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January 5, 2021

VIA OVERNIGHT MAIL and E-MAIL [ted.semaan@redondo.org]

City of Redondo Beach
Attn: Ms. Eleanor Manzano, City Clerk
Attn: Mr. Ted Semaan, Public Works Director
415 Diamond Street
Redondo Beach, California 90277

**Re: January 19, 2021 – City of Redondo Beach
Public Hearing considering adoption of Resolution of Necessity
Right-Turn Only Pocket from Aviation Boulevard to Artesia Boulevard
1700 Artesia Boulevard, Redondo Beach, California
Assessor's Parcel No.: 4162-001-014
Owner: Madani Family Trust**

To The Honorable City Clerk, Public Works Director and City Council Members:

We have been retained as eminent domain counsel for Mr. & Mrs. Mike and Florence Madani, Trustees of the Madani Family Trust, with respect to the City's proposed acquisition by eminent domain of portions of the above-referenced property ("Subject Property") for the City's Right-Turn Only Pocket from northbound Aviation Boulevard onto eastbound Artesia Boulevard Project ("Project").

Mr. & Mrs. Madani strongly object to the City's consideration of adopting the above-referenced Resolution of Necessity and request the opportunity to be heard at the public hearing on January 19, 2021. Mr. & Mrs. Madani's counsel and independent expert traffic engineer will discuss these objections and the evidentiary basis for the objections.

1. INTRODUCTION.

The basis of Mr. & Mrs. Madani's legal and factual objections to the proposed Project and Resolution of Necessity are set forth and summarized herein. These objections are supported by independent expert traffic engineering studies performed by RICK Engineering Company (Brian Stephenson and Robert Stockton), copies of which are enclosed herewith. Additionally, these objections are supported by the City's 2009 Project Study Report Equivalent (PSRE), a copy of which is enclosed herewith, the City's General Plan and such other and further evidence and testimony as may be presented at the public hearing of this matter on January 19, 2021.

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Mr. & Mrs. Madani object on the following grounds establishing that the City cannot make at least 2 of the 3 the requisite findings and determinations required for a duly adopted Resolution of Necessity in accordance with California Code of Civil Procedure §1240.030 and §1245.230(c):

(1) *The Proposed Project is Not Necessary and is Not in the Public Interest.*

The City's 2009 PSRE and the Madani's independent expert traffic studies establish the proposed Project will not improve intersection traffic operations in either the current or future conditions. Moreover, the proposed Project is not warranted because right-turn traffic volume is well below established traffic engineering thresholds in both the current and future scenarios.

- a. The City's 2009 PSRE analysis confirms that the intersection Level of Service with and without the Project will remain LOS F for both the morning and afternoon scenarios.
- b. The City's 2009 PSRE analysis and the independent analysis commissioned by Mr. & Mrs. Madani both confirm that to the extent there may be an improvement, such improvement is minimal and not meaningful and/or the improvement is offset by a corresponding degradation (i.e., if AM condition improves from LOS F to LOS E, the PM condition degrades from LOS E to LOS F).
- c. Standards established by the widely accepted Highway Capacity Manual provide that an exclusive right-turn lane is justified where right-turn volume exceeds 300 vehicles per hour. None of the existing condition traffic counts conducted by the City or independently (in 2009, 2015, and 2018) exceed even 200 vehicles per hour. None of the future 2030 projected traffic counts exceed 300 vehicles per hour (AM 190 v/h; PM 270 v/h). Thus, the proposed Project is not justified.

(2) *The Proposed Project is Not Planned or Located in the Manner Most Compatible with the Greatest Public Good and Least Private Injury.*

The Project not only fails to provide meaningful improvement to intersection traffic operations, but the Madani's independent expert traffic study establishes at least one alternative traffic improvement that would improve the intersection without any private property impacts – adding a second dedicated westbound left-turn lane on Artesia Blvd.

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- a. The independent analysis by RICK Engineering studied alternative intersection improvement options and determined implementation of a second westbound left-turn lane would provide substantial Level of Service improvements for the future 2030 condition (LOS E in AM, and nearly LOS E in PM). Thus, the proposed Project fails to meet the greatest public good and least private injury standard as there is an alternative available that would achieve greater public good without any private injury.
- b. Below is the conceptual layout prepared by RICK Engineering for the implementation of dual left-turn lanes for the westbound approach at the Aviation Blvd. and Artesia Blvd. intersection, entirely within the existing Artesia Blvd. right-of-way:



Accordingly, there is clearly an insufficient evidentiary basis for the City to make the requisite findings and determinations, and there is clearly substantial evidence establishing that such findings and determinations would be not justified.

The City's adoption of a Resolution of Necessity in the absence of substantial evidence or in an arbitrary and capricious manner would constitute a gross abuse of discretion in per Cal. Code of Civ. Proc. §1245.255(b) rendering the Resolution ineffectual. See *Huntington Park Redev.*

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Agency v. Duncan (1983) 142 Cal.App.3d 17. If the Court sustains Mr. & Mrs. Madani's objections in a subsequent eminent domain action and dismisses the City's case, the City would be obligated to pay litigation expenses and damages. Cal. Code of Civ. Proc. §1268.610 and §1268.620.

2. THE SUBJECT PROPERTY, BUSINESS AND THE PROPOSED PROJECT.

a. Mr. & Mrs. Madani's Property and Business.

Mr. & Mrs. Madani are long-time, well-known and respected business owners in Redondo Beach, successfully operating the gas station at the Subject Property for nearly 30 years.

Mike and Florence Madani, Trustees of the Madani Family Trust, are the owners and operators of the property and Shell gas station business at 1700 Artesia Blvd ("Subject Property"). In 1995, after operating the gas station for several years, Mr. & Mrs. Madani purchased the Subject Property from Exxon/Mobil. After purchasing the property, they invested more than \$1 million to install a modern underground gasoline storage and dispensing system and upgrade and re-brand the station.

The Subject Property is an approximately 1.25 acre parcel located at the southeast corner of Aviation Blvd. and Artesia Blvd. This very busy high-volume Shell gas station consists of 8 covered pump islands with 16 pumps, under 2 large canopies, as well as an approximately 1,800 square foot full-service convenience store and a car wash. Mr. & Mrs. Madani lease a portion of the property to the operator of a Valvoline oil change business.

For nearly 30 years Mr. Madani has been at the Subject Property *daily* to monitor the business. During that time, Mr. Madani observed and is very familiar with the traffic in and out of the Subject Property, and on the adjoining streets. The gas station business relies on vehicular traffic and, as a convenience business, is dependent on easy access to and from, and ingress/egress into and out of, the Subject Property from the adjoining streets. Thus, Mr. Madani would welcome street improvements that would significantly relieve congestion at the intersection.

Mr. Madani objects to the City's proposed Project because a dedicated right-turn lane will not alleviate the congestion. Mr. Madani has observed for nearly 30 years that there are not a lot of northbound cars turning right at Artesia Blvd., so the proposed Project will not relieve the back-up of cars travelling north on Aviation Blvd.

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As set forth herein, Mr. Madani's observations are substantiated by the actual traffic volume counts collected by the City in 2009 and 2015, as well as the traffic volume counts collected in 2108 by the Madani's independent expert traffic engineer.

b. The Proposed Project and Proposed Acquisition.

The City proposes the construction and maintenance of a right-turn only pocket from northbound Aviation Blvd. onto eastbound Artesia Boulevard ("Project"). The City's 2009 Project Study Report Equivalent ("PSRE") states that the proposed Project will improve traffic conditions at the intersection. However, this statement is not accurate. While the PSRE states that the Project proposes to improve the level of service from LOS F to LOS E, *the report actually concludes that the Project will not improve the level of service because it will remain LOS F with the Project in both the current and future 2030 condition.*

Moreover, while the City's PSRE identifies a minimal improvement to the volume/capacity ratio for the AM conditions with the Project (even though it does not improve the LOS from F to E), the PSRE concludes there would be a degradation of the volume/capacity ratio in the PM conditions. Thus, the City's PSRE does not establish that the Project will meet its objective (LOS E) or provide any actual meaningful improvements to the intersection.

Notwithstanding the conclusion of the City's PSRE that the Project will not result in a meaningful improvement to traffic conditions at the intersection, the City apparently proposes to proceed with the Project.

In order to accomplish the Project, the City seeks to acquire permanent and temporary interests in the Subject Property. The City seeks to acquire an approximately 1,813sf permanent fee right-of-way interest in the Subject Property along Aviation Blvd. and continuing to the corner of Artesia Blvd ("Fee Interest"). The City also seeks to acquire an additional approximately 1,436sf temporary construction easement for a duration of 12-months (one year) adjacent to the Fee Interest along Aviation Blvd. and continuing around the corner along Artesia Blvd.

c. Substantial Damages Caused by the City's Proposed Project and Acquisition.

The Fee Interest is approximately 10' wide along the Subject Property's entire Aviation Blvd. frontage. The Fee Interest encompasses the large landscape planter along Aviation Blvd, the landscape planter at the corner, and other site improvements which will all be eliminated. The City's acquisition of the Fee Interest will also require Mr. & Mrs. Madani to relocate the large pylon sign at the corner, as well as the monument sign at the southern corner of the property. The Project will also require Mr. & Mrs. Madani to relocate drainage and irrigation

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utilities within the Fee Interest area.

Moreover, the City's construction of the exclusive right-turn lane and taking of the Fee Interest will permanently constrain and restrict ingress/egress through the Aviation Blvd. driveways and the internal circulation for gas station customers and gas delivery trucks. Thus, the taking and Project will result in substantial property and business damages suffered by Mr. & Mrs. Madani.

The width of the Temporary Construction Easement ("TCE") varies between 2.5 feet and 10 feet and is required by the City to reconstruct three driveways – the two driveways along Aviation Blvd, and the westernmost driveway along Artesia Blvd. During the 12-month construction period, the City has the non-exclusive right to use and occupy the TCE area, including half of each driveway. Obviously, ingress and egress to the Subject Property and the driveways will be impeded and disrupted causing significant business damages during the 1-year construction period.

As set forth above, the City's construction and maintenance of the Project, including but not limited to the City's taking of the permanent Fee Interest and Temporary Construction Easement, will constrain, disrupt and impede the Madani's gas station operations and cause substantial property and business damages.

3. THE PUBLIC INTEREST AND NECESSITY DO NOT REQUIRE THE PROJECT; AND, THE PROJECT IS NOT PLANNED OR LOCATED IN THE MANNER COMPATIBLE WITH THE GREATEST PUBLIC GOOD AND LEAST PRIVATE INJURY.

The City cannot establish the requisite findings to properly support adoption of a Resolution of Necessity.

As discussed in detail below, the City's proposed Project is not necessary or in the public interest because it will not improve traffic operations at the intersection. This is established in the City's 2009 PSRE analysis concluding that the Level of Service (LOS) for the intersection will remain F after the Project. To the extent there may be a potential improvement from the Project, the improvement is not meaningful or would be offset by a corresponding degradation. This is reflected in the independent expert traffic analysis prepared by RICK Engineering determining under one scenario the AM peak hour LOS improves from F to E, but in the PM peak hour the LOS degrades from E to F. Thus, the intersection is not improved with the Project.

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Moreover, the Project is not planned to accomplish the greatest public good and least private injury because it does not improve the intersection and because there is at least one other alternative that would improve the intersection and not require any acquisition private property or other private injury. RICK Engineering determined that the intersection could be improved with dual west bound left-turn lanes – adding another dedicated westbound left turn at the intersection. This improvement could be achieved within the width of the existing Artesia Blvd. right-of-way without the need for the taking of any private property. Thus, there is at least one alternative that would achieve a greater public good, greater intersection traffic operation improvements, without any private injury, no taking of any private property.

In order to adopt a Resolution of Necessity to acquire permanent and temporary interests in Mr. & Mrs. Madani's property and proceed with the Project, the City must make several findings and determinations required per Cal. Code Civ. Proc. §1240.030 which provides, "The power of eminent domain may be exercised to acquire property for a proposed project *only if all of the following are established*:

- (a) The public interest and necessity require the proposed project.
- (b) The project is planned or located in the manner that will be most compatible with the greatest public good and the least private injury.

Cal. Code Civ. Proc. §1240.030(c)(1 & 2); emphasis added.

Per the Legislative Comment to this statute, "Subdivision (a) prevents the taking of property by eminent domain unless the public interest and necessity require the project. ... Subdivision (b) prevents the taking of property by eminent domain unless the proposed project is planned or located in the manner that will be compatible with the greatest public good and the least private injury. This limitation, which involves essentially a comparison between two or more sites, has also be described as 'the necessity for adopting a particular plan' for a given public improvement. ... Proper location is based on two factors: public good and private injury. Accordingly, the condemnor's choice is correct or property ***unless another site would involve an equal or greater public good and a lesser private injury.***" (Cal. Code Civ. Proc. §1240.030, Legislative Committee Comment; emphasis added; citations omitted.)

Here, the public interest and necessity does not require the proposed Project. Furthermore, an alternative improvement – dual westbound left turn lanes – would provide a greater public good and lesser private injury.

Adoption of a Resolution of Necessity in the absence of substantial evidence, or where the condemnor is committed to taking the property regardless of the evidence presented, constitutes a gross abuse of discretion. "A gross abuse of discretion occurs where the public

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agency acts arbitrarily or capriciously, renders findings that are lacking in evidentiary support, or fails to follow the required procedures and give the required notices before condemning the property. (*City of Saratoga v. Hinz* (2004) 115 Cal.App.4th 1202, 1221, 9 Cal.Rptr.3d 791.)” *City of Stockton v. Marina Towers LLC* (2009) 171 Cal.App.4th 93, 114.

Moreover, “It has been judicially recognized that ‘[i]mplicit in this requirement of a hearing and the adoption of a resolution of necessity is the concept that in arriving at its decision to take, the Agency engage in a good faith and judicious consideration of the pros and cons of the issue and that the decision to take be buttressed by substantial evidence of the existence of the three basic requirements set forth in Code of Civil Procedure, section 1240.030, ...’ (*Redevelopment Agency v. Norm's Slauson* (1985) 173 Cal.App.3d 1121, 1125–1126, 219 Cal.Rptr. 365.) In short, the statutory requirement that a public entity adopt a Resolution of Necessity before initiating a condemnation action is designed to ensure that public entities will verify and confirm the validity of their intended use of the power of eminent domain prior to the application of that power in any one particular instance.” *San Bernardino County Flood Control Dist. v. Grabowski* (1988) 205 Cal.App.3d 885, 897.

If the Council were to abuse its discretion in adopting a Resolution of Necessity, Mr. & Mrs. Madani will raise these objections in the eminent domain action. And, if successful, the action would be dismissed and the City would be obligated to compensate Mr. & Mrs. Madani for damages and litigation costs, including legal and expert fees. Cal. Code of Civ. Proc. §1268.610 and §1268.620.

a. The Public Interest and Necessity Does Not Require the Proposed Project.

As set forth above, California Code of Civil Procedure §1240.030(a) prevents the taking of private property by eminent domain unless the public interest and necessity require the project. Here, there is insufficient evidence to establish that the proposed Project is in the public interest or is necessary.

More importantly, though, the evidence presented in the City’s 2009 PSRE as well as the independent expert traffic study prepared by RICK Engineering clearly establishes that the Project will not improve the traffic operations at the intersection. Moreover, the 2009, 2015, and 2018 traffic counts establish that construction of an exclusive right-turn lane, as proposed, is not justified as the volume is significantly less than the standard 300 vehicles per hour threshold (the actual volumes do not exceed 200 vehicles per hour). Thus, there is clear evidence that the public interest and necessity do not require the proposed Project.

In the City’s 2009 PSRE, the City analyzed and evaluated the proposed Project. The PSRE calculated the Level of Service vehicle to capacity (v/c) ratios in both the existing (2009) and future (2030) conditions for both the morning and evening. The calculations indicate that in

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the existing conditions, the intersection would continue to operate in excess of capacity in both the morning and evening (both LOS F). While the morning scenario would show a nominal v/c improvement (0.0390), in the afternoon the conditions remain the same. Thus, there is no change in the afternoon and the morning would have a negligible – but still LOS F – condition.

Similarly, in the City's 2009 PSRE the intersection would continue to operate in excess of capacity in both the morning and afternoon scenarios (LOS F) for the future 2030 condition. While the morning condition would show a minimal v/c improvement (0.0840), the afternoon condition would actually worsen (-0.0470). Thus, any negligible improvement in the morning future condition provided by the Project is offset by a worse condition in the afternoon.

Accordingly, the City's 2009 PSRE establishes that there is no meaningful benefit from the proposed Project so it is not in the public interest or necessity.

Mr. & Mrs. Madani obtained an independent expert traffic study performed by Robert Stockton (recently deceased) and Brian Stephenson of RICK Engineering Company. Both Mr. Stockton and Mr. Stephenson are well-regarded and experienced expert traffic engineers working on behalf of municipalities and other government agencies, as well as private parties.

RICK Engineering performed traffic analyses not only based on the 2009 data reflected in the City's 2009 PSRE report, but also the City's 2015 traffic data, as well as independent traffic counts conducted in 2018. Rick Engineering evaluated and studied numerous scenarios and conditions, including a scenario based on the City's General Plan Circulation Element (which considered the City of Manhattan Beach's right-turn only lane project), as well as the eastbound right-turn lane which was not considered by the City in the PSRE.

In RICK Engineering's January 4, 2021 report prepared by Brian Stephenson and enclosed herewith, Mr. Stephenson concludes that the City's proposed Project will not provide any meaningful improvement, that any potential improvement is offset by a corresponding degradation in service. He also finds the proposed Project is not justified because the right-turn volume does not exceed the standard set forth in the Highway Capacity Manual of 300 vehicles per hour as the actual volumes are all less than 200 vehicles per hour in all scenarios.

The following is the conclusion section contained in Mr. Stephenson's January 4, 2021 report:

Based on the traffic analysis shown in the PSRE (LOS F to LOS F), the follow-up counts and analysis performed in 2015 and again in 2018 (which shows a minimal improvement to LOS E during the AM peak hour, likely due to the addition of the eastbound right turn lane; and a degradation to LOS F during the PM peak hour), and the City's buildout projections for 2030 (which show a 3.5% degradation of the v/c ratio for PM conditions with the right-turn lane), an exclusive northbound

right-turn lane does not appear to be warranted at this location, and any potential improvements are offset.

The PSRE and General Plan improvement scenarios are shown to have negligible improvements related to delay and or queue, however, these are not anticipated to have a significant improvement to the intersection LOS as all scenarios are anticipated to continue to operate at LOS F (except for the PSRE scenario, which swapped LOS F and E for the AM and PM peak hours of existing conditions to LOS E and F for the AM and PM peak hours of Forecast Year (2030) conditions).

Additionally, the standard contained within the Highway Capacity Manual 6th Edition states, “An exclusive right-turn lane is often provided when the right-turn volume exceeds 300 veh/h and the adjacent through volume exceeds 300 veh/h/ln.” The report does not show a volume exceeding 300 vehicles per hour in the existing (2018) or in the future (2030) scenarios. In addition, the updated traffic counts from the City of Redondo Beach dated 10/22/2015 do not show volumes exceeding 300 vehicles per hour. An exclusive northbound right turn lane does not appear to be warranted.

Based on the foregoing, the evidence clearly establishes that the proposed Project will not provide a meaningful improvement to the intersection traffic operations. Accordingly, the proposed Project is not in the public interest and is not necessary.

b. The Project is Not Designed to Accomplish the Greatest Public Good and Least Private Injury

The Project is not planned or located in a manner consistent with the greatest public good and least private injury. As discussed above, the Project will not provide a meaningful improvement and is thus not in the public interest or necessary. The Project as planned will cause extensive permanent damage to the Subject Property. Thus, as planned, the Project will not provide a meaningful public benefit but will cause significant private injury.

However, RICK Engineering determined that there is at least one clear alternative available that would accomplish a public benefit – improvement to the intersection traffic operations – while avoiding any private injury. In their January 4, 2021 Addendum Report, enclosed herewith, RICK Engineering reviewed potential alternative options for geometric and signal phasing improvements to determine whether the intersection could function better with alternative improvements.

As described by Mr. Stephenson, “Based on this review of alternative improvements, *it was determined that the results obtained from the implementation of a second left-turn lane for the westbound approach provide an overall better level of service with less delay* at the

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Aviation Boulevard and Artesia Boulevard intersection when compared to the improvement of a northbound right-turn lane as shown in the PSRE.”

In RICK Engineering’s January 4, 2021 addendum report, Mr. Stephenson concludes:

The westbound dual left-turn lane analysis contained within this supplemental analysis shows a greater improvement in terms of LOS and delay when compared to the PSRE analysis. Additionally, important to note is that the dual left-turn lanes can be constructed within the existing curb-to-curb width along Artesia Boulevard, without the need to acquire any private property, and still maintaining the raised median to maintain safety along the roadway.

The standard contained within the Highway Capacity Manual 6th Edition describes the relationship between left-turn volumes and the probable need for exclusive turn lanes. Single left-turn lanes are typically needed when left-turning volumes are at least 100 vehicles per hour, and dual left-turn lanes are typically needed when there are over 300 vehicles per hour. Based on the City’s General Plan Circulation Element, the forecasted volumes for the westbound left-turn movement are shown to exceed 300 turning vehicles during the PM peak hour (530 left-turning vehicles are projected), and ***the analysis contained within this letter report shows that the overall intersection delay can be further improved with the addition of a second westbound left-turn lane.***

Based on the foregoing, the evidence clearly establishes that the proposed Project will not provide a meaningful improvement to the intersection traffic operations and there is a clear alternative that will provide greater public benefit and no private injury. Accordingly, the proposed Project is not planned or located in the manner compatible with the greatest public good and least private injury.

4. CONCLUSION.

For the foregoing reasons, among others, Mr. & Mrs. Madani respectfully object to the City’s consideration of adoption of the proposed Resolution of Necessity on January 19, 2021.

The evidence presented herein clearly establishes the City’s proposed Project will not provide any meaningful improvement to the intersection and is not warranted, thus the proposed Project is not in the public interest or necessary.

Moreover, because the proposed Project will not provide any meaningful improvement and will cause significant private injury – the taking of private property and causing substantial

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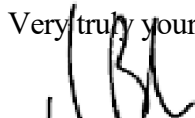
property and business damages – the proposed Project is not planned or located consistent with the greatest public good and least private injury.

Furthermore, independent expert traffic engineers, RICK Engineering, determined that implementation of dual westbound left-turns at the intersection will improve the intersection traffic operations, within the existing Artesia Blvd. right-of-way, and will not result in any private injury.

Accordingly, the City's adoption of the proposed Resolution of Necessity is not justified or supported. Adoption of the Resolution of Necessity contrary to Mr. & Mrs. Madani's objections and the ample evidence presented herein would constitute a gross abuse of discretion. Adoption of the proposed Resolution of Necessity is not supported by substantial evidence and would be arbitrary and capricious.

Mr. & Mrs. Madani request the opportunity to appear before the City Council with their counsel and expert traffic engineer to be heard with respect to their objections to the proposed Resolution of Necessity. Please also ensure that this letter and accompanying documents are presented to the City Council for consideration and included in the public record for this matter.

Very truly yours,



Glenn L. Block

California Eminent Domain Law Group,
a Professional Corporation

Enclosures:

Aviation Boulevard Right Turn Lane Improvement Project in the City of Redondo Beach,
January 4, 2021, RICK Engineering Company

Addendum to Aviation Boulevard Right Turn Lane Improvement Project in the City of
Redondo Beach, January 4, 2021, RICK Engineering Company

Project Study Report Equivalent, Aviation Boulevard Northbound Right Turn Lane
Improvement at Artesia Boulevard, April 23, 2009, City of Redondo Beach

cc: Mr. & Mrs. Mike and Florence Madani (via email)
City of Redondo Beach City Council (via email)



January 4, 2021

Mr. Glenn L. Block, Esq.
California Eminent Domain Law Group, APC
3429 Ocean View Blvd., Suite L
Glendale, CA 91208

SUBJECT: AVIATION BOULEVARD RIGHT TURN LANE IMPROVEMENT PROJECT IN
THE CITY OF REDONDO BEACH
(RICK ENGINEERING COMPANY JOB NO. 17989)

Dear Mr. Glenn L. Block:

Summary

Based on the traffic analysis shown in the PSRE (LOS F to LOS F), the follow-up counts and analysis performed in 2015 and again in 2018 (which shows a minimal improvement to LOS E during the PM peak hour, likely due to the addition of the eastbound right turn lane), and the City's buildout projections for 2030 (which show a 3.5% degradation of the v/c ratio for PM conditions with the right-turn lane), an exclusive northbound right turn lane does not appear to be warranted at this location, and any potential improvements are offset.

Introduction

Pursuant to your request, Rick Engineering Company (RICK) analyzed the necessity for the City of Redondo Beach's proposed northbound right-turn lane project at the intersection of Aviation Boulevard and Artesia Boulevard. Items analyzed include, but are not limited to, the PSRE for *Aviation Boulevard, northbound right turn lane improvement at Artesia Boulevard* dated 4/23/09, the City's General Plan Circulation Element and traffic counts conducted by Transportation Studies Inc. on October 9th, 10th and 11th 2018. Based on the PSRE, the City's General Plan Circulation Element, and recent traffic movement counts obtained, it was determined that there is not a need for the proposed northbound right-turn lane project at the Aviation Boulevard.

PSRE

This project proposes to construct a right-turn lane on northbound Aviation Boulevard at the intersection of Aviation Boulevard and Artesia Boulevard. The City of Redondo Beach is considering the acquisition of a portion of the Shell Station property for the proposed project. This includes a right-of-way acquisition area of approximately 1,813 square feet, more or less, and a temporary construction easement of approximately 1,436 square feet, more or less.

The PSRE identifies 3 different alternatives for the intersection. Alternative 1 suggests no change to the intersection; alternative 2 suggests traffic signal synchronization; alternative 3 suggests the proposed right turn lane project. The report explains that the suggested alternative 2 was already completed to improve the intersection, but still recommends implementing alternative 3. This report

analyzes alternative 3 in which a right-turn lane is added for the northbound approach during the plus PSRE scenario.

General Plan Circulation Element

The City's General Plan proposes to construct a dedicated right-turn lane for the eastbound approach and southbound approach at the Aviation Boulevard/Artesia Boulevard intersection. Existing conditions observed at the study intersection show the General Plan dedicated right-turn lane for the eastbound approach as constructed. This report analyzes the addition of a right-turn lane for the southbound approach and includes the already existing right turn lane for the eastbound approach.

Existing Transportation Conditions and Traffic Data

Traffic counts at the study intersection were performed by Transportation Studies Inc. on October 9, 10 and 11th 2018. The turning movement counts were conducted on October 9 and 10th during the A.M. (7-9) and P.M. (4-6) peak periods. Daily machine counts were conducted on October 10th and 11th, for a total of forty-eight (48) hours.

The conducted counts show existing traffic movement volumes exceeding some of the forecasted (2030) traffic movement volumes contained within the PSRE report. The following movements reflect higher counts for at least one of the peak hours when compared to those shown under the 2030 baseline volumes:

- Southbound: left-turn volumes, through volumes, and right-turn volumes.
- Westbound: through volumes
- Northbound: left-turn volumes
- Eastbound: left-turn volumes

Exhibit 1 shows the existing traffic movement volumes and intersection conditions.

Studied Scenarios

The study intersection was analyzed under the following scenarios using existing traffic data and forecasted volumes reported under the PSRE document:

- Existing (2018) Conditions
- Existing (2018) Conditions + PSRE geometric improvements
- Existing (2018) Conditions + General Plan improvements
- Forecast Year (2030)
- Forecast Year (2030) + PSRE geometric improvements
- Forecast Year (2030) + General Plan improvements

Exhibit 2 shows the traffic volumes and intersection lane conditions used for the study intersection.

Methodologies

The Level of Service (LOS) and 95th percentile queue length results for signalized intersections were calculated using the methodologies described in Chapter 18 of the 2010 HCM, using Synchro Version 10 software. The LOS for signalized intersections is defined in terms of control delay, which is made up of several factors that relate to right-of-way control, geometrics and traffic volumes. The

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95th percentile queue length is defined in terms of feet as it relates to the vehicular traffic (vehicle length plus space between them) being in queue during the signal peak operations which is made up of several factors such as arrival times, the number of lanes available, lane utilization factors, saturation flow rate, and red time.

LOS ranges from LOS A (excellent conditions) to LOS F (overloaded conditions). The City's General Plan Circulation Element Policy P9 states "Where feasible, maintain or achieve LOS D at City intersections."

Traffic Operation Results

Based on the methodologies described above, the study intersection currently operates at LOS F and E for the AM and PM peak hours, respectively. All future study scenarios are anticipated to operate at the same LOS F as existing for the AM and PM peak hours with the exception of the following:

- Forecast Year (2030) + PSRE: LOS F to LOS E, AM peak hour.
- Forecast Year (2030) + PSRE: LOS E to LOS F, PM peak hour.

Thus, while slightly improving the AM peak hour, the PM peak hour gets worse. It should be noted that the City's General Plan Circulation Element shows this intersection to operate at LOS F for both the AM and PM peak hours of the City's buildout condition.

The queuing results are shown to stay the same for all intersection approaches for the "with" and "without" PSRE improvements scenarios, with the exception of the northbound approach. The introduction of the northbound right-turn lane is shown to reduce northbound through queue lengths for the existing and forecast scenarios. Although there is an overall queue length reduction for the northbound approach, the forecast year scenario is shown to have queue lengths exceeding the proposed right-turn lane capacity for the PM peak hour.

Table 1 summarizes the intersection operation results as it relates to Level of Service for the studied scenarios. **Table 2** summarizes the 95th percentile queue lengths and available storage for the studied scenarios.

Highway Capacity Manual Standard

The Highway Capacity Manual 6th Edition states, "An exclusive right-turn lane is often provided when the right-turn volume exceeds 300 veh/h and the adjacent through volume exceeds 300 veh/h/ln." The Project Study Report Equivalent (PSRE) for *Aviation Boulevard, northbound right turn lane improvement at Artesia Boulevard* dated 4/23/09 does not show a volume exceeding 300 vehicles per hour in the existing (2009) or in the future (2030) scenarios. In addition, the updated traffic counts from the City of Redondo Beach dated 10/22/2015 do not show volumes exceeding 300 vehicles per hour, nor do the traffic counts conducted by Transportation Studies Inc. on October 9th, 10th and 11th 2018.

Conclusion

Based on the traffic analysis shown in the PSRE (LOS F to LOS F), the follow-up counts and analysis performed in 2015 and again in 2018 (which shows a minimal improvement to LOS E during the AM peak hour, likely due to the addition of the eastbound right turn lane; and a degradation to LOS F during the PM peak hour), and the City's buildout projections for 2030 (which

Mr. Glenn L. Block, Esq.

January 4, 2021

Page 4 of 4

show a 3.5% degradation of the v/c ratio for PM conditions with the right-turn lane), an exclusive northbound right-turn lane does not appear to be warranted at this location, and any potential improvements are offset.

The PSRE and General Plan improvement scenarios are shown to have negligible improvements related to delay and or queue, however, these are not anticipated to have a significant improvement to the intersection LOS as all scenarios are anticipated to continue to operate at LOS F (except for the PSRE scenario, which swapped LOS F and E for the AM and PM peak hours of existing conditions to LOS E and F for the AM and PM peak hours of Forecast Year (2030) conditions).

Additionally, the standard contained within the Highway Capacity Manual 6th Edition states, "An exclusive right-turn lane is often provided when the right-turn volume exceeds 300 veh/h and the adjacent through volume exceeds 300 veh/h/ln." The report does not show a volume exceeding 300 vehicles per hour in the existing (2018) or in the future (2030) scenarios. In addition, the updated traffic counts from the City of Redondo Beach dated 10/22/2015 do not show volumes exceeding 300 vehicles per hour. An exclusive northbound right turn lane does not appear to be warranted.

Sincerely,

RICK ENGINEERING COMPANY



Brian R. Stephenson, P.E., T.E., P.T.O.E.

RCE No. 69471

Associate Principal

K:\Files\17989\text\17989.001.docx

Attachments:

1. Exhibits
2. Tables
3. Traffic Volume Counts (2018)
4. Capacity Analysis
5. Timing Printouts
6. Queuing Printouts
7. General Plan Circulation Element Analysis Excerpts -Redondo Beach and Manhattan Beach
8. Highway Capacity Manual Exclusive Lane Excerpt

Brian Stephenson PE, TE, PTOE

Brian Stephenson is an Associate Principal at RICK, where he manages a team of traffic engineers who provide a variety of engineering and planning services, including the preparation and review of traffic control plans, traffic signal plans, signing and striping plans, traffic impact studies, optimized network timing plans, and collision analysis. Brian is well-versed with municipal traffic engineering and currently serves as the Contract City Traffic Engineer for the City of Murrieta. Through his public agency work as an extension of staff for the City of Murrieta, and his public works project experience within the San Diego region, he has designed and managed traffic control PS&E for large scale pipeline projects, which typically include sidewalk and ADA improvements, traffic signal upgrades, and utility lateral installations and relocations.

As part of Rick Engineering Company's expert witness services, Mr. Stephenson is responsible for performing review of traffic analysis reports and design plans, and providing expert opinions on conformance to State and local agency analysis and design requirements. A few of these projects include the following:

- Keiper, et al v. USA, et al – County of San Bernardino
- Caltrans v. Janet Gale Hubbard – County of San Bernardino, CA
- SANBAG v. Hakimian – San Bernardino, CA
- RCTC v. Pearl Street Properties – Corona, CA
- San Bernardino County Transportation Commission v. Ehab Atatlla - Colton, CA
- South Milliken Avenue Grade Separation (Sears/Kmart)

CONSULTANT TRAFFIC ENGINEER – CITY OF MURRIETA, CA: As part of Rick Engineering Company's contract services to the City of Murrieta, Mr. Stephenson is the City's Consulting Traffic Engineer responsible for reviewing traffic signal plans, traffic impact studies, and Environmental Impact Report (EIR) traffic analysis submitted to the City of Murrieta by developers. He also responds to citizens concerns with traffic related issues, and represents the City at Traffic Commission, Planning Commission, and City Council meetings.

University Avenue Mobility Plan – City of San Diego, CA: Traffic Engineer responsible for the preparation of traffic related plans for the mobility improvement project within the North Park community of San Diego, which included a transit only lane. The traffic plans included 10 traffic signal/signal modification plans, 3 RRFB plans, 5 street lighting plans, 5 signing and striping plans and 18 traffic control plans, as well as an Intersection Control Evaluation (ICE) study and conceptual layout evaluating a roundabout at one of the study intersections.

INTERSECTION SAFETY STUDIES – CITY OF SACRAMENTO, CA: Project engineer responsible for the preparation of an Intersection Safety Studies report for five intersections within the City of Sacramento. Tasks performed include site visits, analyzing accident history, preparation of accident rates, recommending potential mitigation, preparation of cost estimates for mitigation, and preparation of a report summarizing the collision patterns and mitigation.

Pacific Beach Pipeline South – City of San Diego, CA: Traffic Engineer responsible for the preparation of traffic control plans for the replacement of approximately 7.6 miles of 8-inch to 24-inch water transmission and distribution lines and approximately 1.6 miles of sewer gravity lines and force mains in the Mission Bay Park area and Midway/Pacific



PROJECT ASSIGNMENT
Expert Witness

YEARS OF EXPERIENCE
22

EDUCATION
B.S. in Civil Engineering
1998, University of New
York at Buffalo

REGISTRATION
Registered Professional
Engineer
California, #69471
Arizona, #42520
New York, #080635
Colorado, #0048708

Registered Traffic
Engineer
California, #2419

Professional Traffic
Operations Engineer,
#2169

**PROFESSIONAL
AFFILIATIONS**
Institute of
Transportation
Engineering (ITE)

American Society of Civil
Engineers (ASCE)

International Municipal
Signal Association (IMSA)

American Public Works
Association (APWA)

Highway Corridor. The traffic control plans include 200 sheets of traffic control, within both City and Caltrans right-of-way, and included a separate encroachment permit submittal through Caltrans. The traffic control plans were designed to minimize impacts to the travelling public, area businesses, and residents, as well as to maintain the safety for bicyclists and pedestrians maneuvering through the traffic control.

AZUSA WASTE MANAGEMENT MATERIAL RECOVERY FACILITY – CITY OF AZUSA, CA: Project engineer responsible for the traffic signal modification design at 2 City intersections, and traffic signal design at 3 on-site private intersections. Tasks unique to this project included design within the Waste Management facility, accounting for both horizontal and vertical curve approaches to the signals, as well as designing for primarily large vehicles.

TRAFFIC ENGINEERING PLAN CHECKING – MURRIETA, ONTARIO, LAKE ELSINORE, PLACENTIA, CA: As part of Rick Engineering's contract services to Bureau Veritas for the Cities of Murrieta, Ontario, Lake Elsinore, and Placentia, Mr. Stephenson is the project engineer responsible for the review of various traffic engineering design related plans, including traffic signal plan, signing & striping plans, and traffic control plans.

CALIFORNIA BAPTIST UNIVERSITY TRAFFIC IMPACT ANALYSIS – CITY OF RIVERSIDE, CA: Project Engineer responsible for preparing a Traffic Impact Analysis for the California Baptist University Specific Plan, which calls for an estimated enrollment of 8,080 students by year 2020. The project is an expansion to the existing university, and will ultimately consist of 13 academic buildings, 2 parking structures along with additional surface lots, an event center, and an athletic area and recreation center. The study analyzed impacts of vehicular traffic on the adjacent City and Caltrans roadways, as well as internal to the site. Tasks included performing trip generation, capacity analysis, queuing analysis, ramp merge/diverge analysis, internal truck turning templates, mitigation for buildout of the project, and preparation of a report summarizing the findings of the analysis.

Harmony Grove Traffic Signal, Signing & Striping, Traffic Control, & Detour Plans – County of San Diego, CA: Provided project engineering services for all traffic-related PS&E including traffic signal plans, signing and striping plans, traffic control plans, and detour plans for the mixed-use community of 742 dwelling units, commercial uses, an equestrian facility, and a fire station. The traffic related PS&E included 4 traffic signals, 12 sheets of signing and striping, 6 sheets of traffic control, and 2 detour plans.

RANCHO PARKWAY AND SPORTS PARK TRAFFIC SIGNAL – CITY OF LAKE FOREST, CA: Project manager responsible for the traffic related PS&E for a new traffic signal at the intersection of Rancho Parkway and Sports Park/Nursery. The design for this project included meeting all necessary City and MUTCD requirements for ADA accessibility, including truncated domes for all pedestrian ramps, countdown pedestrian timers, and bicycle detection loops.

Robert Stockton PE, LEED AP

Mr. Stockton has been Principal-in-Charge of Rick Engineering Company's (RICK) Riverside office since opening it in 1987. He received his Bachelor of Science in Construction Engineering in 1978 at California State Polytechnic University, Pomona. He is a Registered Civil Engineer in the states of California and Arizona, and a LEED Accredited Professional. Mr. Stockton has been Principal-in-Charge of numerous large and complex private and public sector projects. He directs and supervises a staff of project engineers, designers, a landscape architect, a mapping director, and surveyors. His responsibilities include coordination of projects with clients and public agencies, as well as supervision of all work performed by his team.

Mr. Stockton is highly experienced in all aspects of civil engineering and surveying related to land and site development. His 41 years of experience include the design of roads, drainage systems, sewer systems, water systems, grading, and right-of-way surveys and mapping.

Mr. Stockton is a board member of the California Board for Professional Engineers, Land Surveyors and Geologists, is a board member Western Municipal Water District representing Division 1, is a past Chair of the Greater Riverside Chamber of Commerce and the City of Riverside's Board of Public Utilities, and is active in national, state, and regional power and water issues. He was the Riverside Public Utilities representative on the Western Municipal Water District and served City of Riverside Ad Hoc Committee for six years. Mr. Stockton also serves on the Path of Life Ministries Board, and the California Baptist University School of Engineering Advisory Committee, is a past Chair of Leadership Riverside and served two terms as planning commissioner for the City of Riverside.

A few of Mr. Stockton's representative projects include:

- **SBCTC v. Arrowhead Central Credit Union** – Provided expert witness services in connection with eminent domain action by the San Bernardino County Transportation Commission. SBCTC sought to condemn a large portion of the credit union's property for the construction of a detention basin for its Downtown San Bernardino Passenger Rail Project. Case settled before trial.
- **RCTC v. 2410 Wardlow Property, LLC** – Provided expert witness services in connection with eminent domain action brought by Riverside County Transportation Commission. RCTC sought to condemn a portion of the multi-tenant commercial/retail property to widen the 91 Freeway in Corona. Case settled before trial.
- **Caltrans v. Javad N. Sani** – Provided expert witness services in connection with eminent domain action brought by Caltrans for three ocean and pastoral view parcels totaling 13.47 acres of Highway 1 in San Simeon. Caltrans sought to condemn portions of two of the three parcels for its State Route 1 Realignment Project. Settlement for full takes of two of the parcels, preserved the owner's ability to seek compensation for the taking of, and damages to the third parcel.
- **Caltrans District 08** – Provided expert witness testimony and forensic engineering on condemnation proceedings at Highway 330, Route 30 and Highland Avenue for the State of California.
- **Ku, Fong, Larsen & Chen, LLP, Bradbury Estates, Bradbury, CA** – Provided expert witness testimony for an arbitration hearing regarding the development potential and corresponding value for 190-acres in the City of Bradbury
- **Caltrans District 08** – Provided expert witness and forensic engineering for development potential and costs for a site at Oleander Drive and Interstate 215
- **City of San Dimas** – Provided expert witness planning and civil engineering to defend the City of San Dimas in a case concerning the General Plan and Hillside Ordinances

PROJECT ASSIGNMENT

Principal-in-Charge

YEARS OF EXPERIENCE

41

EDUCATION

California State Polytechnic University, Pomona
B.S. Construction Engineering, 1978

REGISTRATION

Registered Professional Engineer
California, No. 33591
Arizona, No. 20021

U.S. Green Building Council
Leadership in Energy and Environmental Design
Accredited Professional

PROFESSIONAL AFFILIATIONS

California Board for Professional Engineers, Land Surveyors, and Geologists, V.P., Board Member

American Society of Civil Engineers (ASCE)

American Council of Engineering Companies – California (ACEC-CA)

Greater Riverside Chamber of Commerce, Past Chair

California Baptist University, School of Engineering Advisory Committee

Leadership Riverside, Past Chairman

Monday Morning Group, Director

Path of Life Ministries Board Member

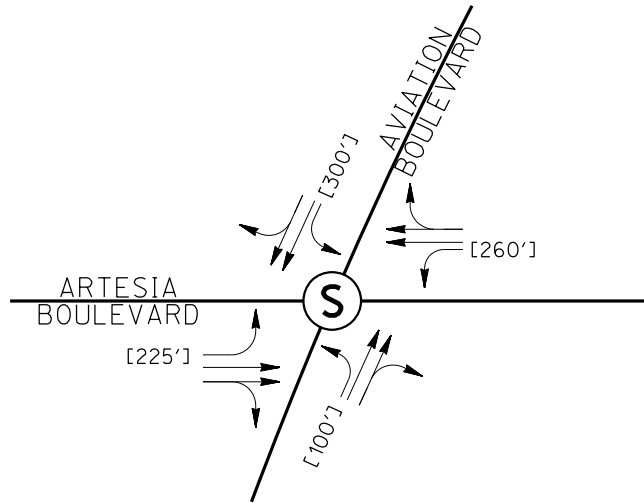
Western Municipal Water District, Past Director Board Member



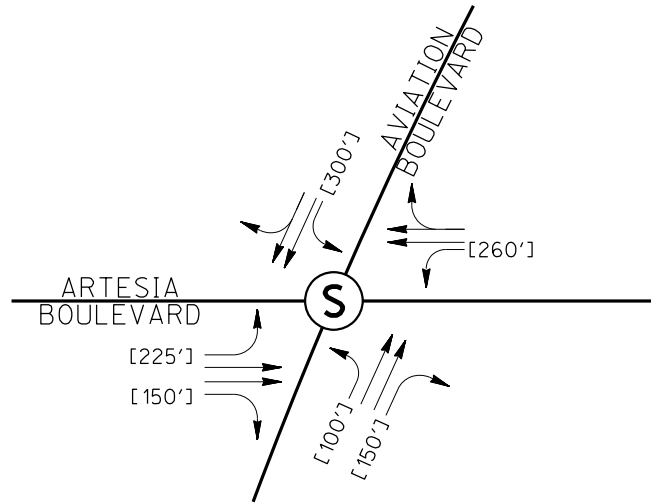
ATTACHMENT 1

EXHIBITS

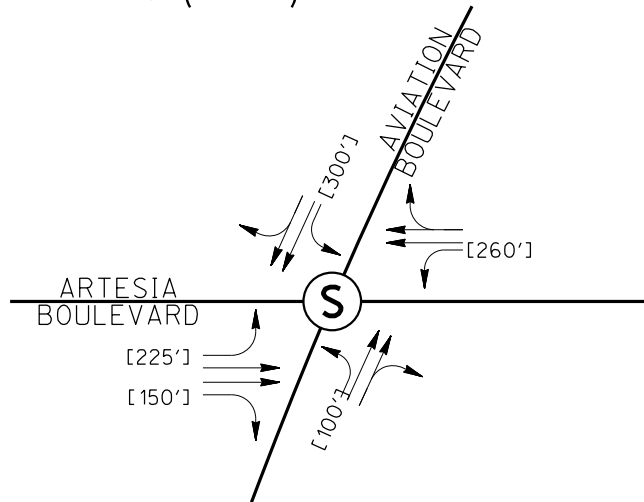
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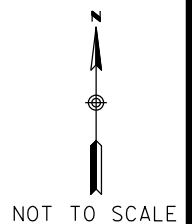
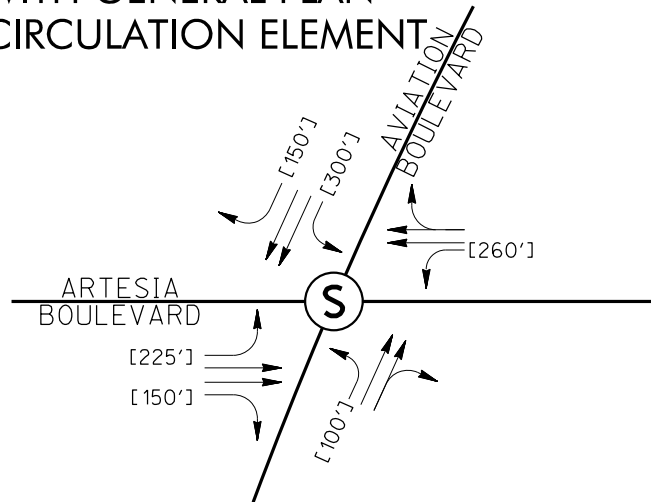
WITH PSRE



EXISTING (2018)



WITH GENERAL PLAN
CIRCULATION ELEMENT



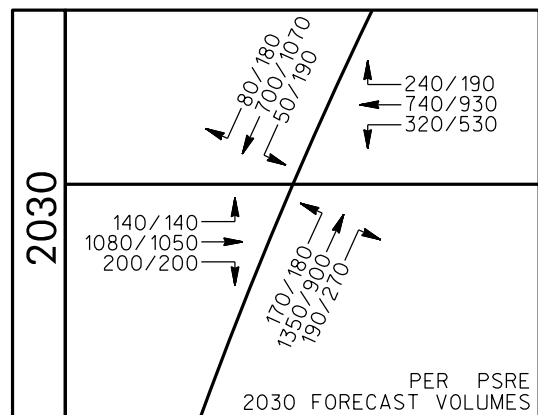
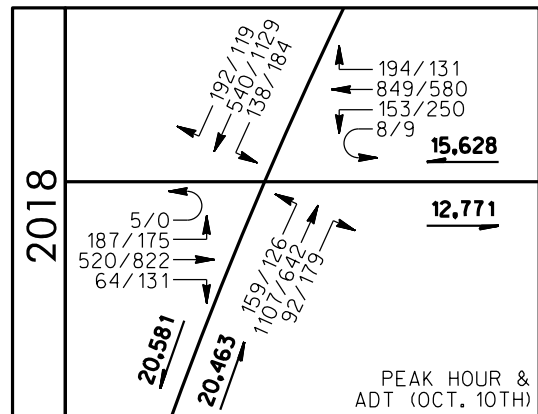
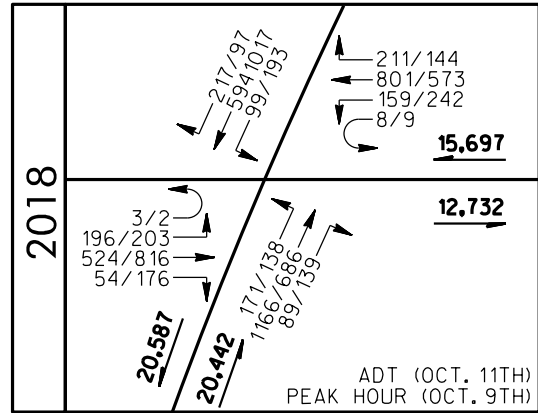
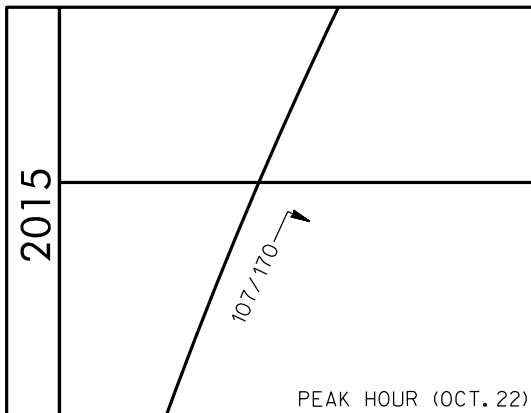
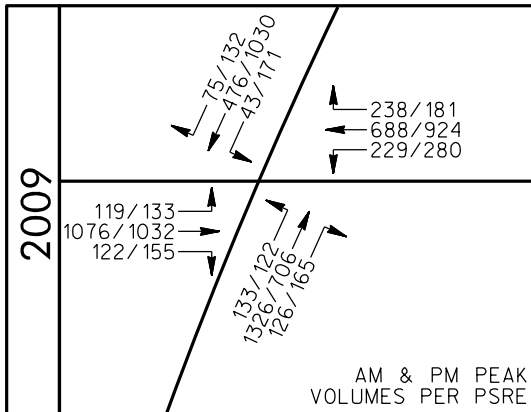
RICK
ENGINEERING COMPANY

EXHIBIT 1
TRANSPORTATION CONDITIONS

AVIATION BOULEVARD RIGHT-TURN LANE IMPROVEMENTS

LEGEND

(S) = SIGNALIZED
[XX'] = STORAGE LENGTH



NOT TO SCALE

LEGEND

AM/PM=PEAK VOLUMES
X,XXX=DIRECTIONAL ADT

ATTACHMENT 2

TABLES

**TABLE 1
INTERSECTION OPERATION RESULTS
AVIATION BOULEVARD RIGHT-TURN LANE IMPROVEMENTS**

ARTESIA BOULEVARD & AVIATION BOULEVARD		RESULTS	
Scenarios (Traffic Signal)		DELAY ¹	LOS ²
Existing (2018) Tuesday	AM	117.4	F
	PM	70.6	E
Existing (2018) Wednesday	AM	116.6	F
	PM	75.6	E
Existing (2018) Tuesday + PSRE ³	AM	111.2	F
	PM	68.4	E
Existing (2018) Wednesday + PSRE ³	AM	111.6	F
	PM	73.5	E
Existing (2018) Tuesday + General Plan ⁴	AM	116.2	F
	PM	64.0	E
Existing (2018) Wednesday + General Plan ⁴	AM	115.7	F
	PM	66.9	E
Forecast Year (2030)	AM	90.8	F
	PM	125.0	F
Forecast Year (2030) + PSRE ³	AM	75.4	E
	PM	112.6	F
Forecast Year (2030) + General Plan ⁴	AM	90.0	F
	PM	113.8	F

Footnotes:

Results calculated utilizing the methodologies described in Chapters 18 of the 2010 Highway Capacity Manual (HCM 2010).

1) Delay is measured in seconds per vehicle.

2) Level of Service

3) The "+PSRE" scenario consists of geometrical improvements of a dedicated right-turn lane for the northbound approach.

4) The "+ General Plan" scenario consists of geometrical improvements of a dedicated right-turn lane for southbound approach.

TABLE 2
INTERSECTION QUEUING RESULTS
AVIATION BOULEVARD RIGHT-TURN LANE IMPROVEMENTS

ARTESIA BOULEVARD & AVIATION BOULEVARD	95th Percentile Queue (Feet)											
	EB			WB		NB			SB			
	L	T	R	L	TR	L	T	R	L	T	R	
Scenarios (Traffic Signal)												
Existing (2018) Tuesday AM	#402	214	0	#332	#530	#337	#643	-	#203	307	-	
PM	#339	#527	125	#404	383	#256	426	-	#331	#670	-	
Existing (2018) Wednesday AM	#388	212	6	#319	#558	#316	#601	-	#276	270	-	
PM	#283	#579	61	#450	#416	#258	453	-	#296	#806	-	
Existing (2018) Tuesday + PSRE ¹ AM	#402	214	0	#345	#530	#337	#566	21	#203	307	-	
PM	#339	#527	125	#404	383	#256	344	79	#331	#670	-	
Existing (2018) Wednesday + PSRE ¹ AM	#388	212	6	#332	#558	#316	#521	22	#276	270	-	
PM	#283	#579	61	#450	#416	#258	344	104	#292	#806	-	
Existing (2018) Tuesday + General Plan ² AM	#402	214	0	#345	#530	#337	#643	-	#203	223	97	
PM	#339	#520	124	#404	380	#252	431	-	#329	#583	41	
Existing (2018) Wednesday + General Plan ² AM	#388	212	6	#332	#558	#316	#601	-	#276	200	84	
PM	#279	#566	60	#442	407	#256	448	-	#330	#701	64	
Forecast Year (2030) AM	#238	#753	97	#556	539	#274	#1,009	-	#130	417	-	
PM	#262	#760	132	#917	611	#376	#749	-	#400	#836	-	
Forecast Year (2030) + PSRE ¹ AM	#230	#728	95	#520	513	#274	#866	101	#130	440	-	
PM	#262	#760	100	#917	611	#376	512	171	#340	#836	-	
Forecast Year (2030) + General Plan ² AM	#238	#753	97	#556	539	#274	#1,009	-	#130	369	0	
PM	#262	#760	132	#905	603	#376	#774	-	#338	#655	99	
Available Storage	225	420	150	265	420	100	420	130	300	820	150	

Footnotes:

- 1) The "+PSRE" scenario consists of geometrical improvements of a dedicated right-turn lane for the northbound approach.
 - 2) The "+ General Plan" scenario consists of geometrical improvements of a dedicated right-turn lane for southbound approach.
- NB = Northbound, SB = Southbound, EB = Eastbound, WB= Westbound
 #=95th percentile volume exceeds capacity, queue may be longer.
 T=thru lane, L=left-turn lane, R =right-turn lane, TR= shared thru-right lane, etc.

ATTACHMENT 3

TRAFFIC COUNTS (2018)

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
951-268-6268

City of Redondo Beach
N/S: Aviation Boulevard
E/W: Artesia Boulevard
Weather: Clear

File Name : RDBAVARAM
Site Code : 12215000
Start Date : 10/22/2015
Page No : 1

Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

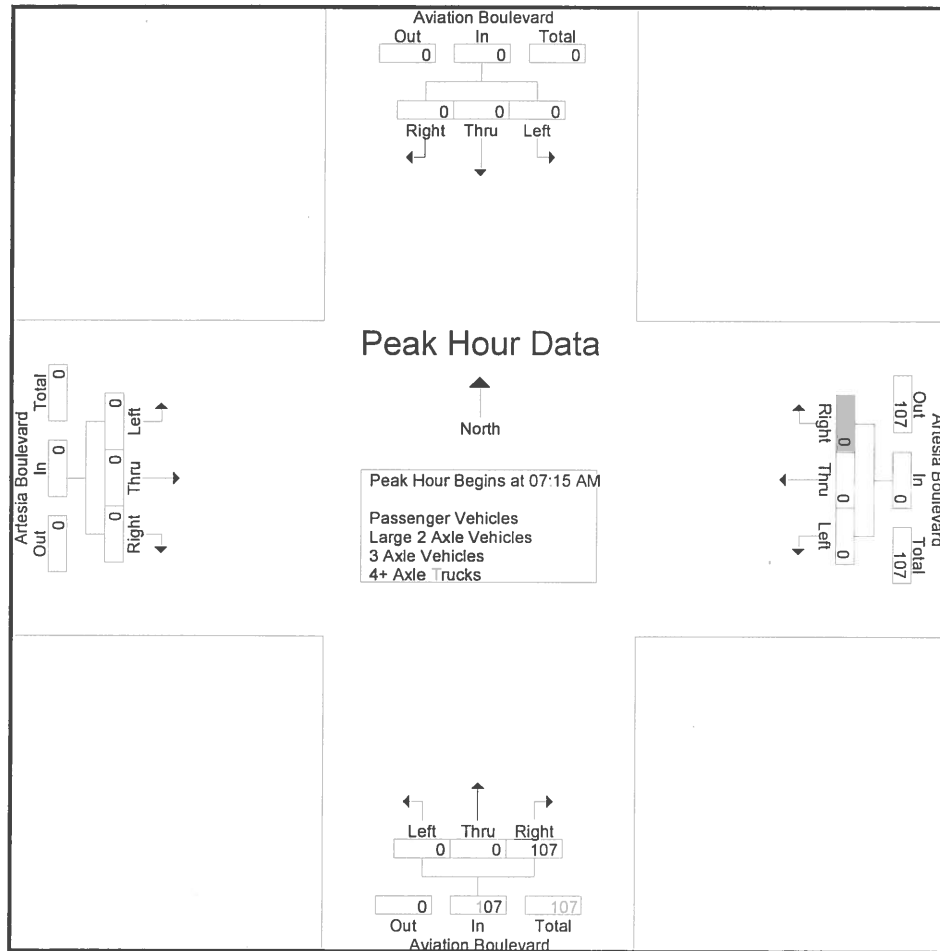
	Aviation Boulevard Southbound				Artesia Boulevard Westbound				Aviation Boulevard Northbound				Artesia Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	0	23	23	0	0	0	0	23
07:15 AM	0	0	0	0	0	0	0	0	0	0	20	20	0	0	0	0	20
07:30 AM	0	0	0	0	0	0	0	0	0	0	29	29	0	0	0	0	29
07:45 AM	0	0	0	0	0	0	0	0	0	0	32	32	0	0	0	0	32
Total	0	0	0	0	0	0	0	0	0	0	104	104	0	0	0	0	104
08:00 AM	0	0	0	0	0	0	0	0	0	0	26	26	0	0	0	0	26
08:15 AM	0	0	0	0	0	0	0	0	0	0	20	20	0	0	0	0	20
08:30 AM	0	0	0	0	0	0	0	0	0	0	29	29	0	0	0	0	29
08:45 AM	0	0	0	0	0	0	0	0	0	0	26	26	0	0	0	0	26
Total	0	0	0	0	0	0	0	0	0	0	101	101	0	0	0	0	101
Grand Total	0	0	0	0	0	0	0	0	0	0	205	205	0	0	0	0	205
Apprch %	0	0	0		0	0	0		0	0	100		0	0	0		
Total %	0	0	0	0	0	0	0	0	0	0	100	100	0	0	0	0	
Passenger Vehicles	0	0	0	0	0	0	0	0	0	0	197	197	0	0	0	0	197
% Passenger Vehicles	0	0	0	0	0	0	0	0	0	0	96.1	96.1	0	0	0	0	96.1
Large 2 Axle Vehicles	0	0	0	0	0	0	0	0	0	0	5	5	0	0	0	0	5
% Large 2 Axle Vehicles	0	0	0	0	0	0	0	0	0	0	2.4	2.4	0	0	0	0	2.4
3 Axle Vehicles	0	0	0	0	0	0	0	0	0	0	3	3	0	0	0	0	3
% 3 Axle Vehicles	0	0	0	0	0	0	0	0	0	0	1.5	1.5	0	0	0	0	1.5
4+ Axle Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% 4+ Axle Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

	Aviation Boulevard Southbound				Artesia Boulevard Westbound				Aviation Boulevard Northbound				Artesia Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	0	0	0	0	0	0	0	0	0	0	20	20	0	0	0	0	20
07:30 AM	0	0	0	0	0	0	0	0	0	0	29	29	0	0	0	0	29
07:45 AM	0	0	0	0	0	0	0	0	0	0	32	32	0	0	0	0	32
08:00 AM	0	0	0	0	0	0	0	0	0	0	26	26	0	0	0	0	26
Total Volume	0	0	0	0	0	0	0	0	0	0	107	107	0	0	0	0	107
% App. Total	0	0	0		0	0	0		0	0	100		0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.836	.836	.000	.000	.000	.000	.836

Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
951-268-6268

City of Redondo Beach
N/S: Aviation Boulevard
E/W: Artesia Boulevard
Weather: Clear

File Name : RDBAVARAM
Site Code : 12215000
Start Date : 10/22/2015
Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	07:00 AM				07:00 AM				07:15 AM				07:00 AM			
+0 mins.	0	0	0	0	0	0	0	0	0	0	20	20	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0	0	29	29	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0	0	32	32	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0	0	26	26	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	107	107	0	0	0	0
% App. Total	0	0	0	0	0	0	0	0	0	0	100	100	0	0	0	0
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.836	.836	.000	.000	.000	.000

Counts Unlimited, Inc.
PO Box 1178
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City of Redondo Beach
N/S: Aviation Boulevard
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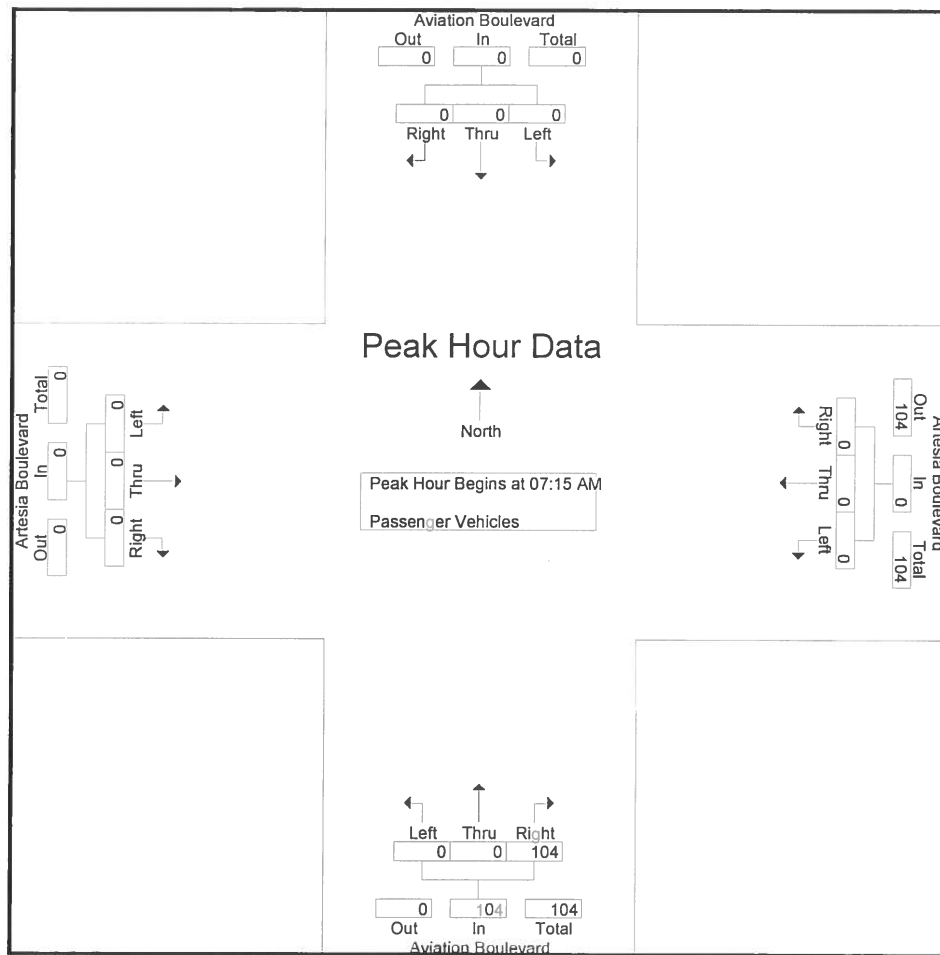
Groups Printed- Passenger Vehicles

Start Time	Aviation Boulevard Southbound				Artesia Boulevard Westbound				Aviation Boulevard Northbound				Artesia Boulevard Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
07:00 AM	0	0	0	0	0	0	0	0	0	0	22	22	0	0	0	0	22
07:15 AM	0	0	0	0	0	0	0	0	0	0	20	20	0	0	0	0	20
07:30 AM	0	0	0	0	0	0	0	0	0	0	27	27	0	0	0	0	27
07:45 AM	0	0	0	0	0	0	0	0	0	0	31	31	0	0	0	0	31
Total	0	0	0	0	0	0	0	0	0	0	100	100	0	0	0	0	100
08:00 AM	0	0	0	0	0	0	0	0	0	0	26	26	0	0	0	0	26
08:15 AM	0	0	0	0	0	0	0	0	0	0	19	19	0	0	0	0	19
08:30 AM	0	0	0	0	0	0	0	0	0	0	27	27	0	0	0	0	27
08:45 AM	0	0	0	0	0	0	0	0	0	0	25	25	0	0	0	0	25
Total	0	0	0	0	0	0	0	0	0	0	97	97	0	0	0	0	97
Grand Total	0	0	0	0	0	0	0	0	0	0	197	197	0	0	0	0	197
Apprch %	0	0	0	0	0	0	0	0	0	0	100	100	0	0	0	0	
Total %	0	0	0	0	0	0	0	0	0	0	100	100	0	0	0	0	

	Aviation Boulevard Southbound				Artesia Boulevard Westbound				Aviation Boulevard Northbound				Artesia Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	0	0	0	0	0	0	0	0	0	0	20	20	0	0	0	0	20
07:30 AM	0	0	0	0	0	0	0	0	0	0	27	27	0	0	0	0	27
07:45 AM	0	0	0	0	0	0	0	0	0	0	31	31	0	0	0	0	31
08:00 AM	0	0	0	0	0	0	0	0	0	0	26	26	0	0	0	0	26
Total Volume	0	0	0	0	0	0	0	0	0	0	104	104	0	0	0	0	104
% App. Total	0	0	0	0	0	0	0	0	0	0	100	100	0	0	0	0	
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.839	.839	.000	.000	.000	.000	.839

City of Redondo Beach
N/S: Aviation Boulevard
E/W: Artesia Boulevard
Weather: Clear

File Name : RDBAVARAM
Site Code : 12215000
Start Date : 10/22/2015
Page No : 2



Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	07:15 AM				07:15 AM				07:15 AM				07:15 AM			
+0 mins.	0	0	0	0	0	0	0	0	0	0	20	20	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0	0	27	27	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0	0	31	31	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0	0	26	26	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	104	104	0	0	0	0
% App. Total	0	0	0	0	0	0	0	0	0	0	100	100	0	0	0	0
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.839	.839	.000	.000	.000	.000

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City of Redondo Beach
N/S: Aviation Boulevard
E/W: Artesia Boulevard
Weather: Clear

File Name : RDBAVARAM
Site Code : 12215000
Start Date : 10/22/2015
Page No : 1

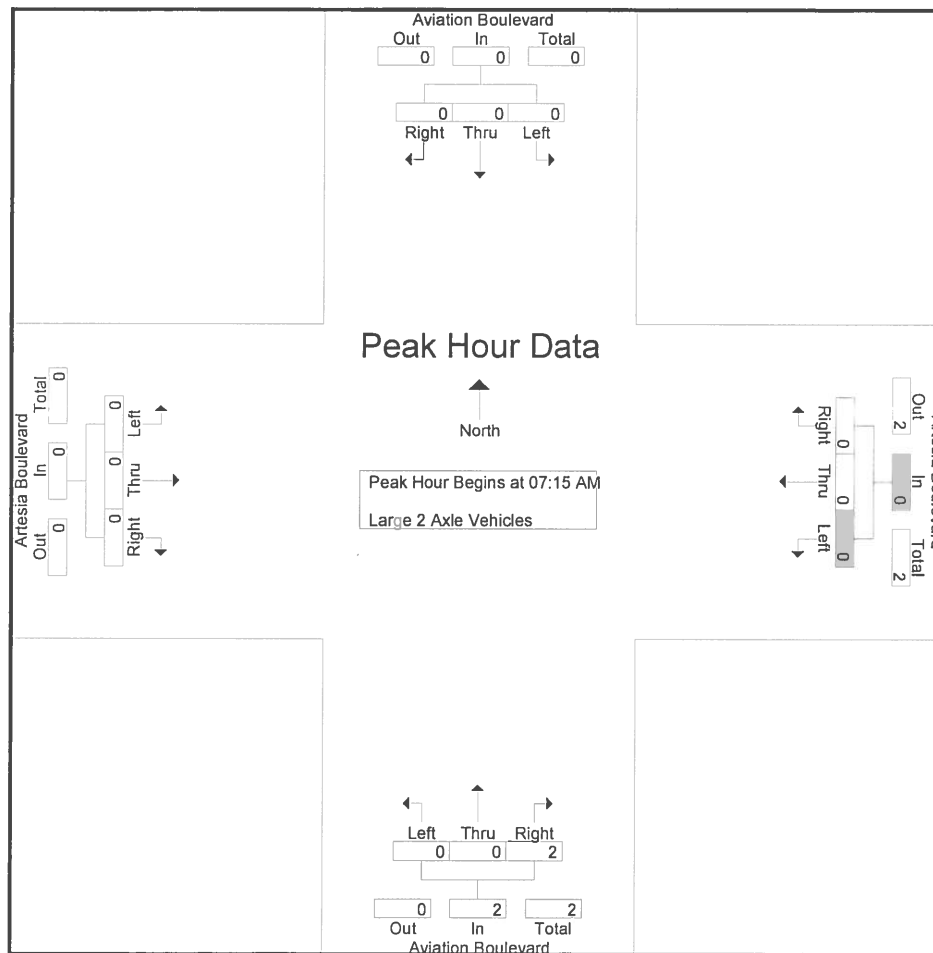
Groups Printed- Large 2 Axle Vehicles

Start Time	Aviation Boulevard Southbound				Artesia Boulevard Westbound				Aviation Boulevard Northbound				Artesia Boulevard Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
07:00 AM	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1
07:45 AM	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1
Total	0	0	0	0	0	0	0	0	0	0	3	3	0	0	0	0	3
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	0	2
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	0	2
Grand Total	0	0	0	0	0	0	0	0	0	0	5	5	0	0	0	0	5
Apprch %	0	0	0		0	0	0		0	0	100		0	0	0		
Total %	0	0	0		0	0	0		0	0	100	100	0	0	0		

	Aviation Boulevard Southbound				Artesia Boulevard Westbound				Aviation Boulevard Northbound				Artesia Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1
07:45 AM	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	0	2
% App. Total	0	0	0		0	0	0		0	0	100		0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.500	.500	.000	.000	.000	.000	.500

City of Redondo Beach
N/S: Aviation Boulevard
E/W: Artesia Boulevard
Weather: Clear

File Name : RDBAVARAM
Site Code : 12215000
Start Date : 10/22/2015
Page No : 2



Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	07:15 AM				07:15 AM				07:15 AM				07:15 AM			
+0 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	0
% App. Total	0	0	0	0	0	0	0	0	0	0	100		0	0	0	
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.500	.500	.000	.000	.000	.000

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City of Redondo Beach
N/S: Aviation Boulevard
E/W: Artesia Boulevard
Weather: Clear

File Name : RDBAVARAM
Site Code : 12215000
Start Date : 10/22/2015
Page No : 1

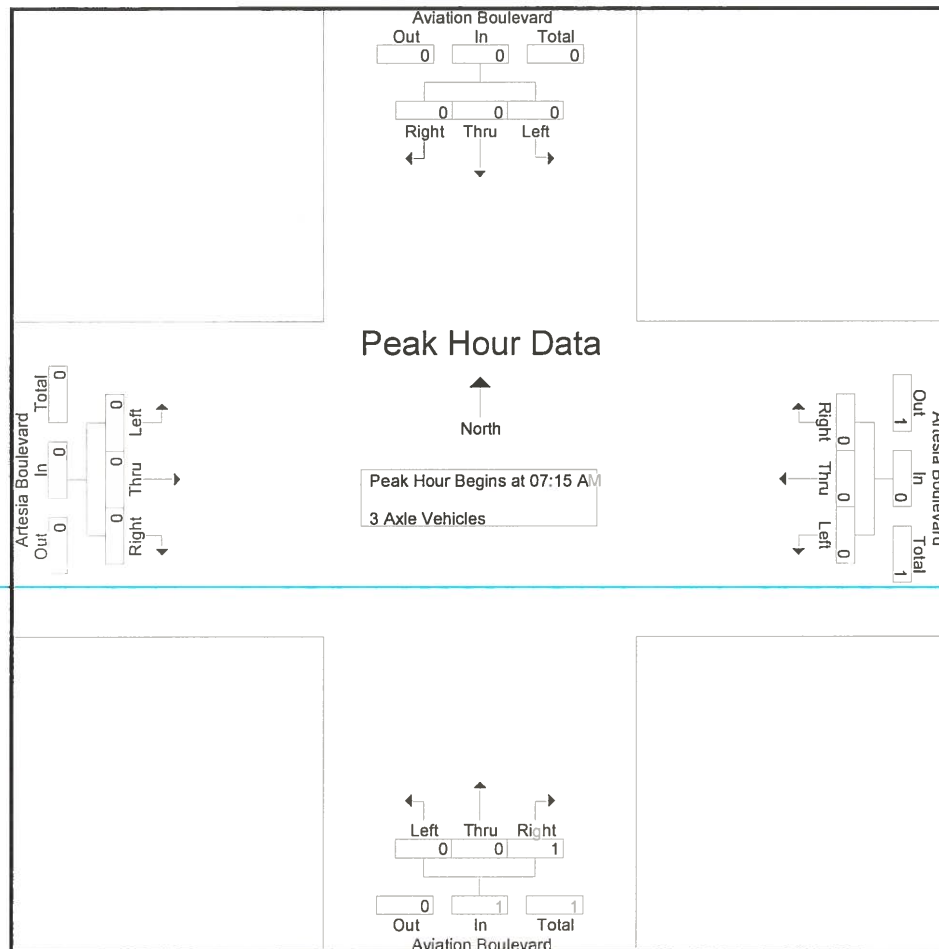
Groups Printed- 3 Axle Vehicles

Start Time	Aviation Boulevard Southbound				Artesia Boulevard Westbound				Aviation Boulevard Northbound				Artesia Boulevard Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1
Total	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	0	2
Grand Total	0	0	0	0	0	0	0	0	0	0	3	3	0	0	0	0	3
Apprch %	0	0	0		0	0	0		0	0	100		0	0	0		
Total %	0	0	0	0	0	0	0	0	0	0	100	100	0	0	0	0	

	Aviation Boulevard Southbound				Artesia Boulevard Westbound				Aviation Boulevard Northbound				Artesia Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1
% App. Total	0	0	0		0	0	0		0	0	100		0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.250	.250	.000	.000	.000	.000	.250

City of Redondo Beach
N/S: Aviation Boulevard
E/W: Artesia Boulevard
Weather: Clear

File Name : RDBAVARAM
Site Code : 12215000
Start Date : 10/22/2015
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Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	07:15 AM				07:15 AM				07:15 AM				07:15 AM			
+0 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0
% App. Total	0	0	0	0	0	0	0	0	0	0	100	100	0	0	0	0
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.250	.250	.000	.000	.000	.000

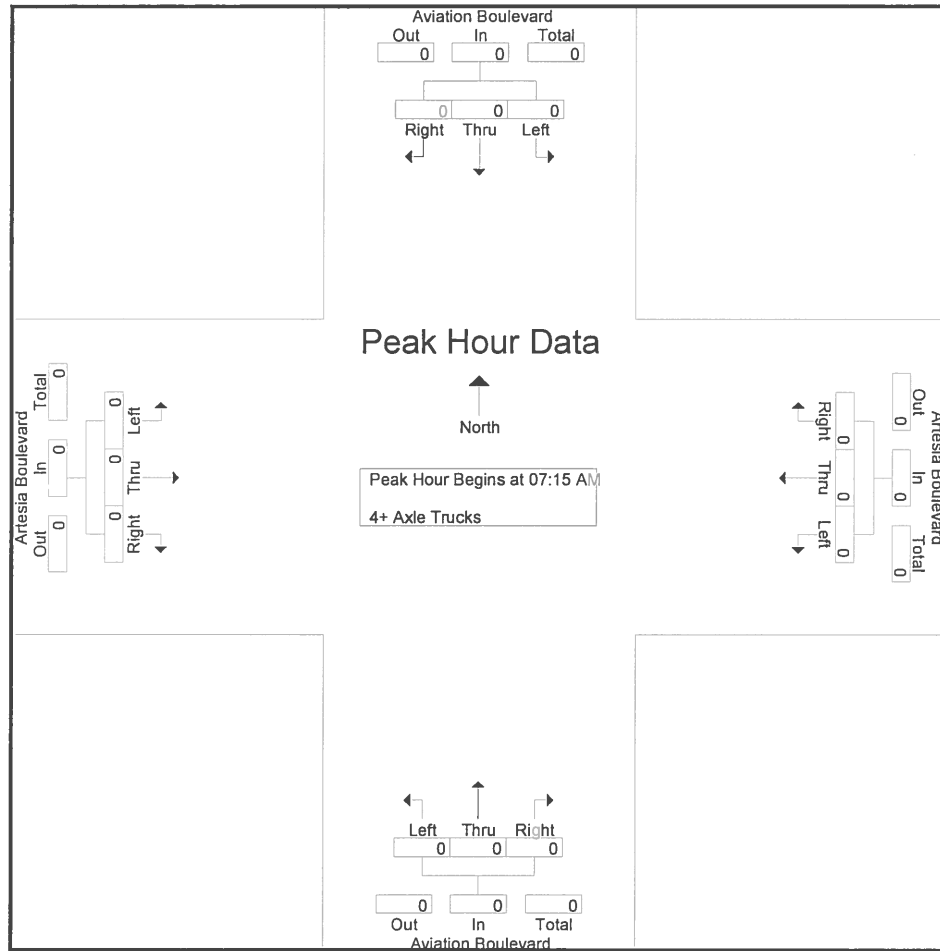
City of Redondo Beach
N/S: Aviation Boulevard
E/W: Artesia Boulevard
Weather: Clear

File Name : RDBAVARAM
Site Code : 12215000
Start Date : 10/22/2015
Page No : 1

Groups Printed- 4+ Axle Trucks

[illegible][illegible]

City of Redondo Beach
N/S: Aviation Boulevard
E/W: Artesia Boulevard
Weather: Clear



Each Hour for Each Approach Begins at:																
	07:15 AM				07:15 AM				07:15 AM				07:15 AM			
+0 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

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City of Redondo Beach
N/S: Aviation Boulevard
E/W: Artesia Boulevard
Weather: Clear

File Name : RDBAVARPM
Site Code : 12215000
Start Date : 10/22/2015
Page No : 1

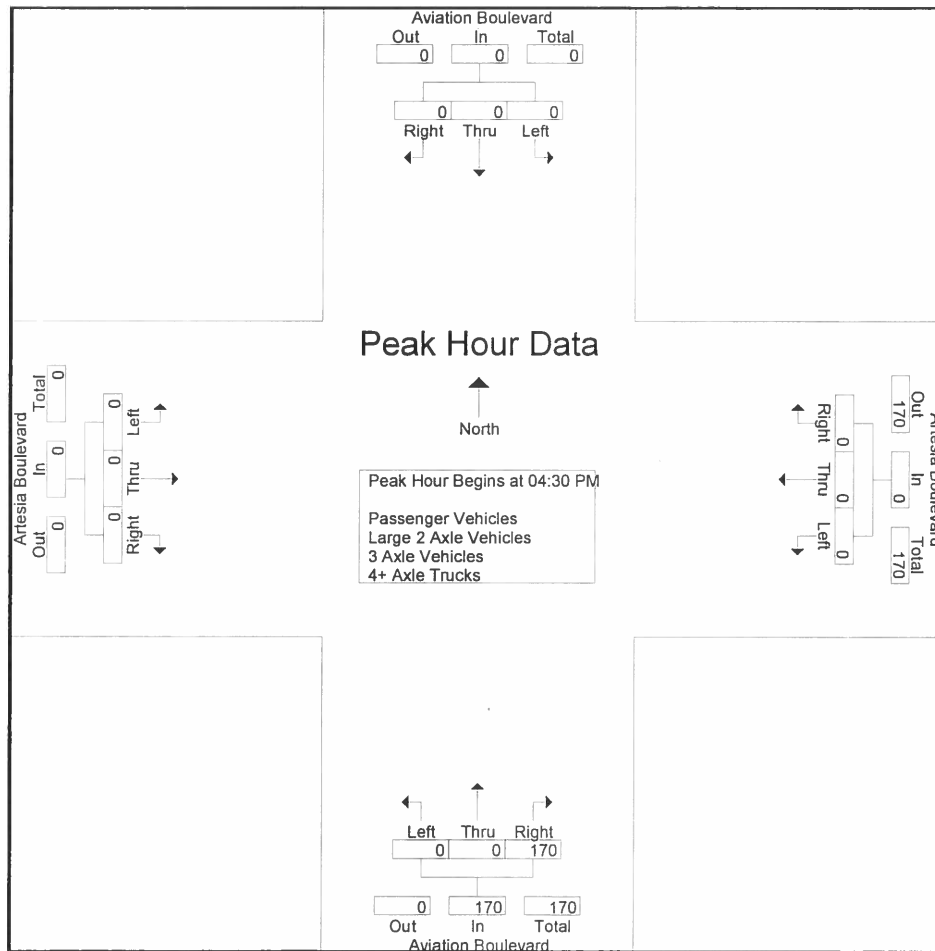
Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

Start Time	Aviation Boulevard Southbound				Artesia Boulevard Westbound				Aviation Boulevard Northbound				Artesia Boulevard Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
04:00 PM	0	0	0	0	0	0	0	0	0	0	50	50	0	0	0	0	50
04:15 PM	0	0	0	0	0	0	0	0	0	0	37	37	0	0	0	0	37
04:30 PM	0	0	0	0	0	0	0	0	0	0	39	39	0	0	0	0	39
04:45 PM	0	0	0	0	0	0	0	0	0	0	41	41	0	0	0	0	41
Total	0	0	0	0	0	0	0	0	0	0	167	167	0	0	0	0	167
05:00 PM	0	0	0	0	0	0	0	0	0	0	45	45	0	0	0	0	45
05:15 PM	0	0	0	0	0	0	0	0	0	0	45	45	0	0	0	0	45
05:30 PM	0	0	0	0	0	0	0	0	0	0	37	37	0	0	0	0	37
05:45 PM	0	0	0	0	0	0	0	0	0	0	41	41	0	0	0	0	41
Total	0	0	0	0	0	0	0	0	0	0	168	168	0	0	0	0	168
Grand Total	0	0	0	0	0	0	0	0	0	0	335	335	0	0	0	0	335
Apprch %	0	0	0	0	0	0	0	0	0	0	100	100	0	0	0	0	100
Total %	0	0	0	0	0	0	0	0	0	0	100	100	0	0	0	0	100
Passenger Vehicles	0	0	0	0	0	0	0	0	0	0	335	335	0	0	0	0	335
% Passenger Vehicles	0	0	0	0	0	0	0	0	0	0	100	100	0	0	0	0	100
Large 2 Axle Vehicles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Large 2 Axle Vehicles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3 Axle Vehicles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% 3 Axle Vehicles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4+ Axle Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% 4+ Axle Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

	Aviation Boulevard Southbound				Artesia Boulevard Westbound				Aviation Boulevard Northbound				Artesia Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	0	0	0	0	0	0	0	0	0	0	39	39	0	0	0	0	39
04:45 PM	0	0	0	0	0	0	0	0	0	0	41	41	0	0	0	0	41
05:00 PM	0	0	0	0	0	0	0	0	0	0	45	45	0	0	0	0	45
05:15 PM	0	0	0	0	0	0	0	0	0	0	45	45	0	0	0	0	45
Total Volume	0	0	0	0	0	0	0	0	0	0	170	170	0	0	0	0	170
% App. Total	0	0	0	0	0	0	0	0	0	0	100	100	0	0	0	0	100
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.944	.944	.000	.000	.000	.000	.944

City of Redondo Beach
N/S: Aviation Boulevard
E/W: Artesia Boulevard
Weather: Clear

File Name : RDBAVARPM
Site Code : 12215000
Start Date : 10/22/2015
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Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:00 PM				04:00 PM				04:30 PM				04:00 PM			
+0 mins.	0	0	0	0	0	0	0	0	0	0	39	39	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0	0	41	41	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0	0	45	45	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0	0	45	45	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	170	170	0	0	0	0
% App. Total	0	0	0	0	0	0	0	0	0	0	100	100	0	0	0	0
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.944	.944	.000	.000	.000	.000

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City of Redondo Beach
N/S: Aviation Boulevard
E/W: Artesia Boulevard
Weather: Clear

File Name : RDBAVARPM
Site Code : 12215000
Start Date : 10/22/2015
Page No : 1

Groups Printed- Passenger Vehicles

	Aviation Boulevard Southbound				Artesia Boulevard Westbound				Aviation Boulevard Northbound				Artesia Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	0	0	50	50	0	0	0	0	50
04:15 PM	0	0	0	0	0	0	0	0	0	0	37	37	0	0	0	0	37
04:30 PM	0	0	0	0	0	0	0	0	0	0	39	39	0	0	0	0	39
04:45 PM	0	0	0	0	0	0	0	0	0	0	41	41	0	0	0	0	41
Total	0	0	0	0	0	0	0	0	0	0	167	167	0	0	0	0	167
05:00 PM	0	0	0	0	0	0	0	0	0	0	45	45	0	0	0	0	45
05:15 PM	0	0	0	0	0	0	0	0	0	0	45	45	0	0	0	0	45
05:30 PM	0	0	0	0	0	0	0	0	0	0	37	37	0	0	0	0	37
05:45 PM	0	0	0	0	0	0	0	0	0	0	41	41	0	0	0	0	41
Total	0	0	0	0	0	0	0	0	0	0	168	168	0	0	0	0	168
Grand Total	0	0	0	0	0	0	0	0	0	0	335	335	0	0	0	0	335
Apprch %	0	0	0		0	0	0		0	0	100		0	0	0		
Total %	0	0	0	0	0	0	0	0	0	0	100	100	0	0	0	0	

	Aviation Boulevard Southbound				Artesia Boulevard Westbound				Aviation Boulevard Northbound				Artesia Boulevard Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	0	0	0	0	0	0	0	0	0	0	39	39	0	0	0	0	39
04:45 PM	0	0	0	0	0	0	0	0	0	0	41	41	0	0	0	0	41
05:00 PM	0	0	0	0	0	0	0	0	0	0	45	45	0	0	0	0	45
05:15 PM	0	0	0	0	0	0	0	0	0	0	45	45	0	0	0	0	45
Total Volume	0	0	0	0	0	0	0	0	0	0	170	170	0	0	0	0	170
% App. Total	0	0	0		0	0	0		0	0	100		0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.944	.944	.000	.000	.000	.000	.944

City of Redondo Beach
N/S: Aviation Boulevard
E/W: Artesia Boulevard
Weather: Clear

File Name : RDBAVARPM
Site Code : 12215000
Start Date : 10/22/2015
Page No : 2



Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:30 PM				04:30 PM				04:30 PM				04:30 PM			
+0 mins.	0	0	0	0	0	0	0	0	0	0	39	39	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0	0	41	41	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0	0	45	45	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0	0	45	45	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	170	170	0	0	0	0
% App. Total	0	0	0	0	0	0	0	0	0	0	100	100	0	0	0	0
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.944	.944	.000	.000	.000	.000

City of Redondo Beach
N/S: Aviation Boulevard
E/W: Artesia Boulevard
Weather: Clear

File Name : RDBAVARPM
Site Code : 12215000
Start Date : 10/22/2015
Page No : 1

Groups Printed- Large 2 Axle Vehicles

[illegible][illegible]

File Name : RDBAVARPM
Site Code : 12215000
Start Date : 10/22/2015
Page No : 2

File Name : RDBAVARPM
Site Code : 12215000
Start Date : 10/22/2015
Page No : 1

Groups Printed- 3 Axle Vehicles

[illegible][illegible]

