group [s/veh]	17.96	4.16	9.03	9.12		9.82	10.40
Lane Group LOS	B	A	A	A		A	B
Critical Lane Group	Yes	No	No	Yes		No	Yes
50th-Percentile Queue Length [veh]	0.12	0.17	0.73	0.73		0.52	0.48
50th-Percentile Queue Length [ft]	2.90	4.13	18.20	18.37		13.03	12.06
95th-Percentile Queue Length [veh]	0.21	0.30	1.31	1.32		0.94	0.87
95th-Percentile Queue Length [ft]	5.22	7.44	32.75	33.06		23.45	21.71

Movement, Approach, & Intersection Results

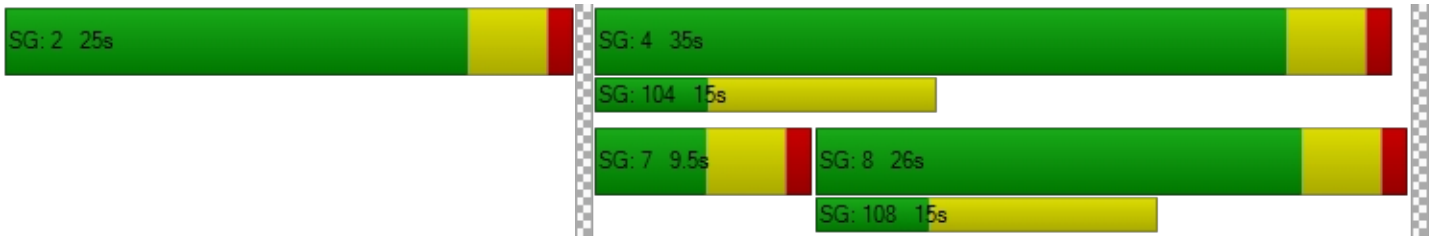
d_M, Delay for Movement [s/veh]	17.96	4.16	0.00	0.00	9.07	9.12	0.00	0.00	0.00	9.82	9.82	10.40
Movement LOS	B	A			A	A				A	A	B
d_A, Approach Delay [s/veh]	4.71			9.07			0.00			10.09		
Approach LOS	A			A			A			B		
d_I, Intersection Delay [s/veh]	7.96											
Intersection LOS	A											
Intersection V/C	0.460											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	21.68	21.68
l_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	1.760	1.834
Crosswalk LOS	F	F	A	A
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1017	717	0	683
d_b, Bicycle Delay [s]	7.25	12.35	30.00	13.00
l_b,int, Bicycle LOS Score for Intersection	1.848	1.955	4.132	1.795
Bicycle LOS	A	A	D	A

Sequence

Ring 1	-	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 15: Avalon Boulevard & I-405 NB Ramps

Control Type:	Signalized	Delay (sec / veh):	7.4
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.616

Intersection Setup

Name	Avalon Boulevard			Avalon Boulevard			I-405 NB Ramps			I-405 NB Ramps		
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]		30.00			30.00			30.00			30.00	
Grade [%]		0.00			0.00			0.00			0.00	
Curb Present		No			No						No	
Crosswalk		No			No			Yes			Yes	

Volumes

Name	Avalon Boulevard			Avalon Boulevard			I-405 NB Ramps			I-405 NB Ramps		
Base Volume Input [veh/h]	294	1321	0	0	1121	641	0	0	0	98	0	453
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 Rate	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
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	294	1321	0	0	1121	641	0	0	0	98	0	453
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]	74	330	0	0	280	160	0	0	0	25	0	113
Total Analysis Volume [veh/h]	294	1321	0	0	1121	641	0	0	0	98	0	453
Presence of On-Street Parking	No		No	No		No				No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing		0			0			0			0	
v_di, Inbound Pedestrian Volume crossing m		0			0			0			0	
v_co, Outbound Pedestrian Volume crossing		0			0			0			0	
v_ci, Inbound Pedestrian Volume crossing mi		0			0			0			0	
v_ab, Corner Pedestrian Volume [ped/h]		0			0			0			0	
Bicycle Volume [bicycles/h]		0			0			0			0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Unsigna	Permiss	Permiss	Permiss	Permiss	Permiss	Unsigna
Signal group	7	4	0	0	8	0	0	0	0	0	2	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	5	5	0	0	5	0	0	0	0	0	5	0
Maximum Green [s]	30	30	0	0	30	0	0	0	0	0	30	0
Amber [s]	3.5	3.5	0.0	0.0	3.5	0.0	0.0	0.0	0.0	0.0	3.5	0.0
All red [s]	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0
Split [s]	14	33	0	0	19	0	0	0	0	0	27	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	0	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	0	0	0	10	0
Rest In Walk		No			No						No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.5	2.5	0.0	0.0	2.5	0.0	0.0	0.0	0.0	0.0	2.5	0.0
Minimum Recall	No	No			No						No	
Maximum Recall	No	No			No						No	
Pedestrian Recall	No	No			No						No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C		L	C
C, Cycle Length [s]	34	34	34		34	34
L, Total Lost Time per Cycle [s]	4.50	4.50	4.50		4.50	4.50
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00		0.00	0.00
l2, Clearance Lost Time [s]	2.50	2.50	2.50		2.50	2.50
g_i, Effective Green Time [s]	5	22	12		3	3
g / C, Green / Cycle	0.15	0.65	0.36		0.09	0.09
(v / s)_i Volume / Saturation Flow Rate	0.09	0.37	0.22		0.03	0.03
s, saturation flow rate [veh/h]	3459	3560	5094		1781	1781
c, Capacity [veh/h]	530	2302	1842		160	160
d1, Uniform Delay [s]	13.38	3.39	8.92		14.54	14.54
k, delay calibration	0.11	0.11	0.11		0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00		1.00	1.00
d2, Incremental Delay [s]	0.91	0.23	0.33		1.07	1.07
d3, Initial Queue Delay [s]	0.00	0.00	0.00		0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00		1.00	1.00
PF, progression factor	1.00	1.00	1.00		1.00	1.00

Lane Group Results

X, volume / capacity	0.55	0.57	0.61		0.31	0.31
d, Delay for Lane Group [s/veh]	14.29	3.62	9.25		15.61	15.61
Lane Group LOS	B	A	A		B	B
Critical Lane Group	No	Yes	No		Yes	No
50th-Percentile Queue Length [veh]	0.89	0.56	1.57		0.34	0.34
50th-Percentile Queue Length [ft]	22.27	13.95	39.20		8.40	8.40
95th-Percentile Queue Length [veh]	1.60	1.00	2.82		0.60	0.60
95th-Percentile Queue Length [ft]	40.08	25.11	70.57		15.12	15.12

Movement, Approach, & Intersection Results

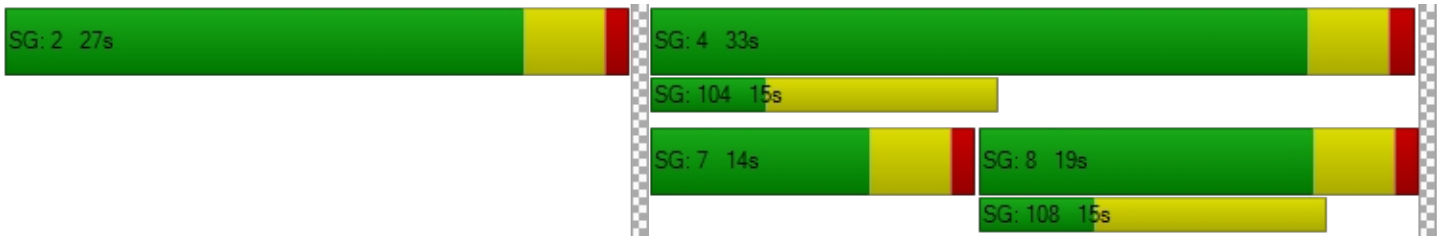
d_M, Delay for Movement [s/veh]	14.29	3.62	0.00	0.00	9.25	0.00	0.00	0.00	0.00	15.61	15.61	0.00
Movement LOS	B	A			A					B	B	
d_A, Approach Delay [s/veh]	5.56			9.25			0.00			15.61		
Approach LOS	A			A			A			B		
d_I, Intersection Delay [s/veh]	7.37											
Intersection LOS	A											
Intersection V/C	0.616											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	21.68	21.68
l_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	1.839	1.953
Crosswalk LOS	F	F	A	A
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	950	483	0	750
d_b, Bicycle Delay [s]	8.27	17.25	30.00	11.72
l_b,int, Bicycle LOS Score for Intersection	2.892	2.176	4.132	1.721
Bicycle LOS	C	B	D	A

Sequence

Ring 1	-	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 16: Avalon Boulevard & I-405 SB Ramps

Control Type:	Signalized	Delay (sec / veh):	10.0
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.750

Intersection Setup

Name	Avalon Boulevard			Avalon Boulevard			I-405 SB Ramps			I-405 SB Ramps		
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]		30.00			30.00			30.00			30.00	
Grade [%]		0.00			0.00			0.00			0.00	
Curb Present		No			No			No				
Crosswalk		Yes			No			Yes			Yes	

Volumes

Name	Avalon Boulevard			Avalon Boulevard			I-405 SB Ramps			I-405 SB Ramps		
Base Volume Input [veh/h]	0	997	129	0	850	347	639	15	368	0	0	0
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 Rate	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
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	997	129	0	850	347	639	15	368	0	0	0
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	249	32	0	213	87	160	4	92	0	0	0
Total Analysis Volume [veh/h]	0	997	129	0	850	347	639	15	368	0	0	0
Presence of On-Street Parking	No		No	No		No	No		No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing		0			0			0			0	
v_di, Inbound Pedestrian Volume crossing m		0			0			0			0	
v_co, Outbound Pedestrian Volume crossing		0			0			0			0	
v_ci, Inbound Pedestrian Volume crossing mi		0			0			0			0	
v_ab, Corner Pedestrian Volume [ped/h]		0			0			0			0	
Bicycle Volume [bicycles/h]		0			0			0			0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Unsigna	Permiss	Permiss	Unsigna	Permiss	Permiss	Permiss
Signal group	7	4	0	0	8	0	0	6	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	5	5	0	0	5	0	0	5	0	0	0	0
Maximum Green [s]	30	30	0	0	30	0	0	30	0	0	0	0
Amber [s]	3.5	3.5	0.0	0.0	3.5	0.0	0.0	3.5	0.0	0.0	0.0	0.0
All red [s]	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0
Split [s]	9	28	0	0	19	0	0	32	0	0	0	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	0	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	0	0
Rest In Walk		No			No			No				
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	2.5	2.5	0.0	0.0	2.5	0.0	0.0	2.5	0.0	0.0	0.0	0.0
Minimum Recall	No	No			No			No				
Maximum Recall	No	No			No			No				
Pedestrian Recall	No	No			No			No				
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	C	L	C	
C, Cycle Length [s]	35	35	35	35	35	35	
L, Total Lost Time per Cycle [s]	4.50	4.50	4.50	4.50	4.50	4.50	
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	
l2, Clearance Lost Time [s]	2.50	2.50	2.50	2.50	2.50	2.50	
g_i, Effective Green Time [s]	0	16	16	12	10	10	
g / C, Green / Cycle	0.00	0.46	0.46	0.33	0.28	0.28	
(v / s)_i Volume / Saturation Flow Rate	0.00	0.31	0.31	0.24	0.18	0.00	
s, saturation flow rate [veh/h]	1781	1870	1796	3560	3459	3560	
c, Capacity [veh/h]	0	867	833	1194	966	994	
d1, Uniform Delay [s]	0.00	7.26	7.27	10.17	11.16	9.14	
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	
d2, Incremental Delay [s]	0.00	0.87	0.91	0.80	0.78	0.01	
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	

Lane Group Results

X, volume / capacity	0.00	0.66	0.66	0.71	0.66	0.02	
d, Delay for Lane Group [s/veh]	0.00	8.14	8.18	10.97	11.95	9.14	
Lane Group LOS	A	A	A	B	B	A	
Critical Lane Group	No	No	Yes	No	Yes	No	
50th-Percentile Queue Length [veh]	0.00	2.13	2.06	2.12	1.72	0.03	
50th-Percentile Queue Length [ft]	0.00	53.24	51.42	53.12	42.90	0.79	
95th-Percentile Queue Length [veh]	0.00	3.83	3.70	3.82	3.09	0.06	
95th-Percentile Queue Length [ft]	0.00	95.83	92.55	95.61	77.22	1.43	

Movement, Approach, & Intersection Results

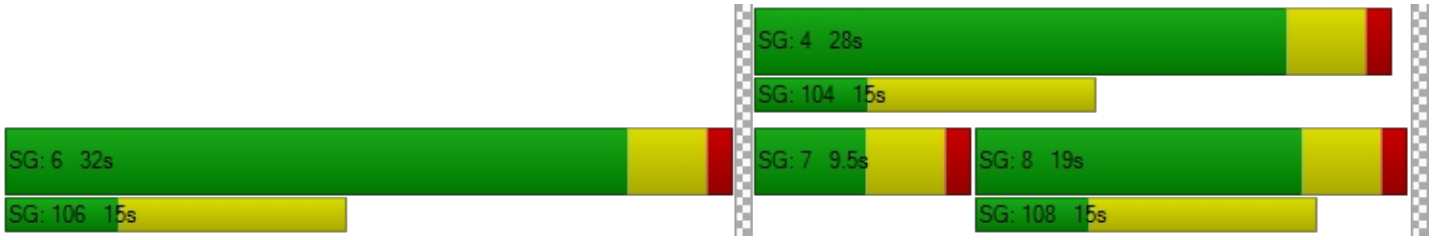
d_M, Delay for Movement [s/veh]	0.00	8.15	8.18	0.00	10.97	0.00	11.95	9.14	0.00	0.00	0.00	0.00
Movement LOS	A	A	A		B		B	A				
d_A, Approach Delay [s/veh]	8.16			10.97			11.88			0.00		
Approach LOS	A			B			B			A		
d_I, Intersection Delay [s/veh]	9.99											
Intersection LOS	A											
Intersection V/C	0.750											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	0.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	21.68	0.00	21.68	21.68
l_p,int, Pedestrian LOS Score for Intersection	2.666	0.000	2.540	1.766
Crosswalk LOS	B	F	B	A
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	783	483	917	0
d_b, Bicycle Delay [s]	11.10	17.25	8.80	30.00
l_b,int, Bicycle LOS Score for Intersection	2.489	2.261	2.099	4.132
Bicycle LOS	B	B	B	D

Sequence

Ring 1	-	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 17: Main Street & SR 91 WB Ramps

Control Type:	Signalized	Delay (sec / veh):	8.9
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.382

Intersection Setup

Name	Main Street			Main Street			SR-91 WB Ramps			SR-91 WB Ramps		
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]		30.00			30.00			30.00			30.00	
Grade [%]		0.00			0.00			0.00			0.00	
Curb Present		No			No						No	
Crosswalk		No			No			No			Yes	

Volumes

Name	Main Street			Main Street			SR-91 WB Ramps			SR-91 WB Ramps		
Base Volume Input [veh/h]	0	199	120	35	220	0	0	0	0	117	0	107
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 Rate	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
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	199	120	35	220	0	0	0	0	117	0	107
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	50	30	9	55	0	0	0	0	29	0	27
Total Analysis Volume [veh/h]	0	199	120	35	220	0	0	0	0	117	0	107
Presence of On-Street Parking	No		No	No		No				No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing		0			0			0			0	
v_di, Inbound Pedestrian Volume crossing m		0			0			0			0	
v_co, Outbound Pedestrian Volume crossing		0			0			0			0	
v_ci, Inbound Pedestrian Volume crossing mi		0			0			0			0	
v_ab, Corner Pedestrian Volume [ped/h]		0			0			0			0	
Bicycle Volume [bicycles/h]		0			0			0			0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	7	4	0	3	8	0	0	0	0	2	0	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	Lead	-	-
Minimum Green [s]	5	5	0	5	5	0	0	0	0	5	0	0
Maximum Green [s]	30	30	0	30	30	0	0	0	0	30	0	0
Amber [s]	3.5	3.5	0.0	3.5	3.5	0.0	0.0	0.0	0.0	3.5	0.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0
Split [s]	9	22	0	9	22	0	0	0	0	29	0	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0
Walk [s]	0	5	0	0	5	0	0	0	0	5	0	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	0	0	10	0	0
Rest In Walk		No			No					No		
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
I2, Clearance Lost Time [s]	2.5	2.5	0.0	2.5	2.5	0.0	0.0	0.0	0.0	2.5	0.0	0.0
Minimum Recall	No	No		No	No					No		
Maximum Recall	No	No		No	No					No		
Pedestrian Recall	No	No		No	No					No		
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C		L	R
C, Cycle Length [s]	23	23	23	23	23		23	23
L, Total Lost Time per Cycle [s]	4.50	4.50	4.50	4.50	4.50		4.50	4.50
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00		0.00	0.00
l2, Clearance Lost Time [s]	2.50	2.50	2.50	2.50	2.50		2.50	2.50
g_i, Effective Green Time [s]	0	4	4	1	5		4	4
g / C, Green / Cycle	0.00	0.19	0.19	0.05	0.24		0.17	0.17
(v / s)_i Volume / Saturation Flow Rate	0.00	0.09	0.09	0.02	0.06		0.07	0.07
s, saturation flow rate [veh/h]	1781	1870	1644	1781	3560		1781	1589
c, Capacity [veh/h]	2	362	318	83	852		303	270
d1, Uniform Delay [s]	0.00	8.17	8.21	10.62	7.07		8.44	8.46
k, delay calibration	0.11	0.11	0.11	0.11	0.11		0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00
d2, Incremental Delay [s]	0.00	0.90	1.13	3.35	0.16		0.81	0.94
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00		0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00		1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00

Lane Group Results

X, volume / capacity	0.00	0.46	0.48	0.42	0.26		0.39	0.40
d, Delay for Lane Group [s/veh]	0.00	9.06	9.35	13.97	7.22		9.25	9.40
Lane Group LOS	A	A	A	B	A		A	A
Critical Lane Group	No	No	Yes	Yes	No		No	Yes
50th-Percentile Queue Length [veh]	0.00	0.49	0.48	0.19	0.25		0.36	0.34
50th-Percentile Queue Length [ft]	0.00	12.33	11.92	4.75	6.15		9.12	8.57
95th-Percentile Queue Length [veh]	0.00	0.89	0.86	0.34	0.44		0.66	0.62
95th-Percentile Queue Length [ft]	0.00	22.19	21.46	8.55	11.07		16.42	15.42

Movement, Approach, & Intersection Results

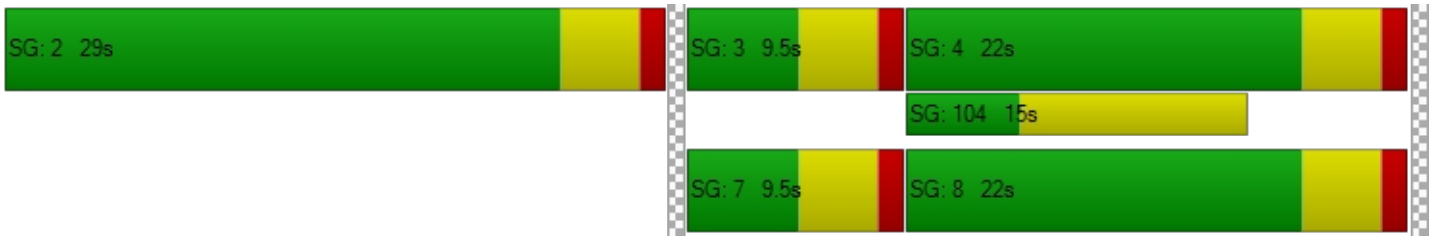
d_M, Delay for Movement [s/veh]	0.00	9.11	9.35	13.97	7.22	0.00	0.00	0.00	0.00	9.25	0.00	9.40
Movement LOS	A	A	A	B	A					A		A
d_A, Approach Delay [s/veh]	9.20			8.15			0.00			9.32		
Approach LOS	A			A			A			A		
d_I, Intersection Delay [s/veh]	8.90											
Intersection LOS	A											
Intersection V/C	0.382											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	0.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	0.00	21.68
l_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	0.000	2.044
Crosswalk LOS	F	F	F	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	583	583	0	0
d_b, Bicycle Delay [s]	15.05	15.05	30.00	30.00
l_b,int, Bicycle LOS Score for Intersection	1.823	1.770	4.132	4.132
Bicycle LOS	A	A	D	D

Sequence

Ring 1	-	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 22: I-110 SB Off-Ramp & 190th Street

Control Type:	Signalized	Delay (sec / veh):	8.4
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.663

Intersection Setup

Name	I-110 SB Off-Ramp		190th Street		190th Street	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	Yes		No		No	

Volumes

Name	I-110 SB Off-Ramp		190th Street		190th Street	
Base Volume Input [veh/h]	259	355	0	936	500	0
Base Volume Adjustment Factor	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
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	259	355	0	936	500	0
Peak Hour Factor	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
Total 15-Minute Volume [veh/h]	65	89	0	234	125	0
Total Analysis Volume [veh/h]	259	355	0	936	500	0
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal group	8	0	0	6	2	0
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	-	-
Minimum Green [s]	5	0	0	5	5	0
Maximum Green [s]	30	0	0	30	30	0
Amber [s]	3.5	0.0	0.0	3.5	3.5	0.0
All red [s]	1.0	0.0	0.0	1.0	1.0	0.0
Split [s]	40	0	0	20	20	0
Vehicle Extension [s]	3.0	0.0	0.0	3.0	3.0	0.0
Walk [s]	5	0	0	5	5	0
Pedestrian Clearance [s]	10	0	0	10	10	0
Rest In Walk	No			No	No	
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.5	0.0	0.0	2.5	2.5	0.0
Minimum Recall	No			No	No	
Maximum Recall	No			No	No	
Pedestrian Recall	No			No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R	C	C
C, Cycle Length [s]	30	30	30	30
L, Total Lost Time per Cycle [s]	4.50	4.50	4.50	4.50
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.50	2.50	2.50	2.50
g_i, Effective Green Time [s]	10	10	11	11
g / C, Green / Cycle	0.32	0.32	0.38	0.38
(v / s)_i Volume / Saturation Flow Rate	0.15	0.22	0.26	0.10
s, saturation flow rate [veh/h]	1781	1589	3560	5094
c, Capacity [veh/h]	568	507	1361	1947
d1, Uniform Delay [s]	8.17	8.99	7.79	6.37
k, delay calibration	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.57	1.78	0.63	0.07
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.46	0.70	0.69	0.26
d, Delay for Lane Group [s/veh]	8.74	10.77	8.42	6.44
Lane Group LOS	A	B	A	A
Critical Lane Group	No	Yes	Yes	No
50th-Percentile Queue Length [veh]	0.94	1.53	1.55	0.43
50th-Percentile Queue Length [ft]	23.40	38.13	38.85	10.76
95th-Percentile Queue Length [veh]	1.69	2.75	2.80	0.77
95th-Percentile Queue Length [ft]	42.13	68.64	69.94	19.36

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	8.74	10.77	0.00	8.42	6.44	0.00
Movement LOS	A	B		A	A	
d_A, Approach Delay [s/veh]	9.91		8.42		6.44	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	8.38					
Intersection LOS	A					
Intersection V/C	0.663					

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	21.68	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersection	1.995	0.000	0.000
Crosswalk LOS	A	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	0	0
d_b, Bicycle Delay [s]	30.00	30.00	30.00
l_b,int, Bicycle LOS Score for Intersection	4.132	4.905	4.407
Bicycle LOS	D	E	E

Sequence

Ring 1	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 28: SR 91 EB Ramps & Albertoni Street

Control Type:	Signalized	Delay (sec / veh):	10.3
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.510

Intersection Setup

Name	SR 91 EB Ramps		Albertoni Street		Albertoni Street	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	Yes		No		No	

Volumes

Name	SR 91 EB Ramps		Albertoni Street		Albertoni Street	
Base Volume Input [veh/h]	208	149	275	272	291	67
Base Volume Adjustment Factor	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
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	208	149	275	272	291	67
Peak Hour Factor	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
Total 15-Minute Volume [veh/h]	52	37	69	68	73	17
Total Analysis Volume [veh/h]	208	149	275	272	291	67
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permissive	Permissive	Protected	Permissive	Permissive	Permissive
Signal group	8	0	1	6	2	0
Auxiliary Signal Groups						
Lead / Lag	Lead	-	Lead	-	-	-
Minimum Green [s]	5	0	5	5	5	0
Maximum Green [s]	30	0	30	30	30	0
Amber [s]	3.5	0.0	3.5	3.5	3.5	0.0
All red [s]	1.0	0.0	1.0	1.0	1.0	0.0
Split [s]	23	0	14	37	23	0
Vehicle Extension [s]	3.0	0.0	3.0	3.0	3.0	0.0
Walk [s]	5	0	0	5	5	0
Pedestrian Clearance [s]	10	0	0	10	10	0
Rest In Walk	No			No	No	
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.5	0.0	2.5	2.5	2.5	0.0
Minimum Recall	No		No	No	No	
Maximum Recall	No		No	No	No	
Pedestrian Recall	No		No	No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R	L	C	C	C
C, Cycle Length [s]	29	29	29	29	29	29
L, Total Lost Time per Cycle [s]	4.50	4.50	4.50	4.50	4.50	4.50
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.50	2.50	2.50	2.50	2.50	2.50
g_i, Effective Green Time [s]	6	6	4	14	5	5
g / C, Green / Cycle	0.20	0.20	0.16	0.49	0.18	0.18
(v / s)_i Volume / Saturation Flow Rate	0.12	0.09	0.08	0.08	0.10	0.10
s, saturation flow rate [veh/h]	1781	1589	3459	3560	1870	1754
c, Capacity [veh/h]	352	314	538	1755	341	320
d1, Uniform Delay [s]	10.60	10.33	11.25	4.05	10.74	10.82
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.59	1.12	0.75	0.04	1.25	1.53
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.59	0.47	0.51	0.16	0.53	0.56
d, Delay for Lane Group [s/veh]	12.19	11.44	12.00	4.09	12.00	12.35
Lane Group LOS	B	B	B	A	B	B
Critical Lane Group	Yes	No	Yes	No	No	Yes
50th-Percentile Queue Length [veh]	1.00	0.68	0.64	0.19	0.85	0.87
50th-Percentile Queue Length [ft]	24.90	17.10	15.97	4.64	21.23	21.80
95th-Percentile Queue Length [veh]	1.79	1.23	1.15	0.33	1.53	1.57
95th-Percentile Queue Length [ft]	44.81	30.79	28.74	8.35	38.21	39.24

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	12.19	11.44	12.00	4.09	12.13	12.35
Movement LOS	B	B	B	A	B	B
d_A, Approach Delay [s/veh]	11.88		8.07		12.17	
Approach LOS	B		A		B	
d_I, Intersection Delay [s/veh]	10.31					
Intersection LOS	B					
Intersection V/C	0.510					

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	21.68	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersection	2.282	0.000	0.000
Crosswalk LOS	B	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	0	0
d_b, Bicycle Delay [s]	30.00	30.00	30.00
l_b,int, Bicycle LOS Score for Intersection	4.132	4.584	4.428
Bicycle LOS	D	E	E

Sequence

Ring 1	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 2: Main Street & I-405 NB Off-Ramp

Control Type:	Signalized	Delay (sec / veh):	9.4
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.552

Intersection Setup

Name	Main Street			Main Street			I-405 NB Off-Ramp			I-405 NB Off-Ramp		
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]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No						No		
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Main Street			Main Street			I-405 NB Off-Ramp			I-405 NB Off-Ramp		
Base Volume Input [veh/h]	14	395	0	0	556	26	0	0	0	259	93	148
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 Rate	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
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	14	395	0	0	556	26	0	0	0	259	93	148
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]	4	99	0	0	139	7	0	0	0	65	23	37
Total Analysis Volume [veh/h]	14	395	0	0	556	26	0	0	0	259	93	148
Presence of On-Street Parking	No		No	No		No				No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	7	4	0	0	8	0	0	0	0	0	2	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	5	5	0	0	5	0	0	0	0	0	5	0
Maximum Green [s]	30	30	0	0	30	0	0	0	0	0	30	0
Amber [s]	3.5	3.5	0.0	0.0	3.5	0.0	0.0	0.0	0.0	0.0	3.5	0.0
All red [s]	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0
Split [s]	10	35	0	0	25	0	0	0	0	0	25	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	0	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	0	0	0	10	0
Rest In Walk		No			No						No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.5	2.5	0.0	0.0	2.5	0.0	0.0	0.0	0.0	0.0	2.5	0.0
Minimum Recall	No	No			No						No	
Maximum Recall	No	No			No						No	
Pedestrian Recall	No	No			No						No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	C		C	C
C, Cycle Length [s]	28	28	28	28		28	28
L, Total Lost Time per Cycle [s]	4.50	4.50	4.50	4.50		4.50	4.50
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00		0.00	0.00
l2, Clearance Lost Time [s]	2.50	2.50	2.50	2.50		2.50	2.50
g_i, Effective Green Time [s]	1	12	7	7		7	7
g / C, Green / Cycle	0.02	0.44	0.26	0.26		0.25	0.25
(v / s)_i Volume / Saturation Flow Rate	0.01	0.11	0.16	0.16		0.15	0.15
s, saturation flow rate [veh/h]	1781	3560	1870	1841		1784	1530
c, Capacity [veh/h]	35	1551	482	475		442	379
d1, Uniform Delay [s]	13.77	5.09	9.27	9.30		9.46	9.49
k, delay calibration	0.11	0.11	0.11	0.11		0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00		1.00	1.00
d2, Incremental Delay [s]	7.33	0.09	1.22	1.29		1.34	1.61
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00		0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00		1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00		1.00	1.00

Lane Group Results

X, volume / capacity	0.40	0.25	0.60	0.61		0.61	0.61
d, Delay for Lane Group [s/veh]	21.11	5.18	10.49	10.59		10.80	11.10
Lane Group LOS	C	A	B	B		B	B
Critical Lane Group	Yes	No	No	Yes		No	Yes
50th-Percentile Queue Length [veh]	0.14	0.36	1.18	1.19		1.12	1.00
50th-Percentile Queue Length [ft]	3.47	9.09	29.53	29.77		27.98	25.04
95th-Percentile Queue Length [veh]	0.25	0.65	2.13	2.14		2.01	1.80
95th-Percentile Queue Length [ft]	6.25	16.37	53.16	53.59		50.37	45.07

Movement, Approach, & Intersection Results

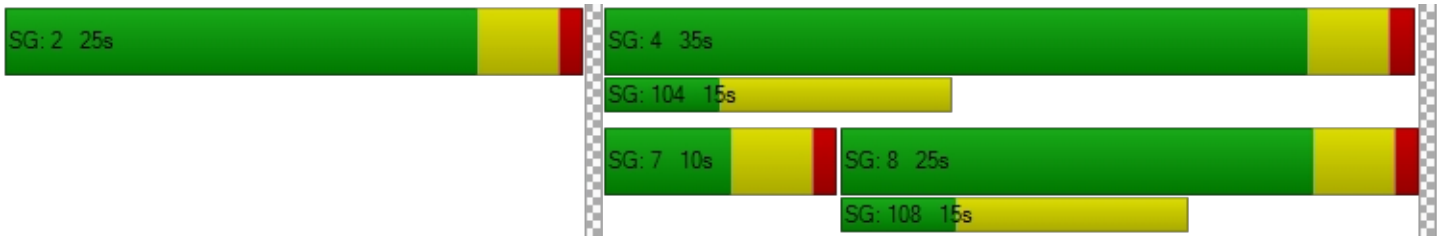
d_M, Delay for Movement [s/veh]	21.11	5.18	0.00	0.00	10.54	10.59	0.00	0.00	0.00	10.80	11.07	11.10
Movement LOS	C	A			B	B				B	B	B
d_A, Approach Delay [s/veh]	5.72			10.54			0.00			10.94		
Approach LOS	A			B			A			B		
d_I, Intersection Delay [s/veh]	9.35											
Intersection LOS	A											
Intersection V/C	0.552											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	21.68	21.68
l_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	1.760	1.939
Crosswalk LOS	F	F	A	A
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1017	683	0	683
d_b, Bicycle Delay [s]	7.25	13.00	30.00	13.00
l_b,int, Bicycle LOS Score for Intersection	1.897	2.040	4.132	1.972
Bicycle LOS	A	B	D	A

Sequence

Ring 1	-	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 15: Avalon Boulevard & I-405 NB Ramps

Control Type:	Signalized	Delay (sec / veh):	13.5
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.705

Intersection Setup

Name	Avalon Boulevard			Avalon Boulevard			I-405 NB Ramps			I-405 NB Ramps		
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]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No						No		
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Avalon Boulevard			Avalon Boulevard			I-405 NB Ramps			I-405 NB Ramps		
Base Volume Input [veh/h]	529	1512	0	0	1424	686	0	0	0	427	0	590
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 Rate	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
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	529	1512	0	0	1424	686	0	0	0	427	0	590
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]	132	378	0	0	356	172	0	0	0	107	0	148
Total Analysis Volume [veh/h]	529	1512	0	0	1424	686	0	0	0	427	0	590
Presence of On-Street Parking	No		No	No		No				No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Unsigna	Permiss	Permiss	Permiss	Permiss	Permiss	Unsigna
Signal group	7	4	0	0	8	0	0	0	0	0	2	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	5	5	0	0	5	0	0	0	0	0	5	0
Maximum Green [s]	30	30	0	0	30	0	0	0	0	0	30	0
Amber [s]	3.5	3.5	0.0	0.0	3.5	0.0	0.0	0.0	0.0	0.0	3.5	0.0
All red [s]	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0
Split [s]	14	34	0	0	20	0	0	0	0	0	26	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	0	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	0	0	0	10	0
Rest In Walk		No			No						No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.5	2.5	0.0	0.0	2.5	0.0	0.0	0.0	0.0	0.0	2.5	0.0
Minimum Recall	No	No			No						No	
Maximum Recall	No	No			No						No	
Pedestrian Recall	No	No			No						No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C		L	C
C, Cycle Length [s]	55	55	55		55	55
L, Total Lost Time per Cycle [s]	4.50	4.50	4.50		4.50	4.50
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00		0.00	0.00
l2, Clearance Lost Time [s]	2.50	2.50	2.50		2.50	2.50
g_i, Effective Green Time [s]	11	37	21		9	9
g / C, Green / Cycle	0.21	0.67	0.38		0.17	0.17
(v / s)_i Volume / Saturation Flow Rate	0.15	0.42	0.28		0.12	0.12
s, saturation flow rate [veh/h]	3459	3560	5094		1781	1781
c, Capacity [veh/h]	719	2386	1941		299	299
d1, Uniform Delay [s]	20.55	5.25	14.74		21.83	21.83
k, delay calibration	0.11	0.11	0.11		0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00		1.00	1.00
d2, Incremental Delay [s]	1.49	0.28	0.55		3.19	3.19
d3, Initial Queue Delay [s]	0.00	0.00	0.00		0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00		1.00	1.00
PF, progression factor	1.00	1.00	1.00		1.00	1.00