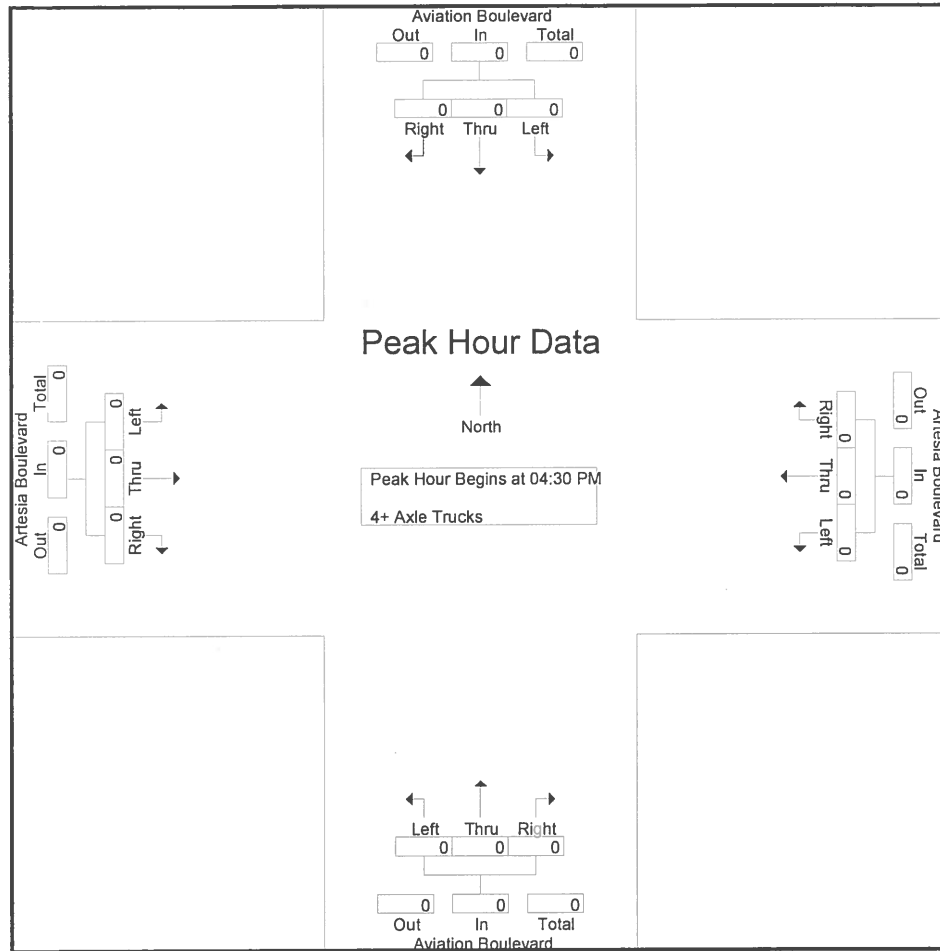
File Name : RDBAVARPM
Site Code : 12215000
Start Date : 10/22/2015
Page No : 2

File Name : RDBAVARPM
Site Code : 12215000
Start Date : 10/22/2015
Page No : 1

Groups Printed- 4+ Axle Trucks

[illegible]

City of Redondo Beach
N/S: Aviation Boulevard
E/W: Artesia Boulevard
Weather: Clear



Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

Peak Hour for Each Approach Begins at:																
	04:30 PM				04:30 PM				04:30 PM				04:30 PM			
+0 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
+15 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
+30 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
+45 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
% App. Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	

City: REDONO BEACH

Location: AVIATION BOULEVARD

Segment: S/O ARTESIA BOULEVARD

Date Start: 11-Oct-18

A1810001

NORTHBOUND, NORTHBOUND1

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
10/11/18	2	46	1	1	3	0	0	0	0	0	0	0	0	53
00:15	1	54	10	0	2	0	0	0	0	0	0	0	0	67
00:30	0	43	3	0	2	0	0	0	0	0	0	0	0	48
00:45	0	35	4	0	2	0	0	0	0	0	0	0	0	41
	3	178	18	1	9	0	0	0	0	0	0	0	0	209
01:00	0	16	2	0	0	0	0	0	0	0	0	0	0	18
01:15	0	27	0	0	0	0	0	0	0	0	0	0	0	27
01:30	0	24	2	0	0	0	0	0	0	0	0	0	0	26
01:45	0	27	2	0	0	0	0	0	0	0	0	0	0	29
	0	94	6	0	0	0	0	0	0	0	0	0	0	100
02:00	0	16	4	0	0	0	0	0	0	0	0	0	0	20
02:15	0	16	4	0	0	0	0	0	0	0	0	0	0	20
02:30	0	15	2	0	0	0	0	0	0	0	0	0	0	17
02:45	0	10	2	0	0	0	0	0	0	0	0	0	0	12
	0	57	12	0	0	0	0	0	0	0	0	0	0	69
03:00	1	17	2	0	0	0	0	2	0	0	0	0	0	22
03:15	0	10	4	0	0	0	0	0	0	0	0	0	0	14
03:30	0	9	2	0	2	0	0	0	0	0	0	0	0	13
03:45	0	24	2	0	2	0	0	0	0	0	0	0	0	28
	1	60	10	0	4	0	0	2	0	0	0	0	0	77
04:00	0	25	17	0	2	0	0	0	0	0	0	0	0	44
04:15	0	34	9	0	6	0	0	0	1	0	0	0	0	50
04:30	0	62	12	0	1	0	0	0	0	0	0	0	0	75
04:45	1	117	16	2	4	0	0	2	0	0	0	0	0	142
	1	238	54	2	13	0	0	2	1	0	0	0	0	311
05:00	1	102	17	0	2	0	0	0	0	0	0	0	0	122
05:15	0	123	28	0	6	2	0	1	0	0	0	0	0	160
05:30	0	203	35	0	4	2	1	1	0	0	0	0	0	246
05:45	0	237	41	0	5	2	0	4	3	1	0	0	0	293
	1	665	121	0	17	6	1	6	3	1	0	0	0	821
06:00	0	267	35	0	5	4	1	2	1	0	0	0	0	315
06:15	0	288	33	0	7	4	0	2	1	0	0	0	0	335
06:30	0	317	34	0	3	1	0	1	0	1	0	0	0	357
06:45	1	359	28	4	7	4	1	4	0	0	0	1	0	409
	1	1231	130	4	22	13	2	9	2	1	0	1	0	1416
07:00	0	260	23	0	4	5	0	2	0	1	0	0	0	295
07:15	0	336	36	0	7	6	0	0	0	0	0	0	0	385
07:30	1	320	42	0	1	4	0	2	0	1	0	0	0	371
07:45	0	189	12	4	4	3	1	2	0	0	0	0	0	215
	1	1105	113	4	16	18	1	6	0	2	0	0	0	1266
08:00	0	153	11	4	2	6	0	2	0	1	0	0	0	179
08:15	0	157	15	1	1	2	0	3	0	1	0	0	0	180
08:30	0	167	23	0	1	6	1	1	0	0	0	0	0	200
08:45	0	131	15	3	0	7	0	1	2	1	0	0	0	160
	0	608	64	8	4	21	1	7	3	3	0	0	0	719
09:00	0	312	32	2	4	5	0	3	0	0	1	0	0	359
09:15	0	253	53	0	5	6	0	1	1	0	0	0	0	319
09:30	0	242	39	0	1	8	3	5	2	0	0	0	0	300
09:45	1	241	50	4	7	5	0	0	1	3	0	0	0	312
	1	1048	174	6	17	24	3	9	4	3	1	0	0	1290
10:00	0	278	41	1	13	4	1	3	1	0	0	0	0	342
10:15	1	243	51	1	4	5	1	2	2	0	0	1	0	311
10:30	0	282	43	0	6	4	1	1	4	2	0	0	0	343
10:45	0	266	41	0	7	5	1	2	1	0	0	0	0	323
	1	1069	176	2	30	18	4	8	8	2	0	1	0	1319
11:00	0	253	35	2	10	4	2	2	0	1	0	0	0	309
11:15	1	232	39	0	14	2	2	4	0	0	0	0	0	294
11:30	0	313	51	0	5	1	0	4	1	0	0	0	0	375
11:45	1	214	42	2	11	1	1	1	0	1	0	0	0	274
	2	1012	167	4	40	8	5	11	1	2	0	0	0	1252
Total	12	7365	1045	31	172	108	17	60	22	14	1	2	0	8849
Percent	0.1%	83.2%	11.8%	0.4%	1.9%	1.2%	0.2%	0.7%	0.2%	0.2%	0.0%	0.0%	0.0%	

City: REDONO BEACH

Location: AVIATION BOULEVARD

Segment: S/O ARTESIA BOULEVARD

Date Start: 11-Oct-18

A1810001

NORTHBOUND, NORTHBOUND1

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
12 PM	0	254	37	2	7	9	1	6	2	0	0	0	0	318
12:15	0	216	49	0	7	2	1	2	4	0	0	0	0	281
12:30	0	241	51	2	7	3	2	1	2	0	0	0	0	309
12:45	0	248	50	3	6	6	0	3	0	0	0	0	0	316
	0	959	187	7	27	20	4	12	8	0	0	0	0	1224
13:00	0	237	35	0	2	3	0	1	0	0	0	0	0	278
13:15	0	229	30	1	7	6	0	1	0	0	0	0	0	274
13:30	0	263	32	3	10	4	1	2	2	0	0	0	1	318
13:45	0	233	41	0	6	4	0	2	1	2	0	0	0	289
	0	962	138	4	25	17	1	6	3	2	0	0	1	1159
14:00	1	188	31	3	6	3	1	4	0	1	0	0	0	238
14:15	0	215	44	3	12	4	0	4	0	0	0	0	0	282
14:30	0	203	43	2	0	4	1	3	0	0	0	0	0	256
14:45	1	211	42	3	9	3	0	1	2	0	0	0	0	272
	2	817	160	11	27	14	2	12	2	1	0	0	0	1048
15:00	1	242	33	3	5	5	0	1	0	2	0	0	0	292
15:15	1	249	36	0	8	7	0	6	0	2	0	0	0	309
15:30	0	228	19	0	6	6	0	1	0	0	0	0	0	260
15:45	1	216	45	2	13	3	0	1	0	0	0	0	0	281
	3	935	133	5	32	21	0	9	0	4	0	0	0	1142
16:00	0	248	31	3	6	4	2	1	0	0	0	0	0	295
16:15	0	237	31	0	5	1	0	5	0	0	0	0	0	279
16:30	0	253	57	0	2	5	0	4	0	0	0	0	0	321
16:45	0	249	40	0	6	2	0	4	0	0	0	0	0	301
	0	987	159	3	19	12	2	14	0	0	0	0	0	1196
17:00	0	297	29	0	7	2	1	2	0	0	0	0	0	338
17:15	0	225	40	1	3	0	0	5	1	1	0	0	0	276
17:30	0	265	30	1	3	2	1	6	0	1	0	0	0	309
17:45	0	252	28	0	0	5	0	1	0	0	0	0	0	286
	0	1039	127	2	13	9	2	14	1	2	0	0	0	1209
18:00	1	264	37	1	4	3	0	4	0	0	0	0	0	314
18:15	1	272	30	0	0	3	0	2	0	0	0	0	0	308
18:30	0	219	31	0	0	5	0	3	0	1	0	0	0	259
18:45	7	253	38	0	1	5	1	1	0	0	0	0	0	306
	9	1008	136	1	5	16	1	10	0	1	0	0	0	1187
19:00	7	224	34	0	3	2	0	2	0	0	0	0	0	272
19:15	0	271	22	0	7	3	0	0	0	0	0	0	0	303
19:30	0	242	22	0	7	4	0	1	2	1	0	0	0	279
19:45	1	219	22	2	2	4	1	0	1	0	0	0	0	252
	8	956	100	2	19	13	1	3	3	1	0	0	0	1106
20:00	1	189	13	0	2	2	0	0	0	0	0	0	0	207
20:15	0	209	22	0	3	0	1	2	0	0	0	0	0	237
20:30	0	193	19	0	3	0	0	1	0	0	0	0	0	216
20:45	0	161	14	0	2	0	0	3	0	0	0	0	0	180
	1	752	68	0	10	2	1	6	0	0	0	0	0	840
21:00	0	139	20	2	0	1	0	1	0	0	0	0	0	163
21:15	1	187	13	0	1	0	0	0	0	0	0	0	0	202
21:30	1	160	11	0	0	0	0	2	0	0	0	0	0	174
21:45	1	133	27	0	1	1	0	0	0	0	0	0	0	163
	3	619	71	2	2	2	0	3	0	0	0	0	0	702
22:00	2	129	9	0	0	1	0	0	0	0	0	0	0	141
22:15	0	129	11	0	2	2	0	0	0	0	0	0	0	144
22:30	1	99	16	0	0	0	0	0	0	0	0	0	0	116
22:45	2	84	9	0	0	0	0	0	0	0	0	0	0	95
	5	441	45	0	2	3	0	0	0	0	0	0	0	496
23:00	0	83	6	0	0	0	0	0	0	0	0	0	0	89
23:15	2	66	9	0	1	1	0	2	0	0	0	0	0	81
23:30	0	53	7	0	0	0	0	0	0	0	0	0	0	60
23:45	0	52	0	0	2	0	0	0	0	0	0	0	0	54
	2	254	22	0	3	1	0	2	0	0	0	0	0	284
Total	33	9729	1346	37	184	130	14	91	17	11	0	0	1	11593
Percent	0.3%	83.9%	11.6%	0.3%	1.6%	1.1%	0.1%	0.8%	0.1%	0.1%	0.0%	0.0%	0.0%	
Grand Total	45	17094	2391	68	356	238	31	151	39	25	1	2	1	20442
Percent	0.2%	83.6%	11.7%	0.3%	1.7%	1.2%	0.2%	0.7%	0.2%	0.1%	0.0%	0.0%	0.0%	

City: REDONO BEACH

Location: AVIATION BOULEVARD

Segment: S/O ARTESIA BOULEVARD

Date Start: 10-Oct-18

A1810001

NORTHBOUND, NORTHBOUND1

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
10/10/18	0	46	4	1	0	0	0	0	0	0	0	0	0	51
00:15	0	27	1	0	0	0	0	0	0	0	0	0	0	28
00:30	0	47	1	0	2	0	0	0	0	0	0	0	0	50
00:45	1	28	0	0	0	0	0	0	0	0	0	0	0	29
	1	148	6	1	2	0	0	0	0	0	0	0	0	158
01:00	0	43	1	0	0	0	0	0	0	0	0	0	0	44
01:15	0	24	1	0	0	0	0	0	0	0	0	0	0	25
01:30	0	19	2	0	0	0	0	0	0	0	0	0	0	21
01:45	0	19	7	0	0	0	0	1	0	0	0	0	0	27
	0	105	11	0	0	0	0	1	0	0	0	0	0	117
02:00	0	11	2	0	0	0	0	0	0	0	0	0	0	13
02:15	0	38	8	0	0	0	0	0	0	0	0	0	0	46
02:30	0	6	2	0	0	0	0	0	0	0	0	0	0	8
02:45	0	14	1	0	0	0	0	0	0	0	0	0	0	15
	0	69	13	0	0	0	0	0	0	0	0	0	0	82
03:00	0	21	1	0	0	0	0	0	0	0	0	0	0	22
03:15	0	12	7	0	0	0	0	0	0	0	0	0	0	19
03:30	0	10	8	0	1	0	0	0	0	0	0	0	0	19
03:45	2	27	9	0	4	0	0	0	0	0	0	0	0	42
	2	70	25	0	5	0	0	0	0	0	0	0	0	102
04:00	0	30	15	0	0	0	0	0	0	0	0	0	0	45
04:15	0	33	7	0	2	0	0	0	0	0	0	0	0	42
04:30	1	65	21	0	4	0	0	0	0	0	0	0	0	91
04:45	1	111	19	0	6	0	0	3	2	0	0	0	0	142
	2	239	62	0	12	0	0	3	2	0	0	0	0	320
05:00	0	106	27	0	2	1	0	0	0	0	0	0	0	136
05:15	1	153	23	0	3	1	0	1	2	1	0	0	0	185
05:30	0	225	46	0	3	1	0	2	0	0	0	0	0	277
05:45	0	255	56	0	7	1	0	4	0	0	0	0	0	323
	1	739	152	0	15	4	0	7	2	1	0	0	0	921
06:00	1	289	22	0	6	1	2	3	1	1	0	0	0	326
06:15	1	281	39	0	15	2	0	1	0	0	0	0	0	339
06:30	0	324	23	0	7	7	0	2	0	1	0	0	0	364
06:45	0	274	31	0	9	7	0	2	0	2	0	1	0	326
	2	1168	115	0	37	17	2	8	1	4	0	1	0	1355
07:00	1	329	29	0	6	3	1	2	0	1	0	0	0	372
07:15	1	262	33	0	4	2	0	0	1	1	0	0	0	304
07:30	0	248	11	0	2	2	0	0	1	1	0	0	0	265
07:45	0	181	15	0	5	3	0	1	1	2	1	1	0	210
	2	1020	88	0	17	10	1	3	3	5	1	1	0	1151
08:00	0	183	18	1	6	5	0	1	0	1	0	0	0	215
08:15	0	113	11	1	0	2	0	2	0	0	0	1	2	132
08:30	0	163	11	1	6	4	0	3	0	3	0	0	0	191
08:45	0	265	33	1	5	4	0	2	0	0	0	0	0	310
	0	724	73	4	17	15	0	8	0	4	0	1	2	848
09:00	0	160	8	1	5	3	1	3	0	0	1	0	0	182
09:15	1	239	23	2	3	4	0	4	0	0	0	0	0	276
09:30	1	251	44	0	7	7	0	4	0	0	0	1	0	315
09:45	0	313	32	2	8	4	1	1	0	0	0	0	0	361
	2	963	107	5	23	18	2	12	0	0	1	1	0	1134
10:00	1	269	40	2	9	4	1	1	0	0	0	0	0	327
10:15	0	288	41	1	6	5	0	2	0	0	0	0	0	343
10:30	0	285	38	1	13	2	1	3	0	0	0	0	0	343
10:45	2	231	29	0	4	2	1	5	2	0	0	0	0	276
	3	1073	148	4	32	13	3	11	2	0	0	0	0	1289
11:00	1	239	51	2	0	5	0	2	2	0	0	0	0	302
11:15	1	233	42	0	13	2	1	5	0	0	0	0	0	297
11:30	0	229	36	2	8	4	1	2	0	0	0	0	0	282
11:45	1	245	46	0	9	1	0	3	0	1	0	0	0	306
	3	946	175	4	30	12	2	12	2	1	0	0	0	1187
Total	18	7264	975	18	190	89	10	65	12	15	2	4	2	8664
Percent	0.2%	83.8%	11.3%	0.2%	2.2%	1.0%	0.1%	0.8%	0.1%	0.2%	0.0%	0.0%	0.0%	

City: REDONO BEACH

Location: AVIATION BOULEVARD

Segment: S/O ARTESIA BOULEVARD

Date Start: 10-Oct-18

A1810001

NORTHBOUND, NORTHBOUND1

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
12 PM	0	261	39	2	15	1	0	2	0	1	0	0	0	321
12:15	0	258	39	3	7	5	0	0	4	0	0	0	0	316
12:30	1	230	51	0	7	4	0	1	2	0	0	0	0	296
12:45	0	292	49	0	11	3	0	3	0	0	0	0	0	358
13:00	1	1041	178	5	40	13	0	6	6	1	0	0	0	1291
13:15	1	270	34	0	7	4	0	1	0	0	0	0	0	317
13:15	0	216	58	0	9	7	0	5	2	1	0	0	0	298
13:30	1	251	30	1	6	2	0	3	0	0	0	0	0	294
13:45	0	231	41	2	9	4	1	3	4	1	0	0	0	296
14:00	2	968	163	3	31	17	1	12	6	2	0	0	0	1205
14:00	0	244	34	0	1	4	1	2	1	1	0	0	0	288
14:15	1	212	45	2	9	6	0	2	0	1	0	0	0	278
14:30	1	230	35	0	6	3	0	1	0	1	0	0	0	277
14:45	1	248	37	3	7	3	0	5	0	0	0	0	0	304
15:00	3	934	151	5	23	16	1	10	1	3	0	0	0	1147
15:00	1	277	56	1	4	3	0	3	0	0	0	0	0	345
15:15	0	219	35	1	8	8	0	0	0	0	0	0	0	271
15:30	0	225	42	0	9	3	0	3	2	0	0	0	0	284
15:45	1	231	44	1	6	2	0	0	0	1	0	0	0	286
16:00	2	952	177	3	27	16	0	6	2	1	0	0	0	1186
16:00	1	233	40	0	14	7	0	3	0	1	0	0	0	299
16:15	0	260	52	3	7	4	1	5	1	0	0	0	0	333
16:30	0	216	66	1	4	4	2	1	0	0	0	0	0	294
16:45	1	242	54	0	2	2	0	0	0	1	1	0	0	303
17:00	2	951	212	4	27	17	3	9	1	2	1	0	0	1229
17:00	1	261	28	1	13	4	0	1	0	0	0	0	0	309
17:15	1	248	40	0	10	4	0	0	0	0	0	0	0	303
17:30	0	223	46	0	2	2	0	5	0	1	0	0	0	279
17:45	0	251	38	1	1	6	0	1	0	0	0	0	0	298
18:00	2	983	152	2	26	16	0	7	0	1	0	0	0	1189
18:00	1	286	32	0	7	4	1	2	0	0	0	0	0	333
18:15	1	243	35	0	6	0	0	1	0	0	0	0	0	286
18:30	0	240	26	0	4	1	0	2	0	0	0	0	0	273
18:45	0	267	42	0	1	2	1	8	0	0	0	0	0	321
19:00	2	1036	135	0	18	7	2	13	0	0	0	0	0	1213
19:00	1	266	20	0	2	2	1	0	0	0	0	0	0	292
19:15	1	256	20	0	6	5	3	0	0	0	0	0	0	291
19:30	0	200	21	0	1	2	0	0	0	0	0	0	0	224
19:45	0	205	22	0	2	4	0	0	2	0	0	0	0	235
20:00	2	927	83	0	11	13	4	0	2	0	0	0	0	1042
20:00	0	172	9	0	3	2	0	2	0	0	0	0	0	188
20:15	0	203	22	0	1	1	0	0	0	0	0	0	0	227
20:30	1	179	21	0	3	1	0	1	0	0	0	0	0	206
20:45	1	190	13	0	2	1	0	0	0	0	0	0	0	207
21:00	2	744	65	0	9	5	0	3	0	0	0	0	0	828
21:00	1	180	26	0	0	0	0	4	0	0	0	0	0	211
21:15	0	157	19	0	0	0	0	0	0	0	0	0	0	176
21:30	1	145	13	0	2	0	0	2	0	0	0	0	0	163
21:45	2	138	23	0	0	0	0	3	0	0	0	0	0	166
22:00	4	620	81	0	2	0	0	9	0	0	0	0	0	716
22:00	1	118	20	0	2	0	0	0	0	0	0	0	0	141
22:15	1	110	13	0	2	0	0	0	0	0	0	0	0	126
22:30	0	133	7	0	0	0	0	0	0	0	0	0	0	140
22:45	0	113	14	4	0	0	0	0	0	0	0	0	0	131
23:00	2	474	54	4	4	0	0	0	0	0	0	0	0	538
23:00	2	91	8	0	2	0	0	0	0	0	0	0	0	103
23:15	0	89	7	0	1	0	0	0	0	0	0	0	0	97
23:30	0	62	4	0	1	1	0	0	0	0	0	0	0	68
23:45	1	55	9	0	0	0	0	0	0	0	0	0	0	65
Total	3	297	28	0	4	1	0	0	0	0	0	0	0	333
Percent	0.2%	83.3%	12.4%	0.2%	1.9%	1.0%	0.1%	0.6%	0.2%	0.1%	0.0%	0.0%	0.0%	11917
Grand Total	45	17191	2454	44	412	210	21	140	30	25	3	4	2	20581
Percent	0.2%	83.5%	11.9%	0.2%	2.0%	1.0%	0.1%	0.7%	0.1%	0.1%	0.0%	0.0%	0.0%	

City: REDONDO BEACH

Location: AVIATION BOULEVARD

Segment: S/O ARTESIA BOULEVARD

Date Start: 11-Oct-18

a1810001s

SOUTHBOUND, SOUTHBOUND1

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
10/11/18	0	52	5	0	2	0	0	0	0	0	0	0	0	59
00:15	1	41	7	0	1	0	1	0	0	0	0	0	0	51
00:30	0	27	5	0	0	0	0	1	0	0	0	0	0	33
00:45	1	30	4	0	1	0	0	0	0	0	0	0	0	36
	2	150	21	0	4	0	1	1	0	0	0	0	0	179
01:00	0	20	4	0	0	0	0	0	0	0	0	0	0	24
01:15	0	18	7	0	1	0	0	0	0	0	0	0	0	26
01:30	0	17	0	0	0	0	0	0	0	0	0	0	0	17
01:45	0	12	6	2	1	0	0	0	0	0	0	0	0	21
	0	67	17	2	2	0	0	0	0	0	0	0	0	88
02:00	0	12	4	0	0	0	0	0	0	0	0	0	0	16
02:15	0	9	1	0	0	0	0	0	0	0	0	0	0	10
02:30	0	10	4	0	0	0	0	2	0	0	0	0	0	16
02:45	1	10	2	0	0	0	0	0	0	0	0	0	0	13
	1	41	11	0	0	0	0	2	0	0	0	0	0	55
03:00	0	6	1	0	0	0	0	0	0	0	0	0	0	7
03:15	0	8	4	0	0	0	0	0	0	0	0	0	0	12
03:30	0	9	4	0	0	0	0	0	0	0	0	0	0	13
03:45	0	23	9	0	0	0	0	0	2	0	0	0	0	34
	0	46	18	0	0	0	0	0	2	0	0	0	0	66
04:00	0	15	4	2	1	0	0	0	0	0	0	0	0	22
04:15	0	14	2	0	1	0	0	2	0	0	0	0	0	19
04:30	0	11	8	1	2	0	0	2	0	0	0	0	0	24
04:45	2	48	8	0	1	0	0	1	1	0	0	0	0	61
	2	88	22	3	5	0	0	5	1	0	0	0	0	126
05:00	0	16	9	0	0	0	0	0	0	0	0	0	0	25
05:15	1	38	8	0	2	0	0	1	3	0	0	0	0	53
05:30	0	35	8	2	4	0	0	0	0	0	0	0	0	49
05:45	0	58	10	0	6	1	0	0	1	0	0	0	0	76
	1	147	35	2	12	1	0	1	4	0	0	0	0	203
06:00	0	44	14	2	1	1	0	0	0	0	0	0	0	62
06:15	2	66	16	0	4	0	0	1	0	0	1	0	0	90
06:30	0	115	14	4	5	1	0	3	2	0	0	0	0	144
06:45	0	108	37	1	11	0	1	2	0	0	0	0	0	160
	2	333	81	7	21	2	1	6	2	0	1	0	0	456
07:00	0	123	25	0	12	2	1	3	0	0	1	0	0	167
07:15	0	178	49	2	13	3	0	2	0	2	0	0	0	249
07:30	0	201	52	1	10	5	1	6	0	0	0	0	0	276
07:45	1	166	62	2	18	5	1	6	1	0	0	1	0	263
	1	668	188	5	53	15	3	17	1	2	1	1	0	955
08:00	1	146	42	1	16	9	0	3	0	1	0	0	0	219
08:15	0	146	46	2	9	4	0	8	0	1	0	1	1	218
08:30	0	183	42	0	16	6	0	3	0	0	0	0	0	250
08:45	0	172	44	2	11	6	1	2	0	1	0	0	1	240
	1	647	174	5	52	25	1	16	0	3	0	1	2	927
09:00	0	152	51	1	11	5	0	5	0	0	0	0	0	225
09:15	1	183	49	0	12	5	2	5	1	0	0	0	0	258
09:30	0	167	51	0	6	4	0	1	2	0	1	0	0	232
09:45	1	181	48	4	12	4	0	4	1	0	0	0	0	255
	2	683	199	5	41	18	2	15	4	0	1	0	0	970
10:00	0	156	30	0	14	3	3	1	0	0	0	0	0	207
10:15	1	159	28	1	14	2	0	1	0	1	0	0	0	207
10:30	0	158	46	0	15	0	0	0	2	0	0	0	0	221
10:45	0	189	46	1	17	2	0	3	1	0	0	0	0	259
	1	662	150	2	60	7	3	5	3	1	0	0	0	894
11:00	0	151	38	0	15	5	0	3	1	0	0	0	0	213
11:15	1	171	25	2	16	7	0	3	0	0	0	0	0	225
11:30	0	228	41	1	13	3	1	1	0	0	0	0	0	288
11:45	0	240	32	2	6	3	0	2	1	1	1	0	0	288
	1	790	136	5	50	18	1	9	2	1	1	0	0	1014
Total	14	4322	1052	36	300	86	12	77	19	7	4	2	2	5933
Percent	0.2%	72.8%	17.7%	0.6%	5.1%	1.4%	0.2%	1.3%	0.3%	0.1%	0.1%	0.0%	0.0%	

City: REDONDO BEACH

Location: AVIATION BOULEVARD

Segment: S/O ARTESIA BOULEVARD

Date Start: 11-Oct-18

a1810001s

SOUTHBOUND, SOUTHBOUND1

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
12 PM	1	198	44	3	14	3	2	5	0	1	0	0	0	271
12:15	1	187	40	3	14	3	0	4	0	0	0	0	0	252
12:30	0	217	47	0	11	8	2	3	0	0	0	0	0	288
12:45	0	243	48	2	13	3	0	2	2	0	0	0	0	313
	2	845	179	8	52	17	4	14	2	1	0	0	0	1124
13:00	1	235	48	1	22	2	3	0	1	1	0	0	0	314
13:15	0	272	47	0	10	6	1	4	0	0	1	0	0	341
13:30	1	242	53	2	19	1	0	3	0	1	0	0	1	323
13:45	0	273	62	1	10	5	0	5	0	2	0	0	0	358
	2	1022	210	4	61	14	4	12	1	4	1	0	1	1336
14:00	0	236	40	0	13	2	0	4	0	1	0	0	0	296
14:15	1	254	55	1	8	1	0	6	0	0	0	0	0	326
14:30	0	258	51	1	16	4	1	2	1	1	0	1	0	336
14:45	1	312	49	0	11	10	1	3	0	0	0	0	0	387
	2	1060	195	2	48	17	2	15	1	2	0	1	0	1345
15:00	0	268	64	0	14	4	1	4	0	1	0	0	0	356
15:15	1	322	55	0	7	5	1	5	0	1	0	0	0	397
15:30	0	258	57	3	12	12	0	2	0	0	0	0	0	344
15:45	0	314	55	3	7	6	0	4	1	0	2	1	0	393
	1	1162	231	6	40	27	2	15	1	2	2	1	0	1490
16:00	1	340	57	1	11	3	2	4	0	2	0	0	0	421
16:15	0	324	50	0	12	7	1	3	0	0	1	0	0	398
16:30	0	329	43	0	18	3	1	5	0	0	0	0	0	399
16:45	0	343	59	0	9	6	0	4	0	1	0	0	0	422
	1	1336	209	1	50	19	4	16	0	3	1	0	0	1640
17:00	0	323	46	2	8	10	0	7	2	1	0	0	0	399
17:15	0	345	49	1	5	12	1	4	0	1	1	0	0	419
17:30	0	345	49	1	12	10	0	7	1	0	1	1	0	427
17:45	0	335	57	0	16	5	0	2	0	0	0	0	0	415
	0	1348	201	4	41	37	1	20	3	2	2	1	0	1660
18:00	0	366	58	0	8	8	1	1	1	1	1	0	0	445
18:15	0	304	42	3	7	7	0	2	0	2	0	0	0	367
18:30	0	418	45	2	4	9	4	5	1	2	0	1	0	491
18:45	0	340	46	0	10	5	0	4	0	1	0	0	0	406
	0	1428	191	5	29	29	5	12	2	6	1	1	0	1709
19:00	0	324	50	0	14	3	0	3	0	0	0	0	0	394
19:15	0	321	48	1	6	6	0	5	0	0	0	0	1	388
19:30	0	306	32	1	9	4	1	2	0	1	0	0	0	356
19:45	1	315	40	0	2	6	3	4	0	0	1	0	0	372
	1	1266	170	2	31	19	4	14	0	1	1	0	1	1510
20:00	0	269	33	0	6	3	0	2	0	1	1	0	0	315
20:15	0	340	34	0	3	4	0	4	0	0	0	0	0	385
20:30	1	180	24	0	1	4	0	2	0	0	0	0	0	212
20:45	0	225	24	0	12	2	0	2	0	0	0	0	0	265
	1	1014	115	0	22	13	0	10	0	1	1	0	0	1177
21:00	1	180	13	0	4	2	0	1	0	1	0	0	0	202
21:15	0	191	21	0	3	0	0	1	0	0	0	0	0	216
21:30	1	139	13	0	4	0	1	1	0	0	0	0	0	159
21:45	0	135	12	0	6	1	0	3	0	1	0	0	0	158
	2	645	59	0	17	3	1	6	0	2	0	0	0	735
22:00	1	142	22	0	1	0	1	2	1	1	1	0	0	172
22:15	0	122	27	0	1	1	1	1	0	0	0	0	0	153
22:30	0	126	16	0	3	0	0	1	0	0	0	0	0	146
22:45	0	118	1	0	0	0	1	2	0	0	0	0	0	122
	1	508	66	0	5	1	3	6	1	1	1	0	0	593
23:00	0	95	8	0	4	2	0	0	0	0	0	0	0	109
23:15	1	88	12	1	2	0	0	0	0	0	0	0	0	104
23:30	0	57	5	0	0	0	0	0	0	0	0	0	0	62
23:45	0	49	9	0	2	0	0	0	0	0	0	0	0	60
	1	289	34	1	8	2	0	0	0	0	0	0	0	335
Total	14	11923	1860	33	404	198	30	140	11	25	10	4	2	14654
Percent	0.1%	81.4%	12.7%	0.2%	2.8%	1.4%	0.2%	1.0%	0.1%	0.2%	0.1%	0.0%	0.0%	
Grand Total	28	16245	2912	69	704	284	42	217	30	32	14	6	4	20587
Percent	0.1%	78.9%	14.1%	0.3%	3.4%	1.4%	0.2%	1.1%	0.1%	0.2%	0.1%	0.0%	0.0%	

City: REDONDO BEACH

Location: AVIATION BOULEVARD

Segment: S/O ARTESIA BOULEVARD

Date Start: 10-Oct-18

a1810001s

SOUTHBOUND, SOUTHBOUND1

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
10/10/18	0	44	2	0	0	0	0	1	0	0	0	0	0	47
00:15	0	41	11	1	1	0	2	0	0	0	0	0	0	56
00:30	0	38	3	0	1	0	0	0	0	0	0	0	0	42
00:45	2	32	3	0	0	0	0	0	0	0	0	0	0	37
	2	155	19	1	2	0	2	1	0	0	0	0	0	182
01:00	1	22	7	0	2	0	0	0	0	0	0	0	0	32
01:15	0	17	4	0	0	0	0	0	0	0	0	0	0	21
01:30	1	19	4	0	0	0	0	0	0	0	0	0	0	24
01:45	0	19	5	0	1	0	0	0	0	0	0	0	0	25
	2	77	20	0	3	0	0	0	0	0	0	0	0	102
02:00	1	20	2	0	0	0	0	0	0	0	0	0	0	23
02:15	0	13	1	0	1	0	0	0	0	0	0	0	0	15
02:30	0	15	0	0	0	0	0	2	0	0	0	0	0	17
02:45	0	15	6	0	1	0	0	0	0	0	0	0	0	22
	1	63	9	0	2	0	0	2	0	0	0	0	0	77
03:00	0	8	2	0	0	0	0	0	0	0	0	0	0	10
03:15	0	16	5	0	0	0	0	0	0	0	0	0	0	21
03:30	0	15	7	0	0	0	0	0	0	0	0	0	0	22
03:45	0	19	6	0	0	1	0	0	0	0	0	0	0	26
	0	58	20	0	0	1	0	0	0	0	0	0	0	79
04:00	0	15	7	0	2	0	0	0	1	0	0	0	0	25
04:15	0	9	2	0	3	0	0	2	0	0	0	0	0	16
04:30	0	13	8	0	7	0	0	1	0	0	0	0	0	29
04:45	1	31	5	0	0	0	0	0	2	0	0	0	0	39
	1	68	22	0	12	0	0	3	3	0	0	0	0	109
05:00	0	25	4	0	0	0	0	0	0	0	0	0	0	29
05:15	0	31	14	0	2	0	0	2	0	0	0	0	0	49
05:30	0	48	8	1	5	0	0	0	0	0	0	0	0	62
05:45	0	64	9	0	2	0	0	0	1	0	0	0	0	76
	0	168	35	1	9	0	0	2	1	0	0	0	0	216
06:00	0	63	22	0	5	0	0	1	0	0	0	0	0	91
06:15	1	62	15	2	4	1	0	0	0	0	0	0	0	85
06:30	0	97	17	3	7	2	0	0	0	0	0	0	0	126
06:45	0	113	22	0	9	1	0	1	0	0	0	0	0	146
	1	335	76	5	25	4	0	2	0	0	0	0	0	448
07:00	0	110	36	0	10	4	0	6	0	0	0	0	0	166
07:15	0	158	54	1	13	2	0	4	0	0	0	0	0	232
07:30	0	194	52	0	14	3	1	9	0	0	0	1	0	274
07:45	0	174	54	0	13	6	3	5	0	1	0	0	0	256
	0	636	196	1	50	15	4	24	0	1	0	1	0	928
08:00	1	183	58	1	15	2	0	3	0	0	0	0	0	263
08:15	0	164	40	1	13	1	2	8	1	1	0	0	0	231
08:30	1	159	28	0	9	3	0	2	0	1	0	0	0	203
08:45	0	202	44	0	15	8	0	3	0	0	0	1	0	273
	2	708	170	2	52	14	2	16	1	2	0	1	0	970
09:00	0	169	42	2	12	3	1	6	0	0	0	0	0	235
09:15	1	170	38	0	7	4	0	3	1	1	0	0	0	225
09:30	1	167	38	1	15	5	1	1	0	1	0	0	0	230
09:45	0	137	31	3	9	2	1	2	0	0	0	0	0	185
	2	643	149	6	43	14	3	12	1	2	0	0	0	875
10:00	1	130	31	3	14	2	0	1	0	0	0	0	1	183
10:15	0	146	39	0	10	6	0	2	2	0	0	0	0	205
10:30	0	210	37	2	8	7	1	4	0	0	0	0	1	270
10:45	1	183	39	1	16	5	0	2	0	0	0	0	0	247
	2	669	146	6	48	20	1	9	2	0	0	0	2	905
11:00	0	154	42	0	6	2	0	5	1	1	0	0	0	211
11:15	0	183	41	1	19	4	0	1	1	0	0	0	0	250
11:30	1	181	47	0	8	0	1	2	0	0	1	0	0	241
11:45	0	190	43	0	10	5	1	2	2	1	0	1	0	255
Total	14	4288	1035	23	289	79	14	81	12	7	1	3	2	5848
Percent	0.2%	73.3%	17.7%	0.4%	4.9%	1.4%	0.2%	1.4%	0.2%	0.1%	0.0%	0.1%	0.0%	

City: REDONDO BEACH

Location: AVIATION BOULEVARD

Segment: S/O ARTESIA BOULEVARD

Date Start: 10-Oct-18

a1810001s

SOUTHBOUND, SOUTHBOUND1

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
12 PM	0	218	52	2	20	7	0	5	1	0	0	0	0	305
12:15	0	237	56	0	9	3	0	7	1	2	0	1	0	316
12:30	0	219	44	0	13	0	0	5	0	0	0	0	0	281
12:45	0	239	27	2	13	3	0	1	1	1	1	0	1	289
	0	913	179	4	55	13	0	18	3	3	1	1	1	1191
13:00	2	226	44	0	12	1	0	3	0	2	0	0	0	290
13:15	0	212	46	0	7	6	0	5	0	1	0	0	0	277
13:30	0	253	41	1	9	9	0	5	0	2	0	0	0	320
13:45	0	231	39	0	7	4	0	4	2	0	0	0	0	287
	2	922	170	1	35	20	0	17	2	5	0	0	0	1174
14:00	0	213	36	0	15	4	2	2	0	1	0	0	0	273
14:15	0	256	57	0	15	3	0	9	0	1	0	0	0	341
14:30	0	271	53	2	6	7	1	2	1	1	0	0	0	344
14:45	0	293	42	1	13	1	0	2	0	2	0	0	0	354
	0	1033	188	3	49	15	3	15	1	5	0	0	0	1312
15:00	0	270	54	1	7	11	1	7	1	0	0	0	0	352
15:15	0	300	66	1	16	4	3	9	1	1	0	0	0	401
15:30	1	294	57	0	20	5	2	1	0	1	0	1	0	382
15:45	0	363	76	1	14	5	1	2	1	1	0	0	0	464
	1	1227	253	3	57	25	7	19	3	3	0	1	0	1599
16:00	0	289	44	0	17	6	0	6	0	0	0	0	1	363
16:15	0	369	59	1	11	7	3	3	0	2	0	1	0	456
16:30	0	337	52	2	10	7	2	9	1	1	1	1	0	423
16:45	0	333	52	1	11	4	2	9	1	2	0	0	0	415
	0	1328	207	4	49	24	7	27	2	5	1	2	1	1657
17:00	0	340	51	0	12	10	0	6	1	1	0	0	1	422
17:15	0	337	51	0	10	4	3	3	0	0	1	0	0	409
17:30	0	352	39	0	9	7	0	3	1	0	1	0	0	412
17:45	0	351	39	0	7	6	1	2	0	1	0	0	0	407
	0	1380	180	0	38	27	4	14	2	2	2	0	1	1650
18:00	0	359	35	1	7	12	3	5	2	0	0	0	0	424
18:15	0	365	28	0	4	6	0	4	0	0	0	0	0	407
18:30	0	353	39	0	6	9	2	5	1	3	0	0	0	418
18:45	0	355	27	0	6	12	0	3	0	1	0	0	0	404
	0	1432	129	1	23	39	5	17	3	4	0	0	0	1653
19:00	0	329	46	1	5	6	3	5	0	1	0	0	0	396
19:15	0	335	60	0	6	10	4	2	0	0	0	0	0	417
19:30	0	301	48	2	4	1	2	2	0	1	0	0	0	361
19:45	0	311	33	1	9	1	0	5	0	0	1	0	0	361
	0	1276	187	4	24	18	9	14	0	2	1	0	0	1535
20:00	0	273	35	0	5	3	2	3	2	0	1	0	0	324
20:15	1	275	40	0	5	4	1	4	0	0	0	0	0	330
20:30	0	236	36	0	7	1	0	1	0	0	0	0	0	281
20:45	2	194	34	0	8	3	1	0	0	1	0	0	0	243
	3	978	145	0	25	11	4	8	2	1	1	0	0	1178
21:00	0	198	25	0	6	1	2	2	0	0	0	0	0	234
21:15	0	139	18	0	1	0	0	0	0	1	0	0	0	159
21:30	1	166	22	0	1	2	0	0	0	0	0	0	0	192
21:45	0	145	19	0	2	2	0	0	0	0	0	0	0	168
	1	648	84	0	10	5	2	2	0	1	0	0	0	753
22:00	0	178	21	0	6	0	0	0	0	0	0	0	0	205
22:15	0	117	19	0	1	0	0	0	0	0	0	0	0	137
22:30	1	127	11	0	1	1	2	1	0	0	0	0	0	144
22:45	0	116	7	0	4	0	0	0	0	0	0	0	0	127
	1	538	58	0	12	1	2	1	0	0	0	0	0	613
23:00	0	90	10	0	0	0	0	0	2	0	0	0	0	102
23:15	1	59	8	0	2	1	0	0	0	0	0	0	0	71
23:30	0	47	9	0	0	0	0	0	0	0	0	0	0	56
23:45	0	67	4	0	0	0	0	0	0	0	0	0	0	71
	1	263	31	0	2	1	0	0	2	0	0	0	0	300
Total	9	11938	1811	20	379	199	43	152	20	31	6	4	3	14615
Percent	0.1%	81.7%	12.4%	0.1%	2.6%	1.4%	0.3%	1.0%	0.1%	0.2%	0.0%	0.0%	0.0%	
Grand Total	23	16226	2846	43	668	278	57	233	32	38	7	7	5	20463
Percent	0.1%	79.3%	13.9%	0.2%	3.3%	1.4%	0.3%	1.1%	0.2%	0.2%	0.0%	0.0%	0.0%	

City: REDONDO BEACH

Location: ARTESIA BOULEVARD

Segment: E/O AVIATION BOULEVARD

Date Start: 11-Oct-18

A1810002E

EASTBOUND, EASTBOUND1

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
10/11/18	1	28	1	0	0	0	0	0	0	0	0	0	0	30
00:15	0	32	4	0	0	0	0	0	0	0	0	0	0	36
00:30	0	24	3	0	0	0	0	0	0	0	0	0	0	27
00:45	0	12	2	0	0	0	0	0	0	0	0	0	0	14
	1	96	10	0	0	0	0	0	0	0	0	0	0	107
01:00	1	15	2	0	0	0	0	0	0	0	0	0	0	18
01:15	1	13	1	0	0	0	0	0	0	0	0	0	0	15
01:30	2	11	3	0	0	0	0	0	0	0	0	0	0	16
01:45	0	23	0	0	0	0	0	0	0	0	0	0	0	23
	4	62	6	0	0	0	0	0	0	0	0	0	0	72
02:00	0	10	2	0	2	0	0	0	0	0	0	0	0	14
02:15	2	11	3	0	0	0	0	0	0	0	0	0	0	16
02:30	0	8	0	0	0	0	0	0	0	0	0	0	0	8
02:45	0	1	4	0	0	0	0	0	0	0	0	0	0	5
	2	30	9	0	2	0	0	0	0	0	0	0	0	43
03:00	0	6	0	0	0	0	0	0	0	0	0	0	0	6
03:15	0	7	1	0	0	0	0	0	0	0	0	0	0	8
03:30	0	3	2	0	0	0	0	0	0	0	0	0	0	5
03:45	0	8	2	0	2	0	0	0	0	0	0	0	0	12
	0	24	5	0	2	0	0	0	0	0	0	0	0	31
04:00	0	6	3	0	0	0	0	0	0	0	0	0	0	9
04:15	0	13	2	0	0	0	0	0	0	0	0	0	0	15
04:30	0	17	2	0	0	0	0	0	0	0	0	0	0	19
04:45	1	17	4	0	1	0	0	0	0	0	0	0	0	23
	1	53	11	0	1	0	0	0	0	0	0	0	0	66
05:00	0	14	4	0	1	0	0	0	0	0	0	0	0	19
05:15	0	27	3	2	2	0	0	0	2	0	0	0	0	36
05:30	0	35	7	0	2	0	0	0	0	0	0	0	0	44
05:45	0	33	8	4	1	0	0	1	1	0	0	0	0	48
	0	109	22	6	6	0	0	1	3	0	0	0	0	147
06:00	0	53	9	0	0	0	0	0	0	0	0	0	0	62
06:15	2	48	11	2	0	0	0	1	1	0	0	0	0	65
06:30	1	78	5	1	0	0	0	0	1	0	0	0	0	86
06:45	0	81	9	3	2	0	0	0	0	0	0	0	0	95
	3	260	34	6	2	0	0	1	2	0	0	0	0	308
07:00	0	126	13	1	2	0	0	0	0	0	0	0	0	142
07:15	0	104	16	2	1	1	0	1	0	0	0	0	0	125
07:30	0	141	7	1	1	1	0	1	0	0	0	0	0	152
07:45	1	133	11	2	3	1	1	0	0	0	0	0	0	152
	1	504	47	6	7	3	1	2	0	0	0	0	0	571
08:00	0	146	17	1	3	1	2	1	0	0	0	0	0	171
08:15	0	155	10	1	4	1	0	0	0	0	0	0	0	171
08:30	0	143	30	2	7	4	0	1	0	0	0	0	0	187
08:45	0	150	22	1	2	5	0	2	2	0	0	0	0	184
	0	594	79	5	16	11	2	4	2	0	0	0	0	713
09:00	2	130	16	2	3	2	0	0	0	0	1	0	0	156
09:15	1	130	22	1	9	1	1	2	1	0	0	0	0	168
09:30	1	107	20	2	10	4	0	2	2	0	0	0	0	148
09:45	0	136	30	2	3	1	0	0	1	0	0	0	0	173
	4	503	88	7	25	8	1	4	4	0	1	0	0	645
10:00	0	152	30	2	8	3	0	2	0	0	0	0	0	197
10:15	0	150	25	2	6	0	0	2	3	0	0	0	0	188
10:30	1	130	24	1	2	3	1	0	2	0	1	0	0	165
10:45	0	149	21	1	6	3	0	1	2	0	0	0	0	183
	1	581	100	6	22	9	1	5	7	0	1	0	0	733
11:00	0	120	23	4	8	3	1	0	1	0	0	0	0	160
11:15	1	125	35	0	11	6	3	1	1	0	0	0	0	183
11:30	0	150	25	3	2	1	0	0	2	0	0	0	0	183
11:45	0	154	22	0	5	2	1	1	0	0	0	0	0	185
	1	549	105	7	26	12	5	2	4	0	0	0	0	711
Total	18	3365	516	43	109	43	10	19	22	0	2	0	0	4147
Percent	0.4%	81.1%	12.4%	1.0%	2.6%	1.0%	0.2%	0.5%	0.5%	0.0%	0.0%	0.0%	0.0%	

City: REDONDO BEACH

Location: ARTESIA BOULEVARD

Segment: E/O AVIATION BOULEVARD

Date Start: 11-Oct-18

A1810002E

EASTBOUND, EASTBOUND1

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
12 PM	0	151	23	2	4	3	0	2	4	0	0	0	0	189
12:15	0	171	36	0	6	3	0	3	0	0	0	0	0	219
12:30	0	153	34	3	8	2	1	3	0	0	0	0	0	204
12:45	1	147	29	4	6	0	1	3	0	0	0	0	0	191
	1	622	122	9	24	8	2	11	4	0	0	0	0	803
13:00	1	159	26	0	8	3	1	2	1	0	2	0	0	203
13:15	1	162	36	4	5	1	0	0	1	0	0	0	0	210
13:30	1	146	20	2	11	1	0	0	1	0	1	0	0	183
13:45	1	153	33	2	4	3	0	2	1	0	0	0	0	199
	4	620	115	8	28	8	1	4	4	0	3	0	0	795
14:00	1	176	27	1	11	2	0	2	0	0	0	0	0	220
14:15	0	176	24	3	7	3	1	5	0	1	0	0	0	220
14:30	1	159	28	1	5	1	0	1	0	0	0	0	0	196
14:45	1	157	39	1	10	1	0	1	2	0	0	0	0	212
	3	668	118	6	33	7	1	9	2	1	0	0	0	848
15:00	1	175	38	1	6	5	0	0	1	0	0	0	0	227
15:15	0	212	29	4	11	2	0	2	0	0	0	0	0	260
15:30	0	173	30	0	12	1	0	1	1	1	0	0	0	219
15:45	1	138	44	3	6	3	0	2	0	1	0	0	0	198
	2	698	141	8	35	11	0	5	2	2	0	0	0	904
16:00	1	208	28	3	5	2	1	0	0	0	1	0	0	249
16:15	1	205	46	2	5	5	0	0	1	0	0	0	0	265
16:30	0	141	27	2	6	1	0	0	0	0	0	0	0	177
16:45	0	173	28	2	5	2	0	3	0	0	2	0	0	215
	2	727	129	9	21	10	1	3	1	0	3	0	0	906
17:00	0	192	31	0	5	2	0	0	0	0	0	0	0	230
17:15	0	199	32	3	7	2	0	0	0	0	0	0	0	243
17:30	0	185	25	0	1	0	0	0	0	0	0	0	1	212
17:45	0	248	39	1	5	1	0	0	0	0	0	0	0	294
	0	824	127	4	18	5	0	0	0	0	0	0	1	979
18:00	1	208	25	3	5	0	1	0	0	0	1	0	0	244
18:15	0	227	24	2	5	0	0	2	0	0	0	0	0	260
18:30	0	182	14	0	5	0	0	0	0	0	0	0	0	201
18:45	0	200	21	1	5	2	0	0	0	0	0	0	0	229
	1	817	84	6	20	2	1	2	0	0	1	0	0	934
19:00	0	198	26	1	2	5	1	1	0	0	0	0	0	234
19:15	1	191	15	1	1	1	0	0	0	0	0	0	0	210
19:30	0	170	17	0	2	0	0	0	0	0	1	0	0	190
19:45	0	144	13	2	1	0	0	0	1	0	0	0	0	161
	1	703	71	4	6	6	1	1	1	0	1	0	0	795
20:00	0	159	14	2	1	0	0	0	0	0	0	0	1	177
20:15	0	154	18	0	1	0	0	0	0	0	1	0	0	174
20:30	1	135	10	2	0	0	0	0	0	0	0	0	0	148
20:45	0	120	13	0	1	0	0	0	0	0	0	0	0	134
	1	568	55	4	3	0	0	0	0	0	1	0	1	633
21:00	1	138	14	3	0	0	0	0	0	0	0	0	0	156
21:15	0	128	10	0	2	0	0	0	0	0	0	0	0	140
21:30	0	90	7	1	1	1	0	0	0	0	0	0	0	100
21:45	0	90	10	2	0	0	0	0	0	0	0	0	0	102
	1	446	41	6	3	1	0	0	0	0	0	0	0	498
22:00	0	76	9	0	0	0	0	0	0	0	0	0	0	85
22:15	0	67	4	0	1	0	0	0	0	0	0	0	0	72
22:30	2	66	4	0	0	0	0	0	0	0	0	0	0	72
22:45	1	60	13	1	0	0	0	0	0	0	0	0	0	75
	3	269	30	1	1	0	0	0	0	0	0	0	0	304
23:00	1	49	6	0	0	0	0	0	0	0	0	0	0	56
23:15	1	38	3	0	1	0	0	1	0	0	0	0	0	44
23:30	0	51	5	0	1	0	0	0	0	0	0	0	0	57
23:45	0	26	2	0	1	0	0	0	0	0	0	0	0	29
	2	164	16	0	3	0	0	1	0	0	0	0	0	186
Total	21	7126	1049	65	195	58	7	36	14	3	9	0	2	8585
Percent	0.2%	83.0%	12.2%	0.8%	2.3%	0.7%	0.1%	0.4%	0.2%	0.0%	0.1%	0.0%	0.0%	
Grand Total	39	10491	1565	108	304	101	17	55	36	3	11	0	2	12732
Percent	0.3%	82.4%	12.3%	0.8%	2.4%	0.8%	0.1%	0.4%	0.3%	0.0%	0.1%	0.0%	0.0%	

City: REDONDO BEACH

Location: ARTESIA BOULEVARD

Segment: E/O AVIATION BOULEVARD

Date Start: 10-Oct-18

A1810002E

EASTBOUND, EASTBOUND1

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
10/10/18	0	24	2	0	0	0	0	0	0	0	0	0	0	26
00:15	0	18	0	0	0	0	0	0	0	0	0	0	0	18
00:30	1	29	0	0	1	0	0	0	0	0	0	0	0	31
00:45	0	13	1	0	0	0	0	0	0	0	0	0	0	14
	1	84	3	0	1	0	0	0	0	0	0	0	0	89
01:00	0	13	0	0	1	0	0	0	0	0	0	0	0	14
01:15	2	15	2	0	0	0	0	0	0	0	0	0	0	19
01:30	0	12	1	0	0	0	0	0	0	0	0	0	0	13
01:45	2	10	3	0	0	0	0	0	0	0	0	0	0	15
	4	50	6	0	1	0	0	0	0	0	0	0	0	61
02:00	0	12	2	0	0	0	0	0	0	0	0	0	0	14
02:15	2	10	4	0	1	0	0	0	1	0	0	0	0	18
02:30	0	7	2	0	0	0	0	0	0	0	0	0	0	9
02:45	0	5	1	0	0	0	0	0	0	0	0	0	0	6
	2	34	9	0	1	0	0	0	1	0	0	0	0	47
03:00	0	12	1	0	0	0	0	0	1	0	0	0	0	14
03:15	1	6	0	0	1	0	0	0	0	0	0	0	0	8
03:30	0	5	2	0	0	0	0	0	0	0	0	0	0	7
03:45	1	7	2	0	2	0	0	0	0	0	0	0	0	12
	2	30	5	0	3	0	0	0	1	0	0	0	0	41
04:00	1	6	3	0	0	0	0	0	0	0	0	0	0	10
04:15	2	10	3	0	0	0	0	0	0	0	0	0	0	15
04:30	0	19	2	0	0	0	0	0	0	0	0	0	0	21
04:45	0	14	3	0	2	0	0	0	1	0	0	0	0	20
	3	49	11	0	2	0	0	0	1	0	0	0	0	66
05:00	0	17	3	0	1	0	0	0	0	0	0	0	0	21
05:15	0	26	5	2	0	0	0	0	2	0	0	0	0	35
05:30	1	34	2	0	6	0	0	0	0	0	0	0	0	43
05:45	1	45	11	3	1	0	0	0	0	0	0	0	0	61
	2	122	21	5	8	0	0	0	2	0	0	0	0	160
06:00	0	42	7	2	1	0	0	1	0	0	0	0	0	53
06:15	1	54	8	2	0	0	0	0	0	0	0	0	0	65
06:30	1	71	6	1	2	0	0	0	0	0	0	0	0	81
06:45	0	104	12	2	2	1	0	1	0	0	0	0	0	122
	2	271	33	7	5	1	0	2	0	0	0	0	0	321
07:00	1	98	4	3	0	0	0	1	0	0	0	0	0	107
07:15	1	101	15	3	1	0	0	0	0	0	0	0	0	121
07:30	0	123	13	0	1	2	2	0	0	0	0	0	0	141
07:45	0	94	20	3	2	0	0	0	1	0	0	0	0	120
	2	416	52	9	4	2	2	1	1	0	0	0	0	489
08:00	0	144	15	2	2	1	0	0	0	0	0	0	0	164
08:15	8	187	11	2	3	1	0	0	0	0	0	0	0	212
08:30	0	132	18	1	3	0	2	0	0	0	0	0	0	156
08:45	2	149	20	3	2	2	0	1	0	0	0	0	0	179
	10	612	64	8	10	4	2	1	0	0	0	0	0	711
09:00	0	153	23	2	2	1	0	0	0	0	0	0	0	181
09:15	0	122	22	0	7	0	2	1	2	0	0	0	0	156
09:30	0	103	26	1	7	0	1	0	0	0	0	0	0	138
09:45	0	143	26	3	3	2	1	1	3	0	0	0	0	182
	0	521	97	6	19	3	4	2	5	0	0	0	0	657
10:00	1	127	23	0	10	3	0	0	1	0	0	0	0	165
10:15	0	150	18	2	10	0	0	1	0	0	0	0	0	181
10:30	0	136	23	4	9	3	0	0	0	0	0	0	0	175
10:45	0	143	40	0	9	2	0	0	1	0	0	0	0	195
	1	556	104	6	38	8	0	1	2	0	0	0	0	716
11:00	0	144	20	2	3	4	1	1	1	0	0	0	0	176
11:15	0	137	40	1	10	3	0	0	0	1	0	0	0	192
11:30	0	134	31	2	6	3	0	4	4	0	0	0	0	184
11:45	0	167	29	2	3	1	0	2	1	1	0	0	0	206
	0	582	120	7	22	11	1	7	6	2	0	0	0	758
Total	29	3327	525	48	114	29	9	14	19	2	0	0	0	4116
Percent	0.7%	80.8%	12.8%	1.2%	2.8%	0.7%	0.2%	0.3%	0.5%	0.0%	0.0%	0.0%	0.0%	

City: REDONDO BEACH

Location: ARTESIA BOULEVARD

Segment: E/O AVIATION BOULEVARD

Date Start: 10-Oct-18

A1810002E

EASTBOUND, EASTBOUND1

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
12 PM	1	152	30	2	6	4	0	2	0	0	0	0	0	197
12:15	0	127	28	4	3	2	0	2	1	0	0	0	0	167
12:30	0	156	28	1	4	2	1	1	0	1	0	0	0	194
12:45	0	159	20	2	4	0	0	1	0	0	0	0	0	186
	1	594	106	9	17	8	1	6	1	1	0	0	0	744
13:00	1	170	22	1	6	3	0	0	0	0	0	0	0	203
13:15	0	159	30	1	3	1	0	4	0	1	0	0	0	199
13:30	0	167	41	0	8	3	2	0	0	0	0	0	0	221
13:45	0	137	31	2	13	1	1	0	1	0	0	0	0	186
	1	633	124	4	30	8	3	4	1	1	0	0	0	809
14:00	0	171	33	0	1	3	0	1	0	0	0	0	0	209
14:15	0	184	40	1	9	1	0	3	0	0	0	0	0	238
14:30	0	162	35	2	7	2	1	2	1	0	0	0	1	213
14:45	0	190	28	0	12	2	0	2	0	0	0	0	0	234
	0	707	136	3	29	8	1	8	1	0	0	0	1	894
15:00	0	170	30	1	9	4	0	0	2	0	1	0	0	217
15:15	0	217	32	2	11	1	0	0	1	0	0	0	0	264
15:30	0	161	39	1	15	8	0	6	0	0	0	0	0	230
15:45	1	180	28	1	11	2	0	3	0	0	0	0	0	226
	1	728	129	5	46	15	0	9	3	0	1	0	0	937
16:00	1	187	31	3	8	4	0	1	0	1	0	0	0	236
16:15	0	182	24	4	6	0	0	1	0	0	0	0	0	217
16:30	0	201	56	2	7	1	0	1	0	0	0	0	0	268
16:45	0	165	44	0	10	1	0	2	0	1	0	0	1	224
	1	735	155	9	31	6	0	5	0	2	0	0	1	945
17:00	0	210	26	1	3	0	0	1	0	0	0	0	0	241
17:15	2	200	31	2	6	1	0	0	1	0	0	0	0	243
17:30	0	237	29	0	2	1	0	0	0	0	1	0	0	270
17:45	0	200	25	3	3	2	0	0	0	0	0	0	0	233
	2	847	111	6	14	4	0	1	1	0	1	0	0	987
18:00	0	264	18	1	5	1	0	1	0	0	0	0	0	290
18:15	0	187	18	3	8	1	0	1	0	1	0	0	0	219
18:30	0	164	18	1	4	0	1	1	0	0	0	0	0	189
18:45	1	179	18	3	0	0	0	1	0	0	1	0	0	203
	1	794	72	8	17	2	1	4	0	1	1	0	0	901
19:00	1	232	16	2	5	0	0	1	0	0	0	0	0	257
19:15	0	172	11	2	6	1	0	0	1	0	0	0	0	193
19:30	0	166	16	2	1	0	0	0	1	0	0	0	0	186
19:45	0	138	12	1	5	2	0	0	0	0	1	0	0	159
	1	708	55	7	17	3	0	1	2	0	1	0	0	795
20:00	0	168	12	0	1	1	0	0	0	0	0	0	0	182
20:15	1	142	16	0	1	2	0	0	0	0	0	0	0	162
20:30	0	150	16	0	1	0	0	1	0	0	0	0	0	168
20:45	0	125	21	1	1	0	0	2	0	0	0	0	0	150
	1	585	65	1	4	3	0	3	0	0	0	0	0	662
21:00	2	134	15	0	1	0	0	0	0	0	0	0	0	152
21:15	0	114	11	0	0	1	0	0	0	0	0	0	0	126
21:30	0	94	12	0	2	0	0	0	0	0	0	0	0	108
21:45	0	83	7	0	0	0	0	0	0	0	0	0	0	90
	2	425	45	0	3	1	0	0	0	0	0	0	0	476
22:00	0	63	10	2	0	0	0	0	0	0	0	0	0	75
22:15	1	77	9	0	0	0	0	0	0	0	0	0	0	87
22:30	1	72	4	0	0	0	0	0	0	0	0	0	0	77
22:45	0	57	9	0	2	1	0	0	0	0	0	0	0	69
	2	269	32	2	2	1	0	0	0	0	0	0	0	308
23:00	1	53	7	1	1	0	0	0	0	0	0	0	0	63
23:15	0	48	5	0	0	0	0	0	0	0	0	0	0	53
23:30	0	40	0	0	0	0	0	0	0	0	0	0	0	40
23:45	1	38	2	0	0	0	0	0	0	0	0	0	0	41
	2	179	14	1	1	0	0	0	0	0	0	0	0	197
Total	15	7204	1044	55	211	59	6	41	9	5	4	0	2	8655
Percent	0.2%	83.2%	12.1%	0.6%	2.4%	0.7%	0.1%	0.5%	0.1%	0.1%	0.0%	0.0%	0.0%	
Grand Total	44	10531	1569	103	325	88	15	55	28	7	4	0	2	12771
Percent	0.3%	82.5%	12.3%	0.8%	2.5%	0.7%	0.1%	0.4%	0.2%	0.1%	0.0%	0.0%	0.0%	

City: REDONDO BEACH

Location: ARTESIA BOULEVARD

Segment: E/O AVIATION BOULEVARD

Date Start: 11-Oct-18

A1810002W

WESTBOUND, WESTBOUND1

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
10/11/18	0	22	5	0	2	0	0	0	0	0	0	0	0	29
00:15	0	23	7	0	1	0	0	0	0	0	0	0	0	31
00:30	0	14	5	0	1	0	0	0	0	0	0	0	0	20
00:45	0	12	3	0	0	0	0	0	0	0	0	0	0	15
	0	71	20	0	4	0	0	0	0	0	0	0	0	95
01:00	0	8	3	0	2	0	0	0	0	0	0	0	0	13
01:15	0	12	4	0	0	0	0	0	0	0	0	0	0	16
01:30	0	12	3	0	0	0	0	0	0	0	0	0	0	15
01:45	0	13	4	1	0	0	0	0	0	0	0	0	0	18
	0	45	14	1	2	0	0	0	0	0	0	0	0	62
02:00	0	12	6	0	1	0	0	0	0	0	0	0	0	19
02:15	0	7	0	0	0	0	0	0	0	0	0	0	0	7
02:30	0	10	0	0	0	0	0	0	0	0	0	0	0	10
02:45	1	5	2	0	0	0	0	0	0	0	0	0	0	8
	1	34	8	0	1	0	0	0	0	0	0	0	0	44
03:00	0	4	2	0	0	0	0	0	0	0	0	0	0	6
03:15	0	5	1	0	1	0	0	0	0	0	0	0	0	7
03:30	0	6	4	0	0	0	0	0	2	0	0	0	0	12
03:45	0	19	8	0	1	0	0	2	1	0	0	0	0	31
	0	34	15	0	2	0	0	2	3	0	0	0	0	56
04:00	0	17	4	0	0	0	0	0	0	0	0	0	0	21
04:15	0	18	2	0	1	0	0	0	0	0	0	0	0	21
04:30	0	22	1	1	1	0	0	1	1	0	0	0	0	27
04:45	0	36	12	2	2	0	0	1	0	0	0	0	0	53
	0	93	19	3	4	0	0	2	1	0	0	0	0	122
05:00	0	32	12	2	2	0	0	0	1	0	0	0	0	49
05:15	1	31	8	2	6	1	0	1	0	0	0	0	0	50
05:30	0	51	16	1	8	0	0	2	0	0	0	0	0	78
05:45	0	119	25	0	6	1	0	0	0	0	0	0	0	151
	1	233	61	5	22	2	0	3	1	0	0	0	0	328
06:00	2	119	16	2	10	1	0	0	0	0	0	0	0	150
06:15	0	155	27	0	11	0	0	0	0	0	0	0	0	193
06:30	0	194	40	0	14	4	0	5	0	0	0	0	0	257
06:45	0	203	52	2	16	5	1	2	0	2	0	0	0	283
	2	671	135	4	51	10	1	7	0	2	0	0	0	883
07:00	1	183	60	2	16	2	1	8	0	1	0	0	0	274
07:15	0	189	51	1	20	4	0	7	1	1	0	0	0	274
07:30	1	183	58	2	20	5	2	4	1	0	0	0	0	276
07:45	1	94	33	0	10	4	1	4	1	1	0	0	1	150
	3	649	202	5	66	15	4	23	3	3	0	0	1	974
08:00	1	136	41	0	9	4	1	11	0	1	0	0	0	204
08:15	0	190	53	0	16	8	3	7	0	1	0	0	0	278
08:30	0	172	29	0	7	6	0	5	0	1	0	0	0	220
08:45	0	167	43	0	11	3	0	6	0	1	0	0	1	232
	1	665	166	0	43	21	4	29	0	4	0	0	1	934
09:00	0	166	30	0	9	4	0	6	0	1	1	1	0	218
09:15	1	182	66	1	12	3	1	4	1	0	0	0	0	271
09:30	0	161	40	2	8	4	2	4	3	0	0	0	0	224
09:45	0	170	37	4	7	5	0	1	0	1	0	0	0	225
	1	679	173	7	36	16	3	15	4	2	1	1	0	938
10:00	2	150	33	3	13	3	1	5	1	0	0	1	0	212
10:15	0	162	39	3	22	2	0	8	3	0	0	0	0	239
10:30	1	145	26	3	13	5	0	3	0	1	0	0	0	197
10:45	1	157	42	0	10	5	0	7	1	1	0	0	0	224
	4	614	140	9	58	15	1	23	5	2	0	1	0	872
11:00	0	148	48	4	10	5	1	0	0	0	1	0	0	217
11:15	0	172	32	2	12	4	1	8	0	0	0	0	0	231
11:30	0	205	37	2	16	1	1	2	2	1	0	0	0	267
11:45	1	206	32	1	13	7	3	2	1	1	0	0	0	267
Total	14	4519	1102	43	340	96	19	116	20	15	2	2	2	6290
Percent	0.2%	71.8%	17.5%	0.7%	5.4%	1.5%	0.3%	1.8%	0.3%	0.2%	0.0%	0.0%	0.0%	

City: REDONDO BEACH

Location: ARTESIA BOULEVARD

Segment: E/O AVIATION BOULEVARD

Date Start: 11-Oct-18

A1810002W

WESTBOUND, WESTBOUND1

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
12 PM	0	152	40	4	1	7	0	3	0	0	0	0	0	207
12:15	1	183	54	2	7	2	0	5	0	0	0	0	0	254
12:30	1	178	53	2	14	1	0	5	3	0	0	0	0	257
12:45	2	171	53	2	9	3	0	4	1	0	0	0	1	246
	4	684	200	10	31	13	0	17	4	0	0	0	1	964
13:00	0	182	43	2	11	4	0	6	2	0	0	0	1	251
13:15	0	163	46	0	11	6	0	1	1	0	0	0	0	228
13:30	0	194	31	2	12	2	0	6	0	0	1	0	0	248
13:45	0	168	40	1	3	3	1	0	0	1	0	0	1	218
	0	707	160	5	37	15	1	13	3	1	1	0	2	945
14:00	1	200	48	0	8	5	0	1	1	1	0	0	2	267
14:15	1	224	40	3	9	6	1	3	0	0	0	0	1	288
14:30	2	184	46	3	8	4	0	2	0	0	1	0	0	250
14:45	1	185	31	2	17	3	1	6	0	0	0	0	2	248
	5	793	165	8	42	18	2	12	1	1	1	0	5	1053
15:00	0	185	40	2	9	0	2	2	0	0	0	0	0	240
15:15	0	171	48	1	6	5	0	6	0	0	0	0	0	237
15:30	1	179	47	1	7	6	2	3	0	1	0	0	0	247
15:45	1	228	37	2	9	4	0	3	0	1	0	0	0	285
	2	763	172	6	31	15	4	14	0	2	0	0	0	1009
16:00	0	167	40	2	2	3	0	3	1	0	0	0	0	218
16:15	0	193	32	1	9	2	0	2	0	0	0	1	0	240
16:30	0	176	32	0	9	7	0	5	1	0	0	0	0	230
16:45	0	203	39	0	4	5	0	2	0	0	0	0	0	253
	0	739	143	3	24	17	0	12	2	0	0	1	0	941
17:00	1	214	42	4	5	7	1	1	0	0	0	0	0	275
17:15	0	180	20	2	8	5	0	0	0	0	0	0	0	215
17:30	1	185	38	2	6	6	3	0	0	2	0	0	0	243
17:45	0	194	35	3	3	6	1	5	0	0	0	0	0	247
	2	773	135	11	22	24	5	6	0	2	0	0	0	980
18:00	0	209	31	2	8	1	0	1	1	0	0	0	0	253
18:15	1	202	31	0	3	2	1	0	0	0	0	0	0	240
18:30	1	200	28	2	5	5	2	4	2	0	0	1	0	250
18:45	0	216	34	0	8	3	0	0	0	0	0	0	0	261
	2	827	124	4	24	11	3	5	3	0	0	1	0	1004
19:00	1	196	34	3	8	5	1	2	0	0	0	0	0	250
19:15	1	171	27	0	4	3	0	3	0	0	0	0	0	209
19:30	0	140	18	0	2	3	0	2	0	0	0	0	0	165
19:45	1	192	35	2	5	1	0	1	0	0	0	0	0	237
	3	699	114	5	19	12	1	8	0	0	0	0	0	861
20:00	1	132	31	0	5	1	0	0	0	0	0	0	0	170
20:15	1	126	23	0	2	1	0	1	0	0	0	0	0	154
20:30	2	112	26	1	2	1	1	1	0	0	0	0	0	146
20:45	0	117	11	0	0	1	0	0	0	0	0	0	0	129
	4	487	91	1	9	4	1	2	0	0	0	0	0	599
21:00	0	111	10	2	4	0	0	0	0	0	0	0	0	127
21:15	0	106	20	2	1	2	0	0	0	0	0	0	0	131
21:30	0	98	15	0	2	1	0	0	0	0	0	0	0	116
21:45	1	86	10	1	3	1	0	1	0	0	0	0	0	103
	1	401	55	5	10	4	0	1	0	0	0	0	0	477
22:00	0	96	23	2	0	0	1	0	0	0	0	0	0	122
22:15	0	73	13	0	0	1	0	0	0	0	0	0	0	87
22:30	1	56	13	0	0	0	0	0	0	0	0	0	0	70
22:45	2	61	13	2	2	0	0	1	0	0	0	0	0	81
	3	286	62	4	2	1	1	1	0	0	0	0	0	360
23:00	1	56	7	0	2	0	0	0	0	0	0	0	0	66
23:15	0	40	4	2	0	0	0	0	0	0	0	0	0	46
23:30	0	44	7	0	2	0	0	0	0	0	0	0	0	53
23:45	0	41	6	0	1	0	0	1	0	0	0	0	0	49
	1	181	24	2	5	0	0	1	0	0	0	0	0	214
Total	27	7340	1445	64	256	134	18	92	13	6	2	2	8	9407
Percent	0.3%	78.0%	15.4%	0.7%	2.7%	1.4%	0.2%	1.0%	0.1%	0.1%	0.0%	0.0%	0.1%	
Grand Total	41	11859	2547	107	596	230	37	208	33	21	4	4	10	15697
Percent	0.3%	75.5%	16.2%	0.7%	3.8%	1.5%	0.2%	1.3%	0.2%	0.1%	0.0%	0.0%	0.1%	

City: REDONDO BEACH

Location: ARTESIA BOULEVARD

Segment: E/O AVIATION BOULEVARD

Date Start: 10-Oct-18

A1810002W

WESTBOUND, WESTBOUND1

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
10/10/18	0	13	2	0	0	0	0	0	0	0	0	0	0	15
00:15	2	14	2	0	0	0	0	0	0	0	0	0	0	18
00:30	1	27	5	0	1	0	0	0	0	0	0	0	0	34
00:45	0	16	3	0	2	0	0	0	0	0	0	0	0	21
	3	70	12	0	3	0	0	0	0	0	0	0	0	88
01:00	0	23	3	0	0	0	0	0	2	0	0	0	0	28
01:15	1	4	1	0	0	0	0	0	0	0	0	0	0	6
01:30	0	8	2	0	0	0	0	0	0	0	0	0	0	10
01:45	0	20	2	0	1	0	0	0	0	0	0	0	0	23
	1	55	8	0	1	0	0	0	2	0	0	0	0	67
02:00	0	5	3	0	1	0	0	0	0	0	0	0	0	9
02:15	0	7	3	0	1	0	0	0	0	0	0	0	0	11
02:30	0	9	1	0	0	0	0	0	0	0	0	0	0	10
02:45	1	7	2	0	2	0	0	0	0	0	0	0	0	12
	1	28	9	0	4	0	0	0	0	0	0	0	0	42
03:00	0	6	2	0	0	0	0	0	0	0	0	0	0	8
03:15	0	6	2	0	0	0	0	0	0	0	0	0	0	8
03:30	0	9	7	0	0	0	0	0	0	0	0	0	0	16
03:45	0	17	7	0	0	0	0	0	0	0	0	0	0	24
	0	38	18	0	0	0	0	0	0	0	0	0	0	56
04:00	0	13	5	0	1	0	0	0	0	0	0	0	0	19
04:15	0	18	4	0	2	0	0	2	0	0	0	0	0	26
04:30	0	33	4	0	2	0	0	2	0	0	0	0	0	41
04:45	0	51	15	1	7	0	0	0	1	0	0	0	0	75
	0	115	28	1	12	0	0	4	1	0	0	0	0	161
05:00	0	22	12	2	2	0	0	0	0	0	0	0	0	38
05:15	0	46	15	2	5	0	0	1	0	0	0	0	0	69
05:30	2	86	10	1	7	0	0	0	0	0	0	0	0	106
05:45	0	127	17	0	3	1	1	0	1	0	0	0	0	150
	2	281	54	5	17	1	1	1	1	0	0	0	0	363
06:00	0	132	19	3	5	0	0	4	0	0	0	0	0	163
06:15	0	156	34	3	5	0	0	2	0	0	0	0	0	200
06:30	1	170	37	2	20	2	0	3	0	0	0	0	0	235
06:45	1	140	44	0	7	5	2	8	0	0	1	0	0	208
	2	598	134	8	37	7	2	17	0	0	1	0	0	806
07:00	0	161	40	0	13	6	0	6	0	1	0	0	0	227
07:15	0	193	40	4	18	2	1	7	1	0	0	0	0	266
07:30	0	177	56	3	16	9	3	10	1	0	0	0	1	276
07:45	0	151	47	3	21	7	1	6	0	0	0	0	0	236
	0	682	183	10	68	24	5	29	2	1	0	0	1	1005
08:00	0	210	44	2	13	6	3	3	0	1	0	0	1	283
08:15	0	144	39	4	11	8	3	5	1	1	0	0	0	216
08:30	0	140	24	3	11	6	2	4	1	2	0	1	0	194
08:45	2	127	23	2	6	1	1	6	1	0	0	0	0	169
	2	621	130	11	41	21	9	18	3	4	0	1	1	862
09:00	1	120	34	2	11	2	2	8	2	2	1	0	0	185
09:15	0	178	40	1	21	4	0	4	2	0	0	1	0	251
09:30	0	180	35	1	9	3	1	4	1	0	1	0	0	235
09:45	0	178	37	1	13	5	0	5	0	0	0	0	0	239
	1	656	146	5	54	14	3	21	5	2	2	1	0	910
10:00	1	195	34	2	7	6	1	2	1	0	0	0	1	250
10:15	2	183	28	0	9	4	1	1	0	0	0	0	0	228
10:30	1	140	49	3	13	6	2	2	0	0	0	0	0	216
10:45	0	180	47	3	11	4	0	3	0	1	0	0	0	249
	4	698	158	8	40	20	4	8	1	1	0	0	1	943
11:00	1	136	33	2	9	5	0	5	1	0	0	0	1	193
11:15	0	169	55	3	20	7	0	2	0	1	0	0	0	257
11:30	0	178	38	4	13	2	0	5	2	0	0	0	0	242
11:45	0	151	33	0	11	9	0	6	1	1	0	0	0	212
Total	17	4476	1039	57	330	110	24	116	19	10	3	2	4	6207
Percent	0.3%	72.1%	16.7%	0.9%	5.3%	1.8%	0.4%	1.9%	0.3%	0.2%	0.0%	0.0%	0.1%	

City: REDONDO BEACH

Location: ARTESIA BOULEVARD

Segment: E/O AVIATION BOULEVARD

Date Start: 10-Oct-18

A1810002W

WESTBOUND, WESTBOUND1

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
12 PM	1	146	36	0	12	7	1	6	1	0	0	0	0	210
12:15	1	201	49	2	13	4	0	2	0	1	0	0	0	273
12:30	0	146	56	2	12	6	0	1	0	1	0	0	1	225
12:45	1	212	41	3	8	9	0	9	3	1	0	0	0	287
	3	705	182	7	45	26	1	18	4	3	0	0	1	995
13:00	1	163	27	2	9	9	1	1	0	0	2	0	0	215
13:15	0	184	44	0	20	3	0	3	0	0	1	0	0	255
13:30	0	199	46	3	8	2	1	3	0	0	0	0	0	262
13:45	1	186	51	2	4	5	1	1	0	0	0	0	0	251
	2	732	168	7	41	19	3	8	0	0	3	0	0	983
14:00	1	200	38	2	11	8	0	5	0	0	0	0	0	265
14:15	0	189	43	1	7	2	1	4	0	0	0	0	1	248
14:30	0	199	44	1	9	4	0	3	0	1	0	0	0	261
14:45	0	188	42	2	4	7	2	1	0	1	0	0	0	247
	1	776	167	6	31	21	3	13	0	2	0	0	1	1021
15:00	0	201	35	2	6	2	0	1	0	1	0	0	0	248
15:15	0	161	41	1	10	1	0	4	0	1	0	0	0	219
15:30	0	191	39	0	7	5	0	1	0	1	1	0	2	247
15:45	1	161	39	1	9	1	0	2	0	1	0	0	0	215
	1	714	154	4	32	9	0	8	0	4	1	0	2	929
16:00	1	199	29	4	12	1	1	3	0	1	0	0	0	251
16:15	1	181	44	1	4	1	2	5	1	0	0	0	0	240
16:30	1	224	32	1	4	3	2	3	0	0	0	0	0	270
16:45	1	205	33	1	10	3	4	3	0	0	1	0	0	261
	4	809	138	7	30	8	9	14	1	1	1	0	0	1022
17:00	0	182	33	1	7	5	1	4	0	1	0	0	0	234
17:15	0	192	18	0	2	5	2	1	0	1	0	0	0	221
17:30	0	219	37	1	5	7	1	4	0	0	0	0	0	274
17:45	0	130	22	2	2	6	1	1	1	0	0	0	0	165
	0	723	110	4	16	23	5	10	1	2	0	0	0	894
18:00	1	190	38	2	8	6	1	1	0	0	1	0	0	248
18:15	0	199	32	0	4	6	0	3	0	0	0	0	0	244
18:30	0	187	38	0	2	8	0	5	0	1	0	0	0	241
18:45	1	189	34	2	1	3	0	2	0	0	0	1	0	233
	2	765	142	4	15	23	1	11	0	1	1	1	0	966
19:00	1	144	23	3	2	3	2	5	0	1	0	1	0	185
19:15	1	188	27	0	3	2	1	1	0	0	0	0	0	223
19:30	0	161	30	0	5	3	0	2	0	1	0	0	0	202
19:45	2	170	16	2	9	5	0	1	0	0	0	0	0	205
	4	663	96	5	19	13	3	9	0	2	0	1	0	815
20:00	1	155	34	1	3	3	0	2	1	0	0	0	0	200
20:15	0	133	37	0	2	3	0	2	0	0	0	0	0	177
20:30	0	171	24	2	2	1	0	2	0	0	0	0	0	202
20:45	1	118	14	2	3	6	0	0	0	0	0	0	0	144
	2	577	109	5	10	13	0	6	1	0	0	0	0	723
21:00	0	131	26	0	4	0	2	2	0	0	0	0	0	165
21:15	0	123	22	2	8	1	0	1	0	0	0	0	0	157
21:30	0	98	13	0	1	1	0	3	0	0	0	0	0	116
21:45	0	92	17	2	1	1	0	0	0	0	0	0	0	113
	0	444	78	4	14	3	2	6	0	0	0	0	0	551
22:00	0	82	20	0	0	0	0	0	0	0	0	0	0	102
22:15	1	75	11	0	0	0	0	0	0	0	0	0	0	87
22:30	1	67	17	0	2	0	0	0	0	0	0	0	0	87
22:45	0	55	9	1	0	0	0	0	0	0	0	0	0	65
	2	279	57	1	2	0	0	0	0	0	0	0	0	341
23:00	1	39	8	0	0	0	0	0	1	0	0	0	0	49
23:15	1	44	10	0	2	0	0	0	0	0	0	0	0	57
23:30	2	35	5	0	0	0	0	0	0	0	0	0	0	42
23:45	0	25	7	0	1	0	0	0	0	0	0	0	0	33
	4	143	30	0	3	0	0	0	1	0	0	0	0	181
Total	25	7330	1431	54	258	158	27	103	8	15	6	2	4	9421
Percent	0.3%	77.8%	15.2%	0.6%	2.7%	1.7%	0.3%	1.1%	0.1%	0.2%	0.1%	0.0%	0.0%	
Grand Total	42	11806	2470	111	588	268	51	219	27	25	9	4	8	15628
Percent	0.3%	75.5%	15.8%	0.7%	3.8%	1.7%	0.3%	1.4%	0.2%	0.2%	0.1%	0.0%	0.1%	

City: REDONO BEACH
Location: AVIATION BOULEVARD
Segment: S/O ARTESIA BOULEVARD

Transportation Studies, Inc.
2640 Walnut Avenue Suite L
Tustin, CA. 92780

Date Start: 10-Oct-18

a1810001

Start Time	10-Oct-18	NORTHBOUND		NORTHBOUND		Combined		11-Oct-Thu	NORTHBOUND		NORTHBOUND		Combined		
	Wed	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.		A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	
12:00		22	114	29	207	51	321		20	108	33	210	53	318	
12:15		10	110	18	206	28	316		26	103	41	178	67	281	
12:30		19	105	31	191	50	296		19	112	29	197	48	309	
12:45		9	130	20	228	29	358		18	127	23	189	41	316	
01:00		17	119	27	198	44	317		7	101	11	177	18	278	
01:15		11	100	14	198	25	298		12	98	15	176	27	274	
01:30		8	108	13	186	21	294		12	127	14	191	26	318	
01:45		11	104	16	192	27	296		12	113	17	176	29	289	
02:00		5	100	8	188	13	288		8	90	12	148	20	238	
02:15		20	107	26	171	46	278		9	97	11	185	20	282	
02:30		2	98	6	179	8	277		5	97	12	159	17	256	
02:45		6	100	9	204	15	304		6	88	6	184	12	272	
03:00		9	128	13	217	22	345		9	100	13	192	22	292	
03:15		8	103	11	168	19	271		6	132	8	177	14	309	
03:30		6	104	13	180	19	284		4	96	9	164	13	260	
03:45		17	98	25	188	42	286		11	96	17	185	28	281	
04:00		18	110	27	189	45	299		17	119	27	176	44	295	
04:15		15	123	27	210	42	333		18	87	32	192	50	279	
04:30		33	105	58	189	91	294		27	111	48	210	75	321	
04:45		45	114	97	189	142	303		49	107	93	194	142	301	
05:00		49	113	87	196	136	309		42	116	80	222	122	338	
05:15		68	114	117	189	185	303		59	107	101	169	160	276	
05:30		101	99	176	180	277	279		89	110	157	199	246	309	
05:45		114	106	209	192	323	298		102	100	191	186	293	286	
06:00		114	114	212	219	326	333		107	117	208	197	315	314	
06:15		122	98	217	188	339	286		116	114	219	194	335	308	
06:30		125	98	239	175	364	273		125	96	232	163	357	259	
06:45		133	121	193	200	326	321		159	112	250	194	409	306	
07:00		145	108	227	184	372	292		113	99	182	173	295	272	
07:15		131	110	173	181	304	291		140	118	245	185	385	303	
07:30		113	75	152	149	265	224		139	106	232	173	371	279	
07:45		98	86	112	149	210	235		98	96	117	156	215	252	
08:00		103	65	112	123	215	188		97	79	82	128	179	207	
08:15		93	82	39	145	132	227		87	89	93	148	180	237	
08:30		94	80	97	126	191	206		104	82	96	134	200	216	
08:45		123	75	187	132	310	207		77	63	83	117	160	180	
09:00		86	75	96	136	182	211		132	57	227	106	359	163	
09:15		110	64	166	112	276	176		109	75	210	127	319	202	
09:30		113	60	202	103	315	163		113	63	187	111	300	174	
09:45		130	68	231	98	361	166		105	58	207	105	312	163	
10:00		112	56	215	85	327	141		119	52	223	89	342	141	
10:15		122	49	221	77	343	126		110	55	201	89	311	144	
10:30		117	57	226	83	343	140		115	46	228	70	343	116	
10:45		87	53	189	78	276	131		120	35	203	60	323	95	
11:00		115	39	187	64	302	103		117	34	192	55	309	89	
11:15		109	36	188	61	297	97		107	33	187	48	294	81	
11:30		105	26	177	42	282	68		133	22	242	38	375	60	
11:45		107	28	199	37	306	65		103	21	171	33	274	54	
Total		3330	4335	5334	7582	8664	11917		3332	4264	5517	7329	8849	11593	
Day Total		7665		12916		20581			7596		12846		20442		
% Total		16.2%	21.1%	25.9%	36.8%				16.3%	20.9%	27.0%	35.9%			
Peak	-	06:30	00:15	09:45	12:00	06:15	12:00	-	06:45	00:45	06:00	04:15	06:45	04:15	
Vol.	-	534	464	893	832	1401	1291	-	551	453	909	818	1460	1239	
P.H.F.		0.921	0.892	0.934	0.912	0.942	0.902		0.866	0.892	0.909	0.921	0.892	0.916	
ADT	ADT 20,512	AADT 20,512													

City: REDONDO BEACH
Location: AVIATION BOULEVARD
Segment: S/O ARTESIA BOULEVARD

Transportation Studies, Inc.
2640 Walnut Avenue Suite L
Tustin, CA. 92780

Date Start: 10-Oct-18

Untitled Vo

Start Time	10-Oct-18	SOUTHBOUND		SOUTHBOUND		Combined		11-Oct-	SOUTHBOUND		SOUTHBOUND		Combined	
	Wed	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	Thu	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.
12:00		14	90	33	215	47	305		13	80	46	191	59	271
12:15		16	102	40	214	56	316		9	81	42	171	51	252
12:30		12	89	30	192	42	281		7	107	26	181	33	288
12:45		11	91	26	198	37	289		11	100	25	213	36	313
01:00		9	92	23	198	32	290		5	103	19	211	24	314
01:15		3	89	18	188	21	277		8	107	18	234	26	341
01:30		6	92	18	228	24	320		4	101	13	222	17	323
01:45		8	84	17	203	25	287		6	112	15	246	21	358
02:00		7	86	16	187	23	273		3	94	13	202	16	296
02:15		3	108	12	233	15	341		3	105	7	221	10	326
02:30		6	116	11	228	17	344		5	105	11	231	16	336
02:45		5	120	17	234	22	354		2	126	11	261	13	387
03:00		2	119	8	233	10	352		0	115	7	241	7	356
03:15		6	142	15	259	21	401		4	135	8	262	12	397
03:30		6	133	16	249	22	382		3	122	10	222	13	344
03:45		9	157	17	307	26	464		14	136	20	257	34	393
04:00		6	126	19	237	25	363		7	152	15	269	22	421
04:15		4	159	12	297	16	456		4	137	15	261	19	398
04:30		7	159	22	264	29	423		5	138	19	261	24	399
04:45		12	139	27	276	39	415		24	146	37	276	61	422
05:00		10	148	19	274	29	422		8	142	17	257	25	399
05:15		19	145	30	264	49	409		16	145	37	274	53	419
05:30		19	136	43	276	62	412		15	164	34	263	49	427
05:45		21	146	55	261	76	407		24	146	52	269	76	415
06:00		35	151	56	273	91	424		23	153	39	292	62	445
06:15		26	134	59	273	85	407		32	128	58	239	90	367
06:30		40	146	86	272	126	418		46	172	98	319	144	491
06:45		46	135	100	269	146	404		58	133	102	273	160	406
07:00		57	140	109	256	166	396		55	122	112	272	167	394
07:15		75	136	157	281	232	417		77	125	172	263	249	388
07:30		87	117	187	244	274	361		83	117	193	239	276	356
07:45		84	112	172	249	256	361		86	125	177	247	263	372
08:00		88	103	175	221	263	324		70	95	149	220	219	315
08:15		82	106	149	224	231	330		73	121	145	264	218	385
08:30		69	82	134	199	203	281		80	61	170	151	250	212
08:45		85	69	188	174	273	243		76	84	164	181	240	265
09:00		75	73	160	161	235	234		74	62	151	140	225	202
09:15		84	47	141	112	225	159		84	65	174	151	258	216
09:30		73	58	157	134	230	192		77	43	155	116	232	159
09:45		54	50	131	118	185	168		79	47	176	111	255	158
10:00		55	67	128	138	183	205		68	57	139	115	207	172
10:15		64	44	141	93	205	137		67	48	140	105	207	153
10:30		80	44	190	100	270	144		61	43	160	103	221	146
10:45		81	40	166	87	247	127		86	35	173	87	259	122
11:00		56	27	155	75	211	102		71	31	142	78	213	109
11:15		75	22	175	49	250	71		64	33	161	71	225	104
11:30		77	14	164	42	241	56		87	16	201	46	288	62
11:45		74	17	181	54	255	71		91	18	197	42	288	60
Total		1843	4802	4005	9813	5848	14615		1868	4833	4065	9821	5933	14654
Day Total		6645		13818		20463			6701		13886		20587	
% Total		9.0%	23.5%	19.6%	48.0%				9.1%	23.5%	19.7%	47.7%		
Peak	-	07:30	04:15	07:15	04:15	07:15	04:15	-	07:15	05:15	11:00	06:30	11:00	05:45
Vol.	-	341	605	691	1111	1025	1716	-	316	608	701	1127	1014	1718
P.H.F.		0.969	0.951	0.924	0.935	0.935	0.941		0.919	0.927	0.872	0.883	0.880	0.875
ADT	ADT	20.525		AADT 20.525										

City: REDONDO BEACH
Location: ARTESIA BOULEVARD
Segment: E/O AVIATION BOULEVARD

Transportation Studies, Inc.
2640 Walnut Avenue Suite L
Tustin, CA. 92780

Date Start: 10-Oct-18

A1810002W

Start Time	10-Oct-18	WESTBOUND		WESTBOUND1		Combined		11-Oct-Thu	WESTBOUND		WESTBOUND1		Combined	
	Wed	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.		A.M.	P.M.	A.M.	P.M.	A.M.	P.M.
12:00		4	92	11	118	15	210		10	85	19	122	29	207
12:15		4	98	14	175	18	273		10	91	21	163	31	254
12:30		9	87	25	138	34	225		5	92	15	165	20	257
12:45		8	110	13	177	21	287		3	86	12	160	15	246
01:00		10	70	18	145	28	215		2	98	11	153	13	251
01:15		0	94	6	161	6	255		4	79	12	149	16	228
01:30		2	92	8	170	10	262		4	91	11	157	15	248
01:45		7	92	16	159	23	251		5	83	13	135	18	218
02:00		1	99	8	166	9	265		7	98	12	169	19	267
02:15		3	92	8	156	11	248		2	112	5	176	7	288
02:30		3	102	7	159	10	261		4	88	6	162	10	250
02:45		2	94	10	153	12	247		2	94	6	154	8	248
03:00		1	94	7	154	8	248		1	89	5	151	6	240
03:15		2	80	6	139	8	219		1	89	6	148	7	237
03:30		4	91	12	156	16	247		2	95	10	152	12	247
03:45		7	80	17	135	24	215		8	98	23	187	31	285
04:00		6	93	13	158	19	251		7	84	14	134	21	218
04:15		10	88	16	152	26	240		8	90	13	150	21	240
04:30		14	101	27	169	41	270		9	84	18	146	27	230
04:45		27	102	48	159	75	261		17	95	36	158	53	253
05:00		13	87	25	147	38	234		15	111	34	164	49	275
05:15		26	86	43	135	69	221		16	78	34	137	50	215
05:30		36	102	70	172	106	274		24	89	54	154	78	243
05:45		51	70	99	95	150	165		57	91	94	156	151	247
06:00		60	92	103	156	163	248		59	90	91	163	150	253
06:15		82	89	118	155	200	244		74	84	119	156	193	240
06:30		94	92	141	149	235	241		98	93	159	157	257	250
06:45		81	77	127	156	208	233		117	90	166	171	283	261
07:00		91	71	136	114	227	185		104	79	170	171	274	250
07:15		103	74	163	149	266	223		112	72	162	137	274	209
07:30		112	71	164	131	276	202		112	53	164	112	276	165
07:45		104	69	132	136	236	205		66	81	84	156	150	237
08:00		115	70	168	130	283	200		92	57	112	113	204	170
08:15		98	59	118	118	216	177		122	52	156	102	278	154
08:30		83	67	111	135	194	202		104	46	116	100	220	146
08:45		86	46	83	98	169	144		85	39	147	90	232	129
09:00		79	56	106	109	185	165		86	39	132	88	218	127
09:15		106	58	145	99	251	157		106	43	165	88	271	131
09:30		91	36	144	80	235	116		84	38	140	78	224	116
09:45		91	35	148	78	239	113		85	28	140	75	225	103
10:00		93	29	157	73	250	102		79	38	133	84	212	122
10:15		82	24	146	63	228	87		86	26	153	61	239	87
10:30		79	29	137	58	216	87		77	20	120	50	197	70
10:45		90	20	159	45	249	65		89	26	135	55	224	81
11:00		74	11	119	38	193	49		73	20	144	46	217	66
11:15		88	14	169	43	257	57		87	14	144	32	231	46
11:30		81	13	161	29	242	42		93	16	174	37	267	53
11:45		79	9	133	24	212	33		99	14	168	35	267	49
Total		2392	3407	3815	6014	6207	9421		2412	3348	3878	6059	6290	9407
Day Total		5799		9829		15628			5760		9937		15697	
% Total		15.3%	21.8%	24.4%	38.5%				15.4%	21.3%	24.7%	38.6%		
Peak	-	07:15	12:00	07:15	01:15	07:15	01:15	-	06:45	02:00	06:45	02:00	06:45	02:00
Vol.	-	434	387	627	656	1061	1033	-	445	392	662	661	1107	1053
P.H.F.		0.943	0.880	0.933	0.965	0.937	0.975		0.951	0.875	0.974	0.939	0.978	0.914
ADT	ADT 15,662	AADT 15,662												

City: REDONDO BEACH
Location: ARTESIA BOULEVARD
Segment: E/O AVIATION BOULEVARD

Transportation Studies, Inc.
2640 Walnut Avenue Suite L
Tustin, CA. 92780

Date Start: 10-Oct-18

A1810002E

Start Time	10-Oct-18		EASTBOUND		EASTBOUND1		Combined		11-Oct- Thu	EASTBOUND		EASTBOUND1		Combined		
	Wed		A.M.	P.M.	A.M.	P.M.	A.M.	P.M.		A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	
12:00			11	100	15	97	26	197			17	99	13	90	30	189
12:15			10	88	8	79	18	167			17	114	19	105	36	219
12:30			21	105	10	89	31	194			18	111	9	93	27	204
12:45			8	96	6	90	14	186			10	104	4	87	14	191
01:00			11	113	3	90	14	203			8	118	10	85	18	203
01:15			9	105	10	94	19	199			12	116	3	94	15	210
01:30			4	124	9	97	13	221			9	88	7	95	16	183
01:45			8	98	7	88	15	186			16	116	7	83	23	199
02:00			7	112	7	97	14	209			11	130	3	90	14	220
02:15			14	138	4	100	18	238			10	123	6	97	16	220
02:30			1	113	8	100	9	213			3	96	5	100	8	196
02:45			3	125	3	109	6	234			2	119	3	93	5	212
03:00			6	120	8	97	14	217			2	134	4	93	6	227
03:15			4	136	4	128	8	264			4	147	4	113	8	260
03:30			2	122	5	108	7	230			3	127	2	92	5	219
03:45			7	133	5	93	12	226			7	106	5	92	12	198
04:00			3	126	7	110	10	236			4	129	5	120	9	249
04:15			9	118	6	99	15	217			5	138	10	127	15	265
04:30			11	145	10	123	21	268			13	108	6	69	19	177
04:45			9	123	11	101	20	224			10	113	13	102	23	215
05:00			11	136	10	105	21	241			10	127	9	103	19	230
05:15			16	128	19	115	35	243			22	129	14	114	36	243
05:30			23	143	20	127	43	270			28	111	16	101	44	212
05:45			36	118	25	115	61	233			26	150	22	144	48	294
06:00			33	164	20	126	53	290			35	131	27	113	62	244
06:15			39	126	26	93	65	219			33	145	32	115	65	260
06:30			45	116	36	73	81	189			48	110	38	91	86	201
06:45			53	122	69	81	122	203			58	126	37	103	95	229
07:00			58	140	49	117	107	257			70	129	72	105	142	234
07:15			61	111	60	82	121	193			65	120	60	90	125	210
07:30			72	99	69	87	141	186			83	109	69	81	152	190
07:45			63	86	57	73	120	159			87	90	65	71	152	161
08:00			77	100	87	82	164	182			88	100	83	77	171	177
08:15			110	88	102	74	212	162			91	101	80	73	171	174
08:30			87	91	69	77	156	168			95	88	92	60	187	148
08:45			98	78	81	72	179	150			99	74	85	60	184	134
09:00			95	80	86	72	181	152			93	81	63	75	156	156
09:15			91	70	65	56	156	126			89	66	79	74	168	140
09:30			82	54	56	54	138	108			85	50	63	50	148	100
09:45			100	55	82	35	182	90			98	57	75	45	173	102
10:00			97	47	68	28	165	75		104	49	93	36	197	85	
10:15			97	44	84	43	181	87		113	40	75	32	188	72	
10:30			93	43	82	34	175	77		91	38	74	34	165	72	
10:45			116	37	79	32	195	69		107	38	76	37	183	75	
11:00			86	34	90	29	176	63		83	30	77	26	160	56	
11:15			101	30	91	23	192	53		102	22	81	22	183	44	
11:30			107	25	77	15	184	40		101	39	82	18	183	57	
11:45			118	24	88	17	206	41		105	17	80	12	185	29	
Total			2223	4729	1893	3926	4116	8655			2290	4703	1857	3882	4147	8585
Day Total			6952		5819		12771				6993		5739		12732	
% Total			17.4%	37.0%	14.8%	30.7%					18.0%	36.9%	14.6%	30.5%		
Peak	-	11:00	05:15	11:00	05:15	11:00	05:15	-	-	10:00	05:30	08:00	05:30	10:00	05:30	
Vol.	-	412	553	346	483	758	1036	-	-	415	537	340	473	733	1010	
P.H.F.		0.873	0.843	0.951	0.951	0.920	0.893			0.918	0.895	0.924	0.821	0.930	0.859	
ADT	ADT	12,752	AADT 12,752													

City: REDONDO BEACH
N-S Direction: AVIATION BOULEVARD
E-W Direction: ARTESIA BOULEVARD

File Name : h1810002wed
Site Code : 00000000
Start Date : 10/10/2018
Page No : 1

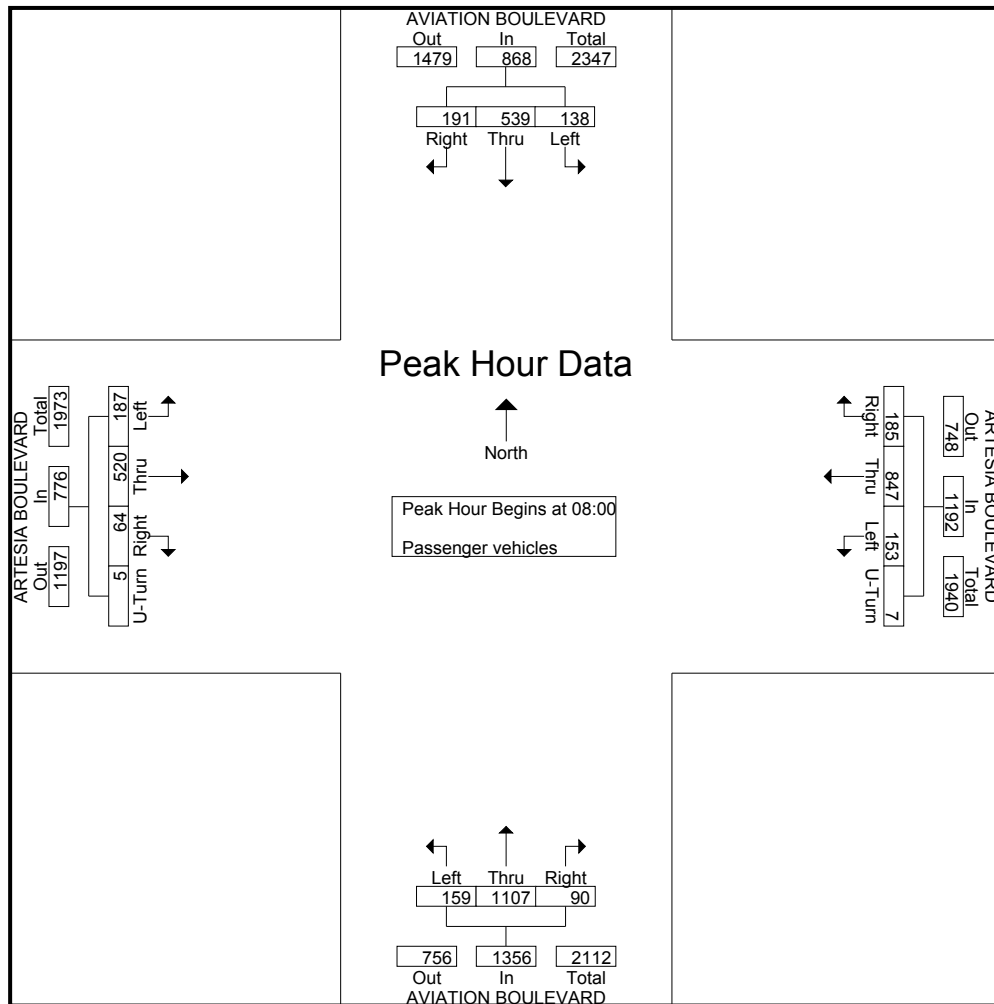
Groups Printed- Passenger vehicles

	AVIATION BOULEVARD Southbound			ARTESIA BOULEVARD Westbound				AVIATION BOULEVARD Northbound			ARTESIA BOULEVARD Eastbound				
Start Time	Right	Thru	Left	Right	Thru	Left	U-Turn	Right	Thru	Left	Right	Thru	Left	U-Turn	Int. Total
07:00	23	144	12	47	142	27	0	21	333	26	6	83	26	1	891
07:15	40	158	20	46	141	39	0	16	271	32	10	102	41	0	916
07:30	39	187	15	55	205	34	0	20	321	35	10	84	41	1	1047
07:45	55	160	18	58	213	32	1	20	314	35	18	108	42	0	1074
Total	157	649	65	206	701	132	1	77	1239	128	44	377	150	2	3928
08:00	40	144	31	36	187	46	1	25	292	35	18	115	48	1	1019
08:15	52	137	38	56	202	33	2	20	298	34	12	119	44	0	1047
08:30	42	105	31	50	232	40	2	18	241	56	13	149	45	0	1024
08:45	57	153	38	43	226	34	2	27	276	34	21	137	50	4	1102
Total	191	539	138	185	847	153	7	90	1107	159	64	520	187	5	4192
*** BREAK ***															
16:00	26	230	47	36	143	50	2	33	183	42	43	204	46	0	1085
16:15	27	285	53	27	121	52	3	52	171	35	38	174	53	0	1091
16:30	25	290	47	30	151	59	2	51	163	35	36	196	36	0	1121
16:45	39	268	53	36	152	64	3	38	149	33	41	187	42	0	1105
Total	117	1073	200	129	567	225	10	174	666	145	158	761	177	0	4402
17:00	25	321	46	31	128	63	2	38	175	27	31	191	57	0	1135
17:15	30	249	38	34	149	64	2	52	154	31	23	248	40	0	1114
17:30	22	289	48	36	134	49	0	35	166	30	35	192	52	1	1089
17:45	23	261	51	29	144	61	2	28	150	33	42	214	41	1	1080
Total	100	1120	183	130	555	237	6	153	645	121	131	845	190	2	4418
Grand Total	565	3381	586	650	2670	747	24	494	3657	553	397	2503	704	9	16940
Apprch %	12.5	74.6	12.9	15.9	65.3	18.3	0.6	10.5	77.7	11.8	11	69.3	19.5	0.2	
Total %	3.3	20	3.5	3.8	15.8	4.4	0.1	2.9	21.6	3.3	2.3	14.8	4.2	0.1	

City: REDONDO BEACH
N-S Direction: AVIATION BOULEVARD
E-W Direction: ARTESIA BOULEVARD

File Name : h1810002wed
Site Code : 00000000
Start Date : 10/10/2018
Page No : 2

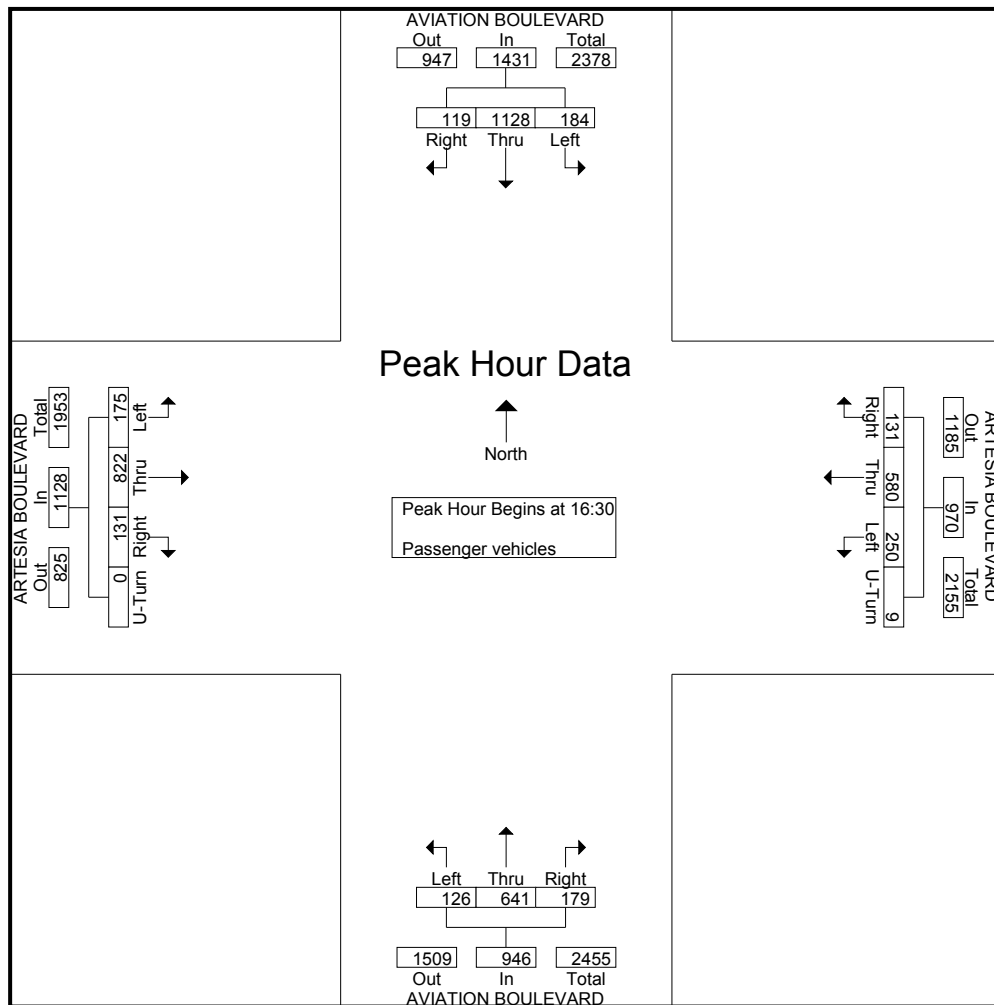
	AVIATION BOULEVARD Southbound					ARTESIA BOULEVARD Westbound					AVIATION BOULEVARD Northbound					ARTESIA BOULEVARD Eastbound					
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total		
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:00																					
08:00	40	144	31	215	36	187	46	1	270	25	292	35	352	18	115	48	1	182	1019		
08:15	52	137	38	227	56	202	33	2	293	20	298	34	352	12	119	44	0	175	1047		
08:30	42	105	31	178	50	232	40	2	324	18	241	56			149	45	0	207	1024		
08:45	57	153	38	248	43	226	34	2	305	27				21	137	50	4	212	1102		
Total Volume	191	539	138	868	185	847	153	7	1192	90	1107	159	1356	64	520	187	5	776	4192		
% App. Total	22	62.1	15.9		15.5	71.1	12.8	0.6		6.6	81.6	11.7		8.2	67	24.1	0.6				
PHF	.838	.881	.908	.875	.826	.913	.832	.875	.920	.833	.929	.710	.963	.762	.872	.935	.313	.915	.951		



City: REDONDO BEACH
N-S Direction: AVIATION BOULEVARD
E-W Direction: ARTESIA BOULEVARD

File Name : h1810002wed
Site Code : 00000000
Start Date : 10/10/2018
Page No : 3

	AVIATION BOULEVARD Southbound				ARTESIA BOULEVARD Westbound					AVIATION BOULEVARD Northbound				ARTESIA BOULEVARD Eastbound					
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																			
Peak Hour for Entire Intersection Begins at 16:30																			
16:30	25	290	47	362	30	151	59	2	242	51	163	35	249	36	196	36	0	268	1121
16:45	39	268	53	360	36	152	64	3	255	38	149	33	220	41	187	42	0	270	1105
17:00	25	321	46	392	31	128	63	2	224	38	175	27	240	31	191	57	0	279	1135
17:15	30	249	38	317	34	149	64	2	249	52				248	40	0	0	311	1114
Total Volume	119	1128	184	1431	131	580	250	9	970	179	641	126	946	131	822	175	0	1128	4475
% App. Total	8.3	78.8	12.9		13.5	59.8	25.8	0.9		18.9	67.8	13.3		11.6	72.9	15.5	0		
PHF	.763	.879	.868	.913	.910	.954	.977	.750	.951	.861	.916	.900	.950	.799	.829	.768	.000	.907	.986



City: REDONDO BEACH
N-S Direction: AVIATION BOULEVARD
E-W Direction: ARTESIA BOULEVARD

File Name : h1810002wed
Site Code : 00000000
Start Date : 10/10/2018
Page No : 1

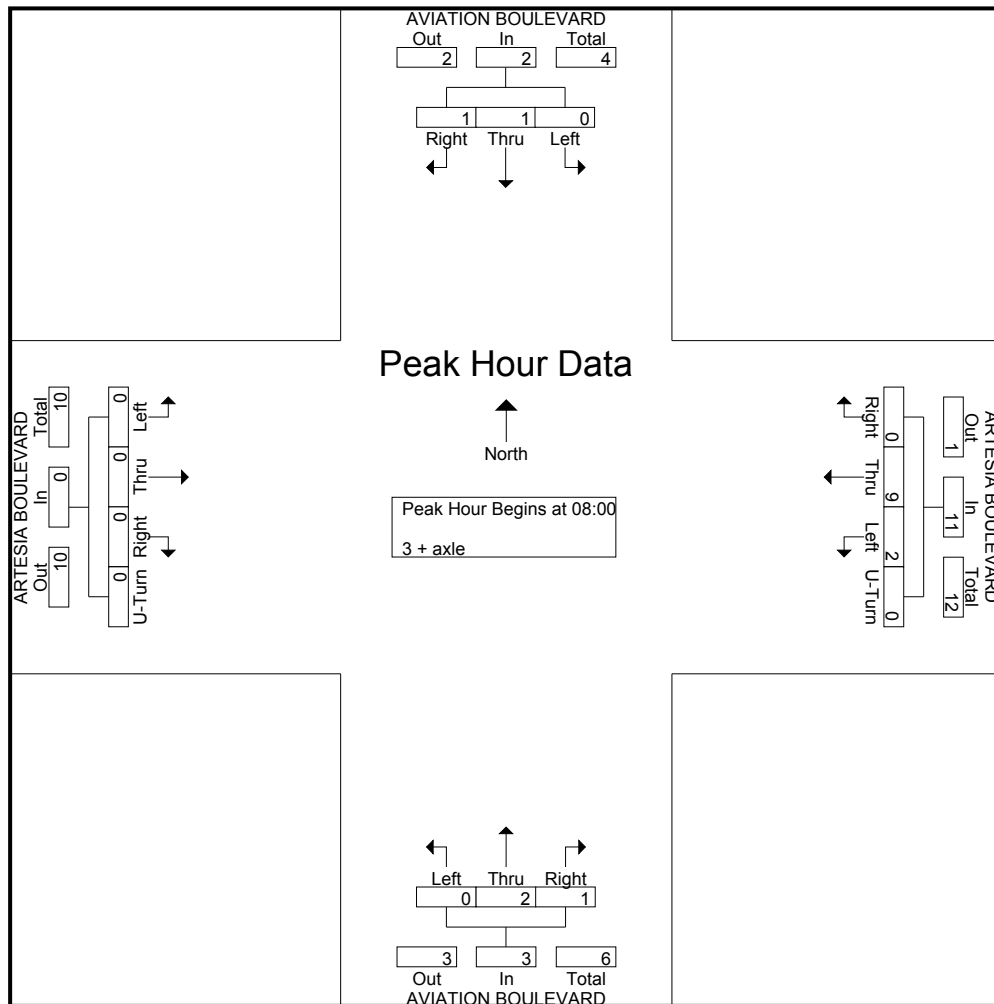
Groups Printed- 3 + axle

	AVIATION BOULEVARD Southbound			ARTESIA BOULEVARD Westbound				AVIATION BOULEVARD Northbound			ARTESIA BOULEVARD Eastbound				
Start Time	Right	Thru	Left	Right	Thru	Left	U-Turn	Right	Thru	Left	Right	Thru	Left	U-Turn	Int. Total
07:00	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
07:15	0	1	0	0	1	0	0	0	0	0	0	0	0	0	2
07:30	0	1	0	0	2	1	0	0	0	0	0	1	0	0	5
07:45	0	0	0	0	2	0	0	0	0	0	0	0	0	0	2
Total	0	2	0	0	6	1	0	0	0	0	0	1	0	0	10
08:00	1	0	0	0	1	0	0	0	0	0	0	0	0	0	2
08:15	0	0	0	0	4	0	0	0	0	0	0	0	0	0	4
08:30	0	0	0	0	3	1	0	0	2	0	0	0	0	0	6
08:45	0	1	0	0	1	1	0	1	0	0	0	0	0	0	4
Total	1	1	0	0	9	2	0	1	2	0	0	0	0	0	16
*** BREAK ***															
16:30	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
*** BREAK ***															
Total	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
*** BREAK ***															
17:30	0	1	0	0	0	0	0	0	1	0	0	0	0	0	2
*** BREAK ***															
Total	0	1	0	0	0	0	0	0	1	0	0	0	0	0	2
Grand Total	1	5	0	0	15	3	0	1	3	0	0	1	0	0	29
Apprch %	16.7	83.3	0	0	83.3	16.7	0	25	75	0	0	100	0	0	
Total %	3.4	17.2	0	0	51.7	10.3	0	3.4	10.3	0	0	3.4	0	0	

City: REDONDO BEACH
N-S Direction: AVIATION BOULEVARD
E-W Direction: ARTESIA BOULEVARD

File Name : h1810002wed
Site Code : 00000000
Start Date : 10/10/2018
Page No : 2

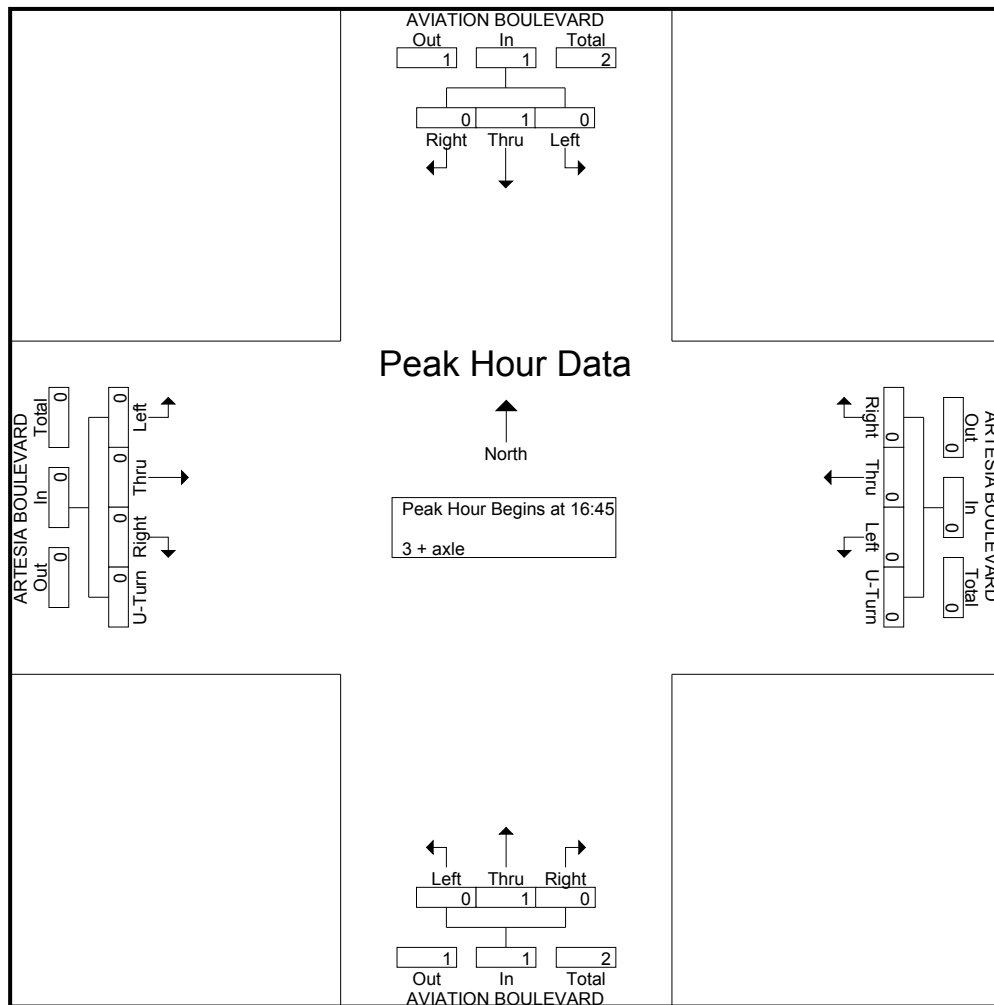
	AVIATION BOULEVARD Southbound				ARTESIA BOULEVARD Westbound					AVIATION BOULEVARD Northbound				ARTESIA BOULEVARD Eastbound					
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																			
Peak Hour for Entire Intersection Begins at 08:00																			
08:00	1	0	0	1	0	1	0	0	1	0	0	0	0	0	0	0	0	0	2
08:15	0	0	0	0	0	4	0	0	4	0	0	0	0	0	0	0	0	0	4
08:30	0	0	0	0	0	3	1	0	4	0	2	0	2	0	0	0	0	0	6
08:45	0	1	0	1	0	1	1	0	2	1									
Total Volume	1	1	0	2	0	9	2	0	11	1	2	0	3	0	0	0	0	0	16
% App. Total	50	50	0		0	81.8	18.2	0		33.3	66.7	0		0	0	0	0		
PHF	.250	.250	.000	.500	.000	.563	.500	.000	.688	.250	.250	.000	.375	.000	.000	.000	.000	.000	.667



City: REDONDO BEACH
N-S Direction: AVIATION BOULEVARD
E-W Direction: ARTESIA BOULEVARD

File Name : h1810002wed
Site Code : 00000000
Start Date : 10/10/2018
Page No : 3

	AVIATION BOULEVARD Southbound				ARTESIA BOULEVARD Westbound					AVIATION BOULEVARD Northbound				ARTESIA BOULEVARD Eastbound					
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																			
Peak Hour for Entire Intersection Begins at 16:45																			
16:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:30	0	1	0	1	0	0	0	0	0	0	1	0	1	0	0	0	0	0	2
Total Volume	0	1	0	1	0	0	0	0	0	0	1	0	1	0	0	0	0	0	2
% App. Total	0	100	0		0	0	0	0		0	100	0		0	0	0	0		
PHF	.000	.250	.000	.250	.000	.000	.000	.000	.000	.000	.250	.000	.250	.000	.000	.000	.000	.000	.250



City: REDONDO BEACH
N-S Direction: AVIATION BOULEVARD
E-W Direction: ARTESIA BOULEVARD

File Name : H1810002TUE
Site Code : 00000000
Start Date : 10/9/2018
Page No : 1

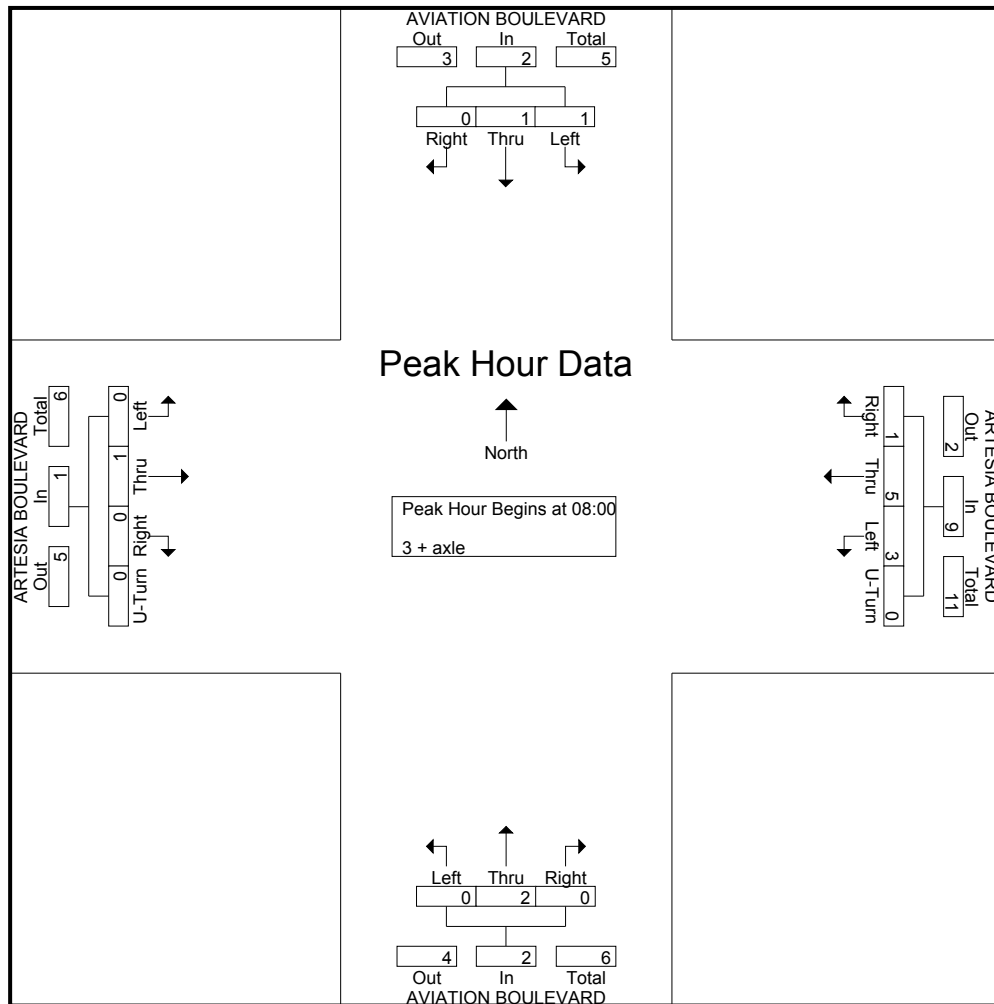
Groups Printed- 3 + axle

	AVIATION BOULEVARD Southbound			ARTESIA BOULEVARD Westbound				AVIATION BOULEVARD Northbound			ARTESIA BOULEVARD Eastbound				
Start Time	Right	Thru	Left	Right	Thru	Left	U-Turn	Right	Thru	Left	Right	Thru	Left	U-Turn	Int. Total
07:00	0	1	0	0	2	0	0	0	0	0	0	0	0	0	3
07:15	0	0	0	0	1	1	0	0	0	0	0	0	0	0	2
07:30	0	2	0	0	1	1	0	0	0	0	0	0	0	0	4
07:45	0	1	0	0	0	0	0	0	2	0	0	0	0	0	3
Total	0	4	0	0	4	2	0	0	2	0	0	0	0	0	12
*** BREAK ***															
08:15	0	0	0	0	2	1	0	0	0	0	0	1	0	0	4
08:30	0	0	0	0	3	1	0	0	1	0	0	0	0	0	5
08:45	0	1	1	1	0	1	0	0	1	0	0	0	0	0	5
Total	0	1	1	1	5	3	0	0	2	0	0	1	0	0	14
*** BREAK ***															
16:00	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
16:15	0	0	0	0	0	0	0	0	1	0	0	2	0	0	3
16:30	0	0	0	0	0	0	0	1	0	0	0	1	0	0	2
*** BREAK ***															
Total	0	0	0	0	0	0	0	1	1	0	0	4	0	0	6
*** BREAK ***															
17:15	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2
17:30	0	1	0	0	0	0	0	0	1	0	0	0	0	0	2
*** BREAK ***															
Total	0	1	0	0	0	0	0	0	1	0	0	2	0	0	4
Grand Total	0	6	1	1	9	5	0	1	6	0	0	7	0	0	36
Apprch %	0	85.7	14.3	6.7	60	33.3	0	14.3	85.7	0	0	100	0	0	
Total %	0	16.7	2.8	2.8	25	13.9	0	2.8	16.7	0	0	19.4	0	0	

City: REDONDO BEACH
N-S Direction: AVIATION BOULEVARD
E-W Direction: ARTESIA BOULEVARD

File Name : H1810002TUE
Site Code : 00000000
Start Date : 10/9/2018
Page No : 2

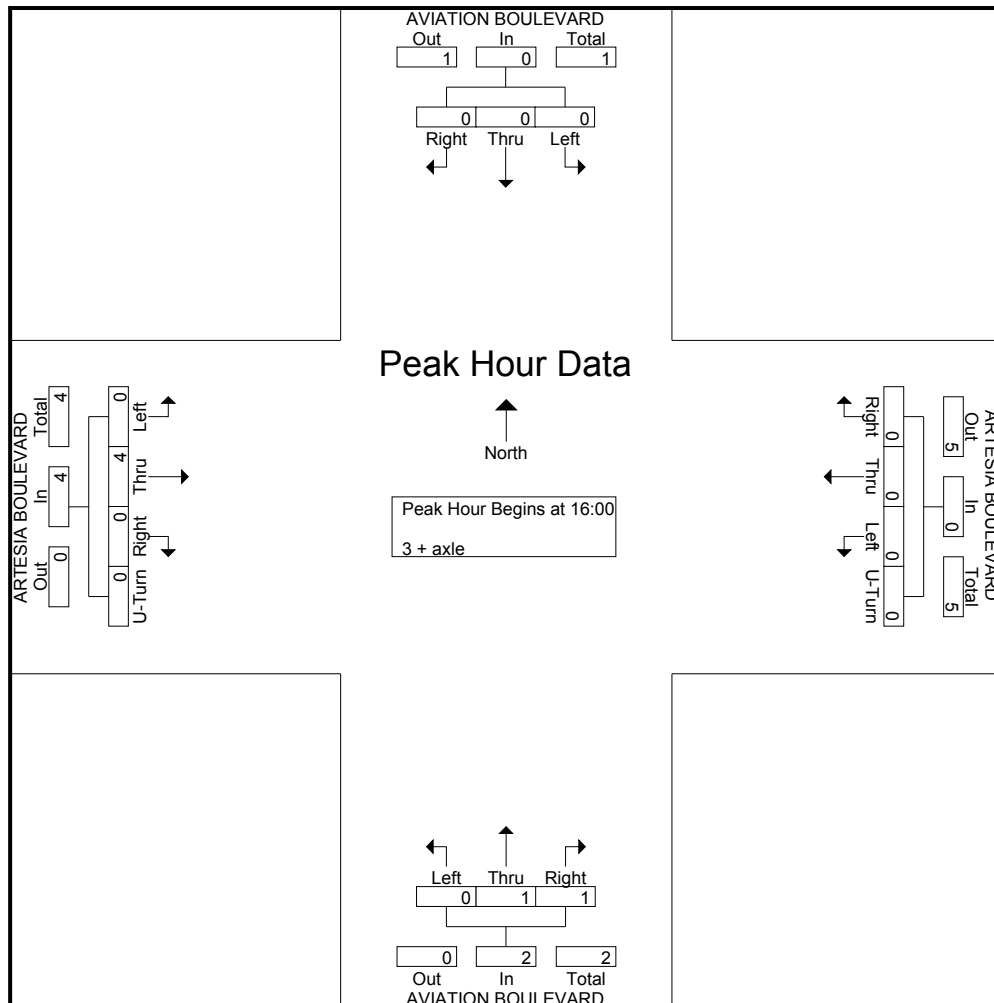
	AVIATION BOULEVARD Southbound				ARTESIA BOULEVARD Westbound					AVIATION BOULEVARD Northbound				ARTESIA BOULEVARD Eastbound					
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																			
Peak Hour for Entire Intersection Begins at 08:00																			
08:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15	0	0	0	0	0	2	1	0	3	0	0	0	0	0	1	0	0	1	4
08:30	0	0	0	0	0	3	1	0	4	0	1	0	1	0	0	0	0	0	5
08:45	0	1	1	2	1	0	1	0	2	0	1	0	1	0	0	0	0	0	5
Total Volume	0	1	1	2	1	5	3	0	9	0	2	0	2	0	1	0	0	1	14
% App. Total	0	50	50		11.1	55.6	33.3	0		0	100	0		0	100	0	0		
PHF	.000	.250	.250	.250	.250	.417	.750	.000	.563	.000	.500	.000	.500	.000	.250	.000	.000	.250	.700



City: REDONDO BEACH
N-S Direction: AVIATION BOULEVARD
E-W Direction: ARTESIA BOULEVARD

File Name : H1810002TUE
Site Code : 00000000
Start Date : 10/9/2018
Page No : 3

	AVIATION BOULEVARD Southbound				ARTESIA BOULEVARD Westbound					AVIATION BOULEVARD Northbound				ARTESIA BOULEVARD Eastbound					
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																			
Peak Hour for Entire Intersection Begins at 16:00																			
16:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
16:15	0	0	0	0	0	0	0	0	0	0	1	0	1	0	2	0	0	2	3
16:30	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0
16:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	1	1	0	2	0	4	0	0	4	6
% App. Total	0	0	0	0	0	0	0	0	0	50	50	0	100	0	100	0	0	100	100
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.250	.250	.000	.500	.000	.500	.000	.000	.500	.500



City: REDONDO BEACH
N-S Direction: AVIATION BOULEVARD
E-W Direction: ARTESIA BOULEVARD

File Name : H1810002TUE
Site Code : 00000000
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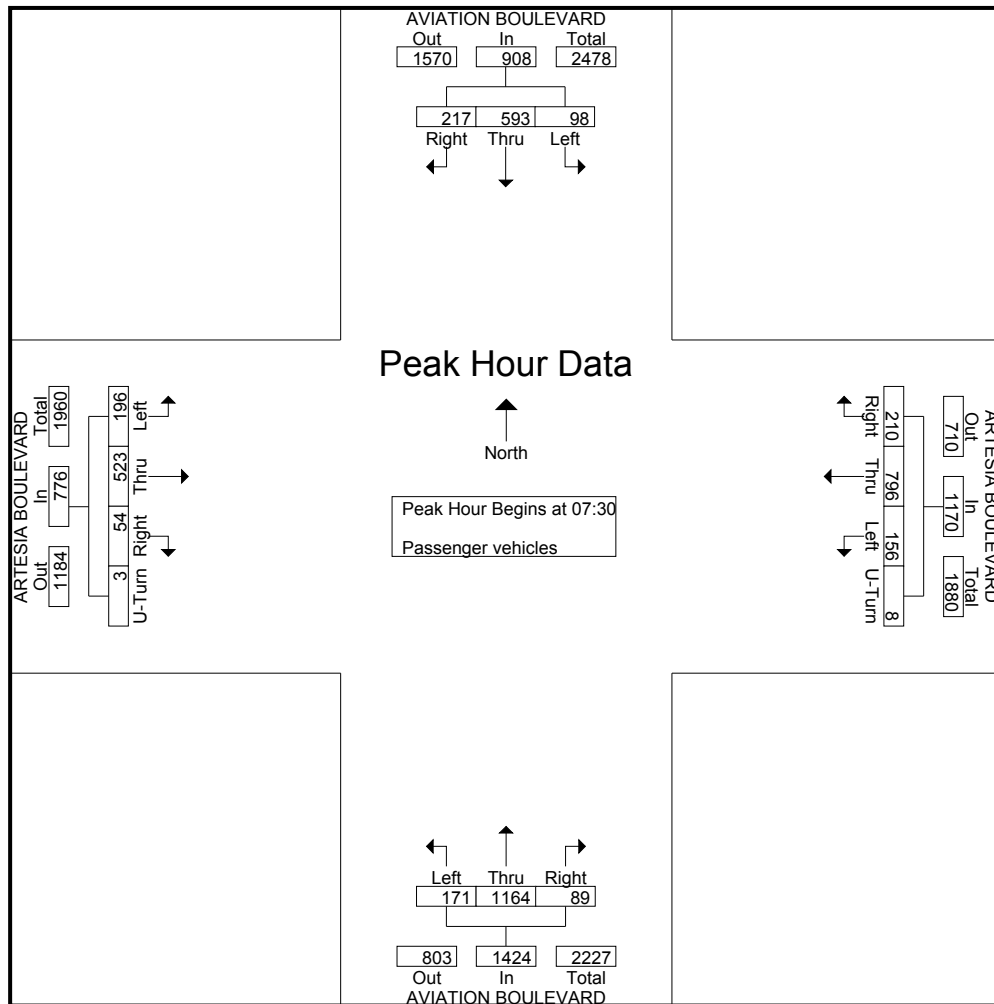
Groups Printed- Passenger vehicles

	AVIATION BOULEVARD Southbound			ARTESIA BOULEVARD Westbound				AVIATION BOULEVARD Northbound			ARTESIA BOULEVARD Eastbound				
Start Time	Right	Thru	Left	Right	Thru	Left	U-Turn	Right	Thru	Left	Right	Thru	Left	U-Turn	Int. Total
07:00	35	89	12	46	135	29	0	16	281	26	14	97	44	0	824
07:15	46	142	17	44	178	44	0	17	336	38	8	104	34	3	1011
07:30	48	142	19	49	223	44	1	17	314	42	8	117	43	1	1068
07:45	72	173	26	51	182	30	1	32	277	43	12	131	71	1	1102
Total	201	546	74	190	718	147	2	82	1208	149	42	449	192	5	4005
08:00	45	136	23	59	189	37	1	20	312	44	13	141	39	0	1059
08:15	52	142	30	51	202	45	5	20	261	42	21	134	43	1	1049
08:30	52	136	15	45	180	42	4	23	292	36	21	146	55	1	1048
08:45	63	129	15	52	198	33	1	31	263	49	12	109	44	0	999
Total	212	543	83	207	769	157	11	94	1128	171	67	530	181	2	4155
*** BREAK ***															
16:00	39	250	45	28	117	51	0	36	150	26	29	202	52	0	1025
16:15	30	268	65	39	132	49	1	34	170	30	30	184	42	3	1077
16:30	23	229	55	41	149	59	0	34	139	27	41	210	53	1	1061
16:45	23	273	58	24	128	70	3	29	187	43	47	174	58	0	1117
Total	115	1020	223	132	526	229	4	133	646	126	147	770	205	4	4280
17:00	24	240	33	36	143	54	6	35	164	31	44	243	51	0	1104
17:15	27	275	47	43	153	59	0	40	195	37	44	185	41	1	1147
17:30	15	243	35	29	151	75	1	33	153	34	41	184	55	0	1049
17:45	11	258	46	46	142	53	1	23	140	38	50	188	43	0	1039
Total	77	1016	161	154	589	241	8	131	652	140	179	800	190	1	4339
Grand Total	605	3125	541	683	2602	774	25	440	3634	586	435	2549	768	12	16779
Apprch %	14.2	73.2	12.7	16.7	63.7	19	0.6	9.4	78	12.6	11.6	67.7	20.4	0.3	
Total %	3.6	18.6	3.2	4.1	15.5	4.6	0.1	2.6	21.7	3.5	2.6	15.2	4.6	0.1	

City: REDONDO BEACH
N-S Direction: AVIATION BOULEVARD
E-W Direction: ARTESIA BOULEVARD

File Name : H1810002TUE
Site Code : 00000000
Start Date : 10/9/2018
Page No : 2

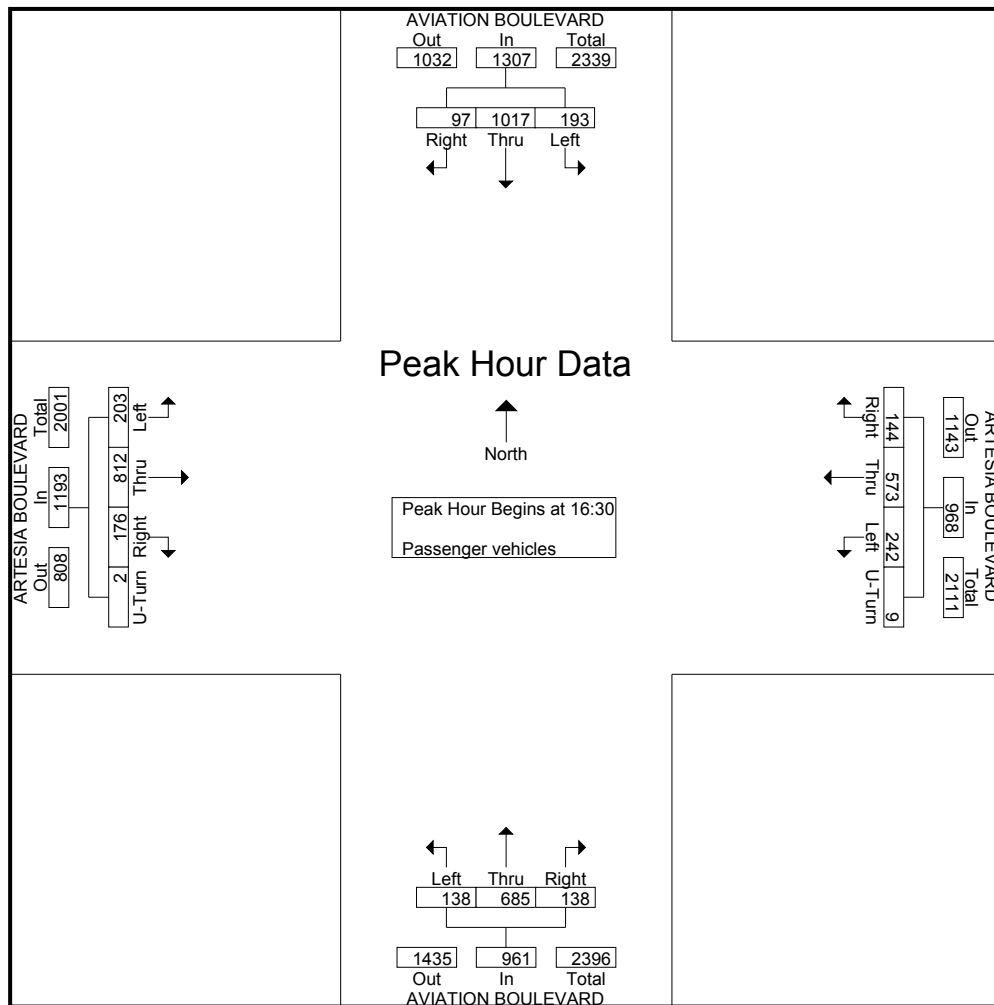
	AVIATION BOULEVARD Southbound				ARTESIA BOULEVARD Westbound					AVIATION BOULEVARD Northbound				ARTESIA BOULEVARD Eastbound					
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																			
Peak Hour for Entire Intersection Begins at 07:30																			
07:30	48	142	19	209	49	223	44	1	317	17	314	42	373	8	117	43	1	169	1068
07:45	72	173	26	271	51	182	30	1	264	32	314	42	373	13	141	39	0	193	1102
08:00	45	136	23	204	59	189	37	1	286	20	312	44	376	13	141	39	0	193	1059
08:15	52	142	30	224	51	202	45	5	303	20	261	42	323	21	134	43	1	199	1049
Total Volume	217	593	98	908	210	796	156	8	1170	89	1164	171	1424	54	523	196	3	776	4278
% App. Total	23.9	65.3	10.8		17.9	68	13.3	0.7		6.2	81.7	12		7	67.4	25.3	0.4		
PHF	.753	.857	.817	.838	.890	.892	.867	.400	.923	.695	.927	.972	.947	.643	.927	.690	.750	.902	.971



City: REDONDO BEACH
N-S Direction: AVIATION BOULEVARD
E-W Direction: ARTESIA BOULEVARD

File Name : H1810002TUE
Site Code : 00000000
Start Date : 10/9/2018
Page No : 3

	AVIATION BOULEVARD Southbound				ARTESIA BOULEVARD Westbound					AVIATION BOULEVARD Northbound				ARTESIA BOULEVARD Eastbound					
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																			
Peak Hour for Entire Intersection Begins at 16:30																			
16:30	23	229	55	307	41	149	59	0	249	34	139	27	200	41	210	53	1	305	1061
16:45	23	273	58	354	24	128	70	3	225	29	187	43		47	174	58	0	279	1117
17:00	24	240	33	297	36	143	54	6	239	35	164	31	230	44	243	51	0	338	1104
17:15	27	275	47	349	43	153	59	0	255	40	195	37	272	44	185	41	1	271	1147
Total Volume	97	1017	193	1307	144	573	242	9	968	138	685	138	961	176	812	203	2	1193	4429
% App. Total	7.4	77.8	14.8		14.9	59.2	25	0.9		14.4	71.3	14.4		14.8	68.1	17	0.2		
PHF	.898	.925	.832	.923	.837	.936	.864	.375	.949	.863	.878	.802	.883	.936	.835	.875	.500	.882	.965



City: REDONDO BEACH

Location: AVIATION BOULEVARD

Segment: S/O ARTESIA BOULEVARD

Date Start: 16-Oct-18

S1810001

NORTHBOUND, NORTHBOUND1

Start Time	1 25	26 28	29 30	31 32	33 34	35 36	37 38	39 40	41 42	43 44	45 46	47 48	49 9999	Total
10/16/18	0	2	2	1	6	5	15	8	2	3	5	1	2	52
00:15	0	0	2	2	1	0	4	7	2	3	4	1	2	28
00:30	1	0	0	2	8	7	8	14	6	0	2	2	0	50
00:45	0	0	0	0	6	5	9	1	3	1	2	0	2	29
01:00	1	2	4	5	21	17	36	30	13	7	13	4	6	159
01:15	0	2	0	0	9	4	10	3	3	2	4	7	0	44
01:30	0	0	0	0	0	2	7	4	1	9	0	0	2	25
01:45	0	0	2	1	0	3	3	4	2	2	3	1	0	21
02:00	0	2	0	2	2	1	3	2	5	1	5	1	3	27
02:15	0	4	2	3	11	10	23	13	11	14	12	9	5	117
02:30	0	0	2	0	1	1	5	2	1	1	0	0	0	13
02:45	4	2	3	2	12	3	4	4	5	6	0	0	1	46
03:00	0	3	0	0	0	0	0	0	1	2	1	0	1	8
03:15	0	0	2	0	0	7	0	2	0	2	0	2	0	15
03:30	4	5	7	2	13	11	9	8	7	11	1	2	2	82
03:45	0	0	0	0	0	6	8	3	1	1	2	0	1	22
04:00	0	2	2	2	0	4	3	1	0	2	1	2	0	19
04:15	0	1	0	1	0	1	9	2	2	0	1	2	0	19
04:30	0	2	0	3	3	5	6	7	7	6	0	0	3	42
04:45	0	5	2	6	3	16	26	13	10	9	4	4	4	102
05:00	0	0	2	2	5	4	1	14	0	6	3	5	3	45
05:15	0	0	0	3	4	5	4	6	2	5	4	3	6	42
05:30	0	0	3	0	3	5	12	11	18	19	8	5	7	91
05:45	0	0	3	7	12	12	21	28	20	14	13	3	9	142
06:00	0	0	8	12	24	26	38	59	40	44	28	16	25	320
06:15	0	0	2	5	7	13	22	16	22	12	18	12	9	138
06:30	2	2	3	6	7	29	28	20	32	18	11	13	16	187
06:45	0	0	10	12	28	34	63	57	34	24	9	3	8	282
07:00	4	22	26	25	41	49	67	50	25	11	9	1	1	331
07:15	6	24	41	48	83	125	180	143	113	65	47	29	34	938
07:30	15	10	16	35	38	65	66	34	31	10	10	4	0	334
07:45	6	22	26	43	57	40	71	37	24	7	5	6	2	346
08:00	27	29	35	48	49	60	49	34	26	7	6	3	2	375
08:15	152	42	30	32	32	34	7	9	7	2	0	0	0	347
08:30	200	103	107	158	176	199	193	114	88	26	21	13	4	1402
08:45	145	59	42	46	30	30	17	7	5	0	1	0	0	382
09:00	156	44	22	22	27	20	10	4	1	2	0	0	0	308
09:15	176	24	29	20	14	5	3	4	0	1	0	0	0	276
09:30	149	26	19	3	6	16	1	4	0	0	0	0	0	224
09:45	626	153	112	91	77	71	31	19	6	3	1	0	0	1190
10:00	197	23	2	1	1	0	0	0	0	0	0	0	0	224
10:15	141	1	1	0	0	0	0	0	0	0	0	0	0	143
10:30	174	28	0	2	1	0	0	0	0	0	0	0	0	205
10:45	184	31	33	19	20	16	12	2	5	0	1	2	0	325
11:00	696	83	36	22	22	16	12	2	5	0	1	2	0	897
11:15	137	19	15	12	6	2	6	0	0	0	0	0	0	197
11:30	151	39	28	25	34	3	5	0	0	0	1	0	0	286
11:45	100	38	41	21	47	41	16	14	7	1	0	0	0	326
12:00	86	50	46	36	51	53	21	15	11	4	0	1	0	374
12:15	474	146	130	94	138	99	48	29	18	5	1	1	0	1183
12:30	72	67	29	34	52	33	17	11	13	6	1	0	0	335
12:45	44	40	53	64	50	48	24	16	6	2	0	2	0	349
13:00	68	49	41	59	38	34	20	15	11	5	3	0	0	343
13:15	39	29	31	37	40	37	26	20	8	6	2	1	0	276
13:30	223	185	154	194	180	152	87	62	38	19	6	3	0	1303
13:45	37	39	34	47	45	42	22	29	11	1	4	0	2	313
14:00	49	42	43	38	36	23	27	14	14	6	4	0	5	301
14:15	56	31	27	34	48	21	25	23	15	3	7	1	1	292
14:30	31	25	27	39	65	47	32	20	15	4	3	1	0	309
14:45	173	137	131	158	194	133	106	86	55	14	18	2	8	1215
Total	2403	847	734	793	942	875	789	578	404	217	153	85	88	8908

City: REDONDO BEACH

Location: AVIATION BOULEVARD

Segment: S/O ARTESIA BOULEVARD

Date Start: 16-Oct-18

S1810001

NORTHBOUND, NORTHBOUND1

Start Time	1 25	26 28	29 30	31 32	33 34	35 36	37 38	39 40	41 42	43 44	45 46	47 48	49 9999	Total
12 PM	38	38	39	55	46	43	35	15	10	4	1	0	0	324
12:15	91	33	34	32	28	28	22	33	11	5	5	0	0	322
12:30	52	38	33	35	24	50	39	16	4	4	4	3	1	303
12:45	62	42	36	48	68	44	25	21	5	7	2	1	0	361
	243	151	142	170	166	165	121	85	30	20	12	4	1	1310
13:00	58	29	48	41	43	28	27	29	13	3	2	0	0	321
13:15	80	40	25	32	46	39	25	9	5	1	0	0	0	302
13:30	33	35	35	41	41	41	40	20	6	8	2	2	1	305
13:45	52	42	31	39	42	29	23	19	12	8	0	3	0	300
	223	146	139	153	172	137	115	77	36	20	4	5	1	1228
14:00	51	22	23	29	52	38	22	26	14	9	5	2	1	294
14:15	41	25	23	33	44	50	25	21	11	7	3	1	0	284
14:30	77	22	38	40	38	28	23	8	8	2	0	0	0	284
14:45	37	30	28	33	53	46	37	22	10	11	6	0	1	314
	206	99	112	135	187	162	107	77	43	29	14	3	2	1176
15:00	65	46	41	61	44	43	30	10	5	5	1	0	0	351
15:15	78	35	31	43	38	31	10	9	4	1	2	1	0	283
15:30	45	24	19	24	47	60	35	19	6	7	1	2	0	289
15:45	53	50	44	27	29	29	23	20	10	3	3	0	0	291
	241	155	135	155	158	163	98	58	25	16	7	3	0	1214
16:00	66	39	42	43	29	37	37	4	4	4	3	1	1	310
16:15	98	28	24	30	56	49	32	13	3	6	0	0	0	339
16:30	74	30	29	33	26	37	37	22	4	1	2	2	2	299
16:45	110	30	45	40	24	27	20	10	1	1	0	0	4	312
	348	127	140	146	135	150	126	49	12	12	5	3	7	1260
17:00	80	32	35	34	50	38	24	15	3	4	3	0	0	318
17:15	134	40	30	43	23	22	13	2	3	4	0	0	0	314
17:30	70	30	34	32	28	40	21	20	9	2	0	0	0	286
17:45	62	47	43	51	47	26	20	7	5	2	0	0	0	310
	346	149	142	160	148	126	78	44	20	12	3	0	0	1228
18:00	96	40	29	55	38	32	21	21	5	0	1	0	0	338
18:15	36	33	24	42	36	46	37	20	13	1	0	0	1	289
18:30	22	31	32	43	46	42	29	19	9	1	2	0	2	278
18:45	72	56	41	25	41	42	20	16	8	1	2	0	0	324
	226	160	126	165	161	162	107	76	35	3	5	0	3	1229
19:00	88	49	39	45	28	20	13	7	3	8	0	0	0	300
19:15	80	20	26	43	32	34	37	10	3	4	1	3	2	295
19:30	9	19	24	22	40	39	30	9	14	10	7	2	4	229
19:45	36	27	16	21	54	26	19	19	7	8	3	2	3	241
	213	115	105	131	154	119	99	45	27	30	11	7	9	1065
20:00	13	14	19	20	39	19	33	16	8	7	0	0	0	188
20:15	29	18	25	29	29	39	27	19	10	3	1	0	0	229
20:30	7	27	27	34	38	19	22	21	9	2	1	2	0	209
20:45	13	39	14	23	34	33	24	9	6	8	1	2	1	207
	62	98	85	106	140	110	106	65	33	20	3	4	1	833
21:00	8	14	24	34	30	34	32	18	17	2	0	0	0	213
21:15	10	11	10	30	34	28	23	14	12	4	2	0	2	180
21:30	2	4	14	23	40	33	29	11	4	2	1	0	0	163
21:45	7	8	9	26	31	20	26	16	3	7	2	6	5	166
	27	37	57	113	135	115	110	59	36	15	5	6	7	722
22:00	0	9	6	17	13	30	26	19	9	9	4	2	0	144
22:15	0	3	6	15	29	28	19	12	8	5	0	1	0	126
22:30	7	2	5	10	27	22	24	29	9	0	6	0	1	142
22:45	0	0	2	17	29	30	30	7	3	1	9	2	1	131
	7	14	19	59	98	110	99	67	29	15	19	5	2	543
23:00	2	1	3	15	9	12	26	17	6	7	2	1	2	103
23:15	0	0	7	7	23	17	14	9	7	4	4	2	3	97
23:30	3	0	2	5	6	8	11	13	5	9	3	2	1	68
23:45	2	0	3	10	7	9	10	5	4	4	5	3	3	65
	7	1	15	37	45	46	61	44	22	24	14	8	9	333
Total	2149	1252	1217	1530	1699	1565	1227	746	348	216	102	48	42	12141
Total	4552	2099	1951	2323	2641	2440	2016	1324	752	433	255	133	130	21049

15th Percentile : 17 MPH
 50th Percentile : 31 MPH
 85th Percentile : 37 MPH
 95th Percentile : 41 MPH

Statistics

Mean Speed(Average) : 30 MPH
 10 MPH Pace Speed : 29-38 MPH
 Number in Pace : 11371
 Percent in Pace : 54.0%
 Number of Vehicles > 55 MPH : 0
 Percent of Vehicles > 55 MPH : 0.0%

City: REDONDO BEACH

Location: AVIATION BOULEVARD

Segment: S/O ARTESIA BOULEVARD

Date Start: 17-Oct-18

S1810001

NORTHBOUND, NORTHBOUND1

Start Time	1 25	26 28	29 30	31 32	33 34	35 36	37 38	39 40	41 42	43 44	45 46	47 48	49 9999	Total
10/17/18	2	2	1	2	7	10	14	6	4	1	2	2	0	53
00:15	4	2	0	0	5	13	19	11	4	3	4	1	1	67
00:30	2	2	6	6	4	11	2	6	2	3	2	2	0	48
00:45	6	0	2	4	3	2	7	7	3	1	4	1	1	41
	14	6	9	12	19	36	42	30	13	8	12	6	2	209
01:00	0	2	0	2	3	2	2	4	2	0	1	0	0	18
01:15	0	0	2	0	2	7	2	2	8	2	1	1	0	27
01:30	0	0	0	2	4	3	5	6	0	2	0	2	2	26
01:45	2	0	1	3	2	5	7	0	5	2	0	0	2	29
	2	2	3	7	11	17	16	12	15	6	2	3	4	100
02:00	0	0	0	2	1	3	2	9	0	0	2	1	0	20
02:15	0	0	0	0	2	1	6	2	2	2	0	1	4	20
02:30	0	1	0	0	2	4	1	4	3	1	1	0	0	17
02:45	0	0	0	0	4	1	1	2	0	2	0	1	1	12
	0	1	0	2	9	9	10	17	5	5	3	3	5	69
03:00	0	2	0	5	0	2	6	2	2	0	1	0	2	22
03:15	0	0	0	0	2	2	0	2	3	0	5	0	0	14
03:30	0	1	0	3	3	0	0	3	1	0	0	0	2	13
03:45	0	0	0	2	3	1	5	11	0	0	3	2	1	28
	0	3	0	10	8	5	11	18	6	0	9	2	5	77
04:00	0	0	0	6	4	0	7	10	7	1	3	3	3	44
04:15	2	0	3	5	4	0	5	7	3	7	2	4	8	50
04:30	0	4	0	3	4	11	1	9	10	11	10	3	9	75
04:45	2	2	2	4	11	18	27	22	20	11	13	6	4	142
	4	6	5	18	23	29	40	48	40	30	28	16	24	311
05:00	0	0	2	2	6	9	14	13	22	14	12	21	7	122
05:15	0	0	0	6	15	24	26	27	28	15	9	3	9	162
05:30	0	2	4	9	27	28	52	35	50	21	10	6	5	249
05:45	15	14	23	25	40	46	53	42	28	11	5	2	3	307
	15	16	29	42	88	107	145	117	128	61	36	32	24	840
06:00	3	14	29	28	41	32	62	43	26	25	10	7	3	323
06:15	22	19	27	54	38	36	49	43	29	19	6	2	5	349
06:30	44	27	19	60	63	64	33	22	17	7	4	1	2	363
06:45	147	45	46	51	47	31	22	15	7	3	2	0	0	416
	216	105	121	193	189	163	166	123	79	54	22	10	10	1451
07:00	152	33	30	36	29	17	6	2	2	1	0	0	0	308
07:15	87	67	51	35	50	49	27	18	8	1	4	3	0	400
07:30	149	45	48	34	38	31	25	8	3	2	0	0	0	383
07:45	151	27	16	10	7	7	6	2	1	2	2	0	0	231
	539	172	145	115	124	104	64	30	14	6	6	3	0	1322
08:00	186	8	0	0	0	0	0	0	0	0	0	0	0	194
08:15	167	17	9	2	1	0	0	2	0	0	0	0	0	198
08:30	173	32	3	6	0	1	0	0	0	0	0	0	0	215
08:45	133	19	5	4	2	0	0	0	0	0	0	0	0	163
	659	76	17	12	3	1	0	2	0	0	0	0	0	770
09:00	159	45	37	37	37	23	12	9	9	3	1	2	0	374
09:15	93	50	39	43	31	26	22	16	6	2	0	0	2	330
09:30	117	32	24	34	24	34	19	13	10	3	1	2	0	313
09:45	97	42	35	38	39	19	12	16	3	7	3	1	0	312
	466	169	135	152	131	102	65	54	28	15	5	5	2	1329
10:00	56	41	42	44	55	37	22	21	15	9	0	0	0	342
10:15	41	38	39	39	52	44	22	17	11	10	4	0	0	317
10:30	63	51	55	45	47	39	28	10	5	4	0	1	1	349
10:45	79	48	33	40	44	35	21	19	12	0	1	0	0	332
	239	178	169	168	198	155	93	67	43	23	5	1	1	1340
11:00	62	31	30	43	34	39	39	19	11	6	0	0	0	314
11:15	41	25	45	47	54	33	23	18	7	3	0	0	2	298
11:30	117	50	46	36	55	41	21	9	5	2	0	0	0	382
11:45	36	40	39	41	37	41	23	11	7	3	2	0	0	280
	256	146	160	167	180	154	106	57	30	14	2	0	2	1274
Total	2410	880	793	898	983	882	758	575	401	222	130	81	79	9092

City: REDONDO BEACH

Location: AVIATION BOULEVARD

Segment: S/O ARTESIA BOULEVARD

Date Start: 17-Oct-18

S1810001

NORTHBOUND, NORTHBOUND1

Start Time	1 25	26 28	29 30	31 32	33 34	35 36	37 38	39 40	41 42	43 44	45 46	47 48	49 9999	Total
12 PM	55	40	46	33	36	28	37	29	12	3	1	1	0	321
12:15	37	29	41	32	38	39	38	13	10	5	4	1	0	287
12:30	34	33	29	47	40	59	29	19	12	5	0	5	0	312
12:45	60	45	29	40	44	27	36	31	9	6	2	1	0	330
13:00	186	147	145	152	158	153	140	92	43	19	7	8	0	1250
13:15	66	31	22	39	29	31	30	13	11	5	1	1	1	280
13:30	41	35	37	35	19	47	24	18	10	11	0	0	0	277
13:45	40	31	32	37	64	51	40	18	2	6	1	0	0	322
14:00	26	25	37	46	52	37	30	25	9	3	1	1	1	293
14:15	173	122	128	157	164	166	124	74	32	25	3	2	2	1172
14:30	61	16	29	29	26	25	14	20	11	6	3	1	0	241
14:45	38	41	19	37	40	50	21	18	11	5	2	0	0	282
15:00	51	40	20	22	26	29	34	19	15	6	0	0	0	262
15:15	24	35	30	30	33	43	34	26	9	6	4	1	0	275
15:30	174	132	98	118	125	147	103	83	46	23	9	2	0	1060
15:45	36	39	23	51	36	42	38	16	5	5	2	1	2	296
16:00	143	53	24	47	23	12	7	10	2	0	0	0	0	321
16:15	101	43	36	23	20	19	10	6	7	0	1	0	0	266
16:30	70	29	26	36	29	32	28	16	6	8	5	0	0	285
16:45	350	164	109	157	108	105	83	48	20	13	8	1	2	1168
17:00	103	32	28	39	35	31	11	15	5	1	1	0	0	301
17:15	70	18	33	42	25	48	26	9	8	3	1	0	1	284
17:30	64	66	31	38	52	37	18	10	6	2	1	0	0	325
17:45	113	48	34	44	21	17	13	9	9	0	2	0	0	310
18:00	350	164	126	163	133	133	68	43	28	6	5	0	1	1220
18:15	75	54	36	51	52	32	25	14	5	0	0	0	0	344
18:30	85	31	35	38	26	31	24	7	6	2	1	1	0	287
18:45	129	26	46	32	23	21	23	9	4	1	2	1	1	318
19:00	88	41	25	36	40	38	17	6	2	2	2	0	0	297
19:15	377	152	142	157	141	122	89	36	17	5	5	2	1	1246
19:30	80	50	37	40	42	30	19	12	2	1	3	0	0	316
19:45	96	37	13	47	44	35	27	11	6	0	1	0	0	317
20:00	31	24	35	39	48	36	27	9	8	2	2	0	0	261
20:15	49	49	32	39	52	35	22	16	6	1	3	0	2	306
20:30	256	160	117	165	186	136	95	48	22	4	9	0	2	1200
20:45	11	30	55	32	48	46	24	16	5	1	4	0	0	272
21:00	31	18	52	53	52	33	35	19	5	2	5	0	1	306
21:15	37	32	35	32	43	46	36	12	5	0	3	0	0	281
21:30	43	33	31	33	46	38	23	5	4	2	1	0	0	259
21:45	122	113	173	150	189	163	118	52	19	5	13	0	1	1118
22:00	23	20	18	28	27	33	16	16	15	11	2	2	0	211
22:15	9	23	21	32	27	50	41	14	8	5	5	2	0	237
22:30	2	21	32	36	31	20	35	22	9	7	5	0	0	220
22:45	7	3	23	29	30	32	30	12	11	3	0	1	1	182
23:00	41	67	94	125	115	135	122	64	43	26	12	5	1	850
23:15	2	14	13	30	25	30	19	14	7	7	2	3	0	166
23:30	4	5	6	38	42	54	22	21	6	3	0	1	0	202
23:45	15	9	11	12	27	25	34	18	8	8	7	0	0	174
24:00	5	2	5	25	29	28	18	29	17	0	1	2	2	163
24:15	26	30	35	105	123	137	93	82	38	18	10	6	2	705
24:30	0	2	4	9	21	32	31	18	12	6	2	2	2	141
24:45	8	4	2	26	15	26	15	14	19	3	7	3	2	144
25:00	2	4	11	15	9	17	21	14	17	4	2	2	0	118
25:15	4	0	8	3	15	17	17	10	11	5	1	4	0	95
25:30	14	10	25	53	60	92	84	56	59	18	12	11	4	498
25:45	2	0	0	5	12	20	20	10	11	2	3	2	2	89
26:00	5	0	0	4	11	6	19	13	13	2	5	1	2	81
26:15	2	0	2	6	5	12	12	3	5	7	1	1	4	60
26:30	2	3	2	6	7	9	10	6	3	6	0	0	0	54
26:45	11	3	4	21	35	47	61	32	32	17	9	4	8	284
Total	2080	1264	1196	1523	1537	1536	1180	710	399	179	102	41	24	11771
Total	4490	2144	1989	2421	2520	2418	1938	1285	800	401	232	122	103	20863

15th Percentile : 17 MPH
 50th Percentile : 31 MPH
 85th Percentile : 37 MPH
 95th Percentile : 41 MPH

Statistics

Mean Speed(Average) : 29 MPH
 10 MPH Pace Speed : 29-38 MPH
 Number in Pace : 11286
 Percent in Pace : 54.1%
 Number of Vehicles > 55 MPH : 0
 Percent of Vehicles > 55 MPH : 0.0%

City: REDONDO BEACH

Location: AVIATION BOULEVARD

Segment: S/O ARTESIA BOULEVARD

Date Start: 16-Oct-18

S1810001S

SOUTHBOUND, SOUTHBOUND1

Start Time	1 25	26 28	29 30	31 32	33 34	35 36	37 38	39 40	41 42	43 44	45 46	47 48	49 9999	Total
10/16/18	0	2	0	4	0	5	5	12	9	7	3	0	0	47
00:15	0	0	0	1	6	7	10	4	10	9	8	2	0	57
00:30	0	0	2	2	0	3	11	5	5	4	6	2	6	46
00:45	3	2	0	3	4	0	6	3	6	9	1	0	0	37
	3	4	2	10	10	15	32	24	30	29	18	4	6	187
01:00	1	2	0	0	1	2	8	3	4	3	2	3	3	32
01:15	0	0	0	2	1	2	3	5	1	4	1	1	1	21
01:30	0	0	1	1	2	0	2	2	6	2	0	2	6	24
01:45	0	4	0	2	3	3	5	2	6	0	1	0	1	27
	1	6	1	5	7	7	18	12	17	9	4	6	11	104
02:00	0	3	0	0	2	4	8	1	5	2	0	0	0	25
02:15	0	2	0	0	1	4	1	1	1	1	1	0	3	15
02:30	0	0	0	2	0	0	3	1	2	0	2	2	5	17
02:45	2	0	0	1	2	1	4	4	0	2	3	0	3	22
	2	5	0	3	5	9	16	7	8	5	6	2	11	79
03:00	0	0	0	0	0	0	2	2	3	0	0	3	0	10
03:15	0	0	0	2	1	2	1	3	2	1	4	5	0	21
03:30	0	0	0	0	1	1	2	6	6	3	0	2	1	22
03:45	0	0	0	0	2	1	3	3	2	5	6	2	2	26
	0	0	0	2	4	4	8	14	13	9	10	12	3	79
04:00	0	0	0	0	1	0	5	4	7	5	1	2	0	25
04:15	2	0	2	0	2	0	1	1	3	2	2	0	1	16
04:30	0	0	0	1	2	4	5	2	7	1	2	4	1	29
04:45	0	0	2	1	1	2	6	4	6	10	2	3	2	39
	2	0	4	2	6	6	17	11	23	18	7	9	4	109
05:00	3	0	0	2	1	3	6	10	2	0	2	2	0	31
05:15	0	0	2	0	2	6	10	13	9	5	2	0	2	51
05:30	0	0	0	0	3	5	6	6	12	11	7	7	5	62
05:45	0	0	0	2	3	3	7	10	17	12	10	3	9	76
	3	0	2	4	9	17	29	39	40	28	21	12	16	220
06:00	0	0	0	0	9	10	10	22	15	10	6	6	3	91
06:15	0	1	1	3	2	12	8	15	17	13	3	7	3	85
06:30	0	0	0	1	9	8	20	23	21	17	11	8	10	128
06:45	0	2	0	6	20	13	26	28	24	16	6	6	1	148
	0	3	1	10	40	43	64	88	77	56	26	27	17	452
07:00	0	0	0	5	14	9	22	51	35	22	5	3	2	168
07:15	13	3	3	6	41	53	36	29	20	13	10	1	9	237
07:30	0	1	2	4	16	41	60	57	45	24	14	4	8	276
07:45	8	0	3	11	23	40	56	39	38	15	17	9	10	269
	21	4	8	26	94	143	174	176	138	74	46	17	29	950
08:00	5	4	7	16	25	39	64	43	37	19	8	3	0	270
08:15	5	2	3	13	32	43	40	40	27	24	2	3	3	237
08:30	4	9	5	10	20	25	44	40	26	6	10	5	4	208
08:45	8	9	14	31	45	45	51	37	21	14	5	4	0	284
	22	24	29	70	122	152	199	160	111	63	25	15	7	999
09:00	0	1	1	10	42	62	37	34	36	14	8	0	3	248
09:15	1	9	3	14	33	23	29	47	40	11	19	2	4	235
09:30	2	0	3	3	14	37	58	41	35	15	11	8	8	235
09:45	4	3	5	10	9	16	27	39	42	11	11	11	2	190
	7	13	12	37	98	138	151	161	153	51	49	21	17	908
10:00	3	1	3	10	16	27	36	35	26	12	7	8	1	185
10:15	5	0	6	10	14	36	49	34	24	20	11	3	3	215
10:30	2	2	17	22	28	36	45	46	33	18	10	9	10	278
10:45	7	12	4	6	34	58	42	39	25	19	3	4	0	253
	17	15	30	48	92	157	172	154	108	69	31	24	14	931
11:00	6	3	1	5	18	23	31	42	41	23	11	5	8	217
11:15	6	3	10	11	29	56	50	27	26	24	12	5	4	263
11:30	6	1	4	12	22	41	40	46	29	22	14	5	5	247
11:45	4	3	5	13	37	53	53	45	28	11	0	4	3	259
	22	10	20	41	106	173	174	160	124	80	37	19	20	986
Total	100	84	109	258	593	864	1054	1006	842	491	280	168	155	6004

City: REDONDO BEACH

Location: AVIATION BOULEVARD

Segment: S/O ARTESIA BOULEVARD

Date Start: 16-Oct-18

S1810001S

SOUTHBOUND, SOUTHBOUND1

Start Time	1 25	26 28	29 30	31 32	33 34	35 36	37 38	39 40	41 42	43 44	45 46	47 48	49 9999	Total
12 PM	5	5	13	24	28	53	50	49	41	20	16	5	8	317
12:15	4	3	5	21	26	64	72	42	50	17	9	5	5	323
12:30	6	7	4	19	25	50	53	51	50	15	6	2	2	290
12:45	9	9	8	40	25	61	54	41	25	15	9	2	2	300
13:00	24	24	30	104	104	228	229	183	166	67	40	14	17	1230
13:15	0	0	1	6	14	57	69	55	43	21	21	1	2	290
13:30	10	8	11	20	26	56	69	37	29	13	6	1	4	290
13:45	2	2	22	36	58	43	50	44	31	25	12	3	2	330
14:00	5	20	18	28	49	58	41	38	18	10	6	5	2	298
14:15	17	30	52	90	147	214	229	174	121	69	45	10	10	1208
14:30	5	1	4	10	34	47	75	43	34	11	10	3	0	277
14:45	7	2	4	31	55	57	64	69	33	16	7	3	3	351
15:00	10	3	10	21	29	64	71	56	44	27	12	8	4	359
15:15	11	6	7	19	44	57	76	81	39	18	4	2	1	365
15:30	33	12	25	81	162	225	286	249	150	72	33	16	8	1352
15:45	3	4	4	30	82	74	70	54	14	19	5	2	7	368
16:00	1	12	28	48	73	63	96	48	31	9	10	0	0	419
16:15	8	17	35	43	72	50	62	57	25	21	5	1	5	401
16:30	3	28	16	38	67	90	113	55	28	22	19	3	6	488
16:45	15	61	83	159	294	277	341	214	98	71	39	6	18	1676
17:00	14	17	12	44	57	62	78	45	25	19	5	8	5	391
17:15	10	9	20	27	90	96	87	69	35	20	5	8	2	478
17:30	35	37	41	49	66	115	70	20	14	3	1	1	0	452
17:45	20	18	24	39	58	79	85	58	24	16	4	6	7	438
18:00	79	81	97	159	271	352	320	192	98	58	15	23	14	1759
18:15	15	6	23	41	60	111	84	53	29	9	1	2	0	434
18:30	25	12	27	44	79	73	67	46	32	19	4	3	2	433
18:45	29	10	23	35	68	84	88	46	29	5	8	6	5	436
19:00	12	16	25	46	75	60	77	64	24	15	8	5	4	431
19:15	81	44	98	166	282	328	316	209	114	48	21	16	11	1734
19:30	8	21	22	38	93	92	70	55	25	7	12	5	1	449
19:45	5	5	5	41	85	88	67	71	29	15	10	3	3	427
20:00	12	15	20	32	82	94	78	61	28	11	4	2	2	441
20:15	6	11	4	26	55	94	106	56	41	14	2	3	3	421
20:30	31	52	51	137	315	368	321	243	123	47	28	13	9	1738
20:45	14	25	20	49	57	78	82	38	33	9	8	6	5	424
21:00	0	17	20	33	77	78	85	57	28	13	8	6	5	427
21:15	2	1	10	27	34	83	82	49	43	12	16	1	9	369
21:30	2	1	10	22	40	58	64	72	45	28	15	6	10	373
21:45	18	44	60	131	208	297	313	216	149	62	47	19	29	1593
22:00	1	5	4	15	32	88	97	41	34	6	5	3	1	332
22:15	1	3	1	11	29	48	79	70	48	16	12	8	7	333
22:30	2	3	1	7	24	49	59	49	43	18	14	7	12	288
22:45	4	3	2	12	23	36	45	59	36	9	3	9	2	243
23:00	8	14	8	45	108	221	280	219	161	49	34	27	22	1196
23:15	1	1	3	10	20	40	48	48	37	22	5	4	5	244
23:30	0	0	0	8	12	24	28	33	28	15	7	5	2	162
23:45	4	3	0	1	8	17	41	37	33	22	13	9	7	195
24:00	0	0	0	3	4	30	39	26	35	18	8	6	3	172
24:15	5	4	3	22	44	111	156	144	133	77	33	24	17	773
24:30	1	0	2	5	8	26	37	40	31	30	14	3	8	205
24:45	1	0	0	4	6	9	31	27	28	14	15	2	7	144
25:00	1	4	1	7	7	16	16	21	29	16	14	8	4	144
25:15	2	0	1	3	10	8	20	20	24	15	16	5	9	133
25:30	5	4	4	19	31	59	104	108	112	75	59	18	28	626
25:45	1	0	1	5	4	12	14	17	18	17	9	10	1	109
26:00	1	4	0	0	7	6	13	12	13	6	7	1	1	71
26:15	0	0	1	2	1	15	8	7	6	7	4	2	5	58
26:30	2	0	0	2	1	8	10	10	12	15	9	2	0	71
26:45	4	4	2	9	13	41	45	46	49	45	29	15	7	309
Total	320	374	513	1122	1979	2721	2940	2197	1474	740	423	201	190	15194
Total	420	458	622	1380	2572	3585	3994	3203	2316	1231	703	369	345	21198