Lane Group Results

X, volume / capacity	0.74	0.63	0.73		0.72	0.72
d, Delay for Lane Group [s/veh]	22.04	5.53	15.29		25.02	25.02
Lane Group LOS	C	A	B		C	C
Critical Lane Group	Yes	No	Yes		Yes	No
50th-Percentile Queue Length [veh]	3.05	2.97	4.47		2.67	2.67
50th-Percentile Queue Length [ft]	76.32	74.32	111.74		66.76	66.76
95th-Percentile Queue Length [veh]	5.50	5.35	7.94		4.81	4.81
95th-Percentile Queue Length [ft]	137.38	133.77	198.42		120.17	120.17

Movement, Approach, & Intersection Results

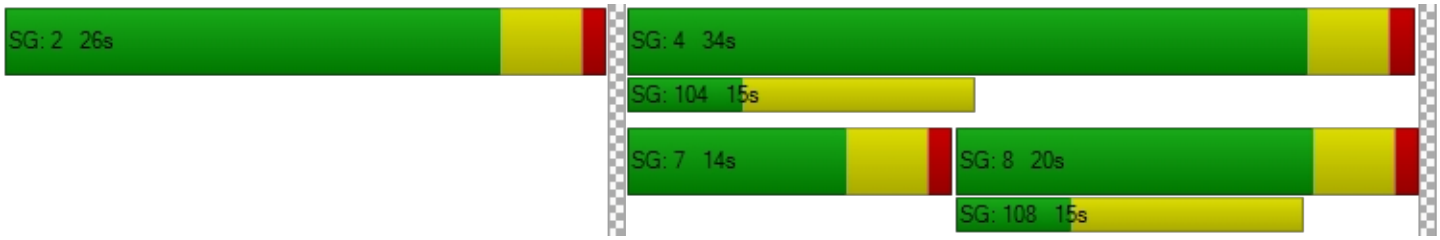
d_M, Delay for Movement [s/veh]	22.04	5.53	0.00	0.00	15.29	0.00	0.00	0.00	0.00	25.02	25.02	0.00
Movement LOS	C	A			B					C	C	
d_A, Approach Delay [s/veh]	9.81			15.29			0.00			25.02		
Approach LOS	A			B			A			C		
d_I, Intersection Delay [s/veh]	13.48											
Intersection LOS	B											
Intersection V/C	0.705											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	21.68	21.68
l_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	1.953	2.060
Crosswalk LOS	F	F	A	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	983	517	0	717
d_b, Bicycle Delay [s]	7.75	16.50	30.00	12.35
l_b,int, Bicycle LOS Score for Intersection	3.243	2.343	4.132	2.264
Bicycle LOS	C	B	D	B

Sequence

Ring 1	-	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 16: Avalon Boulevard & I-405 SB Ramps

Control Type:	Signalized	Delay (sec / veh):	21.6
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.834

Intersection Setup

Name	Avalon Boulevard			Avalon Boulevard			I-405 SB Ramps			I-405 SB Ramps		
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]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No					
Crosswalk	Yes			No			Yes			Yes		

Volumes

Name	Avalon Boulevard			Avalon Boulevard			I-405 SB Ramps			I-405 SB Ramps		
Base Volume Input [veh/h]	278	1183	178	0	1030	796	879	273	683	0	0	0
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 Rate	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
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	278	1183	178	0	1030	796	879	273	683	0	0	0
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]	70	296	45	0	258	199	220	68	171	0	0	0
Total Analysis Volume [veh/h]	278	1183	178	0	1030	796	879	273	683	0	0	0
Presence of On-Street Parking	No		No	No		No	No		No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Unsigna	Permiss	Permiss	Unsigna	Permiss	Permiss	Permiss
Signal group	7	4	0	0	8	0	0	6	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	5	5	0	0	5	0	0	5	0	0	0	0
Maximum Green [s]	30	30	0	0	30	0	0	30	0	0	0	0
Amber [s]	3.5	3.5	0.0	0.0	3.5	0.0	0.0	3.5	0.0	0.0	0.0	0.0
All red [s]	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0
Split [s]	10	30	0	0	20	0	0	30	0	0	0	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	0	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	0	0
Rest In Walk		No			No			No				
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	2.5	2.5	0.0	0.0	2.5	0.0	0.0	2.5	0.0	0.0	0.0	0.0
Minimum Recall	No	No			No			No				
Maximum Recall	No	No			No			No				
Pedestrian Recall	No	No			No			No				
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	C	L	C	
C, Cycle Length [s]	75	75	75	75	75	75	
L, Total Lost Time per Cycle [s]	4.50	4.50	4.50	4.50	4.50	4.50	
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	
l2, Clearance Lost Time [s]	2.50	2.50	2.50	2.50	2.50	2.50	
g_i, Effective Green Time [s]	14	43	43	25	23	23	
g / C, Green / Cycle	0.19	0.58	0.58	0.33	0.30	0.30	
(v / s)_i Volume / Saturation Flow Rate	0.16	0.37	0.38	0.29	0.25	0.08	
s, saturation flow rate [veh/h]	1781	1870	1786	3560	3459	3560	
c, Capacity [veh/h]	331	1079	1030	1178	1048	1079	
d1, Uniform Delay [s]	29.38	10.61	10.74	23.56	24.36	19.68	
k, delay calibration	0.11	0.38	0.39	0.11	0.11	0.11	
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	
d2, Incremental Delay [s]	5.74	2.22	2.55	2.21	1.89	0.12	
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	

Lane Group Results

X, volume / capacity	0.84	0.64	0.65	0.87	0.84	0.25	
d, Delay for Lane Group [s/veh]	35.12	12.82	13.29	25.77	26.25	19.80	
Lane Group LOS	D	B	B	C	C	B	
Critical Lane Group	Yes	No	No	Yes	Yes	No	
50th-Percentile Queue Length [veh]	5.14	7.09	7.08	8.33	7.09	1.73	
50th-Percentile Queue Length [ft]	128.48	177.28	176.99	208.14	177.29	43.22	
95th-Percentile Queue Length [veh]	8.86	11.46	11.44	13.06	11.46	3.11	
95th-Percentile Queue Length [ft]	221.42	286.46	286.09	326.44	286.47	77.79	

Movement, Approach, & Intersection Results

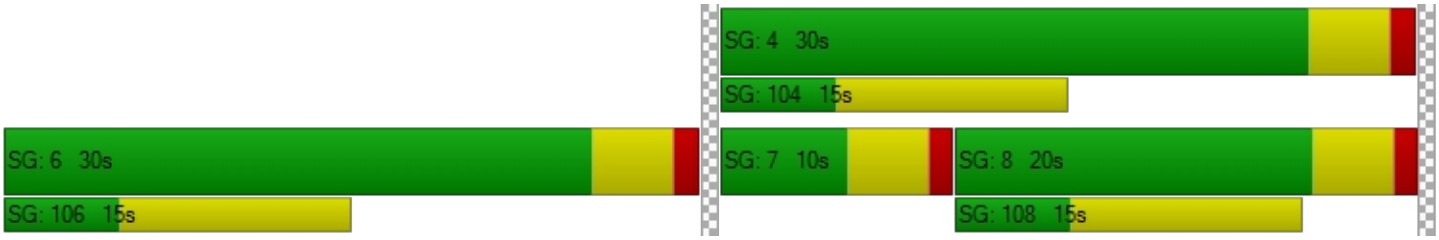
d_M, Delay for Movement [s/veh]	35.12	13.02	13.29	0.00	25.77	0.00	26.25	19.80	0.00	0.00	0.00	0.00
Movement LOS	D	B	B		C		C	B				
d_A, Approach Delay [s/veh]	16.80			25.77			24.72			0.00		
Approach LOS	B			C			C			A		
d_I, Intersection Delay [s/veh]	21.61											
Intersection LOS	C											
Intersection V/C	0.834											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	0.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	21.68	0.00	21.68	21.68
l_p,int, Pedestrian LOS Score for Intersection	2.801	0.000	2.666	1.915
Crosswalk LOS	C	F	B	A
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	850	517	850	0
d_b, Bicycle Delay [s]	9.92	16.50	9.92	30.00
l_b,int, Bicycle LOS Score for Intersection	2.912	2.409	2.510	4.132
Bicycle LOS	C	B	B	D

Sequence

Ring 1	-	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 17: Main Street & SR 91 WB Ramps

Control Type:	Signalized	Delay (sec / veh):	9.0
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.436

Intersection Setup

Name	Main Street			Main Street			SR-91 WB Ramps			SR-91 WB Ramps		
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]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No						No		
Crosswalk	No			No			No			Yes		

Volumes

Name	Main Street			Main Street			SR-91 WB Ramps			SR-91 WB Ramps		
Base Volume Input [veh/h]	0	312	138	35	333	0	0	0	0	126	0	108
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 Rate	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
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	312	138	35	333	0	0	0	0	126	0	108
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	78	35	9	83	0	0	0	0	32	0	27
Total Analysis Volume [veh/h]	0	312	138	35	333	0	0	0	0	126	0	108
Presence of On-Street Parking	No		No	No		No				No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	7	4	0	3	8	0	0	0	0	2	0	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	Lead	-	-
Minimum Green [s]	5	5	0	5	5	0	0	0	0	5	0	0
Maximum Green [s]	30	30	0	30	30	0	0	0	0	30	0	0
Amber [s]	3.5	3.5	0.0	3.5	3.5	0.0	0.0	0.0	0.0	3.5	0.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0
Split [s]	10	22	0	10	22	0	0	0	0	28	0	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0
Walk [s]	0	5	0	0	5	0	0	0	0	5	0	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	0	0	10	0	0
Rest In Walk		No			No					No		
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
I2, Clearance Lost Time [s]	2.5	2.5	0.0	2.5	2.5	0.0	0.0	0.0	0.0	2.5	0.0	0.0
Minimum Recall	No	No		No	No					No		
Maximum Recall	No	No		No	No					No		
Pedestrian Recall	No	No		No	No					No		
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C		L	R
C, Cycle Length [s]	24	24	24	24	24		24	24
L, Total Lost Time per Cycle [s]	4.50	4.50	4.50	4.50	4.50		4.50	4.50
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00		0.00	0.00
l2, Clearance Lost Time [s]	2.50	2.50	2.50	2.50	2.50		2.50	2.50
g_i, Effective Green Time [s]	0	6	6	1	7		4	4
g / C, Green / Cycle	0.00	0.23	0.23	0.04	0.27		0.17	0.17
(v / s)_i Volume / Saturation Flow Rate	0.00	0.12	0.13	0.02	0.09		0.07	0.07
s, saturation flow rate [veh/h]	1781	1870	1681	1781	3560		1781	1589
c, Capacity [veh/h]	1	434	390	80	984		296	264
d1, Uniform Delay [s]	0.00	8.17	8.21	11.27	7.00		9.07	9.04
k, delay calibration	0.11	0.11	0.11	0.11	0.11		0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00
d2, Incremental Delay [s]	0.00	1.04	1.24	3.68	0.20		0.97	1.02
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00		0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00		1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00

Lane Group Results

X, volume / capacity	0.00	0.54	0.56	0.44	0.34		0.43	0.41
d, Delay for Lane Group [s/veh]	0.00	9.22	9.45	14.95	7.20		10.04	10.06
Lane Group LOS	A	A	A	B	A		B	B
Critical Lane Group	No	No	Yes	Yes	No		Yes	No
50th-Percentile Queue Length [veh]	0.00	0.73	0.70	0.21	0.39		0.45	0.39
50th-Percentile Queue Length [ft]	0.00	18.32	17.46	5.20	9.77		11.19	9.72
95th-Percentile Queue Length [veh]	0.00	1.32	1.26	0.37	0.70		0.81	0.70
95th-Percentile Queue Length [ft]	0.00	32.97	31.43	9.35	17.59		20.14	17.49

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	9.27	9.45	14.95	7.20	0.00	0.00	0.00	0.00	10.04	0.00	10.06
Movement LOS	A	A	A	B	A					B		B
d_A, Approach Delay [s/veh]	9.33			7.94			0.00			10.05		
Approach LOS	A			A			A			B		
d_I, Intersection Delay [s/veh]	9.00											
Intersection LOS	A											
Intersection V/C	0.436											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	0.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	0.00	21.68
l_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	0.000	2.053
Crosswalk LOS	F	F	F	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	583	583	0	0
d_b, Bicycle Delay [s]	15.05	15.05	30.00	30.00
l_b,int, Bicycle LOS Score for Intersection	1.931	1.863	4.132	4.132
Bicycle LOS	A	A	D	D

Sequence

Ring 1	-	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 22: I-110 SB Off-Ramp & 190th Street

Control Type:	Signalized	Delay (sec / veh):	8.8
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.678

Intersection Setup

Name	I-110 SB Off-Ramp		190th Street		190th Street	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	Yes		No		No	

Volumes

Name	I-110 SB Off-Ramp		190th Street		190th Street	
Base Volume Input [veh/h]	329	364	0	992	557	0
Base Volume Adjustment Factor	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
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	329	364	0	992	557	0
Peak Hour Factor	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
Total 15-Minute Volume [veh/h]	82	91	0	248	139	0
Total Analysis Volume [veh/h]	329	364	0	992	557	0
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal group	8	0	0	6	2	0
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	-	-
Minimum Green [s]	5	0	0	5	5	0
Maximum Green [s]	30	0	0	30	30	0
Amber [s]	3.5	0.0	0.0	3.5	3.5	0.0
All red [s]	1.0	0.0	0.0	1.0	1.0	0.0
Split [s]	39	0	0	21	21	0
Vehicle Extension [s]	3.0	0.0	0.0	3.0	3.0	0.0
Walk [s]	5	0	0	5	5	0
Pedestrian Clearance [s]	10	0	0	10	10	0
Rest In Walk	No			No	No	
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.5	0.0	0.0	2.5	2.5	0.0
Minimum Recall	No			No	No	
Maximum Recall	No			No	No	
Pedestrian Recall	No			No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R	C	C
C, Cycle Length [s]	32	32	32	32
L, Total Lost Time per Cycle [s]	4.50	4.50	4.50	4.50
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.50	2.50	2.50	2.50
g_i, Effective Green Time [s]	10	10	13	13
g / C, Green / Cycle	0.32	0.32	0.39	0.39
(v / s)_i Volume / Saturation Flow Rate	0.18	0.23	0.28	0.11
s, saturation flow rate [veh/h]	1781	1589	3560	5094
c, Capacity [veh/h]	577	515	1406	2012
d1, Uniform Delay [s]	8.97	9.49	8.13	6.58
k, delay calibration	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.89	1.79	0.66	0.07
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.57	0.71	0.71	0.28
d, Delay for Lane Group [s/veh]	9.86	11.28	8.79	6.66
Lane Group LOS	A	B	A	A
Critical Lane Group	No	Yes	Yes	No
50th-Percentile Queue Length [veh]	1.40	1.72	1.83	0.53
50th-Percentile Queue Length [ft]	34.93	43.11	45.86	13.27
95th-Percentile Queue Length [veh]	2.51	3.10	3.30	0.96
95th-Percentile Queue Length [ft]	62.87	77.60	82.55	23.89

Movement, Approach, & Intersection Results

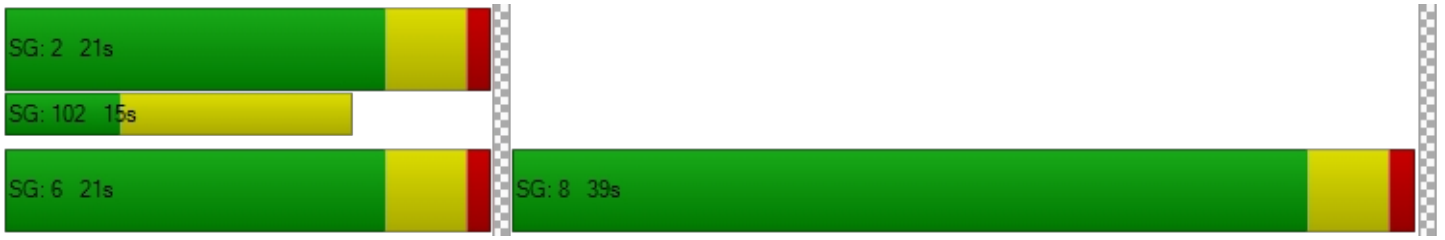
d_M, Delay for Movement [s/veh]	9.86	11.28	0.00	8.79	6.66	0.00
Movement LOS	A	B		A	A	
d_A, Approach Delay [s/veh]	10.61		8.79		6.66	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	8.82					
Intersection LOS	A					
Intersection V/C	0.678					

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	21.68	0.00	0.00
I_p,int, Pedestrian LOS Score for Intersection	2.033	0.000	0.000
Crosswalk LOS	B	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	0	0
d_b, Bicycle Delay [s]	30.00	30.00	30.00
I_b,int, Bicycle LOS Score for Intersection	4.132	4.951	4.439
Bicycle LOS	D	E	E

Sequence

Ring 1	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 28: SR 91 EB Ramps & Albertoni Street

Control Type:	Signalized	Delay (sec / veh):	10.5
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.514

Intersection Setup

Name	SR 91 EB Ramps		Albertoni Street		Albertoni Street	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	Yes		No		No	

Volumes

Name	SR 91 EB Ramps		Albertoni Street		Albertoni Street	
Base Volume Input [veh/h]	209	164	288	266	287	68
Base Volume Adjustment Factor	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
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	209	164	288	266	287	68
Peak Hour Factor	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
Total 15-Minute Volume [veh/h]	52	41	72	67	72	17
Total Analysis Volume [veh/h]	209	164	288	266	287	68
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permissive	Permissive	Protected	Permissive	Permissive	Permissive
Signal group	8	0	1	6	2	0
Auxiliary Signal Groups						
Lead / Lag	Lead	-	Lead	-	-	-
Minimum Green [s]	5	0	5	5	5	0
Maximum Green [s]	30	0	30	30	30	0
Amber [s]	3.5	0.0	3.5	3.5	3.5	0.0
All red [s]	1.0	0.0	1.0	1.0	1.0	0.0
Split [s]	23	0	14	37	23	0
Vehicle Extension [s]	3.0	0.0	3.0	3.0	3.0	0.0
Walk [s]	5	0	0	5	5	0
Pedestrian Clearance [s]	10	0	0	10	10	0
Rest In Walk	No			No	No	
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.5	0.0	2.5	2.5	2.5	0.0
Minimum Recall	No		No	No	No	
Maximum Recall	No		No	No	No	
Pedestrian Recall	No		No	No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R	L	C	C	C
C, Cycle Length [s]	29	29	29	29	29	29
L, Total Lost Time per Cycle [s]	4.50	4.50	4.50	4.50	4.50	4.50
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.50	2.50	2.50	2.50	2.50	2.50
g_i, Effective Green Time [s]	6	6	5	14	5	5
g / C, Green / Cycle	0.20	0.20	0.16	0.49	0.18	0.18
(v / s)_i Volume / Saturation Flow Rate	0.12	0.10	0.08	0.07	0.09	0.10
s, saturation flow rate [veh/h]	1781	1589	3459	3560	1870	1752
c, Capacity [veh/h]	355	316	547	1753	337	315
d1, Uniform Delay [s]	10.60	10.43	11.28	4.06	10.84	10.92
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.56	1.31	0.79	0.04	1.28	1.58
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.59	0.52	0.53	0.15	0.53	0.56
d, Delay for Lane Group [s/veh]	12.16	11.75	12.06	4.10	12.12	12.49
Lane Group LOS	B	B	B	A	B	B
Critical Lane Group	Yes	No	Yes	No	No	Yes
50th-Percentile Queue Length [veh]	1.00	0.77	0.67	0.18	0.85	0.88
50th-Percentile Queue Length [ft]	25.08	19.29	16.87	4.62	21.33	21.92
95th-Percentile Queue Length [veh]	1.81	1.39	1.21	0.33	1.54	1.58
95th-Percentile Queue Length [ft]	45.14	34.71	30.37	8.31	38.40	39.46

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	12.16	11.75	12.06	4.10	12.26	12.49
Movement LOS	B	B	B	A	B	B
d_A, Approach Delay [s/veh]	11.98		8.24		12.31	
Approach LOS	B		A		B	
d_I, Intersection Delay [s/veh]	10.45					
Intersection LOS	B					
Intersection V/C	0.514					

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	21.68	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersection	2.289	0.000	0.000
Crosswalk LOS	B	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	0	0
d_b, Bicycle Delay [s]	30.00	30.00	30.00
l_b,int, Bicycle LOS Score for Intersection	4.132	4.589	4.425
Bicycle LOS	D	E	E

Sequence

Ring 1	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 2: Main Street & I-405 NB Off-Ramp

Control Type:	Signalized	Delay (sec / veh):	9.7
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.576

Intersection Setup

Name	Main Street			Main Street			I-405 NB Off-Ramp			I-405 NB Off-Ramp		
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]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No						No		
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Main Street			Main Street			I-405 NB Off-Ramp			I-405 NB Off-Ramp		
Base Volume Input [veh/h]	14	435	0	0	611	26	0	0	0	259	93	179
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 Rate	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
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	14	435	0	0	611	26	0	0	0	259	93	179
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]	4	109	0	0	153	7	0	0	0	65	23	45
Total Analysis Volume [veh/h]	14	435	0	0	611	26	0	0	0	259	93	179
Presence of On-Street Parking	No		No	No		No				No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	7	4	0	0	8	0	0	0	0	0	2	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	5	5	0	0	5	0	0	0	0	0	5	0
Maximum Green [s]	30	30	0	0	30	0	0	0	0	0	30	0
Amber [s]	3.5	3.5	0.0	0.0	3.5	0.0	0.0	0.0	0.0	0.0	3.5	0.0
All red [s]	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0
Split [s]	10	35	0	0	25	0	0	0	0	0	25	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	0	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	0	0	0	10	0
Rest In Walk		No			No						No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.5	2.5	0.0	0.0	2.5	0.0	0.0	0.0	0.0	0.0	2.5	0.0
Minimum Recall	No	No			No						No	
Maximum Recall	No	No			No						No	
Pedestrian Recall	No	No			No						No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	C		C	C
C, Cycle Length [s]	30	30	30	30		30	30
L, Total Lost Time per Cycle [s]	4.50	4.50	4.50	4.50		4.50	4.50
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00		0.00	0.00
l2, Clearance Lost Time [s]	2.50	2.50	2.50	2.50		2.50	2.50
g_i, Effective Green Time [s]	1	13	8	8		8	8
g / C, Green / Cycle	0.02	0.44	0.27	0.27		0.26	0.26
(v / s)_i Volume / Saturation Flow Rate	0.01	0.12	0.17	0.17		0.16	0.16
s, saturation flow rate [veh/h]	1781	3560	1870	1843		1789	1507
c, Capacity [veh/h]	35	1572	507	500		459	387
d1, Uniform Delay [s]	14.46	5.30	9.55	9.57		9.81	9.84
k, delay calibration	0.11	0.11	0.11	0.11		0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00		1.00	1.00
d2, Incremental Delay [s]	7.41	0.09	1.28	1.35		1.39	1.71
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00		0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00		1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00		1.00	1.00

Lane Group Results

X, volume / capacity	0.40	0.28	0.63	0.64		0.62	0.63
d, Delay for Lane Group [s/veh]	21.86	5.39	10.83	10.93		11.20	11.55
Lane Group LOS	C	A	B	B		B	B
Critical Lane Group	Yes	No	No	Yes		No	Yes
50th-Percentile Queue Length [veh]	0.14	0.45	1.38	1.39		1.29	1.13
50th-Percentile Queue Length [ft]	3.62	11.19	34.56	34.82		32.13	28.35
95th-Percentile Queue Length [veh]	0.26	0.81	2.49	2.51		2.31	2.04
95th-Percentile Queue Length [ft]	6.51	20.14	62.20	62.68		57.83	51.04

Movement, Approach, & Intersection Results

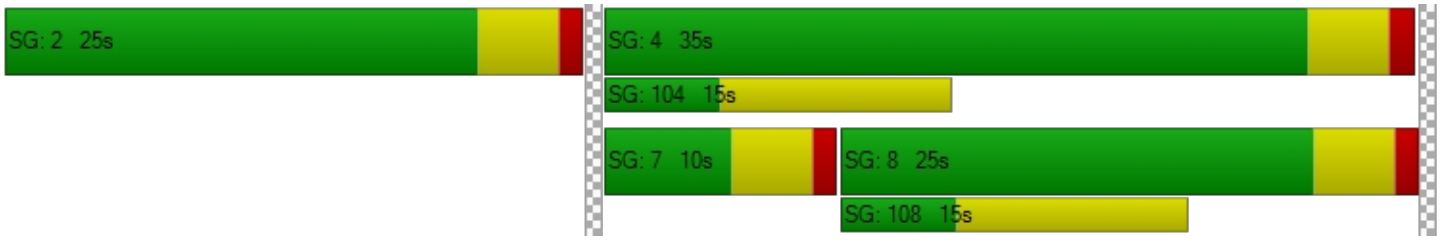
d_M, Delay for Movement [s/veh]	21.86	5.39	0.00	0.00	10.87	10.93	0.00	0.00	0.00	11.20	11.45	11.55
Movement LOS	C	A			B	B				B	B	B
d_A, Approach Delay [s/veh]	5.91			10.88			0.00			11.36		
Approach LOS	A			B			A			B		
d_I, Intersection Delay [s/veh]	9.66											
Intersection LOS	A											
Intersection V/C	0.576											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	21.68	21.68
l_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	1.760	1.954
Crosswalk LOS	F	F	A	A
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1017	683	0	683
d_b, Bicycle Delay [s]	7.25	13.00	30.00	13.00
l_b,int, Bicycle LOS Score for Intersection	1.930	2.085	4.132	1.998
Bicycle LOS	A	B	D	A

Sequence

Ring 1	-	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 15: Avalon Boulevard & I-405 NB Ramps

Control Type:	Signalized	Delay (sec / veh):	13.7
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.713

Intersection Setup

Name	Avalon Boulevard			Avalon Boulevard			I-405 NB Ramps			I-405 NB Ramps		
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]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No						No		
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Avalon Boulevard			Avalon Boulevard			I-405 NB Ramps			I-405 NB Ramps		
Base Volume Input [veh/h]	529	1561	0	0	1479	714	0	0	0	427	0	648
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 Rate	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
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	529	1561	0	0	1479	714	0	0	0	427	0	648
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]	132	390	0	0	370	179	0	0	0	107	0	162
Total Analysis Volume [veh/h]	529	1561	0	0	1479	714	0	0	0	427	0	648
Presence of On-Street Parking	No		No	No		No				No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Unsigna	Permiss	Permiss	Permiss	Permiss	Permiss	Unsigna
Signal group	7	4	0	0	8	0	0	0	0	0	2	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	5	5	0	0	5	0	0	0	0	0	5	0
Maximum Green [s]	30	30	0	0	30	0	0	0	0	0	30	0
Amber [s]	3.5	3.5	0.0	0.0	3.5	0.0	0.0	0.0	0.0	0.0	3.5	0.0
All red [s]	1.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0
Split [s]	14	34	0	0	20	0	0	0	0	0	26	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	0	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	0	0	0	10	0
Rest In Walk		No			No						No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.5	2.5	0.0	0.0	2.5	0.0	0.0	0.0	0.0	0.0	2.5	0.0
Minimum Recall	No	No			No						No	
Maximum Recall	No	No			No						No	
Pedestrian Recall	No	No			No						No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C		L	C
C, Cycle Length [s]	57	57	57		57	57
L, Total Lost Time per Cycle [s]	4.50	4.50	4.50		4.50	4.50
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00		0.00	0.00
l2, Clearance Lost Time [s]	2.50	2.50	2.50		2.50	2.50
g_i, Effective Green Time [s]	12	39	22		9	9
g / C, Green / Cycle	0.21	0.68	0.39		0.17	0.17
(v / s)_i Volume / Saturation Flow Rate	0.15	0.44	0.29		0.12	0.12
s, saturation flow rate [veh/h]	3459	3560	5094		1781	1781
c, Capacity [veh/h]	713	2407	1992		296	296
d1, Uniform Delay [s]	21.23	5.33	14.91		22.54	22.54
k, delay calibration	0.11	0.11	0.11		0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00		1.00	1.00
d2, Incremental Delay [s]	1.55	0.30	0.56		3.31	3.31
d3, Initial Queue Delay [s]	0.00	0.00	0.00		0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00		1.00	1.00
PF, progression factor	1.00	1.00	1.00		1.00	1.00

Lane Group Results

X, volume / capacity	0.74	0.65	0.74		0.72	0.72
d, Delay for Lane Group [s/veh]	22.78	5.63	15.47		25.85	25.85
Lane Group LOS	C	A	B		C	C
Critical Lane Group	Yes	No	Yes		Yes	No
50th-Percentile Queue Length [veh]	3.18	3.22	4.80		2.77	2.77
50th-Percentile Queue Length [ft]	79.42	80.48	119.90		69.35	69.35
95th-Percentile Queue Length [veh]	5.72	5.79	8.39		4.99	4.99
95th-Percentile Queue Length [ft]	142.95	144.87	209.69		124.83	124.83

Movement, Approach, & Intersection Results

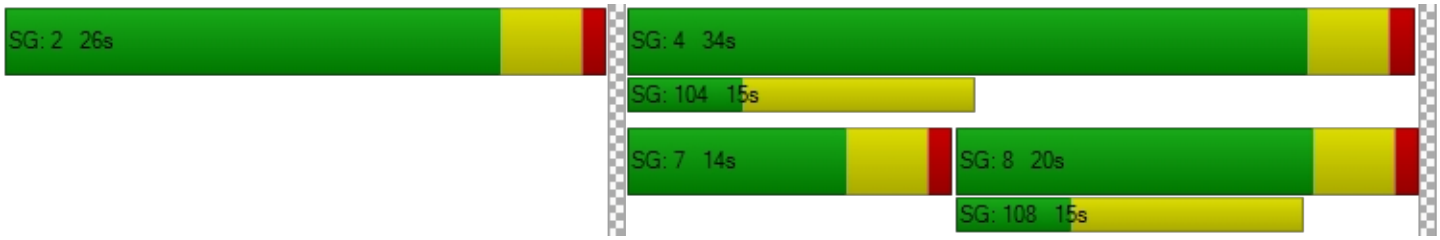
d_M, Delay for Movement [s/veh]	22.78	5.63	0.00	0.00	15.47	0.00	0.00	0.00	0.00	25.85	25.85	0.00
Movement LOS	C	A			B					C	C	
d_A, Approach Delay [s/veh]	9.97			15.47			0.00			25.85		
Approach LOS	A			B			A			C		
d_I, Intersection Delay [s/veh]	13.70											
Intersection LOS	B											
Intersection V/C	0.713											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	21.68	21.68
l_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	1.953	2.060
Crosswalk LOS	F	F	A	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	983	517	0	717
d_b, Bicycle Delay [s]	7.75	16.50	30.00	12.35
l_b,int, Bicycle LOS Score for Intersection	3.284	2.373	4.132	2.264
Bicycle LOS	C	B	D	B

Sequence

Ring 1	-	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 16: Avalon Boulevard & I-405 SB Ramps

Control Type:	Signalized	Delay (sec / veh):	22.6
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.843

Intersection Setup

Name	Avalon Boulevard			Avalon Boulevard			I-405 SB Ramps			I-405 SB Ramps		
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]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No					
Crosswalk	Yes			No			Yes			Yes		

Volumes

Name	Avalon Boulevard			Avalon Boulevard			I-405 SB Ramps			I-405 SB Ramps		
Base Volume Input [veh/h]	278	1196	178	0	1040	841	915	273	683	0	0	0
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 Rate	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
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	278	1196	178	0	1040	841	915	273	683	0	0	0
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]	70	299	45	0	260	210	229	68	171	0	0	0
Total Analysis Volume [veh/h]	278	1196	178	0	1040	841	915	273	683	0	0	0
Presence of On-Street Parking	No		No	No		No	No		No			
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Permiss	Permiss	Unsigna	Permiss	Permiss	Unsigna	Permiss	Permiss	Permiss
Signal group	7	4	0	0	8	0	0	6	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	5	5	0	0	5	0	0	5	0	0	0	0
Maximum Green [s]	30	30	0	0	30	0	0	30	0	0	0	0
Amber [s]	3.5	3.5	0.0	0.0	3.5	0.0	0.0	3.5	0.0	0.0	0.0	0.0
All red [s]	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0
Split [s]	10	30	0	0	20	0	0	30	0	0	0	0
Vehicle Extension [s]	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	0	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	0	0
Rest In Walk		No			No			No				
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
I2, Clearance Lost Time [s]	2.5	2.5	0.0	0.0	2.5	0.0	0.0	2.5	0.0	0.0	0.0	0.0
Minimum Recall	No	No			No			No				
Maximum Recall	No	No			No			No				
Pedestrian Recall	No	No			No			No				
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	C	L	C	
C, Cycle Length [s]	78	78	78	78	78	78	
L, Total Lost Time per Cycle [s]	4.50	4.50	4.50	4.50	4.50	4.50	
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	
l2, Clearance Lost Time [s]	2.50	2.50	2.50	2.50	2.50	2.50	
g_i, Effective Green Time [s]	14	45	45	26	24	24	
g / C, Green / Cycle	0.18	0.57	0.57	0.33	0.31	0.31	
(v / s)_i Volume / Saturation Flow Rate	0.16	0.37	0.38	0.29	0.26	0.08	
s, saturation flow rate [veh/h]	1781	1870	1787	3560	3459	3560	
c, Capacity [veh/h]	330	1073	1026	1178	1073	1105	
d1, Uniform Delay [s]	30.61	11.24	11.39	24.61	25.17	20.05	
k, delay calibration	0.11	0.41	0.43	0.11	0.11	0.11	
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	
d2, Incremental Delay [s]	5.82	2.51	2.89	2.38	2.03	0.12	
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	

Lane Group Results

X, volume / capacity	0.84	0.65	0.66	0.88	0.85	0.25	
d, Delay for Lane Group [s/veh]	36.43	13.75	14.28	26.98	27.20	20.16	
Lane Group LOS	D	B	B	C	C	C	
Critical Lane Group	Yes	No	No	Yes	Yes	No	
50th-Percentile Queue Length [veh]	5.37	7.72	7.72	8.86	7.75	1.79	
50th-Percentile Queue Length [ft]	134.22	192.92	193.02	221.53	193.86	44.71	
95th-Percentile Queue Length [veh]	9.17	12.27	12.28	13.74	12.32	3.22	
95th-Percentile Queue Length [ft]	229.22	306.82	306.95	343.58	308.04	80.49	

Movement, Approach, & Intersection Results

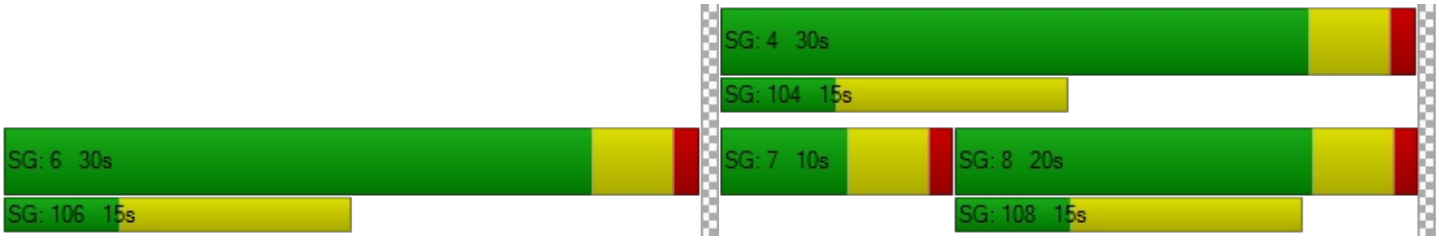
d_M, Delay for Movement [s/veh]	36.43	13.97	14.28	0.00	26.98	0.00	27.20	20.16	0.00	0.00	0.00	0.00
Movement LOS	D	B	B		C		C	C				
d_A, Approach Delay [s/veh]	17.78			26.98			25.58			0.00		
Approach LOS	B			C			C			A		
d_I, Intersection Delay [s/veh]	22.64											
Intersection LOS	C											
Intersection V/C	0.843											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	0.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	21.68	0.00	21.68	21.68
l_p,int, Pedestrian LOS Score for Intersection	2.805	0.000	2.672	1.915
Crosswalk LOS	C	F	B	A
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	850	517	850	0
d_b, Bicycle Delay [s]	9.92	16.50	9.92	30.00
l_b,int, Bicycle LOS Score for Intersection	2.923	2.418	2.540	4.132
Bicycle LOS	C	B	B	D

Sequence

Ring 1	-	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 17: Main Street & SR 91 WB Ramps

Control Type:	Signalized	Delay (sec / veh):	9.1
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.457

Intersection Setup

Name	Main Street			Main Street			SR-91 WB Ramps			SR-91 WB Ramps		
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]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No						No		
Crosswalk	No			No			No			Yes		

Volumes

Name	Main Street			Main Street			SR-91 WB Ramps			SR-91 WB Ramps		
Base Volume Input [veh/h]	0	326	162	35	351	0	0	0	0	135	0	108
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 Rate	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
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	326	162	35	351	0	0	0	0	135	0	108
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	82	41	9	88	0	0	0	0	34	0	27
Total Analysis Volume [veh/h]	0	326	162	35	351	0	0	0	0	135	0	108
Presence of On-Street Parking	No		No	No		No				No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	7	4	0	3	8	0	0	0	0	2	0	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	Lead	-	-
Minimum Green [s]	5	5	0	5	5	0	0	0	0	5	0	0
Maximum Green [s]	30	30	0	30	30	0	0	0	0	30	0	0
Amber [s]	3.5	3.5	0.0	3.5	3.5	0.0	0.0	0.0	0.0	3.5	0.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0
Split [s]	10	22	0	10	22	0	0	0	0	28	0	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0
Walk [s]	0	5	0	0	5	0	0	0	0	5	0	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	0	0	10	0	0
Rest In Walk		No			No					No		
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
I2, Clearance Lost Time [s]	2.5	2.5	0.0	2.5	2.5	0.0	0.0	0.0	0.0	2.5	0.0	0.0
Minimum Recall	No	No		No	No					No		
Maximum Recall	No	No		No	No					No		
Pedestrian Recall	No	No		No	No					No		
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C		L	R
C, Cycle Length [s]	25	25	25	25	25		25	25
L, Total Lost Time per Cycle [s]	4.50	4.50	4.50	4.50	4.50		4.50	4.50
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00		0.00	0.00
l2, Clearance Lost Time [s]	2.50	2.50	2.50	2.50	2.50		2.50	2.50
g_i, Effective Green Time [s]	0	6	6	1	7		4	4
g / C, Green / Cycle	0.00	0.24	0.24	0.04	0.29		0.17	0.17
(v / s)_i Volume / Saturation Flow Rate	0.00	0.14	0.14	0.02	0.10		0.08	0.07
s, saturation flow rate [veh/h]	1781	1870	1666	1781	3560		1781	1589
c, Capacity [veh/h]	1	459	409	80	1032		296	264
d1, Uniform Delay [s]	0.00	8.19	8.22	11.56	6.95		9.35	9.27
k, delay calibration	0.11	0.11	0.11	0.11	0.11		0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00
d2, Incremental Delay [s]	0.00	1.05	1.25	3.71	0.19		1.10	1.02
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00		0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00		1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00

Lane Group Results

X, volume / capacity	0.00	0.55	0.57	0.44	0.34		0.46	0.41
d, Delay for Lane Group [s/veh]	0.00	9.24	9.48	15.26	7.14		10.45	10.28
Lane Group LOS	A	A	A	B	A		B	B
Critical Lane Group	No	No	Yes	Yes	No		Yes	No
50th-Percentile Queue Length [veh]	0.00	0.81	0.77	0.21	0.42		0.51	0.40
50th-Percentile Queue Length [ft]	0.00	20.36	19.21	5.35	10.46		12.66	10.12
95th-Percentile Queue Length [veh]	0.00	1.47	1.38	0.39	0.75		0.91	0.73
95th-Percentile Queue Length [ft]	0.00	36.66	34.58	9.63	18.82		22.80	18.21

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	9.29	9.48	15.26	7.14	0.00	0.00	0.00	0.00	10.45	0.00	10.28
Movement LOS	A	A	A	B	A					B		B
d_A, Approach Delay [s/veh]	9.35			7.88			0.00			10.37		
Approach LOS	A			A			A			B		
d_I, Intersection Delay [s/veh]	9.06											
Intersection LOS	A											
Intersection V/C	0.457											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	0.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	0.00	21.68
l_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	0.000	2.064
Crosswalk LOS	F	F	F	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	583	583	0	0
d_b, Bicycle Delay [s]	15.05	15.05	30.00	30.00
l_b,int, Bicycle LOS Score for Intersection	1.962	1.878	4.132	4.132
Bicycle LOS	A	A	D	D

Sequence

Ring 1	-	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 22: I-110 SB Off-Ramp & 190th Street

Control Type:	Signalized	Delay (sec / veh):	9.0
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.684

Intersection Setup

Name	I-110 SB Off-Ramp		190th Street		190th Street	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	Yes		No		No	

Volumes

Name	I-110 SB Off-Ramp		190th Street		190th Street	
Base Volume Input [veh/h]	356	364	0	1028	585	0
Base Volume Adjustment Factor	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
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	356	364	0	1028	585	0
Peak Hour Factor	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
Total 15-Minute Volume [veh/h]	89	91	0	257	146	0
Total Analysis Volume [veh/h]	356	364	0	1028	585	0
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal group	8	0	0	6	2	0
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	-	-
Minimum Green [s]	5	0	0	5	5	0
Maximum Green [s]	30	0	0	30	30	0
Amber [s]	3.5	0.0	0.0	3.5	3.5	0.0
All red [s]	1.0	0.0	0.0	1.0	1.0	0.0
Split [s]	39	0	0	21	21	0
Vehicle Extension [s]	3.0	0.0	0.0	3.0	3.0	0.0
Walk [s]	5	0	0	5	5	0
Pedestrian Clearance [s]	10	0	0	10	10	0
Rest In Walk	No			No	No	
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.5	0.0	0.0	2.5	2.5	0.0
Minimum Recall	No			No	No	
Maximum Recall	No			No	No	
Pedestrian Recall	No			No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R	C	C
C, Cycle Length [s]	33	33	33	33
L, Total Lost Time per Cycle [s]	4.50	4.50	4.50	4.50
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.50	2.50	2.50	2.50
g_i, Effective Green Time [s]	11	11	13	13
g / C, Green / Cycle	0.32	0.32	0.40	0.40
(v / s)_i Volume / Saturation Flow Rate	0.20	0.23	0.29	0.11
s, saturation flow rate [veh/h]	1781	1589	3560	5094
c, Capacity [veh/h]	576	514	1439	2059
d1, Uniform Delay [s]	9.45	9.81	8.24	6.62
k, delay calibration	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.09	1.82	0.67	0.07
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.62	0.71	0.71	0.28
d, Delay for Lane Group [s/veh]	10.54	11.62	8.91	6.69
Lane Group LOS	B	B	A	A
Critical Lane Group	No	Yes	Yes	No
50th-Percentile Queue Length [veh]	1.64	1.82	1.99	0.58
50th-Percentile Queue Length [ft]	41.08	45.45	49.63	14.46
95th-Percentile Queue Length [veh]	2.96	3.27	3.57	1.04
95th-Percentile Queue Length [ft]	73.95	81.82	89.33	26.03

Movement, Approach, & Intersection Results

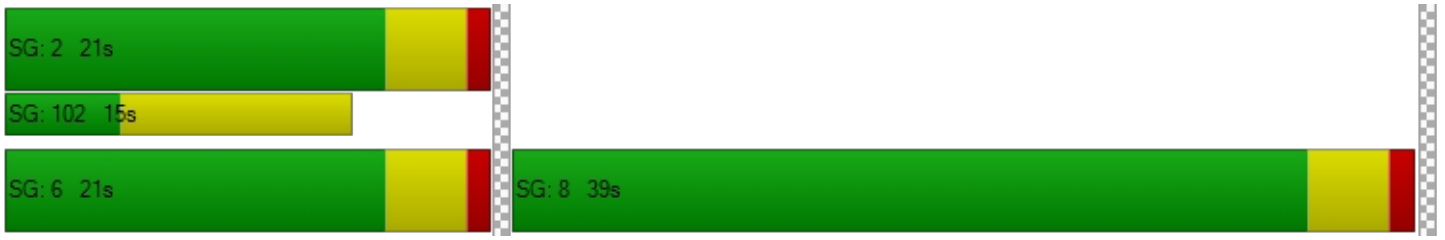
d_M, Delay for Movement [s/veh]	10.54	11.62	0.00	8.91	6.69	0.00
Movement LOS	B	B		A	A	
d_A, Approach Delay [s/veh]	11.09		8.91		6.69	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	9.03					
Intersection LOS	A					
Intersection V/C	0.684					

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	21.68	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersection	2.047	0.000	0.000
Crosswalk LOS	B	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	0	0
d_b, Bicycle Delay [s]	30.00	30.00	30.00
l_b,int, Bicycle LOS Score for Intersection	4.132	4.981	4.454
Bicycle LOS	D	E	E

Sequence

Ring 1	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 28: SR 91 EB Ramps & Albertoni Street

Control Type:	Signalized	Delay (sec / veh):	10.7
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.521

Intersection Setup

Name	SR 91 EB Ramps		Albertoni Street		Albertoni Street	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	Yes		No		No	

Volumes

Name	SR 91 EB Ramps		Albertoni Street		Albertoni Street	
Base Volume Input [veh/h]	209	195	295	275	294	68
Base Volume Adjustment Factor	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
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	209	195	295	275	294	68
Peak Hour Factor	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
Total 15-Minute Volume [veh/h]	52	49	74	69	74	17
Total Analysis Volume [veh/h]	209	195	295	275	294	68
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permissive	Permissive	Protected	Permissive	Permissive	Permissive
Signal group	8	0	1	6	2	0
Auxiliary Signal Groups						
Lead / Lag	Lead	-	Lead	-	-	-
Minimum Green [s]	5	0	5	5	5	0
Maximum Green [s]	30	0	30	30	30	0
Amber [s]	3.5	0.0	3.5	3.5	3.5	0.0
All red [s]	1.0	0.0	1.0	1.0	1.0	0.0
Split [s]	23	0	14	37	23	0
Vehicle Extension [s]	3.0	0.0	3.0	3.0	3.0	0.0
Walk [s]	5	0	0	5	5	0
Pedestrian Clearance [s]	10	0	0	10	10	0
Rest In Walk	No			No	No	
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.5	0.0	2.5	2.5	2.5	0.0
Minimum Recall	No		No	No	No	
Maximum Recall	No		No	No	No	
Pedestrian Recall	No		No	No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R	L	C	C	C
C, Cycle Length [s]	30	30	30	30	30	30
L, Total Lost Time per Cycle [s]	4.50	4.50	4.50	4.50	4.50	4.50
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.50	2.50	2.50	2.50	2.50	2.50
g_i, Effective Green Time [s]	6	6	5	15	5	5
g / C, Green / Cycle	0.21	0.21	0.16	0.49	0.18	0.18
(v / s)_i Volume / Saturation Flow Rate	0.12	0.12	0.09	0.08	0.10	0.10
s, saturation flow rate [veh/h]	1781	1589	3459	3560	1870	1754
c, Capacity [veh/h]	368	329	554	1752	339	318
d1, Uniform Delay [s]	10.65	10.72	11.52	4.18	11.09	11.17
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.38	1.71	0.80	0.04	1.31	1.61
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.57	0.59	0.53	0.16	0.53	0.57
d, Delay for Lane Group [s/veh]	12.03	12.43	12.31	4.22	12.40	12.77
Lane Group LOS	B	B	B	A	B	B
Critical Lane Group	No	Yes	Yes	No	No	Yes
50th-Percentile Queue Length [veh]	1.01	0.97	0.72	0.21	0.90	0.93
50th-Percentile Queue Length [ft]	25.30	24.35	17.92	5.17	22.57	23.18
95th-Percentile Queue Length [veh]	1.82	1.75	1.29	0.37	1.63	1.67
95th-Percentile Queue Length [ft]	45.55	43.84	32.25	9.31	40.63	41.72

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	12.03	12.43	12.31	4.22	12.54	12.77
Movement LOS	B	B	B	A	B	B
d_A, Approach Delay [s/veh]	12.22		8.41		12.59	
Approach LOS	B		A		B	
d_I, Intersection Delay [s/veh]	10.69					
Intersection LOS	B					
Intersection V/C	0.521					

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	21.68	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersection	2.299	0.000	0.000
Crosswalk LOS	B	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	0	0
d_b, Bicycle Delay [s]	30.00	30.00	30.00
l_b,int, Bicycle LOS Score for Intersection	4.132	4.603	4.431
Bicycle LOS	D	E	E

Sequence

Ring 1	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

ATTACHMENT 3

Table 19 and Table 20

TABLE 19A
EXISTING WITH PROJECT CONDITIONS (YEAR 2018)
SIGNALIZED INTERSECTION LEVELS OF SERVICE ANALYSIS

No.	Intersection	Peak Hour	Existing Conditions		Existing with Project Conditions	
			Delay	LOS	Delay	LOS
S-1.	Main Street & I-405 NB Off-Ramp (Intersection #2)	A.M. P.M.	11.0 11.5	B B	11.1 12.0	B B
S-2.	Main Street & I-405 SB On-Ramp (Intersection #3)	A.M. P.M.	7.7 13.0	A B	7.8 13.3	A B
S-3.	Avalon Boulevard & SR-91 WB On-Ramp (Intersection #6)	A.M. P.M.	8.7 8.2	A A	8.8 8.2	A A
S-4.	Avalon Boulevard & I-405 NB Ramps (Intersection #15)	A.M. P.M.	~~15.4~~ 7.1 7.7	~~B~~ A A	~~15.5~~ 7.1 7.7	~~B~~ A A
S-5.	Avalon Boulevard & I-405 SB Ramps (Intersection #16)	A.M. P.M.	~~13.7~~ 8.3 7.6	~~B~~ A A	~~13.7~~ 8.3 7.6	~~B~~ A A
S-6.	Main Street & SR-91 WB Ramps (Intersection #17)	A.M. P.M.	13.7 12.9	B B	13.8 13.1	B B
S-7.	I-110 NB On-Ramp & 190th Street (Intersection #21)	A.M. P.M.	6.7 7.5	A A	6.7 7.5	A A
S-8.	I-110 SB Off-Ramp & 190th Street (Intersection #22)	A.M. P.M.	13.1 12.1	B B	13.3 12.3	B B
S-9.	Figueroa Street & I-110 NB Ramps (Intersection #27)	A.M. P.M.	15.8 15.7	B B	15.9 15.9	B B
S-10.	SR-91 EB Ramps & Albertoni Street (Intersection #28)	A.M. P.M.	12.3 11.7	B B	12.4 11.8	B B

Notes

Delay is measured in seconds per vehicle

LOS = Level of service

Results per Vistro 5 (HCM 6th Edition methodology).

TABLE 20A
FUTURE WITH PROJECT CONDITIONS (YEAR 2020)
SIGNALIZED INTERSECTION LEVELS OF SERVICE ANALYSIS

No.	Intersection	Peak Hour	Future without Project Conditions		Future with Project Conditions	
			Delay	LOS	Delay	LOS
S-1.	Main Street & I-405 NB Off-Ramp (Intersection #2)	A.M. P.M.	11.4 13.4	B B	11.6 14.3	B B
S-2.	Main Street & I-405 SB On-Ramp (Intersection #3)	A.M. P.M.	7.9 14.2	A B	8.0 14.6	A B
S-3.	Avalon Boulevard & SR-91 WB On-Ramp (Intersection #6)	A.M. P.M.	9.3 8.8	A A	9.3 8.9	A A
S-4.	Avalon Boulevard & I-405 NB Ramps (Intersection #15)	A.M. P.M.	~~20.4~~ 8.0 9.3	~~C~~ A A	~~20.6~~ 8.0 9.3	~~C~~ A A
S-5.	Avalon Boulevard & I-405 SB Ramps (Intersection #16)	A.M. P.M.	~~17.8~~ 9.3 9.6	~~B~~ A A	~~17.8~~ 9.3 9.7	~~B~~ A A
S-6.	Main Street & SR-91 WB Ramps (Intersection #17)	A.M. P.M.	14.3 13.4	B B	14.4 13.6	B B
S-7.	I-110 NB On-Ramp & 190th Street (Intersection #21)	A.M. P.M.	6.8 7.7	A A	6.8 7.8	A A
S-8.	I-110 SB Off-Ramp & 190th Street (Intersection #22)	A.M. P.M.	14.9 13.3	B B	15.1 13.5	B B
S-9.	Figueroa Street & I-110 NB Ramps (Intersection #27)	A.M. P.M.	17.4 17.3	B B	17.5 17.6	B B
S-10.	SR-91 EB Ramps & Albertoni Street (Intersection #28)	A.M. P.M.	12.6 11.9	B B	12.8 12.0	B B

Notes

Delay is measured in seconds per vehicle

LOS = Level of service

Results per Vistro 5 (HCM 6th Edition methodology).

ATTACHMENT 4

Updated Appendix C of the Traffic Impact Study

CHAPTER 4
MITIGATION MONITORING AND REPORTING PROGRAM

California Public Resources Code Section 21081.6 requires that, upon certification of an EIR, "[t]he public agency shall adopt a reporting or monitoring program for the changes made to the project or conditions of project approval, adopted in order to mitigate or avoid significant effects on the environment. The reporting or monitoring program shall be designed to ensure compliance during project implementation."

This chapter contains the mitigation monitoring and reporting program (MMRP) that has been developed for the Carol Kimmelman Athletic and Academic Campus Project (project or proposed project). This MMRP has been developed in compliance with Public Resources Code Section 21081.6 and Section 15097 of the CEQA Guidelines. The mitigation measures in the table are coded by alphanumeric identification consistent with the EIR. The following items are identified for each mitigation measure:

- **Mitigation Monitoring.** This section of the MMRP lists the stage of the proposed project during which the mitigation measure would be implemented and the stage during which proper implementation would be monitored and verified. It also lists the agency that is responsible for ensuring that the mitigation measure is implemented and that it is implemented properly.
- **Verification of Compliance.** This section of the MMRP provides a location for the implementing party and/or enforcing agency to make notes and to record their initials and the compliance date for each mitigation measure.

The County must adopt this MMRP, or an equally effective program, if it approves the proposed project with the mitigation measures that were adopted or made conditions of project approval.

Minor changes and modifications to the MMRP are permitted, but can only be made by the Project Applicant or its successor subject to approval by the County. In conjunction with any appropriate agencies or departments, the County will determine the adequacy of any proposed change or modification. Any revisions to a Mitigation Measure in the final MMRP must achieve the same level or more of mitigation as the original mitigation measure and not result in new or more severe environmental impacts.

Table 4-1
Mitigation Monitoring and Reporting Program

Mitigation Measure	Mitigation Monitoring			Verification of Compliance		
	Implementing Phase	*Monitoring Phase*	*Enforcing Agency*	*Initial*	*Date*	*Comments*
Air Quality						
MM-AQ-1. To reduce the potential for health risks, and mass emissions of oxides of nitrogen (NOx) and diesel particulate matter as a result of the construction of the project, the applicant shall include the following requirements in its contracts with the construction contractors: • Equip heavy-duty diesel-powered construction equipment with Tier 4 Final or better diesel engines, except where Tier 4 Final or better engines are not available for specific construction equipment. • Minimize simultaneous operation of multiple construction equipment units. During construction, vehicles in loading and unloading queues shall not idle for more than 5 minutes, and shall turn their engines off when not in use to reduce vehicle emissions. • Properly tune and maintain all construction equipment in accordance with manufacturer's specifications; • Where feasible, employ the use of electrical or natural gas-powered construction equipment, including forklifts and other comparable equipment types. • To reduce the need for electric generators and other fuel-powered equipment, provide on-site electrical hookups for the use of hand tools such as saws, drills, and compressors used for building construction. • Develop a Construction Traffic Control Plan to ensure construction traffic and equipment use is minimized to the extent practicable. The Construction Traffic Control Plan shall route delivery and haul trucks required during construction away from sensitive receptor locations and congested intersections, to the extent feasible. The Construction Traffic Control Plan shall, to the extent	Pre-construction; during construction; final plans and specifications	Final plans and specifications; during construction	County of Los Angeles Department of Public Works			

Table 4-1
Mitigation Monitoring and Reporting Program

Mitigation Measure	Mitigation Monitoring			Verification of Compliance		
	Implementing Phase	*Monitoring Phase*	*Enforcing Agency*	*Initial*	*Date*	*Comments*
feasible, include measures to: reduce the number of large pieces of equipment operating simultaneously during peak construction periods, schedule vendor and haul truck trips to occur during non-peak hours, establish dedicated construction parking areas to encourage carpooling and efficiently accommodate construction vehicles, identify alternative routes to reduce traffic congestion during peak activities, and increase construction employee carpooling. Construction Traffic Control plans shall be finalized and approved prior to issuance of grading permits.						
MM-AQ-2. Prior to the County of Los Angeles' (County's) approval of any grading permits, and during project construction, a Fugitive Dust Plan shall be prepared consistent with South Coast Air Quality Management District (SCAQMD) Rule 403. The project applicant or its designee shall require implementation of the following fugitive dust measures to minimize particulate matter less than or equal to 10 microns in diameter (PM_{10}) and particulate matter less than or equal to 2.5 microns in diameter ($PM_{2.5}$) emissions as part of the Fugitive Dust Plan. All measures shall be designated on grading and improvement plans. Measures shall include but are not limited to the following: • Water, or utilize another SCAQMD-approved dust control non-toxic agent, on the grading areas at least three times daily to minimize fugitive dust. • All permanent roads and roadway improvements shall be constructed and paved as early as possible in the construction process to reduce construction vehicle travel on unpaved roads. To reduce fugitive dust from earth-moving operations, building pads shall be finalized as soon as possible following site preparation and grading activities.	Pre-construction; during construction; final plans and specifications	Final plans and specifications; during construction	County of Los Angeles Department of Public Works			

Table 4-1
Mitigation Monitoring and Reporting Program

Mitigation Measure	Mitigation Monitoring			Verification of Compliance		
	Implementing Phase	*Monitoring Phase*	*Enforcing Agency*	*Initial*	*Date*	*Comments*
• Stabilize grading areas as quickly as possible to minimize fugitive dust. • Apply chemical stabilizer to on-site stockpiles of excavated material, install a gravel pad, or pave the last 100 feet of internal travel path within the construction site prior to public road entry. • Remove any visible track-out into traveled public streets with the use of sweepers, water trucks, or similar method as soon as possible. • Provide sufficient perimeter erosion control to prevent washout of silty material onto public roads. Unpaved construction site egress points shall be graveled to prevent track-out. • Wet wash the construction access point at the end of the workday if any vehicle travel on unpaved surfaces has occurred. • Cover haul trucks or maintain at least 2 feet of freeboard to reduce blow-off during hauling. • Evaluate potential for reduction in dust generating activity if winds exceed 25 miles per hour. • Enforce a 15-mile-per-hour speed limit on unpaved surfaces. • Provide haul truck staging areas for the loading and unloading of soil and materials. Staging areas shall be located away from sensitive receptors, at the furthest feasible distance. Prior to construction activities, the project applicant shall employ a construction relations officer who will address community concerns regarding on-site construction activity. The applicant shall provide public notification in the form of a visible sign containing the contact information of the construction relations officer. The sign shall be placed in easily						

Table 4-1
Mitigation Monitoring and Reporting Program

Mitigation Measure	Mitigation Monitoring			Verification of Compliance		
	Implementing Phase	*Monitoring Phase*	*Enforcing Agency*	*Initial*	*Date*	*Comments*
accessible locations along South Avalon Boulevard and Martin Luther King Jr. Street and noted on grading and improvement plans.						
MM-AQ-3. The proposed project shall provide circuitry and capacity for installation of electric vehicle (EV) charging stations consistent with the County of Los Angeles criteria. The proposed project shall develop up to 5% of the available parking spaces on site as EV charging stations.	Final plans and specifications	Final plans and specifications; prior to issuance of first occupancy permit	County of Los Angeles Department of Public Works			
MM-AQ-4. The construction contractor shall require that construction vendors, contractors, and/or haul truck operators commit to using 2010 model year or newer diesel haul trucks. All construction truck operators shall maintain truck records and make these records available to the County upon request.	Pre-construction; during construction	During construction	County of Los Angeles Department of Public Works			
MM-AQ-5. The construction contractor shall encourage its construction contractors and vendors to apply for South Coast Air Quality Management Surplus Off-Road Opt-In for NOx ("SOON") funds to the extent available, which provide funds to applicable fleets for the purchase of commercially available low-emission heavy-duty engines to achieve near-term reduction of NO_x emissions from in-use off-road diesel vehicles.	Pre-construction; during construction	During construction	County of Los Angeles Department of Public Works			
MM-AQ-6. During operations, the operator of the Learning Center shall encourage school bus fleets under contract with the Learning Center to seek funding opportunities through the South Coast Air Quality Management District's Lower-Emission School Bus Program, to the extent available, to replace older diesel busses with cleaner school buses.	Project operation	Throughout operation	County of Los Angeles Department of Public Works			
MM-AQ-7. During operations, electric landscape equipment, such as lawn mowers and leaf blowers, shall be used to the extent commercially available.	Project operation	Throughout operation	County of Los Angeles Department of Public Works			

Table 4-1
Mitigation Monitoring and Reporting Program

Mitigation Measure	Mitigation Monitoring			Verification of Compliance		
	Implementing Phase	*Monitoring Phase*	*Enforcing Agency*	*Initial*	*Date*	*Comments*
MM-AQ-8. During operations, the project shall utilize electric or alternatively fueled parking lot sweepers with HEPA filters.	Project operation	Throughout operation	County of Los Angeles Department of Public Works			
Biological Resources						
MM-BIO-1. Conduct Pre-Construction Surveys. Prior to construction, a knowledgeable biologist shall conduct a preconstruction survey sweep within areas of suitable habitat for the San Diego desert woodrat. The biologist shall look for any San Diego desert woodrat in suitable habitat that may be located within or immediately adjacent to project work areas (within 100 feet). If individual San Diego desert woodrats are observed within project work areas during the pre-construction survey, a biological monitor shall be on site during construction to flush or move them out of harm's way to avoid direct impacts to these species. If a population of San Diego desert woodrat are observed during the pre-construction survey, and cannot be avoided by the project, consultation with California Department of Fish and Wildlife shall be required, and mitigation shall include relocation of the species and/or the purchase of compensatory habitat-based mitigation credits at a minimum 1:1 ratio for the loss of occupied habitat.	Pre-construction; during construction (if applicable)	Pre-construction; during construction (if applicable)	County of Los Angeles Department of Public Works			
MM-BIO-2. Nesting Bird Avoidance. Construction activities shall avoid the migratory bird nesting season (typically February 1 through August 31), to reduce any potential significant impact to birds that may be nesting within the study area. If construction activities must occur during the migratory bird nesting season, an avian nesting survey of the project site and contiguous habitat within 500 feet of all impact areas shall be conducted for protected migratory birds and active nests. The avian nesting survey shall be performed by a knowledgeable biologist within 72 hours prior to	Pre-construction; during construction (if applicable)	Pre-construction; during construction (if applicable)	County of Los Angeles Department of Public Works			

Table 4-1
Mitigation Monitoring and Reporting Program

Mitigation Measure	Mitigation Monitoring			Verification of Compliance		
	Implementing Phase	*Monitoring Phase*	*Enforcing Agency*	*Initial*	*Date*	*Comments*
the start of construction in accordance with the Migratory Bird Treaty Act (16 USC 703–712) and California Fish and Game Code, Sections 3503, 3503.5, and 3513. If an active bird nest is found, the nest shall be flagged and mapped on the construction plans along with an appropriate no disturbance buffer, which shall be determined by the biologist based on the species' sensitivity to disturbance (typically 300 feet for passerines and 500 feet for raptors and special-status species). The nest area shall be avoided until the nest is vacated and the juveniles have fledged. The nest area shall be demarcated in the field with flagging and stakes or construction fencing.						
Cultural Resources						
MM-CUL-1. Unanticipated Archaeological Resource Discoveries. If archaeological resources (i.e., sites, features, or artifacts) are exposed during construction activities for the proposed project, all construction work occurring within 100 feet of the find shall immediately stop until a qualified archaeologist, meeting the Secretary of the Interior's Professional Qualification Standards for Archaeology, can evaluate the significance of the find and determine whether or not additional study is warranted. The archaeologist shall be empowered to temporarily stop or redirect grading activities to allow removal of abundant or large artifacts. Depending upon qualified archaeologist determination of the significance of the find (14 CCR 15064.5(f); PRC, Section 21082), the archaeologist may record the find and allow work to continue. If the archaeologist determines that the discovery is significant and requires additional work, the archaeologist may require preparation and implementation of an archaeological treatment plan and data recovery. If any artifacts are discovered, the archaeologist shall curate specimens in a repository with permanent retrievable storage and submit a written report to	During construction	During construction; prior to issuance of first occupancy permit (if applicable)	County of Los Angeles Department of Public Works			

Table 4-1
Mitigation Monitoring and Reporting Program

Mitigation Measure	Mitigation Monitoring			Verification of Compliance		
	Implementing Phase	*Monitoring Phase*	*Enforcing Agency*	*Initial*	*Date*	*Comments*
the lead agency prior to occupancy of the first building on the site. Once approved, the final report will be filed with the South Central Coast Information Center (SCCIC). Once artifact analysis is completed, a final written report detailing the results of all research procedures and interpretation of the site shall be submitted to the lead agency for review and approval prior to occupancy of the first building on the site.						
MM-CUL-2. Inadvertent Discovery of Human Remains. In accordance with Section 7050.5 of the California Health and Safety Code, if human remains are found within the project site, the County coroner shall be immediately notified of the discovery. No further excavation or disturbance of the site of the remains or any nearby area reasonably suspected to overlie adjacent remains shall occur until the county coroner has determined, within 2 working days of notification of the discovery, the appropriate treatment and disposition of the human remains. If the County coroner determines that the remains are, or are believed to be, Native American, he or she shall notify the Native American Heritage Commission (NAHC) in Sacramento within 24 hours. In accordance with California Public Resources Code, Section 5097.98, the NAHC must immediately notify those persons it believes to be the "most likely descendant" (MLD) of the deceased Native American. The MLD shall complete his/her inspection within 48 hours of being granted access to the site. The designated MLD would then determine, in consultation with the property owner, the disposition of the human remains.	During construction	During construction	County of Los Angeles Department of Public Works			

Table 4-1
Mitigation Monitoring and Reporting Program

Mitigation Measure	Mitigation Monitoring			Verification of Compliance		
	Implementing Phase	*Monitoring Phase*	*Enforcing Agency*	*Initial*	*Date*	*Comments*
Geology and Soils						
MM-GEO-1. Paleontological Resources Monitoring. Prior to commencement of any grading activity on site, the applicant shall retain a qualified paleontologist acceptable to the County. The paleontologist shall prepare a Paleontological Resources Impact Mitigation Program (PRIMP) for the proposed project. The PRIMP shall be consistent with the guidelines of the Society of Vertebrate Paleontology (SVP 2010). The qualified paleontologist shall attend the preconstruction meeting and be on site during all rough grading and other significant ground-disturbing activities in previously undisturbed older Quaternary alluvial deposits (including old lagoonal deposits). These deposits may be encountered at depths as shallow as 5-10 feet below ground surface. In the event that paleontological resources (e.g., fossils) are unearthed during grading, the paleontology monitor will temporarily halt and/or divert grading activity to allow recovery of paleontological resources. The area of discovery will be roped off with a 50-foot radius buffer. Once documentation and collection of the find is completed, the monitor will remove the rope and allow grading to recommence in the area of the find. If determined to be significant, the paleontological resources shall be stabilized, labeled, and prepared to the point of identification before accessioning into an appropriate paleontological repository with retrievable storage. Following the paleontological monitoring program, a final monitoring report shall be submitted to the lead agency for review and approval. The report should summarize the monitoring program and include geological observations and any paleontological resources recovered during paleontological monitoring for the proposed project.	Pre-construction; during construction (rough grading and other significant ground-disturbing activities)	During construction (rough grading and other significant ground-disturbing activities)	County of Los Angeles Department of Public Works			

Table 4-1
Mitigation Monitoring and Reporting Program

Mitigation Measure	Mitigation Monitoring			Verification of Compliance		
	Implementing Phase	*Monitoring Phase*	*Enforcing Agency*	*Initial*	*Date*	*Comments*
Greenhouse Gas Emissions						
PDF-GHG-1. The project includes the following design features to reduce the demand for energy use: • Appliances shall be Energy Star rated or equivalent. • Outdoor lighting shall be LED or other high-efficiency lightbulbs. • Facilities maintenance personnel/contractors, as applicable, shall be provided information on energy efficiency, energy efficient lighting and lighting control systems, energy management. • Electrical outlets shall be provided at building exterior areas. • Main project buildings (Learning Center, Welcome Center and Player Development building) shall meet the U.S. Green Building Council standards for cool roofs. This is defined as achieving a 3-year solar reflective index (SRI) of 64 for a low-sloped roof and 32 for a high-sloped roof. • Outdoor walkways and patios, and permanent parking lots, shall use paving materials with 3-year SRI of 0.28 or initial SRI of 0.33. • Duct insulation shall be installed to a minimum level of R-6 and modestly enhanced window insulation (for a 5% improvement over the 2016 Title 24 requirement) consistent with County of Los Angeles criteria. • HVAC equipment shall have a SEER of 12 or higher. • Water heaters shall have an energy factor of 0.92 or higher. • Some form of daylighting (e.g., skylights, windows) shall be included in rooms with exterior walls that would normally be occupied.	Final plans and specifications	Final plans and specifications; prior to issuance of certificate of occupancy	County of Los Angeles Department of Public Works			