15th Percentile : 32 MPH
 50th Percentile : 36 MPH
 85th Percentile : 41 MPH
 95th Percentile : 44 MPH

Statistics
 Mean Speed(Average) : 37 MPH
 10 MPH Pace Speed : 33-42 MPH
 Number in Pace : 15670
 Percent in Pace : 73.9%
 Number of Vehicles > 55 MPH : 0
 Percent of Vehicles > 55 MPH : 0.0%

City: REDONDO BEACH

Location: AVIATION BOULEVARD

Segment: S/O ARTESIA BOULEVARD

Date Start: 17-Oct-18

S1810001S

SOUTHBOUND, SOUTHBOUND1

Start	1	26	29	31	33	35	37	39	41	43	45	47	49	
Time	25	28	30	32	34	36	38	40	42	44	46	48	9999	Total
10/17/18	0	0	1	0	2	6	9	10	6	9	10	5	1	59
00:15	0	0	2	2	2	2	2	12	7	11	4	5	2	51
00:30	0	1	0	0	1	3	8	1	7	9	3	0	0	33
00:45	0	0	0	4	5	0	3	4	8	6	5	1	0	36
01:00	0	1	3	6	10	11	22	27	28	35	22	11	3	179
01:15	0	1	1	0	4	7	4	3	1	0	1	0	2	24
01:30	0	0	0	0	5	0	2	7	5	1	4	0	2	26
01:45	0	2	0	0	0	5	2	2	1	2	1	1	1	17
02:00	0	0	1	3	7	0	2	2	1	2	1	0	2	21
02:15	0	3	2	3	16	12	10	14	8	5	7	1	7	88
02:30	2	0	2	0	1	3	1	2	1	1	2	2	1	18
02:45	0	0	2	0	0	2	0	0	2	0	2	1	1	10
03:00	2	0	0	0	2	2	2	5	0	2	1	0	0	16
03:15	0	0	0	0	1	0	0	2	3	1	3	1	2	13
03:30	4	0	4	0	4	7	3	9	6	4	8	4	4	57
03:45	0	0	1	0	2	1	0	0	1	0	0	0	2	7
04:00	0	1	0	0	2	1	1	2	1	1	3	0	0	12
04:15	0	0	0	0	1	1	1	1	3	3	3	0	0	13
04:30	0	0	1	1	0	1	4	6	3	13	5	0	0	34
04:45	0	1	2	1	5	4	6	9	8	17	11	0	2	66
05:00	0	0	0	1	2	1	5	4	3	4	1	0	1	22
05:15	1	0	0	0	3	3	1	5	3	2	1	0	0	19
05:30	0	2	3	1	1	4	1	3	1	5	0	2	1	24
05:45	5	0	0	1	5	5	6	14	2	3	9	5	6	61
06:00	6	2	3	3	11	13	13	26	9	14	11	7	8	126
06:15	0	0	0	1	3	4	5	4	4	2	0	0	2	25
06:30	0	0	2	2	3	8	6	4	12	6	1	2	7	53
06:45	0	0	0	2	7	6	3	12	6	6	0	1	6	49
07:00	0	1	0	0	0	6	11	10	13	16	6	5	8	76
07:15	0	1	2	5	13	24	25	30	35	30	7	8	23	203
07:30	0	0	3	1	5	8	8	9	9	8	5	2	4	62
07:45	2	0	1	4	2	6	24	20	12	11	4	1	3	90
08:00	1	0	0	3	4	12	25	16	31	21	12	5	16	146
08:15	2	6	3	9	5	17	27	40	30	9	7	5	0	160
08:30	5	6	7	17	16	43	84	85	82	49	28	13	23	458
08:45	2	3	2	1	11	29	33	32	25	10	12	5	7	172
09:00	1	0	3	7	28	35	46	51	36	26	12	6	3	254
09:15	2	5	5	15	9	41	70	64	29	19	15	5	5	284
09:30	8	2	17	11	17	32	48	49	35	31	13	6	3	272
09:45	13	10	27	34	65	137	197	196	125	86	52	22	18	982
10:00	7	7	10	6	16	48	52	37	24	10	10	1	2	230
10:15	5	2	4	11	9	46	42	44	34	17	7	8	4	233
10:30	3	4	4	10	16	43	58	44	42	18	6	3	2	253
10:45	3	2	2	17	35	53	53	47	30	15	4	1	4	248
11:00	18	15	20	44	76	172	205	172	130	60	27	13	12	964
11:15	7	1	3	11	17	34	30	45	22	25	15	13	6	229
11:30	6	0	1	9	19	29	61	66	32	25	10	2	8	268
11:45	10	4	1	5	11	24	62	33	34	24	21	7	4	240
12:00	1	2	2	8	20	43	46	60	32	24	9	6	11	264
12:15	24	7	7	33	67	130	199	204	120	98	55	28	29	1001
12:30	2	5	1	7	12	28	43	36	44	21	9	6	1	215
12:45	0	0	3	10	11	30	38	41	37	11	11	8	13	213
13:00	8	3	2	5	20	29	42	51	27	18	8	8	4	225
13:15	3	6	11	11	27	43	43	51	36	22	10	8	8	279
13:30	13	14	17	33	70	130	166	179	144	72	38	30	26	932
13:45	1	0	1	7	22	31	49	39	33	27	4	3	3	220
14:00	6	1	12	16	25	48	38	37	21	17	6	6	0	233
14:15	1	2	15	10	41	42	61	46	37	23	12	3	6	299
14:30	4	0	6	14	26	59	61	54	33	18	8	3	4	290
14:45	12	3	34	47	114	180	209	176	124	85	30	15	13	1042
Total	95	63	128	226	467	863	1139	1127	819	555	296	152	168	6098

City: REDONDO BEACH

Location: AVIATION BOULEVARD

Segment: S/O ARTESIA BOULEVARD

Date Start: 17-Oct-18

S1810001S

SOUTHBOUND, SOUTHBOUND1

Start Time	1 25	26 28	29 30	31 32	33 34	35 36	37 38	39 40	41 42	43 44	45 46	47 48	49 9999	Total
12 PM	6	0	10	15	45	56	47	52	27	11	7	5	1	282
12:15	0	2	8	21	19	36	59	46	37	12	13	5	1	259
12:30	8	9	5	11	52	40	60	54	41	5	13	2	1	301
12:45	2	3	16	27	39	47	60	43	40	23	20	3	4	327
13:00	16	14	39	74	155	179	226	195	145	51	53	15	7	1169
13:15	9	2	4	17	40	60	59	62	32	19	8	6	5	323
13:30	1	13	8	31	34	34	92	75	25	21	12	3	2	351
13:45	2	4	6	25	28	83	81	55	23	18	3	2	1	331
14:00	3	6	9	13	32	55	82	75	49	23	16	6	4	373
14:15	15	25	27	86	134	232	314	267	129	81	39	17	12	1378
14:30	3	2	12	20	35	63	72	51	20	19	3	3	0	303
14:45	4	8	15	21	49	62	73	53	22	18	8	3	1	337
15:00	2	1	3	15	40	81	76	65	42	8	3	6	2	344
15:15	5	17	17	30	24	82	90	62	49	12	8	2	2	400
15:30	14	28	47	86	148	288	311	231	133	57	22	14	5	1384
15:45	1	1	8	9	49	67	97	73	38	21	6	4	2	376
16:00	1	4	15	19	45	92	65	73	30	39	19	3	4	409
16:15	58	24	21	18	32	48	59	51	26	16	3	8	3	367
16:30	4	6	9	32	69	57	88	78	35	12	7	2	4	403
16:45	64	35	53	78	195	264	309	275	129	88	35	17	13	1555
17:00	6	23	16	26	56	85	102	54	37	27	6	2	1	441
17:15	9	16	18	36	75	65	63	70	36	11	4	5	5	413
17:30	10	13	20	24	70	92	71	71	26	12	5	0	2	416
17:45	4	23	26	56	64	75	75	66	29	13	7	0	3	441
18:00	29	75	80	142	265	317	311	261	128	63	22	7	11	1711
18:15	13	26	25	58	70	67	55	47	24	18	8	3	4	418
18:30	21	18	28	42	76	78	86	42	21	16	4	3	4	439
18:45	16	23	31	53	86	87	74	39	25	9	6	5	2	456
19:00	4	6	15	33	68	101	95	64	25	11	5	2	1	430
19:15	54	73	99	186	300	333	310	192	95	54	23	13	11	1743
19:30	11	15	26	48	78	82	109	60	26	13	6	1	3	478
19:45	38	25	22	41	72	71	49	37	23	7	7	1	2	395
20:00	12	22	40	50	102	105	78	60	29	9	2	1	2	512
20:15	4	1	9	26	58	87	92	67	34	23	8	4	6	419
20:30	65	63	97	165	310	345	328	224	112	52	23	7	13	1804
20:45	5	8	14	27	86	69	70	63	31	10	7	5	5	400
21:00	2	4	12	38	45	108	78	54	26	8	16	0	5	396
21:15	4	13	12	25	34	66	84	46	34	17	17	16	12	380
21:30	4	7	5	22	45	68	72	73	43	27	11	4	4	385
21:45	15	32	43	112	210	311	304	236	134	62	51	25	26	1561
22:00	7	0	0	15	39	56	59	62	36	36	7	8	6	331
22:15	14	8	16	25	42	59	62	85	49	22	9	3	2	396
22:30	1	1	8	18	26	37	30	44	11	22	11	3	4	216
22:45	3	0	1	9	30	38	53	49	47	13	16	8	11	278
23:00	25	9	25	67	137	190	204	240	143	93	43	22	23	1221
23:15	2	3	5	9	16	48	36	37	27	10	9	5	3	210
23:30	0	2	0	2	10	29	43	44	46	21	13	1	8	219
23:45	0	0	0	4	12	31	37	35	21	13	8	2	1	164
24:00	1	0	2	4	3	13	25	39	43	10	11	4	5	160
24:15	3	5	7	19	41	121	141	155	137	54	41	12	17	753
24:30	2	2	9	7	12	19	27	37	26	16	10	4	5	176
24:45	0	0	0	4	9	28	24	32	22	18	4	6	8	155
25:00	0	0	0	0	6	15	32	33	27	8	12	6	8	147
25:15	2	0	3	1	5	15	18	23	14	21	14	0	10	126
25:30	4	2	12	12	32	77	101	125	89	63	40	16	31	604
25:45	0	0	0	5	4	13	15	27	16	10	12	4	4	110
26:00	0	0	0	2	4	23	21	16	12	4	10	7	5	104
26:15	0	2	2	0	3	9	14	7	14	3	6	3	1	64
26:30	0	2	1	1	6	9	5	7	7	9	8	1	8	64
26:45	0	4	3	8	17	54	55	57	49	26	36	15	18	342
Total	304	365	532	1035	1944	2711	2914	2458	1423	744	428	180	187	15225
Total	399	428	660	1261	2411	3574	4053	3585	2242	1299	724	332	355	21323

15th Percentile : 32 MPH
 50th Percentile : 36 MPH
 85th Percentile : 41 MPH
 95th Percentile : 44 MPH

Statistics

Mean Speed(Average) : 37 MPH
 10 MPH Pace Speed : 33-42 MPH
 Number in Pace : 15865
 Percent in Pace : 74.4%
 Number of Vehicles > 55 MPH : 0
 Percent of Vehicles > 55 MPH : 0.0%

City: REDONDO BEACH

Location: ARTESIA BOULEVARD

Segment: E/O ARTESIA BOULEVARD

Date Start: 16-Oct-18

S1810002E

EASTBOUND, EASTBOUND1

Start	1	26	29	31	33	35	37	39	41	43	45	47	49	
Time	25	28	30	32	34	36	38	40	42	44	46	48	9999	Total
10/16/18	4	5	0	1	8	6	3	1	0	0	0	0	0	28
00:15	2	2	4	0	3	4	0	1	0	0	2	0	0	18
00:30	7	1	5	4	6	2	2	2	3	1	0	0	0	33
00:45	0	1	1	4	3	1	3	0	1	0	0	0	0	14
	13	9	10	9	20	13	8	4	4	1	2	0	0	93
01:00	4	5	0	2	0	2	0	1	0	0	0	0	0	14
01:15	2	0	2	7	3	3	0	1	0	0	1	0	0	19
01:30	2	0	1	2	1	3	1	1	1	0	1	0	0	13
01:45	3	3	1	2	2	2	1	0	1	0	0	0	0	15
	11	8	4	13	6	10	2	3	2	0	2	0	0	61
02:00	2	0	3	1	1	3	2	1	0	1	0	0	0	14
02:15	4	3	3	2	2	1	1	2	0	0	0	0	0	18
02:30	0	2	1	2	0	1	0	1	1	1	0	0	0	9
02:45	0	1	1	2	0	1	0	1	0	0	0	0	0	6
	6	6	8	7	3	6	3	5	1	2	0	0	0	47
03:00	2	2	1	2	1	1	1	1	2	0	1	0	0	14
03:15	6	0	2	1	1	0	0	0	0	0	0	0	0	10
03:30	1	0	0	0	0	2	1	1	0	1	0	1	0	7
03:45	3	1	1	3	1	1	1	1	0	0	0	0	0	12
	12	3	4	6	3	4	3	3	2	1	1	1	0	43
04:00	0	0	0	3	2	1	0	0	2	0	1	1	0	10
04:15	7	1	1	0	2	1	0	0	1	0	1	1	0	15
04:30	4	5	1	1	2	2	2	1	1	2	0	0	0	21
04:45	3	4	2	4	3	1	1	0	0	0	1	1	0	20
	14	10	4	8	9	5	3	1	4	2	3	3	0	66
05:00	0	0	3	8	3	3	2	0	0	2	0	0	0	21
05:15	4	0	7	2	8	4	1	2	1	2	0	0	4	35
05:30	5	4	5	7	5	7	1	2	1	0	1	0	5	43
05:45	11	3	7	4	11	6	9	2	6	0	2	1	1	63
	20	7	22	21	27	20	13	6	8	4	3	1	10	162
06:00	10	1	7	5	9	7	6	5	1	1	0	0	1	53
06:15	11	4	8	11	6	7	11	1	1	3	1	0	1	65
06:30	19	6	12	12	16	13	2	3	0	0	0	0	1	84
06:45	34	10	17	17	16	11	6	6	2	4	1	1	2	127
	74	21	44	45	47	38	25	15	4	8	2	1	5	329
07:00	16	14	18	18	20	10	8	5	0	1	0	0	0	110
07:15	26	26	20	12	18	9	4	4	3	2	0	1	0	125
07:30	46	28	18	23	19	10	5	1	0	0	0	0	0	150
07:45	27	23	19	20	10	7	9	4	3	5	0	0	1	128
	115	91	75	73	67	36	26	14	6	8	0	1	1	513
08:00	37	24	28	24	17	14	5	9	7	3	0	0	0	168
08:15	79	38	19	29	20	17	9	6	1	1	1	0	0	220
08:30	58	31	17	22	16	8	7	4	5	0	0	0	0	168
08:45	73	22	21	17	18	15	8	3	2	1	1	0	0	181
	247	115	85	92	71	54	29	22	15	5	2	0	0	737
09:00	39	35	14	30	30	26	4	6	3	1	2	0	0	190
09:15	66	24	18	18	11	10	11	3	1	2	0	0	0	164
09:30	50	22	26	18	13	9	7	4	3	0	1	0	0	153
09:45	70	32	17	19	28	13	13	3	0	1	0	0	0	196
	225	113	75	85	82	58	35	16	7	4	3	0	0	703
10:00	71	37	20	15	18	9	9	3	2	2	1	0	0	187
10:15	54	45	30	23	20	8	5	2	1	0	1	0	0	189
10:30	78	17	14	26	24	13	11	4	3	0	0	0	0	190
10:45	75	42	28	32	17	9	2	3	0	0	0	0	0	208
	278	141	92	96	79	39	27	12	6	2	2	0	0	774
11:00	97	24	26	23	16	12	1	2	0	0	0	0	0	201
11:15	47	37	30	27	25	14	8	7	2	0	0	0	0	197
11:30	82	30	35	25	20	6	2	0	0	0	0	0	0	200
11:45	77	36	32	29	17	11	5	3	2	2	1	2	0	217
	303	127	123	104	78	43	16	12	4	2	1	2	0	815
Total	1318	651	546	559	492	326	190	113	63	39	21	9	16	4343

City: REDONDO BEACH

Location: ARTESIA BOULEVARD

Segment: E/O ARTESIA BOULEVARD

Date Start: 16-Oct-18

S1810002E

EASTBOUND, EASTBOUND1

Start	1	26	29	31	33	35	37	39	41	43	45	47	49	
Time	25	28	30	32	34	36	38	40	42	44	46	48	9999	Total
12 PM	86	31	27	18	20	5	4	5	1	3	1	0	0	201
12:15	118	25	18	15	6	3	2	2	0	0	0	0	0	189
12:30	69	43	34	25	13	12	4	2	2	0	0	0	0	204
12:45	86	34	33	30	13	5	6	2	0	0	0	0	0	209
	359	133	112	88	52	25	16	11	3	3	1	0	0	803
13:00	92	31	27	33	18	11	9	4	0	0	1	1	0	227
13:15	71	28	42	24	24	13	3	3	3	1	1	0	0	213
13:30	76	43	43	28	18	12	7	1	1	0	1	0	0	230
13:45	98	34	29	22	8	9	4	2	1	0	0	0	0	207
	337	136	141	107	68	45	23	10	5	1	3	1	0	877
14:00	54	28	35	36	27	23	10	3	3	0	0	0	0	219
14:15	78	34	44	32	28	8	8	5	2	3	2	0	0	244
14:30	117	24	13	26	29	7	12	3	0	1	0	0	1	233
14:45	104	38	36	36	19	10	4	2	0	1	0	0	0	250
	353	124	128	130	103	48	34	13	5	5	2	0	1	946
15:00	78	54	45	30	19	6	2	3	5	0	0	0	0	242
15:15	94	48	40	44	28	17	8	4	1	1	0	0	1	286
15:30	102	35	24	28	27	19	9	5	3	1	0	0	0	253
15:45	65	45	39	29	25	14	13	7	1	1	1	0	0	240
	339	182	148	131	99	56	32	19	10	3	1	0	1	1021
16:00	115	35	19	35	18	13	6	3	2	1	1	0	0	248
16:15	99	44	28	21	18	12	8	1	1	1	2	0	1	236
16:30	135	42	34	23	22	14	13	8	3	1	0	0	0	295
16:45	120	32	34	20	13	12	7	2	0	0	0	0	0	240
	469	153	115	99	71	51	34	14	6	3	3	0	1	1019
17:00	104	40	33	40	16	12	10	1	0	0	0	0	0	256
17:15	119	39	28	25	22	11	4	5	0	0	1	0	0	254
17:30	101	50	43	29	33	15	11	3	1	2	0	0	0	288
17:45	68	54	33	47	18	16	4	2	1	0	0	0	0	243
	392	183	137	141	89	54	29	11	2	2	1	0	0	1041
18:00	133	61	32	39	14	8	14	3	1	0	0	0	0	305
18:15	127	37	23	16	13	12	6	2	1	0	0	1	0	238
18:30	88	42	21	17	20	5	2	1	0	0	0	0	0	196
18:45	94	24	33	38	17	6	1	0	1	0	0	0	0	214
	442	164	109	110	64	31	23	6	3	0	0	1	0	953
19:00	110	48	33	29	29	13	3	4	2	1	1	0	0	273
19:15	75	27	33	24	25	9	4	4	1	2	0	0	0	204
19:30	56	38	22	24	21	13	9	8	3	1	0	0	0	195
19:45	45	25	32	20	26	8	6	2	2	2	0	0	1	169
	286	138	120	97	101	43	22	18	8	6	1	0	1	841
20:00	36	26	31	36	25	15	8	5	3	1	1	0	0	187
20:15	41	31	18	30	19	11	2	5	4	0	3	1	1	166
20:30	29	22	35	29	26	15	10	4	1	0	0	0	0	171
20:45	50	24	22	22	17	9	6	2	3	1	0	0	0	156
	156	103	106	117	87	50	26	16	11	2	4	1	1	680
21:00	20	20	26	36	19	21	6	3	0	2	0	0	1	154
21:15	18	26	19	24	13	12	6	4	3	3	1	1	0	130
21:30	30	17	16	17	8	4	6	3	5	2	1	2	1	112
21:45	15	8	10	23	15	6	4	8	3	0	3	1	0	96
	83	71	71	100	55	43	22	18	11	7	5	4	2	492
22:00	12	15	9	9	9	9	7	1	1	1	1	1	1	76
22:15	9	7	17	10	19	9	3	5	3	2	1	0	1	86
22:30	11	3	8	14	8	15	10	2	3	3	0	1	1	79
22:45	10	6	11	14	13	6	2	2	3	1	1	0	0	69
	42	31	45	47	49	39	22	10	10	7	3	2	3	310
23:00	7	8	7	8	12	6	8	1	3	2	1	0	1	64
23:15	13	8	7	3	5	10	4	4	1	1	0	1	1	58
23:30	8	3	6	12	5	2	2	2	2	0	0	1	0	43
23:45	4	10	6	6	4	0	4	4	2	0	0	0	1	41
	32	29	26	29	26	18	18	11	8	3	1	2	3	206
Total	3290	1447	1258	1196	864	503	301	157	82	42	25	11	13	9189
Total	4608	2098	1804	1755	1356	829	491	270	145	81	46	20	29	13532

15th Percentile : 10 MPH
 50th Percentile : 28 MPH
 85th Percentile : 33 MPH
 95th Percentile : 37 MPH

Statistics

Mean Speed(Average) : 25 MPH
 10 MPH Pace Speed : 26-35 MPH
 Number in Pace : 7427
 Percent in Pace : 54.9%
 Number of Vehicles > 55 MPH : 0
 Percent of Vehicles > 55 MPH : 0.0%

City: REDONDO BEACH

Location: ARTESIA BOULEVARD

Segment: E/O ARTESIA BOULEVARD

Date Start: 17-Oct-18

S1810002E

EASTBOUND, EASTBOUND1

Start	1	26	29	31	33	35	37	39	41	43	45	47	49	
Time	25	28	30	32	34	36	38	40	42	44	46	48	9999	Total
10/17/18	4	4	4	5	4	5	1	3	0	0	1	0	0	31
00:15	13	3	2	2	7	3	2	2	1	0	0	1	0	36
00:30	2	3	5	6	4	3	1	3	0	0	0	0	0	27
00:45	2	1	3	4	2	1	0	1	0	0	0	0	0	14
	21	11	14	17	17	12	4	9	1	0	1	1	0	108
01:00	5	1	3	1	3	1	1	1	2	0	1	0	1	20
01:15	0	1	2	2	4	3	2	0	0	1	0	0	0	15
01:30	2	3	2	2	4	3	0	0	0	0	0	0	0	16
01:45	3	2	4	3	3	1	2	2	2	0	1	0	0	23
	10	7	11	8	14	8	5	3	4	1	2	0	1	74
02:00	0	2	0	4	2	2	3	1	0	0	0	0	0	14
02:15	4	3	0	0	2	1	2	1	0	1	1	1	0	16
02:30	0	1	1	1	1	0	2	0	0	0	0	1	1	8
02:45	1	0	2	0	0	1	1	0	0	0	0	0	0	5
	5	6	3	5	5	4	8	2	0	1	1	2	1	43
03:00	1	1	1	1	1	0	0	1	0	0	0	0	0	6
03:15	0	1	1	2	1	0	2	0	0	1	0	0	0	8
03:30	1	0	0	0	2	1	0	0	0	1	0	0	0	5
03:45	4	0	3	0	2	0	1	1	1	0	0	0	0	12
	6	2	5	3	6	1	3	2	1	2	0	0	0	31
04:00	1	0	0	3	1	3	1	0	0	0	0	0	0	9
04:15	3	2	1	0	2	3	0	2	1	1	0	0	0	15
04:30	2	5	5	2	1	2	1	0	0	1	0	0	0	19
04:45	4	2	2	5	5	3	0	1	1	0	0	0	0	23
	10	9	8	10	9	11	2	3	2	2	0	0	0	66
05:00	1	2	1	3	3	2	1	1	2	1	2	0	0	19
05:15	4	2	3	2	8	5	4	2	4	0	2	0	0	36
05:30	3	3	3	9	6	5	5	4	0	3	1	0	2	44
05:45	10	3	1	3	7	9	8	4	3	3	1	1	1	54
	18	10	8	17	24	21	18	11	9	7	6	1	3	153
06:00	6	4	6	6	3	12	4	9	4	5	2	0	1	62
06:15	7	5	4	10	9	7	11	9	1	1	0	1	0	65
06:30	16	9	14	14	11	7	6	5	1	1	2	0	0	86
06:45	30	18	9	8	15	8	4	6	3	1	0	1	0	103
	59	36	33	38	38	34	25	29	9	8	4	2	1	316
07:00	44	14	14	16	18	18	7	7	6	3	0	1	1	149
07:15	67	12	24	10	9	12	3	1	0	0	1	0	0	139
07:30	48	21	26	17	18	13	9	6	4	1	2	0	0	165
07:45	44	23	18	20	24	9	12	2	2	0	0	0	0	154
	203	70	82	63	69	52	31	16	12	4	3	1	1	607
08:00	72	28	18	28	14	12	5	1	2	2	0	0	0	182
08:15	97	29	25	14	15	4	4	3	1	2	0	0	0	194
08:30	66	32	24	21	23	11	8	6	2	1	0	0	0	194
08:45	63	48	35	21	15	8	6	6	2	2	0	0	1	207
	298	137	102	84	67	35	23	16	7	7	0	0	1	777
09:00	75	23	18	23	15	6	2	2	3	1	0	0	0	168
09:15	46	17	15	34	30	15	8	7	2	1	0	0	1	176
09:30	67	21	16	23	7	5	4	5	5	2	0	0	0	155
09:45	69	27	20	25	16	6	7	3	4	3	0	0	0	180
	257	88	69	105	68	32	21	17	14	7	0	0	1	679
10:00	78	33	18	24	18	13	8	5	7	2	2	0	0	208
10:15	65	38	19	26	14	2	10	9	5	8	2	1	3	202
10:30	82	33	16	22	14	9	3	2	2	0	1	0	0	184
10:45	71	23	26	31	29	11	7	1	3	1	1	0	0	204
	296	127	79	103	75	35	28	17	17	11	6	1	3	798
11:00	65	21	29	20	16	10	4	2	1	0	1	1	0	170
11:15	84	47	25	15	15	8	3	1	0	0	0	0	0	198
11:30	68	27	31	26	23	7	7	3	3	3	1	0	0	199
11:45	73	24	27	24	22	10	7	4	5	0	0	0	0	196
	290	119	112	85	76	35	21	10	9	3	2	1	0	763
Total	1473	622	526	538	468	280	189	135	85	53	25	9	12	4415

City: REDONDO BEACH

Location: ARTESIA BOULEVARD

Segment: E/O ARTESIA BOULEVARD

Date Start: 17-Oct-18

S1810002E

EASTBOUND, EASTBOUND1

Start	1	26	29	31	33	35	37	39	41	43	45	47	49	
Time	25	28	30	32	34	36	38	40	42	44	46	48	9999	Total
12 PM	84	31	25	30	19	11	4	1	1	0	1	1	0	208
12:15	74	38	36	37	21	11	7	3	2	1	2	0	0	232
12:30	85	36	22	18	22	11	13	3	2	0	0	0	0	212
12:45	90	31	27	23	19	11	3	1	2	1	0	0	0	208
	333	136	110	108	81	44	27	8	7	2	3	1	0	860
13:00	75	34	26	43	21	21	0	1	1	0	0	0	0	222
13:15	103	40	28	24	17	11	5	2	1	1	0	0	0	232
13:30	67	40	19	27	9	18	9	1	3	1	1	0	0	195
13:45	75	25	38	33	20	8	7	2	3	1	1	0	0	213
	320	139	111	127	67	58	21	6	8	3	2	0	0	862
14:00	90	46	30	21	22	13	10	1	0	1	0	0	0	234
14:15	96	42	39	23	22	4	3	1	3	3	0	0	0	236
14:30	71	36	24	26	14	18	3	7	4	3	2	0	0	208
14:45	66	46	36	33	16	12	7	6	1	0	0	0	0	223
	323	170	129	103	74	47	23	15	8	7	2	0	0	901
15:00	58	43	42	32	27	18	6	4	2	1	1	0	1	235
15:15	86	60	43	41	21	12	2	6	0	0	0	0	0	271
15:30	107	20	30	27	27	12	8	2	2	0	0	1	1	237
15:45	58	34	40	26	23	11	7	6	1	0	1	0	0	207
	309	157	155	126	98	53	23	18	5	1	2	1	2	950
16:00	118	33	40	34	17	12	6	1	1	0	0	0	0	262
16:15	94	53	53	32	24	12	2	5	1	0	0	0	0	276
16:30	80	41	19	27	18	9	5	3	0	1	0	0	0	203
16:45	120	34	25	18	17	12	8	3	0	0	0	0	0	237
	412	161	137	111	76	45	21	12	2	1	0	0	0	978
17:00	82	43	43	43	24	13	2	3	0	2	0	0	0	255
17:15	102	54	40	27	22	15	2	2	0	1	0	0	0	265
17:30	79	61	27	20	15	9	2	2	2	0	1	0	0	218
17:45	112	52	43	37	34	15	7	2	1	0	0	0	0	303
	375	210	153	127	95	52	13	9	3	3	1	0	0	1041
18:00	96	43	38	39	18	9	6	5	0	0	0	1	0	255
18:15	119	57	30	39	26	6	3	2	1	1	0	0	0	284
18:30	68	30	36	28	26	8	5	2	0	0	0	0	0	203
18:45	67	48	50	32	19	18	9	3	0	0	0	0	1	247
	350	178	154	138	89	41	23	12	1	1	0	1	1	989
19:00	69	60	25	38	29	12	6	3	2	1	1	1	0	247
19:15	78	25	30	32	33	12	11	1	1	0	0	0	0	223
19:30	63	27	27	24	25	19	9	8	3	1	0	0	0	206
19:45	35	31	34	21	23	9	7	1	2	2	1	1	1	168
	245	143	116	115	110	52	33	13	8	4	2	2	1	844
20:00	52	45	19	21	14	13	10	6	3	1	0	0	0	184
20:15	43	30	29	24	26	15	8	2	0	0	0	0	0	177
20:30	27	34	28	24	14	11	9	2	3	0	0	0	0	152
20:45	37	15	27	23	15	8	5	6	2	1	0	0	0	139
	159	124	103	92	69	47	32	16	8	2	0	0	0	652
21:00	59	21	25	18	17	10	4	2	3	2	0	0	0	161
21:15	38	18	20	23	15	9	11	3	3	3	0	0	1	144
21:30	23	13	19	22	11	5	4	2	2	1	0	0	0	102
21:45	12	20	22	20	12	4	5	3	2	2	0	0	0	102
	132	72	86	83	55	28	24	10	10	8	0	0	1	509
22:00	28	11	5	17	11	7	5	2	3	2	0	0	1	92
22:15	7	10	8	14	11	11	7	3	1	0	1	0	0	73
22:30	15	7	10	11	9	8	7	5	1	1	1	1	0	76
22:45	11	11	12	16	10	7	6	3	0	1	1	0	1	79
	61	39	35	58	41	33	25	13	5	4	3	1	2	320
23:00	8	3	10	11	6	5	5	4	1	3	2	0	1	59
23:15	6	3	2	12	6	9	3	3	0	0	1	0	0	45
23:30	6	6	9	10	10	10	2	2	1	0	1	0	0	57
23:45	8	0	5	3	6	3	1	3	2	0	0	0	0	31
	28	12	26	36	28	27	11	12	4	3	4	0	1	192
Total	3047	1541	1315	1224	883	527	276	144	69	39	19	6	8	9098
Total	4520	2163	1841	1762	1351	807	465	279	154	92	44	15	20	13513

15th Percentile : 11 MPH
 50th Percentile : 28 MPH
 85th Percentile : 33 MPH
 95th Percentile : 37 MPH

Statistics

Mean Speed(Average) : 25 MPH
 10 MPH Pace Speed : 26-35 MPH
 Number in Pace : 7520
 Percent in Pace : 55.7%
 Number of Vehicles > 55 MPH : 0
 Percent of Vehicles > 55 MPH : 0.0%

City: REDONDO BEACH

Location: ARTESIA BOULEVARD

Segment: E/O AVIATION BOULEVARD

Date Start: 16-Oct-18

S1810002W

WESTBOUND, WESTBOUND1

Start Time	1 25	26 28	29 30	31 32	33 34	35 36	37 38	39 40	41 42	43 44	45 46	47 48	49 9999	Total
10/16/18	2	3	0	2	4	2	1	0	0	0	1	1	0	16
00:15	0	0	1	2	2	3	3	1	2	2	0	2	0	18
00:30	1	0	0	2	5	2	8	8	2	2	2	0	2	34
00:45	0	6	1	6	5	2	0	0	0	0	1	0	0	21
	3	9	2	12	16	9	12	9	4	4	4	3	2	89
01:00	0	0	0	2	3	5	6	10	2	0	0	0	0	28
01:15	0	1	3	0	0	0	0	2	0	0	0	0	0	6
01:30	2	0	1	1	0	2	0	2	0	2	0	0	0	10
01:45	6	3	0	4	2	3	0	1	2	2	0	0	0	23
	8	4	4	7	5	10	6	15	4	4	0	0	0	67
02:00	0	1	3	1	0	1	1	0	2	0	0	0	0	9
02:15	0	4	0	0	2	3	0	1	0	1	0	0	0	11
02:30	2	2	0	0	1	2	0	0	2	1	0	0	0	10
02:45	0	0	1	0	0	3	2	2	0	1	0	0	3	12
	2	7	4	1	3	9	3	3	4	3	0	0	3	42
03:00	0	0	0	0	0	1	0	2	1	2	0	0	2	8
03:15	0	0	0	0	1	2	2	2	0	0	0	0	1	8
03:30	2	0	0	2	5	4	0	0	0	1	0	1	1	16
03:45	2	1	0	3	2	6	1	3	3	3	0	0	0	24
	4	1	0	5	8	13	3	7	4	6	0	1	4	56
04:00	0	0	0	0	5	2	2	4	4	1	1	0	0	19
04:15	2	0	0	0	4	6	6	4	0	0	2	1	1	26
04:30	0	2	1	3	4	13	4	4	4	1	2	2	1	41
04:45	7	2	1	4	13	15	5	10	2	6	2	3	5	75
	9	4	2	7	26	36	17	22	10	8	7	6	7	161
05:00	2	2	4	5	1	4	3	3	5	3	1	2	3	38
05:15	0	3	7	8	9	4	4	13	5	5	4	3	4	69
05:30	10	2	8	12	10	19	24	12	6	2	0	0	1	106
05:45	10	10	10	13	16	29	23	13	9	5	4	3	8	153
	22	17	29	38	36	56	54	41	25	15	9	8	16	366
06:00	37	11	14	26	20	15	9	9	11	4	2	2	5	165
06:15	45	26	26	13	25	25	18	12	3	4	1	2	4	204
06:30	99	44	18	18	18	18	10	7	4	3	1	0	1	241
06:45	131	44	10	11	8	4	2	1	1	1	0	0	0	213
	312	125	68	68	71	62	39	29	19	12	4	4	10	823
07:00	111	38	43	22	18	6	5	1	1	0	1	1	0	247
07:15	146	45	30	20	22	8	5	1	0	0	0	0	0	277
07:30	231	28	11	7	2	2	1	0	0	0	0	0	0	282
07:45	163	32	24	11	11	3	2	1	0	0	0	0	0	247
	651	143	108	60	53	19	13	3	1	0	1	1	0	1053
08:00	227	19	5	19	10	8	8	2	2	0	0	0	0	300
08:15	227	4	0	0	0	1	0	0	0	0	0	0	0	232
08:30	181	23	5	2	1	0	0	0	0	0	0	0	0	212
08:45	156	18	2	2	0	0	0	0	0	0	0	0	0	178
	791	64	12	23	11	9	8	2	2	0	0	0	0	922
09:00	176	11	4	2	0	1	0	0	0	0	1	0	0	195
09:15	167	44	22	12	15	5	4	2	2	1	0	0	0	274
09:30	150	39	19	14	15	6	2	1	0	0	0	0	0	246
09:45	139	43	24	19	14	5	2	4	0	0	0	0	0	250
	632	137	69	47	44	17	8	7	2	1	1	0	0	965
10:00	165	27	35	13	13	5	2	2	1	1	0	0	0	264
10:15	172	38	17	3	3	1	0	0	0	0	0	0	0	234
10:30	114	31	37	15	17	6	2	2	0	0	0	0	0	224
10:45	127	51	26	19	10	5	6	5	1	0	0	0	0	250
	578	147	115	50	43	17	10	9	2	1	0	0	0	972
11:00	135	20	14	18	6	4	2	0	1	0	0	0	0	200
11:15	106	46	39	29	28	7	2	1	2	0	0	1	1	262
11:30	111	51	19	17	21	16	11	2	0	1	0	0	1	250
11:45	122	33	16	11	14	6	4	6	3	0	0	0	0	215
	474	150	88	75	69	33	19	9	6	1	0	1	2	927
Total	3486	808	501	393	385	290	192	156	83	55	26	24	44	6443

City: REDONDO BEACH

Location: ARTESIA BOULEVARD

Segment: E/O AVIATION BOULEVARD

Date Start: 16-Oct-18

S1810002W

WESTBOUND, WESTBOUND1

Start	1	26	29	31	33	35	37	39	41	43	45	47	49	
Time	25	28	30	32	34	36	38	40	42	44	46	48	9999	Total
12 PM	159	29	13	6	12	2	4	1	0	0	0	0	0	226
12:15	108	55	51	30	11	9	5	2	3	1	0	0	0	275
12:30	113	43	21	22	18	5	7	1	3	0	0	0	0	233
12:45	181	35	29	24	11	8	3	0	2	0	1	0	0	294
13:00	561	162	114	82	52	24	19	4	8	1	1	0	0	1028
13:15	111	42	24	16	9	5	3	7	0	0	1	0	0	218
13:30	168	28	31	26	5	6	1	0	0	2	0	0	0	267
13:45	158	33	23	13	7	13	7	1	8	2	0	0	1	266
14:00	144	36	24	21	9	11	6	0	1	1	0	0	0	253
14:15	581	139	102	76	30	35	17	8	9	5	1	0	1	1004
14:30	141	22	17	32	25	15	10	5	1	0	1	0	0	269
14:45	84	33	32	37	29	19	8	6	3	1	0	0	0	252
15:00	141	18	26	21	24	17	12	4	1	1	0	1	1	267
15:15	147	42	22	12	9	8	3	7	4	2	0	0	0	256
15:30	513	115	97	102	87	59	33	22	9	4	1	1	1	1044
15:45	139	33	29	19	16	7	6	6	1	0	0	0	0	256
16:00	125	38	15	25	16	0	0	2	0	0	0	0	0	221
16:15	140	42	22	20	13	9	7	1	1	0	0	1	0	256
16:30	134	28	24	11	11	4	5	3	0	1	0	0	0	221
16:45	538	141	90	75	56	20	18	12	2	1	0	1	0	954
17:00	163	26	13	8	16	12	7	9	1	1	0	1	1	258
17:15	82	57	30	23	22	12	10	3	1	3	2	0	1	246
17:30	151	34	17	16	27	14	12	1	1	2	1	0	0	276
17:45	130	33	19	24	24	15	9	7	3	2	0	1	0	267
18:00	526	150	79	71	89	53	38	20	6	8	3	2	2	1047
18:15	135	26	26	22	12	9	4	5	0	2	0	1	2	244
18:30	98	27	25	24	13	18	14	5	5	2	0	2	2	235
18:45	160	29	32	29	14	4	6	7	3	0	0	0	0	284
19:00	142	16	2	4	1	5	1	3	0	0	1	1	0	176
19:15	535	98	85	79	40	36	25	20	8	4	1	4	4	939
19:30	168	33	10	25	13	11	0	0	0	0	0	0	0	260
19:45	145	37	17	21	8	7	7	6	2	1	0	0	2	253
20:00	168	33	8	16	15	5	3	1	0	1	0	0	0	250
20:15	131	30	18	17	16	10	6	7	4	0	1	0	0	240
20:30	612	133	53	79	52	33	16	14	6	2	1	0	2	1003
20:45	119	21	10	13	12	3	3	5	0	1	1	0	1	189
21:00	73	47	40	22	23	10	8	4	0	0	1	0	0	228
21:15	93	38	8	13	15	12	11	8	2	1	2	3	1	207
21:30	64	31	28	21	23	18	11	5	3	0	1	0	3	208
21:45	349	137	86	69	73	43	33	22	5	2	5	3	5	832
22:00	58	37	19	29	13	17	9	10	4	2	0	1	1	200
22:15	73	26	24	22	16	4	12	2	3	0	0	0	0	182
22:30	59	30	30	24	17	23	13	4	2	1	2	0	0	205
22:45	21	17	15	27	18	10	12	10	5	3	1	1	6	146
23:00	211	110	88	102	64	54	46	26	14	6	3	2	7	733
23:15	32	20	29	19	20	15	13	5	7	2	1	1	1	165
23:30	29	24	14	22	16	20	12	6	5	2	4	2	2	158
23:45	24	8	12	10	9	8	7	13	11	9	3	3	1	118
24:00	16	21	27	14	8	11	4	4	3	3	0	1	1	113
24:15	101	73	82	65	53	54	36	28	26	16	8	7	5	554
24:30	6	8	19	14	10	16	5	5	9	6	0	1	3	102
24:45	8	18	9	10	12	4	6	6	4	3	2	2	3	87
25:00	9	1	7	9	11	7	14	8	6	2	5	6	2	87
25:15	2	16	10	9	5	5	8	3	5	1	3	0	0	67
25:30	25	43	45	42	38	32	33	22	24	12	10	9	8	343
25:45	5	0	3	6	9	4	6	6	5	1	1	1	1	48
26:00	10	7	6	2	1	8	8	1	4	6	3	0	2	58
26:15	4	0	3	3	8	11	7	3	2	0	1	0	0	42
26:30	2	0	1	7	3	4	3	3	0	3	3	2	2	33
26:45	21	7	13	18	21	27	24	13	11	10	8	3	5	181
Total	4573	1308	934	860	655	470	338	211	128	71	42	32	40	9662
Total	8059	2116	1435	1253	1040	760	530	367	211	126	68	56	84	16105

15th Percentile : 7 MPH
 50th Percentile : 24 MPH
 85th Percentile : 33 MPH
 95th Percentile : 38 MPH

Statistics

Mean Speed(Average) : 22 MPH
 10 MPH Pace Speed : 26-35 MPH
 Number in Pace : 6224
 Percent in Pace : 38.6%
 Number of Vehicles > 55 MPH : 0
 Percent of Vehicles > 55 MPH : 0.0%

City: REDONDO BEACH

Location: ARTESIA BOULEVARD

Segment: E/O AVIATION BOULEVARD

Date Start: 17-Oct-18

S1810002W

WESTBOUND, WESTBOUND1

Start Time	1 25	26 28	29 30	31 32	33 34	35 36	37 38	39 40	41 42	43 44	45 46	47 48	49 9999	Total
10/17/18	0	0	0	4	5	7	4	4	3	0	0	1	1	29
00:15	2	1	4	2	8	7	2	3	2	0	1	0	0	32
00:30	2	0	2	2	2	1	3	4	1	1	0	0	2	20
00:45	1	0	0	1	5	3	1	0	4	0	0	0	0	15
	5	1	6	9	20	18	10	11	10	1	1	1	3	96
01:00	0	0	2	2	2	2	1	0	1	1	1	0	1	13
01:15	1	0	4	2	3	1	1	3	0	1	0	0	0	16
01:30	2	0	4	1	1	0	3	0	2	2	0	0	0	15
01:45	2	0	0	1	3	3	1	4	2	2	0	0	0	18
	5	0	10	6	9	6	6	7	5	6	1	0	1	62
02:00	4	0	2	3	4	1	3	0	0	2	0	0	0	19
02:15	0	0	1	1	1	1	0	3	0	0	0	0	0	7
02:30	0	0	2	1	3	0	2	0	1	1	0	0	0	10
02:45	2	0	0	1	1	0	1	3	0	0	0	0	0	8
	6	0	5	6	9	2	6	6	1	3	0	0	0	44
03:00	0	1	0	0	2	1	0	1	1	0	0	0	0	6
03:15	0	2	0	2	0	0	1	1	0	1	0	0	0	7
03:30	2	0	2	1	1	0	3	1	0	0	2	0	0	12
03:45	1	0	3	0	3	5	7	1	2	3	1	1	4	31
	3	3	5	3	6	6	11	4	3	4	3	1	4	56
04:00	0	3	2	0	2	4	2	3	2	1	1	1	0	21
04:15	0	1	1	4	4	3	2	3	1	0	1	1	0	21
04:30	2	1	5	0	3	3	6	2	3	0	0	1	1	27
04:45	1	2	5	4	3	10	7	6	5	1	1	4	4	53
	3	7	13	8	12	20	17	14	11	2	3	7	5	122
05:00	3	2	4	5	4	12	1	5	4	2	4	3	0	49
05:15	4	2	1	6	3	9	9	3	2	4	5	0	2	50
05:30	8	8	4	12	14	5	7	7	10	1	1	0	1	78
05:45	24	17	19	15	14	14	17	7	5	10	2	4	8	156
	39	29	28	38	35	40	34	22	21	17	12	7	11	333
06:00	12	26	15	20	19	12	8	14	15	5	1	3	3	153
06:15	59	27	15	21	20	15	14	10	6	6	3	0	0	196
06:30	89	60	22	29	31	14	5	2	3	4	2	1	4	266
06:45	134	44	24	15	28	19	12	7	1	1	0	1	2	288
	294	157	76	85	98	60	39	33	25	16	6	5	9	903
07:00	137	35	26	23	21	19	6	6	2	2	2	1	1	281
07:15	166	44	20	24	10	8	7	3	0	0	0	0	0	282
07:30	221	36	10	12	7	2	0	2	0	0	0	0	0	290
07:45	124	28	4	1	2	2	1	0	0	0	0	0	0	162
	648	143	60	60	40	31	14	11	2	2	2	1	1	1015
08:00	192	20	5	4	0	0	1	0	0	0	0	0	0	222
08:15	236	48	18	4	1	0	0	0	0	0	0	0	0	307
08:30	193	22	12	4	6	5	2	1	0	0	0	0	0	245
08:45	162	36	10	9	11	7	5	0	0	1	0	0	0	241
	783	126	45	21	18	12	8	1	0	1	0	0	0	1015
09:00	173	41	8	6	4	0	1	1	0	0	0	0	0	234
09:15	159	49	26	21	14	3	2	4	3	0	0	0	0	281
09:30	147	32	8	8	15	7	8	5	0	1	1	1	0	233
09:45	134	28	22	21	20	3	2	1	2	1	0	0	0	234
	613	150	64	56	53	13	13	11	5	2	1	1	0	982
10:00	136	23	16	12	14	11	1	2	1	0	0	0	0	216
10:15	111	41	24	29	10	10	6	7	3	0	1	1	0	243
10:30	127	23	12	10	11	5	5	4	0	3	0	0	0	200
10:45	117	38	19	21	18	6	4	0	1	0	0	1	0	225
	491	125	71	72	53	32	16	13	5	3	1	2	0	884
11:00	129	35	17	20	7	6	3	3	1	2	1	1	1	226
11:15	126	42	23	19	16	6	2	1	0	0	0	1	0	236
11:30	132	54	31	15	17	9	11	2	1	1	0	0	0	273
11:45	141	43	30	20	17	10	3	3	2	0	0	0	0	269
	528	174	101	74	57	31	19	9	4	3	1	2	1	1004
Total	3418	915	484	438	410	271	193	142	92	60	31	27	35	6516

City: REDONDO BEACH

Location: ARTESIA BOULEVARD

Segment: E/O AVIATION BOULEVARD

Date Start: 17-Oct-18

S1810002W

WESTBOUND, WESTBOUND1

Start	1	26	29	31	33	35	37	39	41	43	45	47	49	
Time	25	28	30	32	34	36	38	40	42	44	46	48	9999	Total
12 PM	148	27	10	9	7	6	3	1	2	1	0	0	0	214
12:15	170	29	13	22	11	8	5	2	0	0	0	0	0	260
12:30	155	32	19	13	16	12	8	2	1	1	2	0	0	261
12:45	122	47	26	20	16	10	3	4	2	1	1	1	0	253
	595	135	68	64	50	36	19	9	5	3	3	1	0	988
13:00	131	58	27	12	13	9	4	4	3	1	0	0	0	262
13:15	135	22	22	22	17	11	3	3	1	1	2	0	0	239
13:30	140	39	17	19	22	8	6	0	0	0	0	0	1	252
13:45	125	42	22	14	11	4	2	2	2	1	0	0	0	225
	531	161	88	67	63	32	15	9	6	3	2	0	1	978
14:00	156	36	24	25	11	9	7	5	2	3	0	0	0	278
14:15	160	46	31	22	22	7	4	1	0	1	1	0	0	295
14:30	105	24	15	40	32	14	7	5	3	5	1	0	0	251
14:45	157	44	13	19	8	2	5	1	0	2	0	0	0	251
	578	150	83	106	73	32	23	12	5	11	2	0	0	1075
15:00	170	31	14	9	5	8	4	5	0	1	0	0	0	247
15:15	125	28	25	16	14	11	10	4	7	1	1	0	0	242
15:30	179	37	16	6	10	1	1	3	0	0	0	0	0	253
15:45	121	47	39	27	20	11	13	5	0	2	2	1	1	289
	595	143	94	58	49	31	28	17	7	4	3	1	1	1031
16:00	130	29	8	12	23	7	4	5	4	3	0	0	0	225
16:15	141	38	16	13	18	7	7	6	3	0	0	0	0	249
16:30	133	40	15	18	19	7	2	4	1	0	0	0	0	239
16:45	131	58	13	14	15	19	8	5	3	0	1	0	0	267
	535	165	52	57	75	40	21	20	11	3	1	0	0	980
17:00	140	50	35	28	12	8	2	2	2	0	1	1	0	281
17:15	162	34	6	8	4	5	2	1	0	0	1	0	1	224
17:30	162	21	28	15	9	6	3	2	1	2	0	0	0	249
17:45	155	35	26	14	9	7	7	3	1	2	1	0	0	260
	619	140	95	65	34	26	14	8	4	4	3	1	1	1014
18:00	152	25	24	23	18	11	10	4	0	1	0	0	0	268
18:15	109	31	24	23	21	23	7	2	4	2	1	0	1	248
18:30	164	49	17	10	7	5	5	1	2	0	0	0	2	262
18:45	118	49	29	19	18	14	9	7	5	0	0	0	0	268
	543	154	94	75	64	53	31	14	11	3	1	0	3	1046
19:00	133	55	20	18	9	10	2	5	1	1	1	1	0	256
19:15	87	30	28	25	19	11	5	2	0	3	2	0	0	212
19:30	47	32	22	19	19	8	6	6	3	3	1	0	1	167
19:45	94	37	29	27	16	21	11	4	0	0	0	0	3	242
	361	154	99	89	63	50	24	17	4	7	4	1	4	877
20:00	46	28	27	26	15	13	4	9	0	1	0	0	1	170
20:15	51	19	11	11	22	16	12	9	2	3	0	0	1	157
20:30	25	18	20	15	17	12	8	11	5	8	2	3	2	146
20:45	35	18	10	20	21	7	9	7	2	0	0	0	1	130
	157	83	68	72	75	48	33	36	9	12	2	3	5	603
21:00	58	19	15	11	6	6	3	2	2	1	3	1	0	127
21:15	18	13	22	24	19	10	8	11	3	3	0	0	0	131
21:30	16	11	14	17	17	8	11	9	5	5	2	1	0	116
21:45	25	20	15	9	5	11	8	3	3	1	2	1	1	104
	117	63	66	61	47	35	30	25	13	10	7	3	1	478
22:00	20	20	15	22	21	7	5	2	4	1	2	2	1	122
22:15	16	14	19	8	6	11	9	2	3	0	0	0	0	88
22:30	10	7	4	8	10	4	4	5	5	4	3	3	2	69
22:45	10	3	6	14	11	11	9	11	5	1	1	0	0	82
	56	44	44	52	48	33	27	20	17	6	6	5	3	361
23:00	9	10	8	7	13	2	7	5	2	4	0	0	0	67
23:15	6	3	3	1	5	5	9	3	5	2	1	1	2	46
23:30	2	4	8	3	17	6	10	3	2	0	0	0	0	55
23:45	0	3	3	4	7	3	11	7	3	2	2	0	4	49
	17	20	22	15	42	16	37	18	12	8	3	1	6	217
Total	4704	1412	873	781	683	432	302	205	104	74	37	16	25	9648
Total	8122	2327	1357	1219	1093	703	495	347	196	134	68	43	60	16164

15th Percentile : 7 MPH
 50th Percentile : 24 MPH
 85th Percentile : 33 MPH
 95th Percentile : 37 MPH

Statistics

Mean Speed(Average) : 22 MPH
 10 MPH Pace Speed : 26-35 MPH
 Number in Pace : 6348
 Percent in Pace : 39.3%
 Number of Vehicles > 55 MPH : 0
 Percent of Vehicles > 55 MPH : 0.0%

Future without project
AM 2030

2030BaselineAM

Mon Mar 9, 2009 15:40:50

Page 27-1

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #25 Artesia/Aviation Blvd

Cycle (sec): 100 Critical Vol./Cap.(X): 1.212

Loss Time (sec): 10 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx

Optimal Cycle: 180 Level Of Service: F

Street Name:	Aviation Blvd						Artesia					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0	1	1	0	1	0	1	1	0	1	0

Volume Module:

Base Vol:	170	1350	190	50	700	80	140	1080	200	320	740	240
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	170	1350	190	50	700	80	140	1080	200	320	740	240
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	170	1350	190	50	700	80	140	1080	200	320	740	240
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	170	1350	190	50	700	80	140	1080	200	320	740	240
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	170	1350	190	50	700	80	140	1080	200	320	740	240

Saturation Flow Module:

Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.75	0.25	1.00	1.79	0.21	1.00	1.69	0.31	1.00	1.51	0.49
Final Sat.:	1600	2805	395	1600	2872	328	1600	2700	500	1600	2416	784

Capacity Analysis Module:

Vol/Sat:	0.11	0.48	0.48	0.03	0.24	0.24	0.09	0.40	0.40	0.20	0.31	0.31
Crit Moves:	****			****			****			****		

Future without project
PM 2030

2030BaselinePM

Mon Mar 9, 2009 15:40:29

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Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #25 Artesia/Aviation Blvd

Cycle (sec): 100 Critical Vol./Cap.(X): 1.325
Loss Time (sec): 10 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 180 Level Of Service: F

Street Name:	Aviation Blvd						Artesia					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0	1	1	0	1	1	0	1	1	0	1

Volume Module:	Aviation Blvd NB			Aviation Blvd SB			Artesia EB			Artesia WB		
Base Vol:	180	900	270	190	1070	180	140	1050	200	530	930	190
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	180	900	270	190	1070	180	140	1050	200	530	930	190
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	180	900	270	190	1070	180	140	1050	200	530	930	190
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	180	900	270	190	1070	180	140	1050	200	530	930	190
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	180	900	270	190	1070	180	140	1050	200	530	930	190

Saturation Flow Module:	Aviation Blvd NB			Aviation Blvd SB			Artesia EB			Artesia WB		
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.54	0.46	1.00	1.71	0.29	1.00	1.68	0.32	1.00	1.66	0.34
Final Sat.:	1600	2462	738	1600	2739	461	1600	2688	512	1600	2657	543

Capacity Analysis Module:	Aviation Blvd NB			Aviation Blvd SB			Artesia EB			Artesia WB		
Vol/Sat:	0.11	0.37	0.37	0.12	0.39	0.39	0.09	0.39	0.39	0.33	0.35	0.35
Crit Moves:	***			***			***			***		

ATTACHMENT 4

CAPACITY ANALYSIS

HCM 2010 Signalized Intersection Summary

3: Aviation Boulevard & Artesia Boulevard

09/06/2019

												
Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (veh/h)	3	196	524	54	8	159	801	211	171	1166	89	99
Future Volume (veh/h)	3	196	524	54	8	159	801	211	171	1166	89	99
Number		7	4	14		3	8	18	5	2	12	1
Initial Q (Qb), veh		0	0	0		0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00		1.00		1.00		1.00	1.00		1.00	1.00
Parking Bus, Adj		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln		1863	1863	1863		1863	1863	1900	1863	1863	1900	1863
Adj Flow Rate, veh/h		213	570	59		173	871	229	186	1267	97	108
Adj No. of Lanes		1	2	1		1	2	0	1	2	0	1
Peak Hour Factor		0.92	0.92	0.92		0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %		2	2	2		2	2	2	2	2	2	2
Cap, veh/h		106	1146	513		90	872	229	90	1286	98	84
Arrive On Green		0.06	0.32	0.32		0.05	0.31	0.31	0.05	0.39	0.39	0.05
Sat Flow, veh/h		1774	3539	1583		1774	2775	729	1774	3333	255	1774
Grp Volume(v), veh/h		213	570	59		173	555	545	186	672	692	108
Grp Sat Flow(s),veh/h/ln		1774	1770	1583		1774	1770	1734	1774	1770	1818	1774
Q Serve(g_s), s		6.3	13.6	2.7		5.3	32.9	33.0	5.3	39.4	39.7	5.0
Cycle Q Clear(g_c), s		6.3	13.6	2.7		5.3	32.9	33.0	5.3	39.4	39.7	5.0
Prop In Lane		1.00		1.00		1.00		0.42	1.00		0.14	1.00
Lane Grp Cap(c), veh/h		106	1146	513		90	556	545	90	683	701	84
V/C Ratio(X)		2.00	0.50	0.12		1.93	1.00	1.00	2.08	0.98	0.99	1.28
Avail Cap(c_a), veh/h		106	1146	513		90	556	545	90	683	701	84
HCM Platoon Ratio		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh		49.3	28.6	24.9		49.8	36.0	36.0	49.8	31.9	32.0	50.0
Incr Delay (d2), s/veh		482.1	0.3	0.1		457.6	37.7	38.4	520.8	30.7	31.1	189.9
Initial Q Delay(d3),s/veh		0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln		17.3	6.7	1.2		14.0	21.9	21.6	15.5	25.0	25.9	6.9
LnGrp Delay(d),s/veh		531.4	28.9	25.0		507.4	73.7	74.4	570.6	62.6	63.1	239.9
LnGrp LOS		F	C	C		F	E	E	F	E	E	F
Approach Vol, veh/h			842				1273			1550		
Approach Delay, s/veh			155.8				132.9			123.8		
Approach LOS			F				F			F		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.7	45.9	10.0	39.4	10.0	45.6	11.0	38.4				
Change Period (Y+Rc), s	* 4.7	5.4	* 4.7	5.4	* 4.7	5.4	* 4.7	5.4				
Max Green Setting (Gmax), s	* 5	40.5	* 5.3	34.0	* 5.3	40.2	* 6.3	33.0				
Max Q Clear Time (g_c+l1), s	7.0	41.7	7.3	15.6	7.3	24.1	8.3	35.0				
Green Ext Time (p_c), s	0.0	0.0	0.0	3.6	0.0	4.9	0.0	0.0				
Intersection Summary												
HCM 2010 Ctrl Delay			117.4									
HCM 2010 LOS			F									
Notes												
User approved ignoring U-Turning movement.												

HCM 2010 Signalized Intersection Summary

3: Aviation Boulevard & Artesia Boulevard

09/06/2019

	↓	↙
Movement	SBT	SBR
Lane Configurations	↑↑	
Traffic Volume (veh/h)	594	217
Future Volume (veh/h)	594	217
Number	6	16
Initial Q (Qb), veh	0	0
Ped-Bike Adj(A_pbT)		1.00
Parking Bus, Adj	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1900
Adj Flow Rate, veh/h	646	236
Adj No. of Lanes	2	0
Peak Hour Factor	0.92	0.92
Percent Heavy Veh, %	2	2
Cap, veh/h	973	355
Arrive On Green	0.38	0.38
Sat Flow, veh/h	2541	928
Grp Volume(v), veh/h	450	432
Grp Sat Flow(s),veh/h/ln	1770	1699
Q Serve(g_s), s	22.1	22.1
Cycle Q Clear(g_c), s	22.1	22.1
Prop In Lane		0.55
Lane Grp Cap(c), veh/h	678	650
V/C Ratio(X)	0.66	0.66
Avail Cap(c_a), veh/h	678	650
HCM Platoon Ratio	1.00	1.00
Upstream Filter(I)	1.00	1.00
Uniform Delay (d), s/veh	26.8	26.8
Incr Delay (d2), s/veh	5.1	5.3
Initial Q Delay(d3),s/veh	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.7	11.3
LnGrp Delay(d),s/veh	31.9	32.1
LnGrp LOS	C	C
Approach Vol, veh/h	990	
Approach Delay, s/veh	54.7	
Approach LOS	D	
Timer		

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary

3: Aviation Boulevard & Artesia Boulevard

09/06/2019

												
Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (veh/h)	2	203	816	176	9	242	573	144	138	686	139	193
Future Volume (veh/h)	2	203	816	176	9	242	573	144	138	686	139	193
Number		7	4	14		3	8	18	5	2	12	1
Initial Q (Qb), veh		0	0	0		0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00		1.00		1.00		1.00	1.00		1.00	1.00
Parking Bus, Adj		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln		1863	1863	1863		1863	1863	1900	1863	1863	1900	1863
Adj Flow Rate, veh/h		221	887	191		263	623	157	150	746	151	210
Adj No. of Lanes		1	2	1		1	2	0	1	2	0	1
Peak Hour Factor		0.92	0.92	0.92		0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %		2	2	2		2	2	2	2	2	2	2
Cap, veh/h		237	878	393		274	753	190	160	925	187	214
Arrive On Green		0.13	0.25	0.25		0.15	0.27	0.27	0.09	0.32	0.32	0.12
Sat Flow, veh/h		1774	3539	1583		1774	2803	705	1774	2934	594	1774
Grp Volume(v), veh/h		221	887	191		263	393	387	150	450	447	210
Grp Sat Flow(s),veh/h/ln		1774	1770	1583		1774	1770	1738	1774	1770	1758	1774
Q Serve(g_s), s		15.4	31.0	12.9		18.4	26.1	26.2	10.5	29.2	29.2	14.8
Cycle Q Clear(g_c), s		15.4	31.0	12.9		18.4	26.1	26.2	10.5	29.2	29.2	14.8
Prop In Lane		1.00		1.00		1.00		0.41	1.00		0.34	1.00
Lane Grp Cap(c), veh/h		237	878	393		274	476	467	160	558	554	214
V/C Ratio(X)		0.93	1.01	0.49		0.96	0.83	0.83	0.94	0.81	0.81	0.98
Avail Cap(c_a), veh/h		237	878	393		274	476	467	160	558	554	214
HCM Platoon Ratio		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh		53.6	47.0	40.2		52.5	43.0	43.0	56.5	39.3	39.3	54.8
Incr Delay (d2), s/veh		40.3	33.0	0.9		43.4	11.4	11.8	52.2	11.8	11.9	55.5
Initial Q Delay(d3),s/veh		0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln		10.2	19.1	5.7		12.4	14.3	14.1	7.5	16.1	16.0	10.5
LnGrp Delay(d),s/veh		93.9	80.0	41.1		95.9	54.4	54.8	108.7	51.1	51.2	110.3
LnGrp LOS		F	F	D		F	D	D	F	D	D	F
Approach Vol, veh/h			1299				1043			1047		
Approach Delay, s/veh			76.7				65.0			59.4		
Approach LOS			E				E			E		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	19.8	44.8	24.0	36.4	16.0	48.6	21.4	39.0				
Change Period (Y+Rc), s	* 4.7	5.4	* 4.7	5.4	* 4.7	5.4	* 4.7	5.4				
Max Green Setting (Gmax), s	* 15	39.4	* 19	31.0	* 11	43.2	* 17	33.6				
Max Q Clear Time (g_c+I1), s	16.8	31.2	20.4	33.0	12.5	43.9	17.4	28.2				
Green Ext Time (p_c), s	0.0	3.5	0.0	0.0	0.0	0.0	0.0	2.2				
Intersection Summary												
HCM 2010 Ctrl Delay			70.6									
HCM 2010 LOS			E									
Notes												
User approved ignoring U-Turning movement.												

HCM 2010 Signalized Intersection Summary

3: Aviation Boulevard & Artesia Boulevard

09/06/2019

	↓	↘
Movement	SBT	SBR
Lane Configurations	↑↑	
Traffic Volume (veh/h)	1017	97
Future Volume (veh/h)	1017	97
Number	6	16
Initial Q (Qb), veh	0	0
Ped-Bike Adj(A_pbT)		1.00
Parking Bus, Adj	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1900
Adj Flow Rate, veh/h	1105	105
Adj No. of Lanes	2	0
Peak Hour Factor	0.92	0.92
Percent Heavy Veh, %	2	2
Cap, veh/h	1129	107
Arrive On Green	0.35	0.35
Sat Flow, veh/h	3267	310
Grp Volume(v), veh/h	598	612
Grp Sat Flow(s),veh/h/ln	1770	1808
Q Serve(g_s), s	41.7	41.9
Cycle Q Clear(g_c), s	41.7	41.9
Prop In Lane		0.17
Lane Grp Cap(c), veh/h	612	625
V/C Ratio(X)	0.98	0.98
Avail Cap(c_a), veh/h	612	625
HCM Platoon Ratio	1.00	1.00
Upstream Filter(l)	1.00	1.00
Uniform Delay (d), s/veh	40.4	40.5
Incr Delay (d2), s/veh	31.3	31.3
Initial Q Delay(d3),s/veh	0.0	0.0
%ile BackOfQ(50%),veh/ln	25.8	26.3
LnGrp Delay(d),s/veh	71.8	71.8
LnGrp LOS	E	E
Approach Vol, veh/h	1420	
Approach Delay, s/veh	77.5	
Approach LOS	E	
Timer		

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary

3: Aviation Boulevard & Artesia Boulevard

09/06/2019

												
Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (veh/h)	5	187	520	64	8	153	849	194	159	1107	92	138
Future Volume (veh/h)	5	187	520	64	8	153	849	194	159	1107	92	138
Number		7	4	14		3	8	18	5	2	12	1
Initial Q (Qb), veh		0	0	0		0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00		1.00		1.00		1.00	1.00		1.00	1.00
Parking Bus, Adj		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln		1863	1863	1863		1863	1863	1900	1863	1863	1900	1863
Adj Flow Rate, veh/h		203	565	70		166	923	211	173	1203	100	150
Adj No. of Lanes		1	2	1		1	2	0	1	2	0	1
Peak Hour Factor		0.92	0.92	0.92		0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %		2	2	2		2	2	2	2	2	2	2
Cap, veh/h		106	1146	513		90	900	205	90	1267	105	90
Arrive On Green		0.06	0.32	0.32		0.05	0.31	0.31	0.05	0.38	0.38	0.05
Sat Flow, veh/h		1774	3539	1583		1774	2863	654	1774	3309	275	1774
Grp Volume(v), veh/h		203	565	70		166	570	564	173	642	661	150
Grp Sat Flow(s),veh/h/ln		1774	1770	1583		1774	1770	1747	1774	1770	1814	1774
Q Serve(g_s), s		6.3	13.5	3.3		5.3	33.0	33.0	5.3	36.9	37.1	5.3
Cycle Q Clear(g_c), s		6.3	13.5	3.3		5.3	33.0	33.0	5.3	36.9	37.1	5.3
Prop In Lane		1.00		1.00		1.00		0.37	1.00		0.15	1.00
Lane Grp Cap(c), veh/h		106	1146	513		90	556	549	90	678	695	90
V/C Ratio(X)		1.91	0.49	0.14		1.85	1.03	1.03	1.93	0.95	0.95	1.68
Avail Cap(c_a), veh/h		106	1146	513		90	556	549	90	678	695	90
HCM Platoon Ratio		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh		49.3	28.6	25.1		49.8	36.0	36.0	49.8	31.4	31.4	49.8
Incr Delay (d2), s/veh		441.1	0.3	0.1		423.8	44.7	45.4	457.6	24.0	24.1	347.4
Initial Q Delay(d3),s/veh		0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln		16.1	6.6	1.5		13.1	23.0	22.8	14.0	22.5	23.2	11.2
LnGrp Delay(d),s/veh		490.5	28.9	25.2		473.6	80.7	81.4	507.4	55.4	55.5	397.3
LnGrp LOS		F	C	C		F	F	F	F	E	E	F
Approach Vol, veh/h			838				1300			1476		
Approach Delay, s/veh			140.4				131.2			108.4		
Approach LOS			F				F			F		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	10.0	45.6	10.0	39.4	10.0	45.6	11.0	38.4				
Change Period (Y+Rc), s	* 4.7	5.4	* 4.7	5.4	* 4.7	5.4	* 4.7	5.4				
Max Green Setting (Gmax), s	* 5.3	40.2	* 5.3	34.0	* 5.3	40.2	* 6.3	33.0				
Max Q Clear Time (g_c+I1), s	7.3	39.1	7.3	15.5	7.3	21.3	8.3	35.0				
Green Ext Time (p_c), s	0.0	0.8	0.0	3.6	0.0	4.6	0.0	0.0				
Intersection Summary												
HCM 2010 Ctrl Delay			116.6									
HCM 2010 LOS			F									
Notes												
User approved ignoring U-Turning movement.												

HCM 2010 Signalized Intersection Summary

3: Aviation Boulevard & Artesia Boulevard

09/06/2019

	↓	↘
Movement	SBT	SBR
Lane Configurations	↑↑	
Traffic Volume (veh/h)	540	192
Future Volume (veh/h)	540	192
Number	6	16
Initial Q (Qb), veh	0	0
Ped-Bike Adj(A_pbT)		1.00
Parking Bus, Adj	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1900
Adj Flow Rate, veh/h	587	209
Adj No. of Lanes	2	0
Peak Hour Factor	0.92	0.92
Percent Heavy Veh, %	2	2
Cap, veh/h	981	348
Arrive On Green	0.38	0.38
Sat Flow, veh/h	2562	910
Grp Volume(v), veh/h	405	391
Grp Sat Flow(s),veh/h/ln	1770	1702
Q Serve(g_s), s	19.2	19.3
Cycle Q Clear(g_c), s	19.2	19.3
Prop In Lane		0.53
Lane Grp Cap(c), veh/h	678	652
V/C Ratio(X)	0.60	0.60
Avail Cap(c_a), veh/h	678	652
HCM Platoon Ratio	1.00	1.00
Upstream Filter(l)	1.00	1.00
Uniform Delay (d), s/veh	25.9	26.0
Incr Delay (d2), s/veh	3.9	4.0
Initial Q Delay(d3),s/veh	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.1	9.7
LnGrp Delay(d),s/veh	29.8	30.0
LnGrp LOS	C	C
Approach Vol, veh/h	946	
Approach Delay, s/veh	88.2	
Approach LOS	F	
Timer		

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary

3: Aviation Boulevard & Artesia Boulevard

09/06/2019

												
Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (veh/h)	175	822	131	9	250	580	131	126	642	179	184	1129
Future Volume (veh/h)	175	822	131	9	250	580	131	126	642	179	184	1129
Number	7	4	14		3	8	18	5	2	12	1	6
Initial Q (Qb), veh	0	0	0		0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00		1.00		1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863		1863	1863	1900	1863	1863	1900	1863	1863
Adj Flow Rate, veh/h	190	893	142		272	630	142	137	698	195	200	1227
Adj No. of Lanes	1	2	1		1	2	0	1	2	0	1	2
Peak Hour Factor	0.92	0.92	0.92		0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2		2	2	2	2	2	2	2	2
Cap, veh/h	215	855	382		272	787	177	141	900	251	224	1217
Arrive On Green	0.12	0.24	0.24		0.15	0.27	0.27	0.08	0.33	0.33	0.13	0.38
Sat Flow, veh/h	1774	3539	1583		1774	2872	646	1774	2734	764	1774	3233
Grp Volume(v), veh/h	190	893	142		272	388	384	137	452	441	200	670
Grp Sat Flow(s),veh/h/ln	1774	1770	1583		1774	1770	1749	1774	1770	1728	1774	1770
Q Serve(g_s), s	14.2	32.6	10.1		20.7	27.5	27.6	10.4	31.0	31.1	15.0	50.8
Cycle Q Clear(g_c), s	14.2	32.6	10.1		20.7	27.5	27.6	10.4	31.0	31.1	15.0	50.8
Prop In Lane	1.00		1.00		1.00		0.37	1.00		0.44	1.00	
Lane Grp Cap(c), veh/h	215	855	382		272	485	479	141	582	569	224	666
V/C Ratio(X)	0.89	1.04	0.37		1.00	0.80	0.80	0.97	0.78	0.78	0.89	1.01
Avail Cap(c_a), veh/h	242	855	382		272	485	479	141	582	569	251	666
HCM Platoon Ratio	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	58.4	51.2	42.7		57.1	45.6	45.6	62.0	40.8	40.8	58.0	42.1
Incr Delay (d2), s/veh	28.0	43.1	0.6		54.5	9.3	9.5	67.8	9.8	10.0	28.3	36.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.6	21.0	4.5		14.2	14.7	14.6	7.7	16.8	16.4	9.1	31.5
LnGrp Delay(d),s/veh	86.4	94.3	43.3		111.7	54.8	55.1	129.9	50.6	50.8	86.3	78.5
LnGrp LOS	F	F	D		F	D	E	F	D	D	F	F
Approach Vol, veh/h	1225			1044			1030			1556		
Approach Delay, s/veh	87.2			69.8			61.2			79.9		
Approach LOS	F			E			E			E		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	21.8	49.8	25.4	38.0	15.4	56.2	21.0	42.4				
Change Period (Y+Rc), s	* 4.7	5.4	* 4.7	5.4	* 4.7	5.4	* 4.7	5.4				
Max Green Setting (Gmax), s	* 19	42.4	* 21	32.6	* 11	50.8	* 18	34.9				
Max Q Clear Time (g_c+I1), s	17.0	33.1	22.7	34.6	12.4	52.8	16.2	29.6				
Green Ext Time (p_c), s	0.1	3.8	0.0	0.0	0.0	0.0	0.1	2.2				
Intersection Summary												
HCM 2010 Ctrl Delay				75.6								
HCM 2010 LOS				E								
Notes												
User approved ignoring U-Turning movement.												

HCM 2010 Signalized Intersection Summary

3: Aviation Boulevard & Artesia Boulevard

09/06/2019

Movement	SBR
Lane Configurations	
Traffic Volume (veh/h)	119
Future Volume (veh/h)	119
Number	16
Initial Q (Qb), veh	0
Ped-Bike Adj(A_pbT)	1.00
Parking Bus, Adj	1.00
Adj Sat Flow, veh/h/ln	1900
Adj Flow Rate, veh/h	129
Adj No. of Lanes	0
Peak Hour Factor	0.92
Percent Heavy Veh, %	2
Cap, veh/h	128
Arrive On Green	0.38
Sat Flow, veh/h	339
Grp Volume(v), veh/h	686
Grp Sat Flow(s),veh/h/ln	1803
Q Serve(g_s), s	50.8
Cycle Q Clear(g_c), s	50.8
Prop In Lane	0.19
Lane Grp Cap(c), veh/h	678
V/C Ratio(X)	1.01
Avail Cap(c_a), veh/h	678
HCM Platoon Ratio	1.00
Upstream Filter(l)	1.00
Uniform Delay (d), s/veh	42.1
Incr Delay (d2), s/veh	37.4
Initial Q Delay(d3),s/veh	0.0
%ile BackOfQ(50%),veh/ln	32.3
LnGrp Delay(d),s/veh	79.5
LnGrp LOS	F
Approach Vol, veh/h	
Approach Delay, s/veh	
Approach LOS	
Timer	

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary

3: Aviation Boulevard & Artesia Boulevard

09/06/2019

												
Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (veh/h)	3	196	524	54	8	159	801	211	171	1166	89	99
Future Volume (veh/h)	3	196	524	54	8	159	801	211	171	1166	89	99
Number		7	4	14		3	8	18	5	2	12	1
Initial Q (Qb), veh		0	0	0		0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00		1.00		1.00		1.00	1.00		1.00	1.00
Parking Bus, Adj		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln		1863	1863	1863		1863	1863	1900	1863	1863	1863	1863
Adj Flow Rate, veh/h		213	570	59		173	871	229	186	1267	97	108
Adj No. of Lanes		1	2	1		1	2	0	1	2	1	1
Peak Hour Factor		0.92	0.92	0.92		0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %		2	2	2		2	2	2	2	2	2	2
Cap, veh/h		106	1146	513		90	872	229	90	1365	611	84
Arrive On Green		0.06	0.32	0.32		0.05	0.31	0.31	0.05	0.39	0.39	0.05
Sat Flow, veh/h		1774	3539	1583		1774	2775	729	1774	3539	1583	1774
Grp Volume(v), veh/h		213	570	59		173	555	545	186	1267	97	108
Grp Sat Flow(s),veh/h/ln		1774	1770	1583		1774	1770	1734	1774	1770	1583	1774
Q Serve(g_s), s		6.3	13.6	2.7		5.3	32.9	33.0	5.3	36.0	4.2	5.0
Cycle Q Clear(g_c), s		6.3	13.6	2.7		5.3	32.9	33.0	5.3	36.0	4.2	5.0
Prop In Lane		1.00		1.00		1.00		0.42	1.00		1.00	1.00
Lane Grp Cap(c), veh/h		106	1146	513		90	556	545	90	1365	611	84
V/C Ratio(X)		2.00	0.50	0.12		1.93	1.00	1.00	2.08	0.93	0.16	1.28
Avail Cap(c_a), veh/h		106	1146	513		90	556	545	90	1365	611	84
HCM Platoon Ratio		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh		49.3	28.6	24.9		49.8	36.0	36.0	49.8	30.9	21.1	50.0
Incr Delay (d2), s/veh		482.1	0.3	0.1		457.6	37.7	38.4	520.8	12.3	0.6	189.9
Initial Q Delay(d3),s/veh		0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln		17.3	6.7	1.2		14.0	21.9	21.6	15.5	19.8	1.9	6.9
LnGrp Delay(d),s/veh		531.4	28.9	25.0		507.4	73.7	74.4	570.6	43.2	21.7	239.9
LnGrp LOS		F	C	C		F	E	E	F	D	C	F
Approach Vol, veh/h			842				1273			1550		
Approach Delay, s/veh			155.8				132.9			105.1		
Approach LOS			F				F			F		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.7	45.9	10.0	39.4	10.0	45.6	11.0	38.4				
Change Period (Y+Rc), s	* 4.7	5.4	* 4.7	5.4	* 4.7	5.4	* 4.7	5.4				
Max Green Setting (Gmax), s	* 5	40.5	* 5.3	34.0	* 5.3	40.2	* 6.3	33.0				
Max Q Clear Time (g_c+l1), s	7.0	38.0	7.3	15.6	7.3	24.1	8.3	35.0				
Green Ext Time (p_c), s	0.0	1.9	0.0	3.6	0.0	4.9	0.0	0.0				
Intersection Summary												
HCM 2010 Ctrl Delay			111.2									
HCM 2010 LOS			F									
Notes												
User approved ignoring U-Turning movement.												

HCM 2010 Signalized Intersection Summary

3: Aviation Boulevard & Artesia Boulevard

09/06/2019

	↓	↘
Movement	SBT	SBR
Lane Configurations	↑↑	
Traffic Volume (veh/h)	594	217
Future Volume (veh/h)	594	217
Number	6	16
Initial Q (Qb), veh	0	0
Ped-Bike Adj(A_pbT)		1.00
Parking Bus, Adj	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1900
Adj Flow Rate, veh/h	646	236
Adj No. of Lanes	2	0
Peak Hour Factor	0.92	0.92
Percent Heavy Veh, %	2	2
Cap, veh/h	973	355
Arrive On Green	0.38	0.38
Sat Flow, veh/h	2541	928
Grp Volume(v), veh/h	450	432
Grp Sat Flow(s),veh/h/ln	1770	1699
Q Serve(g_s), s	22.1	22.1
Cycle Q Clear(g_c), s	22.1	22.1
Prop In Lane		0.55
Lane Grp Cap(c), veh/h	678	650
V/C Ratio(X)	0.66	0.66
Avail Cap(c_a), veh/h	678	650
HCM Platoon Ratio	1.00	1.00
Upstream Filter(l)	1.00	1.00
Uniform Delay (d), s/veh	26.8	26.8
Incr Delay (d2), s/veh	5.1	5.3
Initial Q Delay(d3),s/veh	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.7	11.3
LnGrp Delay(d),s/veh	31.9	32.1
LnGrp LOS	C	C
Approach Vol, veh/h	990	
Approach Delay, s/veh	54.7	
Approach LOS	D	
Timer		

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary

3: Aviation Boulevard & Artesia Boulevard

09/06/2019

												
Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (veh/h)	2	203	816	176	9	242	573	144	138	686	139	193
Future Volume (veh/h)	2	203	816	176	9	242	573	144	138	686	139	193
Number		7	4	14		3	8	18	5	2	12	1
Initial Q (Qb), veh		0	0	0		0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00		1.00		1.00		1.00	1.00		1.00	1.00
Parking Bus, Adj		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln		1863	1863	1863		1863	1863	1900	1863	1863	1863	1863
Adj Flow Rate, veh/h		221	887	191		263	623	157	150	746	151	210
Adj No. of Lanes		1	2	1		1	2	0	1	2	1	1
Peak Hour Factor		0.92	0.92	0.92		0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %		2	2	2		2	2	2	2	2	2	2
Cap, veh/h		237	878	393		274	753	190	160	1116	499	214
Arrive On Green		0.13	0.25	0.25		0.15	0.27	0.27	0.09	0.32	0.32	0.12
Sat Flow, veh/h		1774	3539	1583		1774	2803	705	1774	3539	1583	1774
Grp Volume(v), veh/h		221	887	191		263	393	387	150	746	151	210
Grp Sat Flow(s),veh/h/ln		1774	1770	1583		1774	1770	1738	1774	1770	1583	1774
Q Serve(g_s), s		15.4	31.0	12.9		18.4	26.1	26.2	10.5	22.9	9.0	14.8
Cycle Q Clear(g_c), s		15.4	31.0	12.9		18.4	26.1	26.2	10.5	22.9	9.0	14.8
Prop In Lane		1.00		1.00		1.00		0.41	1.00		1.00	1.00
Lane Grp Cap(c), veh/h		237	878	393		274	476	467	160	1116	499	214
V/C Ratio(X)		0.93	1.01	0.49		0.96	0.83	0.83	0.94	0.67	0.30	0.98
Avail Cap(c_a), veh/h		237	878	393		274	476	467	160	1116	499	214
HCM Platoon Ratio		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh		53.6	47.0	40.2		52.5	43.0	43.0	56.5	37.1	32.4	54.8
Incr Delay (d2), s/veh		40.3	33.0	0.9		43.4	11.4	11.8	52.2	3.2	1.6	55.5
Initial Q Delay(d3),s/veh		0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln		10.2	19.1	5.7		12.4	14.3	14.1	7.5	11.7	4.1	10.5
LnGrp Delay(d),s/veh		93.9	80.0	41.1		95.9	54.4	54.8	108.7	40.3	34.0	110.3
LnGrp LOS		F	F	D		F	D	D	F	D	C	F
Approach Vol, veh/h			1299				1043			1047		
Approach Delay, s/veh			76.7				65.0			49.2		
Approach LOS			E				E			D		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	19.8	44.8	24.0	36.4	16.0	48.6	21.4	39.0				
Change Period (Y+Rc), s	* 4.7	5.4	* 4.7	5.4	* 4.7	5.4	* 4.7	5.4				
Max Green Setting (Gmax), s	* 15	39.4	* 19	31.0	* 11	43.2	* 17	33.6				
Max Q Clear Time (g_c+l1), s	16.8	24.9	20.4	33.0	12.5	43.9	17.4	28.2				
Green Ext Time (p_c), s	0.0	4.8	0.0	0.0	0.0	0.0	0.0	2.2				
Intersection Summary												
HCM 2010 Ctrl Delay			68.4									
HCM 2010 LOS			E									
Notes												
User approved ignoring U-Turning movement.												

HCM 2010 Signalized Intersection Summary

3: Aviation Boulevard & Artesia Boulevard

09/06/2019

	↓	↘
Movement	SBT	SBR
Lane Configurations	↑↑	
Traffic Volume (veh/h)	1017	97
Future Volume (veh/h)	1017	97
Number	6	16
Initial Q (Qb), veh	0	0
Ped-Bike Adj(A_pbT)		1.00
Parking Bus, Adj	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1900
Adj Flow Rate, veh/h	1105	105
Adj No. of Lanes	2	0
Peak Hour Factor	0.92	0.92
Percent Heavy Veh, %	2	2
Cap, veh/h	1129	107
Arrive On Green	0.35	0.35
Sat Flow, veh/h	3267	310
Grp Volume(v), veh/h	598	612
Grp Sat Flow(s),veh/h/ln	1770	1808
Q Serve(g_s), s	41.7	41.9
Cycle Q Clear(g_c), s	41.7	41.9
Prop In Lane		0.17
Lane Grp Cap(c), veh/h	612	625
V/C Ratio(X)	0.98	0.98
Avail Cap(c_a), veh/h	612	625
HCM Platoon Ratio	1.00	1.00
Upstream Filter(I)	1.00	1.00
Uniform Delay (d), s/veh	40.4	40.5
Incr Delay (d2), s/veh	31.3	31.3
Initial Q Delay(d3),s/veh	0.0	0.0
%ile BackOfQ(50%),veh/ln	25.8	26.3
LnGrp Delay(d),s/veh	71.8	71.8
LnGrp LOS	E	E
Approach Vol, veh/h	1420	
Approach Delay, s/veh	77.5	
Approach LOS	E	
Timer		

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary

3: Aviation Boulevard & Artesia Boulevard

09/06/2019

												
Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (veh/h)	5	187	520	64	8	153	849	194	159	1107	92	138
Future Volume (veh/h)	5	187	520	64	8	153	849	194	159	1107	92	138
Number		7	4	14		3	8	18	5	2	12	1
Initial Q (Qb), veh		0	0	0		0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00		1.00		1.00		1.00	1.00		1.00	1.00
Parking Bus, Adj		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln		1863	1863	1863		1863	1863	1900	1863	1863	1863	1863
Adj Flow Rate, veh/h		203	565	70		166	923	211	173	1203	100	150
Adj No. of Lanes		1	2	1		1	2	0	1	2	1	1
Peak Hour Factor		0.92	0.92	0.92		0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %		2	2	2		2	2	2	2	2	2	2
Cap, veh/h		106	1146	513		90	900	205	90	1355	606	90
Arrive On Green		0.06	0.32	0.32		0.05	0.31	0.31	0.05	0.38	0.38	0.05
Sat Flow, veh/h		1774	3539	1583		1774	2863	654	1774	3539	1583	1774
Grp Volume(v), veh/h		203	565	70		166	570	564	173	1203	100	150
Grp Sat Flow(s),veh/h/ln		1774	1770	1583		1774	1770	1747	1774	1770	1583	1774
Q Serve(g_s), s		6.3	13.5	3.3		5.3	33.0	33.0	5.3	33.4	4.4	5.3
Cycle Q Clear(g_c), s		6.3	13.5	3.3		5.3	33.0	33.0	5.3	33.4	4.4	5.3
Prop In Lane		1.00		1.00		1.00		0.37	1.00		1.00	1.00
Lane Grp Cap(c), veh/h		106	1146	513		90	556	549	90	1355	606	90
V/C Ratio(X)		1.91	0.49	0.14		1.85	1.03	1.03	1.93	0.89	0.16	1.68
Avail Cap(c_a), veh/h		106	1146	513		90	556	549	90	1355	606	90
HCM Platoon Ratio		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh		49.3	28.6	25.1		49.8	36.0	36.0	49.8	30.3	21.3	49.8
Incr Delay (d2), s/veh		441.1	0.3	0.1		423.8	44.7	45.4	457.6	8.9	0.6	347.4
Initial Q Delay(d3),s/veh		0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln		16.1	6.6	1.5		13.1	23.0	22.8	14.0	17.9	2.0	11.2
LnGrp Delay(d),s/veh		490.5	28.9	25.2		473.6	80.7	81.4	507.4	39.2	21.9	397.3
LnGrp LOS		F	C	C		F	F	F	F	D	C	F
Approach Vol, veh/h			838				1300			1476		
Approach Delay, s/veh			140.4				131.2			92.9		
Approach LOS			F				F			F		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	10.0	45.6	10.0	39.4	10.0	45.6	11.0	38.4				
Change Period (Y+Rc), s	* 4.7	5.4	* 4.7	5.4	* 4.7	5.4	* 4.7	5.4				
Max Green Setting (Gmax), s	* 5.3	40.2	* 5.3	34.0	* 5.3	40.2	* 6.3	33.0				
Max Q Clear Time (g_c+I1), s	7.3	35.4	7.3	15.5	7.3	21.3	8.3	35.0				
Green Ext Time (p_c), s	0.0	3.3	0.0	3.6	0.0	4.6	0.0	0.0				
Intersection Summary												
HCM 2010 Ctrl Delay			111.6									
HCM 2010 LOS			F									
Notes												
User approved ignoring U-Turning movement.												

HCM 2010 Signalized Intersection Summary

3: Aviation Boulevard & Artesia Boulevard

09/06/2019

	↓	↘
Movement	SBT	SBR
Lane Configurations	↑↑	
Traffic Volume (veh/h)	540	192
Future Volume (veh/h)	540	192
Number	6	16
Initial Q (Qb), veh	0	0
Ped-Bike Adj(A_pbT)		1.00
Parking Bus, Adj	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1900
Adj Flow Rate, veh/h	587	209
Adj No. of Lanes	2	0
Peak Hour Factor	0.92	0.92
Percent Heavy Veh, %	2	2
Cap, veh/h	981	348
Arrive On Green	0.38	0.38
Sat Flow, veh/h	2562	910
Grp Volume(v), veh/h	405	391
Grp Sat Flow(s),veh/h/ln	1770	1702
Q Serve(g_s), s	19.2	19.3
Cycle Q Clear(g_c), s	19.2	19.3
Prop In Lane		0.53
Lane Grp Cap(c), veh/h	678	652
V/C Ratio(X)	0.60	0.60
Avail Cap(c_a), veh/h	678	652
HCM Platoon Ratio	1.00	1.00
Upstream Filter(l)	1.00	1.00
Uniform Delay (d), s/veh	25.9	26.0
Incr Delay (d2), s/veh	3.9	4.0
Initial Q Delay(d3),s/veh	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.1	9.7
LnGrp Delay(d),s/veh	29.8	30.0
LnGrp LOS	C	C
Approach Vol, veh/h	946	
Approach Delay, s/veh	88.2	
Approach LOS	F	
Timer		

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary

3: Aviation Boulevard & Artesia Boulevard

09/06/2019

												
Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (veh/h)	175	822	131	9	250	580	131	126	642	179	184	1129
Future Volume (veh/h)	175	822	131	9	250	580	131	126	642	179	184	1129
Number	7	4	14		3	8	18	5	2	12	1	6
Initial Q (Qb), veh	0	0	0		0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00		1.00		1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863		1863	1863	1900	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	190	893	142		272	630	142	137	698	195	200	1227
Adj No. of Lanes	1	2	1		1	2	0	1	2	1	1	2
Peak Hour Factor	0.92	0.92	0.92		0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2		2	2	2	2	2	2	2	2
Cap, veh/h	215	855	382		272	787	177	141	1164	521	225	1217
Arrive On Green	0.12	0.24	0.24		0.15	0.27	0.27	0.08	0.33	0.33	0.13	0.38
Sat Flow, veh/h	1774	3539	1583		1774	2872	646	1774	3539	1583	1774	3233
Grp Volume(v), veh/h	190	893	142		272	388	384	137	698	195	200	670
Grp Sat Flow(s),veh/h/ln	1774	1770	1583		1774	1770	1749	1774	1770	1583	1774	1770
Q Serve(g_s), s	14.2	32.6	10.1		20.7	27.5	27.6	10.4	22.3	12.7	15.0	50.8
Cycle Q Clear(g_c), s	14.2	32.6	10.1		20.7	27.5	27.6	10.4	22.3	12.7	15.0	50.8
Prop In Lane	1.00		1.00		1.00		0.37	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	215	855	382		272	485	479	141	1164	521	225	666
V/C Ratio(X)	0.89	1.04	0.37		1.00	0.80	0.80	0.97	0.60	0.37	0.89	1.01
Avail Cap(c_a), veh/h	242	855	382		272	485	479	141	1164	521	256	666
HCM Platoon Ratio	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	58.4	51.2	42.7		57.1	45.6	45.6	62.0	37.9	34.7	58.0	42.1
Incr Delay (d2), s/veh	28.0	43.1	0.6		54.5	9.3	9.5	67.8	2.3	2.1	27.4	36.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.6	21.0	4.5		14.2	14.7	14.6	7.7	11.2	5.9	9.0	31.5
LnGrp Delay(d),s/veh	86.4	94.3	43.3		111.7	54.8	55.1	129.9	40.2	36.7	85.4	78.5
LnGrp LOS	F	F	D		F	D	E	F	D	D	F	F
Approach Vol, veh/h	1225				1044				1030			1556
Approach Delay, s/veh	87.2				69.8				51.4			79.8
Approach LOS	F				E				D			E
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	21.8	49.8	25.4	38.0	15.4	56.2	21.0	42.4				
Change Period (Y+Rc), s	* 4.7	5.4	* 4.7	5.4	* 4.7	5.4	* 4.7	5.4				
Max Green Setting (Gmax), s	* 20	42.0	* 21	32.6	* 11	50.8	* 18	34.9				
Max Q Clear Time (g_c+I1), s	17.0	24.3	22.7	34.6	12.4	52.8	16.2	29.6				
Green Ext Time (p_c), s	0.1	5.1	0.0	0.0	0.0	0.0	0.1	2.2				
Intersection Summary												
HCM 2010 Ctrl Delay			73.5									
HCM 2010 LOS			E									
Notes												
User approved ignoring U-Turning movement.												

HCM 2010 Signalized Intersection Summary

3: Aviation Boulevard & Artesia Boulevard

09/06/2019

Movement	SBR
Lane Configurations	
Traffic Volume (veh/h)	119
Future Volume (veh/h)	119
Number	16
Initial Q (Qb), veh	0
Ped-Bike Adj(A_pbT)	1.00
Parking Bus, Adj	1.00
Adj Sat Flow, veh/h/ln	1900
Adj Flow Rate, veh/h	129
Adj No. of Lanes	0
Peak Hour Factor	0.92
Percent Heavy Veh, %	2
Cap, veh/h	128
Arrive On Green	0.38
Sat Flow, veh/h	339
Grp Volume(v), veh/h	686
Grp Sat Flow(s),veh/h/ln	1803
Q Serve(g_s), s	50.8
Cycle Q Clear(g_c), s	50.8
Prop In Lane	0.19
Lane Grp Cap(c), veh/h	678
V/C Ratio(X)	1.01
Avail Cap(c_a), veh/h	678
HCM Platoon Ratio	1.00
Upstream Filter(l)	1.00
Uniform Delay (d), s/veh	42.1
Incr Delay (d2), s/veh	37.4
Initial Q Delay(d3),s/veh	0.0
%ile BackOfQ(50%),veh/ln	32.3
LnGrp Delay(d),s/veh	79.5
LnGrp LOS	F
Approach Vol, veh/h	
Approach Delay, s/veh	
Approach LOS	
Timer	

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary

3: Aviation Boulevard & Artesia Boulevard

09/06/2019

												
Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (veh/h)	3	196	524	54	8	159	801	211	171	1166	89	99
Future Volume (veh/h)	3	196	524	54	8	159	801	211	171	1166	89	99
Number		7	4	14		3	8	18	5	2	12	1
Initial Q (Qb), veh		0	0	0		0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00		1.00		1.00		1.00	1.00		1.00	1.00
Parking Bus, Adj		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln		1863	1863	1863		1863	1863	1900	1863	1863	1900	1863
Adj Flow Rate, veh/h		213	570	59		173	871	229	186	1267	97	108
Adj No. of Lanes		1	2	1		1	2	0	1	2	0	1
Peak Hour Factor		0.92	0.92	0.92		0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %		2	2	2		2	2	2	2	2	2	2
Cap, veh/h		106	1146	513		90	872	229	90	1286	98	84
Arrive On Green		0.06	0.32	0.32		0.05	0.31	0.31	0.05	0.39	0.39	0.05
Sat Flow, veh/h		1774	3539	1583		1774	2775	729	1774	3333	255	1774
Grp Volume(v), veh/h		213	570	59		173	555	545	186	672	692	108
Grp Sat Flow(s),veh/h/ln		1774	1770	1583		1774	1770	1734	1774	1770	1818	1774
Q Serve(g_s), s		6.3	13.6	2.7		5.3	32.9	33.0	5.3	39.4	39.7	5.0
Cycle Q Clear(g_c), s		6.3	13.6	2.7		5.3	32.9	33.0	5.3	39.4	39.7	5.0
Prop In Lane		1.00		1.00		1.00		0.42	1.00		0.14	1.00
Lane Grp Cap(c), veh/h		106	1146	513		90	556	545	90	683	701	84
V/C Ratio(X)		2.00	0.50	0.12		1.93	1.00	1.00	2.08	0.98	0.99	1.28
Avail Cap(c_a), veh/h		106	1146	513		90	556	545	90	683	701	84
HCM Platoon Ratio		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh		49.3	28.6	24.9		49.8	36.0	36.0	49.8	31.9	32.0	50.0
Incr Delay (d2), s/veh		482.1	0.3	0.1		457.6	37.7	38.4	520.8	30.7	31.1	189.9
Initial Q Delay(d3),s/veh		0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln		17.3	6.7	1.2		14.0	21.9	21.6	15.5	25.0	25.9	6.9
LnGrp Delay(d),s/veh		531.4	28.9	25.0		507.4	73.7	74.4	570.6	62.6	63.1	239.9
LnGrp LOS		F	C	C		F	E	E	F	E	E	F
Approach Vol, veh/h			842				1273			1550		
Approach Delay, s/veh			155.8				132.9			123.8		
Approach LOS			F				F			F		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.7	45.9	10.0	39.4	10.0	45.6	11.0	38.4				
Change Period (Y+Rc), s	* 4.7	5.4	* 4.7	5.4	* 4.7	5.4	* 4.7	5.4				
Max Green Setting (Gmax), s	* 5	40.5	* 5.3	34.0	* 5.3	40.2	* 6.3	33.0				
Max Q Clear Time (g_c+I1), s	7.0	41.7	7.3	15.6	7.3	16.5	8.3	35.0				
Green Ext Time (p_c), s	0.0	0.0	0.0	3.6	0.0	5.1	0.0	0.0				
Intersection Summary												
HCM 2010 Ctrl Delay			116.2									
HCM 2010 LOS			F									
Notes												
User approved ignoring U-Turning movement.												

HCM 2010 Signalized Intersection Summary

3: Aviation Boulevard & Artesia Boulevard

09/06/2019

	↓	↘
Movement	SBT	SBR
Lane Configurations	↑↑	↑
Traffic Volume (veh/h)	594	217
Future Volume (veh/h)	594	217
Number	6	16
Initial Q (Qb), veh	0	0
Ped-Bike Adj(A_pbT)		1.00
Parking Bus, Adj	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863
Adj Flow Rate, veh/h	646	236
Adj No. of Lanes	2	1
Peak Hour Factor	0.92	0.92
Percent Heavy Veh, %	2	2
Cap, veh/h	1355	606
Arrive On Green	0.38	0.38
Sat Flow, veh/h	3539	1583
Grp Volume(v), veh/h	646	236
Grp Sat Flow(s),veh/h/ln	1770	1583
Q Serve(g_s), s	14.5	11.4
Cycle Q Clear(g_c), s	14.5	11.4
Prop In Lane		1.00
Lane Grp Cap(c), veh/h	1355	606
V/C Ratio(X)	0.48	0.39
Avail Cap(c_a), veh/h	1355	606
HCM Platoon Ratio	1.00	1.00
Upstream Filter(l)	1.00	1.00
Uniform Delay (d), s/veh	24.5	23.5
Incr Delay (d2), s/veh	1.2	1.9
Initial Q Delay(d3),s/veh	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.3	5.3
LnGrp Delay(d),s/veh	25.7	25.4
LnGrp LOS	C	C
Approach Vol, veh/h	990	
Approach Delay, s/veh	49.0	
Approach LOS	D	
Timer		

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary

3: Aviation Boulevard & Artesia Boulevard

09/06/2019

												
Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (veh/h)	2	203	816	176	9	242	573	144	138	686	139	193
Future Volume (veh/h)	2	203	816	176	9	242	573	144	138	686	139	193
Number		7	4	14		3	8	18	5	2	12	1
Initial Q (Qb), veh		0	0	0		0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00		1.00		1.00		1.00	1.00		1.00	1.00
Parking Bus, Adj		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln		1863	1863	1863		1863	1863	1900	1863	1863	1900	1863
Adj Flow Rate, veh/h		221	887	191		263	623	157	150	746	151	210
Adj No. of Lanes		1	2	1		1	2	0	1	2	0	1
Peak Hour Factor		0.92	0.92	0.92		0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %		2	2	2		2	2	2	2	2	2	2
Cap, veh/h		237	895	400		274	767	193	165	906	183	217
Arrive On Green		0.13	0.25	0.25		0.15	0.27	0.27	0.09	0.31	0.31	0.12
Sat Flow, veh/h		1774	3539	1583		1774	2803	705	1774	2934	594	1774
Grp Volume(v), veh/h		221	887	191		263	393	387	150	450	447	210
Grp Sat Flow(s),veh/h/ln		1774	1770	1583		1774	1770	1738	1774	1770	1758	1774
Q Serve(g_s), s		15.4	31.2	12.8		18.4	25.9	26.0	10.5	29.5	29.5	14.7
Cycle Q Clear(g_c), s		15.4	31.2	12.8		18.4	25.9	26.0	10.5	29.5	29.5	14.7
Prop In Lane		1.00		1.00		1.00		0.41	1.00		0.34	1.00
Lane Grp Cap(c), veh/h		237	895	400		274	484	476	165	546	543	217
V/C Ratio(X)		0.93	0.99	0.48		0.96	0.81	0.81	0.91	0.82	0.82	0.97
Avail Cap(c_a), veh/h		237	895	400		274	484	476	165	546	543	217
HCM Platoon Ratio		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh		53.6	46.6	39.7		52.5	42.4	42.4	56.2	40.0	40.0	54.6
Incr Delay (d2), s/veh		40.3	27.9	0.9		43.4	10.1	10.4	45.3	13.2	13.3	51.6
Initial Q Delay(d3),s/veh		0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln		10.2	18.7	5.7		12.3	14.0	13.8	7.2	16.4	16.3	10.3
LnGrp Delay(d),s/veh		93.9	74.4	40.6		95.9	52.5	52.8	101.4	53.2	53.3	106.2
LnGrp LOS		F	E	D		F	D	D	F	D	D	F
Approach Vol, veh/h			1299				1043			1047		
Approach Delay, s/veh			72.8				63.6			60.2		
Approach LOS			E				E			E		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	20.0	44.0	24.0	37.0	16.3	47.7	21.4	39.6				
Change Period (Y+Rc), s	* 4.7	5.4	* 4.7	5.4	* 4.7	5.4	* 4.7	5.4				
Max Green Setting (Gmax), s	* 15	38.6	* 19	31.6	* 12	42.3	* 17	34.2				
Max Q Clear Time (g_c+I1), s	16.7	31.5	20.4	33.2	12.5	39.5	17.4	28.0				
Green Ext Time (p_c), s	0.0	3.2	0.0	0.0	0.0	1.8	0.0	2.5				
Intersection Summary												
HCM 2010 Ctrl Delay			64.0									
HCM 2010 LOS			E									
Notes												
User approved ignoring U-Turning movement.												

HCM 2010 Signalized Intersection Summary

3: Aviation Boulevard & Artesia Boulevard

09/06/2019

	↓	↘
Movement	SBT	SBR
Lane Configurations	↑↑	↑
Traffic Volume (veh/h)	1017	97
Future Volume (veh/h)	1017	97
Number	6	16
Initial Q (Qb), veh	0	0
Ped-Bike Adj(A_pbT)		1.00
Parking Bus, Adj	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863
Adj Flow Rate, veh/h	1105	105
Adj No. of Lanes	2	1
Peak Hour Factor	0.92	0.92
Percent Heavy Veh, %	2	2
Cap, veh/h	1198	536
Arrive On Green	0.34	0.34
Sat Flow, veh/h	3539	1583
Grp Volume(v), veh/h	1105	105
Grp Sat Flow(s),veh/h/ln	1770	1583
Q Serve(g_s), s	37.5	5.9
Cycle Q Clear(g_c), s	37.5	5.9
Prop In Lane		1.00
Lane Grp Cap(c), veh/h	1198	536
V/C Ratio(X)	0.92	0.20
Avail Cap(c_a), veh/h	1198	536
HCM Platoon Ratio	1.00	1.00
Upstream Filter(I)	1.00	1.00
Uniform Delay (d), s/veh	39.8	29.3
Incr Delay (d2), s/veh	13.0	0.8
Initial Q Delay(d3),s/veh	0.0	0.0
%ile BackOfQ(50%),veh/ln	20.4	2.7
LnGrp Delay(d),s/veh	52.8	30.1
LnGrp LOS	D	C
Approach Vol, veh/h	1420	
Approach Delay, s/veh	59.0	
Approach LOS	E	
Timer		

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary

3: Aviation Boulevard & Artesia Boulevard

09/06/2019

												
Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (veh/h)	5	187	520	64	8	153	849	194	159	1107	92	138
Future Volume (veh/h)	5	187	520	64	8	153	849	194	159	1107	92	138
Number		7	4	14		3	8	18	5	2	12	1
Initial Q (Qb), veh		0	0	0		0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00		1.00		1.00		1.00	1.00		1.00	1.00
Parking Bus, Adj		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln		1863	1863	1863		1863	1863	1900	1863	1863	1900	1863
Adj Flow Rate, veh/h		203	565	70		166	923	211	173	1203	100	150
Adj No. of Lanes		1	2	1		1	2	0	1	2	0	1
Peak Hour Factor		0.92	0.92	0.92		0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %		2	2	2		2	2	2	2	2	2	2
Cap, veh/h		106	1146	513		90	900	205	90	1267	105	90
Arrive On Green		0.06	0.32	0.32		0.05	0.31	0.31	0.05	0.38	0.38	0.05
Sat Flow, veh/h		1774	3539	1583		1774	2863	654	1774	3309	275	1774
Grp Volume(v), veh/h		203	565	70		166	570	564	173	642	661	150
Grp Sat Flow(s),veh/h/ln		1774	1770	1583		1774	1770	1747	1774	1770	1814	1774
Q Serve(g_s), s		6.3	13.5	3.3		5.3	33.0	33.0	5.3	36.9	37.1	5.3
Cycle Q Clear(g_c), s		6.3	13.5	3.3		5.3	33.0	33.0	5.3	36.9	37.1	5.3
Prop In Lane		1.00		1.00		1.00		0.37	1.00		0.15	1.00
Lane Grp Cap(c), veh/h		106	1146	513		90	556	549	90	678	695	90
V/C Ratio(X)		1.91	0.49	0.14		1.85	1.03	1.03	1.93	0.95	0.95	1.68
Avail Cap(c_a), veh/h		106	1146	513		90	556	549	90	678	695	90
HCM Platoon Ratio		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh		49.3	28.6	25.1		49.8	36.0	36.0	49.8	31.4	31.4	49.8
Incr Delay (d2), s/veh		441.1	0.3	0.1		423.8	44.7	45.4	457.6	24.0	24.1	347.4
Initial Q Delay(d3),s/veh		0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln		16.1	6.6	1.5		13.1	23.0	22.8	14.0	22.5	23.2	11.2
LnGrp Delay(d),s/veh		490.5	28.9	25.2		473.6	80.7	81.4	507.4	55.4	55.5	397.3
LnGrp LOS		F	C	C		F	F	F	F	E	E	F
Approach Vol, veh/h			838				1300			1476		
Approach Delay, s/veh			140.4				131.2			108.4		
Approach LOS			F				F			F		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	10.0	45.6	10.0	39.4	10.0	45.6	11.0	38.4				
Change Period (Y+Rc), s	* 4.7	5.4	* 4.7	5.4	* 4.7	5.4	* 4.7	5.4				
Max Green Setting (Gmax), s	* 5.3	40.2	* 5.3	34.0	* 5.3	40.2	* 6.3	33.0				
Max Q Clear Time (g_c+I1), s	7.3	39.1	7.3	15.5	7.3	14.9	8.3	35.0				
Green Ext Time (p_c), s	0.0	0.8	0.0	3.6	0.0	4.6	0.0	0.0				
Intersection Summary												
HCM 2010 Ctrl Delay			115.7									
HCM 2010 LOS			F									
Notes												
User approved ignoring U-Turning movement.												

HCM 2010 Signalized Intersection Summary

3: Aviation Boulevard & Artesia Boulevard

09/06/2019

	↓	↘
Movement	SBT	SBR
Lane Configurations	↑↑	↑
Traffic Volume (veh/h)	540	192
Future Volume (veh/h)	540	192
Number	6	16
Initial Q (Qb), veh	0	0
Ped-Bike Adj(A_pbT)		1.00
Parking Bus, Adj	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863
Adj Flow Rate, veh/h	587	209
Adj No. of Lanes	2	1
Peak Hour Factor	0.92	0.92
Percent Heavy Veh, %	2	2
Cap, veh/h	1355	606
Arrive On Green	0.38	0.38
Sat Flow, veh/h	3539	1583
Grp Volume(v), veh/h	587	209
Grp Sat Flow(s),veh/h/ln	1770	1583
Q Serve(g_s), s	12.9	9.9
Cycle Q Clear(g_c), s	12.9	9.9
Prop In Lane		1.00
Lane Grp Cap(c), veh/h	1355	606
V/C Ratio(X)	0.43	0.34
Avail Cap(c_a), veh/h	1355	606
HCM Platoon Ratio	1.00	1.00
Upstream Filter(l)	1.00	1.00
Uniform Delay (d), s/veh	24.0	23.0
Incr Delay (d2), s/veh	1.0	1.6
Initial Q Delay(d3),s/veh	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.5	4.5
LnGrp Delay(d),s/veh	25.0	24.6
LnGrp LOS	C	C
Approach Vol, veh/h	946	
Approach Delay, s/veh	83.9	
Approach LOS	F	
Timer		

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary

3: Aviation Boulevard & Artesia Boulevard

09/06/2019

												
Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (veh/h)	175	822	131	9	250	580	131	126	642	179	184	1129
Future Volume (veh/h)	175	822	131	9	250	580	131	126	642	179	184	1129
Number	7	4	14		3	8	18	5	2	12	1	6
Initial Q (Qb), veh	0	0	0		0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00		1.00		1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863		1863	1863	1900	1863	1863	1900	1863	1863
Adj Flow Rate, veh/h	190	893	142		272	630	142	137	698	195	200	1227
Adj No. of Lanes	1	2	1		1	2	0	1	2	0	1	2
Peak Hour Factor	0.92	0.92	0.92		0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2		2	2	2	2	2	2	2	2
Cap, veh/h	215	881	394		281	823	185	143	881	246	214	1282
Arrive On Green	0.12	0.25	0.25		0.16	0.29	0.29	0.08	0.32	0.32	0.12	0.36
Sat Flow, veh/h	1774	3539	1583		1774	2872	646	1774	2734	764	1774	3539
Grp Volume(v), veh/h	190	893	142		272	388	384	137	452	441	200	1227
Grp Sat Flow(s),veh/h/ln	1774	1770	1583		1774	1770	1749	1774	1770	1728	1774	1770
Q Serve(g_s), s	14.2	33.6	10.0		20.6	27.0	27.1	10.4	31.4	31.4	15.1	45.7
Cycle Q Clear(g_c), s	14.2	33.6	10.0		20.6	27.0	27.1	10.4	31.4	31.4	15.1	45.7
Prop In Lane	1.00		1.00		1.00		0.37	1.00		0.44	1.00	
Lane Grp Cap(c), veh/h	215	881	394		281	507	501	143	570	557	214	1282
V/C Ratio(X)	0.88	1.01	0.36		0.97	0.77	0.77	0.96	0.79	0.79	0.93	0.96
Avail Cap(c_a), veh/h	246	881	394		281	507	501	143	570	557	214	1282
HCM Platoon Ratio	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	58.4	50.7	41.8		56.5	44.0	44.1	61.8	41.6	41.6	58.8	42.0
Incr Delay (d2), s/veh	27.2	33.8	0.6		44.6	6.9	7.0	61.9	10.8	11.0	43.3	16.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.6	20.5	4.4		13.6	14.2	14.1	7.6	17.0	16.7	10.0	25.3
LnGrp Delay(d),s/veh	85.6	84.5	42.4		101.0	50.9	51.1	123.7	52.4	52.7	102.1	58.8
LnGrp LOS	F	F	D		F	D	D	F	D	D	F	E
Approach Vol, veh/h	1225			1044			1030			1556		
Approach Delay, s/veh	79.8			64.0			62.0			62.0		
Approach LOS	E			E			E			E		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	21.0	48.9	26.1	39.0	15.6	54.3	21.0	44.1				
Change Period (Y+Rc), s	* 4.7	5.4	* 4.7	5.4	* 4.7	5.4	* 4.7	5.4				
Max Green Setting (Gmax), s	* 16	43.5	* 21	33.6	* 11	48.9	* 19	36.3				
Max Q Clear Time (g_c+I1), s	17.1	33.4	22.6	35.6	12.4	47.7	16.2	29.1				
Green Ext Time (p_c), s	0.0	4.0	0.0	0.0	0.0	0.9	0.1	2.7				
Intersection Summary												
HCM 2010 Ctrl Delay			66.9									
HCM 2010 LOS			E									
Notes												
User approved ignoring U-Turning movement.												

HCM 2010 Signalized Intersection Summary

3: Aviation Boulevard & Artesia Boulevard

09/06/2019

Movement	SBR
Lane Configurations	
Traffic Volume (veh/h)	119
Future Volume (veh/h)	119
Number	16
Initial Q (Qb), veh	0
Ped-Bike Adj(A_pbT)	1.00
Parking Bus, Adj	1.00
Adj Sat Flow, veh/h/ln	1863
Adj Flow Rate, veh/h	129
Adj No. of Lanes	1
Peak Hour Factor	0.92
Percent Heavy Veh, %	2
Cap, veh/h	574
Arrive On Green	0.36
Sat Flow, veh/h	1583
Grp Volume(v), veh/h	129
Grp Sat Flow(s),veh/h/ln	1583
Q Serve(g_s), s	7.6
Cycle Q Clear(g_c), s	7.6
Prop In Lane	1.00
Lane Grp Cap(c), veh/h	574
V/C Ratio(X)	0.22
Avail Cap(c_a), veh/h	574
HCM Platoon Ratio	1.00
Upstream Filter(l)	1.00
Uniform Delay (d), s/veh	29.9
Incr Delay (d2), s/veh	0.9
Initial Q Delay(d3),s/veh	0.0
%ile BackOfQ(50%),veh/ln	3.5
LnGrp Delay(d),s/veh	30.8
LnGrp LOS	C
Approach Vol, veh/h	
Approach Delay, s/veh	
Approach LOS	
Timer	

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary

3: Aviation Boulevard & Artesia Boulevard

09/06/2019

																
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR				
Lane Configurations																
Traffic Volume (veh/h)	140	1080	200	320	740	240	170	1350	190	50	700	80				
Future Volume (veh/h)	140	1080	200	320	740	240	170	1350	190	50	700	80				
Number	7	4	14	3	8	18	5	2	12	1	6	16				
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0				
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00				
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1863	1900				
Adj Flow Rate, veh/h	140	1080	200	320	740	240	170	1350	190	50	700	80				
Adj No. of Lanes	1	2	1	1	2	0	1	2	0	1	2	0				
Peak Hour 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				
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2				
Cap, veh/h	163	967	432	273	881	286	193	1246	174	61	1041	119				
Arrive On Green	0.09	0.27	0.27	0.15	0.34	0.34	0.11	0.40	0.40	0.03	0.33	0.33				
Sat Flow, veh/h	1774	3539	1583	1774	2629	853	1774	3120	436	1774	3202	366				
Grp Volume(v), veh/h	140	1080	200	320	498	482	170	761	779	50	387	393				
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1712	1774	1770	1786	1774	1770	1798				
Q Serve(g_s), s	11.3	39.6	15.2	22.3	37.8	37.8	13.7	57.9	57.9	4.1	27.4	27.4				
Cycle Q Clear(g_c), s	11.3	39.6	15.2	22.3	37.8	37.8	13.7	57.9	57.9	4.1	27.4	27.4				
Prop In Lane	1.00		1.00	1.00		0.50	1.00		0.24	1.00		0.20				
Lane Grp Cap(c), veh/h	163	967	432	273	593	574	193	707	713	61	575	584				
V/C Ratio(X)	0.86	1.12	0.46	1.17	0.84	0.84	0.88	1.08	1.09	0.82	0.67	0.67				
Avail Cap(c_a), veh/h	184	967	432	273	593	574	219	707	713	61	575	584				
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Uniform Delay (d), s/veh	64.9	52.7	43.8	61.4	44.6	44.6	63.7	43.5	43.6	69.5	42.3	42.3				
Incr Delay (d2), s/veh	29.3	66.8	0.8	109.6	10.4	10.7	29.1	56.5	61.7	55.9	6.2	6.1				
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				
%ile BackOfQ(50%),veh/ln	6.9	28.3	6.8	19.2	20.1	19.5	8.3	39.4	40.7	3.0	14.3	14.6				
LnGrp Delay(d),s/veh	94.3	119.5	44.6	170.9	55.0	55.3	92.8	100.1	105.2	125.5	48.4	48.4				
LnGrp LOS	F	F	D	F	D	E	F	F	F	F	D	D				
Approach Vol, veh/h	1420				1300				1710							
Approach Delay, s/veh	106.5				83.6				101.7							
Approach LOS	F				F				F							
Timer	1	2	3	4	5	6	7	8								
Assigned Phs	1	2	3	4	5	6	7	8								
Phs Duration (G+Y+Rc), s	9.7	63.3	27.0	45.0	20.5	52.5	18.0	54.0								
Change Period (Y+Rc), s	* 4.7	5.4	* 4.7	5.4	* 4.7	5.4	* 4.7	5.4								
Max Green Setting (Gmax), s	* 5	57.9	* 22	39.6	* 18	45.0	* 15	46.9								
Max Q Clear Time (g_c+I1), s	6.1	59.9	24.3	41.6	15.7	29.4	13.3	39.8								
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.1	4.1	0.1	3.5								
Intersection Summary																
HCM 2010 Ctrl Delay	90.8															
HCM 2010 LOS	F															
Notes																
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.																

HCM 2010 Signalized Intersection Summary

3: Aviation Boulevard & Artesia Boulevard

09/06/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	140	1050	200	530	930	190	180	900	270	190	1070	180
Future Volume (veh/h)	140	1050	200	530	930	190	180	900	270	190	1070	180
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	140	1050	200	530	930	190	180	900	270	190	1070	180
Adj No. of Lanes	1	2	1	1	2	0	1	2	0	1	2	0
Peak Hour 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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	159	893	400	358	1069	218	138	882	264	138	996	167
Arrive On Green	0.09	0.25	0.25	0.20	0.36	0.36	0.08	0.33	0.33	0.08	0.33	0.33
Sat Flow, veh/h	1774	3539	1583	1774	2929	598	1774	2686	804	1774	3033	509
Grp Volume(v), veh/h	140	1050	200	530	562	558	180	592	578	190	623	627
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1757	1774	1770	1721	1774	1770	1773
Q Serve(g_s), s	11.3	36.6	15.7	29.3	42.8	42.9	11.3	47.6	47.6	11.3	47.6	47.6
Cycle Q Clear(g_c), s	11.3	36.6	15.7	29.3	42.8	42.9	11.3	47.6	47.6	11.3	47.6	47.6
Prop In Lane	1.00		1.00	1.00		0.34	1.00		0.47	1.00		0.29
Lane Grp Cap(c), veh/h	159	893	400	358	646	641	138	581	565	138	581	582
V/C Ratio(X)	0.88	1.18	0.50	1.48	0.87	0.87	1.30	1.02	1.02	1.37	1.07	1.08
Avail Cap(c_a), veh/h	159	893	400	358	646	641	138	581	565	138	581	582
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	65.2	54.2	46.4	57.8	42.8	42.9	66.9	48.7	48.7	66.9	48.7	48.7
Incr Delay (d2), s/veh	39.1	90.7	1.0	229.8	12.3	12.5	178.6	42.4	43.7	207.3	58.4	59.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.3	29.1	7.0	37.2	23.1	23.0	12.4	30.1	29.5	13.5	32.7	32.9
LnGrp Delay(d),s/veh	104.4	144.9	47.4	287.7	55.1	55.3	245.4	91.1	92.4	274.1	107.1	108.4
LnGrp LOS	F	F	D	F	E	E	F	F	F	F	F	F
Approach Vol, veh/h	1390				1650				1350			
Approach Delay, s/veh	126.8				129.9				112.2			
Approach LOS	F				F				F			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	16.0	53.0	34.0	42.0	16.0	53.0	17.7	58.3				
Change Period (Y+Rc), s	* 4.7	5.4	* 4.7	5.4	* 4.7	5.4	* 4.7	5.4				
Max Green Setting (Gmax), s	* 11	47.6	* 29	36.6	* 11	47.6	* 13	52.9				
Max Q Clear Time (g_c+I1), s	13.3	49.6	31.3	38.6	13.3	49.6	13.3	44.9				
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.3				
Intersection Summary												
HCM 2010 Ctrl Delay			125.0									
HCM 2010 LOS			F									
Notes												
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.												

HCM 2010 Signalized Intersection Summary

3: Aviation Boulevard & Artesia Boulevard

09/06/2019

																
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR				
Lane Configurations																
Traffic Volume (veh/h)	140	1080	200	320	740	240	170	1350	190	50	700	80				
Future Volume (veh/h)	140	1080	200	320	740	240	170	1350	190	50	700	80				
Number	7	4	14	3	8	18	5	2	12	1	6	16				
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0				
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00				
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1900				
Adj Flow Rate, veh/h	140	1080	200	320	740	240	170	1350	190	50	700	80				
Adj No. of Lanes	1	2	1	1	2	0	1	2	1	1	2	0				
Peak Hour 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				
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2				
Cap, veh/h	163	1015	454	310	972	315	193	1291	578	61	930	106				
Arrive On Green	0.09	0.29	0.29	0.17	0.37	0.37	0.11	0.36	0.36	0.03	0.29	0.29				
Sat Flow, veh/h	1774	3539	1583	1774	2629	853	1774	3539	1583	1774	3202	366				
Grp Volume(v), veh/h	140	1080	200	320	498	482	170	1350	190	50	387	393				
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1712	1774	1770	1583	1774	1770	1798				
Q Serve(g_s), s	11.3	41.6	14.9	25.3	35.8	35.8	13.7	52.9	12.6	4.1	28.8	28.8				
Cycle Q Clear(g_c), s	11.3	41.6	14.9	25.3	35.8	35.8	13.7	52.9	12.6	4.1	28.8	28.8				
Prop In Lane	1.00		1.00	1.00		0.50	1.00		1.00	1.00		0.20				
Lane Grp Cap(c), veh/h	163	1015	454	310	654	633	193	1291	578	61	514	522				
V/C Ratio(X)	0.86	1.06	0.44	1.03	0.76	0.76	0.88	1.05	0.33	0.82	0.75	0.75				
Avail Cap(c_a), veh/h	192	1015	454	310	654	633	219	1291	578	61	514	522				
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Uniform Delay (d), s/veh	64.9	51.7	42.2	59.8	40.1	40.1	63.7	46.0	33.2	69.5	46.7	46.7				
Incr Delay (d2), s/veh	27.2	46.8	0.7	60.2	5.2	5.4	29.1	37.8	1.5	55.9	9.8	9.7				
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				
%ile BackOfQ(50%),veh/ln	6.8	26.9	6.6	17.6	18.4	17.8	8.3	32.6	5.7	3.0	15.5	15.7				
LnGrp Delay(d),s/veh	92.2	98.5	42.9	120.0	45.3	45.5	92.8	83.9	34.8	125.5	56.5	56.4				
LnGrp LOS	F	F	D	F	D	D	F	F	C	F	E	E				
Approach Vol, veh/h	1420				1300				1710							
Approach Delay, s/veh	90.0				63.8				79.3							
Approach LOS	F				E				E							
Timer	1	2	3	4	5	6	7	8								
Assigned Phs	1	2	3	4	5	6	7	8								
Phs Duration (G+Y+Rc), s	9.7	58.3	30.0	47.0	20.5	47.5	18.0	59.0								
Change Period (Y+Rc), s	* 4.7	5.4	* 4.7	5.4	* 4.7	5.4	* 4.7	5.4								
Max Green Setting (Gmax), s	* 5	52.9	* 25	41.6	* 18	40.0	* 16	51.2								
Max Q Clear Time (g_c+I1), s	6.1	54.9	27.3	43.6	15.7	30.8	13.3	37.8								
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.1	3.1	0.1	5.2								
Intersection Summary																
HCM 2010 Ctrl Delay	75.4															
HCM 2010 LOS	E															
Notes																
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.																

HCM 2010 Signalized Intersection Summary

3: Aviation Boulevard & Artesia Boulevard

09/06/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	140	1050	200	530	930	190	180	900	270	190	1070	180
Future Volume (veh/h)	140	1050	200	530	930	190	180	900	270	190	1070	180
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	140	1050	200	530	930	190	180	900	270	190	1070	180
Adj No. of Lanes	1	2	1	1	2	0	1	2	1	1	2	0
Peak Hour 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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	159	893	400	358	1069	218	138	1040	465	199	996	167
Arrive On Green	0.09	0.25	0.25	0.20	0.36	0.36	0.08	0.29	0.29	0.11	0.33	0.33
Sat Flow, veh/h	1774	3539	1583	1774	2929	598	1774	3539	1583	1774	3033	509
Grp Volume(v), veh/h	140	1050	200	530	562	558	180	900	270	190	623	627
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1757	1774	1770	1583	1774	1770	1773
Q Serve(g_s), s	11.3	36.6	15.7	29.3	42.8	42.9	11.3	34.9	21.1	15.4	47.6	47.6
Cycle Q Clear(g_c), s	11.3	36.6	15.7	29.3	42.8	42.9	11.3	34.9	21.1	15.4	47.6	47.6
Prop In Lane	1.00		1.00	1.00		0.34	1.00		1.00	1.00		0.29
Lane Grp Cap(c), veh/h	159	893	400	358	646	641	138	1040	465	199	581	582
V/C Ratio(X)	0.88	1.18	0.50	1.48	0.87	0.87	1.30	0.87	0.58	0.95	1.07	1.08
Avail Cap(c_a), veh/h	159	893	400	358	646	641	138	1040	465	199	581	582
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	65.2	54.2	46.4	57.8	42.8	42.9	66.9	48.5	43.6	64.0	48.7	48.7
Incr Delay (d2), s/veh	39.1	90.7	1.0	229.8	12.3	12.5	178.6	9.6	5.2	50.2	58.4	59.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.3	29.1	7.0	37.2	23.1	23.0	12.4	18.4	9.9	10.4	32.7	32.9
LnGrp Delay(d),s/veh	104.4	144.9	47.4	287.7	55.1	55.3	245.4	58.1	48.8	114.1	107.1	108.4
LnGrp LOS	F	F	D	F	E	E	F	E	D	F	F	F
Approach Vol, veh/h	1390				1650				1350			
Approach Delay, s/veh	126.8				129.9				81.2			
Approach LOS	F				F				F			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	21.0	48.0	34.0	42.0	16.0	53.0	17.7	58.3				
Change Period (Y+Rc), s	* 4.7	5.4	* 4.7	5.4	* 4.7	5.4	* 4.7	5.4				
Max Green Setting (Gmax), s	* 16	42.6	* 29	36.6	* 11	47.6	* 13	52.9				
Max Q Clear Time (g_c+I1), s	17.4	36.9	31.3	38.6	13.3	49.6	13.3	44.9				
Green Ext Time (p_c), s	0.0	3.2	0.0	0.0	0.0	0.0	0.0	4.3				
Intersection Summary												
HCM 2010 Ctrl Delay			112.6									
HCM 2010 LOS			F									
Notes												
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.												

HCM 2010 Signalized Intersection Summary

3: Aviation Boulevard & Artesia Boulevard

09/06/2019

																
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR				
Lane Configurations																
Traffic Volume (veh/h)	140	1080	200	320	740	240	170	1350	190	50	700	80				
Future Volume (veh/h)	140	1080	200	320	740	240	170	1350	190	50	700	80				
Number	7	4	14	3	8	18	5	2	12	1	6	16				
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0				
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00				
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1863	1863				
Adj Flow Rate, veh/h	140	1080	200	320	740	240	170	1350	190	50	700	80				
Adj No. of Lanes	1	2	1	1	2	0	1	2	0	1	2	1				
Peak Hour 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				
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2				
Cap, veh/h	163	967	432	273	881	286	193	1246	174	61	1150	515				
Arrive On Green	0.09	0.27	0.27	0.15	0.34	0.34	0.11	0.40	0.40	0.03	0.33	0.33				
Sat Flow, veh/h	1774	3539	1583	1774	2629	853	1774	3120	436	1774	3539	1583				
Grp Volume(v), veh/h	140	1080	200	320	498	482	170	761	779	50	700	80				
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1712	1774	1770	1786	1774	1770	1583				
Q Serve(g_s), s	11.3	39.6	15.2	22.3	37.8	37.8	13.7	57.9	57.9	4.1	24.1	5.2				
Cycle Q Clear(g_c), s	11.3	39.6	15.2	22.3	37.8	37.8	13.7	57.9	57.9	4.1	24.1	5.2				
Prop In Lane	1.00		1.00	1.00		0.50	1.00		0.24	1.00		1.00				
Lane Grp Cap(c), veh/h	163	967	432	273	593	574	193	707	713	61	1150	515				
V/C Ratio(X)	0.86	1.12	0.46	1.17	0.84	0.84	0.88	1.08	1.09	0.82	0.61	0.16				
Avail Cap(c_a), veh/h	184	967	432	273	593	574	219	707	713	61	1150	515				
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Uniform Delay (d), s/veh	64.9	52.7	43.8	61.4	44.6	44.6	63.7	43.5	43.6	69.5	41.2	34.8				
Incr Delay (d2), s/veh	29.3	66.8	0.8	109.6	10.4	10.7	29.1	56.5	61.7	55.9	2.4	0.6				
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				
%ile BackOfQ(50%),veh/ln	6.9	28.3	6.8	19.2	20.1	19.5	8.3	39.4	40.7	3.0	12.1	2.4				
LnGrp Delay(d),s/veh	94.3	119.5	44.6	170.9	55.0	55.3	92.8	100.1	105.2	125.5	43.6	35.4				
LnGrp LOS	F	F	D	F	D	E	F	F	F	F	D	D				
Approach Vol, veh/h	1420				1300				1710							
Approach Delay, s/veh	106.5				83.6				101.7							
Approach LOS	F				F				F							
Timer	1	2	3	4	5	6	7	8								
Assigned Phs	1	2	3	4	5	6	7	8								
Phs Duration (G+Y+Rc), s	9.7	63.3	27.0	45.0	20.5	52.5	18.0	54.0								
Change Period (Y+Rc), s	* 4.7	5.4	* 4.7	5.4	* 4.7	5.4	* 4.7	5.4								
Max Green Setting (Gmax), s	* 5	57.9	* 22	39.6	* 18	45.0	* 15	46.9								
Max Q Clear Time (g_c+I1), s	6.1	59.9	24.3	41.6	15.7	26.1	13.3	39.8								
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.1	4.6	0.1	3.5								
Intersection Summary																
HCM 2010 Ctrl Delay			90.0													
HCM 2010 LOS			F													
Notes																
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.																

HCM 2010 Signalized Intersection Summary

3: Aviation Boulevard & Artesia Boulevard

09/06/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	140	1050	200	530	930	190	180	900	270	190	1070	180
Future Volume (veh/h)	140	1050	200	530	930	190	180	900	270	190	1070	180
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	140	1050	200	530	930	190	180	900	270	190	1070	180
Adj No. of Lanes	1	2	1	1	2	0	1	2	0	1	2	1
Peak Hour 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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	159	893	400	371	1089	222	138	845	253	150	1137	509
Arrive On Green	0.09	0.25	0.25	0.21	0.37	0.37	0.08	0.31	0.31	0.08	0.32	0.32
Sat Flow, veh/h	1774	3539	1583	1774	2929	598	1774	2686	804	1774	3539	1583
Grp Volume(v), veh/h	140	1050	200	530	562	558	180	592	578	190	1070	180
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1757	1774	1770	1721	1774	1770	1583
Q Serve(g_s), s	11.3	36.6	15.7	30.3	42.4	42.4	11.3	45.6	45.6	12.3	42.6	12.6
Cycle Q Clear(g_c), s	11.3	36.6	15.7	30.3	42.4	42.4	11.3	45.6	45.6	12.3	42.6	12.6
Prop In Lane	1.00		1.00	1.00		0.34	1.00		0.47	1.00		1.00
Lane Grp Cap(c), veh/h	159	893	400	371	658	653	138	557	541	150	1137	509
V/C Ratio(X)	0.88	1.18	0.50	1.43	0.85	0.85	1.30	1.06	1.07	1.26	0.94	0.35
Avail Cap(c_a), veh/h	159	893	400	371	658	653	138	557	541	150	1137	509
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	65.2	54.2	46.4	57.3	41.9	41.9	66.9	49.7	49.7	66.4	47.9	37.7
Incr Delay (d2), s/veh	39.1	90.7	1.0	208.3	10.6	10.8	178.6	56.4	58.0	160.5	15.8	1.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.3	29.1	7.0	36.3	22.5	22.6	12.4	31.0	30.4	12.7	23.3	5.8
LnGrp Delay(d),s/veh	104.4	144.9	47.4	265.7	52.5	52.7	245.4	106.1	107.7	226.8	63.6	39.6
LnGrp LOS	F	F	D	F	D	D	F	F	F	F	E	D
Approach Vol, veh/h	1390				1650				1350			
Approach Delay, s/veh	126.8				121.1				125.3			
Approach LOS	F				F				F			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	17.0	51.0	35.0	42.0	16.0	52.0	17.7	59.3				
Change Period (Y+Rc), s	* 4.7	5.4	* 4.7	5.4	* 4.7	5.4	* 4.7	5.4				
Max Green Setting (Gmax), s	* 12	45.6	* 30	36.6	* 11	46.6	* 13	53.9				
Max Q Clear Time (g_c+I1), s	14.3	47.6	32.3	38.6	13.3	44.6	13.3	44.4				
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	1.4	0.0	4.8				
Intersection Summary												
HCM 2010 Ctrl Delay			113.8									
HCM 2010 LOS			F									
Notes												
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.												

ATTACHMENT 5

TIMING PRINTOUTS

Timings

3: Aviation Boulevard & Artesia Boulevard

09/06/2019

											
Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	
Lane Configurations											
Traffic Volume (vph)	3	196	524	54	159	801	171	1166	99	594	
Future Volume (vph)	3	196	524	54	159	801	171	1166	99	594	
Turn Type	custom	Prot	NA	Perm	Prot	NA	Prot	NA	Prot	NA	
Protected Phases		7	4		3	8	5	2	1	6	
Permitted Phases	7			4							
Detector Phase	7	7	4	4	3	8	5	2	1	6	
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	9.7	9.7	36.4	36.4	9.7	38.4	9.7	43.4	9.7	44.4	
Total Split (s)	11.0	11.0	39.4	39.4	10.0	38.4	10.0	45.9	9.7	45.6	
Total Split (%)	10.5%	10.5%	37.5%	37.5%	9.5%	36.6%	9.5%	43.7%	9.2%	43.4%	
Yellow Time (s)	3.7	3.7	4.4	4.4	3.7	4.4	3.7	4.4	3.7	4.4	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)		4.7	5.4	5.4	4.7	5.4	4.7	5.4	4.7	5.4	
Lead/Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	None	None	None	None	None	None	Max	None	Max	
Act Effct Green (s)		6.3	34.0	34.0	5.3	33.0	5.3	40.5	5.0	40.2	
Actuated g/C Ratio		0.06	0.32	0.32	0.05	0.31	0.05	0.39	0.05	0.38	
v/c Ratio		3.09	0.50	0.10	2.04	1.00	2.09	1.01	1.29	0.66	
Control Delay		993.5	30.4	0.3	533.9	62.8	553.0	58.7	234.3	27.7	
Queue Delay		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay		993.5	30.4	0.3	533.9	62.8	553.0	58.7	234.3	27.7	
LOS		F	C	A	F	E	F	E	F	C	
Approach Delay			274.5			129.7		118.0		50.3	
Approach LOS			F			F		F		D	

Intersection Summary

Cycle Length: 105

Actuated Cycle Length: 105

Natural Cycle: 105

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 3.09

Intersection Signal Delay: 135.2

Intersection LOS: F

Intersection Capacity Utilization 97.3%

ICU Level of Service F

Analysis Period (min) 15

Splits and Phases: 3: Aviation Boulevard & Artesia Boulevard

 Ø1	 Ø2	 Ø3	 Ø4
9.7 s	45.9 s	10 s	39.4 s
 Ø5	 Ø6	 Ø7	 Ø8
10 s	45.6 s	11 s	38.4 s

Timings

3: Aviation Boulevard & Artesia Boulevard

09/06/2019

									
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	203	816	176	242	573	138	686	193	1017
Future Volume (vph)	203	816	176	242	573	138	686	193	1017
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	Prot	NA
Protected Phases	7	4		3	8	5	2	1	6
Permitted Phases			4						
Detector Phase	7	4	4	3	8	5	2	1	6
Switch Phase									
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.7	36.4	36.4	9.7	38.4	9.7	43.4	9.7	44.4
Total Split (s)	21.4	36.4	36.4	24.0	39.0	16.0	44.8	19.8	48.6
Total Split (%)	17.1%	29.1%	29.1%	19.2%	31.2%	12.8%	35.8%	15.8%	38.9%
Yellow Time (s)	3.7	4.4	4.4	3.7	4.4	3.7	4.4	3.7	4.4
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.7	5.4	5.4	4.7	5.4	4.7	5.4	4.7	5.4
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Max	None	Max
Act Effct Green (s)	16.7	31.0	31.0	19.3	33.6	11.3	39.4	15.1	43.2
Actuated g/C Ratio	0.13	0.25	0.25	0.15	0.27	0.09	0.32	0.12	0.35
v/c Ratio	0.94	1.01	0.40	1.00	0.83	0.94	0.81	0.99	1.00
Control Delay	99.8	79.9	20.1	107.4	50.4	112.9	45.6	113.1	65.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	99.8	79.9	20.1	107.4	50.4	112.9	45.6	113.1	65.9
LOS	F	E	C	F	D	F	D	F	E
Approach Delay		74.5			65.2		55.2		72.9
Approach LOS		E			E		E		E

Intersection Summary

Cycle Length: 125

Actuated Cycle Length: 125

Natural Cycle: 125

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 1.01

Intersection Signal Delay: 67.8

Intersection LOS: E

Intersection Capacity Utilization 92.1%

ICU Level of Service F

Analysis Period (min) 15

Splits and Phases: 3: Aviation Boulevard & Artesia Boulevard

			
19.8 s	44.8 s	24 s	36.4 s
			
16 s	48.6 s	21.4 s	39 s

Timings

3: Aviation Boulevard & Artesia Boulevard

09/06/2019

											
Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	
Lane Configurations											
Traffic Volume (vph)	5	187	520	64	153	849	159	1107	138	540	
Future Volume (vph)	5	187	520	64	153	849	159	1107	138	540	
Turn Type	custom	Prot	NA	Perm	Prot	NA	Prot	NA	Prot	NA	
Protected Phases		7	4		3	8	5	2	1	6	
Permitted Phases	7			4							
Detector Phase	7	7	4	4	3	8	5	2	1	6	
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	9.7	9.7	36.4	36.4	9.7	38.4	9.7	43.4	9.7	44.4	
Total Split (s)	11.0	11.0	39.4	39.4	10.0	38.4	10.0	45.6	10.0	45.6	
Total Split (%)	10.5%	10.5%	37.5%	37.5%	9.5%	36.6%	9.5%	43.4%	9.5%	43.4%	
Yellow Time (s)	3.7	3.7	4.4	4.4	3.7	4.4	3.7	4.4	3.7	4.4	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)		4.7	5.4	5.4	4.7	5.4	4.7	5.4	4.7	5.4	
Lead/Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	None	None	None	None	None	None	Max	None	Max	
Act Effct Green (s)		6.3	34.0	34.0	5.3	33.0	5.3	40.2	5.3	40.2	
Actuated g/C Ratio		0.06	0.32	0.32	0.05	0.31	0.05	0.38	0.05	0.38	
v/c Ratio		2.97	0.49	0.12	1.97	1.03	1.94	0.97	1.69	0.60	
Control Delay		943.3	30.4	1.1	500.6	71.0	491.2	50.5	384.2	26.2	
Queue Delay		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay		943.3	30.4	1.1	500.6	71.0	491.2	50.5	384.2	26.2	
LOS		F	C	A	F	E	F	D	F	C	
Approach Delay			253.2			128.4		102.2		83.0	
Approach LOS			F			F		F		F	

Intersection Summary

Cycle Length: 105

Actuated Cycle Length: 105

Natural Cycle: 105

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 2.97

Intersection Signal Delay: 133.5

Intersection LOS: F

Intersection Capacity Utilization 98.3%

ICU Level of Service F

Analysis Period (min) 15

Splits and Phases: 3: Aviation Boulevard & Artesia Boulevard

 Ø1	 Ø2	 Ø3	 Ø4
10 s	45.6 s	10 s	39.4 s
 Ø5	 Ø6	 Ø7	 Ø8
10 s	45.6 s	11 s	38.4 s

Timings

3: Aviation Boulevard & Artesia Boulevard

09/06/2019

									
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	175	822	131	250	580	126	642	184	1129
Future Volume (vph)	175	822	131	250	580	126	642	184	1129
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	Prot	NA
Protected Phases	7	4		3	8	5	2	1	6
Permitted Phases			4						
Detector Phase	7	4	4	3	8	5	2	1	6
Switch Phase									
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.7	36.4	36.4	9.7	38.4	9.7	43.4	9.7	44.4
Total Split (s)	23.1	38.0	38.0	25.4	40.3	15.4	47.8	23.8	56.2
Total Split (%)	17.1%	28.1%	28.1%	18.8%	29.9%	11.4%	35.4%	17.6%	41.6%
Yellow Time (s)	3.7	4.4	4.4	3.7	4.4	3.7	4.4	3.7	4.4
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.7	5.4	5.4	4.7	5.4	4.7	5.4	4.7	5.4
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Max	None	Max
Act Effct Green (s)	17.3	32.6	32.6	20.7	36.0	10.7	43.5	18.0	50.8
Actuated g/C Ratio	0.13	0.24	0.24	0.15	0.27	0.08	0.32	0.13	0.38
v/c Ratio	0.84	1.05	0.29	1.04	0.83	0.98	0.80	0.85	1.03
Control Delay	87.0	92.5	9.5	120.3	54.4	131.9	46.9	87.0	73.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	87.0	92.5	9.5	120.3	54.4	131.9	46.9	87.0	73.5
LOS	F	F	A	F	D	F	D	F	E
Approach Delay		82.0			72.0		58.2		75.2
Approach LOS		F			E		E		E

Intersection Summary

Cycle Length: 135

Actuated Cycle Length: 135

Natural Cycle: 135

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 1.05

Intersection Signal Delay: 72.6

Intersection LOS: E

Intersection Capacity Utilization 95.9%

ICU Level of Service F

Analysis Period (min) 15

Splits and Phases: 3: Aviation Boulevard & Artesia Boulevard

			
23.8 s	47.8 s	25.4 s	38 s
			
15.4 s	56.2 s	23.1 s	40.3 s

Timings

3: Aviation Boulevard & Artesia Boulevard

09/06/2019

												
Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	3	196	524	54	8	159	801	171	1166	89	99	594
Future Volume (vph)	3	196	524	54	8	159	801	171	1166	89	99	594
Turn Type	custom	Prot	NA	Perm	custom	Prot	NA	Prot	NA	Perm	Prot	NA
Protected Phases		7	4			3	8	5	2		1	6
Permitted Phases	7			4	3					2		
Detector Phase	7	7	4	4	3	3	8	5	2	2	1	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.7	9.7	36.4	36.4	9.7	9.7	38.4	9.7	43.4	43.4	9.7	44.4
Total Split (s)	11.0	11.0	39.4	39.4	10.0	10.0	38.4	10.0	45.9	45.9	9.7	45.6
Total Split (%)	10.5%	10.5%	37.5%	37.5%	9.5%	9.5%	36.6%	9.5%	43.7%	43.7%	9.2%	43.4%
Yellow Time (s)	3.7	3.7	4.4	4.4	3.7	3.7	4.4	3.7	4.4	4.4	3.7	4.4
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		4.7	5.4	5.4		4.7	5.4	4.7	5.4	5.4	4.7	5.4
Lead/Lag	Lead	Lead	Lag	Lag	Lead	Lead	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	Max	Max	None	Max
Act Effct Green (s)		6.3	34.0	34.0		5.3	33.0	5.3	40.5	40.5	5.0	40.2
Actuated g/C Ratio		0.06	0.32	0.32		0.05	0.31	0.05	0.39	0.39	0.05	0.38
v/c Ratio		3.09	0.50	0.10		2.60	1.00	2.09	0.93	0.14	1.29	0.66
Control Delay		993.5	30.4	0.3		781.2	62.8	553.0	43.8	2.6	234.3	27.7
Queue Delay		0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		993.5	30.4	0.3		781.2	62.8	553.0	43.8	2.6	234.3	27.7
LOS		F	C	A		F	E	F	D	A	F	C
Approach Delay			274.5				164.8		102.3			50.3
Approach LOS			F				F		F			D

Intersection Summary

Cycle Length: 105

Actuated Cycle Length: 105

Natural Cycle: 105

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 3.09

Intersection Signal Delay: 139.6

Intersection LOS: F

Intersection Capacity Utilization 94.5%

ICU Level of Service F

Analysis Period (min) 15

Splits and Phases: 3: Aviation Boulevard & Artesia Boulevard

 Ø1	 Ø2	 Ø3	 Ø4
9.7 s	45.9 s	10 s	39.4 s
 Ø5	 Ø6	 Ø7	 Ø8
10 s	45.6 s	11 s	38.4 s

Timings

3: Aviation Boulevard & Artesia Boulevard

09/06/2019

										
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	203	816	176	242	573	138	686	139	193	1017
Future Volume (vph)	203	816	176	242	573	138	686	139	193	1017
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	Perm	Prot	NA
Protected Phases	7	4		3	8	5	2		1	6
Permitted Phases			4					2		
Detector Phase	7	4	4	3	8	5	2	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.7	36.4	36.4	9.7	38.4	9.7	43.4	43.4	9.7	44.4
Total Split (s)	21.4	36.4	36.4	24.0	39.0	16.0	44.8	44.8	19.8	48.6
Total Split (%)	17.1%	29.1%	29.1%	19.2%	31.2%	12.8%	35.8%	35.8%	15.8%	38.9%
Yellow Time (s)	3.7	4.4	4.4	3.7	4.4	3.7	4.4	4.4	3.7	4.4
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.7	5.4	5.4	4.7	5.4	4.7	5.4	5.4	4.7	5.4
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Max	Max	None	Max
Act Effct Green (s)	16.7	31.0	31.0	19.3	33.6	11.3	39.4	39.4	15.1	43.2
Actuated g/C Ratio	0.13	0.25	0.25	0.15	0.27	0.09	0.32	0.32	0.12	0.35
v/c Ratio	0.94	1.01	0.40	1.00	0.83	0.94	0.67	0.27	0.99	1.00
Control Delay	99.8	79.9	20.1	107.4	50.4	112.9	40.7	12.7	113.1	65.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	99.8	79.9	20.1	107.4	50.4	112.9	40.7	12.7	113.1	65.9
LOS	F	E	C	F	D	F	D	B	F	E
Approach Delay		74.5			65.2		47.0			72.9
Approach LOS		E			E		D			E

Intersection Summary

Cycle Length: 125

Actuated Cycle Length: 125

Natural Cycle: 125

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 1.01

Intersection Signal Delay: 66.0

Intersection LOS: E

Intersection Capacity Utilization 92.1%

ICU Level of Service F

Analysis Period (min) 15

Splits and Phases: 3: Aviation Boulevard & Artesia Boulevard

 Ø1	 Ø2	 Ø3	 Ø4
19.8 s	44.8 s	24 s	36.4 s
 Ø5	 Ø6	 Ø7	 Ø8
16 s	48.6 s	21.4 s	39 s

Timings

3: Aviation Boulevard & Artesia Boulevard

09/06/2019

												
Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	5	187	520	64	8	153	849	159	1107	92	138	540
Future Volume (vph)	5	187	520	64	8	153	849	159	1107	92	138	540
Turn Type	custom	Prot	NA	Perm	custom	Prot	NA	Prot	NA	Perm	Prot	NA
Protected Phases		7	4			3	8	5	2		1	6
Permitted Phases	7			4	3					2		
Detector Phase	7	7	4	4	3	3	8	5	2	2	1	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.7	9.7	36.4	36.4	9.7	9.7	38.4	9.7	43.4	43.4	9.7	44.4
Total Split (s)	11.0	11.0	39.4	39.4	10.0	10.0	38.4	10.0	45.6	45.6	10.0	45.6
Total Split (%)	10.5%	10.5%	37.5%	37.5%	9.5%	9.5%	36.6%	9.5%	43.4%	43.4%	9.5%	43.4%
Yellow Time (s)	3.7	3.7	4.4	4.4	3.7	3.7	4.4	3.7	4.4	4.4	3.7	4.4
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		4.7	5.4	5.4		4.7	5.4	4.7	5.4	5.4	4.7	5.4
Lead/Lag	Lead	Lead	Lag	Lag	Lead	Lead	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	Max	Max	None	Max
Act Effct Green (s)		6.3	34.0	34.0		5.3	33.0	5.3	40.2	40.2	5.3	40.2
Actuated g/C Ratio		0.06	0.32	0.32		0.05	0.31	0.05	0.38	0.38	0.05	0.38
v/c Ratio		2.97	0.49	0.12		2.50	1.03	1.94	0.89	0.15	1.69	0.60
Control Delay		943.3	30.4	1.1		737.8	71.0	491.2	39.9	2.9	384.2	26.2
Queue Delay		0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		943.3	30.4	1.1		737.8	71.0	491.2	39.9	2.9	384.2	26.2
LOS		F	C	A		F	E	F	D	A	F	C
Approach Delay			253.2				160.1		90.3			83.0
Approach LOS			F				F		F			F

Intersection Summary

Cycle Length: 105

Actuated Cycle Length: 105

Natural Cycle: 105

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 2.97

Intersection Signal Delay: 138.8

Intersection LOS: F

Intersection Capacity Utilization 95.4%

ICU Level of Service F

Analysis Period (min) 15

Splits and Phases: 3: Aviation Boulevard & Artesia Boulevard

			
10 s	45.6 s	10 s	39.4 s
			
10 s	45.6 s	11 s	38.4 s

Timings

3: Aviation Boulevard & Artesia Boulevard

09/06/2019

										
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	175	822	131	250	580	126	642	179	184	1129
Future Volume (vph)	175	822	131	250	580	126	642	179	184	1129
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	Perm	Prot	NA
Protected Phases	7	4		3	8	5	2		1	6
Permitted Phases			4					2		
Detector Phase	7	4	4	3	8	5	2	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.7	36.4	36.4	9.7	38.4	9.7	43.4	43.4	9.7	44.4
Total Split (s)	23.1	38.0	38.0	25.4	40.3	15.4	47.4	47.4	24.2	56.2
Total Split (%)	17.1%	28.1%	28.1%	18.8%	29.9%	11.4%	35.1%	35.1%	17.9%	41.6%
Yellow Time (s)	3.7	4.4	4.4	3.7	4.4	3.7	4.4	4.4	3.7	4.4
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.7	5.4	5.4	4.7	5.4	4.7	5.4	5.4	4.7	5.4
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Max	Max	None	Max
Act Effct Green (s)	17.3	32.6	32.6	20.7	36.0	10.7	43.3	43.3	18.2	50.8
Actuated g/C Ratio	0.13	0.24	0.24	0.15	0.27	0.08	0.32	0.32	0.13	0.38
v/c Ratio	0.84	1.05	0.29	1.04	0.83	0.98	0.61	0.33	0.84	1.03
Control Delay	87.0	92.5	9.5	120.3	54.4	131.9	41.9	13.5	85.6	73.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	87.0	92.5	9.5	120.3	54.4	131.9	41.9	13.5	85.6	73.5
LOS	F	F	A	F	D	F	D	B	F	E
Approach Delay		82.0			72.0		48.5			75.0
Approach LOS		F			E		D			E

Intersection Summary

Cycle Length: 135

Actuated Cycle Length: 135

Natural Cycle: 135

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 1.05

Intersection Signal Delay: 70.5

Intersection LOS: E

Intersection Capacity Utilization 95.9%

ICU Level of Service F

Analysis Period (min) 15

Splits and Phases: 3: Aviation Boulevard & Artesia Boulevard

			
24.2 s	47.4 s	25.4 s	38 s
			
15.4 s	56.2 s	23.1 s	40.3 s

Timings

3: Aviation Boulevard & Artesia Boulevard

09/06/2019

												
Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	196	524	54	8	159	801	171	1166	99	594	217
Future Volume (vph)	3	196	524	54	8	159	801	171	1166	99	594	217
Turn Type	custom	Prot	NA	Perm	custom	Prot	NA	Prot	NA	Prot	NA	Perm
Protected Phases		7	4			3	8	5	2	1	6	
Permitted Phases	7			4	3							6
Detector Phase	7	7	4	4	3	3	8	5	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.7	9.7	36.4	36.4	9.7	9.7	38.4	9.7	43.4	9.7	44.4	44.4
Total Split (s)	11.0	11.0	39.4	39.4	10.0	10.0	38.4	10.0	45.9	9.7	45.6	45.6
Total Split (%)	10.5%	10.5%	37.5%	37.5%	9.5%	9.5%	36.6%	9.5%	43.7%	9.2%	43.4%	43.4%
Yellow Time (s)	3.7	3.7	4.4	4.4	3.7	3.7	4.4	3.7	4.4	3.7	4.4	4.4
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		4.7	5.4	5.4		4.7	5.4	4.7	5.4	4.7	5.4	5.4
Lead/Lag	Lead	Lead	Lag	Lag	Lead	Lead	Lag	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	Max	None	Max	Max
Act Effct Green (s)		6.3	34.0	34.0		5.3	33.0	5.3	40.5	5.0	40.2	40.2
Actuated g/C Ratio		0.06	0.32	0.32		0.05	0.31	0.05	0.39	0.05	0.38	0.38
v/c Ratio		3.09	0.50	0.10		2.60	1.00	2.09	1.01	1.29	0.48	0.34
Control Delay		993.5	30.4	0.3		781.2	62.8	553.0	58.7	234.3	25.9	10.4
Queue Delay		0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		993.5	30.4	0.3		781.2	62.8	553.0	58.7	234.3	25.9	10.4
LOS		F	C	A		F	E	F	E	F	C	B
Approach Delay			274.5				164.8		118.0		44.9	
Approach LOS			F				F		F		D	

Intersection Summary

Cycle Length: 105

Actuated Cycle Length: 105

Natural Cycle: 105

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 3.09

Intersection Signal Delay: 143.7

Intersection LOS: F

Intersection Capacity Utilization 97.3%

ICU Level of Service F

Analysis Period (min) 15

Splits and Phases: 3: Aviation Boulevard & Artesia Boulevard

 Ø1	 Ø2	 Ø3	 Ø4
9.7 s	45.9 s	10 s	39.4 s
 Ø5	 Ø6	 Ø7	 Ø8
10 s	45.6 s	11 s	38.4 s

Timings

3: Aviation Boulevard & Artesia Boulevard

09/06/2019

										
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	203	816	176	242	573	138	686	193	1017	97
Future Volume (vph)	203	816	176	242	573	138	686	193	1017	97
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	Prot	NA	Perm
Protected Phases	7	4		3	8	5	2	1	6	
Permitted Phases			4							6
Detector Phase	7	4	4	3	8	5	2	1	6	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.7	36.4	36.4	9.7	38.4	9.7	43.4	9.7	44.4	44.4
Total Split (s)	21.4	37.0	37.0	24.0	39.6	16.3	44.0	20.0	47.7	47.7
Total Split (%)	17.1%	29.6%	29.6%	19.2%	31.7%	13.0%	35.2%	16.0%	38.2%	38.2%
Yellow Time (s)	3.7	4.4	4.4	3.7	4.4	3.7	4.4	3.7	4.4	4.4
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.7	5.4	5.4	4.7	5.4	4.7	5.4	4.7	5.4	5.4
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Max	None	Max	Max
Act Effct Green (s)	16.7	31.6	31.6	19.3	34.2	11.6	38.6	15.3	42.3	42.3
Actuated g/C Ratio	0.13	0.25	0.25	0.15	0.27	0.09	0.31	0.12	0.34	0.34
v/c Ratio	0.94	0.99	0.40	1.00	0.82	0.91	0.83	0.97	0.92	0.17
Control Delay	99.8	74.9	19.7	107.4	49.0	107.1	47.1	109.2	53.2	6.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	99.8	74.9	19.7	107.4	49.0	107.1	47.1	109.2	53.2	6.3
LOS	F	E	B	F	D	F	D	F	D	A
Approach Delay		71.1			64.2		55.7		58.0	
Approach LOS		E			E		E		E	

Intersection Summary

Cycle Length: 125

Actuated Cycle Length: 125

Natural Cycle: 125

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 1.00

Intersection Signal Delay: 62.4

Intersection LOS: E

Intersection Capacity Utilization 89.1%

ICU Level of Service E

Analysis Period (min) 15

Splits and Phases: 3: Aviation Boulevard & Artesia Boulevard

			
20 s	44 s	24 s	37 s
			
16.3 s	47.7 s	21.4 s	39.6 s

Timings

3: Aviation Boulevard & Artesia Boulevard

09/06/2019

												
Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	187	520	64	8	153	849	159	1107	138	540	192
Future Volume (vph)	5	187	520	64	8	153	849	159	1107	138	540	192
Turn Type	custom	Prot	NA	Perm	custom	Prot	NA	Prot	NA	Prot	NA	Perm
Protected Phases		7	4			3	8	5	2	1	6	
Permitted Phases	7			4	3							6
Detector Phase	7	7	4	4	3	3	8	5	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.7	9.7	36.4	36.4	9.7	9.7	38.4	9.7	43.4	9.7	44.4	44.4
Total Split (s)	11.0	11.0	39.4	39.4	10.0	10.0	38.4	10.0	45.6	10.0	45.6	45.6
Total Split (%)	10.5%	10.5%	37.5%	37.5%	9.5%	9.5%	36.6%	9.5%	43.4%	9.5%	43.4%	43.4%
Yellow Time (s)	3.7	3.7	4.4	4.4	3.7	3.7	4.4	3.7	4.4	3.7	4.4	4.4
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		4.7	5.4	5.4		4.7	5.4	4.7	5.4	4.7	5.4	5.4
Lead/Lag	Lead	Lead	Lag	Lag	Lead	Lead	Lag	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	Max	None	Max	Max
Act Effct Green (s)		6.3	34.0	34.0		5.3	33.0	5.3	40.2	5.3	40.2	40.2
Actuated g/C Ratio		0.06	0.32	0.32		0.05	0.31	0.05	0.38	0.05	0.38	0.38
v/c Ratio		2.97	0.49	0.12		2.50	1.03	1.94	0.97	1.69	0.43	0.30
Control Delay		943.3	30.4	1.1		737.8	71.0	491.2	50.5	384.2	25.2	9.7
Queue Delay		0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		943.3	30.4	1.1		737.8	71.0	491.2	50.5	384.2	25.2	9.7
LOS		F	C	A		F	E	F	D	F	C	A
Approach Delay			253.2				160.1		102.2		78.7	
Approach LOS			F				F		F		E	

Intersection Summary

Cycle Length: 105

Actuated Cycle Length: 105

Natural Cycle: 105

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 2.97

Intersection Signal Delay: 141.7

Intersection LOS: F

Intersection Capacity Utilization 98.3%

ICU Level of Service F

Analysis Period (min) 15

Splits and Phases: 3: Aviation Boulevard & Artesia Boulevard

			
10 s	45.6 s	10 s	39.4 s
			
10 s	45.6 s	11 s	38.4 s

Timings

3: Aviation Boulevard & Artesia Boulevard

09/06/2019

										
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	175	822	131	250	580	126	642	184	1129	119
Future Volume (vph)	175	822	131	250	580	126	642	184	1129	119
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	Prot	NA	Perm
Protected Phases	7	4		3	8	5	2	1	6	
Permitted Phases			4							6
Detector Phase	7	4	4	3	8	5	2	1	6	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.7	36.4	36.4	9.7	38.4	9.7	43.4	9.7	44.4	44.4
Total Split (s)	23.4	39.0	39.0	26.1	41.7	15.6	48.9	21.0	54.3	54.3
Total Split (%)	17.3%	28.9%	28.9%	19.3%	30.9%	11.6%	36.2%	15.6%	40.2%	40.2%
Yellow Time (s)	3.7	4.4	4.4	3.7	4.4	3.7	4.4	3.7	4.4	4.4
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.7	5.4	5.4	4.7	5.4	4.7	5.4	4.7	5.4	5.4
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Max	None	Max	Max
Act Effct Green (s)	17.4	33.6	33.6	21.4	37.6	10.9	43.5	16.3	48.9	48.9
Actuated g/C Ratio	0.13	0.25	0.25	0.16	0.28	0.08	0.32	0.12	0.36	0.36
v/c Ratio	0.83	1.01	0.29	1.01	0.80	0.96	0.80	0.94	0.96	0.20
Control Delay	85.6	83.9	9.2	111.6	51.3	127.9	46.7	106.2	59.0	10.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	85.6	83.9	9.2	111.6	51.3	127.9	46.7	106.2	59.0	10.2
LOS	F	F	A	F	D	F	D	F	E	B
Approach Delay		75.5			67.5		57.5		61.0	
Approach LOS		E			E		E		E	

Intersection Summary

Cycle Length: 135

Actuated Cycle Length: 135

Natural Cycle: 135

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 1.01

Intersection Signal Delay: 65.3

Intersection LOS: E

Intersection Capacity Utilization 92.1%

ICU Level of Service F

Analysis Period (min) 15

Splits and Phases: 3: Aviation Boulevard & Artesia Boulevard

			
21 s	48.9 s	26.1 s	39 s
			
15.6 s	54.3 s	23.4 s	41.7 s

Timings

3: Aviation Boulevard & Artesia Boulevard

09/06/2019

									
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	140	1080	200	320	740	170	1350	50	700
Future Volume (vph)	140	1080	200	320	740	170	1350	50	700
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	Prot	NA
Protected Phases	7	4		3	8	5	2	1	6
Permitted Phases			4						
Detector Phase	7	4	4	3	8	5	2	1	6
Switch Phase									
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.7	36.4	36.4	9.7	38.4	9.7	43.4	9.7	44.4
Total Split (s)	19.7	45.0	45.0	27.0	52.3	22.6	63.3	9.7	50.4
Total Split (%)	13.6%	31.0%	31.0%	18.6%	36.1%	15.6%	43.7%	6.7%	34.8%
Yellow Time (s)	3.7	4.4	4.4	3.7	4.4	3.7	4.4	3.7	4.4
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.7	5.4	5.4	4.7	5.4	4.7	5.4	4.7	5.4
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Max	None	Max
Act Effct Green (s)	14.2	39.6	39.6	22.3	47.7	16.8	57.9	5.0	46.1
Actuated g/C Ratio	0.10	0.27	0.27	0.15	0.33	0.12	0.40	0.03	0.32
v/c Ratio	0.81	1.12	0.37	1.18	0.86	0.83	1.10	0.82	0.70
Control Delay	95.6	114.7	12.3	162.6	52.9	93.2	98.5	139.4	47.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	95.6	114.7	12.3	162.6	52.9	93.2	98.5	139.4	47.1
LOS	F	F	B	F	D	F	F	F	D
Approach Delay		98.4			79.9		98.0		52.7
Approach LOS		F			E		F		D

Intersection Summary

Cycle Length: 145

Actuated Cycle Length: 145

Natural Cycle: 145

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 1.18

Intersection Signal Delay: 86.5

Intersection LOS: F

Intersection Capacity Utilization 112.0%

ICU Level of Service H

Analysis Period (min) 15

Splits and Phases: 3: Aviation Boulevard & Artesia Boulevard

 Ø1	 Ø2	 Ø3	 Ø4
9.7 s	63.3 s	27 s	45 s
 Ø5	 Ø6	 Ø7	 Ø8
22.6 s	50.4 s	19.7 s	52.3 s

Timings

3: Aviation Boulevard & Artesia Boulevard

09/06/2019

									
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	140	1050	200	530	930	180	900	190	1070
Future Volume (vph)	140	1050	200	530	930	180	900	190	1070
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	Prot	NA
Protected Phases	7	4		3	8	5	2	1	6
Permitted Phases			4						
Detector Phase	7	4	4	3	8	5	2	1	6
Switch Phase									
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.7	36.4	36.4	9.7	38.4	9.7	43.4	9.7	44.4
Total Split (s)	17.7	42.0	42.0	34.0	58.3	16.0	53.0	16.0	53.0
Total Split (%)	12.2%	29.0%	29.0%	23.4%	40.2%	11.0%	36.6%	11.0%	36.6%
Yellow Time (s)	3.7	4.4	4.4	3.7	4.4	3.7	4.4	3.7	4.4
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.7	5.4	5.4	4.7	5.4	4.7	5.4	4.7	5.4
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Max	None	Max
Act Effct Green (s)	13.0	36.6	36.6	29.3	52.9	11.3	47.6	11.3	47.6
Actuated g/C Ratio	0.09	0.25	0.25	0.20	0.36	0.08	0.33	0.08	0.33
v/c Ratio	0.89	1.18	0.41	1.48	0.88	1.31	1.03	1.39	1.09
Control Delay	111.5	137.6	19.9	272.0	51.6	232.8	79.8	259.2	100.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	111.5	137.6	19.9	272.0	51.6	232.8	79.8	259.2	100.0
LOS	F	F	B	F	D	F	E	F	F
Approach Delay		118.0			122.4		100.2		121.0
Approach LOS		F			F		F		F

Intersection Summary

Cycle Length: 145

Actuated Cycle Length: 145

Natural Cycle: 145

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 1.48

Intersection Signal Delay: 115.9

Intersection LOS: F

Intersection Capacity Utilization 120.5%

ICU Level of Service H

Analysis Period (min) 15

Splits and Phases: 3: Aviation Boulevard & Artesia Boulevard

 Ø1	 Ø2	 Ø3	 Ø4
16 s	53 s	34 s	42 s
 Ø5	 Ø6	 Ø7	 Ø8
16 s	53 s	17.7 s	58.3 s

Timings

3: Aviation Boulevard & Artesia Boulevard

09/06/2019

										
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	140	1080	200	320	740	170	1350	190	50	700
Future Volume (vph)	140	1080	200	320	740	170	1350	190	50	700
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	Perm	Prot	NA
Protected Phases	7	4		3	8	5	2		1	6
Permitted Phases			4					2		
Detector Phase	7	4	4	3	8	5	2	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.7	36.4	36.4	9.7	38.4	9.7	43.4	43.4	9.7	44.4
Total Split (s)	20.4	47.0	47.0	30.0	56.6	22.6	58.3	58.3	9.7	45.4
Total Split (%)	14.1%	32.4%	32.4%	20.7%	39.0%	15.6%	40.2%	40.2%	6.7%	31.3%
Yellow Time (s)	3.7	4.4	4.4	3.7	4.4	3.7	4.4	4.4	3.7	4.4
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.7	5.4	5.4	4.7	5.4	4.7	5.4	5.4	4.7	5.4
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Max	Max	None	Max
Act Effct Green (s)	14.6	41.6	41.6	25.3	52.3	16.8	52.9	52.9	5.0	41.1
Actuated g/C Ratio	0.10	0.29	0.29	0.17	0.36	0.12	0.36	0.36	0.03	0.28
v/c Ratio	0.79	1.06	0.35	1.04	0.78	0.83	1.05	0.29	0.82	0.79
Control Delay	92.5	95.7	11.8	118.6	45.4	93.2	82.2	12.9	139.4	54.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	92.5	95.7	11.8	118.6	45.4	93.2	82.2	12.9	139.4	54.3
LOS	F	F	B	F	D	F	F	B	F	D
Approach Delay		83.6			63.5		75.6			59.4
Approach LOS		F			E		E			E

Intersection Summary

Cycle Length: 145

Actuated Cycle Length: 145

Natural Cycle: 145

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 1.06

Intersection Signal Delay: 72.2

Intersection LOS: E

Intersection Capacity Utilization 105.9%

ICU Level of Service G

Analysis Period (min) 15

Splits and Phases: 3: Aviation Boulevard & Artesia Boulevard

			
9.7 s	58.3 s	30 s	47 s
			
22.6 s	45.4 s	20.4 s	56.6 s

Timings

3: Aviation Boulevard & Artesia Boulevard

09/06/2019

										
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	140	1050	200	530	930	180	900	270	190	1070
Future Volume (vph)	140	1050	200	530	930	180	900	270	190	1070
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	Perm	Prot	NA
Protected Phases	7	4		3	8	5	2		1	6
Permitted Phases			4					2		
Detector Phase	7	4	4	3	8	5	2	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.7	36.4	36.4	9.7	38.4	9.7	43.4	43.4	9.7	44.4
Total Split (s)	17.7	42.0	42.0	34.0	58.3	16.0	48.0	48.0	21.0	53.0
Total Split (%)	12.2%	29.0%	29.0%	23.4%	40.2%	11.0%	33.1%	33.1%	14.5%	36.6%
Yellow Time (s)	3.7	4.4	4.4	3.7	4.4	3.7	4.4	4.4	3.7	4.4
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.7	5.4	5.4	4.7	5.4	4.7	5.4	5.4	4.7	5.4
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Max	Max	None	Max
Act Effct Green (s)	13.0	36.6	36.6	29.3	52.9	11.3	42.6	42.6	16.3	47.6
Actuated g/C Ratio	0.09	0.25	0.25	0.20	0.36	0.08	0.29	0.29	0.11	0.33
v/c Ratio	0.89	1.18	0.39	1.48	0.88	1.31	0.87	0.47	0.96	1.09
Control Delay	111.5	137.6	13.2	272.0	51.6	232.8	58.4	19.5	117.3	100.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	111.5	137.6	13.2	272.0	51.6	232.8	58.4	19.5	117.3	100.0
LOS	F	F	B	F	D	F	E	B	F	F
Approach Delay		117.1			122.4		73.9			102.3
Approach LOS		F			F		E			F

Intersection Summary

Cycle Length: 145

Actuated Cycle Length: 145

Natural Cycle: 145

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 1.48

Intersection Signal Delay: 104.9

Intersection LOS: F

Intersection Capacity Utilization 120.5%

ICU Level of Service H

Analysis Period (min) 15

Splits and Phases: 3: Aviation Boulevard & Artesia Boulevard

			
21 s	48 s	34 s	42 s
			
16 s	53 s	17.7 s	58.3 s

Timings

3: Aviation Boulevard & Artesia Boulevard

09/06/2019

												
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR		
Lane Configurations												
Traffic Volume (vph)	140	1080	200	320	740	170	1350	50	700	80		
Future Volume (vph)	140	1080	200	320	740	170	1350	50	700	80		
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	Prot	NA	Perm		
Protected Phases	7	4		3	8	5	2	1	6			
Permitted Phases			4							6		
Detector Phase	7	4	4	3	8	5	2	1	6	6		
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		
Minimum Split (s)	9.7	36.4	36.4	9.7	38.4	9.7	43.4	9.7	44.4	44.4		
Total Split (s)	19.7	45.0	45.0	27.0	52.3	22.6	63.3	9.7	50.4	50.4		
Total Split (%)	13.6%	31.0%	31.0%	18.6%	36.1%	15.6%	43.7%	6.7%	34.8%	34.8%		
Yellow Time (s)	3.7	4.4	4.4	3.7	4.4	3.7	4.4	3.7	4.4	4.4		
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Total Lost Time (s)	4.7	5.4	5.4	4.7	5.4	4.7	5.4	4.7	5.4	5.4		
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag		
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		
Recall Mode	None	None	None	None	None	None	Max	None	Max	Max		
Act Effct Green (s)	14.2	39.6	39.6	22.3	47.7	16.8	57.9	5.0	46.1	46.1		
Actuated g/C Ratio	0.10	0.27	0.27	0.15	0.33	0.12	0.40	0.03	0.32	0.32		
v/c Ratio	0.81	1.12	0.37	1.18	0.86	0.83	1.10	0.82	0.62	0.13		
Control Delay	95.6	114.7	12.3	162.6	52.9	93.2	98.5	139.4	45.2	0.4		
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Total Delay	95.6	114.7	12.3	162.6	52.9	93.2	98.5	139.4	45.2	0.4		
LOS	F	F	B	F	D	F	F	F	D	A		
Approach Delay		98.4			79.9		98.0		46.6			
Approach LOS		F			E		F		D			

Intersection Summary

Cycle Length: 145

Actuated Cycle Length: 145

Natural Cycle: 145

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 1.18

Intersection Signal Delay: 85.5

Intersection LOS: F

Intersection Capacity Utilization 112.0%

ICU Level of Service H

Analysis Period (min) 15

Splits and Phases: 3: Aviation Boulevard & Artesia Boulevard

								
9.7 s	63.3 s		27 s		45 s			
								
22.6 s	50.4 s		19.7 s		52.3 s			

Timings

3: Aviation Boulevard & Artesia Boulevard

09/06/2019

										
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	140	1050	200	530	930	180	900	190	1070	180
Future Volume (vph)	140	1050	200	530	930	180	900	190	1070	180
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	Prot	NA	Perm
Protected Phases	7	4		3	8	5	2	1	6	
Permitted Phases			4							6
Detector Phase	7	4	4	3	8	5	2	1	6	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.7	36.4	36.4	9.7	38.4	9.7	43.4	9.7	44.4	44.4
Total Split (s)	17.7	42.0	42.0	35.0	59.3	16.0	51.0	17.0	52.0	52.0
Total Split (%)	12.2%	29.0%	29.0%	24.1%	40.9%	11.0%	35.2%	11.7%	35.9%	35.9%
Yellow Time (s)	3.7	4.4	4.4	3.7	4.4	3.7	4.4	3.7	4.4	4.4
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.7	5.4	5.4	4.7	5.4	4.7	5.4	4.7	5.4	5.4
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Max	None	Max	Max
Act Effct Green (s)	13.0	36.6	36.6	30.3	53.9	11.3	45.6	12.3	46.6	46.6
Actuated g/C Ratio	0.09	0.25	0.25	0.21	0.37	0.08	0.31	0.08	0.32	0.32
v/c Ratio	0.89	1.18	0.41	1.44	0.86	1.31	1.07	1.27	0.94	0.30
Control Delay	111.5	137.6	19.9	251.7	49.7	232.8	93.9	213.1	63.7	13.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	111.5	137.6	19.9	251.7	49.7	232.8	93.9	213.1	63.7	13.7
LOS	F	F	B	F	D	F	F	F	E	B
Approach Delay		118.0			114.6		112.4		77.2	
Approach LOS		F			F		F		E	

Intersection Summary

Cycle Length: 145

Actuated Cycle Length: 145

Natural Cycle: 145

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 1.44

Intersection Signal Delay: 105.7

Intersection LOS: F

Intersection Capacity Utilization 119.2%

ICU Level of Service H

Analysis Period (min) 15

Splits and Phases: 3: Aviation Boulevard & Artesia Boulevard

			
17 s	51 s	35 s	42 s
			
16 s	52 s	17.7 s	59.3 s

ATTACHMENT 6

QUEUEING PRINTOUTS

Queues

3: Aviation Boulevard & Artesia Boulevard

09/06/2019

									
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	216	570	59	182	1100	186	1364	108	882
v/c Ratio	3.09	0.50	0.10	2.04	1.00	2.09	1.01	1.29	0.66
Control Delay	993.5	30.4	0.3	533.9	62.8	553.0	58.7	234.3	27.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	993.5	30.4	0.3	533.9	62.8	553.0	58.7	234.3	27.7
Queue Length 50th (ft)	~253	161	0	~193	377	~198	~480	~92	237
Queue Length 95th (ft)	#402	214	0	#332	#530	#337	#643	#203	307
Internal Link Dist (ft)	1590				300		1020		820
Turn Bay Length (ft)	225		145		265		100		300
Base Capacity (vph)	70	1145	595	89	1100	89	1355	84	1336
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	3.09	0.50	0.10	2.04	1.00	2.09	1.01	1.29	0.66

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Queues

3: Aviation Boulevard & Artesia Boulevard

09/06/2019

									
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	223	887	191	273	780	150	897	210	1210
v/c Ratio	0.94	1.01	0.40	1.00	0.83	0.94	0.81	0.99	1.00
Control Delay	99.8	79.9	20.1	107.4	50.4	112.9	45.6	113.1	65.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	99.8	79.9	20.1	107.4	50.4	112.9	45.6	113.1	65.9
Queue Length 50th (ft)	181	~386	54	223	304	123	344	172	509
Queue Length 95th (ft)	#339	#527	125	#404	383	#256	426	#331	#670
Internal Link Dist (ft)		1590			300		1020		820
Turn Bay Length (ft)	225		145	265		100		300	
Base Capacity (vph)	236	877	473	273	940	160	1101	213	1213
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.94	1.01	0.40	1.00	0.83	0.94	0.81	0.99	1.00

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Queues

3: Aviation Boulevard & Artesia Boulevard

09/06/2019

									
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	208	565	70	175	1134	173	1303	150	796
v/c Ratio	2.97	0.49	0.12	1.97	1.03	1.94	0.97	1.69	0.60
Control Delay	943.3	30.4	1.1	500.6	71.0	491.2	50.5	384.2	26.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	943.3	30.4	1.1	500.6	71.0	491.2	50.5	384.2	26.2
Queue Length 50th (ft)	~242	160	0	~183	~424	~180	443	~148	206
Queue Length 95th (ft)	#388	212	6	#319	#558	#316	#601	#276	270
Internal Link Dist (ft)		1590			300		1020		820
Turn Bay Length (ft)	225		145	265		100		300	
Base Capacity (vph)	70	1145	595	89	1099	89	1344	89	1336
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	2.97	0.49	0.12	1.97	1.03	1.94	0.97	1.69	0.60

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Queues

3: Aviation Boulevard & Artesia Boulevard

09/06/2019

									
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	190	893	142	282	772	137	893	200	1356
v/c Ratio	0.84	1.05	0.29	1.04	0.83	0.98	0.80	0.85	1.03
Control Delay	87.0	92.5	9.5	120.3	54.4	131.9	46.9	87.0	73.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	87.0	92.5	9.5	120.3	54.4	131.9	46.9	87.0	73.5
Queue Length 50th (ft)	164	~446	6	~266	333	122	369	172	~665
Queue Length 95th (ft)	#283	#579	61	#450	#416	#258	453	#296	#806
Internal Link Dist (ft)		1590			300		1020		820
Turn Bay Length (ft)	225		145	265		100		300	
Base Capacity (vph)	241	854	483	271	931	140	1121	250	1318
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.79	1.05	0.29	1.04	0.83	0.98	0.80	0.80	1.03

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Queues

3: Aviation Boulevard & Artesia Boulevard

09/06/2019

										
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	216	570	59	182	1100	186	1267	97	108	882
v/c Ratio	3.09	0.50	0.10	2.60	1.00	2.09	0.93	0.14	1.29	0.66
Control Delay	993.5	30.4	0.3	781.2	62.8	553.0	43.8	2.6	234.3	27.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	993.5	30.4	0.3	781.2	62.8	553.0	43.8	2.6	234.3	27.7
Queue Length 50th (ft)	~253	161	0	~206	377	~198	422	0	~92	237
Queue Length 95th (ft)	#402	214	0	#345	#530	#337	#566	21	#203	307
Internal Link Dist (ft)	1590			300			1020			820
Turn Bay Length (ft)	225		145	265		100		130	300	
Base Capacity (vph)	70	1145	595	70	1100	89	1365	686	84	1336
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	3.09	0.50	0.10	2.60	1.00	2.09	0.93	0.14	1.29	0.66

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Queues

3: Aviation Boulevard & Artesia Boulevard

09/06/2019

											
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	
Lane Group Flow (vph)	223	887	191	273	780	150	746	151	210	1210	
v/c Ratio	0.94	1.01	0.40	1.00	0.83	0.94	0.67	0.27	0.99	1.00	
Control Delay	99.8	79.9	20.1	107.4	50.4	112.9	40.7	12.7	113.1	65.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	99.8	79.9	20.1	107.4	50.4	112.9	40.7	12.7	113.1	65.9	
Queue Length 50th (ft)	181	~386	54	223	304	123	274	27	172	509	
Queue Length 95th (ft)	#339	#527	125	#404	383	#256	344	79	#331	#670	
Internal Link Dist (ft)		1590			300		1020			820	
Turn Bay Length (ft)	225		145	265		100		130	300		
Base Capacity (vph)	236	877	473	273	940	160	1115	569	213	1213	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.94	1.01	0.40	1.00	0.83	0.94	0.67	0.27	0.99	1.00	

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Queues

3: Aviation Boulevard & Artesia Boulevard

09/06/2019

										
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	208	565	70	175	1134	173	1203	100	150	796
v/c Ratio	2.97	0.49	0.12	2.50	1.03	1.94	0.89	0.15	1.69	0.60
Control Delay	943.3	30.4	1.1	737.8	71.0	491.2	39.9	2.9	384.2	26.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	943.3	30.4	1.1	737.8	71.0	491.2	39.9	2.9	384.2	26.2
Queue Length 50th (ft)	~242	160	0	~196	~424	~180	392	0	~148	206
Queue Length 95th (ft)	#388	212	6	#332	#558	#316	#521	22	#276	270
Internal Link Dist (ft)	1590				300		1020		820	
Turn Bay Length (ft)	225		145		265		100		130	
Base Capacity (vph)	70	1145	595	70	1099	89	1354	681	89	1336
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	2.97	0.49	0.12	2.50	1.03	1.94	0.89	0.15	1.69	0.60

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Queues

3: Aviation Boulevard & Artesia Boulevard

09/06/2019

											
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	
Lane Group Flow (vph)	190	893	142	282	772	137	698	195	200	1356	
v/c Ratio	0.84	1.05	0.29	1.04	0.83	0.98	0.61	0.33	0.84	1.03	
Control Delay	87.0	92.5	9.5	120.3	54.4	131.9	41.9	13.5	85.6	73.5	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	87.0	92.5	9.5	120.3	54.4	131.9	41.9	13.5	85.6	73.5	
Queue Length 50th (ft)	164	~446	6	~266	333	122	276	39	171	~665	
Queue Length 95th (ft)	#283	#579	61	#450	#416	#258	344	104	#292	#806	
Internal Link Dist (ft)		1590			300		1020			820	
Turn Bay Length (ft)	225		145	265		100		130	300		
Base Capacity (vph)	241	854	483	271	931	140	1135	598	255	1318	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.79	1.05	0.29	1.04	0.83	0.98	0.61	0.33	0.78	1.03	

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Queues

3: Aviation Boulevard & Artesia Boulevard

09/06/2019

										
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	216	570	59	182	1100	186	1364	108	646	236
v/c Ratio	3.09	0.50	0.10	2.60	1.00	2.09	1.01	1.29	0.48	0.34
Control Delay	993.5	30.4	0.3	781.2	62.8	553.0	58.7	234.3	25.9	10.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	993.5	30.4	0.3	781.2	62.8	553.0	58.7	234.3	25.9	10.4
Queue Length 50th (ft)	~253	161	0	~206	377	~198	~480	~92	170	39
Queue Length 95th (ft)	#402	214	0	#345	#530	#337	#643	#203	223	97
Internal Link Dist (ft)	1590			300			1020		820	
Turn Bay Length (ft)	225		145	265		100		300		150
Base Capacity (vph)	70	1145	595	70	1100	89	1355	84	1354	695
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	3.09	0.50	0.10	2.60	1.00	2.09	1.01	1.29	0.48	0.34

Intersection Summary

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Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Queues

3: Aviation Boulevard & Artesia Boulevard

09/06/2019

										
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	223	887	191	273	780	150	897	210	1105	105
v/c Ratio	0.94	0.99	0.40	1.00	0.82	0.91	0.83	0.97	0.92	0.17
Control Delay	99.8	74.9	19.7	107.4	49.0	107.1	47.1	109.2	53.2	6.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	99.8	74.9	19.7	107.4	49.0	107.1	47.1	109.2	53.2	6.3
Queue Length 50th (ft)	181	378	54	223	302	122	347	172	450	1
Queue Length 95th (ft)	#339	#520	124	#404	380	#252	431	#329	#583	41
Internal Link Dist (ft)	1590				300	1020		820		
Turn Bay Length (ft)	225	145		265	100		300	150		
Base Capacity (vph)	236	894	480	273	957	164	1079	216	1197	603
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.94	0.99	0.40	1.00	0.82	0.91	0.83	0.97	0.92	0.17

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Queues

3: Aviation Boulevard & Artesia Boulevard

09/06/2019

										
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	208	565	70	175	1134	173	1303	150	587	209
v/c Ratio	2.97	0.49	0.12	2.50	1.03	1.94	0.97	1.69	0.43	0.30
Control Delay	943.3	30.4	1.1	737.8	71.0	491.2	50.5	384.2	25.2	9.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	943.3	30.4	1.1	737.8	71.0	491.2	50.5	384.2	25.2	9.7
Queue Length 50th (ft)	~242	160	0	~196	~424	~180	443	~148	151	32
Queue Length 95th (ft)	#388	212	6	#332	#558	#316	#601	#276	200	84
Internal Link Dist (ft)	1590				300		1020		820	
Turn Bay Length (ft)	225		145		265		100		300	
Base Capacity (vph)	70	1145	595	70	1099	89	1344	89	1354	689
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	2.97	0.49	0.12	2.50	1.03	1.94	0.97	1.69	0.43	0.30

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Queues

3: Aviation Boulevard & Artesia Boulevard

09/06/2019

										
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	190	893	142	282	772	137	893	200	1227	129
v/c Ratio	0.83	1.01	0.29	1.01	0.80	0.96	0.80	0.94	0.96	0.20
Control Delay	85.6	83.9	9.2	111.6	51.3	127.9	46.7	106.2	59.0	10.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	85.6	83.9	9.2	111.6	51.3	127.9	46.7	106.2	59.0	10.2
Queue Length 50th (ft)	163	~424	6	~252	327	122	364	176	549	19
Queue Length 95th (ft)	#279	#566	60	#442	407	#256	448	#330	#701	64
Internal Link Dist (ft)	1590				300	1020		820		
Turn Bay Length (ft)	225	145		265	100		300	150		
Base Capacity (vph)	245	880	493	280	971	142	1121	213	1281	633
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.78	1.01	0.29	1.01	0.80	0.96	0.80	0.94	0.96	0.20

Intersection Summary

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Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Queues

3: Aviation Boulevard & Artesia Boulevard

09/06/2019

									
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	140	1080	200	320	980	170	1540	50	780
v/c Ratio	0.81	1.12	0.37	1.18	0.86	0.83	1.10	0.82	0.70
Control Delay	95.6	114.7	12.3	162.6	52.9	93.2	98.5	139.4	47.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	95.6	114.7	12.3	162.6	52.9	93.2	98.5	139.4	47.1
Queue Length 50th (ft)	131	~615	29	~360	447	158	~866	48	341
Queue Length 95th (ft)	#238	#753	97	#556	539	#274	#1009	#130	417
Internal Link Dist (ft)		1590			300		1020		820
Turn Bay Length (ft)	225		145	265		100		300	
Base Capacity (vph)	183	966	547	272	1141	218	1394	61	1114
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.77	1.12	0.37	1.18	0.86	0.78	1.10	0.82	0.70

Intersection Summary

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Queue shown is maximum after two cycles.
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Queue shown is maximum after two cycles.