Table 4-1
Mitigation Monitoring and Reporting Program

Mitigation Measure	Mitigation Monitoring			Verification of Compliance		
	Implementing Phase	*Monitoring Phase*	*Enforcing Agency*	*Initial*	*Date*	*Comments*
• Artificial lighting in at least 50% of unit fixtures shall be energy efficient. • Waterless urinals, and high-efficiency faucets and toilets shall be used in the project.						
PDF-GHG-2. The project shall include the installation of a solar photovoltaic rooftop system on the Learning Center, Welcome Center and/or Player Development buildings to the extent feasible.	Final plans and specifications	Final plans and specifications; prior to issuance of certificate of occupancy	County of Los Angeles Department of Public Works			
PDF-GHG-3. The project's landscape shall use recycled water.	Final plans and specifications	Final plans and specifications; prior to issuance of certificate of occupancy	County of Los Angeles Department of Public Works			
Hazards and Hazardous Materials						
MM-HAZ-1. Prior to issuance of the first excavation or grading permit for project development, the County shall confirm that the Department of Toxic Substances Control (DTSC) has no objections to issuance of the excavation/grading permit.	Pre-construction	Prior to issuance of the first excavation or grading permit	County of Los Angeles Department of Public Works			
MM-HAZ-2. If excavation or grading occurs in areas with potential for residual contamination in the subsurface in the maintenance area (Figure 4.8-1), then a qualified environmental professional retained by the project applicant and approved by the County shall screen soils in the identified area prior to excavation and grading based on the nature of the potential contamination. In the event that potential contamination is encountered the contamination shall be evaluated by the qualified environmental professional using appropriate collection and sampling techniques as determined by the environmental professional based on the nature of the contamination. The nature and extent of contamination shall	During construction (excavation and grading) (if applicable)	During construction (grading and excavation)	County of Los Angeles Department of Public Works			

Table 4-1
Mitigation Monitoring and Reporting Program

Mitigation Measure	Mitigation Monitoring			Verification of Compliance		
	Implementing Phase	*Monitoring Phase*	*Enforcing Agency*	*Initial*	*Date*	*Comments*
be determined and the appropriate handling, disposal, and/or treatment shall be implemented in accordance with applicable regulatory requirements.						
PDF-HAZ-1. Prior to the issuance of any demolition permit or permit for remodeling of existing buildings, if applicable, the applicant shall provide a letter to the applicable authority indicating that the demolition/renovation contract provides for a qualified asbestos abatement contractor/specialist to remove or otherwise abate or manage asbestos during demolition or renovation activities in accordance with the South Coast Air Quality Management District's Rule 1403. The applicant shall comply with State and federal regulations to test for asbestos prior to issuance of any demolition permit. If asbestos-containing materials are found to be present, it shall be abated in compliance with the South Coast Air Quality Management District's Rule 1403, as well as all other applicable state and federal rules and regulations.	Pre-construction	Prior to the issuance of any demolition permit or permit for remodeling of existing buildings (if applicable)	County of Los Angeles Department of Public Works			
PDF-HAZ-2. Prior to the issuance of any permit for demolition or alteration of an existing structure, if applicable, a lead-based paint survey shall be performed in compliance with applicable State and federal regulations. Should lead-based paint materials be identified, the applicant shall provide evidence to the applicable authority demonstrating that the demolition/renovation contract provides that standard handling and disposal practices would be implemented pursuant to Occupational Safety and Health Act regulations. The applicant shall comply with State and federal regulations to test for lead-based paint prior to issuance of any demolition permit. Should lead-based paint materials be identified, standard handling and disposal practices shall be implemented pursuant to Occupational Safety and Health Act regulations.	Pre-construction	Prior to the issuance of any demolition permit or permit for remodeling of existing buildings (if applicable)	County of Los Angeles Department of Public Works			

Table 4-1
Mitigation Monitoring and Reporting Program

Mitigation Measure	Mitigation Monitoring			Verification of Compliance		
	Implementing Phase	*Monitoring Phase*	*Enforcing Agency*	*Initial*	*Date*	*Comments*
Noise						
MM-NOI-1. Noise Barrier Installation. The following measure shall be incorporated into the project contract specifications. Prior to commencement of construction activities involving heavy equipment within the areas shown on Figure 4.11-2, Location of Required Temporary Barrier for Construction Noise Mitigation, temporary construction noise barriers shall be constructed in the locations shown in Figure 4.11-2. The eastern noise barrier shall be erected along the top edge of the slope that exists along the eastern edge of the property. The noise barriers shall be 8 feet in height, have a surface density of at least four pounds per square foot, and be free of openings and cracks (with the exception of expansion joints gaps and other construction techniques, which could create an opening or crack). Sound blankets or panels with a minimum 20 Sound Transmission Class (STC) rating may be used as the surface of the noise barrier; such blankets or panels should be constructed for outdoor use, and may be supported on a metal framework.	Pre-construction; final plans and specifications	Final plans and specifications; during construction				
MM-NOI-2. Pile Driving. The following measure shall be incorporated into the project contract specifications. Pile driving within the areas shown on Figure 4.11-3, Boundaries of Area Where Sonic Pile Drive is Required for Noise Mitigation, shall employ a vibratory (sonic) pile driver if technically feasible as determined by the project geologist.	Final plans and specifications; during construction (if applicable)	Final plans and specifications; during construction (if applicable)	County of Los Angeles Department of Public Works			
MM-NOI-3. Construction Hours. Construction activities shall take place during the permitted time and day per Section 12.08.440 of the County Code. The applicant shall ensure that construction activities for the proposed project are limited to the hours of 7:00 a.m. to 7:00 p.m. Monday through Saturday, and not at all during other hours or on Sundays or holidays.	During construction	During construction	County of Los Angeles Department of Public Works			

Table 4-1
Mitigation Monitoring and Reporting Program

Mitigation Measure	Mitigation Monitoring			Verification of Compliance		
	Implementing Phase	*Monitoring Phase*	*Enforcing Agency*	*Initial*	*Date*	*Comments*
MM-NOI-4. Construction Noise Reduction. The County of Los Angeles shall require the contractor to adhere to the following measures as a condition of granting a grading permit to the contractor: • All construction equipment, fixed or mobile, shall be equipped with properly operating and maintained mufflers. • Construction noise reduction methods such as shutting off idling equipment, construction of a temporary noise barrier, maximizing the distance between construction equipment staging areas and adjacent residences, and use of electric air compressors and similar power tools, rather than diesel equipment, shall be used where feasible. • During construction, stationary construction equipment shall be placed such that emitted noise is directed away from or shielded from sensitive receptors. • Construction hours, allowable workdays, and the phone number of the job superintendent shall be clearly posted at all construction entrances. • At the request of the school administration for Towne Avenue Elementary School, the contractor will meet with the school principal or other representative each week to discuss anticipated upcoming construction activities and applicable noise reduction measures.	Pre-construction; during construction	Final plans and specifications; prior to issuance of a grading permit during construction	County of Los Angeles Department of Public Works			
Traffic and Transportation						
The Traffic and Transportation Project Design Features and Mitigation Measures set forth in the Environmental Impact Report and this MMRP include several off-site improvements and fair-share funding obligations. These traffic-related Project Design Features and Mitigation Measures may be revised, where appropriate and as determined, by the County: (1) upon demonstration that Mitigation Measures are equivalent or superior to the original Project Design Feature and/or Mitigation Measures, and/or (2) upon demonstration that approval or implementation of Project Design Features or Mitigation Measures that require other jurisdiction approvals have been delayed or might not be completed, provided that the Project Applicant or its successor has demonstrated reasonable efforts and due diligence to the satisfaction of the County. Those Mitigation Measures that require physical improvements may be completed by the Project Applicant or guaranteed by bond.						

Table 4-1
Mitigation Monitoring and Reporting Program

Mitigation Measure	Mitigation Monitoring			Verification of Compliance		
	Implementing Phase	*Monitoring Phase*	*Enforcing Agency*	*Initial*	*Date*	*Comments*
MM-TRAF-1. No. 7 Avalon Boulevard/Albertoni Street. The proposed project shall implement the following improvements at Avalon Boulevard/Albertoni Street: • Restripe existing (cross-hatched) pavement on the northbound approach to a second (dual) northbound left-turn lane. This improvement could be accomplished within the existing right-of-way. • Modify existing protected left-turn phasing on the northbound and southbound approaches for a lead/lag operation (for opposing left-turn clearance purposes).	Pre-operation	Prior to issuance of a certificate of occupancy	County of Los Angeles Department of Public Works			
MM-TRAF-2. No. 18 Main Street/Albertoni Street. The proposed project shall implement the following improvements at Main Street/Albertoni Street: • Add new eastbound right-turn lane. This improvement could be accomplished within the existing right-of-way, but would require the removal of approximately 5 on-street parking spaces approximately 100 feet west of the intersection.	Pre-operation	Prior to issuance of a certificate of occupancy	County of Los Angeles Department of Public Works			
MM-TRAF-3. No. 19 Main Street/Victoria Street. The proposed project shall implement the following improvements at Main Street/Victoria Street: • Add new eastbound right-turn lane. This improvement could be accomplished within the existing right-of-way, but would require the removal of approximately 5 on-street parking spaces approximately 100 feet west of the intersection.	Pre-operation	Prior to issuance of a certificate of occupancy	County of Los Angeles Department of Public Works			
MM-TRAF-4. No. 25 Hamilton Avenue/I-110 Southbound Ramps. The proposed project shall pay its fair-share, as calculated based on the County's methodology, toward the implementation of the following improvements at Hamilton Avenue/I-110 southbound ramps:	Pre-operation	Prior to issuance of a certificate of occupancy	County of Los Angeles Department of Public Works			

Table 4-1
Mitigation Monitoring and Reporting Program

Mitigation Measure	Mitigation Monitoring			Verification of Compliance		
	Implementing Phase	*Monitoring Phase*	*Enforcing Agency*	*Initial*	*Date*	*Comments*
• Installation of a new traffic signal at Hamilton Avenue/I-110 southbound ramps consisting of a northbound/southbound split phase and westbound permitted phase with overlapping right-turns. • Reconfiguration of the southbound approach to provide a dedicated left-turn lane and a left-turn/through lane.						
MM-TRAF-5. No. 1 Main Street/Martin Luther King Jr. Street. The proposed project shall pay its fair-share, as calculated based on the County's methodology, toward the implementation of the following improvements at Main Street/Martin Luther King, Jr. Street: • Reconfigure the westbound approach to provide a left-turn, shared left/right-turn, and right-turn lanes; • Add new northbound right-turn lane	Pre-operation	Prior to issuance of a certificate of occupancy	County of Los Angeles Department of Public Works			
MM-TRAF-6. No. 3 Main Street/I-405 southbound ramps. The proposed project shall pay its fair-share, as calculated based on the County's methodology, toward the implementation of the following improvements at Main Street/I-405 southbound ramps: • Convert the eastbound left-turn lane to a shared through-left-turn lane (onto the I-405 on-ramp).	Pre-operation	Prior to issuance of a certificate of occupancy	County of Los Angeles Department of Public Works			
MM-TRAF-7. No. 4 Main Street/Del Amo Boulevard. The proposed project shall pay its fair-share, as calculated based on the County's methodology, toward the implementation of the following improvements at Main Street/Del Amo Boulevard: • Add new second (dual) westbound left-turn lane; • Add new northbound right-turn lane; • Widening of the westbound approach will be required.	Pre-operation	Prior to issuance of a certificate of occupancy	County of Los Angeles Department of Public Works			

Table 4-1
Mitigation Monitoring and Reporting Program

Mitigation Measure	Mitigation Monitoring			Verification of Compliance		
	Implementing Phase	*Monitoring Phase*	*Enforcing Agency*	*Initial*	*Date*	*Comments*
MM-TRAF-8. No. 8 Avalon Boulevard/Victoria Street. The proposed project shall pay its fair-share, as calculated based on the County's methodology, toward the implementation of the following improvements at Avalon Boulevard/Victoria Street: • On the eastbound approach, restripe the right-turn lane into a shared through/right-turn lane; • On the eastbound departure, restripe to provide three through lanes.	Pre-operation	Prior to issuance of a certificate of occupancy	County of Los Angeles Department of Public Works			
MM-TRAF-9. No. 10 Avalon Boulevard/University Avenue. The proposed project shall pay its fair-share, as calculated based on the County's methodology, toward the implementation of the following physical improvements at Avalon Boulevard/University Avenue: • On the westbound approach, reconfigure to provide two left-turn lanes and one right-turn lane; this is anticipated to require some modification to the existing medians located on Avalon Boulevard and University Avenue • Reclassify a section of the existing dedicated westbound bicycle lane as a shared lane.	Pre-operation	Prior to issuance of a certificate of occupancy	County of Los Angeles Department of Public Works			
MM-TRAF-10. No. 14 Avalon Boulevard/Del Amo Boulevard. The proposed project shall pay its fair-share, as calculated based on the County's methodology, toward the implementation of the following improvements at Avalon Boulevard/Del Amo Boulevard: • Add second (dual) northbound left-turn lane. • Reconfigure southbound approach to provide a right-turn lane. • Reconfigure eastbound right-turn lane into a shared through/right-turn lane.	Pre-operation	Prior to issuance of a certificate of occupancy	County of Los Angeles Department of Public Works			

Table 4-1
Mitigation Monitoring and Reporting Program

Mitigation Measure	Mitigation Monitoring			Verification of Compliance		
	Implementing Phase	*Monitoring Phase*	*Enforcing Agency*	*Initial*	*Date*	*Comments*
MM-TRAF-11. No. 16 Avalon Boulevard/I-405 southbound ramps. The proposed project shall pay its fair-share, as calculated based on the County's methodology, toward the implementation of the following improvements at Avalon Boulevard/I-405 Southbound Ramps: • Upgrade traffic control equipment to provide a new southbound right-turn overlap signal phase.	Pre-operation	Prior to issuance of a certificate of occupancy	County of Los Angeles Department of Public Works			
MM-TRAF-12. No. 22 I-110 southbound ramps/190th Street. The proposed project shall pay its fair-share, as calculated based on the County's methodology, toward the implementation of the following physical improvements at I-110 southbound ramps/190th Street: • Provide an additional eastbound lane for a total of three through lanes by reducing the width of the existing painted median on 190th Street to accommodate the additional eastbound lane.	Pre-operation	Prior to issuance of a certificate of occupancy	County of Los Angeles Department of Public Works			
MM-TRAF-13. No.24 Hamilton Avenue/Del Amo Boulevard. The proposed project shall pay its fair-share, as calculated based on the County's methodology, toward the implementation of the following improvements at Hamilton Avenue/Del Amo Boulevard: • Convert the second northbound through lane to a dedicated right-turn lane. • Modify the traffic signal to provide an overlap phase for the northbound right-turn and add protected-permitted phasing for the westbound left-turn movements.	Pre-operation	Prior to issuance of a certificate of occupancy	County of Los Angeles Department of Public Works			

Table 4-1
Mitigation Monitoring and Reporting Program

Mitigation Measure	Mitigation Monitoring			Verification of Compliance		
	Implementing Phase	*Monitoring Phase*	*Enforcing Agency*	*Initial*	*Date*	*Comments*
MM-TRAF-14. No. 26 Figueroa Street/Del Amo Boulevard. The proposed project shall pay its fair-share, as calculated based on the County's methodology, toward the implementation of the following improvements at Figueroa Street/Del Amo Boulevard: • Restripe the westbound approach to provide two left-turn lanes, a through lane, and a shared through-right lane. • Restripe the eastbound approach to provide a left-turn lane, two through lanes, and a shared through-right turn lane. • Modify the traffic signal to provide an overlap phase for the northbound and southbound right-turns.	Pre-operation	Prior to issuance of a certificate of occupancy	County of Los Angeles Department of Public Works			
PDF-TRAF-1. The proposed project will include a Special Event Management Plan (SEMP) for Special Events. The SEMP measures would be implemented at the following thresholds: 1. All on-site measures would be implemented when weekend Soccer and weekend Tennis Center tournaments operate simultaneously. The on-site measures are discussed in more detail in the proposed project's TIA (Appendix K) and may include, but not be limited to: • Physical site design • Parking operations • Guest communications 2. All on-site measures and selected off-site measures, as identified through coordination with the lead agency, would be implemented when: a. Weekend Soccer and weekend Tennis Center tournaments operate simultaneously plus the full use of the Tennis Center exhibition venue; OR,	Pre-operation; Project operation	Prior to issuance of a certificate of occupancy; throughout operation	County of Los Angeles Department of Public Works			

Table 4-1
Mitigation Monitoring and Reporting Program

Mitigation Measure	Mitigation Monitoring			Verification of Compliance		
	Implementing Phase	*Monitoring Phase*	*Enforcing Agency*	*Initial*	*Date*	*Comments*
b. The scheduling of a special event at the Soccer Center (e.g., nontypical event, professional sports exhibition, etc.). The off-site measures are discussed in more detail in the proposed project's TIA (Appendix K) and may include, but not be limited to: • Traffic management (off site) • Coordinated traffic control • Traffic control officers • Schedule coordination The SEMP is intended to be an evolving document subject to modification over time in coordination and consultation with the County, in order to respond to changes in traffic patterns and mobility/parking technologies which may alter the travel to and attendance of events at the project.						
PDF-TRAF-2. Prior to issuance of a grading permit, the proposed project will develop a Construction Traffic Management Plan for construction activities that would impact public streets. The Construction Traffic Management Plan shall be based on the nature and timing of the specific construction and other projects in the vicinity of the project site and shall include the following elements as appropriate: • Advance notification to adjacent property owners and occupants, as well as, nearby schools, of upcoming construction activities, including durations and daily hours of construction.	Pre-construction; during construction	Prior to issuance of a grading permit; during construction	County of Los Angeles Department of Public Works			

Table 4-1
Mitigation Monitoring and Reporting Program

Mitigation Measure	Mitigation Monitoring			Verification of Compliance		
	Implementing Phase	*Monitoring Phase*	*Enforcing Agency*	*Initial*	*Date*	*Comments*
• The project's construction manager shall contact LAUSD's Transportation Branch at (213) 580-2950 regarding the potential impact upon existing school bus routes, and the expected start and ending dates for various portions of the project construction that may affect traffic within nearby school areas. • Prohibition of construction worker parking on adjacent residential streets, and identify construction employee parking locations and protocols. • Temporary traffic control during all construction activities adjacent to public rights-of-way to improve traffic flow on public roadways (e.g., flag men flagmen). The temporary traffic controls shall minimize traffic delays for LAUSD transported students. • Prohibition of construction-related vehicle parking on surrounding public streets. • Safety precautions for pedestrian and bicyclists through such measures as alternate routing and protection barriers as appropriate, including along all identified Los Angeles Unified School District (LAUSD) and Compton Unified School District (CUSD) pedestrian routes to nearby schools. • Scheduling of construction-related deliveries, haul trips, etc., so as to occur outside the commuter peak hours to the extent feasible, and so as to not impede school drop-off and pick-up activities and students using LAUSD/CUSD's identified pedestrian routes to nearby schools. • Coordination with public transit agencies to provide advanced notifications of any anticipated stop relocations and durations.						

Table 4-1
Mitigation Monitoring and Reporting Program

Mitigation Measure	Mitigation Monitoring			Verification of Compliance		
	Implementing Phase	*Monitoring Phase*	*Enforcing Agency*	*Initial*	*Date*	*Comments*
• Provision of advanced notification of any temporary on-street parking removals and duration of removals. • Establish construction hours that are in compliance with Carson Municipal Code (CMC). • Establish a construction phone number which shall be posted on the site, and appoint a construction liaison officer to respond to concerns or inquiries regarding project construction. • Construction trucks and other vehicles are required to stop when encountering school buses using red-flashing-lights must-stop-indicators per the California Vehicle Code. • Contractors shall install and maintain appropriate traffic controls (signs and signals) for vehicular safety. • Contractors shall maintain ongoing communication with LAUSD school administrators, for the school to provided sufficient notice to children and parents when existing vehicle and pedestrian routes to school may be impacted. • Maintain unimpeded emergency access to the project site and nearby properties. • Establish truck access and staging areas, and review haul route approved with the project. • Provide construction site security. • Prohibition of staging or parking of construction-related vehicles, including worker-transport vehicles, on or adjacent to a school property without the express written permission of the applicable school district.						

Table 4-1
Mitigation Monitoring and Reporting Program

Mitigation Measure	Mitigation Monitoring			Verification of Compliance		
	Implementing Phase	*Monitoring Phase*	*Enforcing Agency*	*Initial*	*Date*	*Comments*
• Funding for crossing guards at the contractor's expense to the extent required when safety of children may be compromised by construction-related activities at impacted school crossings.						
Tribal Cultural Resources						
MM-TCR-1. Unanticipated Discovery While no tribal cultural resources (TCRs) have been identified that may be affected by the project, the following approach for the unanticipated discovery of TCRs has been prepared to reduce potential impacts to unanticipated resources. Should a potential TCR be encountered, construction activities near the potential TCR shall be temporarily halted within 50 feet of the potential TCR and the County of Los Angeles (County) notified. The County will notify Native American tribes that have been identified by the Native American Heritage Commission (NAHC) to be traditionally and culturally affiliated with the geographic area of the project. If the unanticipated resource is archaeological in nature, appropriate management requirements shall be implemented as outlined in Mitigation Measure (MM-) CUL-1 (see Section 4.4.5, Mitigation Measures). If the County determines that the potential resource is a TCR (as defined by Public Resources Code, Section 21074), tribes consulting under AB 52 would be provided a reasonable period of time, typically 5 days from the date a new discovery is made, to conduct a site visit and make recommendations regarding future ground disturbance activities as well as the treatment and disposition of any discovered TCRs. A qualified archaeologist shall implement a plan for the treatment and disposition of any discovered TCRs based on the nature of the resource and considering the recommendations of the	During construction	During construction	County of Los Angeles Department of Public Works			

Table 4-1
Mitigation Monitoring and Reporting Program

Mitigation Measure	Mitigation Monitoring			Verification of Compliance		
	Implementing Phase	*Monitoring Phase*	*Enforcing Agency*	*Initial*	*Date*	*Comments*
tribe(s). All activities shall be conducted in accordance with regulatory requirements. If human remains are found within the project site, management recommendations as outlined in MM-CUL-3 (see Section 4.4.5) should be implemented.						

SOURCE: USDA 2016

DUDEK

0 250 500 Feet

FIGURE 4.8-1

Maintenance Area Location

Carol Kimmelman Athletic and Academic Campus

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LEGEND

TENNIS CENTER

1. WELCOME CENTER
2. LEARNING CENTER
3. ENTRY PLAZA
4. BASKETBALL COURTS
5. COMPETITION VENUE (12 HARD COURTS)
6. PLAYER DEVELOPMENT / COLLEGIATE CENTER
7. TOURNAMENT/ LEAGUE ADMINISTRATION BUILDING
8. 100M SPRINT TRACK
9. 4 CLAY COURTS
10. MONUMENT ENTRY/ SIGN
11. CENTRAL PLAZA
12. 8 36 FT COURTS
13. 4 60 FT COURTS (+4 FUTURE COURTS)
14. TRAINING TURF
15. TENNIS CENTER COURTS (24 HARD COURTS)
16. FUTURE COVERED COURTS (6 COURTS)
17. MAINTENANCE BUILDING
18. OUTDOOR EXERCISE COURSE
19. VISITOR PARKING
20. BUS PARKING
21. EMPLOYEE PARKING
22. OVERFLOW PARKING

SOCCER CENTER

23. 2 NATURAL GRASS MULTIPURPOSE FIELDS
24. 6 FULL SIZE NATURAL GRASS SOCCER FIELDS
25. 2 FULL SIZE ARTIFICIAL TURF SOCCER FIELDS
26. SUPPORT BUIDLING
27. SOCCER PARKING
28. OVERFLOW PARKING

Location of 8 foot temporary construction noise soundwall
Eastern barrier to be maintained during work in this area
Northern barrier to be maintained during work in this area

SOURCE: Bing Maps 2018

DUDEK 0 70 140 Feet

FIGURE 4.11-2

Location of Required Temporary Barrier for Construction Noise Mitigation

Carol Kimmelman Athletic and Academic Campus

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SOURCE: Bing Maps 2018

DUDEK 0 70 140 Feet

FIGURE 4.11-3

Boundaries of Area Where Sonic Pile Driver is Required for Noise Mitigation

Carol Kimmelman Athletic and Academic Campus

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CHAPTER 4
MITIGATION MONITORING AND REPORTING PROGRAM

California Public Resources Code Section 21081.6 requires that, upon certification of an EIR, "[t]he public agency shall adopt a reporting or monitoring program for the changes made to the project or conditions of project approval, adopted in order to mitigate or avoid significant effects on the environment. The reporting or monitoring program shall be designed to ensure compliance during project implementation."

This chapter contains the mitigation monitoring and reporting program (MMRP) that has been developed for the Carol Kimmelman Athletic and Academic Campus Project (project or proposed project). This MMRP has been developed in compliance with Public Resources Code Section 21081.6 and Section 15097 of the CEQA Guidelines. The mitigation measures in the table are coded by alphanumeric identification consistent with the EIR. The following items are identified for each mitigation measure:

- **Mitigation Monitoring.** This section of the MMRP lists the stage of the proposed project during which the mitigation measure would be implemented and the stage during which proper implementation would be monitored and verified. It also lists the agency that is responsible for ensuring that the mitigation measure is implemented and that it is implemented properly.
- **Verification of Compliance.** This section of the MMRP provides a location for the implementing party and/or enforcing agency to make notes and to record their initials and the compliance date for each mitigation measure.

The County must adopt this MMRP, or an equally effective program, if it approves the proposed project with the mitigation measures that were adopted or made conditions of project approval.

Minor changes and modifications to the MMRP are permitted, but can only be made by the Project Applicant or its successor subject to approval by the County. In conjunction with any appropriate agencies or departments, the County will determine the adequacy of any proposed change or modification. Any revisions to a Mitigation Measure in the final MMRP must achieve the same level or more of mitigation as the original mitigation measure and not result in new or more severe environmental impacts.

Table 4-1
Mitigation Monitoring and Reporting Program

Mitigation Measure	Mitigation Monitoring			Verification of Compliance		
	Implementing Phase	*Monitoring Phase*	*Enforcing Agency*	*Initial*	*Date*	*Comments*
Air Quality						
MM-AQ-1. To reduce the potential for health risks, and mass emissions of oxides of nitrogen (NOx) and diesel particulate matter as a result of the construction of the project, the applicant shall include the following requirements in its contracts with the construction contractors: • Equip heavy-duty diesel-powered construction equipment with Tier 4 Final or better diesel engines, except where Tier 4 Final or better engines are not available for specific construction equipment. • Minimize simultaneous operation of multiple construction equipment units. During construction, vehicles in loading and unloading queues shall not idle for more than 5 minutes, and shall turn their engines off when not in use to reduce vehicle emissions. • Properly tune and maintain all construction equipment in accordance with manufacturer's specifications; • Where feasible, employ the use of electrical or natural gas-powered construction equipment, including forklifts and other comparable equipment types. • To reduce the need for electric generators and other fuel-powered equipment, provide on-site electrical hookups for the use of hand tools such as saws, drills, and compressors used for building construction. • Develop a Construction Traffic Control Plan to ensure construction traffic and equipment use is minimized to the extent practicable. The Construction Traffic Control Plan shall route delivery and haul trucks required during construction away from sensitive receptor locations and congested intersections, to the extent feasible. The Construction Traffic Control Plan shall, to the extent	Pre-construction; during construction; final plans and specifications	Final plans and specifications; during construction	County of Los Angeles Department of Public Works			

Table 4-1
Mitigation Monitoring and Reporting Program

Mitigation Measure	Mitigation Monitoring			Verification of Compliance		
	Implementing Phase	*Monitoring Phase*	*Enforcing Agency*	*Initial*	*Date*	*Comments*
feasible, include measures to: reduce the number of large pieces of equipment operating simultaneously during peak construction periods, schedule vendor and haul truck trips to occur during non-peak hours, establish dedicated construction parking areas to encourage carpooling and efficiently accommodate construction vehicles, identify alternative routes to reduce traffic congestion during peak activities, and increase construction employee carpooling. Construction Traffic Control plans shall be finalized and approved prior to issuance of grading permits.						
MM-AQ-2. Prior to the County of Los Angeles' (County's) approval of any grading permits, and during project construction, a Fugitive Dust Plan shall be prepared consistent with South Coast Air Quality Management District (SCAQMD) Rule 403. The project applicant or its designee shall require implementation of the following fugitive dust measures to minimize particulate matter less than or equal to 10 microns in diameter (PM_{10}) and particulate matter less than or equal to 2.5 microns in diameter ($PM_{2.5}$) emissions as part of the Fugitive Dust Plan. All measures shall be designated on grading and improvement plans. Measures shall include but are not limited to the following: • Water, or utilize another SCAQMD-approved dust control non-toxic agent, on the grading areas at least three times daily to minimize fugitive dust. • All permanent roads and roadway improvements shall be constructed and paved as early as possible in the construction process to reduce construction vehicle travel on unpaved roads. To reduce fugitive dust from earth-moving operations, building pads shall be finalized as soon as possible following site preparation and grading activities.	Pre-construction; during construction; final plans and specifications	Final plans and specifications; during construction	County of Los Angeles Department of Public Works			

Table 4-1
Mitigation Monitoring and Reporting Program

Mitigation Measure	Mitigation Monitoring			Verification of Compliance		
	Implementing Phase	*Monitoring Phase*	*Enforcing Agency*	*Initial*	*Date*	*Comments*
• Stabilize grading areas as quickly as possible to minimize fugitive dust. • Apply chemical stabilizer to on-site stockpiles of excavated material, install a gravel pad, or pave the last 100 feet of internal travel path within the construction site prior to public road entry. • Remove any visible track-out into traveled public streets with the use of sweepers, water trucks, or similar method as soon as possible. • Provide sufficient perimeter erosion control to prevent washout of silty material onto public roads. Unpaved construction site egress points shall be graveled to prevent track-out. • Wet wash the construction access point at the end of the workday if any vehicle travel on unpaved surfaces has occurred. • Cover haul trucks or maintain at least 2 feet of freeboard to reduce blow-off during hauling. • Evaluate potential for reduction in dust generating activity if winds exceed 25 miles per hour. • Enforce a 15-mile-per-hour speed limit on unpaved surfaces. • Provide haul truck staging areas for the loading and unloading of soil and materials. Staging areas shall be located away from sensitive receptors, at the furthest feasible distance. Prior to construction activities, the project applicant shall employ a construction relations officer who will address community concerns regarding on-site construction activity. The applicant shall provide public notification in the form of a visible sign containing the contact information of the construction relations officer. The sign shall be placed in easily						

Table 4-1
Mitigation Monitoring and Reporting Program

Mitigation Measure	Mitigation Monitoring			Verification of Compliance		
	Implementing Phase	*Monitoring Phase*	*Enforcing Agency*	*Initial*	*Date*	*Comments*
accessible locations along South Avalon Boulevard and Martin Luther King Jr. Street and noted on grading and improvement plans.						
MM-AQ-3. The proposed project shall provide circuitry and capacity for installation of electric vehicle (EV) charging stations consistent with the County of Los Angeles criteria. The proposed project shall develop up to 5% of the available parking spaces on site as EV charging stations.	Final plans and specifications	Final plans and specifications; prior to issuance of first occupancy permit	County of Los Angeles Department of Public Works			
MM-AQ-4. The construction contractor shall require that construction vendors, contractors, and/or haul truck operators commit to using 2010 model year or newer diesel haul trucks. All construction truck operators shall maintain truck records and make these records available to the County upon request.	Pre-construction; during construction	During construction	County of Los Angeles Department of Public Works			
MM-AQ-5. The construction contractor shall encourage its construction contractors and vendors to apply for South Coast Air Quality Management Surplus Off-Road Opt-In for NOx ("SOON") funds to the extent available, which provide funds to applicable fleets for the purchase of commercially available low-emission heavy-duty engines to achieve near-term reduction of NO_x emissions from in-use off-road diesel vehicles.	Pre-construction; during construction	During construction	County of Los Angeles Department of Public Works			
MM-AQ-6. During operations, the operator of the Learning Center shall encourage school bus fleets under contract with the Learning Center to seek funding opportunities through the South Coast Air Quality Management District's Lower-Emission School Bus Program, to the extent available, to replace older diesel busses with cleaner school buses.	Project operation	Throughout operation	County of Los Angeles Department of Public Works			
MM-AQ-7. During operations, electric landscape equipment, such as lawn mowers and leaf blowers, shall be used to the extent commercially available.	Project operation	Throughout operation	County of Los Angeles Department of Public Works			

Table 4-1
Mitigation Monitoring and Reporting Program

Mitigation Measure	Mitigation Monitoring			Verification of Compliance		
	Implementing Phase	*Monitoring Phase*	*Enforcing Agency*	*Initial*	*Date*	*Comments*
MM-AQ-8. During operations, the project shall utilize electric or alternatively fueled parking lot sweepers with HEPA filters.	Project operation	Throughout operation	County of Los Angeles Department of Public Works			
Biological Resources						
MM-BIO-1. Conduct Pre-Construction Surveys. Prior to construction, a knowledgeable biologist shall conduct a preconstruction survey sweep within areas of suitable habitat for the San Diego desert woodrat. The biologist shall look for any San Diego desert woodrat in suitable habitat that may be located within or immediately adjacent to project work areas (within 100 feet). If individual San Diego desert woodrats are observed within project work areas during the pre-construction survey, a biological monitor shall be on site during construction to flush or move them out of harm's way to avoid direct impacts to these species. If a population of San Diego desert woodrat are observed during the pre-construction survey, and cannot be avoided by the project, consultation with California Department of Fish and Wildlife shall be required, and mitigation shall include relocation of the species and/or the purchase of compensatory habitat-based mitigation credits at a minimum 1:1 ratio for the loss of occupied habitat.	Pre-construction; during construction (if applicable)	Pre-construction; during construction (if applicable)	County of Los Angeles Department of Public Works			
MM-BIO-2. Nesting Bird Avoidance. Construction activities shall avoid the migratory bird nesting season (typically February 1 through August 31), to reduce any potential significant impact to birds that may be nesting within the study area. If construction activities must occur during the migratory bird nesting season, an avian nesting survey of the project site and contiguous habitat within 500 feet of all impact areas shall be conducted for protected migratory birds and active nests. The avian nesting survey shall be performed by a knowledgeable biologist within 72 hours prior to	Pre-construction; during construction (if applicable)	Pre-construction; during construction (if applicable)	County of Los Angeles Department of Public Works			