Queues

3: Aviation Boulevard & Artesia Boulevard

09/06/2019

									
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	140	1050	200	530	1120	180	1170	190	1250
v/c Ratio	0.89	1.18	0.41	1.48	0.88	1.31	1.03	1.39	1.09
Control Delay	111.5	137.6	19.9	272.0	51.6	232.8	79.8	259.2	100.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	111.5	137.6	19.9	272.0	51.6	232.8	79.8	259.2	100.0
Queue Length 50th (ft)	133	~622	57	~688	512	~218	~608	~237	~694
Queue Length 95th (ft)	#262	#760	132	#917	611	#376	#749	#400	#836
Internal Link Dist (ft)		1590			300		1020		820
Turn Bay Length (ft)	225		145	265		100		300	
Base Capacity (vph)	158	893	492	357	1272	137	1140	137	1145
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.89	1.18	0.41	1.48	0.88	1.31	1.03	1.39	1.09

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Queues

3: Aviation Boulevard & Artesia Boulevard

09/06/2019

										
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	140	1080	200	320	980	170	1350	190	50	780
v/c Ratio	0.79	1.06	0.35	1.04	0.78	0.83	1.05	0.29	0.82	0.79
Control Delay	92.5	95.7	11.8	118.6	45.4	93.2	82.2	12.9	139.4	54.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	92.5	95.7	11.8	118.6	45.4	93.2	82.2	12.9	139.4	54.3
Queue Length 50th (ft)	130	~590	28	~324	425	158	~726	41	48	359
Queue Length 95th (ft)	#230	#728	95	#520	513	#274	#866	101	#130	440
Internal Link Dist (ft)		1590			300		1020			820
Turn Bay Length (ft)	225		145	265		100		130	300	
Base Capacity (vph)	191	1015	567	308	1250	218	1291	656	61	993
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.73	1.06	0.35	1.04	0.78	0.78	1.05	0.29	0.82	0.79

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Queues

3: Aviation Boulevard & Artesia Boulevard

09/06/2019

										
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	140	1050	200	530	1120	180	900	270	190	1250
v/c Ratio	0.89	1.18	0.39	1.48	0.88	1.31	0.87	0.47	0.96	1.09
Control Delay	111.5	137.6	13.2	272.0	51.6	232.8	58.4	19.5	117.3	100.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	111.5	137.6	13.2	272.0	51.6	232.8	58.4	19.5	117.3	100.0
Queue Length 50th (ft)	133	~622	30	~688	512	~218	425	82	181	~694
Queue Length 95th (ft)	#262	#760	100	#917	611	#376	512	171	#340	#836
Internal Link Dist (ft)		1590			300		1020			820
Turn Bay Length (ft)	225		145	265		100		130	300	
Base Capacity (vph)	158	893	518	357	1272	137	1039	577	198	1145
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.89	1.18	0.39	1.48	0.88	1.31	0.87	0.47	0.96	1.09

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Queues

3: Aviation Boulevard & Artesia Boulevard

09/06/2019

										
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	140	1080	200	320	980	170	1540	50	700	80
v/c Ratio	0.81	1.12	0.37	1.18	0.86	0.83	1.10	0.82	0.62	0.13
Control Delay	95.6	114.7	12.3	162.6	52.9	93.2	98.5	139.4	45.2	0.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	95.6	114.7	12.3	162.6	52.9	93.2	98.5	139.4	45.2	0.4
Queue Length 50th (ft)	131	~615	29	~360	447	158	~866	48	300	0
Queue Length 95th (ft)	#238	#753	97	#556	539	#274	#1009	#130	369	0
Internal Link Dist (ft)		1590			300		1020		820	
Turn Bay Length (ft)	225		145	265		100		300		150
Base Capacity (vph)	183	966	547	272	1141	218	1394	61	1125	611
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.77	1.12	0.37	1.18	0.86	0.78	1.10	0.82	0.62	0.13

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Queues

3: Aviation Boulevard & Artesia Boulevard

09/06/2019

										
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	140	1050	200	530	1120	180	1170	190	1070	180
v/c Ratio	0.89	1.18	0.41	1.44	0.86	1.31	1.07	1.27	0.94	0.30
Control Delay	111.5	137.6	19.9	251.7	49.7	232.8	93.9	213.1	63.7	13.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	111.5	137.6	19.9	251.7	49.7	232.8	93.9	213.1	63.7	13.7
Queue Length 50th (ft)	133	~622	57	~676	506	~218	~633	~225	517	37
Queue Length 95th (ft)	#262	#760	132	#905	603	#376	#774	#388	#655	99
Internal Link Dist (ft)		1590			300		1020		820	
Turn Bay Length (ft)	225		145	265		100		300		150
Base Capacity (vph)	158	893	492	369	1295	137	1093	150	1137	592
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.89	1.18	0.41	1.44	0.86	1.31	1.07	1.27	0.94	0.30

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

ATTACHMENT 7

GENERAL PLAN CIRCULATION ELEMENT EXCERPTS

REDONDO BEACH

REDONDO BEACH CIRCULATION ELEMENT



Submitted by:

FEHR & PEERS
TRANSPORTATION CONSULTANTS

FEHR & PEERS
201 Santa Monica Blvd., Suite 500
Santa Monica, CA 90401
(310) 458-9916

November 2009

TABLE 3 EXISTING (YEAR 2007) AND FUTURE (YEAR 2030) INTERSECTION LEVELS OF SERVICE										
Intersection			2007				2030			
			AM		PM		AM		PM	
Number	Street	Cross Street	LOS	V/C or Delay	LOS	V/C or Delay	LOS	V/C or Delay	LOS	V/C or Delay
60	Pacific Coast Hwy	Aviation Blvd	F	1.026	D	0.892	F	1.109	F	1.163
61	Hermosa Av	8th St	B	10.8	B	11.0	B	11.5	B	13.0
62	Hermosa Av	Pier Av	A	0.413	A	0.419	A	0.434	A	0.469
63	Kingsdale Av	Artesia Blvd	A	0.577	B	0.645	C	0.709	D	0.806
64	Kingsdale Av	Grant Av	A	0.479	A	0.587	A	0.569	B	0.694
65	Kingsdale Av	182nd St	B	12.1	C	17.5	C	21.9	F	69.1
66	Redondo Beach Blvd	Artesia Blvd	B	0.623	D	0.854	D	0.884	E	0.958
67	Inglewood Av	Grant Av	C	0.799	D	0.849	E	0.906	F	1.053
68	Inglewood Av	Ripley Av	E	45.3	D	30.1	F	103.8	F	668.7
69	Felton Ln	Grant Av	C	0.715	B	0.639	C	0.763	C	0.725
70	Aviation Blvd	Grant Av	C	0.765	C	0.706	D	0.834	D	0.894
71	Felton Av	Artesia Blvd	B	0.697	C	0.754	C	0.781	D	0.859
72	Kingsdale Av	Target Driveway	A	0.243	A	0.501	A	0.259	A	0.581
73	N Gertruda Av	Catalina Av	A	0.413	B	0.601	A	0.544	C	0.763
74	N Francisca Av	Beryl St	B	11.3	B	14.5	B	11.9	D	26.9
75	N Harbor Dr	Pacific Av	A	8.0	A	8.9	A	8.7	B	10.6
76	Camelion St	Catalina Av	A	0.420	A	0.429	A	0.503	A	0.512
77	Diamond St	Catalina Av	A	0.408	A	0.463	A	0.494	A	0.525
78	Emerald St	Catalina Av	A	0.440	A	0.445	A	0.541	A	0.550
79	Pearl St	Catalina Av	A	0.408	A	0.353	A	0.472	A	0.563
80	Camino Real	Torrance Blvd	A	0.494	A	0.523	B	0.600	C	0.703
81	Camino Real	S Juanita Av	A	9.7	A	9.2	B	10.2	B	10.4
82	Camino Real	S Prospect Av	A	0.551	A	0.522	B	0.669	A	0.581
83	Palos Verdes Blvd	Torrance Blvd	C	0.728	C	0.707	C	0.776	D	0.846
84	Anza Av	Torrance Blvd	E	0.926	E	0.999	F	1.044	F	1.225
85	Sepulveda Blvd	Palos Verdes Blvd	C	0.730	B	0.620	E	0.916	C	0.738
86	Anza Av	190th St	E	0.952	E	0.947	F	1.055	F	1.082
87	Firmona Av	190th St	F	198.8	F	231.9	F	OVRFL *	F	939.5
88	Flagler Ln	190th St	E	42.9	F	57.5	F	136.8	F	124.3
89	Flagler Ln	Beryl St	C	16.3	C	17.9	C	22.0	F	58.0
90	Harkness Ln	Beryl St	D	33.2	C	21.2	E	39.4	E	44.0
91	Prospect Av	Knob Hill Av	A	0.403	A	0.419	A	0.484	A	0.481
92	Prospect Av	Del Amo Blvd	C	0.785	B	0.685	F	1.147	F	1.144
93	Prospect Av	Pearl St	A	0.456	A	0.377	A	0.475	A	0.444
94	Pacific Coast Hwy	Saphire St	B	0.629	B	0.688	B	0.681	C	0.766
95	Pacific Coast Hwy	Garnet St	B	0.670	B	0.696	C	0.722	C	0.766
96	Pacific Coast Hwy	Avenue F	A	0.565	A	0.598	B	0.612	B	0.656
97	Pacific Coast Hwy	Avenue C	B	0.626	B	0.638	C	0.709	C	0.728
98	Green Ln	Artesia Blvd	A	0.534	A	0.548	A	0.575	B	0.612
99	Elena Av	Avenue I	A	9.4	B	11.6	B	10.5	B	13.6
100	Green Ln	Grant Av	A	0.573	A	0.562	B	0.637	B	0.637
101	Prospect Av	Palos Verdes Blvd	A	0.453	A	0.455	A	0.531	A	0.519
102	Ford Av	Aviation Blvd	B	0.665	B	0.682	B	0.700	C	0.747
103	Ford Av	Artesia Blvd	B	0.657	A	0.562	B	0.669	B	0.634
104	Camino Real	Pearl St	A	8.6	A	8.4	A	9.0	A	9.0
105	190th St	Rindge Ln	B	0.640	B	0.690	C	0.775	C	0.775
106	190th St	Meyer Ln	C	0.793	B	0.688	E	0.972	D	0.828
107	Anita St	Harkness Ln	A	0.526	A	0.462	B	0.662	A	0.538
108	Manhattan Beach	Hawthorne	D	0.808	E	0.955	F	1.026	F	1.073
109	Harbor Dr	Yacht Club Wy	A	0.402	A	0.506	B	0.669	E	0.925

notes:

Future year Intersection LOS in **bold** indicates that the intersection is forecast to exceed the target LOS of D or better in the future

Future year Intersection LOS in **bold italics** indicates that the intersection is forecast to exceed the target LOS of D or better in the future and was meeting that target in 2007 or the intersection was not meeting the target in 2007 and is forecast to operate at a worse LOS in the future

* Overflow conditions - Delay cannot be accurately calculated.

Aviation Boulevard & Artesia Boulevard
(#25)

Reconfigure both the southbound and eastbound approaches from one left-turn lane, one through lane, and one shared through/right lane to one left-turn lane, two through lanes, and one right-turn lane.

Prairie Avenue & Redondo Beach Boulevard
(#28)

Reconfigure the southbound approach from one left-turn lane, one through lane, and one shared through/right lane to one left-turn lane, two through lanes, and one right-turn lane.

405 Northbound On-ramp/Off-ramp & 182nd
Street (#35)

Reconfigure eastbound approach from one through lane and one shared through/right lane to two through lanes and one right-turn lane.

Pacific Coast Highway & Palos Verdes
Boulevard (#37)

Reconfigure both the southbound and eastbound approaches from one left-turn lane, one through lane, and one shared through/right lane to one left-turn lane, two through lanes, and one right-turn lane.

Pacific Coast Highway & Torrance
Boulevard (#39)

Reconfigure the northbound approach from one left-turn lane, one through lane, and one shared through/right lane to one left-turn lane, two through lanes, and one right-turn lane.

Manhattan Beach Boulevard & Hawthorne
Boulevard (#108)

Add a protected left-turn phase for the eastbound approach. Also, reconfigure the northbound approach from two left-turn lanes, two through lanes, and one shared through/right lane to two left-turn lanes, three through lanes, and one right-turn lane.

Macro Effects Test

A hypothetical future model run scenario was conducted to estimate the impact of two large changes in land use and transportation:

1) What would occur if 25% of all 2030 traffic generated in Redondo Beach used alternative modes?

2) What would occur if 50% of all new development in Redondo Beach did not take place?

Figures 8 and 9 show the effect of these scenarios on LOS at unmitigated and mitigated study intersections. This exercise illustrates the fact that no single policy action has the power to resolve the issue of traffic congestion in Redondo Beach. Ultimately, increasing mobility will rely on a combination of smart growth development, the utilization of non-auto modes, and the mitigation of traffic impacts.

ATTACHMENT 8

HIGHWAY CAPACITY MANUAL EXCLUSIVE LANE EXCERPTS

Geometric Design Data

This subsection describes the geometric design data listed in Exhibit 19-11. These data describe the geometric elements of the intersection that influence traffic operation.

Number of Lanes

The number of lanes represents the count of lanes provided for each intersection traffic movement. For a turn movement, this count represents the lanes reserved for the exclusive use of turning vehicles. Turn-movement lanes include turn lanes that extend backward for the length of the segment and lanes in a turn bay. Lanes that are shared by two or more movements are included in the count of through lanes and are described as *shared lanes*. If no exclusive turn lanes are provided, then the turn movement is indicated to have zero lanes.

The number of lanes on an approach depends on approach volume and signal timing. A single exclusive left-turn lane is often provided when the left-turn volume ranges between 100 and 300 veh/h. Similarly, a dual exclusive left-turn lane is often provided when the left-turn volume exceeds 300 veh/h. An exclusive right-turn lane is often provided when the right-turn volume exceeds 300 veh/h and the adjacent through volume exceeds 300 veh/h/ln.

Average Lane Width

The average lane width represents the average width of the lanes represented in a movement group. The minimum average lane width is 8 ft. Standard lane widths are 12 ft. Lane widths greater than 16 ft can be included; however, the analyst should consider whether the wide lane actually operates as two narrow lanes. The analysis should reflect the way in which the lane width is actually used or expected to be used.

Number of Receiving Lanes

The number of receiving lanes represents the count of lanes departing the intersection. This number should be separately determined for each left-turn and right-turn movement. Experience indicates proper turning cannot be executed at some intersections because a receiving lane is frequently blocked by double-parked vehicles. For this reason, the number of receiving lanes should be determined from field observation when possible.

Turn Bay Length

Turn bay length represents the length of the bay for which the lanes have full width and in which queued vehicles can be stored. Bay length is measured parallel to the roadway centerline. If there are multiple lanes in the bay and they have different lengths, then the length entered should be an average value.

If a two-way left-turn lane is provided for left-turn vehicle storage and adjacent access points exist, then the bay length entered should represent the "effective" storage length available to the left-turn movement. The determination of effective length is based on consideration of the adjacent access points and the associated left-turning vehicles that can be stored in the two-way left-turn lane.



January 4, 2021

Mr. Glenn L. Block, Esq.
California Eminent Domain Law Group, APC
3429 Ocean View Blvd., Suite L
Glendale, CA 91208

SUBJECT: ADDENDUM TO AVIATION BOULEVARD RIGHT TURN LANE
 IMPROVEMENT PROJECT IN THE CITY OF REDONDO BEACH
 (RICK ENGINEERING COMPANY JOB NUMER 17989)

Dear Mr. Glenn L. Block:

Rick Engineering Company (RICK) has prepared a supplemental analysis to the Aviation Boulevard Right Turn Lane Improvement project in the City of Redondo Beach letter, which determined that an exclusive northbound right-turn lane is not warranted at the intersection of Aviation Boulevard and Artesia Boulevard, and would provide a minimal benefit. Other options for geometric and signal phasing improvements at the Aviation Boulevard and Artesia Boulevard intersection were reviewed to determine if the intersection could function better with alternative improvements.

Based on this review of alternative improvements, it was determined that the results obtained from the implementation of a second left-turn lane for the westbound approach provide an overall better level of service with less delay at the Aviation Boulevard and Artesia Boulevard intersection when compared to the improvement of a northbound right-turn lane as shown in the PSRE.

Existing Transportation Conditions and Traffic Data

Traffic counts at the study intersection were performed by Transportation Studies Inc. on October 9, 10 and 11th 2018. The turning movement counts were conducted on October 9 and 10th during the A.M. (7-9) and P.M. (4-6) peak periods. Daily machine counts were conducted on October 10th and 11th, for a total of forty-eight (48) hours.

The conducted counts show existing traffic movement volumes exceeding some of the forecasted (2030) traffic movement volumes contained within the PSRE report. The following movements reflect higher counts for at least one of the peak hours when compared to those shown under the 2030 baseline volumes:

- Southbound (SB): left-turn volumes, through volumes, and right-turn volumes.
- Westbound (WB): through volumes
- Northbound (NB): left-turn volumes
- Eastbound (EB): left-turn volumes

Exhibit 1 shows the existing traffic movement volumes and intersection conditions.

Studied Scenarios

The study intersection was analyzed under the following scenarios using existing traffic data and forecasted volumes reported under the Project Study Report Equivalent (PSRE) document:

- Existing (2018) Conditions + PSRE geometric improvements
- Existing (2018) Conditions + Westbound Dual Left-Turn Lanes
- Existing (2018) Conditions + General Plan improvements
- Existing (2018) Conditions + General Plan improvements + WB Dual Left-Turn Lanes.
- Forecast Year (2030) + PSRE geometric improvements
- Forecast Year (2030) + WB Dual Left-Turn Lanes
- Forecast Year (2030) + General Plan improvements
- Forecast Year (2030) + General Plan improvements + WB Dual Left-Turn Lanes.

Exhibit 2 shows the traffic volumes and intersection lane conditions used for the study intersection.

Methodologies

The Level of Service (LOS) results for signalized intersections were calculated using the methodologies described in Chapter 18 of the 2010 HCM, using Synchro Version 10 software. The LOS for signalized intersections is defined in terms of control delay, which is made up of several factors that relate to right-of-way control, geometrics and traffic volumes. LOS ranges from LOS A (excellent conditions) to LOS F (overloaded conditions). The City's General Plan Circulation Element Policy P9 states "Where feasible, maintain or achieve LOS D at City intersections."

Traffic Operation Results

Based on the methodologies described above, the study intersection is anticipated to operate at LOS of F and E for the AM and PM peak respectively for the year 2018 scenario. When comparing the operational results within the year 2018 scenario, it was found that the implementation of the dual westbound left-turn lanes results in a lower overall delay with a reduction of 5.8 to 10.9 seconds when compared to the plus PSRE scenario.

For the forecast year 2030 the study intersection is anticipated to operate at a LOS of E and F, respectively. When comparing the operational results within the year 2030 scenario, it was found that the dual westbound left-turn lane result in a lower overall delay with a reduction of 2.1 to 18.5 seconds when compared to the plus PSRE scenario.

The anticipated geometrical improvements within the City's general plan, plus the addition of a second westbound left-turn lane are anticipated to operate better in terms of delay reduction for both the 2018 and 2030 scenarios. The overall intersection delay is anticipated to be reduced 7.8 to 16.8 seconds during the Year 2018 scenario when compared to the plus PSRE geometric improvements, similarly a reduction of overall delay of 2.8 to 28.3 seconds for the Year 2030 when compared to the plus PSRE geometric improvements.

Table 1 summaries the intersection operation results as it relates to Level of Service for the studied scenarios.

Mr. Glenn L. Block, Esq.

January 4, 2021

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Conclusion

Based on the traffic analysis shown in the PSRE (LOS F to LOS F), the follow-up counts and analysis performed in 2015 and again in 2018 (which shows a minimal improvement to LOS E during the AM peak hour, likely due to the addition of the eastbound right turn lane; and a degradation to LOS F during the PM peak hour), and the City's buildout projections for 2030 (which show a 3.5% degradation of the v/c ratio for PM conditions with the right-turn lane), an exclusive northbound right turn lane does not appear to be warranted at this location, and any potential improvements are offset.

The PSRE and General Plan improvement scenarios are shown to have negligible improvements related to delay; however, these are not anticipated to have a significant improvement to the intersection LOS as all scenarios are shown to operate at LOS F (except for the PSRE scenario, which swapped LOS F and E for the AM and PM peak hours of existing conditions to LOS E and LOS F for the AM and PM peak hours of Forecast Year (2030) conditions).

The westbound dual left-turn lane analysis contained within this supplemental analysis shows a greater improvement in terms of LOS and delay when compared to the PSRE analysis. Additionally, important to note is that the dual left-turn lanes can be constructed within the existing curb-to-curb width along Artesia Boulevard, without the need to acquire any private property, and still maintaining the raised median to maintain safety along the roadway.

The standard contained within the Highway Capacity Manual 6th Edition describes the relationship between left-turn volumes and the probable need for exclusive turn lanes. Single left-turn lanes are typically needed when left-turning volumes are at least 100 vehicles per hour, and dual left-turn lanes are typically needed when there are over 300 vehicles per hour. Based on the City's General Plan Circulation Element, the forecasted volumes for the westbound left-turn movement are shown to exceed 300 turning vehicles during the PM peak hour (530 left-turning vehicles are projected), and the analysis contained within this letter report shows that the overall intersection delay can be further improved with the addition of a second westbound left-turn lane.

Exhibit 3 illustrates a conceptual layout with the implementation of dual left turn lanes for the westbound approach.

Sincerely,

RICK ENGINEERING COMPANY

A handwritten signature in dark ink, appearing to read "Brian R. Stephenson", with a long horizontal flourish extending to the right.

Brian R. Stephenson, P.E., T.E., P.T.O.E.

RCE No. 69471

Associate Principal

K:\Files\17989\text\17989.002.docx

Mr. Glenn L. Block, Esq.

January 4, 2021

Page 4 of 4

Attachments:

1. Exhibits
2. Table
3. Capacity Analysis- Westbound Dual Left turn lanes
4. Timing Printouts- Westbound Dual Left turn lanes

Brian Stephenson PE, TE, PTOE

Brian Stephenson is an Associate Principal at RICK, where he manages a team of traffic engineers who provide a variety of engineering and planning services, including the preparation and review of traffic control plans, traffic signal plans, signing and striping plans, traffic impact studies, optimized network timing plans, and collision analysis. Brian is well-versed with municipal traffic engineering and currently serves as the Contract City Traffic Engineer for the City of Murrieta. Through his public agency work as an extension of staff for the City of Murrieta, and his public works project experience within the San Diego region, he has designed and managed traffic control PS&E for large scale pipeline projects, which typically include sidewalk and ADA improvements, traffic signal upgrades, and utility lateral installations and relocations.

As part of Rick Engineering Company's expert witness services, Mr. Stephenson is responsible for performing review of traffic analysis reports and design plans, and providing expert opinions on conformance to State and local agency analysis and design requirements. A few of these projects include the following:

- Keiper, et al v. USA, et al – County of San Bernardino
- Caltrans v. Janet Gale Hubbard – County of San Bernardino, CA
- SANBAG v. Hakimian – San Bernardino, CA
- RCTC v. Pearl Street Properties – Corona, CA
- San Bernardino County Transportation Commission v. Ehab Atatlla - Colton, CA
- South Milliken Avenue Grade Separation (Sears/Kmart)

CONSULTANT TRAFFIC ENGINEER – CITY OF MURRIETA, CA: As part of Rick Engineering Company's contract services to the City of Murrieta, Mr. Stephenson is the City's Consulting Traffic Engineer responsible for reviewing traffic signal plans, traffic impact studies, and Environmental Impact Report (EIR) traffic analysis submitted to the City of Murrieta by developers. He also responds to citizens concerns with traffic related issues, and represents the City at Traffic Commission, Planning Commission, and City Council meetings.

University Avenue Mobility Plan – City of San Diego, CA: Traffic Engineer responsible for the preparation of traffic related plans for the mobility improvement project within the North Park community of San Diego, which included a transit only lane. The traffic plans included 10 traffic signal/signal modification plans, 3 RRFB plans, 5 street lighting plans, 5 signing and striping plans and 18 traffic control plans, as well as an Intersection Control Evaluation (ICE) study and conceptual layout evaluating a roundabout at one of the study intersections.

INTERSECTION SAFETY STUDIES – CITY OF SACRAMENTO, CA: Project engineer responsible for the preparation of an Intersection Safety Studies report for five intersections within the City of Sacramento. Tasks performed include site visits, analyzing accident history, preparation of accident rates, recommending potential mitigation, preparation of cost estimates for mitigation, and preparation of a report summarizing the collision patterns and mitigation.

Pacific Beach Pipeline South – City of San Diego, CA: Traffic Engineer responsible for the preparation of traffic control plans for the replacement of approximately 7.6 miles of 8-inch to 24-inch water transmission and distribution lines and approximately 1.6 miles of sewer gravity lines and force mains in the Mission Bay Park area and Midway/Pacific



PROJECT ASSIGNMENT
Expert Witness

YEARS OF EXPERIENCE
22

EDUCATION
B.S. in Civil Engineering
1998, University of New
York at Buffalo

REGISTRATION
Registered Professional
Engineer
California, #69471
Arizona, #42520
New York, #080635
Colorado, #0048708

Registered Traffic
Engineer
California, #2419

Professional Traffic
Operations Engineer,
#2169

**PROFESSIONAL
AFFILIATIONS**
Institute of
Transportation
Engineering (ITE)

American Society of Civil
Engineers (ASCE)

International Municipal
Signal Association (IMSA)

American Public Works
Association (APWA)

Highway Corridor. The traffic control plans include 200 sheets of traffic control, within both City and Caltrans right-of-way, and included a separate encroachment permit submittal through Caltrans. The traffic control plans were designed to minimize impacts to the travelling public, area businesses, and residents, as well as to maintain the safety for bicyclists and pedestrians maneuvering through the traffic control.

AZUSA WASTE MANAGEMENT MATERIAL RECOVERY FACILITY – CITY OF AZUSA, CA: Project engineer responsible for the traffic signal modification design at 2 City intersections, and traffic signal design at 3 on-site private intersections. Tasks unique to this project included design within the Waste Management facility, accounting for both horizontal and vertical curve approaches to the signals, as well as designing for primarily large vehicles.

TRAFFIC ENGINEERING PLAN CHECKING – MURRIETA, ONTARIO, LAKE ELSINORE, PLACENTIA, CA: As part of Rick Engineering's contract services to Bureau Veritas for the Cities of Murrieta, Ontario, Lake Elsinore, and Placentia, Mr. Stephenson is the project engineer responsible for the review of various traffic engineering design related plans, including traffic signal plan, signing & striping plans, and traffic control plans.

CALIFORNIA BAPTIST UNIVERSITY TRAFFIC IMPACT ANALYSIS – CITY OF RIVERSIDE, CA: Project Engineer responsible for preparing a Traffic Impact Analysis for the California Baptist University Specific Plan, which calls for an estimated enrollment of 8,080 students by year 2020. The project is an expansion to the existing university, and will ultimately consist of 13 academic buildings, 2 parking structures along with additional surface lots, an event center, and an athletic area and recreation center. The study analyzed impacts of vehicular traffic on the adjacent City and Caltrans roadways, as well as internal to the site. Tasks included performing trip generation, capacity analysis, queuing analysis, ramp merge/diverge analysis, internal truck turning templates, mitigation for buildout of the project, and preparation of a report summarizing the findings of the analysis.

Harmony Grove Traffic Signal, Signing & Striping, Traffic Control, & Detour Plans – County of San Diego, CA: Provided project engineering services for all traffic-related PS&E including traffic signal plans, signing and striping plans, traffic control plans, and detour plans for the mixed-use community of 742 dwelling units, commercial uses, an equestrian facility, and a fire station. The traffic related PS&E included 4 traffic signals, 12 sheets of signing and striping, 6 sheets of traffic control, and 2 detour plans.

RANCHO PARKWAY AND SPORTS PARK TRAFFIC SIGNAL – CITY OF LAKE FOREST, CA: Project manager responsible for the traffic related PS&E for a new traffic signal at the intersection of Rancho Parkway and Sports Park/Nursery. The design for this project included meeting all necessary City and MUTCD requirements for ADA accessibility, including truncated domes for all pedestrian ramps, countdown pedestrian timers, and bicycle detection loops.

Robert Stockton PE, LEED AP

Mr. Stockton has been Principal-in-Charge of Rick Engineering Company's (RICK) Riverside office since opening it in 1987. He received his Bachelor of Science in Construction Engineering in 1978 at California State Polytechnic University, Pomona. He is a Registered Civil Engineer in the states of California and Arizona, and a LEED Accredited Professional. Mr. Stockton has been Principal-in-Charge of numerous large and complex private and public sector projects. He directs and supervises a staff of project engineers, designers, a landscape architect, a mapping director, and surveyors. His responsibilities include coordination of projects with clients and public agencies, as well as supervision of all work performed by his team.

Mr. Stockton is highly experienced in all aspects of civil engineering and surveying related to land and site development. His 41 years of experience include the design of roads, drainage systems, sewer systems, water systems, grading, and right-of-way surveys and mapping.

Mr. Stockton is a board member of the California Board for Professional Engineers, Land Surveyors and Geologists, is a board member Western Municipal Water District representing Division 1, is a past Chair of the Greater Riverside Chamber of Commerce and the City of Riverside's Board of Public Utilities, and is active in national, state, and regional power and water issues. He was the Riverside Public Utilities representative on the Western Municipal Water District and served City of Riverside Ad Hoc Committee for six years. Mr. Stockton also serves on the Path of Life Ministries Board, and the California Baptist University School of Engineering Advisory Committee, is a past Chair of Leadership Riverside and served two terms as planning commissioner for the City of Riverside.

A few of Mr. Stockton's representative projects include:

- **SBCTC v. Arrowhead Central Credit Union** – Provided expert witness services in connection with eminent domain action by the San Bernardino County Transportation Commission. SBCTC sought to condemn a large portion of the credit union's property for the construction of a detention basin for its Downtown San Bernardino Passenger Rail Project. Case settled before trial.
- **RCTC v. 2410 Wardlow Property, LLC** – Provided expert witness services in connection with eminent domain action brought by Riverside County Transportation Commission. RCTC sought to condemn a portion of the multi-tenant commercial/retail property to widen the 91 Freeway in Corona. Case settled before trial.
- **Caltrans v. Javad N. Sani** – Provided expert witness services in connection with eminent domain action brought by Caltrans for three ocean and pastoral view parcels totaling 13.47 acres of Highway 1 in San Simeon. Caltrans sought to condemn portions of two of the three parcels for its State Route 1 Realignment Project. Settlement for full takes of two of the parcels, preserved the owner's ability to seek compensation for the taking of, and damages to the third parcel.
- **Caltrans District 08** – Provided expert witness testimony and forensic engineering on condemnation proceedings at Highway 330, Route 30 and Highland Avenue for the State of California.
- **Ku, Fong, Larsen & Chen, LLP, Bradbury Estates, Bradbury, CA** – Provided expert witness testimony for an arbitration hearing regarding the development potential and corresponding value for 190-acres in the City of Bradbury
- **Caltrans District 08** – Provided expert witness and forensic engineering for development potential and costs for a site at Oleander Drive and Interstate 215
- **City of San Dimas** – Provided expert witness planning and civil engineering to defend the City of San Dimas in a case concerning the General Plan and Hillside Ordinances

PROJECT ASSIGNMENT

Principal-in-Charge

YEARS OF EXPERIENCE

41

EDUCATION

California State Polytechnic University, Pomona
B.S. Construction Engineering, 1978

REGISTRATION

Registered Professional Engineer
California, No. 33591
Arizona, No. 20021

U.S. Green Building Council
Leadership in Energy and Environmental Design
Accredited Professional

PROFESSIONAL AFFILIATIONS

California Board for Professional Engineers, Land Surveyors, and Geologists, V.P., Board Member

American Society of Civil Engineers (ASCE)

American Council of Engineering Companies – California (ACEC-CA)

Greater Riverside Chamber of Commerce, Past Chair

California Baptist University, School of Engineering Advisory Committee

Leadership Riverside, Past Chairman

Monday Morning Group, Director

Path of Life Ministries Board Member

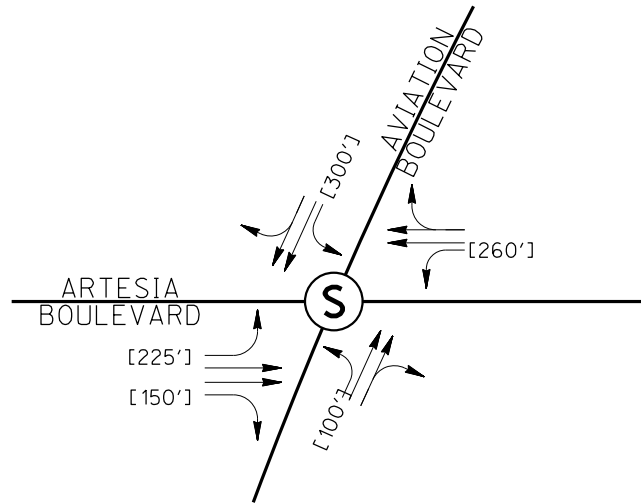
Western Municipal Water District, Past Director Board Member



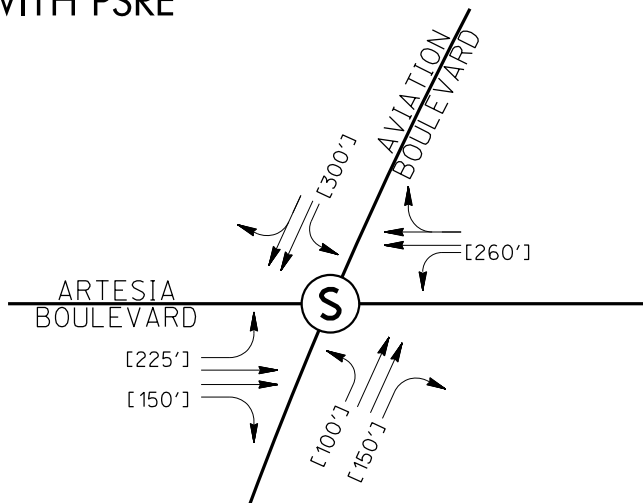
ATTACHMENT 1

EXHIBITS

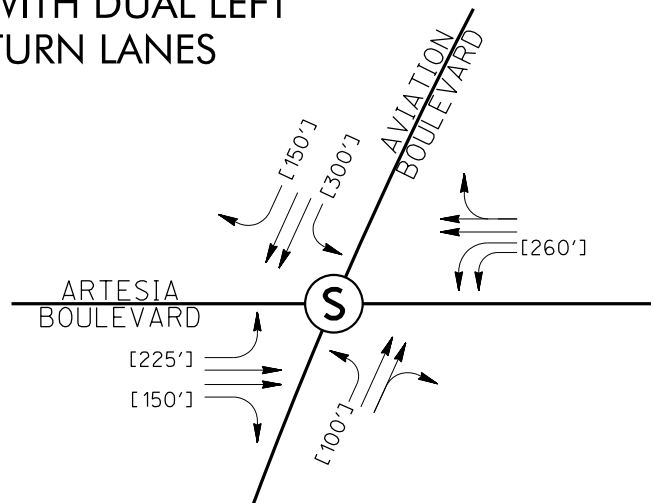
EXISTING (2018)



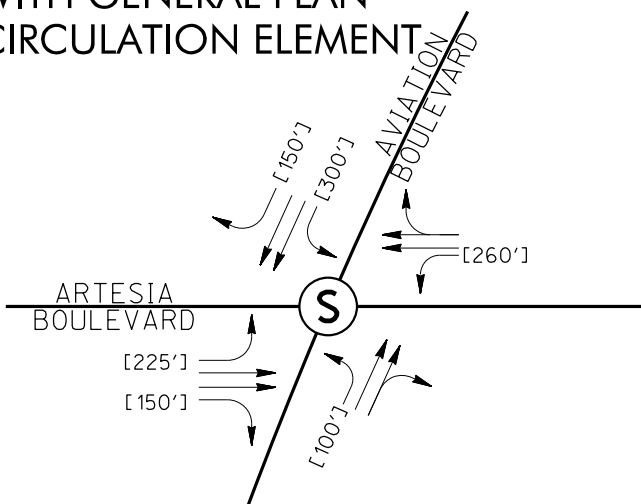
WITH PSRE



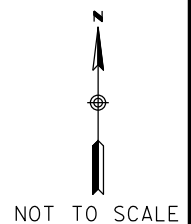
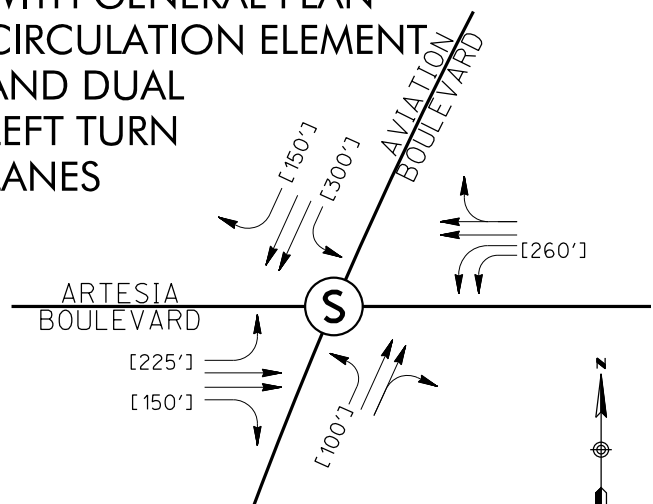
WITH DUAL LEFT TURN LANES



WITH GENERAL PLAN CIRCULATION ELEMENT



WITH GENERAL PLAN CIRCULATION ELEMENT AND DUAL LEFT TURN LANES



RICK
ENGINEERING COMPANY

EXHIBIT 1

TRANSPORTATION CONDITIONS

ADDENDUM TO

AVIATION BOULEVARD RIGHT-TURN LANE IMPROVEMENTS

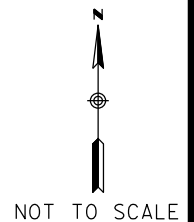
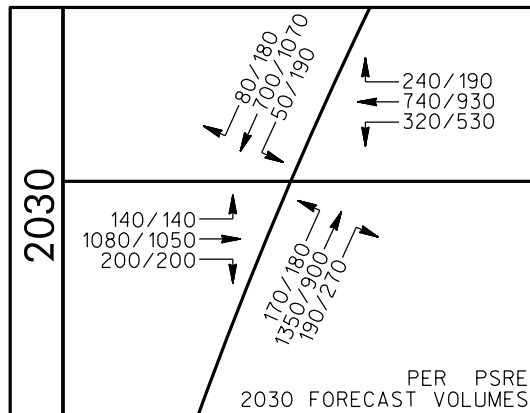
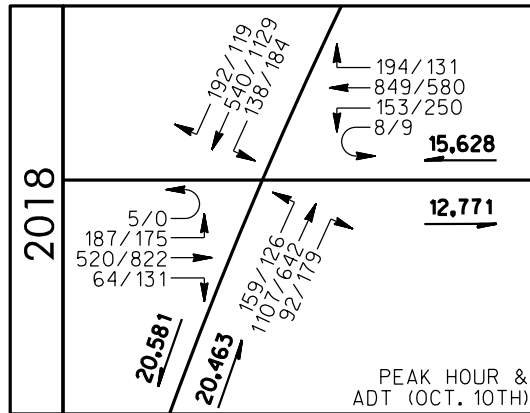
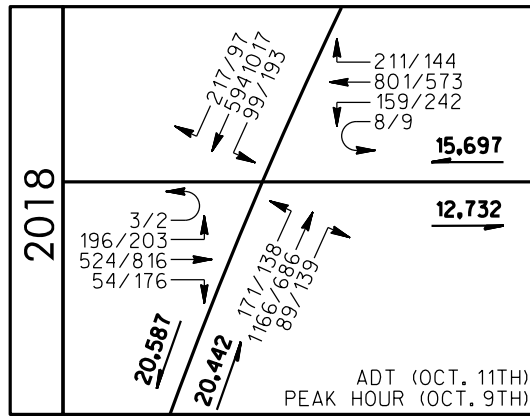
LEGEND



= SIGNALIZED

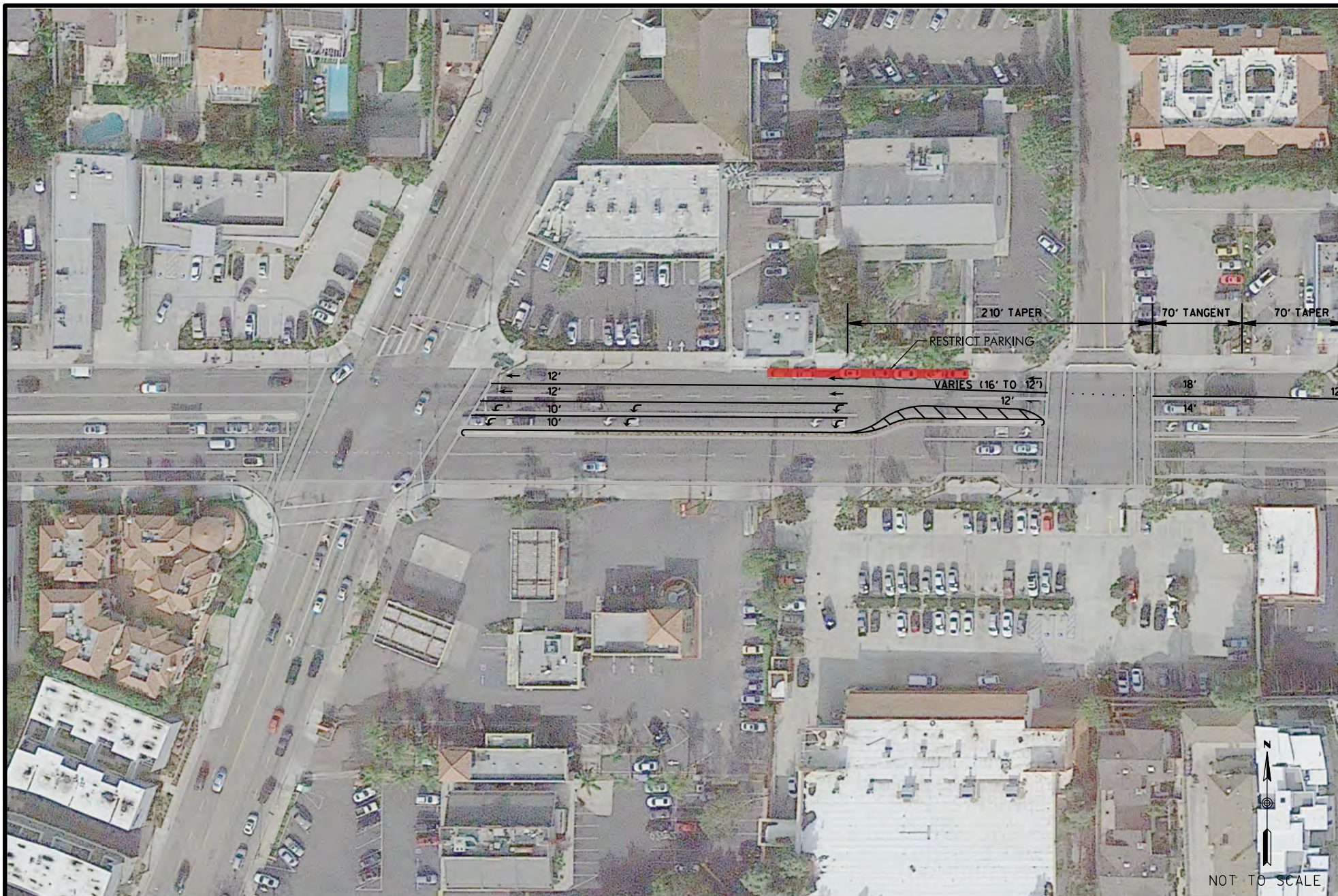


= STORAGE LENGTH



LEGEND

AM/PM=PEAK VOLUMES
X.XXX=DIRECTIONAL ADT



RICKTM
ENGINEERING COMPANY

EXHIBIT 3

CONCEPT LAYOUT- WESTBOUND DUAL LEFT TURN LANE

ADDENDUM TO

AVIATION BOULEVARD RIGHT-TURN LANE IMPROVEMENTS

ATTACHMENT 2

TABLE

**TABLE 1
INTERSECTION OPERATION RESULTS**

ARTESIA BOULEVARD & AVIATION BOULEVARD		RESULTS	
Scenarios (Traffic Signal)		DELAY ¹	LOS ²
Existing (2018) Tuesday + PSRE ³	AM	111.2	F
	PM	68.4	E
Existing (2018) Wednesday + PSRE ³	AM	111.6	F
	PM	73.5	E
Existing (2018) Tuesday + WB Dual LT Lanes ⁴	AM	100.9	F
	PM	59.9	E
Existing (2018) Wednesday + WB Dual LT Lanes ⁴	AM	101.6	F
	PM	62.6	E
Existing (2018) Tuesday + General Plan ⁵	AM	116.2	F
	PM	64.0	E
Existing (2018) Wednesday + General Plan ⁵	AM	115.7	F
	PM	66.9	E
Existing (2018) Tuesday + General Plan + WB Dual LT Lanes ⁶	AM	94.4	F
	PM	60.6	E
Existing (2018) Wednesday + General Plan + WB Dual LT Lanes ⁶	AM	100.9	F
	PM	57.0	E
Forecast Year (2030) + PSRE ³	AM	75.4	E
	PM	112.6	F
Forecast Year (2030) + WB Dual LT Lanes ⁴	AM	73.3	E
	PM	94.1	F
Forecast Year (2030) + General Plan ⁵	AM	90.0	F
	PM	113.8	F
Forecast Year (2030) + General Plan + WB Dual LT Lanes ⁶	AM	72.6	E
	PM	84.3	F

Footnotes:

Results calculated utilizing the methodologies described in Chapters 18 of the HCM 2010.

1) Delay is measured in seconds per vehicle.

2) Level of Service

3) The "+PSRE" scenario consists of geometrical improvements of a dedicated right-turn lane for the northbound approach.

4) The "+WB Dual LT Lanes" scenario consists of geometrical improvements of an additional left-turn lane for the westbound approach.

5) The "+ General Plan" scenario consists of geometrical improvements of a dedicated right-turn lane for southbound approach.

6) Incorporates the geometrical improvements described in the General Plan and westbound dual left turn lanes.

ATTACHMENT 3

CAPACITY ANALYSIS WORKSHEETS WESTBOUND DUAL LEFT TURN LANES

HCM 2010 Signalized Intersection Summary

3: Aviation Boulevard & Artesia Boulevard

09/06/2019

												
Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (veh/h)	3	196	524	54	8	159	801	211	171	1166	89	99
Future Volume (veh/h)	3	196	524	54	8	159	801	211	171	1166	89	99
Number		7	4	14		3	8	18	5	2	12	1
Initial Q (Qb), veh		0	0	0		0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00		1.00		1.00		1.00	1.00		1.00	1.00
Parking Bus, Adj		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln		1863	1863	1863		1863	1863	1900	1863	1863	1863	1863
Adj Flow Rate, veh/h		213	570	59		173	871	229	186	1267	97	108
Adj No. of Lanes		1	2	1		1	2	0	1	2	1	1
Peak Hour Factor		0.92	0.92	0.92		0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %		2	2	2		2	2	2	2	2	2	2
Cap, veh/h		106	1146	513		90	872	229	90	1365	611	84
Arrive On Green		0.06	0.32	0.32		0.05	0.31	0.31	0.05	0.39	0.39	0.05
Sat Flow, veh/h		1774	3539	1583		1774	2775	729	1774	3539	1583	1774
Grp Volume(v), veh/h		213	570	59		173	555	545	186	1267	97	108
Grp Sat Flow(s),veh/h/ln		1774	1770	1583		1774	1770	1734	1774	1770	1583	1774
Q Serve(g_s), s		6.3	13.6	2.7		5.3	32.9	33.0	5.3	36.0	4.2	5.0
Cycle Q Clear(g_c), s		6.3	13.6	2.7		5.3	32.9	33.0	5.3	36.0	4.2	5.0
Prop In Lane		1.00		1.00		1.00		0.42	1.00		1.00	1.00
Lane Grp Cap(c), veh/h		106	1146	513		90	556	545	90	1365	611	84
V/C Ratio(X)		2.00	0.50	0.12		1.93	1.00	1.00	2.08	0.93	0.16	1.28
Avail Cap(c_a), veh/h		106	1146	513		90	556	545	90	1365	611	84
HCM Platoon Ratio		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh		49.3	28.6	24.9		49.8	36.0	36.0	49.8	30.9	21.1	50.0
Incr Delay (d2), s/veh		482.1	0.3	0.1		457.6	37.7	38.4	520.8	12.3	0.6	189.9
Initial Q Delay(d3),s/veh		0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln		17.3	6.7	1.2		14.0	21.9	21.6	15.5	19.8	1.9	6.9
LnGrp Delay(d),s/veh		531.4	28.9	25.0		507.4	73.7	74.4	570.6	43.2	21.7	239.9
LnGrp LOS		F	C	C		F	E	E	F	D	C	F
Approach Vol, veh/h			842				1273			1550		
Approach Delay, s/veh			155.8				132.9			105.1		
Approach LOS			F				F			F		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.7	45.9	10.0	39.4	10.0	45.6	11.0	38.4				
Change Period (Y+Rc), s	* 4.7	5.4	* 4.7	5.4	* 4.7	5.4	* 4.7	5.4				
Max Green Setting (Gmax), s	* 5	40.5	* 5.3	34.0	* 5.3	40.2	* 6.3	33.0				
Max Q Clear Time (g_c+l1), s	7.0	38.0	7.3	15.6	7.3	24.1	8.3	35.0				
Green Ext Time (p_c), s	0.0	1.9	0.0	3.6	0.0	4.9	0.0	0.0				
Intersection Summary												
HCM 2010 Ctrl Delay			111.2									
HCM 2010 LOS			F									
Notes												
User approved ignoring U-Turning movement.												

HCM 2010 Signalized Intersection Summary

3: Aviation Boulevard & Artesia Boulevard

09/06/2019

	↓	↘
Movement	SBT	SBR
Lane Configurations	↑↑	
Traffic Volume (veh/h)	594	217
Future Volume (veh/h)	594	217
Number	6	16
Initial Q (Qb), veh	0	0
Ped-Bike Adj(A_pbT)		1.00
Parking Bus, Adj	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1900
Adj Flow Rate, veh/h	646	236
Adj No. of Lanes	2	0
Peak Hour Factor	0.92	0.92
Percent Heavy Veh, %	2	2
Cap, veh/h	973	355
Arrive On Green	0.38	0.38
Sat Flow, veh/h	2541	928
Grp Volume(v), veh/h	450	432
Grp Sat Flow(s),veh/h/ln	1770	1699
Q Serve(g_s), s	22.1	22.1
Cycle Q Clear(g_c), s	22.1	22.1
Prop In Lane		0.55
Lane Grp Cap(c), veh/h	678	650
V/C Ratio(X)	0.66	0.66
Avail Cap(c_a), veh/h	678	650
HCM Platoon Ratio	1.00	1.00
Upstream Filter(l)	1.00	1.00
Uniform Delay (d), s/veh	26.8	26.8
Incr Delay (d2), s/veh	5.1	5.3
Initial Q Delay(d3),s/veh	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.7	11.3
LnGrp Delay(d),s/veh	31.9	32.1
LnGrp LOS	C	C
Approach Vol, veh/h	990	
Approach Delay, s/veh	54.7	
Approach LOS	D	
Timer		

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary

3: Aviation Boulevard & Artesia Boulevard

09/06/2019

												
Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (veh/h)	2	203	816	176	9	242	573	144	138	686	139	193
Future Volume (veh/h)	2	203	816	176	9	242	573	144	138	686	139	193
Number		7	4	14		3	8	18	5	2	12	1
Initial Q (Qb), veh		0	0	0		0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00		1.00		1.00		1.00	1.00		1.00	1.00
Parking Bus, Adj		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln		1863	1863	1863		1863	1863	1900	1863	1863	1863	1863
Adj Flow Rate, veh/h		221	887	191		263	623	157	150	746	151	210
Adj No. of Lanes		1	2	1		1	2	0	1	2	1	1
Peak Hour Factor		0.92	0.92	0.92		0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %		2	2	2		2	2	2	2	2	2	2
Cap, veh/h		237	878	393		274	753	190	160	1116	499	214
Arrive On Green		0.13	0.25	0.25		0.15	0.27	0.27	0.09	0.32	0.32	0.12
Sat Flow, veh/h		1774	3539	1583		1774	2803	705	1774	3539	1583	1774
Grp Volume(v), veh/h		221	887	191		263	393	387	150	746	151	210
Grp Sat Flow(s),veh/h/ln		1774	1770	1583		1774	1770	1738	1774	1770	1583	1774
Q Serve(g_s), s		15.4	31.0	12.9		18.4	26.1	26.2	10.5	22.9	9.0	14.8
Cycle Q Clear(g_c), s		15.4	31.0	12.9		18.4	26.1	26.2	10.5	22.9	9.0	14.8
Prop In Lane		1.00		1.00		1.00		0.41	1.00		1.00	1.00
Lane Grp Cap(c), veh/h		237	878	393		274	476	467	160	1116	499	214
V/C Ratio(X)		0.93	1.01	0.49		0.96	0.83	0.83	0.94	0.67	0.30	0.98
Avail Cap(c_a), veh/h		237	878	393		274	476	467	160	1116	499	214
HCM Platoon Ratio		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh		53.6	47.0	40.2		52.5	43.0	43.0	56.5	37.1	32.4	54.8
Incr Delay (d2), s/veh		40.3	33.0	0.9		43.4	11.4	11.8	52.2	3.2	1.6	55.5
Initial Q Delay(d3),s/veh		0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln		10.2	19.1	5.7		12.4	14.3	14.1	7.5	11.7	4.1	10.5
LnGrp Delay(d),s/veh		93.9	80.0	41.1		95.9	54.4	54.8	108.7	40.3	34.0	110.3
LnGrp LOS		F	F	D		F	D	D	F	D	C	F
Approach Vol, veh/h			1299				1043			1047		
Approach Delay, s/veh			76.7				65.0			49.2		
Approach LOS			E				E			D		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	19.8	44.8	24.0	36.4	16.0	48.6	21.4	39.0				
Change Period (Y+Rc), s	* 4.7	5.4	* 4.7	5.4	* 4.7	5.4	* 4.7	5.4				
Max Green Setting (Gmax), s	* 15	39.4	* 19	31.0	* 11	43.2	* 17	33.6				
Max Q Clear Time (g_c+I1), s	16.8	24.9	20.4	33.0	12.5	43.9	17.4	28.2				
Green Ext Time (p_c), s	0.0	4.8	0.0	0.0	0.0	0.0	0.0	2.2				
Intersection Summary												
HCM 2010 Ctrl Delay			68.4									
HCM 2010 LOS			E									
Notes												
User approved ignoring U-Turning movement.												

HCM 2010 Signalized Intersection Summary

3: Aviation Boulevard & Artesia Boulevard

09/06/2019

	↓	↘
Movement	SBT	SBR
Lane Configurations	↑↑	
Traffic Volume (veh/h)	1017	97
Future Volume (veh/h)	1017	97
Number	6	16
Initial Q (Qb), veh	0	0
Ped-Bike Adj(A_pbT)		1.00
Parking Bus, Adj	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1900
Adj Flow Rate, veh/h	1105	105
Adj No. of Lanes	2	0
Peak Hour Factor	0.92	0.92
Percent Heavy Veh, %	2	2
Cap, veh/h	1129	107
Arrive On Green	0.35	0.35
Sat Flow, veh/h	3267	310
Grp Volume(v), veh/h	598	612
Grp Sat Flow(s),veh/h/ln	1770	1808
Q Serve(g_s), s	41.7	41.9
Cycle Q Clear(g_c), s	41.7	41.9
Prop In Lane		0.17
Lane Grp Cap(c), veh/h	612	625
V/C Ratio(X)	0.98	0.98
Avail Cap(c_a), veh/h	612	625
HCM Platoon Ratio	1.00	1.00
Upstream Filter(l)	1.00	1.00
Uniform Delay (d), s/veh	40.4	40.5
Incr Delay (d2), s/veh	31.3	31.3
Initial Q Delay(d3),s/veh	0.0	0.0
%ile BackOfQ(50%),veh/ln	25.8	26.3
LnGrp Delay(d),s/veh	71.8	71.8
LnGrp LOS	E	E
Approach Vol, veh/h	1420	
Approach Delay, s/veh	77.5	
Approach LOS	E	
Timer		

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary

3: Aviation Boulevard & Artesia Boulevard

09/06/2019

												
Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (veh/h)	5	187	520	64	8	153	849	194	159	1107	92	138
Future Volume (veh/h)	5	187	520	64	8	153	849	194	159	1107	92	138
Number		7	4	14		3	8	18	5	2	12	1
Initial Q (Qb), veh		0	0	0		0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00		1.00		1.00		1.00	1.00		1.00	1.00
Parking Bus, Adj		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln		1863	1863	1863		1863	1863	1900	1863	1863	1863	1863
Adj Flow Rate, veh/h		203	565	70		166	923	211	173	1203	100	150
Adj No. of Lanes		1	2	1		1	2	0	1	2	1	1
Peak Hour Factor		0.92	0.92	0.92		0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %		2	2	2		2	2	2	2	2	2	2
Cap, veh/h		106	1146	513		90	900	205	90	1355	606	90
Arrive On Green		0.06	0.32	0.32		0.05	0.31	0.31	0.05	0.38	0.38	0.05
Sat Flow, veh/h		1774	3539	1583		1774	2863	654	1774	3539	1583	1774
Grp Volume(v), veh/h		203	565	70		166	570	564	173	1203	100	150
Grp Sat Flow(s),veh/h/ln		1774	1770	1583		1774	1770	1747	1774	1770	1583	1774
Q Serve(g_s), s		6.3	13.5	3.3		5.3	33.0	33.0	5.3	33.4	4.4	5.3
Cycle Q Clear(g_c), s		6.3	13.5	3.3		5.3	33.0	33.0	5.3	33.4	4.4	5.3
Prop In Lane		1.00		1.00		1.00		0.37	1.00		1.00	1.00
Lane Grp Cap(c), veh/h		106	1146	513		90	556	549	90	1355	606	90
V/C Ratio(X)		1.91	0.49	0.14		1.85	1.03	1.03	1.93	0.89	0.16	1.68
Avail Cap(c_a), veh/h		106	1146	513		90	556	549	90	1355	606	90
HCM Platoon Ratio		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh		49.3	28.6	25.1		49.8	36.0	36.0	49.8	30.3	21.3	49.8
Incr Delay (d2), s/veh		441.1	0.3	0.1		423.8	44.7	45.4	457.6	8.9	0.6	347.4
Initial Q Delay(d3),s/veh		0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln		16.1	6.6	1.5		13.1	23.0	22.8	14.0	17.9	2.0	11.2
LnGrp Delay(d),s/veh		490.5	28.9	25.2		473.6	80.7	81.4	507.4	39.2	21.9	397.3
LnGrp LOS		F	C	C		F	F	F	F	D	C	F
Approach Vol, veh/h			838				1300			1476		
Approach Delay, s/veh			140.4				131.2			92.9		
Approach LOS			F				F			F		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	10.0	45.6	10.0	39.4	10.0	45.6	11.0	38.4				
Change Period (Y+Rc), s	* 4.7	5.4	* 4.7	5.4	* 4.7	5.4	* 4.7	5.4				
Max Green Setting (Gmax), s	* 5.3	40.2	* 5.3	34.0	* 5.3	40.2	* 6.3	33.0				
Max Q Clear Time (g_c+I1), s	7.3	35.4	7.3	15.5	7.3	21.3	8.3	35.0				
Green Ext Time (p_c), s	0.0	3.3	0.0	3.6	0.0	4.6	0.0	0.0				
Intersection Summary												
HCM 2010 Ctrl Delay			111.6									
HCM 2010 LOS			F									
Notes												
User approved ignoring U-Turning movement.												

HCM 2010 Signalized Intersection Summary

3: Aviation Boulevard & Artesia Boulevard

09/06/2019

	↓	↘
Movement	SBT	SBR
Lane Configurations	↑↑	
Traffic Volume (veh/h)	540	192
Future Volume (veh/h)	540	192
Number	6	16
Initial Q (Qb), veh	0	0
Ped-Bike Adj(A_pbT)		1.00
Parking Bus, Adj	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1900
Adj Flow Rate, veh/h	587	209
Adj No. of Lanes	2	0
Peak Hour Factor	0.92	0.92
Percent Heavy Veh, %	2	2
Cap, veh/h	981	348
Arrive On Green	0.38	0.38
Sat Flow, veh/h	2562	910
Grp Volume(v), veh/h	405	391
Grp Sat Flow(s),veh/h/ln	1770	1702
Q Serve(g_s), s	19.2	19.3
Cycle Q Clear(g_c), s	19.2	19.3
Prop In Lane		0.53
Lane Grp Cap(c), veh/h	678	652
V/C Ratio(X)	0.60	0.60
Avail Cap(c_a), veh/h	678	652
HCM Platoon Ratio	1.00	1.00
Upstream Filter(l)	1.00	1.00
Uniform Delay (d), s/veh	25.9	26.0
Incr Delay (d2), s/veh	3.9	4.0
Initial Q Delay(d3),s/veh	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.1	9.7
LnGrp Delay(d),s/veh	29.8	30.0
LnGrp LOS	C	C
Approach Vol, veh/h	946	
Approach Delay, s/veh	88.2	
Approach LOS	F	
Timer		

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary

3: Aviation Boulevard & Artesia Boulevard

09/06/2019

												
Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (veh/h)	175	822	131	9	250	580	131	126	642	179	184	1129
Future Volume (veh/h)	175	822	131	9	250	580	131	126	642	179	184	1129
Number	7	4	14		3	8	18	5	2	12	1	6
Initial Q (Qb), veh	0	0	0		0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00		1.00		1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863		1863	1863	1900	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	190	893	142		272	630	142	137	698	195	200	1227
Adj No. of Lanes	1	2	1		1	2	0	1	2	1	1	2
Peak Hour Factor	0.92	0.92	0.92		0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2		2	2	2	2	2	2	2	2
Cap, veh/h	215	855	382		272	787	177	141	1164	521	225	1217
Arrive On Green	0.12	0.24	0.24		0.15	0.27	0.27	0.08	0.33	0.33	0.13	0.38
Sat Flow, veh/h	1774	3539	1583		1774	2872	646	1774	3539	1583	1774	3233
Grp Volume(v), veh/h	190	893	142		272	388	384	137	698	195	200	670
Grp Sat Flow(s),veh/h/ln	1774	1770	1583		1774	1770	1749	1774	1770	1583	1774	1770
Q Serve(g_s), s	14.2	32.6	10.1		20.7	27.5	27.6	10.4	22.3	12.7	15.0	50.8
Cycle Q Clear(g_c), s	14.2	32.6	10.1		20.7	27.5	27.6	10.4	22.3	12.7	15.0	50.8
Prop In Lane	1.00		1.00		1.00		0.37	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	215	855	382		272	485	479	141	1164	521	225	666
V/C Ratio(X)	0.89	1.04	0.37		1.00	0.80	0.80	0.97	0.60	0.37	0.89	1.01
Avail Cap(c_a), veh/h	242	855	382		272	485	479	141	1164	521	256	666
HCM Platoon Ratio	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	58.4	51.2	42.7		57.1	45.6	45.6	62.0	37.9	34.7	58.0	42.1
Incr Delay (d2), s/veh	28.0	43.1	0.6		54.5	9.3	9.5	67.8	2.3	2.1	27.4	36.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.6	21.0	4.5		14.2	14.7	14.6	7.7	11.2	5.9	9.0	31.5
LnGrp Delay(d),s/veh	86.4	94.3	43.3		111.7	54.8	55.1	129.9	40.2	36.7	85.4	78.5
LnGrp LOS	F	F	D		F	D	E	F	D	D	F	F
Approach Vol, veh/h	1225				1044				1030			1556
Approach Delay, s/veh	87.2				69.8				51.4			79.8
Approach LOS	F				E				D			E
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	21.8	49.8	25.4	38.0	15.4	56.2	21.0	42.4				
Change Period (Y+Rc), s	* 4.7	5.4	* 4.7	5.4	* 4.7	5.4	* 4.7	5.4				
Max Green Setting (Gmax), s	* 20	42.0	* 21	32.6	* 11	50.8	* 18	34.9				
Max Q Clear Time (g_c+I1), s	17.0	24.3	22.7	34.6	12.4	52.8	16.2	29.6				
Green Ext Time (p_c), s	0.1	5.1	0.0	0.0	0.0	0.0	0.1	2.2				
Intersection Summary												
HCM 2010 Ctrl Delay			73.5									
HCM 2010 LOS			E									
Notes												
User approved ignoring U-Turning movement.												

HCM 2010 Signalized Intersection Summary

3: Aviation Boulevard & Artesia Boulevard

09/06/2019

↙	
Movement	SBR
Lane Configurations	
Traffic Volume (veh/h)	119
Future Volume (veh/h)	119
Number	16
Initial Q (Qb), veh	0
Ped-Bike Adj(A_pbT)	1.00
Parking Bus, Adj	1.00
Adj Sat Flow, veh/h/ln	1900
Adj Flow Rate, veh/h	129
Adj No. of Lanes	0
Peak Hour Factor	0.92
Percent Heavy Veh, %	2
Cap, veh/h	128
Arrive On Green	0.38
Sat Flow, veh/h	339
Grp Volume(v), veh/h	686
Grp Sat Flow(s),veh/h/ln	1803
Q Serve(g_s), s	50.8
Cycle Q Clear(g_c), s	50.8
Prop In Lane	0.19
Lane Grp Cap(c), veh/h	678
V/C Ratio(X)	1.01
Avail Cap(c_a), veh/h	678
HCM Platoon Ratio	1.00
Upstream Filter(l)	1.00
Uniform Delay (d), s/veh	42.1
Incr Delay (d2), s/veh	37.4
Initial Q Delay(d3),s/veh	0.0
%ile BackOfQ(50%),veh/ln	32.3
LnGrp Delay(d),s/veh	79.5
LnGrp LOS	F
Approach Vol, veh/h	
Approach Delay, s/veh	
Approach LOS	
Timer	

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary

3: Aviation Boulevard & Artesia Boulevard

09/06/2019

												
Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (veh/h)	3	196	524	54	8	159	801	211	171	1166	89	99
Future Volume (veh/h)	3	196	524	54	8	159	801	211	171	1166	89	99
Number		7	4	14		3	8	18	5	2	12	1
Initial Q (Qb), veh		0	0	0		0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00		1.00		1.00		1.00	1.00		1.00	1.00
Parking Bus, Adj		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln		1863	1863	1863		1863	1863	1900	1863	1863	1900	1863
Adj Flow Rate, veh/h		213	570	59		173	871	229	186	1267	97	108
Adj No. of Lanes		1	2	1		2	2	0	1	2	0	1
Peak Hour Factor		0.92	0.92	0.92		0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %		2	2	2		2	2	2	2	2	2	2
Cap, veh/h		106	1083	485		235	872	229	90	1286	98	84
Arrive On Green		0.06	0.31	0.31		0.07	0.31	0.31	0.05	0.39	0.39	0.05
Sat Flow, veh/h		1774	3539	1583		3442	2775	729	1774	3333	255	1774
Grp Volume(v), veh/h		213	570	59		173	555	545	186	672	692	108
Grp Sat Flow(s),veh/h/ln		1774	1770	1583		1721	1770	1734	1774	1770	1818	1774
Q Serve(g_s), s		6.3	14.0	2.8		5.2	32.9	33.0	5.3	39.4	39.7	5.0
Cycle Q Clear(g_c), s		6.3	14.0	2.8		5.2	32.9	33.0	5.3	39.4	39.7	5.0
Prop In Lane		1.00		1.00		1.00		0.42	1.00		0.14	1.00
Lane Grp Cap(c), veh/h		106	1083	485		235	556	545	90	683	701	84
V/C Ratio(X)		2.00	0.53	0.12		0.74	1.00	1.00	2.08	0.98	0.99	1.28
Avail Cap(c_a), veh/h		106	1083	485		252	556	545	90	683	701	84
HCM Platoon Ratio		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh		49.3	30.1	26.3		48.0	36.0	36.0	49.8	31.9	32.0	50.0
Incr Delay (d2), s/veh		482.1	0.5	0.1		10.1	37.7	38.4	520.8	30.7	31.1	189.9
Initial Q Delay(d3),s/veh		0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln		17.3	6.9	1.2		2.8	21.9	21.6	15.5	25.0	25.9	6.9
LnGrp Delay(d),s/veh		531.4	30.6	26.4		58.0	73.7	74.4	570.6	62.6	63.1	239.9
LnGrp LOS		F	C	C		E	E	E	F	E	E	F
Approach Vol, veh/h			842				1273			1550		
Approach Delay, s/veh			157.0				71.9			123.8		
Approach LOS			F				E			F		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.7	45.9	11.9	37.5	10.0	45.6	11.0	38.4				
Change Period (Y+Rc), s	* 4.7	5.4	* 4.7	5.4	* 4.7	5.4	* 4.7	5.4				
Max Green Setting (Gmax), s	* 5	40.5	* 7.7	31.6	* 5.3	40.2	* 6.3	33.0				
Max Q Clear Time (g_c+I1), s	7.0	41.7	7.2	16.0	7.3	24.1	8.3	35.0				
Green Ext Time (p_c), s	0.0	0.0	0.0	3.4	0.0	4.9	0.0	0.0				
Intersection Summary												
HCM 2010 Ctrl Delay			100.9									
HCM 2010 LOS			F									
Notes												
User approved ignoring U-Turning movement.												

HCM 2010 Signalized Intersection Summary

3: Aviation Boulevard & Artesia Boulevard

09/06/2019

	↓	↘
Movement	SBT	SBR
Lane Configurations	↑↑	
Traffic Volume (veh/h)	594	217
Future Volume (veh/h)	594	217
Number	6	16
Initial Q (Qb), veh	0	0
Ped-Bike Adj(A_pbT)		1.00
Parking Bus, Adj	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1900
Adj Flow Rate, veh/h	646	236
Adj No. of Lanes	2	0
Peak Hour Factor	0.92	0.92
Percent Heavy Veh, %	2	2
Cap, veh/h	973	355
Arrive On Green	0.38	0.38
Sat Flow, veh/h	2541	928
Grp Volume(v), veh/h	450	432
Grp Sat Flow(s),veh/h/ln	1770	1699
Q Serve(g_s), s	22.1	22.1
Cycle Q Clear(g_c), s	22.1	22.1
Prop In Lane		0.55
Lane Grp Cap(c), veh/h	678	650
V/C Ratio(X)	0.66	0.66
Avail Cap(c_a), veh/h	678	650
HCM Platoon Ratio	1.00	1.00
Upstream Filter(I)	1.00	1.00
Uniform Delay (d), s/veh	26.8	26.8
Incr Delay (d2), s/veh	5.1	5.3
Initial Q Delay(d3),s/veh	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.7	11.3
LnGrp Delay(d),s/veh	31.9	32.1
LnGrp LOS	C	C
Approach Vol, veh/h	990	
Approach Delay, s/veh	54.7	
Approach LOS	D	
Timer		

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary

3: Aviation Boulevard & Artesia Boulevard

09/06/2019

												
Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (veh/h)	2	203	816	176	9	242	573	144	138	686	139	193
Future Volume (veh/h)	2	203	816	176	9	242	573	144	138	686	139	193
Number		7	4	14		3	8	18	5	2	12	1
Initial Q (Qb), veh		0	0	0		0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00		1.00		1.00		1.00	1.00		1.00	1.00
Parking Bus, Adj		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln		1863	1863	1863		1863	1863	1900	1863	1863	1900	1863
Adj Flow Rate, veh/h		221	887	191		263	623	157	150	746	151	210
Adj No. of Lanes		1	2	1		2	2	0	1	2	0	1
Peak Hour Factor		0.92	0.92	0.92		0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %		2	2	2		2	2	2	2	2	2	2
Cap, veh/h		236	1022	457		318	695	175	164	950	192	231
Arrive On Green		0.13	0.29	0.29		0.09	0.25	0.25	0.09	0.32	0.32	0.13
Sat Flow, veh/h		1774	3539	1583		3442	2803	705	1774	2934	594	1774
Grp Volume(v), veh/h		221	887	191		263	393	387	150	450	447	210
Grp Sat Flow(s),veh/h/ln		1774	1770	1583		1721	1770	1738	1774	1770	1758	1774
Q Serve(g_s), s		15.1	29.1	11.9		9.2	26.3	26.4	10.3	28.2	28.2	14.3
Cycle Q Clear(g_c), s		15.1	29.1	11.9		9.2	26.3	26.4	10.3	28.2	28.2	14.3
Prop In Lane		1.00		1.00		1.00		0.41	1.00		0.34	1.00
Lane Grp Cap(c), veh/h		236	1022	457		318	439	431	164	573	569	231
V/C Ratio(X)		0.93	0.87	0.42		0.83	0.90	0.90	0.92	0.79	0.79	0.91
Avail Cap(c_a), veh/h		236	1070	479		346	477	469	164	573	569	231
HCM Platoon Ratio		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh		52.5	41.3	35.2		54.6	44.5	44.5	55.0	37.5	37.5	52.5
Incr Delay (d2), s/veh		41.0	7.5	0.6		14.3	18.3	18.9	46.4	10.4	10.5	36.1
Initial Q Delay(d3),s/veh		0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln		10.1	15.2	5.3		5.0	15.1	14.9	7.2	15.4	15.3	9.3
LnGrp Delay(d),s/veh		93.4	48.8	35.8		68.9	62.8	63.4	101.5	47.9	48.0	88.6
LnGrp LOS		F	D	D		E	E	E	F	D	D	F
Approach Vol, veh/h			1299				1043			1047		
Approach Delay, s/veh			54.5				64.6			55.6		
Approach LOS			D				E			E		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	20.6	45.0	16.0	40.7	16.0	49.6	21.0	35.7				
Change Period (Y+Rc), s	* 4.7	5.4	* 4.7	5.4	* 4.7	5.4	* 4.7	5.4				
Max Green Setting (Gmax), s	* 16	39.6	* 12	37.0	* 11	44.2	* 16	33.0				
Max Q Clear Time (g_c+I1), s	16.3	30.2	11.2	31.1	12.3	42.0	17.1	28.4				
Green Ext Time (p_c), s	0.0	3.8	0.1	3.1	0.0	1.5	0.0	2.0				
Intersection Summary												
HCM 2010 Ctrl Delay			59.9									
HCM 2010 LOS			E									
Notes												
User approved ignoring U-Turning movement.												

HCM 2010 Signalized Intersection Summary

3: Aviation Boulevard & Artesia Boulevard

09/06/2019

	↓	↘
Movement	SBT	SBR
Lane Configurations	↑↑	
Traffic Volume (veh/h)	1017	97
Future Volume (veh/h)	1017	97
Number	6	16
Initial Q (Qb), veh	0	0
Ped-Bike Adj(A_pbT)		1.00
Parking Bus, Adj	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1900
Adj Flow Rate, veh/h	1105	105
Adj No. of Lanes	2	0
Peak Hour Factor	0.92	0.92
Percent Heavy Veh, %	2	2
Cap, veh/h	1181	112
Arrive On Green	0.36	0.36
Sat Flow, veh/h	3267	310
Grp Volume(v), veh/h	598	612
Grp Sat Flow(s),veh/h/ln	1770	1808
Q Serve(g_s), s	39.9	40.0
Cycle Q Clear(g_c), s	39.9	40.0
Prop In Lane		0.17
Lane Grp Cap(c), veh/h	639	653
V/C Ratio(X)	0.94	0.94
Avail Cap(c_a), veh/h	639	653
HCM Platoon Ratio	1.00	1.00
Upstream Filter(l)	1.00	1.00
Uniform Delay (d), s/veh	37.7	37.7
Incr Delay (d2), s/veh	22.8	22.7
Initial Q Delay(d3),s/veh	0.0	0.0
%ile BackOfQ(50%),veh/ln	23.5	24.0
LnGrp Delay(d),s/veh	60.5	60.4
LnGrp LOS	E	E
Approach Vol, veh/h	1420	
Approach Delay, s/veh	64.6	
Approach LOS	E	
Timer		

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary

3: Aviation Boulevard & Artesia Boulevard

09/06/2019

												
Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (veh/h)	5	187	520	64	8	153	849	194	159	1107	92	138
Future Volume (veh/h)	5	187	520	64	8	153	849	194	159	1107	92	138
Number		7	4	14		3	8	18	5	2	12	1
Initial Q (Qb), veh		0	0	0		0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00		1.00		1.00		1.00	1.00		1.00	1.00
Parking Bus, Adj		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln		1863	1863	1863		1863	1863	1900	1863	1863	1900	1863
Adj Flow Rate, veh/h		203	565	70		166	923	211	173	1203	100	150
Adj No. of Lanes		1	2	1		2	2	0	1	2	0	1
Peak Hour Factor		0.92	0.92	0.92		0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %		2	2	2		2	2	2	2	2	2	2
Cap, veh/h		106	1090	488		228	900	205	90	1267	105	90
Arrive On Green		0.06	0.31	0.31		0.07	0.31	0.31	0.05	0.38	0.38	0.05
Sat Flow, veh/h		1774	3539	1583		3442	2863	654	1774	3309	275	1774
Grp Volume(v), veh/h		203	565	70		166	570	564	173	642	661	150
Grp Sat Flow(s),veh/h/ln		1774	1770	1583		1721	1770	1747	1774	1770	1814	1774
Q Serve(g_s), s		6.3	13.8	3.4		5.0	33.0	33.0	5.3	36.9	37.1	5.3
Cycle Q Clear(g_c), s		6.3	13.8	3.4		5.0	33.0	33.0	5.3	36.9	37.1	5.3
Prop In Lane		1.00		1.00		1.00		0.37	1.00		0.15	1.00
Lane Grp Cap(c), veh/h		106	1090	488		228	556	549	90	678	695	90
V/C Ratio(X)		1.91	0.52	0.14		0.73	1.03	1.03	1.93	0.95	0.95	1.68
Avail Cap(c_a), veh/h		106	1090	488		265	556	549	90	678	695	90
HCM Platoon Ratio		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh		49.3	29.9	26.3		48.1	36.0	36.0	49.8	31.4	31.4	49.8
Incr Delay (d2), s/veh		441.1	0.4	0.1		8.1	44.7	45.4	457.6	24.0	24.1	347.4
Initial Q Delay(d3),s/veh		0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln		16.1	6.8	1.5		2.6	23.0	22.8	14.0	22.5	23.2	11.2
LnGrp Delay(d),s/veh		490.5	30.4	26.4		56.2	80.7	81.4	507.4	55.4	55.5	397.3
LnGrp LOS		F	C	C		E	F	F	F	E	E	F
Approach Vol, veh/h			838				1300			1476		
Approach Delay, s/veh			141.5				77.9			108.4		
Approach LOS			F				E			F		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	10.0	45.6	11.7	37.7	10.0	45.6	11.0	38.4				
Change Period (Y+Rc), s	* 4.7	5.4	* 4.7	5.4	* 4.7	5.4	* 4.7	5.4				
Max Green Setting (Gmax), s	* 5.3	40.2	* 8.1	31.2	* 5.3	40.2	* 6.3	33.0				
Max Q Clear Time (g_c+I1), s	7.3	39.1	7.0	15.8	7.3	21.3	8.3	35.0				
Green Ext Time (p_c), s	0.0	0.8	0.1	3.3	0.0	4.6	0.0	0.0				
Intersection Summary												
HCM 2010 Ctrl Delay			101.6									
HCM 2010 LOS			F									
Notes												
User approved ignoring U-Turning movement.												