Table 4-1
Mitigation Monitoring and Reporting Program

Mitigation Measure	Mitigation Monitoring			Verification of Compliance		
	Implementing Phase	*Monitoring Phase*	*Enforcing Agency*	*Initial*	*Date*	*Comments*
the start of construction in accordance with the Migratory Bird Treaty Act (16 USC 703–712) and California Fish and Game Code, Sections 3503, 3503.5, and 3513. If an active bird nest is found, the nest shall be flagged and mapped on the construction plans along with an appropriate no disturbance buffer, which shall be determined by the biologist based on the species' sensitivity to disturbance (typically 300 feet for passerines and 500 feet for raptors and special-status species). The nest area shall be avoided until the nest is vacated and the juveniles have fledged. The nest area shall be demarcated in the field with flagging and stakes or construction fencing.						
Cultural Resources						
MM-CUL-1. Unanticipated Archaeological Resource Discoveries. If archaeological resources (i.e., sites, features, or artifacts) are exposed during construction activities for the proposed project, all construction work occurring within 100 feet of the find shall immediately stop until a qualified archaeologist, meeting the Secretary of the Interior's Professional Qualification Standards for Archaeology, can evaluate the significance of the find and determine whether or not additional study is warranted. The archaeologist shall be empowered to temporarily stop or redirect grading activities to allow removal of abundant or large artifacts. Depending upon qualified archaeologist determination of the significance of the find (14 CCR 15064.5(f); PRC, Section 21082), the archaeologist may record the find and allow work to continue. If the archaeologist determines that the discovery is significant and requires additional work, the archaeologist may require preparation and implementation of an archaeological treatment plan and data recovery. If any artifacts are discovered, the archaeologist shall curate specimens in a repository with permanent retrievable storage and submit a written report to	During construction	During construction; prior to issuance of first occupancy permit (if applicable)	County of Los Angeles Department of Public Works			

Table 4-1
Mitigation Monitoring and Reporting Program

Mitigation Measure	Mitigation Monitoring			Verification of Compliance		
	Implementing Phase	*Monitoring Phase*	*Enforcing Agency*	*Initial*	*Date*	*Comments*
the lead agency prior to occupancy of the first building on the site. Once approved, the final report will be filed with the South Central Coast Information Center (SCCIC). Once artifact analysis is completed, a final written report detailing the results of all research procedures and interpretation of the site shall be submitted to the lead agency for review and approval prior to occupancy of the first building on the site.						
MM-CUL-2. Inadvertent Discovery of Human Remains. In accordance with Section 7050.5 of the California Health and Safety Code, if human remains are found within the project site, the County coroner shall be immediately notified of the discovery. No further excavation or disturbance of the site of the remains or any nearby area reasonably suspected to overlie adjacent remains shall occur until the county coroner has determined, within 2 working days of notification of the discovery, the appropriate treatment and disposition of the human remains. If the County coroner determines that the remains are, or are believed to be, Native American, he or she shall notify the Native American Heritage Commission (NAHC) in Sacramento within 24 hours. In accordance with California Public Resources Code, Section 5097.98, the NAHC must immediately notify those persons it believes to be the "most likely descendant" (MLD) of the deceased Native American. The MLD shall complete his/her inspection within 48 hours of being granted access to the site. The designated MLD would then determine, in consultation with the property owner, the disposition of the human remains.	During construction	During construction	County of Los Angeles Department of Public Works			

Table 4-1
Mitigation Monitoring and Reporting Program

Mitigation Measure	Mitigation Monitoring			Verification of Compliance		
	Implementing Phase	*Monitoring Phase*	*Enforcing Agency*	*Initial*	*Date*	*Comments*
Geology and Soils						
MM-GEO-1. Paleontological Resources Monitoring. Prior to commencement of any grading activity on site, the applicant shall retain a qualified paleontologist acceptable to the County. The paleontologist shall prepare a Paleontological Resources Impact Mitigation Program (PRIMP) for the proposed project. The PRIMP shall be consistent with the guidelines of the Society of Vertebrate Paleontology (SVP 2010). The qualified paleontologist shall attend the preconstruction meeting and be on site during all rough grading and other significant ground-disturbing activities in previously undisturbed older Quaternary alluvial deposits (including old lagoonal deposits). These deposits may be encountered at depths as shallow as 5-10 feet below ground surface. In the event that paleontological resources (e.g., fossils) are unearthed during grading, the paleontology monitor will temporarily halt and/or divert grading activity to allow recovery of paleontological resources. The area of discovery will be roped off with a 50-foot radius buffer. Once documentation and collection of the find is completed, the monitor will remove the rope and allow grading to recommence in the area of the find. If determined to be significant, the paleontological resources shall be stabilized, labeled, and prepared to the point of identification before accessioning into an appropriate paleontological repository with retrievable storage. Following the paleontological monitoring program, a final monitoring report shall be submitted to the lead agency for review and approval. The report should summarize the monitoring program and include geological observations and any paleontological resources recovered during paleontological monitoring for the proposed project.	Pre-construction; during construction (rough grading and other significant ground-disturbing activities)	During construction (rough grading and other significant ground-disturbing activities)	County of Los Angeles Department of Public Works			

Table 4-1
Mitigation Monitoring and Reporting Program

Mitigation Measure	Mitigation Monitoring			Verification of Compliance		
	Implementing Phase	*Monitoring Phase*	*Enforcing Agency*	*Initial*	*Date*	*Comments*
Greenhouse Gas Emissions						
PDF-GHG-1. The project includes the following design features to reduce the demand for energy use: • Appliances shall be Energy Star rated or equivalent. • Outdoor lighting shall be LED or other high-efficiency lightbulbs. • Facilities maintenance personnel/contractors, as applicable, shall be provided information on energy efficiency, energy efficient lighting and lighting control systems, energy management. • Electrical outlets shall be provided at building exterior areas. • Main project buildings (Learning Center, Welcome Center and Player Development building) shall meet the U.S. Green Building Council standards for cool roofs. This is defined as achieving a 3-year solar reflective index (SRI) of 64 for a low-sloped roof and 32 for a high-sloped roof. • Outdoor walkways and patios, and permanent parking lots, shall use paving materials with 3-year SRI of 0.28 or initial SRI of 0.33. • Duct insulation shall be installed to a minimum level of R-6 and modestly enhanced window insulation (for a 5% improvement over the 2016 Title 24 requirement) consistent with County of Los Angeles criteria. • HVAC equipment shall have a SEER of 12 or higher. • Water heaters shall have an energy factor of 0.92 or higher. • Some form of daylighting (e.g., skylights, windows) shall be included in rooms with exterior walls that would normally be occupied.	Final plans and specifications	Final plans and specifications; prior to issuance of certificate of occupancy	County of Los Angeles Department of Public Works			

Table 4-1
Mitigation Monitoring and Reporting Program

Mitigation Measure	Mitigation Monitoring			Verification of Compliance		
	Implementing Phase	*Monitoring Phase*	*Enforcing Agency*	*Initial*	*Date*	*Comments*
• Artificial lighting in at least 50% of unit fixtures shall be energy efficient. • Waterless urinals, and high-efficiency faucets and toilets shall be used in the project.						
PDF-GHG-2. The project shall include the installation of a solar photovoltaic rooftop system on the Learning Center, Welcome Center and/or Player Development buildings to the extent feasible.	Final plans and specifications	Final plans and specifications; prior to issuance of certificate of occupancy	County of Los Angeles Department of Public Works			
PDF-GHG-3. The project's landscape shall use recycled water.	Final plans and specifications	Final plans and specifications; prior to issuance of certificate of occupancy	County of Los Angeles Department of Public Works			
Hazards and Hazardous Materials						
MM-HAZ-1. Prior to issuance of the first excavation or grading permit for project development, the County shall confirm that the Department of Toxic Substances Control (DTSC) has no objections to issuance of the excavation/grading permit.	Pre-construction	Prior to issuance of the first excavation or grading permit	County of Los Angeles Department of Public Works			
MM-HAZ-2. If excavation or grading occurs in areas with potential for residual contamination in the subsurface in the maintenance area (Figure 4.8-1), then a qualified environmental professional retained by the project applicant and approved by the County shall screen soils in the identified area prior to excavation and grading based on the nature of the potential contamination. In the event that potential contamination is encountered the contamination shall be evaluated by the qualified environmental professional using appropriate collection and sampling techniques as determined by the environmental professional based on the nature of the contamination. The nature and extent of contamination shall	During construction (excavation and grading) (if applicable)	During construction (grading and excavation)	County of Los Angeles Department of Public Works			

Table 4-1
Mitigation Monitoring and Reporting Program

Mitigation Measure	Mitigation Monitoring			Verification of Compliance		
	Implementing Phase	*Monitoring Phase*	*Enforcing Agency*	*Initial*	*Date*	*Comments*
be determined and the appropriate handling, disposal, and/or treatment shall be implemented in accordance with applicable regulatory requirements.						
PDF-HAZ-1. Prior to the issuance of any demolition permit or permit for remodeling of existing buildings, if applicable, the applicant shall provide a letter to the applicable authority indicating that the demolition/renovation contract provides for a qualified asbestos abatement contractor/specialist to remove or otherwise abate or manage asbestos during demolition or renovation activities in accordance with the South Coast Air Quality Management District's Rule 1403. The applicant shall comply with State and federal regulations to test for asbestos prior to issuance of any demolition permit. If asbestos-containing materials are found to be present, it shall be abated in compliance with the South Coast Air Quality Management District's Rule 1403, as well as all other applicable state and federal rules and regulations.	Pre-construction	Prior to the issuance of any demolition permit or permit for remodeling of existing buildings (if applicable)	County of Los Angeles Department of Public Works			
PDF-HAZ-2. Prior to the issuance of any permit for demolition or alteration of an existing structure, if applicable, a lead-based paint survey shall be performed in compliance with applicable State and federal regulations. Should lead-based paint materials be identified, the applicant shall provide evidence to the applicable authority demonstrating that the demolition/renovation contract provides that standard handling and disposal practices would be implemented pursuant to Occupational Safety and Health Act regulations. The applicant shall comply with State and federal regulations to test for lead-based paint prior to issuance of any demolition permit. Should lead-based paint materials be identified, standard handling and disposal practices shall be implemented pursuant to Occupational Safety and Health Act regulations.	Pre-construction	Prior to the issuance of any demolition permit or permit for remodeling of existing buildings (if applicable)	County of Los Angeles Department of Public Works			

Table 4-1
Mitigation Monitoring and Reporting Program

Mitigation Measure	Mitigation Monitoring			Verification of Compliance		
	Implementing Phase	*Monitoring Phase*	*Enforcing Agency*	*Initial*	*Date*	*Comments*
Noise						
MM-NOI-1. Noise Barrier Installation. The following measure shall be incorporated into the project contract specifications. Prior to commencement of construction activities involving heavy equipment within the areas shown on Figure 4.11-2, Location of Required Temporary Barrier for Construction Noise Mitigation, temporary construction noise barriers shall be constructed in the locations shown in Figure 4.11-2. The eastern noise barrier shall be erected along the top edge of the slope that exists along the eastern edge of the property. The noise barriers shall be 8 feet in height, have a surface density of at least four pounds per square foot, and be free of openings and cracks (with the exception of expansion joints gaps and other construction techniques, which could create an opening or crack). Sound blankets or panels with a minimum 20 Sound Transmission Class (STC) rating may be used as the surface of the noise barrier; such blankets or panels should be constructed for outdoor use, and may be supported on a metal framework.	Pre-construction; final plans and specifications	Final plans and specifications; during construction				
MM-NOI-2. Pile Driving. The following measure shall be incorporated into the project contract specifications. Pile driving within the areas shown on Figure 4.11-3, Boundaries of Area Where Sonic Pile Drive is Required for Noise Mitigation, shall employ a vibratory (sonic) pile driver if technically feasible as determined by the project geologist.	Final plans and specifications; during construction (if applicable)	Final plans and specifications; during construction (if applicable)	County of Los Angeles Department of Public Works			
MM-NOI-3. Construction Hours. Construction activities shall take place during the permitted time and day per Section 12.08.440 of the County Code. The applicant shall ensure that construction activities for the proposed project are limited to the hours of 7:00 a.m. to 7:00 p.m. Monday through Saturday, and not at all during other hours or on Sundays or holidays.	During construction	During construction	County of Los Angeles Department of Public Works			

Table 4-1
Mitigation Monitoring and Reporting Program

Mitigation Measure	Mitigation Monitoring			Verification of Compliance		
	Implementing Phase	*Monitoring Phase*	*Enforcing Agency*	*Initial*	*Date*	*Comments*
MM-NOI-4. Construction Noise Reduction. The County of Los Angeles shall require the contractor to adhere to the following measures as a condition of granting a grading permit to the contractor: • All construction equipment, fixed or mobile, shall be equipped with properly operating and maintained mufflers. • Construction noise reduction methods such as shutting off idling equipment, construction of a temporary noise barrier, maximizing the distance between construction equipment staging areas and adjacent residences, and use of electric air compressors and similar power tools, rather than diesel equipment, shall be used where feasible. • During construction, stationary construction equipment shall be placed such that emitted noise is directed away from or shielded from sensitive receptors. • Construction hours, allowable workdays, and the phone number of the job superintendent shall be clearly posted at all construction entrances. • At the request of the school administration for Towne Avenue Elementary School, the contractor will meet with the school principal or other representative each week to discuss anticipated upcoming construction activities and applicable noise reduction measures.	Pre-construction; during construction	Final plans and specifications; prior to issuance of a grading permit during construction	County of Los Angeles Department of Public Works			
Traffic and Transportation						
The Traffic and Transportation Project Design Features and Mitigation Measures set forth in the Environmental Impact Report and this MMRP include several off-site improvements and fair-share funding obligations. These traffic-related Project Design Features and Mitigation Measures may be revised, where appropriate and as determined, by the County: (1) upon demonstration that Mitigation Measures are equivalent or superior to the original Project Design Feature and/or Mitigation Measures, and/or (2) upon demonstration that approval or implementation of Project Design Features or Mitigation Measures that require other jurisdiction approvals have been delayed or might not be completed, provided that the Project Applicant or its successor has demonstrated reasonable efforts and due diligence to the satisfaction of the County. Those Mitigation Measures that require physical improvements may be completed by the Project Applicant or guaranteed by bond.						

Table 4-1
Mitigation Monitoring and Reporting Program

Mitigation Measure	Mitigation Monitoring			Verification of Compliance		
	Implementing Phase	*Monitoring Phase*	*Enforcing Agency*	*Initial*	*Date*	*Comments*
MM-TRAF-1. No. 7 Avalon Boulevard/Albertoni Street. The proposed project shall implement the following improvements at Avalon Boulevard/Albertoni Street: • Restripe existing (cross-hatched) pavement on the northbound approach to a second (dual) northbound left-turn lane. This improvement could be accomplished within the existing right-of-way. • Modify existing protected left-turn phasing on the northbound and southbound approaches for a lead/lag operation (for opposing left-turn clearance purposes).	Pre-operation	Prior to issuance of a certificate of occupancy	County of Los Angeles Department of Public Works			
MM-TRAF-2. No. 18 Main Street/Albertoni Street. The proposed project shall implement the following improvements at Main Street/Albertoni Street: • Add new eastbound right-turn lane. This improvement could be accomplished within the existing right-of-way, but would require the removal of approximately 5 on-street parking spaces approximately 100 feet west of the intersection.	Pre-operation	Prior to issuance of a certificate of occupancy	County of Los Angeles Department of Public Works			
MM-TRAF-3. No. 19 Main Street/Victoria Street. The proposed project shall implement the following improvements at Main Street/Victoria Street: • Add new eastbound right-turn lane. This improvement could be accomplished within the existing right-of-way, but would require the removal of approximately 5 on-street parking spaces approximately 100 feet west of the intersection.	Pre-operation	Prior to issuance of a certificate of occupancy	County of Los Angeles Department of Public Works			
MM-TRAF-4. No. 25 Hamilton Avenue/I-110 Southbound Ramps. The proposed project shall pay its fair-share, as calculated based on the County's methodology, toward the implementation of the following improvements at Hamilton Avenue/I-110 southbound ramps:	Pre-operation	Prior to issuance of a certificate of occupancy	County of Los Angeles Department of Public Works			

Table 4-1
Mitigation Monitoring and Reporting Program

Mitigation Measure	Mitigation Monitoring			Verification of Compliance		
	Implementing Phase	*Monitoring Phase*	*Enforcing Agency*	*Initial*	*Date*	*Comments*
• Installation of a new traffic signal at Hamilton Avenue/I-110 southbound ramps consisting of a northbound/southbound split phase and westbound permitted phase with overlapping right-turns. • Reconfiguration of the southbound approach to provide a dedicated left-turn lane and a left-turn/through lane.						
MM-TRAF-5. No. 1 Main Street/Martin Luther King Jr. Street. The proposed project shall pay its fair-share, as calculated based on the County's methodology, toward the implementation of the following improvements at Main Street/Martin Luther King, Jr. Street: • Reconfigure the westbound approach to provide a left-turn, shared left/right-turn, and right-turn lanes; • Add new northbound right-turn lane	Pre-operation	Prior to issuance of a certificate of occupancy	County of Los Angeles Department of Public Works			
MM-TRAF-6. No. 3 Main Street/I-405 southbound ramps. The proposed project shall pay its fair-share, as calculated based on the County's methodology, toward the implementation of the following improvements at Main Street/I-405 southbound ramps: • Convert the eastbound left-turn lane to a shared through-left-turn lane (onto the I-405 on-ramp).	Pre-operation	Prior to issuance of a certificate of occupancy	County of Los Angeles Department of Public Works			
MM-TRAF-7. No. 4 Main Street/Del Amo Boulevard. The proposed project shall pay its fair-share, as calculated based on the County's methodology, toward the implementation of the following improvements at Main Street/Del Amo Boulevard: • Add new second (dual) westbound left-turn lane; • Add new northbound right-turn lane; • Widening of the westbound approach will be required.	Pre-operation	Prior to issuance of a certificate of occupancy	County of Los Angeles Department of Public Works			

Table 4-1
Mitigation Monitoring and Reporting Program

Mitigation Measure	Mitigation Monitoring			Verification of Compliance		
	Implementing Phase	*Monitoring Phase*	*Enforcing Agency*	*Initial*	*Date*	*Comments*
MM-TRAF-8. No. 8 Avalon Boulevard/Victoria Street. The proposed project shall pay its fair-share, as calculated based on the County's methodology, toward the implementation of the following improvements at Avalon Boulevard/Victoria Street: • On the eastbound approach, restripe the right-turn lane into a shared through/right-turn lane; • On the eastbound departure, restripe to provide three through lanes.	Pre-operation	Prior to issuance of a certificate of occupancy	County of Los Angeles Department of Public Works			
MM-TRAF-9. No. 10 Avalon Boulevard/University Avenue. The proposed project shall pay its fair-share, as calculated based on the County's methodology, toward the implementation of the following physical improvements at Avalon Boulevard/University Avenue: • On the westbound approach, reconfigure to provide two left-turn lanes and one right-turn lane; this is anticipated to require some modification to the existing medians located on Avalon Boulevard and University Avenue • Reclassify a section of the existing dedicated westbound bicycle lane as a shared lane.	Pre-operation	Prior to issuance of a certificate of occupancy	County of Los Angeles Department of Public Works			
MM-TRAF-10. No. 14 Avalon Boulevard/Del Amo Boulevard. The proposed project shall pay its fair-share, as calculated based on the County's methodology, toward the implementation of the following improvements at Avalon Boulevard/Del Amo Boulevard: • Add second (dual) northbound left-turn lane. • Reconfigure southbound approach to provide a right-turn lane. • Reconfigure eastbound right-turn lane into a shared through/right-turn lane.	Pre-operation	Prior to issuance of a certificate of occupancy	County of Los Angeles Department of Public Works			

Table 4-1
Mitigation Monitoring and Reporting Program

Mitigation Measure	Mitigation Monitoring			Verification of Compliance		
	Implementing Phase	*Monitoring Phase*	*Enforcing Agency*	*Initial*	*Date*	*Comments*
MM-TRAF-11. No. 16 Avalon Boulevard/I-405 southbound ramps. The proposed project shall pay its fair-share, as calculated based on the County's methodology, toward the implementation of the following improvements at Avalon Boulevard/I-405 Southbound Ramps: • Upgrade traffic control equipment to provide a new southbound right-turn overlap signal phase.	Pre-operation	Prior to issuance of a certificate of occupancy	County of Los Angeles Department of Public Works			
MM-TRAF-12. No. 22 I-110 southbound ramps/190th Street. The proposed project shall pay its fair-share, as calculated based on the County's methodology, toward the implementation of the following physical improvements at I-110 southbound ramps/190th Street: • Provide an additional eastbound lane for a total of three through lanes by reducing the width of the existing painted median on 190th Street to accommodate the additional eastbound lane.	Pre-operation	Prior to issuance of a certificate of occupancy	County of Los Angeles Department of Public Works			
MM-TRAF-13. No.24 Hamilton Avenue/Del Amo Boulevard. The proposed project shall pay its fair-share, as calculated based on the County's methodology, toward the implementation of the following improvements at Hamilton Avenue/Del Amo Boulevard: • Convert the second northbound through lane to a dedicated right-turn lane. • Modify the traffic signal to provide an overlap phase for the northbound right-turn and add protected-permitted phasing for the westbound left-turn movements.	Pre-operation	Prior to issuance of a certificate of occupancy	County of Los Angeles Department of Public Works			

Table 4-1
Mitigation Monitoring and Reporting Program

Mitigation Measure	Mitigation Monitoring			Verification of Compliance		
	Implementing Phase	*Monitoring Phase*	*Enforcing Agency*	*Initial*	*Date*	*Comments*
MM-TRAF-14. No. 26 Figueroa Street/Del Amo Boulevard. The proposed project shall pay its fair-share, as calculated based on the County's methodology, toward the implementation of the following improvements at Figueroa Street/Del Amo Boulevard: • Restripe the westbound approach to provide two left-turn lanes, a through lane, and a shared through-right lane. • Restripe the eastbound approach to provide a left-turn lane, two through lanes, and a shared through-right turn lane. • Modify the traffic signal to provide an overlap phase for the northbound and southbound right-turns.	Pre-operation	Prior to issuance of a certificate of occupancy	County of Los Angeles Department of Public Works			
PDF-TRAF-1. The proposed project will include a Special Event Management Plan (SEMP) for Special Events. The SEMP measures would be implemented at the following thresholds: 1. All on-site measures would be implemented when weekend Soccer and weekend Tennis Center tournaments operate simultaneously. The on-site measures are discussed in more detail in the proposed project's TIA (Appendix K) and may include, but not be limited to: • Physical site design • Parking operations • Guest communications 2. All on-site measures and selected off-site measures, as identified through coordination with the lead agency, would be implemented when: a. Weekend Soccer and weekend Tennis Center tournaments operate simultaneously plus the full use of the Tennis Center exhibition venue; OR,	Pre-operation; Project operation	Prior to issuance of a certificate of occupancy; throughout operation	County of Los Angeles Department of Public Works			

Table 4-1
Mitigation Monitoring and Reporting Program

Mitigation Measure	Mitigation Monitoring			Verification of Compliance		
	Implementing Phase	*Monitoring Phase*	*Enforcing Agency*	*Initial*	*Date*	*Comments*
b. The scheduling of a special event at the Soccer Center (e.g., nontypical event, professional sports exhibition, etc.). The off-site measures are discussed in more detail in the proposed project's TIA (Appendix K) and may include, but not be limited to: • Traffic management (off site) • Coordinated traffic control • Traffic control officers • Schedule coordination The SEMP is intended to be an evolving document subject to modification over time in coordination and consultation with the County, in order to respond to changes in traffic patterns and mobility/parking technologies which may alter the travel to and attendance of events at the project.						
PDF-TRAF-2. Prior to issuance of a grading permit, the proposed project will develop a Construction Traffic Management Plan for construction activities that would impact public streets. The Construction Traffic Management Plan shall be based on the nature and timing of the specific construction and other projects in the vicinity of the project site and shall include the following elements as appropriate: • Advance notification to adjacent property owners and occupants, as well as, nearby schools, of upcoming construction activities, including durations and daily hours of construction.	Pre-construction; during construction	Prior to issuance of a grading permit; during construction	County of Los Angeles Department of Public Works			

Table 4-1
Mitigation Monitoring and Reporting Program

Mitigation Measure	Mitigation Monitoring			Verification of Compliance		
	Implementing Phase	*Monitoring Phase*	*Enforcing Agency*	*Initial*	*Date*	*Comments*
• The project's construction manager shall contact LAUSD's Transportation Branch at (213) 580-2950 regarding the potential impact upon existing school bus routes, and the expected start and ending dates for various portions of the project construction that may affect traffic within nearby school areas. • Prohibition of construction worker parking on adjacent residential streets, and identify construction employee parking locations and protocols. • Temporary traffic control during all construction activities adjacent to public rights-of-way to improve traffic flow on public roadways (e.g., flag men flagmen). The temporary traffic controls shall minimize traffic delays for LAUSD transported students. • Prohibition of construction-related vehicle parking on surrounding public streets. • Safety precautions for pedestrian and bicyclists through such measures as alternate routing and protection barriers as appropriate, including along all identified Los Angeles Unified School District (LAUSD) and Compton Unified School District (CUSD) pedestrian routes to nearby schools. • Scheduling of construction-related deliveries, haul trips, etc., so as to occur outside the commuter peak hours to the extent feasible, and so as to not impede school drop-off and pick-up activities and students using LAUSD/CUSD's identified pedestrian routes to nearby schools. • Coordination with public transit agencies to provide advanced notifications of any anticipated stop relocations and durations.						

Table 4-1
Mitigation Monitoring and Reporting Program

Mitigation Measure	Mitigation Monitoring			Verification of Compliance		
	Implementing Phase	*Monitoring Phase*	*Enforcing Agency*	*Initial*	*Date*	*Comments*
• Provision of advanced notification of any temporary on-street parking removals and duration of removals. • Establish construction hours that are in compliance with Carson Municipal Code (CMC). • Establish a construction phone number which shall be posted on the site, and appoint a construction liaison officer to respond to concerns or inquiries regarding project construction. • Construction trucks and other vehicles are required to stop when encountering school buses using red-flashing-lights must-stop-indicators per the California Vehicle Code. • Contractors shall install and maintain appropriate traffic controls (signs and signals) for vehicular safety. • Contractors shall maintain ongoing communication with LAUSD school administrators, for the school to provided sufficient notice to children and parents when existing vehicle and pedestrian routes to school may be impacted. • Maintain unimpeded emergency access to the project site and nearby properties. • Establish truck access and staging areas, and review haul route approved with the project. • Provide construction site security. • Prohibition of staging or parking of construction-related vehicles, including worker-transport vehicles, on or adjacent to a school property without the express written permission of the applicable school district.						

Table 4-1
Mitigation Monitoring and Reporting Program

Mitigation Measure	Mitigation Monitoring			Verification of Compliance		
	Implementing Phase	*Monitoring Phase*	*Enforcing Agency*	*Initial*	*Date*	*Comments*
• Funding for crossing guards at the contractor's expense to the extent required when safety of children may be compromised by construction-related activities at impacted school crossings.						
Tribal Cultural Resources						
MM-TCR-1. Unanticipated Discovery While no tribal cultural resources (TCRs) have been identified that may be affected by the project, the following approach for the unanticipated discovery of TCRs has been prepared to reduce potential impacts to unanticipated resources. Should a potential TCR be encountered, construction activities near the potential TCR shall be temporarily halted within 50 feet of the potential TCR and the County of Los Angeles (County) notified. The County will notify Native American tribes that have been identified by the Native American Heritage Commission (NAHC) to be traditionally and culturally affiliated with the geographic area of the project. If the unanticipated resource is archaeological in nature, appropriate management requirements shall be implemented as outlined in Mitigation Measure (MM-) CUL-1 (see Section 4.4.5, Mitigation Measures). If the County determines that the potential resource is a TCR (as defined by Public Resources Code, Section 21074), tribes consulting under AB 52 would be provided a reasonable period of time, typically 5 days from the date a new discovery is made, to conduct a site visit and make recommendations regarding future ground disturbance activities as well as the treatment and disposition of any discovered TCRs. A qualified archaeologist shall implement a plan for the treatment and disposition of any discovered TCRs based on the nature of the resource and considering the recommendations of the	During construction	During construction	County of Los Angeles Department of Public Works			

Table 4-1
Mitigation Monitoring and Reporting Program

Mitigation Measure	Mitigation Monitoring			Verification of Compliance		
	Implementing Phase	*Monitoring Phase*	*Enforcing Agency*	*Initial*	*Date*	*Comments*
tribe(s). All activities shall be conducted in accordance with regulatory requirements. If human remains are found within the project site, management recommendations as outlined in MM-CUL-3 (see Section 4.4.5) should be implemented.						

SOURCE: USDA 2016

DUDEK

0 250 500 Feet

FIGURE 4.8-1

Maintenance Area Location

Carol Kimmelman Athletic and Academic Campus

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LEGEND

TENNIS CENTER

1. WELCOME CENTER
2. LEARNING CENTER
3. ENTRY PLAZA
4. BASKETBALL COURTS
5. COMPETITION VENUE (12 HARD COURTS)
6. PLAYER DEVELOPMENT / COLLEGIATE CENTER
7. TOURNAMENT/ LEAGUE ADMINISTRATION BUILDING
8. 100M SPRINT TRACK
9. 4 CLAY COURTS
10. MONUMENT ENTRY/ SIGN
11. CENTRAL PLAZA
12. 8 36 FT COURTS
13. 4 60 FT COURTS (+4 FUTURE COURTS)
14. TRAINING TURF
15. TENNIS CENTER COURTS (24 HARD COURTS)
16. FUTURE COVERED COURTS (6 COURTS)
17. MAINTENANCE BUILDING
18. OUTDOOR EXERCISE COURSE
19. VISITOR PARKING
20. BUS PARKING
21. EMPLOYEE PARKING
22. OVERFLOW PARKING

SOCCER CENTER

23. 2 NATURAL GRASS MULTIPURPOSE FIELDS
24. 6 FULL SIZE NATURAL GRASS SOCCER FIELDS
25. 2 FULL SIZE ARTIFICIAL TURF SOCCER FIELDS
26. SUPPORT BUIDLING
27. SOCCER PARKING
28. OVERFLOW PARKING

Location of 8 foot temporary construction noise soundwall
Eastern barrier to be maintained during work in this area
Northern barrier to be maintained during work in this area

SOURCE: Bing Maps 2018

DUDEK 0 70 140 Feet

FIGURE 4.11-2

Location of Required Temporary Barrier for Construction Noise Mitigation

Carol Kimmelman Athletic and Academic Campus

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SOURCE: Bing Maps 2018

DUDEK 0 70 140 Feet

FIGURE 4.11-3

Boundaries of Area Where Sonic Pile Driver is Required for Noise Mitigation

Carol Kimmelman Athletic and Academic Campus

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CEQA Findings of Fact and Statement of Overriding Considerations

1. Introduction

1.1 Purpose

This statement of findings addresses the environmental effects associated with the Carol Kimmelman Athletic and Academic Campus Project (Project) that are described in the Environmental Impact Report (EIR) for the project. This statement is made pursuant to the California Environmental Quality Act (CEQA; California Public Resources Code Section 21000 et seq.), specifically Public Resources Code Sections 21081 and 21081.6 and the CEQA Guidelines (14 CCR 15000 et seq.), specifically Section 15091.

Public Resources Code Section 21081 and CEQA Guidelines Section 15091 require that the lead agency, in this case the County of Los Angeles (County), prepare written findings for identified significant impacts, accompanied by a brief explanation of the rationale for each finding. CEQA Guidelines Section 15091 states, in part, that:

a. No public agency shall approve or carry out a project for which an EIR has been certified which identifies one or more significant environmental effects of the project unless the public agency makes one or more written findings for each of those significant effects, accompanied by a brief explanation of the rationale for each finding. The possible findings are:

    1. Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect as identified in the final EIR.

    2. Such changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency.

    3. Specific economic, legal, social, technological, or other considerations, including provision of employment opportunities for highly trained workers,

make infeasible the mitigation measures or project alternatives identified in the final EIR.

As required by CEQA, in adopting these findings, the County also adopts a Mitigation Monitoring and Reporting Program (MMRP) for the Project. The County finds that the MMRP, which is incorporated by reference and made a part of these findings, meets the requirements of Public Resources Code Section 21081.6 by providing for the implementation and monitoring of measures intended to mitigate potentially significant effects of the Project.

As required by CEQA, the County finds that the Final EIR for the Project reflects the County's independent review and judgment. In accordance with the provisions of CEQA and the CEQA Guidelines, the County adopts these findings as part of its certification of the Final EIR. The Final EIR, consisting of the Draft EIR, comments on the Draft EIR, responses to comments on the Draft EIR, revisions to the Draft EIR, Errata, and MMRP are hereby incorporated by reference into these findings without limitation.

In accordance with Public Resource Code Section 21081 and CEQA Guidelines Section 15093, whenever significant effects cannot be mitigated to below a level of significance, the decision-making agency is required to balance, as applicable, the benefits of the project against its unavoidable environmental risks when determining whether to approve the project. If the benefits of a project outweigh the unavoidable adverse environmental effects, the adverse effects may be considered "acceptable," in which case the lead agency must adopt a formal statement of overriding considerations. The Final EIR for the Project identified potentially significant effects that could result from Project implementation even with implementation of mitigation measures. As such, a statement of overriding considerations has been prepared pursuant to CEQA Guidelines Section 15093.

1.2 Organization of the Findings of Fact

The content and format of this CEQA Findings of Fact is designed to meet the latest CEQA statutes and Guidelines. The Findings of Fact is organized into the following sections:

Chapter 1, Introduction outlines the organization of this document and identifies the location and custodian of the record of proceedings.

Chapter 2, Project Description summarizes the Project, including its location, and provides a list of project objectives.

Chapter 3, CEQA Review and Public Outreach describes the steps that the County has undertaken to comply with the CEQA statutes and Guidelines as they relate to public input, review, and participation during the preparation of the Draft and Final EIRs.

Chapter 4, Impacts Determined Not to Be Significant in the Initial Study and EIR provides a list of those environmental issue areas where no reasonably foreseeable impacts would occur and provides a list of those impacts determined to be below the threshold of significance without the incorporation of mitigation measures.

Chapter 5, Impacts Determined to be Less than Significant with Mitigation provides findings for all potentially significant environmental impacts for which implementation of identified feasible mitigation measures would avoid or substantially reduce the environmental impacts to less than significant levels.

Chapter 6, Impacts Determined to be Significant and Unavoidable provides a summary of the impacts determined to be significant and unavoidable.

Chapter 7, Findings on Project Alternatives provides a summary of the alternatives considered for the project and describes the associated findings.

Chapter 8, Other CEQA Findings addresses the County's findings regarding growth inducing impacts, significant irreversible environmental changes, potential secondary impacts, recirculation, and the MMRP.

Chapter 9, Statement of Overriding Considerations provides a statement of overriding considerations in accordance with CEQA Guidelines Section 15093.

2. Project Description

2.1 Project Location

The proposed project site is owned by the County of Los Angeles (County) and is located at 340 Martin Luther King Jr. Street in the County of Los Angeles, City of Carson. The site, which is approximately 87 acres within the existing 171-acre Links at Victoria Golf Course (Victoria Golf Course) and adjacent tennis courts, is northeast of the Dominguez Channel and east of the junction of Interstate (I) 405 and I-110. As shown in Figure 3-1 of the Draft EIR (Project Location), the project site is bounded by Martin Luther King Jr. Street to the north, South Avalon Boulevard to the east, and the remaining portion of the Victoria Golf Course to the south and west. The site is generally within the northeastern portion of Assessor Parcel Number 7339-017-917 and is located within the U.S. Geological Survey

7.5-Minute Series Torrance Quadrangle, Township 3S, 4S, Range 13W, Sections 4, 5, 6, 7, 8, 9, 31, and 32.

2.2 Project Summary

The Carol Kimmelman Foundation LLC, in partnership with athletic and academic organizations, such as the United States Tennis Association Foundation (USTA Foundation), the TGR Foundation, a Tiger Woods Charity, and LA Galaxy Foundation, proposes to develop the Carol Kimmelman Athletic and Academic Campus. The Project would be a community-oriented athletic and academic venue serving youth to seniors. The Project includes three basic areas: (i) the Learning Center, (ii) the Tennis Center and (iii) the Soccer Center. The Learning Center would be located at the gateway to the Carol Kimmelman Athletic and Academic Campus and adjacent to the Tennis Center. The Tennis Center would include up to 62 tennis courts of varying sizes, a tennis exhibition court, player development building, tournament building, administration building, maintenance buildings, and other recreational amenities, and associated restroom and storage facilities. The Soccer Center would include up to eight soccer fields, two multi-use fields, maintenance buildings and associated restroom and storage facilities. The overall athletic and academic campus would include other recreational amenities for community use. Such amenities may include additional active recreational areas such as exercise areas, skateboarding facilities and walk/running trails as well as passive recreational areas.

2.3 Project Objectives

Section 15124(b) of the California Environmental Quality Act (CEQA) Guidelines states that the project description shall contain “a statement of the objectives sought by the proposed project.” Section 15124(b) of the CEQA Guidelines further states that “the statement of objectives should include the underlying purpose of the project.” The primary objectives of the proposed project include the following:

- Convert the existing underperforming Victoria Golf Course into a more diverse and accessible recreational facility to serve County residents.

- Develop a sports and academic campus that provides programs that stimulate recreation, combined with learning and wellness for children and adults in the South Los Angeles region.

- Develop a learning center that provides learning and mentoring programs for underserved elementary, middle and high school students and educators including programs focused on STEM (science, technology, engineering and math) and workshops, group sessions and presentations on college-access designed to help

all students, especially low-income and first-generation students, plan a roadmap to college.

- Develop a tennis center to serve all age and level of players, with a focus on youth and community programs, including tennis opportunities for children, seniors, disabled, veterans, and players with special needs, and providing facilities for professional staff to instruct beginners to collegiate and professional athletes in order to increase access for and development of a broad range of players to the sport of tennis.

- Develop a recreational athletic field facility that includes multipurpose and soccer fields for community use and use by youth and adult teams as wells as skills development for collegiate and professional athletes.

2.4 Discretionary Actions

The Project would require a number of permits and approvals, including but not limited to the following:

- County of Los Angeles: approval of ground lease, site plan review, sign plan approval, and building permits grading permits, and other construction-related permits and approvals

- Other actions as may be required by other local, regional and state agencies including, but not limited to the City of Carson, the Department of Toxic Substances Control, the Los Angeles Regional Water Quality Control Board, Caltrans, and the South Coast Air Quality Management District (SCAQMD). Therefore, these agencies may be responsible agencies under CEQA.

3. CEQA Review and Public Outreach

Pursuant to CEQA Guidelines Section 15082, the County issued a Notice of Preparation (NOP) on July 31, 2018, which was distributed to the State Clearinghouse, interested agencies, individuals, and groups on July 31, 2018. The NOP is intended to encourage interagency communication regarding the Project so that agencies, organizations, and individuals are afforded an opportunity to respond with specific comments and/or questions regarding the scope and content of the EIR. Recipients of the NOP were requested to provide responses during the public review period after their receipt of the NOP. The NOP public review period ended August 31, 2018. Comments received during the NOP public review period were considered during the preparation of this EIR. The NOP and NOP comments are included in Appendix A of the Draft EIR.

A public agency scoping meeting was held on August 14, 2018. The purpose of this meeting was to seek input from public agencies and the general public regarding the environmental issues and concerns that may potentially result from the proposed project.

The Draft EIR was made available for public review and comment pursuant to CEQA Guidelines Section 15087. The public review period for the Draft EIR started on May 15, 2019. The public review period ended on July 1, 2019. At the beginning of the public review period, 15 copies of the Draft EIR and one copy of the Notice of Completion (NOC) were submitted to the State Clearinghouse. A Notice of Availability (NOA) and an electronic copy of the Draft EIR was mailed to agencies, organizations, and property owners and occupants within a 500-foot radius of the project site, and individuals who had previously requested such notice in writing. The NOA was filed with the Los Angeles County Clerk and published in the Los Angeles Times on May 15, 2019. The NOA described where the document was available and how to submit comments on the Draft EIR. The NOA and Draft EIR were also made available for public review at the County of Los Angeles Department of Public Works, Project Management Division II (900 South Fremont Avenue, 5th Floor, Alhambra, California 91803), at the Dr. Martin Luther King Jr. Library (17906 South Avalon Boulevard, Carson, California 90746), and on the County's Department of Parks and Recreation website. The public review period provided interested public agencies, groups, and individuals the opportunity to comment on the contents of the Draft EIR.

Pursuant to Section 15088 of the CEQA Guidelines, the County reviewed comments received during the review period for the Draft EIR and responded to comments in the Final EIR, which was completed in July 2019 and is hereby incorporated by reference. The Final EIR was prepared and distributed in accordance with CEQA Guidelines Section 15088(b), which requires that written responses be provided to commenting agencies at least 10 days prior to certifying an EIR. The Final EIR was also made available to the public on the Department of Parks and Recreation website.

3.1 Record of Proceedings

For the purposes of CEQA, and the Findings herein set forth, the record of proceedings for the Project consists of those items listed in CEQA Section 21167.6(e). The record of proceedings for the County's decision on the Project consists of the following documents, at a minimum, which are incorporated by reference and made part of the record supporting these findings:

- The NOP, NOA, and all other public notices issued by the County in conjunction with the Project;

- The Draft EIR for the Project and all technical appendices and documents relied upon or incorporated by reference;
- All written comments received from agencies, organizations, or members of the public during the public review comment period on the Draft EIR and the County's responses to those comments;
- The Final EIR for the Project, including the Errata, and all technical appendices and documents relied upon or incorporated by reference;
- The MMRP for the Project;
- All reports, studies, memoranda, maps, staff reports, or other planning documents relating to the Project prepared by the County or consultants to the County with respect to the County's compliance with the requirements of CEQA and with respect to the County's action on the Project;
- All documents received by the County from other public agencies or members of the public in connection with the Project, up through the close of the public hearing for the Project;
- Any minutes and/or verbatim transcripts of all information sessions, public meetings, and public hearings held by the County in connection with the Project;
- Any documentary or other evidence submitted to the County at such information sessions, public meetings, and public hearings;
- Any ordinances or resolutions adopted by the County regarding the Project, and all staff reports, analyses, and summaries related to the adoption of those ordinances and resolutions;
- The County's General Plan and all updates and related environmental analyses;
- Matters of common knowledge to the County, including, but not limited to federal, state, and local laws and regulations;
- Any documents expressly cited in these findings, in addition to those cited above; and any other materials required for the record of proceedings by CEQA Section 21167.6(e).

3.2 Custodian and Location of Records

The documents and other materials that constitute the record of proceedings upon which the County's project approval is based are located at the address below:

County of Los Angeles
Department of Public Works, Project Management Division II
900 South Fremont Avenue, 5th Floor
Alhambra, California 91803

The County's Department of Public Works is the custodian of such documents and other materials that constitute the record of proceedings. The record of proceedings is provided in compliance with Public Resources Code Section 21081.6(a)(2) and CEQA Guidelines Section 15091(e).

4. Impacts Determined Not to Be Significant in the Initial Study and EIR

This section describes environmental factors and impacts that were determined not to be significant and not discussed in detail in the Draft or Final EIR, and environmental impacts that were evaluated in the Draft and Final EIR and determined to result in "no impact" or a "less than significant impact."

4.1 Environmental Areas and Impacts Determined Not to Be Significant in the Initial Study

The County prepared an Initial Study dated July 30, 2018, which determined that the Project would not have the potential to cause significant impacts in the following areas: agriculture and forestry resources, mineral resources, and population and housing. Therefore, these issue areas were not examined in detail in the EIR. Additionally, the Initial Study determined that the Project would not have the potential to cause certain significant impacts (discussed below) within the following areas: aesthetics; biological resources; geology and soils; hazards and hazardous materials; hydrology and water quality; land use and planning; noise; public services; and transportation and traffic. Accordingly, these environmental impacts were not examined in detail in the EIR. (The Initial Study also determined that the Project would not have the potential to cause significant impacts in the area of land use and planning, however, based on public comments during the scoping period this issue was examined in more detail in the EIR.)

The rationale for the conclusion that no significant impact would occur in each of these issue areas and impacts is summarized below, and based on that rationale, and other evidence in the administrative record relating to the proposed Project, the County finds and determines that the following environmental impact categories and specific impacts will not result in any significant impacts and that no mitigation measures are needed.

4.1.1 Aesthetics

The Project site is currently used as a portion of a County golf course and is visible from surrounding land uses, including I-405 to the west, Victoria Park and Towne Avenue Elementary School to the north, and the residential community to the east. The Project site is not located within a designated scenic vista area, and as such, visual changes at the Project site would not adversely affect scenic vistas. For those who have visual access to the Project site from public vantage points, viewers currently see open space associated with the existing golf course. Implementation of the Project would replace the existing recreational golf course with recreational facilities for soccer and tennis in a landscaped setting. As such, the existing open space and recreational character of the site would be maintained with project implementation. Given that the Project site is not associated with any scenic vistas and that the existing open space and recreational character of the site would be retained with project implementation, impacts would be less than significant. Therefore, no impacts with respect to scenic vistas would occur and no mitigation measures are required.

No scenic highways are located within the vicinity of the Project site. The closest officially designated state scenic highway to the project site is State Route 2, Angeles Crest Highway, located north of La Canada–Flintridge in the northern portion of Los Angeles County. The Project site is not visible from this state-designated scenic highway, nor is the highway visible from the project site. As such, implementation of the Project would not substantially degrade scenic resources within a state scenic highway. Therefore, no impacts with respect to scenic resources would occur and no mitigation measures are required.

(The Initial Study also determined that the Project would not have the potential to cause significant impacts by substantially degrading the existing visual character or quality of the site and its surroundings, however, based on public comments during the scoping period this issue was examined in more detail in the EIR.)

4.1.2 Agriculture and Forestry Resources

Per the Farmland Mapping and Monitoring Program of the California Department of Conservation, the Project site is not mapped as prime farmland, unique farmland, or farmland of statewide importance. The Project site is currently developed as a portion of a County golf course, and implementation of the Project would not convert farmland to non-agricultural use. Furthermore, the Project site is not zoned for agricultural use and is not under a Williamson Act contract. The Project site is currently developed as a portion of a County golf course. The County General Plan Parks and Recreation Element designates the site as a “Special Use Facility.” As such, construction and operation of the Project would not result in a conflict with existing zoning for agricultural use. Additionally, the Project site is not zoned as forest land or timberland use. As such, construction and operation of the Project would not result in a conflict with existing zoning for forest land or timberland use. Moreover, the Project site is currently used for recreational open space. As such, construction and operation of the Project would not result in the loss of forest land. Finally, the Project site is currently developed and used as a portion of a County golf

course, it is not used for agricultural, forest land, or timberland use, and is not mapped as Farmland. As such, construction and operation of the Project would not convert or make changes to existing agricultural, Farmland, or forest land uses. Therefore, no impacts to agricultural and forestry resources would occur and no mitigation measures are required.

4.1.3 Biological Resources

The Project site is not located within an adopted habitat conservation plan or natural community conservation plan. Additionally, the Project does not conflict with the provisions of the County of Los Angeles General Plan. The City's open space areas are composed of Recreational Open Space, including the County Victoria Golf Course and Dominguez Channel (a concrete-lined flood control channel). Although the Project site occurs within the northeastern portion of the Victoria Golf Course, which is recognized as an open space area, the general use of the area will remain the same (from existing golf course to a new sports recreation and academic resources facility). Additionally, the Dominguez Channel is a fenced concrete-lined flood control channel that is located more than 950 feet southwest of the project site; therefore, Project activities are not anticipated to impact this channel. As such, the Project would not conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan. Therefore, no impact would occur with respect to this issue, and no mitigation measures are required.

4.1.4 Geology and Soils

The Project site is not located within an identified Alquist-Priolo Earthquake Fault Zone. However, the Project site is located in the seismically active Southern California region. Structures and people located on the Project site do have the potential to be subject to strong seismic ground shaking; however, the site is not identified as being within an Alquist-Priolo Earthquake Fault Zone.

With respect to landslides, the project site is located within a relatively flat area and is relatively flat itself. As such, given the limited slope of the site and surrounding area, risks to structures and people resulting from landslides are minimal. Accordingly, impacts associated with ground rupture and landslides would be less than significant and no mitigation measures are required.

The Project would not have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water. The Project would be connected to existing utility systems, including sewer lines. No septic tanks or alternative wastewater disposal systems would be used for the project. Therefore, no impacts would occur and no mitigation measures are required.

4.1.5 Hazards and Hazardous Materials

The Project site is not located within an airport land use plan or within 2 miles of an existing public airport. The closest public airports to the Project site are Zamperini Field, approximately 5.4 miles southwest of the Project site; Hawthorne Municipal Airport,

approximately 6 miles northwest of the Project site; and Long Beach Airport, approximately 6.6 miles southeast of the Project site. As such, Project implementation would not result in a safety hazard for people residing or working in the project area due to proximity to public use airports. Accordingly, no impact would occur with respect to safety hazards relating to the Project's location in an airport land use plan, and no mitigation measures are required.

Furthermore, the Project site is located southwest of the intersection of Martin Luther King Jr. Street and South Avalon Boulevard, both major thoroughfares in the City of Carson. Additionally, I-405, located west of the project site, is a primary freeway disaster route, and South Avalon Boulevard, located immediately east of the Project site, is designated a secondary disaster route. Disaster routes are freeway, highway, or arterial routes preidentified for use during times of crisis. These routes are used to bring in emergency personnel, equipment, and supplies to impacted areas in order to save lives, protect property, and minimize impact to the environment. During a disaster, these routes have priority for clearing, repairing, and restoration over all other roads. Implementation of the Project would occur on the Project site itself, and no roadways would be closed during Project construction or operation such that disaster routes would be compromised. As such, impacts with respect to impaired implementation of or physical interference with an adopted emergency response plan or emergency evacuation plan would be less than significant, and no mitigation measures are required.

Moreover, the Project site is located in a developed area of the City of Carson and not close to any wildlands that could be subject to wildfire. North of the Project site is Victoria Park, which is a recreational open space with trees. East of the Project site is a residential community, south of the Project site is commercial development, and west of the Project site is undeveloped land and I-405. Although open space with vegetation is located north and west of the Project site, risk associated with wildland fires is minimal, and emergency fire service would be readily provided by the County via Martin Luther King Jr. Street and South Avalon Boulevard. As such, risks from wildland fires would be less than significant and no mitigation measures are required.

4.1.6 Hydrology and Water Quality

The Project involves the redevelopment of a portion of the existing Victoria Golf Course to a sports and academic campus with a tennis center, soccer fields, and an academic resources building designed to serve youth in the surrounding community. No housing is proposed as part of this project. As such, the Project would not place housing within a 100-year flood hazard area, and no impacts related to such issue would occur. Accordingly, no mitigation measures are required.

4.1.7 Land Use and Planning

The Project site is not located within or subject to any habitat conservation plans or natural community conservation plans. The conversion of the existing golf course to soccer fields and tennis courts would not conflict with habitat conservation or natural community conservation plans. Accordingly, no impacts pertaining to an applicable habitat or natural community conservation plan would occur and no mitigation measures are required.

4.1.8 Mineral Resources

The Project site is currently used as a portion of a County golf course and is undergoing remediation for historical use as a landfill. No mineral resources are accessible from or produced by the Project site. As such, implementation of the Project would not result in the loss of availability of a known mineral resource. Furthermore, the Project site is not delineated as an important mineral resource recovery site in any land use plans. As such, implementation of the Project would not result in the loss of availability of a known mineral resource. Therefore, no impacts to mineral resources would occur and no mitigation measures are required.

4.1.9 Noise

The Project is not located within an airport land use plan or within a 2-mile radius of any public airport or public use airport. Accordingly, no impacts associated with excessive noise pertaining to an airport land use plan or public airport would occur and no mitigation measures are required.

Additionally, the Project site is located immediately east of the Goodyear Blimp Airship Base, a private airbase used solely for the Goodyear Blimp. This airbase has been used by the Goodyear Blimp since January 1968 and has not posed a safety or hazard risk to golfers at the Victoria Golf Course. The Project would replace the existing golf course with new recreational and academic facilities that are similar to the existing recreational use of the site. Noise associated with the Goodyear Blimp operations is solely related to blimp departures and arrivals, and due to the nature of the motors used in the blimp, such noise is minimal. As with current operations, recreational uses would be located adjacent to the airship base, and these would not expose people in the Project area to excessive noise levels. Accordingly, impacts associated with excessive noise pertaining to a private air strip would be less than significant, and no mitigation measures are required.

4.1.10 Population and Housing

The Project involves the removal of the northeastern 87 acres of the existing County Victoria Golf Course and replacing it with a tennis, soccer, and academic campus designed to serve youth in the City of Carson, South Los Angeles and the greater Los Angeles area. No new homes would be constructed as a part of the Project, nor would the Project result in substantial increases in employment at the project site or within the City of Carson. Additionally, implementation of the Project would not require installation of new roadways, public services, or utilities; the site is currently served by existing roadways, utilities, and services, and these services would be maintained as part of the proposed project. Accordingly, implementation of the Project would not induce growth, and impacts would be less than significant. Furthermore, no housing is currently located on the project site, and project implementation would not require demolition of existing housing. As such, no impacts to housing would occur. Lastly, no displacement impacts would occur, as implementation of the Project would not displace any individuals such that construction of new housing would be required. Therefore, no impacts to population and housing would occur and no mitigation measures are required.

4.1.11 Public Services

Schools located in the City of Carson are part of the Los Angeles Unified School District. The Project would replace the northeastern 87 acres of the existing County Victoria Golf Course with a recreational sports and academic campus. Implementation of the Project would not result in increased demand for schools or require the construction of new schools. The Project is intended to serve the existing community and would not result in population growth such that new schools would be required. As such, impacts associated with the provision of new schools or the alteration of existing schools would be less than significant, and no mitigation measures are required.

Additionally, implementation of the Project would not result in increased demand for libraries or other public facilities such that the construction of new facilities associated with increased demand would be required. The Project is intended to serve the existing community and would not result in population growth such that new libraries or other public facilities would be required. As such, impacts associated with the provision of new libraries or other public facilities or the alteration of the same would be less than significant, and no mitigation measures are required.

4.1.12 Transportation and Traffic

The Project site is located along two major thoroughfares: Martin Luther King Jr. Street to the north, and South Avalon Boulevard to the east. According to the County of Los Angeles Bicycle Master Plan (2012), South Avalon Boulevard includes dedicated Class II bicycle lanes in both the northbound and southbound directions. A Class I Bike Path is also located northwest of the Project site, terminating at Martin Luther King Jr. Street. Additionally, public transportation is provided along South Avalon Boulevard via Long Beach Transit Line 1 and Los Angeles County Metropolitan Transportation Authority Line 205 and Line 246. The Project would not alter the Class II bicycle lanes along South Avalon Boulevard or the transit service provided by Long Beach Transit and the County Metropolitan Transportation Authority. As such, Project implementation would not conflict with adopted policies, plans, or programs regarding alternative forms of transportation, and impacts would be less than significant. Accordingly, no mitigation measures are required.

4.2 Impacts Determined Not to Be Significant in the EIR

This section describes impacts that were evaluated in the Draft and Final EIR and determined to result in “no impact” or a “less than significant impact” due to the design (including project design features), location, and scope of the Project and/or through adherence with existing laws, codes, and statutes. Based on the environmental analysis presented in the Draft EIR and the comments received by the public on the Draft EIR, no substantial evidence was submitted to or identified by the County indicating that the Project would have a potentially significant impact with respect to the environmental categories listed below. Substantial evidence supporting these environmental impact conclusions is provided throughout Chapter IV of the Draft EIR and in Chapters II and III of the Final EIR.

4.2.1 Aesthetics

- Implementation of the Project would result in less than significant impacts with regard to creating a new source of substantial light or glare which would adversely affect day or nighttime views in the area (Draft EIR p. 4.1-19).

- Implementation of the Project would result in less than significant impacts associated with potential conflicts with applicable zoning and other regulations governing scenic quality (Draft EIR pp. 4.1-25 to 4.1-26).

4.2.2 Air Quality

- Implementation of the Project would result in less than significant impacts associated with the emissions (such as those leading to odors) adversely affecting a substantial number of people (Draft EIR p. 4.2-41).

4.2.3 Biological Resources

- Implementation of the Project would result in less than significant impacts on riparian habitats or other sensitive natural communities (Draft EIR p. 4.3-37 to 4.3-38).

- Implementation of the Project would result in no direct impact on federally protected wetlands and would result in less than significant indirect impacts on such wetlands (Draft EIR p. 4.3-38).

- Implementation of the Project would result in less than significant impacts on the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors or the use of native wildlife nursery sites (Draft EIR pp. 4.3-39 to 4.3-40).

- Implementation of the Project would result in less than significant impacts regarding conflicts with local policies or ordinances protecting biological resources (Draft EIR p. 4.3-40).

4.2.4 Cultural Resources

- Implementation of the Project would result in less than significant impacts associated with a substantial adverse change in significance of a historical resource as defined in State CEQA Guidelines Section 15064.5 (Draft EIR p. 4.4-15).

4.2.5 Energy

- Implementation of the Project would result in less than significant impacts due to a wasteful, inefficient, or unnecessary consumption of energy resources during project construction or operation (Draft EIR p. 4.5-23).

- Implementation of the Project would result in less than significant impacts due to conflicts with existing or the obstruction of a state or local plan for renewable energy or energy efficiency (Draft EIR p. 4.5-26).

4.2.6 Geology and Soils

- Implementation of the Project would result in less than significant impacts associated with causing potential substantial adverse effects, including the risk of loss, injury, or death involving strong seismic ground shaking or seismic-related ground failure (Draft EIR pp. 4.6-11 to 4.6-12).

- Implementation of the Project would result in less than significant impacts associated with substantial soil erosion and the loss of topsoil (Draft EIR p. 4.6-13).

- Implementation of the Project would result in less than significant impacts associated with the potential for on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse (Draft EIR p. 4.6-13 to 4.6-14).

- Implementation of the Project would result in less than significant impacts associated with expansive soils (Draft EIR 4.6-14).

4.2.7 Greenhouse Gas Emissions

- Implementation of the Project would result in less than significant impacts regarding generation of greenhouse gas emissions (Draft EIR p. 4.7-40).

- Implementation of the Project would result in less than significant impacts regarding conflicts with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouses gases (Draft EIR p. 4.7-40).

In assessing the Project's potential impacts on greenhouse gas emissions, the analysis relied upon the Project's implementation of the project design features listed below. The Project will implement the below project design features, which would reduce identified impacts relating to greenhouse gas emissions. Pursuant to CEQA Guidelines Section 15091, the following project design features have been included in a MMRP that is to be adopted concurrently with these findings:

Project Design Feature GHG-1: The Project includes the following design features to reduce the demand for energy use, which would reduce GHG emissions:

- Appliances shall be Energy Star rated or equivalent.
- Outdoor lighting shall be LED or other high-efficiency lightbulbs.
- Facilities maintenance personnel/contractors, as applicable, shall be provided information on energy efficiency, energy efficient lighting and lighting control systems, energy management.
- Electrical outlets shall be provided at building exterior areas.
- Main project buildings (Learning Center, Welcome Center and Player Development building) shall meet the U.S. Green Building Council standards for cool roofs. This is defined as achieving a 3-year solar reflective index (SRI) of 64 for a low-sloped roof and 32 for a high-sloped roof.
- Outdoor walkways and patios, and permanent parking lots, shall use paving materials with 3-year SRI of 0.28 or initial SRI of 0.33.
- Duct insulation shall be installed to a minimum level of R-6 and modestly enhanced window insulation (for a 5% improvement over the 2016 Title 24 requirement) consistent with County of Los Angeles criteria.
- HVAC equipment shall have a SEER of 12 or higher.
- Water heaters shall have an energy factor of 0.92 or higher.
- Some form of daylighting (e.g., skylights, windows) shall be included in rooms with exterior walls that would normally be occupied.
- Artificial lighting in at least 50% of unit fixtures shall be energy efficient.
- Waterless urinals, and high-efficiency faucets and toilets shall be used in the project.

Project Design Feature GHG-2: The project shall include the installation of a solar photovoltaic rooftop system on the Learning Center, Welcome Center and/or Player Development buildings to the extent feasible.

Project Design Feature GHG-3: The project's landscape shall use recycled water.

4.2.8 Hydrology and Water Quality

- Implementation of the Project would result in less than significant impacts regarding the potential violation of water quality standards or waste discharge requirements or substantially degrading surface or ground water quality (Draft EIR p. 4.9-19).

- Implementation of the Project would result in less than significant impacts regarding groundwater supply and recharge (Draft EIR p. 4.9-19).

- Implementation of the Project would result in less than significant impacts regarding alterations in existing drainage patterns in a manner which would result in substantial erosion or siltation (Draft EIR pp. IV.F-21 to IV.F-22 and IV.F-24 to IV.F-27).

- Implementation of the Project would result in less than significant impacts regarding alterations in existing drainage patterns in a manner which would result in any of the following:

    - Substantial erosion or siltation (Draft EIR p. 4.9-20);

    - Substantial increase in the rate or amount of surface runoff in a manner that would result in flooding (Draft EIR p. 4.9-22);

    - Runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff (Draft EIR p. 4.9-22);

    - Impeding or redirecting flood flows (Draft EIR p. 4.9-23).

- Implementation of the Project would result in less than significant impacts regarding the potential release of pollutants due to project inundation in the event of flood hazard, tsunami, or seiche (Draft EIR p. 4.9-23).

- Implementation of the Project would result in less than significant impacts regarding conflicts or obstructions to the implementation of a water quality control plan or sustainable groundwater management plan (Draft EIR p. 4.9-24).

4.2.9 Land Use and Planning

- Implementation of the Project would result in no impacts with regard to physically dividing an established community (Draft EIR p. 4.10-11).

- Implementation of the Project would result in less than significant impacts regarding conflicts with any applicable land use plan, policy, or regulation

adopted for the purpose of avoiding or mitigating an environmental effect (Draft EIR p. 4.10-27).

4.2.10 Noise

- Implementation of the Project would result in less than significant impacts regarding the generation of excessive groundborne vibration or groundborne noise levels (Draft EIR p. 4.11-20).

4.2.11 Public Services

- Implementation of the Project would result in a less than significant impact regarding the need for new or physically altered government facilities (Draft EIR pp. 4.12-12 to 4.12-17).

4.2.12 Transportation and Traffic

- Implementation of the Project would not conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b) (Draft EIR p. 4.13-47).

- Implementation of the Project would result in less than significant impacts regarding hazards due to a geometric design feature or incompatible uses (Draft EIR p. 4.13-49).

- Implementation of the Project would result in less than significant impacts regarding emergency access (Draft EIR pp. 4.13-49, 4.13-52).

In assessing the Project's potential impacts on transportation and traffic, the analysis relied upon the Project's implementation of the project design features listed below. The Project will implement the below project design features, which would reduce identified impacts relating to transportation and traffic. Pursuant to CEQA Guidelines Section 15091, the following project design features have been included in a MMRP that is to be adopted concurrently with these findings:

PDF-TRAF-1: The proposed project will include a Special Event Management Plan (SEMP) for Special Events. The SEMP measures would be implemented at the following thresholds:

- 1. All on-site measures would be implemented when weekend Soccer and weekend Tennis Center tournaments operate simultaneously. The on-site measures are discussed in more detail in the proposed project's TIA (DEIR, Appendix K) and may include, but not be limited to:
    - Physical site design
    - Parking operations

- Guest communications

- 2. All on-site measures and selected off-site measures, as identified through coordination with the lead agency, would be implemented when:

  a. Weekend Soccer and weekend Tennis Center tournaments operate simultaneously plus the full use of the Tennis Center exhibition venue; OR,

  b. The scheduling of a special event at the Soccer Center (e.g., nontypical event, professional sports exhibition, etc.).

  - The off-site measures are discussed in more detail in the proposed project's TIA (DEIR, Appendix K) and may include, but not be limited to:
    - Traffic management (off site)
    - Coordinated traffic control
    - Traffic control officers
    - Schedule coordination

The SEMP is intended to be an evolving document subject to modification over time in coordination and consultation with the County, in order to respond to changes in traffic patterns and mobility/parking technologies which may alter the travel to and attendance of events at the project.

PDF-TRAF-2: Prior to issuance of a grading permit, the proposed project will develop a Construction Traffic Management Plan for construction activities that would impact public streets. The Construction Traffic Management Plan shall be based on the nature and timing of the specific construction and other projects in the vicinity of the project site and shall include the following elements as appropriate:

- Advance notification to adjacent property owners and occupants, as well as, nearby schools, of upcoming construction activities, including durations and daily hours of construction.

- The project's construction manager shall contact LAUSD's Transportation Branch at (213) 580-2950 regarding the potential impact upon existing school bus routes, and the expected start and ending dates for various portions of the project construction that may affect traffic within nearby school areas.

- Prohibition of construction worker parking on adjacent residential streets, and identify construction employee parking locations and protocols.

- Temporary traffic control during all construction activities adjacent to public rights-of-way to improve traffic flow on public roadways (e.g., flag men flagmen). The temporary traffic controls shall minimize traffic delays for LAUSD transported students.

- Prohibition of construction-related vehicle parking on surrounding public streets.

- Safety precautions for pedestrian and bicyclists through such measures as alternate routing and protection barriers as appropriate, including along all identified Los Angeles Unified School District (LAUSD) and Compton Unified School District (CUSD) pedestrian routes to nearby schools.

- Scheduling of construction-related deliveries, haul trips, etc., so as to occur outside the commuter peak hours to the extent feasible, and so as to not impede school drop-off and pick-up activities and students using LAUSD/CUSD's identified pedestrian routes to nearby schools.

- Coordination with public transit agencies to provide advanced notifications of any anticipated stop relocations and durations;

- Provision of advanced notification of any temporary on-street parking removals and duration of removals.

- Establish construction hours that are in compliance with Carson Municipal Code (CMC).

- Establish a construction phone number which shall be posted on the site, and appoint a construction liaison officer to respond to concerns or inquiries regarding project construction.

- Construction trucks and other vehicles are required to stop when encountering school buses using red-flashing-lights must-stop-indicators per the California Vehicle Code.

- Contractors shall install and maintain appropriate traffic controls (signs and signals) for vehicular safety.

- Contractors shall maintain ongoing communication with LAUSD school administrators, for the school to provided sufficient notice

to children and parents when existing vehicle and pedestrian routes to school may be impacted.

- Maintain unimpeded emergency access to the project site and nearby properties;
- Establish truck access and staging areas, and review haul route approved with the project; and
- Provide construction site security.
- Prohibition of staging or parking of construction-related vehicles, including worker-transport vehicles, on or adjacent to a school property without the express written permission of the applicable school district.
- Funding for crossing guards at the contractor's expense to the extent required when safety of children may be compromised by construction-related activities at impacted school crossings.

4.2.13 Tribal Cultural Resources

- Implementation of the Project would result in less than significant impacts regarding tribal cultural resources that are eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k) (Draft EIR p. 4.14-12).

4.2.14 Utilities and Service Systems

- Implementation of the Project would result in less than significant impacts regarding on-site water infrastructure and lateral connections to the project site, new wastewater treatment facilities, the construction of new stormwater drainage facilities, and upgrades of electric, natural gas, and telecommunication lateral connections to the project site (Draft EIR pp. 4.15-17 to 4.15-20).
- Implementation of the Project would result in less than significant impacts regarding the availability of water supplies to serve the project and foreseeable future development during normal, dry, and multiple dry years (Draft EIR p. 4.15-22).
- Implementation of the Project would result in less than significant impacts regarding the wastewater treatment provider's capacity to serve the Project's demands, in addition to its existing commitments (Draft EIR 4.15-22).
- Implementation of the Project would result in less than significant impacts regarding solid waste generation or the impairment of solid waste reduction goals (Draft EIR pp. 4.15-23, 4.15-25).

- Implementation of the Project would result in less than significant impacts regarding compliance with solid waste regulations (Draft EIR p. 4.15-25).

4.2.15 Cumulative Impacts

The Project would result in less than significant cumulative impacts or no cumulative impacts for the following environmental issue areas: aesthetics (Draft EIR pp. 4.1-26 to 4.1-28), biological resources (Draft EIR p. 4.3-43), cultural resources (Draft EIR p. 4.4-18) energy (Draft EIR pp. 4.5-24 to 4.5-27), geology and soils (Draft EIR p. 4.6-17), greenhouse gas emissions (Draft EIR p. 4.7-40), hazards and hazardous materials (Draft EIR p. 4.8-27), hydrology and water quality (Draft EIR pp. 4.9-24 to 4.9-25), land use and planning (Draft EIR p. 4.10-27), public services (Draft EIR p. 4.12-19), tribal cultural resources (Draft EIR p. 4.14-13), and utilities and service systems (Draft EIR pp. 4.15-28 to 4.15-26).