HCM 2010 Signalized Intersection Summary

3: Aviation Boulevard & Artesia Boulevard

09/06/2019

	↓	↘
Movement	SBT	SBR
Lane Configurations	↑↑	
Traffic Volume (veh/h)	540	192
Future Volume (veh/h)	540	192
Number	6	16
Initial Q (Qb), veh	0	0
Ped-Bike Adj(A_pbT)		1.00
Parking Bus, Adj	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1900
Adj Flow Rate, veh/h	587	209
Adj No. of Lanes	2	0
Peak Hour Factor	0.92	0.92
Percent Heavy Veh, %	2	2
Cap, veh/h	981	348
Arrive On Green	0.38	0.38
Sat Flow, veh/h	2562	910
Grp Volume(v), veh/h	405	391
Grp Sat Flow(s),veh/h/ln	1770	1702
Q Serve(g_s), s	19.2	19.3
Cycle Q Clear(g_c), s	19.2	19.3
Prop In Lane		0.53
Lane Grp Cap(c), veh/h	678	652
V/C Ratio(X)	0.60	0.60
Avail Cap(c_a), veh/h	678	652
HCM Platoon Ratio	1.00	1.00
Upstream Filter(I)	1.00	1.00
Uniform Delay (d), s/veh	25.9	26.0
Incr Delay (d2), s/veh	3.9	4.0
Initial Q Delay(d3),s/veh	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.1	9.7
LnGrp Delay(d),s/veh	29.8	30.0
LnGrp LOS	C	C
Approach Vol, veh/h	946	
Approach Delay, s/veh	88.2	
Approach LOS	F	
Timer		

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary

3: Aviation Boulevard & Artesia Boulevard

09/06/2019

												
Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (veh/h)	175	822	131	9	250	580	131	126	642	179	184	1129
Future Volume (veh/h)	175	822	131	9	250	580	131	126	642	179	184	1129
Number	7	4	14		3	8	18	5	2	12	1	6
Initial Q (Qb), veh	0	0	0		0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00		1.00		1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863		1863	1863	1900	1863	1863	1900	1863	1863
Adj Flow Rate, veh/h	190	893	142		272	630	142	137	698	195	200	1227
Adj No. of Lanes	1	2	1		2	2	0	1	2	0	1	2
Peak Hour Factor	0.92	0.92	0.92		0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2		2	2	2	2	2	2	2	2
Cap, veh/h	200	968	433		325	733	165	149	932	260	227	1244
Arrive On Green	0.11	0.27	0.27		0.09	0.26	0.26	0.08	0.34	0.34	0.13	0.38
Sat Flow, veh/h	1774	3539	1583		3442	2872	646	1774	2734	764	1774	3233
Grp Volume(v), veh/h	190	893	142		272	388	384	137	452	441	200	670
Grp Sat Flow(s),veh/h/ln	1774	1770	1583		1721	1770	1749	1774	1770	1728	1774	1770
Q Serve(g_s), s	13.1	30.3	8.8		9.6	25.8	25.9	9.5	27.9	27.9	13.7	46.3
Cycle Q Clear(g_c), s	13.1	30.3	8.8		9.6	25.8	25.9	9.5	27.9	27.9	13.7	46.3
Prop In Lane	1.00		1.00		1.00		0.37	1.00		0.44	1.00	
Lane Grp Cap(c), veh/h	200	968	433		325	452	446	149	603	589	227	681
V/C Ratio(X)	0.95	0.92	0.33		0.84	0.86	0.86	0.92	0.75	0.75	0.88	0.98
Avail Cap(c_a), veh/h	200	997	446		337	473	467	149	603	589	261	681
HCM Platoon Ratio	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	54.5	43.6	35.8		55.0	43.9	43.9	56.1	36.0	36.0	52.9	37.6
Incr Delay (d2), s/veh	49.8	13.4	0.4		16.3	14.2	14.6	49.7	8.3	8.5	25.3	30.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.2	16.6	3.9		5.3	14.4	14.3	6.7	15.1	14.8	8.3	28.4
LnGrp Delay(d),s/veh	104.3	57.0	36.3		71.3	58.1	58.5	105.9	44.3	44.5	78.2	68.6
LnGrp LOS	F	E	D		E	E	E	F	D	D	E	E
Approach Vol, veh/h	1225			1044			1030			1556		
Approach Delay, s/veh	62.0			61.7			52.6			70.2		
Approach LOS	E			E			D			E		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	20.5	47.5	16.4	39.2	15.1	52.9	18.6	36.9				
Change Period (Y+Rc), s	* 4.7	5.4	* 4.7	5.4	* 4.7	5.4	* 4.7	5.4				
Max Green Setting (Gmax), s	* 18	39.7	* 12	34.8	* 10	47.5	* 14	33.0				
Max Q Clear Time (g_c+I1), s	15.7	29.9	11.6	32.3	11.5	48.7	15.1	27.9				
Green Ext Time (p_c), s	0.1	3.9	0.1	1.5	0.0	0.0	0.0	2.1				
Intersection Summary												
HCM 2010 Ctrl Delay	62.6											
HCM 2010 LOS	E											
Notes												
User approved ignoring U-Turning movement.												

HCM 2010 Signalized Intersection Summary

3: Aviation Boulevard & Artesia Boulevard

09/06/2019

↙	
Movement	SBR
Lane Configurations	
Traffic Volume (veh/h)	119
Future Volume (veh/h)	119
Number	16
Initial Q (Qb), veh	0
Ped-Bike Adj(A_pbT)	1.00
Parking Bus, Adj	1.00
Adj Sat Flow, veh/h/ln	1900
Adj Flow Rate, veh/h	129
Adj No. of Lanes	0
Peak Hour Factor	0.92
Percent Heavy Veh, %	2
Cap, veh/h	130
Arrive On Green	0.38
Sat Flow, veh/h	339
Grp Volume(v), veh/h	686
Grp Sat Flow(s),veh/h/ln	1803
Q Serve(g_s), s	46.7
Cycle Q Clear(g_c), s	46.7
Prop In Lane	0.19
Lane Grp Cap(c), veh/h	693
V/C Ratio(X)	0.99
Avail Cap(c_a), veh/h	693
HCM Platoon Ratio	1.00
Upstream Filter(l)	1.00
Uniform Delay (d), s/veh	37.8
Incr Delay (d2), s/veh	31.7
Initial Q Delay(d3),s/veh	0.0
%ile BackOfQ(50%),veh/ln	29.4
LnGrp Delay(d),s/veh	69.5
LnGrp LOS	E
Approach Vol, veh/h	
Approach Delay, s/veh	
Approach LOS	
Timer	

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary

3: Aviation Boulevard & Artesia Boulevard

09/06/2019

												
Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (veh/h)	3	196	524	54	8	159	801	211	171	1166	89	99
Future Volume (veh/h)	3	196	524	54	8	159	801	211	171	1166	89	99
Number		7	4	14		3	8	18	5	2	12	1
Initial Q (Qb), veh		0	0	0		0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00		1.00		1.00		1.00	1.00		1.00	1.00
Parking Bus, Adj		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln		1863	1863	1863		1863	1863	1900	1863	1863	1900	1863
Adj Flow Rate, veh/h		213	570	59		173	871	229	186	1267	97	108
Adj No. of Lanes		1	2	1		1	2	0	1	2	0	1
Peak Hour Factor		0.92	0.92	0.92		0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %		2	2	2		2	2	2	2	2	2	2
Cap, veh/h		106	1146	513		90	872	229	90	1286	98	84
Arrive On Green		0.06	0.32	0.32		0.05	0.31	0.31	0.05	0.39	0.39	0.05
Sat Flow, veh/h		1774	3539	1583		1774	2775	729	1774	3333	255	1774
Grp Volume(v), veh/h		213	570	59		173	555	545	186	672	692	108
Grp Sat Flow(s),veh/h/ln		1774	1770	1583		1774	1770	1734	1774	1770	1818	1774
Q Serve(g_s), s		6.3	13.6	2.7		5.3	32.9	33.0	5.3	39.4	39.7	5.0
Cycle Q Clear(g_c), s		6.3	13.6	2.7		5.3	32.9	33.0	5.3	39.4	39.7	5.0
Prop In Lane		1.00		1.00		1.00		0.42	1.00		0.14	1.00
Lane Grp Cap(c), veh/h		106	1146	513		90	556	545	90	683	701	84
V/C Ratio(X)		2.00	0.50	0.12		1.93	1.00	1.00	2.08	0.98	0.99	1.28
Avail Cap(c_a), veh/h		106	1146	513		90	556	545	90	683	701	84
HCM Platoon Ratio		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh		49.3	28.6	24.9		49.8	36.0	36.0	49.8	31.9	32.0	50.0
Incr Delay (d2), s/veh		482.1	0.3	0.1		457.6	37.7	38.4	520.8	30.7	31.1	189.9
Initial Q Delay(d3),s/veh		0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln		17.3	6.7	1.2		14.0	21.9	21.6	15.5	25.0	25.9	6.9
LnGrp Delay(d),s/veh		531.4	28.9	25.0		507.4	73.7	74.4	570.6	62.6	63.1	239.9
LnGrp LOS		F	C	C		F	E	E	F	E	E	F
Approach Vol, veh/h			842				1273			1550		
Approach Delay, s/veh			155.8				132.9			123.8		
Approach LOS			F				F			F		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.7	45.9	10.0	39.4	10.0	45.6	11.0	38.4				
Change Period (Y+Rc), s	* 4.7	5.4	* 4.7	5.4	* 4.7	5.4	* 4.7	5.4				
Max Green Setting (Gmax), s	* 5	40.5	* 5.3	34.0	* 5.3	40.2	* 6.3	33.0				
Max Q Clear Time (g_c+l1), s	7.0	41.7	7.3	15.6	7.3	16.5	8.3	35.0				
Green Ext Time (p_c), s	0.0	0.0	0.0	3.6	0.0	5.1	0.0	0.0				
Intersection Summary												
HCM 2010 Ctrl Delay			116.2									
HCM 2010 LOS			F									
Notes												
User approved ignoring U-Turning movement.												

HCM 2010 Signalized Intersection Summary

3: Aviation Boulevard & Artesia Boulevard

09/06/2019

	↓	↘
Movement	SBT	SBR
Lane Configurations	↑↑	↑
Traffic Volume (veh/h)	594	217
Future Volume (veh/h)	594	217
Number	6	16
Initial Q (Qb), veh	0	0
Ped-Bike Adj(A_pbT)		1.00
Parking Bus, Adj	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863
Adj Flow Rate, veh/h	646	236
Adj No. of Lanes	2	1
Peak Hour Factor	0.92	0.92
Percent Heavy Veh, %	2	2
Cap, veh/h	1355	606
Arrive On Green	0.38	0.38
Sat Flow, veh/h	3539	1583
Grp Volume(v), veh/h	646	236
Grp Sat Flow(s),veh/h/ln	1770	1583
Q Serve(g_s), s	14.5	11.4
Cycle Q Clear(g_c), s	14.5	11.4
Prop In Lane		1.00
Lane Grp Cap(c), veh/h	1355	606
V/C Ratio(X)	0.48	0.39
Avail Cap(c_a), veh/h	1355	606
HCM Platoon Ratio	1.00	1.00
Upstream Filter(l)	1.00	1.00
Uniform Delay (d), s/veh	24.5	23.5
Incr Delay (d2), s/veh	1.2	1.9
Initial Q Delay(d3),s/veh	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.3	5.3
LnGrp Delay(d),s/veh	25.7	25.4
LnGrp LOS	C	C
Approach Vol, veh/h	990	
Approach Delay, s/veh	49.0	
Approach LOS	D	
Timer		

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary

3: Aviation Boulevard & Artesia Boulevard

09/06/2019

												
Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (veh/h)	2	203	816	176	9	242	573	144	138	686	139	193
Future Volume (veh/h)	2	203	816	176	9	242	573	144	138	686	139	193
Number		7	4	14		3	8	18	5	2	12	1
Initial Q (Qb), veh		0	0	0		0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00		1.00		1.00		1.00	1.00		1.00	1.00
Parking Bus, Adj		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln		1863	1863	1863		1863	1863	1900	1863	1863	1900	1863
Adj Flow Rate, veh/h		221	887	191		263	623	157	150	746	151	210
Adj No. of Lanes		1	2	1		1	2	0	1	2	0	1
Peak Hour Factor		0.92	0.92	0.92		0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %		2	2	2		2	2	2	2	2	2	2
Cap, veh/h		237	895	400		274	767	193	165	906	183	217
Arrive On Green		0.13	0.25	0.25		0.15	0.27	0.27	0.09	0.31	0.31	0.12
Sat Flow, veh/h		1774	3539	1583		1774	2803	705	1774	2934	594	1774
Grp Volume(v), veh/h		221	887	191		263	393	387	150	450	447	210
Grp Sat Flow(s),veh/h/ln		1774	1770	1583		1774	1770	1738	1774	1770	1758	1774
Q Serve(g_s), s		15.4	31.2	12.8		18.4	25.9	26.0	10.5	29.5	29.5	14.7
Cycle Q Clear(g_c), s		15.4	31.2	12.8		18.4	25.9	26.0	10.5	29.5	29.5	14.7
Prop In Lane		1.00		1.00		1.00		0.41	1.00		0.34	1.00
Lane Grp Cap(c), veh/h		237	895	400		274	484	476	165	546	543	217
V/C Ratio(X)		0.93	0.99	0.48		0.96	0.81	0.81	0.91	0.82	0.82	0.97
Avail Cap(c_a), veh/h		237	895	400		274	484	476	165	546	543	217
HCM Platoon Ratio		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh		53.6	46.6	39.7		52.5	42.4	42.4	56.2	40.0	40.0	54.6
Incr Delay (d2), s/veh		40.3	27.9	0.9		43.4	10.1	10.4	45.3	13.2	13.3	51.6
Initial Q Delay(d3),s/veh		0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln		10.2	18.7	5.7		12.3	14.0	13.8	7.2	16.4	16.3	10.3
LnGrp Delay(d),s/veh		93.9	74.4	40.6		95.9	52.5	52.8	101.4	53.2	53.3	106.2
LnGrp LOS		F	E	D		F	D	D	F	D	D	F
Approach Vol, veh/h	1299			1043				1047				
Approach Delay, s/veh	72.8			63.6				60.2				
Approach LOS	E			E				E				
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	20.0	44.0	24.0	37.0	16.3	47.7	21.4	39.6				
Change Period (Y+Rc), s	* 4.7	5.4	* 4.7	5.4	* 4.7	5.4	* 4.7	5.4				
Max Green Setting (Gmax), s	* 15	38.6	* 19	31.6	* 12	42.3	* 17	34.2				
Max Q Clear Time (g_c+I1), s	16.7	31.5	20.4	33.2	12.5	39.5	17.4	28.0				
Green Ext Time (p_c), s	0.0	3.2	0.0	0.0	0.0	1.8	0.0	2.5				
Intersection Summary												
HCM 2010 Ctrl Delay	64.0											
HCM 2010 LOS	E											
Notes												
User approved ignoring U-Turning movement.												

HCM 2010 Signalized Intersection Summary

3: Aviation Boulevard & Artesia Boulevard

09/06/2019

	↓	↘
Movement	SBT	SBR
Lane Configurations	↑↑	↑
Traffic Volume (veh/h)	1017	97
Future Volume (veh/h)	1017	97
Number	6	16
Initial Q (Qb), veh	0	0
Ped-Bike Adj(A_pbT)		1.00
Parking Bus, Adj	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863
Adj Flow Rate, veh/h	1105	105
Adj No. of Lanes	2	1
Peak Hour Factor	0.92	0.92
Percent Heavy Veh, %	2	2
Cap, veh/h	1198	536
Arrive On Green	0.34	0.34
Sat Flow, veh/h	3539	1583
Grp Volume(v), veh/h	1105	105
Grp Sat Flow(s),veh/h/ln	1770	1583
Q Serve(g_s), s	37.5	5.9
Cycle Q Clear(g_c), s	37.5	5.9
Prop In Lane		1.00
Lane Grp Cap(c), veh/h	1198	536
V/C Ratio(X)	0.92	0.20
Avail Cap(c_a), veh/h	1198	536
HCM Platoon Ratio	1.00	1.00
Upstream Filter(I)	1.00	1.00
Uniform Delay (d), s/veh	39.8	29.3
Incr Delay (d2), s/veh	13.0	0.8
Initial Q Delay(d3),s/veh	0.0	0.0
%ile BackOfQ(50%),veh/ln	20.4	2.7
LnGrp Delay(d),s/veh	52.8	30.1
LnGrp LOS	D	C
Approach Vol, veh/h	1420	
Approach Delay, s/veh	59.0	
Approach LOS	E	
Timer		

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary

3: Aviation Boulevard & Artesia Boulevard

09/06/2019

												
Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (veh/h)	5	187	520	64	8	153	849	194	159	1107	92	138
Future Volume (veh/h)	5	187	520	64	8	153	849	194	159	1107	92	138
Number		7	4	14		3	8	18	5	2	12	1
Initial Q (Qb), veh		0	0	0		0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00		1.00		1.00		1.00	1.00		1.00	1.00
Parking Bus, Adj		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln		1863	1863	1863		1863	1863	1900	1863	1863	1900	1863
Adj Flow Rate, veh/h		203	565	70		166	923	211	173	1203	100	150
Adj No. of Lanes		1	2	1		1	2	0	1	2	0	1
Peak Hour Factor		0.92	0.92	0.92		0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %		2	2	2		2	2	2	2	2	2	2
Cap, veh/h		106	1146	513		90	900	205	90	1267	105	90
Arrive On Green		0.06	0.32	0.32		0.05	0.31	0.31	0.05	0.38	0.38	0.05
Sat Flow, veh/h		1774	3539	1583		1774	2863	654	1774	3309	275	1774
Grp Volume(v), veh/h		203	565	70		166	570	564	173	642	661	150
Grp Sat Flow(s),veh/h/ln		1774	1770	1583		1774	1770	1747	1774	1770	1814	1774
Q Serve(g_s), s		6.3	13.5	3.3		5.3	33.0	33.0	5.3	36.9	37.1	5.3
Cycle Q Clear(g_c), s		6.3	13.5	3.3		5.3	33.0	33.0	5.3	36.9	37.1	5.3
Prop In Lane		1.00		1.00		1.00		0.37	1.00		0.15	1.00
Lane Grp Cap(c), veh/h		106	1146	513		90	556	549	90	678	695	90
V/C Ratio(X)		1.91	0.49	0.14		1.85	1.03	1.03	1.93	0.95	0.95	1.68
Avail Cap(c_a), veh/h		106	1146	513		90	556	549	90	678	695	90
HCM Platoon Ratio		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh		49.3	28.6	25.1		49.8	36.0	36.0	49.8	31.4	31.4	49.8
Incr Delay (d2), s/veh		441.1	0.3	0.1		423.8	44.7	45.4	457.6	24.0	24.1	347.4
Initial Q Delay(d3),s/veh		0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln		16.1	6.6	1.5		13.1	23.0	22.8	14.0	22.5	23.2	11.2
LnGrp Delay(d),s/veh		490.5	28.9	25.2		473.6	80.7	81.4	507.4	55.4	55.5	397.3
LnGrp LOS		F	C	C		F	F	F	F	E	E	F
Approach Vol, veh/h			838				1300			1476		
Approach Delay, s/veh			140.4				131.2			108.4		
Approach LOS			F				F			F		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	10.0	45.6	10.0	39.4	10.0	45.6	11.0	38.4				
Change Period (Y+Rc), s	* 4.7	5.4	* 4.7	5.4	* 4.7	5.4	* 4.7	5.4				
Max Green Setting (Gmax), s	* 5.3	40.2	* 5.3	34.0	* 5.3	40.2	* 6.3	33.0				
Max Q Clear Time (g_c+I1), s	7.3	39.1	7.3	15.5	7.3	14.9	8.3	35.0				
Green Ext Time (p_c), s	0.0	0.8	0.0	3.6	0.0	4.6	0.0	0.0				
Intersection Summary												
HCM 2010 Ctrl Delay			115.7									
HCM 2010 LOS			F									
Notes												
User approved ignoring U-Turning movement.												

HCM 2010 Signalized Intersection Summary

3: Aviation Boulevard & Artesia Boulevard

09/06/2019

	↓	↘
Movement	SBT	SBR
Lane Configurations	↑↑	↑
Traffic Volume (veh/h)	540	192
Future Volume (veh/h)	540	192
Number	6	16
Initial Q (Qb), veh	0	0
Ped-Bike Adj(A_pbT)		1.00
Parking Bus, Adj	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863
Adj Flow Rate, veh/h	587	209
Adj No. of Lanes	2	1
Peak Hour Factor	0.92	0.92
Percent Heavy Veh, %	2	2
Cap, veh/h	1355	606
Arrive On Green	0.38	0.38
Sat Flow, veh/h	3539	1583
Grp Volume(v), veh/h	587	209
Grp Sat Flow(s),veh/h/ln	1770	1583
Q Serve(g_s), s	12.9	9.9
Cycle Q Clear(g_c), s	12.9	9.9
Prop In Lane		1.00
Lane Grp Cap(c), veh/h	1355	606
V/C Ratio(X)	0.43	0.34
Avail Cap(c_a), veh/h	1355	606
HCM Platoon Ratio	1.00	1.00
Upstream Filter(l)	1.00	1.00
Uniform Delay (d), s/veh	24.0	23.0
Incr Delay (d2), s/veh	1.0	1.6
Initial Q Delay(d3),s/veh	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.5	4.5
LnGrp Delay(d),s/veh	25.0	24.6
LnGrp LOS	C	C
Approach Vol, veh/h	946	
Approach Delay, s/veh	83.9	
Approach LOS	F	
Timer		

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary

3: Aviation Boulevard & Artesia Boulevard

09/06/2019

												
Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (veh/h)	175	822	131	9	250	580	131	126	642	179	184	1129
Future Volume (veh/h)	175	822	131	9	250	580	131	126	642	179	184	1129
Number	7	4	14		3	8	18	5	2	12	1	6
Initial Q (Qb), veh	0	0	0		0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00		1.00		1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863		1863	1863	1900	1863	1863	1900	1863	1863
Adj Flow Rate, veh/h	190	893	142		272	630	142	137	698	195	200	1227
Adj No. of Lanes	1	2	1		1	2	0	1	2	0	1	2
Peak Hour Factor	0.92	0.92	0.92		0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2		2	2	2	2	2	2	2	2
Cap, veh/h	215	881	394		281	823	185	143	881	246	214	1282
Arrive On Green	0.12	0.25	0.25		0.16	0.29	0.29	0.08	0.32	0.32	0.12	0.36
Sat Flow, veh/h	1774	3539	1583		1774	2872	646	1774	2734	764	1774	3539
Grp Volume(v), veh/h	190	893	142		272	388	384	137	452	441	200	1227
Grp Sat Flow(s),veh/h/ln	1774	1770	1583		1774	1770	1749	1774	1770	1728	1774	1770
Q Serve(g_s), s	14.2	33.6	10.0		20.6	27.0	27.1	10.4	31.4	31.4	15.1	45.7
Cycle Q Clear(g_c), s	14.2	33.6	10.0		20.6	27.0	27.1	10.4	31.4	31.4	15.1	45.7
Prop In Lane	1.00		1.00		1.00		0.37	1.00		0.44	1.00	
Lane Grp Cap(c), veh/h	215	881	394		281	507	501	143	570	557	214	1282
V/C Ratio(X)	0.88	1.01	0.36		0.97	0.77	0.77	0.96	0.79	0.79	0.93	0.96
Avail Cap(c_a), veh/h	246	881	394		281	507	501	143	570	557	214	1282
HCM Platoon Ratio	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	58.4	50.7	41.8		56.5	44.0	44.1	61.8	41.6	41.6	58.8	42.0
Incr Delay (d2), s/veh	27.2	33.8	0.6		44.6	6.9	7.0	61.9	10.8	11.0	43.3	16.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.6	20.5	4.4		13.6	14.2	14.1	7.6	17.0	16.7	10.0	25.3
LnGrp Delay(d),s/veh	85.6	84.5	42.4		101.0	50.9	51.1	123.7	52.4	52.7	102.1	58.8
LnGrp LOS	F	F	D		F	D	D	F	D	D	F	E
Approach Vol, veh/h	1225			1044			1030			1556		
Approach Delay, s/veh	79.8			64.0			62.0			62.0		
Approach LOS	E			E			E			E		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	21.0	48.9	26.1	39.0	15.6	54.3	21.0	44.1				
Change Period (Y+Rc), s	* 4.7	5.4	* 4.7	5.4	* 4.7	5.4	* 4.7	5.4				
Max Green Setting (Gmax), s	* 16	43.5	* 21	33.6	* 11	48.9	* 19	36.3				
Max Q Clear Time (g_c+I1), s	17.1	33.4	22.6	35.6	12.4	47.7	16.2	29.1				
Green Ext Time (p_c), s	0.0	4.0	0.0	0.0	0.0	0.9	0.1	2.7				
Intersection Summary												
HCM 2010 Ctrl Delay				66.9								
HCM 2010 LOS				E								
Notes												
User approved ignoring U-Turning movement.												

HCM 2010 Signalized Intersection Summary

3: Aviation Boulevard & Artesia Boulevard

09/06/2019

Movement	SBR
Lane Configurations	7
Traffic Volume (veh/h)	119
Future Volume (veh/h)	119
Number	16
Initial Q (Qb), veh	0
Ped-Bike Adj(A_pbT)	1.00
Parking Bus, Adj	1.00
Adj Sat Flow, veh/h/ln	1863
Adj Flow Rate, veh/h	129
Adj No. of Lanes	1
Peak Hour Factor	0.92
Percent Heavy Veh, %	2
Cap, veh/h	574
Arrive On Green	0.36
Sat Flow, veh/h	1583
Grp Volume(v), veh/h	129
Grp Sat Flow(s),veh/h/ln	1583
Q Serve(g_s), s	7.6
Cycle Q Clear(g_c), s	7.6
Prop In Lane	1.00
Lane Grp Cap(c), veh/h	574
V/C Ratio(X)	0.22
Avail Cap(c_a), veh/h	574
HCM Platoon Ratio	1.00
Upstream Filter(l)	1.00
Uniform Delay (d), s/veh	29.9
Incr Delay (d2), s/veh	0.9
Initial Q Delay(d3),s/veh	0.0
%ile BackOfQ(50%),veh/ln	3.5
LnGrp Delay(d),s/veh	30.8
LnGrp LOS	C
Approach Vol, veh/h	
Approach Delay, s/veh	
Approach LOS	
Timer	

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary

3: Aviation Boulevard & Artesia Boulevard

09/06/2019

												
Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (veh/h)	3	196	524	54	8	159	801	211	171	1166	89	99
Future Volume (veh/h)	3	196	524	54	8	159	801	211	171	1166	89	99
Number		7	4	14		3	8	18	5	2	12	1
Initial Q (Qb), veh		0	0	0		0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00		1.00		1.00		1.00	1.00		1.00	1.00
Parking Bus, Adj		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln		1863	1863	1863		1863	1863	1900	1863	1863	1900	1863
Adj Flow Rate, veh/h		213	570	59		173	871	229	186	1267	97	108
Adj No. of Lanes		1	2	1		2	2	0	1	2	0	1
Peak Hour Factor		0.92	0.92	0.92		0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %		2	2	2		2	2	2	2	2	2	2
Cap, veh/h		182	1184	530		234	832	219	85	1218	93	85
Arrive On Green		0.10	0.33	0.33		0.07	0.30	0.30	0.05	0.37	0.37	0.05
Sat Flow, veh/h		1774	3539	1583		3442	2775	729	1774	3333	255	1774
Grp Volume(v), veh/h		213	570	59		173	555	545	186	672	692	108
Grp Sat Flow(s),veh/h/ln		1774	1770	1583		1721	1770	1734	1774	1770	1818	1774
Q Serve(g_s), s		11.3	14.1	2.8		5.4	33.0	33.0	5.3	40.2	40.2	5.3
Cycle Q Clear(g_c), s		11.3	14.1	2.8		5.4	33.0	33.0	5.3	40.2	40.2	5.3
Prop In Lane		1.00		1.00		1.00		0.42	1.00		0.14	1.00
Lane Grp Cap(c), veh/h		182	1184	530		234	531	520	85	647	664	85
V/C Ratio(X)		1.17	0.48	0.11		0.74	1.05	1.05	2.18	1.04	1.04	1.26
Avail Cap(c_a), veh/h		182	1184	530		297	531	520	85	647	664	85
HCM Platoon Ratio		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh		49.3	29.0	25.3		50.3	38.5	38.5	52.3	34.9	34.9	52.3
Incr Delay (d2), s/veh		119.4	0.3	0.1		7.0	51.6	52.4	565.7	45.7	46.4	183.7
Initial Q Delay(d3),s/veh		0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln		11.6	6.9	1.2		2.8	23.7	23.3	16.0	27.8	28.7	7.0
LnGrp Delay(d),s/veh		168.8	29.3	25.4		57.3	90.1	90.9	618.0	80.6	81.3	236.1
LnGrp LOS		F	C	C		E	F	F	F	F	F	F
Approach Vol, veh/h			842				1273			1550		
Approach Delay, s/veh			64.3				86.0			145.4		
Approach LOS			E				F			F		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	10.0	45.6	12.2	42.2	10.0	45.6	16.0	38.4				
Change Period (Y+Rc), s	* 4.7	5.4	* 4.7	5.4	* 4.7	5.4	* 4.7	5.4				
Max Green Setting (Gmax), s	* 5.3	40.2	* 9.5	34.8	* 5.3	40.2	* 11	33.0				
Max Q Clear Time (g_c+I1), s	7.3	42.2	7.4	16.1	7.3	17.6	13.3	35.0				
Green Ext Time (p_c), s	0.0	0.0	0.1	3.6	0.0	5.1	0.0	0.0				
Intersection Summary												
HCM 2010 Ctrl Delay			94.4									
HCM 2010 LOS			F									
Notes												
User approved ignoring U-Turning movement.												

HCM 2010 Signalized Intersection Summary

3: Aviation Boulevard & Artesia Boulevard

09/06/2019

	↓	↘
Movement	SBT	SBR
Lane Configurations	↑↑	↑
Traffic Volume (veh/h)	594	217
Future Volume (veh/h)	594	217
Number	6	16
Initial Q (Qb), veh	0	0
Ped-Bike Adj(A_pbT)		1.00
Parking Bus, Adj	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863
Adj Flow Rate, veh/h	646	236
Adj No. of Lanes	2	1
Peak Hour Factor	0.92	0.92
Percent Heavy Veh, %	2	2
Cap, veh/h	1293	579
Arrive On Green	0.37	0.37
Sat Flow, veh/h	3539	1583
Grp Volume(v), veh/h	646	236
Grp Sat Flow(s),veh/h/ln	1770	1583
Q Serve(g_s), s	15.6	12.2
Cycle Q Clear(g_c), s	15.6	12.2
Prop In Lane		1.00
Lane Grp Cap(c), veh/h	1293	579
V/C Ratio(X)	0.50	0.41
Avail Cap(c_a), veh/h	1293	579
HCM Platoon Ratio	1.00	1.00
Upstream Filter(l)	1.00	1.00
Uniform Delay (d), s/veh	27.1	26.0
Incr Delay (d2), s/veh	1.4	2.1
Initial Q Delay(d3),s/veh	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.9	5.7
LnGrp Delay(d),s/veh	28.5	28.2
LnGrp LOS	C	C
Approach Vol, veh/h	990	
Approach Delay, s/veh	51.0	
Approach LOS	D	
Timer		

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary

3: Aviation Boulevard & Artesia Boulevard

09/06/2019

												
Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (veh/h)	2	203	816	176	9	242	573	144	138	686	139	193
Future Volume (veh/h)	2	203	816	176	9	242	573	144	138	686	139	193
Number		7	4	14		3	8	18	5	2	12	1
Initial Q (Qb), veh		0	0	0		0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00		1.00		1.00		1.00	1.00		1.00	1.00
Parking Bus, Adj		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln		1863	1863	1863		1863	1863	1900	1863	1863	1900	1863
Adj Flow Rate, veh/h		221	887	191		263	623	157	150	746	151	210
Adj No. of Lanes		1	2	1		2	2	0	1	2	0	1
Peak Hour Factor		0.92	0.92	0.92		0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %		2	2	2		2	2	2	2	2	2	2
Cap, veh/h		178	1000	447		309	762	192	131	1021	207	178
Arrive On Green		0.10	0.28	0.28		0.09	0.27	0.27	0.07	0.35	0.35	0.10
Sat Flow, veh/h		1774	3539	1583		3442	2803	705	1774	2934	594	1774
Grp Volume(v), veh/h		221	887	191		263	393	387	150	450	447	210
Grp Sat Flow(s),veh/h/ln		1774	1770	1583		1721	1770	1738	1774	1770	1758	1774
Q Serve(g_s), s		11.3	27.0	11.1		8.5	23.4	23.5	8.3	25.0	25.0	11.3
Cycle Q Clear(g_c), s		11.3	27.0	11.1		8.5	23.4	23.5	8.3	25.0	25.0	11.3
Prop In Lane		1.00		1.00		1.00		0.41	1.00		0.34	1.00
Lane Grp Cap(c), veh/h		178	1000	447		309	481	473	131	616	612	178
V/C Ratio(X)		1.24	0.89	0.43		0.85	0.82	0.82	1.15	0.73	0.73	1.18
Avail Cap(c_a), veh/h		178	1075	481		309	519	509	131	616	612	178
HCM Platoon Ratio		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh		50.7	38.7	33.0		50.5	38.4	38.4	52.2	32.1	32.1	50.7
Incr Delay (d2), s/veh		147.1	8.7	0.6		19.9	9.3	9.6	123.7	7.5	7.5	124.1
Initial Q Delay(d3),s/veh		0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln		12.8	14.4	4.9		4.9	12.7	12.5	8.5	13.5	13.4	11.6
LnGrp Delay(d),s/veh		197.8	47.4	33.6		70.4	47.7	48.0	175.9	39.6	39.6	174.8
LnGrp LOS		F	D	C		E	D	D	F	D	D	F
Approach Vol, veh/h			1299				1043			1047		
Approach Delay, s/veh			71.0				53.5			59.1		
Approach LOS			E				D			E		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	16.0	44.6	14.8	37.2	13.0	47.6	16.0	36.0				
Change Period (Y+Rc), s	* 4.7	5.4	* 4.7	5.4	* 4.7	5.4	* 4.7	5.4				
Max Green Setting (Gmax), s	* 11	39.2	* 10	34.2	* 8.3	42.2	* 11	33.0				
Max Q Clear Time (g_c+I1), s	13.3	27.0	10.5	29.0	10.3	34.0	13.3	25.5				
Green Ext Time (p_c), s	0.0	4.5	0.0	2.8	0.0	4.6	0.0	2.8				
Intersection Summary												
HCM 2010 Ctrl Delay			60.6									
HCM 2010 LOS			E									
Notes												
User approved ignoring U-Turning movement.												

HCM 2010 Signalized Intersection Summary

3: Aviation Boulevard & Artesia Boulevard

09/06/2019

	↓	↘
Movement	SBT	SBR
Lane Configurations	↑↑	↑
Traffic Volume (veh/h)	1017	97
Future Volume (veh/h)	1017	97
Number	6	16
Initial Q (Qb), veh	0	0
Ped-Bike Adj(A_pbT)		1.00
Parking Bus, Adj	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863
Adj Flow Rate, veh/h	1105	105
Adj No. of Lanes	2	1
Peak Hour Factor	0.92	0.92
Percent Heavy Veh, %	2	2
Cap, veh/h	1326	593
Arrive On Green	0.37	0.37
Sat Flow, veh/h	3539	1583
Grp Volume(v), veh/h	1105	105
Grp Sat Flow(s),veh/h/ln	1770	1583
Q Serve(g_s), s	32.0	5.0
Cycle Q Clear(g_c), s	32.0	5.0
Prop In Lane		1.00
Lane Grp Cap(c), veh/h	1326	593
V/C Ratio(X)	0.83	0.18
Avail Cap(c_a), veh/h	1326	593
HCM Platoon Ratio	1.00	1.00
Upstream Filter(I)	1.00	1.00
Uniform Delay (d), s/veh	32.0	23.6
Incr Delay (d2), s/veh	6.3	0.7
Initial Q Delay(d3),s/veh	0.0	0.0
%ile BackOfQ(50%),veh/ln	16.8	2.3
LnGrp Delay(d),s/veh	38.3	24.2
LnGrp LOS	D	C
Approach Vol, veh/h	1420	
Approach Delay, s/veh	57.4	
Approach LOS	E	
Timer		

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary

3: Aviation Boulevard & Artesia Boulevard

09/06/2019

												
Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (veh/h)	5	187	520	64	8	153	849	194	159	1107	92	138
Future Volume (veh/h)	5	187	520	64	8	153	849	194	159	1107	92	138
Number		7	4	14		3	8	18	5	2	12	1
Initial Q (Qb), veh		0	0	0		0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00		1.00		1.00		1.00	1.00		1.00	1.00
Parking Bus, Adj		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln		1863	1863	1863		1863	1863	1900	1863	1863	1900	1863
Adj Flow Rate, veh/h		203	565	70		166	923	211	173	1203	100	150
Adj No. of Lanes		1	2	1		2	2	0	1	2	0	1
Peak Hour Factor		0.92	0.92	0.92		0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %		2	2	2		2	2	2	2	2	2	2
Cap, veh/h		106	1099	492		220	900	205	90	1267	105	90
Arrive On Green		0.06	0.31	0.31		0.06	0.31	0.31	0.05	0.38	0.38	0.05
Sat Flow, veh/h		1774	3539	1583		3442	2863	654	1774	3309	275	1774
Grp Volume(v), veh/h		203	565	70		166	570	564	173	642	661	150
Grp Sat Flow(s),veh/h/ln		1774	1770	1583		1721	1770	1747	1774	1770	1814	1774
Q Serve(g_s), s		6.3	13.8	3.3		5.0	33.0	33.0	5.3	36.9	37.1	5.3
Cycle Q Clear(g_c), s		6.3	13.8	3.3		5.0	33.0	33.0	5.3	36.9	37.1	5.3
Prop In Lane		1.00		1.00		1.00		0.37	1.00		0.15	1.00
Lane Grp Cap(c), veh/h		106	1099	492		220	556	549	90	678	695	90
V/C Ratio(X)		1.91	0.51	0.14		0.76	1.03	1.03	1.93	0.95	0.95	1.68
Avail Cap(c_a), veh/h		106	1099	492		220	556	549	90	678	695	90
HCM Platoon Ratio		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh		49.3	29.7	26.1		48.3	36.0	36.0	49.8	31.4	31.4	49.8
Incr Delay (d2), s/veh		441.1	0.4	0.1		13.9	44.7	45.4	457.6	24.0	24.1	347.4
Initial Q Delay(d3),s/veh		0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln		16.1	6.7	1.5		2.8	23.0	22.8	14.0	22.5	23.2	11.2
LnGrp Delay(d),s/veh		490.5	30.1	26.2		62.3	80.7	81.4	507.4	55.4	55.5	397.3
LnGrp LOS		F	C	C		E	F	F	F	E	E	F
Approach Vol, veh/h			838				1300			1476		
Approach Delay, s/veh			141.3				78.6			108.4		
Approach LOS			F				E			F		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	10.0	45.6	11.4	38.0	10.0	45.6	11.0	38.4				
Change Period (Y+Rc), s	* 4.7	5.4	* 4.7	5.4	* 4.7	5.4	* 4.7	5.4				
Max Green Setting (Gmax), s	* 5.3	40.2	* 6.7	32.6	* 5.3	40.2	* 6.3	33.0				
Max Q Clear Time (g_c+l1), s	7.3	39.1	7.0	15.8	7.3	14.9	8.3	35.0				
Green Ext Time (p_c), s	0.0	0.8	0.0	3.5	0.0	4.6	0.0	0.0				
Intersection Summary												
HCM 2010 Ctrl Delay			100.9									
HCM 2010 LOS			F									
Notes												
User approved ignoring U-Turning movement.												

HCM 2010 Signalized Intersection Summary

3: Aviation Boulevard & Artesia Boulevard

09/06/2019

	↓	↘
Movement	SBT	SBR
Lane Configurations	↑↑	↑
Traffic Volume (veh/h)	540	192
Future Volume (veh/h)	540	192
Number	6	16
Initial Q (Qb), veh	0	0
Ped-Bike Adj(A_pbT)		1.00
Parking Bus, Adj	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863
Adj Flow Rate, veh/h	587	209
Adj No. of Lanes	2	1
Peak Hour Factor	0.92	0.92
Percent Heavy Veh, %	2	2
Cap, veh/h	1355	606
Arrive On Green	0.38	0.38
Sat Flow, veh/h	3539	1583
Grp Volume(v), veh/h	587	209
Grp Sat Flow(s),veh/h/ln	1770	1583
Q Serve(g_s), s	12.9	9.9
Cycle Q Clear(g_c), s	12.9	9.9
Prop In Lane		1.00
Lane Grp Cap(c), veh/h	1355	606
V/C Ratio(X)	0.43	0.34
Avail Cap(c_a), veh/h	1355	606
HCM Platoon Ratio	1.00	1.00
Upstream Filter(l)	1.00	1.00
Uniform Delay (d), s/veh	24.0	23.0
Incr Delay (d2), s/veh	1.0	1.6
Initial Q Delay(d3),s/veh	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.5	4.5
LnGrp Delay(d),s/veh	25.0	24.6
LnGrp LOS	C	C
Approach Vol, veh/h	946	
Approach Delay, s/veh	83.9	
Approach LOS	F	
Timer		

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary

3: Aviation Boulevard & Artesia Boulevard

09/06/2019

												
Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (veh/h)	175	822	131	9	250	580	131	126	642	179	184	1129
Future Volume (veh/h)	175	822	131	9	250	580	131	126	642	179	184	1129
Number	7	4	14		3	8	18	5	2	12	1	6
Initial Q (Qb), veh	0	0	0		0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00		1.00		1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863		1863	1863	1900	1863	1863	1900	1863	1863
Adj Flow Rate, veh/h	190	893	142		272	630	142	137	698	195	200	1227
Adj No. of Lanes	1	2	1		2	2	0	1	2	0	1	2
Peak Hour Factor	0.92	0.92	0.92		0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2		2	2	2	2	2	2	2	2
Cap, veh/h	177	988	442		329	790	178	143	948	265	177	1296
Arrive On Green	0.10	0.28	0.28		0.10	0.27	0.27	0.08	0.35	0.35	0.10	0.37
Sat Flow, veh/h	1774	3539	1583		3442	2872	646	1774	2734	764	1774	3539
Grp Volume(v), veh/h	190	893	142		272	388	384	137	452	441	200	1227
Grp Sat Flow(s),veh/h/ln	1774	1770	1583		1721	1770	1749	1774	1770	1728	1774	1770
Q Serve(g_s), s	11.3	27.5	8.0		8.8	23.0	23.1	8.7	25.3	25.3	11.3	38.0
Cycle Q Clear(g_c), s	11.3	27.5	8.0		8.8	23.0	23.1	8.7	25.3	25.3	11.3	38.0
Prop In Lane	1.00		1.00		1.00		0.37	1.00		0.44	1.00	
Lane Grp Cap(c), veh/h	177	988	442		329	486	481	143	613	599	177	1296
V/C Ratio(X)	1.07	0.90	0.32		0.83	0.80	0.80	0.96	0.74	0.74	1.13	0.95
Avail Cap(c_a), veh/h	177	1039	465		338	516	510	143	613	599	177	1296
HCM Platoon Ratio	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.9	39.3	32.3		50.2	38.1	38.1	51.8	32.4	32.4	50.9	34.8
Incr Delay (d2), s/veh	88.0	10.7	0.4		15.2	8.1	8.4	62.9	7.7	7.9	106.2	15.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.8	14.9	3.5		4.8	12.3	12.2	6.8	13.6	13.3	10.7	21.3
LnGrp Delay(d),s/veh	138.9	50.0	32.7		65.4	46.2	46.5	114.7	40.1	40.3	157.1	50.0
LnGrp LOS	F	D	C		E	D	D	F	D	D	F	D
Approach Vol, veh/h	1225			1044			1030			1556		
Approach Delay, s/veh	61.8			51.3			50.1			61.7		
Approach LOS	E			D			D			E		
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	16.0	44.6	15.5	37.0	13.8	46.8	16.0	36.5				
Change Period (Y+Rc), s	* 4.7	5.4	* 4.7	5.4	* 4.7	5.4	* 4.7	5.4				
Max Green Setting (Gmax), s	* 11	39.2	* 11	33.2	* 9.1	41.4	* 11	33.0				
Max Q Clear Time (g_c+I1), s	13.3	27.3	10.8	29.5	10.7	40.0	13.3	25.1				
Green Ext Time (p_c), s	0.0	4.4	0.0	2.1	0.0	1.0	0.0	2.9				
Intersection Summary												
HCM 2010 Ctrl Delay			57.0									
HCM 2010 LOS			E									
Notes												
User approved ignoring U-Turning movement.												

HCM 2010 Signalized Intersection Summary

3: Aviation Boulevard & Artesia Boulevard

09/06/2019

Movement	SBR
Lane Configurations	
Traffic Volume (veh/h)	119
Future Volume (veh/h)	119
Number	16
Initial Q (Qb), veh	0
Ped-Bike Adj(A_pbT)	1.00
Parking Bus, Adj	1.00
Adj Sat Flow, veh/h/ln	1863
Adj Flow Rate, veh/h	129
Adj No. of Lanes	1
Peak Hour Factor	0.92
Percent Heavy Veh, %	2
Cap, veh/h	580
Arrive On Green	0.37
Sat Flow, veh/h	1583
Grp Volume(v), veh/h	129
Grp Sat Flow(s),veh/h/ln	1583
Q Serve(g_s), s	6.4
Cycle Q Clear(g_c), s	6.4
Prop In Lane	1.00
Lane Grp Cap(c), veh/h	580
V/C Ratio(X)	0.22
Avail Cap(c_a), veh/h	580
HCM Platoon Ratio	1.00
Upstream Filter(l)	1.00
Uniform Delay (d), s/veh	24.7
Incr Delay (d2), s/veh	0.9
Initial Q Delay(d3),s/veh	0.0
%ile BackOfQ(50%),veh/ln	2.9
LnGrp Delay(d),s/veh	25.6
LnGrp LOS	C
Approach Vol, veh/h	
Approach Delay, s/veh	
Approach LOS	
Timer	

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary

3: Aviation Boulevard & Artesia Boulevard

09/06/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	140	1080	200	320	740	240	170	1350	190	50	700	80
Future Volume (veh/h)	140	1080	200	320	740	240	170	1350	190	50	700	80
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	140	1080	200	320	740	240	170	1350	190	50	700	80
Adj No. of Lanes	1	2	1	1	2	0	1	2	1	1	2	0
Peak Hour 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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	163	1015	454	310	972	315	193	1291	578	61	930	106
Arrive On Green	0.09	0.29	0.29	0.17	0.37	0.37	0.11	0.36	0.36	0.03	0.29	0.29
Sat Flow, veh/h	1774	3539	1583	1774	2629	853	1774	3539	1583	1774	3202	366
Grp Volume(v), veh/h	140	1080	200	320	498	482	170	1350	190	50	387	393
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1712	1774	1770	1583	1774	1770	1798
Q Serve(g_s), s	11.3	41.6	14.9	25.3	35.8	35.8	13.7	52.9	12.6	4.1	28.8	28.8
Cycle Q Clear(g_c), s	11.3	41.6	14.9	25.3	35.8	35.8	13.7	52.9	12.6	4.1	28.8	28.8
Prop In Lane	1.00		1.00	1.00		0.50	1.00		1.00	1.00		0.20
Lane Grp Cap(c), veh/h	163	1015	454	310	654	633	193	1291	578	61	514	522
V/C Ratio(X)	0.86	1.06	0.44	1.03	0.76	0.76	0.88	1.05	0.33	0.82	0.75	0.75
Avail Cap(c_a), veh/h	192	1015	454	310	654	633	219	1291	578	61	514	522
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	64.9	51.7	42.2	59.8	40.1	40.1	63.7	46.0	33.2	69.5	46.7	46.7
Incr Delay (d2), s/veh	27.2	46.8	0.7	60.2	5.2	5.4	29.1	37.8	1.5	55.9	9.8	9.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.8	26.9	6.6	17.6	18.4	17.8	8.3	32.6	5.7	3.0	15.5	15.7
LnGrp Delay(d),s/veh	92.2	98.5	42.9	120.0	45.3	45.5	92.8	83.9	34.8	125.5	56.5	56.4
LnGrp LOS	F	F	D	F	D	D	F	F	C	F	E	E
Approach Vol, veh/h	1420				1300				1710			
Approach Delay, s/veh	90.0				63.8				79.3			
Approach LOS	F				E				E			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.7	58.3	30.0	47.0	20.5	47.5	18.0	59.0				
Change Period (Y+Rc), s	* 4.7	5.4	* 4.7	5.4	* 4.7	5.4	* 4.7	5.4				
Max Green Setting (Gmax), s	* 5	52.9	* 25	41.6	* 18	40.0	* 16	51.2				
Max Q Clear Time (g_c+I1), s	6.1	54.9	27.3	43.6	15.7	30.8	13.3	37.8				
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.1	3.1	0.1	5.2				
Intersection Summary												
HCM 2010 Ctrl Delay	75.4											
HCM 2010 LOS	E											
Notes												
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.												

HCM 2010 Signalized Intersection Summary

3: Aviation Boulevard & Artesia Boulevard

09/06/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	140	1050	200	530	930	190	180	900	270	190	1070	180
Future Volume (veh/h)	140	1050	200	530	930	190	180	900	270	190	1070	180
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	140	1050	200	530	930	190	180	900	270	190	1070	180
Adj No. of Lanes	1	2	1	1	2	0	1	2	1	1	2	0
Peak Hour 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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	159	893	400	358	1069	218	138	1040	465	199	996	167
Arrive On Green	0.09	0.25	0.25	0.20	0.36	0.36	0.08	0.29	0.29	0.11	0.33	0.33
Sat Flow, veh/h	1774	3539	1583	1774	2929	598	1774	3539	1583	1774	3033	509
Grp Volume(v), veh/h	140	1050	200	530	562	558	180	900	270	190	623	627
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1757	1774	1770	1583	1774	1770	1773
Q Serve(g_s), s	11.3	36.6	15.7	29.3	42.8	42.9	11.3	34.9	21.1	15.4	47.6	47.6
Cycle Q Clear(g_c), s	11.3	36.6	15.7	29.3	42.8	42.9	11.3	34.9	21.1	15.4	47.6	47.6
Prop In Lane	1.00		1.00	1.00		0.34	1.00		1.00	1.00		0.29
Lane Grp Cap(c), veh/h	159	893	400	358	646	641	138	1040	465	199	581	582
V/C Ratio(X)	0.88	1.18	0.50	1.48	0.87	0.87	1.30	0.87	0.58	0.95	1.07	1.08
Avail Cap(c_a), veh/h	159	893	400	358	646	641	138	1040	465	199	581	582
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	65.2	54.2	46.4	57.8	42.8	42.9	66.9	48.5	43.6	64.0	48.7	48.7
Incr Delay (d2), s/veh	39.1	90.7	1.0	229.8	12.3	12.5	178.6	9.6	5.2	50.2	58.4	59.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.3	29.1	7.0	37.2	23.1	23.0	12.4	18.4	9.9	10.4	32.7	32.9
LnGrp Delay(d),s/veh	104.4	144.9	47.4	287.7	55.1	55.3	245.4	58.1	48.8	114.1	107.1	108.4
LnGrp LOS	F	F	D	F	E	E	F	E	D	F	F	F
Approach Vol, veh/h	1390				1650				1350			
Approach Delay, s/veh	126.8				129.9				81.2			
Approach LOS	F				F				F			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	21.0	48.0	34.0	42.0	16.0	53.0	17.7	58.3				
Change Period (Y+Rc), s	* 4.7	5.4	* 4.7	5.4	* 4.7	5.4	* 4.7	5.4				
Max Green Setting (Gmax), s	* 16	42.6	* 29	36.6	* 11	47.6	* 13	52.9				
Max Q Clear Time (g_c+I1), s	17.4	36.9	31.3	38.6	13.3	49.6	13.3	44.9				
Green Ext Time (p_c), s	0.0	3.2	0.0	0.0	0.0	0.0	0.0	4.3				
Intersection Summary												
HCM 2010 Ctrl Delay			112.6									
HCM 2010 LOS			F									
Notes												
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.												

HCM 2010 Signalized Intersection Summary

3: Aviation Boulevard & Artesia Boulevard

09/06/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	140	1080	200	320	740	240	170	1350	190	50	700	80
Future Volume (veh/h)	140	1080	200	320	740	240	170	1350	190	50	700	80
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	140	1080	200	320	740	240	170	1350	190	50	700	80
Adj No. of Lanes	1	2	1	2	2	0	1	2	0	1	2	0
Peak Hour 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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	159	1065	476	330	807	262	195	1335	186	64	1134	130
Arrive On Green	0.09	0.30	0.30	0.10	0.31	0.31	0.11	0.43	0.43	0.04	0.35	0.35
Sat Flow, veh/h	1774	3539	1583	3442	2629	853	1774	3120	436	1774	3202	366
Grp Volume(v), veh/h	140	1080	200	320	498	482	170	761	779	50	387	393
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1721	1770	1712	1774	1770	1786	1774	1770	1798
Q Serve(g_s), s	11.3	43.6	14.7	13.4	39.3	39.3	13.7	62.0	62.0	4.1	26.2	26.2
Cycle Q Clear(g_c), s	11.3	43.6	14.7	13.4	39.3	39.3	13.7	62.0	62.0	4.1	26.2	26.2
Prop In Lane	1.00		1.00	1.00		0.50	1.00		0.24	1.00		0.20
Lane Grp Cap(c), veh/h	159	1065	476	330	543	526	195	757	764	64	627	637
V/C Ratio(X)	0.88	1.01	0.42	0.97	0.92	0.92	0.87	1.01	1.02	0.78	0.62	0.62
Avail Cap(c_a), veh/h	159	1065	476	330	543	526	283	757	764	65	627	637
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	65.2	50.7	40.6	65.3	48.4	48.4	63.5	41.5	41.5	69.3	38.7	38.7
Incr Delay (d2), s/veh	39.0	31.2	0.6	41.2	20.5	21.0	18.1	34.0	37.6	43.9	4.5	4.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.3	25.9	6.5	8.3	22.3	21.7	7.7	37.4	38.5	2.8	13.6	13.8
LnGrp Delay(d),s/veh	104.2	81.9	41.1	106.5	68.9	69.4	81.7	75.5	79.1	113.2	43.2	43.1
LnGrp LOS	F	F	D	F	E	E	F	F	F	F	D	D
Approach Vol, veh/h	1420				1300				1710			
Approach Delay, s/veh	78.4				78.4				77.8			
Approach LOS	E				E				E			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.9	67.4	18.6	49.0	20.6	56.7	17.7	49.9				
Change Period (Y+Rc), s	* 4.7	5.4	* 4.7	5.4	* 4.7	5.4	* 4.7	5.4				
Max Green Setting (Gmax), s	* 5.3	62.0	* 14	43.6	* 23	44.2	* 13	44.5				
Max Q Clear Time (g_c+l1), s	6.1	64.0	15.4	45.6	15.7	28.2	13.3	41.3				
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.2	4.2	0.0	1.8				
Intersection Summary												
HCM 2010 Ctrl Delay			73.3									
HCM 2010 LOS			E									
Notes												
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.												

HCM 2010 Signalized Intersection Summary

3: Aviation Boulevard & Artesia Boulevard

09/06/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	140	1050	200	530	930	190	180	900	270	190	1070	180
Future Volume (veh/h)	140	1050	200	530	930	190	180	900	270	190	1070	180
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	140	1050	200	530	930	190	180	900	270	190	1070	180
Adj No. of Lanes	1	2	1	2	2	0	1	2	0	1	2	0
Peak Hour 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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	159	981	439	506	980	200	176	893	267	185	1023	172
Arrive On Green	0.09	0.28	0.28	0.15	0.33	0.33	0.10	0.33	0.33	0.10	0.34	0.34
Sat Flow, veh/h	1774	3539	1583	3442	2929	598	1774	2686	804	1774	3033	509
Grp Volume(v), veh/h	140	1050	200	530	562	558	180	592	578	190	623	627
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1721	1770	1757	1774	1770	1721	1774	1770	1773
Q Serve(g_s), s	11.3	40.2	15.2	21.3	44.9	44.9	14.4	48.2	48.2	15.1	48.9	48.9
Cycle Q Clear(g_c), s	11.3	40.2	15.2	21.3	44.9	44.9	14.4	48.2	48.2	15.1	48.9	48.9
Prop In Lane	1.00		1.00	1.00		0.34	1.00		0.47	1.00		0.29
Lane Grp Cap(c), veh/h	159	981	439	506	592	588	176	588	572	185	597	598
V/C Ratio(X)	0.88	1.07	0.46	1.05	0.95	0.95	1.02	1.01	1.01	1.03	1.04	1.05
Avail Cap(c_a), veh/h	159	981	439	506	592	588	176	588	572	185	597	598
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	65.2	52.4	43.3	61.9	47.0	47.1	65.3	48.4	48.4	64.9	48.0	48.1
Incr Delay (d2), s/veh	39.1	49.4	0.7	53.3	24.9	25.3	73.6	38.8	40.1	73.9	48.9	50.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.2	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.3	26.4	6.7	13.9	25.9	25.8	10.6	29.9	29.3	11.2	32.0	32.2
LnGrp Delay(d),s/veh	104.4	101.8	44.1	115.1	71.9	72.3	139.1	87.2	88.6	139.0	96.9	98.2
LnGrp LOS	F	F	D	F	E	E	F	F	F	F	F	F
Approach Vol, veh/h	1390				1650				1350		1440	
Approach Delay, s/veh	93.8				85.9				94.7		103.0	
Approach LOS	F				F				F		F	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	19.8	53.6	26.0	45.6	19.1	54.3	17.7	53.9				
Change Period (Y+Rc), s	* 4.7	5.4	* 4.7	5.4	* 4.7	5.4	* 4.7	5.4				
Max Green Setting (Gmax), s	* 15	48.2	* 21	40.2	* 14	48.9	* 13	48.5				
Max Q Clear Time (g_c+l1), s	17.1	50.2	23.3	42.2	16.4	50.9	13.3	46.9				
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0				
Intersection Summary												
HCM 2010 Ctrl Delay			94.1									
HCM 2010 LOS			F									
Notes												
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.												

HCM 2010 Signalized Intersection Summary

3: Aviation Boulevard & Artesia Boulevard

09/06/2019

																
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR				
Lane Configurations																
Traffic Volume (veh/h)	140	1080	200	320	740	240	170	1350	190	50	700	80				
Future Volume (veh/h)	140	1080	200	320	740	240	170	1350	190	50	700	80				
Number	7	4	14	3	8	18	5	2	12	1	6	16				
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0				
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00				
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1863	1863				
Adj Flow Rate, veh/h	140	1080	200	320	740	240	170	1350	190	50	700	80				
Adj No. of Lanes	1	2	1	1	2	0	1	2	0	1	2	1				
Peak Hour 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				
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2				
Cap, veh/h	163	967	432	273	881	286	193	1246	174	61	1150	515				
Arrive On Green	0.09	0.27	0.27	0.15	0.34	0.34	0.11	0.40	0.40	0.03	0.33	0.33				
Sat Flow, veh/h	1774	3539	1583	1774	2629	853	1774	3120	436	1774	3539	1583				
Grp Volume(v), veh/h	140	1080	200	320	498	482	170	761	779	50	700	80				
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1712	1774	1770	1786	1774	1770	1583				
Q Serve(g_s), s	11.3	39.6	15.2	22.3	37.8	37.8	13.7	57.9	57.9	4.1	24.1	5.2				
Cycle Q Clear(g_c), s	11.3	39.6	15.2	22.3	37.8	37.8	13.7	57.9	57.9	4.1	24.1	5.2				
Prop In Lane	1.00		1.00	1.00		0.50	1.00		0.24	1.00		1.00				
Lane Grp Cap(c), veh/h	163	967	432	273	593	574	193	707	713	61	1150	515				
V/C Ratio(X)	0.86	1.12	0.46	1.17	0.84	0.84	0.88	1.08	1.09	0.82	0.61	0.16				
Avail Cap(c_a), veh/h	184	967	432	273	593	574	219	707	713	61	1150	515				
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Uniform Delay (d), s/veh	64.9	52.7	43.8	61.4	44.6	44.6	63.7	43.5	43.6	69.5	41.2	34.8				
Incr Delay (d2), s/veh	29.3	66.8	0.8	109.6	10.4	10.7	29.1	56.5	61.7	55.9	2.4	0.6				
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				
%ile BackOfQ(50%),veh/ln	6.9	28.3	6.8	19.2	20.1	19.5	8.3	39.4	40.7	3.0	12.1	2.4				
LnGrp Delay(d),s/veh	94.3	119.5	44.6	170.9	55.0	55.3	92.8	100.1	105.2	125.5	43.6	35.4				
LnGrp LOS	F	F	D	F	D	E	F	F	F	F	D	D				
Approach Vol, veh/h	1420				1300				1710							
Approach Delay, s/veh	106.5				83.6				101.7							
Approach LOS	F				F				F							
Timer	1	2	3	4	5	6	7	8								
Assigned Phs	1	2	3	4	5	6	7	8								
Phs Duration (G+Y+Rc), s	9.7	63.3	27.0	45.0	20.5	52.5	18.0	54.0								
Change Period (Y+Rc), s	* 4.7	5.4	* 4.7	5.4	* 4.7	5.4	* 4.7	5.4								
Max Green Setting (Gmax), s	* 5	57.9	* 22	39.6	* 18	45.0	* 15	46.9								
Max Q Clear Time (g_c+I1), s	6.1	59.9	24.3	41.6	15.7	26.1	13.3	39.8								
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.1	4.6	0.1	3.5								
Intersection Summary																
HCM 2010 Ctrl Delay	90.0															
HCM 2010 LOS	F															
Notes																
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.																

HCM 2010 Signalized Intersection Summary

3: Aviation Boulevard & Artesia Boulevard

09/06/2019

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	140	1050	200	530	930	190	180	900	270	190	1070	180
Future Volume (veh/h)	140	1050	200	530	930	190	180	900	270	190	1070	180
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	140	1050	200	530	930	190	180	900	270	190	1070	180
Adj No. of Lanes	1	2	1	1	2	0	1	2	0	1	2	1
Peak Hour 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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	159	893	400	371	1089	222	138	845	253	150	1137	509
Arrive On Green	0.09	0.25	0.25	0.21	0.37	0.37	0.08	0.31	0.31	0.08	0.32	0.32
Sat Flow, veh/h	1774	3539	1583	1774	2929	598	1774	2686	804	1774	3539	1583
Grp Volume(v), veh/h	140	1050	200	530	562	558	180	592	578	190	1070	180
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1757	1774	1770	1721	1774	1770	1583
Q Serve(g_s), s	11.3	36.6	15.7	30.3	42.4	42.4	11.3	45.6	45.6	12.3	42.6	12.6
Cycle Q Clear(g_c), s	11.3	36.6	15.7	30.3	42.4	42.4	11.3	45.6	45.6	12.3	42.6	12.6
Prop In Lane	1.00		1.00	1.00		0.34	1.00		0.47	1.00		1.00
Lane Grp Cap(c), veh/h	159	893	400	371	658	653	138	557	541	150	1137	509
V/C Ratio(X)	0.88	1.18	0.50	1.43	0.85	0.85	1.30	1.06	1.07	1.26	0.94	0.35
Avail Cap(c_a), veh/h	159	893	400	371	658	653	138	557	541	150	1137	509
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	65.2	54.2	46.4	57.3	41.9	41.9	66.9	49.7	49.7	66.4	47.9	37.7
Incr Delay (d2), s/veh	39.1	90.7	1.0	208.3	10.6	10.8	178.6	56.4	58.0	160.5	15.8	1.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.3	29.1	7.0	36.3	22.5	22.6	12.4	31.0	30.4	12.7	23.3	5.8
LnGrp Delay(d),s/veh	104.4	144.9	47.4	265.7	52.5	52.7	245.4	106.1	107.7	226.8	63.6	39.6
LnGrp LOS	F	F	D	F	D	D	F	F	F	F	E	D
Approach Vol, veh/h	1390				1650				1350			
Approach Delay, s/veh	126.8				121.1				125.3			
Approach LOS	F				F				F			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	17.0	51.0	35.0	42.0	16.0	52.0	17.7	59.3				
Change Period (Y+Rc), s	* 4.7	5.4	* 4.7	5.4	* 4.7	5.4	* 4.7	5.4				
Max Green Setting (Gmax), s	* 12	45.6	* 30	36.6	* 11	46.6	* 13	53.9				
Max Q Clear Time (g_c+l1), s	14.3	47.6	32.3	38.6	13.3	44.6	13.3	44.4				
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	1.4	0.0	4.8				
Intersection Summary												
HCM 2010 Ctrl Delay	113.8											
HCM 2010 LOS	F											
Notes												
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.												

HCM 2010 Signalized Intersection Summary

3: Aviation Boulevard & Artesia Boulevard

01/05/2021

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	140	1080	200	320	740	240	170	1350	190	50	700	80
Future Volume (veh/h)	140	1080	200	320	740	240	170	1350	190	50	700	80
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	140	1080	200	320	740	240	170	1350	190	50	700	80
Adj No. of Lanes	1	2	1	2	2	0	1	2	0	1	2	1
Peak Hour 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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	159	1060	474	354	822	267	195	1317	184	64	1234	552
Arrive On Green	0.09	0.30	0.30	0.10	0.31	0.31	0.11	0.42	0.42	0.04	0.35	0.35
Sat Flow, veh/h	1774	3539	1583	3442	2629	853	1774	3120	436	1774	3539	1583
Grp Volume(v), veh/h	140	1080	200	320	498	482	170	761	779	50	700	80
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1721	1770	1712	1774	1770	1786	1774	1770	1583
Q Serve(g_s), s	11.3	43.4	14.7	13.3	39.0	39.0	13.7	61.2	61.2	4.1	23.3	5.0
Cycle Q Clear(g_c), s	11.3	43.4	14.7	13.3	39.0	39.0	13.7	61.2	61.2	4.1	23.3	5.0
Prop In Lane	1.00		1.00	1.00		0.50	1.00		0.24	1.00		1.00
Lane Grp Cap(c), veh/h	159	1060	474	354	553	535	195	747	754	64	1234	552
V/C Ratio(X)	0.88	1.02	0.42	0.90	0.90	0.90	0.87	1.02	1.03	0.78	0.57	0.14
Avail Cap(c_a), veh/h	159	1060	474	354	553	535	283	747	754	65	1234	552
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	65.2	50.8	40.7	64.3	47.7	47.7	63.5	41.9	41.9	69.3	38.3	32.4
Incr Delay (d2), s/veh	39.0	32.5	0.6	25.7	17.8	18.3	18.1	37.7	41.6	43.9	1.9	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.3	26.0	6.5	7.6	21.8	21.2	7.7	37.7	38.9	2.8	11.7	2.3
LnGrp Delay(d),s/veh	104.2	83.3	41.3	90.0	65.5	65.9	81.7	79.5	83.4	113.2	40.2	32.9
LnGrp LOS	F	F	D	F	E	E	F	F	F	F	D	C
Approach Vol, veh/h	1420				1300				1710			
Approach Delay, s/veh	79.5				71.7				81.5			
Approach LOS	E				E				F			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.9	66.6	19.6	48.8	20.6	55.9	17.7	50.7				
Change Period (Y+Rc), s	* 4.7	5.4	* 4.7	5.4	* 4.7	5.4	* 4.7	5.4				
Max Green Setting (Gmax), s	* 5.3	61.2	* 15	43.4	* 23	43.4	* 13	45.3				
Max Q Clear Time (g_c+I1), s	6.1	63.2	15.3	45.4	15.7	25.3	13.3	41.0				
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.2	4.5	0.0	2.3				
Intersection Summary												
HCM 2010 Ctrl Delay	72.6											
HCM 2010 LOS	E											
Notes												

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

HCM 2010 Signalized Intersection Summary

3: Aviation Boulevard & Artesia Boulevard

09/06/2019

																
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR				
Lane Configurations																
Traffic Volume (veh/h)	140	1050	200	530	930	190	180	900	270	190	1070	180				
Future Volume (veh/h)	140	1050	200	530	930	190	180	900	270	190	1070	180				
Number	7	4	14	3	8	18	5	2	12	1	6	16				
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0				
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00				
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1863	1863				
Adj Flow Rate, veh/h	140	1050	200	530	930	190	180	900	270	190	1070	180				
Adj No. of Lanes	1	2	1	2	2	0	1	2	0	1	2	1				
Peak Hour 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				
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2				
Cap, veh/h	159	981	439	539	1008	206	185	867	260	185	1142	511				
Arrive On Green	0.09	0.28	0.28	0.16	0.34	0.34	0.10	0.32	0.32	0.10	0.32	0.32				
Sat Flow, veh/h	1774	3539	1583	3442	2929	598	1774	2686	804	1774	3539	1583				
Grp Volume(v), veh/h	140	1050	200	530	562	558	180	592	578	190	1070	180				
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1721	1770	1757	1774	1770	1721	1774	1770	1583				
Q Serve(g_s), s	11.3	40.2	15.2	22.3	44.2	44.3	14.7	46.8	46.8	15.1	42.6	12.6				
Cycle Q Clear(g_c), s	11.3	40.2	15.2	22.3	44.2	44.3	14.7	46.8	46.8	15.1	42.6	12.6				
Prop In Lane	1.00		1.00	1.00		0.34	1.00		0.47	1.00		1.00				
Lane Grp Cap(c), veh/h	159	981	439	539	609	605	185	571	555	185	1142	511				
V/C Ratio(X)	0.88	1.07	0.46	0.98	0.92	0.92	0.97	1.04	1.04	1.03	0.94	0.35				
Avail Cap(c_a), veh/h	159	981	439	539	609	605	185	571	555	185	1142	511				
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Uniform Delay (d), s/veh	65.2	52.4	43.3	61.0	45.7	45.7	64.8	49.1	49.1	64.9	47.7	37.5				
Incr Delay (d2), s/veh	39.1	49.4	0.7	34.5	19.7	20.0	58.5	47.6	49.0	73.9	15.2	1.9				
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0				
%ile BackOfQ(50%),veh/ln	7.3	26.4	6.7	13.2	24.9	24.8	10.2	30.4	29.8	11.2	23.2	5.8				
LnGrp Delay(d),s/veh	104.4	101.8	44.1	95.4	65.4	65.7	123.3	96.7	98.1	139.0	62.9	39.4				
LnGrp LOS	F	F	D	F	E	E	F	F	F	F	E	D				
Approach Vol, veh/h	1390				1650				1350							
Approach Delay, s/veh	93.8				75.1				100.8							
Approach LOS	F				E				F							
Timer	1	2	3	4	5	6	7	8								
Assigned Phs	1	2	3	4	5	6	7	8								
Phs Duration (G+Y+Rc), s	19.8	52.2	27.4	45.6	19.8	52.2	17.7	55.3								
Change Period (Y+Rc), s	* 4.7	5.4	* 4.7	5.4	* 4.7	5.4	* 4.7	5.4								
Max Green Setting (Gmax), s	* 15	46.8	* 23	40.2	* 15	46.8	* 13	49.9								
Max Q Clear Time (g_c+I1), s	17.1	48.8	24.3	42.2	16.7	44.6	13.3	46.3								
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	1.5	0.0	2.2								
Intersection Summary																
HCM 2010 Ctrl Delay	84.3															
HCM 2010 LOS	F															
Notes																
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.																

ATTACHMENT 4

TIMING PRINTOUTS

WESTBOUND DUAL LEFT TURN LANES

Timings

3: Aviation Boulevard & Artesia Boulevard

09/06/2019

												
Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	3	196	524	54	8	159	801	171	1166	89	99	594
Future Volume (vph)	3	196	524	54	8	159	801	171	1166	89	99	594
Turn Type	custom	Prot	NA	Perm	custom	Prot	NA	Prot	NA	Perm	Prot	NA
Protected Phases		7	4			3	8	5	2		1	6
Permitted Phases	7			4	3					2		
Detector Phase	7	7	4	4	3	3	8	5	2	2	1	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.7	9.7	36.4	36.4	9.7	9.7	38.4	9.7	43.4	43.4	9.7	44.4
Total Split (s)	11.0	11.0	39.4	39.4	10.0	10.0	38.4	10.0	45.9	45.9	9.7	45.6
Total Split (%)	10.5%	10.5%	37.5%	37.5%	9.5%	9.5%	36.6%	9.5%	43.7%	43.7%	9.2%	43.4%
Yellow Time (s)	3.7	3.7	4.4	4.4	3.7	3.7	4.4	3.7	4.4	4.4	3.7	4.4
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		4.7	5.4	5.4		4.7	5.4	4.7	5.4	5.4	4.7	5.4
Lead/Lag	Lead	Lead	Lag	Lag	Lead	Lead	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	Max	Max	None	Max
Act Effct Green (s)		6.3	34.0	34.0		5.3	33.0	5.3	40.5	40.5	5.0	40.2
Actuated g/C Ratio		0.06	0.32	0.32		0.05	0.31	0.05	0.39	0.39	0.05	0.38
v/c Ratio		3.09	0.50	0.10		2.60	1.00	2.09	0.93	0.14	1.29	0.66
Control Delay		993.5	30.4	0.3		781.2	62.8	553.0	43.8	2.6	234.3	27.7
Queue Delay		0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		993.5	30.4	0.3		781.2	62.8	553.0	43.8	2.6	234.3	27.7
LOS		F	C	A		F	E	F	D	A	F	C
Approach Delay			274.5				164.8		102.3			50.3
Approach LOS			F				F		F			D

Intersection Summary

Cycle Length: 105

Actuated Cycle Length: 105

Natural Cycle: 105

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 3.09

Intersection Signal Delay: 139.6

Intersection LOS: F

Intersection Capacity Utilization 94.5%

ICU Level of Service F

Analysis Period (min) 15

Splits and Phases: 3: Aviation Boulevard & Artesia Boulevard

 Ø1	 Ø2	 Ø3	 Ø4
9.7 s	45.9 s	10 s	39.4 s
 Ø5	 Ø6	 Ø7	 Ø8
10 s	45.6 s	11 s	38.4 s

Timings

3: Aviation Boulevard & Artesia Boulevard

09/06/2019

											
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	
Lane Configurations											
Traffic Volume (vph)	203	816	176	242	573	138	686	139	193	1017	
Future Volume (vph)	203	816	176	242	573	138	686	139	193	1017	
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	Perm	Prot	NA	
Protected Phases	7	4		3	8	5	2		1	6	
Permitted Phases			4					2			
Detector Phase	7	4	4	3	8	5	2	2	1	6	
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	9.7	36.4	36.4	9.7	38.4	9.7	43.4	43.4	9.7	44.4	
Total Split (s)	21.4	36.4	36.4	24.0	39.0	16.0	44.8	44.8	19.8	48.6	
Total Split (%)	17.1%	29.1%	29.1%	19.2%	31.2%	12.8%	35.8%	35.8%	15.8%	38.9%	
Yellow Time (s)	3.7	4.4	4.4	3.7	4.4	3.7	4.4	4.4	3.7	4.4	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.7	5.4	5.4	4.7	5.4	4.7	5.4	5.4	4.7	5.4	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	None	None	None	None	None	Max	Max	None	Max	
Act Effct Green (s)	16.7	31.0	31.0	19.3	33.6	11.3	39.4	39.4	15.1	43.2	
Actuated g/C Ratio	0.13	0.25	0.25	0.15	0.27	0.09	0.32	0.32	0.12	0.35	
v/c Ratio	0.94	1.01	0.40	1.00	0.83	0.94	0.67	0.27	0.99	1.00	
Control Delay	99.8	79.9	20.1	107.4	50.4	112.9	40.7	12.7	113.1	65.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	99.8	79.9	20.1	107.4	50.4	112.9	40.7	12.7	113.1	65.9	
LOS	F	E	C	F	D	F	D	B	F	E	
Approach Delay		74.5			65.2		47.0			72.9	
Approach LOS		E			E		D			E	

Intersection Summary

Cycle Length: 125

Actuated Cycle Length: 125

Natural Cycle: 125

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 1.01

Intersection Signal Delay: 66.0

Intersection LOS: E

Intersection Capacity Utilization 92.1%

ICU Level of Service F

Analysis Period (min) 15

Splits and Phases: 3: Aviation Boulevard & Artesia Boulevard

 Ø1	 Ø2	 Ø3	 Ø4
19.8 s	44.8 s	24 s	36.4 s
 Ø5	 Ø6	 Ø7	 Ø8
16 s	48.6 s	21.4 s	39 s

Timings

3: Aviation Boulevard & Artesia Boulevard

09/06/2019

												
Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	5	187	520	64	8	153	849	159	1107	92	138	540
Future Volume (vph)	5	187	520	64	8	153	849	159	1107	92	138	540
Turn Type	custom	Prot	NA	Perm	custom	Prot	NA	Prot	NA	Perm	Prot	NA
Protected Phases		7	4			3	8	5	2		1	6
Permitted Phases	7			4	3					2		
Detector Phase	7	7	4	4	3	3	8	5	2	2	1	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.7	9.7	36.4	36.4	9.7	9.7	38.4	9.7	43.4	43.4	9.7	44.4
Total Split (s)	11.0	11.0	39.4	39.4	10.0	10.0	38.4	10.0	45.6	45.6	10.0	45.6
Total Split (%)	10.5%	10.5%	37.5%	37.5%	9.5%	9.5%	36.6%	9.5%	43.4%	43.4%	9.5%	43.4%
Yellow Time (s)	3.7	3.7	4.4	4.4	3.7	3.7	4.4	3.7	4.4	4.4	3.7	4.4
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		4.7	5.4	5.4		4.7	5.4	4.7	5.4	5.4	4.7	5.4
Lead/Lag	Lead	Lead	Lag	Lag	Lead	Lead	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	Max	Max	None	Max
Act Effct Green (s)		6.3	34.0	34.0		5.3	33.0	5.3	40.2	40.2	5.3	40.2
Actuated g/C Ratio		0.06	0.32	0.32		0.05	0.31	0.05	0.38	0.38	0.05	0.38
v/c Ratio		2.97	0.49	0.12		2.50	1.03	1.94	0.89	0.15	1.69	0.60
Control Delay		943.3	30.4	1.1		737.8	71.0	491.2	39.9	2.9	384.2	26.2
Queue Delay		0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		943.3	30.4	1.1		737.8	71.0	491.2	39.9	2.9	384.2	26.2
LOS		F	C	A		F	E	F	D	A	F	C
Approach Delay			253.2				160.1		90.3			83.0
Approach LOS			F				F		F			F

Intersection Summary

Cycle Length: 105

Actuated Cycle Length: 105

Natural Cycle: 105

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 2.97

Intersection Signal Delay: 138.8

Intersection LOS: F

Intersection Capacity Utilization 95.4%

ICU Level of Service F

Analysis Period (min) 15

Splits and Phases: 3: Aviation Boulevard & Artesia Boulevard

 Ø1	 Ø2	 Ø3	 Ø4
10 s	45.6 s	10 s	39.4 s
 Ø5	 Ø6	 Ø7	 Ø8
10 s	45.6 s	11 s	38.4 s

Timings

3: Aviation Boulevard & Artesia Boulevard

09/06/2019

										
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	175	822	131	250	580	126	642	179	184	1129
Future Volume (vph)	175	822	131	250	580	126	642	179	184	1129
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	Perm	Prot	NA
Protected Phases	7	4		3	8	5	2		1	6
Permitted Phases			4					2		
Detector Phase	7	4	4	3	8	5	2	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.7	36.4	36.4	9.7	38.4	9.7	43.4	43.4	9.7	44.4
Total Split (s)	23.1	38.0	38.0	25.4	40.3	15.4	47.4	47.4	24.2	56.2
Total Split (%)	17.1%	28.1%	28.1%	18.8%	29.9%	11.4%	35.1%	35.1%	17.9%	41.6%
Yellow Time (s)	3.7	4.4	4.4	3.7	4.4	3.7	4.4	4.4	3.7	4.4
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.7	5.4	5.4	4.7	5.4	4.7	5.4	5.4	4.7	5.4
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Max	Max	None	Max
Act Effct Green (s)	17.3	32.6	32.6	20.7	36.0	10.7	43.3	43.3	18.2	50.8
Actuated g/C Ratio	0.13	0.24	0.24	0.15	0.27	0.08	0.32	0.32	0.13	0.38
v/c Ratio	0.84	1.05	0.29	1.04	0.83	0.98	0.61	0.33	0.84	1.03
Control Delay	87.0	92.5	9.5	120.3	54.4	131.9	41.9	13.5	85.6	73.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	87.0	92.5	9.5	120.3	54.4	131.9	41.9	13.5	85.6	73.5
LOS	F	F	A	F	D	F	D	B	F	E
Approach Delay		82.0			72.0		48.5			75.0
Approach LOS		F			E		D			E

Intersection Summary

Cycle Length: 135

Actuated Cycle Length: 135

Natural Cycle: 135

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 1.05

Intersection Signal Delay: 70.5

Intersection LOS: E

Intersection Capacity Utilization 95.9%

ICU Level of Service F

Analysis Period (min) 15

Splits and Phases: 3: Aviation Boulevard & Artesia Boulevard

			
24.2 s	47.4 s	25.4 s	38 s
			
15.4 s	56.2 s	23.1 s	40.3 s

Timings

3: Aviation Boulevard & Artesia Boulevard

09/06/2019

											
Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	
Lane Configurations											
Traffic Volume (vph)	3	196	524	54	159	801	171	1166	99	594	
Future Volume (vph)	3	196	524	54	159	801	171	1166	99	594	
Turn Type	custom	Prot	NA	Perm	Prot	NA	Prot	NA	Prot	NA	
Protected Phases		7	4		3	8	5	2	1	6	
Permitted Phases	7			4							
Detector Phase	7	7	4	4	3	8	5	2	1	6	
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	9.7	9.7	36.4	36.4	9.7	38.4	9.7	43.4	9.7	44.4	
Total Split (s)	11.0	11.0	37.0	37.0	12.4	38.4	10.0	45.9	9.7	45.6	
Total Split (%)	10.5%	10.5%	35.2%	35.2%	11.8%	36.6%	9.5%	43.7%	9.2%	43.4%	
Yellow Time (s)	3.7	3.7	4.4	4.4	3.7	4.4	3.7	4.4	3.7	4.4	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)		4.7	5.4	5.4	4.7	5.4	4.7	5.4	4.7	5.4	
Lead/Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	None	None	None	None	None	None	Max	None	Max	
Act Effct Green (s)		6.3	31.6	31.6	7.7	33.0	5.3	40.5	5.0	40.2	
Actuated g/C Ratio		0.06	0.30	0.30	0.07	0.31	0.05	0.39	0.05	0.38	
v/c Ratio		3.09	0.54	0.10	0.78	1.00	2.09	1.01	1.29	0.66	
Control Delay		993.5	32.8	0.4	70.6	62.8	553.0	58.7	234.3	27.7	
Queue Delay		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay		993.5	32.8	0.4	70.6	62.8	553.0	58.7	234.3	27.7	
LOS		F	C	A	E	E	F	E	F	C	
Approach Delay			276.1			63.9		118.0		50.3	
Approach LOS			F			E		F		D	

Intersection Summary

Cycle Length: 105

Actuated Cycle Length: 105

Natural Cycle: 105

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 3.09

Intersection Signal Delay: 117.4

Intersection LOS: F

Intersection Capacity Utilization 97.3%

ICU Level of Service F

Analysis Period (min) 15

Splits and Phases: 3: Aviation Boulevard & Artesia Boulevard

 Ø1	 Ø2	 Ø3	 Ø4
9.7 s	45.9 s	12.4 s	37 s
 Ø5	 Ø6	 Ø7	 Ø8
10 s	45.6 s	11 s	38.4 s

Timings

3: Aviation Boulevard & Artesia Boulevard

09/06/2019

									
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	203	816	176	242	573	138	686	193	1017
Future Volume (vph)	203	816	176	242	573	138	686	193	1017
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	Prot	NA
Protected Phases	7	4		3	8	5	2	1	6
Permitted Phases			4						
Detector Phase	7	4	4	3	8	5	2	1	6
Switch Phase									
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.7	36.4	36.4	9.7	38.4	9.7	43.4	9.7	44.4
Total Split (s)	21.0	42.4	42.4	17.0	38.4	16.0	45.0	20.6	49.6
Total Split (%)	16.8%	33.9%	33.9%	13.6%	30.7%	12.8%	36.0%	16.5%	39.7%
Yellow Time (s)	3.7	4.4	4.4	3.7	4.4	3.7	4.4	3.7	4.4
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.7	5.4	5.4	4.7	5.4	4.7	5.4	4.7	5.4
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Max	None	Max
Act Effct Green (s)	16.3	35.2	35.2	12.3	31.2	11.3	39.6	15.9	44.2
Actuated g/C Ratio	0.13	0.29	0.29	0.10	0.25	0.09	0.32	0.13	0.36
v/c Ratio	0.95	0.88	0.36	0.86	0.88	0.93	0.80	0.92	0.96
Control Delay	101.9	52.8	16.2	79.7	55.2	109.6	44.0	95.7	56.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	101.9	52.8	16.2	79.7	55.2	109.6	44.0	95.7	56.6
LOS	F	D	B	E	E	F	D	F	E
Approach Delay		55.9			61.6		53.4		62.4
Approach LOS		E			E		D		E

Intersection Summary

Cycle Length: 125

Actuated Cycle Length: 123.2

Natural Cycle: 125

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.96

Intersection Signal Delay: 58.5

Intersection LOS: E

Intersection Capacity Utilization 87.5%

ICU Level of Service E

Analysis Period (min) 15

Splits and Phases: 3: Aviation Boulevard & Artesia Boulevard

			
Ø1	Ø2	Ø3	Ø4
20.6 s	45 s	17 s	42.4 s
			
Ø5	Ø6	Ø7	Ø8
16 s	49.6 s	21 s	38.4 s

Timings

3: Aviation Boulevard & Artesia Boulevard

09/06/2019

										
Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	5	187	520	64	153	849	159	1107	138	540
Future Volume (vph)	5	187	520	64	153	849	159	1107	138	540
Turn Type	custom	Prot	NA	Perm	Prot	NA	Prot	NA	Prot	NA
Protected Phases		7	4		3	8	5	2	1	6
Permitted Phases	7			4						
Detector Phase	7	7	4	4	3	8	5	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.7	9.7	36.4	36.4	9.7	38.4	9.7	43.4	9.7	44.4
Total Split (s)	11.0	11.0	36.6	36.6	12.8	38.4	10.0	45.6	10.0	45.6
Total Split (%)	10.5%	10.5%	34.9%	34.9%	12.2%	36.6%	9.5%	43.4%	9.5%	43.4%
Yellow Time (s)	3.7	3.7	4.4	4.4	3.7	4.4	3.7	4.4	3.7	4.4
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		4.7	5.4	5.4	4.7	5.4	4.7	5.4	4.7	5.4
Lead/Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Max	None	Max
Act Effct Green (s)		6.3	31.2	31.2	8.1	33.0	5.3	40.2	5.3	40.2
Actuated g/C Ratio		0.06	0.30	0.30	0.08	0.31	0.05	0.38	0.05	0.38
v/c Ratio		2.97	0.54	0.13	0.71	1.03	1.94	0.97	1.69	0.60
Control Delay		943.3	33.1	1.2	63.7	71.0	491.2	50.5	384.2	26.2
Queue Delay		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		943.3	33.1	1.2	63.7	71.0	491.2	50.5	384.2	26.2
LOS		F	C	A	E	E	F	D	F	C
Approach Delay			255.1			70.0		102.2		83.0
Approach LOS			F			E		F		F

Intersection Summary

Cycle Length: 105

Actuated Cycle Length: 105

Natural Cycle: 105

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 2.97

Intersection Signal Delay: 117.2

Intersection LOS: F

Intersection Capacity Utilization 98.3%

ICU Level of Service F

Analysis Period (min) 15

Splits and Phases: 3: Aviation Boulevard & Artesia Boulevard

			
10 s	45.6 s	12.8 s	36.6 s
			
10 s	45.6 s	11 s	38.4 s

Timings

3: Aviation Boulevard & Artesia Boulevard

09/06/2019

									
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	175	822	131	250	580	126	642	184	1129
Future Volume (vph)	175	822	131	250	580	126	642	184	1129
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	Prot	NA
Protected Phases	7	4		3	8	5	2	1	6
Permitted Phases			4						
Detector Phase	7	4	4	3	8	5	2	1	6
Switch Phase									
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.7	36.4	36.4	9.7	38.4	9.7	43.4	9.7	44.4
Total Split (s)	18.6	40.2	40.2	16.8	38.4	15.1	45.1	22.9	52.9
Total Split (%)	14.9%	32.2%	32.2%	13.4%	30.7%	12.1%	36.1%	18.3%	42.3%
Yellow Time (s)	3.7	4.4	4.4	3.7	4.4	3.7	4.4	3.7	4.4
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.7	5.4	5.4	4.7	5.4	4.7	5.4	4.7	5.4
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Max	None	Max
Act Effct Green (s)	13.9	34.1	34.1	12.1	32.3	10.4	40.9	17.0	47.5
Actuated g/C Ratio	0.11	0.27	0.27	0.10	0.26	0.08	0.33	0.14	0.38
v/c Ratio	0.96	0.92	0.26	0.90	0.85	0.93	0.78	0.83	1.01
Control Delay	110.5	59.1	6.6	87.3	52.6	113.7	42.4	79.6	65.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	110.5	59.1	6.6	87.3	52.6	113.7	42.4	79.6	65.8
LOS	F	E	A	F	D	F	D	E	E
Approach Delay		61.0			61.9		51.9		67.5
Approach LOS		E			E		D		E

Intersection Summary

Cycle Length: 125

Actuated Cycle Length: 124.3

Natural Cycle: 125

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 1.01

Intersection Signal Delay: 61.3

Intersection LOS: E

Intersection Capacity Utilization 88.9%

ICU Level of Service E

Analysis Period (min) 15

Splits and Phases: 3: Aviation Boulevard & Artesia Boulevard

			
22.9 s	45.1 s	16.8 s	40.2 s
			
15.1 s	52.9 s	18.6 s	38.4 s

Timings

3: Aviation Boulevard & Artesia Boulevard

09/06/2019

												
Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	196	524	54	8	159	801	171	1166	99	594	217
Future Volume (vph)	3	196	524	54	8	159	801	171	1166	99	594	217
Turn Type	custom	Prot	NA	Perm	custom	Prot	NA	Prot	NA	Prot	NA	Perm
Protected Phases		7	4			3	8	5	2	1	6	
Permitted Phases	7			4	3							6
Detector Phase	7	7	4	4	3	3	8	5	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.7	9.7	36.4	36.4	9.7	9.7	38.4	9.7	43.4	9.7	44.4	44.4
Total Split (s)	11.0	11.0	39.4	39.4	10.0	10.0	38.4	10.0	45.9	9.7	45.6	45.6
Total Split (%)	10.5%	10.5%	37.5%	37.5%	9.5%	9.5%	36.6%	9.5%	43.7%	9.2%	43.4%	43.4%
Yellow Time (s)	3.7	3.7	4.4	4.4	3.7	3.7	4.4	3.7	4.4	3.7	4.4	4.4
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		4.7	5.4	5.4		4.7	5.4	4.7	5.4	4.7	5.4	5.4
Lead/Lag	Lead	Lead	Lag	Lag	Lead	Lead	Lag	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	Max	None	Max	Max
Act Effct Green (s)		6.3	34.0	34.0		5.3	33.0	5.3	40.5	5.0	40.2	40.2
Actuated g/C Ratio		0.06	0.32	0.32		0.05	0.31	0.05	0.39	0.05	0.38	0.38
v/c Ratio		3.09	0.50	0.10		2.60	1.00	2.09	1.01	1.29	0.48	0.34
Control Delay		993.5	30.4	0.3		781.2	62.8	553.0	58.7	234.3	25.9	10.4
Queue Delay		0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		993.5	30.4	0.3		781.2	62.8	553.0	58.7	234.3	25.9	10.4
LOS		F	C	A		F	E	F	E	F	C	B
Approach Delay			274.5				164.8		118.0		44.9	
Approach LOS			F				F		F		D	

Intersection Summary

Cycle Length: 105

Actuated Cycle Length: 105

Natural Cycle: 105

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 3.09

Intersection Signal Delay: 143.7

Intersection LOS: F

Intersection Capacity Utilization 97.3%

ICU Level of Service F

Analysis Period (min) 15

Splits and Phases: 3: Aviation Boulevard & Artesia Boulevard

 Ø1	 Ø2	 Ø3	 Ø4
9.7 s	45.9 s	10 s	39.4 s
 Ø5	 Ø6	 Ø7	 Ø8
10 s	45.6 s	11 s	38.4 s

Timings

3: Aviation Boulevard & Artesia Boulevard

09/06/2019

										
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	203	816	176	242	573	138	686	193	1017	97
Future Volume (vph)	203	816	176	242	573	138	686	193	1017	97
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	Prot	NA	Perm
Protected Phases	7	4		3	8	5	2	1	6	
Permitted Phases			4							6
Detector Phase	7	4	4	3	8	5	2	1	6	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.7	36.4	36.4	9.7	38.4	9.7	43.4	9.7	44.4	44.4
Total Split (s)	21.4	37.0	37.0	24.0	39.6	16.3	44.0	20.0	47.7	47.7
Total Split (%)	17.1%	29.6%	29.6%	19.2%	31.7%	13.0%	35.2%	16.0%	38.2%	38.2%
Yellow Time (s)	3.7	4.4	4.4	3.7	4.4	3.7	4.4	3.7	4.4	4.4
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.7	5.4	5.4	4.7	5.4	4.7	5.4	4.7	5.4	5.4
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Max	None	Max	Max
Act Effct Green (s)	16.7	31.6	31.6	19.3	34.2	11.6	38.6	15.3	42.3	42.3
Actuated g/C Ratio	0.13	0.25	0.25	0.15	0.27	0.09	0.31	0.12	0.34	0.34
v/c Ratio	0.94	0.99	0.40	1.00	0.82	0.91	0.83	0.97	0.92	0.17
Control Delay	99.8	74.9	19.7	107.4	49.0	107.1	47.1	109.2	53.2	6.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	99.8	74.9	19.7	107.4	49.0	107.1	47.1	109.2	53.2	6.3
LOS	F	E	B	F	D	F	D	F	D	A
Approach Delay		71.1			64.2		55.7		58.0	
Approach LOS		E			E		E		E	

Intersection Summary

Cycle Length: 125

Actuated Cycle Length: 125

Natural Cycle: 125

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 1.00

Intersection Signal Delay: 62.4

Intersection LOS: E

Intersection Capacity Utilization 89.1%

ICU Level of Service E

Analysis Period (min) 15

Splits and Phases: 3: Aviation Boulevard & Artesia Boulevard

			
20 s	44 s	24 s	37 s
			
16.3 s	47.7 s	21.4 s	39.6 s

Timings

3: Aviation Boulevard & Artesia Boulevard

09/06/2019

												
Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	187	520	64	8	153	849	159	1107	138	540	192
Future Volume (vph)	5	187	520	64	8	153	849	159	1107	138	540	192
Turn Type	custom	Prot	NA	Perm	custom	Prot	NA	Prot	NA	Prot	NA	Perm
Protected Phases		7	4			3	8	5	2	1	6	
Permitted Phases	7			4	3							6
Detector Phase	7	7	4	4	3	3	8	5	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.7	9.7	36.4	36.4	9.7	9.7	38.4	9.7	43.4	9.7	44.4	44.4
Total Split (s)	11.0	11.0	39.4	39.4	10.0	10.0	38.4	10.0	45.6	10.0	45.6	45.6
Total Split (%)	10.5%	10.5%	37.5%	37.5%	9.5%	9.5%	36.6%	9.5%	43.4%	9.5%	43.4%	43.4%
Yellow Time (s)	3.7	3.7	4.4	4.4	3.7	3.7	4.4	3.7	4.4	3.7	4.4	4.4
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		4.7	5.4	5.4		4.7	5.4	4.7	5.4	4.7	5.4	5.4
Lead/Lag	Lead	Lead	Lag	Lag	Lead	Lead	Lag	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	Max	None	Max	Max
Act Effct Green (s)		6.3	34.0	34.0		5.3	33.0	5.3	40.2	5.3	40.2	40.2
Actuated g/C Ratio		0.06	0.32	0.32		0.05	0.31	0.05	0.38	0.05	0.38	0.38
v/c Ratio		2.97	0.49	0.12		2.50	1.03	1.94	0.97	1.69	0.43	0.30
Control Delay		943.3	30.4	1.1		737.8	71.0	491.2	50.5	384.2	25.2	9.7
Queue Delay		0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		943.3	30.4	1.1		737.8	71.0	491.2	50.5	384.2	25.2	9.7
LOS		F	C	A		F	E	F	D	F	C	A
Approach Delay			253.2				160.1		102.2		78.7	
Approach LOS			F				F		F		E	

Intersection Summary

Cycle Length: 105

Actuated Cycle Length: 105

Natural Cycle: 105

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 2.97

Intersection Signal Delay: 141.7

Intersection LOS: F

Intersection Capacity Utilization 98.3%

ICU Level of Service F

Analysis Period (min) 15

Splits and Phases: 3: Aviation Boulevard & Artesia Boulevard

 Ø1	 Ø2	 Ø3	 Ø4
10 s	45.6 s	10 s	39.4 s
 Ø5	 Ø6	 Ø7	 Ø8
10 s	45.6 s	11 s	38.4 s

Timings

3: Aviation Boulevard & Artesia Boulevard

09/06/2019

										
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	175	822	131	250	580	126	642	184	1129	119
Future Volume (vph)	175	822	131	250	580	126	642	184	1129	119
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	Prot	NA	Perm
Protected Phases	7	4		3	8	5	2	1	6	
Permitted Phases			4							6
Detector Phase	7	4	4	3	8	5	2	1	6	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.7	36.4	36.4	9.7	38.4	9.7	43.4	9.7	44.4	44.4
Total Split (s)	23.4	39.0	39.0	26.1	41.7	15.6	48.9	21.0	54.3	54.3
Total Split (%)	17.3%	28.9%	28.9%	19.3%	30.9%	11.6%	36.2%	15.6%	40.2%	40.2%
Yellow Time (s)	3.7	4.4	4.4	3.7	4.4	3.7	4.4	3.7	4.4	4.4
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.7	5.4	5.4	4.7	5.4	4.7	5.4	4.7	5.4	5.4
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Max	None	Max	Max
Act Effct Green (s)	17.4	33.6	33.6	21.4	37.6	10.9	43.5	16.3	48.9	48.9
Actuated g/C Ratio	0.13	0.25	0.25	0.16	0.28	0.08	0.32	0.12	0.36	0.36
v/c Ratio	0.83	1.01	0.29	1.01	0.80	0.96	0.80	0.94	0.96	0.20
Control Delay	85.6	83.9	9.2	111.6	51.3	127.9	46.7	106.2	59.0	10.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	85.6	83.9	9.2	111.6	51.3	127.9	46.7	106.2	59.0	10.2
LOS	F	F	A	F	D	F	D	F	E	B
Approach Delay		75.5			67.5		57.5		61.0	
Approach LOS		E			E		E		E	

Intersection Summary

Cycle Length: 135

Actuated Cycle Length: 135

Natural Cycle: 135

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 1.01

Intersection Signal Delay: 65.3

Intersection LOS: E

Intersection Capacity Utilization 92.1%

ICU Level of Service F

Analysis Period (min) 15

Splits and Phases: 3: Aviation Boulevard & Artesia Boulevard

			
21 s	48.9 s	26.1 s	39 s
			
15.6 s	54.3 s	23.4 s	41.7 s

Timings

3: Aviation Boulevard & Artesia Boulevard

09/06/2019

												
Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	196	524	54	8	159	801	171	1166	99	594	217
Future Volume (vph)	3	196	524	54	8	159	801	171	1166	99	594	217
Turn Type	custom	Prot	NA	Perm	custom	Prot	NA	Prot	NA	Prot	NA	Perm
Protected Phases		7	4			3	8	5	2	1	6	
Permitted Phases	7			4	3							6
Detector Phase	7	7	4	4	3	3	8	5	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.7	9.7	36.4	36.4	9.7	9.7	38.4	9.7	43.4	9.7	44.4	44.4
Total Split (s)	16.0	16.0	40.2	40.2	14.2	14.2	38.4	10.0	45.6	10.0	45.6	45.6
Total Split (%)	14.5%	14.5%	36.5%	36.5%	12.9%	12.9%	34.9%	9.1%	41.5%	9.1%	41.5%	41.5%
Yellow Time (s)	3.7	3.7	4.4	4.4	3.7	3.7	4.4	3.7	4.4	3.7	4.4	4.4
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		4.7	5.4	5.4		4.7	5.4	4.7	5.4	4.7	5.4	5.4
Lead/Lag	Lead	Lead	Lag	Lag	Lead	Lead	Lag	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	Max	None	Max	Max
Act Effct Green (s)		11.3	34.8	34.8		9.5	33.0	5.3	40.2	5.3	40.2	40.2
Actuated g/C Ratio		0.10	0.32	0.32		0.09	0.30	0.05	0.37	0.05	0.37	0.37
v/c Ratio		3.22	0.51	0.10		1.49	1.05	2.19	1.06	1.27	0.50	0.33
Control Delay		1055.9	32.6	0.4		295.5	78.1	597.0	77.8	229.7	28.7	5.2
Queue Delay		0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		1055.9	32.6	0.4		295.5	78.1	597.0	77.8	229.7	28.7	5.2
LOS		F	C	A		F	E	F	E	F	C	A
Approach Delay			291.9				108.9		140.1		45.0	
Approach LOS			F				F		F		D	

Intersection Summary

Cycle Length: 110

Actuated Cycle Length: 110

Natural Cycle: 105

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 3.22

Intersection Signal Delay: 138.9

Intersection LOS: F

Intersection Capacity Utilization 97.3%

ICU Level of Service F

Analysis Period (min) 15

Splits and Phases: 3: Aviation Boulevard & Artesia Boulevard

			
10 s	45.6 s	14.2 s	40.2 s
			
10 s	45.6 s	16 s	38.4 s

Timings

3: Aviation Boulevard & Artesia Boulevard

09/06/2019

										
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	203	816	176	242	573	138	686	193	1017	97
Future Volume (vph)	203	816	176	242	573	138	686	193	1017	97
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	Prot	NA	Perm
Protected Phases	7	4		3	8	5	2	1	6	
Permitted Phases			4							6
Detector Phase	7	4	4	3	8	5	2	1	6	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.7	36.4	36.4	9.7	38.4	9.7	43.4	9.7	44.4	44.4
Total Split (s)	16.0	39.6	39.6	14.8	38.4	13.0	44.6	16.0	47.6	47.6
Total Split (%)	13.9%	34.4%	34.4%	12.9%	33.4%	11.3%	38.8%	13.9%	41.4%	41.4%
Yellow Time (s)	3.7	4.4	4.4	3.7	4.4	3.7	4.4	3.7	4.4	4.4
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.7	5.4	5.4	4.7	5.4	4.7	5.4	4.7	5.4	5.4
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Max	None	Max	Max
Act Effct Green (s)	11.3	32.6	32.6	10.1	31.4	8.3	39.2	11.3	42.2	42.2
Actuated g/C Ratio	0.10	0.29	0.29	0.09	0.28	0.07	0.35	0.10	0.37	0.37
v/c Ratio	1.27	0.87	0.35	0.90	0.80	1.16	0.74	1.19	0.84	0.16
Control Delay	200.5	48.9	13.7	82.5	44.0	177.0	36.7	174.9	39.8	4.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	200.5	48.9	13.7	82.5	44.0	177.0	36.7	174.9	39.8	4.6
LOS	F	D	B	F	D	F	D	F	D	A
Approach Delay		69.8			54.0		56.8		57.2	
Approach LOS		E			D		E		E	

Intersection Summary

Cycle Length: 115

Actuated Cycle Length: 113.5

Natural Cycle: 115

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 1.27

Intersection Signal Delay: 59.8

Intersection LOS: E

Intersection Capacity Utilization 84.4%

ICU Level of Service E

Analysis Period (min) 15

Splits and Phases: 3: Aviation Boulevard & Artesia Boulevard

			
16 s	44.6 s	14.8 s	39.6 s
			
13 s	47.6 s	16 s	38.4 s

Timings

3: Aviation Boulevard & Artesia Boulevard

09/06/2019

												
Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	187	520	64	8	153	849	159	1107	138	540	192
Future Volume (vph)	5	187	520	64	8	153	849	159	1107	138	540	192
Turn Type	custom	Prot	NA	Perm	custom	Prot	NA	Prot	NA	Prot	NA	Perm
Protected Phases		7	4			3	8	5	2	1	6	
Permitted Phases	7			4	3							6
Detector Phase	7	7	4	4	3	3	8	5	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.7	9.7	36.4	36.4	9.7	9.7	38.4	9.7	43.4	9.7	44.4	44.4
Total Split (s)	11.0	11.0	38.0	38.0	11.4	11.4	38.4	10.0	45.6	10.0	45.6	45.6
Total Split (%)	10.5%	10.5%	36.2%	36.2%	10.9%	10.9%	36.6%	9.5%	43.4%	9.5%	43.4%	43.4%
Yellow Time (s)	3.7	3.7	4.4	4.4	3.7	3.7	4.4	3.7	4.4	3.7	4.4	4.4
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		4.7	5.4	5.4		4.7	5.4	4.7	5.4	4.7	5.4	5.4
Lead/Lag	Lead	Lead	Lag	Lag	Lead	Lead	Lag	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	Max	None	Max	Max
Act Effct Green (s)		6.3	32.6	32.6		6.7	33.0	5.3	40.2	5.3	40.2	40.2
Actuated g/C Ratio		0.06	0.31	0.31		0.06	0.31	0.05	0.38	0.05	0.38	0.38
v/c Ratio		2.97	0.51	0.12		1.37	1.03	1.94	0.97	1.69	0.43	0.30
Control Delay		943.3	31.7	1.2		245.5	71.0	491.2	50.5	384.2	25.2	7.8
Queue Delay		0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		943.3	31.7	1.2		245.5	71.0	491.2	50.5	384.2	25.2	7.8
LOS		F	C	A		F	E	F	D	F	C	A
Approach Delay			254.1				94.3		102.2		78.3	
Approach LOS			F				F		F		E	

Intersection Summary

Cycle Length: 105

Actuated Cycle Length: 105

Natural Cycle: 105

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 2.97

Intersection Signal Delay: 123.0

Intersection LOS: F

Intersection Capacity Utilization 98.3%

ICU Level of Service F

Analysis Period (min) 15

Splits and Phases: 3: Aviation Boulevard & Artesia Boulevard

 Ø1	 Ø2	 Ø3	 Ø4
10 s	45.6 s	11.4 s	38 s
 Ø5	 Ø6	 Ø7	 Ø8
10 s	45.6 s	11 s	38.4 s

Timings

3: Aviation Boulevard & Artesia Boulevard

09/06/2019

										
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	175	822	131	250	580	126	642	184	1129	119
Future Volume (vph)	175	822	131	250	580	126	642	184	1129	119
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	Prot	NA	Perm
Protected Phases	7	4		3	8	5	2	1	6	
Permitted Phases			4							6
Detector Phase	7	4	4	3	8	5	2	1	6	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.7	36.4	36.4	9.7	38.4	9.7	43.4	9.7	44.4	44.4
Total Split (s)	16.0	38.6	38.6	15.8	38.4	13.8	44.6	16.0	46.8	46.8
Total Split (%)	13.9%	33.6%	33.6%	13.7%	33.4%	12.0%	38.8%	13.9%	40.7%	40.7%
Yellow Time (s)	3.7	4.4	4.4	3.7	4.4	3.7	4.4	3.7	4.4	4.4
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.7	5.4	5.4	4.7	5.4	4.7	5.4	4.7	5.4	5.4
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Max	None	Max	Max
Act Effct Green (s)	11.3	32.2	32.2	11.1	32.0	9.1	39.2	11.3	41.4	41.4
Actuated g/C Ratio	0.10	0.28	0.28	0.10	0.28	0.08	0.34	0.10	0.36	0.36
v/c Ratio	1.09	0.89	0.27	0.90	0.79	0.97	0.75	1.14	0.95	0.20
Control Delay	142.2	51.8	10.4	83.2	43.2	121.7	36.5	159.0	52.4	7.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	142.2	51.8	10.4	83.2	43.2	121.7	36.5	159.0	52.4	7.1
LOS	F	D	B	F	D	F	D	F	D	A
Approach Delay		61.0			53.9		47.8		62.4	
Approach LOS		E			D		D		E	

Intersection Summary

Cycle Length: 115

Actuated Cycle Length: 114

Natural Cycle: 115

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 1.14

Intersection Signal Delay: 57.1

Intersection LOS: E

Intersection Capacity Utilization 85.1%

ICU Level of Service E

Analysis Period (min) 15

Splits and Phases: 3: Aviation Boulevard & Artesia Boulevard

			
16 s	44.6 s	15.8 s	38.6 s
			
13.8 s	46.8 s	16 s	38.4 s

Timings

3: Aviation Boulevard & Artesia Boulevard

09/06/2019

										
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	140	1080	200	320	740	170	1350	190	50	700
Future Volume (vph)	140	1080	200	320	740	170	1350	190	50	700
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	Perm	Prot	NA
Protected Phases	7	4		3	8	5	2		1	6
Permitted Phases			4					2		
Detector Phase	7	4	4	3	8	5	2	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.7	36.4	36.4	9.7	38.4	9.7	43.4	43.4	9.7	44.4
Total Split (s)	20.4	47.0	47.0	30.0	56.6	22.6	58.3	58.3	9.7	45.4
Total Split (%)	14.1%	32.4%	32.4%	20.7%	39.0%	15.6%	40.2%	40.2%	6.7%	31.3%
Yellow Time (s)	3.7	4.4	4.4	3.7	4.4	3.7	4.4	4.4	3.7	4.4
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.7	5.4	5.4	4.7	5.4	4.7	5.4	5.4	4.7	5.4
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Max	Max	None	Max
Act Effct Green (s)	14.6	41.6	41.6	25.3	52.3	16.8	52.9	52.9	5.0	41.1
Actuated g/C Ratio	0.10	0.29	0.29	0.17	0.36	0.12	0.36	0.36	0.03	0.28
v/c Ratio	0.79	1.06	0.35	1.04	0.78	0.83	1.05	0.29	0.82	0.79
Control Delay	92.5	95.7	11.8	118.6	45.4	93.2	82.2	12.9	139.4	54.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	92.5	95.7	11.8	118.6	45.4	93.2	82.2	12.9	139.4	54.3
LOS	F	F	B	F	D	F	F	B	F	D
Approach Delay		83.6			63.5		75.6			59.4
Approach LOS		F			E		E			E

Intersection Summary

Cycle Length: 145

Actuated Cycle Length: 145

Natural Cycle: 145

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 1.06

Intersection Signal Delay: 72.2

Intersection LOS: E

Intersection Capacity Utilization 105.9%

ICU Level of Service G

Analysis Period (min) 15

Splits and Phases: 3: Aviation Boulevard & Artesia Boulevard

			
9.7 s	58.3 s	30 s	47 s
			
22.6 s	45.4 s	20.4 s	56.6 s

Timings

3: Aviation Boulevard & Artesia Boulevard

09/06/2019

										
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	140	1050	200	530	930	180	900	270	190	1070
Future Volume (vph)	140	1050	200	530	930	180	900	270	190	1070
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	Perm	Prot	NA
Protected Phases	7	4		3	8	5	2		1	6
Permitted Phases			4					2		
Detector Phase	7	4	4	3	8	5	2	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.7	36.4	36.4	9.7	38.4	9.7	43.4	43.4	9.7	44.4
Total Split (s)	17.7	42.0	42.0	34.0	58.3	16.0	48.0	48.0	21.0	53.0
Total Split (%)	12.2%	29.0%	29.0%	23.4%	40.2%	11.0%	33.1%	33.1%	14.5%	36.6%
Yellow Time (s)	3.7	4.4	4.4	3.7	4.4	3.7	4.4	4.4	3.7	4.4
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.7	5.4	5.4	4.7	5.4	4.7	5.4	5.4	4.7	5.4
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Max	Max	None	Max
Act Effct Green (s)	13.0	36.6	36.6	29.3	52.9	11.3	42.6	42.6	16.3	47.6
Actuated g/C Ratio	0.09	0.25	0.25	0.20	0.36	0.08	0.29	0.29	0.11	0.33
v/c Ratio	0.89	1.18	0.39	1.48	0.88	1.31	0.87	0.47	0.96	1.09
Control Delay	111.5	137.6	13.2	272.0	51.6	232.8	58.4	19.5	117.3	100.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	111.5	137.6	13.2	272.0	51.6	232.8	58.4	19.5	117.3	100.0
LOS	F	F	B	F	D	F	E	B	F	F
Approach Delay		117.1			122.4		73.9			102.3
Approach LOS		F			F		E			F

Intersection Summary

Cycle Length: 145

Actuated Cycle Length: 145

Natural Cycle: 145

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 1.48

Intersection Signal Delay: 104.9

Intersection LOS: F

Intersection Capacity Utilization 120.5%

ICU Level of Service H

Analysis Period (min) 15

Splits and Phases: 3: Aviation Boulevard & Artesia Boulevard

			
21 s	48 s	34 s	42 s
			
16 s	53 s	17.7 s	58.3 s

Timings

3: Aviation Boulevard & Artesia Boulevard

09/06/2019

									
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	140	1080	200	320	740	170	1350	50	700
Future Volume (vph)	140	1080	200	320	740	170	1350	50	700
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	Prot	NA
Protected Phases	7	4		3	8	5	2	1	6
Permitted Phases			4						
Detector Phase	7	4	4	3	8	5	2	1	6
Switch Phase									
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.7	36.4	36.4	9.7	38.4	9.7	43.4	9.7	44.4
Total Split (s)	17.7	49.0	49.0	18.6	49.9	27.8	67.4	10.0	49.6
Total Split (%)	12.2%	33.8%	33.8%	12.8%	34.4%	19.2%	46.5%	6.9%	34.2%
Yellow Time (s)	3.7	4.4	4.4	3.7	4.4	3.7	4.4	3.7	4.4
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.7	5.4	5.4	4.7	5.4	4.7	5.4	4.7	5.4
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Max	None	Max
Act Effct Green (s)	12.9	43.6	43.6	13.9	44.7	18.4	62.1	5.3	46.9
Actuated g/C Ratio	0.09	0.30	0.30	0.10	0.31	0.13	0.43	0.04	0.33
v/c Ratio	0.88	1.00	0.35	0.96	0.90	0.75	1.02	0.77	0.68
Control Delay	109.7	76.9	17.0	103.6	58.2	80.0	67.3	126.9	45.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	109.7	76.9	17.0	103.6	58.2	80.0	67.3	126.9	45.2
LOS	F	E	B	F	E	E	E	F	D
Approach Delay		71.7			69.4		68.5		50.1
Approach LOS		E			E		E		D

Intersection Summary

Cycle Length: 145

Actuated Cycle Length: 143

Natural Cycle: 145

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 1.02

Intersection Signal Delay: 66.7

Intersection LOS: E

Intersection Capacity Utilization 103.4%

ICU Level of Service G

Analysis Period (min) 15

Splits and Phases: 3: Aviation Boulevard & Artesia Boulevard

 Ø1	 Ø2	 Ø3	 Ø4
10 s	67.4 s	18.6 s	49 s
 Ø5	 Ø6	 Ø7	 Ø8
27.8 s	49.6 s	17.7 s	49.9 s

Timings

3: Aviation Boulevard & Artesia Boulevard

09/06/2019

									
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	140	1050	200	530	930	180	900	190	1070
Future Volume (vph)	140	1050	200	530	930	180	900	190	1070
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	Prot	NA
Protected Phases	7	4		3	8	5	2	1	6
Permitted Phases			4						
Detector Phase	7	4	4	3	8	5	2	1	6
Switch Phase									
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.7	36.4	36.4	9.7	38.4	9.7	43.4	9.7	44.4
Total Split (s)	17.7	45.6	45.6	26.0	53.9	19.1	53.6	19.8	54.3
Total Split (%)	12.2%	31.4%	31.4%	17.9%	37.2%	13.2%	37.0%	13.7%	37.4%
Yellow Time (s)	3.7	4.4	4.4	3.7	4.4	3.7	4.4	3.7	4.4
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.7	5.4	5.4	4.7	5.4	4.7	5.4	4.7	5.4
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Max	None	Max
Act Effct Green (s)	13.0	40.2	40.2	21.3	48.5	14.4	48.2	15.1	48.9
Actuated g/C Ratio	0.09	0.28	0.28	0.15	0.33	0.10	0.33	0.10	0.34
v/c Ratio	0.89	1.07	0.38	1.05	0.96	1.03	1.01	1.03	1.06
Control Delay	111.5	98.6	18.3	112.5	64.7	137.9	76.3	136.8	89.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	111.5	98.6	18.3	112.5	64.7	137.9	76.3	136.8	89.8
LOS	F	F	B	F	E	F	E	F	F
Approach Delay		88.4			80.0		84.5		96.0
Approach LOS		F			F		F		F

Intersection Summary

Cycle Length: 145

Actuated Cycle Length: 145

Natural Cycle: 145

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 1.07

Intersection Signal Delay: 87.0

Intersection LOS: F

Intersection Capacity Utilization 106.3%

ICU Level of Service G

Analysis Period (min) 15

Splits and Phases: 3: Aviation Boulevard & Artesia Boulevard

			
Ø1	Ø2	Ø3	Ø4
19.8 s	53.6 s	26 s	45.6 s
			
Ø5	Ø6	Ø7	Ø8
19.1 s	54.3 s	17.7 s	53.9 s

Timings

3: Aviation Boulevard & Artesia Boulevard

09/06/2019

												
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR		
Lane Configurations												
Traffic Volume (vph)	140	1080	200	320	740	170	1350	50	700	80		
Future Volume (vph)	140	1080	200	320	740	170	1350	50	700	80		
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	Prot	NA	Perm		
Protected Phases	7	4		3	8	5	2	1	6			
Permitted Phases			4							6		
Detector Phase	7	4	4	3	8	5	2	1	6	6		
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		
Minimum Split (s)	9.7	36.4	36.4	9.7	38.4	9.7	43.4	9.7	44.4	44.4		
Total Split (s)	19.7	45.0	45.0	27.0	52.3	22.6	63.3	9.7	50.4	50.4		
Total Split (%)	13.6%	31.0%	31.0%	18.6%	36.1%	15.6%	43.7%	6.7%	34.8%	34.8%		
Yellow Time (s)	3.7	4.4	4.4	3.7	4.4	3.7	4.4	3.7	4.4	4.4		
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Total Lost Time (s)	4.7	5.4	5.4	4.7	5.4	4.7	5.4	4.7	5.4	5.4		
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag		
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		
Recall Mode	None	None	None	None	None	None	Max	None	Max	Max		
Act Effct Green (s)	14.2	39.6	39.6	22.3	47.7	16.8	57.9	5.0	46.1	46.1		
Actuated g/C Ratio	0.10	0.27	0.27	0.15	0.33	0.12	0.40	0.03	0.32	0.32		
v/c Ratio	0.81	1.12	0.37	1.18	0.86	0.83	1.10	0.82	0.62	0.13		
Control Delay	95.6	114.7	12.3	162.6	52.9	93.2	98.5	139.4	45.2	0.4		
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Total Delay	95.6	114.7	12.3	162.6	52.9	93.2	98.5	139.4	45.2	0.4		
LOS	F	F	B	F	D	F	F	F	D	A		
Approach Delay		98.4			79.9		98.0		46.6			
Approach LOS		F			E		F		D			

Intersection Summary

Cycle Length: 145

Actuated Cycle Length: 145

Natural Cycle: 145

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 1.18

Intersection Signal Delay: 85.5

Intersection LOS: F

Intersection Capacity Utilization 112.0%

ICU Level of Service H

Analysis Period (min) 15

Splits and Phases: 3: Aviation Boulevard & Artesia Boulevard

								
9.7 s	63.3 s		27 s		45 s			
								
22.6 s	50.4 s		19.7 s		52.3 s			

Timings

3: Aviation Boulevard & Artesia Boulevard

09/06/2019

										
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	140	1050	200	530	930	180	900	190	1070	180
Future Volume (vph)	140	1050	200	530	930	180	900	190	1070	180
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	Prot	NA	Perm
Protected Phases	7	4		3	8	5	2	1	6	
Permitted Phases			4							6
Detector Phase	7	4	4	3	8	5	2	1	6	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.7	36.4	36.4	9.7	38.4	9.7	43.4	9.7	44.4	44.4
Total Split (s)	17.7	42.0	42.0	35.0	59.3	16.0	51.0	17.0	52.0	52.0
Total Split (%)	12.2%	29.0%	29.0%	24.1%	40.9%	11.0%	35.2%	11.7%	35.9%	35.9%
Yellow Time (s)	3.7	4.4	4.4	3.7	4.4	3.7	4.4	3.7	4.4	4.4
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.7	5.4	5.4	4.7	5.4	4.7	5.4	4.7	5.4	5.4
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Max	None	Max	Max
Act Effct Green (s)	13.0	36.6	36.6	30.3	53.9	11.3	45.6	12.3	46.6	46.6
Actuated g/C Ratio	0.09	0.25	0.25	0.21	0.37	0.08	0.31	0.08	0.32	0.32
v/c Ratio	0.89	1.18	0.41	1.44	0.86	1.31	1.07	1.27	0.94	0.30
Control Delay	111.5	137.6	19.9	251.7	49.7	232.8	93.9	213.1	63.7	13.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	111.5	137.6	19.9	251.7	49.7	232.8	93.9	213.1	63.7	13.7
LOS	F	F	B	F	D	F	F	F	E	B
Approach Delay		118.0			114.6		112.4		77.2	
Approach LOS		F			F		F		E	

Intersection Summary

Cycle Length: 145

Actuated Cycle Length: 145

Natural Cycle: 145

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 1.44

Intersection Signal Delay: 105.7

Intersection LOS: F

Intersection Capacity Utilization 119.2%

ICU Level of Service H

Analysis Period (min) 15

Splits and Phases: 3: Aviation Boulevard & Artesia Boulevard

			
17 s	51 s	35 s	42 s
			
16 s	52 s	17.7 s	59.3 s

3: Aviation Boulevard & Artesia Boulevard

Intersection Summary	
Cycle Length: 145	
Actuated Cycle Length: 143	
Natural Cycle: 145	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.03	
Intersection Signal Delay: 66.9	Intersection LOS: E
Intersection Capacity Utilization 103.4%	ICU Level of Service G
Analysis Period (min) 15	

 Ø1	 Ø2	 Ø3	 Ø4
10 s	66.6 s	19.6 s	48.8 s
 Ø5	 Ø6	 Ø7	 Ø8
27.8 s	48.8 s	17.7 s	50.7 s

Timings

3: Aviation Boulevard & Artesia Boulevard

09/06/2019

										
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	140	1050	200	530	930	180	900	190	1070	180
Future Volume (vph)	140	1050	200	530	930	180	900	190	1070	180
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	Prot	NA	Perm
Protected Phases	7	4		3	8	5	2	1	6	
Permitted Phases			4							6
Detector Phase	7	4	4	3	8	5	2	1	6	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.7	36.4	36.4	9.7	38.4	9.7	43.4	9.7	44.4	44.4
Total Split (s)	17.7	45.6	45.6	27.4	55.3	19.8	52.2	19.8	52.2	52.2
Total Split (%)	12.2%	31.4%	31.4%	18.9%	38.1%	13.7%	36.0%	13.7%	36.0%	36.0%
Yellow Time (s)	3.7	4.4	4.4	3.7	4.4	3.7	4.4	3.7	4.4	4.4
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.7	5.4	5.4	4.7	5.4	4.7	5.4	4.7	5.4	5.4
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	Max	None	Max	Max
Act Effct Green (s)	13.0	40.2	40.2	22.7	49.9	15.1	46.8	15.1	46.8	46.8
Actuated g/C Ratio	0.09	0.28	0.28	0.16	0.34	0.10	0.32	0.10	0.32	0.32
v/c Ratio	0.89	1.07	0.38	1.06	0.93	0.98	1.04	1.03	0.94	0.30
Control Delay	111.5	98.6	18.3	113.6	59.5	124.6	85.0	136.8	62.9	13.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	111.5	98.6	18.3	113.6	59.5	124.6	85.0	136.8	62.9	13.6
LOS	F	F	B	F	E	F	F	F	E	B
Approach Delay		88.4			76.9		90.3		66.5	
Approach LOS		F			E		F		E	

Intersection Summary

Cycle Length: 145

Actuated Cycle Length: 145

Natural Cycle: 145

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 1.07

Intersection Signal Delay: 80.2

Intersection LOS: F

Intersection Capacity Utilization 105.0%

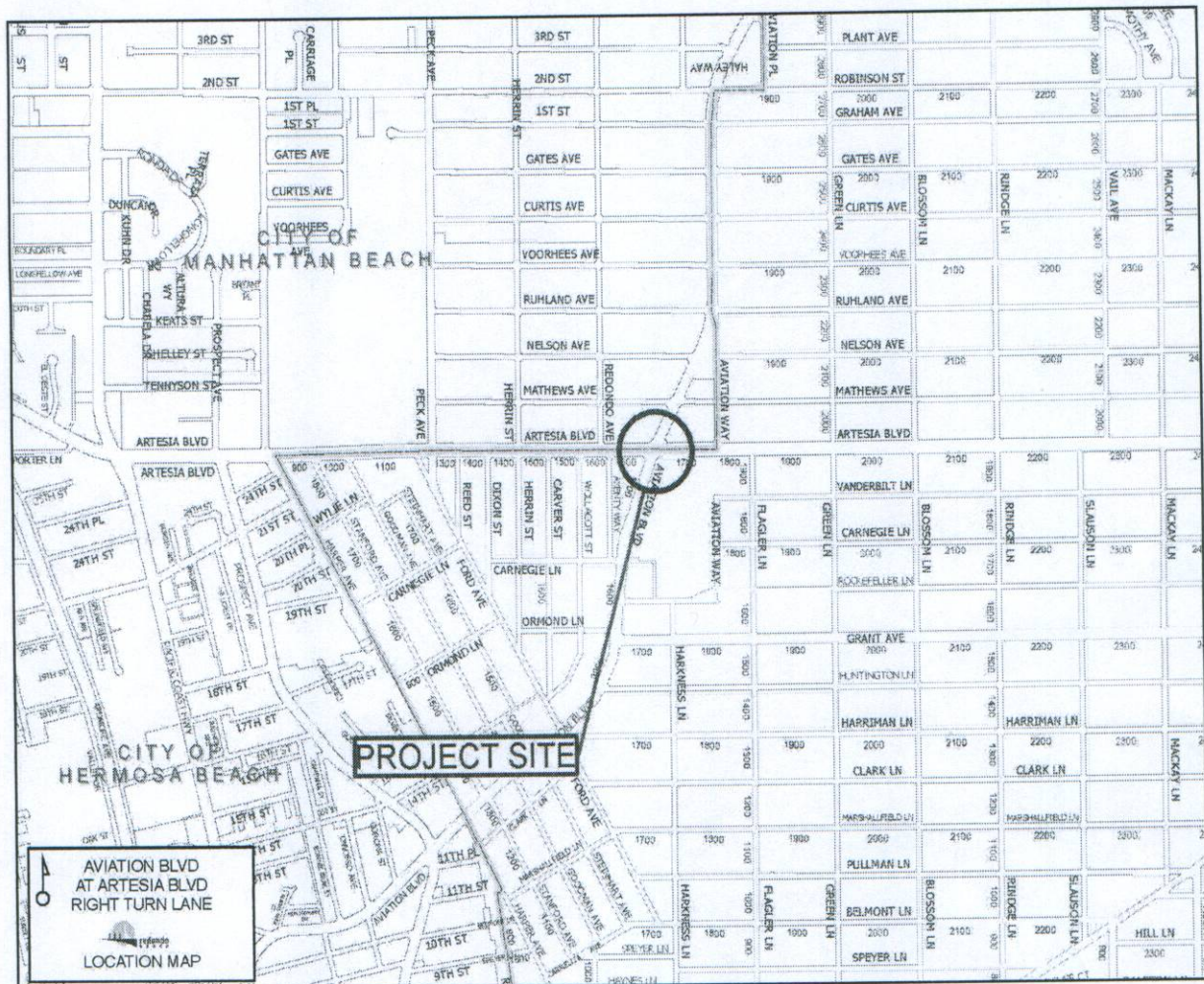
ICU Level of Service G

Analysis Period (min) 15

Splits and Phases: 3: Aviation Boulevard & Artesia Boulevard

			
19.8 s	52.2 s	27.4 s	45.6 s
			
19.8 s	52.2 s	17.7 s	55.3 s

PROJECT STUDY REPORT EQUIVALENT



AVIATION BOULEVARD NORTHBOUND RIGHT TURN LANE IMPROVEMENT AT ARTESIA BOULEVARD

Approved by Local Agency: STEVE HUANG, City Engineer/Chief Building Official
Submitted By: CITY OF REDONDO BEACH

4/23/09
Date

This Project Study Report Equivalent has been prepared under the direction of the following staff authorized by the sponsoring agency to sign for the work. The person signing below attests to and certifies the technical information contained herein and the engineering data upon which the recommendation, conclusions, and decisions are based.

John Mate
JOHN MATE, Project Manager

4/23/09
Date



County: Los Angeles
Route: Aviation Boulevard

Date: April 20, 2009

PROJECT STUDY REPORT EQUIVALENT

AVIATION BOULEVARD RIGHT TURN LANE IMPROVEMENT AT ARTESIA BOULEVARD

PROJECT DESCRIPTION

The proposed project will improve congested traffic conditions at the intersection of Aviation Boulevard and Artesia Boulevard. The project is the addition of a north bound right turn lane on Aviation Boulevard at the intersection of Artesia Boulevard. This project will assist in decreasing time travel time by commuters at this intersection of two regional arterials.

Work Description

Project will consists of the obtaining a 10 feet wide portion of private property from an existing gas station site, relocating private property signs and replacing landscape where feasible, relocating the existing sidewalk, relocating any utilities, relocating traffic signal poles, relocating the gas island pump if required and constructing a right turn only lane along the length of the gas station site. An engineering consultant will be hired to design the road construction plans and modifications to the gas station site.

Project Limits

The project is at one location, the south east corner on Aviation Boulevard at the intersection of Artesia Boulevard. The project is 0.1 miles in length. A figure showing the location of the intersection is attached. A figure is enclosed showing the existing travel lanes. The third figure shows the proposed improvement.

NEED AND PURPOSE

Aviation Boulevard is a regionally significant arterial that supports the movement of commuters and goods in the South Bay region of Los Angeles County. The intersection of Aviation Boulevard and Artesia Boulevard is a major entryway into the City of Redondo Beach. This location is also the intersection of two major arterials in the South Bay. Motorists, including both commuters and goods transporters traverse Aviation Boulevard accessing many regionally significant destinations including the Los Angeles International Airport, El Segundo Employment Center, Galleria at South Bay, Del Amo Fashion Center, a host of Piers and beaches. Additionally, Aviation Boulevard is a critical link to several freeways in the South Bay including I-405, I-105, and SR-91. The residents and business owners of the City of Redondo Beach have demonstrated tremendous support for any improvements that can be accomplished at this

intersection. This improvement is listed on the Cities unfunded Capital Improvements Project list and satisfies the Cities goals of "Improve public facilities and infrastructure" and "Enhance the livability and environmental sustainability of our community".

The project proposes to improve the current level of service, LOS F, at the intersection, to a LOS E. This improvement will relieve intersection backup and congestion due to through and right turning vehicles having to share the same lane. The project will require the purchase of 10 feet of property from the land owner along the Aviation Boulevard side of the existing gasoline station site. The widening of the street will result in the relocation of the sidewalk and the reconfiguration of the corner.

Currently this intersection is always congested during the morning and afternoon rush hours.

The following are the approximate vehicles per day (vpd) for each street:

Aviation Boulevard	major arterial	32,700 – 37,100 vpd,
Artesia Boulevard	major arterial	33,000 vpd,

Background and project history

The project was realized as necessary in the mid 80's during the time the aerospace industry in the South Bay was at its peak in regards to employment. This particular intersection is a major north-south corridor from the residential areas in the southern part of the South Bay to the employment centers to the north. The project has been on the City's CIP list the previous six years. This project is not included as a mitigation of any nearby improvement at this time. The project is supported by the local residents. The owner of the gas station property has concerns regarding the daily operations of the site during the construction of a right turn lane encroaching adjacent to the site. A review of critical dimensions concerning pumping islands and the underground storage tanks revealed minimal concerns at this time. A consultant with experience in gas station design will be hired in order to appropriately address all design and regulation issues.

Discussion of alternatives

1. Alternative – No build

This project has three alternatives. The no build scenario, the intersections remain the same with no improvements and the existing LOS only worsening.

2. Alternative- traffic signal synchronization improvement

The second alternative is the improvement of the traffic signal timing at the intersection. The LA County Department of Public Works has been hired by the South Bay Cities COG to be the lead designer and project manager to spend Call for Projects monies received by the COG for traffic signal synchronization improvements along the major corridors of the South Bay Cities. The LA County Department of Public Works implemented new traffic signal coordination along the east-west corridor of Artesia Boulevard in March 2008. The implementation of traffic signal timing included the intersection of Aviation Boulevard at Artesia Boulevard. The improvement has recently been completed thereby removes this as an alternative.

3. Alternative 3 – the project - RECOMMENDED

The third alternative is the project of constructing an exclusive northbound right turn lane on Aviation Boulevard at Artesia Boulevard. This will result in the separation of northbound right turning traffic from northbound through traffic. A reduction of vehicles delays and improving the intersection operation and level of service will occur. The Level of Service will improve from the existing LOS F, $v/c = 1.098$ in the AM and LOS F, $v/c=1.085$ in the PM and with the improvement existing conditions, to LOS F, $v/c=1.059$ in the AM to LOS F, $v/c=1.085$ in the PM.

The project will require the hiring of a design consultant in order to properly update the street widening plans and correlate those with the onsite improvements, such as landscaping relocation, removals, private signage relocation, traffic signal pole relocation and the possible relocation of the gas pump island. No environmental issues are foreseen, such as soil contamination, as this item was resolved in 1994/95 when new underground storage tanks were installed.

The property owner was notified and a meeting on site with the Engineering Services Division of the City of Redondo Beach. The owner will be requiring proper an legal compensation for the property required for the right turn only lane. The City of Redondo Beach has hired a certified appraiser in order to obtain a reasonable cost of the right of way for this grant request. A copy of the appraisal is attached,

4. System Planning

- This project is consistent with the General Plan of the City of Redondo Beach.
- The project is currently listed on the City's unfunded list of capital improvement projects, see attached
- The project was identified on the South Bay Transportation project List – Coastal Corridor study has completed by the South Bay Cities COG. See attachment
- The project was later identified as a priority number one project for the SBCCOG Goods Movement Study along with improvements in the City of El Segundo and City of Manhattan Beach for other intersections along Aviation Boulevard. This project would be the portion of the Goods Movement Study entirely located within the City of Redondo Beach. See attachment

5. Environmental Determination

The City of Redondo Beach will be the lead agency. The consultant will conduct an Initial Site Assessment (ISA) of the project area currently located within the gas station site to determine the potential for encountering hazardous waste materials and/or soil contamination. There is no reason to suspect environmental contamination within the area of the private property which is purposed to become the right turn lane. The NEPA compliance result is expected to be Categorical Exclusion with required technical studies. The required technical studies will be for hazardous materials/hazardous waste and for impact to any water quality

resources. The consultant will study and investigate by sampling the ground about the project site.

6. Potential hazardous materials/waste problems

Currently the City of Redondo Beach feels there should no mitigation required at the site for soil contamination or hazardous waste. During 1994 soil remediation occurred at the site to reduce potential contaminated soil. In 1995 new underground storage tanks were installed with no soil contamination reported since those improvements.

7. Proposed sources of funding, project funding, funding eligibility and tentative schedule.

Sources of funding:

Agency: City of Redondo Beach

Source of Funding: Proposition C funds (36%)

The City of Redondo Beach will execute the agreements and be the lead.

Proposed Project Schedule:	Start Date	Finish Date
a. Hire Design Consultant	October 2011	December 2011
b. Start Environmental Studies	December 2011	February 2012
c. Draft Environmental Document	January 2012	April 2012
d. Final Environmental Document	May 2012	September 2012
e. Begin Design Engineering	August 2012	
f. Start ROW Acquisition	August 2012	November 2012
g. Final PS & E	November 2012	January 2013
h. Advertise Bid Package	February 2013	April 2013
i. Start Construction	July 2013	
j. Project Completion		October 2013

8. Identification of the potential programming and funding of this project.

No previous funding has been received for this project.

9. Partially Complete Project Programming Request - enclosed

10. Appropriate Supporting Attachments

Maps of the location are attached. Also a draft plan, 3 sheets, showing the details of the right turn installation. This plan requires redesign has changes have occurred on the private property adjacent to the street.

Level of Service Calculations with resulting v/c ratios are attached for the:

Existing conditions: AM, v/c 1.098 and PM, v/c 1.085;

Existing with project: AM, v/c 1.059 and PM, v/c 1.085;

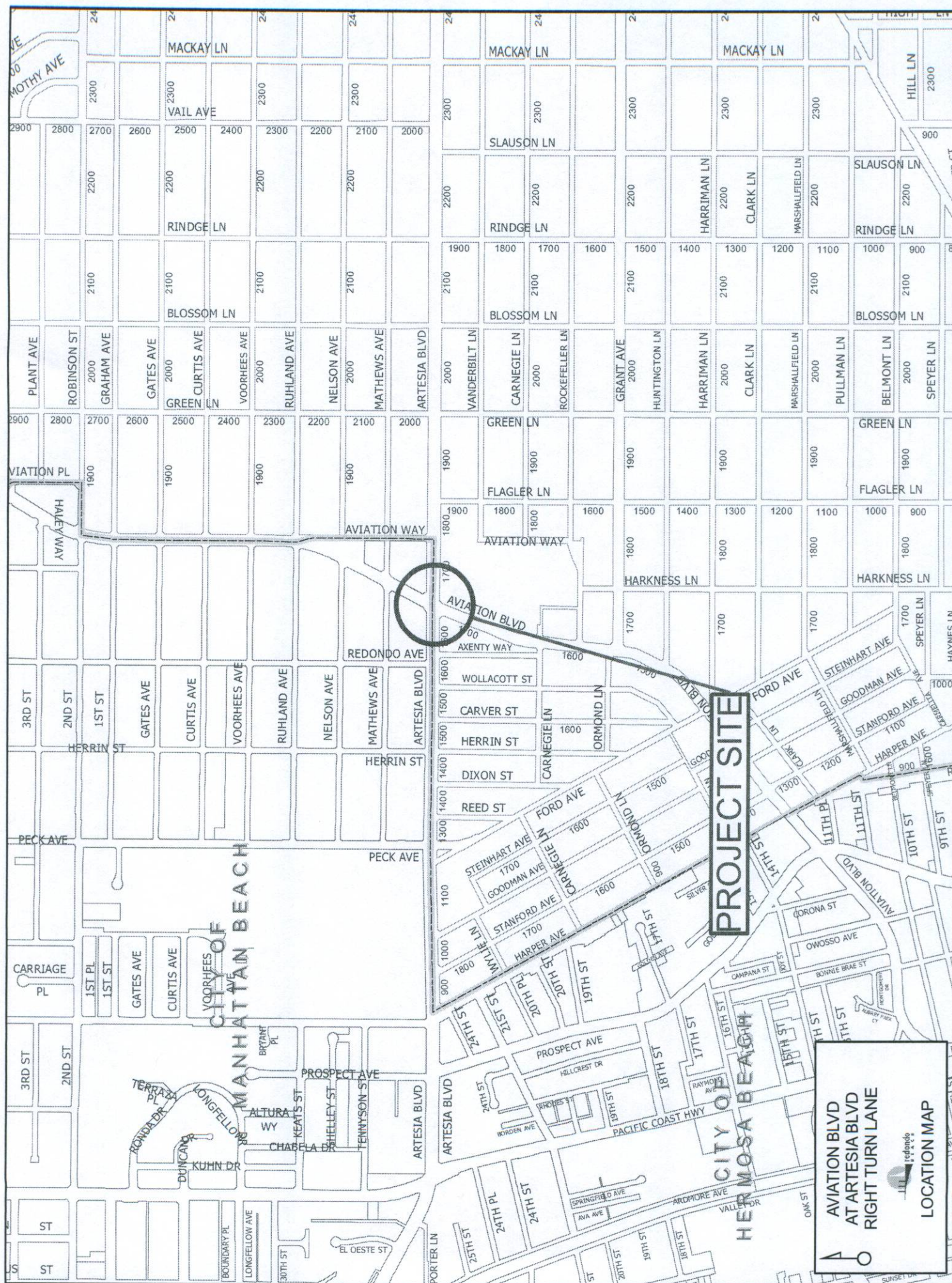
Shows an improvement of v/c of 0.0390 in the AM, a 4% improvement.

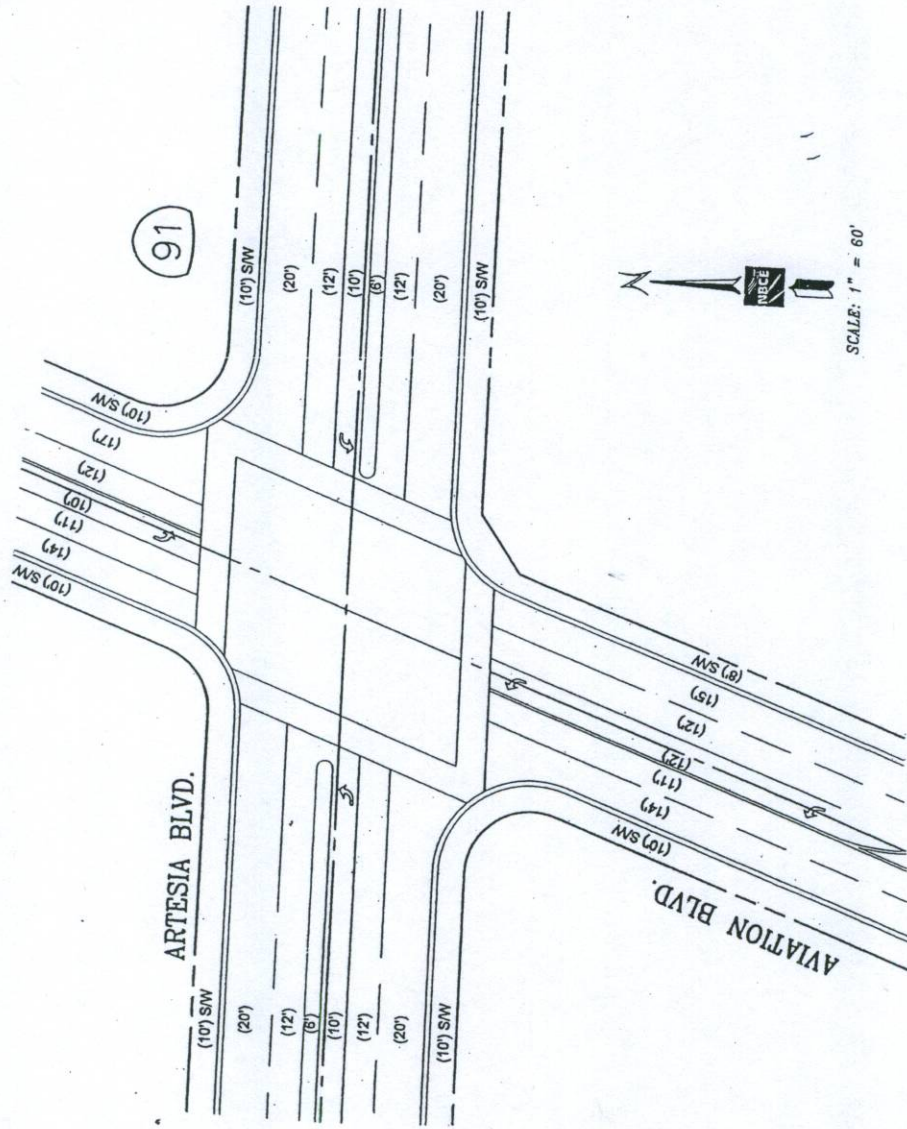
Future 2030 without project. AM, v/c 1.212 and PM, v/c 1.325;

Future 2030 with project. Am, v/c 1.128 and PM, v/c 1.372.

Shows an improvement of v/c of 0.0840 in the AM, an 8% improvement.

Attachments:





SCALE: 1" = 60'

AVIATION MULTIJURISDICTION
CAPACITY IMPROVEMENT PROJECT
CITY OF REDONDO BCH/MANHATTAN BCH

EXISTING INTERSECTION
LANE GEOMETRICS
ARTESIA BLVD



ENGINEER'S COST ESTIMATE

JOB NO.		DATE:		SHEET OF	
		4/20/2009		1 1	
PROJECT TITLE:					
AVIATION ARTESIA RIGHT TURN LANE					
LOCATION:					
OWNER:					
ESTIMATED BY:		CHECKED BY:		APPROVED BY:	
JU		JM			
ITEM NO.	DESCRIPTION	ESTIMATED QUANTITY	UNIT	UNIT PRICE MAT. & LAB.	ESTIMATED AMOUNT
1	Mobilization & Hauling	1	LS	\$20,000.00	\$20,000.00
2	Excavation 16"	247	SY	\$40.00	\$9,880.00
3	Excavation 12"	142	SY	\$30.00	\$4,260.00
4	CAB 10"	247	SY	\$9.00	\$2,223.00
5	4" B (PG 64/10)	52	TON	\$60.00	\$3,120.00
6	2" C2 (PG 64/10)	26	TON	\$60.00	\$1,560.00
7	Tack coat	247	SY	\$1.00	\$247.00
8	Remove & Replace Curb and Gutter	235	LF	\$40.00	\$9,400.00
9	Remove & Replace Sidewalk	1276	SF	\$31.00	\$39,556.00
10	Remove & Replace D/W approach	623	SF	\$54.00	\$33,642.00
11	Remove and Replace curb ramp planter	200	SF	\$44.00	\$8,800.00
12	Relocate Tree	1	LS	\$13,200.00	\$13,200.00
13	Landscaping	200	SF	\$15.00	\$3,000.00
14	ADA Ramp include demo relocate	1	EA	\$2,500.00	\$2,500.00
15	Relocate "Shell" and "EZ Lube" signs	1	LS	\$36,000.00	\$36,000.00
16	Adjust Manholes	3	LS	\$330.00	\$990.00
17	Relocate Traffic Signals	1	LS	\$22,000.00	\$22,000.00
18	Relocate Street Light Pole	1	LS	\$5,500.00	\$5,500.00
19	Relocate Detector Loops, Advance Loops, Conduit	1	LS	\$22,000.00	\$22,000.00
20	Construction survey	1	LS	\$22,000.00	\$22,000.00
21	Construction staging & traffic Control	1	LS	\$11,000.00	\$11,000.00
22	Removal/Relocation of Gas Pump Island	1	LS	\$36,000.00	\$36,000.00
23	Excavation and Repiping for Gas Pumps	1	LS	\$42,000.00	\$42,000.00
SUB-TOTAL		\$348,878.00			
10% Const Management		\$47,500.00			
15% Contingency INCIDENTALS		\$71,252.00			
TOTAL		\$467,630.00			

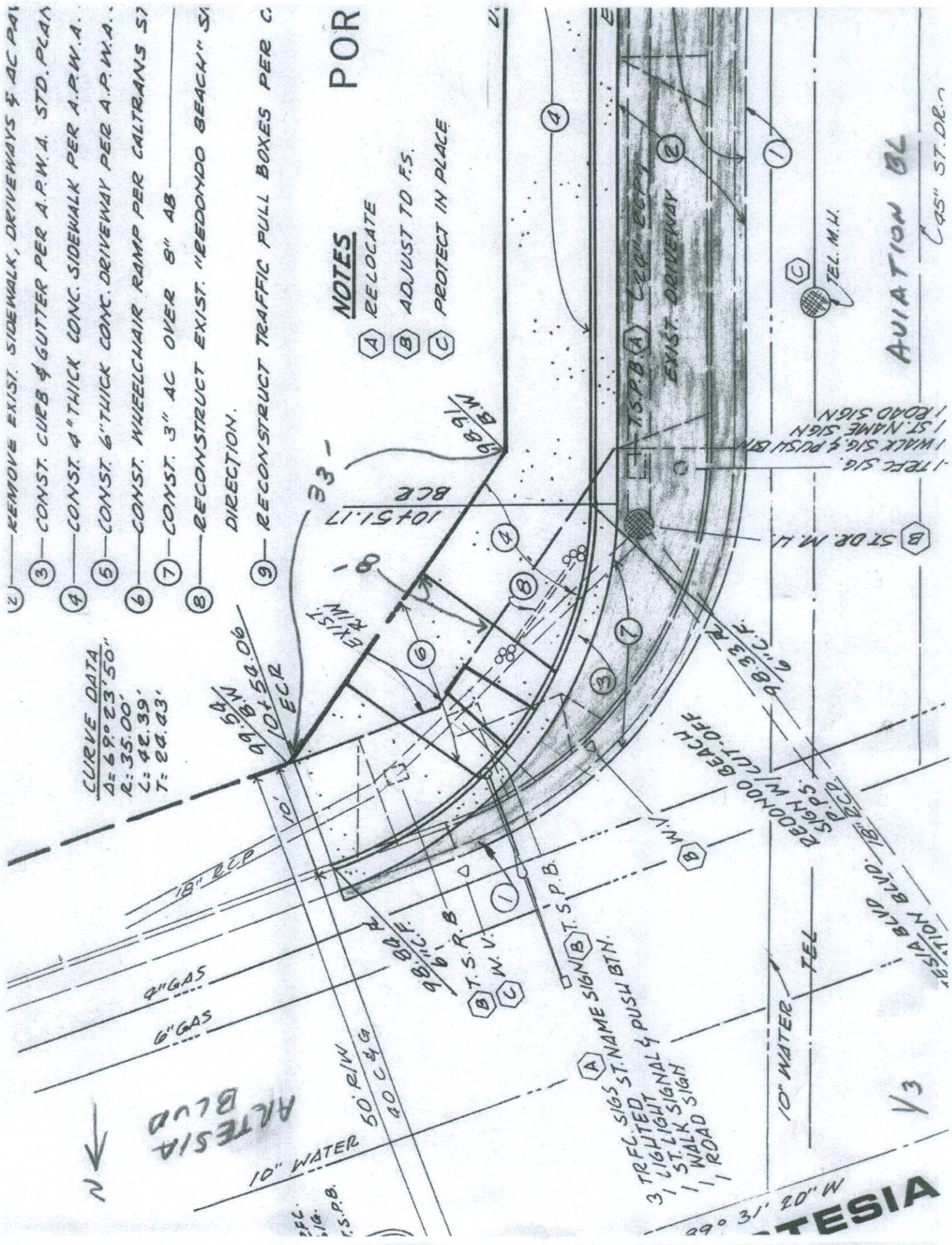
- 2) REMOVE EXIST. SIDEWALK, DRIVEWAYS & AC PAV.
- 3) CONST. CURB & GUTTER PER A.P.W.A. STD. PLAN
- 4) CONST. 4" THICK CONC. SIDEWALK PER A.P.W.A.
- 5) CONST. 6" THICK CONC. DRIVEWAY PER A.P.W.A.
- 6) CONST. WHEELCHAIR RAMP PER CALTRANS S7
- 7) CONST. 3" AC OVER 8" AB
- 8) RECONSTRUCT EXIST. "REDONDO BEACH" ST. DIRECTION.
- 9) RECONSTRUCT TRAFFIC PULL BOXES PER C.

CURVE DATA
 $\Delta = 69^\circ 23' 50"$
 $R = 35.00'$
 $L = 42.39'$
 $T = 24.43'$

POR

NOTES

- A) RELOCATE
- B) ADJUST TO F.S.
- C) PROTECT IN PLACE



AVIATION BL

45" ST. DR.

V3

10" WATER

TEL

TEL. M.H.

ST. DR. M.H.

1 TRFL SIG.
 1 WALK SIG. & PUSH BTN.
 1 ST. NAME SIGN
 1 ROAD SIGN

3 TRFL SIGS ST. NAME SIGN & PUSH BTN.
 1 LIGHTED SIGNAL
 1 ST. WALK SIGN
 1 ROAD SIGN

ARTESIA BLVD

ARTESIA

"REDONDO BEACH" SIGN PER CITY'S ENGINEER — 1 EA

ERIC PULL BOXES PER CALTRANS STD. PLAN # N8-B

POR. PCL 1 PARCEL MAP

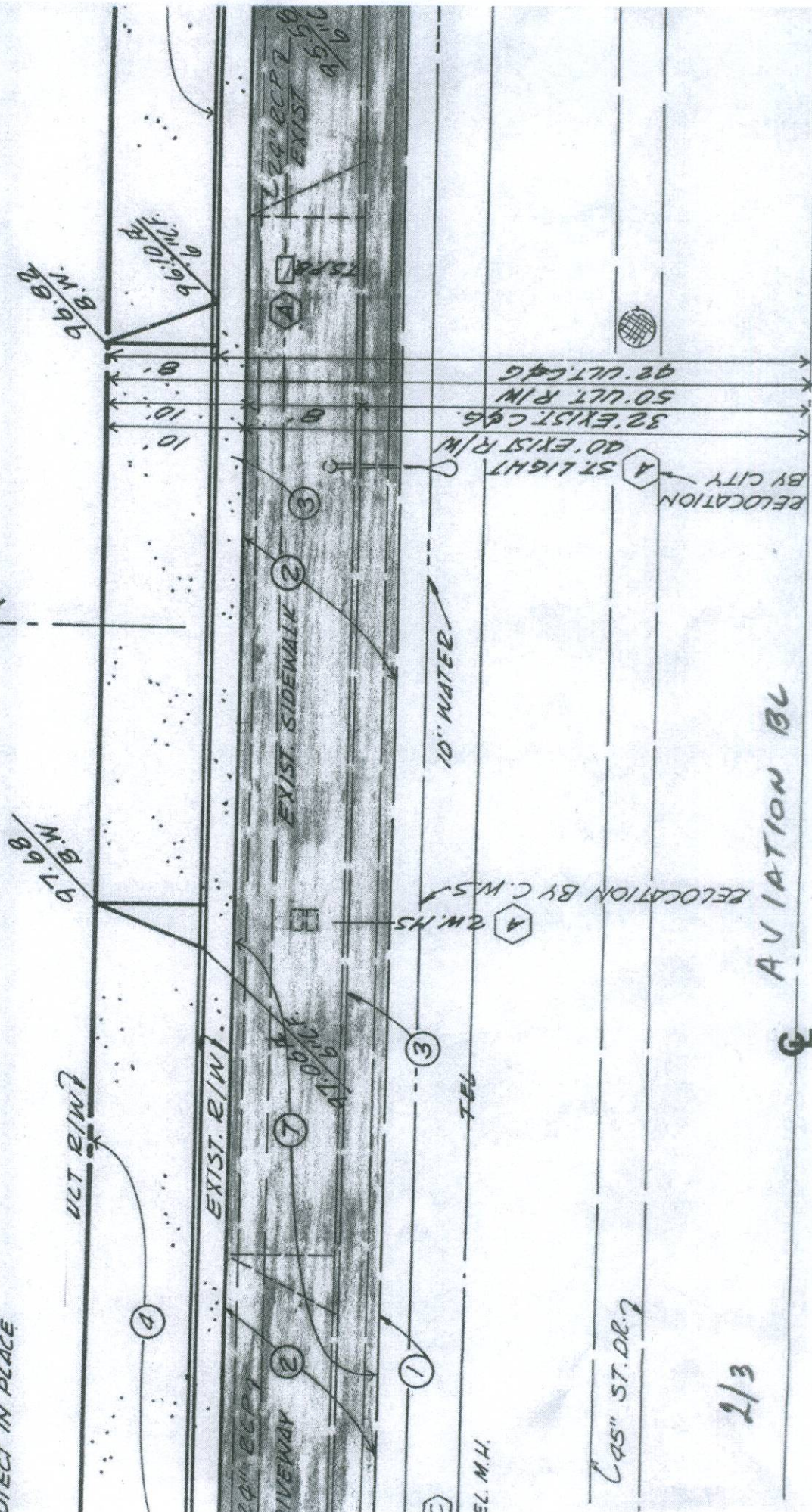
1392 BK 24/78

TYPICAL SECTION A-VI
no scale

ATES
LOCATE

JUST TO F.S.

OBJECT IN PLACE



no scale

4/78

CURVE DATA
 $\Delta = 180.55' 24''$
 $R = 92.50'$
 $L = 30.55'$
 $T = 15.42'$

TAIT & ASSOCIATES, INC.
CONSULTING ENGINEERS
714-634-4800
800 N. ECKHOFF STREET
ORANGE, CALIFORNIA 92667

C/7

EXISTING

Existing AM

A/M

Wed Feb 18, 2009 18:13:48

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Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #25 Artesia/Aviation Blvd

Cycle (sec): 100 Critical Vol./Cap.(X): 1.098
 Loss Time (sec): 10 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
 Optimal Cycle: 180 Level Of Service: F

Street Name:	Aviation Blvd						Artesia					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0	1	1	0	1	1	0	1	1	0	1

Volume Module:	Aviation Blvd			Artesia		
Base Vol:	133	1326	126	43	476	75
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	133	1326	126	43	476	75
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	133	1326	126	43	476	75
Reduct Vol:	0	0	0	0	0	0
Reduced Vol:	133	1326	126	43	476	75
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	133	1326	126	43	476	75

Saturation Flow Module:	Aviation Blvd			Artesia		
Sat/Lane:	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.83	0.17	1.00	1.73	0.27
Final Sat.:	1600	2922	278	1600	2764	436

Capacity Analysis Module:	Aviation Blvd			Artesia		
Vol/Sat:	0.08	0.45	0.45	0.03	0.17	0.17
Crit Moves:	****	****	****	****	****	****

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #25 Artesia/Aviation Blvd

Cycle (sec): 100 Critical Vol./Cap.(X): 1.085
Loss Time (sec): 10 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 180 Level Of Service: F

Street Name: Aviation Blvd Artesia
Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R
Control: Protected Protected Protected Protected
Rights: Include Include Include Include
Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0
Lanes: 1 0 1 1 0 1 0 1 1 0 1 0 1 1 0

Volume Module:
Base Vol: 122 706 165 171 1030 132 133 1032 155 280 924 181
Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Initial Bse: 122 706 165 171 1030 132 133 1032 155 280 924 181
User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Volume: 122 706 165 171 1030 132 133 1032 155 280 924 181
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 122 706 165 171 1030 132 133 1032 155 280 924 181
PCE Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
MLF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Final Volume: 122 706 165 171 1030 132 133 1032 155 280 924 181

Saturation Flow Module:
Sat/Lane: 1600 1600 1600 1600 1600 1600 1600 1600 1600 1600 1600 1600
Adjustment: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Lanes: 1.00 1.62 0.38 1.00 1.77 0.23 1.00 1.74 0.26 1.00 1.67 0.33
Final Sat.: 1600 2594 606 1600 2836 364 1600 2782 418 1600 2676 524

Capacity Analysis Module:
Vol/Sat: 0.08 0.27 0.27 0.11 0.36 0.36 0.08 0.37 0.37 0.17 0.35 0.35
Crit Moves: ****

EXISTING WITH PROJECT

Existing AM *AM* Wed Apr 15, 2009 13:32:43 Page 27-1

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #25 Artesia/Aviation Blvd

Cycle (sec): 100 Critical Vol./Cap.(X): 1.059

Loss Time (sec): 10 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx

Optimal Cycle: 180 Level Of Service: F

Street Name:	Aviation Blvd						Artesia					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0	2	0	1	1	0	1	1	0	1	0

Volume Module:

Base Vol:	133	1326	126	43	476	75	119	1076	122	229	688	238
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	133	1326	126	43	476	75	119	1076	122	229	688	238
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	133	1326	126	43	476	75	119	1076	122	229	688	238
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	133	1326	126	43	476	75	119	1076	122	229	688	238
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	133	1326	126	43	476	75	119	1076	122	229	688	238

Saturation Flow Module:

Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.00	1.00	1.00	1.73	0.27	1.00	1.80	0.20	1.00	1.49	0.51
Final Sat.:	1600	3200	1600	1600	2764	436	1600	2874	326	1600	2378	822

Capacity Analysis Module:

Vol/Sat:	0.08	0.41	0.08	0.03	0.17	0.17	0.07	0.37	0.37	0.14	0.29	0.29
Crit Moves:	****			****			****			****		

EXISTING WITH PROJECT

Existing PM

PM

Wed Apr 15, 2009 13:32:56

Page 27-1

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #25 Artesia/Aviation Blvd

Cycle (sec): 100 Critical Vol./Cap.(X): 1.085
Loss Time (sec): 10 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 180 Level Of Service: F

Street Name:	Aviation Blvd						Artesia						
Approach:	North Bound			South Bound			East Bound			West Bound			
Movement:	L	T	R	L	T	R	L	T	R	L	T	R	
Control:	Protected			Protected			Protected			Protected			
Rights:	Include			Include			Include			Include			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	
Lanes:	1	0	2	0	1	1	0	1	0	1	0	1	0

Volume Module:	Aviation Blvd			Artesia		
Base Vol:	122	706	165	171	1030	132
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	122	706	165	171	1030	132
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	122	706	165	171	1030	132
Reduct Vol:	0	0	0	0	0	0
Reduced Vol:	122	706	165	171	1030	132
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00
Final Volume:	122	706	165	171	1030	132

Saturation Flow Module:	Aviation Blvd			Artesia		
Sat/Lane:	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.00	1.00	1.00	1.77	0.23
Final Sat.:	1600	3200	1600	1600	2836	364

Capacity Analysis Module:	Aviation Blvd			Artesia		
Vol/Sat:	0.08	0.22	0.10	0.11	0.36	0.36
Crit Moves:	****			****		

Future without project
AM 2030

2030BaselineAM

Mon Mar 9, 2009 15:40:50

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Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #25 Artesia/Aviation Blvd

Cycle (sec): 100 Critical Vol./Cap.(X): 1.212

Loss Time (sec): 10 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx

Optimal Cycle: 180 Level Of Service: F

Street Name:	Aviation Blvd						Artesia								
Approach:	North Bound			South Bound			East Bound			West Bound					
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
----- ----- ----- -----															
Control:	Protected			Protected			Protected			Protected					
Rights:	Include			Include			Include			Include					
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Lanes:	1	0	1	1	0	1	0	1	1	0	1	0	1	1	0

Volume Module:

Base Vol:	170	1350	190	50	700	80	140	1080	200	320	740	240
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	170	1350	190	50	700	80	140	1080	200	320	740	240
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	170	1350	190	50	700	80	140	1080	200	320	740	240
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	170	1350	190	50	700	80	140	1080	200	320	740	240
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	170	1350	190	50	700	80	140	1080	200	320	740	240

Saturation Flow Module:

Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.75	0.25	1.00	1.79	0.21	1.00	1.69	0.31	1.00	1.51	0.49
Final Sat.:	1600	2805	395	1600	2872	328	1600	2700	500	1600	2416	784

Capacity Analysis Module:

Vol/Sat:	0.11	0.48	0.48	0.03	0.24	0.24	0.09	0.40	0.40	0.20	0.31	0.31
Crit Moves:	****			****			****			****		

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)
*****
Intersection #25 Artesia/Aviation Blvd
*****
Cycle (sec):      100      Critical Vol./Cap.(X):      1.325
Loss Time (sec):  10 (Y+R=4.0 sec)  Average Delay (sec/veh):      xxxxxx
Optimal Cycle:    180      Level Of Service:      F
*****
Street Name:      Aviation Blvd      Artesia
Approach:          North Bound      South Bound      East Bound      West Bound
Movement:          L - T - R      L - T - R      L - T - R      L - T - R
-----|-----|-----|-----|
Control:           Protected      Protected      Protected      Protected
Rights:            Include      Include      Include      Include
Min. Green:        0  0  0      0  0  0      0  0  0      0  0  0
Lanes:             1  0  1  1  0      1  0  1  1  0      1  0  1  1  0      1  0  1  1  0
-----|-----|-----|-----|
Volume Module:
Base Vol:          180  900  270  190 1070  180  140 1050  200  530  930  190
Growth Adj:        1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:        180  900  270  190 1070  180  140 1050  200  530  930  190
User Adj:           1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:            1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:         180  900  270  190 1070  180  140 1050  200  530  930  190
Reduct Vol:         0  0  0      0  0  0      0  0  0      0  0  0
Reduced Vol:        180  900  270  190 1070  180  140 1050  200  530  930  190
PCE Adj:            1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:            1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
FinalVolume:        180  900  270  190 1070  180  140 1050  200  530  930  190
-----|-----|-----|-----|
Saturation Flow Module:
Sat/Lane:          1600 1600  1600  1600 1600  1600 1600  1600  1600 1600  1600
Adjustment:         1.00 1.00  1.00  1.00 1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:              1.00 1.54  0.46  1.00 1.71  0.29  1.00 1.68  0.32  1.00 1.66  0.34
Final Sat.:         1600 2462  738  1600 2739  461  1600 2688  512  1600 2657  543
-----|-----|-----|-----|
Capacity Analysis Module:
Vol/Sat:            0.11 0.37  0.37  0.12 0.39  0.39  0.09 0.39  0.39  0.33 0.35  0.35
Crit Moves:         ****              ****              ****              ****
*****

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Future 2030 with project AM

2030BaselineAM

Wed Apr 15, 2009 13:33:18

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Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #25 Artesia/Aviation Blvd

Cycle (sec): 100 Critical Vol./Cap.(X): 1.128
Loss Time (sec): 10 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 180 Level Of Service: F

Street Name: Aviation Blvd Artesia
Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R

Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0	2	0	1	1	0	1	1	0	1	1

Volume Module:

Base Vol:	150	1330	200	50	660	80	150	1080	200	290	720	240
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	150	1330	200	50	660	80	150	1080	200	290	720	240
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	150	1330	200	50	660	80	150	1080	200	290	720	240
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	150	1330	200	50	660	80	150	1080	200	290	720	240
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	150	1330	200	50	660	80	150	1080	200	290	720	240

Saturation Flow Module:

Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.00	1.00	1.00	1.78	0.22	1.00	1.69	0.31	1.00	1.50	0.50
Final Sat.:	1600	3200	1600	1600	2854	346	1600	2700	500	1600	2400	800

Capacity Analysis Module:

Vol/Sat:	0.09	0.42	0.13	0.03	0.23	0.23	0.09	0.40	0.40	0.18	0.30	0.30
Crit Moves:	****			****			****			****		

Future 2030 with project
PM

2030BaselinePM

Wed Apr 15, 2009 13:33:31

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Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #25 Artesia/Aviation Blvd

Cycle (sec): 100 Critical Vol./Cap.(X): 1.372
Loss Time (sec): 10 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 180 Level Of Service: F

Street Name: Aviation Blvd Artesia

Approach: North Bound South Bound East Bound West Bound

Movement: L - T - R L - T - R L - T - R L - T - R

Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0	2	0	1	0	1	0	1	1	0	0

Volume Module:

Base Vol:	160	860	240	200	1040	260	140	1060	170	610	930	190
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	160	860	240	200	1040	260	140	1060	170	610	930	190
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	160	860	240	200	1040	260	140	1060	170	610	930	190
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	160	860	240	200	1040	260	140	1060	170	610	930	190
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	160	860	240	200	1040	260	140	1060	170	610	930	190

Saturation Flow Module:

Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.00	1.00	1.00	1.60	0.40	1.00	1.72	0.28	1.00	1.66	0.34
Final Sat.:	1600	3200	1600	1600	2560	640	1600	2758	442	1600	2657	543

Capacity Analysis Module:

Vol/Sat:	0.10	0.27	0.15	0.13	0.41	0.41	0.09	0.38	0.38	0.38	0.35	0.35
Crit Moves:	****				****			****		****		

METRO PSRE GUIDELINES

ATTACHMENT A: PROJECT FINANCIAL PLAN
PROJECT STUDY REPORT EQUIVALENT (PSRE)

AVIATION BLVD. LIGHT TOWER ONLY LANE at
ARRESTA BLVD

NOTE: INDICATE ALL AMOUNTS IN WHOLE NUMBERS AND IN FY 2008-09 DOLLARS

PROJECT EXPENSES *		FY 2010-11	FY 2011-12	FY 2012-13	FY 2013-14	FY 2014-15	TOTAL
CAPITAL EXPENSES:							
1	Design and PS&E		125,000				125,000 \$0
2	Construction			420,000			420,000 \$0
3	Construction Engineering			47,000			47,000 \$0
4	Right-of-Way Acquisition or Lease						260,000 \$0
5	Equipment Purchase or Lease (e.g. computers)		260,000				260,000 \$0
6	Vehicle Purchase or Lease						\$0
OPERATING EXPENSES:							
7	Administration						42,000 \$0
8	Operating Costs			42,000			\$0
9	Maintenance						\$0
10	Marketing						\$0
OTHER EXPENSES (Specify):							
11							\$0
12							\$0
13							\$0
14							\$0
15							\$0
16							\$0
17	TOTAL PROJECT EXPENSES	\$0	385,000 \$0	509,000 \$0	\$0	\$0	894,000 \$0

* List only expenses to be incurred in the completion of the Scope of Services of the project for which you are applying for funding. Expense categories are not applicable for all projects.

Attachment B

Transportation Problem: The heavy congestion affecting the morning and evening rush hour traffic at the intersection of Aviation Boulevard at Artesia Boulevard. A major problem are north bound right turning vehicles do not have their own separate right turn lane.

Project Scope:

Route: Aviation Boulevard, northbound lanes approaching the intersection of Artesia Boulevard.

Project Limits: the project is less than 0.1 miles in length, northbound #2 lane to be widen the length of the private gasoline station lot at the south east corner of the intersection.

Description of Project Scope: Project is to construct a 10 foot wide right turn only lane for north bound vehicles on Aviation Boulevard for the north bound approach to the intersection of Artesia Boulevard. The project will require the purchase of private property from the owner of the existing gas station site at the south east corner of the intersection. The relocation of private property signs, the possibility of relocating the gas pumping island, the relocation of traffic signal poles, adjustment of manholes and valve covers, removal/relocation of landscaping, and the reconstruction of the private driveways will be required. The existing sidewalk will be relocated to the eastern edge of the new street.

Special conditions: The Purchase of private property will be a special condition. A property appraisal report is attached to this document.

Will overtime be required? No

<u>Project component costs:</u>	Metro Requested	Total
Environmental		
Design Eng	\$ 80,000	\$125,000
R/W	\$166,400	\$260,000
Construction	\$268,800	\$420,000
Overhead	\$ 56,050	\$ 89,000
Total	\$571,250	\$894,000

Proposed Schedule

Start Environmental Studies
Draft Environmental Document
Final Environmental Document
Begin Design Engineering
Plans, Specifications, & Estimates
Start R/W Acquisition
R/W Certification
Ready to Advertise
Start Construction (award)
Project Completion (open for use)

Quarter & Year

Dec. 2011
May 2012
Sept. 2012
Aug. 2012
Jan. 2013
Aug. 2012
Nov. 2012
Feb. 2013
July 2013
Oct. 2013

Are the Project Milestones consistent with Metro lapsing policy? Yes

Responsible Agency City of Redondo Beach

Contact Person and Contact Information:

John Mate
Transportation Engineer
415 Diamond Street
Redondo Beach, CA 90277
(310) 318-0661 ext. 2277

PROJECT PROGRAMMING REQUEST

DTP-0001 (REV. 3/08)

General Instructions

☒ New Project ☐ Amendment (Existing Project)				Date: 04/23/09	
Caltrans District	EA	PPNO	MPO ID	TCRP No.	
07					
County	Route/Corridor	Project Sponsor/Lead Agency		MPO	Element
LA	Aviation Blvd.	City of Redondo Beach			
Project Title					
Aviation Blvd. Right Turn Only Lane at Artesia Blvd.					
PM Bk	PM Ahd	Project Mgr/Contact	Phone	E-mail Address	
		John Mate	310.318.0661	john.mate@redondo.org	
Location, Project Limits, Description, Scope of Work, Legislative Description					
Aviation Blvd. Right Turn Only Lane at Artesia Blvd. located 0.1 miles south of Artesia Boulevard. The construction of a right turn lane will require the purchase of private property adjacent to Aviation Boulevard. Project will require relocation of sidewalk, driveway, private property signs, traffic signal poles and utility covers and maholes.					
Component	Implementing Agency		AB 3090	Letter of No Prejudice	
PA&ED			☐	☐	
PS&E			☐	☐	
Right of Way			☐	☐	
Construction			☐	☐	
Legislative Districts					
Assembly: 53 (100%)		Senate: 28 (100%)			
Congressional: 36 (100%)					
Purpose and Need					
The need is to reduce congestion at this major intersection of two principal arterials.					
Project Benefits					
The benefit will be improved travel for vehicular and transit system traffic through the intersection.					
Project Milestone					Date
Project Study Report Approved					
Begin Environmental (PA&ED) Phase					
Circulate Draft Environmental Document			Document Type	N/A	
Draft Project Report					
End Environmental Phase (PA&ED Milestone)					
Begin Design (PS&E) Phase					
End Design Phase (Ready to List for Advertisement Milestone)					
Begin Right of Way Phase					
End Right of Way Phase (Right of Way Certification Milestone)					
Begin Construction Phase (Contract Award Milestone)					
End Construction Phase (Construction Contract Acceptance Milestone)					
Begin Closeout Phase					
End Closeout Phase (Closeout Report)					

ADA Notice

For individuals with sensory disabilities, this document is available in alternate formats. For information call (916) 654-6410 or TDD (916) 654-3880 or write Records and Forms Management, 1120 N Street, MS-89, Sacramento, CA 95814.

PROJECT PROGRAMMING REQUEST

DTP-0001 (REV. 3/08)

Date: 04/23/09

County	CT District	PPNO	TCRP Project No.	EA
LA	07			
Project Title: Aviation Blvd. Right Turn Only Lane at Artesia Blvd.				

Existing Total Project Cost									Implementing Agency
Component	Prior	08/09	09/10	10/11	11/12	12/13	13/14+	Total	
E&P (PA&ED)									
PS&E									
R/W SUP (CT)									
CON SUP (CT)									
R/W									
CON									
TOTAL									
Proposed Total Project Cost									
E&P (PA&ED)									
PS&E					125,000			125,000	
R/W SUP (CT)									
CON SUP (CT)									
R/W					260,000			260,000	
CON						509,000		509,000	
TOTAL					385,000	509,000		894,000	

Fund No. 1:									Program Code
Existing Funding									
Component	Prior	08/09	09/10	10/11	11/12	12/13	13/14+	Total	Funding Agency
E&P (PA&ED)									
PS&E									
R/W SUP (CT)									
CON SUP (CT)									
R/W									
CON									
TOTAL									
Proposed Funding									Notes
E&P (PA&ED)									Includes local match from City of 36%.
PS&E					125,000			125,000	
R/W SUP (CT)									
CON SUP (CT)									
R/W					260,000			260,000	
CON						509,000		509,000	
TOTAL					385,000	509,000		894,000	

Fund No. 2:									Program Code
Existing Funding									
Component	Prior	08/09	09/10	10/11	11/12	12/13	13/14+	Total	Funding Agency
E&P (PA&ED)									
PS&E									
R/W SUP (CT)									
CON SUP (CT)									
R/W									
CON									
TOTAL									
Proposed Funding									Notes
E&P (PA&ED)									
PS&E									
R/W SUP (CT)									
CON SUP (CT)									
R/W									
CON									
TOTAL									