5. Impacts Determined to Be Less than Significant With Mitigation

This section describes impacts of the Project that, without mitigation, would result in significant adverse impacts. However, upon implementation of the mitigation measures provided in the EIR, these impacts would be reduced to less-than-significant levels. In accordance with CEQA Guidelines Section 15091(a), a specific finding is made for each of these impacts and mitigation measures in the discussions below.

5.1 Biological Resources

Potential Effects. Potentially significant effects were identified for the Project in the following threshold for biological resources:

- The Project could result in a significant impact on candidate, sensitive, or special-status species.

Substantial evidence supporting these environmental impact conclusions is provided in Section 4.3, Biological Resources, of the Draft EIR.

Mitigation Measures. Consistent with CEQA Guidelines Section 15126.4(a)(1), feasible measures that can minimize significant adverse impacts related to biological resources were developed for the Project. Pursuant to CEQA Guidelines Section 15091, the following mitigation measures have been included in a MMRP that is to be adopted concurrently with these findings:

MM-BIO-1: Conduct Pre-Construction Surveys

Prior to construction, a knowledgeable biologist shall conduct a preconstruction survey sweep within areas of suitable habitat for the San Diego desert woodrat. The biologist shall look for any San Diego desert woodrat in suitable habitat that may be located within or immediately adjacent to project work areas (within 100 feet). If individual San Diego desert woodrats are observed within project work areas during the pre-construction survey, a biological monitor shall be on site during construction to flush or move them out of harm's way to avoid direct impacts to these species. If a population of San Diego desert woodrat are observed during the pre-construction survey, and cannot be avoided by the project, consultation with California Department of Fish and Wildlife shall be required, and mitigation shall include relocation of the species and/or the purchase of compensatory habitat-based mitigation credits at a minimum 1:1 ratio for the loss of occupied habitat.

MM-BIO-2: Nesting Bird Avoidance

Construction activities shall avoid the migratory bird nesting season (typically February 1 through August 31), to reduce any potential significant impact to birds that may be nesting within the study area. If construction activities must occur during the migratory bird nesting season, an avian nesting survey of the project site and contiguous habitat within 500 feet of all impact areas shall be conducted for protected migratory birds and active nests. The avian nesting survey shall be performed by a knowledgeable biologist within 72 hours prior to the start of construction in accordance with the Migratory Bird Treaty Act (16 USC 703–712) and California Fish and Game Code, Sections 3503, 3503.5, and 3513. If an active bird nest is found, the nest shall be flagged and mapped on the construction plans along with an appropriate no disturbance buffer, which shall be determined by the biologist based on the species' sensitivity to disturbance (typically 300 feet for passerines and 500 feet for raptors and special-status species). The nest area shall be avoided until the nest is vacated and the juveniles have fledged. The nest area shall be demarcated in the field with flagging and stakes or construction fencing.

Finding. The County finds that the above mitigation measures are feasible, are adopted, and will reduce the potentially significant biological resources impacts of the Project to less-than-significant levels. Accordingly, the County finds that, pursuant to Public Resources Code Section 21081(a)(1) and CEQA Guidelines Section 15091(a)(1), changes or alterations have been required in, or incorporated into the Project that mitigate or avoid the potentially significant biological resources impacts of the Project identified in the EIR.

5.2 Cultural Resources

Potential Effects. Potentially significant effects were identified for the Project in the following thresholds for cultural resources:

- The Project could cause a substantial adverse change in the significance of an archaeological resource pursuant to CEQA Guidelines Section 15064.5.
- The Project could disturb human remains.

Substantial evidence supporting these environmental impact conclusions is provided in Section 4.4, Cultural Resources, of the Draft EIR.

Mitigation Measures. Consistent with CEQA Guidelines Section 15126.4(a)(1), feasible measures that can minimize significant adverse impacts related to cultural resources were developed for the Project. Pursuant to CEQA Guidelines Section 15091, the following mitigation measures have been included in a MMRP that is to be adopted concurrently with these findings:

MM-CUL-1 Unanticipated Archaeological Resource Discoveries

If archaeological resources (i.e., sites, features, or artifacts) are exposed during construction activities for the proposed project, all construction work occurring within 100 feet of the find shall immediately stop until a qualified archaeologist, meeting the Secretary of the Interior's Professional Qualification Standards for Archaeology, can evaluate the significance of the find and determine whether or not additional study is warranted. The archaeologist shall be empowered to temporarily stop or redirect grading activities to allow removal of abundant or large artifacts. Depending upon qualified archaeologist determination of the significance of the find (14 CCR 15064.5(f); PRC Section 21082), the archaeologist may record the find and allow work to continue. If the archaeologist determines that the discovery is significant and requires additional work, the archaeologist may require preparation and implementation of an archaeological treatment plan and data recovery. If any artifacts are discovered, the archaeologist shall curate specimens in a repository with permanent retrievable storage and submit a written report to the lead agency prior to occupancy of the first building on the site. Once approved, the final report will be filed with the South Central Coast Information Center (SCCIC).

Once artifact analysis is completed, a final written report detailing the results of all research procedures and interpretation of the site shall be

submitted to the lead agency for review and approval prior to occupancy of the first building on the site.

MM-CUL-2 Inadvertent Discovery of Human Remains

In accordance with Section 7050.5 of the California Health and Safety Code, if human remains are found within the project site, the County coroner shall be immediately notified of the discovery. No further excavation or disturbance of the site of the remains or any nearby area reasonably suspected to overlie adjacent remains shall occur until the county coroner has determined, within 2 working days of notification of the discovery, the appropriate treatment and disposition of the human remains. If the County coroner determines that the remains are, or are believed to be, Native American, he or she shall notify the Native American Heritage Commission (NAHC) in Sacramento within 24 hours. In accordance with California Public Resources Code, Section 5097.98, the NAHC must immediately notify those persons it believes to be the "most likely descendant" (MLD) of the deceased Native American. The MLD shall complete his/her inspection within 48 hours of being granted access to the site. The designated MLD would then determine, in consultation with the property owner, the disposition of the human remains.

Finding. The County finds that the above mitigation measures are feasible, are adopted, and will reduce the potentially significant cultural resources impacts of the Project to less-than-significant levels. Accordingly, the County finds that, pursuant to Public Resources Code Section 21081(a)(1) and CEQA Guidelines Section 15091(a)(1), changes or alterations have been required in, or incorporated into the Project that mitigate or avoid the potentially significant cultural resources impacts of the Project identified in the EIR.

5.3 Geology and Soils

Potential Effects. Potentially significant effects were identified for the Project in the following threshold for geology and soils:

- The Project could directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.

Substantial evidence supporting these environmental impact conclusions is provided in Section 4.4, Geology and Soils, of the Draft EIR.

Mitigation Measures. Consistent with CEQA Guidelines Section 15126.4(a)(1), a feasible measure that can minimize significant adverse impacts related to geology and soils was developed for the Project. Pursuant to CEQA Guidelines Section 15091, the following

mitigation measure has been included in a MMRP that is to be adopted concurrently with these findings:

MM-GEO-1: Paleontological Resources Monitoring

Prior to commencement of any grading activity on site, the applicant shall retain a qualified paleontologist acceptable to the County. The paleontologist shall prepare a Paleontological Resources Impact Mitigation Program (PRIMP) for the proposed project. The PRIMP shall be consistent with the guidelines of the Society of Vertebrate Paleontology (SVP 2010). The qualified paleontologist shall attend the preconstruction meeting and be on site during all rough grading and other significant ground-disturbing activities in previously undisturbed older Quaternary alluvial deposits (including old lagoonal deposits). These deposits may be encountered at depths as shallow as 5-10 feet below ground surface. In the event that paleontological resources (e.g., fossils) are unearthed during grading, the paleontology monitor will temporarily halt and/or divert grading activity to allow recovery of paleontological resources. The area of discovery will be roped off with a 50-foot radius buffer. Once documentation and collection of the find is completed, the monitor will remove the rope and allow grading to recommence in the area of the find. If determined to be significant, the paleontological resources shall be stabilized, labeled, and prepared to the point of identification before accessioning into an appropriate paleontological repository with retrievable storage. Following the paleontological monitoring program, a final monitoring report shall be submitted to the lead agency for review and approval. The report should summarize the monitoring program and include geological observations and any paleontological resources recovered during paleontological monitoring for the proposed project.

Finding. The County finds that the above mitigation measure is feasible, is adopted, and will reduce the potentially significant geology and soils impacts of the Project to less-than-significant levels. Accordingly, the County finds that, pursuant to Public Resources Code Section 21081(a)(1) and CEQA Guidelines Section 15091(a)(1), changes or alterations have been required in, or incorporated into the Project that mitigate or avoid the potentially significant geology and soils impacts of the Project identified in the EIR.

5.4 Hazards and Hazardous Materials

Potential Effects. Potentially significant effects were identified for the Project in the following thresholds for hazards and hazardous materials:

- The Project could have a significant impact regarding the creation of a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.

- The Project could have a significant impact regarding the creation of a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.

- The Project could have a significant impact regarding hazardous emissions or handling of hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.

- The Project could have a significant impact regarding the creation of a significant hazard to the public or the environment due to listing on a site compiled pursuant to Government Code Section 65962.5.

Substantial evidence supporting these environmental impact conclusions is provided in Section 4.5, Hazards and Hazardous Materials, of the Draft EIR.

Mitigation Measures. Consistent with CEQA Guidelines Section 15126.4(a)(1), feasible measures that can minimize significant adverse impacts related to hazards and hazardous materials were developed for the Project. The Project will additionally implement the below project design features, which would reduce identified impacts of hazards and hazardous materials. Pursuant to CEQA Guidelines Section 15091, the following mitigation measures and project design features have been included in a MMRP that is to be adopted concurrently with these findings:

Project Design Feature Hazard-1. Prior to the issuance of any demolition permit or permit for remodeling of existing buildings, if applicable, the applicant shall provide a letter to the applicable authority indicating that the demolition/renovation contract provides for a qualified asbestos abatement contractor/specialist to remove or otherwise abate or manage asbestos during demolition or renovation activities in accordance with the South Coast Air Quality Management District's Rule 1403. The applicant shall comply with state and federal regulations to test for asbestos prior to issuance of any demolition permit. If asbestos-containing materials are found to be present, it shall be abated in compliance with the South Coast Air Quality Management District's Rule 1403, as well as all other applicable state and federal rules and regulations.

Project Design Feature Hazard-2. Prior to the issuance of any permit for demolition or alteration of an existing structure, if applicable, a lead-based paint survey shall be performed in compliance with applicable state and federal regulations. Should lead-based paint materials be identified, the applicant shall provide evidence to the applicable authority

demonstrating that the demolition/renovation contract provides that standard handling and disposal practices would be implemented pursuant to Occupational Safety and Health Act regulations. The applicant shall comply with state and federal regulations to test for lead-based paint prior to issuance of any demolition permit. Should lead-based paint materials be identified, standard handling and disposal practices shall be implemented pursuant to Occupational Safety and Health Act regulations.

MM-HAZ-1: Prior to issuance of the first excavation or grading permit for project development, the County shall confirm that the Department of Toxic Substances Control (DTSC) has no objections to issuance of the excavation/grading permit.

MM-HAZ-2: If excavation or grading occurs in areas with potential for residual contamination in the subsurface in the storage area (see Draft EIR, Figure 4.8-1), then a qualified environmental professional retained by the project applicant and approved by the County shall screen soils in the identified area prior to excavation and grading based on the nature of the potential contamination. In the event that potential contamination is encountered the contamination shall be evaluated by the qualified environmental professional using appropriate collection and sampling techniques as determined by the environmental professional based on the nature of the contamination. The nature and extent of contamination shall be determined and the appropriate handling, disposal, and/or treatment shall be implemented in accordance with applicable regulatory requirements.

Finding. The County finds that the above project design features and mitigation measures are feasible, are adopted, and will reduce the potentially significant hazards and hazardous materials impacts of the Project to less-than-significant levels. Accordingly, the County finds that, pursuant to Public Resources Code Section 21081(a)(1) and CEQA Guidelines Section 15091(a)(1), changes or alterations have been required in, or incorporated into the Project that mitigate or avoid the potentially significant hazards and hazardous materials impacts of the Project identified in the EIR.

5.5 Tribal Cultural Resources

Potential Effects. Potentially significant effects were identified for the Project in the following threshold for tribal cultural resources:

- The Project could cause a substantial adverse change in the significance of a tribal cultural resource pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1.

Substantial evidence supporting these environmental impact conclusions is provided in Section 4.14, tribal cultural resources, of the Draft EIR.

Mitigation Measures. Consistent with CEQA Guidelines Section 15126.4(a)(1), a feasible measure that can minimize significant adverse impacts related to tribal cultural resources was developed for the Project. Pursuant to CEQA Guidelines Section 15091, the following mitigation measure has been included in a MMRP that is to be adopted concurrently with these findings:

MM-TCR-1 Unanticipated Discovery

> While no tribal cultural resources (TCRs) have been identified that may be affected by the project, the following approach for the unanticipated discovery of TCRs has been prepared to reduce potential impacts to unanticipated resources. Should a potential TCR be encountered, construction activities near the potential TCR shall be temporarily halted within 50 feet of the potential TCR and the County of Los Angeles (County) notified. The County will notify Native American tribes that have been identified by the Native American Heritage Commission (NAHC) to be traditionally and culturally affiliated with the geographic area of the project. If the unanticipated resource is archaeological in nature, appropriate management requirements shall be implemented as outlined in Mitigation Measure (MM-) CUL- 1 (see Draft EIR, Section 4.4.5, Mitigation Measures). If the County determines that the potential resource is a TCR (as defined by Public Resources Code, Section 21074), tribes consulting under AB 52 would be provided a reasonable period of time, typically 5 days from the date a new discovery is made, to conduct a site visit and make recommendations regarding future ground disturbance activities as well as the treatment and disposition of any discovered TCRs. A qualified archaeologist shall implement a plan for the treatment and disposition of any discovered TCRs based on the nature of the resource and considering the recommendations of the tribe(s). All activities shall be conducted in accordance with regulatory requirements. If human remains are found within the project site, management recommendations as outlined in MM-CUL-3 (see Draft EIR, Section 4.4.5) should be implemented.

Finding. The County finds that the above mitigation measure is feasible, is adopted, and will reduce the potentially significant tribal cultural resources impacts of the Project to less-than-significant levels. Accordingly, the County finds that, pursuant to Public Resources Code Section 21081(a)(1) and CEQA Guidelines Section 15091(a)(1), changes or alterations have been required in, or incorporated into the Project that mitigate or avoid the potentially significant tribal cultural resources impacts of the Project identified in the EIR.

6 Impacts Determined to Be Significant and Unavoidable

This section describes impacts of the Project that, even with mitigation, would result in significant and unavoidable impacts. In accordance with CEQA Guidelines Section 15091(a), a specific finding is made for each of these impacts and mitigation measures in the discussions below.

6.1 Air Quality

Potential Effects. Potentially significant air quality effects were identified for the Project for the following thresholds:

- The Project would potentially conflict with or obstruct implementation of the applicable air quality plan (Draft EIR p. 4.2-25).
- The Project would potentially result in a cumulatively considerable new increase of any criteria pollutant for which the Project region is in non-attainment under applicable air quality standards. (Draft EIR p. 4.2-32).
- The Project would potentially expose sensitive receptors to substantial pollutant concentrations (Draft EIR p. 4.2-41).

Substantial evidence supporting these environmental impact conclusions is provided in Section 4.2, Air Quality, of the Draft EIR.

Mitigation Measures. Consistent with CEQA Guidelines Section 15126.4(a)(1), feasible measures that can minimize the significant adverse impacts related to air quality were developed for the Project. Pursuant to CEQA Guidelines Section 15091, the following mitigation measures have been included in a MMRP that is to be adopted concurrently with these findings:

MM-AQ-1: To reduce the potential for health risks, and mass emissions of oxides of nitrogen (NOx) and diesel particulate matter as a result of the construction of the project, the applicant shall include the following requirements in its contracts with the construction contractors:

- Equip heavy-duty diesel-powered construction equipment with Tier 4 Final or better diesel engines, except where Tier 4 Final or better engines are not available for specific construction equipment.
- Minimize simultaneous operation of multiple construction equipment units. During construction, vehicles in loading and

unloading queues shall not idle for more than 5 minutes, and shall turn their engines off when not in use to reduce vehicle emissions.

- Properly tune and maintain all construction equipment in accordance with manufacturer's specifications;
- Where feasible, employ the use of electrical or natural gas-powered construction equipment, including forklifts and other comparable equipment types.
- To reduce the need for electric generators and other fuel-powered equipment, provide on-site electrical hookups for the use of hand tools such as saws, drills, and compressors used for building construction.
- Develop a Construction Traffic Control Plan to ensure construction traffic and equipment use is minimized to the extent practicable. The Construction Traffic Control Plan shall route delivery and haul trucks required during construction away from sensitive receptor locations and congested intersections, to the extent feasible. The Construction Traffic Control Plan shall, to the extent feasible, include measures to: reduce the number of large pieces of equipment operating simultaneously during peak construction periods, schedule vendor and haul truck trips to occur during non-peak hours, establish dedicated construction parking areas to encourage carpooling and efficiently accommodate construction vehicles, identify alternative routes to reduce traffic congestion during peak activities, and increase construction employee carpooling. Construction Traffic Control plans shall be finalized and approved prior to issuance of grading permits.

MM-AQ-2: Prior to the County of Los Angeles' (County's) approval of any grading permits, and during project construction, a Fugitive Dust Plan shall be prepared consistent with South Coast Air Quality Management District (SCAQMD) Rule 403. The project applicant or its designee shall require implementation of the following fugitive dust measures to minimize particulate matter less than or equal to 10 microns in diameter (PM10) and particulate matter less than or equal to 2.5 microns in diameter (PM2.5) emissions as part of the Fugitive Dust Plan. All measures shall be designated on grading and improvement plans. Measures shall include but are not limited to the following:

- Water, or utilize another SCAQMD-approved dust control non-toxic agent, on the grading areas at least three times daily to minimize fugitive dust.
- All permanent roads and roadway improvements shall be constructed and paved as early as possible in the construction

process to reduce construction vehicle travel on unpaved roads. To reduce fugitive dust from earth-moving operations, building pads shall be finalized as soon as possible following site preparation and grading activities.

- Stabilize grading areas as quickly as possible to minimize fugitive dust.
- Apply chemical stabilizer to on-site stockpiles of excavated material, install a gravel pad, or pave the last 100 feet of internal travel path within the construction site prior to public road entry.
- Remove any visible track-out into traveled public streets with the use of sweepers, water trucks, or similar method as soon as possible.
- Provide sufficient perimeter erosion control to prevent washout of silty material onto public roads. Unpaved construction site egress points shall be graveled to prevent track-out.
- Wet wash the construction access point at the end of the workday if any vehicle travel on unpaved surfaces has occurred.
- Cover haul trucks or maintain at least 2 feet of freeboard to reduce blow-off during hauling.
- Evaluate potential for reduction in dust generating activity if winds exceed 25 miles per hour.
- Enforce a 15-mile-per-hour speed limit on unpaved surfaces.
- Provide haul truck staging areas for the loading and unloading of soil and materials. Staging areas shall be located away from sensitive receptors, at the furthest feasible distance.
- Prior to construction activities, the project applicant shall employ a construction relations officer who will address community concerns regarding on-site construction activity. The applicant shall provide public notification in the form of a visible sign containing the contact information of the construction relations officer. The sign shall be placed in easily accessible locations along South Avalon Boulevard and Martin Luther King Jr. Street and noted on grading and improvement plans.

MM-AQ-3: The proposed project shall provide circuitry and capacity for installation of electric vehicle (EV) charging stations consistent with the County of Los Angeles criteria. The proposed project shall develop up to 5% of the available parking spaces on site as EV charging stations.

MM-AQ-4: The construction contractor shall require that construction vendors, contractors, and/or haul truck operators commit to using 2010 model year or newer diesel haul trucks. All construction truck operators shall maintain truck records and make these records available to the County upon request.

MM-AQ-5: The construction contractor shall encourage its construction contractors and vendors to apply for South Coast Air Quality Management Surplus Off-Road Opt-In for NOx ("SOON") funds to the extent available, which provide funds to applicable fleets for the purchase of commercially available low-emission heavy-duty engines to achieve near-term reduction of NOx emissions from in-use off-road diesel vehicles.

MM-AQ-6: During operations, the operator of the Learning Center shall encourage school bus fleets under contract with the Learning Center to seek funding opportunities through the South Coast Air Quality Management District's Lower-Emission School Bus Program, to the extent available, to replace older diesel busses with cleaner school buses.

MM-AQ-7: During operations, electric landscape equipment, such as lawn mowers and leaf blowers, shall be used to the extent commercially available.

MM-AQ-8: During operations, the project shall utilize electric or alternatively fueled parking lot sweepers with HEPA filters.

Finding. The County finds that changes and alterations and mitigation measures were made to the Project to reduce the significant air quality impacts of the project. No additional feasible measures are available to reduce the air quality impacts to less than significant levels.

6.2 Noise

Potential Effects. Potentially significant construction noise effects were identified for the Project for the following thresholds:

- The Project would potentially result in residual temporary construction noise that would increase ambient noise levels in excess of applicable local standards (Draft EIR p. 4.11-14).

Substantial evidence supporting these environmental impact conclusions is provided in Section 4.11, Noise, of the Draft EIR.

Mitigation Measures. Consistent with CEQA Guidelines Section 15126.4(a)(1), feasible measures that can minimize the significant adverse impacts related to construction noise were developed for the Project. Pursuant to CEQA Guidelines Section 15091, the

following mitigation measures have been included in a MMRP that is to be adopted concurrently with these findings:

MM-NOI-1: **Noise Barrier Installation**

The following measure shall be incorporated into the project contract specifications. Prior to commencement of construction activities involving heavy equipment within the areas shown on Draft EIR Figure 4.11-2, Location of Required Temporary Barrier for Construction Noise Mitigation, temporary construction noise barriers shall be constructed in the locations shown in Draft EIR Figure 4.11-2. The eastern noise barrier shall be erected along the top edge of the slope that exists along the eastern edge of the property. The noise barriers shall be 8 feet in height, have a surface density of at least four pounds per square foot, and be free of openings and cracks (with the exception of expansion joints gaps and other construction techniques, which could create an opening or crack). Sound blankets or panels with a minimum 20 Sound Transmission Class (STC) rating may be used as the surface of the noise barrier; such blankets or panels should be constructed for outdoor use, and may be supported on a metal framework.

MM-NOI-2: Pile Driving

The following measure shall be incorporated into the project contract specifications. Pile driving within the areas shown on Draft EIR Figure 4.11-3, Boundaries of Area Where Sonic Pile Driver is Required for Noise Mitigation, shall employ a vibratory (sonic) pile driver if technically feasible as determined by the project geologist.

MM-NOI-3: Construction Hours

Construction activities shall take place during the permitted time and day per Section 12.08.440 of the County Code. The applicant shall ensure that construction activities for the proposed project are limited to the hours of 7:00 a.m. to 7:00 p.m. Monday through Saturday, and not at all during other hours or on Sundays or holidays.

MM-NOI-4: Construction Noise Reduction

The County of Los Angeles shall require the contractor to adhere to the following measures as a condition of granting a grading permit to the contractor:

- All construction equipment, fixed or mobile, shall be equipped with properly operating and maintained mufflers.
- Construction noise reduction methods such as shutting off idling equipment, construction of a temporary noise barrier, maximizing the distance between construction equipment staging areas and adjacent residences, and use of electric air compressors and similar power tools, rather than diesel equipment, shall be used where feasible.
- During construction, stationary construction equipment shall be placed such that emitted noise is directed away from or shielded from sensitive receptors.
- Construction hours, allowable workdays, and the phone number of the job superintendent shall be clearly posted at all construction entrances.
- At the request of the school administration for Towne Avenue Elementary School, the contractor will meet with the school principal or other representative each week to discuss anticipated upcoming construction activities and applicable noise reduction measures.

Finding. The County finds that changes and alterations and mitigation measures were made to the Project to reduce the significant construction-related noise impacts of the project. However, from a conservative perspective, it may not be technically feasible to use sonic pile driving for the installation of piles at the project site, therefore short-term construction noise impacts would remain significant and unavoidable after mitigation. No additional feasible measures are available to reduce the construction-related noise and impacts to less than significant levels.

6.3 Transportation

Potential Effects. Potentially significant traffic effects were identified for the Project during operation for the following thresholds:

- The Project would potentially conflict with an applicable plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle or pedestrian facilities (Draft EIR p. 1-44).

Substantial evidence supporting these environmental impact conclusions is provided in Section 4.13, Transportation, of the Draft EIR.

In addition, for informational purposes, for roadways and intersections located within the jurisdiction of the City of Carson or Caltrans, an analysis was conducted in accordance with the methodologies of those jurisdictions as follows. The City of Carson uses different methodologies than the County to evaluate operating conditions at City facilities. Because many of the study intersections are located within the City of Carson, a supplemental analysis using the City of Carson significant impact criteria and analysis methodology was prepared for informational purposes and is provided in Appendix K of the Draft EIR. Caltrans uses different methodologies than the County to evaluate operating conditions at Caltrans facilities. To provide further information to the decision makers, the Draft EIR analyzed Caltrans facilities using HCM methodology for informational purposes as provided in Appendix K of the Draft EIR. No additional impacts were identified under the City of Carson or Caltrans analyses.

Mitigation Measures. Consistent with CEQA Guidelines Section 15126.4(a)(1), feasible measures that can minimize the significant adverse impacts related to operational traffic were developed for the Project. Pursuant to CEQA Guidelines Section 15091, the following mitigation measures have been included in a MMRP that is to be adopted concurrently with these findings:

MM-TRAF-1: The proposed project shall implement the following improvements at Avalon Boulevard/Albertoni Street:

- Restripe existing (cross-hatched) pavement on the northbound approach to a second (dual) northbound left-turn lane. This improvement could be accomplished within the existing right-of-way.
- Modify existing protected left-turn phasing on the northbound and southbound approaches for a lead/lag operation (for opposing left-turn clearance purposes).

MM-TRAF-2: The proposed project shall implement the following improvements at Main Street/Albertoni Street:

- Add new eastbound right-turn lane. This improvement could be accomplished within the existing right-of-way, but would require the removal of approximately 5 on-street parking spaces approximately 100 feet west of the intersection.

MM-TRAF-3: The proposed project shall implement the following improvements at Main Street/Victoria Street:

- Add new eastbound right-turn lane. This improvement could be accomplished within the existing right-of-way, but would require

the removal of approximately 5 on-street parking spaces approximately 100 feet west of the intersection.

MM-TRAF-4: Hamilton Avenue/I-110 Southbound Ramps

The proposed project shall pay its fair-share, as calculated based on the County's methodology, toward the implementation of the following improvements at Hamilton Avenue/I-110 southbound ramps:

- Installation of a new traffic signal at Hamilton Avenue/I-110 southbound ramps consisting of a northbound/southbound split phase and westbound permitted phase with overlapping right-turns.
- Reconfiguration of the southbound approach to provide a dedicated left-turn lane and a left-turn/through lane.

Finding. The County finds that changes and alterations and mitigation measures were made to the Project to reduce the significant operational traffic impacts of the Project. Implementation of MM-TRAF-1 through MM-TRAF-4 would reduce project impacts to less than significant based on the County's methodology. The significantly impacted intersections are within the jurisdiction of another public agency. Physical improvements requiring implementation by another public agency will be monitored by County Public Works and implemented to the extent feasible. If the physical improvements are deemed infeasible by the other public agency, cannot be implemented, or implementation is delayed, a significant impact would remain until the improvement is implemented. As the County is not assured of timely implementation of the physical improvement, it is conservatively concluded that impacts at the intersections listed above would remain significant and unavoidable. No additional feasible measures are available to reduce the operational traffic impacts to less than significant levels.

6.4 Cumulative Impacts

Pursuant to CEQA Guidelines Section 15130, the following findings identify potentially significant cumulative impacts and the Project's incremental contribution to those impacts. For the following environmental resource area, the Project's incremental effect would be cumulatively considerable after implementation of the applicable mitigation measures.

6.4.1 Air Quality

Potential Effects. Cumulative impacts associated with the emissions of NO_x during Project construction and operation would exceed SCAQMD thresholds and therefore, the Project would have a significant and unavoidable cumulative impact pertaining to air quality.

Mitigation Measures. Measures have been developed for the Project to address its potential impacts related to air quality. Mitigation Measures MM-AQ-1 through MM-AQ-8 are provided in Section 6.1 of this document. These mitigation measures would reduce the Project's potential incremental effects related to air quality. There are no feasible mitigation measures to address the potential cumulative construction air quality levels associated with cumulative air quality impacts.

Finding. The County finds that Mitigation Measures MM-AQ-1 through MM-AQ-8 are feasible, are adopted, and will reduce the potentially significant cumulative construction-related air quality impacts associated with the Project. The County finds that changes and alterations and mitigation measures were made to the Project to reduce the significant cumulative air quality impacts of the Project. However, such impacts would continue to be significant and unavoidable. No additional measures are available to reduce these impacts to less-than-significant levels.

6.4.2 Noise

Potential Effects. The Project would potentially result in residual temporary construction noise that would increase ambient noise levels in excess of applicable local standards, and construction of the Creek at Dominguez Hills project at the same time could result in significant and unavoidable cumulative construction noise impacts.

Mitigation Measures. Measures have been developed for the Project to address its potential impacts related to construction noise. Mitigation Measures MM-NOI-1 through MM-NOI-4 are provided in Section 6.2 of this document. With adherence to MM-NOI-1 through MM-NOI-4, temporary construction noise impacts as a result of the proposed project would be minimized. There are no feasible mitigation measures to address the potential cumulative construction noise impacts.

Finding. The County finds that Mitigation Measures MM-NOI-1 through MM-NOI-4 are feasible, are adopted, and will reduce the potentially significant cumulative construction-related noise impacts associated with the Project. The County finds that changes and alterations and mitigation measures were made to the Project to reduce the significant cumulative noise impacts of the Project. However, from a conservative perspective, it may not be technically feasible to use sonic pile driving for the installation of piles at the project site, therefore short-term construction noise impacts would remain significant and unavoidable after mitigation. No additional measures are available to reduce these impacts to less-than-significant levels.

6.4.3 Transportation

Potential Effects. Cumulative impacts associated with project traffic would exceed applicable County thresholds and therefore, the Project would have a significant and unavoidable cumulative impact pertaining to traffic at the following intersections:

- Main Street and Martin Luther King Jr. Street
- Main Street and I-405 SB On-Ramp

- Main Street and Del Amo Boulevard
- Avalon Boulevard and Albertoni Street
- Avalon Boulevard and Victoria Street
- Avalon Boulevard and University Drive
- Avalon Boulevard and Del Amo Boulevard
- Avalon Boulevard and I-405 SB Ramps
- Main Street and Albertoni Street
- Main Street and Victoria Street
- I-110 SB Off-Ramp and 190th Street
- Hamilton Avenue and I-110 SB Ramps
- Hamilton Avenue and Del Amo Boulevard
- Figueroa Street and Del Amo Boulevard

Mitigation Measures. Consistent with CEQA Guidelines Section 15126.4(a)(1), feasible measures that can minimize the significant adverse cumulative impacts related to traffic were developed for the Project. Pursuant to CEQA Guidelines Section 15091, the following mitigation measures have been included in a MMRP that is to be adopted concurrently with these findings:

MM-TRAF-5: Main Street/Martin Luther King Jr. Street

The proposed project shall pay its fair-share, as calculated based on the County's methodology, toward the implementation of the following improvements at Main Street/Martin Luther King, Jr. Street:

- Reconfigure the westbound approach to provide a left-turn, shared left/right-turn, and right-turn lanes;
- Add new northbound right-turn lane.

MM-TRAF-6: Main Street/I-405 southbound ramps

The proposed project shall pay its fair-share, as calculated based on the County's methodology, toward the implementation of the following improvements at Main Street/I-405 southbound ramps:

- Convert the eastbound left-turn lane to a shared through left-turn lane (onto the I-405 on-ramp).

MM-TRAF-7: Main Street/Del Amo Boulevard

The proposed project shall pay its fair-share, as calculated based on the County's methodology, toward the implementation of the following improvements at Main Street/Del Amo Boulevard:

- Add new second (dual) westbound left-turn lane;
- Add new northbound right-turn lane;
- Widening of the westbound approach will be required.

MM-TRAF-8: Avalon Boulevard/Victoria Street

The proposed project shall pay its fair-share, as calculated based on the County's methodology, toward the implementation of the following improvements at Avalon Boulevard/Victoria Street:

- On the eastbound approach, restripe the right-turn lane into a shared through/right-turn lane;
- On the eastbound departure, restripe to provide three through lanes.

MM-TRAF-9: Avalon Boulevard/University Avenue

The proposed project shall pay its fair-share, as calculated based on the County's methodology, toward the implementation of the following physical improvements at Avalon Boulevard/University Avenue:

- On the westbound approach, reconfigure to provide two left-turn lanes and one right-turn lane; this is anticipated to require some modification to the existing medians located on Avalon Boulevard and University Avenue.
- Reclassify a section of the existing dedicated westbound bicycle lane as a shared lane.

MM-TRAF-10 The proposed project shall pay its fair-share, as calculated based on the County's methodology, toward the implementation of the following improvements at Avalon Boulevard/Del Amo Boulevard:

- Add second (dual) northbound left-turn lane.
- Reconfigure southbound approach to provide a right-turn lane.
- Reconfigure eastbound right-turn lane into a shared through/right-turn lane.

MM-TRAF-11: The proposed project shall pay its fair-share, as calculated based on the County's methodology, toward the implementation of the following improvements at Avalon Boulevard/I-405 Southbound Ramps:

- Upgrade traffic control equipment to provide a new southbound right-turn overlap signal phase.

MM-TRAF-12: I-110 southbound ramps/190th Street

The proposed project shall pay its fair-share, as calculated based on the County's methodology, toward the implementation of the following physical improvements at I-110 southbound ramps/190th Street:

- Provide an additional eastbound lane for a total of three through lanes by reducing the width of the existing painted median on 190th Street to accommodate the additional eastbound lane.

MM-TRAF-13: Hamilton Avenue/Del Amo Boulevard

The proposed project shall pay its fair-share, as calculated based on the County's methodology, toward the implementation of the following improvements at Hamilton Avenue/Del Amo Boulevard:

- Convert the second northbound through lane to a dedicated right-turn lane.
- Modify the traffic signal to provide an overlap phase for the northbound right-turn and add protected-permitted phasing for the westbound left-turn movements.

MM-TRAF-14: Figueroa Street/Del Amo Boulevard

The proposed project shall pay its fair-share, as calculated based on the County's methodology, toward the implementation of the following improvements at Figueroa Street/Del Amo Boulevard:

- Restripe the westbound approach to provide two left-turn lanes, a through lane, and a shared through-right lane.
- Restripe the eastbound approach to provide a left-turn lane, two through lanes, and a shared through-right turn lane.
- Modify the traffic signal to provide an overlap phase for the northbound and southbound right-turns.

MM-TRAF-1 through MM-TRAF-4 are provided in Section 6.3 of this document. Implementation of MM-TRAF-1 through MM-TRAF-14 would reduce cumulative future with project impacts during weekdays to less than significant based on the County methodology with the exception of the following intersections: Main Street and Del Amo Boulevard, Avalon Boulevard and Del Amo Boulevard, Main Street and Albertoni Street, and Main Street and Victoria Street. Implementation of MM-TRAF-1 through MM-TRAF-14 would reduce cumulative future with project impacts during Saturdays to less than significant based on the County methodology with the exception of the following intersections: Avalon Boulevard and Del Amo Boulevard and Avalon Boulevard and I-405 SB Ramps. Nearly all of the significantly impacted intersections, are within the jurisdiction of another public agency. Physical improvements requiring implementation by another public agency will be monitored by County Public Works and implemented to the extent feasible. If the physical improvements are deemed infeasible by the other public agency, cannot be implemented, or implementation is delayed, a significant impact would remain until the improvement is implemented. As the County is not assured of timely implementation of the physical improvement, it is conservatively concluded that impacts at the intersections listed above would remain significant and unavoidable. Mitigation Measure MM-TRAF-1 through MM-TRAF-14 would reduce the Project's potential incremental effects related to traffic. No further feasible mitigation for the above intersections have been identified, therefore, cumulative traffic impacts would be significant and unavoidable.

Finding. The County finds that Mitigation Measures MM-TRAF-1 through MM-TRAF-14 are feasible, are adopted, and will reduce the potentially significant cumulative traffic impacts associated with the Project. The County finds that changes and alterations and mitigation measures were made to the Project to reduce the significant cumulative traffic impacts of the Project. However, impacts would continue to be significant and unavoidable. No additional measures are available to reduce these impacts to less-than-significant levels.

7. Findings Regarding Project Alternatives

Consistent with Section 15126.6 of the CEQA Guidelines, the EIR includes consideration of a reasonable range of alternatives to the Project (see Chapter 6 of the Draft EIR). Two alternatives were considered but rejected based on one or more of the criteria for rejection outlined in Section 15126.6(c) of the Guidelines. Three alternatives were carried forward for detailed consideration in the Draft and Final EIR, including the No Project Alternative, the Reduced Project Alternative, and the Passive Park Alternative. In compliance with CEQA, these Findings examine these alternatives and the extent to which they lessen or avoid the project's significant environmental effects while meeting the project objectives. The County finds that a good faith effort was made to evaluate all reasonable alternatives to the Project that could feasibly obtain its basic objectives, even when the alternatives might impede the attainment of the objectives or be more costly. The County also finds that all reasonable alternatives were reviewed, analyzed, and discussed in the review process of the Final EIR and the ultimate decision on the project.

7.1 Alternative 1—No Project Alternative

In accordance with the CEQA Guidelines, the No Project Alternative for a development project on an identifiable property consists of the circumstance under which a proposed project does not proceed. Section 15126.6(e)(3)(B) of the CEQA Guidelines states in part, that, "in certain instances, the No Project Alternative means 'no build' wherein the existing environmental setting is maintained." Accordingly, Alternative 1, the No Project Alternative assumes that the Project would not be approved, no new development would occur within the Project Site, and the existing environment would be maintained. Under Alternative 1, the project site would remain unchanged and, while the existing golf course is underperforming and could continue to decline, this analysis assumes that the project site would continue to operate as a County-owned golf course with adjacent tennis courts. The existing club house, driving range, tennis courts, and associated facilities would remain on site. As no new development would occur on the Project site, no discretionary actions would be triggered.

7.1.1 Environmental Effects

Alternative 1 would avoid the Project's significant environmental impacts related to air quality, traffic, and construction noise. As no changes to the existing conditions would occur, Alternative 1 would also eliminate the Project's remaining impacts that are already less-than-significant or less-than-significant with mitigation. However, impacts to water quality, hydrology, and aesthetics would be consistent with the levels anticipated for the Project. Substantial evidence supporting these environmental impact conclusions is provided in Section 6, Alternatives of the Draft EIR (pp. 6-1 to 6-31).

7.1.2 Finding

Overall, Alternative 1 would not meet any of the Project objectives. As such, the County rejects Alternative 1. The County finds that this alternative is not desirable or feasible and finds that the Project is preferred over this alternative.

7.2 Alternative 2—Reduced Project Alternative

Under the Reduced Project Alternative (Alternative 2), the development of the project site would be similar to the proposed project, but reduced in scope. Under Alternative 2, the proposed Learning Center would not be constructed, and the tennis and soccer facilities would be reduced in half with the remainder of the project site utilized for passive open space/recreation. As such, Alternative 2 would consist of the following components:

- 12,000-square-foot Welcome Center;

- Competition Venue including 6 hard courts with approximately 600 seats for spectator viewing, an approximately 6,500-square-foot Player Development Building, and an approximately 2,500-square-foot Tournament/League Administration Building;
- Two green-clay courts;
- Training court area with four 36-foot courts, four 60-foot courts, and 15 full-sized hard surface courts;
- Five full-sized soccer fields;
- Associated parking, restroom, and support buildings and signage.

Construction and operational hours for Alternative 2 would be the same as those associated with the proposed project.

7.2.1 Environmental Effects

Alternative 2 would eliminate the Project's significant and unavoidable impacts related to air quality, construction noise, and traffic. However, Alternative 2 would not reduce the Project's impacts that are less than significant or less than significant with mitigation, with respect to biological resources; hazards and hazardous materials; hydrology and water quality; land use and planning; or public services. Although Alternative 2 would reduce Project impacts associated with aesthetics; cultural resources; energy; geology and soils; greenhouse gas emissions; tribal cultural resources; and utilities and service systems, these same impacts of the Project already are or will be (with mitigation) less than significant.

7.2.2 Finding

Alternative 2 would not achieve all of the Project's objectives to the same extent that the Project would. Alternative 2 would only wholly meet Project objective 1 and would only partially meet Project objectives 2, 4, and 5. Alternative 2 would fail to meet Project objective 3 entirely. As such, the County rejects Alternative 2. The County finds that this alternative is not desirable or feasible and finds that the Project is preferred over this alternative.

7.3 Alternative 3—Passive Park Alternative

Under Alternative 3, development of the project site would not occur as discussed in Chapter 3 of this Draft EIR. The project site would be available as a passive recreational open space park area. Minimal facilities, such was restroom facilities, walking trails and park benches, would be constructed on the site.

7.3.1 Environmental Effects

Alternative 3 would eliminate the Project's significant and unavoidable impacts related to air quality, construction noise, and traffic. However, Alternative 3 would not reduce the Project's impacts that are less than significant or less than significant with mitigation, with respect to biological resources; hazards and hazardous materials; hydrology and water quality; land use and planning; or public services. Although Alternative 3 would reduce Project impacts associated with aesthetics; cultural resources; energy; geology and soils; greenhouse gas emissions; tribal cultural resources; and utilities and service systems, these impacts are or will be (with mitigation) less than significant with implementation of the Project.

7.3.2 Finding

Alternative 3 would not achieve all of the Project objectives. Specifically, Alternative 3 would only partially achieve Project objective 1. It would fail entirely to meet objectives 2, 3, 4, and 5. As such, the County rejects Alternative 3. The County finds that this alternative is not desirable or feasible and finds that the Project is preferred over this alternative.

8. Other CEQA Findings

8.1 Findings Regarding Growth-Inducing Impacts

Section 15126.2(e) of the CEQA Guidelines requires that growth-inducing impacts of a project be considered in an EIR. Growth-inducing impacts are characteristics of a project that could directly or indirectly foster economic or population growth or the construction of additional housing, either directly or indirectly, in the surrounding environment. According to the CEQA Guidelines, such projects include those that would remove obstacles to population growth (e.g., a major expansion of a waste water treatment plant that, for example, may allow for more construction in service areas). In addition, as set forth in the CEQA Guidelines, increases in the population may tax existing community service facilities, thus requiring construction of new facilities that could cause significant environmental effects. The CEQA Guidelines also require a discussion of the characteristics of projects which may encourage and facilitate other activities that could significantly affect the environment, either individually or cumulatively. Finally, the CEQA Guidelines also state that it must not be assumed that growth in an area is necessarily beneficial, detrimental, or of little significance to the environment. Growth can be induced or fostered as follows:

- Direct growth associated with a project;

- Indirect growth created by either the demand not satisfied by a project or the creation of surplus infrastructure not utilized by a project.

The Project would redevelop the northeastern approximately 87 acres of the existing Victoria Golf Course and the adjacent tennis courts with a tennis, soccer, and academic campus designed to serve existing youth in the City of Carson, South Los Angeles, and the greater Los Angeles area. No new homes would be constructed as part of the Project, nor would the Project result in substantial increases in employment at the Project site or within the City of Carson. It is anticipated that most of the jobs associated with the Project would be filled by existing County residents or by residents of neighboring cities in the densely populated Los Angeles metropolitan area. Therefore, it is not anticipated that the employment generated by the Project would lead to a substantial influx of residents to the County. Due to the ability of the existing regional population to provide an ample employment pool within proximity to the Project site and due to the minor increase in employment relative to total jobs available in the County, the Project would not generate substantial population growth. As such, the growth-inducing impacts of the Project would be minimal. The Project would not result in significant adverse secondary effects related to induced growth.

8.2 Findings Regarding Significant Irreversible Environmental Changes

In accordance with Section 15126.2(c) of the CEQA Guidelines, an EIR is required to evaluate significant irreversible environmental changes that would be caused by implementation of the Project. As stated in CEQA Guidelines Section 15126.2(d), "[u]ses of nonrenewable resources during the initial and continued phases of the project may be irreversible since a large commitment of such resources makes removal or nonuse thereafter unlikely. Primary impacts and, particularly, secondary impacts (such as highway improvement which provides access to a previously inaccessible area) generally commit future generations to similar uses. Also, irreversible damage can result from environmental accidents associated with the project. Irretrievable commitments of resources should be evaluated to assure that such current consumption is justified."

Implementation of the Project would occur on a portion of the existing Links at Victoria Golf Course (Victoria Golf Course) and adjacent tennis courts. Implementation of the Project would increase the intensity of the site compared to existing conditions. Proposed development would include the irreversible commitment of natural resources, energy, and human resources. Nonrenewable resources that would be used on site during construction and operation include natural gas, other fossil fuels, water, concrete, steel, and lumber. The Project would result in the commitment of such resources. Ongoing maintenance and operation of the Project would entail a further irreversible commitment of energy resources in the form of petroleum products (diesel fuel and gasoline), natural gas,

and electricity. The Project has incorporated sustainable design factors described in Chapter 3, Project Description, and Draft EIR Sections 4.5 (Energy) and 4.7 (Greenhouse Gas Emissions). As such, the proposed project is not anticipated to consume substantial amounts of energy in a wasteful manner, and it would not result in significant impacts from consumption of utilities. However, long-term impacts would result from an increase in vehicular traffic, as well as the associated air pollutant.

Based on the above, construction and operation of the Project would require the irretrievable commitment of limited, slowly renewable, and non-renewable resources, which would limit the availability of these resources and the Project site for future generations or for other uses. However, the consumption of such resources would not be considered substantial and would be consistent with regional and local growth forecasts and development goals for the area. The loss of such resources would not be highly accelerated when compared to existing conditions, and such resources would not be used in a wasteful manner. Therefore, although irreversible environmental changes would result from the Project, such changes are concluded to be less than significant. Considering that the Project would consume an immaterial amount of natural resources and would replace an existing recreational use with a new recreational use, the limited use of non-renewable resources required by the Project's construction and operation is justified.

8.3 Potential Secondary Effects

Section 15126.4(a)(1)(D) of the CEQA Guidelines requires that "if a mitigation measure would cause one or more significant effects in addition to those that would be caused by the project as proposed, the effects of the mitigation measure shall be discussed but in less detail than the significant effects of the project as proposed." With regard to this section of the CEQA Guidelines, the potential impacts that could result with the implementation of each mitigation measure for the proposed project was reviewed. The following provides a discussion of the potential secondary impacts that could occur as a result of the implementation of project mitigation measures, listed by environmental issue area.

8.3.1 Aesthetics

Impacts associated with aesthetics would be less than significant, and no mitigation measures would be required. Therefore, no potential secondary aesthetic impacts would occur.

8.3.2 Air Quality

Mitigation measures MM-AQ-1 and MM-AQ-2 address the proposed project's construction air quality impacts. Mitigation measures require the following: use of Tier 4 Final or better diesel engines, minimize simultaneous operation of multiple construction equipment units, properly tune and maintain construction equipment, use electrical and/or

natural gas powered equipment when feasible, provide on-site electrical hook-ups, develop a Construction Traffic Control Plan, and comply with SCAQMD Rule 403 regarding fugitive dust. Mitigation measure MM-AQ-3 addresses the proposed project's operational air quality impact, specifically related to NO_x, and requires the installation of electric vehicle charging stations. The use of electricity during project construction and operation is addressed in Section 4.5, Energy, of this Draft EIR. As discussed therein, impacts related to electricity consumption during project construction and operation would be less than significant. The vehicle charging stations represent a nominal increase in electrical consumption. Therefore, implementation of mitigation measures MM-AQ-1 through MM-AQ-3 would be beneficial to air quality impacts during project construction and would not result in adverse secondary impacts.

8.3.3 Biological Resources

Mitigation measures MM-BIO-1 and MM-BIO-2 address the proposed project's impacts on biological resources. Specifically, upon project approval, MM-BIO-1 requires that pre-construction surveys be conducted within areas of suitable habitat for the San Diego desert woodrat, and MM-BIO-2 requires the avoidance of the migratory bird nesting season or, if the nesting bird season cannot be avoided, an avian nesting survey of the project site and contiguous habitat shall be conducted. These mitigation measures represent procedural actions and, as such, would not result in physical changes to the environment. Therefore, these mitigation measures would not result in adverse secondary impacts.

8.3.4 Cultural Resources

Mitigation measures MM-CUL-1 through MM-CUL-3 address the proposed project's impacts on cultural resources. Specifically, during construction of the proposed project, MM-CUL-1 outlines the procedures to be followed in the event of an unanticipated archaeological resource discovery, MM-CUL-2 requires that the project applicant retain a qualified paleontologist to prepare a Paleontological Resources Impact Mitigation Program, and MM-CUL-3 outlines the procedures to be followed in the event of an unanticipated discovery of human remains. These mitigation measures represent procedural actions and, as such, would not result in physical changes to the environment. Therefore, these mitigation measures would not result in adverse secondary impacts.

8.3.5 Energy Consumption

Impacts associated with energy consumption would be less than significant, and no mitigation measures would be required. Therefore, no potential secondary energy impacts would occur.

8.3.6 Geology and Soils

Impacts associated with geology and soils would be less than significant, and no mitigation measures would be required. Therefore, no potential secondary geology and soils impacts would occur.

8.3.7 Greenhouse Gas Emissions

Impacts associated with greenhouse gas emissions would be less than significant, and no mitigation measures would be required. Therefore, no potential secondary greenhouse gas emissions impacts would occur.

8.3.8 Hazards and Hazardous Materials

Mitigation measures MM-HAZ-1 and MM-HAZ-2 address the proposed project's impacts associated with hazards and hazardous materials. MM-HAZ-1 requires that prior to the issuance of the first excavation or grading permit, the County shall confirm that DTSC has no objections to issuance of the permit(s), and MM-HAZ-2 requires that in the event excavation or grading occurs in areas with the potential for residual contamination, a qualified environmental professional be retained to screen the soils. These mitigation measures represent procedural actions consistent with existing regulatory requirements. Implementation of these measures would be beneficial and, would not result in physical changes to the environment. Therefore, these mitigation measures would not result in adverse secondary impacts.

8.3.9 Hydrology and Water Quality

Impacts associated with hydrology and water quality would be less than significant, and no mitigation measures would be required. Therefore, no potential secondary hydrology and water quality impacts would occur.

8.3.10 Land Use and Planning

Impacts associated with land use and planning would be less than significant, and no mitigation measures would be required. Therefore, no potential secondary land use and planning impacts would occur.

8.3.11 Noise

Mitigation measures MM-NOI-1 through MM-NOI-4 address short-term construction noise impacts. MM-NOI-1 requires the installation of a noise barrier during construction, MM-NOI-2 requires, to the extent feasible, use of a vibratory pile driver, MM-NOI-3 limits the hours of construction to those allowed within the County Code, and MM-NOI-4 requires the contractor to employ noise reduction measures on all construction equipment. The effects of construction on project site views were described in more detail in Section 4.1.

The installation of noise barriers around the project site would result in short-term visual changes to the project vicinity. . Use of vibratory pile drivers instead of other pile driving techniques would not result in physical changes to the environment and, again, would reduce construction noise impacts. Compliance with County Code for hours of construction and maintaining construction equipment so as to minimize noise impacts are both procedural and would not result in physical changes to the environment. Therefore, these mitigation measures would not result in adverse secondary impacts.

8.3.12 Public Services

Impacts associated with public services would be less than significant, and no mitigation measures would be required. Therefore, no potential secondary public services impacts would occur.

8.3.13 Transportation and Traffic

Mitigation measures TRAF-1 through TRAF-4 could all be accomplished within the existing right-of-way and involve restriping or other non-earthmoving activities; therefore, they require no physical construction activity and mitigation measure TRAF-1 and TRAF-4 would not result in adverse secondary environmental impacts. Mitigation measures TRAF-2 and TRAF-3 address significant impacts at the intersection of Main Street and Albertoni Street and at the intersection of Main Street and Victoria Street, respectively. These mitigation measures add new eastbound right-turn lanes within the existing right-of-way. In order to provide the right-turn lanes, approximately five on-street parking spaces extending approximately 100 feet west of the intersections on the south sides of Albertoni Street and Victoria Street, respectively, would need to be removed. Although on-street parking stalls would remain in the vicinity and the proposed project would provide more parking spaces on site than required by the County Code to accommodate parking for all guests, implementation of mitigation measures TRAF-2 and TRAF-3 is conservatively concluded to result in an adverse secondary impact with respect to the loss of up to five on-street parking spaces for each mitigation measure.

The proposed project is obligated to provide its fair-share contribution for transportation improvements at various intersections to address cumulative impacts, as required in MM-TRAF-5 through MM-TRAF-14. MM-TRAF-7 addresses cumulative impacts at the intersection of Main Street and Del Amo Boulevard and would require roadway widening through the modification of the existing median island and narrowing the north sidewalk by approximately five feet to accommodate improvements to the westbound approach on Del Amo Boulevard. Although the north sidewalk on Del Amo Boulevard east of the intersection would remain, implementation of mitigation measure TRAF-7 is conservatively concluded to result in an adverse secondary impact with respect to the loss of median and up to five feet of sidewalk space. MM-TRAF-9 addresses cumulative impacts at the intersection of Avalon Boulevard and University Avenue and would require modifications to the existing medians located on both Avalon Boulevard and University Avenue and the reclassification of the existing dedicated westbound bicycle lane on

University Avenue as a shared lane. Although bicycle access would remain, mitigation measure TRAF-9 is conservatively concluded to result in an adverse secondary impact with respect to the loss of median and a dedicated bicycle lane. MM-TRAF-10 addresses cumulative impacts at the intersection of Avalon Boulevard and Del Amo Boulevard and would require modification of the northbound left turn pocket on Avalon Boulevard, including the reduction of the median. Mitigation Measure TRAF-10 is conservatively concluded to result in an adverse secondary impact with respect to the loss of median.

The remainder of these improvements would only affect existing roadway right-of-ways and would not impact private property. It is anticipated that potential air quality, cultural, geotechnical, hazards, hydrology and water quality impacts, and utilities that may occur in connection with construction of the roadway improvements would be appropriately addressed through compliance with applicable regulatory requirements during the permitting process. The local jurisdiction would generally require construction traffic management plans for offsite roadway improvements. Such plans would include detours, construction staging, hauling, emergency vehicle access, bus stops, etc., as needed. It is anticipated that temporary noise impacts may occur for sensitive uses in proximity to the required roadway improvements. These impacts would be limited in duration.

The roadway improvements would not introduce visual elements that would interfere with existing views that are available in the project area. The roadway materials would continue to be similar in color, form and texture as those in place.

The roadway improvements would occur at locations that are currently developed with transportation uses and are located in highly urbanized areas. Biotic resources present in these areas are limited to street trees and ornamental landscaping. It is anticipated that the removal of any street trees would be addressed in accordance with local regulatory requirements.

The affected roadways' applicable jurisdiction maintains long-range transportation plans and capital improvement programs that include transportation improvements for cumulative projects. Such plans and programs are subject to review in compliance with CEQA. Therefore, the proposed project's mitigation requirements to contribute to roadway improvements via fair-share contributions would have the environmental effects of those improvements addressed through the lead agency's environmental review of their long-range transportation plans and capital improvement programs.

8.3.14 Tribal Cultural Resources

Mitigation measure MM-TRC-1 addresses the proposed project's impacts to tribal cultural resources. Specifically, upon project approval, MM-TRC-1 requires that in the event of an unanticipated discovery of a tribal cultural resource, construction activities within 50 feet of the resource shall be halted and the County shall be notified. If the resource is determined to be tribal in nature, tribes consulting under AB 52 will be notified by the County. This mitigation measure represents a procedural action and, as such, would not

result in physical changes to the environment. Therefore, this mitigation measure would not result in adverse secondary impacts.

8.3.15 Utilities and Service Systems

Impacts associated with utilities and service systems would be less than significant, and no mitigation measures would be required. Therefore, no potential secondary utilities and service systems impacts would occur.

8.4 Findings Regarding Recirculation

The County finds that the EIR does not require recirculation under CEQA (CEQA Section 21092.1, CEQA Guidelines Section 15088.5). CEQA Guidelines Section 15088.5 requires recirculation of an EIR prior to certification of the Final EIR when "significant new information is added to the EIR after public notice is given of the availability of the Draft EIR for public review." As described in CEQA Guidelines Section 15088.5:

> *New information added to an EIR is not "significant" unless the EIR is changed in a way that deprives the public of a meaningful opportunity to comment upon a substantial adverse environmental effect of the project or a feasible way to mitigate or avoid such an effect (including a feasible project alternative) that the project's proponents have declined to implement. "Significant new information" requiring recirculation includes, for example, a disclosure showing that:*
>
> 1. *A new significant environmental impact would result from the project or from a new mitigation measure proposed to be implemented;*
> 2. *A substantial increase in the severity of an environmental impact would result unless mitigation measures are adopted that reduce the impact to a level of insignificance;*
> 3. *A feasible project alternative or mitigation measure considerably different from others previously analyzed would clearly lessen the significant environmental impacts of the project, but the project's proponents decline to adopt it;*
> 4. *The Draft EIR was so fundamentally and basically inadequate and conclusory in nature that meaningful public review and comment were precluded.*

In addition, CEQA Guidelines Section 15088.5(b) provides that "recirculation is not required where the new information added to the EIR merely clarifies and amplifies or makes insignificant modifications in an adequate EIR."

As such, the County makes the following findings:

1. None of the public comments submitted to the County regarding the Draft EIR present any significant new information that would require the EIR to be recirculated for public review.

2. No new or modified mitigation measures are proposed that would have the potential to create new significant environmental impacts.

3. The Draft EIR adequately analyzed project alternatives and there are no feasible project alternatives or mitigation measures considerably different from others previously analyzed that would clearly lessen the significant environmental impacts of the project.

4. The Draft EIR was not fundamentally and basically inadequate and conclusory in nature and did not preclude meaningful public review and comment.

The new information in the Final EIR and Errata has been provided merely to clarify or amplify information in the Draft EIR. The new information does not reveal that the project would cause significant new impacts not previously identified in the Draft EIR.

8.5 Findings Regarding the Mitigation Monitoring and Reporting Program

In accordance with CEQA and the CEQA Guidelines, the County must adopt a MMRP to ensure that the adopted mitigation measures are implemented. The County adopts, and incorporates as conditions of approval of the Project, the mitigation measures set forth in the MMRP to reduce certain of the potentially significant impacts of the project to below a level of significance. The County has also incorporated project design features into the MMRP. The County makes the finding that the measures included in the MMRP constitute changes or alterations that avoid or substantially lessen potentially significant effects on the environment. The MMRP is attached to these findings as Attachment A.

9 Statement of Overriding Considerations

As discussed above, the Final EIR identified that the Project would result in significant impacts that cannot be feasibly mitigated with respect to the following impact areas:

9.1 Air Quality

As discussed in Section 4.2, Air Quality, of the Draft EIR, air quality impacts pertaining to construction and operation of the Project could be significant. First, the Project may conflict with implementation of air quality regulations established by AQMD. Air quality modeling analysis completed for the Project demonstrates that NO_x emissions produced during construction and operation of the project may conflict with Consistency Criterion No. 1 of the SCAQMD CEQA Air Quality Handbook. Secondly, based on the project-generated construction and operational emissions of NO_x, the Project would result in a cumulatively considerable increase in emissions of nonattainment pollutants. Though the Project would implement various measures to reduce construction and operational impacts associated with air quality, including Mitigation Measures AQ-1 through AQ-8 (provided in Section 6.1 above), the air quality impacts associated with Project construction and operation would remain significant and unavoidable.

9.2 Construction Noise

As discussed in Section 4.11, Noise, of the Draft EIR, the Project would result in construction noise that exceeds the County's significance threshold for noise at residential property. For construction lasting longer than 10 days, the daytime limit for noise exposure at any residential property affected by the construction noise is 60 dBA. Based upon the construction noise analysis, the noise from construction would exceed the County's construction noise significance threshold of 60 dBA during the day. Applying the County's construction noise limits, the project would have potentially significant short-term construction impacts. Even with the implementation of mitigation measures MM-NOI-1, MM-NOI-2, MM-NOI-3, and MM-NOI-4, residual temporary noise impacts from construction activities could remain significant and unavoidable.

9.3 Operational-related Traffic

As discussed in Section 4.13, Transportation, of the Draft EIR, Project operation could result in significant and unavoidable project level and cumulative traffic impacts. Implementation of MM-TRAF-1 through MM-TRAF-14 would reduce the Project's impact to less than significant based on the County's methodology. However, a majority of the traffic intersections studied are within the jurisdiction of another public agency. Physical improvements requiring implementation by the other public agency will be monitored by County Public Works and implemented to the extent feasible. If the physical improvements are deemed infeasible by the other public agency, cannot be implemented, or implementation is delayed, a significant impact would remain until the improvement is implemented. As the County is not assured of timely implementation of the physical improvement, it is conservatively concluded that impacts at the following intersections would remain significant and unavoidable: Main Street and Martin Luther King Jr. Street;

Main Street and I-405 SB On-Ramp; Main Street and Del Amo Boulevard; Avalon Boulevard and Albertoni Street; Avalon Boulevard and Victoria Street; Avalon Boulevard and University Drive; Avalon Boulevard and Del Amo Boulevard; Avalon Boulevard and I-405 SB Ramps; Main Street and Albertoni Street; Main Street and Victoria Street; I-110 SB Off-Ramp and 190th Street; Hamilton Avenue and I-110 SB Ramps; and Figueroa Street and Del Amo Boulevard.

9.4 Overriding Considerations

Section 21081 of the California Public Resources Code and Section 15093(b) of the CEQA Guidelines provide that when the decision of a public agency allow the occurrence of significant impacts identified in a Final EIR that are not substantially lessened or avoided, the lead agency must state in writing the reasons supporting its decision based on the Final EIR and/or other information in the record. Pursuant to Section 15093(b) of the CEQA Guidelines, the decision-maker must adopt a Statement of Overriding Considerations at the time a project is approved if it finds that significant adverse environmental effects identified in the Final EIR cannot be substantially lessened or avoided. These findings and the Statement of Overriding Considerations are based on substantial evidence in the record, including but not limited to the Final EIR, the source references in the Final EIR, and other documents and material that constitute the record of proceedings.

Accordingly, the County adopts the following Statement of Overriding Considerations. The County recognizes that significant and unavoidable impacts will result from implementation of the Project. Having (i) adopted all feasible mitigation measures, (ii) considered but rejected as infeasible alternatives to the Project, (iii) recognized all significant, unavoidable impacts, and (iv) balanced the benefits of the Project against the Project's significant and unavoidable impacts, the County hereby finds that the Project's benefits outweigh and override the significant unavoidable impacts of the Project.

The reasons why the Project has been proposed are grounded in a comprehensive list of Project objectives included in Section 3, Project Description, of the Draft EIR, and are further described below.

The Project would rehabilitate an underutilized and deteriorating golf course overlying a parcel historically used as a landfill. In doing so, the project would convert the existing Victoria Golf Course into a more diverse and accessible recreational facility to serve the surrounding community and County.

Additionally, the Project would provide a state of the art athletic and academic campus providing programs that would benefit the public to an extent that exceeds the

Project site's current use. As the Draft EIR explains, the Project site is located within an area of high park need. (Draft EIR, p. 4.12-11.) The Project would combine recreational usage with learning and wellness for children and adults, serving a broader and more diverse population of beneficiaries than that currently using the existing facilities. Likewise, the Project would bring essential educational and athletic services to the immediate community and to underserved children in particular. As part of the Project, the learning center would provide elementary and high school students with invaluable academic and mentorship programming. Such programming will further include presentations on college-access designed to help all students, especially low-income and first-generation students, plan a roadmap to college. These resources are essential assets for the long-term development of the community's youth.

The Project would revitalize and repurpose the existing Project site, substantially expanding the breadth of available recreational uses. The tennis center would serve players of all ages and skill levels, focusing on community programs and including tennis opportunities for children, seniors, disabled, veterans, and players with special needs. The athletic fields would similarly provide opportunities for youth, adult, collegiate, and professional athletes. These facilities would increase access for and development of a broad range of players, particularly for the sport of tennis.

The Project would also serve to construct energy-efficient and environmentally conscious buildings by incorporating sustainable elements of design, construction, and operation to achieve Leadership in Energy and Environmental Design (LEED) Silver Level certification by the U.S. Green Building Council or equivalent green building standards. Thus, the Project would support the green building and sustainable environmental goals and policies of the County.

As detailed further in Section 4.10, Land Use and Planning, of the Draft EIR, the Project would support many goals and policies in both the City and County General Plans. The Project's consistency with the applicable goals and policies includes, but is not limited to, infill development and redevelopment that strengthens and enhances communities; vibrant, livable, and healthy communities with a mix of land uses, services, and amenities; promoting community health for all neighborhoods; encouraging patterns of development that promote physical activity; well-designed and healthy places that support a diversity of built environments; promoting environmentally sensitive and sustainable design; providing additional active and passive recreation based on a community's setting, and recreational needs and preferences; productive reuse of "brownfield" sites; maintaining and upgrading the City's parks; creating a visually attractive appearance throughout the City of Carson; developing a center focus within the community that combines commercial, civic, cultural, and recreational uses; and preserving and enhancing the existing open space resources in Carson.

Among the three specific alternatives considered in Chapter 6, Alternatives, of the Draft EIR, no feasible alternative was identified that would wholly accomplish a majority of project objectives. In addition, the Project is focused on the development and rehabilitation of a particular underutilized and underperforming site. Development on an alternative site would result in no changes to existing on-site conditions, which would therefore provide no potential to achieve the basic project objective of converting the existing golf course into a more diverse and accessible recreational facility. Further, the Project site is already under the ownership of the County. A review of available open spaces/recreational properties of approximately the same size as the Project site (87 acres) in the South Los Angeles region did not identify feasible alternative off-site locations that could accommodate the Project.

The Project's design would largely comport to the existing character of the Project site and be consistent with the applicable County General Plan policies and goals governing scenic quality. The Project would largely maintain existing views of a recreational setting with areas of open space and landscaping available to viewer groups in the surrounding areas. Moreover, the proposed buildings on the Project site would be of similar size and scale as the surrounding development. Much of the development on-site would largely be screened from view by fencing and a variety of trees and landscape elements. Doing so would enhance the visual quality of the community and achieve a coherent and cohesive landscape throughout the site.

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BOARD OF SUPERVISORS
OFFICIAL COPY

July 30, 2019

COUNTY OF LOS ANGELES

REQUEST FOR APPROPRIATION ADJUSTMENT

DEPARTMENT OF PUBLIC WORKS

AUDITOR-CONTROLLER:

THE FOLLOWING APPROPRIATION ADJUSTMENT IS DEEMED NECESSARY BY THIS DEPARTMENT. PLEASE CONFIRM THE ACCOUNTING ENTRIES AND AVAILABLE BALANCES AND FORWARD TO THE CHIEF EXECUTIVE OFFICER FOR HER RECOMMENDATION OR ACTION.

ADJUSTMENT REQUESTED AND REASONS THEREFORE
FY 2019-20
3 - VOTES

SOURCES		USES	
PUBLIC WORKS - MEASURE M LOCAL RETURN FUND		**PUBLIC WORKS - MEASURE M LOCAL RETURN FUND**	
CN2-PW-2000-47000		CN2-PW-5500-47000	
SERVICES & SUPPLIES		OTHER CHARGES	
DECREASE APPROPRIATION	**4,000,000**	**INCREASE APPROPRIATION**	**4,000,000**
PUBLIC WORKS - MEASURE R LOCAL RETURN FUND		**PUBLIC WORKS - MEASURE R LOCAL RETURN FUND**	
CN5-PW-2000-47000		CN5-PW-5500-47000	
SERVICES & SUPPLIES		OTHER CHARGES	
DECREASE APPROPRIATION	**1,250,000**	**INCREASE APPROPRIATION**	**1,250,000**
SOURCES TOTAL	**$ 5,250,000**	**USES TOTAL**	**$ 5,250,000**

JUSTIFICATION

Reflects an increase of $4,000,000 in Measure M Local Return Fund Other Charges and an increase of $1,250,000 in Measure R Local Return Fund Other Charges, fully offset by corresponding decreases in Services and Supplies to support a comprehensive road improvement project on Martin Luther King, Jr. Street, and other related road and traffic improvements adjacent to the Victoria Golf Course Project.

ADOPTED
BOARD OF SUPERVISORS
COUNTY OF LOS ANGELES

4 JUL 30 2019

BOARD OF SUPERVISOR'S APPROVAL (AS REQUESTED/REVISED)

AUTHORIZED SIGNATURE CLAUDIA PIROTTON, ASST. CHIEF B/FM

CELIA ZAVALA
EXECUTIVE OFFICER

REFERRED TO THE CHIEF EXECUTIVE OFFICER FOR---

☐ ACTION
☑ RECOMMENDATION

AUDITOR-CONTROLLER

BY

B.A. NO. 005

DATE July 24, 2019

☑ APPROVED AS REQUESTED
☐ APPROVED AS REVISED

CHIEF EXECUTIVE OFFICER

BY

DATE July 24, 2019